APPENDIX A

Terms of Reference and Staff Response

LEA Consulting Ltd.
625 Cochrane Drive, 9th Floor
Markham, ON, L3R 9R9 Canada
T | 905 470 0015 F | 905 470 0030
WWW.LEA.CA

September 18, 2023

Reference Number: 24030

Mr. Matt Krusto
Supervisor, Transportation Development Review
Halton Region
Via Email: matt.krusto@halton.ca

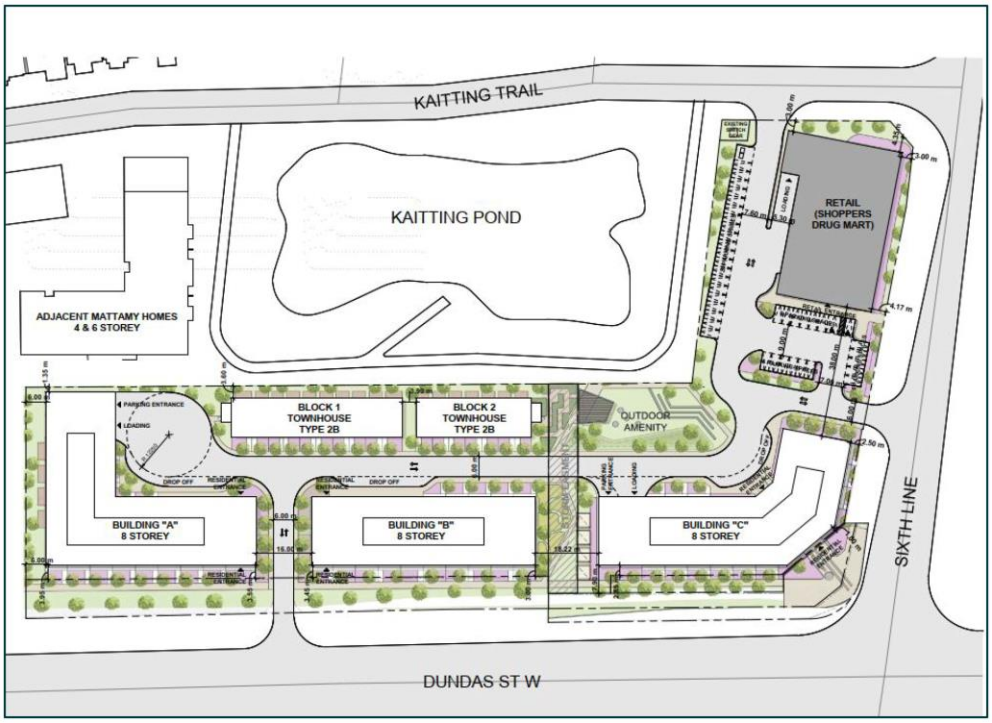
Mr. Syed Rizvi
Transportation Engineer
Town of Oakville
Via Email: syed.rizvi@oakville.ca

Dear Mr. Krusto and Mr. Rizvi,

RE: Traffic Impact Study – Dundas Street West and Sixth Line, Oakville

LEA Consulting Ltd. would like to confirm the following study parameters for a traffic analysis of the proposed development located at the northwest corner of the intersection of Dundas Street West and Sixth Line in the Town of Oakville. The subject site currently consists of vacant land bounded by residential neighbourhoods. The applicant is proposing a mixed-use development consisting of both residential and commercial land uses. Internal street networks will be provided, connecting to Dundas Street West (right-in/right-out), Sixth Line (full moves), and Kaitting Trail (full moves). The interim phase of this development project will include a total of 552 residential units and 1,384 m^2 of commercial GFA, with the ultimate buildout resulting in a total of 724 residential units. The interim site plan is provided in **Figure 1;** the development drawings are subject to further refinement and have been provided for illustrative purposes only.

Figure 1: Preliminary Development Concept



STUDY AREA

LEA proposes to include the following intersections in the TIS study area:

1. Dundas Street West and Preserve Drive / Harman Gate (Signalized);
2. Dundas Street West and Sixth Line (Signalized);
3. Sixth Line and Munn's United Church Site Access (Unsignalized);
4. Sixth Line and Kaitting Trail (Unsignalized);
5. Sixth Line and Sixteen Mile Drive / Wheat Boom Drive (Signalized); and
6. Kaitting Trail and Janice Drive (Unsignalized).

The evaluation will also include an assessment of any new connections to surrounding public roadways included as part of the proposed development. The location of the study area intersections is provided in **Figure 2**.

Figure 2: Study Area Intersections

EXISTING ANALYSIS

Existing traffic conditions will be analyzed using Highway Capacity Manual (HCM) methods with the aid of Synchro 11 software. Turning movement counts (TMC) for the weekday AM and PM peak periods will be collected at the intersections listed above.

FUTURE ANALYSIS

The impacts of the proposed development on the surrounding road network will be assessed based on two study horizons: 2028 (interim), and 2033 (ultimate).

TRANSPORTATION NETWORK CHANGES

Based on our review of the Halton Region Transportation Master Plan, no future road network improvements have been identified. This assumption reflects the inclusion of the Sixth Line widening under existing conditions, as the majority of the works will have been completed at the time of survey. The Dundas BRT is assumed to not be implemented within the planning horizons of this study.

BACKGROUND DEVELOPMENTS

Based on a review of the Town of Oakville's Active Development Applications website, eight background developments were identified within or the study area. Traffic associated with these developments will be included in the future analysis. LEA is requesting that the Region/ City staff confirm the list of background developments and provide any supporting traffic studies. In addition, LEA will conduct a site visit at the sites identified as under a "Phase of Registration" to confirm whether they have achieved occupancy at the time of survey.

Table 1: Background Developments

Location	Description	Phase or Site Plan #
98 Kaitting Trail	Two 6-storey apartment buildings with 263 units, and 10 townhouse units. Vehicle and bicycle parking is provided both below and at-grade.	Phase of Registration
3058, 3068, 3066, 3070, 3074 and 3078 Sixth Line	109 unit standard plan of condominium.	Phase of Registration
Sixth Line W/S (Timsin Holding)	22 single detached units, 14 semi-detached units, 22 lane townhouse units and two natural heritage system blocks.	Phase of Registration
3270 Sixth Line	218 unit subdivision consisting of 8 storey mixed use buildings, town houses, and SWM pond.	Phase of Registration
3006 - 3052 Creekshore Common	Condominium features a 4 storey, 62 unit apartment building fronting on to Dundas street West, 26 lane based townhouse dwellings and an internal private road network.	Phase of Registration
3240 Carding Mill Trail	Five storey mixed-use building with 157 units and ground floor commercial. In addition, two blocks of stacked townhouses are proposed with a total of 18 units on a private lane.	1318.006/01
3010 Ernest Appelbe Boule	Eight Storey Condominium Building with 233 Units.	1314.003/01
90 Oak Park Blvd	12 Storey Mixed Building with 229 residential units and 1,080 square metres of retail space.	1414.030/01

BACKGROUND GROWTH

Historical TMC data collected at the intersection of Sixth Line and Dundas Street West will be utilized to establish an appropriate corridor growth rates for these two major roadways. No corridor growth will be assumed for minor streets within the study area.

SITE TRAFFIC

Site traffic will be estimated using ITE trip generation methodology. The mode split of site trips will be estimated using the 2016 TTS. Vehicle trips will be distributed and assigned to the surrounding road network based on TTS origin-destination data.

Should you have any questions or concerns regarding these terms of reference, please do not hesitate to contact me at rkeel@lea.ca.

Yours truly,

LEA CONSULTING LTD.

Robert Keel, MSc. Pl, MCIP, RPP
Manager, Transportation Planning
Transportation Group

Dana Usaty

From: Khan, Ayesha <Ayesha.Khan@halton.ca>
Sent: October 13, 2023 9:14 AM
To: Robert Keel
Cc: Loro, Darren
Subject: RE: TIS ToR - Dundas and Sixth Line

Follow Up Flag: Follow up
Flag Status: Flagged

External Sender

Good morning Robert,
My apologies, I thought I had responded to your request but I realized my email was stuck in my outbox. Please see my comments below:

Development Proposal – Mixed-use development consisting of both residential and commercial land uses. Internal street networks will be provided, connecting to Dundas Street West (right-in/right-out), Sixth Line (full moves), and Kaitting Trail (full moves). The interim phase of this development project will include a total of 552 residential units and 1,384 m2 of commercial GFA, with the ultimate buildout resulting in a total of 724 residential units.

Study Area
- Dundas Street West and Preserve Drive / Harman Gate (Signalized)
- Dundas Street West and Sixth Line (Signalized)
- Sixth Line and Munn's United Church Site Access (Unsignalized)
- Sixth Line and Kaitting Trail (Unsignalized)
- Sixth Line and Sixteen Mile Drive / Wheat Boom Drive (Signalized)
- Kaitting Trail and Janice Drive (Unsignalized)

The above is acceptable.

Horizon Year
The TOR notes that the future analysis will be based on two study horizons – 2028 (interim), and 2033 (ultimate).

As noted in the development proposal, the development will be phased with the ultimate buildout resulting in 724 units – is the anticipated completion of the 2nd phase anticipated for 2033? Please note that we require the following analyses:

- Interim Project Completion (Phase 1)
- Ultimate Project Completion (Phase 2)
- 5-Year Post Buildout of the Ultimate (Phase 2)

Background Developments
Town staff will provide/approve all background developments to consider as part of the study.

General Comments

Access, TIS Guidelines:

The Study must be in accordance to Halton Region's Transportation Impact Study Guidelines (2015), Access Management Guidelines (2015) and Access By-Law 32-17.

Traffic Data
Traffic data requests (traffic signal timing, turning movement counts) can be obtained from Halton's Road Operations group via request through accesshalton@halton.ca

All plan and study submission should only be directed to the Planners on the file for Halton Region and the Town of Oakville.

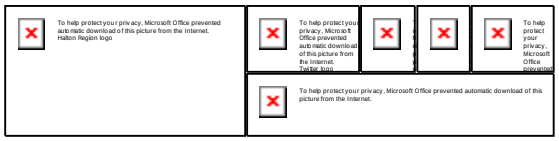
Report Layout
The TIS report must include:

- Site Plan and Map,
- Size & Number of Development Phases,
- Existing Conditions (Study Area Intersections, Road Network, Pedestrian Routes, Cycling Routes, Transit Services),
- Existing Traffic Conditions (Site Operating Characteristics, Data Collection/Traffic Counts, Analysis Periods (5 years Ahead),
- Future Background Conditions (Horizon Years, Horizon Year Volumes)
- Background Traffic Demand (with TMC's < 2 years old),
- Background Traffic Demand Forecast (with acceptable growth rates)
- Site Generated Traffic (Transit Modal Split, Trip Generation/Distribution/Assignment)
- Future Total Traffic Demand,
- Capacity Analysis (by Intersection, with LOS, Avg. Delay, V/C ratios),
- Traffic Impacts (Tables – Total Traffic with/without Mitigation)
- Access Considerations – Existing, Proposed, Geometrics (turn lanes, sight lines),
- Recommendations - Identify required/recommended road improvements either as a result of the development impacts, or general non-development improvements.
- TDM recommendations (Transit, Pedestrian & Cycling Facilities Analysis)
- Conclusions
- Appendices with Terms of Reference correspondence from all agencies.

The above is also subject to the review and approval by the Town of Oakville.

Thanks,
Ayesha

Ayesha Khan
Transportation Planning Coordination PM1
Infrastructure Planning & Policy
Public Works
Halton Region
905-825-6000, ext. | 1-866-442-5866



From: Robert Keel <rkeel@lea.ca>
Sent: Thursday, October 12, 2023 5:20 PM

Dana Usaty

From: Syed Rizvi <syed.rizvi@oakville.ca>
Sent: October 13, 2023 11:25 AM
To: Robert Keel; Krusto, Matt
Cc: Esther Kim
Subject: RE: TIS ToR - Dundas and Sixth Line

Follow Up Flag: Follow up
Flag Status: Flagged

External Sender

Hi Robert,

Thanks for the TIS TOR's, the list of items cover generally all items and agreed upon. Please include following to the list of deliverables.

- Parking Justification Report.
- For Background studies, please refer to the town Planning GIS site, accessible to public.

Let me know if you have any questions.
Regards,
Syed

Syed Rizvi, M.Sc., P. Eng
Transportation Engineer
Transportation and Engineering
Town of Oakville | 905-845-6601, ext.3981 | www.oakville.ca

From: Robert Keel <rkeel@lea.ca>
Sent: Tuesday, September 19, 2023 4:40 PM
To: Krusto, Matt <Matt.Krusto@halton.ca>; Syed Rizvi <syed.rizvi@oakville.ca>
Cc: Esther Kim <EKim@lea.ca>
Subject: TIS ToR - Dundas and Sixth Line

Hi Matt and Syed,

Hope you are both doing well. See attached a TIS TOR for the proposed development near the intersection of Dundas and Sixth Line, we would appreciate your review and confirmation of the proposed study parameters. Please let me know if you have any questions or require clarification.

Regards,

Robert Keel, MSc. PI, MCIP, RPP
Manager, Transportation Planning
LEA Consulting Ltd.
M: 647-562-6117 E: rkeel@lea.ca

APPENDIX B

TMC Data Collection

LEA Consulting Ltd.
625 Cochrane Drive

Markham, Ontario, Canada L3R 9R9
905-470-0015 x240 idinsmore@lea.ca

Count Name: 24030_Preserve Dr & Dundas St W-AM
Site Code: 24030
Start Date: 11/22/2023

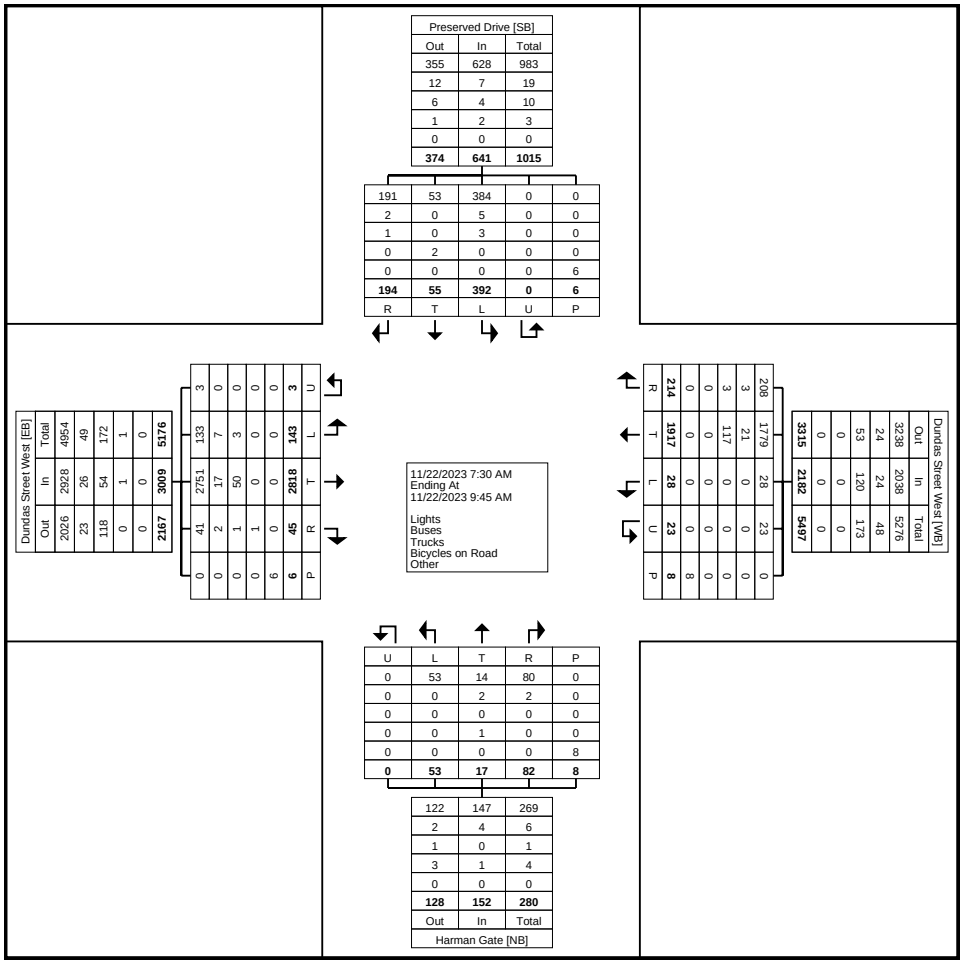
Turning Movement Data

Start Time	Preserved Drive Southbound						Dundas Street West Westbound						Harman Gate Northbound						Dundas Street West Eastbound						
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Int. Total
7:30 AM	50	5	22	0	0	77	1	173	13	3	0	190	6	0	13	0	1	19	16	284	1	0	2	301	587
7:45 AM	60	5	19	0	0	84	3	239	14	2	0	258	4	1	8	0	0	13	10	340	0	1	0	351	706
Hourly Total	110	10	41	0	0	161	4	412	27	5	0	448	10	1	21	0	1	32	26	624	1	1	2	652	1293
8:00 AM	66	17	18	0	0	101	5	219	22	3	2	249	8	4	11	0	0	23	16	339	6	0	0	361	734
8:15 AM	39	10	17	0	1	66	2	261	25	4	2	292	14	6	7	0	1	27	21	409	13	0	1	443	828
8:30 AM	38	4	33	0	2	75	5	262	37	1	0	305	5	2	13	0	1	20	28	380	11	0	1	419	819
8:45 AM	42	2	26	0	0	70	3	293	34	1	0	331	4	1	7	0	1	12	19	389	9	1	2	418	831
Hourly Total	185	33	94	0	3	312	15	1035	118	9	4	1177	31	13	38	0	3	82	84	1517	39	1	4	1641	3212
9:00 AM	47	4	32	0	2	83	3	263	40	6	2	312	3	1	15	0	1	19	18	351	3	1	0	373	787
9:15 AM	50	8	27	0	1	85	6	207	29	3	2	245	9	2	8	0	3	19	15	324	2	0	0	341	690
9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	2
Grand Total	392	55	194	0	6	641	28	1917	214	23	8	2182	53	17	82	0	8	152	143	2818	45	3	6	3009	5984
Approach %	61.2	8.6	30.3	0.0	-	-	1.3	87.9	9.8	1.1	-	-	34.9	11.2	53.9	0.0	-	-	4.8	93.7	1.5	0.1	-	-	-
Total %	6.6	0.9	3.2	0.0	-	10.7	0.5	32.0	3.6	0.4	-	36.5	0.9	0.3	1.4	0.0	-	2.5	2.4	47.1	0.8	0.1	-	50.3	-
Lights	384	53	191	0	-	628	28	1779	208	23	-	2038	53	14	80	0	-	147	133	2751	41	3	-	2928	5741
% Lights	98.0	96.4	98.5	-	-	98.0	100.0	92.8	97.2	100.0	-	93.4	100.0	82.4	97.6	-	-	96.7	93.0	97.6	91.1	100.0	-	97.3	95.9
Buses	5	0	2	0	-	7	0	21	3	0	-	24	0	2	2	0	-	4	7	17	2	0	-	26	61
% Buses	1.3	0.0	1.0	-	-	1.1	0.0	1.1	1.4	0.0	-	1.1	0.0	11.8	2.4	-	-	2.6	4.9	0.6	4.4	0.0	-	0.9	1.0
Trucks	3	0	1	0	-	4	0	117	3	0	-	120	0	0	0	0	-	0	3	50	1	0	-	54	178
% Trucks	0.8	0.0	0.5	-	-	0.6	0.0	6.1	1.4	0.0	-	5.5	0.0	0.0	0.0	-	-	0.0	2.1	1.8	2.2	0.0	-	1.8	3.0
Bicycles on Road	0	2	0	0	-	2	0	0	0	0	-	0	0	1	0	0	-	1	0	0	1	0	-	1	4
% Bicycles on Road	0.0	3.6	0.0	-	-	0.3	0.0	0.0	0.0	0.0	-	0.0	0.0	5.9	0.0	-	-	0.7	0.0	0.0	2.2	0.0	-	0.0	0.1
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	1	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	12.5	-	-	-	-	-	16.7	-	-
Pedestrians	-	-	-	-	6	-	-	-	-	-	8	-	-	-	-	-	7	-	-	-	-	-	5	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	87.5	-	-	-	-	-	83.3	-	-

LEA Consulting Ltd.
625 Cochrane Drive

Markam, Ontario, Canada L3R 9R9
905-470-0015 x240 idinsmore@lea.ca

Count Name: 24030_Preserve Dr & Dundas St W-AM
Site Code: 24030
Start Date: 11/22/2023



Turning Movement Data Plot

LEA Consulting Ltd.
625 Cochrane Drive

Markham, Ontario, Canada L3R 9R9
905-470-0015 x240 idinsmore@lea.ca

Count Name: 24030_Preserve Dr & Dundas St W-AM
Site Code: 24030
Start Date: 11/22/2023

Turning Movement Peak Hour Data (8:15 AM)

Start Time	Preserved Drive Southbound						Dundas Street West Westbound						Harman Gate Northbound						Dundas Street West Eastbound						
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Int. Total
8:15 AM	39	10	17	0	1	66	2	261	25	4	2	292	14	6	7	0	1	27	21	409	13	0	1	443	828
8:30 AM	38	4	33	0	2	75	5	262	37	1	0	305	5	2	13	0	1	20	28	380	11	0	1	419	819
8:45 AM	42	2	26	0	0	70	3	293	34	1	0	331	4	1	7	0	1	12	19	389	9	1	2	418	831
9:00 AM	47	4	32	0	2	83	3	263	40	6	2	312	3	1	15	0	1	19	18	351	3	1	0	373	787
Total	166	20	108	0	5	294	13	1079	136	12	4	1240	26	10	42	0	4	78	86	1529	36	2	4	1653	3265
Approach %	56.5	6.8	36.7	0.0	-	-	1.0	87.0	11.0	1.0	-	-	33.3	12.8	53.8	0.0	-	-	5.2	92.5	2.2	0.1	-	-	-
Total %	5.1	0.6	3.3	0.0	-	9.0	0.4	33.0	4.2	0.4	-	38.0	0.8	0.3	1.3	0.0	-	2.4	2.6	46.8	1.1	0.1	-	50.6	-
PHF	0.883	0.500	0.818	0.000	-	0.886	0.650	0.921	0.850	0.500	-	0.937	0.464	0.417	0.700	0.000	-	0.722	0.768	0.935	0.692	0.500	-	0.933	0.982
Lights	164	20	106	0	-	290	13	1002	132	12	-	1159	26	9	41	0	-	76	81	1488	32	2	-	1603	3128
% Lights	98.8	100.0	98.1	-	-	98.6	100.0	92.9	97.1	100.0	-	93.5	100.0	90.0	97.6	-	-	97.4	94.2	97.3	88.9	100.0	-	97.0	95.8
Buses	0	0	1	0	-	1	0	9	3	0	-	12	0	0	1	0	-	1	2	10	2	0	-	14	28
% Buses	0.0	0.0	0.9	-	-	0.3	0.0	0.8	2.2	0.0	-	1.0	0.0	0.0	2.4	-	-	1.3	2.3	0.7	5.6	0.0	-	0.8	0.9
Trucks	2	0	1	0	-	3	0	68	1	0	-	69	0	0	0	0	-	0	3	31	1	0	-	35	107
% Trucks	1.2	0.0	0.9	-	-	1.0	0.0	6.3	0.7	0.0	-	5.6	0.0	0.0	0.0	-	-	0.0	3.5	2.0	2.8	0.0	-	2.1	3.3
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	1	0	0	-	1	0	0	1	0	-	1	2
% Bicycles on Road	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	0.0	-	0.0	0.0	10.0	0.0	-	-	1.3	0.0	0.0	2.8	0.0	-	0.1	0.1
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	1	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	25.0	-	-
Pedestrians	-	-	-	-	5	-	-	-	-	-	4	-	-	-	-	-	4	-	-	-	-	-	3	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	75.0	-	-

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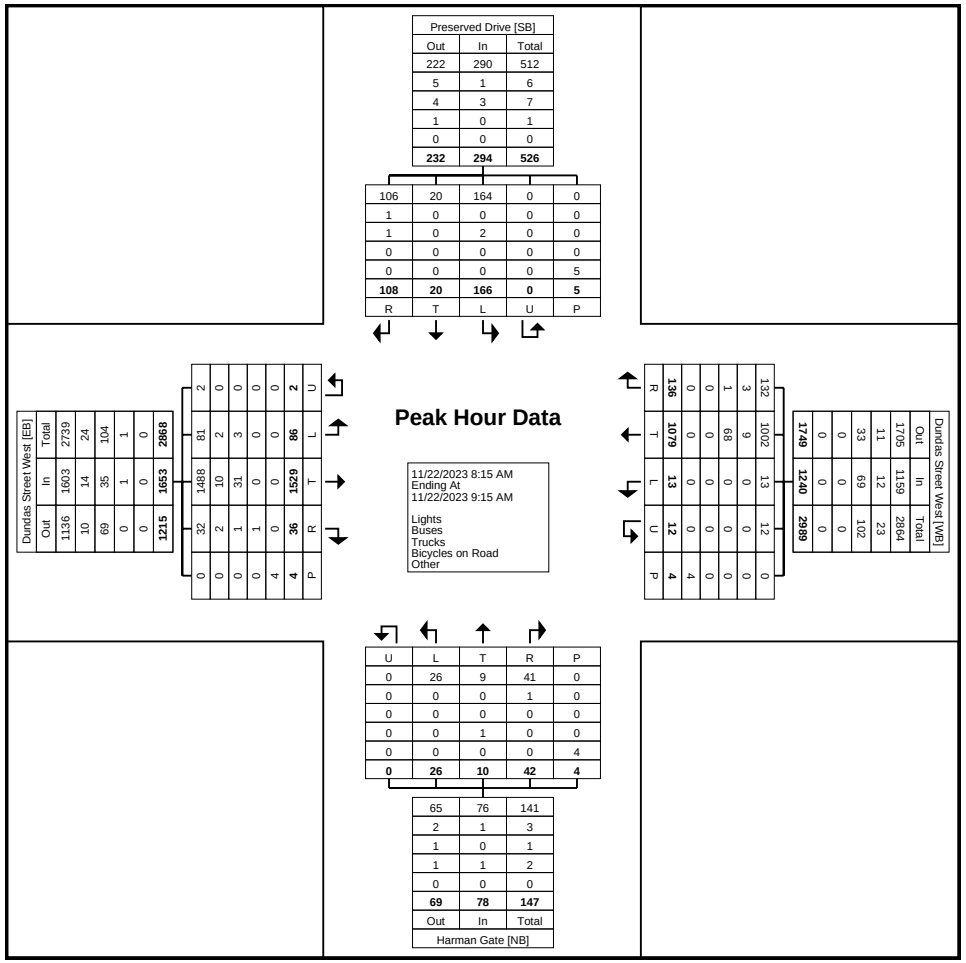
905-470-0015 x240 idinsmore@lea.ca

Count Name: 24030_Preserve Dr & Dundas St W-AM
Site Code: 24030
Start Date: 11/22/2023



Turning Movement Peak Hour Data Plot (8:15 AM)

LEA Consulting Ltd.
625 Cochrane Drive

Markham, Ontario, Canada L3R 9R9
905-470-0015 x240 idinsmore@lea.ca

Count Name: 24030_Preserve Dr & Dundas St W-PM
Site Code: 24030
Start Date: 11/22/2023

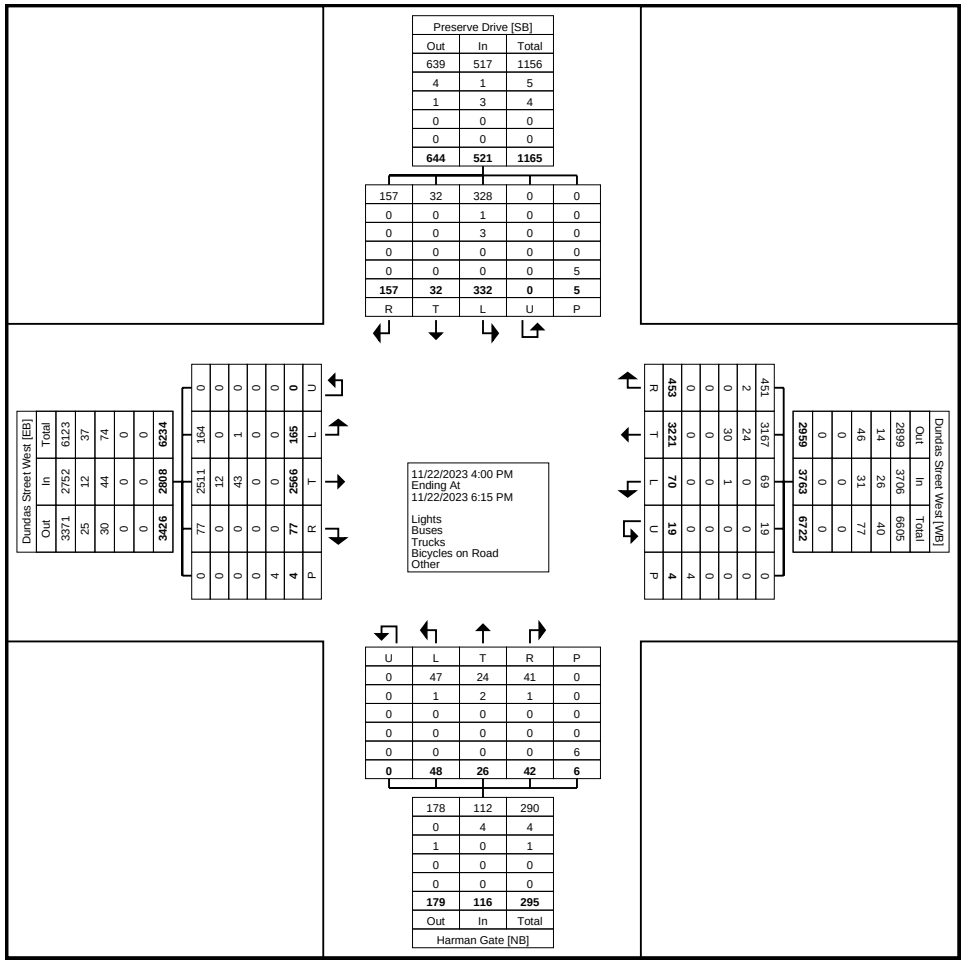
Turning Movement Data

Start Time	Preserve Drive Southbound						Dundas Street West Westbound						Harman Gate Northbound						Dundas Street West Eastbound						
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Int. Total
4:00 PM	31	3	25	0	0	59	13	408	54	3	1	478	6	3	4	0	0	13	19	321	6	0	0	346	896
4:15 PM	41	5	16	0	0	62	2	419	50	0	0	471	7	5	5	0	0	17	17	316	8	0	0	341	891
4:30 PM	49	2	13	0	1	64	5	443	43	2	2	493	4	0	0	0	2	4	17	341	13	0	0	371	932
4:45 PM	52	5	19	0	0	76	11	426	57	4	0	498	9	6	3	0	1	18	20	287	9	0	0	316	908
Hourly Total	173	15	73	0	1	261	31	1696	204	9	3	1940	26	14	12	0	3	52	73	1265	36	0	0	1374	3627
5:00 PM	37	1	20	0	2	58	8	439	69	2	0	518	0	3	6	0	0	9	25	357	7	0	1	389	974
5:15 PM	36	8	23	0	1	67	6	346	57	3	0	412	7	4	10	0	0	21	26	306	11	0	2	343	843
5:30 PM	45	4	30	0	0	79	11	392	64	3	0	470	9	2	9	0	2	20	22	346	10	0	0	378	947
5:45 PM	41	4	11	0	1	56	14	348	59	2	1	423	6	3	5	0	1	14	19	292	13	0	1	324	817
Hourly Total	159	17	84	0	4	260	39	1525	249	10	1	1823	22	12	30	0	3	64	92	1301	41	0	4	1434	3581
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	332	32	157	0	5	521	70	3221	453	19	4	3763	48	26	42	0	6	116	165	2566	77	0	4	2808	7208
Approach %	63.7	6.1	30.1	0.0	-	-	1.9	85.6	12.0	0.5	-	-	41.4	22.4	36.2	0.0	-	-	5.9	91.4	2.7	0.0	-	-	-
Total %	4.6	0.4	2.2	0.0	-	7.2	1.0	44.7	6.3	0.3	-	52.2	0.7	0.4	0.6	0.0	-	1.6	2.3	35.6	1.1	0.0	-	39.0	-
Lights	328	32	157	0	-	517	69	3167	451	19	-	3706	47	24	41	0	-	112	164	2511	77	0	-	2752	7087
% Lights	98.8	100.0	100.0	-	-	99.2	98.6	98.3	99.6	100.0	-	98.5	97.9	92.3	97.6	-	-	96.6	99.4	97.9	100.0	-	-	98.0	98.3
Buses	1	0	0	0	-	1	0	24	2	0	-	26	1	2	1	0	-	4	0	12	0	0	-	12	43
% Buses	0.3	0.0	0.0	-	-	0.2	0.0	0.7	0.4	0.0	-	0.7	2.1	7.7	2.4	-	-	3.4	0.0	0.5	0.0	-	-	0.4	0.6
Trucks	3	0	0	0	-	3	1	30	0	0	-	31	0	0	0	0	-	0	1	43	0	0	-	44	78
% Trucks	0.9	0.0	0.0	-	-	0.6	1.4	0.9	0.0	0.0	-	0.8	0.0	0.0	0.0	-	-	0.0	0.6	1.7	0.0	-	-	1.6	1.1
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Bicycles on Road	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	25.0	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	-	5	-	-	-	-	-	3	-	-	-	-	-	6	-	-	-	-	-	4	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	75.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-

LEA Consulting Ltd.
625 Cochrane Drive

Markam, Ontario, Canada L3R 9R9
905-470-0015 x240 idinsmore@lea.ca

Count Name: 24030_Preserve Dr & Dundas St W-PM
Site Code: 24030
Start Date: 11/22/2023



Turning Movement Data Plot

LEA Consulting Ltd.
625 Cochrane Drive

Markham, Ontario, Canada L3R 9R9
905-470-0015 x240 idinsmore@lea.ca

Count Name: 24030_Preserve Dr & Dundas St W-PM
Site Code: 24030
Start Date: 11/22/2023

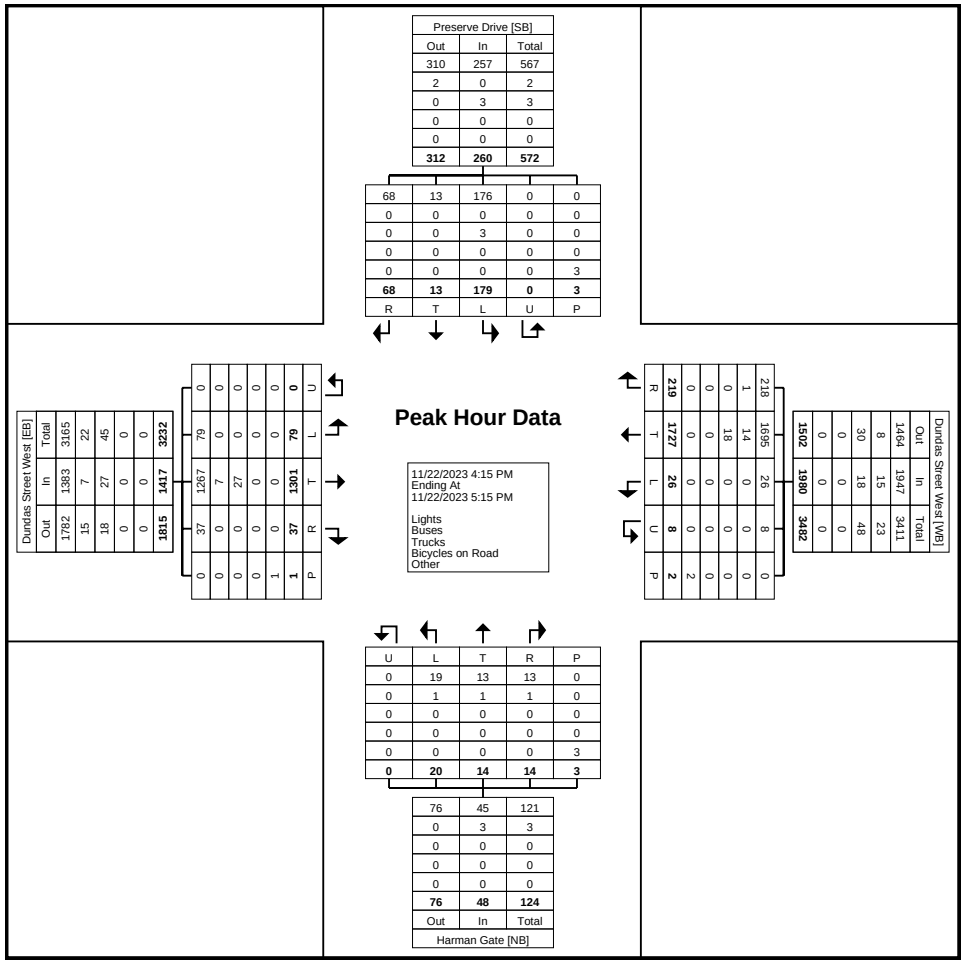
Turning Movement Peak Hour Data (4:15 PM)

Start Time	Preserve Drive Southbound						Dundas Street West Westbound						Harman Gate Northbound						Dundas Street West Eastbound						
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Int. Total
4:15 PM	41	5	16	0	0	62	2	419	50	0	0	471	7	5	5	0	0	17	17	316	8	0	0	341	891
4:30 PM	49	2	13	0	1	64	5	443	43	2	2	493	4	0	0	0	2	4	17	341	13	0	0	371	932
4:45 PM	52	5	19	0	0	76	11	426	57	4	0	498	9	6	3	0	1	18	20	287	9	0	0	316	908
5:00 PM	37	1	20	0	2	58	8	439	69	2	0	518	0	3	6	0	0	9	25	357	7	0	1	389	974
Total	179	13	68	0	3	260	26	1727	219	8	2	1980	20	14	14	0	3	48	79	1301	37	0	1	1417	3705
Approach %	68.8	5.0	26.2	0.0	-	-	1.3	87.2	11.1	0.4	-	-	41.7	29.2	29.2	0.0	-	-	5.6	91.8	2.6	0.0	-	-	-
Total %	4.8	0.4	1.8	0.0	-	7.0	0.7	46.6	5.9	0.2	-	53.4	0.5	0.4	0.4	0.0	-	1.3	2.1	35.1	1.0	0.0	-	38.2	-
PHF	0.861	0.650	0.850	0.000	-	0.855	0.591	0.975	0.793	0.500	-	0.956	0.556	0.583	0.583	0.000	-	0.667	0.790	0.911	0.712	0.000	-	0.911	0.951
Lights	176	13	68	0	-	257	26	1695	218	8	-	1947	19	13	13	0	-	45	79	1267	37	0	-	1383	3632
% Lights	98.3	100.0	100.0	-	-	98.8	100.0	98.1	99.5	100.0	-	98.3	95.0	92.9	92.9	-	-	93.8	100.0	97.4	100.0	-	-	97.6	98.0
Buses	0	0	0	0	-	0	0	14	1	0	-	15	1	1	1	0	-	3	0	7	0	0	-	7	25
% Buses	0.0	0.0	0.0	-	-	0.0	0.0	0.8	0.5	0.0	-	0.8	5.0	7.1	7.1	-	-	6.3	0.0	0.5	0.0	-	-	0.5	0.7
Trucks	3	0	0	0	-	3	0	18	0	0	-	18	0	0	0	0	-	0	0	27	0	0	-	27	48
% Trucks	1.7	0.0	0.0	-	-	1.2	0.0	1.0	0.0	0.0	-	0.9	0.0	0.0	0.0	-	-	0.0	0.0	2.1	0.0	-	-	1.9	1.3
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Bicycles on Road	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	50.0	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	-	3	-	-	-	-	-	1	-	-	-	-	-	3	-	-	-	-	-	1	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	50.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-

LEA Consulting Ltd.
625 Cochrane Drive

Markam, Ontario, Canada L3R 9R9
905-470-0015 x240 idinsmore@lea.ca

Count Name: 24030_Preserve Dr & Dundas St W-PM
Site Code: 24030
Start Date: 11/22/2023
Page No: 4



Turning Movement Peak Hour Data Plot (4:15 PM)

LEA Consulting Ltd.
625 Cochrane Drive

Markham, Ontario, Canada L3R 9R9
905-470-0015 x240 idinsmore@lea.ca

Count Name: 24030_Sixth Ln & Dundas St W-AM
Site Code: 24030
Start Date: 11/22/2023

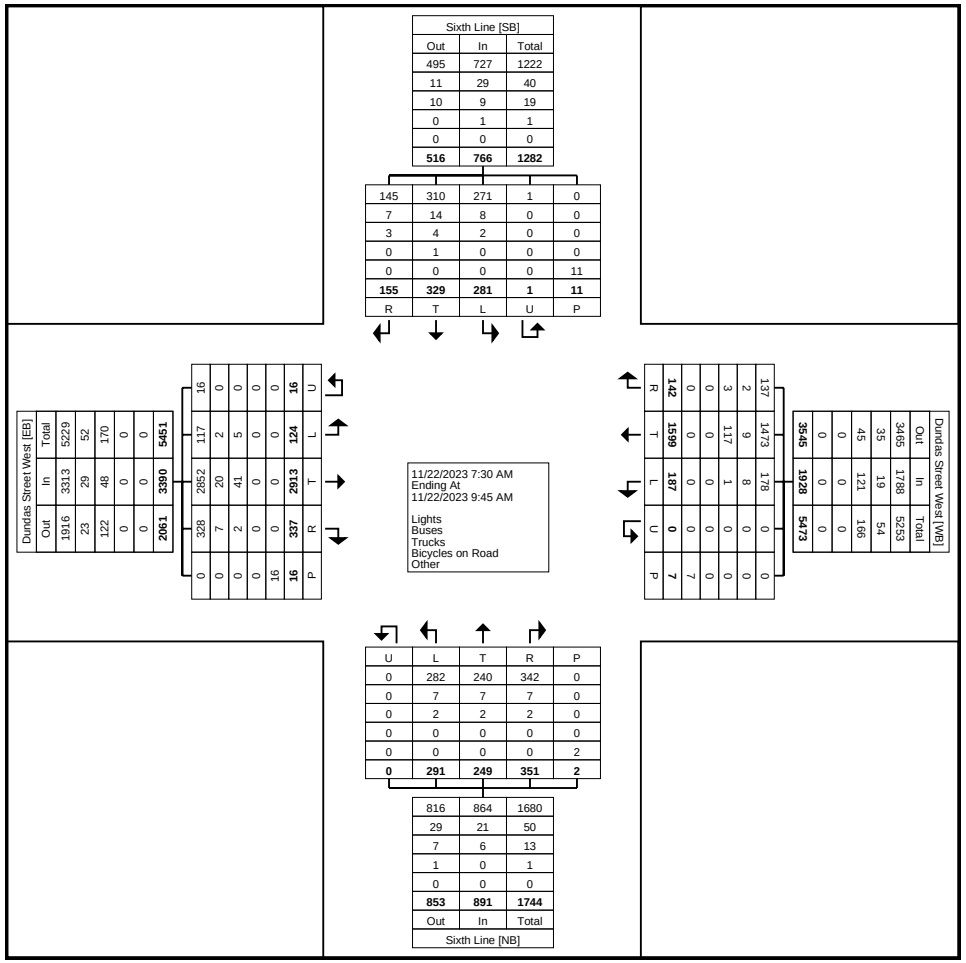
Turning Movement Data

Start Time	Sixth Line Southbound						Dundas Street West Westbound						Sixth Line Northbound						Dundas Street West Eastbound						
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Int. Total
7:30 AM	41	43	12	0	0	96	14	149	7	0	0	170	13	26	44	0	1	83	11	311	29	0	0	351	700
7:45 AM	30	57	20	0	1	107	24	193	12	0	1	229	21	17	26	0	0	64	5	382	59	3	2	449	849
Hourly Total	71	100	32	0	1	203	38	342	19	0	1	399	34	43	70	0	1	147	16	693	88	3	2	800	1549
8:00 AM	42	71	16	0	0	129	41	177	16	0	1	234	42	45	63	0	1	150	14	348	74	0	6	436	949
8:15 AM	27	38	16	1	5	82	19	205	20	0	0	244	63	65	66	0	0	194	18	384	35	1	2	438	958
8:30 AM	34	30	17	0	2	81	28	232	24	0	1	284	42	28	41	0	0	111	19	394	32	2	2	447	923
8:45 AM	26	24	18	0	1	68	27	256	24	0	1	307	46	29	40	0	0	115	24	398	42	1	1	465	955
Hourly Total	129	163	67	1	8	360	115	870	84	0	3	1069	193	167	210	0	1	570	75	1524	183	4	11	1786	3785
9:00 AM	40	30	30	0	1	100	18	223	22	0	1	263	29	26	41	0	0	96	17	380	35	2	3	434	893
9:15 AM	41	36	26	0	1	103	16	164	17	0	2	197	35	13	30	0	0	78	16	316	31	7	0	370	748
9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	281	329	155	1	11	766	187	1599	142	0	7	1928	291	249	351	0	2	891	124	2913	337	16	16	3390	6975
Approach %	36.7	43.0	20.2	0.1	-	-	9.7	82.9	7.4	0.0	-	-	32.7	27.9	39.4	0.0	-	-	3.7	85.9	9.9	0.5	-	-	-
Total %	4.0	4.7	2.2	0.0	-	11.0	2.7	22.9	2.0	0.0	-	27.6	4.2	3.6	5.0	0.0	-	12.8	1.8	41.8	4.8	0.2	-	48.6	-
Lights	271	310	145	1	-	727	178	1473	137	0	-	1788	282	240	342	0	-	864	117	2852	328	16	-	3313	6692
% Lights	96.4	94.2	93.5	100.0	-	94.9	95.2	92.1	96.5	-	-	92.7	96.9	96.4	97.4	-	-	97.0	94.4	97.9	97.3	100.0	-	97.7	95.9
Buses	8	14	7	0	-	29	8	9	2	0	-	19	7	7	7	0	-	21	2	20	7	0	-	29	98
% Buses	2.8	4.3	4.5	0.0	-	3.8	4.3	0.6	1.4	-	-	1.0	2.4	2.8	2.0	-	-	2.4	1.6	0.7	2.1	0.0	-	0.9	1.4
Trucks	2	4	3	0	-	9	1	117	3	0	-	121	2	2	2	0	-	6	5	41	2	0	-	48	184
% Trucks	0.7	1.2	1.9	0.0	-	1.2	0.5	7.3	2.1	-	-	6.3	0.7	0.8	0.6	-	-	0.7	4.0	1.4	0.6	0.0	-	1.4	2.6
Bicycles on Road	0	1	0	0	-	1	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	1
% Bicycles on Road	0.0	0.3	0.0	0.0	-	0.1	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	0.0	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	2	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	12.5	-	-
Pedestrians	-	-	-	-	11	-	-	-	-	-	7	-	-	-	-	-	2	-	-	-	-	-	14	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	87.5	-	-

LEA Consulting Ltd.
625 Cochrane Drive

Markam, Ontario, Canada L3R 9R9
905-470-0015 x240 idinsmore@lea.ca

Count Name: 24030_Sixth Ln & Dundas St W-AM
Site Code: 24030
Start Date: 11/22/2023
Page No: 2



Turning Movement Data Plot

LEA Consulting Ltd.
625 Cochrane Drive

Markham, Ontario, Canada L3R 9R9
905-470-0015 x240 idinsmore@lea.ca

Count Name: 24030_Sixth Ln & Dundas St W-AM
Site Code: 24030
Start Date: 11/22/2023

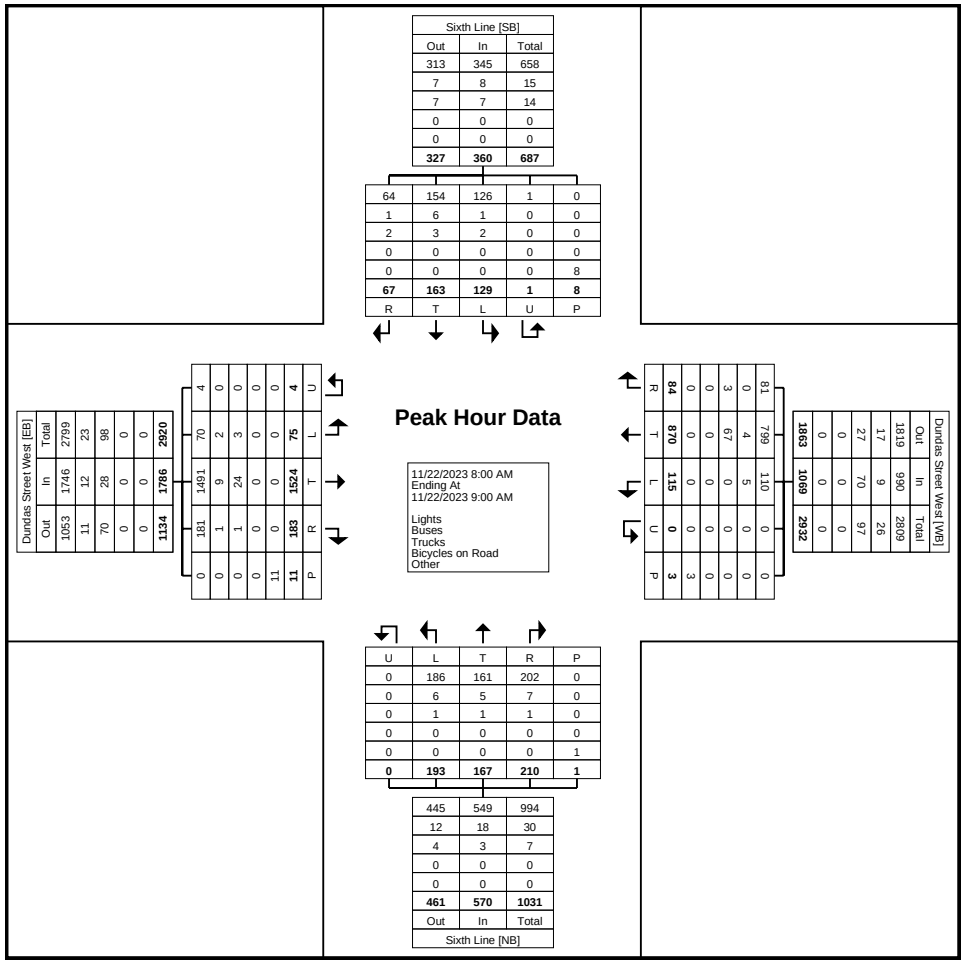
Turning Movement Peak Hour Data (8:00 AM)

Start Time	Sixth Line Southbound						Dundas Street West Westbound						Sixth Line Northbound						Dundas Street West Eastbound						
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Int. Total
8:00 AM	42	71	16	0	0	129	41	177	16	0	1	234	42	45	63	0	1	150	14	348	74	0	6	436	949
8:15 AM	27	38	16	1	5	82	19	205	20	0	0	244	63	65	66	0	0	194	18	384	35	1	2	438	958
8:30 AM	34	30	17	0	2	81	28	232	24	0	1	284	42	28	41	0	0	111	19	394	32	2	2	447	923
8:45 AM	26	24	18	0	1	68	27	256	24	0	1	307	46	29	40	0	0	115	24	398	42	1	1	465	955
Total	129	163	67	1	8	360	115	870	84	0	3	1069	193	167	210	0	1	570	75	1524	183	4	11	1786	3785
Approach %	35.8	45.3	18.6	0.3	-	-	10.8	81.4	7.9	0.0	-	-	33.9	29.3	36.8	0.0	-	-	4.2	85.3	10.2	0.2	-	-	-
Total %	3.4	4.3	1.8	0.0	-	9.5	3.0	23.0	2.2	0.0	-	28.2	5.1	4.4	5.5	0.0	-	15.1	2.0	40.3	4.8	0.1	-	47.2	-
PHF	0.768	0.574	0.931	0.250	-	0.698	0.701	0.850	0.875	0.000	-	0.871	0.766	0.642	0.795	0.000	-	0.735	0.781	0.957	0.618	0.500	-	0.960	0.988
Lights	126	154	64	1	-	345	110	799	81	0	-	990	186	161	202	0	-	549	70	1491	181	4	-	1746	3630
% Lights	97.7	94.5	95.5	100.0	-	95.8	95.7	91.8	96.4	-	-	92.6	96.4	96.4	96.2	-	-	96.3	93.3	97.8	98.9	100.0	-	97.8	95.9
Buses	1	6	1	0	-	8	5	4	0	0	-	9	6	5	7	0	-	18	2	9	1	0	-	12	47
% Buses	0.8	3.7	1.5	0.0	-	2.2	4.3	0.5	0.0	-	-	0.8	3.1	3.0	3.3	-	-	3.2	2.7	0.6	0.5	0.0	-	0.7	1.2
Trucks	2	3	2	0	-	7	0	67	3	0	-	70	1	1	1	0	-	3	3	24	1	0	-	28	108
% Trucks	1.6	1.8	3.0	0.0	-	1.9	0.0	7.7	3.6	-	-	6.5	0.5	0.6	0.5	-	-	0.5	4.0	1.6	0.5	0.0	-	1.6	2.9
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Bicycles on Road	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	0.0	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	1	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	9.1	-	-
Pedestrians	-	-	-	-	8	-	-	-	-	-	3	-	-	-	-	-	1	-	-	-	-	-	10	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	90.9	-	-

LEA Consulting Ltd.
625 Cochrane Drive

Markam, Ontario, Canada L3R 9R9
905-470-0015 x240 idinsmore@lea.ca

Count Name: 24030_Sixth Ln & Dundas St W-AM
Site Code: 24030
Start Date: 11/22/2023



Turning Movement Peak Hour Data Plot (8:00 AM)

LEA Consulting Ltd.
625 Cochrane Drive

Markam, Ontario, Canada L3R 9R9
905-470-0015 x240 idinsmore@lea.ca

Count Name: 24030_Sixth Ln & Dundas St W-PM
Site Code: 24030
Start Date: 11/22/2023

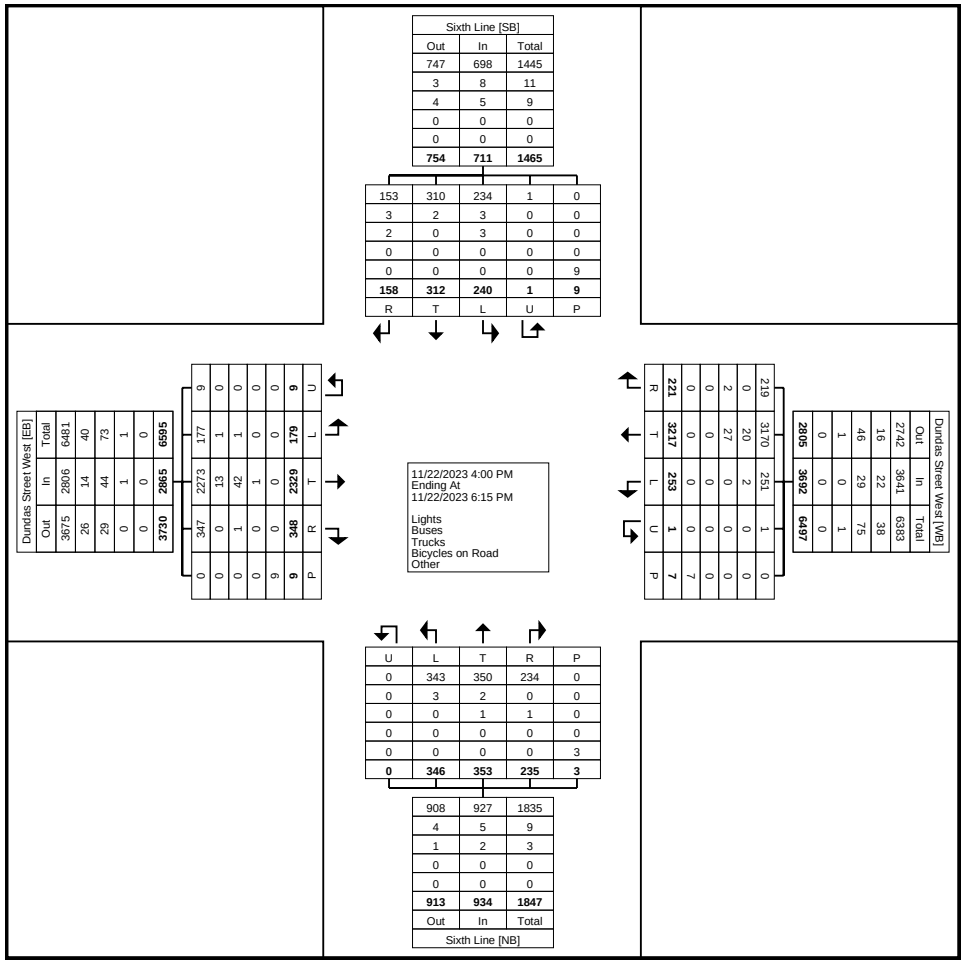
Turning Movement Data

Start Time	Sixth Line Southbound						Dundas Street West Westbound						Sixth Line Northbound						Dundas Street West Eastbound						
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Int. Total
4:00 PM	33	49	19	0	1	101	29	416	27	0	2	472	44	50	28	0	0	122	15	260	40	0	0	315	1010
4:15 PM	30	58	21	0	1	109	34	449	27	0	1	510	33	30	23	0	2	86	18	342	47	0	0	407	1112
4:30 PM	39	41	16	0	3	96	29	364	28	1	2	422	50	55	25	0	1	130	23	276	56	2	1	357	1005
4:45 PM	29	29	16	0	0	74	28	440	25	0	0	493	45	48	32	0	0	125	23	334	36	2	2	395	1087
Hourly Total	131	177	72	0	5	380	120	1669	107	1	5	1897	172	183	108	0	3	463	79	1212	179	4	3	1474	4214
5:00 PM	25	33	17	0	2	75	34	417	29	0	1	480	55	46	26	0	0	127	25	286	46	1	0	358	1040
5:15 PM	23	39	18	1	1	81	35	367	31	0	0	433	43	50	28	0	0	121	24	289	46	2	4	361	996
5:30 PM	32	34	22	0	1	88	35	427	27	0	0	489	41	40	35	0	0	116	33	273	36	1	1	343	1036
5:45 PM	29	29	29	0	0	87	29	337	27	0	1	393	35	34	38	0	0	107	18	269	41	1	1	329	916
Hourly Total	109	135	86	1	4	331	133	1548	114	0	2	1795	174	170	127	0	0	471	100	1117	169	5	6	1391	3988
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	240	312	158	1	9	711	253	3217	221	1	7	3692	346	353	235	0	3	934	179	2329	348	9	9	2865	8202
Approach %	33.8	43.9	22.2	0.1	-	-	6.9	87.1	6.0	0.0	-	-	37.0	37.8	25.2	0.0	-	-	6.2	81.3	12.1	0.3	-	-	-
Total %	2.9	3.8	1.9	0.0	-	8.7	3.1	39.2	2.7	0.0	-	45.0	4.2	4.3	2.9	0.0	-	11.4	2.2	28.4	4.2	0.1	-	34.9	-
Lights	234	310	153	1	-	698	251	3170	219	1	-	3641	343	350	234	0	-	927	177	2273	347	9	-	2806	8072
% Lights	97.5	99.4	96.8	100.0	-	98.2	99.2	98.5	99.1	100.0	-	98.6	99.1	99.2	99.6	-	-	99.3	98.9	97.6	99.7	100.0	-	97.9	98.4
Buses	3	2	3	0	-	8	2	20	0	0	-	22	3	2	0	0	-	5	1	13	0	0	-	14	49
% Buses	1.3	0.6	1.9	0.0	-	1.1	0.8	0.6	0.0	0.0	-	0.6	0.9	0.6	0.0	-	-	0.5	0.6	0.6	0.0	0.0	-	0.5	0.6
Trucks	3	0	2	0	-	5	0	27	2	0	-	29	0	1	1	0	-	2	1	42	1	0	-	44	80
% Trucks	1.3	0.0	1.3	0.0	-	0.7	0.0	0.8	0.9	0.0	-	0.8	0.0	0.3	0.4	-	-	0.2	0.6	1.8	0.3	0.0	-	1.5	1.0
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	0.0	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	0.0	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	-	2	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	1	-	-
% Bicycles on Crosswalk	-	-	-	-	22.2	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	11.1	-	-
Pedestrians	-	-	-	-	7	-	-	-	-	-	7	-	-	-	-	-	3	-	-	-	-	-	8	-	-
% Pedestrians	-	-	-	-	77.8	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	88.9	-	-

LEA Consulting Ltd.
625 Cochrane Drive

Markam, Ontario, Canada L3R 9R9
905-470-0015 x240 idinsmore@lea.ca

Count Name: 24030_Sixth Ln & Dundas St W-PM
Site Code: 24030
Start Date: 11/22/2023
Page No: 2



Turning Movement Data Plot

LEA Consulting Ltd.
625 Cochrane Drive

Markham, Ontario, Canada L3R 9R9
905-470-0015 x240 idinsmore@lea.ca

Count Name: 24030_Sixth Ln & Dundas St W-PM
Site Code: 24030
Start Date: 11/22/2023

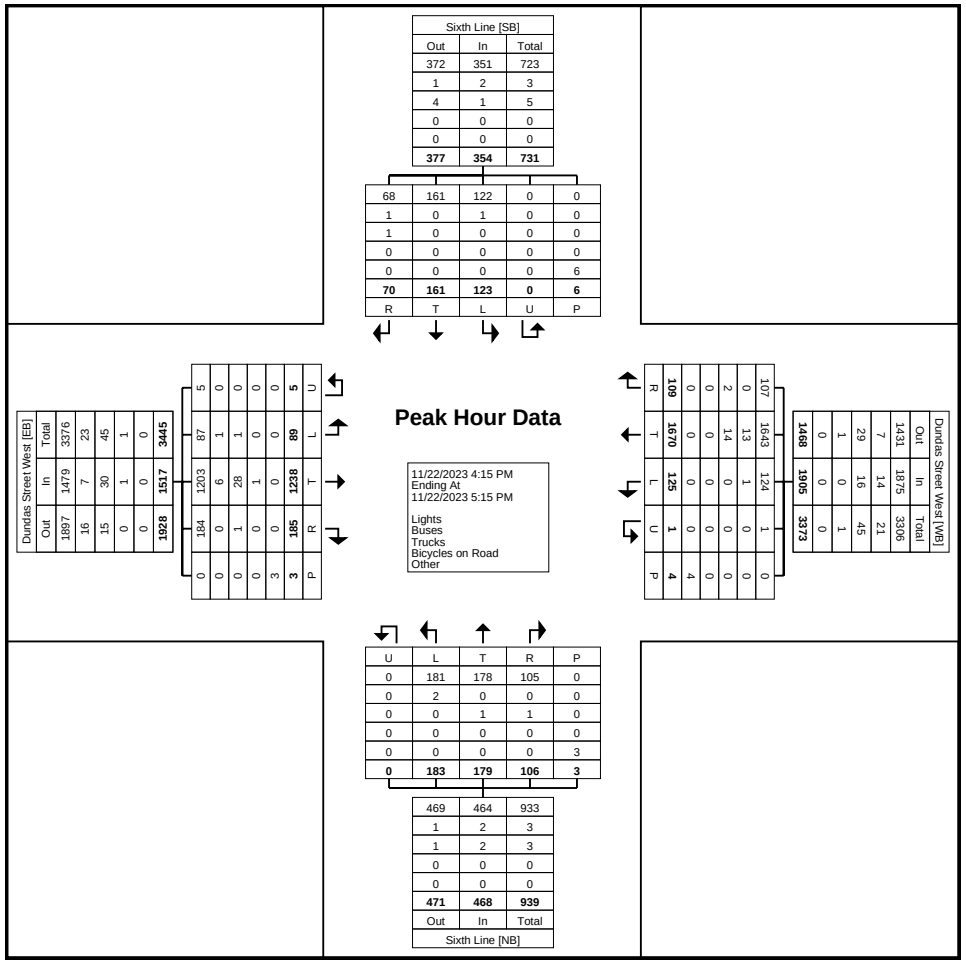
Turning Movement Peak Hour Data (4:15 PM)

Start Time	Sixth Line Southbound						Dundas Street West Westbound						Sixth Line Northbound						Dundas Street West Eastbound						
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Int. Total
4:15 PM	30	58	21	0	1	109	34	449	27	0	1	510	33	30	23	0	2	86	18	342	47	0	0	407	1112
4:30 PM	39	41	16	0	3	96	29	364	28	1	2	422	50	55	25	0	1	130	23	276	56	2	1	357	1005
4:45 PM	29	29	16	0	0	74	28	440	25	0	0	493	45	48	32	0	0	125	23	334	36	2	2	395	1087
5:00 PM	25	33	17	0	2	75	34	417	29	0	1	480	55	46	26	0	0	127	25	286	46	1	0	358	1040
Total	123	161	70	0	6	354	125	1670	109	1	4	1905	183	179	106	0	3	468	89	1238	185	5	3	1517	4244
Approach %	34.7	45.5	19.8	0.0	-	-	6.6	87.7	5.7	0.1	-	-	39.1	38.2	22.6	0.0	-	-	5.9	81.6	12.2	0.3	-	-	-
Total %	2.9	3.8	1.6	0.0	-	8.3	2.9	39.3	2.6	0.0	-	44.9	4.3	4.2	2.5	0.0	-	11.0	2.1	29.2	4.4	0.1	-	35.7	-
PHF	0.788	0.694	0.833	0.000	-	0.812	0.919	0.930	0.940	0.250	-	0.934	0.832	0.814	0.828	0.000	-	0.900	0.890	0.905	0.826	0.625	-	0.932	0.954
Lights	122	161	68	0	-	351	124	1643	107	1	-	1875	181	178	105	0	-	464	87	1203	184	5	-	1479	4169
% Lights	99.2	100.0	97.1	-	-	99.2	99.2	98.4	98.2	100.0	-	98.4	98.9	99.4	99.1	-	-	99.1	97.8	97.2	99.5	100.0	-	97.5	98.2
Buses	1	0	1	0	-	2	1	13	0	0	-	14	2	0	0	0	-	2	1	6	0	0	-	7	25
% Buses	0.8	0.0	1.4	-	-	0.6	0.8	0.8	0.0	0.0	-	0.7	1.1	0.0	0.0	-	-	0.4	1.1	0.5	0.0	0.0	-	0.5	0.6
Trucks	0	0	1	0	-	1	0	14	2	0	-	16	0	1	1	0	-	2	1	28	1	0	-	30	49
% Trucks	0.0	0.0	1.4	-	-	0.3	0.0	0.8	1.8	0.0	-	0.8	0.0	0.6	0.9	-	-	0.4	1.1	2.3	0.5	0.0	-	2.0	1.2
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	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.1	0.0	0.0	-	0.1	0.0
Bicycles on Crosswalk	-	-	-	-	2	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	33.3	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	-	4	-	-	-	-	-	4	-	-	-	-	-	3	-	-	-	-	-	3	-	-
% Pedestrians	-	-	-	-	66.7	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-

LEA Consulting Ltd.
625 Cochrane Drive

Markam, Ontario, Canada L3R 9R9
905-470-0015 x240 idinsmore@lea.ca

Count Name: 24030_Sixth Ln & Dundas St W-PM
Site Code: 24030
Start Date: 11/22/2023



Turning Movement Peak Hour Data Plot (4:15 PM)

LEA Consulting Ltd.
625 Cochrane Drive

Markham, Ontario, Canada L3R 9R9
905-470-0015 x240 idinsmore@lea.ca

Count Name: 24030_Sixth Ln & Sixteen Mile Dr-AM
Site Code: 24030
Start Date: 11/22/2023

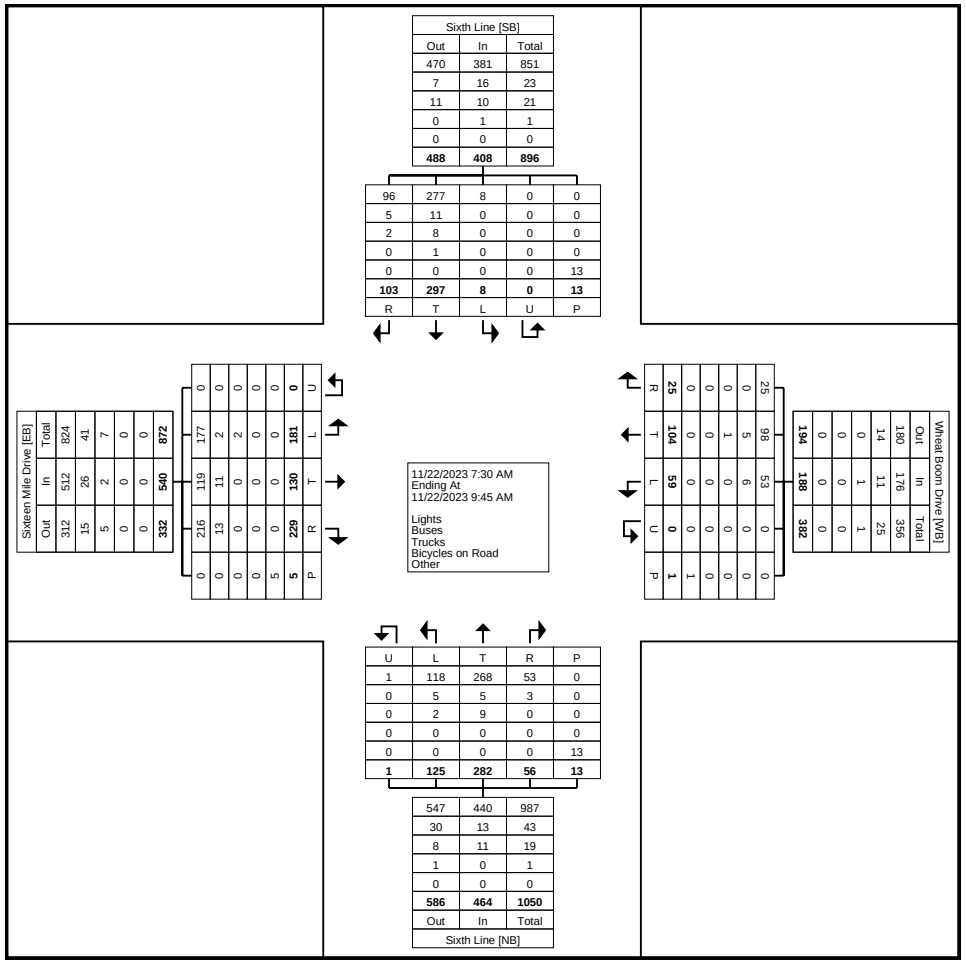
Turning Movement Data

Start Time	Sixth Line Southbound						Wheat Boom Drive Westbound						Sixth Line Northbound						Sixteen Mile Drive Eastbound						
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Int. Total
7:30 AM	0	34	8	0	2	42	4	7	1	0	0	12	4	31	3	0	5	38	19	8	24	0	1	51	143
7:45 AM	0	51	14	0	3	65	10	3	3	0	0	16	6	26	1	0	0	33	19	13	30	0	1	62	176
Hourly Total	0	85	22	0	5	107	14	10	4	0	0	28	10	57	4	0	5	71	38	21	54	0	2	113	319
8:00 AM	0	45	5	0	0	50	15	6	3	0	0	24	12	40	8	0	2	60	28	11	35	0	0	74	208
8:15 AM	3	34	9	0	2	46	7	12	2	0	0	21	33	51	11	0	0	95	24	13	19	0	2	56	218
8:30 AM	1	34	8	0	2	43	6	12	6	0	0	24	28	28	11	0	2	67	25	12	20	0	1	57	191
8:45 AM	3	32	25	0	1	60	2	22	2	0	1	26	14	42	8	0	2	64	27	12	24	0	0	63	213
Hourly Total	7	145	47	0	5	199	30	52	13	0	1	95	87	161	38	0	6	286	104	48	98	0	3	250	830
9:00 AM	0	37	26	0	0	63	8	20	4	0	0	32	23	38	8	1	1	70	25	32	41	0	0	98	263
9:15 AM	1	30	8	0	3	39	7	22	4	0	0	33	5	26	6	0	1	37	14	29	36	0	0	79	188
9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	8	297	103	0	13	408	59	104	25	0	1	188	125	282	56	1	13	464	181	130	229	0	5	540	1600
Approach %	2.0	72.8	25.2	0.0	-	-	31.4	55.3	13.3	0.0	-	-	26.9	60.8	12.1	0.2	-	-	33.5	24.1	42.4	0.0	-	-	-
Total %	0.5	18.6	6.4	0.0	-	25.5	3.7	6.5	1.6	0.0	-	11.8	7.8	17.6	3.5	0.1	-	29.0	11.3	8.1	14.3	0.0	-	33.8	-
Lights	8	277	96	0	-	381	53	98	25	0	-	176	118	268	53	1	-	440	177	119	216	0	-	512	1509
% Lights	100.0	93.3	93.2	-	-	93.4	89.8	94.2	100.0	-	-	93.6	94.4	95.0	94.6	100.0	-	94.8	97.8	91.5	94.3	-	-	94.8	94.3
Buses	0	11	5	0	-	16	6	5	0	0	-	11	5	5	3	0	-	13	2	11	13	0	-	26	66
% Buses	0.0	3.7	4.9	-	-	3.9	10.2	4.8	0.0	-	-	5.9	4.0	1.8	5.4	0.0	-	2.8	1.1	8.5	5.7	-	-	4.8	4.1
Trucks	0	8	2	0	-	10	0	1	0	0	-	1	2	9	0	0	-	11	2	0	0	0	-	2	24
% Trucks	0.0	2.7	1.9	-	-	2.5	0.0	1.0	0.0	-	-	0.5	1.6	3.2	0.0	0.0	-	2.4	1.1	0.0	0.0	-	-	0.4	1.5
Bicycles on Road	0	1	0	0	-	1	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	1
% Bicycles on Road	0.0	0.3	0.0	-	-	0.2	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	-	-	0.0	0.1
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	7.7	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	-	13	-	-	-	-	-	1	-	-	-	-	-	12	-	-	-	-	-	5	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	92.3	-	-	-	-	-	100.0	-	-

LEA Consulting Ltd.
625 Cochrane Drive

Markam, Ontario, Canada L3R 9R9
905-470-0015 x240 idinsmore@lea.ca

Count Name: 24030_Sixth Ln & Sixteen Mile Dr-AM
Site Code: 24030
Start Date: 11/22/2023
Page No: 2



Turning Movement Data Plot

LEA Consulting Ltd.
625 Cochrane Drive

Markham, Ontario, Canada L3R 9R9
905-470-0015 x240 idinsmore@lea.ca

Count Name: 24030_Sixth Ln & Sixteen Mile Dr-AM
Site Code: 24030
Start Date: 11/22/2023

Turning Movement Peak Hour Data (8:15 AM)

Start Time	Sixth Line Southbound						Wheat Boom Drive Westbound						Sixth Line Northbound						Sixteen Mile Drive Eastbound						
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Int. Total
8:15 AM	3	34	9	0	2	46	7	12	2	0	0	21	33	51	11	0	0	95	24	13	19	0	2	56	218
8:30 AM	1	34	8	0	2	43	6	12	6	0	0	24	28	28	11	0	2	67	25	12	20	0	1	57	191
8:45 AM	3	32	25	0	1	60	2	22	2	0	1	26	14	42	8	0	2	64	27	12	24	0	0	63	213
9:00 AM	0	37	26	0	0	63	8	20	4	0	0	32	23	38	8	1	1	70	25	32	41	0	0	98	263
Total	7	137	68	0	5	212	23	66	14	0	1	103	98	159	38	1	5	296	101	69	104	0	3	274	885
Approach %	3.3	64.6	32.1	0.0	-	-	22.3	64.1	13.6	0.0	-	-	33.1	53.7	12.8	0.3	-	-	36.9	25.2	38.0	0.0	-	-	-
Total %	0.8	15.5	7.7	0.0	-	24.0	2.6	7.5	1.6	0.0	-	11.6	11.1	18.0	4.3	0.1	-	33.4	11.4	7.8	11.8	0.0	-	31.0	-
PHF	0.583	0.926	0.654	0.000	-	0.841	0.719	0.750	0.583	0.000	-	0.805	0.742	0.779	0.864	0.250	-	0.779	0.935	0.539	0.634	0.000	-	0.699	0.841
Lights	7	131	62	0	-	200	20	62	14	0	-	96	94	149	37	1	-	281	98	62	98	0	-	258	835
% Lights	100.0	95.6	91.2	-	-	94.3	87.0	93.9	100.0	-	-	93.2	95.9	93.7	97.4	100.0	-	94.9	97.0	89.9	94.2	-	-	94.2	94.4
Buses	0	3	4	0	-	7	3	3	0	0	-	6	3	3	1	0	-	7	1	7	6	0	-	14	34
% Buses	0.0	2.2	5.9	-	-	3.3	13.0	4.5	0.0	-	-	5.8	3.1	1.9	2.6	0.0	-	2.4	1.0	10.1	5.8	-	-	5.1	3.8
Trucks	0	3	2	0	-	5	0	1	0	0	-	1	1	7	0	0	-	8	2	0	0	0	-	2	16
% Trucks	0.0	2.2	2.9	-	-	2.4	0.0	1.5	0.0	-	-	1.0	1.0	4.4	0.0	0.0	-	2.7	2.0	0.0	0.0	-	-	0.7	1.8
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Bicycles on Road	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	20.0	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	-	5	-	-	-	-	-	1	-	-	-	-	-	4	-	-	-	-	-	3	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	80.0	-	-	-	-	-	100.0	-	-

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625 Cochrane Drive

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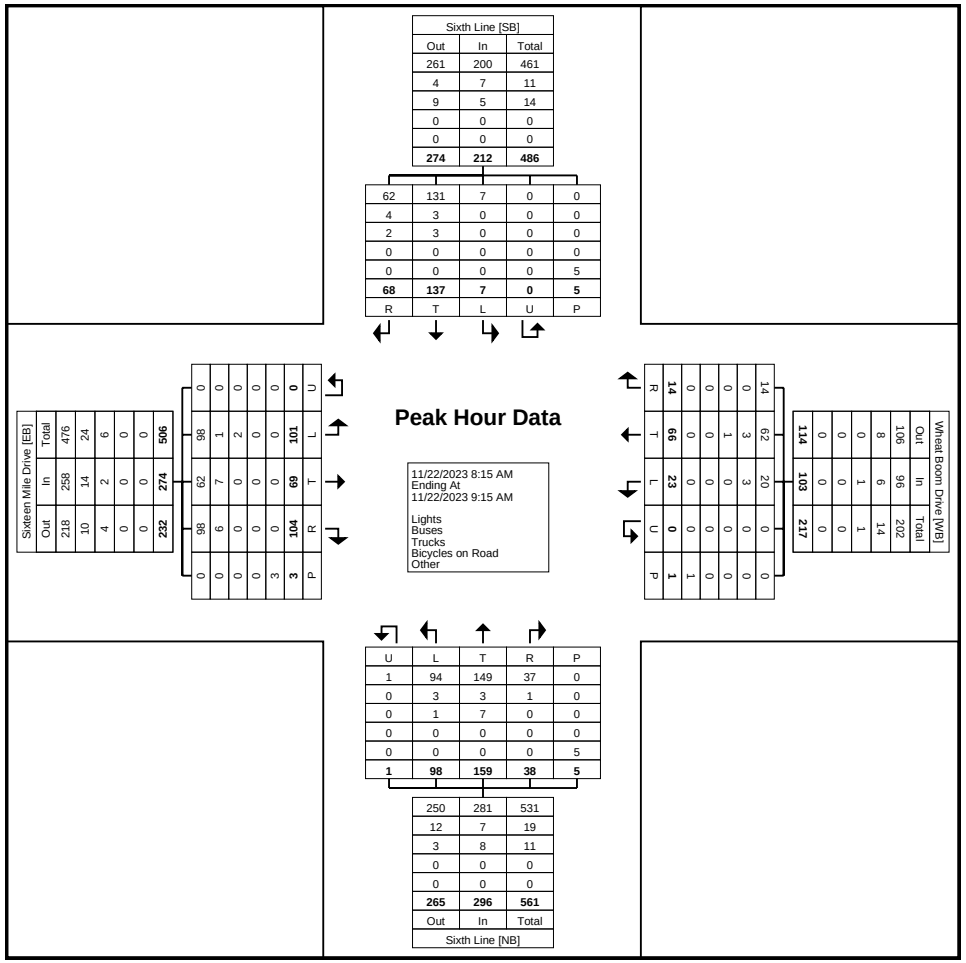
Site Code: 24030
Start Date: 11/22/2023



Turning Movement Peak Hour Data Plot (8:15 AM)

LEA Consulting Ltd.
625 Cochrane Drive

Markam, Ontario, Canada L3R 9R9
905-470-0015 x240 idinsmore@lea.ca

Count Name: 24030_Sixth Ln & Sixteen Mile Dr-PM
Site Code: 24030
Start Date: 11/22/2023

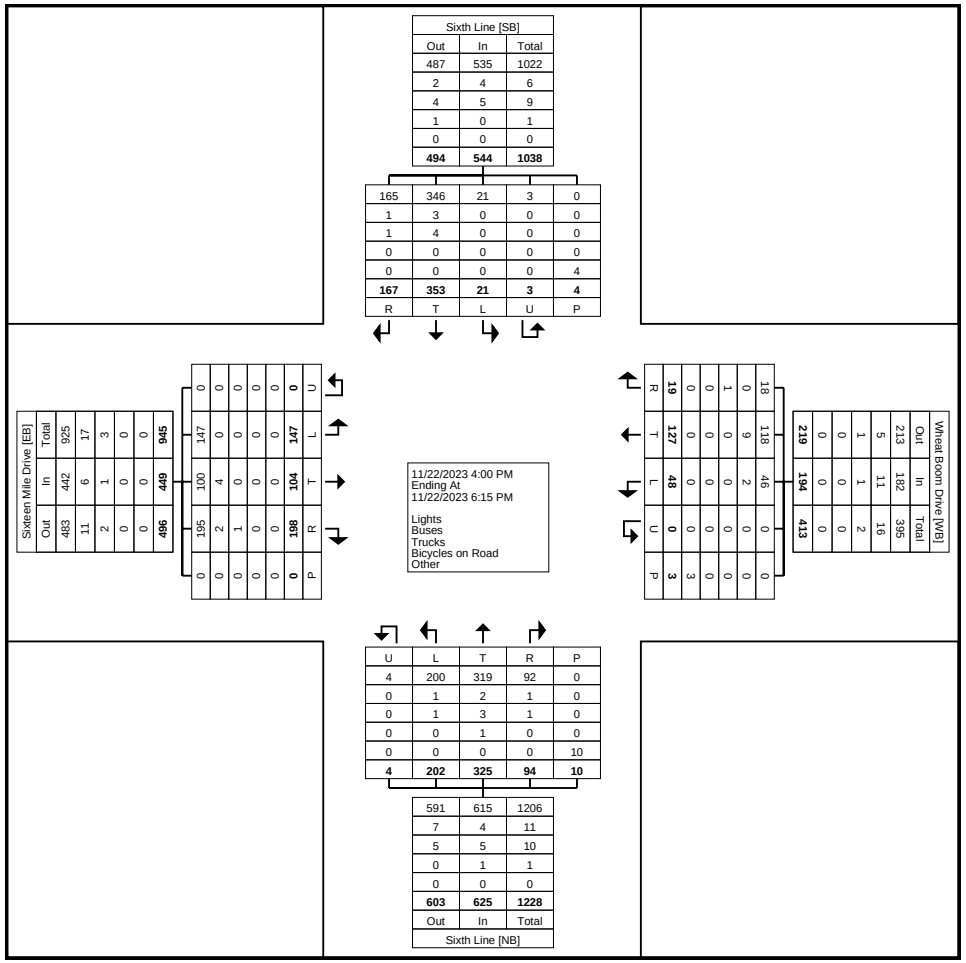
Turning Movement Data

Start Time	Sixth Line Southbound						Wheat Boom Drive Westbound						Sixth Line Northbound						Sixteen Mile Drive Eastbound						
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Int. Total
4:00 PM	3	55	23	0	0	81	5	16	1	0	0	22	32	30	10	0	6	72	19	12	17	0	0	48	223
4:15 PM	3	54	17	0	0	74	9	17	2	0	0	28	24	41	1	0	1	66	14	13	42	0	0	69	237
4:30 PM	2	43	14	0	0	59	10	16	3	0	0	29	26	37	15	0	1	78	10	12	22	0	0	44	210
4:45 PM	5	39	28	0	0	72	2	13	4	0	0	19	24	54	10	1	1	89	21	8	13	0	0	42	222
Hourly Total	13	191	82	0	0	286	26	62	10	0	0	98	106	162	36	1	9	305	64	45	94	0	0	203	892
5:00 PM	3	41	25	2	1	71	9	17	1	0	1	27	29	53	7	0	0	89	17	15	25	0	0	57	244
5:15 PM	1	35	19	0	0	55	3	11	5	0	1	19	26	38	18	0	0	82	23	18	29	0	0	70	226
5:30 PM	3	46	19	0	3	68	4	15	3	0	0	22	23	43	16	2	1	84	28	18	29	0	0	75	249
5:45 PM	1	40	22	1	0	64	6	22	0	0	1	28	18	29	17	1	0	65	15	8	21	0	0	44	201
Hourly Total	8	162	85	3	4	258	22	65	9	0	3	96	96	163	58	3	1	320	83	59	104	0	0	246	920
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	21	353	167	3	4	544	48	127	19	0	3	194	202	325	94	4	10	625	147	104	198	0	0	449	1812
Approach %	3.9	64.9	30.7	0.6	-	-	24.7	65.5	9.8	0.0	-	-	32.3	52.0	15.0	0.6	-	-	32.7	23.2	44.1	0.0	-	-	-
Total %	1.2	19.5	9.2	0.2	-	30.0	2.6	7.0	1.0	0.0	-	10.7	11.1	17.9	5.2	0.2	-	34.5	8.1	5.7	10.9	0.0	-	24.8	-
Lights	21	346	165	3	-	535	46	118	18	0	-	182	200	319	92	4	-	615	147	100	195	0	-	442	1774
% Lights	100.0	98.0	98.8	100.0	-	98.3	95.8	92.9	94.7	-	-	93.8	99.0	98.2	97.9	100.0	-	98.4	100.0	96.2	98.5	-	-	98.4	97.9
Buses	0	3	1	0	-	4	2	9	0	0	-	11	1	2	1	0	-	4	0	4	2	0	-	6	25
% Buses	0.0	0.8	0.6	0.0	-	0.7	4.2	7.1	0.0	-	-	5.7	0.5	0.6	1.1	0.0	-	0.6	0.0	3.8	1.0	-	-	1.3	1.4
Trucks	0	4	1	0	-	5	0	0	1	0	-	1	1	3	1	0	-	5	0	0	1	0	-	1	12
% Trucks	0.0	1.1	0.6	0.0	-	0.9	0.0	0.0	5.3	-	-	0.5	0.5	0.9	1.1	0.0	-	0.8	0.0	0.0	0.5	-	-	0.2	0.7
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	1	0	0	-	1	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	-	-	0.0	0.0	0.3	0.0	0.0	-	0.2	0.0	0.0	0.0	-	-	0.0	0.1
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	2	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	20.0	-	-	-	-	-	-	-	-
Pedestrians	-	-	-	-	4	-	-	-	-	-	3	-	-	-	-	-	8	-	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	80.0	-	-	-	-	-	-	-	-

LEA Consulting Ltd.
625 Cochrane Drive

Markam, Ontario, Canada L3R 9R9
905-470-0015 x240 idinsmore@lea.ca

Count Name: 24030_Sixth Ln & Sixteen Mile Dr-PM
Site Code: 24030
Start Date: 11/22/2023
Page No: 2



Turning Movement Data Plot

LEA Consulting Ltd.
625 Cochrane Drive

Markham, Ontario, Canada L3R 9R9
905-470-0015 x240 idinsmore@lea.ca

Count Name: 24030_Sixth Ln & Sixteen Mile Dr-PM
Site Code: 24030
Start Date: 11/22/2023

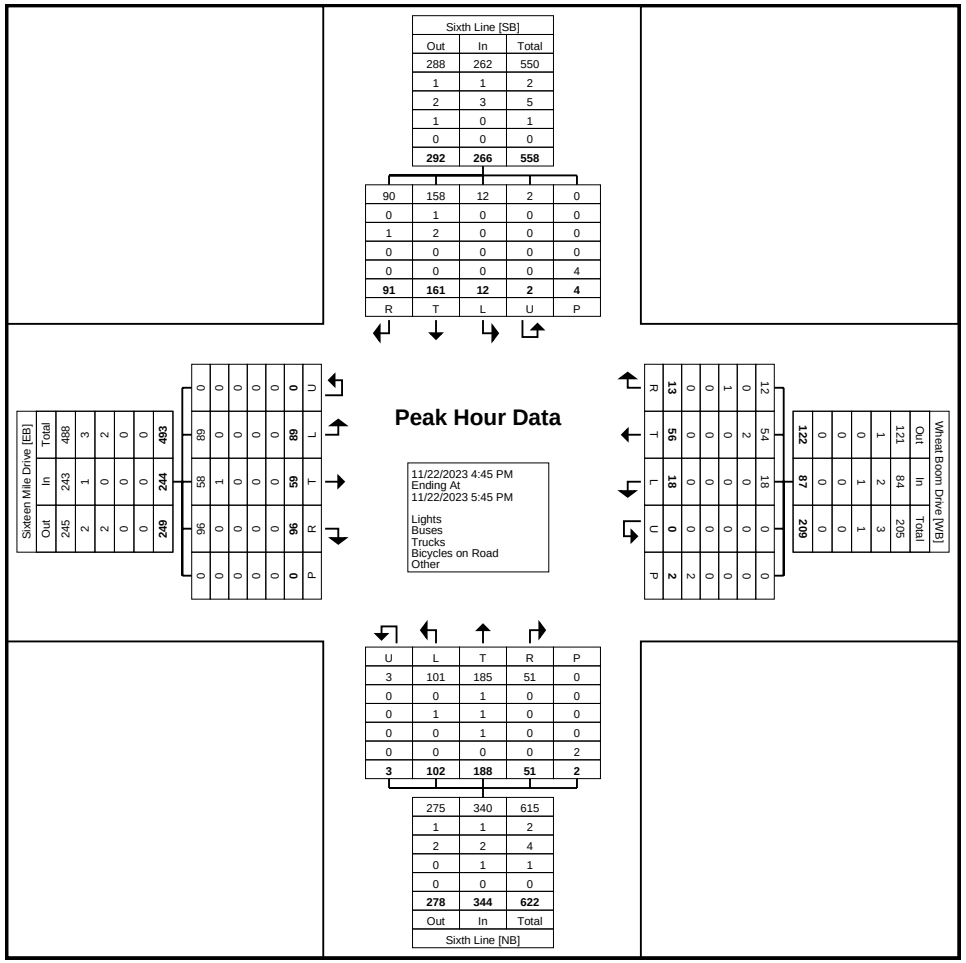
Turning Movement Peak Hour Data (4:45 PM)

Start Time	Sixth Line Southbound						Wheat Boom Drive Westbound						Sixth Line Northbound						Sixteen Mile Drive Eastbound						
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Int. Total
4:45 PM	5	39	28	0	0	72	2	13	4	0	0	19	24	54	10	1	1	89	21	8	13	0	0	42	222
5:00 PM	3	41	25	2	1	71	9	17	1	0	1	27	29	53	7	0	0	89	17	15	25	0	0	57	244
5:15 PM	1	35	19	0	0	55	3	11	5	0	1	19	26	38	18	0	0	82	23	18	29	0	0	70	226
5:30 PM	3	46	19	0	3	68	4	15	3	0	0	22	23	43	16	2	1	84	28	18	29	0	0	75	249
Total	12	161	91	2	4	266	18	56	13	0	2	87	102	188	51	3	2	344	89	59	96	0	0	244	941
Approach %	4.5	60.5	34.2	0.8	-	-	20.7	64.4	14.9	0.0	-	-	29.7	54.7	14.8	0.9	-	-	36.5	24.2	39.3	0.0	-	-	-
Total %	1.3	17.1	9.7	0.2	-	28.3	1.9	6.0	1.4	0.0	-	9.2	10.8	20.0	5.4	0.3	-	36.6	9.5	6.3	10.2	0.0	-	25.9	-
PHF	0.600	0.875	0.813	0.250	-	0.924	0.500	0.824	0.650	0.000	-	0.806	0.879	0.870	0.708	0.375	-	0.966	0.795	0.819	0.828	0.000	-	0.813	0.945
Lights	12	158	90	2	-	262	18	54	12	0	-	84	101	185	51	3	-	340	89	58	96	0	-	243	929
% Lights	100.0	98.1	98.9	100.0	-	98.5	100.0	96.4	92.3	-	-	96.6	99.0	98.4	100.0	100.0	-	98.8	100.0	98.3	100.0	-	-	99.6	98.7
Buses	0	1	0	0	-	1	0	2	0	0	-	2	0	1	0	0	-	1	0	1	0	0	-	1	5
% Buses	0.0	0.6	0.0	0.0	-	0.4	0.0	3.6	0.0	-	-	2.3	0.0	0.5	0.0	0.0	-	0.3	0.0	1.7	0.0	-	-	0.4	0.5
Trucks	0	2	1	0	-	3	0	0	1	0	-	1	1	1	0	0	-	2	0	0	0	0	-	0	6
% Trucks	0.0	1.2	1.1	0.0	-	1.1	0.0	0.0	7.7	-	-	1.1	1.0	0.5	0.0	0.0	-	0.6	0.0	0.0	0.0	-	-	0.0	0.6
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	1	0	0	-	1	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	-	-	0.0	0.0	0.5	0.0	0.0	-	0.3	0.0	0.0	0.0	-	-	0.0	0.1
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	50.0	-	-	-	-	-	-	-	-
Pedestrians	-	-	-	-	4	-	-	-	-	-	2	-	-	-	-	-	1	-	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	50.0	-	-	-	-	-	-	-	-

LEA Consulting Ltd.
625 Cochrane Drive

Markam, Ontario, Canada L3R 9R9
905-470-0015 x240 idinsmore@lea.ca

Count Name: 24030_Sixth Ln & Sixteen Mile Dr-PM
Site Code: 24030
Start Date: 11/22/2023
Page No: 4



Turning Movement Peak Hour Data Plot (4:45 PM)

LEA Consulting Ltd.

625 Cochrane Drive, 5th Floor
Markham, ON L3R 9R9

Project No.: 24030
Intersection: Janice Dr & Kaitting Trail
Weather: Overcast
Surveyor(s): JC

File Name : Janice Dr & Kaitting Trail-AM
Site Code : 00024030
Start Date : 2023-11-22
Page No : 1

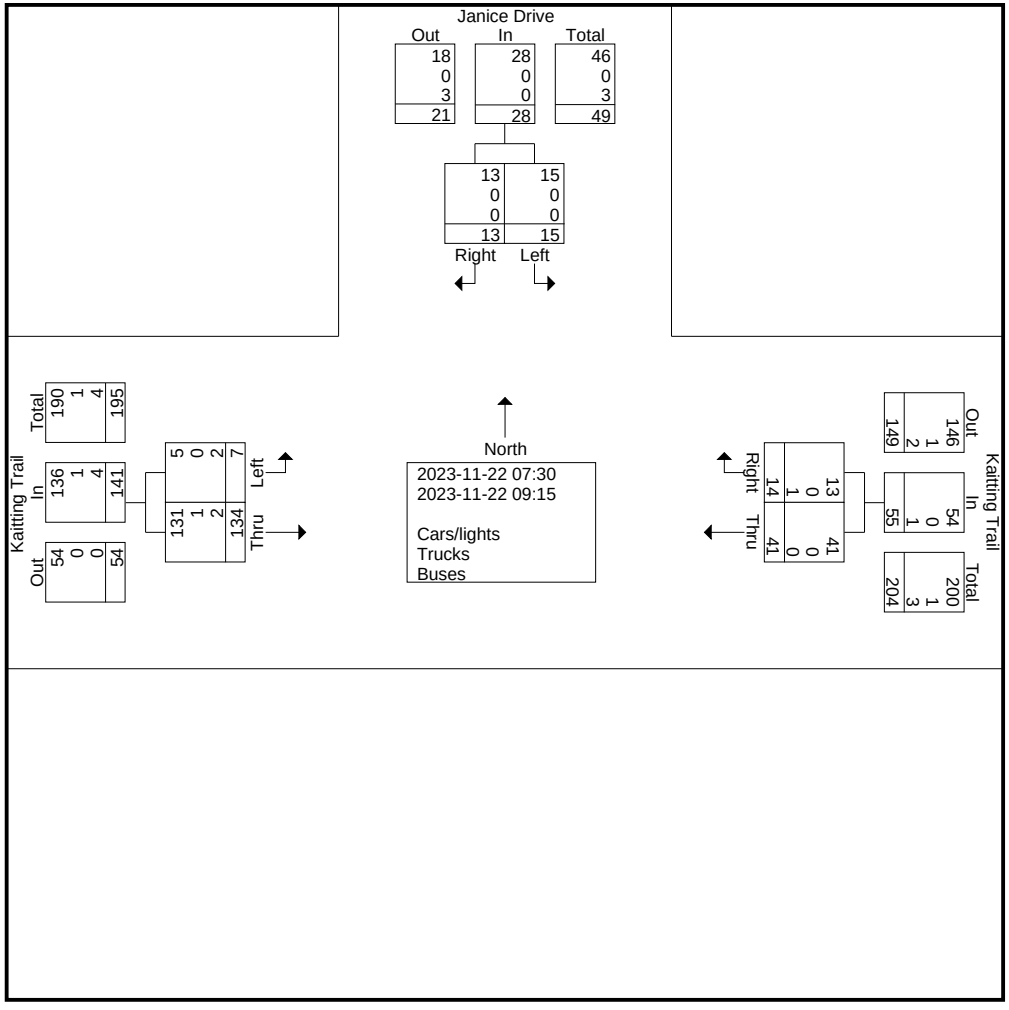
Groups Printed- Cars/lights - Trucks - Buses

	Janice Drive Southbound				Kaitting Trail Westbound				Kaitting Trail Eastbound						
Start Time	Left	Right	Peds	App. Total	Thru	Right	Peds	App. Total	Left	Thru	Peds	App. Total	Exclu. Total	Inclu. Total	Int. Total
07:30	2	0	[0]	2	1	1	[0]	2	1	17	[0]	18	0	22	22
07:45	3	0	[1]	3	1	0	[0]	1	1	15	[1]	16	2	20	22
Total	5	0	[1]	5	2	1	[0]	3	2	32	[1]	34	2	42	44
08:00	3	0	[0]	3	4	1	[0]	5	0	21	[0]	21	0	29	29
08:15	1	0	[0]	1	9	0	[0]	9	0	10	[0]	10	0	20	20
08:30	2	0	[2]	2	3	3	[0]	6	0	15	[0]	15	2	23	25
08:45	1	2	[5]	3	10	4	[0]	14	1	11	[0]	12	5	29	34
Total	7	2	[7]	9	26	8	[0]	34	1	57	[0]	58	7	101	108
09:00	2	8	[2]	10	7	2	[1]	9	3	30	[0]	33	3	52	55
09:15	1	3	[1]	4	6	3	[0]	9	1	15	[0]	16	1	29	30
Grand Total	15	13	[11]	28	41	14	[1]	55	7	134	[1]	141	13	224	237
Apprch %	53.6	46.4			74.5	25.5			5	95					
Total %	6.7	5.8		12.5	18.3	6.2		24.6	3.1	59.8		62.9	5.5	94.5	
Cars/lights	15	13		39	41	13		54	5	131		136	0	0	229
% Cars/lights	100	100	100	100	100	92.9	0	96.4	71.4	97.8	0	95.8	0	0	96.6
Trucks	0	0		0	0	0		1	0	1		2	0	0	3
% Trucks	0	0	0	0	0	0	100	1.8	0	0.7	100	1.4	0	0	1.3
Buses	0	0		0	0	1		1	2	2		4	0	0	5
% Buses	0	0	0	0	0	7.1	0	1.8	28.6	1.5	0	2.8	0	0	2.1

LEA Consulting Ltd.

625 Cochrane Drive, 5th Floor
Markham, ON L3R 9R9

File Name : Janice Dr & Kaitting Trail-AM
Site Code : 00024030
Start Date : 2023-11-22
Page No : 2



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625 Cochrane Drive, 5th Floor
Markham, ON L3R 9R9

File Name : Janice Dr & Kaitting Trail-AM
Site Code : 00024030
Start Date : 2023-11-22
Page No : 3

	Janice Drive Southbound			Kaitting Trail Westbound			Kaitting Trail Eastbound			
Start Time	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	Int. Total
Peak Hour Analysis From 07:30 to 09:15 - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 08:30										
08:30	**2**	0	2	3	3	6	0	15	15	23
08:45	1	2	3	**10**	**4**	**14**	1	11	12	29
09:00	2	**8**	**10**	7	2	9	**3**	**30**	**33**	**52**
09:15	1	3	4	6	3	9	1	15	16	29
Total Volume	6	13	19	26	12	38	5	71	76	133
% App. Total	31.6	68.4		68.4	31.6		6.6	93.4		
PHF	.750	.406	.475	.650	.750	.679	.417	.592	.576	.639
Cars/lights	6	13	19	26	11	37	5	68	73	129
% Cars/lights	100	100	100	100	91.7	97.4	100	95.8	96.1	97.0
Trucks	0	0	0	0	0	0	0	1	1	1
% Trucks	0	0	0	0	0	0	0	1.4	1.3	0.8
Buses	0	0	0	0	1	1	0	2	2	3
% Buses	0	0	0	0	8.3	2.6	0	2.8	2.6	2.3

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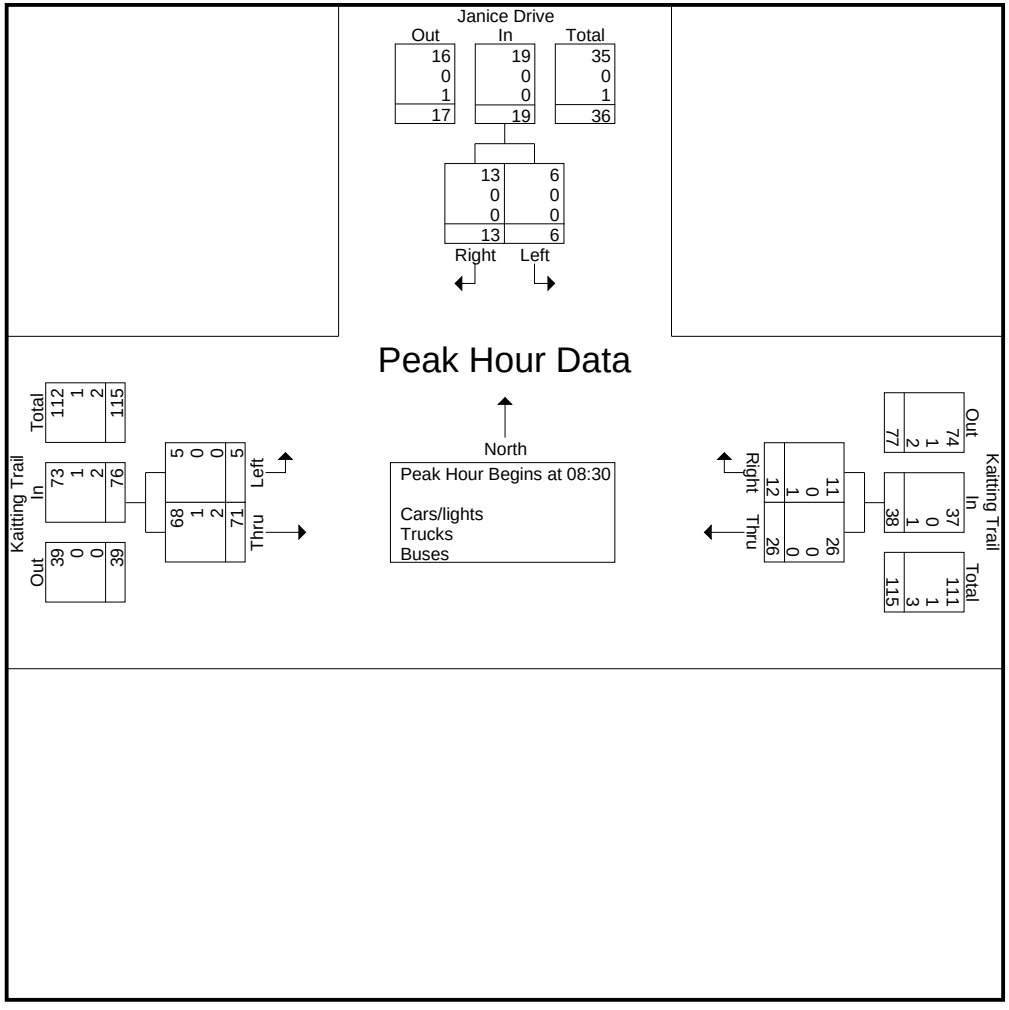
File Name : Janice Dr & Kaitting Trail-AM
Site Code : 00024030
Start Date : 2023-11-22
Page No : 4



LEA Consulting Ltd.

625 Cochrane Drive, 5th Floor
Markham, ON L3R 9R9

Project No.: 24030
Intersection: Janice Dr & Kaitting Trail
Weather: Overcast
Surveyor(s): JC

File Name : Janice Dr & Kaitting Trail-PM
Site Code : 00024030
Start Date : 2023-11-22
Page No : 1

Groups Printed- Cars/lights - Trucks - Buses

	Janice Drive Southbound				Kaitting Trail Westbound				Kaitting Trail Eastbound						
Start Time	Left	Right	Peds	App. Total	Thru	Right	Peds	App. Total	Left	Thru	Peds	App. Total	Exclu. Total	Inclu. Total	Int. Total
16:00	2	1	[2]	3	11	3	[0]	14	1	11	[0]	12	2	29	31
16:15	3	0	[1]	3	12	1	[0]	13	0	9	[0]	9	1	25	26
16:30	1	0	[4]	1	14	6	[0]	20	0	13	[0]	13	4	34	38
16:45	0	0	[0]	0	8	1	[0]	9	2	8	[0]	10	0	19	19
Total	6	1	[7]	7	45	11	[0]	56	3	41	[0]	44	7	107	114
17:00	1	1	[0]	2	11	4	[0]	15	1	11	[0]	12	0	29	29
17:15	1	0	[0]	1	13	3	[0]	16	0	5	[0]	5	0	22	22
17:30	1	0	[0]	1	11	2	[0]	13	0	9	[0]	9	0	23	23
17:45	2	0	[0]	2	11	6	[0]	17	0	9	[0]	9	0	28	28
Total	5	1	[0]	6	46	15	[0]	61	1	34	[0]	35	0	102	102
Grand Total	11	2	[7]	13	91	26	[0]	117	4	75	[0]	79	7	209	216
Apprch %	84.6	15.4			77.8	22.2			5.1	94.9					
Total %	5.3	1		6.2	43.5	12.4		56	1.9	35.9		37.8	3.2	96.8	
Cars/lights	11	1		19	89	26		115	4	74		78	0	0	212
% Cars/lights	100	50	100	95	97.8	100	0	98.3	100	98.7	0	98.7	0	0	98.1
Trucks	0	0		0	0	0		0	0	0		0	0	0	0
% Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Buses	0	1		1	2	0		2	0	1		1	0	0	4
% Buses	0	50	0	5	2.2	0	0	1.7	0	1.3	0	1.3	0	0	1.9

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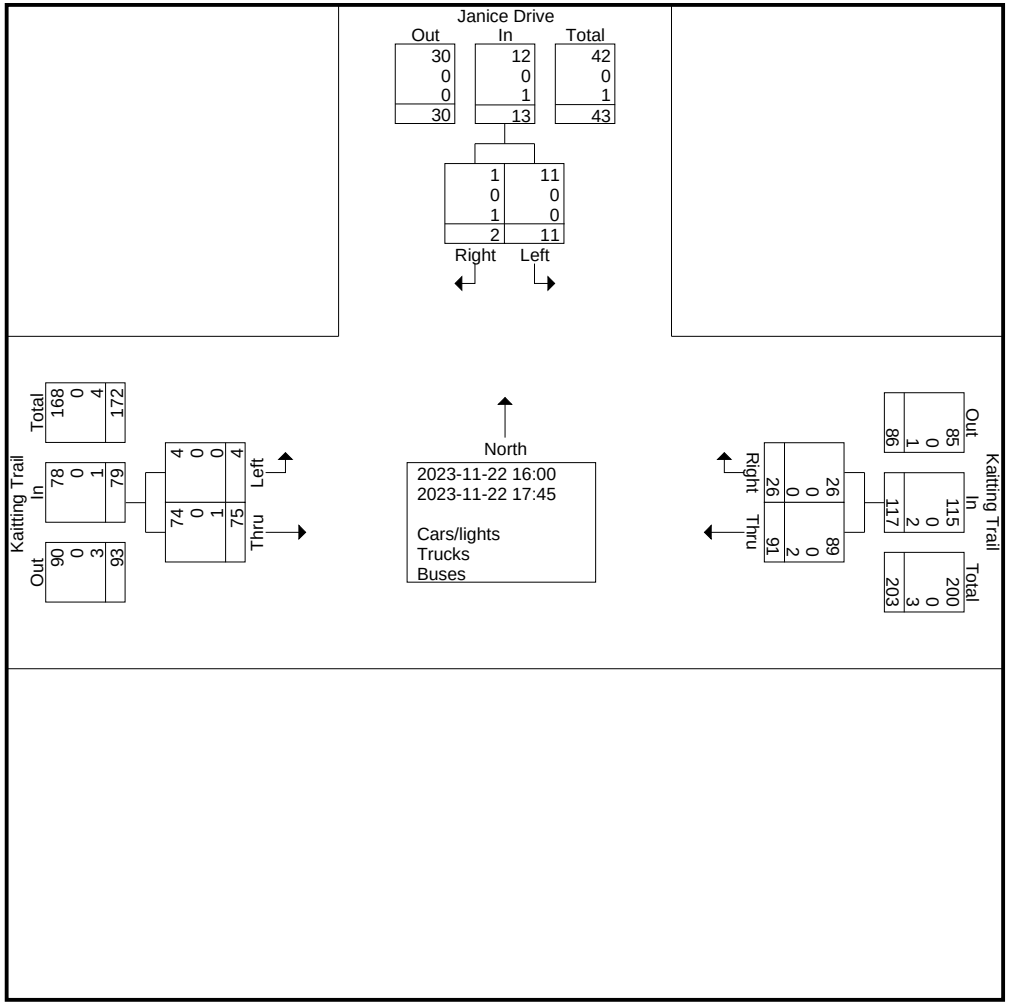
625 Cochrane Drive, 5th Floor
Markham, ON L3R 9R9

File Name : Janice Dr & Kaitting Trail-PM
Site Code : 00024030
Start Date : 2023-11-22
Page No : 2



LEA Consulting Ltd.

625 Cochrane Drive, 5th Floor
Markham, ON L3R 9R9

File Name : Janice Dr & Kaitting Trail-PM
Site Code : 00024030
Start Date : 2023-11-22
Page No : 3

	Janice Drive Southbound			Kaitting Trail Westbound			Kaitting Trail Eastbound			
Start Time	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 16:00										
16:00	2	**1**	**3**	11	3	14	1	11	12	29
16:15	**3**	0	3	12	1	13	0	9	9	25
16:30	1	0	1	**14**	**6**	**20**	0	**13**	**13**	**34**
16:45	0	0	0	8	1	9	**2**	8	10	19
Total Volume	6	1	7	45	11	56	3	41	44	107
% App. Total	85.7	14.3		80.4	19.6		6.8	93.2		
PHF	.500	.250	.583	.804	.458	.700	.375	.788	.846	.787
Cars/lights	6	0	6	43	11	54	3	40	43	103
% Cars/lights	100	0	85.7	95.6	100	96.4	100	97.6	97.7	96.3
Trucks	0	0	0	0	0	0	0	0	0	0
% Trucks	0	0	0	0	0	0	0	0	0	0
Buses	0	1	1	2	0	2	0	1	1	4
% Buses	0	100	14.3	4.4	0	3.6	0	2.4	2.3	3.7

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625 Cochrane Drive, 5th Floor
Markham, ON L3R 9R9

File Name : Janice Dr & Kaitting Trail-PM
Site Code : 00024030
Start Date : 2023-11-22
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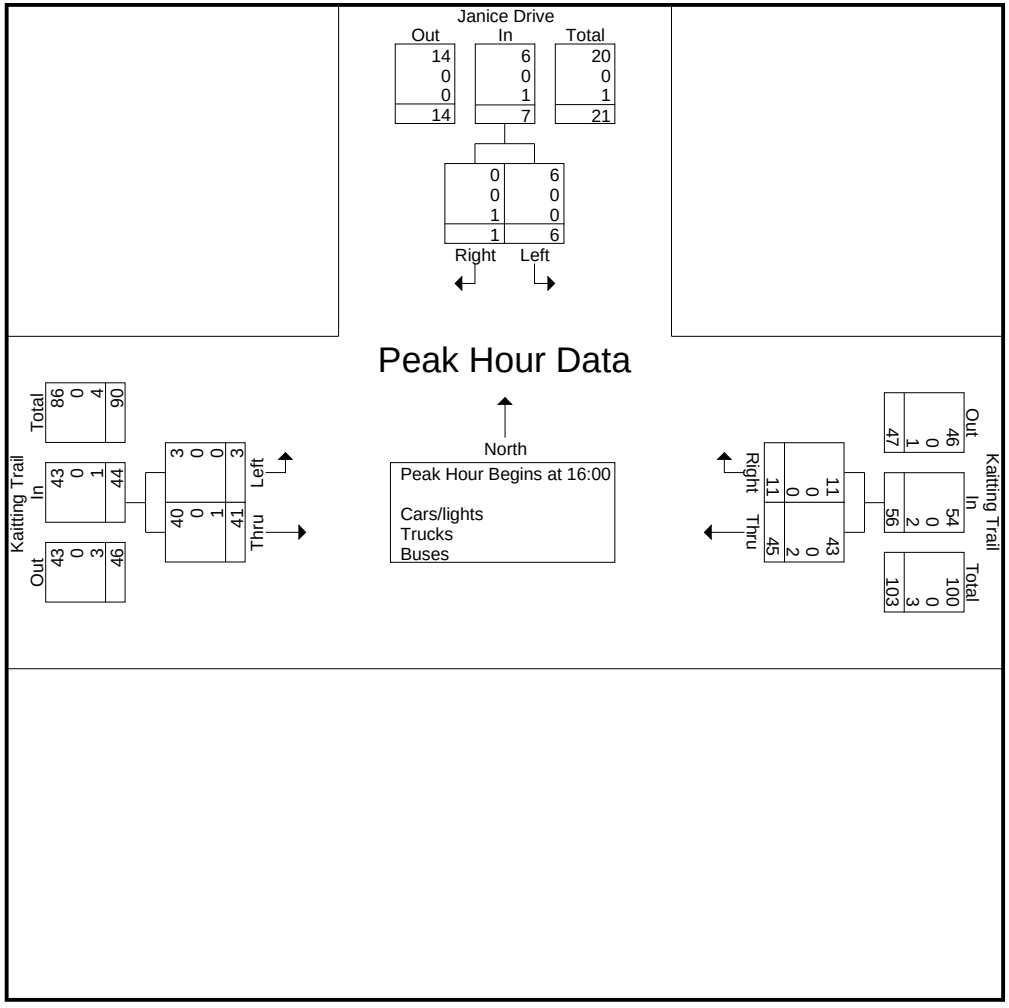


LEA Consulting Ltd.

625 Cochrane Drive, 5th Floor
Markham, ON L3R 9R9

Project No.: 24030
Intersection: Sixth Line & Kaitting Tr
Weather: Overcast
Surveyor(s): KL

File Name : Sixth Line & Kaitting Trail-AM
Site Code : 24030
Start Date : 2023-11-22
Page No : 1

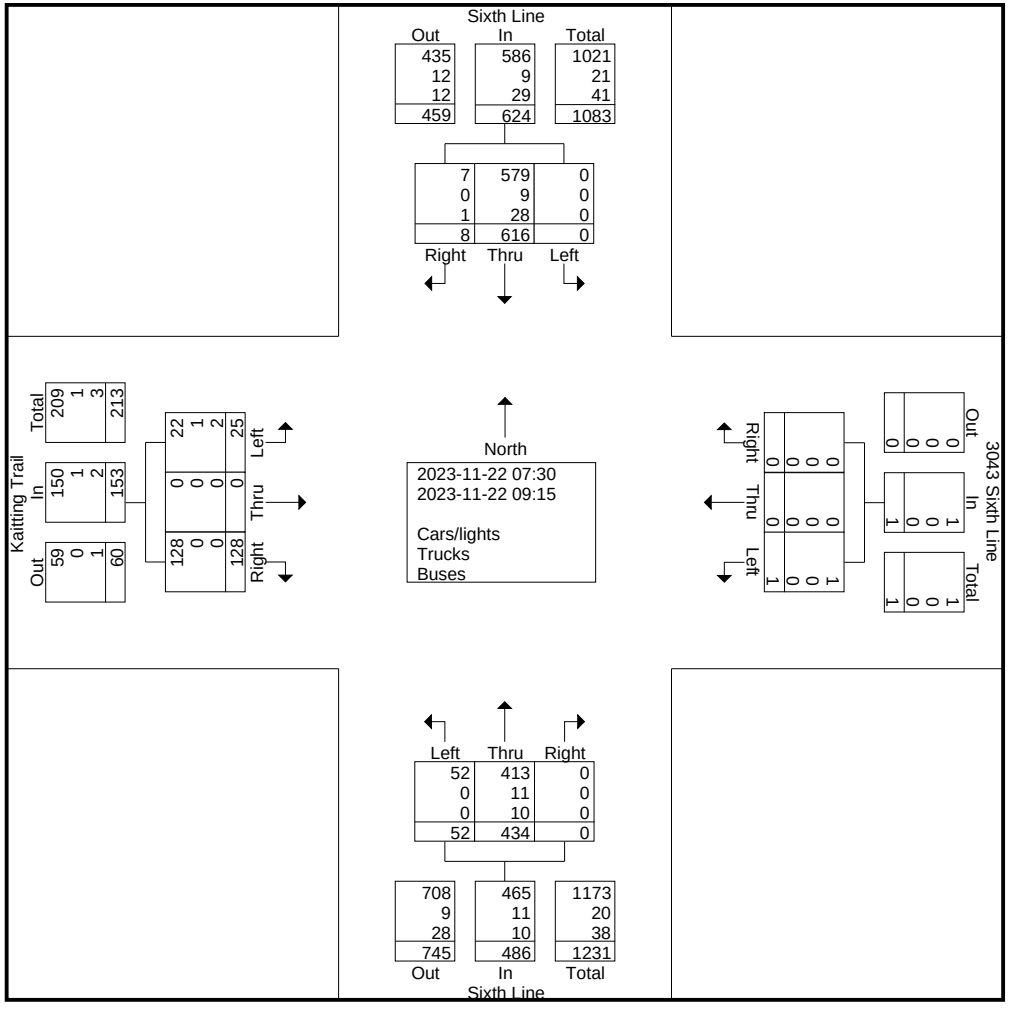
Groups Printed- Cars/lights - Trucks - Buses

	Sixth Line Southbound					3043 Sixth Line Westbound					Sixth Line Northbound					Kaitting Trail Eastbound							
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Exclu. Total	Inclu. Total	Int. Total
07:30	0	60	0	[0]	60	0	0	0	[0]	0	3	36	0	[0]	39	1	0	13	[0]	14	0	113	113
07:45	0	94	0	[1]	94	0	0	0	[0]	0	2	28	0	[0]	30	1	0	18	[4]	19	5	143	148
Total	0	154	0	[1]	154	0	0	0	[0]	0	5	64	0	[0]	69	2	0	31	[4]	33	5	256	261
08:00	0	101	0	[0]	101	0	0	0	[0]	0	6	64	0	[0]	70	2	0	23	[1]	25	1	196	197
08:15	0	71	1	[1]	72	0	0	0	[0]	0	10	90	0	[0]	100	2	0	15	[2]	17	3	189	192
08:30	0	67	0	[0]	67	0	0	0	[0]	0	6	60	0	[0]	66	4	0	12	[2]	16	2	149	151
08:45	0	56	2	[0]	58	0	0	0	[0]	0	11	62	0	[3]	73	1	0	10	[0]	11	3	142	145
Total	0	295	3	[1]	298	0	0	0	[0]	0	33	276	0	[3]	309	9	0	60	[5]	69	9	676	685
09:00	0	94	4	[0]	98	1	0	0	[0]	1	5	60	0	[1]	65	11	0	20	[1]	31	2	195	197
09:15	0	73	1	[0]	74	0	0	0	[0]	0	9	34	0	[0]	43	3	0	17	[3]	20	3	137	140
Grand Total	0	616	8	[2]	624	1	0	0	[0]	1	52	434	0	[4]	486	25	0	128	[13]	153	19	1264	1283
Apprch %	0	98.7	1.3			100	0	0			10.7	89.3	0			16.3	0	83.7					
Total %	0	48.7	0.6		49.4	0.1	0	0		0.1	4.1	34.3	0		38.4	2	0	10.1		12.1	1.5	98.5	
Cars/lights	0	579	7		586	1	0	0		1	52	413	0		467	22	0	128		163	0	0	1217
% Cars/lights	0	94	87.5	0	93.6	100	0	0	0	100	100	95.2	0	50	95.3	88	0	100	100	98.2	0	0	94.9
Trucks	0	9	0		11	0	0	0		0	0	11	0		11	1	0	0		1	0	0	23
% Trucks	0	1.5	0	100	1.8	0	0	0	0	0	0	2.5	0	0	2.2	4	0	0	0	0.6	0	0	1.8
Buses	0	28	1		29	0	0	0		0	0	10	0		12	2	0	0		2	0	0	43
% Buses	0	4.5	12.5	0	4.6	0	0	0	0	0	0	2.3	0	50	2.4	8	0	0	0	1.2	0	0	3.4

LEA Consulting Ltd.

625 Cochrane Drive, 5th Floor
Markham, ON L3R 9R9

File Name : Sixth Line & Kaitting Trail-AM
Site Code : 24030
Start Date : 2023-11-22
Page No : 2



LEA Consulting Ltd.

625 Cochrane Drive, 5th Floor
Markham, ON L3R 9R9

File Name : Sixth Line & Kaitting Trail-AM
Site Code : 24030
Start Date : 2023-11-22
Page No : 3

	Sixth Line Southbound				3043 Sixth Line Westbound				Sixth Line Northbound				Kaitting Trail Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:30 to 09:15 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:45																	
07:45	0	94	0	94	0	0	0	0	2	28	0	30	1	0	18	19	143
08:00	0	**101**	0	**101**	0	0	0	0	6	64	0	70	2	0	**23**	**25**	**196**
08:15	0	71	**1**	72	0	0	0	0	**10**	**90**	0	**100**	2	0	15	17	189
08:30	0	67	0	67	0	0	0	0	6	60	0	66	**4**	0	12	16	149
Total Volume	0	333	1	334	0	0	0	0	24	242	0	266	9	0	68	77	677
% App. Total	0	99.7	0.3		0	0	0		9	91	0		11.7	0	88.3		
PHF	.000	.824	.250	.827	.000	.000	.000	.000	.600	.672	.000	.665	.563	.000	.739	.770	.864
Cars/lights	0	318	1	319	0	0	0	0	24	231	0	255	8	0	68	76	650
% Cars/lights	0	95.5	100	95.5	0	0	0	0	100	95.5	0	95.9	88.9	0	100	98.7	96.0
Trucks	0	6	0	6	0	0	0	0	0	7	0	7	0	0	0	0	13
% Trucks	0	1.8	0	1.8	0	0	0	0	0	2.9	0	2.6	0	0	0	0	1.9
Buses	0	9	0	9	0	0	0	0	0	4	0	4	1	0	0	1	14
% Buses	0	2.7	0	2.7	0	0	0	0	0	1.7	0	1.5	11.1	0	0	1.3	2.1

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625 Cochrane Drive, 5th Floor
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File Name : Sixth Line & Kaitting Trail-AM
Site Code : 24030
Start Date : 2023-11-22
Page No : 4

Peak Hour Data

Peak Hour Begins at 07:45

Cars/lights
Trucks
Buses

North

Sixth Line

Out	In	Total
239	319	558
7	6	13
5	9	14
251	334	585

Right	Thru	Left
1	318	0
0	6	0
0	9	0
1	333	0

Kaitting Trail

Out	In	Total
25	76	101
0	0	0
0	1	1
25	77	102

Right	Thru	Left
68	0	8
0	0	0
0	0	1
68	0	9

3043 Sixth Line

Right	Thru	Left
0	0	0
0	0	0
0	0	0
0	0	0

Out	In	Total
0	0	0
0	0	0
0	0	0
0	0	0

Sixth Line

Left	Thru	Right
24	231	0
0	7	0
0	4	0
24	242	0

Out	In	Total
386	255	641
6	7	13
9	4	13
401	266	667

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625 Cochrane Drive, 5th Floor
Markham, ON L3R 9R9

Project No.: 24030
Intersection: Sixth Line & Kaitting Tr
Weather: Overcast
Surveyor(s): KL

File Name : Sixth Line & Kaitting Trail-PM
Site Code : 24030
Start Date : 2023-11-22
Page No : 1

Groups Printed- Cars/lights - Trucks - Buses

	Sixth Line Southbound					3043 Sixth Line Westbound					Sixth Line Northbound					Kaitting Trail Eastbound							
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Exclu. Total	Inclu. Total	Int. Total
16:00	0	75	1	[0]	76	0	0	0	[0]	0	14	72	0	[0]	86	1	0	9	[0]	10	0	172	172
16:15	0	100	3	[0]	103	0	0	0	[0]	0	10	65	0	[0]	75	1	0	12	[1]	13	1	191	192
16:30	0	76	2	[0]	78	0	0	0	[0]	0	19	81	0	[1]	100	2	0	13	[0]	15	1	193	194
16:45	0	60	0	[1]	60	0	0	0	[0]	0	10	88	0	[2]	98	3	0	6	[1]	9	4	167	171
Total	0	311	6	[1]	317	0	0	0	[0]	0	53	306	0	[3]	359	7	0	40	[2]	47	6	723	729
17:00	0	70	3	[0]	73	0	0	1	[0]	1	10	89	1	[0]	100	5	0	7	[0]	12	0	186	186
17:15	0	72	1	[1]	73	0	0	0	[0]	0	21	85	0	[2]	106	1	0	8	[1]	9	4	188	192
17:30	0	81	2	[0]	83	0	0	0	[0]	0	8	90	0	[0]	98	0	0	11	[1]	11	1	192	193
17:45	0	74	4	[0]	78	0	0	0	[0]	0	13	70	0	[0]	83	0	0	9	[0]	9	0	170	170
Total	0	297	10	[1]	307	0	0	1	[0]	1	52	334	1	[2]	387	6	0	35	[2]	41	5	736	741
Grand Total	0	608	16	[2]	624	0	0	1	[0]	1	105	640	1	[5]	746	13	0	75	[4]	88	11	1459	1470
Apprch %	0	97.4	2.6			0	0	100			14.1	85.8	0.1			14.8	0	85.2					
Total %	0	41.7	1.1		42.8	0	0	0.1		0.1	7.2	43.9	0.1		51.1	0.9	0	5.1		6	0.7	99.3	
Cars/lights	0	599	14		613	0	0	1		1	105	634	1		740	13	0	75		92	0	0	1446
% Cars/lights	0	98.5	87.5	0	97.9	0	0	100	0	100	100	99.1	100	0	98.5	100	0	100	100	100	0	0	98.4
Trucks	0	4	0		4	0	0	0		0	0	3	0		4	0	0	0		0	0	0	8
% Trucks	0	0.7	0	0	0.6	0	0	0	0	0	0	0.5	0	20	0.5	0	0	0	0	0	0	0	0.5
Buses	0	5	2		9	0	0	0		0	0	3	0		7	0	0	0		0	0	0	16
% Buses	0	0.8	12.5	100	1.4	0	0	0	0	0	0	0.5	0	80	0.9	0	0	0	0	0	0	0	1.1

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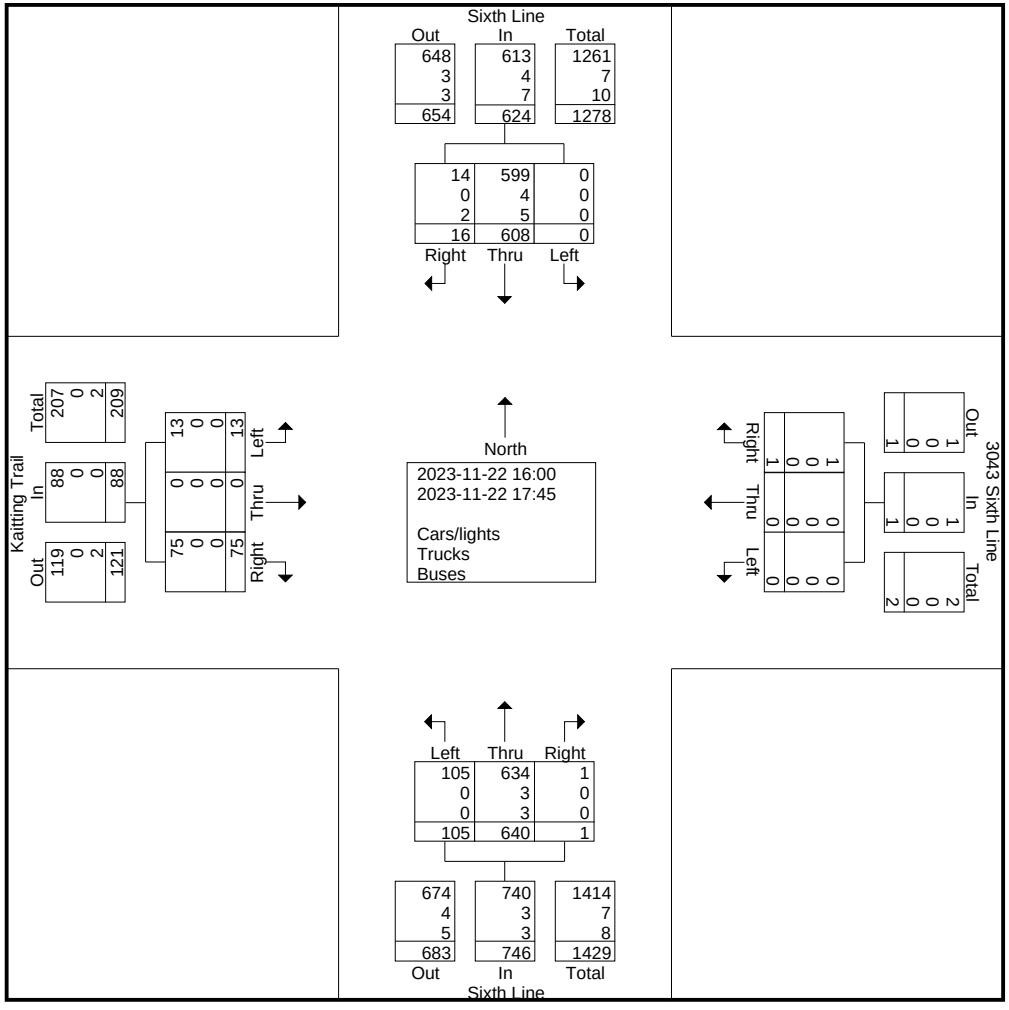
625 Cochrane Drive, 5th Floor
Markham, ON L3R 9R9

File Name : Sixth Line & Kaitting Trail-PM
Site Code : 24030
Start Date : 2023-11-22
Page No : 2



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625 Cochrane Drive, 5th Floor
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File Name : Sixth Line & Kaitting Trail-PM
Site Code : 24030
Start Date : 2023-11-22
Page No : 3

	Sixth Line Southbound				3043 Sixth Line Westbound				Sixth Line Northbound				Kaitting Trail Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 16:15																	
16:15	0	**100**	**3**	**103**	0	0	0	0	10	65	0	75	1	0	12	13	191
16:30	0	76	2	78	0	0	0	0	**19**	81	0	**100**	2	0	**13**	**15**	**193**
16:45	0	60	0	60	0	0	0	0	10	88	0	98	3	0	6	9	167
17:00	0	70	3	73	0	0	**1**	**1**	10	**89**	**1**	100	**5**	0	7	12	186
Total Volume	0	306	8	314	0	0	1	1	49	323	1	373	11	0	38	49	737
% App. Total	0	97.5	2.5		0	0	100		13.1	86.6	0.3		22.4	0	77.6		
PHF	.000	.765	.667	.762	.000	.000	.250	.250	.645	.907	.250	.933	.550	.000	.731	.817	.955
Cars/lights	0	303	6	309	0	0	1	1	49	319	1	369	11	0	38	49	728
% Cars/lights	0	99.0	75.0	98.4	0	0	100	100	100	98.8	100	98.9	100	0	100	100	98.8
Trucks	0	1	0	1	0	0	0	0	0	3	0	3	0	0	0	0	4
% Trucks	0	0.3	0	0.3	0	0	0	0	0	0.9	0	0.8	0	0	0	0	0.5
Buses	0	2	2	4	0	0	0	0	0	1	0	1	0	0	0	0	5
% Buses	0	0.7	25.0	1.3	0	0	0	0	0	0.3	0	0.3	0	0	0	0	0.7

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625 Cochrane Drive, 5th Floor
Markham, ON L3R 9R9

File Name : Sixth Line & Kaitting Trail-PM
Site Code : 24030
Start Date : 2023-11-22
Page No : 4

Peak Hour Data

Peak Hour Begins at 16:15

Cars/lights
Trucks
Buses

North

Sixth Line

Out	In	Total
331	309	640
3	1	4
1	4	5
335	314	649

Right	Thru	Left
6	303	0
0	1	0
2	2	0
8	306	0

Kaitting Trail

	Out	In	Total
	55	49	104
	0	0	0
	2	0	2
	57	49	106

	Right	Thru	Left
	38	0	11
	0	0	0
	0	0	0
	38	0	11

3043 Sixth Line

	Right	Thru	Left
	1	0	0
	0	0	0
	0	0	0
	1	0	0

	Out	In	Total
	1	1	2
	0	0	0
	0	0	0
	1	1	2

Sixth Line

Left	Thru	Right
49	319	1
0	3	0
0	1	0
49	323	1

Out	In	Total
341	369	710
1	3	4
2	1	3
344	373	717

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625 Cochrane Drive, 5th Floor
Markham, ON L3R 9R9

Project No.: 24030
Intersection: Sixth Ln & Site Access
Weather: Overcast
Surveyor(s): ID

File Name : Sixth Line & Munn's United Church Access-AM
Site Code : 24030
Start Date : 2023-11-22
Page No : 1

Groups Printed- Cars/lights - Trucks - Buses

	Sixth Line Southbound				Munn's United Church Access Westbound				Sixth Line Northbound						
Start Time	Left	Thru	Peds	App. Total	Left	Right	Peds	App. Total	Thru	Right	Peds	App. Total	Exclu. Total	Inclu. Total	Int. Total
07:30	0	73	[0]	73	2	1	[0]	3	38	1	[0]	39	0	115	115
07:45	2	110	[2]	112	1	0	[0]	1	30	1	[0]	31	2	144	146
Total	2	183	[2]	185	3	1	[0]	4	68	2	[0]	70	2	259	261
08:00	1	123	[0]	124	2	1	[0]	3	69	3	[0]	72	0	199	199
08:15	2	84	[0]	86	1	2	[0]	3	98	3	[0]	101	0	190	190
08:30	0	79	[0]	79	2	0	[1]	2	66	4	[0]	70	1	151	152
08:45	2	64	[0]	66	3	1	[0]	4	72	4	[0]	76	0	146	146
Total	5	350	[0]	355	8	4	[1]	12	305	14	[0]	319	1	686	687
09:00	6	108	[0]	114	7	6	[1]	13	59	5	[0]	64	1	191	192
09:15	1	89	[0]	90	3	2	[0]	5	41	4	[0]	45	0	140	140
Grand Total	14	730	[2]	744	21	13	[2]	34	473	25	[0]	498	4	1276	1280
Apprch %	1.9	98.1			61.8	38.2			95	5					
Total %	1.1	57.2		58.3	1.6	1		2.7	37.1	2		39	0.3	99.7	
Cars/lights	14	693		707	21	13		36	452	25		477	0	0	1220
% Cars/lights	100	94.9	0	94.8	100	100	100	100	95.6	100	0	95.8	0	0	95.3
Trucks	0	9		11	0	0		0	11	0		11	0	0	22
% Trucks	0	1.2	100	1.5	0	0	0	0	2.3	0	0	2.2	0	0	1.7
Buses	0	28		28	0	0		0	10	0		10	0	0	38
% Buses	0	3.8	0	3.8	0	0	0	0	2.1	0	0	2	0	0	3

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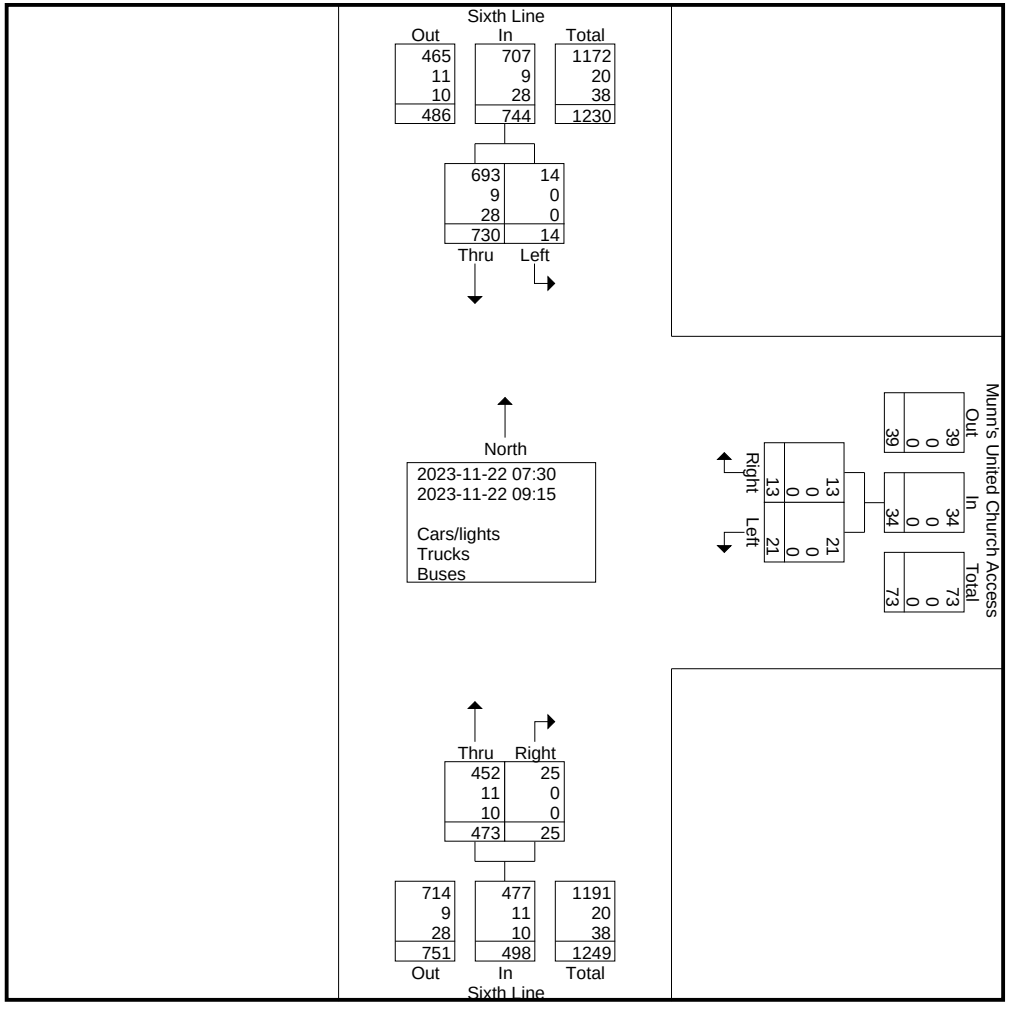
File Name : Sixth Line & Munn's United Church Access-AM
Site Code : 24030
Start Date : 2023-11-22
Page No : 2



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Markham, ON L3R 9R9

File Name : Sixth Line & Munn's United Church Access-AM
Site Code : 24030
Start Date : 2023-11-22
Page No : 3

	Sixth Line Southbound			Munn's United Church Access Westbound			Sixth Line Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:30 to 09:15 - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 08:00										
08:00	1	**123**	**124**	2	1	3	69	3	72	**199**
08:15	**2**	84	86	1	**2**	3	**98**	3	**101**	190
08:30	0	79	79	2	0	2	66	**4**	70	151
08:45	2	64	66	**3**	1	**4**	72	4	76	146
Total Volume	5	350	355	8	4	12	305	14	319	686
% App. Total	1.4	98.6		66.7	33.3		95.6	4.4		
PHF	.625	.711	.716	.667	.500	.750	.778	.875	.790	.862
Cars/lights	5	335	340	8	4	12	290	14	304	656
% Cars/lights	100	95.7	95.8	100	100	100	95.1	100	95.3	95.6
Trucks	0	7	7	0	0	0	9	0	9	16
% Trucks	0	2.0	2.0	0	0	0	3.0	0	2.8	2.3
Buses	0	8	8	0	0	0	6	0	6	14
% Buses	0	2.3	2.3	0	0	0	2.0	0	1.9	2.0

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625 Cochrane Drive, 5th Floor
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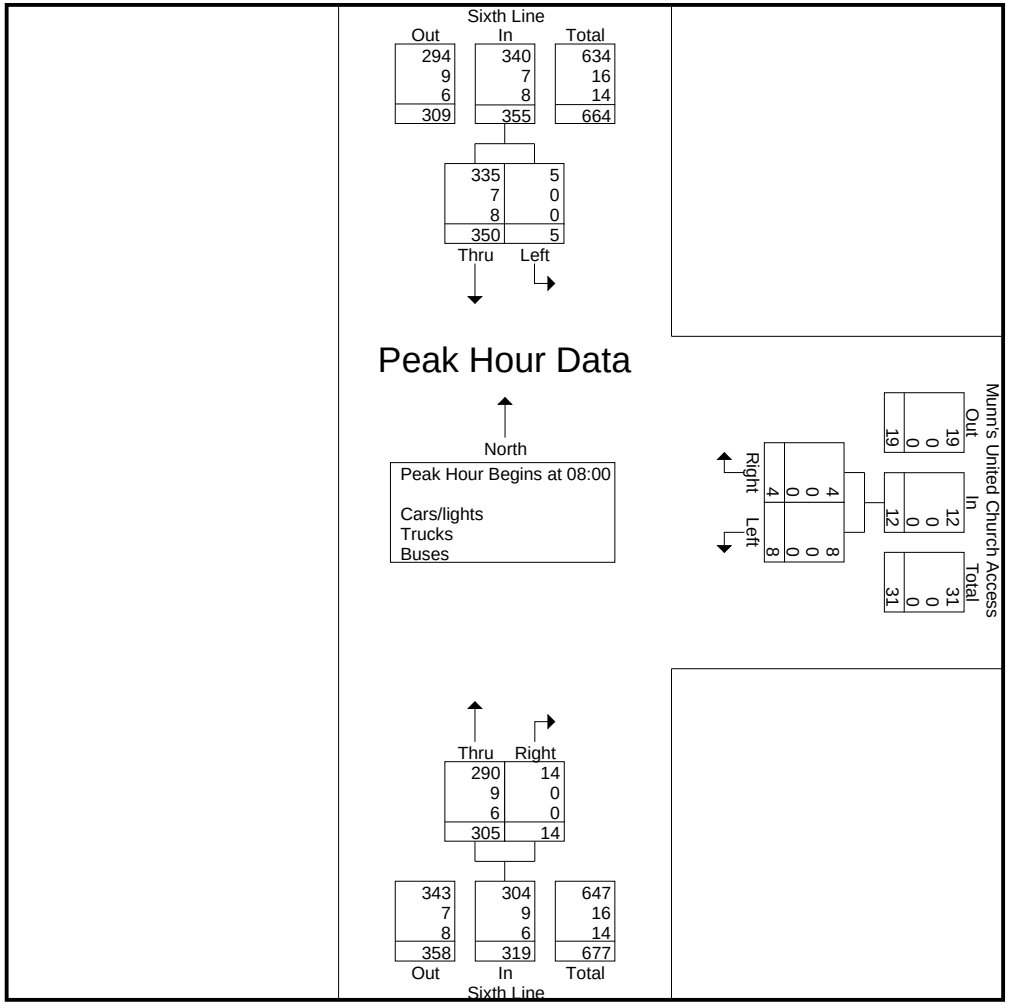
File Name : Sixth Line & Munn's United Church Access-AM
Site Code : 24030
Start Date : 2023-11-22
Page No : 4



LEA Consulting Ltd.

625 Cochrane Drive, 5th Floor
Markham, ON L3R 9R9

Project No.: 24030
Intersection: Sixth Ln & Site Access
Weather: Overcast
Surveyor(s): ID

File Name : Sixth Line & Munn's United Church Access-PM
Site Code : 24030
Start Date : 2023-11-22
Page No : 1

Groups Printed- Cars/lights - Trucks - Buses

	Sixth Line Southbound				Munn's United Church Access Westbound				Sixth Line Northbound						
Start Time	Left	Thru	Peds	App. Total	Left	Right	Peds	App. Total	Thru	Right	Peds	App. Total	Exclu. Total	Inclu. Total	Int. Total
16:00	1	83	[0]	84	1	1	[0]	2	86	1	[0]	87	0	173	173
16:15	0	112	[0]	112	3	1	[0]	4	74	1	[0]	75	0	191	191
16:30	2	87	[0]	89	2	1	[0]	3	100	4	[0]	104	0	196	196
16:45	0	66	[0]	66	4	3	[0]	7	95	2	[0]	97	0	170	170
Total	3	348	[0]	351	10	6	[0]	16	355	8	[0]	363	0	730	730
17:00	1	76	[0]	77	1	1	[2]	2	97	3	[0]	100	2	179	181
17:15	2	78	[0]	80	3	3	[1]	6	103	3	[0]	106	1	192	193
17:30	1	91	[0]	92	2	3	[1]	5	95	4	[0]	99	1	196	197
17:45	0	83	[0]	83	2	1	[0]	3	82	0	[0]	82	0	168	168
Total	4	328	[0]	332	8	8	[4]	16	377	10	[0]	387	4	735	739
Grand Total	7	676	[0]	683	18	14	[4]	32	732	18	[0]	750	4	1465	1469
Apprch %	1	99			56.2	43.8			97.6	2.4					
Total %	0.5	46.1		46.6	1.2	1		2.2	50	1.2		51.2	0.3	99.7	
Cars/lights	7	667		674	18	14		36	726	18		744	0	0	1454
% Cars/lights	100	98.7	0	98.7	100	100	100	100	99.2	100	0	99.2	0	0	99
Trucks	0	4		4	0	0		0	3	0		3	0	0	7
% Trucks	0	0.6	0	0.6	0	0	0	0	0.4	0	0	0.4	0	0	0.5
Buses	0	5		5	0	0		0	3	0		3	0	0	8
% Buses	0	0.7	0	0.7	0	0	0	0	0.4	0	0	0.4	0	0	0.5

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625 Cochrane Drive, 5th Floor
Markham, ON L3R 9R9

File Name : Sixth Line & Munn's United Church Access-PM
Site Code : 24030
Start Date : 2023-11-22
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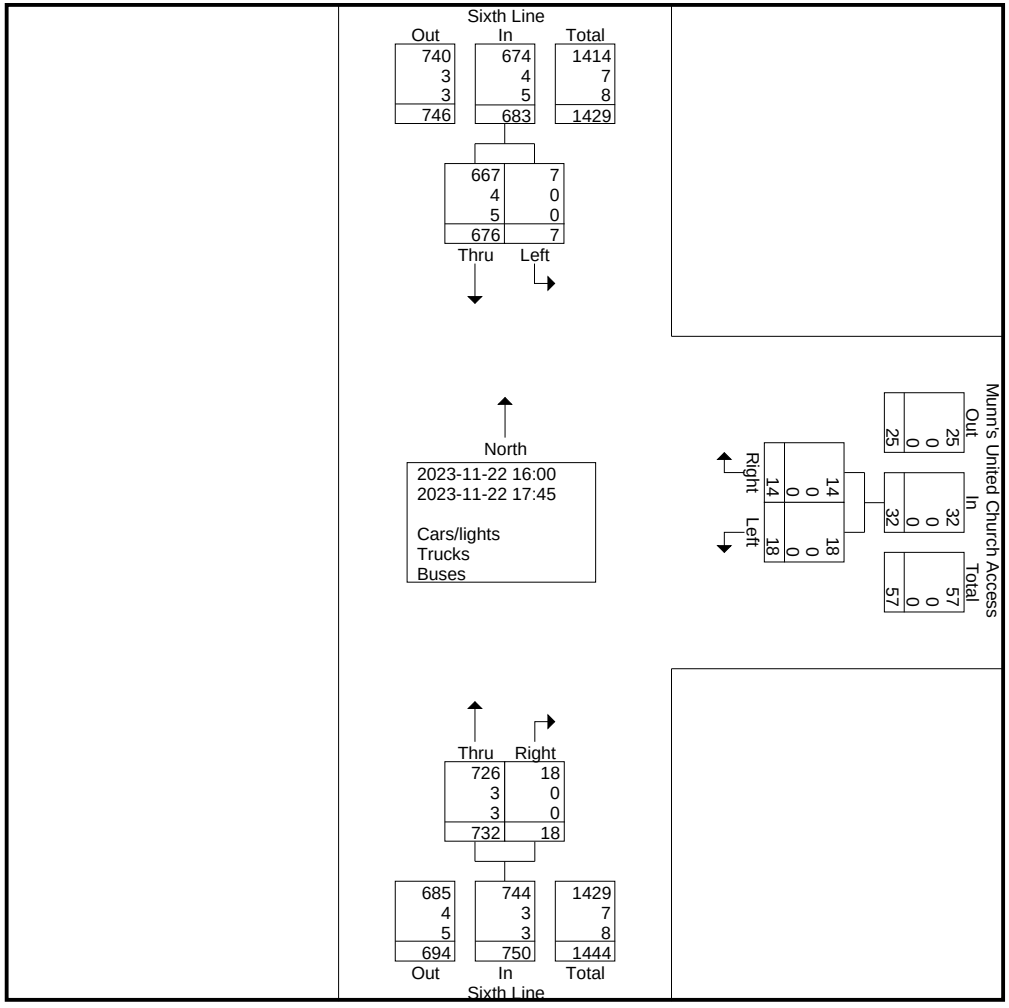

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625 Cochrane Drive, 5th Floor
Markham, ON L3R 9R9

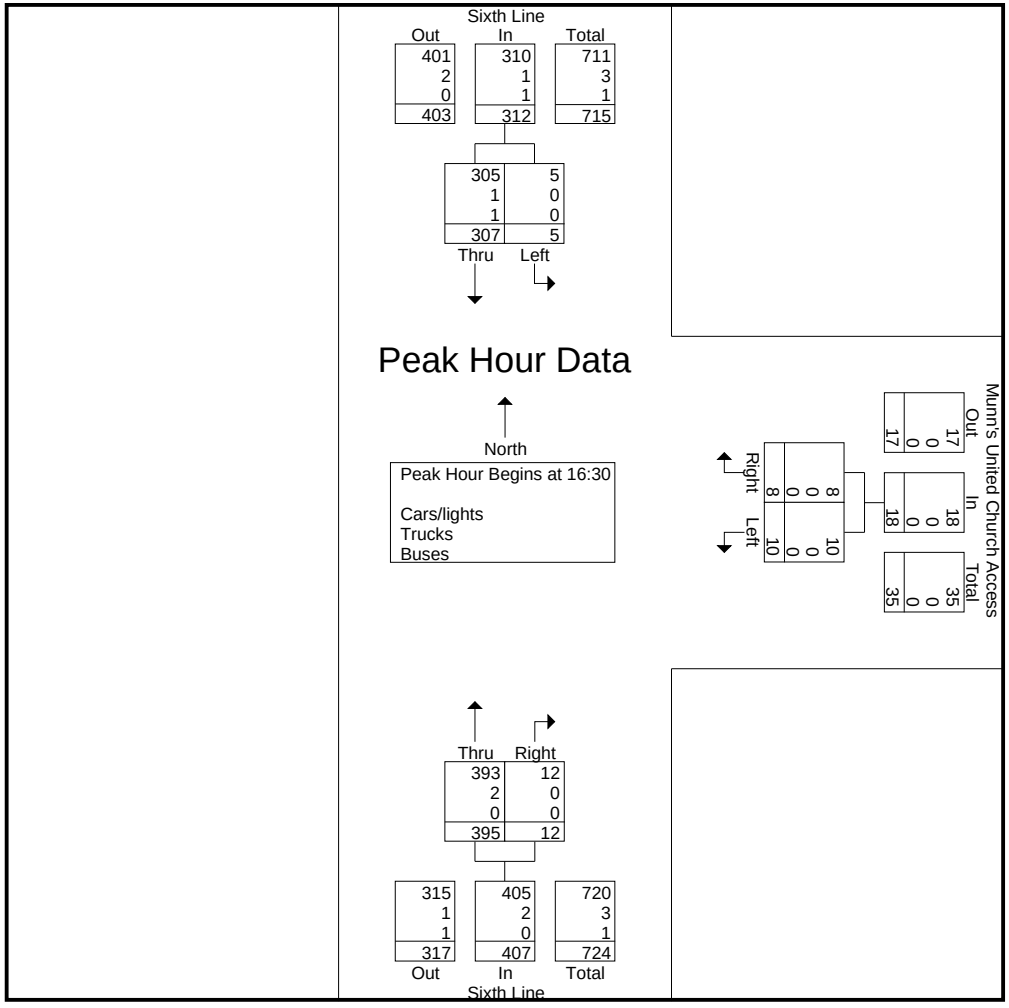
File Name : Sixth Line & Munn's United Church Access-PM
Site Code : 24030
Start Date : 2023-11-22
Page No : 3

	Sixth Line Southbound			Munn's United Church Access Westbound			Sixth Line Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 16:30										
16:30	**2**	**87**	**89**	2	1	3	100	**4**	104	**196**
16:45	0	66	66	**4**	**3**	**7**	95	2	97	170
17:00	1	76	77	1	1	2	97	3	100	179
17:15	2	78	80	3	3	6	**103**	3	**106**	192
Total Volume	5	307	312	10	8	18	395	12	407	737
% App. Total	1.6	98.4		55.6	44.4		97.1	2.9		
PHF	.625	.882	.876	.625	.667	.643	.959	.750	.960	.940
Cars/lights	5	305	310	10	8	18	393	12	405	733
% Cars/lights	100	99.3	99.4	100	100	100	99.5	100	99.5	99.5
Trucks	0	1	1	0	0	0	2	0	2	3
% Trucks	0	0.3	0.3	0	0	0	0.5	0	0.5	0.4
Buses	0	1	1	0	0	0	0	0	0	1
% Buses	0	0.3	0.3	0	0	0	0	0	0	0.1

LEA Consulting Ltd.

625 Cochrane Drive, 5th Floor
Markham, ON L3R 9R9

File Name : Sixth Line & Munn's United Church Access-PM
Site Code : 24030
Start Date : 2023-11-22
Page No : 4



Town of Oakville

ECONOLITE

MOVING TRAFFIC FORWARD

OAK1131 - Sixth Line @ Sixteen Mile Dr - Econolite Type - Cobalt

Controller Timing Plan (MM) 2-1

Plan 1 - ""

Phase	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**
Direction	**S-L**	**N-T**	**N**	**E-T**	**N**	**S-T**	**N**	**W-T**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**
Min Green	7	35	0	20	7	35	0	20	5	5	5	5	5	5	5	5
Bk Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CS Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Delay Green	0	0	0	5	0	0	0	5	0	0	0	0	0	0	0	0
Walk	0	10	0	10	0	10	0	10	0	10	0	10	0	10	0	10
Walk2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear	0	15	0	22	0	15	0	22	0	16	0	16	0	16	0	16
Ped Clear 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped CO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vehicle Ext	3.0	4.0	3.0	3.6	3.0	4.0	3.0	3.6	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Ext 2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max1	15	60	35	30	15	60	35	30	35	35	35	35	35	35	35	35
Max2	0	40	40	40	0	40	40	40	40	40	40	40	40	40	40	40
Max3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DYM Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dym Step	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yellow	3.0	3.7	3.0	3.3	3.0	3.7	3.0	3.3	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Red Clear	1.0	2.4	0.0	3.1	1.0	2.4	0.0	3.1	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Red Max	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Revert	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Act B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sec/Act	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max Int	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Time B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cars Wt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
STPTDuc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TTReduc	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Min Gap	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Plan 2 - ""

Phase	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**
Direction	**S-L**	**N-T**	**N**	**E-T**	**N**	**S-T**	**N**	**W-T**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**
Min Green	7	25	0	10	7	25	0	10	5	5	5	5	5	5	5	5
Bk Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CS Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Delay Green	0	0	0	5	0	0	0	5	0	0	0	0	0	0	0	0
Walk	0	10	0	10	0	10	0	10	0	10	0	10	0	10	0	10
Walk2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear	0	15	0	22	0	15	0	22	0	16	0	16	0	16	0	16
Ped Clear 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped CO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vehicle Ext	3.0	4.0	3.0	3.6	3.0	4.0	3.0	3.6	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Ext 2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max1	15	60	35	25	15	60	35	25	35	35	35	35	35	35	35	35
Max2	0	40	40	40	0	40	40	40	40	40	40	40	40	40	40	40
Max3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DYM Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dym Step	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yellow	3.0	3.7	3.0	3.3	3.0	3.7	3.0	3.3	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Red Clear	1.0	2.4	0.0	3.1	1.0	2.4	0.0	3.1	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Red Max	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Revert	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Act B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sec/Act	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max Int	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Time B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cars Wt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
STPTDuc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TTReduc	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Min Gap	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Town of Oakville

ECONOLITE

MOVING TRAFFIC FORWARD

OAK1131 - Sixth Line @ Sixteen Mile Dr - Econolite Type - Cobalt

Coordination Options

Options (MM) 3-1

Manual Pattern	Auto	ECPI Coord	Yes
System Source	TBC	System Format	STD
Splits In	Percent	Offsets In	Percent
Transition	Smooth	Max Select	MAXINH
Dwell / Add Time	0		
Delay Coord Wk-LZ	No	Force Off	Float
Offset Reference	Lead	Use Ped Time	Yes
Ped Recall	No	Ped Reservice	Yes
Local Zero Override	Yes	FO Added Ini Green	No
Re-sync Count	0	Multisync	No

Auto Perm Minimum Green (Seconds) (MM) 3-4

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Minimum Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Split Demand (MM) 3-5

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Demand 1																
Demand 2																

Demand	1	2
Detector	0	0
Call Time (Sec)	0	0
Cycle Count	0	0

Town of Oakville

ECONOLITE

MOVING TRAFFIC FORWARD

OAK1131 - Sixth Line @ Sixteen Mile Dr - Econolite Type - Cobalt

Coordination Pattern Data
Coordinator Pattern Data (MM) 3-2

Coordinator Pattern # 1

Split Pattern	1	TS2 (Pat-Off)	0-1	Splits In	Percent
Cycle	100	Std (COS)	9	Offsets In	Percent
Offset Value	0%	Dwell/Add Time	0		
Actuated Coord	Yes	Timing Plan	1		
Actuated Walk Rest	No	Sequence	0		
Phase Reservice	No	Action Plan	1		
Max Select	None	Force Off	None		

Split Preference Phases

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description	S-L	N-T	N	E-T	N	S-T	N	W-T	N	N	N	N	N	N	N	N
Splits (Split Pat 1)	14	47	0	39	14	47	0	39	0	0	0	0	0	0	0	0
Pref 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pref 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Ring	1	2	3	4
Ring Split Ext	0	0	0	0
Ring Displacement	-	0	0	0
Split Sum	100%	100%	0%	0%

Misc. Data

Veh Perm 1	0	Veh Perm 2	0	Veh Perm 2 Disp	0
Split Demand Pat 1	0	Split Demand Pat 2	0	Crossing Arterial Pat	0

Split Pattern

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Coord Phase		X				X										
Vehicle Recall		X				X										
Pedestrian Recall																
Recall to Max. Time																
Omit Phase									X	X	X	X	X	X	X	X
Special Funciton Outputs																

Coordinator Pattern # 3

Split Pattern	3	TS2 (Pat-Off)	0-3	Splits In	Percent
Cycle	100	Std (COS)	25	Offsets In	Percent
Offset Value	0%	Dwell/Add Time	0		
Actuated Coord	Yes	Timing Plan	1		
Actuated Walk Rest	No	Sequence	0		
Phase Reservice	No	Action Plan	3		
Max Select	None	Force Off	None		

Split Preference Phases

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description	S-L	N-T	N	E-T	N	S-T	N	W-T	N	N	N	N	N	N	N	N
Splits (Split Pat 3)	14	47	0	39	16	45	0	39	0	0	0	0	0	0	0	0
Pref 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pref 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Ring	1	2	3	4
Ring Split Ext	0	0	0	0
Ring Displacement	-	0	0	0
Split Sum	100%	100%	0%	0%

Misc. Data

Veh Perm 1	0	Veh Perm 2	0	Veh Perm 2 Disp	0
Split Demand Pat 1	0	Split Demand Pat 2	0	Crossing Arterial Pat	0

Split Pattern

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Coord Phase		X				X										
Vehicle Recall		X				X										
Pedestrian Recall																
Recall to Max. Time																
Omit Phase									X	X	X	X	X	X	X	X
Special Funciton Outputs																

Town of Oakville

ECONOLITE

MOVING TRAFFIC FORWARD

OAK1131 - Sixth Line @ Sixteen Mile Dr - Econolite Type - Cobalt

Coordination Split Pattern
Split Pattern Data (MM) 3-3

Split Pattern # 1

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description	S-L	N-T	N	E-T	N	S-T	N	W-T	N	N	N	N	N	N	N	N
Split (percent)	14	47	0	39	14	47	0	39	0	0	0	0	0	0	0	0
Coord Phase		X				X										
Vehicle Recall		X				X										
Pedestrian Recall																
Recall to Max. Time																
Omit Phase									X	X	X	X	X	X	X	X

Ring	1	2	3	4
Split Sum	100%	100%	0%	0%

Split Pattern # 3

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description	S-L	N-T	N	E-T	N	S-T	N	W-T	N	N	N	N	N	N	N	N
Split (percent)	14	47	0	39	16	45	0	39	0	0	0	0	0	0	0	0
Coord Phase		X				X										
Vehicle Recall		X				X										
Pedestrian Recall																
Recall to Max. Time																
Omit Phase									X	X	X	X	X	X	X	X

Ring	1	2	3	4
Split Sum	100%	100%	0%	0%

Town of Oakville

ECONOLITE

MOVING TRAFFIC FORWARD

OAK1131 - Sixth Line @ Sixteen Mile Dr - Econolite Type - Cobalt

Time Base Clock/Calendar
Clock/Calendar Data (MM) 5-1

Manual Action Plan:	0
SYNC Reference Time:	03:15
SYNC Reference:	Reference Time
Day Light Savings:	USDLS
Time Reset Input Set Time:	3:30:00
Standard Time From GMT:	-5

Town of Oakville

ECONOLITE

MOVING TRAFFIC FORWARD

OAK1131 - Sixth Line @ Sixteen Mile Dr - Econolite Type - Cobalt

Time Base Action Plan
Action Plan (MM) 5-2

Action Plan - 1 - "1"

Pattern	1	Override Sys	Yes
Timing Plan	1	Sequence	0
Veh Detector Plan	0	Det Log	None
Flash	No	Red Rest	No
Veh Det Diag Plan	0	Ped Det Diag Plan	0
Dimming Enable	No	Pmt Veh Priority Ret	No
Pmt Ped Priority Ret	No	Pmt Queue Delay	No
Pmt Cond Delay	No		

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Ped Recall																
Walk 2																
Veh Ext 2																
Veh Recall																
Max Recall																
Max 2																
Max 3																
CS Inhibit																
Omit																
Spec Func (1-8)																
Aux Func (1-3)																

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
LP 1-15	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 16-30	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 31-45	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 46-60	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 61-75	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 76-90	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 91-100	.	.	.	.	.	.	.	.	.	.					

Action Plan - 2 - "2"

Pattern	Free	Override Sys	Yes
Timing Plan	1	Sequence	1
Veh Detector Plan	0	Det Log	None
Flash	No	Red Rest	No
Veh Det Diag Plan	0	Ped Det Diag Plan	0
Dimming Enable	No	Pmt Veh Priority Ret	No
Pmt Ped Priority Ret	No	Pmt Queue Delay	No
Pmt Cond Delay	No		

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Ped Recall																
Walk 2																
Veh Ext 2																
Veh Recall																
Max Recall																
Max 2																
Max 3																
CS Inhibit																
Omit																
Spec Func (1-8)																
Aux Func (1-3)																

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
LP 1-15	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 16-30	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 31-45	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 46-60	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 61-75	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 76-90	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 91-100	.	.	.	.	.	.	.	.	.	.					

Action Plan - 3 - "3"

Pattern	3	Override Sys	Yes
Timing Plan	1	Sequence	0
Veh Detector Plan	0	Det Log	None
Flash	No	Red Rest	No
Veh Det Diag Plan	0	Ped Det Diag Plan	0
Dimming Enable	No	Pmt Veh Priority Ret	No
Pmt Ped Priority Ret	No	Pmt Queue Delay	No
Pmt Cond Delay	No		

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Ped Recall																
Walk 2																
Veh Ext 2																
Veh Recall																
Max Recall																
Max 2																
Max 3																
CS Inhibit																
Omit																
Spec Func (1-8)																
Aux Func (1-3)																

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
LP 1-15	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
LP 16-30	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 31-45	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 46-60	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 61-75	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 76-90	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 91-100	.	.	.	.	.	.	.	.	.	.					

Action Plan - 4 - "4"

Pattern	Free	Override Sys	Yes
Timing Plan	1	Sequence	0
Veh Detector Plan	0	Det Log	None
Flash	No	Red Rest	No
Veh Det Diag Plan	0	Ped Det Diag Plan	0
Dimming Enable	No	Pmt Veh Priority Ret	No
Pmt Ped Priority Ret	No	Pmt Queue Delay	No
Pmt Cond Delay	No		

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Ped Recall																
Walk 2																
Veh Ext 2																
Veh Recall																
Max Recall																
Max 2																
Max 3																
CS Inhibit																
Omit																
Spec Func (1-8)																
Aux Func (1-3)																

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
LP 1-15	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 16-30	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 31-45	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 46-60	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 61-75	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 76-90	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 91-100	.	.	.	.	.	.	.	.	.	.					

Action Plan - 5 - "5"

Pattern	Free	Override Sys	Yes
Timing Plan	2	Sequence	0
Veh Detector Plan	0	Det Log	None
Flash	No	Red Rest	No
Veh Det Diag Plan	0	Ped Det Diag Plan	0
Dimming Enable	No	Pmt Veh Priority Ret	No
Pmt Ped Priority Ret	No	Pmt Queue Delay	No
Pmt Cond Delay	No		

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Ped Recall																
Walk 2																
Veh Ext 2																
Veh Recall																
Max Recall																
Max 2																
Max 3																
CS Inhibit																
Omit																
Spec Func (1-8)																
Aux Func (1-3)																

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
LP 1-15	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
LP 16-30	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 31-45	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 46-60	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 61-75	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 76-90	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 91-100	.	.	.	.	.	.	.	.	.	.					

Town of Oakville

ECONOLITE

MOVING TRAFFIC FORWARD

OAK1131 - Sixth Line @ Sixteen Mile Dr - Econolite Type - Cobalt

Time Base Day Plan/Schedule
Day Plan (MM) 5-3

Day Plan #1 - "1"

Event	Action Plan	Start Time
1	1	06:00
2	2	10:00
3	3	15:15
4	4	19:00
5	5	22:00

Day Plan #2 - "2"

Event	Action Plan	Start Time
1	99	00:00
2	2	09:00
3	3	15:00
4	99	19:00

Schedule (MM) 5-4

Schedule Number - 1

Day Plan No.: 1

Month	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
	X	X	X	X	X	X	X	X	X	X	X	X

Day (DOW)	SUN	MON	TUE	WED	THU	FRI	SAT
	X	X	X	X	X	X	X

Day (DOM)	1	2	3	4	5	6	7	8	9	10	11
	X	X	X	X	X	X	X	X	X	X	X
	12	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**	**21**	**22**
	X	X	X	X	X	X	X	X	X	X	X
	23	**24**	**25**	**26**	**27**	**28**	**29**	**30**	**31**		
	X	X	X	X	X	X	X	X	X		

Schedule Number - 2

Day Plan No.: 2

Month	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC

Day (DOW)	SUN	MON	TUE	WED	THU	FRI	SAT

Day (DOM)	1	2	3	4	5	6	7	8	9	10	11
	12	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**	**21**	**22**
	23	**24**	**25**	**26**	**27**	**28**	**29**	**30**	**31**		

APPENDIX C

Background Traffic Calculations

Dundas St W @ Harman Gate

Morning Peak Diagram

Specified Period
From: 7:00:00
To: 9:00:00

One Hour Peak
From: 8:00:00
To: 9:00:00

Municipality: Halton Region
Site #: 0000002966
Intersection: Dundas St W & Harman Gate
TFR File #: 3
Count date: 24-May-2017

Weather conditions:
Cloudy/Dry

Person(s) who counted:
Cam

**** Signalized Intersection ****

Major Road: Dundas St W runs W/E

North Leg Total:	336
North Entering:	233
North Peds:	0
Peds Cross:	⋈

Heavys	3	2	1	6
Trucks	0	0	1	1
Cars	87	18	121	226
Totals	90	20	123	

Heavys	3
Trucks	2
Cars	98
Totals	103

East Leg Total:	2922
East Entering:	964
East Peds:	2
Peds Cross:	⧗

Preserve Dr

Heavys	Trucks	Cars	Totals
65	28	924	1017

Cars	Trucks	Heavys	Totals
45	2	2	49
812	28	62	902
13	0	0	13
870	30	64	

Dundas St W

N
W E
S

Heavys	Trucks	Cars	Totals
1	0	43	44
28	25	1747	1800
1	0	33	34
30	25	1823	

Dundas St W

Cars	Trucks	Heavys	Totals
1903	26	29	1958

Harman Gate

Peds Cross:	⧗
West Peds:	4
West Entering:	1878
West Leg Total:	2895

Cars	64
Trucks	0
Heavys	3
Totals	67

Cars	25	10	35	70
Trucks	0	0	0	0
Heavys	0	0	0	0
Totals	25	10	35	

Peds Cross:	⋈
South Peds:	3
South Entering:	70
South Leg Total:	137

Comments

Dundas St W @ Harman Gate

Mid-day Peak Diagram

Specified Period
From: 11:00:00
To: 14:00:00

One Hour Peak
From: 12:30:00
To: 13:30:00

Municipality: Halton Region
Site #: 0000002966
Intersection: Dundas St W & Harman Gate
TFR File #: 3
Count date: 24-May-2017

Weather conditions:
Cloudy/Dry

Person(s) who counted:
Cam

**** Signalized Intersection ****

Major Road: Dundas St W runs W/E

North Leg Total: 210
North Entering: 115
North Peds: 1
Peds Cross: ⋈

Heavys	1	0	1	2
Trucks	0	0	2	2
Cars	50	3	58	111
Totals	51	3	61	

Heavys	2
Trucks	2
Cars	91
Totals	95

East Leg Total: 2332
East Entering: 1240
East Peds: 3
Peds Cross: ⧗

Preserve Dr

Heavys	Trucks	Cars	Totals
53	32	1130	1215

Cars	Trucks	Heavys	Totals
60	1	1	62
1070	30	52	1152
24	1	1	26
1154	32	54	

Dundas St W

N
W E
S

Dundas St W

Heavys	Trucks	Cars	Totals
1	1	29	31
49	17	951	1017
0	1	18	19
50	19	998	

Cars	Trucks	Heavys	Totals
1023	19	50	1092

Harman Gate

Peds Cross: ⧗
West Peds: 1
West Entering: 1067
West Leg Total: 2282

Cars	45
Trucks	2
Heavys	1
Totals	48

Cars	10	2	14	26
Trucks	2	0	0	2
Heavys	0	0	0	0
Totals	12	2	14	

Peds Cross: ⋈
South Peds: 5
South Entering: 28
South Leg Total: 76

Comments

Dundas St W @ Harman Gate

Afternoon Peak Diagram

Specified Period
From: 15:00:00
To: 18:00:00

One Hour Peak
From: 17:00:00
To: 18:00:00

Municipality: Halton Region
Site #: 0000002966
Intersection: Dundas St W & Harman Gate
TFR File #: 3
Count date: 24-May-2017

Weather conditions:
Cloudy/Dry

Person(s) who counted:
Cam

**** Signalized Intersection ****

Major Road: Dundas St W runs W/E

North Leg Total: 385
North Entering: 173
North Peds: 4
Peds Cross: ⋈

Heavys	0	1	0	1
Trucks	0	0	1	1
Cars	86	10	75	171
Totals	86	11	76	

Heavys	0
Trucks	0
Cars	212
Totals	212

East Leg Total: 3478
East Entering: 2133
East Peds: 3
Peds Cross: ⧗

Preserve Dr

Heavys	Trucks	Cars	Totals
33	28	2002	2063

Cars	Trucks	Heavys	Totals
147	0	0	147
1891	28	33	1952
34	0	0	34
2072	28	33	

Dundas St W

N
W E
S

Heavys	Trucks	Cars	Totals
0	0	56	56
28	11	1213	1252
0	0	35	35
28	11	1304	

Dundas St W

Cars	Trucks	Heavys	Totals
1305	12	28	1345

Harman Gate

Peds Cross: ⧗
West Peds: 3
West Entering: 1343
West Leg Total: 3406

Cars	79
Trucks	0
Heavys	1
Totals	80

Cars	25	9	17	51
Trucks	0	0	0	0
Heavys	0	0	0	0
Totals	25	9	17	

Peds Cross: ⋈
South Peds: 8
South Entering: 51
South Leg Total: 131

Comments

Dundas St W @ Harman Gate

Total Count Diagram

Municipality: Halton Region
Site #: 0000002966
Intersection: Dundas St W & Harman Gate
TFR File #: 3
Count date: 24-May-2017

Weather conditions:
Cloudy/Dry

Person(s) who counted:
Cam

**** Signalized Intersection ****

Major Road: Dundas St W runs W/E

North Leg Total: 2284
North Entering: 1225
North Peds: 8
Peds Cross: ⋈

Heavys	16	7	9	32
Trucks	2	0	8	10
Cars	500	71	612	1183
Totals	518	78	629	

Heavys	18
Trucks	14
Cars	1027
Totals	1059

East Leg Total: 22170
East Entering: 11196
East Peds: 15
Peds Cross: ⧗

Preserve Dr

Heavys	Trucks	Cars	Totals
358	234	10489	11081

Cars	Trucks	Heavys	Totals
600	7	10	617
9843	229	342	10414
163	1	1	165
10606	237	353	

Dundas St W

N
W E
S

Heavys	Trucks	Cars	Totals
7	3	376	386
337	123	9684	10144
3	3	204	210
347	129	10264	

Dundas St W

Cars	Trucks	Heavys	Totals
10494	134	346	10974

Harman Gate

Peds Cross: ⧗
West Peds: 34
West Entering: 10740
West Leg Total: 21821

Cars	438
Trucks	4
Heavys	11
Totals	453

Cars	146	51	198	395
Trucks	3	4	3	10
Heavys	0	1	0	1
Totals	149	56	201	

Peds Cross: ⋈
South Peds: 46
South Entering: 406
South Leg Total: 859

Comments

Dundas St @ Sixth Line

Morning Peak Diagram

Specified Period
From: 7:00:00
To: 9:00:00

One Hour Peak
From: 7:30:00
To: 8:30:00

Municipality: Halton Region
Site #: 0000002554
Intersection: Dundas St & Sixth Line
TFR File #: 7
Count date: 21-Apr-2015

Weather conditions:
Sunny/Dry am, Rain pm

Person(s) who counted:
Teresa
Elizabeth

**** Signalized Intersection ****

Major Road: Dundas St runs W/E

North Leg Total:	1113
North Entering:	712
North Peds:	0
Peds Cross:	⋈

Heavys	4	5	4	13
Trucks	6	4	3	13
Cars	61	364	261	686
Totals	71	373	268	

Heavys	9
Trucks	9
Cars	383
Totals	401

East Leg Total:	4094
East Entering:	736
East Peds:	0
Peds Cross:	⧗

Sixth Line

Heavys	Trucks	Cars	Totals
64	34	654	752

Dundas St

Cars	Trucks	Heavys	Totals
52	1	2	55
506	27	58	591
83	3	4	90
641	31	64	

N
W E
S

Heavys	Trucks	Cars	Totals
5	4	155	164
36	23	2761	2820
3	2	154	159
44	29	3070	

Dundas St

Cars	Trucks	Heavys	Totals
3287	27	44	3358

Sixth Line

Peds Cross:	⧗
West Peds:	3
West Entering:	3143
West Leg Total:	3895

Cars	601
Trucks	9
Heavys	12
Totals	622

Cars	87	176	265	528
Trucks	1	4	1	6
Heavys	2	2	4	8
Totals	90	182	270	

Peds Cross:	⋈
South Peds:	0
South Entering:	542
South Leg Total:	1164

Comments

Dundas St @ Sixth Line

Mid-day Peak Diagram

Specified Period
From: 11:00:00
To: 14:00:00

One Hour Peak
From: 12:00:00
To: 13:00:00

Municipality: Halton Region
Site #: 0000002554
Intersection: Dundas St & Sixth Line
TFR File #: 7
Count date: 21-Apr-2015

Weather conditions:
Sunny/Dry am, Rain pm

Person(s) who counted:
Teresa
Elizabeth

**** Signalized Intersection ****

Major Road: Dundas St runs W/E

North Leg Total: 353
North Entering: 184
North Peds: 1
Peds Cross: ⋈

Heavys	1	0	0	1
Trucks	2	3	1	6
Cars	26	60	91	177
Totals	29	63	92	

Heavys	0
Trucks	4
Cars	165
Totals	169

East Leg Total: 2099
East Entering: 996
East Peds: 1
Peds Cross: ⧗

Sixth Line

Heavys	Trucks	Cars	Totals
41	32	847	920

Dundas St

Cars	Trucks	Heavys	Totals
79	0	0	79
741	29	39	809
104	3	1	108
924	32	40	

N
W E
S

Heavys	Trucks	Cars	Totals
0	1	36	37
32	38	850	920
0	2	67	69
32	41	953	

Dundas St

Cars	Trucks	Heavys	Totals
1032	39	32	1103

Sixth Line

Peds Cross: ⧗
West Peds: 2
West Entering: 1026
West Leg Total: 1946

Cars	231
Trucks	8
Heavys	1
Totals	240

Cars	80	50	91	221
Trucks	1	3	0	4
Heavys	1	0	0	1
Totals	82	53	91	

Peds Cross: ⋈
South Peds: 2
South Entering: 226
South Leg Total: 466

Comments

Dundas St @ Sixth Line

Afternoon Peak Diagram

Specified Period
From: 15:00:00
To: 18:00:00

One Hour Peak
From: 17:00:00
To: 18:00:00

Municipality: Halton Region
Site #: 0000002554
Intersection: Dundas St & Sixth Line
TFR File #: 7
Count date: 21-Apr-2015

Weather conditions:
Sunny/Dry am, Rain pm

Person(s) who counted:
Teresa
Elizabeth

**** Signalized Intersection ****

Major Road: Dundas St runs W/E

North Leg Total: 1355
North Entering: 640
North Peds: 0
Peds Cross: ⋈

Heavys	3	0	0	3
Trucks	0	0	5	5
Cars	183	314	135	632
Totals	186	314	140	

Heavys	6
Trucks	6
Cars	703
Totals	715

East Leg Total: 3758
East Entering: 2301
East Peds: 1
Peds Cross: ⧗

Sixth Line

Heavys	Trucks	Cars	Totals
27	22	2195	2244

Dundas St

Cars	Trucks	Heavys	Totals
188	3	3	194
1860	17	24	1901
206	0	0	206
2254	20	27	

N
W E
S

Heavys	Trucks	Cars	Totals
0	2	123	125
22	6	1156	1184
0	1	123	124
22	9	1402	

Dundas St

Cars	Trucks	Heavys	Totals
1416	19	22	1457

Sixth Line

Peds Cross: ⧗
West Peds: 3
West Entering: 1433
West Leg Total: 3677

Cars	643
Trucks	1
Heavys	0
Totals	644

Cars	152	392	125	669
Trucks	5	1	8	14
Heavys	0	3	0	3
Totals	157	396	133	

Peds Cross: ⋈
South Peds: 1
South Entering: 686
South Leg Total: 1330

Comments

Dundas St @ Sixth Line

Total Count Diagram

Municipality: Halton Region
Site #: 0000002554
Intersection: Dundas St & Sixth Line
TFR File #: 7
Count date: 21-Apr-2015

Weather conditions:
Sunny/Dry am, Rain pm

Person(s) who counted:
Teresa
Elizabeth

**** Signalized Intersection ****

Major Road: Dundas St runs W/E

North Leg Total:	5942
North Entering:	3199
North Peds:	11
Peds Cross:	⋈

Heavys	19	11	12	42
Trucks	16	42	21	79
Cars	576	1385	1117	3078
Totals	611	1438	1150	

Heavys	33
Trucks	49
Cars	2661
Totals	2743

East Leg Total:	23264
East Entering:	10563
East Peds:	12
Peds Cross:	⋈

Sixth Line

Heavys	Trucks	Cars	Totals
342	273	9735	10350

Cars	Trucks	Heavys	Totals
708	12	13	733
8387	235	306	8928
883	13	6	902
9978	260	325	

Dundas St

N
W E
S

Heavys	Trucks	Cars	Totals
11	15	693	719
270	224	10006	10500
13	12	747	772
294	251	11446	

Dundas St

Cars	Trucks	Heavys	Totals
12146	264	291	12701

Sixth Line

Peds Cross:	⋈
West Peds:	25
West Entering:	11991
West Leg Total:	22341

Cars	3015
Trucks	67
Heavys	30
Totals	3112

Cars	772	1260	1023	3055
Trucks	22	22	19	63
Heavys	17	9	9	35
Totals	811	1291	1051	

Peds Cross:	⋈
South Peds:	7
South Entering:	3153
South Leg Total:	6265

Comments

Turning Movement Count
Location Name: DUNDAS ST W & 6TH LINE
Date: Thu, Oct 25, 2018 Deployment Lead: Walter Fugaj

Turning Movement Count (1 . DUNDAS ST W & 6TH LINE)

Start Time	N Approach 6TH LINE						E Approach DUNDAS ST W						S Approach 6TH LINE						W Approach DUNDAS ST W						Int. Total (15 min)	Int. Total (1 hr)
	Right N:W	Thru N:S	Left N:E	U-Turn N:N	Peds N:	Approach Total	Right E:N	Thru E:W	Left E:S	U-Turn E:E	Peds E:	Approach Total	Right S:E	Thru S:N	Left S:W	U-Turn S:S	Peds S:	Approach Total	Right W:S	Thru W:E	Left W:N	U-Turn W:W	Peds W:	Approach Total		
07:00:00	5	17	39	0	0	61	24	138	3	0	0	165	38	23	15	0	0	76	12	364	23	0	0	399	701	
07:15:00	8	38	40	0	0	86	14	170	10	0	1	194	43	24	16	0	0	83	30	479	25	0	0	534	897	
07:30:00	10	60	50	0	0	120	21	202	14	0	0	237	49	27	21	0	0	97	28	422	14	0	0	464	918	
07:45:00	10	67	46	0	1	123	9	210	14	0	0	233	58	27	25	0	0	110	40	459	17	0	4	516	982	3498
08:00:00	13	70	55	0	0	138	10	216	44	0	1	270	68	44	33	0	0	145	38	409	15	0	4	462	1015	3812
08:15:00	9	58	57	0	0	124	17	269	50	0	0	336	56	44	33	0	0	133	30	435	17	0	1	482	1075	3990
08:30:00	10	59	50	0	0	119	19	191	29	0	0	239	95	51	36	0	0	182	30	413	11	0	2	454	994	4066
08:45:00	11	37	33	0	0	81	31	240	15	0	0	286	35	15	21	0	0	71	31	406	21	0	0	458	896	3980
BREAK																										
16:00:00	9	33	33	0	0	75	33	388	41	0	0	462	26	40	45	0	0	111	31	270	21	0	1	322	970	
16:15:00	11	42	29	0	0	82	25	496	35	0	3	556	38	61	40	0	1	139	28	345	17	0	0	390	1167	
16:30:00	16	30	26	0	1	72	35	424	30	0	0	489	25	51	43	0	1	119	27	313	9	0	0	349	1029	
16:45:00	15	43	27	0	0	85	29	433	31	0	0	493	47	67	37	0	0	151	29	320	18	0	4	367	1096	4262
17:00:00	17	44	31	0	0	92	35	398	24	0	1	457	33	66	36	0	0	135	37	317	18	0	0	372	1056	4348
17:15:00	19	46	28	0	1	93	32	470	35	0	0	537	42	67	37	0	0	146	35	334	26	0	0	395	1171	4352
17:30:00	20	46	31	0	0	97	47	452	36	0	1	535	35	66	33	0	0	134	39	295	21	0	3	355	1121	4444
17:45:00	12	42	28	0	1	82	35	458	46	0	2	539	31	64	45	0	0	140	32	293	10	0	1	335	1096	4444
Grand Total	195	732	603	0	4	1530	416	5155	457	0	9	6028	719	737	516	0	2	1972	497	5874	283	0	20	6654	**16184**	-
Approach%	12.7%	47.8%	39.4%	0%		-	6.9%	85.5%	7.6%	0%		-	36.5%	37.4%	26.2%	0%		-	7.5%	88.3%	4.3%	0%		-	-	-
Totals %	1.2%	4.5%	3.7%	0%		9.5%	2.6%	31.9%	2.8%	0%		37.2%	4.4%	4.6%	3.2%	0%		12.2%	3.1%	36.3%	1.7%	0%		41.1%	-	-
Heavy	14	14	23	0		-	27	270	11	0		-	13	10	9	0		-	19	186	15	0		-	-	-
Heavy %	7.2%	1.9%	3.8%	0%		-	6.5%	5.2%	2.4%	0%		-	1.8%	1.4%	1.7%	0%		-	3.8%	3.2%	5.3%	0%		-	-	-
Bicycles	0	3	0	0		-	0	0	0	0		-	0	1	0	0		-	0	0	0	0		-	-	-
Bicycle %	0%	0.4%	0%	0%		-	0%	0%	0%	0%		-	0%	0.1%	0%	0%		-	0%	0%	0%	0%		-	-	-

Turning Movement Count
Location Name: DUNDAS ST W & 6TH LINE
Date: Thu, Oct 25, 2018 Deployment Lead: Walter Fugaj

Peak Hour: 07:45 AM - 08:45 AM Weather: Mostly Cloudy (3 °C)

Start Time	N Approach 6TH LINE						E Approach DUNDAS ST W						S Approach 6TH LINE						W Approach DUNDAS ST W						Int. Total (15 min)
	Right	Thru	Left	U-Turn	Peds	Approach Total	Right	Thru	Left	U-Turn	Peds	Approach Total	Right	Thru	Left	U-Turn	Peds	Approach Total	Right	Thru	Left	U-Turn	Peds	Approach Total	
07:45:00	10	67	46	0	1	123	9	210	14	0	0	233	58	27	25	0	0	110	40	459	17	0	4	516	982
08:00:00	13	70	55	0	0	138	10	216	44	0	1	270	68	44	33	0	0	145	38	409	15	0	4	462	1015
08:15:00	9	58	57	0	0	124	17	269	50	0	0	336	56	44	33	0	0	133	30	435	17	0	1	482	1075
08:30:00	10	59	50	0	0	119	19	191	29	0	0	239	95	51	36	0	0	182	30	413	11	0	2	454	994
Grand Total	42	254	208	0	1	504	55	886	137	0	1	1078	277	166	127	0	0	570	138	1716	60	0	11	1914	**4066**
Approach%	8.3%	50.4%	41.3%	0%		-	5.1%	82.2%	12.7%	0%		-	48.6%	29.1%	22.3%	0%		-	7.2%	89.7%	3.1%	0%		-	-
Totals %	1%	6.2%	5.1%	0%		12.4%	1.4%	21.8%	3.4%	0%		26.5%	6.8%	4.1%	3.1%	0%		14%	3.4%	42.2%	1.5%	0%		47.1%	-
PHF	0.81	0.91	0.91	0		0.91	0.72	0.82	0.69	0		0.8	0.73	0.81	0.88	0		0.78	0.86	0.93	0.88	0		0.93	-
Heavy	4	5	6	0		15	9	108	8	0		125	5	2	5	0		12	7	39	2	0		48	-
Heavy %	9.5%	2%	2.9%	0%		3%	16.4%	12.2%	5.8%	0%		11.6%	1.8%	1.2%	3.9%	0%		2.1%	5.1%	2.3%	3.3%	0%		2.5%	-
Lights	38	249	202	0		489	46	778	129	0		953	272	164	122	0		558	131	1677	58	0		1866	-
Lights %	90.5%	98%	97.1%	0%		97%	83.6%	87.8%	94.2%	0%		88.4%	98.2%	98.8%	96.1%	0%		97.9%	94.9%	97.7%	96.7%	0%		97.5%	-
Single-Unit Trucks	3	2	3	0		8	5	60	1	0		66	1	0	2	0		3	2	25	2	0		29	-
Single-Unit Trucks %	7.1%	0.8%	1.4%	0%		1.6%	9.1%	6.8%	0.7%	0%		6.1%	0.4%	0%	1.6%	0%		0.5%	1.4%	1.5%	3.3%	0%		1.5%	-
Buses	0	2	3	0		5	3	5	7	0		15	4	2	3	0		9	4	2	0	0		6	-
Buses %	0%	0.8%	1.4%	0%		1%	5.5%	0.6%	5.1%	0%		1.4%	1.4%	1.2%	2.4%	0%		1.6%	2.9%	0.1%	0%	0%		0.3%	-
Articulated Trucks	1	1	0	0		2	1	43	0	0		44	0	0	0	0		0	1	12	0	0		13	-
Articulated Trucks %	2.4%	0.4%	0%	0%		0.4%	1.8%	4.9%	0%	0%		4.1%	0%	0%	0%	0%		0%	0.7%	0.7%	0%	0%		0.7%	-
Pedestrians	-	-	-	-	1	-	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	9	-	-
Pedestrians%	-	-	-	-	7.7%		-	-	-	-	7.7%		-	-	-	-	0%		-	-	-	-	69.2%		-
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	2	-	-
Bicycles on Crosswalk%	-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	15.4%		-
Bicycles on Road	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	-
Bicycles on Road%	-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		-

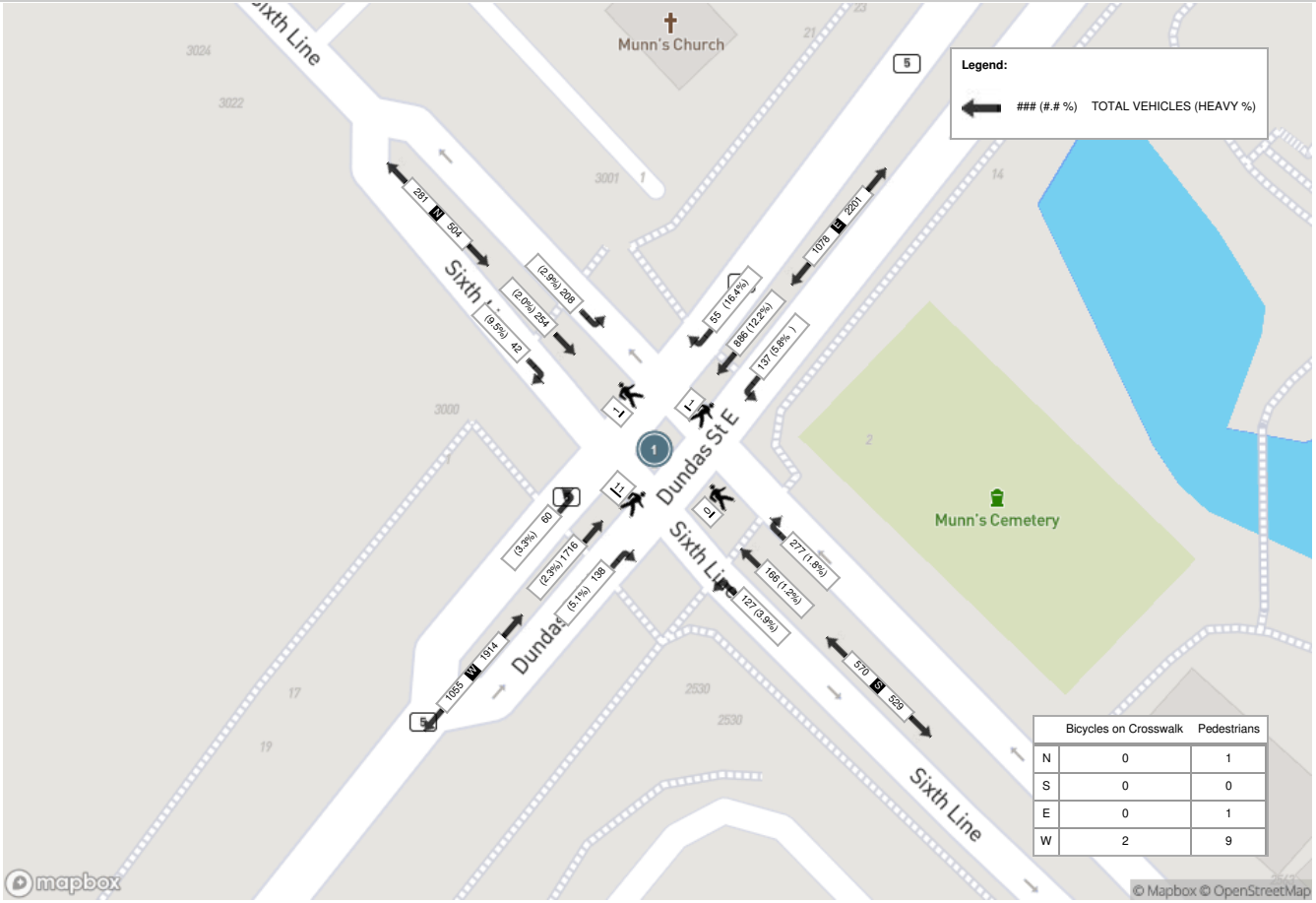
Turning Movement Count
Location Name: DUNDAS ST W & 6TH LINE
Date: Thu, Oct 25, 2018 Deployment Lead: Walter Fugaj

Peak Hour: 05:00 PM - 06:00 PM Weather: Mostly Cloudy (10.5 °C)

Start Time	N Approach 6TH LINE						E Approach DUNDAS ST W						S Approach 6TH LINE						W Approach DUNDAS ST W						Int. Total (15 min)
	Right	Thru	Left	U-Turn	Peds	Approach Total	Right	Thru	Left	U-Turn	Peds	Approach Total	Right	Thru	Left	U-Turn	Peds	Approach Total	Right	Thru	Left	U-Turn	Peds	Approach Total	
17:00:00	17	44	31	0	0	92	35	398	24	0	1	457	33	66	36	0	0	135	37	317	18	0	0	372	1056
17:15:00	19	46	28	0	1	93	32	470	35	0	0	537	42	67	37	0	0	146	35	334	26	0	0	395	1171
17:30:00	20	46	31	0	0	97	47	452	36	0	1	535	35	66	33	0	0	134	39	295	21	0	3	355	1121
17:45:00	12	42	28	0	1	82	35	458	46	0	2	539	31	64	45	0	0	140	32	293	10	0	1	335	1096
Grand Total	68	178	118	0	2	364	149	1778	141	0	4	2068	141	263	151	0	0	555	143	1239	75	0	4	1457	**4444**
Approach%	18.7%	48.9%	32.4%	0%		-	7.2%	86%	6.8%	0%		-	25.4%	47.4%	27.2%	0%		-	9.8%	85%	5.1%	0%		-	-
Totals %	1.5%	4%	2.7%	0%		8.2%	3.4%	40%	3.2%	0%		46.5%	3.2%	5.9%	3.4%	0%		12.5%	3.2%	27.9%	1.7%	0%		32.8%	-
PHF	0.85	0.97	0.95	0		0.94	0.79	0.95	0.77	0		0.96	0.84	0.98	0.84	0		0.95	0.92	0.93	0.72	0		0.92	-
Heavy	3	0	3	0		6	3	34	1	0		38	2	2	0	0		4	1	37	1	0		39	-
Heavy %	4.4%	0%	2.5%	0%		1.6%	2%	1.9%	0.7%	0%		1.8%	1.4%	0.8%	0%	0%		0.7%	0.7%	3%	1.3%	0%		2.7%	-
Lights	65	178	115	0		358	146	1744	140	0		2030	139	261	151	0		551	142	1202	74	0		1418	-
Lights %	95.6%	100%	97.5%	0%		98.4%	98%	98.1%	99.3%	0%		98.2%	98.6%	99.2%	100%	0%		99.3%	99.3%	97%	98.7%	0%		97.3%	-
Single-Unit Trucks	1	0	2	0		3	1	21	0	0		22	2	1	0	0		3	0	22	1	0		23	-
Single-Unit Trucks %	1.5%	0%	1.7%	0%		0.8%	0.7%	1.2%	0%	0%		1.1%	1.4%	0.4%	0%	0%		0.5%	0%	1.8%	1.3%	0%		1.6%	-
Buses	0	0	1	0		1	2	3	1	0		6	0	1	0	0		1	1	0	0	0		1	-
Buses %	0%	0%	0.8%	0%		0.3%	1.3%	0.2%	0.7%	0%		0.3%	0%	0.4%	0%	0%		0.2%	0.7%	0%	0%	0%		0.1%	-
Articulated Trucks	2	0	0	0		2	0	10	0	0		10	0	0	0	0		0	0	15	0	0		15	-
Articulated Trucks %	2.9%	0%	0%	0%		0.5%	0%	0.6%	0%	0%		0.5%	0%	0%	0%	0%		0%	0%	1.2%	0%	0%		1%	-
Pedestrians	-	-	-	-	2	-	-	-	-	-	4	-	-	-	-	-	0	-	-	-	-	-	4	-	-
Pedestrians%	-	-	-	-	20%		-	-	-	-	40%		-	-	-	-	0%		-	-	-	-	40%		-
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
Bicycles on Crosswalk%	-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		-
Bicycles on Road	0	2	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	-
Bicycles on Road%	-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		-

Turning Movement Count
Location Name: DUNDAS ST W & 6TH LINE
Date: Thu, Oct 25, 2018 Deployment Lead: Walter Fugaj

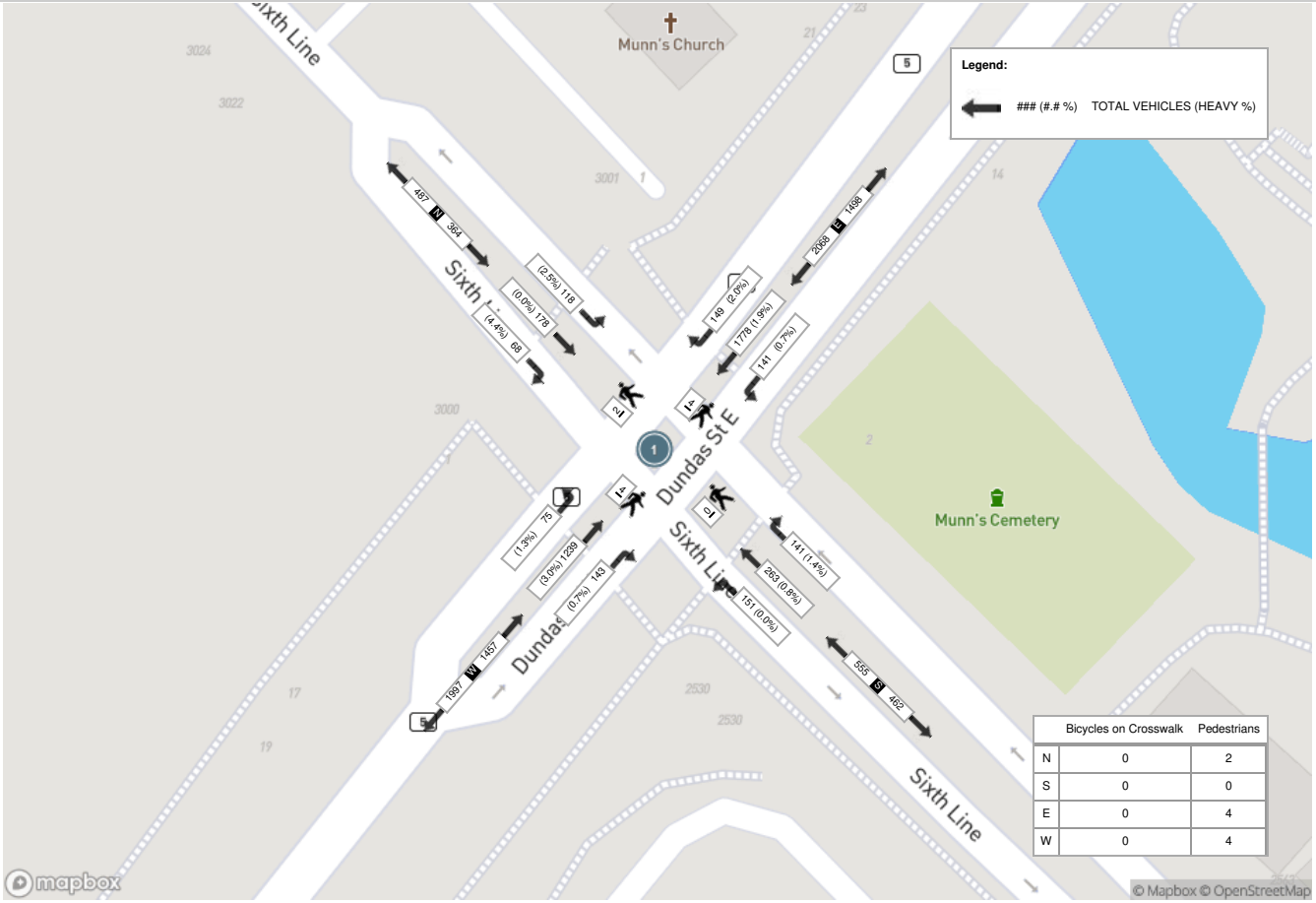
Peak Hour: 07:45 AM - 08:45 AM Weather: Mostly Cloudy (3 °C)



	Bicycles on Crosswalk	Pedestrians
N	0	1
S	0	0
E	0	1
W	2	9

Turning Movement Count
Location Name: DUNDAS ST W & 6TH LINE
Date: Thu, Oct 25, 2018 Deployment Lead: Walter Fugaj

Peak Hour: 05:00 PM - 06:00 PM Weather: Mostly Cloudy (10.5 °C)



	Bicycles on Crosswalk	Pedestrians
N	0	2
S	0	0
E	0	4
W	0	4

Technical Memorandum

To:	Syed Rizvi – Town of Oakville	Date:	2021-11-18
Cc:	Kevin Singh – ARGO Development Corporation Christopher Gordon – CGH Transportation		
From:	Mark Crockford, P.Eng.	Project Number:	2019-78

Re: Argo West Morrison Creek – Neighbourhood 9/10/11 Transportation Impact Study Addendum

1 Introduction

To support several residential developments in the Neighbourhood 9/10/11 areas of North Oakville, a Transportation Impact Study (TIS) was prepared and finalized in late May 2020. This study used the initial concept plan for each development to develop a TIS that examined the overall impact of the subject developments on the transportation network. The Neighbourhood 9/10/11 TIS, referred to herein as the TIS, forms the basis for this memo. This addendum acts as a covering letter for the Neighbourhood 9/10/11 TIS.

This addendum has been prepared to support Argo's West Morrison Creek development and will examine the changes between the original concept plan considered in the TIS and the current plan that is being put forward. This includes examining the unit count and type, preparing an updated trip generation (using the same factors as those presented in the TIS), and, if significant changes to the trip generation are noted, providing updated Synchro results at key Study Area intersections.

2 Site Plan Comparison

The original concept plan considered in the TIS is included as Attachment 1. The updated plan, to be analyzed through this memo, is included as Attachment 2. Table 1 summarizes the unit count changes between the original concept and the updated plan.

Table 1: Land Use Statistic Comparison

	Single Detached LUC 210	Townhouses LUC 220	Mid-Rise LUC 221	Shopping Centre LUC 820
Original	85	162	0	0
Updated	103	90	124	140 m^2
Change	18	-72	124	140 m^2
% Change	21%	-44%	-	-

As shown above, the revised plan would reduce the townhouse units by 72 (44% of the total number of townhouses), and add 18 single detached units, 124 mid-rise apartment units, and 140 square meters of ground floor commercial space. Due to the change in unit counts the trip generation has been examined to determine if the proposed changes would significantly change relative to the trip generation originally considered. The trip generation equations and rates for the Single detached, townhouse units, and mid-rise apartment units were used in the TIS. The Shopping Centre Land Use was not considered in the original TIS but has been added for this analysis. The trip generation factors used for each of the land uses are summarized in Table 2.

Table 2: ITE Trip Generation Factor

	Single Detached LUC 210	Townhouses LUC 220	Mid-Rise LUC 221	Shopping Centre LUC 820
AM Peak	T=0.71(X)+4.8	$\ln(T) = 0.95\ln(T) - 0.51$	$\ln(T) = 0.98\ln(T) - 0.98$	1.2
PM Peak	$\ln(T) = 0.96\ln(T) + 0.20$	$\ln(T) = 0.89\ln(T) - 0.02$	$\ln(T) = 0.96\ln(T) - 0.63$	4.88

For the residential land uses, the rate equation was used in the original TIS as the rates produced using these equations were within the range of rates listed in the data statistics for each land use code. For the Shopping Centre land use, using the rate equation yielded a rate that was outside of the range of rates listed in the ITE Trip Generation Manual and uncharacteristically high, given the limited space proposed as part of this development. Therefore, the average rates were used to better reflect the trip generation of the proposed development.

Using the above trip generation rates the total trip generation for the site has been recalculated and compared to the TIS trip generation. Table 3 summarizes and compares the trip generation between the two scenarios (original and updated).

Table 3: Vehicle Trip Generation Comparison

Scenario	AM Peak Hour			PM Peak Hour		
	In	Out	Total	In	Out	Total
Original	28	90	118	94	55	149
Updated	34	104	138	112	71	182
Difference	4	8	11	12	11	23
% Difference	14%	9%	9%	13%	20%	15%

As shown above the changes to the trip generation will result in a net increase of approximately 13% in vehicle traffic from this development. Therefore, this increase in traffic necessitates a re-examination of the operational analysis of Marvin Avenue at Sixth Line and Marvin Avenue at Preserve Drive.

The updated vehicle trip generation has been applied to the study area intersections using the same assumptions as the TIS. Figure 1 illustrates the original traffic volumes at the intersections of Marvin Avenue / Access #6 at Sixth Line and Marvin Avenue / Access #6 at Preserve Drive. Figure 2 illustrates the updated traffic volumes.

Figure 1: Original Turning Movement Volumes (2024 Horizon)

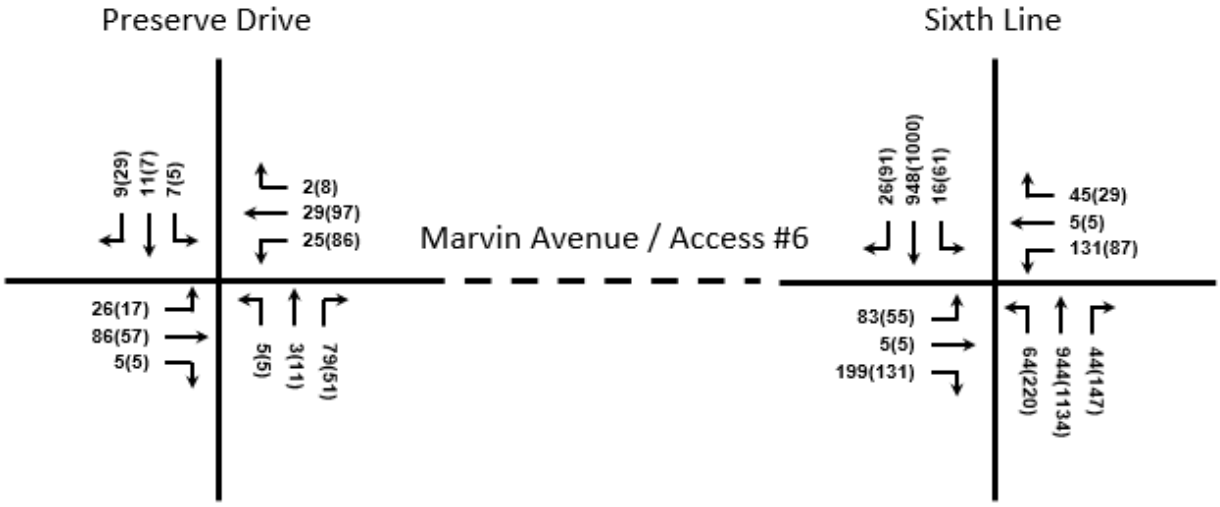
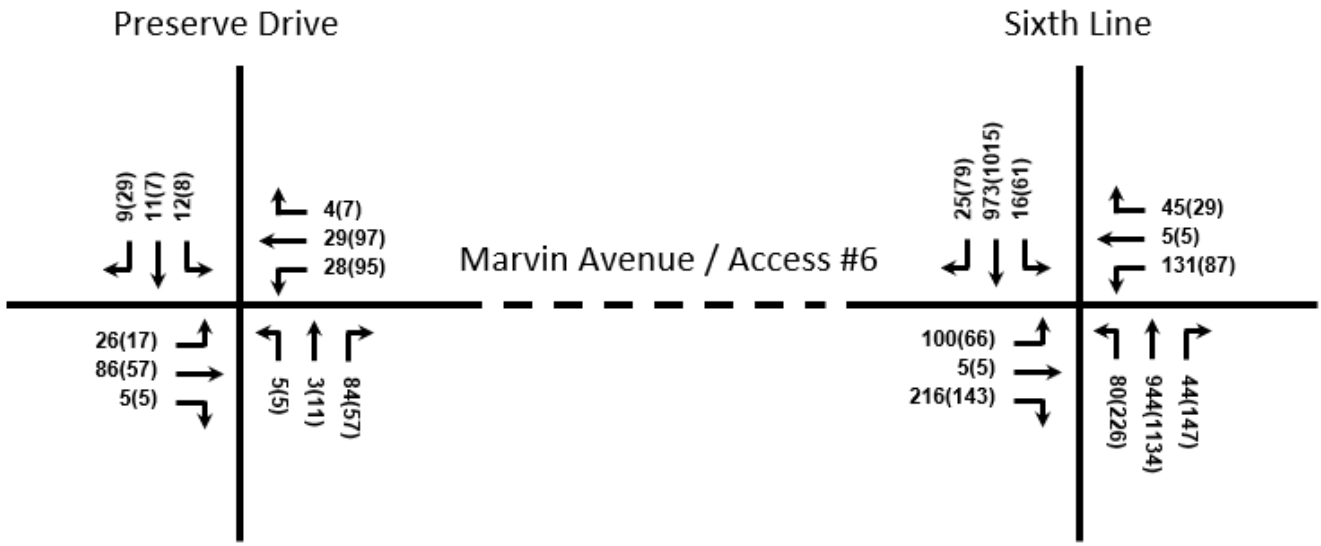


Figure 2: Updated Turning Movement Volumes (2024 Horizon)



While the differences between the original and updated volumes are minor, the Synchro analysis for these intersections has been updated to ensure that the analysis results are accurate. The Synchro parameters and analysis assumptions used in the TIS have been carried forward and only the turning movement volumes have been changed. The comparison of the operational analysis is presented in Table 4. The TIS Analysis Synchro Worksheets can be found in Attachment 3 and the Updated Analysis Synchro Worksheets can be found in Attachment 4.

Table 4: Operational Analysis Comparison

Intersection	Mvmnt	AM Peak Hour					PM Peak Hour				
		LOS	V/C	Del. (s)	Q (50th)	Q (95th)	LOS	V/C	Del. (s)	Q (50th)	Q (95th)
Marvin Avenue / Access #6 & Sixth Line (Signalized)	**TIS Analysis**										
	Overall	B	-	13	-	-	B	-	12	-	-
	Updated Analysis										
	Overall	B	-	12	-	-	B	-	14	-	-
Marvin Avenue / Access #6 & Sixth Line (All-way Stop Control)	**TIS Analysis**										
	EBL/T/R	A	0.15	8	-	4	A	0.11	8	-	3
	WBL/T/R	A	0.07	8	-	2	A	0.25	9	-	8
	Updated Analysis										
	EBL/T/R	A	0.15	8	-	4	A	0.11	8	-	3
	WBL/T/R	A	0.08	8	-	2	A	0.26	9	-	8

As shown above the incremental change of traffic, while increased by 13% from the previous version, has a minimal impact on the operational analysis of both intersections. As the results for 2024 remain consistent with the TIS it can be concluded that the 2030 analysis will have a similar result and there is no need to re-examine the results for the 2030 horizon. Therefore, the result of the original TIS remain valid with respect to the ARGO Lands' proposed development.

3 Parking Justification

As part of the planning rationale, a parking plan has been prepared and is further justified herein. This section will examine the parking provisions and compare them to the North Oakville Parking Zoning By-Law requirements. A parking summary can be seen in Table 5.

Table 5: Parking Summary

Land Use	Parking Rate	Min/Max	Units	Parking Required	Parking Provided	Meets Requirement?
Single Detached	2.0 / unit	Minimum	92	≥ 184	184	Yes
Townhouse	1.0 / unit	Minimum	86	≥ 86	86	Yes
Apartment	1.25 / unit	Maximum	124	≤ 155	131	Yes
Visitor	0.2 / unit	Maximum	124	≤ 25	25	Yes
Non-residential portion of mixed-use building	1 / 30 m^2	Minimum	140 m^2	≥ 5	5	Yes

As can be seen in Table 5, all parking provisions meet the By-Law Requirements.

For the mid-rise building, parking was provided at a rate of 1.01 resident stall per unit, which does not exceed the maximum recommended rate. To ensure that the proposed parking rate will satisfy the parking demand, a proxy site has been reviewed to determine a suitable parking rate. 5220 Lakeshore Road, which is used for comparison, is a 12-storey residential tower with surface and underground parking. This building is located adjacent to low-rise suburban development, similar to the subject development. The site was surveyed on May 28, 2019. Through that survey a parking demand rate of 0.93 parking stalls per unit plus 0.09 visitor parking stalls per unit, for a combined parking rate of 1.01 parking stalls per unit. The survey results and calculation table are included in Attachment 5. Based on the proxy site survey, the proposed parking rate of 1.01 parking stalls plus 0.2 visitor stalls per unit will adequately serve the proposed site.

It is anticipated that many of the trips to the commercial component of the proposed development will be made by the residents of the mixed-use building. Thus, the minimum required number of parking spaces will be provided for the non-residential component of the mixed-use building. As the underground visitor parking will be publicly accessible, retail users will also have access to underground visitor parking. This will accommodate any fluctuation in visitor and retail parking demand throughout the day. For example, if the retail parking demand were to exceed five parking stalls during the day, the underground visitor parking area would accommodate any retail parking overflow.

Additionally, seven on-street parking stalls located immediately adjacent to the proposed mixed-use development, and 22 on-street parking stalls along the opposite site of Street 'A' can be utilized by the mixed-use building patrons or visitors throughout the day. The On-Street Parking Concept Plan, prepared by Korsiak, is included in Attachment 6.

4 Site Specific Transportation Review

This memo has been prepared to address some site-specific considerations for Argo's West Morrison Creek including Transit Facilities Plan, Road Cross-Sections, Pedestrian Circulation Plan, Cycling Facilities Plan, and Parking Provisions.

4.1 Transit Facilities Plan

A Transit Facilities Plan was created as part of the Neighbourhood 9/10/11 TIS. The Transit Facilities Plan has been recreated, focusing on the West Morrison Creek Development. This plan is included in Drawing 001, Attachment 7. Per the Transit Facilities Plan, all of the residential units are within 400 metres of at least one proposed transit station.

4.2 Road Cross-sections

The proposed right-of-ways and cross-sections are illustrated in Drawing 002, Attachment 7. These cross-sections are proposed to be consistent with the North Oakville Urban Design and Open Space Guidelines. The cross-sections used in this plan from these guidelines have been included in Attachment 8.

4.3 Pedestrian Concept Plan

A pedestrian circulation plan has been created to illustrate the sidewalk locations. Sidewalk provisions are generally per the road cross-section. Drawing 003, Attachment 7, illustrates the sidewalk locations and key pedestrian crossing locations.

4.4 Cycling Facilities Plan

A Cycling Facilities Plan was created as part of the Neighbourhood 9/10/11 TIS. The Cycling Facilities Plan has been recreated, focusing on the West Morrison Creek Development. This plan is included in Drawing 004, Attachment 7. Per the Cycling Facilities Plan, a signed route is provided along Marvin Avenue and a bicycle lane is provided along Sixth Line.

5 Conclusions

The proposed development concept has been refined since the original TIS was prepared. This addendum has verified that the changes to the unit counts and land uses will have no impact on the operational analysis and that the Neighbourhood 9/10/11 TIS remains valid.

This addendum has also addressed the site-specific issues including, parking, multi-modal transportation facilities, and roadway cross-sections. Through the plans prepared as part of this work it has been shown that the proposed development will have adequate cycling, pedestrian, and transit facilities and that the proposed right of ways are sufficient to support the appropriate cross-sections.

If you have any questions or comments, please do not hesitate to contact the undersigned.

Prepared By:

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AECOM Imagine it. Delivered.

Fernbrook Homes (Seven Oaks 2021) Ltd Block 415, Town of Oakville
Traffic Brief

February 25, 2022

Statement of Qualifications and Limitations

The attached Report (the "Report") has been prepared by AECOM Canada Ltd. ("AECOM") for the benefit of the Client ("Client") in accordance with the agreement between AECOM and Client, including the scope of work detailed therein (the "Agreement").

The information, data, recommendations and conclusions contained in the Report (collectively, the "Information"):

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- represents AECOM's professional judgement in light of the Limitations and industry standards for the preparation of similar reports;
- may be based on information provided to AECOM which has not been independently verified;
- has not been updated since the date of issuance of the Report and its accuracy is limited to the time period and circumstances in which it was collected, processed, made or issued;
- must be read as a whole and sections thereof should not be read out of such context;
- was prepared for the specific purposes described in the Report and the Agreement; and
- in the case of subsurface, environmental or geotechnical conditions, may be based on limited testing and on the assumption that such conditions are uniform and not variable either geographically or over time.

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AECOM: 2015-04-13

Quality information

Prepared by	Checked by	Verified by	Approved by
Ilya Sher David Rahikka	Ilya Sher CET LEL	Ilya Sher CET LEL	Ilya Sher CET LEL

Revision History

Revision	Revision date	Details	Authorized	Name	Position

Distribution List

# Hard Copies	PDF Required	Association / Company Name

Table of Content

Figures

Tables

Appendices

1. Introduction

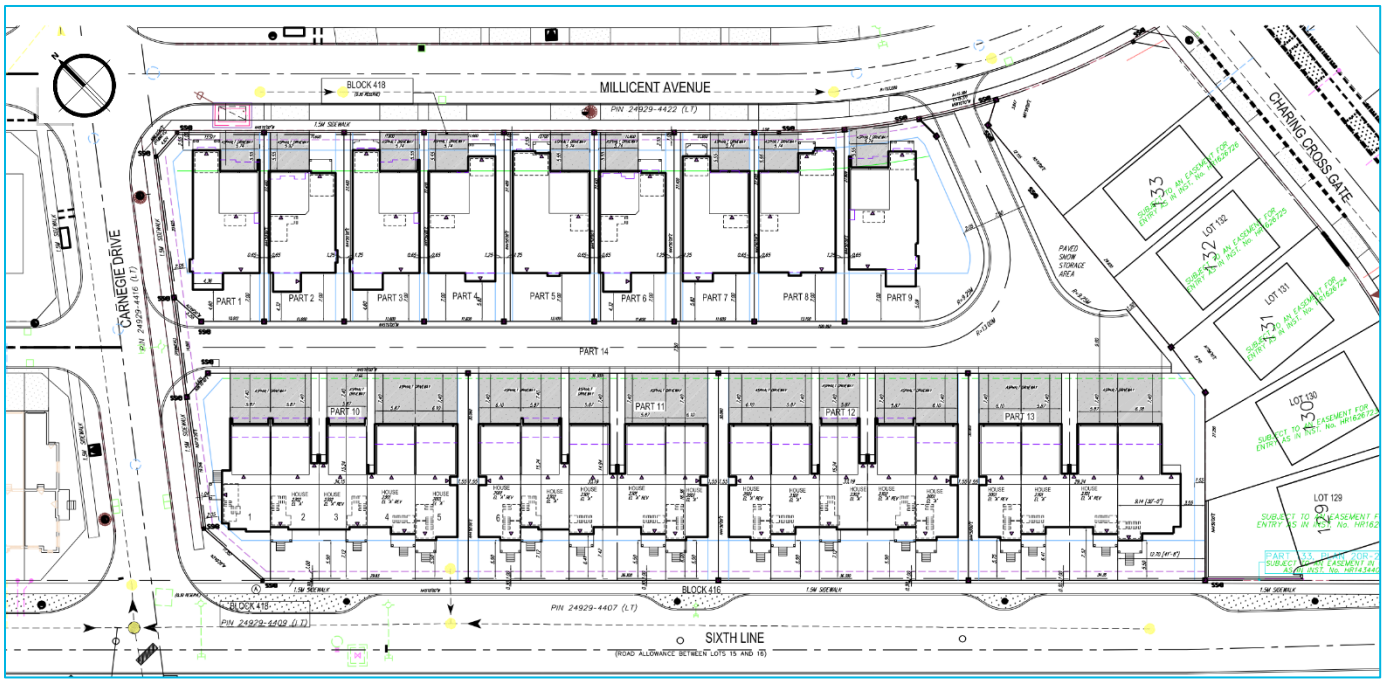
AECOM has been retained by Fernbrook Homes (Seven Oaks 2021) Ltd. to prepare a Traffic Impact Brief for a proposed residential block as part of the Sixth Line Development in the Town of Oakville (the Town). The proposed residential development block is located in the southeast quadrant of the intersection of Carnegie Drive and Sixth Line.

The Traffic Impact Brief encompasses the following:

- Description and trip generation associated with the residential block
- On-street parking plan
- Internal Functional Plan
- Swept path analysis (waste collection vehicle)

The subject site comprises nine single family detached dwelling units and 19 townhomes. The Block 415 site plan is shown in **Figure 1**.

Figure 1: Site Plan



2. Site Description and Trip Generation

As noted above, the subject site includes a total of 28 residential units: nine detached single family units and 19 townhomes. Trip generation was based on the ITE Trip Generation Manual (10th Edition) and applicable land uses: LUC 210 Single Family Detached and LUC 220 Multifamily Housing (Low-Rise) or Townhomes. **Table 1** summarizes the Trip Generation for the subject site.

Table 1. Trip generation Summary

Description/ITE Code	Dwelling Units	Calculation Method	Trip Generation Rates & Distributions						Total Trips		InboundOutbound			
			AM	PM	AM In	AM Out	PM In	PM Out	AM Peak	PM Peak	AM In	AM Out	PM In	PM Out
Single Family Detached Housing (210)	9	Fitted Curve Equation	0.54	0.77	23%	77%	63%	37%	5	7	1	4	4	3
		Average Rate	*0.46*	*0.56*					4	5	1	3	3	2
Multifamily Housing (Low-Rise) (220)	19	Fitted Curve Equation	0.96	0.88	25%	75%	63%	37%	18	17	5	14	11	6
		Average Rate	*0.74*	*0.99*					14	19	4	11	12	7
ITE Trip Generation Manual, 10th Edition								***Maximum:***	**23**	**26**	**6**	**17**	**16**	**10**

A total of 23 trips are expected in the AM peak hour, while in the PM peak hour up to 26 trips are expected to be generated. This translates to six inbound and 17 outbound trips in the AM peak hour, and 16 inbound and ten outbound trips in the PM peak hour.

Access to/from the townhomes is provided via a laneway to either Carnegie Drive or Millicent Avenue. Driveways of the fully detached houses are on Millicent Avenue. The laneway is expected to carry up to 19 vehicles in the peak hour.

3. On-Street Parking

The Site was reviewed with respect to available private and on-street parking to accommodate homeowners and visitors. Each dwelling unit (single family detached and townhome) has a two-car garage and a driveway that can accommodate up to two additional vehicles. This translates to 112 private parking spaces. It should be noted that the current Town of Oakville parking-Bylaw requires a minimum of two parking spaces per single family detached dwelling unit and one space per townhome. The provided private parking for the subject site exceeds the minimum requirement.

Visitors parking is provided along the east side of Millicent Avenue as well as via layby parking on Sixth Line (east side). An on-street parking plan is provided in Appendix A. A total of 17 on-street parking spaces are provided. It should be noted that on-street parking along Millicent Drive is shared with residents on both sides of the street. A total of 18 houses (driveways) are on Millicent Drive between Carnegie Drive and Charing Cross Gate. It can be estimated that the 17 on-street parking spaces provided on Millicent Drive between Carnegie Drive and Charing Cross Gate, and layby parking on the east side of Sixth Line will accommodate a total of 37 residential units, which translates to 0.46 parking (visitors') spaces per unit.

The subject site does not have any parking deficiencies.

4. Transportation Function Design

AECOM Canada undertook a comprehensive transportation functional design of the entire Sixth Line development in 2017 as part of the original transportation study. The design was consequently approved and accepted by the Town. The Transportation Functional Design for the subject residential block builds on the previously prepared overall plan.

The original plan illustrated stop sign control on Carnegie Drive at Sixth Line and also on Millicent Avenue at Carnegie Drive. The addition of the laneway will require traffic on the laneway to be stop-controlled at Carnegie Drive and at Millicent Avenue. It should be noted that the laneway will form the fourth leg at the intersection on Carnegie Drive with a laneway on the opposite side, approximately 35 metres east of the Sixth Line. As per Site Design and Development Standards for Oakville "*street access driveway entrances should be located opposite existing or proposed municipal roadways, private laneways and other street access driveways to avoid offset intersection conditions*". The proposed design meets this requirement.

On-street parking is prohibited on the west side of Millicent Drive and on both sides along the laneway. The laneway ROW width is 7.5 metres and the pavement width is 5.6 metres. There are no sidewalks along the laneway.

5. Swept Path Analysis

A swept path analysis of a waste collection vehicle was performed for the laneway. A front-loader waste collection design vehicle was used in the analysis. The analysis was undertaken using the AutoTURN software package. The laneway alignment is such that it has a horizontal bend (street elbow) to provide a connection between Carnegie Drive with Millicent Avenue. In order to improve the radius of this bend in the road, a hammerhead design for the laneway is proposed to accommodate access to the two south most residential units. As such, the waste collection vehicle is expected to have to back up for a short distance once collected waste from the last two units. Although backing up of a waste collection vehicle is typically not desirable, given the trade-off, the short back up is deemed to be acceptable. It should be noted that the proposed lane was designed in consultation with Town and Region staff, including considerations for snow clearance and waste collection truck maneuvering.

Fire truck route is via Sixth Line for the townhomes and Millicent Avenue for the single family detached units. There are no fire hydrants on the laneway and fire trucks are not expected to use the laneway.

APPENDIX D

TTS Mode Split and Trip Distribution

Thu Oct 19 2023 11:53:25 GMT-0400 (Eastern Daylight Time) - Run Time: 2681ms

Cross Tabulation Query Form - Trip - 2016 v1.1

Row: Type of dwelling unit - dwell_type
Column: Primary travel mode of trip - mode_prime

Filters:
(2006 GTA zone of household - gta06_hhld In 4025,4026, 4028-4038, 4181-4183
and
Trip purpose - trip_purp In 1,2)

Trip 2016
Table:

	Transit excluding GO rail	Cycle	Auto driver	GO rail only	Joint GO rail and local transit	Motorcycle	Other	Auto passenger	School bus	Taxi passenger	Paid rideshare	Walk	
House	1370	1702	25845	3558	1483	45	0	5049	2600	49	34	4714	
Apartment	357	35	3052	121	38	0	0	265	130	15	0	819	4832
Townhouse	563	109	6143	461	472	0	75	1078	446	14	0	1691	

Auto Driver	66%
Auto Passenger	6%
Transit	11%
Walk	17%
Cycle	1%
	100%

Thu Oct 19 2023 12:02:13 GMT-0400 (Eastern Daylight Time) - Run Time: 2589ms

Cross Tabulation Query Form - Trip - 2016 v1.1

Row: Type of dwelling unit - dwell_type
Column: Primary travel mode of trip - mode_prime

Filters:
(2006 GTA zone of household - gta06_hhld In 4025,4026, 4028-4038, 4181-4183
and
Trip purpose - trip_purp In 3,)

Trip 2016
Table:

	Transit exc	Cycle	Auto driver	GO rail onl	Joint GO ra	Motorcycl	Other	Auto passe	School bus	Taxi passe	Walk	
House	339	249	35112	280	139	62	0	8454	30	119	743	45527
Apartment	609	0	4229	50	0	0	50	1020	0	0	281	6189
Townhouse	225	191	7269	0	69	0	0	1966	0	49	266	10035
	1173	440	46610	330	208	62	50	11440	30	168	1290	61751

Auto Driver	76%
Auto Passenger	19%
Transit	2%
Walk	2%
Cycle	1%
	100%

Sun Oct 29 2023 17:56:29 GMT-0400 (Eastern Daylight Time) - Run Time: 2798ms

Cross Tabulation Query Form - Trip - 2016 v1.1

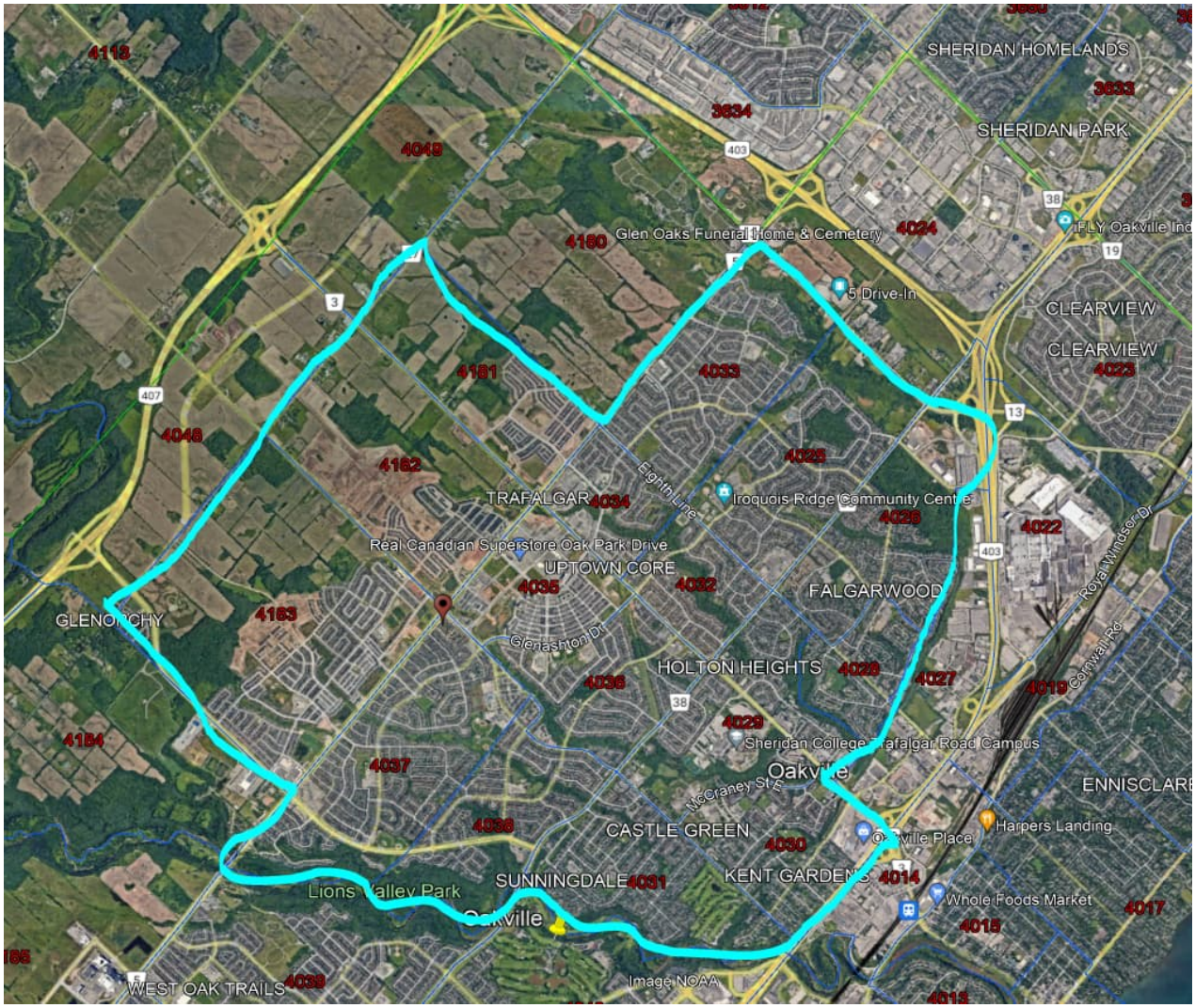
Row: Type of dwelling unit - dwell_type
Column: Primary travel mode of trip - mode_prime

Filters:
(2006 GTA zone of destination - gta06_dest In 4025,4026, 4028-4038, 4181-4183
and
Trip purpose - trip_purp In 1,)

Trip 2016
Table:

	Transit excluding GO rail	Cycle	Auto driver	GO rail only	Joint GO rail and local transit	Motorcycle	Auto pa	Taxi passenger	Paid rideshar	Walk	
House	472	45	16902	1731	597	22	1119	30	86	125	21129
Apartment	250	17	2919	58	24	0	314	0	0	96	3678
Townhouse	142	0	3854	222	214	0	383	0	0	193	5008
	864	62	23675	2011	835	22	1816	30	86	414	29815

Auto Driver	86%
Auto Passenger	6%
Transit	6%
Walk	1%
Cycle	0%
	100%


SHERIDAN HOMELANDS
SHERIDAN PARK
Glen Oaks Funeral Home & Cemetery
5 Drive-In
CLEARVIEW
CLEARVIEW
TRAFALGAR
Eighth Line
Iroquois Ridge Community Centre
Real Canadian Superstore Oak Park Drive
UPTOWN CORE
FALGARWOOD
GLENORCHY
Glenashton Dr
HOLTON HEIGHTS
Sheridan College Trafalgar Road Campus
Oakville
McCraney St E
CASTLE GREEN
Harpers Landing
KENT GARDENS
SUNNINGDALE
Lions Valley Park
Whole Foods Market
WEST OAK TRAILS
Image NOAA
Royal Windsor Dr
Cornwall Rd
ENNISCLARE

Mon Oct 16 2023 11:14:19 GMT-0400 (Eastern Daylight Time) - Run Time: 2813ms

Cross Tabulation Query Form - Trip - 2016 v1.1

Row: Planning district of origin - pd_orig
Column: 2006 GTA zone of destination - gta06_dest

Filters:
(2006 GTA zone of household - gta06_hhld In 4025,4026, 4028-4038, 4181-4183
and
Trip purpose of destination - purp_dest In H
and
Start time of trip - start_time In 1500-1900
and
Primary travel mode of trip - mode_prime In D,)

Trip 2016
Table:

	Destination														Total	Trip Distribution		Trip Assignment				
Origin	4025	4026	4028	4029	4030	4031	4032	4033	4034	4035	4036	4037	4038	4183	from	%	Direction From	From North	From South	From East	From West	Predicted Route
PD 1 of To	76	31	11	0	25	0	24	82	0	53	0	93	81	76	552	3%	E			3%		Dundas St E SB
PD 2 of To	0	34	13	0	105	0	0	75	0	8	18	0	32	0	285	1%	E			1%		Dundas St E SB
PD 3 of To	8	0	17	0	0	0	0	107	0	0	0	0	0	27	159	1%	E			1%		Dundas St E SB
PD 4 of To	54	0	11	18	0	0	0	0	0	0	23	0	0	11	117	1%	E			1%		Dundas St E SB
PD 5 of To	0	0	0	13	0	0	0	0	0	0	0	0	24	21	58	0%	E			0%		Dundas St E SB
PD 7 of To	0	0	0	0	15	0	0	0	0	0	0	0	0	18	33	0%	E			0%		Dundas St E SB
PD 8 of To	37	57	0	77	21	60	24	25	18	14	50	19	0	97	499	2%	E			2%		Dundas St E SB
PD 9 of To	0	43	20	0	0	12	0	0	0	0	0	12	29	0	116	1%	E			1%		Dundas St E SB
PD 10 of T	8	0	0	31	9	0	0	11	0	12	11	98	20	0	200	1%	E			1%		Dundas St E SB
PD 11 of T	0	0	0	0	0	0	36	42	0	12	9	0	0	20	119	1%	N	1%				Dundas St E SB
PD 12 of T	0	0	0	0	0	0	0	0	0	0	0	0	0	44	44	0%	N	0%				Dundas St E SB
PD 13 of T	0	0	0	0	0	0	0	0	14	0	0	0	0	22	36	0%	N	0%				Dundas St E SB
PD 16 of T	0	0	0	17	0	0	0	0	0	0	0	0	0	45	62	0%	N	0%				Dundas St E SB
Whitby	0	0	0	0	0	0	0	15	0	0	0	0	0	0	15	0%	E			0%		Dundas St E SB
4001	0	0	0	0	0	0	0	18	0	0	0	0	0	0	18	0%	S		0%			Dundas St E SB
4002	0	8	0	31	0	0	0	41	0	0	0	82	0	0	162	1%	S		1%			Dundas St E NB
4003	19	31	13	0	13	0	0	0	25	0	0	52	0	32	185	1%	S		1%			Kaitiling Trail NB
4005	11	6	0	0	0	0	0	0	0	29	0	19	0	9	74	0%	S		0%			Kaitiling Trail NB
4006	0	0	0	0	14	0	13	24	0	8	16	0	0	0	75	0%	S		0%			Kaitiling Trail NB
4007	0	10	0	0	0	0	13	11	14	0	0	0	0	0	48	0%	S		0%			Kaitiling Trail NB
4008	44	0	0	0	0	32	0	0	11	0	33	161	25	19	325	2%	S		2%			Kaitiling Trail NB
4009	75	0	0	0	28	0	34	0	0	20	16	73	29	23	298	1%	S		1%			Kaitiling Trail NB
4011	14	0	0	13	52	0	0	0	0	0	0	0	0	13	92	0%	S		0%			Kaitiling Trail NB
4012	19	0	34	0	36	57	13	0	14	0	49	25	0	0	247	1%	S		1%			Kaitiling Trail NB
4014	4	5	48	72	15	65	34	0	14	26	52	119	0	17	471	2%	S		2%			Dundas St E SB
4015	10	0	0	0	0	0	0	29	0	0	0	0	0	15	54	0%	S		0%			Sixth Line WB
4016	5	13	0	15	17	20	32	0	80	85	0	0	0	0	267	1%	S		1%			Dundas St E SB
4017	0	22	0	0	0	0	0	14	0	0	0	24	0	49	109	1%	S		1%			Dundas St E SB
4018	19	27	0	0	0	0	0	0	29	0	0	0	0	0	75	0%	S		0%			Sixth Line WB
4019	0	0	0	0	0	0	0	0	0	11	0	0	0	45	56	0%	E			0%		Sixth Line WB
4020	0	0	0	0	0	0	0	0	0	0	0	0	24	0	24	0%	E			0%		Dundas St E SB
4021	0	0	0	0	0	156	19	0	0	0	0	0	0	0	175	1%	E			1%		Dundas St E SB
4022	0	37	0	0	26	0	24	0	0	0	0	0	0	0	87	0%	E			0%		Dundas St E SB
4023	33	7	0	32	0	0	0	14	0	16	0	51	0	46	199	1%	E			1%		Sixth Line WB
4024	155	70	0	5	152	0	18	132	11	23	61	0	0	114	741	3%	N	3%				Dundas St E SB
4025	306	58	26	34	31	0	30	178	71	10	34	0	0	10	788	4%	E			4%		Dundas St E SB
4026	8	0	0	0	0	0	20	8	0	0	39	0	31	0	106	0%	E			0%		Sixth Line WB
4027	0	14	53	121	40	44	14	0	36	11	43	0	51	10	437	2%	E			2%		Sixth Line WB
4028	0	18	17	0	0	0	0	0	0	0	0	0	0	0	35	0%	E			0%		Sixth Line WB
4029	128	85	0	64	13	20	0	0	0	0	0	70	0	31	411	2%	E			2%		Sixth Line WB
4030	27	13	11	50	180	109	0	0	36	0	21	73	17	22	559	3%	S		3%			Sixth Line WB
4031	0	0	0	0	13	30	0	0	0	0	0	74	31	0	148	1%	S		1%			Sixth Line WB
4032	0	0	0	0	0	0	0	14	0	0	14	0	0	0	28	0%	E			0%		Sixth Line WB
4033	14	0	0	12	0	0	0	174	0	23	0	0	0	0	223	1%	N	1%				Dundas St E SB
4034	35	14	11	11	11	39	0	207	0	104	13	47	36	59	587	3%	N	3%				Dundas St E SB
4035	51	0	0	124	14	65	35	75	117	71	45	177	46	57	877	4%	E			4%		Sixth Line EB
4036	20	41	0	0	0	24	0	0	0	21	34	18	0	18	176	1%	E			1%		Sixth Line EB
4037	8	34	0	0	0	0	54	73	0	11	65	208	12	31	496	2%	E			2%		Kaitiling Trail NB
4038	0	0	0	0	33	0	0	0	0	0	0	16	0	12	61	0%	S		0%			Sixth Line WB
4039	14	0	0	0	0	13	0	8	0	0	0	76	29	0	140	1%	S		1%			Dundas St E NB
4040	9	14	0	8	0	10	42	0	0	26	0	0	0	18	127	1%	S		1%			Sixth Line WB
4041	115	0	0	0	0	13	0	0	28	0	8	111	0	96	371	2%	S		1%			Dundas St E NB
																	S		1%			Kaitiling Trail NB
4042	0	0	0	0	0	0	0	0	0	18	0	16	0	14	48	0%	S		0%			Kaitiling Trail NB
4045	0	0	0	0	0	20	0	0	0	0	35	0	0	0	55	0%	S		0%			Kaitiling Trail NB
4180	6	0	0	0	0	0	0	0	0	0	0	0	0	0	6	0%	N	0%				Sixth Line EB
4183	0	0	0	0	0	0	30	22	0	0	14	16	40	234	356	2%	W				2%	Sixteen Mile Dr NB
4184	0	0	0	0	0	0	0	0	0	0	0	24	0	0	24	0%	W				0%	Kaitiling Trail NB
4185	32	0	0	26	6	0	0	9	39	55	0	0	0	18	185	1%	S		1%			Kaitiling Trail NB
4186	6	0	0	0	0	0	14	19	0	20	0	0	0	38	97	0%	S		0%			Kaitiling Trail NB
Oshawa	0	0	0	0	0	0	0	0	0	0	0	0	0	19	19	0%	E			0%		Dundas St E SB
Richmond	0	0	0	0	0	0	0	0	0	0	0	56	0	0	56	0%	N	0%				Dundas St E SB
Markham	64	0	0	19	0	0	0	19	11	26	0	0	0	0	139	1%	N	1%				Dundas St E SB
Vaughan	33	10	0	55	18	0	0	0	0	0	0	88	32	76	312	1%	N	1%				Dundas St E SB
Caledon	0	0	0	0	19	0	0	0	0	0	0	0	0	0	19	0%	N	0%				Dundas St E SB
Brampton	8	93	36	11	117	25	42	95	14	29	54	131	52	67	774	4%	N	4%				Dundas St E SB
Mississaug	249	249	183	362	202	253	107	804	236	213	358	752	402	915	5285	24%	E			8%		Dundas St E SB
																	E			8%		Sixteen Mile Dr NB
																	E			8%		Sixth Line EB
Halton Hills	73	0	0	32	0	0	32	0	53	22	0	26	0	0	238	1%	W				1%	Sixth Line EB
Milton	0	0	0	47	0	96	13	76	20	9	0	23	0	20	304	1%	W				1%	Dundas St E NB
Burlington	41	33	0	116	77	16	43	82	0	101	83	63	45	59	759	4%	S		2%			Sixth Line WB
																	S		2%			Sixteen Mile Dr NB
Flamboroug	0	0	0	0	0	0	0	115	0	0	0	17	0	0	132	1%	W				1%	Dundas St E NB
Glanbrook	0	0	0	0	0	0	0	0	0	0	0	32	0	0	32	0%	S		0%			Sixth Line WB
Hamilton	41	11	0	25	0	15	36	117	25	0	12	39	31	146	498	2%	S		2%			Sixth Line WB
Grimsby	0	0	0	0	0	0	0	0	0	0	0	14	0	0	14	0%	S		0%			Sixth Line WB
Lincoln	0	0	29	0	0	0	0	0	0	0	0	0	0	0	29	0%	S		0%			Sixth Line WB
Niagara-on	0	0	0	0	0	0	0	0	0	0	0	0	0	16	16	0%	S		0%			Sixth Line WB
St. Catharı	0	0	0	0	0	0	0	9	0	0	0	0	0	27	36	0%	S		0%			Sixth Line WB
Niagara Fa	0	0	0	0	0	0	0	0	0	0	0	29	0	0	29	0%	S		0%			Sixth Line WB
Waterloo	0	0	0	0	12	0	0	0	0	0	10	0	0	36	58	0%	W				0%	Dundas St E NB
Kitchener	0	0	0	31	0	0	0	0	0	0	0	0	0	0	31	0%	W				0%	Dundas St E NB
Cambridge	0	0	8	0	0	0	0	0	0	0	0	32	0	0	40	0%	W				0%	Dundas St E NB
City of Gue	6	0	0	37	0	0	0	0	0	0	0	42	14	0	99	0%	W				0%	Dundas St E SB
Orangeville	17	0	0	0	0	0	0	0	0	0	0	0	0	0	17	0%	N	0%				Dundas St E SB
Barrie	0	0	45	0	0	0	0	0	0	0	0	0	0	0	45	0%	N	0%				Dundas St E SB
Kawartha L	5	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0%	N	0%				Dundas St E SB
Grey	0	0	0	0	0	0	0	0	14	0	0	0	0	0	14	0%	W				0%	Dundas St E SB
Oxford	0	0	0	0	0	0	0	0	0	0	0	37	0	0	37	0%	W				0%	Dundas St E SB
Brant	0	0	0	0	0	0	0	22	80	0	0	0	0	0	102	0%	S		0%			Sixth Line WB
External	0	0	0	0	0	0	0	37	0	0	0	0	36	0	73	0%	S		0%			Sixth Line WB
															21630	100%		15%	27%	52%	6%	Check
																						100%

Res In Summary	
Direction From	%
N	15%
S	27%
E	52%
W	6%
SUM	100%

Direction From	Predicted Route	%
North	Dundas St E SB	15%
	Sixth Line EB	0%
South	Dundas St E NB	2%
	Dundas St E SB	4%
	Kaitiling Trail N	9%
	Sixth Line WB	10%
East	Sixth Line WB	2%
	Dundas St E SB	23%
	Kaitiling Trail N	2%
	Sixth Line EB	13%
	Sixth Line WB	6%
	Sixteen Mile Dr	8%
West	Dundas St E NB	3%
	Dundas St E SB	1%
	Kaitiling Trail N	0%
	Sixth Line EB	1%
	Sixteen Mile Dr	2%
SUM		100%

Dundas St E NB	5%
Dundas St E SB	42%
Sixth Line EB	14%
Sixth Line WB	18%
Kaitiling Trail NB	11%
Sixteen Mile Dr NB	10%
	100%

Mon Oct 16 2023 11:25:02 GMT-0400 (Eastern Daylight Time) - Run Time: 2566ms

Cross Tabulation Query Form - Trip - 2016 v1.1

Row: 2006 GTA zone of origin - gta06_orig
Column: 2006 GTA zone of destination - gta06_dest

Filters:
(2006 GTA zone of destination - gta06_dest In 4025,4026, 4028-4038, 4181-4183
and
Trip purpose of destination - purp_dest In H
and
Start time of trip - start_time In 1500-1900
and
Primary travel mode of trip - mode_prime In D, M
and
Planning district of origin - pd_orig In 39,)

Trip 2016
Table:

	4025	4026	4028	4029	4030	4031	4032	4033	4034	4035	4036	4037	4038	4183
4001	0	0	0	0	0	0	0	18	0	0	0	0	0	0
4002	0	8	0	31	0	0	0	41	0	0	0	82	0	0
4003	19	31	13	0	13	0	0	0	25	0	0	52	0	32
4005	11	6	0	0	0	0	0	0	0	29	0	19	0	9
4006	0	0	0	0	14	0	13	24	0	8	16	0	0	0
4007	0	10	0	0	0	0	13	11	14	0	0	0	0	0
4008	44	0	0	0	0	32	0	0	11	0	33	161	25	19
4009	75	0	0	0	28	0	34	0	0	20	16	73	29	23
4011	14	0	0	13	52	0	0	0	0	0	0	0	0	13
4012	19	0	34	0	36	57	13	0	14	0	49	25	0	0
4014	4	5	48	72	15	65	34	0	14	26	52	119	0	17
4015	10	0	0	0	0	0	0	29	0	0	0	0	0	15
4016	5	13	0	15	17	20	32	0	80	85	0	0	0	0
4017	0	22	0	0	0	0	0	14	0	0	0	24	0	49
4018	19	27	0	0	0	0	0	0	29	0	0	0	0	0
4019	0	0	0	0	0	0	0	0	0	11	0	0	0	45
4020	0	0	0	0	0	0	0	0	0	0	0	0	24	0
4021	0	0	0	0	0	156	19	0	0	0	0	0	0	0
4022	0	37	0	0	26	0	24	0	0	0	0	0	0	0
4023	33	7	0	32	0	0	0	14	0	16	0	51	0	46
4024	155	70	0	5	152	0	18	132	11	23	61	0	0	114
4025	306	58	26	34	31	0	30	178	71	10	34	0	0	10
4026	8	0	0	0	0	0	20	8	0	0	39	0	31	0
4027	0	14	53	121	40	44	14	0	36	11	43	0	51	10
4028	0	18	17	0	0	0	0	0	0	0	0	0	0	0
4029	128	85	0	64	13	20	0	0	0	0	0	70	0	31
4030	27	13	11	50	180	109	0	0	36	0	21	73	17	22
4031	0	0	0	0	13	30	0	0	0	0	0	74	31	0
4032	0	0	0	0	0	0	0	14	0	0	14	0	0	0
4033	14	0	0	12	0	0	0	174	0	23	0	0	0	0
4034	35	14	11	11	11	39	0	207	0	104	13	47	36	59
4035	51	0	0	124	14	65	35	75	117	71	45	177	46	57
4036	20	41	0	0	0	24	0	0	0	21	34	18	0	18
4037	8	34	0	0	0	0	54	73	0	11	65	208	12	31
4038	0	0	0	0	33	0	0	0	0	0	0	16	0	12
4039	14	0	0	0	0	13	0	8	0	0	0	76	29	0
4040	9	14	0	8	0	10	42	0	0	26	0	0	0	18
4041	115	0	0	0	0	13	0	0	28	0	8	111	0	96
4042	0	0	0	0	0	0	0	0	0	18	0	16	0	14
4045	0	0	0	0	0	20	0	0	0	0	35	0	0	0
4180	6	0	0	0	0	0	0	0	0	0	0	0	0	0
4183	0	0	0	0	0	0	30	22	0	0	14	16	40	234
4184	0	0	0	0	0	0	0	0	0	0	0	24	0	0
4185	32	0	0	26	6	0	0	9	39	55	0	0	0	18
4186	6	0	0	0	0	0	14	19	0	20	0	0	0	38
Oakville	1186	524	212	617	694	716	439	1068	526	589	592	1532	370	1052

Mon Oct 16 2023 14:04:05 GMT-0400 (Eastern Daylight Time) - Run Time: 3229ms

Cross Tabulation Query Form - Trip - 2016 v1.1

Row: Planning district of destination - pd_dest
Column: 2006 GTA zone of origin - gta06_orig

Filters:
(2006 GTA zone of origin - gta06_orig In 4025,4026, 4028-4031, 4181-4183
and
Trip purpose of origin - purp_orig In H
and
Start time of trip - start_time In 600-1000
and
Primary travel mode of trip - mode_prime In D,)

Trip 2016
Table:

	Destination														Total	Trip Distribution		Trip Assignment				
Origin	4025	4026	4028	4029	4030	4031	4032	4033	4034	4035	4036	4037	4038	4183	from	%	Direction	From North	From South	From East	From West	Predicted Route
PD 1 of 7	90	0	0	0	53	4	0	132	0	43	34	77	133	38	604	3%	E			3%		Dundas St E NB
PD 2 of 7	0	34	13	0	124	90	0	35	0	0	18	0	58	0	372	2%	E			2%		Dundas St E NB
PD 3 of 7	8	0	17	17	0	0	0	88	0	0	0	0	0	27	157	1%	E			1%		Dundas St E NB
PD 4 of 7	54	0	11	13	0	0	0	0	0	13	23	0	0	11	125	1%	E			1%		Dundas St E NB
PD 5 of 7	0	0	0	13	0	0	0	0	0	0	10	16	24	21	84	0%	E			0%		Dundas St E NB
PD 7 of 7	0	6	0	0	54	0	0	0	0	0	0	29	0	18	107	0%	E			0%		Dundas St E NB
PD 8 of 7	35	88	0	0	21	23	0	25	18	23	50	24	0	60	367	2%	E			2%		Dundas St E NB
PD 9 of 7	0	43	20	0	0	0	0	0	0	0	38	12	57	0	170	1%	E			1%		Dundas St E NB
PD 10 of	8	0	0	31	91	60	0	11	0	12	11	83	20	11	338	1%	E			1%		Dundas St E NB
PD 11 of	0	0	0	0	0	0	0	36	42	0	0	9	24	0	40	151	1%	N	1%			Dundas St E NB
PD 12 of	22	0	0	0	0	0	0	0	0	0	0	0	0	0	33	55	0%	N	0%			Dundas St E NB
PD 13 of	0	0	0	0	0	0	0	0	0	0	0	0	0	0	22	22	0%	N	0%			Dundas St E NB
PD 16 of	0	0	0	15	0	0	0	0	0	0	0	0	0	0	65	80	0%	N	0%			Dundas St E NB
Whitby	0	0	0	0	0	0	0	15	0	0	0	0	0	0	15	15	0%	E		0%		Dundas St E NB
Newmarke	0	0	0	0	0	0	0	0	0	6	0	0	0	0	6	0%	N	0%				Dundas St E NB
Richmond	0	0	0	0	0	0	0	0	0	0	0	56	32	0	88	0%	N	0%				Dundas St E NB
Markham	0	0	0	19	0	0	0	38	11	26	0	0	0	0	94	0%	N	0%				Dundas St E NB
Vaughan	33	10	0	55	18	30	0	66	0	0	0	49	32	96	389	2%	N	2%				Dundas St E NB
Brampton	8	93	36	7	13	84	89	118	14	17	16	131	29	100	755	3%	N	3%				Dundas St E NB
Mississaua	415	220	253	401	254	273	106	680	285	351	421	883	372	1003	5917	26%	E			9%		Dundas St E NB
																	E			9%		Sixteen Mile Dr SB
																	E			9%		Sixth Line WB
Halton Hill	0	0	0	15	14	0	0	0	53	22	4	26	0	0	134	1%	W				1%	Sixth Line WB
Milton	0	17	0	40	0	126	0	191	0	0	0	42	0	42	458	2%	W				2%	Dundas St E SB
4001	0	0	0	0	0	0	0	18	0	0	0	0	0	42	60	0%	S		0%			Sixth Line EB
4002	15	0	0	31	0	0	0	41	0	0	0	57	0	0	144	1%	S		1%			Kaitting Trail SB
4003	0	31	43	0	13	0	0	0	44	0	0	0	0	7	138	1%	S		1%			Kaitting Trail SB
4004	0	0	0	15	0	0	0	0	0	0	0	0	0	0	15	0%	S		0%			Kaitting Trail SB
4005	0	0	0	0	0	0	0	0	0	20	0	0	0	46	66	0%	S		0%			Kaitting Trail SB
4006	0	0	0	6	6	0	0	0	0	26	0	0	0	0	38	0%	S		0%			Kaitting Trail SB
4007	0	0	0	0	0	0	13	0	0	0	0	0	24	0	37	0%	S		0%			Kaitting Trail SB
4008	0	0	0	25	12	32	13	0	11	16	12	75	0	0	196	1%	S		1%			Kaitting Trail SB
4009	141	9	0	19	55	0	34	0	0	20	25	90	29	34	456	2%	S		2%			Dundas St E SB
4011	14	0	7	6	13	0	15	37	0	0	0	12	38	13	155	1%	S		1%			Dundas St E SB
4012	47	0	0	0	36	101	30	0	14	0	17	51	0	9	305	1%	S		1%			Dundas St E SB
4014	136	5	15	30	15	50	42	15	14	26	57	103	17	86	611	3%	S		3%			Dundas St E SB
4015	0	0	0	0	0	0	0	29	0	0	0	0	0	15	44	0%	S		0%			Sixth Line EB
4016	10	0	0	15	17	30	44	0	0	10	0	0	24	0	150	1%	S		1%			Dundas St E SB
4017	22	22	0	0	0	0	0	0	0	0	48	24	0	16	132	1%	S		1%			Dundas St E SB
4018	19	27	0	13	0	0	0	0	29	0	0	0	0	14	102	0%	S		0%			Sixth Line EB
4019	0	0	0	26	0	0	0	9	0	11	0	40	0	0	86	0%	E				0%	Sixth Line EB
4021	0	0	0	0	0	96	0	0	0	0	0	0	0	0	96	0%	E				0%	Sixth Line EB
4022	0	37	0	17	0	0	24	0	0	0	0	0	0	0	78	0%	E				0%	Dundas St E NB
4023	27	0	0	32	0	0	0	14	0	30	0	51	0	46	200	1%	E				1%	Sixth Line EB
4024	151	14	0	0	18	0	16	102	21	41	18	0	0	135	516	2%	N	2%				Sixth Line EB
4025	91	77	0	66	60	107	95	343	166	28	36	40	12	0	1121	5%	E				5%	Sixth Line EB
4026	0	30	0	0	0	0	20	0	0	0	39	0	0	0	89	0%	E				0%	Sixth Line EB
4027	0	56	15	49	0	0	19	57	36	18	14	0	51	10	325	1%	E				1%	Sixth Line EB
4028	0	18	0	0	0	0	0	0	0	0	0	0	0	0	18	0%	E				0%	Sixth Line EB
4029	69	126	17	26	24	20	51	64	20	12	35	0	0	36	500	2%	E				2%	Sixth Line EB
4030	34	13	0	16	6	123	0	0	18	50	68	37	30	75	470	2%	S		2%			Kaitting Trail SB
4031	0	0	0	0	134	125	0	22	0	11	0	74	57	0	423	2%	S		2%			Dundas St E SB
4032	0	0	0	0	0	14	0	0	0	14	0	0	0	0	28	0%	E				0%	Sixth Line EB
4033	105	0	0	0	0	0	18	209	10	0	0	0	14	0	356	2%	N	2%				Sixth Line EB
4034	22	0	0	19	5	0	30	61	13	63	13	110	0	0	336	1%	N	1%				Sixth Line EB
4035	5	0	7	51	15	0	20	23	0	0	60	61	34	18	294	1%	E				1%	Sixth Line WB
4036	0	48	0	15	0	28	13	47	21	36	63	6	17	37	331	1%	E				1%	Sixth Line WB
4037	26	0	0	0	16	32	54	130	76	22	80	185	50	60	731	3%	E				3%	Kaitting Trail SB
4038	0	0	0	0	33	0	0	37	0	0	0	0	20	12	102	0%	S		0%			Sixth Line EB
4039	14	13	0	17	0	28	0	0	36	0	0	38	29	0	175	1%	S		1%			Dundas St E SB
4040	0	0	0	0	0	7	0	0	28	22	15	38	0	7	117	1%	S		1%			Dundas St E SB
4041	115	7	11	7	4	13	0	26	28	0	0	111	101	58	481	2%	S		2%			Kaitting Trail SB
4042	0	31	0	0	19	0	0	0	0	0	0	16	0	14	80	0%	S		0%			Kaitting Trail SB
4045	0	14	0	0	0	0	0	0	0	0	0	0	0	0	14	0%	S		0%			Kaitting Trail SB
4048	0	0	0	25	0	0	0	0	0	0	0	0	0	0	25	0%	N	0%				Dundas St E NB
4180	6	0	0	0	0	0	0	0	0	0	0	0	0	0	6	0%	N	0%				Sixth Line WB
4182	0	0	0	0	0	0	0	0	0	0	0	32	0	0	32	0%	N	0%				Sixteen Mile Dr SB
4183	25	0	0	0	0	0	0	44	0	0	0	16	40	167	292	1%	W				1%	Sixteen Mile Dr SB
4184	0	0	0	0	0	0	0	0	0	0	0	24	0	0	24	0%	W				0%	Kaitting Trail SB
4185	17	8	0	30	6	0	20	9	39	40	25	52	25	18	289	1%	S		1%			Kaitting Trail SB
4186	12	0	0	0	0	0	14	19	0	7	0	0	0	81	133	1%	S		1%			Kaitting Trail SB
Burlington	122	43	0	168	67	43	43	67	18	102	53	151	50	63	990	4%	S		2%			Sixth Line EB
																	S		2%			Sixteen Mile Dr SB
Flamboro	10	0	0	71	0	0	0	115	0	0	0	0	0	0	196	1%	W				1%	Dundas St E SB
Dundas	0	14	0	0	0	0	0	0	0	0	0	0	0	0	14	0%	S					Dundas ST E SB
Hamilton	41	11	0	25	0	0	36	164	0	0	0	39	45	138	499	2%	S		2%			Sixteen Mile Dr SB
Grimsby	0	0	0	0	0	0	0	0	0	0	0	14	0	0	14	0%	S		0%			Sixth Line EB
Lincoln	0	0	29	0	0	0	0	0	0	0	0	0	0	7	36	0%	S		0%			Sixth Line EB
Niagara-o	0	0	0	0	33	0	0	0	0	0	0	0	0	16	49	0%	S		0%			Sixth Line EB
St. Cather	0	0	0	0	0	0	0	9	0	0	0	0	0	27	36	0%	S		0%			Sixth Line EB
Niagara F-	0	0	0	0	0	0	0	38	0	0	0	29	0	0	67	0%	S		0%			Sixth Line EB
Waterloo	0	0	0	0	0	0	0	0	0	0	0	0	0	36	36	0%	W				0%	Dundas St E SB
Kitchener	0	0	0	31	0	15	0	0	0	0	0	0	0	0	46	0%	W				0%	Dundas St E SB
Cambridge	0	0	8	0	0	0	0	0	0	0	10	32	0	0	50	0%	W				0%	Dundas St E SB
City of Gu	6	0	0	37	0	0	0	0	0	0	11	30	42	0	126	1%	W				1%	Dundas St E NB
Orangeville	0	17	0	0	0	0	0	0	0	0	0	0	0	0	17	0%	N	0%				Dundas St E NB
Barrie	0	0	45	0	0	0	0	0	0	0	0	0	0	0	45	0%	N	0%				Dundas St E NB
Brantford	0	0	0	0	0	0	0	0	0	0	0	0	36	0	36	0%	W				0%	Dundas St E SB
External	0	0	0	0	0	0	0	0	0	0	15	8	0	0	23	0%	W				0%	Dundas St E SB
															23185	100%		13%	29%	52%	6%	Check 100%

Res Out Summary	
Direction From	%
N	13%
S	29%
E	52%
W	6%
SUM	100%

Direction From	Predicted Route	%
North	Dundas St E NB	7%
	Sixteen Mile Dr	0%
	Sixth Line WB	0%
South	Sixth Line EB	5%
	Dundas St E SB	11%
	Kaitting Trail SB	9%
	Sixteen Mile Dr	4%
	Sixth Line EB	4%
East	Dundas St E NB	19%
	Kaitting Trail SB	3%
	Sixteen Mile Dr	9%
	Sixth Line EB	11%
	Sixth Line WB	11%
West	Dundas St E NB	1%
	Dundas St E SB	4%
	Kaitting Trail SB	0%
	Sixteen Mile Dr	1%
	Sixth Line WB	1%
Sum		100%

Dundas St E NB	27%
Dundas St E SB	15%
Sixth Line EB	20%
Sixth Line WB	12%
Sixteen Mile Dr SB	14%
Kaitting Trail SB	12%
	100%

Row Labels	Sum of From North	Sum of From South	Sum of From East	Sum of From West
E			52%	
Dundas St E NB			19%	
Kaitting Trail SB			3%	
Sixteen Mile Dr SB			9%	
Sixth Line EB			11%	
Sixth Line WB			11%	
N	13%			
Dundas St E	7%			
Sixteen Mile	0%			
Sixth Line El	5%			
Sixth Line Va	0%			
S		29%		
Dundas St E SB		11%		
Kaitting Trail SB		9%		
Sixteen Mile Dr SB		4%		
Sixth Line EB		4%		
W				6%
Dundas St E NB				1%
Dundas St E SB				4%
Kaitting Trail SB				0%
Sixteen Mile Dr SB				1%
Sixth Line WB				1%
Grand Total	13%	29%	52%	6%

Mon Oct 16 2023 14:06:33 GMT-0400 (Eastern Daylight Time) - Run Time: 2566ms

Cross Tabulation Query Form - Trip - 2016 v1.1

Row: 2006 GTA zone of destination - gta06_dest
Column: 2006 GTA zone of origin - gta06_orig

Filters:
(2006 GTA zone of origin - gta06_orig In 4025,4026, 4028-4031, 4181-4183
and
Trip purpose of origin - purp_orig In H
and
Start time of trip - start_time In 600-1000
and
Primary travel mode of trip - mode_prime In D,
and
Planning district of destination - pd_dest In 39)

Trip 2016
Table:

	4025	4026	4028	4029	4030	4031	4032	4033	4034	4035	4036	4037	4038	4183
4001	0	0	0	0	0	0	0	18	0	0	0	0	0	42
4002	15	0	0	31	0	0	0	41	0	0	0	57	0	0
4003	0	31	43	0	13	0	0	0	44	0	0	0	0	7
4004	0	0	0	15	0	0	0	0	0	0	0	0	0	0
4005	0	0	0	0	0	0	0	0	0	20	0	0	0	46
4006	0	0	0	6	6	0	0	0	0	26	0	0	0	0
4007	0	0	0	0	0	0	13	0	0	0	0	0	24	0
4008	0	0	0	25	12	32	13	0	11	16	12	75	0	0
4009	141	9	0	19	55	0	34	0	0	20	25	90	29	34
4011	14	0	7	6	13	0	15	37	0	0	0	12	38	13
4012	47	0	0	0	36	101	30	0	14	0	17	51	0	9
4014	136	5	15	30	15	50	42	15	14	26	57	103	17	86
4015	0	0	0	0	0	0	0	29	0	0	0	0	0	15
4016	10	0	0	15	17	30	44	0	0	10	0	0	24	0
4017	22	22	0	0	0	0	0	0	0	0	48	24	0	16
4018	19	27	0	13	0	0	0	0	29	0	0	0	0	14
4019	0	0	0	26	0	0	0	9	0	11	0	40	0	0
4021	0	0	0	0	0	96	0	0	0	0	0	0	0	0
4022	0	37	0	17	0	0	24	0	0	0	0	0	0	0
4023	27	0	0	32	0	0	0	14	0	30	0	51	0	46
4024	151	14	0	0	18	0	16	102	21	41	18	0	0	135
4025	91	77	0	66	60	107	95	343	166	28	36	40	12	0
4026	0	30	0	0	0	0	20	0	0	0	39	0	0	0
4027	0	56	15	49	0	0	19	57	36	18	14	0	51	10
4028	0	18	0	0	0	0	0	0	0	0	0	0	0	0
4029	69	126	17	26	24	20	51	64	20	12	35	0	0	36
4030	34	13	0	16	6	123	0	0	18	50	68	37	30	75
4031	0	0	0	0	134	125	0	22	0	11	0	74	57	0
4032	0	0	0	0	0	14	0	0	0	14	0	0	0	0
4033	105	0	0	0	0	0	18	209	10	0	0	0	14	0
4034	22	0	0	19	5	0	30	61	13	63	13	110	0	0
4035	5	0	7	51	15	0	20	23	0	0	60	61	34	18
4036	0	48	0	15	0	28	13	47	21	36	63	6	17	37
4037	26	0	0	0	16	32	54	130	76	22	80	185	50	60
4038	0	0	0	0	33	0	0	37	0	0	0	0	20	12
4039	14	13	0	17	0	28	0	0	36	0	0	38	29	0
4040	0	0	0	0	0	7	0	0	28	22	15	38	0	7
4041	115	7	11	7	4	13	0	26	28	0	0	111	101	58
4042	0	31	0	0	19	0	0	0	0	0	0	16	0	14
4045	0	14	0	0	0	0	0	0	0	0	0	0	0	0
4048	0	0	0	25	0	0	0	0	0	0	0	0	0	0
4180	6	0	0	0	0	0	0	0	0	0	0	0	0	0
4182	0	0	0	0	0	0	0	0	0	0	0	32	0	0
4183	25	0	0	0	0	0	0	44	0	0	0	16	40	167
4184	0	0	0	0	0	0	0	0	0	0	0	24	0	0
4185	17	8	0	30	6	0	20	9	39	40	25	52	25	18
4186	12	0	0	0	0	0	14	19	0	7	0	0	0	81
Oakville	1120	584	115	554	510	804	587	1355	622	509	641	1344	611	1058

10414 45%

Tue Oct 17 2023 11:08:27 GMT-0400 (Eastern Daylight Time) - Run Time: 2472ms

Cross Tabulation Query Form - Trip - 2016 v1.1

Row: Planning district of origin - pd_orig
Column: 2006 GTA zone of destination - gta06_dest

Filters:
(2006 GTA zone of destination - gta06_dest In 4025,4026, 4028-4038, 4181-4183
and
Trip purpose of destination - purp_dest In M
and
Start time of trip - start_time In 1500-1900
and
Primary travel mode of trip - mode_prime In D,)

Trip 2016
Table:

	Destination											Total	Trip Distribution		Trip Assignment				
Origin	4025	4029	4030	4033	4034	4035	4036	4037	4038	4182	4183	from	%	Direction	From Nort	From Sout	From East	From Wes	Predicted Route
PD 7 of To	0	0	0	0	6	0	0	0	0	0	0	6	0%	E			0%		Dundas St E SB
PD 8 of To	0	0	0	0	0	0	8	0	4	0	0	12	0%	E			0%		Dundas St E SB
PD 10 of T	0	0	52	0	0	0	0	0	0	0	0	52	2%	E			2%		Dundas St E SB
PD 14 of T	8	0	0	0	0	0	0	0	0	0	0	8	0%	E			0%		Dundas St E SB
PD 16 of T	0	0	0	0	15	0	0	0	0	0	0	15	1%	N	1%				Dundas St E SB
Brampton	0	0	0	0	0	0	0	0	0	0	20	20	1%	N	1%				Dundas St E SB
Mississaug	36	0	16	14	20	139	0	0	0	25	39	289	11%	E			11%		Dundas St E SB
Milton	0	0	22	0	30	24	0	0	0	0	0	76	3%	W				3%	Dundas St E NB
4003	10	0	0	0	0	0		0		0	0	10	0%	S		0%			Kaitting Trail NB
4005	0	0	16	0	0	0		0		0	0	16	1%	S		1%			Sixteen Mile Dr NB
4008	0	0	28	0	0	0		0		0	0	28	1%	S		1%			Sixteen Mile Dr NB
4009	0	0	21	0	0	0		0		0	0	21	1%	S		1%			Sixteen Mile Dr NB
4011	0	0	0	0	0	20		0		0	0	20	1%	S		1%			Sixteen Mile Dr NB
4012	0	0	19	0	26	0		0		0	0	45	2%	S		2%			Kaitting Trail NB
4017	0	12	0	0	0	35		0		0	0	47	2%	S		2%			Kaitting Trail NB
4020	0	0	12	0	0	0		0		0	0	12	0%	E			0%		Dundas St E SB
4023	51	0	0	0	0	37		0		0	0	88	3%	E			3%		Sixth Line WB
4024	0	0	0	0	36	0		0		0	0	36	1%	N	1%				Dundas St E SB
4025	76	0	56	0	26	31		0		0	0	189	7%	E			7%		Dundas St E SB
4026	14	0	0	0	13	35		0		0	0	62	2%	E			2%		Sixth Line WB
4027	0	0	32	0	0	29		0		0	0	61	2%	E			2%		Sixth Line WB
4029	26	38	107	0	0	35		0		0	0	206	8%	E			8%		Sixth Line WB
4030	0	25	0	0	9	29		0		0	0	63	2%	S		2%			Kaitting Trail NB
4031	0	0	39	0	0	13		0		0	0	52	2%	S		2%			Kaitting Trail NB
4032	0	0	0	0	29	0		0		0	0	29	1%	E			1%		Sixth Line WB
4033	14	0	0	29	106	0		73		0	0	222	8%	N	8%				Dundas St E SB
4034	0	0	0	0	0	109		0		0	20	129	5%	N	5%				Dundas St E SB
4035	5	0	0	8	11	180		0		0	0	204	7%	E			7%		Sixth Line EB
4036	0	0	15	0	14	19		22		0	21	91	3%	E			3%		Sixth Line EB
4037	0	0	33	0	0	36		14		0	53	136	5%	E			5%		Kaitting Trail NB
4038	0	0	0	0	8	13		12		0	0	33	1%	S		1%			Sixteen Mile Dr NB
4039	0	0	28	0	0	5		0		0	9	42	2%	S		2%			Kaitting Trail NB
4042	9	0	0	0	0	0		0		0	0	9	0%	S		0%			Kaitting Trail NB
4180	0	0	0	0	0	35		0		0	0	35	1%	N	1%				Sixth Line EB
4183	0	0	18	0	10	24		0		0	14	66	2%	W				2%	Sixteen Mile Dr NB
4184	0	0	0	0	0	0		0		0	18	18	1%	W				1%	Sixteen Mile Dr NB
4185	0	0	0	0	0	8		0		15	0	23	1%	S		1%			Kaitting Trail NB
4186	0	0	0	0	0	23		0		0	22	45	2%	S		2%			Kaitting Trail NB
Burlington	0	0	0	0	0	25	24	0	0	0	0	49	2%	S		2%			Kaitting Trail NB
Flamborou	0	0	18	0	0	71	0	0	0	0	0	89	3%	W				3%	Dundas St E NB
Hamilton	0	0	0	0	51	0	0	0	0	0	0	51	2%	S		2%			Sixteen Mile Dr NB
Waterloo	0	0	0	0	0	0	0	0	0	0	30	30	1%	W				1%	Dundas St E NB
City of Gue	0	0	0	0	11	0	0	0	0	0	0	11	0%	W				0%	Dundas St E NB
												2746	100%		17%	20%	53%	11%	100%

Res Out Summary	
Direction	%
N	17%
S	20%
E	53%
W	11%
SUM	100%

Direction	Predicted Route	%
North	Dundas St E SB	15%
	Sixth Line EB	1%
	Kaitting Trail NB	14%
South	Sixteen Mile Dr	6%
	Sixth Line WB	0%
	Dundas St E NB	
	Dundas St E SB	21%
East	Sixth Line WB	16%
	Sixth Line EB	11%
	Kaitting Trail NB	5%
	Dundas St E NB	8%
West	Dundas St E NB	3%
		100%

Row Labels	Sum of From North	Sum of From South	Sum of From East	Sum of From West	
E			53%		
Dundas St E SB			21%		
Kaitting Trail NB			5%		
Sixth Line WB			16%		
Sixth Line EB			11%		
N	17%				
Dundas St E S	15%				
Sixth Line EB	1%				
S		20%			
Kaitting Trail NB		14%			
Sixteen Mile Dr NB		6%			
W				11%	
Sixteen Mile Dr NB				3%	
Dundas St E NB				8%	
Grand Total	17%	20%	53%	11%	100%

Dundas St E SB	36%
Dundas St E NB	11%
Sixth Line EB	12%
Sixth Line WB	16%
Kaitting Trail NB	19%
Sixteen Mile Dr NB	6%
	100%

Tue Oct 17 2023 11:10:10 GMT-0400 (Eastern Daylight Time) - Run Time: 2668ms

Cross Tabulation Query Form - Trip - 2016 v1.1

Row: 2006 GTA zone of origin - gta06_orig
Column: 2006 GTA zone of destination - gta06_dest

Filters:
(2006 GTA zone of destination - gta06_dest In 4025,4026, 4028-4038, 4181-4183
and
Trip purpose of destination - purp_dest In M
and
Start time of trip - start_time In 1500-1900
and
Primary travel mode of trip - mode_prime In D,
and
Planning district of origin - pd_orig In 39,)

Trip 2016
Table:

Oakville	204	76	424	36	288	715	0	121	0	15	157	2036	74%
	4025	4029	4030	4033	4034	4035	4037	4182	4183				
4003	10	0	0	0	0	0	0	0	0				
4005	0	0	16	0	0	0	0	0	0				
4008	0	0	28	0	0	0	0	0	0				
4009	0	0	21	0	0	0	0	0	0				
4011	0	0	0	0	0	20	0	0	0				
4012	0	0	19	0	26	0	0	0	0				
4017	0	12	0	0	0	35	0	0	0				
4020	0	0	12	0	0	0	0	0	0				
4023	51	0	0	0	0	37	0	0	0				
4024	0	0	0	0	36	0	0	0	0				
4025	76	0	56	0	26	31	0	0	0				
4026	14	0	0	0	13	35	0	0	0				
4027	0	0	32	0	0	29	0	0	0				
4029	26	38	107	0	0	35	0	0	0				
4030	0	25	0	0	9	29	0	0	0				
4031	0	0	39	0	0	13	0	0	0				
4032	0	0	0	0	29	0	0	0	0				
4033	14	0	0	29	106	0	73	0	0				
4034	0	0	0	0	0	109	0	0	20				
4035	5	0	0	8	11	180	0	0	0				
4036	0	0	15	0	14	19	22	0	21				
4037	0	0	33	0	0	36	14	0	53				
4038	0	0	0	0	8	13	12	0	0				
4039	0	0	28	0	0	5	0	0	9				
4042	9	0	0	0	0	0	0	0	0				
4180	0	0	0	0	0	35	0	0	0				
4183	0	0	18	0	10	24	0	0	14				
4184	0	0	0	0	0	0	0	0	18				
4185	0	0	0	0	0	8	0	15	0				
4186	0	0	0	0	0	23	0	0	22				

Tue Oct 17 2023 11:25:59 GMT-0400 (Eastern Daylight Time) - Run Time: 2740ms

Cross Tabulation Query-Form - Trip - 2016 v1.1

Row: Planning district of destination - pd_dest
Column: 2006 GTA zone of origin - gta06_orig

Filters:
(2006 GTA zone of origin - gta06_orig In 4025,4026, 4028–4030, 4181–4183
and
Trip purpose of destination - purp_dest In M
and
Start time of trip - start_time In 1500-1900
and
Primary/travel mode of trip - mode_prime In D.)

Trip 2016
Table:

	Destination														Total	Trip Distribution		Trip Assignment				
Origin	4025	4026	4028	4029	4030	4031	4032	4033	4034	4035	4036	4037	4038	4183	from	%	Direction	From Nor	From Sou	From Eas	From Wes	Predicted Route
PD 8 of Toro	0	0	0	0	0	0	5	0	0	0	0	0	0	0	5	0%	E			0%		Dundas St E NB
PD 9 of Toro	0	0	0	0	0	0	0	9	0	0	0	0	0	0	9	0%	E			0%		Dundas St E NB
Mississauga	7	0	0	52	0	0	0	128	45	16	23	13	20	22	326	10%	E			10%		Dundas St E NB
Milton	0	0	0	0	0	0	0	0	0	9	0	0	0	0	9	0%	W				0%	Dundas St E SB
4002	0	0		0	16			0	0	0		0		0	16	1%	S	1%				Kaitting Trail SB
4005	0	0		0	42			0	0	0		0		0	42	1%	S	1%				Kaitting Trail SB
4007	10	0		0	0			0	0	0		0		0	10	0%	S	0%				Kaitting Trail SB
4011	0	0		0	47			0	0	0		0		0	47	1%	S	1%				Kaitting Trail SB
4012	0	0		0	21			0	17	0		0		0	38	1%	S	1%				Kaitting Trail SB
4014	0	0		0	0			0	0	9		0		0	9	0%	S	0%				Kaitting Trail SB
4015	0	0		0	9			0	0	0		0		0	9	0%	S	0%				Kaitting Trail SB
4017	0	0		12	0			0	0	0		0		0	12	0%	S	0%				Kaitting Trail SB
4020	0	0		0	23			0	0	17		0		0	40	1%	E			1%		Dundas St E NB
4021	0	0		0	0			0	16	0		0		0	16	1%	E			1%		Sixth Line EB
4023	0	0		0	74			0	0	0		0		0	74	2%	E			2%		Sixth Line EB
4025	74	8		0	27			14	48	37		0		0	208	7%	E			7%		Sixth Line EB
4026	14	0		0	0			0	6	0		0		0	20	1%	E			1%		Sixth Line EB
4027	0	0		0	19			0	0	71		0		0	90	3%	E			3%		Sixth Line EB
4028	0	0		0	11			0	11	0		0		0	22	1%	E			1%		Sixth Line EB
4029	36	0		38	76			0	0	60		0		0	210	7%	E			7%		Sixth Line EB
4030	0	0		0	52			0	11	14		0		0	77	2%	S	2%				Kaitting Trail SB
4031	0	0		0	43			0	39	42		0		0	124	4%	S	4%				Sixteen Mile Dr SB
4032	0	0		0	13			0	0	35		0		0	48	2%	E			2%		Sixth Line EB
4033	14	0		0	52			0	59	52		73		0	198	6%	N	6%				Dundas St E NB
4034	23	0		0	19			0	0	117		0		0	159	5%	N	5%				Dundas St E NB
4035	9	0		0	47			8	90	172		0		0	326	10%	E			10%		Sixth Line WB
4036	12	0		0	30			0	0	45		22		14	123	4%	E			4%		Sixth Line WB
4037	0	0		0	29			0	26	76		14		0	145	5%	E			5%		Kaitting Trail SB
4038	0	0		0	0			0	8	32		12		0	52	2%	S	2%				Kaitting Trail SB
4039	0	0		0	11			0	0	60		0		44	115	4%	S	4%				Dundas St E SB
4040	0	0		0	39			0	13	0		0		0	52	2%	S	2%				Kaitting Trail SB
4041	5	0		0	0			0	0	17		0		0	22	1%	S	1%				Kaitting Trail SB
4042	0	0		0	13			0	0	21		0		0	34	1%	S	1%				Sixteen Mile Dr SB
4045	0	0		0	0			0	0	25		0		0	25	1%	S	1%				Sixteen Mile Dr SB
4183	0	0		0	0			0	10	39		0		20	69	2%	W				2%	Sixteen Mile Dr SB
4184	0	0		0	0			0	0	0		0		18	18	1%	W				1%	Sixteen Mile Dr SB
4186	0	0		0	19			0	22	56		0		117	214	7%	S	7%				Sixteen Mile Dr SB
Burlington	24	0	0	0	10	0	0	40	14	0	0	21	0	0	109	3%	S	3%				Kaitting Trail SB
Hamilton	0	0	0	24	0	0	0	0	0	0	0	0	0	0	24	1%	S	1%				Kaitting Trail SB
															3146	100%		11%	33%	53%	3%	100%

Retail Out	%
N	11%
S	33%
E	53%
W	3%
	100%

North	Dundas St E NB	11%
South	Kaitting Trail SB	16%
	Sixteen Mile Dr SB	13%
	Dundas St E SB	4%
East	W	
	Dundas St E NB	12%
	Kaitting Trail SB	5%
	Sixth Line EB	22%
	Sixth Line WB	14%
West	Sixteen Mile Dr SB	3%
	Grand Total	0%
		100%

Dundas St E NB	23%
Dundas St E SB	4%
Sixth Line EB	22%
Sixth Line WB	14%
Sixteen Mile Dr SB	15%
Kaitting Trail SB	21%
	100%

Row Labels	Sum of From North	Sum of From South	Sum of From East	Sum of From West
E			53%	
Dundas St E NB			12%	
Kaitting Trail SB			5%	
Sixth Line EB			22%	
Sixth Line WB			14%	
N	11%			
Dundas St E NB	11%			
S		33%		
Kaitting Trail SB		16%		
Sixteen Mile Dr SB		13%		
Dundas St E SB		4%		
W				3%
Sixteen Mile Dr SB				3%
Dundas St E SB				0%
Grand Total	11%	33%	53%	3%

0%

Tue Oct 17 2023 11:30:01 GMT-0400 (Eastern Daylight Time) - Run Time: 2496ms

Cross Tabulation Query-Form - Trip - 2016 v1.1

Row: 2006 GTA zone of destination - gta06_dest
Column: 2006 GTA zone of origin - gta06_orig

Filters:
(2006 GTA zone of origin - gta06_orig In 4025,4026, 4028–4030, 4181–4183
and
Trip purpose of origin - purp_orig In M
and
Start time of trip - start_time In 1500-1900
and
Primary/travel mode of trip - mode_prime In D
and
Planning district of destination - pd_dest In 38)

Trip 2016
Table:

	4025	4026	4029	4030	4033	4034	4035	4037	4181	4182	4183
4002	0	0	0	16	0	0	0	0	0	0	0
4005	0	0	0	42	0	0	0	0	10	0	0
4007	10	0	0	0	0	0	0	0	0	0	0
4011	0	0	0	47	0	0	0	0	0	0	0
4012	0	0	0	21	0	17	0	0	0	0	0
4014	0	0	0	0	0	0	9	0	0	0	0
4015	0	0	0	9	0	0	0	0	0	0	0
4017	0	0	12	0	0	0	0	0	0	0	0
4020	0	0	0	23	0	0	17	0	0	0	0
4021	0	0	0	0	0	16	0	0	0	0	0
4023	0	0	0	74	0	0	0	0	0	0	0
4025	74	8	0	27	14	48	37	0	0	0	0
4026	14	0	0	0	0	6	0	0	0	0	0
4027	0	0	0	19	0	0	71	0	0	0	0
4028	0	0	0	11	0	11	0	0	0	0	0
4029	36	0	38	76	0	0	60	0	0	0	0
4030	0	0	0	52	0	11	14	0	0	0	0
4031	0	0	0	43	0	39	42	0	0	0	0
4032	0	0	0	13	0	0	35	0	0	0	0
4033	14	0	0	0	0	59	52	73	0	0	0
4034	23	0	0	19	0	0	117	0	0	0	0
4035	9	0	0	47	0	8	90	22	0	0	14
4036	12	0	0	30	0	0	45	14	0	0	0
4038	0	0	0	0	0	8	32	12	0	0	0
4039	0	0	0	11	0	0	60	0	0	0	44
4041	5	0	0	0	0	0	17	0	0	25	0
4042	0	0	0	13	0	0	21	0	0	0	0
4045	0	0	0	0	0	0	25	0	0	0	0
4183	0	0	0	0	0	10	39	0	0	0	20
4184	0	0	0	0	0	0	0	0	0	0	18
4186	0	0	0	19	0	22	56	0	0	0	117
Oakville	253	71	55	285	126	52	29	267	177	240	121	154	54	66

APPENDIX E

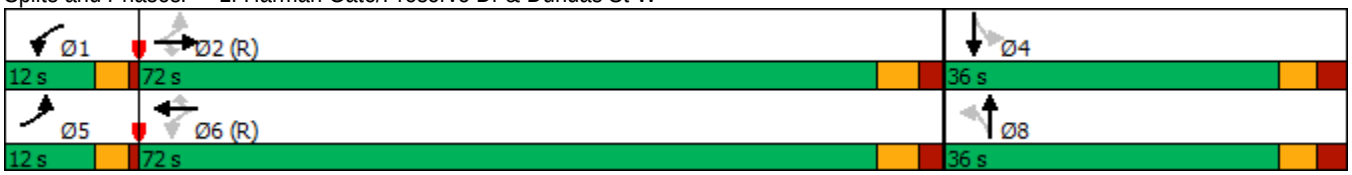
Intersection Capacity Analysis – Existing Conditions

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	86	1569	35	13	1079	136	26	9	170	20
Future Volume (vph)	86	1569	35	13	1079	136	26	9	170	20
Lane Group Flow (vph)	88	1601	36	13	1101	139	27	53	173	130
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	NA
Protected Phases	5	2		1	6			8		4
Permitted Phases	2		2	6		6	8		4	
Detector Phase	5	2	2	1	6	6	8	8	4	4
Switch Phase										
Minimum Initial (s)	7.0	20.0	20.0	7.0	20.0	20.0	10.0	10.0	10.0	10.0
Minimum Split (s)	11.5	41.1	41.1	11.0	41.1	41.1	40.2	40.2	40.3	40.3
Total Split (s)	12.0	72.0	72.0	12.0	72.0	72.0	36.0	36.0	36.0	36.0
Total Split (%)	10.0%	60.0%	60.0%	10.0%	60.0%	60.0%	30.0%	30.0%	30.0%	30.0%
Yellow Time (s)	3.0	3.7	3.7	3.0	3.7	3.7	3.3	3.3	3.3	3.3
All-Red Time (s)	1.0	2.4	2.4	1.0	2.4	2.4	2.9	2.9	2.9	2.9
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	6.1	6.1	4.0	6.1	6.1	6.2	6.2	6.2	6.2
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes				
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	Max	Max	Max	Max
v/c Ratio	0.29	0.52	0.04	0.06	0.41	0.16	0.09	0.12	0.54	0.27
Control Delay	9.5	14.6	0.9	7.4	16.1	2.5	35.8	13.6	46.2	10.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	9.5	14.6	0.9	7.4	16.1	2.5	35.8	13.6	46.2	10.9
Queue Length 50th (m)	7.1	69.0	0.0	1.0	55.5	0.0	5.2	1.7	37.4	3.8
Queue Length 95th (m)	13.0	104.2	1.7	3.2	66.6	9.3	13.3	12.3	61.7	20.0
Internal Link Dist (m)		434.4			677.7			233.6		111.4
Turn Bay Length (m)	135.0		115.0	115.0		115.0	35.0		40.0	
Base Capacity (vph)	313	3084	897	238	2680	895	297	432	323	482
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	0.28	0.52	0.04	0.05	0.41	0.16	0.09	0.12	0.54	0.27

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 113 (94%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 95
Control Type: Actuated-Coordinated

Splits and Phases: 1: Harman Gate/Preserve Dr & Dundas St W



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	86	1569	35	13	1079	136	26	9	43	170	20	108
Future Volume (vph)	86	1569	35	13	1079	136	26	9	43	170	20	108
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.3	3.6	3.5	3.3	3.6	3.5	3.3	3.6	3.5	3.3	3.6	3.5
Total Lost time (s)	4.0	6.1	6.1	4.0	6.1	6.1	6.2	6.2		6.2	6.2	
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.97	1.00	1.00	0.97	1.00	0.98		1.00	0.99	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		0.99	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.88		1.00	0.87	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1646	5036	1425	1745	4848	1506	1739	1608		1715	1609	
Flt Permitted	0.20	1.00	1.00	0.12	1.00	1.00	0.66	1.00		0.72	1.00	
Satd. Flow (perm)	346	5036	1425	216	4848	1506	1199	1608		1304	1609	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	88	1601	36	13	1101	139	27	9	44	173	20	110
RTOR Reduction (vph)	0	0	15	0	0	62	0	33	0	0	83	0
Lane Group Flow (vph)	88	1601	21	13	1101	77	27	20	0	173	47	0
Confl. Peds. (#/hr)	5		4	4		5	4		4	4		4
Confl. Bikes (#/hr)			1						1			
Heavy Vehicles (%)	6%	3%	9%	0%	7%	3%	0%	0%	2%	1%	0%	2%
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases	2		2	6		6	8			4		
Actuated Green, G (s)	77.9	71.1	71.1	69.2	66.4	66.4	29.8	29.8		29.8	29.8	
Effective Green, g (s)	77.9	71.1	71.1	69.2	66.4	66.4	29.8	29.8		29.8	29.8	
Actuated g/C Ratio	0.65	0.59	0.59	0.58	0.55	0.55	0.25	0.25		0.25	0.25	
Clearance Time (s)	4.0	6.1	6.1	4.0	6.1	6.1	6.2	6.2		6.2	6.2	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	305	2983	844	160	2682	833	297	399		323	399	
v/s Ratio Prot	c0.02	c0.32		0.00	0.23			0.01			0.03	
v/s Ratio Perm	0.17		0.01	0.04		0.05	0.02			c0.13		
v/c Ratio	0.29	0.54	0.03	0.08	0.41	0.09	0.09	0.05		0.54	0.12	
Uniform Delay, d1	8.7	14.6	10.1	11.6	15.5	12.6	34.7	34.3		39.1	34.9	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.5	0.7	0.1	0.2	0.5	0.2	0.6	0.2		6.2	0.6	
Delay (s)	9.3	15.3	10.2	11.8	16.0	12.8	35.3	34.6		45.3	35.5	
Level of Service	A	B	B	B	B	B	D	C		D	D	
Approach Delay (s)		14.9			15.6			34.8			41.1	
Approach LOS		B			B			C			D	

Intersection Summary			
HCM 2000 Control Delay	18.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.3
Intersection Capacity Utilization	78.1%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	75	1524	183	115	939	208	167	210	145	183	75
Future Volume (vph)	75	1524	183	115	939	208	167	210	145	183	75
Lane Group Flow (vph)	76	1539	185	116	1033	210	169	212	146	185	76
Turn Type	pm+pt	NA	Perm	pm+pt	NA	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2		1	6	3	8		7	4	
Permitted Phases	2		2	6		8		8	4		4
Detector Phase	5	2	2	1	6	3	8	8	7	4	4
Switch Phase											
Minimum Initial (s)	7.0	24.0	24.0	7.0	24.0	7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	14.0	31.0	31.0	14.0	31.0	11.5	37.0	37.0	11.5	37.0	37.0
Total Split (s)	14.0	71.0	71.0	14.0	71.0	14.0	41.0	41.0	14.0	41.0	41.0
Total Split (%)	10.0%	50.7%	50.7%	10.0%	50.7%	10.0%	29.3%	29.3%	10.0%	29.3%	29.3%
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	3.0	2.0	2.0	3.0	2.0	1.0	2.0	2.0	1.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	4.0	6.0	6.0	4.0	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?											
Recall Mode	None	C-Max	C-Max	None	C-Max	None	Max	Max	None	Max	Max
v/c Ratio	0.30	0.65	0.23	0.69	0.46	0.57	0.37	0.42	0.38	0.41	0.17
Control Delay	17.3	30.4	4.3	40.7	26.0	41.0	46.2	12.8	34.6	47.3	4.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	17.3	30.4	4.3	40.7	26.0	41.0	46.2	12.8	34.6	47.3	4.2
Queue Length 50th (m)	9.7	123.9	1.9	15.3	73.1	44.3	41.0	9.1	29.5	45.4	0.0
Queue Length 95th (m)	17.9	140.8	15.5	#38.9	86.2	66.9	63.5	32.4	47.0	69.4	7.4
Internal Link Dist (m)		677.7			1210.7		440.8			65.0	
Turn Bay Length (m)	107.0		80.0	120.0		90.0			76.0		
Base Capacity (vph)	259	2363	817	167	2222	366	458	505	388	448	453
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.29	0.65	0.23	0.69	0.46	0.57	0.37	0.42	0.38	0.41	0.17

Intersection Summary

Cycle Length: 140
Actuated Cycle Length: 140
Offset: 36 (26%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 95
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 2: Sixth Line & Dundas St E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	75	1524	183	115	939	84	208	167	210	145	183	75
Future Volume (vph)	75	1524	183	115	939	84	208	167	210	145	183	75
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.3	3.6	3.5	3.3	3.6	3.5	3.3	3.6	3.5	3.3	3.6	3.5
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0		4.0	6.0	6.0	4.0	6.0	6.0
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91		1.00	1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00		1.00	1.00	0.97	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	0.99	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1630	5085	1559	1678	4748		1675	1827	1497	1701	1792	1511
Flt Permitted	0.21	1.00	1.00	0.09	1.00		0.53	1.00	1.00	0.56	1.00	1.00
Satd. Flow (perm)	359	5085	1559	155	4748		930	1827	1497	1010	1792	1511
Peak-hour factor, PHF	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Adj. Flow (vph)	76	1539	185	116	948	85	210	169	212	146	185	76
RTOR Reduction (vph)	0	0	93	0	7	0	0	0	129	0	0	57
Lane Group Flow (vph)	76	1539	92	116	1026	0	210	169	83	146	185	19
Confl. Peds. (#/hr)	8		1	1		8	3		10	10		3
Confl. Bikes (#/hr)			1									
Heavy Vehicles (%)	7%	2%	1%	4%	8%	4%	4%	4%	4%	2%	6%	4%
Turn Type	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6			8		8	4		4
Actuated Green, G (s)	72.8	65.1	65.1	73.2	65.3		45.2	35.2	35.2	44.8	35.0	35.0
Effective Green, g (s)	72.8	65.1	65.1	73.2	65.3		45.2	35.2	35.2	44.8	35.0	35.0
Actuated g/C Ratio	0.52	0.46	0.46	0.52	0.47		0.32	0.25	0.25	0.32	0.25	0.25
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0		4.0	6.0	6.0	4.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	256	2364	724	166	2214		353	459	376	371	448	377
v/s Ratio Prot	0.02	0.30		c0.04	0.22		c0.04	0.09		0.03	0.10	
v/s Ratio Perm	0.14		0.06	c0.32			c0.15		0.06	0.10		0.01
v/c Ratio	0.30	0.65	0.13	0.70	0.46		0.59	0.37	0.22	0.39	0.41	0.05
Uniform Delay, d1	17.7	28.7	21.3	22.1	25.4		38.4	43.2	41.5	35.5	43.9	39.9
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.7	1.4	0.4	12.1	0.7		2.7	2.3	1.4	0.7	2.8	0.3
Delay (s)	18.4	30.1	21.7	34.2	26.1		41.1	45.5	42.9	36.2	46.7	40.1
Level of Service	B	C	C	C	C		D	D	D	D	D	D
Approach Delay (s)		28.8			26.9			43.0			41.7	
Approach LOS		C			C			D			D	

Intersection Summary			
HCM 2000 Control Delay	31.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	22.0
Intersection Capacity Utilization	91.5%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	0.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	8	4	312	14	6	395
Future Vol, veh/h	8	4	312	14	6	395
Conflicting Peds, #/hr	0	0	0	1	1	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	0	0	5	0	0	4
Mvmt Flow	9	5	363	16	7	459

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	616	191	0	0	380	0
Stage 1	372	-	-	-	-	-
Stage 2	244	-	-	-	-	-
Critical Hdwy	6.8	6.9	-	-	4.1	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	427	825	-	-	1190	-
Stage 1	673	-	-	-	-	-
Stage 2	780	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	423	824	-	-	1189	-
Mov Cap-2 Maneuver	423	-	-	-	-	-
Stage 1	672	-	-	-	-	-
Stage 2	774	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	12.3	0	0.1
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	505	1189	-
HCM Lane V/C Ratio	-	-	0.028	0.006	-
HCM Control Delay (s)	-	-	12.3	8	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Intersection	
Int Delay, s/veh	1.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	9	68	28	281	333	10
Future Vol, veh/h	9	68	28	281	333	10
Conflicting Peds, #/hr	2	0	7	0	0	7
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	25	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	11	0	0	5	5	0
Mvmt Flow	10	79	33	327	387	12

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	632	207	406	0	-	0
Stage 1	400	-	-	-	-	-
Stage 2	232	-	-	-	-	-
Critical Hdwy	7.02	6.9	4.1	-	-	-
Critical Hdwy Stg 1	6.02	-	-	-	-	-
Critical Hdwy Stg 2	6.02	-	-	-	-	-
Follow-up Hdwy	3.61	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	393	805	1164	-	-	-
Stage 1	620	-	-	-	-	-
Stage 2	758	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	378	801	1158	-	-	-
Mov Cap-2 Maneuver	378	-	-	-	-	-
Stage 1	600	-	-	-	-	-
Stage 2	754	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10.8	0.7	0
HCM LOS	B		

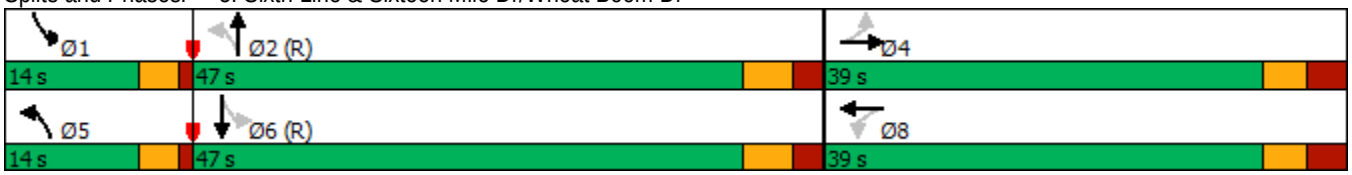
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1158	-	708	-	-
HCM Lane V/C Ratio	0.028	-	0.126	-	-
HCM Control Delay (s)	8.2	-	10.8	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.4	-	-

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	101	69	27	66	10	187	98	186
Future Volume (vph)	101	69	27	66	10	187	98	186
Lane Group Flow (vph)	120	226	32	96	12	334	117	266
Turn Type	Perm	NA	Perm	NA	pm+pt	NA	pm+pt	NA
Protected Phases		4		8	5	2	1	6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	5	2	1	6
Switch Phase								
Minimum Initial (s)	20.0	20.0	20.0	20.0	7.0	35.0	7.0	35.0
Minimum Split (s)	38.4	38.4	38.4	38.4	11.5	41.1	11.0	41.1
Total Split (s)	39.0	39.0	39.0	39.0	14.0	47.0	14.0	47.0
Total Split (%)	39.0%	39.0%	39.0%	39.0%	14.0%	47.0%	14.0%	47.0%
Yellow Time (s)	3.3	3.3	3.3	3.3	3.0	3.7	3.0	3.7
All-Red Time (s)	3.1	3.1	3.1	3.1	1.0	2.4	1.0	2.4
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.4	6.4	6.4	6.4	4.0	6.1	4.0	6.1
Lead/Lag					Lead	Lag	Lead	Lag
Lead-Lag Optimize?								
Recall Mode	Max	Max	Max	Max	None	C-Max	None	C-Max
v/c Ratio	0.30	0.39	0.11	0.17	0.02	0.24	0.21	0.15
Control Delay	27.7	17.1	25.0	22.1	9.7	13.2	10.9	11.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	27.7	17.1	25.0	22.1	9.7	13.2	10.9	11.7
Queue Length 50th (m)	18.2	19.7	4.5	12.2	1.0	15.0	10.4	11.6
Queue Length 95th (m)	31.0	35.9	11.0	22.5	3.3	22.6	17.4	21.4
Internal Link Dist (m)		26.8		207.1		202.5		1327.3
Turn Bay Length (m)	17.0		54.0		60.0		75.0	
Base Capacity (vph)	402	579	293	580	653	1420	579	1765
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.30	0.39	0.11	0.17	0.02	0.24	0.20	0.15

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 95
Control Type: Actuated-Coordinated

Splits and Phases: 5: Sixth Line & Sixteen Mile Dr/Wheat Boom Dr



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	101	69	121	27	66	14	10	187	93	98	186	38
Future Volume (vph)	101	69	121	27	66	14	10	187	93	98	186	38
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.3	3.6	3.5	3.3	3.6	3.5	3.3	3.6	3.5	3.3	3.6	3.5
Total Lost time (s)	6.4	6.4		6.4	6.4		4.0	6.1		4.0	6.1	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	0.99		1.00	1.00		1.00	0.99		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.90		1.00	0.97		1.00	0.95		1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1687	1582		1539	1757		1743	3218		1675	3323	
Flt Permitted	0.69	1.00		0.56	1.00		0.59	1.00		0.50	1.00	
Satd. Flow (perm)	1234	1582		900	1757		1078	3218		884	3323	
Peak-hour factor, PHF	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Adj. Flow (vph)	120	82	144	32	79	17	12	223	111	117	221	45
RTOR Reduction (vph)	0	63	0	0	7	0	0	60	0	0	15	0
Lane Group Flow (vph)	120	163	0	32	89	0	12	274	0	117	251	0
Confl. Peds. (#/hr)	5		5	5		5	1		3	3		1
Heavy Vehicles (%)	3%	10%	6%	13%	6%	0%	0%	4%	9%	4%	6%	3%
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	32.6	32.6		32.6	32.6		43.7	42.3		54.9	49.5	
Effective Green, g (s)	32.6	32.6		32.6	32.6		43.7	42.3		54.9	49.5	
Actuated g/C Ratio	0.33	0.33		0.33	0.33		0.44	0.42		0.55	0.50	
Clearance Time (s)	6.4	6.4		6.4	6.4		4.0	6.1		4.0	6.1	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	402	515		293	572		480	1361		553	1644	
v/s Ratio Prot		c0.10			0.05		0.00	0.09		c0.02	0.08	
v/s Ratio Perm	0.10			0.04			0.01			c0.10		
v/c Ratio	0.30	0.32		0.11	0.15		0.03	0.20		0.21	0.15	
Uniform Delay, d1	25.2	25.3		23.6	23.9		16.0	18.2		11.0	13.8	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.9	1.6		0.8	0.6		0.0	0.3		0.2	0.2	
Delay (s)	27.1	26.9		24.3	24.5		16.0	18.5		11.2	14.0	
Level of Service	C	C		C	C		B	B		B	B	
Approach Delay (s)		27.0			24.4			18.4			13.1	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM 2000 Control Delay	19.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.26		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	16.5
Intersection Capacity Utilization	75.4%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Intersection	
Int Delay, s/veh	1.6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	5	71	26	12	6	13
Future Vol, veh/h	5	71	26	12	6	13
Conflicting Peds, #/hr	10	0	0	10	0	1
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	64	64	64	64	64	64
Heavy Vehicles, %	0	4	0	8	0	0
Mvmt Flow	8	111	41	19	9	20

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	70	0	-	0	188	62
Stage 1	-	-	-	-	61	-
Stage 2	-	-	-	-	127	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1544	-	-	-	806	1009
Stage 1	-	-	-	-	967	-
Stage 2	-	-	-	-	904	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1532	-	-	-	788	1000
Mov Cap-2 Maneuver	-	-	-	-	788	-
Stage 1	-	-	-	-	953	-
Stage 2	-	-	-	-	897	-

Approach	EB	WB	SB
HCM Control Delay, s	0.5	0	9
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1532	-	-	-	922
HCM Lane V/C Ratio	0.005	-	-	-	0.032
HCM Control Delay (s)	7.4	0	-	-	9
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0.1

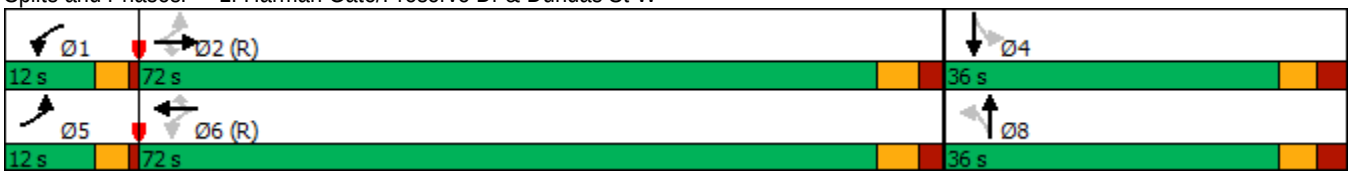
1: Harman Gate/Preserve Dr & Dundas St W

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	79	1326	37	26	1727	219	20	14	182	13
Future Volume (vph)	79	1326	37	26	1727	219	20	14	182	13
Lane Group Flow (vph)	83	1396	39	27	1818	231	21	30	192	86
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	NA
Protected Phases	5	2		1	6			8		4
Permitted Phases	2		2	6		6	8		4	
Detector Phase	5	2	2	1	6	6	8	8	4	4
Switch Phase										
Minimum Initial (s)	7.0	20.0	20.0	7.0	20.0	20.0	10.0	10.0	10.0	10.0
Minimum Split (s)	11.5	41.1	41.1	11.0	41.1	41.1	40.2	40.2	40.3	40.3
Total Split (s)	12.0	72.0	72.0	12.0	72.0	72.0	36.0	36.0	36.0	36.0
Total Split (%)	10.0%	60.0%	60.0%	10.0%	60.0%	60.0%	30.0%	30.0%	30.0%	30.0%
Yellow Time (s)	3.0	3.7	3.7	3.0	3.7	3.7	3.3	3.3	3.3	3.3
All-Red Time (s)	1.0	2.4	2.4	1.0	2.4	2.4	2.9	2.9	2.9	2.9
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	6.1	6.1	4.0	6.1	6.1	6.2	6.2	6.2	6.2
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes				
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	Max	Max	Max	Max
v/c Ratio	0.45	0.47	0.04	0.10	0.63	0.23	0.07	0.07	0.58	0.19
Control Delay	17.4	14.9	1.2	7.7	18.8	2.3	35.4	22.1	47.9	11.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	17.4	14.9	1.2	7.7	18.8	2.3	35.4	22.1	47.9	11.9
Queue Length 50th (m)	6.6	74.0	0.0	2.1	109.4	0.0	4.0	2.8	42.0	2.6
Queue Length 95th (m)	16.2	86.6	2.2	5.3	127.2	11.4	11.0	10.9	67.9	16.0
Internal Link Dist (m)		434.4			677.7			233.6		111.4
Turn Bay Length (m)	135.0		115.0	115.0		115.0	35.0		40.0	
Base Capacity (vph)	193	2992	950	273	2907	989	303	416	329	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	0.43	0.47	0.04	0.10	0.63	0.23	0.07	0.07	0.58	0.19

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 64 (53%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 95
Control Type: Actuated-Coordinated

Splits and Phases: 1: Harman Gate/Preserve Dr & Dundas St W



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	79	1326	37	26	1727	219	20	14	14	182	13	68
Future Volume (vph)	79	1326	37	26	1727	219	20	14	14	182	13	68
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.3	3.6	3.5	3.3	3.6	3.5	3.3	3.6	3.5	3.3	3.6	3.5
Total Lost time (s)	4.0	6.1	6.1	4.0	6.1	6.1	6.2	6.2		6.2	6.2	
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.97	1.00	1.00	0.97	1.00	0.99		1.00	0.99	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.93		1.00	0.87	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1745	5036	1556	1745	5085	1557	1659	1631		1707	1642	
Flt Permitted	0.07	1.00	1.00	0.15	1.00	1.00	0.70	1.00		0.74	1.00	
Satd. Flow (perm)	131	5036	1556	274	5085	1557	1224	1631		1326	1642	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	83	1396	39	27	1818	231	21	15	15	192	14	72
RTOR Reduction (vph)	0	0	16	0	0	100	0	11	0	0	54	0
Lane Group Flow (vph)	83	1396	23	27	1818	131	21	19	0	192	32	0
Confl. Peds. (#/hr)	3		3	3		3	2		1	1		2
Confl. Bikes (#/hr)			1									
Heavy Vehicles (%)	0%	3%	0%	0%	2%	0%	5%	7%	7%	2%	0%	0%
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases	2		2	6		6	8			4		
Actuated Green, G (s)	75.8	69.7	69.7	72.0	67.8	67.8	29.8	29.8		29.8	29.8	
Effective Green, g (s)	75.8	69.7	69.7	72.0	67.8	67.8	29.8	29.8		29.8	29.8	
Actuated g/C Ratio	0.63	0.58	0.58	0.60	0.56	0.56	0.25	0.25		0.25	0.25	
Clearance Time (s)	4.0	6.1	6.1	4.0	6.1	6.1	6.2	6.2		6.2	6.2	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	164	2925	903	215	2873	879	303	405		329	407	
v/s Ratio Prot	c0.03	0.28		0.00	c0.36			0.01			0.02	
v/s Ratio Perm	0.29		0.01	0.07		0.08	0.02			c0.14		
v/c Ratio	0.51	0.48	0.03	0.13	0.63	0.15	0.07	0.05		0.58	0.08	
Uniform Delay, d1	13.3	14.6	10.7	10.4	17.7	12.4	34.5	34.3		39.6	34.6	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	2.4	0.6	0.1	0.3	1.1	0.4	0.4	0.2		7.4	0.4	
Delay (s)	15.8	15.1	10.7	10.7	18.7	12.7	34.9	34.5		47.0	34.9	
Level of Service	B	B	B	B	B	B	C	C		D	C	
Approach Delay (s)		15.1			18.0			34.7			43.3	
Approach LOS		B			B			C			D	

Intersection Summary			
HCM 2000 Control Delay	18.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.3
Intersection Capacity Utilization	81.1%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	101	1237	185	125	1734	128	183	70	183	179	106
Future Volume (vph)	101	1237	185	125	1734	128	183	70	183	179	106
Lane Group Flow (vph)	106	1302	195	132	1956	135	193	74	193	188	112
Turn Type	pm+pt	NA	Perm	pm+pt	NA	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2		1	6	3	8		7	4	
Permitted Phases	2		2	6		8		8	4		4
Detector Phase	5	2	2	1	6	3	8	8	7	4	4
Switch Phase											
Minimum Initial (s)	7.0	24.0	24.0	7.0	24.0	7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	13.0	31.0	31.0	13.0	31.0	11.0	37.0	37.0	11.0	37.0	37.0
Total Split (s)	17.0	74.0	74.0	17.0	74.0	11.0	38.0	38.0	11.0	38.0	38.0
Total Split (%)	12.1%	52.9%	52.9%	12.1%	52.9%	7.9%	27.1%	27.1%	7.9%	27.1%	27.1%
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	3.0	2.0	2.0	3.0	2.0	1.0	2.0	2.0	1.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	4.0	6.0	6.0	4.0	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?											
Recall Mode	None	C-Max	C-Max	None	C-Max	None	Max	Max	None	Max	Max
v/c Ratio	0.64	0.52	0.22	0.53	0.78	0.44	0.44	0.17	0.63	0.44	0.25
Control Delay	42.7	25.1	3.2	20.1	31.7	41.2	50.2	4.2	49.6	50.1	8.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	42.7	25.1	3.2	20.1	31.7	41.2	50.2	4.2	49.6	50.1	8.9
Queue Length 50th (m)	14.2	92.8	0.0	15.6	167.5	29.0	48.7	0.0	43.0	47.3	0.0
Queue Length 95th (m)	35.1	108.7	13.2	25.4	191.4	47.0	73.9	7.0	65.6	72.1	16.1
Internal Link Dist (m)		677.7			1210.7		440.8			65.0	
Turn Bay Length (m)	107.0		80.0	120.0		90.0			76.0		
Base Capacity (vph)	185	2495	867	266	2506	309	434	426	305	429	441
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.57	0.52	0.22	0.50	0.78	0.44	0.44	0.17	0.63	0.44	0.25

Intersection Summary

Cycle Length: 140
Actuated Cycle Length: 140
Offset: 71 (51%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 105
Control Type: Actuated-Coordinated

Splits and Phases: 2: Sixth Line & Dundas St E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	101	1237	185	125	1734	124	128	183	70	183	179	106
Future Volume (vph)	101	1237	185	125	1734	124	128	183	70	183	179	106
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.3	3.6	3.5	3.3	3.6	3.5	3.3	3.6	3.5	3.3	3.6	3.5
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0		4.0	6.0	6.0	4.0	6.0	6.0
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91		1.00	1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00		1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1711	5036	1553	1727	5027		1724	1900	1526	1725	1881	1554
Flt Permitted	0.06	1.00	1.00	0.14	1.00		0.51	1.00	1.00	0.50	1.00	1.00
Satd. Flow (perm)	104	5036	1553	261	5027		921	1900	1526	904	1881	1554
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	106	1302	195	132	1825	131	135	193	74	193	188	112
RTOR Reduction (vph)	0	0	98	0	6	0	0	0	57	0	0	86
Lane Group Flow (vph)	106	1302	97	132	1950	0	135	193	17	193	188	26
Confl. Peds. (#/hr)	6		3	3		6	4		3	3		4
Confl. Bikes (#/hr)			1									
Heavy Vehicles (%)	2%	3%	1%	1%	2%	2%	1%	0%	3%	1%	1%	1%
Turn Type	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6			8		8	4		4
Actuated Green, G (s)	78.8	69.4	69.4	79.2	69.6		39.0	32.0	32.0	39.0	32.0	32.0
Effective Green, g (s)	78.8	69.4	69.4	79.2	69.6		39.0	32.0	32.0	39.0	32.0	32.0
Actuated g/C Ratio	0.56	0.50	0.50	0.57	0.50		0.28	0.23	0.23	0.28	0.23	0.23
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0		4.0	6.0	6.0	4.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	166	2496	769	248	2499		296	434	348	292	429	355
v/s Ratio Prot	c0.04	0.26		0.04	c0.39		0.02	0.10		c0.03	0.10	
v/s Ratio Perm	0.32		0.06	0.26			0.10		0.01	c0.15		0.02
v/c Ratio	0.64	0.52	0.13	0.53	0.78		0.46	0.44	0.05	0.66	0.44	0.07
Uniform Delay, d1	25.1	24.0	19.0	16.5	28.9		40.8	46.4	42.1	44.5	46.3	42.4
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	7.8	0.8	0.3	2.2	2.5		1.1	3.3	0.3	5.5	3.2	0.4
Delay (s)	32.9	24.8	19.3	18.6	31.4		41.9	49.6	42.4	50.0	49.5	42.7
Level of Service	C	C	B	B	C		D	D	D	D	D	D
Approach Delay (s)		24.7			30.6			45.7			48.2	
Approach LOS		C			C			D			D	

Intersection Summary			
HCM 2000 Control Delay	31.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	22.0
Intersection Capacity Utilization	96.4%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	0.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	15	8	395	12	6	453
Future Vol, veh/h	15	8	395	12	6	453
Conflicting Peds, #/hr	0	0	0	3	3	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	0	0	1	0	0	1
Mvmt Flow	16	9	420	13	6	482

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	683	220	0	0	436	0
Stage 1	430	-	-	-	-	-
Stage 2	253	-	-	-	-	-
Critical Hdwy	6.8	6.9	-	-	4.1	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	387	790	-	-	1134	-
Stage 1	629	-	-	-	-	-
Stage 2	772	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	384	788	-	-	1131	-
Mov Cap-2 Maneuver	384	-	-	-	-	-
Stage 1	628	-	-	-	-	-
Stage 2	767	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	13.1	0	0.1
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	467	1131	-
HCM Lane V/C Ratio	-	-	0.052	0.006	-
HCM Control Delay (s)	-	-	13.1	8.2	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.2	0	-

Intersection	
Int Delay, s/veh	1.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	11	38	53	349	306	10
Future Vol, veh/h	11	38	53	349	306	10
Conflicting Peds, #/hr	3	1	2	0	0	2
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	25	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	0	0	0	1	1	25
Mvmt Flow	11	40	55	364	319	10

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	621	168	331	0	-	0
Stage 1	326	-	-	-	-	-
Stage 2	295	-	-	-	-	-
Critical Hdwy	6.8	6.9	4.1	-	-	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	424	853	1240	-	-	-
Stage 1	710	-	-	-	-	-
Stage 2	736	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	404	851	1238	-	-	-
Mov Cap-2 Maneuver	404	-	-	-	-	-
Stage 1	677	-	-	-	-	-
Stage 2	735	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10.7	1.1	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1238	-	682	-	-
HCM Lane V/C Ratio	0.045	-	0.075	-	-
HCM Control Delay (s)	8	-	10.7	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.2	-	-

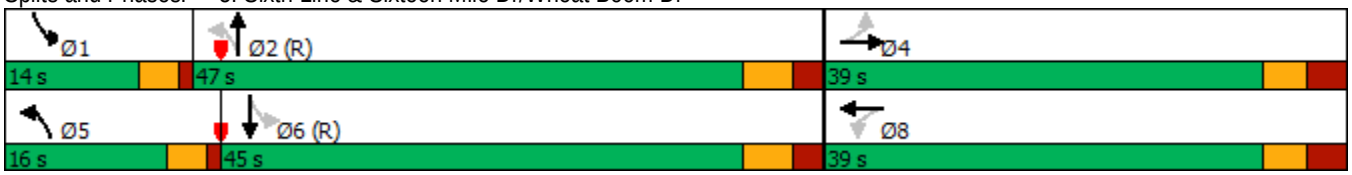
5: Sixth Line & Sixteen Mile Dr/Wheat Boom Dr

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	89	59	19	56	16	220	102	196
Future Volume (vph)	89	59	19	56	16	220	102	196
Lane Group Flow (vph)	94	168	20	73	17	363	107	260
Turn Type	Perm	NA	Perm	NA	pm+pt	NA	pm+pt	NA
Protected Phases		4		8	5	2	1	6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	5	2	1	6
Switch Phase								
Minimum Initial (s)	20.0	20.0	20.0	20.0	7.0	35.0	7.0	35.0
Minimum Split (s)	38.4	38.4	38.4	38.4	11.5	41.1	11.0	41.1
Total Split (s)	39.0	39.0	39.0	39.0	16.0	47.0	14.0	45.0
Total Split (%)	39.0%	39.0%	39.0%	39.0%	16.0%	47.0%	14.0%	45.0%
Yellow Time (s)	3.3	3.3	3.3	3.3	3.0	3.7	3.0	3.7
All-Red Time (s)	3.1	3.1	3.1	3.1	1.0	2.4	1.0	2.4
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.4	6.4	6.4	6.4	4.0	6.1	4.0	6.1
Lead/Lag					Lead	Lag	Lead	Lag
Lead-Lag Optimize?								
Recall Mode	Max	Max	Max	Max	None	C-Max	None	C-Max
v/c Ratio	0.22	0.27	0.05	0.13	0.03	0.24	0.19	0.15
Control Delay	26.3	13.1	23.7	20.6	9.8	12.2	10.8	12.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	26.3	13.1	23.7	20.6	9.8	12.2	10.8	12.5
Queue Length 50th (m)	13.8	11.0	2.8	8.5	1.4	15.0	9.4	10.8
Queue Length 95th (m)	26.9	26.9	8.3	18.9	4.4	25.5	17.4	22.0
Internal Link Dist (m)		26.8		207.1		202.5		1327.3
Turn Bay Length (m)	17.0		54.0		60.0		75.0	
Base Capacity (vph)	423	612	382	581	688	1493	580	1762
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.22	0.27	0.05	0.13	0.02	0.24	0.18	0.15

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 95
Control Type: Actuated-Coordinated

Splits and Phases: 5: Sixth Line & Sixteen Mile Dr/Wheat Boom Dr



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	89	59	101	19	56	13	16	220	124	102	196	51
Future Volume (vph)	89	59	101	19	56	13	16	220	124	102	196	51
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.3	3.6	3.5	3.3	3.6	3.5	3.3	3.6	3.5	3.3	3.6	3.5
Total Lost time (s)	6.4	6.4		6.4	6.4		4.0	6.1		4.0	6.1	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	0.99		1.00	1.00		1.00	0.99		1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.91		1.00	0.97		1.00	0.95		1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1739	1693		1742	1756		1742	3334		1728	3452	
Flt Permitted	0.71	1.00		0.64	1.00		0.59	1.00		0.48	1.00	
Satd. Flow (perm)	1299	1693		1174	1756		1084	3334		874	3452	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	94	62	106	20	59	14	17	232	131	107	206	54
RTOR Reduction (vph)	0	61	0	0	9	0	0	75	0	0	20	0
Lane Group Flow (vph)	94	107	0	20	64	0	17	288	0	107	240	0
Confl. Peds. (#/hr)	4		2	2		4	2					2
Confl. Bikes (#/hr)									1			
Heavy Vehicles (%)	0%	2%	0%	0%	4%	8%	0%	2%	1%	1%	1%	0%
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	32.6	32.6		32.6	32.6		45.3	42.5		54.9	48.1	
Effective Green, g (s)	32.6	32.6		32.6	32.6		45.3	42.5		54.9	48.1	
Actuated g/C Ratio	0.33	0.33		0.33	0.33		0.45	0.42		0.55	0.48	
Clearance Time (s)	6.4	6.4		6.4	6.4		4.0	6.1		4.0	6.1	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	423	551		382	572		509	1416		551	1660	
v/s Ratio Prot		0.06			0.04		0.00	0.09		c0.02	0.07	
v/s Ratio Perm	c0.07			0.02			0.01			c0.09		
v/c Ratio	0.22	0.19		0.05	0.11		0.03	0.20		0.19	0.14	
Uniform Delay, d1	24.5	24.2		23.1	23.6		15.1	18.1		11.0	14.5	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.2	0.8		0.3	0.4		0.0	0.3		0.2	0.2	
Delay (s)	25.7	25.0		23.4	24.0		15.1	18.4		11.1	14.7	
Level of Service	C	C		C	C		B	B		B	B	
Approach Delay (s)		25.3			23.8			18.3			13.6	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM 2000 Control Delay	18.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.21		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	16.5
Intersection Capacity Utilization	75.4%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	3	41	45	11	6	1
Future Vol, veh/h	3	41	45	11	6	1
Conflicting Peds, #/hr	7	0	0	7	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	79	79	79	79	79	79
Heavy Vehicles, %	0	2	4	0	0	100
Mvmt Flow	4	52	57	14	8	1

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	78	0	-	0	131	71
Stage 1	-	-	-	-	71	-
Stage 2	-	-	-	-	60	-
Critical Hdwy	4.1	-	-	-	6.4	7.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	4.2
Pot Cap-1 Maneuver	1533	-	-	-	868	775
Stage 1	-	-	-	-	957	-
Stage 2	-	-	-	-	968	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1525	-	-	-	857	771
Mov Cap-2 Maneuver	-	-	-	-	857	-
Stage 1	-	-	-	-	949	-
Stage 2	-	-	-	-	963	-

Approach	EB	WB	SB
HCM Control Delay, s	0.5	0	9.3
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1525	-	-	-	844
HCM Lane V/C Ratio	0.002	-	-	-	0.01
HCM Control Delay (s)	7.4	0	-	-	9.3
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0

APPENDIX F

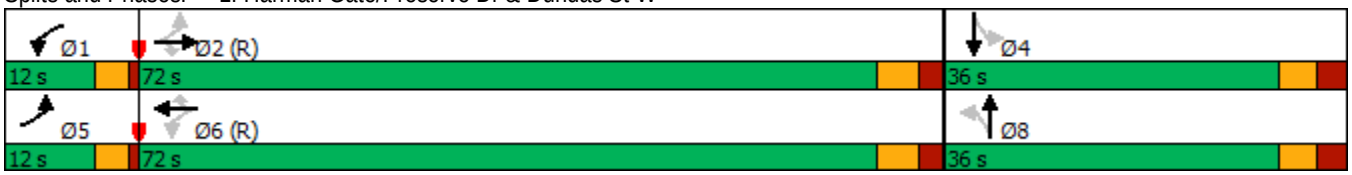
Intersection Capacity Analysis – Future Background Conditions

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	86	1599	35	13	1098	136	26	9	170	20
Future Volume (vph)	86	1599	35	13	1098	136	26	9	170	20
Lane Group Flow (vph)	88	1632	36	13	1120	139	27	53	173	130
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	NA
Protected Phases	5	2		1	6			8		4
Permitted Phases	2		2	6		6	8		4	
Detector Phase	5	2	2	1	6	6	8	8	4	4
Switch Phase										
Minimum Initial (s)	7.0	20.0	20.0	7.0	20.0	20.0	10.0	10.0	10.0	10.0
Minimum Split (s)	11.5	41.1	41.1	11.0	41.1	41.1	40.2	40.2	40.3	40.3
Total Split (s)	12.0	72.0	72.0	12.0	72.0	72.0	36.0	36.0	36.0	36.0
Total Split (%)	10.0%	60.0%	60.0%	10.0%	60.0%	60.0%	30.0%	30.0%	30.0%	30.0%
Yellow Time (s)	3.0	3.7	3.7	3.0	3.7	3.7	3.3	3.3	3.3	3.3
All-Red Time (s)	1.0	2.4	2.4	1.0	2.4	2.4	2.9	2.9	2.9	2.9
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	6.1	6.1	4.0	6.1	6.1	6.2	6.2	6.2	6.2
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes				
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	Max	Max	Max	Max
v/c Ratio	0.29	0.53	0.04	0.06	0.42	0.16	0.09	0.12	0.54	0.27
Control Delay	9.6	14.8	0.9	7.4	16.2	2.5	35.8	13.6	46.2	10.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	9.6	14.8	0.9	7.4	16.2	2.5	35.8	13.6	46.2	10.9
Queue Length 50th (m)	7.1	70.8	0.0	1.0	56.6	0.0	5.2	1.7	37.4	3.8
Queue Length 95th (m)	13.0	107.1	1.7	3.2	68.2	9.3	13.3	12.3	61.7	20.0
Internal Link Dist (m)		434.4			531.7			233.6		111.4
Turn Bay Length (m)	135.0		115.0	115.0		115.0	35.0		40.0	
Base Capacity (vph)	308	3084	897	233	2680	895	297	432	323	482
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	0.29	0.53	0.04	0.06	0.42	0.16	0.09	0.12	0.54	0.27

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 113 (94%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 95
Control Type: Actuated-Coordinated

Splits and Phases: 1: Harman Gate/Preserve Dr & Dundas St W



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	86	1599	35	13	1098	136	26	9	43	170	20	108
Future Volume (vph)	86	1599	35	13	1098	136	26	9	43	170	20	108
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.3	3.6	3.5	3.3	3.6	3.5	3.3	3.6	3.5	3.3	3.6	3.5
Total Lost time (s)	4.0	6.1	6.1	4.0	6.1	6.1	6.2	6.2		6.2	6.2	
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.97	1.00	1.00	0.97	1.00	0.98		1.00	0.99	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		0.99	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.88		1.00	0.87	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1646	5036	1425	1745	4848	1506	1739	1608		1715	1609	
Flt Permitted	0.19	1.00	1.00	0.11	1.00	1.00	0.66	1.00		0.72	1.00	
Satd. Flow (perm)	338	5036	1425	206	4848	1506	1199	1608		1304	1609	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	88	1632	36	13	1120	139	27	9	44	173	20	110
RTOR Reduction (vph)	0	0	15	0	0	62	0	33	0	0	83	0
Lane Group Flow (vph)	88	1632	21	13	1120	77	27	20	0	173	47	0
Confl. Peds. (#/hr)	5		4	4		5	4		4	4		4
Confl. Bikes (#/hr)			1						1			
Heavy Vehicles (%)	6%	3%	9%	0%	7%	3%	0%	0%	2%	1%	0%	2%
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases	2		2	6		6	8			4		
Actuated Green, G (s)	77.9	71.1	71.1	69.2	66.4	66.4	29.8	29.8		29.8	29.8	
Effective Green, g (s)	77.9	71.1	71.1	69.2	66.4	66.4	29.8	29.8		29.8	29.8	
Actuated g/C Ratio	0.65	0.59	0.59	0.58	0.55	0.55	0.25	0.25		0.25	0.25	
Clearance Time (s)	4.0	6.1	6.1	4.0	6.1	6.1	6.2	6.2		6.2	6.2	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	301	2983	844	154	2682	833	297	399		323	399	
v/s Ratio Prot	c0.02	c0.32		0.00	0.23			0.01			0.03	
v/s Ratio Perm	0.17		0.01	0.05		0.05	0.02			c0.13		
v/c Ratio	0.29	0.55	0.03	0.08	0.42	0.09	0.09	0.05		0.54	0.12	
Uniform Delay, d1	8.8	14.7	10.1	11.6	15.6	12.6	34.7	34.3		39.1	34.9	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.5	0.7	0.1	0.2	0.5	0.2	0.6	0.2		6.2	0.6	
Delay (s)	9.3	15.5	10.2	11.9	16.0	12.8	35.3	34.6		45.3	35.5	
Level of Service	A	B	B	B	B	B	D	C		D	D	
Approach Delay (s)		15.1			15.7			34.8			41.1	
Approach LOS		B			B			C			D	

Intersection Summary			
HCM 2000 Control Delay	18.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.3
Intersection Capacity Utilization	78.6%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	77	1524	183	115	939	208	174	210	180	209	94
Future Volume (vph)	77	1524	183	115	939	208	174	210	180	209	94
Lane Group Flow (vph)	78	1539	185	116	1050	210	176	212	182	211	95
Turn Type	pm+pt	NA	Perm	pm+pt	NA	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2		1	6	3	8		7	4	
Permitted Phases	2		2	6		8		8	4		4
Detector Phase	5	2	2	1	6	3	8	8	7	4	4
Switch Phase											
Minimum Initial (s)	7.0	24.0	24.0	7.0	24.0	7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	14.0	31.0	31.0	14.0	31.0	11.5	37.0	37.0	11.5	37.0	37.0
Total Split (s)	14.0	75.0	75.0	14.0	75.0	14.0	37.0	37.0	14.0	37.0	37.0
Total Split (%)	10.0%	53.6%	53.6%	10.0%	53.6%	10.0%	26.4%	26.4%	10.0%	26.4%	26.4%
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	3.0	2.0	2.0	3.0	2.0	1.0	2.0	2.0	1.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	4.0	6.0	6.0	4.0	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?											
Recall Mode	None	C-Max	C-Max	None	C-Max	None	Max	Max	None	Max	Max
v/c Ratio	0.29	0.61	0.21	0.65	0.45	0.68	0.44	0.47	0.53	0.53	0.23
Control Delay	15.3	27.1	3.2	33.3	23.2	50.0	51.0	18.4	42.2	53.8	8.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	15.3	27.1	3.2	33.3	23.2	50.0	51.0	18.4	42.2	53.8	8.4
Queue Length 50th (m)	9.3	116.8	0.3	14.2	70.0	46.5	44.6	14.6	39.4	54.8	0.0
Queue Length 95th (m)	17.0	132.6	13.0	#31.5	82.5	70.0	68.8	40.1	60.9	82.2	13.6
Internal Link Dist (m)		122.2			1210.7		440.8			65.0	
Turn Bay Length (m)	107.0		80.0	120.0		90.0			76.0		
Base Capacity (vph)	271	2512	863	179	2354	308	404	449	342	396	413
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.29	0.61	0.21	0.65	0.45	0.68	0.44	0.47	0.53	0.53	0.23

Intersection Summary

Cycle Length: 140
Actuated Cycle Length: 140
Offset: 36 (26%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 95
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 2: Sixth Line & Dundas St E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	77	1524	183	115	939	101	208	174	210	180	209	94
Future Volume (vph)	77	1524	183	115	939	101	208	174	210	180	209	94
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.3	3.6	3.5	3.3	3.6	3.5	3.3	3.6	3.5	3.3	3.6	3.5
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0		4.0	6.0	6.0	4.0	6.0	6.0
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91		1.00	1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00		1.00	1.00	0.97	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1630	5085	1559	1678	4738		1676	1827	1497	1702	1792	1511
Flt Permitted	0.21	1.00	1.00	0.10	1.00		0.45	1.00	1.00	0.52	1.00	1.00
Satd. Flow (perm)	362	5085	1559	170	4738		802	1827	1497	941	1792	1511
Peak-hour factor, PHF	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Adj. Flow (vph)	78	1539	185	116	948	102	210	176	212	182	211	95
RTOR Reduction (vph)	0	0	93	0	9	0	0	0	118	0	0	74
Lane Group Flow (vph)	78	1539	92	116	1041	0	210	176	94	182	211	21
Confl. Peds. (#/hr)	8		1	1		8	3		10	10		3
Confl. Bikes (#/hr)			1									
Heavy Vehicles (%)	7%	2%	1%	4%	8%	4%	4%	4%	4%	2%	6%	4%
Turn Type	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6			8		8	4		4
Actuated Green, G (s)	76.9	69.2	69.2	77.1	69.3		41.0	31.0	31.0	41.0	31.0	31.0
Effective Green, g (s)	76.9	69.2	69.2	77.1	69.3		41.0	31.0	31.0	41.0	31.0	31.0
Actuated g/C Ratio	0.55	0.49	0.49	0.55	0.49		0.29	0.22	0.22	0.29	0.22	0.22
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0		4.0	6.0	6.0	4.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	268	2513	770	177	2345		297	404	331	329	396	334
v/s Ratio Prot	0.02	0.30		c0.04	0.22		c0.05	0.10		0.04	0.12	
v/s Ratio Perm	0.14		0.06	c0.32			c0.16		0.06	0.12		0.01
v/c Ratio	0.29	0.61	0.12	0.66	0.44		0.71	0.44	0.29	0.55	0.53	0.06
Uniform Delay, d1	15.7	25.7	19.0	19.5	22.9		42.8	47.0	45.3	40.2	48.1	43.0
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.6	1.1	0.3	8.4	0.6		7.5	3.4	2.2	2.0	5.1	0.4
Delay (s)	16.3	26.8	19.4	27.9	23.5		50.3	50.4	47.4	42.2	53.2	43.4
Level of Service	B	C	B	C	C		D	D	D	D	D	D
Approach Delay (s)		25.6			23.9			49.3			47.2	
Approach LOS		C			C			D			D	

Intersection Summary			
HCM 2000 Control Delay	31.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	22.0
Intersection Capacity Utilization	91.5%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	0.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	8	4	324	14	6	474
Future Vol, veh/h	8	4	324	14	6	474
Conflicting Peds, #/hr	0	0	0	1	1	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	0	0	5	0	0	4
Mvmt Flow	9	5	377	16	7	551

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	676	198	0	0	394	0
Stage 1	386	-	-	-	-	-
Stage 2	290	-	-	-	-	-
Critical Hdwy	6.8	6.9	-	-	4.1	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	391	816	-	-	1176	-
Stage 1	662	-	-	-	-	-
Stage 2	740	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	387	815	-	-	1175	-
Mov Cap-2 Maneuver	387	-	-	-	-	-
Stage 1	661	-	-	-	-	-
Stage 2	733	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	12.9	0	0.1
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	469	1175	-
HCM Lane V/C Ratio	-	-	0.03	0.006	-
HCM Control Delay (s)	-	-	12.9	8.1	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Intersection	
Int Delay, s/veh	1.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	14	68	28	293	412	26
Future Vol, veh/h	14	68	28	293	412	26
Conflicting Peds, #/hr	2	0	7	0	0	7
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	25	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	11	0	0	5	5	0
Mvmt Flow	16	79	33	341	479	30

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	740	262	516	0	-	0
Stage 1	501	-	-	-	-	-
Stage 2	239	-	-	-	-	-
Critical Hdwy	7.02	6.9	4.1	-	-	-
Critical Hdwy Stg 1	6.02	-	-	-	-	-
Critical Hdwy Stg 2	6.02	-	-	-	-	-
Follow-up Hdwy	3.61	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	334	743	1060	-	-	-
Stage 1	549	-	-	-	-	-
Stage 2	752	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	320	739	1054	-	-	-
Mov Cap-2 Maneuver	320	-	-	-	-	-
Stage 1	529	-	-	-	-	-
Stage 2	748	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	12.1	0.7	0
HCM LOS	B		

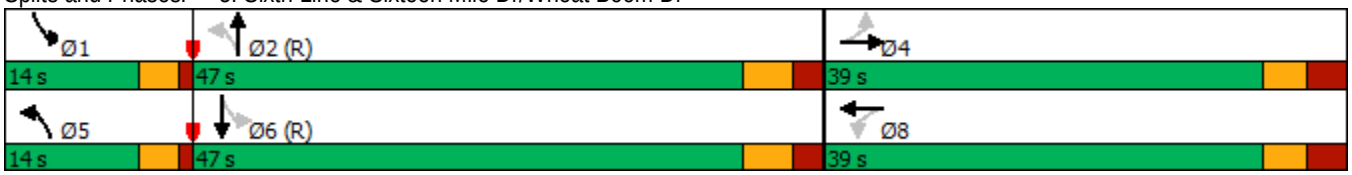
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1054	-	604	-	-
HCM Lane V/C Ratio	0.031	-	0.158	-	-
HCM Control Delay (s)	8.5	-	12.1	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.6	-	-

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	105	69	27	66	10	199	98	265
Future Volume (vph)	105	69	27	66	10	199	98	265
Lane Group Flow (vph)	125	226	32	96	12	348	117	377
Turn Type	Perm	NA	Perm	NA	pm+pt	NA	pm+pt	NA
Protected Phases		4		8	5	2	1	6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	5	2	1	6
Switch Phase								
Minimum Initial (s)	20.0	20.0	20.0	20.0	7.0	35.0	7.0	35.0
Minimum Split (s)	38.4	38.4	38.4	38.4	11.5	41.1	11.0	41.1
Total Split (s)	39.0	39.0	39.0	39.0	14.0	47.0	14.0	47.0
Total Split (%)	39.0%	39.0%	39.0%	39.0%	14.0%	47.0%	14.0%	47.0%
Yellow Time (s)	3.3	3.3	3.3	3.3	3.0	3.7	3.0	3.7
All-Red Time (s)	3.1	3.1	3.1	3.1	1.0	2.4	1.0	2.4
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.4	6.4	6.4	6.4	4.0	6.1	4.0	6.1
Lead/Lag					Lead	Lag	Lead	Lag
Lead-Lag Optimize?								
Recall Mode	Max	Max	Max	Max	None	C-Max	None	C-Max
v/c Ratio	0.31	0.39	0.11	0.17	0.02	0.25	0.21	0.21
Control Delay	28.0	17.1	25.0	22.1	9.7	14.0	11.0	12.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	28.0	17.1	25.0	22.1	9.7	14.0	11.0	12.6
Queue Length 50th (m)	19.0	19.7	4.5	12.2	1.0	16.6	10.4	17.8
Queue Length 95th (m)	32.0	35.9	11.0	22.5	3.3	24.6	17.4	30.5
Internal Link Dist (m)		26.8		207.1		202.5		1327.3
Turn Bay Length (m)	17.0		54.0		60.0		75.0	
Base Capacity (vph)	402	579	293	580	604	1418	571	1764
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.31	0.39	0.11	0.17	0.02	0.25	0.20	0.21

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 95
Control Type: Actuated-Coordinated

Splits and Phases: 5: Sixth Line & Sixteen Mile Dr/Wheat Boom Dr



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	105	69	121	27	66	14	10	199	93	98	265	52
Future Volume (vph)	105	69	121	27	66	14	10	199	93	98	265	52
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.3	3.6	3.5	3.3	3.6	3.5	3.3	3.6	3.5	3.3	3.6	3.5
Total Lost time (s)	6.4	6.4		6.4	6.4		4.0	6.1		4.0	6.1	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	0.99		1.00	1.00		1.00	0.99		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.90		1.00	0.97		1.00	0.95		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1687	1582		1539	1757		1744	3228		1675	3325	
Flt Permitted	0.69	1.00		0.56	1.00		0.53	1.00		0.49	1.00	
Satd. Flow (perm)	1234	1582		900	1757		969	3228		866	3325	
Peak-hour factor, PHF	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Adj. Flow (vph)	125	82	144	32	79	17	12	237	111	117	315	62
RTOR Reduction (vph)	0	63	0	0	7	0	0	54	0	0	14	0
Lane Group Flow (vph)	125	163	0	32	89	0	12	294	0	117	363	0
Confl. Peds. (#/hr)	5		5	5		5	1		3	3		1
Heavy Vehicles (%)	3%	10%	6%	13%	6%	0%	0%	4%	9%	4%	6%	3%
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	32.6	32.6		32.6	32.6		43.7	42.3		54.9	49.5	
Effective Green, g (s)	32.6	32.6		32.6	32.6		43.7	42.3		54.9	49.5	
Actuated g/C Ratio	0.33	0.33		0.33	0.33		0.44	0.42		0.55	0.50	
Clearance Time (s)	6.4	6.4		6.4	6.4		4.0	6.1		4.0	6.1	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	402	515		293	572		434	1365		545	1645	
v/s Ratio Prot		c0.10			0.05		0.00	0.09		c0.02	c0.11	
v/s Ratio Perm	0.10			0.04			0.01			0.10		
v/c Ratio	0.31	0.32		0.11	0.15		0.03	0.22		0.21	0.22	
Uniform Delay, d1	25.3	25.3		23.6	23.9		16.0	18.3		11.0	14.3	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	2.0	1.6		0.8	0.6		0.0	0.4		0.2	0.3	
Delay (s)	27.3	26.9		24.3	24.5		16.0	18.7		11.2	14.6	
Level of Service	C	C		C	C		B	B		B	B	
Approach Delay (s)		27.1			24.4			18.6			13.8	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM 2000 Control Delay	19.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.27		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	16.5
Intersection Capacity Utilization	75.4%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Intersection	
Int Delay, s/veh	1.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	5	76	42	12	6	13
Future Vol, veh/h	5	76	42	12	6	13
Conflicting Peds, #/hr	10	0	0	10	0	1
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	64	64	64	64	64	64
Heavy Vehicles, %	0	4	0	8	0	0
Mvmt Flow	8	119	66	19	9	20

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	95	0	-	0	221	87
Stage 1	-	-	-	-	86	-
Stage 2	-	-	-	-	135	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1512	-	-	-	772	977
Stage 1	-	-	-	-	942	-
Stage 2	-	-	-	-	896	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1500	-	-	-	755	969
Mov Cap-2 Maneuver	-	-	-	-	755	-
Stage 1	-	-	-	-	929	-
Stage 2	-	-	-	-	889	-

Approach	EB	WB	SB
HCM Control Delay, s	0.5	0	9.2
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1500	-	-	-	889
HCM Lane V/C Ratio	0.005	-	-	-	0.033
HCM Control Delay (s)	7.4	0	-	-	9.2
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑	↑↑↑↳			↱
Traffic Vol, veh/h	0	1812	1247	0	0	0
Future Vol, veh/h	0	1812	1247	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	1849	1272	0	0	0

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	636
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	7.1
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.9
Pot Cap-1 Maneuver	0	-	-	-	0	364
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	-	-	-	-	-	364
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-
HCM Control Delay (s)	-	-	-	0
HCM Lane LOS	-	-	-	A
HCM 95th %tile Q(veh)	-	-	-	-

Intersection	
Int Delay, s/veh	0

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	77	0	0	38	0	0
Future Vol, veh/h	77	0	0	38	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	90	0	0	44	0	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	90	0	134	90
Stage 1	-	-	-	-	90	-
Stage 2	-	-	-	-	44	-
Critical Hdwy	-	-	4.1	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1518	-	864	973
Stage 1	-	-	-	-	939	-
Stage 2	-	-	-	-	984	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1518	-	864	973
Mov Cap-2 Maneuver	-	-	-	-	864	-
Stage 1	-	-	-	-	939	-
Stage 2	-	-	-	-	984	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	-	1518	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	-	-	-	0	-

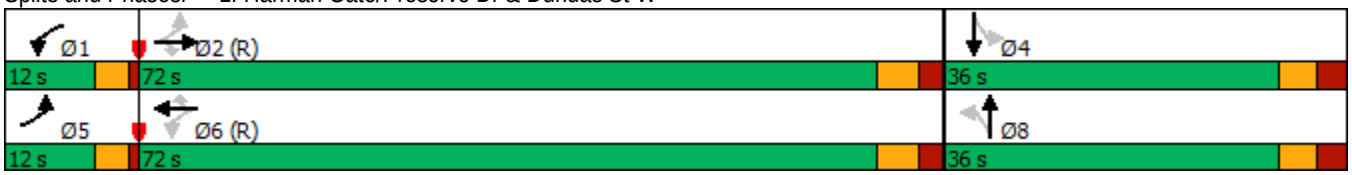
1: Harman Gate/Preserve Dr & Dundas St W

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	79	1550	37	26	1739	219	20	14	182	16
Future Volume (vph)	79	1550	37	26	1739	219	20	14	182	16
Lane Group Flow (vph)	83	1632	39	27	1831	231	21	30	192	89
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	NA
Protected Phases	5	2		1	6			8		4
Permitted Phases	2		2	6		6	8		4	
Detector Phase	5	2	2	1	6	6	8	8	4	4
Switch Phase										
Minimum Initial (s)	7.0	20.0	20.0	7.0	20.0	20.0	10.0	10.0	10.0	10.0
Minimum Split (s)	11.5	41.1	41.1	11.0	41.1	41.1	40.2	40.2	40.3	40.3
Total Split (s)	12.0	72.0	72.0	12.0	72.0	72.0	36.0	36.0	36.0	36.0
Total Split (%)	10.0%	60.0%	60.0%	10.0%	60.0%	60.0%	30.0%	30.0%	30.0%	30.0%
Yellow Time (s)	3.0	3.7	3.7	3.0	3.7	3.7	3.3	3.3	3.3	3.3
All-Red Time (s)	1.0	2.4	2.4	1.0	2.4	2.4	2.9	2.9	2.9	2.9
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	6.1	6.1	4.0	6.1	6.1	6.2	6.2	6.2	6.2
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes				
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	Max	Max	Max	Max
v/c Ratio	0.45	0.55	0.04	0.13	0.63	0.23	0.07	0.07	0.58	0.19
Control Delay	17.9	16.1	1.2	8.2	18.9	2.3	35.5	22.1	47.9	12.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	17.9	16.1	1.2	8.2	18.9	2.3	35.5	22.1	47.9	12.3
Queue Length 50th (m)	6.6	92.5	0.0	2.1	110.8	0.0	4.0	2.8	42.0	3.2
Queue Length 95th (m)	16.8	107.1	2.2	5.3	128.5	11.4	11.0	10.9	67.9	16.8
Internal Link Dist (m)		434.4			531.7			233.6		111.4
Turn Bay Length (m)	135.0		115.0	115.0		115.0	35.0		40.0	
Base Capacity (vph)	191	2992	950	228	2907	989	302	416	329	464
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	0.55	0.04	0.12	0.63	0.23	0.07	0.07	0.58	0.19

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 64 (53%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 95
Control Type: Actuated-Coordinated

Splits and Phases: 1: Harman Gate/Preserve Dr & Dundas St W



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	79	1550	37	26	1739	219	20	14	14	182	16	68
Future Volume (vph)	79	1550	37	26	1739	219	20	14	14	182	16	68
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.3	3.6	3.5	3.3	3.6	3.5	3.3	3.6	3.5	3.3	3.6	3.5
Total Lost time (s)	4.0	6.1	6.1	4.0	6.1	6.1	6.2	6.2		6.2	6.2	
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.97	1.00	1.00	0.97	1.00	0.99		1.00	0.99	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.93		1.00	0.88	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1745	5036	1556	1745	5085	1557	1659	1631		1707	1650	
Flt Permitted	0.07	1.00	1.00	0.11	1.00	1.00	0.70	1.00		0.74	1.00	
Satd. Flow (perm)	129	5036	1556	194	5085	1557	1221	1631		1326	1650	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	83	1632	39	27	1831	231	21	15	15	192	17	72
RTOR Reduction (vph)	0	0	16	0	0	100	0	11	0	0	54	0
Lane Group Flow (vph)	83	1632	23	27	1831	131	21	19	0	192	35	0
Confl. Peds. (#/hr)	3		3	3		3	2		1	1		2
Confl. Bikes (#/hr)			1									
Heavy Vehicles (%)	0%	3%	0%	0%	2%	0%	5%	7%	7%	2%	0%	0%
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases	2		2	6		6	8			4		
Actuated Green, G (s)	75.8	69.7	69.7	72.0	67.8	67.8	29.8	29.8		29.8	29.8	
Effective Green, g (s)	75.8	69.7	69.7	72.0	67.8	67.8	29.8	29.8		29.8	29.8	
Actuated g/C Ratio	0.63	0.58	0.58	0.60	0.56	0.56	0.25	0.25		0.25	0.25	
Clearance Time (s)	4.0	6.1	6.1	4.0	6.1	6.1	6.2	6.2		6.2	6.2	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	163	2925	903	170	2873	879	303	405		329	409	
v/s Ratio Prot	c0.03	0.32		0.01	c0.36			0.01			0.02	
v/s Ratio Perm	0.30		0.01	0.09		0.08	0.02			c0.14		
v/c Ratio	0.51	0.56	0.03	0.16	0.64	0.15	0.07	0.05		0.58	0.09	
Uniform Delay, d1	13.5	15.6	10.7	11.1	17.7	12.4	34.5	34.3		39.6	34.6	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	2.5	0.8	0.1	0.4	1.1	0.4	0.4	0.2		7.4	0.4	
Delay (s)	16.0	16.4	10.7	11.5	18.8	12.7	34.9	34.5		47.0	35.0	
Level of Service	B	B	B	B	B	B	C	C		D	D	
Approach Delay (s)		16.2			18.1			34.7			43.2	
Approach LOS		B			B			C			D	

Intersection Summary			
HCM 2000 Control Delay	19.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.3
Intersection Capacity Utilization	81.3%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

2: Sixth Line & Dundas St E

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	107	1426	185	125	1734	128	205	70	205	252	118
Future Volume (vph)	107	1426	185	125	1734	128	205	70	205	252	118
Lane Group Flow (vph)	113	1501	195	132	2008	135	216	74	216	265	124
Turn Type	pm+pt	NA	Perm	pm+pt	NA	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2		1	6	3	8		7	4	
Permitted Phases	2		2	6		8		8	4		4
Detector Phase	5	2	2	1	6	3	8	8	7	4	4
Switch Phase											
Minimum Initial (s)	7.0	24.0	24.0	7.0	24.0	7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	13.0	31.0	31.0	13.0	31.0	11.0	37.0	37.0	11.0	37.0	37.0
Total Split (s)	19.0	68.0	68.0	19.0	68.0	16.0	37.0	37.0	16.0	37.0	37.0
Total Split (%)	13.6%	48.6%	48.6%	13.6%	48.6%	11.4%	26.4%	26.4%	11.4%	26.4%	26.4%
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	3.0	2.0	2.0	3.0	2.0	1.0	2.0	2.0	1.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	4.0	6.0	6.0	4.0	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?											
Recall Mode	None	C-Max	C-Max	None	C-Max	None	Max	Max	None	Max	Max
v/c Ratio	0.64	0.65	0.24	0.64	0.86	0.46	0.51	0.18	0.64	0.62	0.28
Control Delay	42.3	30.9	4.8	33.1	38.6	37.7	52.9	4.3	44.8	56.3	8.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	42.3	30.9	4.8	33.1	38.6	37.7	52.9	4.3	44.8	56.3	8.8
Queue Length 50th (m)	16.1	120.6	2.3	16.8	187.1	27.7	55.8	0.0	46.7	70.6	0.0
Queue Length 95th (m)	37.5	142.8	17.1	36.2	218.3	44.9	83.2	7.0	70.0	102.2	17.0
Internal Link Dist (m)		122.2			1210.7		440.8			65.0	
Turn Bay Length (m)	107.0		80.0	120.0		90.0			76.0		
Base Capacity (vph)	210	2320	812	238	2323	304	420	416	338	427	448
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.54	0.65	0.24	0.55	0.86	0.44	0.51	0.18	0.64	0.62	0.28

Intersection Summary

Cycle Length: 140
Actuated Cycle Length: 140
Offset: 71 (51%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 105
Control Type: Actuated-Coordinated

Splits and Phases: 2: Sixth Line & Dundas St E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	107	1426	185	125	1734	174	128	205	70	205	252	118
Future Volume (vph)	107	1426	185	125	1734	174	128	205	70	205	252	118
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.3	3.6	3.5	3.3	3.6	3.5	3.3	3.6	3.5	3.3	3.6	3.5
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0		4.0	6.0	6.0	4.0	6.0	6.0
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91		1.00	1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00		1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1711	5036	1553	1728	5006		1726	1900	1526	1726	1881	1554
Flt Permitted	0.06	1.00	1.00	0.09	1.00		0.37	1.00	1.00	0.43	1.00	1.00
Satd. Flow (perm)	112	5036	1553	170	5006		668	1900	1526	788	1881	1554
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	113	1501	195	132	1825	183	135	216	74	216	265	124
RTOR Reduction (vph)	0	0	97	0	8	0	0	0	58	0	0	96
Lane Group Flow (vph)	113	1501	98	132	2000	0	135	216	16	216	265	28
Confl. Peds. (#/hr)	6		3	3		6	4		3	3		4
Confl. Bikes (#/hr)			1									
Heavy Vehicles (%)	2%	3%	1%	1%	2%	2%	1%	0%	3%	1%	1%	1%
Turn Type	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6			8		8	4		4
Actuated Green, G (s)	74.7	64.5	64.5	75.3	64.8		42.2	31.0	31.0	43.8	31.8	31.8
Effective Green, g (s)	74.7	64.5	64.5	75.3	64.8		42.2	31.0	31.0	43.8	31.8	31.8
Actuated g/C Ratio	0.53	0.46	0.46	0.54	0.46		0.30	0.22	0.22	0.31	0.23	0.23
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0		4.0	6.0	6.0	4.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	176	2320	715	208	2317		285	420	337	326	427	352
v/s Ratio Prot	0.05	0.30		c0.05	c0.40		0.04	0.11		c0.06	0.14	
v/s Ratio Perm	0.30		0.06	0.29			0.10		0.01	c0.15		0.02
v/c Ratio	0.64	0.65	0.14	0.63	0.86		0.47	0.51	0.05	0.66	0.62	0.08
Uniform Delay, d1	27.3	29.0	21.7	21.1	33.6		37.6	47.9	42.9	39.3	48.7	42.6
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	7.8	1.4	0.4	6.2	4.6		1.2	4.4	0.3	5.0	6.6	0.4
Delay (s)	35.0	30.4	22.1	27.3	38.2		38.9	52.3	43.2	44.3	55.3	43.0
Level of Service	D	C	C	C	D		D	D	D	D	E	D
Approach Delay (s)		29.8			37.5			46.5			48.9	
Approach LOS		C			D			D			D	

Intersection Summary			
HCM 2000 Control Delay	36.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	22.0
Intersection Capacity Utilization	98.9%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	0.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	15	8	429	12	6	644
Future Vol, veh/h	15	8	429	12	6	644
Conflicting Peds, #/hr	0	0	0	3	3	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	0	0	1	0	0	1
Mvmt Flow	16	9	456	13	6	685

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	821	238	0	0	472	0
Stage 1	466	-	-	-	-	-
Stage 2	355	-	-	-	-	-
Critical Hdwy	6.8	6.9	-	-	4.1	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	317	769	-	-	1100	-
Stage 1	604	-	-	-	-	-
Stage 2	686	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	314	767	-	-	1097	-
Mov Cap-2 Maneuver	314	-	-	-	-	-
Stage 1	603	-	-	-	-	-
Stage 2	680	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	14.7	0	0.1
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	395	1097	-
HCM Lane V/C Ratio	-	-	0.062	0.006	-
HCM Control Delay (s)	-	-	14.7	8.3	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.2	0	-

Intersection	
Int Delay, s/veh	1.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	25	38	53	383	452	20
Future Vol, veh/h	25	38	53	383	452	20
Conflicting Peds, #/hr	3	1	2	0	0	2
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	25	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	0	0	0	1	1	25
Mvmt Flow	26	40	55	399	471	21

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	797	249	494	0	-	0
Stage 1	484	-	-	-	-	-
Stage 2	313	-	-	-	-	-
Critical Hdwy	6.8	6.9	4.1	-	-	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	328	757	1080	-	-	-
Stage 1	591	-	-	-	-	-
Stage 2	721	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	310	755	1078	-	-	-
Mov Cap-2 Maneuver	310	-	-	-	-	-
Stage 1	560	-	-	-	-	-
Stage 2	720	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	13.7	1	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1078	-	481	-	-
HCM Lane V/C Ratio	0.051	-	0.136	-	-
HCM Control Delay (s)	8.5	-	13.7	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0.2	-	0.5	-	-

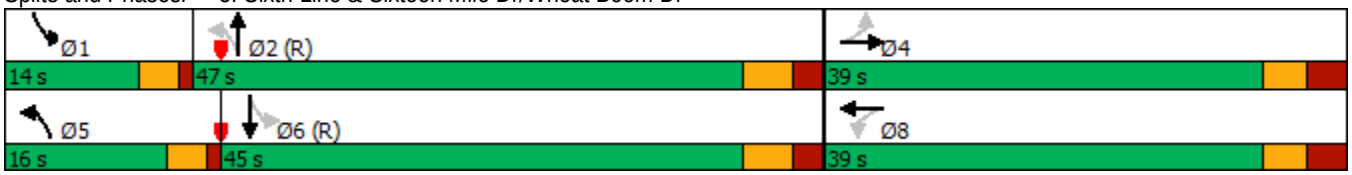
5: Sixth Line & Sixteen Mile Dr/Wheat Boom Dr

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	101	68	19	56	16	254	102	306
Future Volume (vph)	101	68	19	56	16	254	102	306
Lane Group Flow (vph)	106	178	20	73	17	398	107	385
Turn Type	Perm	NA	Perm	NA	pm+pt	NA	pm+pt	NA
Protected Phases		4		8	5	2	1	6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	5	2	1	6
Switch Phase								
Minimum Initial (s)	20.0	20.0	20.0	20.0	7.0	35.0	7.0	35.0
Minimum Split (s)	38.4	38.4	38.4	38.4	11.5	41.1	11.0	41.1
Total Split (s)	39.0	39.0	39.0	39.0	16.0	47.0	14.0	45.0
Total Split (%)	39.0%	39.0%	39.0%	39.0%	16.0%	47.0%	14.0%	45.0%
Yellow Time (s)	3.3	3.3	3.3	3.3	3.0	3.7	3.0	3.7
All-Red Time (s)	3.1	3.1	3.1	3.1	1.0	2.4	1.0	2.4
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.4	6.4	6.4	6.4	4.0	6.1	4.0	6.1
Lead/Lag					Lead	Lag	Lead	Lag
Lead-Lag Optimize?								
Recall Mode	Max	Max	Max	Max	None	C-Max	None	C-Max
v/c Ratio	0.25	0.29	0.05	0.13	0.03	0.27	0.20	0.22
Control Delay	26.8	15.2	23.8	20.6	9.8	14.3	10.8	14.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	26.8	15.2	23.8	20.6	9.8	14.3	10.8	14.0
Queue Length 50th (m)	15.8	14.3	2.8	8.5	1.4	19.5	9.4	18.2
Queue Length 95th (m)	29.8	31.4	8.3	18.9	4.4	31.3	17.4	33.8
Internal Link Dist (m)		26.8		207.1		202.5		1327.3
Turn Bay Length (m)	17.0		54.0		60.0		75.0	
Base Capacity (vph)	423	608	373	581	634	1484	559	1769
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.25	0.29	0.05	0.13	0.03	0.27	0.19	0.22

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 95
Control Type: Actuated-Coordinated

Splits and Phases: 5: Sixth Line & Sixteen Mile Dr/Wheat Boom Dr



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	101	68	101	19	56	13	16	254	124	102	306	60
Future Volume (vph)	101	68	101	19	56	13	16	254	124	102	306	60
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.3	3.6	3.5	3.3	3.6	3.5	3.3	3.6	3.5	3.3	3.6	3.5
Total Lost time (s)	6.4	6.4		6.4	6.4		4.0	6.1		4.0	6.1	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	0.99		1.00	1.00		1.00	0.99		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.91		1.00	0.97		1.00	0.95		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1739	1702		1742	1756		1743	3352		1728	3478	
Flt Permitted	0.71	1.00		0.63	1.00		0.52	1.00		0.46	1.00	
Satd. Flow (perm)	1299	1702		1147	1756		961	3352		830	3478	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	106	72	106	20	59	14	17	267	131	107	322	63
RTOR Reduction (vph)	0	53	0	0	9	0	0	59	0	0	14	0
Lane Group Flow (vph)	106	125	0	20	64	0	17	339	0	107	371	0
Confl. Peds. (#/hr)	4		2	2		4	2					2
Confl. Bikes (#/hr)									1			
Heavy Vehicles (%)	0%	2%	0%	0%	4%	8%	0%	2%	1%	1%	1%	0%
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	32.6	32.6		32.6	32.6		45.3	42.5		54.9	48.1	
Effective Green, g (s)	32.6	32.6		32.6	32.6		45.3	42.5		54.9	48.1	
Actuated g/C Ratio	0.33	0.33		0.33	0.33		0.45	0.42		0.55	0.48	
Clearance Time (s)	6.4	6.4		6.4	6.4		4.0	6.1		4.0	6.1	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	423	554		373	572		457	1424		531	1672	
v/s Ratio Prot		0.07			0.04		0.00	c0.10		c0.02	0.11	
v/s Ratio Perm	c0.08			0.02			0.02			0.09		
v/c Ratio	0.25	0.23		0.05	0.11		0.04	0.24		0.20	0.22	
Uniform Delay, d1	24.7	24.5		23.1	23.6		15.1	18.4		11.0	15.1	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.4	0.9		0.3	0.4		0.0	0.4		0.2	0.3	
Delay (s)	26.2	25.5		23.4	24.0		15.1	18.8		11.2	15.4	
Level of Service	C	C		C	C		B	B		B	B	
Approach Delay (s)		25.7			23.8			18.6			14.5	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM 2000 Control Delay	19.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.24		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	16.5
Intersection Capacity Utilization	75.4%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	3	61	55	11	6	1
Future Vol, veh/h	3	61	55	11	6	1
Conflicting Peds, #/hr	7	0	0	7	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	79	79	79	79	79	79
Heavy Vehicles, %	0	2	4	0	0	100
Mvmt Flow	4	77	70	14	8	1

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	91	0	-	0	169	84
Stage 1	-	-	-	-	84	-
Stage 2	-	-	-	-	85	-
Critical Hdwy	4.1	-	-	-	6.4	7.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	4.2
Pot Cap-1 Maneuver	1517	-	-	-	826	761
Stage 1	-	-	-	-	944	-
Stage 2	-	-	-	-	943	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1509	-	-	-	815	757
Mov Cap-2 Maneuver	-	-	-	-	815	-
Stage 1	-	-	-	-	936	-
Stage 2	-	-	-	-	938	-

Approach	EB	WB	SB
HCM Control Delay, s	0.3	0	9.5
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1509	-	-	-	806
HCM Lane V/C Ratio	0.003	-	-	-	0.011
HCM Control Delay (s)	7.4	0	-	-	9.5
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑	↑↑↑↳			↱
Traffic Vol, veh/h	0	1777	1984	0	0	0
Future Vol, veh/h	0	1777	1984	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	1871	2088	0	0	0

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	1044
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	7.1
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.9
Pot Cap-1 Maneuver	0	-	-	-	0	197
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	-	-	-	-	-	197
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-
HCM Control Delay (s)	-	-	-	0
HCM Lane LOS	-	-	-	A
HCM 95th %tile Q(veh)	-	-	-	-

Intersection	
Int Delay, s/veh	0

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	53	0	0	56	0	0
Future Vol, veh/h	53	0	0	56	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	55	0	0	58	0	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	55	0	113	55
Stage 1	-	-	-	-	55	-
Stage 2	-	-	-	-	58	-
Critical Hdwy	-	-	4.1	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1563	-	888	1018
Stage 1	-	-	-	-	973	-
Stage 2	-	-	-	-	970	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1563	-	888	1018
Mov Cap-2 Maneuver	-	-	-	-	888	-
Stage 1	-	-	-	-	973	-
Stage 2	-	-	-	-	970	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	-	1563	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	-	-	-	0	-

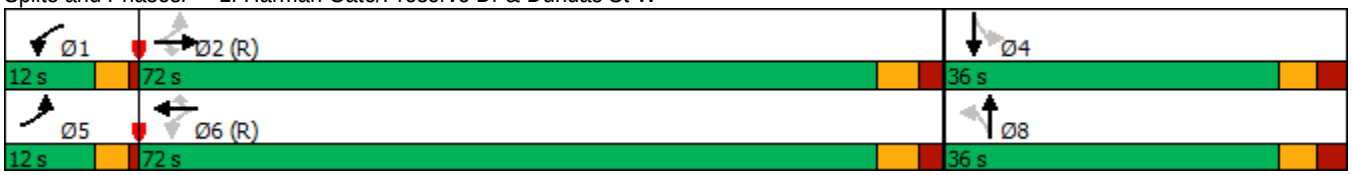
1: Harman Gate/Preserve Dr & Dundas St W

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	86	1599	35	13	1098	136	26	9	170	20
Future Volume (vph)	86	1599	35	13	1098	136	26	9	170	20
Lane Group Flow (vph)	88	1632	36	13	1120	139	27	53	173	130
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	NA
Protected Phases	5	2		1	6			8		4
Permitted Phases	2		2	6		6	8		4	
Detector Phase	5	2	2	1	6	6	8	8	4	4
Switch Phase										
Minimum Initial (s)	7.0	20.0	20.0	7.0	20.0	20.0	10.0	10.0	10.0	10.0
Minimum Split (s)	11.5	41.1	41.1	11.0	41.1	41.1	40.2	40.2	40.3	40.3
Total Split (s)	12.0	72.0	72.0	12.0	72.0	72.0	36.0	36.0	36.0	36.0
Total Split (%)	10.0%	60.0%	60.0%	10.0%	60.0%	60.0%	30.0%	30.0%	30.0%	30.0%
Yellow Time (s)	3.0	3.7	3.7	3.0	3.7	3.7	3.3	3.3	3.3	3.3
All-Red Time (s)	1.0	2.4	2.4	1.0	2.4	2.4	2.9	2.9	2.9	2.9
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	6.1	6.1	4.0	6.1	6.1	6.2	6.2	6.2	6.2
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes				
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	Max	Max	Max	Max
v/c Ratio	0.29	0.53	0.04	0.06	0.42	0.16	0.09	0.12	0.54	0.27
Control Delay	9.6	14.8	0.9	7.4	16.2	2.5	35.8	13.6	46.2	10.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	9.6	14.8	0.9	7.4	16.2	2.5	35.8	13.6	46.2	10.9
Queue Length 50th (m)	7.1	70.8	0.0	1.0	56.6	0.0	5.2	1.7	37.4	3.8
Queue Length 95th (m)	13.0	107.1	1.7	3.2	68.2	9.3	13.3	12.3	61.7	20.0
Internal Link Dist (m)		434.4			531.7			233.6		111.4
Turn Bay Length (m)	135.0		115.0	115.0		115.0	35.0		40.0	
Base Capacity (vph)	308	3084	897	233	2680	895	297	432	323	482
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	0.29	0.53	0.04	0.06	0.42	0.16	0.09	0.12	0.54	0.27

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 113 (94%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 95
Control Type: Actuated-Coordinated

Splits and Phases: 1: Harman Gate/Preserve Dr & Dundas St W



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	86	1599	35	13	1098	136	26	9	43	170	20	108
Future Volume (vph)	86	1599	35	13	1098	136	26	9	43	170	20	108
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.3	3.6	3.5	3.3	3.6	3.5	3.3	3.6	3.5	3.3	3.6	3.5
Total Lost time (s)	4.0	6.1	6.1	4.0	6.1	6.1	6.2	6.2		6.2	6.2	
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.97	1.00	1.00	0.97	1.00	0.98		1.00	0.99	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		0.99	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.88		1.00	0.87	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1646	5036	1425	1745	4848	1506	1739	1608		1715	1609	
Flt Permitted	0.19	1.00	1.00	0.11	1.00	1.00	0.66	1.00		0.72	1.00	
Satd. Flow (perm)	338	5036	1425	206	4848	1506	1199	1608		1304	1609	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	88	1632	36	13	1120	139	27	9	44	173	20	110
RTOR Reduction (vph)	0	0	15	0	0	62	0	33	0	0	83	0
Lane Group Flow (vph)	88	1632	21	13	1120	77	27	20	0	173	47	0
Confl. Peds. (#/hr)	5		4	4		5	4		4	4		4
Confl. Bikes (#/hr)			1						1			
Heavy Vehicles (%)	6%	3%	9%	0%	7%	3%	0%	0%	2%	1%	0%	2%
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases	2		2	6		6	8			4		
Actuated Green, G (s)	77.9	71.1	71.1	69.2	66.4	66.4	29.8	29.8		29.8	29.8	
Effective Green, g (s)	77.9	71.1	71.1	69.2	66.4	66.4	29.8	29.8		29.8	29.8	
Actuated g/C Ratio	0.65	0.59	0.59	0.58	0.55	0.55	0.25	0.25		0.25	0.25	
Clearance Time (s)	4.0	6.1	6.1	4.0	6.1	6.1	6.2	6.2		6.2	6.2	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	301	2983	844	154	2682	833	297	399		323	399	
v/s Ratio Prot	c0.02	c0.32		0.00	0.23			0.01			0.03	
v/s Ratio Perm	0.17		0.01	0.05		0.05	0.02			c0.13		
v/c Ratio	0.29	0.55	0.03	0.08	0.42	0.09	0.09	0.05		0.54	0.12	
Uniform Delay, d1	8.8	14.7	10.1	11.6	15.6	12.6	34.7	34.3		39.1	34.9	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.5	0.7	0.1	0.2	0.5	0.2	0.6	0.2		6.2	0.6	
Delay (s)	9.3	15.5	10.2	11.9	16.0	12.8	35.3	34.6		45.3	35.5	
Level of Service	A	B	B	B	B	B	D	C		D	D	
Approach Delay (s)		15.1			15.7			34.8			41.1	
Approach LOS		B			B			C			D	

Intersection Summary			
HCM 2000 Control Delay	18.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.3
Intersection Capacity Utilization	78.6%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	77	1524	183	115	939	208	174	210	180	209	94
Future Volume (vph)	77	1524	183	115	939	208	174	210	180	209	94
Lane Group Flow (vph)	78	1539	185	116	1050	210	176	212	182	211	95
Turn Type	pm+pt	NA	Perm	pm+pt	NA	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2		1	6	3	8		7	4	
Permitted Phases	2		2	6		8		8	4		4
Detector Phase	5	2	2	1	6	3	8	8	7	4	4
Switch Phase											
Minimum Initial (s)	7.0	24.0	24.0	7.0	24.0	7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	14.0	31.0	31.0	14.0	31.0	11.5	37.0	37.0	11.5	37.0	37.0
Total Split (s)	14.0	75.0	75.0	14.0	75.0	14.0	37.0	37.0	14.0	37.0	37.0
Total Split (%)	10.0%	53.6%	53.6%	10.0%	53.6%	10.0%	26.4%	26.4%	10.0%	26.4%	26.4%
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	3.0	2.0	2.0	3.0	2.0	1.0	2.0	2.0	1.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	4.0	6.0	6.0	4.0	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?											
Recall Mode	None	C-Max	C-Max	None	C-Max	None	Max	Max	None	Max	Max
v/c Ratio	0.29	0.61	0.21	0.65	0.45	0.68	0.44	0.47	0.53	0.53	0.23
Control Delay	15.3	27.1	3.2	33.3	23.2	50.0	51.0	18.4	42.2	53.8	8.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	15.3	27.1	3.2	33.3	23.2	50.0	51.0	18.4	42.2	53.8	8.4
Queue Length 50th (m)	9.3	116.8	0.3	14.2	70.0	46.5	44.6	14.6	39.4	54.8	0.0
Queue Length 95th (m)	17.0	132.6	13.0	#31.5	82.5	70.0	68.8	40.1	60.9	82.2	13.6
Internal Link Dist (m)		122.2			1210.7		440.8			65.0	
Turn Bay Length (m)	107.0		80.0	120.0		90.0			76.0		
Base Capacity (vph)	271	2512	863	179	2354	308	404	449	342	396	413
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.29	0.61	0.21	0.65	0.45	0.68	0.44	0.47	0.53	0.53	0.23

Intersection Summary

Cycle Length: 140
Actuated Cycle Length: 140
Offset: 36 (26%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 95
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 2: Sixth Line & Dundas St E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	77	1524	183	115	939	101	208	174	210	180	209	94
Future Volume (vph)	77	1524	183	115	939	101	208	174	210	180	209	94
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.3	3.6	3.5	3.3	3.6	3.5	3.3	3.6	3.5	3.3	3.6	3.5
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0		4.0	6.0	6.0	4.0	6.0	6.0
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91		1.00	1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00		1.00	1.00	0.97	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1630	5085	1559	1678	4738		1676	1827	1497	1702	1792	1511
Flt Permitted	0.21	1.00	1.00	0.10	1.00		0.45	1.00	1.00	0.52	1.00	1.00
Satd. Flow (perm)	362	5085	1559	170	4738		802	1827	1497	941	1792	1511
Peak-hour factor, PHF	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Adj. Flow (vph)	78	1539	185	116	948	102	210	176	212	182	211	95
RTOR Reduction (vph)	0	0	93	0	9	0	0	0	118	0	0	74
Lane Group Flow (vph)	78	1539	92	116	1041	0	210	176	94	182	211	21
Confl. Peds. (#/hr)	8		1	1		8	3		10	10		3
Confl. Bikes (#/hr)			1									
Heavy Vehicles (%)	7%	2%	1%	4%	8%	4%	4%	4%	4%	2%	6%	4%
Turn Type	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6			8		8	4		4
Actuated Green, G (s)	76.9	69.2	69.2	77.1	69.3		41.0	31.0	31.0	41.0	31.0	31.0
Effective Green, g (s)	76.9	69.2	69.2	77.1	69.3		41.0	31.0	31.0	41.0	31.0	31.0
Actuated g/C Ratio	0.55	0.49	0.49	0.55	0.49		0.29	0.22	0.22	0.29	0.22	0.22
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0		4.0	6.0	6.0	4.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	268	2513	770	177	2345		297	404	331	329	396	334
v/s Ratio Prot	0.02	0.30		c0.04	0.22		c0.05	0.10		0.04	0.12	
v/s Ratio Perm	0.14		0.06	c0.32			c0.16		0.06	0.12		0.01
v/c Ratio	0.29	0.61	0.12	0.66	0.44		0.71	0.44	0.29	0.55	0.53	0.06
Uniform Delay, d1	15.7	25.7	19.0	19.5	22.9		42.8	47.0	45.3	40.2	48.1	43.0
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.6	1.1	0.3	8.4	0.6		7.5	3.4	2.2	2.0	5.1	0.4
Delay (s)	16.3	26.8	19.4	27.9	23.5		50.3	50.4	47.4	42.2	53.2	43.4
Level of Service	B	C	B	C	C		D	D	D	D	D	D
Approach Delay (s)		25.6			23.9			49.3			47.2	
Approach LOS		C			C			D			D	

Intersection Summary			
HCM 2000 Control Delay	31.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	22.0
Intersection Capacity Utilization	91.5%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	0.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	8	4	324	14	6	474
Future Vol, veh/h	8	4	324	14	6	474
Conflicting Peds, #/hr	0	0	0	1	1	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	0	0	5	0	0	4
Mvmt Flow	9	5	377	16	7	551

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	676	198	0	0	394	0
Stage 1	386	-	-	-	-	-
Stage 2	290	-	-	-	-	-
Critical Hdwy	6.8	6.9	-	-	4.1	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	391	816	-	-	1176	-
Stage 1	662	-	-	-	-	-
Stage 2	740	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	387	815	-	-	1175	-
Mov Cap-2 Maneuver	387	-	-	-	-	-
Stage 1	661	-	-	-	-	-
Stage 2	733	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	12.9	0	0.1
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	469	1175	-
HCM Lane V/C Ratio	-	-	0.03	0.006	-
HCM Control Delay (s)	-	-	12.9	8.1	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Intersection	
Int Delay, s/veh	1.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	14	68	28	293	412	26
Future Vol, veh/h	14	68	28	293	412	26
Conflicting Peds, #/hr	2	0	7	0	0	7
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	25	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	11	0	0	5	5	0
Mvmt Flow	16	79	33	341	479	30

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	740	262	516	0	-	0
Stage 1	501	-	-	-	-	-
Stage 2	239	-	-	-	-	-
Critical Hdwy	7.02	6.9	4.1	-	-	-
Critical Hdwy Stg 1	6.02	-	-	-	-	-
Critical Hdwy Stg 2	6.02	-	-	-	-	-
Follow-up Hdwy	3.61	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	334	743	1060	-	-	-
Stage 1	549	-	-	-	-	-
Stage 2	752	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	320	739	1054	-	-	-
Mov Cap-2 Maneuver	320	-	-	-	-	-
Stage 1	529	-	-	-	-	-
Stage 2	748	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	12.1	0.7	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1054	-	604	-	-
HCM Lane V/C Ratio	0.031	-	0.158	-	-
HCM Control Delay (s)	8.5	-	12.1	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.6	-	-

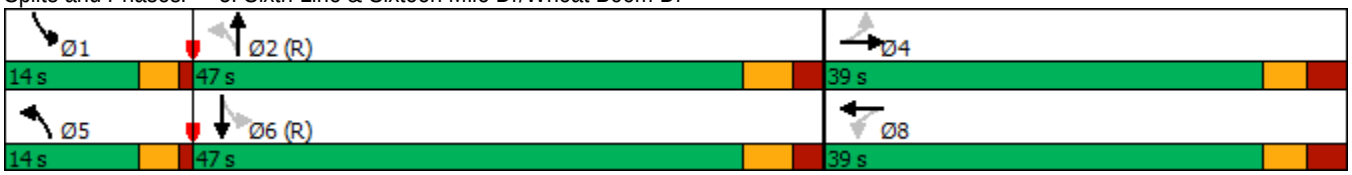
5: Sixth Line & Sixteen Mile Dr/Wheat Boom Dr

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	105	69	27	66	10	199	98	265
Future Volume (vph)	105	69	27	66	10	199	98	265
Lane Group Flow (vph)	125	226	32	96	12	348	117	377
Turn Type	Perm	NA	Perm	NA	pm+pt	NA	pm+pt	NA
Protected Phases		4		8	5	2	1	6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	5	2	1	6
Switch Phase								
Minimum Initial (s)	20.0	20.0	20.0	20.0	7.0	35.0	7.0	35.0
Minimum Split (s)	38.4	38.4	38.4	38.4	11.5	41.1	11.0	41.1
Total Split (s)	39.0	39.0	39.0	39.0	14.0	47.0	14.0	47.0
Total Split (%)	39.0%	39.0%	39.0%	39.0%	14.0%	47.0%	14.0%	47.0%
Yellow Time (s)	3.3	3.3	3.3	3.3	3.0	3.7	3.0	3.7
All-Red Time (s)	3.1	3.1	3.1	3.1	1.0	2.4	1.0	2.4
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.4	6.4	6.4	6.4	4.0	6.1	4.0	6.1
Lead/Lag					Lead	Lag	Lead	Lag
Lead-Lag Optimize?								
Recall Mode	Max	Max	Max	Max	None	C-Max	None	C-Max
v/c Ratio	0.31	0.39	0.11	0.17	0.02	0.25	0.21	0.21
Control Delay	28.0	17.1	25.0	22.1	9.7	14.0	11.0	12.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	28.0	17.1	25.0	22.1	9.7	14.0	11.0	12.6
Queue Length 50th (m)	19.0	19.7	4.5	12.2	1.0	16.6	10.4	17.8
Queue Length 95th (m)	32.0	35.9	11.0	22.5	3.3	24.6	17.4	30.5
Internal Link Dist (m)		26.8		207.1		202.5		1327.3
Turn Bay Length (m)	17.0		54.0		60.0		75.0	
Base Capacity (vph)	402	579	293	580	604	1418	571	1764
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.31	0.39	0.11	0.17	0.02	0.25	0.20	0.21

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 95
Control Type: Actuated-Coordinated

Splits and Phases: 5: Sixth Line & Sixteen Mile Dr/Wheat Boom Dr



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	105	69	121	27	66	14	10	199	93	98	265	52
Future Volume (vph)	105	69	121	27	66	14	10	199	93	98	265	52
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.3	3.6	3.5	3.3	3.6	3.5	3.3	3.6	3.5	3.3	3.6	3.5
Total Lost time (s)	6.4	6.4		6.4	6.4		4.0	6.1		4.0	6.1	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	0.99		1.00	1.00		1.00	0.99		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.90		1.00	0.97		1.00	0.95		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1687	1582		1539	1757		1744	3228		1675	3325	
Flt Permitted	0.69	1.00		0.56	1.00		0.53	1.00		0.49	1.00	
Satd. Flow (perm)	1234	1582		900	1757		969	3228		866	3325	
Peak-hour factor, PHF	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Adj. Flow (vph)	125	82	144	32	79	17	12	237	111	117	315	62
RTOR Reduction (vph)	0	63	0	0	7	0	0	54	0	0	14	0
Lane Group Flow (vph)	125	163	0	32	89	0	12	294	0	117	363	0
Confl. Peds. (#/hr)	5		5	5		5	1		3	3		1
Heavy Vehicles (%)	3%	10%	6%	13%	6%	0%	0%	4%	9%	4%	6%	3%
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	32.6	32.6		32.6	32.6		43.7	42.3		54.9	49.5	
Effective Green, g (s)	32.6	32.6		32.6	32.6		43.7	42.3		54.9	49.5	
Actuated g/C Ratio	0.33	0.33		0.33	0.33		0.44	0.42		0.55	0.50	
Clearance Time (s)	6.4	6.4		6.4	6.4		4.0	6.1		4.0	6.1	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	402	515		293	572		434	1365		545	1645	
v/s Ratio Prot		c0.10			0.05		0.00	0.09		c0.02	c0.11	
v/s Ratio Perm	0.10			0.04			0.01			0.10		
v/c Ratio	0.31	0.32		0.11	0.15		0.03	0.22		0.21	0.22	
Uniform Delay, d1	25.3	25.3		23.6	23.9		16.0	18.3		11.0	14.3	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	2.0	1.6		0.8	0.6		0.0	0.4		0.2	0.3	
Delay (s)	27.3	26.9		24.3	24.5		16.0	18.7		11.2	14.6	
Level of Service	C	C		C	C		B	B		B	B	
Approach Delay (s)		27.1			24.4			18.6			13.8	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM 2000 Control Delay	19.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.27		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	16.5
Intersection Capacity Utilization	75.4%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Intersection	
Int Delay, s/veh	1.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	5	76	42	12	6	13
Future Vol, veh/h	5	76	42	12	6	13
Conflicting Peds, #/hr	10	0	0	10	0	1
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	64	64	64	64	64	64
Heavy Vehicles, %	0	4	0	8	0	0
Mvmt Flow	8	119	66	19	9	20

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	95	0	-	0	221	87
Stage 1	-	-	-	-	86	-
Stage 2	-	-	-	-	135	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1512	-	-	-	772	977
Stage 1	-	-	-	-	942	-
Stage 2	-	-	-	-	896	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1500	-	-	-	755	969
Mov Cap-2 Maneuver	-	-	-	-	755	-
Stage 1	-	-	-	-	929	-
Stage 2	-	-	-	-	889	-

Approach	EB	WB	SB
HCM Control Delay, s	0.5	0	9.2
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1500	-	-	-	889
HCM Lane V/C Ratio	0.005	-	-	-	0.033
HCM Control Delay (s)	7.4	0	-	-	9.2
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑	↑↑↑↳			↱
Traffic Vol, veh/h	0	1812	1247	0	0	0
Future Vol, veh/h	0	1812	1247	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	1849	1272	0	0	0

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	636
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	7.1
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.9
Pot Cap-1 Maneuver	0	-	-	-	0	364
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	-	-	-	-	-	364
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-
HCM Control Delay (s)	-	-	-	0
HCM Lane LOS	-	-	-	A
HCM 95th %tile Q(veh)	-	-	-	-

Intersection	
Int Delay, s/veh	0

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	77	0	0	38	0	0
Future Vol, veh/h	77	0	0	38	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	90	0	0	44	0	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	90	0	134	90
Stage 1	-	-	-	-	90	-
Stage 2	-	-	-	-	44	-
Critical Hdwy	-	-	4.1	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1518	-	864	973
Stage 1	-	-	-	-	939	-
Stage 2	-	-	-	-	984	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1518	-	864	973
Mov Cap-2 Maneuver	-	-	-	-	864	-
Stage 1	-	-	-	-	939	-
Stage 2	-	-	-	-	984	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	-	1518	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	-	-	-	0	-

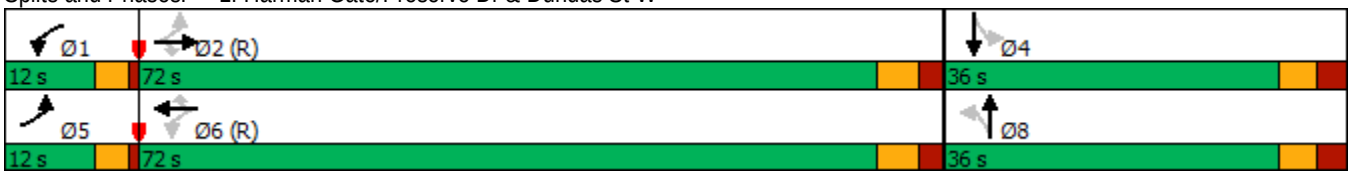
1: Harman Gate/Preserve Dr & Dundas St W

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	79	1618	37	26	1739	219	20	14	182	17
Future Volume (vph)	79	1618	37	26	1739	219	20	14	182	17
Lane Group Flow (vph)	83	1703	39	27	1831	231	21	30	192	90
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	NA
Protected Phases	5	2		1	6			8		4
Permitted Phases	2		2	6		6	8		4	
Detector Phase	5	2	2	1	6	6	8	8	4	4
Switch Phase										
Minimum Initial (s)	7.0	20.0	20.0	7.0	20.0	20.0	10.0	10.0	10.0	10.0
Minimum Split (s)	11.5	41.1	41.1	11.0	41.1	41.1	40.2	40.2	40.3	40.3
Total Split (s)	12.0	72.0	72.0	12.0	72.0	72.0	36.0	36.0	36.0	36.0
Total Split (%)	10.0%	60.0%	60.0%	10.0%	60.0%	60.0%	30.0%	30.0%	30.0%	30.0%
Yellow Time (s)	3.0	3.7	3.7	3.0	3.7	3.7	3.3	3.3	3.3	3.3
All-Red Time (s)	1.0	2.4	2.4	1.0	2.4	2.4	2.9	2.9	2.9	2.9
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	6.1	6.1	4.0	6.1	6.1	6.2	6.2	6.2	6.2
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes				
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	Max	Max	Max	Max
v/c Ratio	0.45	0.57	0.04	0.13	0.63	0.23	0.07	0.07	0.58	0.19
Control Delay	17.9	16.5	1.2	8.3	18.9	2.3	35.5	22.1	47.9	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	17.9	16.5	1.2	8.3	18.9	2.3	35.5	22.1	47.9	12.6
Queue Length 50th (m)	6.6	98.6	0.0	2.1	110.8	0.0	4.0	2.8	42.0	3.4
Queue Length 95th (m)	16.8	113.9	2.2	5.3	128.5	11.4	11.0	10.9	67.9	17.0
Internal Link Dist (m)		434.4			531.7			233.6		111.4
Turn Bay Length (m)	135.0		115.0	115.0		115.0	35.0		40.0	
Base Capacity (vph)	191	2992	950	216	2907	989	302	416	329	464
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	0.57	0.04	0.13	0.63	0.23	0.07	0.07	0.58	0.19

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 64 (53%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 95
Control Type: Actuated-Coordinated

Splits and Phases: 1: Harman Gate/Preserve Dr & Dundas St W



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	79	1618	37	26	1739	219	20	14	14	182	17	68
Future Volume (vph)	79	1618	37	26	1739	219	20	14	14	182	17	68
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.3	3.6	3.5	3.3	3.6	3.5	3.3	3.6	3.5	3.3	3.6	3.5
Total Lost time (s)	4.0	6.1	6.1	4.0	6.1	6.1	6.2	6.2		6.2	6.2	
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.97	1.00	1.00	0.97	1.00	0.99		1.00	0.99	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.93		1.00	0.88	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1745	5036	1556	1745	5085	1557	1659	1631		1707	1653	
Flt Permitted	0.07	1.00	1.00	0.09	1.00	1.00	0.70	1.00		0.74	1.00	
Satd. Flow (perm)	129	5036	1556	174	5085	1557	1220	1631		1326	1653	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	83	1703	39	27	1831	231	21	15	15	192	18	72
RTOR Reduction (vph)	0	0	16	0	0	100	0	11	0	0	54	0
Lane Group Flow (vph)	83	1703	23	27	1831	131	21	19	0	192	36	0
Confl. Peds. (#/hr)	3		3	3		3	2		1	1		2
Confl. Bikes (#/hr)			1									
Heavy Vehicles (%)	0%	3%	0%	0%	2%	0%	5%	7%	7%	2%	0%	0%
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases	2		2	6		6	8			4		
Actuated Green, G (s)	75.8	69.7	69.7	72.0	67.8	67.8	29.8	29.8		29.8	29.8	
Effective Green, g (s)	75.8	69.7	69.7	72.0	67.8	67.8	29.8	29.8		29.8	29.8	
Actuated g/C Ratio	0.63	0.58	0.58	0.60	0.56	0.56	0.25	0.25		0.25	0.25	
Clearance Time (s)	4.0	6.1	6.1	4.0	6.1	6.1	6.2	6.2		6.2	6.2	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	163	2925	903	159	2873	879	302	405		329	410	
v/s Ratio Prot	c0.03	0.34		0.01	c0.36			0.01			0.02	
v/s Ratio Perm	0.30		0.01	0.10		0.08	0.02			c0.14		
v/c Ratio	0.51	0.58	0.03	0.17	0.64	0.15	0.07	0.05		0.58	0.09	
Uniform Delay, d1	13.5	15.9	10.7	11.4	17.7	12.4	34.5	34.3		39.6	34.7	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	2.5	0.9	0.1	0.5	1.1	0.4	0.4	0.2		7.4	0.4	
Delay (s)	16.0	16.8	10.7	11.9	18.8	12.7	34.9	34.5		47.0	35.1	
Level of Service	B	B	B	B	B	B	C	C		D	D	
Approach Delay (s)		16.6			18.1			34.7			43.2	
Approach LOS		B			B			C			D	

Intersection Summary			
HCM 2000 Control Delay	19.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.3
Intersection Capacity Utilization	81.3%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

2: Sixth Line & Dundas St E

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	107	1489	185	125	1734	128	205	70	205	271	118
Future Volume (vph)	107	1489	185	125	1734	128	205	70	205	271	118
Lane Group Flow (vph)	113	1567	195	132	2008	135	216	74	216	285	124
Turn Type	pm+pt	NA	Perm	pm+pt	NA	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2		1	6	3	8		7	4	
Permitted Phases	2		2	6		8		8	4		4
Detector Phase	5	2	2	1	6	3	8	8	7	4	4
Switch Phase											
Minimum Initial (s)	7.0	24.0	24.0	7.0	24.0	7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	13.0	31.0	31.0	13.0	31.0	11.0	37.0	37.0	11.0	37.0	37.0
Total Split (s)	19.0	68.0	68.0	19.0	68.0	16.0	37.0	37.0	16.0	37.0	37.0
Total Split (%)	13.6%	48.6%	48.6%	13.6%	48.6%	11.4%	26.4%	26.4%	11.4%	26.4%	26.4%
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	3.0	2.0	2.0	3.0	2.0	1.0	2.0	2.0	1.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	4.0	6.0	6.0	4.0	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?											
Recall Mode	None	C-Max	C-Max	None	C-Max	None	Max	Max	None	Max	Max
v/c Ratio	0.64	0.68	0.24	0.66	0.86	0.49	0.51	0.18	0.64	0.67	0.28
Control Delay	42.6	31.8	5.4	38.0	38.6	38.6	52.9	4.3	44.8	58.3	8.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	42.6	31.8	5.4	38.0	38.6	38.6	52.9	4.3	44.8	58.3	8.8
Queue Length 50th (m)	16.2	129.4	3.6	16.8	187.1	27.7	55.8	0.0	46.7	76.9	0.0
Queue Length 95th (m)	37.5	151.2	18.6	39.6	218.3	44.9	83.2	7.0	70.0	110.1	17.0
Internal Link Dist (m)		122.2			1210.7		440.8			65.0	
Turn Bay Length (m)	107.0		80.0	120.0		90.0			76.0		
Base Capacity (vph)	210	2313	806	228	2323	288	420	416	338	427	448
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.54	0.68	0.24	0.58	0.86	0.47	0.51	0.18	0.64	0.67	0.28

Intersection Summary

Cycle Length: 140
Actuated Cycle Length: 140
Offset: 71 (51%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 105
Control Type: Actuated-Coordinated

Splits and Phases: 2: Sixth Line & Dundas St E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	107	1489	185	125	1734	174	128	205	70	205	271	118
Future Volume (vph)	107	1489	185	125	1734	174	128	205	70	205	271	118
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.3	3.6	3.5	3.3	3.6	3.5	3.3	3.6	3.5	3.3	3.6	3.5
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0		4.0	6.0	6.0	4.0	6.0	6.0
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91		1.00	1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00		1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1711	5036	1553	1728	5006		1726	1900	1526	1726	1881	1554
Flt Permitted	0.06	1.00	1.00	0.08	1.00		0.33	1.00	1.00	0.43	1.00	1.00
Satd. Flow (perm)	112	5036	1553	148	5006		598	1900	1526	788	1881	1554
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	113	1567	195	132	1825	183	135	216	74	216	285	124
RTOR Reduction (vph)	0	0	93	0	8	0	0	0	58	0	0	96
Lane Group Flow (vph)	113	1567	102	132	2000	0	135	216	16	216	285	28
Confl. Peds. (#/hr)	6		3	3		6	4		3	3		4
Confl. Bikes (#/hr)			1									
Heavy Vehicles (%)	2%	3%	1%	1%	2%	2%	1%	0%	3%	1%	1%	1%
Turn Type	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6			8		8	4		4
Actuated Green, G (s)	74.5	64.3	64.3	75.5	64.8		42.2	31.0	31.0	43.8	31.8	31.8
Effective Green, g (s)	74.5	64.3	64.3	75.5	64.8		42.2	31.0	31.0	43.8	31.8	31.8
Actuated g/C Ratio	0.53	0.46	0.46	0.54	0.46		0.30	0.22	0.22	0.31	0.23	0.23
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0		4.0	6.0	6.0	4.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	176	2312	713	200	2317		270	420	337	326	427	352
v/s Ratio Prot	0.05	0.31		c0.05	c0.40		0.04	0.11		c0.06	c0.15	
v/s Ratio Perm	0.29		0.07	0.31			0.11		0.01	0.15		0.02
v/c Ratio	0.64	0.68	0.14	0.66	0.86		0.50	0.51	0.05	0.66	0.67	0.08
Uniform Delay, d1	27.2	29.7	21.9	22.3	33.6		37.8	47.9	42.9	39.3	49.3	42.6
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	7.8	1.6	0.4	7.9	4.6		1.5	4.4	0.3	5.0	8.0	0.4
Delay (s)	34.9	31.3	22.3	30.2	38.2		39.3	52.3	43.2	44.3	57.3	43.0
Level of Service	C	C	C	C	D		D	D	D	D	E	D
Approach Delay (s)		30.6			37.7			46.6			50.0	
Approach LOS		C			D			D			D	

Intersection Summary			
HCM 2000 Control Delay	37.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	22.0
Intersection Capacity Utilization	98.9%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	0.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	15	8	429	12	6	691
Future Vol, veh/h	15	8	429	12	6	691
Conflicting Peds, #/hr	0	0	0	3	3	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	0	0	1	0	0	1
Mvmt Flow	16	9	456	13	6	735

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	846	238	0	0	472	0
Stage 1	466	-	-	-	-	-
Stage 2	380	-	-	-	-	-
Critical Hdwy	6.8	6.9	-	-	4.1	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	305	769	-	-	1100	-
Stage 1	604	-	-	-	-	-
Stage 2	667	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	302	767	-	-	1097	-
Mov Cap-2 Maneuver	302	-	-	-	-	-
Stage 1	603	-	-	-	-	-
Stage 2	661	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	15	0	0.1
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	383	1097	-
HCM Lane V/C Ratio	-	-	0.064	0.006	-
HCM Control Delay (s)	-	-	15	8.3	0
HCM Lane LOS	-	-	C	A	A
HCM 95th %tile Q(veh)	-	-	0.2	0	-

Intersection	
Int Delay, s/veh	1.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	25	38	53	383	484	20
Future Vol, veh/h	25	38	53	383	484	20
Conflicting Peds, #/hr	3	1	2	0	0	2
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	25	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	0	0	0	1	1	25
Mvmt Flow	26	40	55	399	504	21

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	830	266	527	0	-	0
Stage 1	517	-	-	-	-	-
Stage 2	313	-	-	-	-	-
Critical Hdwy	6.8	6.9	4.1	-	-	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	313	738	1050	-	-	-
Stage 1	569	-	-	-	-	-
Stage 2	721	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	295	736	1048	-	-	-
Mov Cap-2 Maneuver	295	-	-	-	-	-
Stage 1	538	-	-	-	-	-
Stage 2	720	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	14.1	1	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1048	-	462	-	-
HCM Lane V/C Ratio	0.053	-	0.142	-	-
HCM Control Delay (s)	8.6	-	14.1	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0.2	-	0.5	-	-

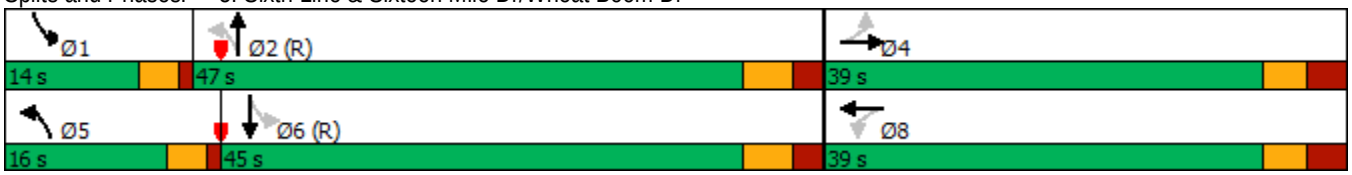
5: Sixth Line & Sixteen Mile Dr/Wheat Boom Dr

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	101	71	19	56	16	254	102	326
Future Volume (vph)	101	71	19	56	16	254	102	326
Lane Group Flow (vph)	106	181	20	73	17	398	107	406
Turn Type	Perm	NA	Perm	NA	pm+pt	NA	pm+pt	NA
Protected Phases		4		8	5	2	1	6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	5	2	1	6
Switch Phase								
Minimum Initial (s)	20.0	20.0	20.0	20.0	7.0	35.0	7.0	35.0
Minimum Split (s)	38.4	38.4	38.4	38.4	11.5	41.1	11.0	41.1
Total Split (s)	39.0	39.0	39.0	39.0	16.0	47.0	14.0	45.0
Total Split (%)	39.0%	39.0%	39.0%	39.0%	16.0%	47.0%	14.0%	45.0%
Yellow Time (s)	3.3	3.3	3.3	3.3	3.0	3.7	3.0	3.7
All-Red Time (s)	3.1	3.1	3.1	3.1	1.0	2.4	1.0	2.4
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.4	6.4	6.4	6.4	4.0	6.1	4.0	6.1
Lead/Lag					Lead	Lag	Lead	Lag
Lead-Lag Optimize?								
Recall Mode	Max	Max	Max	Max	None	C-Max	None	C-Max
v/c Ratio	0.25	0.30	0.05	0.13	0.03	0.27	0.20	0.23
Control Delay	26.8	15.9	23.8	20.6	9.8	14.3	10.8	14.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	26.8	15.9	23.8	20.6	9.8	14.3	10.8	14.3
Queue Length 50th (m)	15.8	15.4	2.8	8.5	1.4	19.5	9.4	19.5
Queue Length 95th (m)	29.8	32.8	8.3	18.9	4.4	31.3	17.4	35.9
Internal Link Dist (m)		26.8		207.1		202.5		1327.3
Turn Bay Length (m)	17.0		54.0		60.0		75.0	
Base Capacity (vph)	423	606	371	581	625	1484	559	1771
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.25	0.30	0.05	0.13	0.03	0.27	0.19	0.23

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 95
Control Type: Actuated-Coordinated

Splits and Phases: 5: Sixth Line & Sixteen Mile Dr/Wheat Boom Dr



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	101	71	101	19	56	13	16	254	124	102	326	60
Future Volume (vph)	101	71	101	19	56	13	16	254	124	102	326	60
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.3	3.6	3.5	3.3	3.6	3.5	3.3	3.6	3.5	3.3	3.6	3.5
Total Lost time (s)	6.4	6.4		6.4	6.4		4.0	6.1		4.0	6.1	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	0.99		1.00	1.00		1.00	0.99		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.91		1.00	0.97		1.00	0.95		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1739	1705		1742	1756		1743	3352		1728	3483	
Flt Permitted	0.71	1.00		0.62	1.00		0.51	1.00		0.46	1.00	
Satd. Flow (perm)	1299	1705		1139	1756		942	3352		830	3483	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	106	75	106	20	59	14	17	267	131	107	343	63
RTOR Reduction (vph)	0	51	0	0	9	0	0	59	0	0	13	0
Lane Group Flow (vph)	106	130	0	20	64	0	17	339	0	107	393	0
Confl. Peds. (#/hr)	4		2	2		4	2					2
Confl. Bikes (#/hr)									1			
Heavy Vehicles (%)	0%	2%	0%	0%	4%	8%	0%	2%	1%	1%	1%	0%
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	32.6	32.6		32.6	32.6		45.3	42.5		54.9	48.1	
Effective Green, g (s)	32.6	32.6		32.6	32.6		45.3	42.5		54.9	48.1	
Actuated g/C Ratio	0.33	0.33		0.33	0.33		0.45	0.42		0.55	0.48	
Clearance Time (s)	6.4	6.4		6.4	6.4		4.0	6.1		4.0	6.1	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	423	555		371	572		449	1424		531	1675	
v/s Ratio Prot		0.08			0.04		0.00	0.10		c0.02	c0.11	
v/s Ratio Perm	c0.08			0.02			0.02			0.09		
v/c Ratio	0.25	0.24		0.05	0.11		0.04	0.24		0.20	0.23	
Uniform Delay, d1	24.7	24.6		23.1	23.6		15.1	18.4		11.0	15.2	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.4	1.0		0.3	0.4		0.0	0.4		0.2	0.3	
Delay (s)	26.2	25.6		23.4	24.0		15.1	18.8		11.2	15.5	
Level of Service	C	C		C	C		B	B		B	B	
Approach Delay (s)		25.8			23.9			18.6			14.6	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM 2000 Control Delay	19.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.25		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	16.5
Intersection Capacity Utilization	75.4%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	3	63	55	11	6	1
Future Vol, veh/h	3	63	55	11	6	1
Conflicting Peds, #/hr	7	0	0	7	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	79	79	79	79	79	79
Heavy Vehicles, %	0	2	4	0	0	100
Mvmt Flow	4	80	70	14	8	1

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	91	0	-	0	172	84
Stage 1	-	-	-	-	84	-
Stage 2	-	-	-	-	88	-
Critical Hdwy	4.1	-	-	-	6.4	7.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	4.2
Pot Cap-1 Maneuver	1517	-	-	-	823	761
Stage 1	-	-	-	-	944	-
Stage 2	-	-	-	-	940	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1509	-	-	-	812	757
Mov Cap-2 Maneuver	-	-	-	-	812	-
Stage 1	-	-	-	-	936	-
Stage 2	-	-	-	-	935	-

Approach	EB	WB	SB
HCM Control Delay, s	0.3	0	9.5
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1509	-	-	-	804
HCM Lane V/C Ratio	0.003	-	-	-	0.011
HCM Control Delay (s)	7.4	0	-	-	9.5
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑	↑↑↑↳			↱
Traffic Vol, veh/h	0	1855	1984	0	0	0
Future Vol, veh/h	0	1855	1984	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	1953	2088	0	0	0

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	1044
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	7.1
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.9
Pot Cap-1 Maneuver	0	-	-	-	0	197
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	-	-	-	-	-	197
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-
HCM Control Delay (s)	-	-	-	0
HCM Lane LOS	-	-	-	A
HCM 95th %tile Q(veh)	-	-	-	-

Intersection	
Int Delay, s/veh	0

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	55	0	0	56	0	0
Future Vol, veh/h	55	0	0	56	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	57	0	0	58	0	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	57	0	115	57
Stage 1	-	-	-	-	57	-
Stage 2	-	-	-	-	58	-
Critical Hdwy	-	-	4.1	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1560	-	886	1015
Stage 1	-	-	-	-	971	-
Stage 2	-	-	-	-	970	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1560	-	886	1015
Mov Cap-2 Maneuver	-	-	-	-	886	-
Stage 1	-	-	-	-	971	-
Stage 2	-	-	-	-	970	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	-	1560	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	-	-	-	0	-

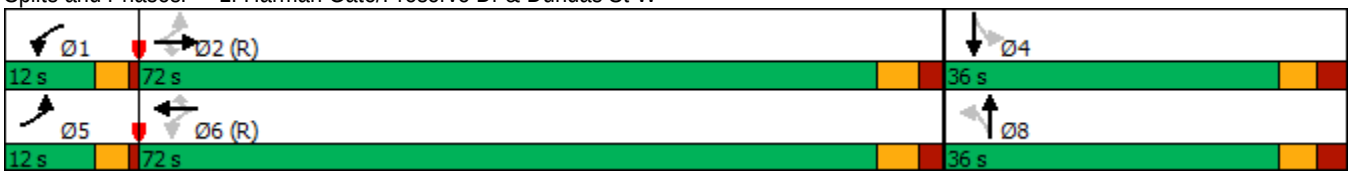
1: Harman Gate/Preserve Dr & Dundas St W

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	86	1599	35	13	1098	136	26	9	170	20
Future Volume (vph)	86	1599	35	13	1098	136	26	9	170	20
Lane Group Flow (vph)	88	1632	36	13	1120	139	27	53	173	130
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	NA
Protected Phases	5	2		1	6			8		4
Permitted Phases	2		2	6		6	8		4	
Detector Phase	5	2	2	1	6	6	8	8	4	4
Switch Phase										
Minimum Initial (s)	7.0	20.0	20.0	7.0	20.0	20.0	10.0	10.0	10.0	10.0
Minimum Split (s)	11.5	41.1	41.1	11.0	41.1	41.1	40.2	40.2	40.3	40.3
Total Split (s)	12.0	72.0	72.0	12.0	72.0	72.0	36.0	36.0	36.0	36.0
Total Split (%)	10.0%	60.0%	60.0%	10.0%	60.0%	60.0%	30.0%	30.0%	30.0%	30.0%
Yellow Time (s)	3.0	3.7	3.7	3.0	3.7	3.7	3.3	3.3	3.3	3.3
All-Red Time (s)	1.0	2.4	2.4	1.0	2.4	2.4	2.9	2.9	2.9	2.9
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	6.1	6.1	4.0	6.1	6.1	6.2	6.2	6.2	6.2
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag				
Lead-Lag Optimize?										
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	Max	Max	Max	Max
v/c Ratio	0.29	0.53	0.04	0.06	0.42	0.16	0.09	0.12	0.54	0.27
Control Delay	9.6	14.8	0.9	7.4	16.2	2.5	35.8	13.6	46.2	10.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	9.6	14.8	0.9	7.4	16.2	2.5	35.8	13.6	46.2	10.9
Queue Length 50th (m)	7.1	70.8	0.0	1.0	56.6	0.0	5.2	1.7	37.4	3.8
Queue Length 95th (m)	13.0	107.1	1.7	3.2	68.2	9.3	13.3	12.3	61.7	20.0
Internal Link Dist (m)		434.4			531.7			233.6		111.4
Turn Bay Length (m)	135.0		115.0	115.0		115.0	35.0		40.0	
Base Capacity (vph)	308	3084	897	233	2680	895	297	432	323	482
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	0.29	0.53	0.04	0.06	0.42	0.16	0.09	0.12	0.54	0.27

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 113 (94%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 95
Control Type: Actuated-Coordinated

Splits and Phases: 1: Harman Gate/Preserve Dr & Dundas St W



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	86	1599	35	13	1098	136	26	9	43	170	20	108
Future Volume (vph)	86	1599	35	13	1098	136	26	9	43	170	20	108
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.3	3.6	3.5	3.3	3.6	3.5	3.3	3.6	3.5	3.3	3.6	3.5
Total Lost time (s)	4.0	6.1	6.1	4.0	6.1	6.1	6.2	6.2		6.2	6.2	
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.97	1.00	1.00	0.97	1.00	0.98		1.00	0.99	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		0.99	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.88		1.00	0.87	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1646	5036	1425	1745	4848	1506	1739	1608		1715	1609	
Flt Permitted	0.19	1.00	1.00	0.11	1.00	1.00	0.66	1.00		0.72	1.00	
Satd. Flow (perm)	338	5036	1425	206	4848	1506	1199	1608		1304	1609	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	88	1632	36	13	1120	139	27	9	44	173	20	110
RTOR Reduction (vph)	0	0	15	0	0	62	0	33	0	0	83	0
Lane Group Flow (vph)	88	1632	21	13	1120	77	27	20	0	173	47	0
Confl. Peds. (#/hr)	5		4	4		5	4		4	4		4
Confl. Bikes (#/hr)			1						1			
Heavy Vehicles (%)	6%	3%	9%	0%	7%	3%	0%	0%	2%	1%	0%	2%
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases	2		2	6		6	8			4		
Actuated Green, G (s)	77.9	71.1	71.1	69.2	66.4	66.4	29.8	29.8		29.8	29.8	
Effective Green, g (s)	77.9	71.1	71.1	69.2	66.4	66.4	29.8	29.8		29.8	29.8	
Actuated g/C Ratio	0.65	0.59	0.59	0.58	0.55	0.55	0.25	0.25		0.25	0.25	
Clearance Time (s)	4.0	6.1	6.1	4.0	6.1	6.1	6.2	6.2		6.2	6.2	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	301	2983	844	154	2682	833	297	399		323	399	
v/s Ratio Prot	c0.02	c0.32		0.00	0.23			0.01			0.03	
v/s Ratio Perm	0.17		0.01	0.05		0.05	0.02			c0.13		
v/c Ratio	0.29	0.55	0.03	0.08	0.42	0.09	0.09	0.05		0.54	0.12	
Uniform Delay, d1	8.8	14.7	10.1	11.6	15.6	12.6	34.7	34.3		39.1	34.9	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.5	0.7	0.1	0.2	0.5	0.2	0.6	0.2		6.2	0.6	
Delay (s)	9.3	15.5	10.2	11.9	16.0	12.8	35.3	34.6		45.3	35.5	
Level of Service	A	B	B	B	B	B	D	C		D	D	
Approach Delay (s)		15.1			15.7			34.8			41.1	
Approach LOS		B			B			C			D	

Intersection Summary			
HCM 2000 Control Delay	18.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.3
Intersection Capacity Utilization	78.6%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	77	1524	183	115	939	208	174	210	180	209	94
Future Volume (vph)	77	1524	183	115	939	208	174	210	180	209	94
Lane Group Flow (vph)	78	1539	185	116	1050	210	176	212	182	211	95
Turn Type	pm+pt	NA	Perm	pm+pt	NA	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2		1	6	3	8		7	4	
Permitted Phases	2		2	6		8		8	4		4
Detector Phase	5	2	2	1	6	3	8	8	7	4	4
Switch Phase											
Minimum Initial (s)	7.0	24.0	24.0	7.0	24.0	7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	14.0	31.0	31.0	14.0	31.0	11.5	37.0	37.0	11.5	37.0	37.0
Total Split (s)	14.0	75.0	75.0	14.0	75.0	14.0	37.0	37.0	14.0	37.0	37.0
Total Split (%)	10.0%	53.6%	53.6%	10.0%	53.6%	10.0%	26.4%	26.4%	10.0%	26.4%	26.4%
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	3.0	2.0	2.0	3.0	2.0	1.0	2.0	2.0	1.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	4.0	6.0	6.0	4.0	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?											
Recall Mode	None	C-Max	C-Max	None	C-Max	None	Max	Max	None	Max	Max
v/c Ratio	0.29	0.61	0.21	0.65	0.45	0.68	0.44	0.47	0.53	0.53	0.23
Control Delay	15.3	27.1	3.2	33.3	23.2	50.0	51.0	18.4	42.2	53.8	8.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	15.3	27.1	3.2	33.3	23.2	50.0	51.0	18.4	42.2	53.8	8.4
Queue Length 50th (m)	9.3	116.8	0.3	14.2	70.0	46.5	44.6	14.6	39.4	54.8	0.0
Queue Length 95th (m)	17.0	132.6	13.0	#31.5	82.5	70.0	68.8	40.1	60.9	82.2	13.6
Internal Link Dist (m)		122.2			1210.7		440.8			65.0	
Turn Bay Length (m)	107.0		80.0	120.0		90.0			76.0		
Base Capacity (vph)	271	2512	863	179	2354	308	404	449	342	396	413
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.29	0.61	0.21	0.65	0.45	0.68	0.44	0.47	0.53	0.53	0.23

Intersection Summary

Cycle Length: 140
Actuated Cycle Length: 140
Offset: 36 (26%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 95
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 2: Sixth Line & Dundas St E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	77	1524	183	115	939	101	208	174	210	180	209	94
Future Volume (vph)	77	1524	183	115	939	101	208	174	210	180	209	94
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.3	3.6	3.5	3.3	3.6	3.5	3.3	3.6	3.5	3.3	3.6	3.5
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0		4.0	6.0	6.0	4.0	6.0	6.0
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91		1.00	1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00		1.00	1.00	0.97	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1630	5085	1559	1678	4738		1676	1827	1497	1702	1792	1511
Flt Permitted	0.21	1.00	1.00	0.10	1.00		0.45	1.00	1.00	0.52	1.00	1.00
Satd. Flow (perm)	362	5085	1559	170	4738		802	1827	1497	941	1792	1511
Peak-hour factor, PHF	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Adj. Flow (vph)	78	1539	185	116	948	102	210	176	212	182	211	95
RTOR Reduction (vph)	0	0	93	0	9	0	0	0	118	0	0	74
Lane Group Flow (vph)	78	1539	92	116	1041	0	210	176	94	182	211	21
Confl. Peds. (#/hr)	8		1	1		8	3		10	10		3
Confl. Bikes (#/hr)			1									
Heavy Vehicles (%)	7%	2%	1%	4%	8%	4%	4%	4%	4%	2%	6%	4%
Turn Type	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6			8		8	4		4
Actuated Green, G (s)	76.9	69.2	69.2	77.1	69.3		41.0	31.0	31.0	41.0	31.0	31.0
Effective Green, g (s)	76.9	69.2	69.2	77.1	69.3		41.0	31.0	31.0	41.0	31.0	31.0
Actuated g/C Ratio	0.55	0.49	0.49	0.55	0.49		0.29	0.22	0.22	0.29	0.22	0.22
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0		4.0	6.0	6.0	4.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	268	2513	770	177	2345		297	404	331	329	396	334
v/s Ratio Prot	0.02	0.30		c0.04	0.22		c0.05	0.10		0.04	0.12	
v/s Ratio Perm	0.14		0.06	c0.32			c0.16		0.06	0.12		0.01
v/c Ratio	0.29	0.61	0.12	0.66	0.44		0.71	0.44	0.29	0.55	0.53	0.06
Uniform Delay, d1	15.7	25.7	19.0	19.5	22.9		42.8	47.0	45.3	40.2	48.1	43.0
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.6	1.1	0.3	8.4	0.6		7.5	3.4	2.2	2.0	5.1	0.4
Delay (s)	16.3	26.8	19.4	27.9	23.5		50.3	50.4	47.4	42.2	53.2	43.4
Level of Service	B	C	B	C	C		D	D	D	D	D	D
Approach Delay (s)		25.6			23.9			49.3			47.2	
Approach LOS		C			C			D			D	

Intersection Summary			
HCM 2000 Control Delay	31.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	22.0
Intersection Capacity Utilization	91.5%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	0.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	8	4	324	14	6	474
Future Vol, veh/h	8	4	324	14	6	474
Conflicting Peds, #/hr	0	0	0	1	1	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	0	0	5	0	0	4
Mvmt Flow	9	5	377	16	7	551

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	676	198	0	0	394	0
Stage 1	386	-	-	-	-	-
Stage 2	290	-	-	-	-	-
Critical Hdwy	6.8	6.9	-	-	4.1	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	391	816	-	-	1176	-
Stage 1	662	-	-	-	-	-
Stage 2	740	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	387	815	-	-	1175	-
Mov Cap-2 Maneuver	387	-	-	-	-	-
Stage 1	661	-	-	-	-	-
Stage 2	733	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	12.9	0	0.1
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	469	1175	-
HCM Lane V/C Ratio	-	-	0.03	0.006	-
HCM Control Delay (s)	-	-	12.9	8.1	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Intersection	
Int Delay, s/veh	1.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	14	68	28	293	412	26
Future Vol, veh/h	14	68	28	293	412	26
Conflicting Peds, #/hr	2	0	7	0	0	7
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	25	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	11	0	0	5	5	0
Mvmt Flow	16	79	33	341	479	30

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	740	262	516	0	-	0
Stage 1	501	-	-	-	-	-
Stage 2	239	-	-	-	-	-
Critical Hdwy	7.02	6.9	4.1	-	-	-
Critical Hdwy Stg 1	6.02	-	-	-	-	-
Critical Hdwy Stg 2	6.02	-	-	-	-	-
Follow-up Hdwy	3.61	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	334	743	1060	-	-	-
Stage 1	549	-	-	-	-	-
Stage 2	752	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	320	739	1054	-	-	-
Mov Cap-2 Maneuver	320	-	-	-	-	-
Stage 1	529	-	-	-	-	-
Stage 2	748	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	12.1	0.7	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1054	-	604	-	-
HCM Lane V/C Ratio	0.031	-	0.158	-	-
HCM Control Delay (s)	8.5	-	12.1	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.6	-	-

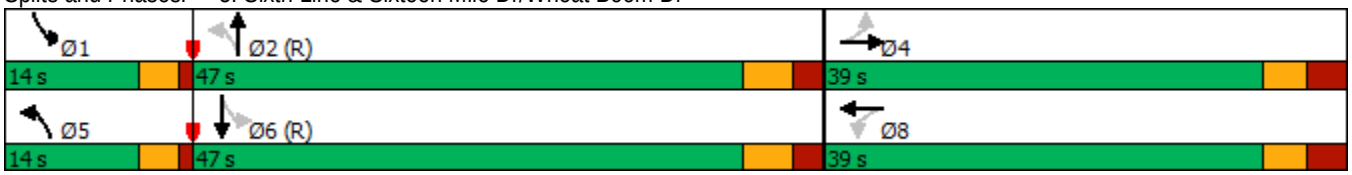
5: Sixth Line & Sixteen Mile Dr/Wheat Boom Dr

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	105	69	27	66	10	199	98	265
Future Volume (vph)	105	69	27	66	10	199	98	265
Lane Group Flow (vph)	125	226	32	96	12	348	117	377
Turn Type	Perm	NA	Perm	NA	pm+pt	NA	pm+pt	NA
Protected Phases		4		8	5	2	1	6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	5	2	1	6
Switch Phase								
Minimum Initial (s)	20.0	20.0	20.0	20.0	7.0	35.0	7.0	35.0
Minimum Split (s)	38.4	38.4	38.4	38.4	11.5	41.1	11.0	41.1
Total Split (s)	39.0	39.0	39.0	39.0	14.0	47.0	14.0	47.0
Total Split (%)	39.0%	39.0%	39.0%	39.0%	14.0%	47.0%	14.0%	47.0%
Yellow Time (s)	3.3	3.3	3.3	3.3	3.0	3.7	3.0	3.7
All-Red Time (s)	3.1	3.1	3.1	3.1	1.0	2.4	1.0	2.4
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.4	6.4	6.4	6.4	4.0	6.1	4.0	6.1
Lead/Lag					Lead	Lag	Lead	Lag
Lead-Lag Optimize?								
Recall Mode	Max	Max	Max	Max	None	C-Max	None	C-Max
v/c Ratio	0.31	0.39	0.11	0.17	0.02	0.25	0.21	0.21
Control Delay	28.0	17.1	25.0	22.1	9.7	14.0	11.0	12.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	28.0	17.1	25.0	22.1	9.7	14.0	11.0	12.6
Queue Length 50th (m)	19.0	19.7	4.5	12.2	1.0	16.6	10.4	17.8
Queue Length 95th (m)	32.0	35.9	11.0	22.5	3.3	24.6	17.4	30.5
Internal Link Dist (m)		26.8		207.1		202.5		1327.3
Turn Bay Length (m)	17.0		54.0		60.0		75.0	
Base Capacity (vph)	402	579	293	580	604	1418	571	1764
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.31	0.39	0.11	0.17	0.02	0.25	0.20	0.21

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 95
Control Type: Actuated-Coordinated

Splits and Phases: 5: Sixth Line & Sixteen Mile Dr/Wheat Boom Dr



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	105	69	121	27	66	14	10	199	93	98	265	52
Future Volume (vph)	105	69	121	27	66	14	10	199	93	98	265	52
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.3	3.6	3.5	3.3	3.6	3.5	3.3	3.6	3.5	3.3	3.6	3.5
Total Lost time (s)	6.4	6.4		6.4	6.4		4.0	6.1		4.0	6.1	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	0.99		1.00	1.00		1.00	0.99		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.90		1.00	0.97		1.00	0.95		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1687	1582		1539	1757		1744	3228		1675	3325	
Flt Permitted	0.69	1.00		0.56	1.00		0.53	1.00		0.49	1.00	
Satd. Flow (perm)	1234	1582		900	1757		969	3228		866	3325	
Peak-hour factor, PHF	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Adj. Flow (vph)	125	82	144	32	79	17	12	237	111	117	315	62
RTOR Reduction (vph)	0	63	0	0	7	0	0	54	0	0	14	0
Lane Group Flow (vph)	125	163	0	32	89	0	12	294	0	117	363	0
Confl. Peds. (#/hr)	5		5	5		5	1		3	3		1
Heavy Vehicles (%)	3%	10%	6%	13%	6%	0%	0%	4%	9%	4%	6%	3%
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	32.6	32.6		32.6	32.6		43.7	42.3		54.9	49.5	
Effective Green, g (s)	32.6	32.6		32.6	32.6		43.7	42.3		54.9	49.5	
Actuated g/C Ratio	0.33	0.33		0.33	0.33		0.44	0.42		0.55	0.50	
Clearance Time (s)	6.4	6.4		6.4	6.4		4.0	6.1		4.0	6.1	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	402	515		293	572		434	1365		545	1645	
v/s Ratio Prot		c0.10			0.05		0.00	0.09		c0.02	c0.11	
v/s Ratio Perm	0.10			0.04			0.01			0.10		
v/c Ratio	0.31	0.32		0.11	0.15		0.03	0.22		0.21	0.22	
Uniform Delay, d1	25.3	25.3		23.6	23.9		16.0	18.3		11.0	14.3	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	2.0	1.6		0.8	0.6		0.0	0.4		0.2	0.3	
Delay (s)	27.3	26.9		24.3	24.5		16.0	18.7		11.2	14.6	
Level of Service	C	C		C	C		B	B		B	B	
Approach Delay (s)		27.1			24.4			18.6			13.8	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM 2000 Control Delay	19.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.27		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	16.5
Intersection Capacity Utilization	75.4%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Intersection	
Int Delay, s/veh	1.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	5	76	42	12	6	13
Future Vol, veh/h	5	76	42	12	6	13
Conflicting Peds, #/hr	10	0	0	10	0	1
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	64	64	64	64	64	64
Heavy Vehicles, %	0	4	0	8	0	0
Mvmt Flow	8	119	66	19	9	20

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	95	0	-	0	221	87
Stage 1	-	-	-	-	86	-
Stage 2	-	-	-	-	135	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1512	-	-	-	772	977
Stage 1	-	-	-	-	942	-
Stage 2	-	-	-	-	896	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1500	-	-	-	755	969
Mov Cap-2 Maneuver	-	-	-	-	755	-
Stage 1	-	-	-	-	929	-
Stage 2	-	-	-	-	889	-

Approach	EB	WB	SB
HCM Control Delay, s	0.5	0	9.2
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1500	-	-	-	889
HCM Lane V/C Ratio	0.005	-	-	-	0.033
HCM Control Delay (s)	7.4	0	-	-	9.2
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑	↑↑↑↳			↱
Traffic Vol, veh/h	0	1812	1247	0	0	0
Future Vol, veh/h	0	1812	1247	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	1849	1272	0	0	0

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	636
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	7.1
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.9
Pot Cap-1 Maneuver	0	-	-	-	0	364
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	-	-	-	-	-	364
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-
HCM Control Delay (s)	-	-	-	0
HCM Lane LOS	-	-	-	A
HCM 95th %tile Q(veh)	-	-	-	-

Intersection	
Int Delay, s/veh	0

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	77	0	0	38	0	0
Future Vol, veh/h	77	0	0	38	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	90	0	0	44	0	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	90	0	134	90
Stage 1	-	-	-	-	90	-
Stage 2	-	-	-	-	44	-
Critical Hdwy	-	-	4.1	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1518	-	864	973
Stage 1	-	-	-	-	939	-
Stage 2	-	-	-	-	984	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1518	-	864	973
Mov Cap-2 Maneuver	-	-	-	-	864	-
Stage 1	-	-	-	-	939	-
Stage 2	-	-	-	-	984	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	-	1518	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	-	-	-	0	-

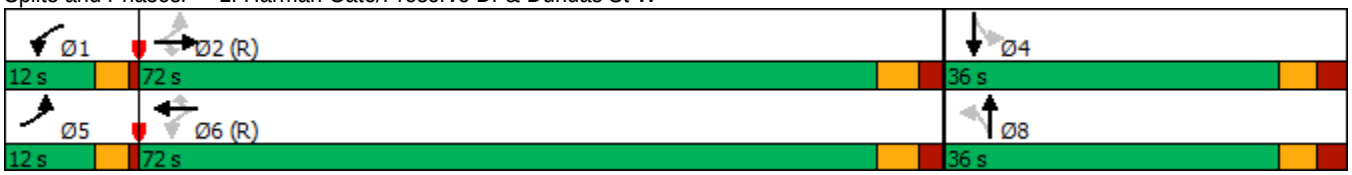
1: Harman Gate/Preserve Dr & Dundas St W

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	79	1686	37	26	1739	219	20	14	182	18
Future Volume (vph)	79	1686	37	26	1739	219	20	14	182	18
Lane Group Flow (vph)	83	1775	39	27	1831	231	21	30	192	91
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	NA
Protected Phases	5	2		1	6			8		4
Permitted Phases	2		2	6		6	8		4	
Detector Phase	5	2	2	1	6	6	8	8	4	4
Switch Phase										
Minimum Initial (s)	7.0	20.0	20.0	7.0	20.0	20.0	10.0	10.0	10.0	10.0
Minimum Split (s)	11.5	41.1	41.1	11.0	41.1	41.1	40.2	40.2	40.3	40.3
Total Split (s)	12.0	72.0	72.0	12.0	72.0	72.0	36.0	36.0	36.0	36.0
Total Split (%)	10.0%	60.0%	60.0%	10.0%	60.0%	60.0%	30.0%	30.0%	30.0%	30.0%
Yellow Time (s)	3.0	3.7	3.7	3.0	3.7	3.7	3.3	3.3	3.3	3.3
All-Red Time (s)	1.0	2.4	2.4	1.0	2.4	2.4	2.9	2.9	2.9	2.9
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	6.1	6.1	4.0	6.1	6.1	6.2	6.2	6.2	6.2
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes				
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	Max	Max	Max	Max
v/c Ratio	0.45	0.59	0.04	0.14	0.63	0.23	0.07	0.07	0.58	0.20
Control Delay	17.9	17.0	1.2	8.5	18.9	2.3	35.5	22.1	47.9	12.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	17.9	17.0	1.2	8.5	18.9	2.3	35.5	22.1	47.9	12.7
Queue Length 50th (m)	6.6	105.1	0.0	2.1	110.8	0.0	4.0	2.8	42.0	3.6
Queue Length 95th (m)	16.8	121.0	2.2	5.3	128.5	11.4	11.0	10.9	67.9	17.2
Internal Link Dist (m)		434.4			531.7			233.6		111.4
Turn Bay Length (m)	135.0		115.0	115.0		115.0	35.0		40.0	
Base Capacity (vph)	191	2992	950	204	2907	989	302	416	329	465
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	0.59	0.04	0.13	0.63	0.23	0.07	0.07	0.58	0.20

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 64 (53%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 95
Control Type: Actuated-Coordinated

Splits and Phases: 1: Harman Gate/Preserve Dr & Dundas St W



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	79	1686	37	26	1739	219	20	14	14	182	18	68
Future Volume (vph)	79	1686	37	26	1739	219	20	14	14	182	18	68
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.3	3.6	3.5	3.3	3.6	3.5	3.3	3.6	3.5	3.3	3.6	3.5
Total Lost time (s)	4.0	6.1	6.1	4.0	6.1	6.1	6.2	6.2		6.2	6.2	
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.97	1.00	1.00	0.97	1.00	0.99		1.00	0.99	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.93		1.00	0.88	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1745	5036	1556	1745	5085	1557	1659	1631		1707	1656	
Flt Permitted	0.07	1.00	1.00	0.08	1.00	1.00	0.70	1.00		0.74	1.00	
Satd. Flow (perm)	129	5036	1556	155	5085	1557	1219	1631		1326	1656	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	83	1775	39	27	1831	231	21	15	15	192	19	72
RTOR Reduction (vph)	0	0	16	0	0	100	0	11	0	0	54	0
Lane Group Flow (vph)	83	1775	23	27	1831	131	21	19	0	192	37	0
Confl. Peds. (#/hr)	3		3	3		3	2		1	1		2
Confl. Bikes (#/hr)			1									
Heavy Vehicles (%)	0%	3%	0%	0%	2%	0%	5%	7%	7%	2%	0%	0%
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases	2		2	6		6	8			4		
Actuated Green, G (s)	75.8	69.7	69.7	72.0	67.8	67.8	29.8	29.8		29.8	29.8	
Effective Green, g (s)	75.8	69.7	69.7	72.0	67.8	67.8	29.8	29.8		29.8	29.8	
Actuated g/C Ratio	0.63	0.58	0.58	0.60	0.56	0.56	0.25	0.25		0.25	0.25	
Clearance Time (s)	4.0	6.1	6.1	4.0	6.1	6.1	6.2	6.2		6.2	6.2	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	163	2925	903	148	2873	879	302	405		329	411	
v/s Ratio Prot	c0.03	0.35		0.01	c0.36			0.01			0.02	
v/s Ratio Perm	0.30		0.01	0.10		0.08	0.02			c0.14		
v/c Ratio	0.51	0.61	0.03	0.18	0.64	0.15	0.07	0.05		0.58	0.09	
Uniform Delay, d1	13.5	16.3	10.7	11.7	17.7	12.4	34.5	34.3		39.6	34.7	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	2.5	0.9	0.1	0.6	1.1	0.4	0.4	0.2		7.4	0.4	
Delay (s)	16.0	17.2	10.7	12.3	18.8	12.7	34.9	34.5		47.0	35.1	
Level of Service	B	B	B	B	B	B	C	C		D	D	
Approach Delay (s)		17.0			18.1			34.7			43.2	
Approach LOS		B			B			C			D	

Intersection Summary			
HCM 2000 Control Delay	19.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.3
Intersection Capacity Utilization	81.3%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

2: Sixth Line & Dundas St E

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	107	1552	185	125	1734	128	205	70	205	280	118
Future Volume (vph)	107	1552	185	125	1734	128	205	70	205	280	118
Lane Group Flow (vph)	113	1634	195	132	2008	135	216	74	216	295	124
Turn Type	pm+pt	NA	Perm	pm+pt	NA	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2		1	6	3	8		7	4	
Permitted Phases	2		2	6		8		8	4		4
Detector Phase	5	2	2	1	6	3	8	8	7	4	4
Switch Phase											
Minimum Initial (s)	7.0	24.0	24.0	7.0	24.0	7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	13.0	31.0	31.0	13.0	31.0	11.0	37.0	37.0	11.0	37.0	37.0
Total Split (s)	19.0	68.0	68.0	19.0	68.0	16.0	37.0	37.0	16.0	37.0	37.0
Total Split (%)	13.6%	48.6%	48.6%	13.6%	48.6%	11.4%	26.4%	26.4%	11.4%	26.4%	26.4%
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	3.0	2.0	2.0	3.0	2.0	1.0	2.0	2.0	1.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	4.0	6.0	6.0	4.0	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?											
Recall Mode	None	C-Max	C-Max	None	C-Max	None	Max	Max	None	Max	Max
v/c Ratio	0.64	0.71	0.24	0.69	0.86	0.50	0.51	0.18	0.64	0.69	0.28
Control Delay	42.6	32.8	5.9	43.9	38.6	39.2	52.9	4.3	44.8	59.5	8.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	42.6	32.8	5.9	43.9	38.6	39.2	52.9	4.3	44.8	59.5	8.8
Queue Length 50th (m)	16.4	138.9	4.8	19.1	187.4	27.7	55.8	0.0	46.7	80.1	0.0
Queue Length 95th (m)	37.5	160.5	19.9	42.7	218.3	44.9	83.2	7.0	70.0	114.1	17.0
Internal Link Dist (m)		122.2			1210.7		440.8			65.0	
Turn Bay Length (m)	107.0		80.0	120.0		90.0			76.0		
Base Capacity (vph)	210	2307	800	219	2322	280	420	416	338	427	448
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.54	0.71	0.24	0.60	0.86	0.48	0.51	0.18	0.64	0.69	0.28

Intersection Summary

Cycle Length: 140
Actuated Cycle Length: 140
Offset: 71 (51%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 105
Control Type: Actuated-Coordinated

Splits and Phases: 2: Sixth Line & Dundas St E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	107	1552	185	125	1734	174	128	205	70	205	280	118
Future Volume (vph)	107	1552	185	125	1734	174	128	205	70	205	280	118
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.3	3.6	3.5	3.3	3.6	3.5	3.3	3.6	3.5	3.3	3.6	3.5
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0		4.0	6.0	6.0	4.0	6.0	6.0
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91		1.00	1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00		1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1711	5036	1553	1728	5006		1726	1900	1526	1726	1881	1554
Flt Permitted	0.06	1.00	1.00	0.07	1.00		0.31	1.00	1.00	0.43	1.00	1.00
Satd. Flow (perm)	112	5036	1553	127	5006		564	1900	1526	788	1881	1554
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	113	1634	195	132	1825	183	135	216	74	216	295	124
RTOR Reduction (vph)	0	0	89	0	8	0	0	0	58	0	0	96
Lane Group Flow (vph)	113	1634	106	132	2000	0	135	216	16	216	295	28
Confl. Peds. (#/hr)	6		3	3		6	4		3	3		4
Confl. Bikes (#/hr)			1									
Heavy Vehicles (%)	2%	3%	1%	1%	2%	2%	1%	0%	3%	1%	1%	1%
Turn Type	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6			8		8	4		4
Actuated Green, G (s)	74.3	64.1	64.1	75.7	64.8		42.2	31.0	31.0	43.8	31.8	31.8
Effective Green, g (s)	74.3	64.1	64.1	75.7	64.8		42.2	31.0	31.0	43.8	31.8	31.8
Actuated g/C Ratio	0.53	0.46	0.46	0.54	0.46		0.30	0.22	0.22	0.31	0.23	0.23
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0		4.0	6.0	6.0	4.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	175	2305	711	193	2317		262	420	337	326	427	352
v/s Ratio Prot	0.05	0.32		c0.05	c0.40		0.04	0.11		c0.06	c0.16	
v/s Ratio Perm	0.29		0.07	0.32			0.11		0.01	0.15		0.02
v/c Ratio	0.65	0.71	0.15	0.68	0.86		0.52	0.51	0.05	0.66	0.69	0.08
Uniform Delay, d1	27.1	30.5	22.1	24.9	33.6		37.9	47.9	42.9	39.3	49.6	42.6
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	7.9	1.9	0.4	9.6	4.6		1.7	4.4	0.3	5.0	8.9	0.4
Delay (s)	35.0	32.3	22.5	34.5	38.2		39.6	52.3	43.2	44.3	58.5	43.0
Level of Service	D	C	C	C	D		D	D	D	D	E	D
Approach Delay (s)		31.5			38.0			46.7			50.6	
Approach LOS		C			D			D			D	

Intersection Summary			
HCM 2000 Control Delay	37.8	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	22.0
Intersection Capacity Utilization	98.9%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	0.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	15	8	429	12	6	714
Future Vol, veh/h	15	8	429	12	6	714
Conflicting Peds, #/hr	0	0	0	3	3	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	0	0	1	0	0	1
Mvmt Flow	16	9	456	13	6	760

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	858	238	0	0	472	0
Stage 1	466	-	-	-	-	-
Stage 2	392	-	-	-	-	-
Critical Hdwy	6.8	6.9	-	-	4.1	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	300	769	-	-	1100	-
Stage 1	604	-	-	-	-	-
Stage 2	658	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	297	767	-	-	1097	-
Mov Cap-2 Maneuver	297	-	-	-	-	-
Stage 1	603	-	-	-	-	-
Stage 2	652	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	15.2	0	0.1
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	377	1097	-
HCM Lane V/C Ratio	-	-	0.065	0.006	-
HCM Control Delay (s)	-	-	15.2	8.3	0
HCM Lane LOS	-	-	C	A	A
HCM 95th %tile Q(veh)	-	-	0.2	0	-

Intersection	
Int Delay, s/veh	1.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	25	38	53	383	500	20
Future Vol, veh/h	25	38	53	383	500	20
Conflicting Peds, #/hr	3	1	2	0	0	2
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	25	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	0	0	0	1	1	25
Mvmt Flow	26	40	55	399	521	21

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	847	274	544	0	-	0
Stage 1	534	-	-	-	-	-
Stage 2	313	-	-	-	-	-
Critical Hdwy	6.8	6.9	4.1	-	-	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	305	730	1035	-	-	-
Stage 1	558	-	-	-	-	-
Stage 2	721	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	288	728	1033	-	-	-
Mov Cap-2 Maneuver	288	-	-	-	-	-
Stage 1	527	-	-	-	-	-
Stage 2	720	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	14.3	1.1	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1033	-	453	-	-
HCM Lane V/C Ratio	0.053	-	0.145	-	-
HCM Control Delay (s)	8.7	-	14.3	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0.2	-	0.5	-	-

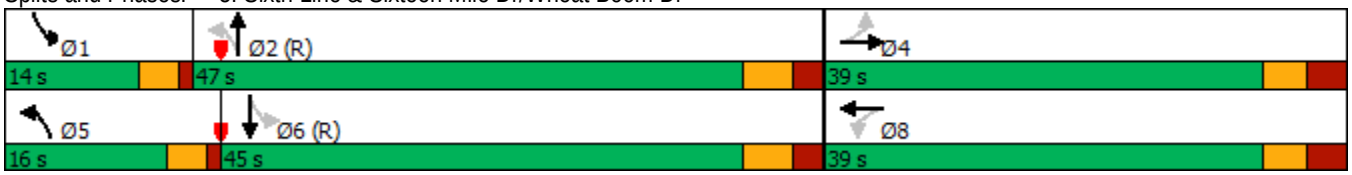
5: Sixth Line & Sixteen Mile Dr/Wheat Boom Dr

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	101	74	19	56	16	254	102	336
Future Volume (vph)	101	74	19	56	16	254	102	336
Lane Group Flow (vph)	106	184	20	73	17	398	107	417
Turn Type	Perm	NA	Perm	NA	pm+pt	NA	pm+pt	NA
Protected Phases		4		8	5	2	1	6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	5	2	1	6
Switch Phase								
Minimum Initial (s)	20.0	20.0	20.0	20.0	7.0	35.0	7.0	35.0
Minimum Split (s)	38.4	38.4	38.4	38.4	11.5	41.1	11.0	41.1
Total Split (s)	39.0	39.0	39.0	39.0	16.0	47.0	14.0	45.0
Total Split (%)	39.0%	39.0%	39.0%	39.0%	16.0%	47.0%	14.0%	45.0%
Yellow Time (s)	3.3	3.3	3.3	3.3	3.0	3.7	3.0	3.7
All-Red Time (s)	3.1	3.1	3.1	3.1	1.0	2.4	1.0	2.4
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.4	6.4	6.4	6.4	4.0	6.1	4.0	6.1
Lead/Lag					Lead	Lag	Lead	Lag
Lead-Lag Optimize?								
Recall Mode	Max	Max	Max	Max	None	C-Max	None	C-Max
v/c Ratio	0.25	0.30	0.05	0.13	0.03	0.27	0.20	0.24
Control Delay	26.8	16.5	23.8	20.6	9.8	14.3	10.8	14.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	26.8	16.5	23.8	20.6	9.8	14.3	10.8	14.4
Queue Length 50th (m)	15.8	16.2	2.8	8.5	1.4	19.5	9.4	20.2
Queue Length 95th (m)	29.8	33.7	8.3	18.9	4.4	31.3	17.4	37.0
Internal Link Dist (m)		26.8		207.1		202.5		1327.3
Turn Bay Length (m)	17.0		54.0		60.0		75.0	
Base Capacity (vph)	423	606	368	581	621	1484	559	1771
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.25	0.30	0.05	0.13	0.03	0.27	0.19	0.24

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 95
Control Type: Actuated-Coordinated

Splits and Phases: 5: Sixth Line & Sixteen Mile Dr/Wheat Boom Dr



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	101	74	101	19	56	13	16	254	124	102	336	60
Future Volume (vph)	101	74	101	19	56	13	16	254	124	102	336	60
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.3	3.6	3.5	3.3	3.6	3.5	3.3	3.6	3.5	3.3	3.6	3.5
Total Lost time (s)	6.4	6.4		6.4	6.4		4.0	6.1		4.0	6.1	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	0.99		1.00	1.00		1.00	0.99		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.91		1.00	0.97		1.00	0.95		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1739	1708		1742	1756		1743	3352		1728	3486	
Flt Permitted	0.71	1.00		0.62	1.00		0.51	1.00		0.46	1.00	
Satd. Flow (perm)	1299	1708		1130	1756		932	3352		830	3486	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	106	78	106	20	59	14	17	267	131	107	354	63
RTOR Reduction (vph)	0	49	0	0	9	0	0	59	0	0	12	0
Lane Group Flow (vph)	106	135	0	20	64	0	17	339	0	107	405	0
Confl. Peds. (#/hr)	4		2	2		4	2					2
Confl. Bikes (#/hr)									1			
Heavy Vehicles (%)	0%	2%	0%	0%	4%	8%	0%	2%	1%	1%	1%	0%
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	32.6	32.6		32.6	32.6		45.3	42.5		54.9	48.1	
Effective Green, g (s)	32.6	32.6		32.6	32.6		45.3	42.5		54.9	48.1	
Actuated g/C Ratio	0.33	0.33		0.33	0.33		0.45	0.42		0.55	0.48	
Clearance Time (s)	6.4	6.4		6.4	6.4		4.0	6.1		4.0	6.1	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	423	556		368	572		444	1424		531	1676	
v/s Ratio Prot		0.08			0.04		0.00	0.10		c0.02	c0.12	
v/s Ratio Perm	c0.08			0.02			0.02			0.09		
v/c Ratio	0.25	0.24		0.05	0.11		0.04	0.24		0.20	0.24	
Uniform Delay, d1	24.7	24.7		23.1	23.6		15.1	18.4		11.0	15.2	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.4	1.0		0.3	0.4		0.0	0.4		0.2	0.3	
Delay (s)	26.2	25.7		23.4	24.0		15.1	18.8		11.2	15.6	
Level of Service	C	C		C	C		B	B		B	B	
Approach Delay (s)		25.9			23.9			18.6			14.7	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM 2000 Control Delay	19.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.25		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	16.5
Intersection Capacity Utilization	75.4%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	3	65	55	11	6	1
Future Vol, veh/h	3	65	55	11	6	1
Conflicting Peds, #/hr	7	0	0	7	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	79	79	79	79	79	79
Heavy Vehicles, %	0	2	4	0	0	100
Mvmt Flow	4	82	70	14	8	1

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	91	0	-	0	174	84
Stage 1	-	-	-	-	84	-
Stage 2	-	-	-	-	90	-
Critical Hdwy	4.1	-	-	-	6.4	7.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	4.2
Pot Cap-1 Maneuver	1517	-	-	-	821	761
Stage 1	-	-	-	-	944	-
Stage 2	-	-	-	-	939	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1509	-	-	-	810	757
Mov Cap-2 Maneuver	-	-	-	-	810	-
Stage 1	-	-	-	-	936	-
Stage 2	-	-	-	-	934	-

Approach	EB	WB	SB
HCM Control Delay, s	0.3	0	9.5
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1509	-	-	-	802
HCM Lane V/C Ratio	0.003	-	-	-	0.011
HCM Control Delay (s)	7.4	0	-	-	9.5
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑	↑↑↑↳			↱
Traffic Vol, veh/h	0	1933	1984	0	0	0
Future Vol, veh/h	0	1933	1984	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	2035	2088	0	0	0

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	1044
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	7.1
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.9
Pot Cap-1 Maneuver	0	-	-	-	0	197
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	-	-	-	-	-	197
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-
HCM Control Delay (s)	-	-	-	0
HCM Lane LOS	-	-	-	A
HCM 95th %tile Q(veh)	-	-	-	-

Intersection	
Int Delay, s/veh	0

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	57	0	0	56	0	0
Future Vol, veh/h	57	0	0	56	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	59	0	0	58	0	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	59	0	117	59
Stage 1	-	-	-	-	59	-
Stage 2	-	-	-	-	58	-
Critical Hdwy	-	-	4.1	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1558	-	884	1012
Stage 1	-	-	-	-	969	-
Stage 2	-	-	-	-	970	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1558	-	884	1012
Mov Cap-2 Maneuver	-	-	-	-	884	-
Stage 1	-	-	-	-	969	-
Stage 2	-	-	-	-	970	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	-	1558	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	-	-	-	0	-

APPENDIX G

Intersection Capacity Analysis – Future Total Conditions

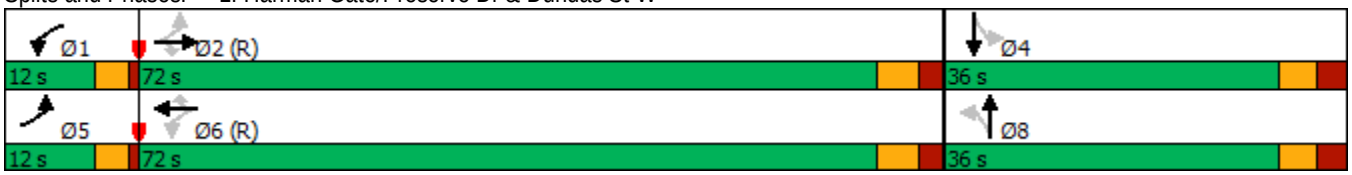
1: Harman Gate/Preserve Dr & Dundas St W

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	96	1603	35	13	1123	136	26	9	170	20
Future Volume (vph)	96	1603	35	13	1123	136	26	9	170	20
Lane Group Flow (vph)	98	1636	36	13	1146	139	27	53	173	180
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	NA
Protected Phases	5	2		1	6			8		4
Permitted Phases	2		2	6		6	8		4	
Detector Phase	5	2	2	1	6	6	8	8	4	4
Switch Phase										
Minimum Initial (s)	7.0	20.0	20.0	7.0	20.0	20.0	10.0	10.0	10.0	10.0
Minimum Split (s)	11.5	41.1	41.1	11.0	41.1	41.1	40.2	40.2	40.3	40.3
Total Split (s)	12.0	72.0	72.0	12.0	72.0	72.0	36.0	36.0	36.0	36.0
Total Split (%)	10.0%	60.0%	60.0%	10.0%	60.0%	60.0%	30.0%	30.0%	30.0%	30.0%
Yellow Time (s)	3.0	3.7	3.7	3.0	3.7	3.7	3.3	3.3	3.3	3.3
All-Red Time (s)	1.0	2.4	2.4	1.0	2.4	2.4	2.9	2.9	2.9	2.9
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	6.1	6.1	4.0	6.1	6.1	6.2	6.2	6.2	6.2
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes				
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	Max	Max	Max	Max
v/c Ratio	0.33	0.53	0.04	0.06	0.43	0.16	0.11	0.12	0.54	0.35
Control Delay	10.2	14.8	0.9	7.4	16.4	2.5	36.3	13.6	46.2	9.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	10.2	14.8	0.9	7.4	16.4	2.5	36.3	13.6	46.2	9.6
Queue Length 50th (m)	7.9	71.1	0.0	1.0	58.8	0.0	5.2	1.7	37.4	3.8
Queue Length 95th (m)	14.1	107.4	1.7	3.2	70.0	9.3	13.4	12.3	61.7	22.5
Internal Link Dist (m)		434.4			531.7			233.6		111.4
Turn Bay Length (m)	135.0		115.0	115.0		115.0	35.0		40.0	
Base Capacity (vph)	301	3084	897	233	2676	893	255	432	323	516
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	0.33	0.53	0.04	0.06	0.43	0.16	0.11	0.12	0.54	0.35

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 113 (94%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 95
Control Type: Actuated-Coordinated

Splits and Phases: 1: Harman Gate/Preserve Dr & Dundas St W



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	96	1603	35	13	1123	136	26	9	43	170	20	157
Future Volume (vph)	96	1603	35	13	1123	136	26	9	43	170	20	157
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.3	3.6	3.5	3.3	3.6	3.5	3.3	3.6	3.5	3.3	3.6	3.5
Total Lost time (s)	4.0	6.1	6.1	4.0	6.1	6.1	6.2	6.2		6.2	6.2	
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.97	1.00	1.00	0.97	1.00	0.98		1.00	0.99	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		0.99	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.88		1.00	0.87	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1646	5036	1425	1745	4848	1506	1739	1608		1715	1595	
Flt Permitted	0.19	1.00	1.00	0.11	1.00	1.00	0.56	1.00		0.72	1.00	
Satd. Flow (perm)	325	5036	1425	205	4848	1506	1028	1608		1304	1595	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	98	1636	36	13	1146	139	27	9	44	173	20	160
RTOR Reduction (vph)	0	0	15	0	0	62	0	33	0	0	120	0
Lane Group Flow (vph)	98	1636	21	13	1146	77	27	20	0	173	60	0
Confl. Peds. (#/hr)	5		4	4		5	4		4	4		4
Confl. Bikes (#/hr)			1						1			
Heavy Vehicles (%)	6%	3%	9%	0%	7%	3%	0%	0%	2%	1%	0%	2%
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases	2		2	6		6	8			4		
Actuated Green, G (s)	77.9	71.1	71.1	69.1	66.3	66.3	29.8	29.8		29.8	29.8	
Effective Green, g (s)	77.9	71.1	71.1	69.1	66.3	66.3	29.8	29.8		29.8	29.8	
Actuated g/C Ratio	0.65	0.59	0.59	0.58	0.55	0.55	0.25	0.25		0.25	0.25	
Clearance Time (s)	4.0	6.1	6.1	4.0	6.1	6.1	6.2	6.2		6.2	6.2	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	294	2983	844	153	2678	832	255	399		323	396	
v/s Ratio Prot	c0.02	c0.32		0.00	0.24			0.01			0.04	
v/s Ratio Perm	0.19		0.01	0.05		0.05	0.03			c0.13		
v/c Ratio	0.33	0.55	0.03	0.08	0.43	0.09	0.11	0.05		0.54	0.15	
Uniform Delay, d1	9.0	14.8	10.1	11.7	15.7	12.7	34.8	34.3		39.1	35.2	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.7	0.7	0.1	0.2	0.5	0.2	0.8	0.2		6.2	0.8	
Delay (s)	9.6	15.5	10.2	11.9	16.2	12.9	35.6	34.6		45.3	36.0	
Level of Service	A	B	B	B	B	B	D	C		D	D	
Approach Delay (s)		15.1			15.8			34.9			40.6	
Approach LOS		B			B			C			D	

Intersection Summary			
HCM 2000 Control Delay	18.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.3
Intersection Capacity Utilization	78.7%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	81	1524	183	115	949	208	186	210	228	245	94
Future Volume (vph)	81	1524	183	115	949	208	186	210	228	245	94
Lane Group Flow (vph)	82	1539	185	116	1078	210	188	212	230	247	95
Turn Type	pm+pt	NA	Perm	pm+pt	NA	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2		1	6	3	8		7	4	
Permitted Phases	2		2	6		8		8	4		4
Detector Phase	5	2	2	1	6	3	8	8	7	4	4
Switch Phase											
Minimum Initial (s)	7.0	24.0	24.0	7.0	24.0	7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	14.0	31.0	31.0	14.0	31.0	11.5	37.0	37.0	11.5	37.0	37.0
Total Split (s)	14.0	75.0	75.0	14.0	75.0	14.0	37.0	37.0	14.0	37.0	37.0
Total Split (%)	10.0%	53.6%	53.6%	10.0%	53.6%	10.0%	26.4%	26.4%	10.0%	26.4%	26.4%
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	3.0	2.0	2.0	3.0	2.0	1.0	2.0	2.0	1.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	4.0	6.0	6.0	4.0	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?											
Recall Mode	None	C-Max	C-Max	None	C-Max	None	Max	Max	None	Max	Max
v/c Ratio	0.31	0.61	0.21	0.65	0.46	0.75	0.47	0.48	0.69	0.62	0.23
Control Delay	15.7	27.1	3.2	33.3	23.4	55.9	51.7	20.8	50.3	57.2	8.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	15.7	27.1	3.2	33.3	23.4	55.9	51.7	20.8	50.3	57.2	8.4
Queue Length 50th (m)	9.8	116.8	0.3	14.2	72.3	46.5	48.0	17.6	51.4	65.6	0.0
Queue Length 95th (m)	17.6	132.6	13.0	#31.5	85.0	#76.6	73.2	43.8	76.4	96.1	13.6
Internal Link Dist (m)		122.2			1210.7		440.8			65.0	
Turn Bay Length (m)	107.0		80.0	120.0		90.0			76.0		
Base Capacity (vph)	264	2512	863	179	2350	279	404	439	332	396	413
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.31	0.61	0.21	0.65	0.46	0.75	0.47	0.48	0.69	0.62	0.23

Intersection Summary

Cycle Length: 140
Actuated Cycle Length: 140
Offset: 36 (26%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 95
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 2: Sixth Line & Dundas St E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	81	1524	183	115	949	118	208	186	210	228	245	94
Future Volume (vph)	81	1524	183	115	949	118	208	186	210	228	245	94
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.3	3.6	3.5	3.3	3.6	3.5	3.3	3.6	3.5	3.3	3.6	3.5
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0		4.0	6.0	6.0	4.0	6.0	6.0
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91		1.00	1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00		1.00	1.00	0.97	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1630	5085	1559	1678	4729		1676	1827	1497	1703	1792	1511
Flt Permitted	0.20	1.00	1.00	0.10	1.00		0.38	1.00	1.00	0.50	1.00	1.00
Satd. Flow (perm)	348	5085	1559	170	4729		678	1827	1497	898	1792	1511
Peak-hour factor, PHF	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Adj. Flow (vph)	82	1539	185	116	959	119	210	188	212	230	247	95
RTOR Reduction (vph)	0	0	93	0	11	0	0	0	108	0	0	74
Lane Group Flow (vph)	82	1539	92	116	1067	0	210	188	104	230	247	21
Confl. Peds. (#/hr)	8		1	1		8	3		10	10		3
Confl. Bikes (#/hr)			1									
Heavy Vehicles (%)	7%	2%	1%	4%	8%	4%	4%	4%	4%	2%	6%	4%
Turn Type	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6			8		8	4		4
Actuated Green, G (s)	76.9	69.2	69.2	77.1	69.3		41.0	31.0	31.0	41.0	31.0	31.0
Effective Green, g (s)	76.9	69.2	69.2	77.1	69.3		41.0	31.0	31.0	41.0	31.0	31.0
Actuated g/C Ratio	0.55	0.49	0.49	0.55	0.49		0.29	0.22	0.22	0.29	0.22	0.22
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0		4.0	6.0	6.0	4.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	261	2513	770	177	2340		269	404	331	320	396	334
v/s Ratio Prot	0.02	0.30		c0.04	0.23		c0.06	0.10		0.05	0.14	
v/s Ratio Perm	0.16		0.06	c0.32			c0.17		0.07	0.16		0.01
v/c Ratio	0.31	0.61	0.12	0.66	0.46		0.78	0.47	0.31	0.72	0.62	0.06
Uniform Delay, d1	15.8	25.7	19.0	19.5	23.1		43.8	47.3	45.6	43.2	49.2	43.0
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.7	1.1	0.3	8.4	0.6		13.6	3.8	2.5	7.5	7.2	0.4
Delay (s)	16.5	26.8	19.4	27.9	23.7		57.5	51.1	48.1	50.7	56.5	43.4
Level of Service	B	C	B	C	C		E	D	D	D	E	D
Approach Delay (s)		25.6			24.1			52.2			52.0	
Approach LOS		C			C			D			D	

Intersection Summary			
HCM 2000 Control Delay	32.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	22.0
Intersection Capacity Utilization	92.6%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	1.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	9	0	85	8	0	4	10	358	14	6	559	14
Future Vol, veh/h	9	0	85	8	0	4	10	358	14	6	559	14
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	1	1	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	0	-	0	0	-	0	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	86	86	86	86	86	86	86	86	86	86	86	86
Heavy Vehicles, %	0	0	0	0	0	0	0	5	0	0	4	0
Mvmt Flow	10	0	99	9	0	5	12	416	16	7	650	16

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	904	-	333	788	-	217	666	0	0	433	0	0
Stage 1	672	-	-	449	-	-	-	-	-	-	-	-
Stage 2	232	-	-	339	-	-	-	-	-	-	-	-
Critical Hdwy	7.5	-	6.9	7.5	-	6.9	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.5	-	-	6.5	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.5	-	-	6.5	-	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	-	3.3	3.5	-	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	235	0	669	285	0	794	933	-	-	1137	-	-
Stage 1	416	0	-	564	0	-	-	-	-	-	-	-
Stage 2	756	0	-	655	0	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	229	-	669	238	-	793	933	-	-	1136	-	-
Mov Cap-2 Maneuver	229	-	-	238	-	-	-	-	-	-	-	-
Stage 1	409	-	-	554	-	-	-	-	-	-	-	-
Stage 2	739	-	-	553	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	12.3	17	0.3	0.1
HCM LOS	B	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	933	-	-	229	669	238	793	1136	-	-
HCM Lane V/C Ratio	0.012	-	-	0.046	0.148	0.039	0.006	0.006	-	-
HCM Control Delay (s)	8.9	0.1	-	21.5	11.3	20.7	9.6	8.2	0	-
HCM Lane LOS	A	A	-	C	B	C	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0.5	0.1	0	0	-	-

Intersection	
Int Delay, s/veh	2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	25	68	51	303	427	26
Future Vol, veh/h	25	68	51	303	427	26
Conflicting Peds, #/hr	2	0	7	0	0	7
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	25	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	11	0	0	5	5	0
Mvmt Flow	29	79	59	352	497	30

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	815	271	534	0	-	0
Stage 1	519	-	-	-	-	-
Stage 2	296	-	-	-	-	-
Critical Hdwy	7.02	6.9	4.1	-	-	-
Critical Hdwy Stg 1	6.02	-	-	-	-	-
Critical Hdwy Stg 2	6.02	-	-	-	-	-
Follow-up Hdwy	3.61	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	298	733	1044	-	-	-
Stage 1	537	-	-	-	-	-
Stage 2	703	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	278	729	1038	-	-	-
Mov Cap-2 Maneuver	278	-	-	-	-	-
Stage 1	504	-	-	-	-	-
Stage 2	699	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	14	1.3	0
HCM LOS	B		

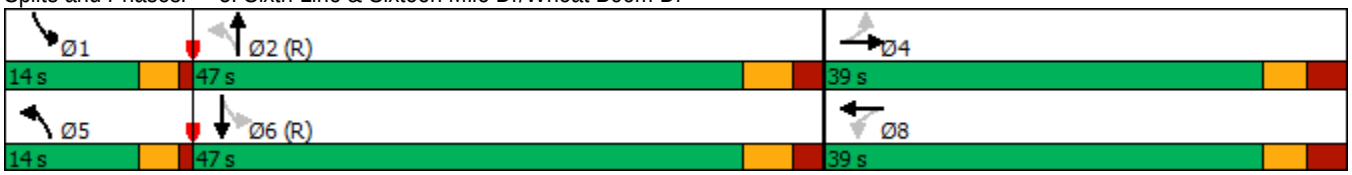
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1038	-	508	-	-
HCM Lane V/C Ratio	0.057	-	0.213	-	-
HCM Control Delay (s)	8.7	-	14	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0.2	-	0.8	-	-

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	105	69	27	66	10	220	98	274
Future Volume (vph)	105	69	27	66	10	220	98	274
Lane Group Flow (vph)	125	233	32	96	12	373	117	388
Turn Type	Perm	NA	Perm	NA	pm+pt	NA	pm+pt	NA
Protected Phases		4		8	5	2	1	6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	5	2	1	6
Switch Phase								
Minimum Initial (s)	20.0	20.0	20.0	20.0	7.0	35.0	7.0	35.0
Minimum Split (s)	38.4	38.4	38.4	38.4	11.5	41.1	11.0	41.1
Total Split (s)	39.0	39.0	39.0	39.0	14.0	47.0	14.0	47.0
Total Split (%)	39.0%	39.0%	39.0%	39.0%	14.0%	47.0%	14.0%	47.0%
Yellow Time (s)	3.3	3.3	3.3	3.3	3.0	3.7	3.0	3.7
All-Red Time (s)	3.1	3.1	3.1	3.1	1.0	2.4	1.0	2.4
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.4	6.4	6.4	6.4	4.0	6.1	4.0	6.1
Lead/Lag					Lead	Lag	Lead	Lag
Lead-Lag Optimize?								
Recall Mode	Max	Max	Max	Max	None	C-Max	None	C-Max
v/c Ratio	0.31	0.40	0.11	0.17	0.02	0.26	0.21	0.22
Control Delay	28.0	17.1	25.0	22.1	9.7	15.3	11.0	12.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	28.0	17.1	25.0	22.1	9.7	15.3	11.0	12.8
Queue Length 50th (m)	19.0	20.2	4.5	12.2	1.0	19.5	10.4	18.5
Queue Length 95th (m)	32.0	37.0	11.0	22.5	3.3	28.0	17.4	31.5
Internal Link Dist (m)		26.8		207.1		202.5		1327.3
Turn Bay Length (m)	17.0		54.0		60.0		75.0	
Base Capacity (vph)	402	581	287	580	599	1417	556	1765
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.31	0.40	0.11	0.17	0.02	0.26	0.21	0.22

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 95
Control Type: Actuated-Coordinated

Splits and Phases: 5: Sixth Line & Sixteen Mile Dr/Wheat Boom Dr



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	105	69	127	27	66	14	10	220	93	98	274	52
Future Volume (vph)	105	69	127	27	66	14	10	220	93	98	274	52
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.3	3.6	3.5	3.3	3.6	3.5	3.3	3.6	3.5	3.3	3.6	3.5
Total Lost time (s)	6.4	6.4		6.4	6.4		4.0	6.1		4.0	6.1	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	0.99		1.00	1.00		1.00	0.99		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.90		1.00	0.97		1.00	0.96		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1687	1580		1539	1757		1744	3244		1675	3327	
Flt Permitted	0.69	1.00		0.55	1.00		0.52	1.00		0.47	1.00	
Satd. Flow (perm)	1234	1580		883	1757		959	3244		835	3327	
Peak-hour factor, PHF	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Adj. Flow (vph)	125	82	151	32	79	17	12	262	111	117	326	62
RTOR Reduction (vph)	0	66	0	0	7	0	0	46	0	0	14	0
Lane Group Flow (vph)	125	167	0	32	89	0	12	327	0	117	374	0
Confl. Peds. (#/hr)	5		5	5		5	1		3	3		1
Heavy Vehicles (%)	3%	10%	6%	13%	6%	0%	0%	4%	9%	4%	6%	3%
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	32.6	32.6		32.6	32.6		43.7	42.3		54.9	49.5	
Effective Green, g (s)	32.6	32.6		32.6	32.6		43.7	42.3		54.9	49.5	
Actuated g/C Ratio	0.33	0.33		0.33	0.33		0.44	0.42		0.55	0.50	
Clearance Time (s)	6.4	6.4		6.4	6.4		4.0	6.1		4.0	6.1	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	402	515		287	572		430	1372		530	1646	
v/s Ratio Prot		c0.11			0.05		0.00	0.10		c0.02	c0.11	
v/s Ratio Perm	0.10			0.04			0.01			0.10		
v/c Ratio	0.31	0.32		0.11	0.15		0.03	0.24		0.22	0.23	
Uniform Delay, d1	25.3	25.4		23.6	23.9		16.0	18.5		11.1	14.4	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	2.0	1.7		0.8	0.6		0.0	0.4		0.2	0.3	
Delay (s)	27.3	27.1		24.4	24.5		16.0	18.9		11.3	14.7	
Level of Service	C	C		C	C		B	B		B	B	
Approach Delay (s)		27.1			24.5			18.8			13.9	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM 2000 Control Delay	19.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.27		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	16.5
Intersection Capacity Utilization	75.4%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Intersection	
Int Delay, s/veh	1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	5	86	91	12	6	13
Future Vol, veh/h	5	86	91	12	6	13
Conflicting Peds, #/hr	10	0	0	10	0	1
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	64	64	64	64	64	64
Heavy Vehicles, %	0	4	0	8	0	0
Mvmt Flow	8	134	142	19	9	20

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	171	0	-	0	312	163
Stage 1	-	-	-	-	162	-
Stage 2	-	-	-	-	150	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1418	-	-	-	685	887
Stage 1	-	-	-	-	872	-
Stage 2	-	-	-	-	883	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1407	-	-	-	670	879
Mov Cap-2 Maneuver	-	-	-	-	670	-
Stage 1	-	-	-	-	860	-
Stage 2	-	-	-	-	876	-

Approach	EB	WB	SB
HCM Control Delay, s	0.4	0	9.7
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1407	-	-	-	800
HCM Lane V/C Ratio	0.006	-	-	-	0.037
HCM Control Delay (s)	7.6	0	-	-	9.7
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑	↑↑↑↳			↱
Traffic Vol, veh/h	0	1816	1247	10	0	25
Future Vol, veh/h	0	1816	1247	10	0	25
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	1853	1272	10	0	26

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	641
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	7.1
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.9
Pot Cap-1 Maneuver	0	-	-	-	0	362
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	-	-	-	-	-	362
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	15.7
HCM LOS			C

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	362
HCM Lane V/C Ratio	-	-	-	0.07
HCM Control Delay (s)	-	-	-	15.7
HCM Lane LOS	-	-	-	C
HCM 95th %tile Q(veh)	-	-	-	0.2

Intersection	
Int Delay, s/veh	3.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	79	8	20	41	48	10
Future Vol, veh/h	79	8	20	41	48	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	92	9	23	48	56	12

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	101	0	191	97
Stage 1	-	-	-	-	97	-
Stage 2	-	-	-	-	94	-
Critical Hdwy	-	-	4.1	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1504	-	803	965
Stage 1	-	-	-	-	932	-
Stage 2	-	-	-	-	935	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1504	-	790	965
Mov Cap-2 Maneuver	-	-	-	-	790	-
Stage 1	-	-	-	-	932	-
Stage 2	-	-	-	-	920	-

Approach	EB	WB	NB
HCM Control Delay, s	0	2.4	9.8
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	815	-	-	1504	-
HCM Lane V/C Ratio	0.083	-	-	0.015	-
HCM Control Delay (s)	9.8	-	-	7.4	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.3	-	-	0	-

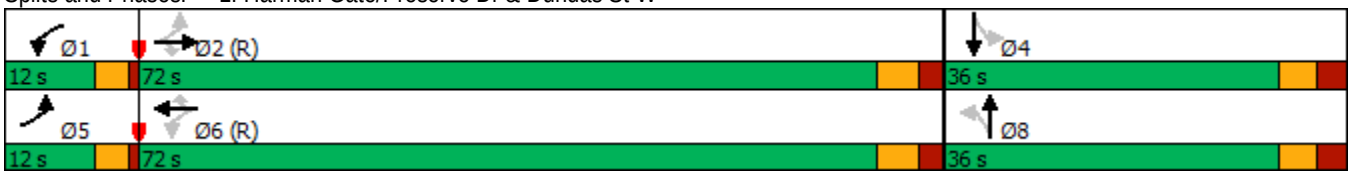
1: Harman Gate/Preserve Dr & Dundas St W

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	98	1559	37	26	1754	219	20	14	182	13
Future Volume (vph)	98	1559	37	26	1754	219	20	14	182	13
Lane Group Flow (vph)	103	1641	39	27	1846	231	21	30	192	120
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	NA
Protected Phases	5	2		1	6			8		4
Permitted Phases	2		2	6		6	8		4	
Detector Phase	5	2	2	1	6	6	8	8	4	4
Switch Phase										
Minimum Initial (s)	7.0	20.0	20.0	7.0	20.0	20.0	10.0	10.0	10.0	10.0
Minimum Split (s)	11.5	41.1	41.1	11.0	41.1	41.1	40.2	40.2	40.3	40.3
Total Split (s)	12.0	72.0	72.0	12.0	72.0	72.0	36.0	36.0	36.0	36.0
Total Split (%)	10.0%	60.0%	60.0%	10.0%	60.0%	60.0%	30.0%	30.0%	30.0%	30.0%
Yellow Time (s)	3.0	3.7	3.7	3.0	3.7	3.7	3.3	3.3	3.3	3.3
All-Red Time (s)	1.0	2.4	2.4	1.0	2.4	2.4	2.9	2.9	2.9	2.9
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	6.1	6.1	4.0	6.1	6.1	6.2	6.2	6.2	6.2
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes				
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	Max	Max	Max	Max
v/c Ratio	0.57	0.55	0.04	0.13	0.66	0.24	0.07	0.07	0.58	0.25
Control Delay	27.7	16.2	1.2	8.2	20.4	2.3	35.5	22.1	47.9	10.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	27.7	16.2	1.2	8.2	20.4	2.3	35.5	22.1	47.9	10.1
Queue Length 50th (m)	8.3	93.2	0.0	2.1	113.5	0.0	4.0	2.8	42.0	2.7
Queue Length 95th (m)	25.7	107.9	2.2	5.3	130.1	11.4	11.0	10.9	67.9	18.1
Internal Link Dist (m)		434.4			531.7			233.6		111.4
Turn Bay Length (m)	135.0		115.0	115.0		115.0	35.0		40.0	
Base Capacity (vph)	185	2992	950	227	2807	963	292	416	329	483
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	0.56	0.55	0.04	0.12	0.66	0.24	0.07	0.07	0.58	0.25

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 64 (53%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 95
Control Type: Actuated-Coordinated

Splits and Phases: 1: Harman Gate/Preserve Dr & Dundas St W



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	98	1559	37	26	1754	219	20	14	14	182	13	101
Future Volume (vph)	98	1559	37	26	1754	219	20	14	14	182	13	101
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.3	3.6	3.5	3.3	3.6	3.5	3.3	3.6	3.5	3.3	3.6	3.5
Total Lost time (s)	4.0	6.1	6.1	4.0	6.1	6.1	6.2	6.2		6.2	6.2	
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.97	1.00	1.00	0.97	1.00	0.99		1.00	0.99	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.93		1.00	0.87	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1745	5036	1556	1745	5085	1557	1659	1631		1707	1628	
Flt Permitted	0.06	1.00	1.00	0.11	1.00	1.00	0.67	1.00		0.74	1.00	
Satd. Flow (perm)	118	5036	1556	195	5085	1557	1177	1631		1326	1628	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	103	1641	39	27	1846	231	21	15	15	192	14	106
RTOR Reduction (vph)	0	0	16	0	0	103	0	11	0	0	80	0
Lane Group Flow (vph)	103	1641	23	27	1846	128	21	19	0	192	40	0
Confl. Peds. (#/hr)	3		3	3		3	2		1	1		2
Confl. Bikes (#/hr)			1									
Heavy Vehicles (%)	0%	3%	0%	0%	2%	0%	5%	7%	7%	2%	0%	0%
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases	2		2	6		6	8			4		
Actuated Green, G (s)	77.3	69.7	69.7	70.5	66.3	66.3	29.8	29.8		29.8	29.8	
Effective Green, g (s)	77.3	69.7	69.7	70.5	66.3	66.3	29.8	29.8		29.8	29.8	
Actuated g/C Ratio	0.64	0.58	0.58	0.59	0.55	0.55	0.25	0.25		0.25	0.25	
Clearance Time (s)	4.0	6.1	6.1	4.0	6.1	6.1	6.2	6.2		6.2	6.2	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	179	2925	903	168	2809	860	292	405		329	404	
v/s Ratio Prot	c0.04	0.33		0.01	c0.36			0.01			0.02	
v/s Ratio Perm	0.33		0.01	0.09		0.08	0.02			c0.14		
v/c Ratio	0.58	0.56	0.03	0.16	0.66	0.15	0.07	0.05		0.58	0.10	
Uniform Delay, d1	15.4	15.6	10.7	11.5	18.9	13.1	34.5	34.3		39.6	34.8	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	4.4	0.8	0.1	0.5	1.2	0.4	0.5	0.2		7.4	0.5	
Delay (s)	19.8	16.4	10.7	12.0	20.1	13.5	35.0	34.5		47.0	35.3	
Level of Service	B	B	B	B	C	B	C	C		D	D	
Approach Delay (s)		16.5			19.3			34.7			42.5	
Approach LOS		B			B			C			D	

Intersection Summary			
HCM 2000 Control Delay	20.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.3
Intersection Capacity Utilization	81.6%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

2: Sixth Line & Dundas St E

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	116	1426	185	125	1761	128	232	70	235	276	119
Future Volume (vph)	116	1426	185	125	1761	128	232	70	235	276	119
Lane Group Flow (vph)	122	1501	195	132	2075	135	244	74	247	291	125
Turn Type	pm+pt	NA	Perm	pm+pt	NA	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2		1	6	3	8		7	4	
Permitted Phases	2		2	6		8		8	4		4
Detector Phase	5	2	2	1	6	3	8	8	7	4	4
Switch Phase											
Minimum Initial (s)	7.0	24.0	24.0	7.0	24.0	7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	13.0	31.0	31.0	13.0	31.0	11.0	37.0	37.0	11.0	37.0	37.0
Total Split (s)	19.0	68.0	68.0	19.0	68.0	16.0	37.0	37.0	16.0	37.0	37.0
Total Split (%)	13.6%	48.6%	48.6%	13.6%	48.6%	11.4%	26.4%	26.4%	11.4%	26.4%	26.4%
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	3.0	2.0	2.0	3.0	2.0	1.0	2.0	2.0	1.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	-3.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	3.0	4.0	6.0	6.0	4.0	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?											
Recall Mode	None	C-Max	C-Max	None	C-Max	None	Max	Max	None	Max	Max
v/c Ratio	0.68	0.65	0.24	0.63	0.86	0.49	0.58	0.18	0.79	0.68	0.28
Control Delay	45.9	30.9	4.8	32.8	36.7	38.9	55.1	4.3	55.7	59.0	8.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	45.9	30.9	4.8	32.8	36.7	38.9	55.1	4.3	55.7	59.0	8.8
Queue Length 50th (m)	18.6	120.6	2.3	16.8	191.0	27.7	64.1	0.0	54.4	78.8	0.0
Queue Length 95th (m)	41.1	142.8	17.1	35.8	220.6	44.9	93.8	7.0	#90.7	112.7	17.0
Internal Link Dist (m)		122.2			1210.7		440.8			65.0	
Turn Bay Length (m)	107.0		80.0	120.0		90.0			76.0		
Base Capacity (vph)	210	2320	812	239	2415	284	420	416	314	427	449
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.58	0.65	0.24	0.55	0.86	0.48	0.58	0.18	0.79	0.68	0.28

Intersection Summary

Cycle Length: 140
Actuated Cycle Length: 140
Offset: 71 (51%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 105
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 2: Sixth Line & Dundas St E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	116	1426	185	125	1761	210	128	232	70	235	276	119
Future Volume (vph)	116	1426	185	125	1761	210	128	232	70	235	276	119
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.3	3.6	3.5	3.3	3.6	3.5	3.3	3.6	3.5	3.3	3.6	3.5
Total Lost time (s)	6.0	6.0	6.0	6.0	3.0		4.0	6.0	6.0	4.0	6.0	6.0
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91		1.00	1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00		1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1711	5036	1553	1728	4992		1726	1900	1526	1726	1881	1554
Flt Permitted	0.06	1.00	1.00	0.09	1.00		0.32	1.00	1.00	0.38	1.00	1.00
Satd. Flow (perm)	112	5036	1553	171	4992		577	1900	1526	691	1881	1554
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	122	1501	195	132	1854	221	135	244	74	247	291	125
RTOR Reduction (vph)	0	0	97	0	10	0	0	0	58	0	0	97
Lane Group Flow (vph)	122	1501	98	132	2065	0	135	244	16	247	291	28
Confl. Peds. (#/hr)	6		3	3		6	4		3	3		4
Confl. Bikes (#/hr)			1									
Heavy Vehicles (%)	2%	3%	1%	1%	2%	2%	1%	0%	3%	1%	1%	1%
Turn Type	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6			8		8	4		4
Actuated Green, G (s)	75.1	64.5	64.5	74.9	64.4		42.2	31.0	31.0	43.8	31.8	31.8
Effective Green, g (s)	75.1	64.5	64.5	74.9	67.4		42.2	31.0	31.0	43.8	31.8	31.8
Actuated g/C Ratio	0.54	0.46	0.46	0.54	0.48		0.30	0.22	0.22	0.31	0.23	0.23
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0		4.0	6.0	6.0	4.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	181	2320	715	208	2403		265	420	337	304	427	352
v/s Ratio Prot	c0.05	0.30		0.05	c0.41		0.04	0.13		c0.07	0.15	
v/s Ratio Perm	0.31		0.06	0.29			0.11		0.01	c0.18		0.02
v/c Ratio	0.67	0.65	0.14	0.63	0.86		0.51	0.58	0.05	0.81	0.68	0.08
Uniform Delay, d1	30.8	29.0	21.7	21.1	32.1		37.9	48.7	42.9	42.1	49.5	42.6
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	9.5	1.4	0.4	6.2	4.3		1.5	5.8	0.3	15.1	8.5	0.4
Delay (s)	40.3	30.4	22.1	27.3	36.4		39.4	54.5	43.2	57.3	58.0	43.0
Level of Service	D	C	C	C	D		D	D	D	E	E	D
Approach Delay (s)		30.2			35.8			48.1			54.9	
Approach LOS		C			D			D			D	

Intersection Summary			
HCM 2000 Control Delay	37.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	22.0
Intersection Capacity Utilization	100.7%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	2	0	52	15	0	8	16	501	12	6	699	33
Future Vol, veh/h	2	0	52	15	0	8	16	501	12	6	699	33
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	3	3	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	0	-	0	0	-	0	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	0	0	0	0	0	0	0	1	0	0	1	0
Mvmt Flow	2	0	55	16	0	9	17	533	13	6	744	35

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1075	-	390	961	-	276	779	0	0	549	0	0
Stage 1	774	-	-	577	-	-	-	-	-	-	-	-
Stage 2	301	-	-	384	-	-	-	-	-	-	-	-
Critical Hdwy	7.5	-	6.9	7.5	-	6.9	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.5	-	-	6.5	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.5	-	-	6.5	-	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	-	3.3	3.5	-	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	177	0	614	214	0	727	847	-	-	1031	-	-
Stage 1	362	0	-	474	0	-	-	-	-	-	-	-
Stage 2	689	0	-	616	0	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	170	-	614	189	-	725	847	-	-	1029	-	-
Mov Cap-2 Maneuver	170	-	-	189	-	-	-	-	-	-	-	-
Stage 1	352	-	-	459	-	-	-	-	-	-	-	-
Stage 2	661	-	-	555	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	12	20.3	0.4	0.1
HCM LOS	B	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	847	-	-	170	614	189	725	1029	-	-
HCM Lane V/C Ratio	0.02	-	-	0.013	0.09	0.084	0.012	0.006	-	-
HCM Control Delay (s)	9.3	0.1	-	26.4	11.4	25.8	10	8.5	0	-
HCM Lane LOS	A	A	-	D	B	D	B	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0	0.3	0.3	0	0	-	-

Intersection	
Int Delay, s/veh	2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	33	38	103	390	488	20
Future Vol, veh/h	33	38	103	390	488	20
Conflicting Peds, #/hr	3	1	2	0	0	2
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	25	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	0	0	0	1	1	25
Mvmt Flow	34	40	107	406	508	21

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	941	268	531	0	-	0
Stage 1	521	-	-	-	-	-
Stage 2	420	-	-	-	-	-
Critical Hdwy	6.8	6.9	4.1	-	-	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	265	736	1047	-	-	-
Stage 1	566	-	-	-	-	-
Stage 2	637	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	237	734	1045	-	-	-
Mov Cap-2 Maneuver	237	-	-	-	-	-
Stage 1	507	-	-	-	-	-
Stage 2	636	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	17.1	1.8	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1045	-	372	-	-
HCM Lane V/C Ratio	0.103	-	0.199	-	-
HCM Control Delay (s)	8.8	-	17.1	-	-
HCM Lane LOS	A	-	C	-	-
HCM 95th %tile Q(veh)	0.3	-	0.7	-	-

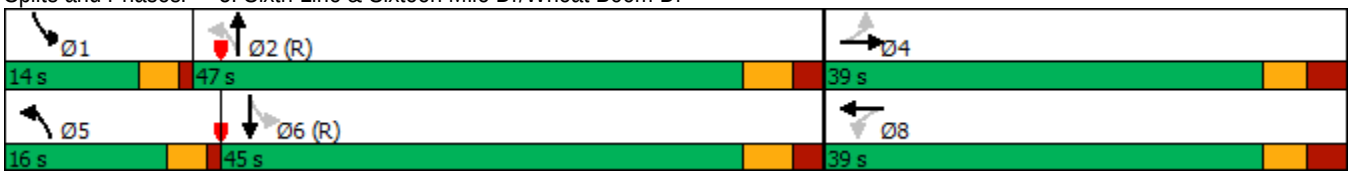
5: Sixth Line & Sixteen Mile Dr/Wheat Boom Dr

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	101	59	19	56	16	268	102	267
Future Volume (vph)	101	59	19	56	16	268	102	267
Lane Group Flow (vph)	106	184	20	73	17	413	107	344
Turn Type	Perm	NA	Perm	NA	pm+pt	NA	pm+pt	NA
Protected Phases		4		8	5	2	1	6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	5	2	1	6
Switch Phase								
Minimum Initial (s)	20.0	20.0	20.0	20.0	7.0	35.0	7.0	35.0
Minimum Split (s)	38.4	38.4	38.4	38.4	11.5	41.1	11.0	41.1
Total Split (s)	39.0	39.0	39.0	39.0	16.0	47.0	14.0	45.0
Total Split (%)	39.0%	39.0%	39.0%	39.0%	16.0%	47.0%	14.0%	45.0%
Yellow Time (s)	3.3	3.3	3.3	3.3	3.0	3.7	3.0	3.7
All-Red Time (s)	3.1	3.1	3.1	3.1	1.0	2.4	1.0	2.4
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.4	6.4	6.4	6.4	4.0	6.1	4.0	6.1
Lead/Lag					Lead	Lag	Lead	Lag
Lead-Lag Optimize?								
Recall Mode	Max	Max	Max	Max	None	C-Max	None	C-Max
v/c Ratio	0.25	0.30	0.05	0.13	0.03	0.28	0.20	0.19
Control Delay	26.8	12.5	23.8	20.6	9.8	15.0	10.9	13.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	26.8	12.5	23.8	20.6	9.8	15.0	10.9	13.6
Queue Length 50th (m)	15.8	11.3	2.8	8.5	1.4	21.2	9.4	15.7
Queue Length 95th (m)	29.8	28.1	8.3	18.9	4.4	33.3	17.4	29.8
Internal Link Dist (m)		26.8		207.1		202.5		1327.3
Turn Bay Length (m)	17.0		54.0		60.0		75.0	
Base Capacity (vph)	423	620	368	581	651	1480	550	1766
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.25	0.30	0.05	0.13	0.03	0.28	0.19	0.19

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 95
Control Type: Actuated-Coordinated

Splits and Phases: 5: Sixth Line & Sixteen Mile Dr/Wheat Boom Dr



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	101	59	116	19	56	13	16	268	124	102	267	60
Future Volume (vph)	101	59	116	19	56	13	16	268	124	102	267	60
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.3	3.6	3.5	3.3	3.6	3.5	3.3	3.6	3.5	3.3	3.6	3.5
Total Lost time (s)	6.4	6.4		6.4	6.4		4.0	6.1		4.0	6.1	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	0.99		1.00	1.00		1.00	0.99		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.90		1.00	0.97		1.00	0.95		1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1739	1684		1742	1756		1742	3359		1728	3467	
Flt Permitted	0.71	1.00		0.62	1.00		0.55	1.00		0.45	1.00	
Satd. Flow (perm)	1299	1684		1130	1756		1000	3359		812	3467	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	106	62	122	20	59	14	17	282	131	107	281	63
RTOR Reduction (vph)	0	71	0	0	9	0	0	53	0	0	16	0
Lane Group Flow (vph)	106	113	0	20	64	0	17	360	0	107	328	0
Confl. Peds. (#/hr)	4		2	2		4	2					2
Confl. Bikes (#/hr)									1			
Heavy Vehicles (%)	0%	2%	0%	0%	4%	8%	0%	2%	1%	1%	1%	0%
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	32.6	32.6		32.6	32.6		45.3	42.5		54.9	48.1	
Effective Green, g (s)	32.6	32.6		32.6	32.6		45.3	42.5		54.9	48.1	
Actuated g/C Ratio	0.33	0.33		0.33	0.33		0.45	0.42		0.55	0.48	
Clearance Time (s)	6.4	6.4		6.4	6.4		4.0	6.1		4.0	6.1	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	423	548		368	572		473	1427		522	1667	
v/s Ratio Prot		0.07			0.04		0.00	c0.11		c0.02	0.09	
v/s Ratio Perm	c0.08			0.02			0.02			0.10		
v/c Ratio	0.25	0.21		0.05	0.11		0.04	0.25		0.20	0.20	
Uniform Delay, d1	24.7	24.4		23.1	23.6		15.1	18.5		11.0	14.9	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.4	0.9		0.3	0.4		0.0	0.4		0.2	0.3	
Delay (s)	26.2	25.2		23.4	24.0		15.1	18.9		11.2	15.1	
Level of Service	C	C		C	C		B	B		B	B	
Approach Delay (s)		25.6			23.9			18.8			14.2	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM 2000 Control Delay	19.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.25		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	16.5
Intersection Capacity Utilization	75.4%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	3	74	88	11	6	1
Future Vol, veh/h	3	74	88	11	6	1
Conflicting Peds, #/hr	7	0	0	7	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	79	79	79	79	79	79
Heavy Vehicles, %	0	2	4	0	0	100
Mvmt Flow	4	94	111	14	8	1

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	132	0	-	0	227	125
Stage 1	-	-	-	-	125	-
Stage 2	-	-	-	-	102	-
Critical Hdwy	4.1	-	-	-	6.4	7.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	4.2
Pot Cap-1 Maneuver	1466	-	-	-	766	717
Stage 1	-	-	-	-	906	-
Stage 2	-	-	-	-	927	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1458	-	-	-	756	713
Mov Cap-2 Maneuver	-	-	-	-	756	-
Stage 1	-	-	-	-	899	-
Stage 2	-	-	-	-	922	-

Approach	EB	WB	SB
HCM Control Delay, s	0.3	0	9.9
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1458	-	-	-	750
HCM Lane V/C Ratio	0.003	-	-	-	0.012
HCM Control Delay (s)	7.5	0	-	-	9.9
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑	↑↑↑↳			↱
Traffic Vol, veh/h	0	1786	1985	27	0	14
Future Vol, veh/h	0	1786	1985	27	0	14
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	1880	2089	28	0	15

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	1059
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	7.1
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.9
Pot Cap-1 Maneuver	0	-	-	-	0	192
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	-	-	-	-	-	192
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	25.3
HCM LOS			D

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	192
HCM Lane V/C Ratio	-	-	-	0.077
HCM Control Delay (s)	-	-	-	25.3
HCM Lane LOS	-	-	-	D
HCM 95th %tile Q(veh)	-	-	-	0.2

Intersection	
Int Delay, s/veh	2.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	54	29	37	69	22	2
Future Vol, veh/h	54	29	37	69	22	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	56	30	39	72	23	2

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	86	0	221	71
Stage 1	-	-	-	-	71	-
Stage 2	-	-	-	-	150	-
Critical Hdwy	-	-	4.1	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1523	-	772	997
Stage 1	-	-	-	-	957	-
Stage 2	-	-	-	-	883	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1523	-	751	997
Mov Cap-2 Maneuver	-	-	-	-	751	-
Stage 1	-	-	-	-	957	-
Stage 2	-	-	-	-	859	-

Approach	EB	WB	NB
HCM Control Delay, s	0	2.6	9.9
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	767	-	-	1523	-
HCM Lane V/C Ratio	0.033	-	-	0.025	-
HCM Control Delay (s)	9.9	-	-	7.4	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0.1	-

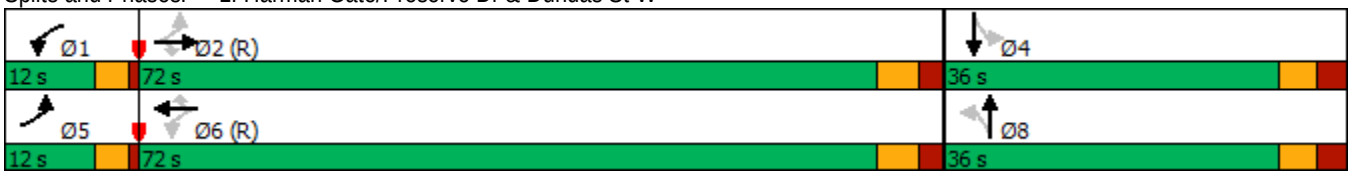
1: Harman Gate/Preserve Dr & Dundas St W

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	94	1602	35	13	1130	136	26	9	170	20
Future Volume (vph)	94	1602	35	13	1130	136	26	9	170	20
Lane Group Flow (vph)	96	1635	36	13	1153	139	27	53	173	158
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	NA
Protected Phases	5	2		1	6			8		4
Permitted Phases	2		2	6		6	8		4	
Detector Phase	5	2	2	1	6	6	8	8	4	4
Switch Phase										
Minimum Initial (s)	7.0	20.0	20.0	7.0	20.0	20.0	10.0	10.0	10.0	10.0
Minimum Split (s)	11.5	41.1	41.1	11.0	41.1	41.1	40.2	40.2	40.3	40.3
Total Split (s)	12.0	72.0	72.0	12.0	72.0	72.0	36.0	36.0	36.0	36.0
Total Split (%)	10.0%	60.0%	60.0%	10.0%	60.0%	60.0%	30.0%	30.0%	30.0%	30.0%
Yellow Time (s)	3.0	3.7	3.7	3.0	3.7	3.7	3.3	3.3	3.3	3.3
All-Red Time (s)	1.0	2.4	2.4	1.0	2.4	2.4	2.9	2.9	2.9	2.9
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	6.1	6.1	4.0	6.1	6.1	6.2	6.2	6.2	6.2
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes				
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	Max	Max	Max	Max
v/c Ratio	0.33	0.53	0.04	0.06	0.43	0.16	0.10	0.12	0.54	0.32
Control Delay	10.1	14.8	0.9	7.4	16.4	2.5	36.1	13.6	46.2	10.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	10.1	14.8	0.9	7.4	16.4	2.5	36.1	13.6	46.2	10.0
Queue Length 50th (m)	7.7	71.1	0.0	1.0	59.0	0.0	5.2	1.7	37.4	3.8
Queue Length 95th (m)	13.9	107.3	1.7	3.2	70.4	9.3	13.4	12.3	61.7	21.2
Internal Link Dist (m)		434.4			531.7			233.6		111.4
Turn Bay Length (m)	135.0		115.0	115.0		115.0	35.0		40.0	
Base Capacity (vph)	299	3084	897	233	2677	893	273	432	323	501
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	0.32	0.53	0.04	0.06	0.43	0.16	0.10	0.12	0.54	0.32

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 113 (94%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 95
Control Type: Actuated-Coordinated

Splits and Phases: 1: Harman Gate/Preserve Dr & Dundas St W



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	94	1602	35	13	1130	136	26	9	43	170	20	135
Future Volume (vph)	94	1602	35	13	1130	136	26	9	43	170	20	135
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.3	3.6	3.5	3.3	3.6	3.5	3.3	3.6	3.5	3.3	3.6	3.5
Total Lost time (s)	4.0	6.1	6.1	4.0	6.1	6.1	6.2	6.2		6.2	6.2	
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.97	1.00	1.00	0.97	1.00	0.98		1.00	0.99	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		0.99	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.88		1.00	0.87	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1646	5036	1425	1745	4848	1506	1739	1608		1715	1600	
Flt Permitted	0.19	1.00	1.00	0.11	1.00	1.00	0.60	1.00		0.72	1.00	
Satd. Flow (perm)	322	5036	1425	205	4848	1506	1102	1608		1304	1600	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	96	1635	36	13	1153	139	27	9	44	173	20	138
RTOR Reduction (vph)	0	0	15	0	0	62	0	33	0	0	104	0
Lane Group Flow (vph)	96	1635	21	13	1153	77	27	20	0	173	54	0
Confl. Peds. (#/hr)	5		4	4		5	4		4	4		4
Confl. Bikes (#/hr)			1						1			
Heavy Vehicles (%)	6%	3%	9%	0%	7%	3%	0%	0%	2%	1%	0%	2%
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases	2		2	6		6	8			4		
Actuated Green, G (s)	77.9	71.1	71.1	69.1	66.3	66.3	29.8	29.8		29.8	29.8	
Effective Green, g (s)	77.9	71.1	71.1	69.1	66.3	66.3	29.8	29.8		29.8	29.8	
Actuated g/C Ratio	0.65	0.59	0.59	0.58	0.55	0.55	0.25	0.25		0.25	0.25	
Clearance Time (s)	4.0	6.1	6.1	4.0	6.1	6.1	6.2	6.2		6.2	6.2	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	292	2983	844	153	2678	832	273	399		323	397	
v/s Ratio Prot	c0.02	c0.32		0.00	0.24			0.01			0.03	
v/s Ratio Perm	0.19		0.01	0.05		0.05	0.02			c0.13		
v/c Ratio	0.33	0.55	0.03	0.08	0.43	0.09	0.10	0.05		0.54	0.14	
Uniform Delay, d1	9.0	14.8	10.1	11.7	15.8	12.7	34.8	34.3		39.1	35.1	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.7	0.7	0.1	0.2	0.5	0.2	0.7	0.2		6.2	0.7	
Delay (s)	9.6	15.5	10.2	11.9	16.3	12.9	35.5	34.6		45.3	35.8	
Level of Service	A	B	B	B	B	B	D	C		D	D	
Approach Delay (s)		15.1			15.9			34.9			40.8	
Approach LOS		B			B			C			D	

Intersection Summary			
HCM 2000 Control Delay	18.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.3
Intersection Capacity Utilization	78.7%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

2: Sixth Line & Dundas St E

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	80	1524	183	115	953	208	186	210	240	254	94
Future Volume (vph)	80	1524	183	115	953	208	186	210	240	254	94
Lane Group Flow (vph)	81	1539	185	116	1079	210	188	212	242	257	95
Turn Type	pm+pt	NA	Perm	pm+pt	NA	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2		1	6	3	8		7	4	
Permitted Phases	2		2	6		8		8	4		4
Detector Phase	5	2	2	1	6	3	8	8	7	4	4
Switch Phase											
Minimum Initial (s)	7.0	24.0	24.0	7.0	24.0	7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	14.0	31.0	31.0	14.0	31.0	11.5	37.0	37.0	11.5	37.0	37.0
Total Split (s)	14.0	75.0	75.0	14.0	75.0	14.0	37.0	37.0	14.0	37.0	37.0
Total Split (%)	10.0%	53.6%	53.6%	10.0%	53.6%	10.0%	26.4%	26.4%	10.0%	26.4%	26.4%
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	3.0	2.0	2.0	3.0	2.0	1.0	2.0	2.0	1.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	4.0	6.0	6.0	4.0	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?											
Recall Mode	None	C-Max	C-Max	None	C-Max	None	Max	Max	None	Max	Max
v/c Ratio	0.31	0.61	0.21	0.65	0.46	0.77	0.47	0.48	0.73	0.65	0.23
Control Delay	15.7	27.1	3.2	33.3	23.4	58.2	51.7	21.2	52.8	58.3	8.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	15.7	27.1	3.2	33.3	23.4	58.2	51.7	21.2	52.8	58.3	8.4
Queue Length 50th (m)	9.7	116.8	0.3	14.2	72.4	46.5	48.0	18.1	54.5	68.7	0.0
Queue Length 95th (m)	17.4	132.6	13.0	#31.5	85.0	#79.5	73.2	44.4	#81.3	100.3	13.6
Internal Link Dist (m)		122.2			1210.7		440.8			65.0	
Turn Bay Length (m)	107.0		80.0	120.0		90.0			76.0		
Base Capacity (vph)	263	2512	863	179	2352	271	404	438	332	396	413
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.31	0.61	0.21	0.65	0.46	0.77	0.47	0.48	0.73	0.65	0.23

Intersection Summary

Cycle Length: 140
Actuated Cycle Length: 140
Offset: 36 (26%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 95
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 2: Sixth Line & Dundas St E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	80	1524	183	115	953	115	208	186	210	240	254	94
Future Volume (vph)	80	1524	183	115	953	115	208	186	210	240	254	94
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.3	3.6	3.5	3.3	3.6	3.5	3.3	3.6	3.5	3.3	3.6	3.5
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0		4.0	6.0	6.0	4.0	6.0	6.0
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91		1.00	1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00		1.00	1.00	0.97	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1630	5085	1559	1678	4731		1676	1827	1497	1703	1792	1511
Flt Permitted	0.20	1.00	1.00	0.10	1.00		0.36	1.00	1.00	0.50	1.00	1.00
Satd. Flow (perm)	347	5085	1559	170	4731		644	1827	1497	898	1792	1511
Peak-hour factor, PHF	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Adj. Flow (vph)	81	1539	185	116	963	116	210	188	212	242	257	95
RTOR Reduction (vph)	0	0	93	0	11	0	0	0	107	0	0	74
Lane Group Flow (vph)	81	1539	92	116	1068	0	210	188	105	242	257	21
Confl. Peds. (#/hr)	8		1	1		8	3		10	10		3
Confl. Bikes (#/hr)			1									
Heavy Vehicles (%)	7%	2%	1%	4%	8%	4%	4%	4%	4%	2%	6%	4%
Turn Type	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6			8		8	4		4
Actuated Green, G (s)	76.9	69.2	69.2	77.1	69.3		41.0	31.0	31.0	41.0	31.0	31.0
Effective Green, g (s)	76.9	69.2	69.2	77.1	69.3		41.0	31.0	31.0	41.0	31.0	31.0
Actuated g/C Ratio	0.55	0.49	0.49	0.55	0.49		0.29	0.22	0.22	0.29	0.22	0.22
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0		4.0	6.0	6.0	4.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	261	2513	770	177	2341		262	404	331	320	396	334
v/s Ratio Prot	0.02	0.30		c0.04	0.23		c0.06	0.10		0.05	0.14	
v/s Ratio Perm	0.15		0.06	c0.32			c0.18		0.07	0.17		0.01
v/c Ratio	0.31	0.61	0.12	0.66	0.46		0.80	0.47	0.32	0.76	0.65	0.06
Uniform Delay, d1	15.8	25.7	19.0	19.5	23.1		44.1	47.3	45.6	43.9	49.6	43.0
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.7	1.1	0.3	8.4	0.6		16.0	3.8	2.5	9.8	8.0	0.4
Delay (s)	16.5	26.8	19.4	27.9	23.7		60.1	51.1	48.2	53.7	57.6	43.4
Level of Service	B	C	B	C	C		E	D	D	D	E	D
Approach Delay (s)		25.6			24.1			53.2			53.7	
Approach LOS		C			C			D			D	

Intersection Summary			
HCM 2000 Control Delay	33.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	22.0
Intersection Capacity Utilization	93.3%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	1.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	8	0	105	8	0	4	9	353	14	6	579	16
Future Vol, veh/h	8	0	105	8	0	4	9	353	14	6	579	16
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	1	1	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	0	-	0	0	-	0	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	86	86	86	86	86	86	86	86	86	86	86	86
Heavy Vehicles, %	0	0	0	0	0	0	0	5	0	0	4	0
Mvmt Flow	9	0	122	9	0	5	10	410	16	7	673	19

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	922	-	346	790	-	214	692	0	0	427	0	0
Stage 1	697	-	-	439	-	-	-	-	-	-	-	-
Stage 2	225	-	-	351	-	-	-	-	-	-	-	-
Critical Hdwy	7.5	-	6.9	7.5	-	6.9	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.5	-	-	6.5	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.5	-	-	6.5	-	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	-	3.3	3.5	-	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	228	0	656	284	0	797	912	-	-	1143	-	-
Stage 1	402	0	-	572	0	-	-	-	-	-	-	-
Stage 2	763	0	-	644	0	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	223	-	656	227	-	796	912	-	-	1142	-	-
Mov Cap-2 Maneuver	223	-	-	227	-	-	-	-	-	-	-	-
Stage 1	396	-	-	563	-	-	-	-	-	-	-	-
Stage 2	748	-	-	519	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	12.4	17.5	0.3	0.1
HCM LOS	B	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	912	-	-	223	656	227	796	1142	-	-
HCM Lane V/C Ratio	0.011	-	-	0.042	0.186	0.041	0.006	0.006	-	-
HCM Control Delay (s)	9	0.1	-	21.8	11.7	21.5	9.5	8.2	0	-
HCM Lane LOS	A	A	-	C	B	C	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0.7	0.1	0	0	-	-

Intersection	
Int Delay, s/veh	2.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	32	68	49	301	428	26
Future Vol, veh/h	32	68	49	301	428	26
Conflicting Peds, #/hr	2	0	7	0	0	7
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	25	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	11	0	0	5	5	0
Mvmt Flow	37	79	57	350	498	30

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	811	271	535	0	-	0
Stage 1	520	-	-	-	-	-
Stage 2	291	-	-	-	-	-
Critical Hdwy	7.02	6.9	4.1	-	-	-
Critical Hdwy Stg 1	6.02	-	-	-	-	-
Critical Hdwy Stg 2	6.02	-	-	-	-	-
Follow-up Hdwy	3.61	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	300	733	1043	-	-	-
Stage 1	536	-	-	-	-	-
Stage 2	707	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	281	729	1037	-	-	-
Mov Cap-2 Maneuver	281	-	-	-	-	-
Stage 1	504	-	-	-	-	-
Stage 2	703	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	14.8	1.2	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1037	-	483	-	-
HCM Lane V/C Ratio	0.055	-	0.241	-	-
HCM Control Delay (s)	8.7	-	14.8	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0.2	-	0.9	-	-

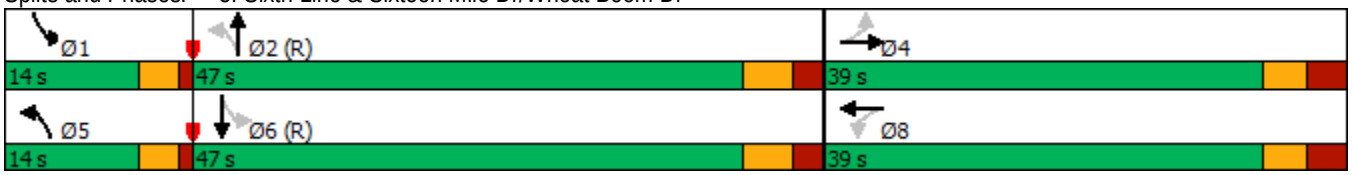
5: Sixth Line & Sixteen Mile Dr/Wheat Boom Dr

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	105	69	27	66	10	225	98	274
Future Volume (vph)	105	69	27	66	10	225	98	274
Lane Group Flow (vph)	125	234	32	96	12	379	117	388
Turn Type	Perm	NA	Perm	NA	pm+pt	NA	pm+pt	NA
Protected Phases		4		8	5	2	1	6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	5	2	1	6
Switch Phase								
Minimum Initial (s)	20.0	20.0	20.0	20.0	7.0	35.0	7.0	35.0
Minimum Split (s)	38.4	38.4	38.4	38.4	11.5	41.1	11.0	41.1
Total Split (s)	39.0	39.0	39.0	39.0	14.0	47.0	14.0	47.0
Total Split (%)	39.0%	39.0%	39.0%	39.0%	14.0%	47.0%	14.0%	47.0%
Yellow Time (s)	3.3	3.3	3.3	3.3	3.0	3.7	3.0	3.7
All-Red Time (s)	3.1	3.1	3.1	3.1	1.0	2.4	1.0	2.4
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.4	6.4	6.4	6.4	4.0	6.1	4.0	6.1
Lead/Lag					Lead	Lag	Lead	Lag
Lead-Lag Optimize?								
Recall Mode	Max	Max	Max	Max	None	C-Max	None	C-Max
v/c Ratio	0.31	0.40	0.11	0.17	0.02	0.27	0.22	0.22
Control Delay	28.0	17.1	25.0	22.1	9.7	15.5	11.0	12.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	28.0	17.1	25.0	22.1	9.7	15.5	11.0	12.8
Queue Length 50th (m)	19.0	20.1	4.5	12.2	1.0	20.1	10.4	18.5
Queue Length 95th (m)	32.0	36.8	11.0	22.5	3.3	28.7	17.4	31.5
Internal Link Dist (m)		26.8		207.1		202.5		1327.3
Turn Bay Length (m)	17.0		54.0		60.0		75.0	
Base Capacity (vph)	402	581	287	580	599	1417	553	1765
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.31	0.40	0.11	0.17	0.02	0.27	0.21	0.22

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 95
Control Type: Actuated-Coordinated

Splits and Phases: 5: Sixth Line & Sixteen Mile Dr/Wheat Boom Dr



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	105	69	128	27	66	14	10	225	93	98	274	52
Future Volume (vph)	105	69	128	27	66	14	10	225	93	98	274	52
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.3	3.6	3.5	3.3	3.6	3.5	3.3	3.6	3.5	3.3	3.6	3.5
Total Lost time (s)	6.4	6.4		6.4	6.4		4.0	6.1		4.0	6.1	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	0.99		1.00	1.00		1.00	0.99		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.90		1.00	0.97		1.00	0.96		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1687	1579		1539	1757		1744	3248		1675	3327	
Flt Permitted	0.69	1.00		0.54	1.00		0.52	1.00		0.47	1.00	
Satd. Flow (perm)	1234	1579		881	1757		959	3248		827	3327	
Peak-hour factor, PHF	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Adj. Flow (vph)	125	82	152	32	79	17	12	268	111	117	326	62
RTOR Reduction (vph)	0	67	0	0	7	0	0	44	0	0	14	0
Lane Group Flow (vph)	125	167	0	32	89	0	12	335	0	117	374	0
Confl. Peds. (#/hr)	5		5	5		5	1		3	3		1
Heavy Vehicles (%)	3%	10%	6%	13%	6%	0%	0%	4%	9%	4%	6%	3%
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	32.6	32.6		32.6	32.6		43.7	42.3		54.9	49.5	
Effective Green, g (s)	32.6	32.6		32.6	32.6		43.7	42.3		54.9	49.5	
Actuated g/C Ratio	0.33	0.33		0.33	0.33		0.44	0.42		0.55	0.50	
Clearance Time (s)	6.4	6.4		6.4	6.4		4.0	6.1		4.0	6.1	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	402	514		287	572		430	1373		526	1646	
v/s Ratio Prot		c0.11			0.05		0.00	c0.10		c0.02	0.11	
v/s Ratio Perm	0.10			0.04			0.01			0.10		
v/c Ratio	0.31	0.33		0.11	0.15		0.03	0.24		0.22	0.23	
Uniform Delay, d1	25.3	25.4		23.6	23.9		16.0	18.6		11.1	14.4	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	2.0	1.7		0.8	0.6		0.0	0.4		0.2	0.3	
Delay (s)	27.3	27.1		24.4	24.5		16.0	19.0		11.3	14.7	
Level of Service	C	C		C	C		B	B		B	B	
Approach Delay (s)		27.2			24.5			18.9			13.9	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM 2000 Control Delay	19.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.28		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	16.5
Intersection Capacity Utilization	75.4%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Intersection	
Int Delay, s/veh	1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	5	84	69	44	6	13
Future Vol, veh/h	5	84	69	44	6	13
Conflicting Peds, #/hr	10	0	0	10	0	1
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	64	64	64	64	64	64
Heavy Vehicles, %	0	4	0	8	0	0
Mvmt Flow	8	131	108	69	9	20

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	187	0	-	0	300	154
Stage 1	-	-	-	-	153	-
Stage 2	-	-	-	-	147	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1399	-	-	-	696	897
Stage 1	-	-	-	-	880	-
Stage 2	-	-	-	-	885	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1388	-	-	-	681	889
Mov Cap-2 Maneuver	-	-	-	-	681	-
Stage 1	-	-	-	-	868	-
Stage 2	-	-	-	-	878	-

Approach	EB	WB	SB
HCM Control Delay, s	0.4	0	9.6
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1388	-	-	-	811
HCM Lane V/C Ratio	0.006	-	-	-	0.037
HCM Control Delay (s)	7.6	0	-	-	9.6
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑	↑↑↑↳			↱
Traffic Vol, veh/h	0	1815	1247	14	0	32
Future Vol, veh/h	0	1815	1247	14	0	32
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	1852	1272	14	0	33

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	643
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	7.1
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.9
Pot Cap-1 Maneuver	0	-	-	-	0	361
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	-	-	-	-	-	361
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	16
HCM LOS			C

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	361
HCM Lane V/C Ratio	-	-	-	0.09
HCM Control Delay (s)	-	-	-	16
HCM Lane LOS	-	-	-	C
HCM 95th %tile Q(veh)	-	-	-	0.3

Intersection	
Int Delay, s/veh	4.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	77	8	21	38	59	18
Future Vol, veh/h	77	8	21	38	59	18
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	90	9	24	44	69	21

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	99	0	187	95
Stage 1	-	-	-	-	95	-
Stage 2	-	-	-	-	92	-
Critical Hdwy	-	-	4.1	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1507	-	807	967
Stage 1	-	-	-	-	934	-
Stage 2	-	-	-	-	937	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1507	-	794	967
Mov Cap-2 Maneuver	-	-	-	-	794	-
Stage 1	-	-	-	-	934	-
Stage 2	-	-	-	-	922	-

Approach	EB	WB	NB
HCM Control Delay, s	0	2.6	9.9
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	829	-	-	1507	-
HCM Lane V/C Ratio	0.108	-	-	0.016	-
HCM Control Delay (s)	9.9	-	-	7.4	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.4	-	-	0	-

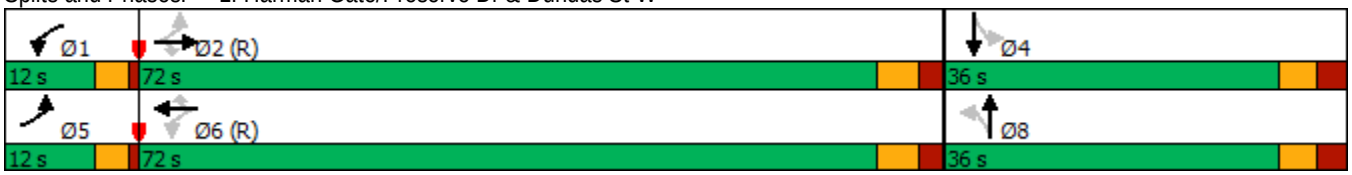
1: Harman Gate/Preserve Dr & Dundas St W

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	99	1626	37	26	1757	219	20	14	182	13
Future Volume (vph)	99	1626	37	26	1757	219	20	14	182	13
Lane Group Flow (vph)	104	1712	39	27	1849	231	21	30	192	102
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	NA
Protected Phases	5	2		1	6			8		4
Permitted Phases	2		2	6		6	8		4	
Detector Phase	5	2	2	1	6	6	8	8	4	4
Switch Phase										
Minimum Initial (s)	7.0	20.0	20.0	7.0	20.0	20.0	10.0	10.0	10.0	10.0
Minimum Split (s)	11.5	41.1	41.1	11.0	41.1	41.1	40.2	40.2	40.3	40.3
Total Split (s)	12.0	72.0	72.0	12.0	72.0	72.0	36.0	36.0	36.0	36.0
Total Split (%)	10.0%	60.0%	60.0%	10.0%	60.0%	60.0%	30.0%	30.0%	30.0%	30.0%
Yellow Time (s)	3.0	3.7	3.7	3.0	3.7	3.7	3.3	3.3	3.3	3.3
All-Red Time (s)	1.0	2.4	2.4	1.0	2.4	2.4	2.9	2.9	2.9	2.9
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	6.1	6.1	4.0	6.1	6.1	6.2	6.2	6.2	6.2
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes				
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	Max	Max	Max	Max
v/c Ratio	0.58	0.57	0.04	0.14	0.66	0.24	0.07	0.07	0.58	0.22
Control Delay	28.2	16.6	1.2	8.4	20.4	2.3	35.5	22.1	47.9	10.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	28.2	16.6	1.2	8.4	20.4	2.3	35.5	22.1	47.9	10.9
Queue Length 50th (m)	8.4	99.4	0.0	2.1	113.8	0.0	4.0	2.8	42.0	2.7
Queue Length 95th (m)	26.0	114.8	2.2	5.3	130.4	11.4	11.0	10.9	67.9	17.0
Internal Link Dist (m)		434.4			531.7			233.6		111.4
Turn Bay Length (m)	135.0		115.0	115.0		115.0	35.0		40.0	
Base Capacity (vph)	185	2992	950	215	2807	963	299	416	329	472
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	0.56	0.57	0.04	0.13	0.66	0.24	0.07	0.07	0.58	0.22

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 64 (53%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 95
Control Type: Actuated-Coordinated

Splits and Phases: 1: Harman Gate/Preserve Dr & Dundas St W



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	99	1626	37	26	1757	219	20	14	14	182	13	84
Future Volume (vph)	99	1626	37	26	1757	219	20	14	14	182	13	84
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.3	3.6	3.5	3.3	3.6	3.5	3.3	3.6	3.5	3.3	3.6	3.5
Total Lost time (s)	4.0	6.1	6.1	4.0	6.1	6.1	6.2	6.2		6.2	6.2	
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.97	1.00	1.00	0.97	1.00	0.99		1.00	0.99	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.93		1.00	0.87	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1745	5036	1556	1745	5085	1557	1659	1631		1707	1634	
Flt Permitted	0.06	1.00	1.00	0.10	1.00	1.00	0.69	1.00		0.74	1.00	
Satd. Flow (perm)	118	5036	1556	175	5085	1557	1207	1631		1326	1634	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	104	1712	39	27	1849	231	21	15	15	192	14	88
RTOR Reduction (vph)	0	0	16	0	0	103	0	11	0	0	66	0
Lane Group Flow (vph)	104	1712	23	27	1849	128	21	19	0	192	36	0
Confl. Peds. (#/hr)	3		3	3		3	2		1	1		2
Confl. Bikes (#/hr)			1									
Heavy Vehicles (%)	0%	3%	0%	0%	2%	0%	5%	7%	7%	2%	0%	0%
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases	2		2	6		6	8			4		
Actuated Green, G (s)	77.3	69.7	69.7	70.5	66.3	66.3	29.8	29.8		29.8	29.8	
Effective Green, g (s)	77.3	69.7	69.7	70.5	66.3	66.3	29.8	29.8		29.8	29.8	
Actuated g/C Ratio	0.64	0.58	0.58	0.59	0.55	0.55	0.25	0.25		0.25	0.25	
Clearance Time (s)	4.0	6.1	6.1	4.0	6.1	6.1	6.2	6.2		6.2	6.2	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	179	2925	903	157	2809	860	299	405		329	405	
v/s Ratio Prot	c0.04	0.34		0.01	c0.36			0.01			0.02	
v/s Ratio Perm	0.34		0.01	0.09		0.08	0.02			c0.14		
v/c Ratio	0.58	0.59	0.03	0.17	0.66	0.15	0.07	0.05		0.58	0.09	
Uniform Delay, d1	15.5	16.0	10.7	11.8	18.9	13.1	34.5	34.3		39.6	34.7	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	4.7	0.9	0.1	0.5	1.2	0.4	0.5	0.2		7.4	0.4	
Delay (s)	20.3	16.8	10.7	12.3	20.1	13.5	35.0	34.5		47.0	35.1	
Level of Service	C	B	B	B	C	B	C	C		D	D	
Approach Delay (s)		16.9			19.3			34.7			42.9	
Approach LOS		B			B			C			D	

Intersection Summary			
HCM 2000 Control Delay	20.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.3
Intersection Capacity Utilization	81.7%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

2: Sixth Line & Dundas St E

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	115	1489	185	125	1771	128	236	70	239	296	118
Future Volume (vph)	115	1489	185	125	1771	128	236	70	239	296	118
Lane Group Flow (vph)	121	1567	195	132	2086	135	248	74	252	312	124
Turn Type	pm+pt	NA	Perm	pm+pt	NA	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2		1	6	3	8		7	4	
Permitted Phases	2		2	6		8		8	4		4
Detector Phase	5	2	2	1	6	3	8	8	7	4	4
Switch Phase											
Minimum Initial (s)	7.0	24.0	24.0	7.0	24.0	7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	13.0	31.0	31.0	13.0	31.0	11.0	37.0	37.0	11.0	37.0	37.0
Total Split (s)	19.0	70.0	70.0	19.0	70.0	14.0	37.0	37.0	14.0	37.0	37.0
Total Split (%)	13.6%	50.0%	50.0%	13.6%	50.0%	10.0%	26.4%	26.4%	10.0%	26.4%	26.4%
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	3.0	2.0	2.0	3.0	2.0	1.0	2.0	2.0	1.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	4.0	6.0	6.0	4.0	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?											
Recall Mode	None	C-Max	C-Max	None	C-Max	None	Max	Max	None	Max	Max
v/c Ratio	0.68	0.66	0.23	0.65	0.88	0.58	0.59	0.18	0.88	0.74	0.28
Control Delay	45.9	30.0	4.7	34.9	38.3	44.7	55.4	4.3	70.8	62.8	8.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	45.9	30.0	4.7	34.9	38.3	44.7	55.4	4.3	70.8	62.8	8.9
Queue Length 50th (m)	18.5	125.0	2.8	16.2	195.8	28.3	65.3	0.0	57.0	85.6	0.0
Queue Length 95th (m)	40.9	147.0	17.2	37.4	225.7	46.0	95.1	7.0	#105.7	121.1	17.0
Internal Link Dist (m)		122.2			1210.7		440.8			65.0	
Turn Bay Length (m)	107.0		80.0	120.0		90.0			76.0		
Base Capacity (vph)	210	2390	830	234	2380	237	420	416	286	419	443
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.58	0.66	0.23	0.56	0.88	0.57	0.59	0.18	0.88	0.74	0.28

Intersection Summary

Cycle Length: 140
Actuated Cycle Length: 140
Offset: 71 (51%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 105
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 2: Sixth Line & Dundas St E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	115	1489	185	125	1771	211	128	236	70	239	296	118
Future Volume (vph)	115	1489	185	125	1771	211	128	236	70	239	296	118
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.3	3.6	3.5	3.3	3.6	3.5	3.3	3.6	3.5	3.3	3.6	3.5
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0		4.0	6.0	6.0	4.0	6.0	6.0
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91		1.00	1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00		1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1711	5036	1553	1728	4992		1727	1900	1526	1726	1881	1554
Flt Permitted	0.06	1.00	1.00	0.09	1.00		0.27	1.00	1.00	0.38	1.00	1.00
Satd. Flow (perm)	108	5036	1553	157	4992		485	1900	1526	688	1881	1554
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	121	1567	195	132	1864	222	135	248	74	252	312	124
RTOR Reduction (vph)	0	0	93	0	10	0	0	0	58	0	0	96
Lane Group Flow (vph)	121	1567	102	132	2076	0	135	248	16	252	312	28
Confl. Peds. (#/hr)	6		3	3		6	4		3	3		4
Confl. Bikes (#/hr)			1									
Heavy Vehicles (%)	2%	3%	1%	1%	2%	2%	1%	0%	3%	1%	1%	1%
Turn Type	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6			8		8	4		4
Actuated Green, G (s)	76.9	66.4	66.4	77.1	66.5		40.7	31.0	31.0	41.3	31.3	31.3
Effective Green, g (s)	76.9	66.4	66.4	77.1	66.5		40.7	31.0	31.0	41.3	31.3	31.3
Actuated g/C Ratio	0.55	0.47	0.47	0.55	0.48		0.29	0.22	0.22	0.29	0.22	0.22
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0		4.0	6.0	6.0	4.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	179	2388	736	205	2371		227	420	337	277	420	347
v/s Ratio Prot	c0.05	0.31		0.05	c0.42		0.04	0.13		c0.06	0.17	
v/s Ratio Perm	0.32		0.07	0.31			0.13		0.01	c0.20		0.02
v/c Ratio	0.68	0.66	0.14	0.64	0.88		0.59	0.59	0.05	0.91	0.74	0.08
Uniform Delay, d1	30.5	28.1	20.7	20.9	33.0		39.3	48.8	42.9	46.5	50.6	43.0
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	9.7	1.4	0.4	6.8	4.9		4.1	6.0	0.3	31.1	11.3	0.4
Delay (s)	40.2	29.5	21.1	27.7	37.9		43.5	54.8	43.2	77.6	61.9	43.4
Level of Service	D	C	C	C	D		D	D	D	E	E	D
Approach Delay (s)		29.3			37.3			49.6			64.3	
Approach LOS		C			D			D			E	

Intersection Summary			
HCM 2000 Control Delay	39.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	22.0
Intersection Capacity Utilization	102.8%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	1.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	4	0	59	15	0	8	23	505	12	6	750	42
Future Vol, veh/h	4	0	59	15	0	8	23	505	12	6	750	42
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	3	3	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	0	-	0	0	-	0	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	0	0	0	0	0	0	0	1	0	0	1	0
Mvmt Flow	4	0	63	16	0	9	24	537	13	6	798	45

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1150	-	422	1006	-	278	843	0	0	553	0	0
Stage 1	833	-	-	595	-	-	-	-	-	-	-	-
Stage 2	317	-	-	411	-	-	-	-	-	-	-	-
Critical Hdwy	7.5	-	6.9	7.5	-	6.9	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.5	-	-	6.5	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.5	-	-	6.5	-	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	-	3.3	3.5	-	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	156	0	586	198	0	725	802	-	-	1027	-	-
Stage 1	334	0	-	463	0	-	-	-	-	-	-	-
Stage 2	674	0	-	594	0	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	148	-	586	169	-	723	802	-	-	1025	-	-
Mov Cap-2 Maneuver	148	-	-	169	-	-	-	-	-	-	-	-
Stage 1	320	-	-	442	-	-	-	-	-	-	-	-
Stage 2	637	-	-	525	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	13	22.1	0.6	0.1
HCM LOS	B	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	802	-	-	148	586	169	723	1025	-	-
HCM Lane V/C Ratio	0.031	-	-	0.029	0.107	0.094	0.012	0.006	-	-
HCM Control Delay (s)	9.6	0.2	-	30	11.9	28.5	10	8.5	0	-
HCM Lane LOS	A	A	-	D	B	D	B	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.1	0.4	0.3	0	0	-	-

Intersection	
Int Delay, s/veh	2.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	35	38	106	387	526	20
Future Vol, veh/h	35	38	106	387	526	20
Conflicting Peds, #/hr	3	1	2	0	0	2
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	25	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	0	0	0	1	1	25
Mvmt Flow	36	40	110	403	548	21

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	986	288	571	0	-	0
Stage 1	561	-	-	-	-	-
Stage 2	425	-	-	-	-	-
Critical Hdwy	6.8	6.9	4.1	-	-	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	248	715	1012	-	-	-
Stage 1	540	-	-	-	-	-
Stage 2	633	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	220	713	1010	-	-	-
Mov Cap-2 Maneuver	220	-	-	-	-	-
Stage 1	480	-	-	-	-	-
Stage 2	632	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	18.4	1.9	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1010	-	344	-	-
HCM Lane V/C Ratio	0.109	-	0.221	-	-
HCM Control Delay (s)	9	-	18.4	-	-
HCM Lane LOS	A	-	C	-	-
HCM 95th %tile Q(veh)	0.4	-	0.8	-	-

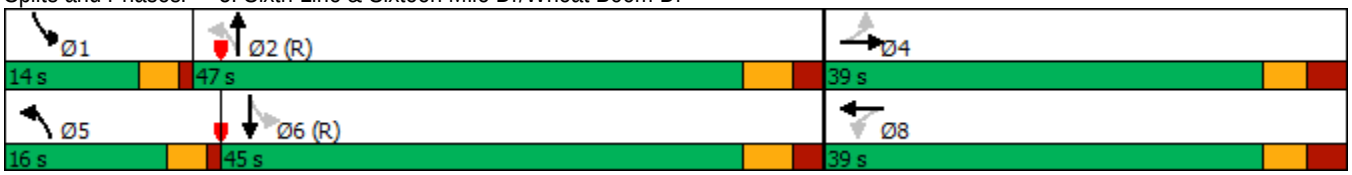
5: Sixth Line & Sixteen Mile Dr/Wheat Boom Dr

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	101	59	19	56	16	269	102	271
Future Volume (vph)	101	59	19	56	16	269	102	271
Lane Group Flow (vph)	106	186	20	73	17	414	107	348
Turn Type	Perm	NA	Perm	NA	pm+pt	NA	pm+pt	NA
Protected Phases		4		8	5	2	1	6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	5	2	1	6
Switch Phase								
Minimum Initial (s)	20.0	20.0	20.0	20.0	7.0	35.0	7.0	35.0
Minimum Split (s)	38.4	38.4	38.4	38.4	11.5	41.1	11.0	41.1
Total Split (s)	39.0	39.0	39.0	39.0	16.0	47.0	14.0	45.0
Total Split (%)	39.0%	39.0%	39.0%	39.0%	16.0%	47.0%	14.0%	45.0%
Yellow Time (s)	3.3	3.3	3.3	3.3	3.0	3.7	3.0	3.7
All-Red Time (s)	3.1	3.1	3.1	3.1	1.0	2.4	1.0	2.4
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.4	6.4	6.4	6.4	4.0	6.1	4.0	6.1
Lead/Lag					Lead	Lag	Lead	Lag
Lead-Lag Optimize?								
Recall Mode	Max	Max	Max	Max	None	C-Max	None	C-Max
v/c Ratio	0.25	0.30	0.05	0.13	0.03	0.28	0.20	0.20
Control Delay	26.8	12.5	23.8	20.6	9.8	15.1	10.9	13.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	26.8	12.5	23.8	20.6	9.8	15.1	10.9	13.6
Queue Length 50th (m)	15.8	11.3	2.8	8.5	1.4	21.4	9.4	15.9
Queue Length 95th (m)	29.8	28.3	8.3	18.9	4.4	33.5	17.4	30.2
Internal Link Dist (m)		26.8		207.1		202.5		1327.3
Turn Bay Length (m)	17.0		54.0		60.0		75.0	
Base Capacity (vph)	423	620	366	581	650	1482	550	1767
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.25	0.30	0.05	0.13	0.03	0.28	0.19	0.20

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 95
Control Type: Actuated-Coordinated

Splits and Phases: 5: Sixth Line & Sixteen Mile Dr/Wheat Boom Dr



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	101	59	118	19	56	13	16	269	124	102	271	60
Future Volume (vph)	101	59	118	19	56	13	16	269	124	102	271	60
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.3	3.6	3.5	3.3	3.6	3.5	3.3	3.6	3.5	3.3	3.6	3.5
Total Lost time (s)	6.4	6.4		6.4	6.4		4.0	6.1		4.0	6.1	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	0.99		1.00	1.00		1.00	0.99		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.90		1.00	0.97		1.00	0.95		1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1739	1683		1742	1756		1742	3359		1728	3468	
Flt Permitted	0.71	1.00		0.61	1.00		0.54	1.00		0.45	1.00	
Satd. Flow (perm)	1299	1683		1125	1756		996	3359		810	3468	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	106	62	124	20	59	14	17	283	131	107	285	63
RTOR Reduction (vph)	0	72	0	0	9	0	0	53	0	0	16	0
Lane Group Flow (vph)	106	114	0	20	64	0	17	361	0	107	332	0
Confl. Peds. (#/hr)	4		2	2		4	2					2
Confl. Bikes (#/hr)									1			
Heavy Vehicles (%)	0%	2%	0%	0%	4%	8%	0%	2%	1%	1%	1%	0%
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	32.6	32.6		32.6	32.6		45.3	42.5		54.9	48.1	
Effective Green, g (s)	32.6	32.6		32.6	32.6		45.3	42.5		54.9	48.1	
Actuated g/C Ratio	0.33	0.33		0.33	0.33		0.45	0.42		0.55	0.48	
Clearance Time (s)	6.4	6.4		6.4	6.4		4.0	6.1		4.0	6.1	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	423	548		366	572		472	1427		521	1668	
v/s Ratio Prot		0.07			0.04		0.00	c0.11		c0.02	0.10	
v/s Ratio Perm	c0.08			0.02			0.02			0.10		
v/c Ratio	0.25	0.21		0.05	0.11		0.04	0.25		0.21	0.20	
Uniform Delay, d1	24.7	24.4		23.1	23.6		15.1	18.5		11.0	14.9	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.4	0.9		0.3	0.4		0.0	0.4		0.2	0.3	
Delay (s)	26.2	25.2		23.4	24.0		15.1	19.0		11.2	15.2	
Level of Service	C	C		C	C		B	B		B	B	
Approach Delay (s)		25.6			23.9			18.8			14.2	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM 2000 Control Delay	19.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.25		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	16.5
Intersection Capacity Utilization	75.4%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	3	75	71	29	6	1
Future Vol, veh/h	3	75	71	29	6	1
Conflicting Peds, #/hr	7	0	0	7	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	79	79	79	79	79	79
Heavy Vehicles, %	0	2	4	0	0	100
Mvmt Flow	4	95	90	37	8	1

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	134	0	-	0	219	116
Stage 1	-	-	-	-	116	-
Stage 2	-	-	-	-	103	-
Critical Hdwy	4.1	-	-	-	6.4	7.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	4.2
Pot Cap-1 Maneuver	1463	-	-	-	774	727
Stage 1	-	-	-	-	914	-
Stage 2	-	-	-	-	926	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1455	-	-	-	764	723
Mov Cap-2 Maneuver	-	-	-	-	764	-
Stage 1	-	-	-	-	907	-
Stage 2	-	-	-	-	921	-

Approach	EB	WB	SB
HCM Control Delay, s	0.3	0	9.8
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1455	-	-	-	758
HCM Lane V/C Ratio	0.003	-	-	-	0.012
HCM Control Delay (s)	7.5	0	-	-	9.8
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑	↑↑↑↳			↱
Traffic Vol, veh/h	0	1863	1984	37	0	18
Future Vol, veh/h	0	1863	1984	37	0	18
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	1961	2088	39	0	19

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	1064
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	7.1
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.9
Pot Cap-1 Maneuver	0	-	-	-	0	191
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	-	-	-	-	-	191
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	25.9
HCM LOS			D

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	191
HCM Lane V/C Ratio	-	-	-	0.099
HCM Control Delay (s)	-	-	-	25.9
HCM Lane LOS	-	-	-	D
HCM 95th %tile Q(veh)	-	-	-	0.3

Intersection	
Int Delay, s/veh	3.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	47	20	53	56	33	10
Future Vol, veh/h	47	20	53	56	33	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	49	21	55	58	34	10

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	70	0	228	60
Stage 1	-	-	-	-	60	-
Stage 2	-	-	-	-	168	-
Critical Hdwy	-	-	4.1	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1544	-	765	1011
Stage 1	-	-	-	-	968	-
Stage 2	-	-	-	-	867	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1544	-	737	1011
Mov Cap-2 Maneuver	-	-	-	-	737	-
Stage 1	-	-	-	-	968	-
Stage 2	-	-	-	-	835	-

Approach	EB	WB	NB
HCM Control Delay, s	0	3.6	9.9
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	787	-	-	1544	-
HCM Lane V/C Ratio	0.057	-	-	0.036	-
HCM Control Delay (s)	9.9	-	-	7.4	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.2	-	-	0.1	-

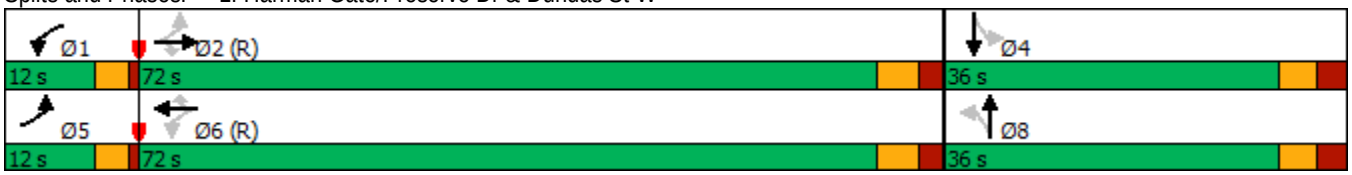
1: Harman Gate/Preserve Dr & Dundas St W

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	94	1602	35	13	1130	136	26	9	170	20
Future Volume (vph)	94	1602	35	13	1130	136	26	9	170	20
Lane Group Flow (vph)	96	1635	36	13	1153	139	27	53	173	158
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	NA
Protected Phases	5	2		1	6			8		4
Permitted Phases	2		2	6		6	8		4	
Detector Phase	5	2	2	1	6	6	8	8	4	4
Switch Phase										
Minimum Initial (s)	7.0	20.0	20.0	7.0	20.0	20.0	10.0	10.0	10.0	10.0
Minimum Split (s)	11.5	41.1	41.1	11.0	41.1	41.1	40.2	40.2	40.3	40.3
Total Split (s)	12.0	72.0	72.0	12.0	72.0	72.0	36.0	36.0	36.0	36.0
Total Split (%)	10.0%	60.0%	60.0%	10.0%	60.0%	60.0%	30.0%	30.0%	30.0%	30.0%
Yellow Time (s)	3.0	3.7	3.7	3.0	3.7	3.7	3.3	3.3	3.3	3.3
All-Red Time (s)	1.0	2.4	2.4	1.0	2.4	2.4	2.9	2.9	2.9	2.9
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	6.1	6.1	4.0	6.1	6.1	6.2	6.2	6.2	6.2
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag				
Lead-Lag Optimize?										
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	Max	Max	Max	Max
v/c Ratio	0.33	0.53	0.04	0.06	0.43	0.16	0.10	0.12	0.54	0.32
Control Delay	10.1	14.8	0.9	7.4	16.4	2.5	36.1	13.6	46.2	10.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	10.1	14.8	0.9	7.4	16.4	2.5	36.1	13.6	46.2	10.0
Queue Length 50th (m)	7.7	71.1	0.0	1.0	59.0	0.0	5.2	1.7	37.4	3.8
Queue Length 95th (m)	13.9	107.3	1.7	3.2	70.4	9.3	13.4	12.3	61.7	21.2
Internal Link Dist (m)		434.4			531.7			233.6		111.4
Turn Bay Length (m)	135.0		115.0	115.0		115.0	35.0		40.0	
Base Capacity (vph)	299	3084	897	233	2677	893	273	432	323	501
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	0.32	0.53	0.04	0.06	0.43	0.16	0.10	0.12	0.54	0.32

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 113 (94%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 95
Control Type: Actuated-Coordinated

Splits and Phases: 1: Harman Gate/Preserve Dr & Dundas St W



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	94	1602	35	13	1130	136	26	9	43	170	20	135
Future Volume (vph)	94	1602	35	13	1130	136	26	9	43	170	20	135
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.3	3.6	3.5	3.3	3.6	3.5	3.3	3.6	3.5	3.3	3.6	3.5
Total Lost time (s)	4.0	6.1	6.1	4.0	6.1	6.1	6.2	6.2		6.2	6.2	
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.97	1.00	1.00	0.97	1.00	0.98		1.00	0.99	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		0.99	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.88		1.00	0.87	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1646	5036	1425	1745	4848	1506	1739	1608		1715	1600	
Flt Permitted	0.19	1.00	1.00	0.11	1.00	1.00	0.60	1.00		0.72	1.00	
Satd. Flow (perm)	322	5036	1425	205	4848	1506	1102	1608		1304	1600	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	96	1635	36	13	1153	139	27	9	44	173	20	138
RTOR Reduction (vph)	0	0	15	0	0	62	0	33	0	0	104	0
Lane Group Flow (vph)	96	1635	21	13	1153	77	27	20	0	173	54	0
Confl. Peds. (#/hr)	5		4	4		5	4		4	4		4
Confl. Bikes (#/hr)			1						1			
Heavy Vehicles (%)	6%	3%	9%	0%	7%	3%	0%	0%	2%	1%	0%	2%
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases	2		2	6		6	8			4		
Actuated Green, G (s)	77.9	71.1	71.1	69.1	66.3	66.3	29.8	29.8		29.8	29.8	
Effective Green, g (s)	77.9	71.1	71.1	69.1	66.3	66.3	29.8	29.8		29.8	29.8	
Actuated g/C Ratio	0.65	0.59	0.59	0.58	0.55	0.55	0.25	0.25		0.25	0.25	
Clearance Time (s)	4.0	6.1	6.1	4.0	6.1	6.1	6.2	6.2		6.2	6.2	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	292	2983	844	153	2678	832	273	399		323	397	
v/s Ratio Prot	c0.02	c0.32		0.00	0.24			0.01			0.03	
v/s Ratio Perm	0.19		0.01	0.05		0.05	0.02			c0.13		
v/c Ratio	0.33	0.55	0.03	0.08	0.43	0.09	0.10	0.05		0.54	0.14	
Uniform Delay, d1	9.0	14.8	10.1	11.7	15.8	12.7	34.8	34.3		39.1	35.1	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.7	0.7	0.1	0.2	0.5	0.2	0.7	0.2		6.2	0.7	
Delay (s)	9.6	15.5	10.2	11.9	16.3	12.9	35.5	34.6		45.3	35.8	
Level of Service	A	B	B	B	B	B	D	C		D	D	
Approach Delay (s)		15.1			15.9			34.9			40.8	
Approach LOS		B			B			C			D	

Intersection Summary			
HCM 2000 Control Delay	18.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.3
Intersection Capacity Utilization	78.7%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	80	1524	183	115	953	208	186	210	240	254	94
Future Volume (vph)	80	1524	183	115	953	208	186	210	240	254	94
Lane Group Flow (vph)	81	1539	185	116	1079	210	188	212	242	257	95
Turn Type	pm+pt	NA	Perm	pm+pt	NA	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2		1	6	3	8		7	4	
Permitted Phases	2		2	6		8		8	4		4
Detector Phase	5	2	2	1	6	3	8	8	7	4	4
Switch Phase											
Minimum Initial (s)	7.0	24.0	24.0	7.0	24.0	7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	14.0	31.0	31.0	14.0	31.0	11.5	37.0	37.0	11.5	37.0	37.0
Total Split (s)	14.0	75.0	75.0	14.0	75.0	14.0	37.0	37.0	14.0	37.0	37.0
Total Split (%)	10.0%	53.6%	53.6%	10.0%	53.6%	10.0%	26.4%	26.4%	10.0%	26.4%	26.4%
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	3.0	2.0	2.0	3.0	2.0	1.0	2.0	2.0	1.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	4.0	6.0	6.0	4.0	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?											
Recall Mode	None	C-Max	C-Max	None	C-Max	None	Max	Max	None	Max	Max
v/c Ratio	0.31	0.61	0.21	0.65	0.46	0.77	0.47	0.48	0.73	0.65	0.23
Control Delay	15.7	27.1	3.2	33.3	23.4	58.2	51.7	21.2	52.8	58.3	8.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	15.7	27.1	3.2	33.3	23.4	58.2	51.7	21.2	52.8	58.3	8.4
Queue Length 50th (m)	9.7	116.8	0.3	14.2	72.4	46.5	48.0	18.1	54.5	68.7	0.0
Queue Length 95th (m)	17.4	132.6	13.0	#31.5	85.0	#79.5	73.2	44.4	#81.3	100.3	13.6
Internal Link Dist (m)		122.2			1210.7		440.8			65.0	
Turn Bay Length (m)	107.0		80.0	120.0		90.0			76.0		
Base Capacity (vph)	263	2512	863	179	2352	271	404	438	332	396	413
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.31	0.61	0.21	0.65	0.46	0.77	0.47	0.48	0.73	0.65	0.23

Intersection Summary

Cycle Length: 140
Actuated Cycle Length: 140
Offset: 36 (26%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 95
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 2: Sixth Line & Dundas St E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	80	1524	183	115	953	115	208	186	210	240	254	94
Future Volume (vph)	80	1524	183	115	953	115	208	186	210	240	254	94
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.3	3.6	3.5	3.3	3.6	3.5	3.3	3.6	3.5	3.3	3.6	3.5
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0		4.0	6.0	6.0	4.0	6.0	6.0
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91		1.00	1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00		1.00	1.00	0.97	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1630	5085	1559	1678	4731		1676	1827	1497	1703	1792	1511
Flt Permitted	0.20	1.00	1.00	0.10	1.00		0.36	1.00	1.00	0.50	1.00	1.00
Satd. Flow (perm)	347	5085	1559	170	4731		644	1827	1497	898	1792	1511
Peak-hour factor, PHF	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Adj. Flow (vph)	81	1539	185	116	963	116	210	188	212	242	257	95
RTOR Reduction (vph)	0	0	93	0	11	0	0	0	107	0	0	74
Lane Group Flow (vph)	81	1539	92	116	1068	0	210	188	105	242	257	21
Confl. Peds. (#/hr)	8		1	1		8	3		10	10		3
Confl. Bikes (#/hr)			1									
Heavy Vehicles (%)	7%	2%	1%	4%	8%	4%	4%	4%	4%	2%	6%	4%
Turn Type	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6			8		8	4		4
Actuated Green, G (s)	76.9	69.2	69.2	77.1	69.3		41.0	31.0	31.0	41.0	31.0	31.0
Effective Green, g (s)	76.9	69.2	69.2	77.1	69.3		41.0	31.0	31.0	41.0	31.0	31.0
Actuated g/C Ratio	0.55	0.49	0.49	0.55	0.49		0.29	0.22	0.22	0.29	0.22	0.22
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0		4.0	6.0	6.0	4.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	261	2513	770	177	2341		262	404	331	320	396	334
v/s Ratio Prot	0.02	0.30		c0.04	0.23		c0.06	0.10		0.05	0.14	
v/s Ratio Perm	0.15		0.06	c0.32			c0.18		0.07	0.17		0.01
v/c Ratio	0.31	0.61	0.12	0.66	0.46		0.80	0.47	0.32	0.76	0.65	0.06
Uniform Delay, d1	15.8	25.7	19.0	19.5	23.1		44.1	47.3	45.6	43.9	49.6	43.0
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.7	1.1	0.3	8.4	0.6		16.0	3.8	2.5	9.8	8.0	0.4
Delay (s)	16.5	26.8	19.4	27.9	23.7		60.1	51.1	48.2	53.7	57.6	43.4
Level of Service	B	C	B	C	C		E	D	D	D	E	D
Approach Delay (s)		25.6			24.1			53.2			53.7	
Approach LOS		C			C			D			D	

Intersection Summary			
HCM 2000 Control Delay	33.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	22.0
Intersection Capacity Utilization	93.3%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	1.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	8	0	105	8	0	4	9	353	14	6	579	16
Future Vol, veh/h	8	0	105	8	0	4	9	353	14	6	579	16
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	1	1	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	0	-	0	0	-	0	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	86	86	86	86	86	86	86	86	86	86	86	86
Heavy Vehicles, %	0	0	0	0	0	0	0	5	0	0	4	0
Mvmt Flow	9	0	122	9	0	5	10	410	16	7	673	19

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	922	-	346	790	-	214	692	0	0	427	0	0
Stage 1	697	-	-	439	-	-	-	-	-	-	-	-
Stage 2	225	-	-	351	-	-	-	-	-	-	-	-
Critical Hdwy	7.5	-	6.9	7.5	-	6.9	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.5	-	-	6.5	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.5	-	-	6.5	-	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	-	3.3	3.5	-	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	228	0	656	284	0	797	912	-	-	1143	-	-
Stage 1	402	0	-	572	0	-	-	-	-	-	-	-
Stage 2	763	0	-	644	0	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	223	-	656	227	-	796	912	-	-	1142	-	-
Mov Cap-2 Maneuver	223	-	-	227	-	-	-	-	-	-	-	-
Stage 1	396	-	-	563	-	-	-	-	-	-	-	-
Stage 2	748	-	-	519	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	12.4	17.5	0.3	0.1
HCM LOS	B	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	912	-	-	223	656	227	796	1142	-	-
HCM Lane V/C Ratio	0.011	-	-	0.042	0.186	0.041	0.006	0.006	-	-
HCM Control Delay (s)	9	0.1	-	21.8	11.7	21.5	9.5	8.2	0	-
HCM Lane LOS	A	A	-	C	B	C	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0.7	0.1	0	0	-	-

Intersection	
Int Delay, s/veh	2.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	32	68	49	301	428	26
Future Vol, veh/h	32	68	49	301	428	26
Conflicting Peds, #/hr	2	0	7	0	0	7
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	25	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	11	0	0	5	5	0
Mvmt Flow	37	79	57	350	498	30

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	811	271	535	0	-	0
Stage 1	520	-	-	-	-	-
Stage 2	291	-	-	-	-	-
Critical Hdwy	7.02	6.9	4.1	-	-	-
Critical Hdwy Stg 1	6.02	-	-	-	-	-
Critical Hdwy Stg 2	6.02	-	-	-	-	-
Follow-up Hdwy	3.61	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	300	733	1043	-	-	-
Stage 1	536	-	-	-	-	-
Stage 2	707	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	281	729	1037	-	-	-
Mov Cap-2 Maneuver	281	-	-	-	-	-
Stage 1	504	-	-	-	-	-
Stage 2	703	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	14.8	1.2	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1037	-	483	-	-
HCM Lane V/C Ratio	0.055	-	0.241	-	-
HCM Control Delay (s)	8.7	-	14.8	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0.2	-	0.9	-	-

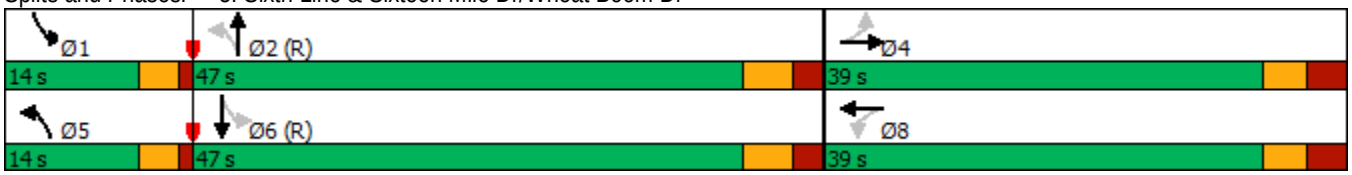
5: Sixth Line & Sixteen Mile Dr/Wheat Boom Dr

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	105	69	27	66	10	225	98	274
Future Volume (vph)	105	69	27	66	10	225	98	274
Lane Group Flow (vph)	125	234	32	96	12	379	117	388
Turn Type	Perm	NA	Perm	NA	pm+pt	NA	pm+pt	NA
Protected Phases		4		8	5	2	1	6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	5	2	1	6
Switch Phase								
Minimum Initial (s)	20.0	20.0	20.0	20.0	7.0	35.0	7.0	35.0
Minimum Split (s)	38.4	38.4	38.4	38.4	11.5	41.1	11.0	41.1
Total Split (s)	39.0	39.0	39.0	39.0	14.0	47.0	14.0	47.0
Total Split (%)	39.0%	39.0%	39.0%	39.0%	14.0%	47.0%	14.0%	47.0%
Yellow Time (s)	3.3	3.3	3.3	3.3	3.0	3.7	3.0	3.7
All-Red Time (s)	3.1	3.1	3.1	3.1	1.0	2.4	1.0	2.4
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.4	6.4	6.4	6.4	4.0	6.1	4.0	6.1
Lead/Lag					Lead	Lag	Lead	Lag
Lead-Lag Optimize?								
Recall Mode	Max	Max	Max	Max	None	C-Max	None	C-Max
v/c Ratio	0.31	0.40	0.11	0.17	0.02	0.27	0.22	0.22
Control Delay	28.0	17.1	25.0	22.1	9.7	15.5	11.0	12.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	28.0	17.1	25.0	22.1	9.7	15.5	11.0	12.8
Queue Length 50th (m)	19.0	20.1	4.5	12.2	1.0	20.1	10.4	18.5
Queue Length 95th (m)	32.0	36.8	11.0	22.5	3.3	28.7	17.4	31.5
Internal Link Dist (m)		26.8		207.1		202.5		1327.3
Turn Bay Length (m)	17.0		54.0		60.0		75.0	
Base Capacity (vph)	402	581	287	580	599	1417	553	1765
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.31	0.40	0.11	0.17	0.02	0.27	0.21	0.22

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 95
Control Type: Actuated-Coordinated

Splits and Phases: 5: Sixth Line & Sixteen Mile Dr/Wheat Boom Dr



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	105	69	128	27	66	14	10	225	93	98	274	52
Future Volume (vph)	105	69	128	27	66	14	10	225	93	98	274	52
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.3	3.6	3.5	3.3	3.6	3.5	3.3	3.6	3.5	3.3	3.6	3.5
Total Lost time (s)	6.4	6.4		6.4	6.4		4.0	6.1		4.0	6.1	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	0.99		1.00	1.00		1.00	0.99		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.90		1.00	0.97		1.00	0.96		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1687	1579		1539	1757		1744	3248		1675	3327	
Flt Permitted	0.69	1.00		0.54	1.00		0.52	1.00		0.47	1.00	
Satd. Flow (perm)	1234	1579		881	1757		959	3248		827	3327	
Peak-hour factor, PHF	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Adj. Flow (vph)	125	82	152	32	79	17	12	268	111	117	326	62
RTOR Reduction (vph)	0	67	0	0	7	0	0	44	0	0	14	0
Lane Group Flow (vph)	125	167	0	32	89	0	12	335	0	117	374	0
Confl. Peds. (#/hr)	5		5	5		5	1		3	3		1
Heavy Vehicles (%)	3%	10%	6%	13%	6%	0%	0%	4%	9%	4%	6%	3%
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	32.6	32.6		32.6	32.6		43.7	42.3		54.9	49.5	
Effective Green, g (s)	32.6	32.6		32.6	32.6		43.7	42.3		54.9	49.5	
Actuated g/C Ratio	0.33	0.33		0.33	0.33		0.44	0.42		0.55	0.50	
Clearance Time (s)	6.4	6.4		6.4	6.4		4.0	6.1		4.0	6.1	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	402	514		287	572		430	1373		526	1646	
v/s Ratio Prot		c0.11			0.05		0.00	c0.10		c0.02	0.11	
v/s Ratio Perm	0.10			0.04			0.01			0.10		
v/c Ratio	0.31	0.33		0.11	0.15		0.03	0.24		0.22	0.23	
Uniform Delay, d1	25.3	25.4		23.6	23.9		16.0	18.6		11.1	14.4	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	2.0	1.7		0.8	0.6		0.0	0.4		0.2	0.3	
Delay (s)	27.3	27.1		24.4	24.5		16.0	19.0		11.3	14.7	
Level of Service	C	C		C	C		B	B		B	B	
Approach Delay (s)		27.2			24.5			18.9			13.9	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM 2000 Control Delay	19.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.28		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	16.5
Intersection Capacity Utilization	75.4%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Intersection	
Int Delay, s/veh	1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	5	84	69	44	6	13
Future Vol, veh/h	5	84	69	44	6	13
Conflicting Peds, #/hr	10	0	0	10	0	1
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	64	64	64	64	64	64
Heavy Vehicles, %	0	4	0	8	0	0
Mvmt Flow	8	131	108	69	9	20

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	187	0	-	0	300	154
Stage 1	-	-	-	-	153	-
Stage 2	-	-	-	-	147	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1399	-	-	-	696	897
Stage 1	-	-	-	-	880	-
Stage 2	-	-	-	-	885	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1388	-	-	-	681	889
Mov Cap-2 Maneuver	-	-	-	-	681	-
Stage 1	-	-	-	-	868	-
Stage 2	-	-	-	-	878	-

Approach	EB	WB	SB
HCM Control Delay, s	0.4	0	9.6
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1388	-	-	-	811
HCM Lane V/C Ratio	0.006	-	-	-	0.037
HCM Control Delay (s)	7.6	0	-	-	9.6
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑	↑↑↑↳			↱
Traffic Vol, veh/h	0	1815	1247	14	0	32
Future Vol, veh/h	0	1815	1247	14	0	32
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	1852	1272	14	0	33

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	643
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	7.1
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.9
Pot Cap-1 Maneuver	0	-	-	-	0	361
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	-	-	-	-	-	361
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	16
HCM LOS			C

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	361
HCM Lane V/C Ratio	-	-	-	0.09
HCM Control Delay (s)	-	-	-	16
HCM Lane LOS	-	-	-	C
HCM 95th %tile Q(veh)	-	-	-	0.3

Intersection	
Int Delay, s/veh	4.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	77	8	21	38	59	18
Future Vol, veh/h	77	8	21	38	59	18
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	90	9	24	44	69	21

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	99	0	187	95
Stage 1	-	-	-	-	95	-
Stage 2	-	-	-	-	92	-
Critical Hdwy	-	-	4.1	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1507	-	807	967
Stage 1	-	-	-	-	934	-
Stage 2	-	-	-	-	937	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1507	-	794	967
Mov Cap-2 Maneuver	-	-	-	-	794	-
Stage 1	-	-	-	-	934	-
Stage 2	-	-	-	-	922	-

Approach	EB	WB	NB
HCM Control Delay, s	0	2.6	9.9
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	829	-	-	1507	-
HCM Lane V/C Ratio	0.108	-	-	0.016	-
HCM Control Delay (s)	9.9	-	-	7.4	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.4	-	-	0	-

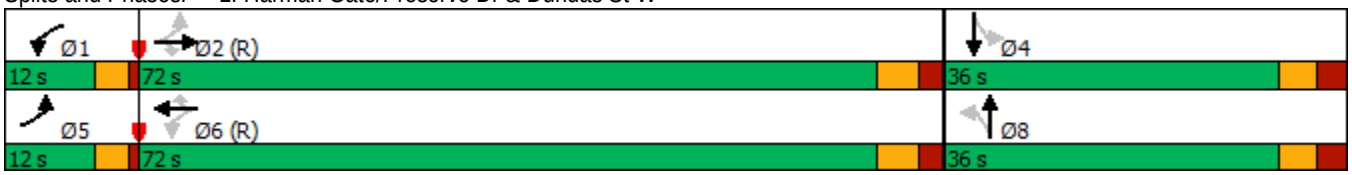
1: Harman Gate/Preserve Dr & Dundas St W

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	99	1694	37	26	1757	219	20	14	182	13
Future Volume (vph)	99	1694	37	26	1757	219	20	14	182	13
Lane Group Flow (vph)	104	1783	39	27	1849	231	21	30	192	102
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	NA
Protected Phases	5	2		1	6			8		4
Permitted Phases	2		2	6		6	8		4	
Detector Phase	5	2	2	1	6	6	8	8	4	4
Switch Phase										
Minimum Initial (s)	7.0	20.0	20.0	7.0	20.0	20.0	10.0	10.0	10.0	10.0
Minimum Split (s)	11.5	41.1	41.1	11.0	41.1	41.1	40.2	40.2	40.3	40.3
Total Split (s)	12.0	72.0	72.0	12.0	72.0	72.0	36.0	36.0	36.0	36.0
Total Split (%)	10.0%	60.0%	60.0%	10.0%	60.0%	60.0%	30.0%	30.0%	30.0%	30.0%
Yellow Time (s)	3.0	3.7	3.7	3.0	3.7	3.7	3.3	3.3	3.3	3.3
All-Red Time (s)	1.0	2.4	2.4	1.0	2.4	2.4	2.9	2.9	2.9	2.9
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	6.1	6.1	4.0	6.1	6.1	6.2	6.2	6.2	6.2
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes				
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	Max	Max	Max	Max
v/c Ratio	0.58	0.60	0.04	0.14	0.66	0.24	0.07	0.07	0.58	0.22
Control Delay	28.2	17.0	1.2	8.5	20.4	2.3	35.5	22.1	47.9	10.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	28.2	17.0	1.2	8.5	20.4	2.3	35.5	22.1	47.9	10.9
Queue Length 50th (m)	8.4	105.8	0.0	2.1	113.8	0.0	4.0	2.8	42.0	2.7
Queue Length 95th (m)	26.0	121.7	2.2	5.3	130.4	11.4	11.0	10.9	67.9	17.0
Internal Link Dist (m)		434.4			531.7			233.6		111.4
Turn Bay Length (m)	135.0		115.0	115.0		115.0	35.0		40.0	
Base Capacity (vph)	185	2992	950	205	2807	963	299	416	329	472
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	0.56	0.60	0.04	0.13	0.66	0.24	0.07	0.07	0.58	0.22

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 64 (53%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 95
Control Type: Actuated-Coordinated

Splits and Phases: 1: Harman Gate/Preserve Dr & Dundas St W



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	99	1694	37	26	1757	219	20	14	14	182	13	84
Future Volume (vph)	99	1694	37	26	1757	219	20	14	14	182	13	84
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.3	3.6	3.5	3.3	3.6	3.5	3.3	3.6	3.5	3.3	3.6	3.5
Total Lost time (s)	4.0	6.1	6.1	4.0	6.1	6.1	6.2	6.2		6.2	6.2	
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.97	1.00	1.00	0.97	1.00	0.99		1.00	0.99	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.93		1.00	0.87	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1745	5036	1556	1745	5085	1557	1659	1631		1707	1634	
Flt Permitted	0.06	1.00	1.00	0.09	1.00	1.00	0.69	1.00		0.74	1.00	
Satd. Flow (perm)	118	5036	1556	156	5085	1557	1207	1631		1326	1634	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	104	1783	39	27	1849	231	21	15	15	192	14	88
RTOR Reduction (vph)	0	0	16	0	0	103	0	11	0	0	66	0
Lane Group Flow (vph)	104	1783	23	27	1849	128	21	19	0	192	36	0
Confl. Peds. (#/hr)	3		3	3		3	2		1	1		2
Confl. Bikes (#/hr)			1									
Heavy Vehicles (%)	0%	3%	0%	0%	2%	0%	5%	7%	7%	2%	0%	0%
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases	2		2	6		6	8			4		
Actuated Green, G (s)	77.3	69.7	69.7	70.5	66.3	66.3	29.8	29.8		29.8	29.8	
Effective Green, g (s)	77.3	69.7	69.7	70.5	66.3	66.3	29.8	29.8		29.8	29.8	
Actuated g/C Ratio	0.64	0.58	0.58	0.59	0.55	0.55	0.25	0.25		0.25	0.25	
Clearance Time (s)	4.0	6.1	6.1	4.0	6.1	6.1	6.2	6.2		6.2	6.2	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	179	2925	903	147	2809	860	299	405		329	405	
v/s Ratio Prot	c0.04	0.35		0.01	c0.36			0.01			0.02	
v/s Ratio Perm	0.34		0.01	0.10		0.08	0.02			c0.14		
v/c Ratio	0.58	0.61	0.03	0.18	0.66	0.15	0.07	0.05		0.58	0.09	
Uniform Delay, d1	15.5	16.3	10.7	12.1	18.9	13.1	34.5	34.3		39.6	34.7	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	4.7	1.0	0.1	0.6	1.2	0.4	0.5	0.2		7.4	0.4	
Delay (s)	20.3	17.3	10.7	12.7	20.1	13.5	35.0	34.5		47.0	35.1	
Level of Service	C	B	B	B	C	B	C	C		D	D	
Approach Delay (s)		17.3			19.3			34.7			42.9	
Approach LOS		B			B			C			D	

Intersection Summary			
HCM 2000 Control Delay	20.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.3
Intersection Capacity Utilization	81.7%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

2: Sixth Line & Dundas St E

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	115	1552	185	125	1771	128	236	70	239	305	118
Future Volume (vph)	115	1552	185	125	1771	128	236	70	239	305	118
Lane Group Flow (vph)	121	1634	195	132	2086	135	248	74	252	321	124
Turn Type	pm+pt	NA	Perm	pm+pt	NA	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2		1	6	3	8		7	4	
Permitted Phases	2		2	6		8		8	4		4
Detector Phase	5	2	2	1	6	3	8	8	7	4	4
Switch Phase											
Minimum Initial (s)	7.0	24.0	24.0	7.0	24.0	7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	13.0	31.0	31.0	13.0	31.0	11.0	37.0	37.0	11.0	37.0	37.0
Total Split (s)	19.0	70.0	70.0	19.0	70.0	14.0	37.0	37.0	14.0	37.0	37.0
Total Split (%)	13.6%	50.0%	50.0%	13.6%	50.0%	10.0%	26.4%	26.4%	10.0%	26.4%	26.4%
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	3.0	2.0	2.0	3.0	2.0	1.0	2.0	2.0	1.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	4.0	6.0	6.0	4.0	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?											
Recall Mode	None	C-Max	C-Max	None	C-Max	None	Max	Max	None	Max	Max
v/c Ratio	0.68	0.69	0.24	0.67	0.88	0.59	0.59	0.18	0.88	0.77	0.28
Control Delay	46.1	30.9	5.2	40.3	38.3	45.8	55.4	4.3	70.8	64.2	8.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	46.1	30.9	5.2	40.3	38.3	45.8	55.4	4.3	70.8	64.2	8.9
Queue Length 50th (m)	18.7	134.2	3.9	17.2	195.8	28.3	65.3	0.0	57.0	88.6	0.0
Queue Length 95th (m)	40.9	156.0	18.4	40.6	225.7	46.0	95.1	7.0	#105.7	#129.9	17.0
Internal Link Dist (m)		122.2			1210.7		440.8			65.0	
Turn Bay Length (m)	107.0		80.0	120.0		90.0			76.0		
Base Capacity (vph)	210	2384	824	224	2380	230	420	416	286	419	443
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.58	0.69	0.24	0.59	0.88	0.59	0.59	0.18	0.88	0.77	0.28

Intersection Summary

Cycle Length: 140
Actuated Cycle Length: 140
Offset: 71 (51%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 105
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 2: Sixth Line & Dundas St E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	115	1552	185	125	1771	211	128	236	70	239	305	118
Future Volume (vph)	115	1552	185	125	1771	211	128	236	70	239	305	118
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.3	3.6	3.5	3.3	3.6	3.5	3.3	3.6	3.5	3.3	3.6	3.5
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0		4.0	6.0	6.0	4.0	6.0	6.0
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91		1.00	1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00		1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1711	5036	1553	1728	4992		1727	1900	1526	1726	1881	1554
Flt Permitted	0.06	1.00	1.00	0.08	1.00		0.25	1.00	1.00	0.38	1.00	1.00
Satd. Flow (perm)	109	5036	1553	137	4992		455	1900	1526	688	1881	1554
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	121	1634	195	132	1864	222	135	248	74	252	321	124
RTOR Reduction (vph)	0	0	89	0	10	0	0	0	58	0	0	96
Lane Group Flow (vph)	121	1634	106	132	2076	0	135	248	16	252	321	28
Confl. Peds. (#/hr)	6		3	3		6	4		3	3		4
Confl. Bikes (#/hr)			1									
Heavy Vehicles (%)	2%	3%	1%	1%	2%	2%	1%	0%	3%	1%	1%	1%
Turn Type	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6			8		8	4		4
Actuated Green, G (s)	76.8	66.3	66.3	77.2	66.5		40.7	31.0	31.0	41.3	31.3	31.3
Effective Green, g (s)	76.8	66.3	66.3	77.2	66.5		40.7	31.0	31.0	41.3	31.3	31.3
Actuated g/C Ratio	0.55	0.47	0.47	0.55	0.48		0.29	0.22	0.22	0.29	0.22	0.22
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0		4.0	6.0	6.0	4.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	179	2384	735	197	2371		220	420	337	277	420	347
v/s Ratio Prot	0.05	0.32		c0.05	c0.42		0.04	0.13		c0.06	0.17	
v/s Ratio Perm	0.32		0.07	0.32			0.14		0.01	c0.20		0.02
v/c Ratio	0.68	0.69	0.14	0.67	0.88		0.61	0.59	0.05	0.91	0.76	0.08
Uniform Delay, d1	30.5	28.7	20.8	22.3	33.0		39.4	48.8	42.9	46.5	50.9	43.0
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	9.7	1.6	0.4	8.6	4.9		5.0	6.0	0.3	31.1	12.4	0.4
Delay (s)	40.1	30.3	21.2	30.9	37.9		44.4	54.8	43.2	77.6	63.3	43.4
Level of Service	D	C	C	C	D		D	D	D	E	E	D
Approach Delay (s)		30.0			37.5			49.9			65.0	
Approach LOS		C			D			D			E	

Intersection Summary			
HCM 2000 Control Delay	39.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	22.0
Intersection Capacity Utilization	102.8%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	1.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	4	0	59	15	0	8	23	505	12	6	773	42
Future Vol, veh/h	4	0	59	15	0	8	23	505	12	6	773	42
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	3	3	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	0	-	0	0	-	0	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	0	0	0	0	0	0	0	1	0	0	1	0
Mvmt Flow	4	0	63	16	0	9	24	537	13	6	822	45

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1174	-	434	1018	-	278	867	0	0	553	0	0
Stage 1	857	-	-	595	-	-	-	-	-	-	-	-
Stage 2	317	-	-	423	-	-	-	-	-	-	-	-
Critical Hdwy	7.5	-	6.9	7.5	-	6.9	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.5	-	-	6.5	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.5	-	-	6.5	-	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	-	3.3	3.5	-	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	149	0	576	194	0	725	785	-	-	1027	-	-
Stage 1	323	0	-	463	0	-	-	-	-	-	-	-
Stage 2	674	0	-	585	0	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	141	-	576	165	-	723	785	-	-	1025	-	-
Mov Cap-2 Maneuver	141	-	-	165	-	-	-	-	-	-	-	-
Stage 1	309	-	-	442	-	-	-	-	-	-	-	-
Stage 2	637	-	-	516	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	13.2	22.5	0.6	0.1
HCM LOS	B	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	785	-	-	141	576	165	723	1025	-	-
HCM Lane V/C Ratio	0.031	-	-	0.03	0.109	0.097	0.012	0.006	-	-
HCM Control Delay (s)	9.7	0.2	-	31.3	12	29.1	10	8.5	0	-
HCM Lane LOS	A	A	-	D	B	D	B	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.1	0.4	0.3	0	0	-	-

Intersection	
Int Delay, s/veh	2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	35	38	106	387	542	20
Future Vol, veh/h	35	38	106	387	542	20
Conflicting Peds, #/hr	3	1	2	0	0	2
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	25	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	0	0	0	1	1	25
Mvmt Flow	36	40	110	403	565	21

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1003	296	588	0	-	0
Stage 1	578	-	-	-	-	-
Stage 2	425	-	-	-	-	-
Critical Hdwy	6.8	6.9	4.1	-	-	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	242	706	997	-	-	-
Stage 1	530	-	-	-	-	-
Stage 2	633	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	214	704	995	-	-	-
Mov Cap-2 Maneuver	214	-	-	-	-	-
Stage 1	470	-	-	-	-	-
Stage 2	632	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	18.8	1.9	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	995	-	336	-	-
HCM Lane V/C Ratio	0.111	-	0.226	-	-
HCM Control Delay (s)	9.1	-	18.8	-	-
HCM Lane LOS	A	-	C	-	-
HCM 95th %tile Q(veh)	0.4	-	0.9	-	-

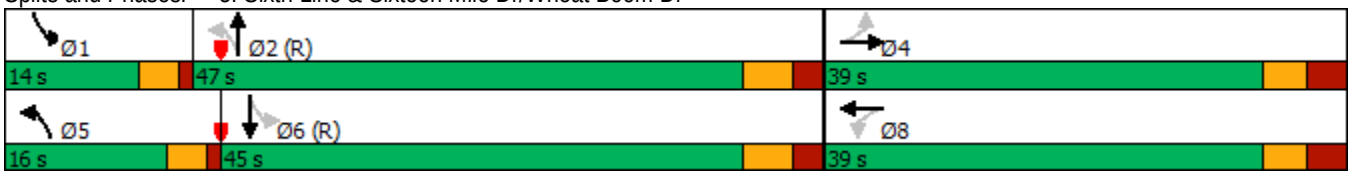
5: Sixth Line & Sixteen Mile Dr/Wheat Boom Dr

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	101	59	19	56	16	269	102	271
Future Volume (vph)	101	59	19	56	16	269	102	271
Lane Group Flow (vph)	106	186	20	73	17	414	107	348
Turn Type	Perm	NA	Perm	NA	pm+pt	NA	pm+pt	NA
Protected Phases		4		8	5	2	1	6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	5	2	1	6
Switch Phase								
Minimum Initial (s)	20.0	20.0	20.0	20.0	7.0	35.0	7.0	35.0
Minimum Split (s)	38.4	38.4	38.4	38.4	11.5	41.1	11.0	41.1
Total Split (s)	39.0	39.0	39.0	39.0	16.0	47.0	14.0	45.0
Total Split (%)	39.0%	39.0%	39.0%	39.0%	16.0%	47.0%	14.0%	45.0%
Yellow Time (s)	3.3	3.3	3.3	3.3	3.0	3.7	3.0	3.7
All-Red Time (s)	3.1	3.1	3.1	3.1	1.0	2.4	1.0	2.4
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.4	6.4	6.4	6.4	4.0	6.1	4.0	6.1
Lead/Lag					Lead	Lag	Lead	Lag
Lead-Lag Optimize?								
Recall Mode	Max	Max	Max	Max	None	C-Max	None	C-Max
v/c Ratio	0.25	0.30	0.05	0.13	0.03	0.28	0.20	0.20
Control Delay	26.8	12.5	23.8	20.6	9.8	15.1	10.9	13.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	26.8	12.5	23.8	20.6	9.8	15.1	10.9	13.6
Queue Length 50th (m)	15.8	11.3	2.8	8.5	1.4	21.4	9.4	15.9
Queue Length 95th (m)	29.8	28.3	8.3	18.9	4.4	33.5	17.4	30.2
Internal Link Dist (m)		26.8		207.1		202.5		1327.3
Turn Bay Length (m)	17.0		54.0		60.0		75.0	
Base Capacity (vph)	423	620	366	581	650	1482	550	1767
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.25	0.30	0.05	0.13	0.03	0.28	0.19	0.20

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 95
Control Type: Actuated-Coordinated

Splits and Phases: 5: Sixth Line & Sixteen Mile Dr/Wheat Boom Dr



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	101	59	118	19	56	13	16	269	124	102	271	60
Future Volume (vph)	101	59	118	19	56	13	16	269	124	102	271	60
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.3	3.6	3.5	3.3	3.6	3.5	3.3	3.6	3.5	3.3	3.6	3.5
Total Lost time (s)	6.4	6.4		6.4	6.4		4.0	6.1		4.0	6.1	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	0.99		1.00	1.00		1.00	0.99		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.90		1.00	0.97		1.00	0.95		1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1739	1683		1742	1756		1742	3359		1728	3468	
Flt Permitted	0.71	1.00		0.61	1.00		0.54	1.00		0.45	1.00	
Satd. Flow (perm)	1299	1683		1125	1756		996	3359		810	3468	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	106	62	124	20	59	14	17	283	131	107	285	63
RTOR Reduction (vph)	0	72	0	0	9	0	0	53	0	0	16	0
Lane Group Flow (vph)	106	114	0	20	64	0	17	361	0	107	332	0
Confl. Peds. (#/hr)	4		2	2		4	2					2
Confl. Bikes (#/hr)									1			
Heavy Vehicles (%)	0%	2%	0%	0%	4%	8%	0%	2%	1%	1%	1%	0%
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	32.6	32.6		32.6	32.6		45.3	42.5		54.9	48.1	
Effective Green, g (s)	32.6	32.6		32.6	32.6		45.3	42.5		54.9	48.1	
Actuated g/C Ratio	0.33	0.33		0.33	0.33		0.45	0.42		0.55	0.48	
Clearance Time (s)	6.4	6.4		6.4	6.4		4.0	6.1		4.0	6.1	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	423	548		366	572		472	1427		521	1668	
v/s Ratio Prot		0.07			0.04		0.00	c0.11		c0.02	0.10	
v/s Ratio Perm	c0.08			0.02			0.02			0.10		
v/c Ratio	0.25	0.21		0.05	0.11		0.04	0.25		0.21	0.20	
Uniform Delay, d1	24.7	24.4		23.1	23.6		15.1	18.5		11.0	14.9	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.4	0.9		0.3	0.4		0.0	0.4		0.2	0.3	
Delay (s)	26.2	25.2		23.4	24.0		15.1	19.0		11.2	15.2	
Level of Service	C	C		C	C		B	B		B	B	
Approach Delay (s)		25.6			23.9			18.8			14.2	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM 2000 Control Delay	19.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.25		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	16.5
Intersection Capacity Utilization	75.4%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	3	75	71	29	6	1
Future Vol, veh/h	3	75	71	29	6	1
Conflicting Peds, #/hr	7	0	0	7	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	79	79	79	79	79	79
Heavy Vehicles, %	0	2	4	0	0	100
Mvmt Flow	4	95	90	37	8	1

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	134	0	-	0	219	116
Stage 1	-	-	-	-	116	-
Stage 2	-	-	-	-	103	-
Critical Hdwy	4.1	-	-	-	6.4	7.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	4.2
Pot Cap-1 Maneuver	1463	-	-	-	774	727
Stage 1	-	-	-	-	914	-
Stage 2	-	-	-	-	926	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1455	-	-	-	764	723
Mov Cap-2 Maneuver	-	-	-	-	764	-
Stage 1	-	-	-	-	907	-
Stage 2	-	-	-	-	921	-

Approach	EB	WB	SB
HCM Control Delay, s	0.3	0	9.8
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1455	-	-	-	758
HCM Lane V/C Ratio	0.003	-	-	-	0.012
HCM Control Delay (s)	7.5	0	-	-	9.8
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑	↑↑↑↳			↱
Traffic Vol, veh/h	0	1941	1984	37	0	18
Future Vol, veh/h	0	1941	1984	37	0	18
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	2043	2088	39	0	19

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	1064
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	7.1
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.9
Pot Cap-1 Maneuver	0	-	-	-	0	191
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	-	-	-	-	-	191
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	25.9
HCM LOS			D

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	191
HCM Lane V/C Ratio	-	-	-	0.099
HCM Control Delay (s)	-	-	-	25.9
HCM Lane LOS	-	-	-	D
HCM 95th %tile Q(veh)	-	-	-	0.3

Intersection	
Int Delay, s/veh	3.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	47	20	53	56	33	10
Future Vol, veh/h	47	20	53	56	33	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	49	21	55	58	34	10

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	70	0	228	60
Stage 1	-	-	-	-	60	-
Stage 2	-	-	-	-	168	-
Critical Hdwy	-	-	4.1	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1544	-	765	1011
Stage 1	-	-	-	-	968	-
Stage 2	-	-	-	-	867	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1544	-	737	1011
Mov Cap-2 Maneuver	-	-	-	-	737	-
Stage 1	-	-	-	-	968	-
Stage 2	-	-	-	-	835	-

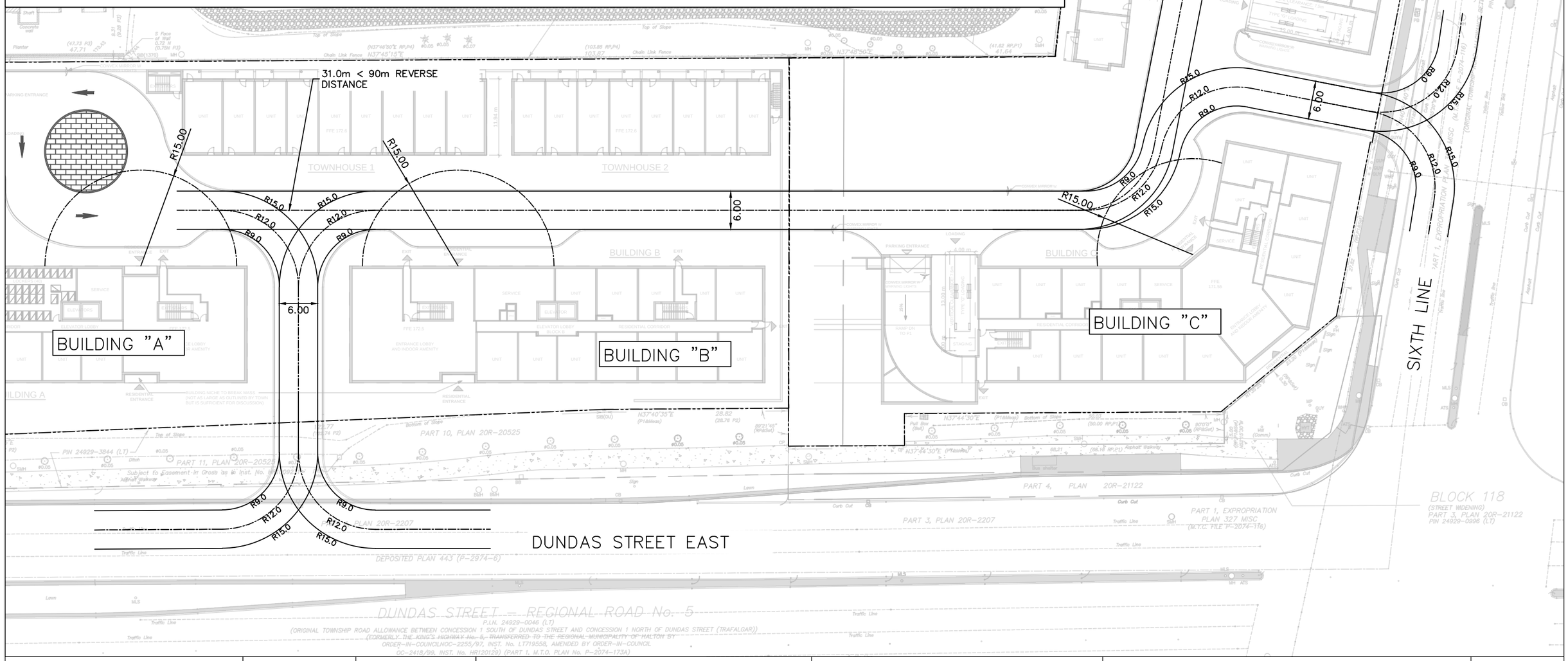
Approach	EB	WB	NB
HCM Control Delay, s	0	3.6	9.9
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	787	-	-	1544	-
HCM Lane V/C Ratio	0.057	-	-	0.036	-
HCM Control Delay (s)	9.9	-	-	7.4	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.2	-	-	0.1	-

APPENDIX H

Functional Design Review

ONTARIO BUILDING CODE – FIRE ACCESS ROUTE:
PER ONTARIO BUILDING CODE SECTION 3.2.5.5:
1. ACCESS ROUTES REQUIRE THAT THE PRINCIPAL ENTRANCES ARE LOCATED NOT LESS THAN 3m AND NOT MORE THAN 15m FROM THE CLOSEST PORTION OF THE ACCESS ROUTE REQUIRED FOR FIRE DEPARTMENT USE, MEASURED HORIZONTALLY FROM THE FACE OF THE BUILDING.
2. FIRE HYDRANTS TO BE LOCATED AS SPECIFIED.
PER ONTARIO BUILDING CODE SECTION 3.2.5.6
3. A PORTION OF A ROADWAY OR YARD PROVIDED AS A REQUIRED ACCESS ROUTE FOR FIRE DEPARTMENT USE SHALL:
a. HAVE A CLEAR WIDTH NOT LESS THAN 6m, UNLESS IT CAN BE SHOWN THAT LESSER WIDTHS ARE SATISFACTORY;
b. HAVE A CENTRELINE RADIUS NOT LESS THAN 12m;
c. HAVE AN OVERHEAD CLEARANCE NOT LESS THAN 5m;
d. HAVE A CHANGE OF GRADIENT NOT MORE THAN 1 IN 12.5 OVER A MINIMUM DISTANCE OF 15m;
e. BE DESIGNED TO SUPPORT THE EXPECTED LOADS IMPOSED BY FIREFIGHTING EQUIPMENT AND BE SURFACED WITH CONCRETE, ASPHALT OR OTHER MATERIAL DESIGNED TO PERMIT ACCESSIBILITY UNDER ALL CLIMATIC CONDITIONS;
f. HAVE TURNAROUND FACILITIES FOR ANY DEAD–END PORTION OF THE ACCESS ROUTE MORE THAN 90m LONG AND;
g. BE CONNECTED WITH A PUBLIC THROUGHFARE.



PLOT DATE: October 10, 2024

DRAWN BY: CNELSON

LEA Consulting Ltd.
Consulting Engineers and Planners
www.LEA.ca

Project No. 24030

Date Oct. 01, 2024

DUNDAS STREET E & SIXTH LINE
OAKVILLE ONTARIO

6 0 6 12 18m
1:600

SITE PLAN – FIRE ROUTE REVIEW

Drawing No. 001

DRAWING NAME: F:\24030\Drafting\24030 – WF007 ultimate.dwg

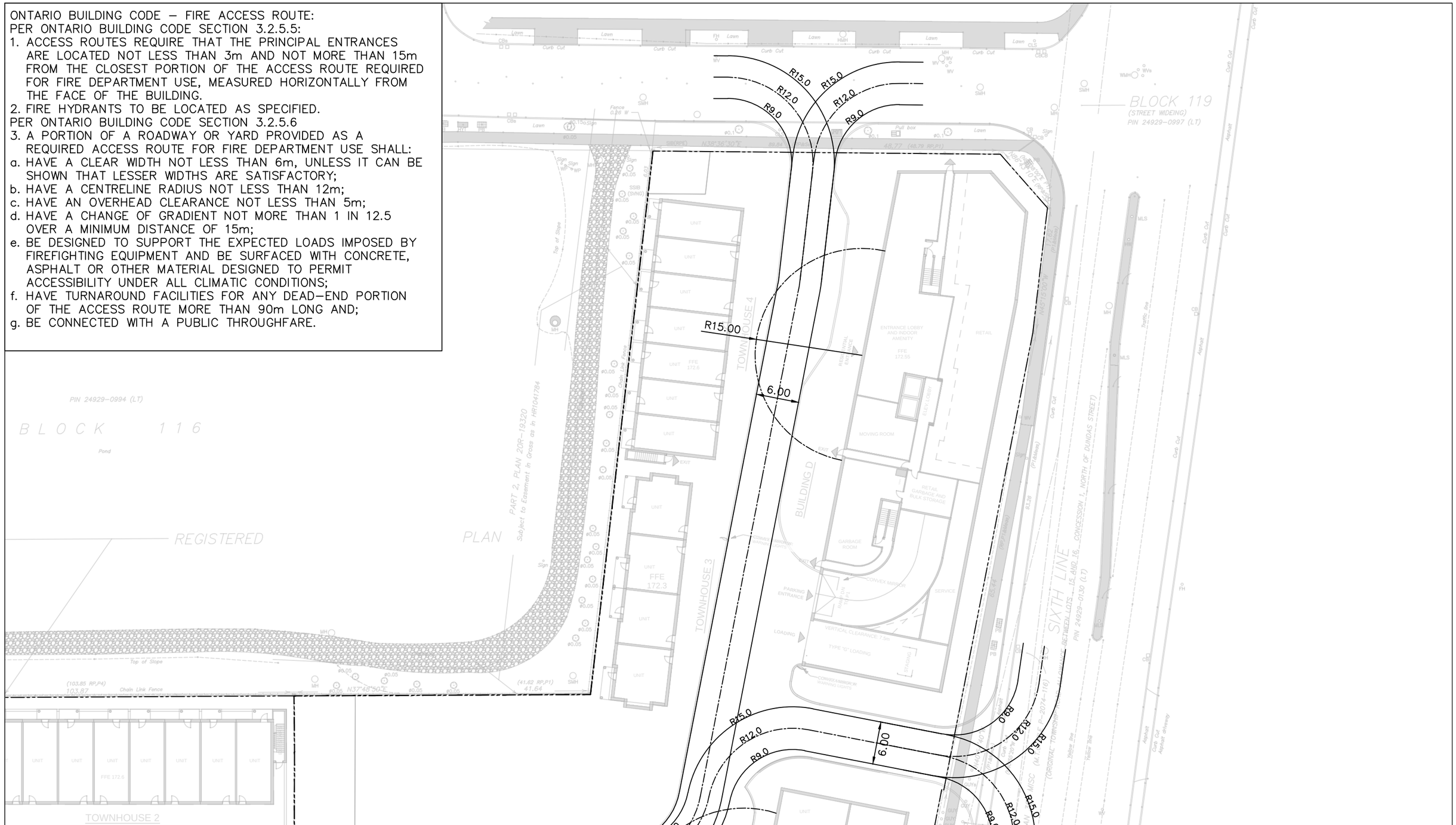
ONTARIO BUILDING CODE – FIRE ACCESS ROUTE:
PER ONTARIO BUILDING CODE SECTION 3.2.5.5:

1. ACCESS ROUTES REQUIRE THAT THE PRINCIPAL ENTRANCES ARE LOCATED NOT LESS THAN 3m AND NOT MORE THAN 15m FROM THE CLOSEST PORTION OF THE ACCESS ROUTE REQUIRED FOR FIRE DEPARTMENT USE, MEASURED HORIZONTALLY FROM THE FACE OF THE BUILDING.
2. FIRE HYDRANTS TO BE LOCATED AS SPECIFIED.

PER ONTARIO BUILDING CODE SECTION 3.2.5.6

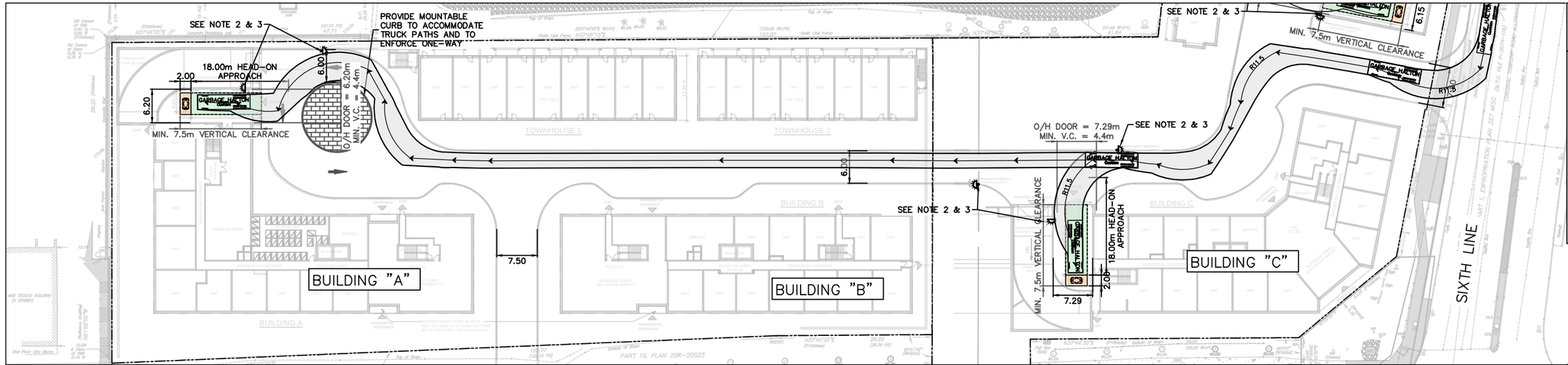
3. A PORTION OF A ROADWAY OR YARD PROVIDED AS A REQUIRED ACCESS ROUTE FOR FIRE DEPARTMENT USE SHALL:

a. HAVE A CLEAR WIDTH NOT LESS THAN 6m, UNLESS IT CAN BE SHOWN THAT LESSER WIDTHS ARE SATISFACTORY;
b. HAVE A CENTRELINE RADIUS NOT LESS THAN 12m;
c. HAVE AN OVERHEAD CLEARANCE NOT LESS THAN 5m;
d. HAVE A CHANGE OF GRADIENT NOT MORE THAN 1 IN 12.5 OVER A MINIMUM DISTANCE OF 15m;
e. BE DESIGNED TO SUPPORT THE EXPECTED LOADS IMPOSED BY FIREFIGHTING EQUIPMENT AND BE SURFACED WITH CONCRETE, ASPHALT OR OTHER MATERIAL DESIGNED TO PERMIT ACCESSIBILITY UNDER ALL CLIMATIC CONDITIONS;
f. HAVE TURNAROUND FACILITIES FOR ANY DEAD–END PORTION OF THE ACCESS ROUTE MORE THAN 90m LONG AND;
g. BE CONNECTED WITH A PUBLIC THROUGHFARE.



LEA Consulting Ltd. Consulting Engineers and Planners www.LEA.ca	Project No. 24030 Date Oct. 01, 2024	DUNDAS STREET E & SIXTH LINE OAKVILLE ONTARIO 5 0 5 10 15m 1:500	SITE PLAN – FIRE ROUTE REVIEW	Drawing No. 002

PLOT DATE: October 10, 2024
DRAWN BY: CNELSON
DRAWING NAME: F:\24030\Drafting\24030 – WF007 ultimate.dwg



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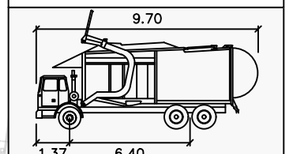
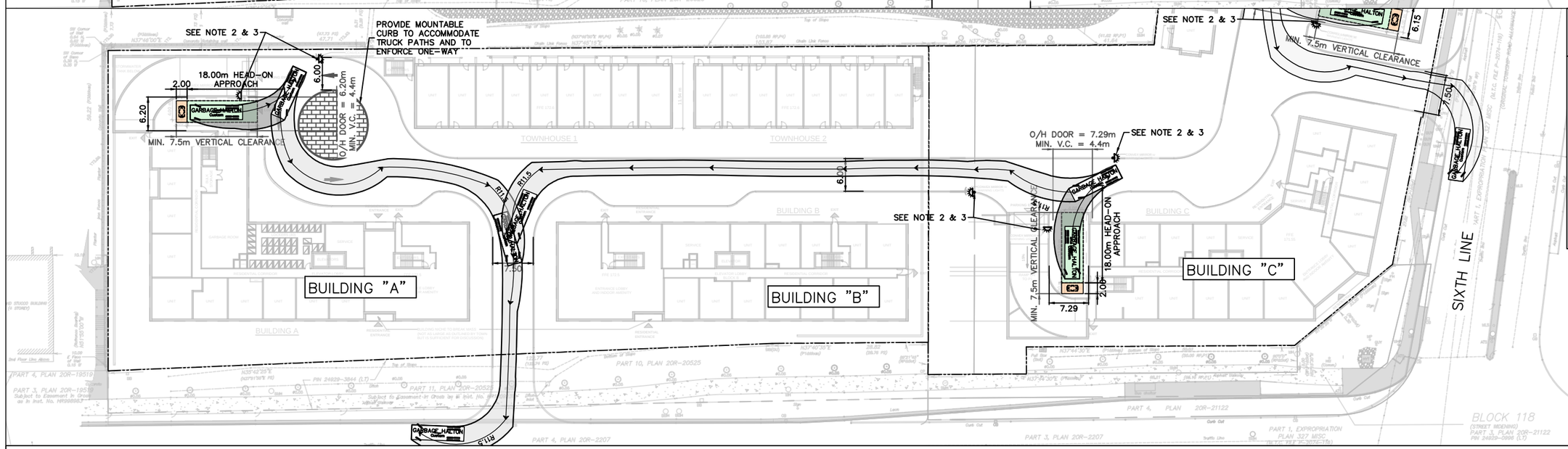


GARBAGE HALTON

	Meters
Width	: 2.70
Track	: 2.70
Lock to Lock Time	: 6.0
Steering Angle	: 33.8



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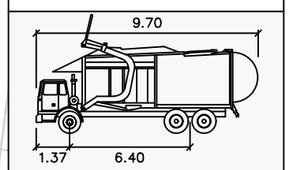

GARBAGE HALTON

	Meters
Width	: 2.70
Track	: 2.70
Lock to Lock Time	: 6.0
Steering Angle	: 33.8

NOTE:

1. A TRAINED ON-SITE STAFF TO BE AVAILABLE TO MANEUVER THE WASTE COLLECTION BINS TO THE FRONT OF THE TRUCK FOR THE COLLECTION DRIVER, AND ACT AS A FLAGMAN WHEN THE TRUCK IS REVERSING. IN THE EVENT WHEN THE ON-SITE STAFF MEMBER IS UNAVAILABLE AT THE TIME THE COLLECTION VEHICLE ARRIVES AT THE SITE, THE COLLECTION VEHICLE WILL LEAVE THE SITE AND NOT RETURN UNTIL THE NEXT SCHEDULED COLLECTION DAY.
2. FLASHING WARNING LIGHT TO BE ACTIVATED WHEN TRUCKS ENTER AND EXIT THE SITE. THE SYSTEM TO REMAIN ACTIVATED DURING THE GARBAGE COLLECTION ACTIVITY AND UNTIL THE TRUCK EXITS THE SITE. WARNING SIGN TO BE MOUNTED BELOW THE FLASH LIGHT.

PER REGION OF HALTON WASTE COLLECTION GUIDELINE

3. ALL ROADWAYS, INCLUDING PUBLIC LANEWAYS, SHALL HAVE A MIN. WIDTH OF 6.0m
4. TRUCK MUST HAVE A MIN. TURNING RADII OF 11.5m FOR THE FRONT LOADING GARBAGE TRUCK
5. SLOPE OF THE ACCESS ROUTE SHALL NOT EXCEED 8% AND SLOPE OF LOADING AREA SHALL NOT EXCEED 2%.
6. A MIN. OF 18m HEAD-ON APPROACH TO THE COLLECTION POINT
7. MIN. OVERHEAD CLEARANCE OF 7.5m

WATCH FOR TURNING TRUCKS WHEN FLASHING

(600x300)
BLACK LEGEND & BORDER,
WHITE REFL. BACKGROUND.

PLOT DATE: October 10, 2024

DRAWN BY: CNELSON

LEA Consulting Ltd.
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Project No. 24030

Date Oct. 01, 2024

DUNDAS STREET E & SIXTH LINE
OAKVILLE ONTARIO

8 0 8 16 24
1:800

GROUND FLOOR LOADING REVIEW
REGION FRONT LOADER GARBAGE TRUCK
ENTRY & EXIT PATHS

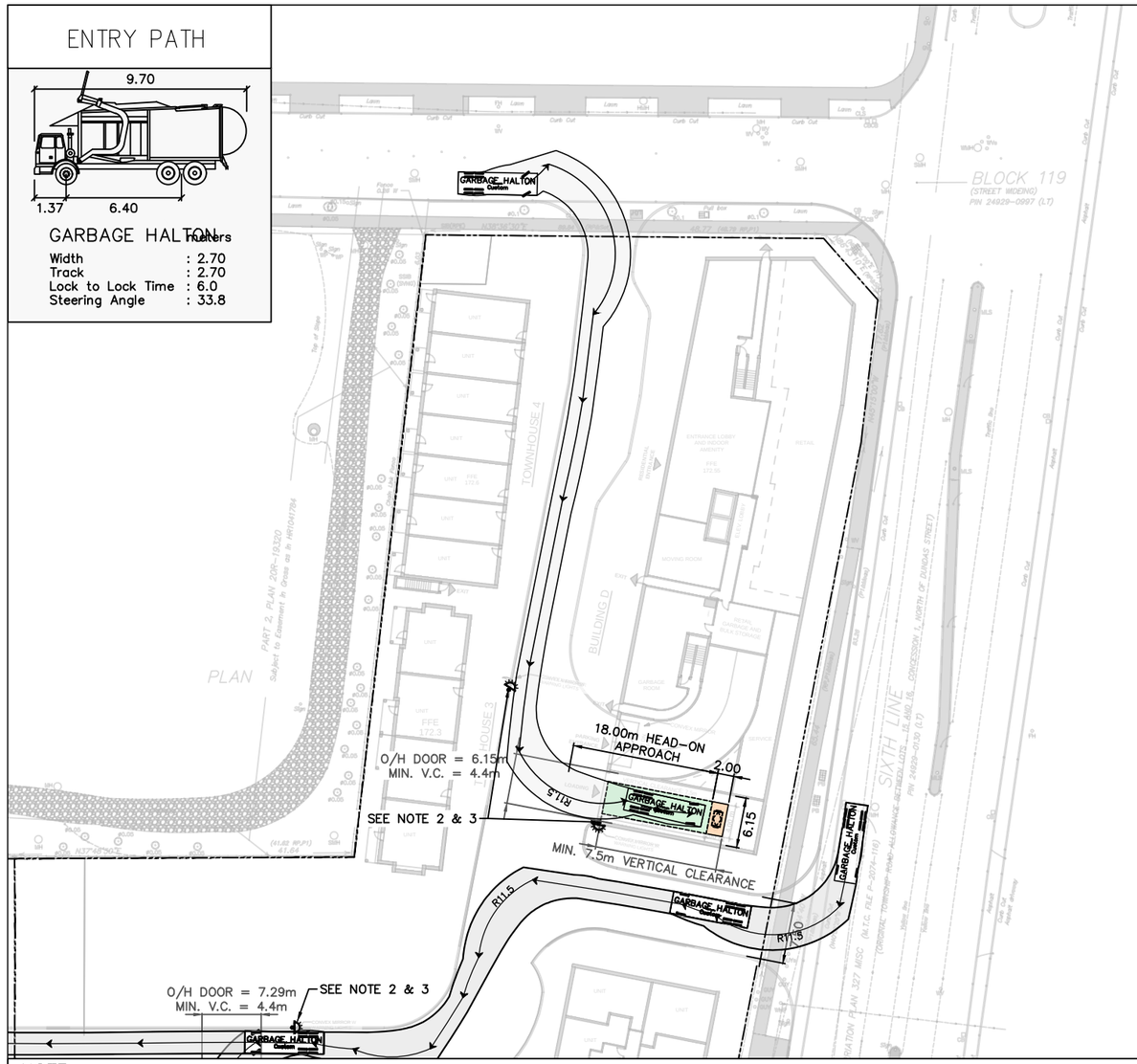
Drawing No. 003

DRAWING NAME: F:\24030\Drafting\24030 – WF007 ultimate.dwg

ENTRY PATH

GARBAGE HALTON

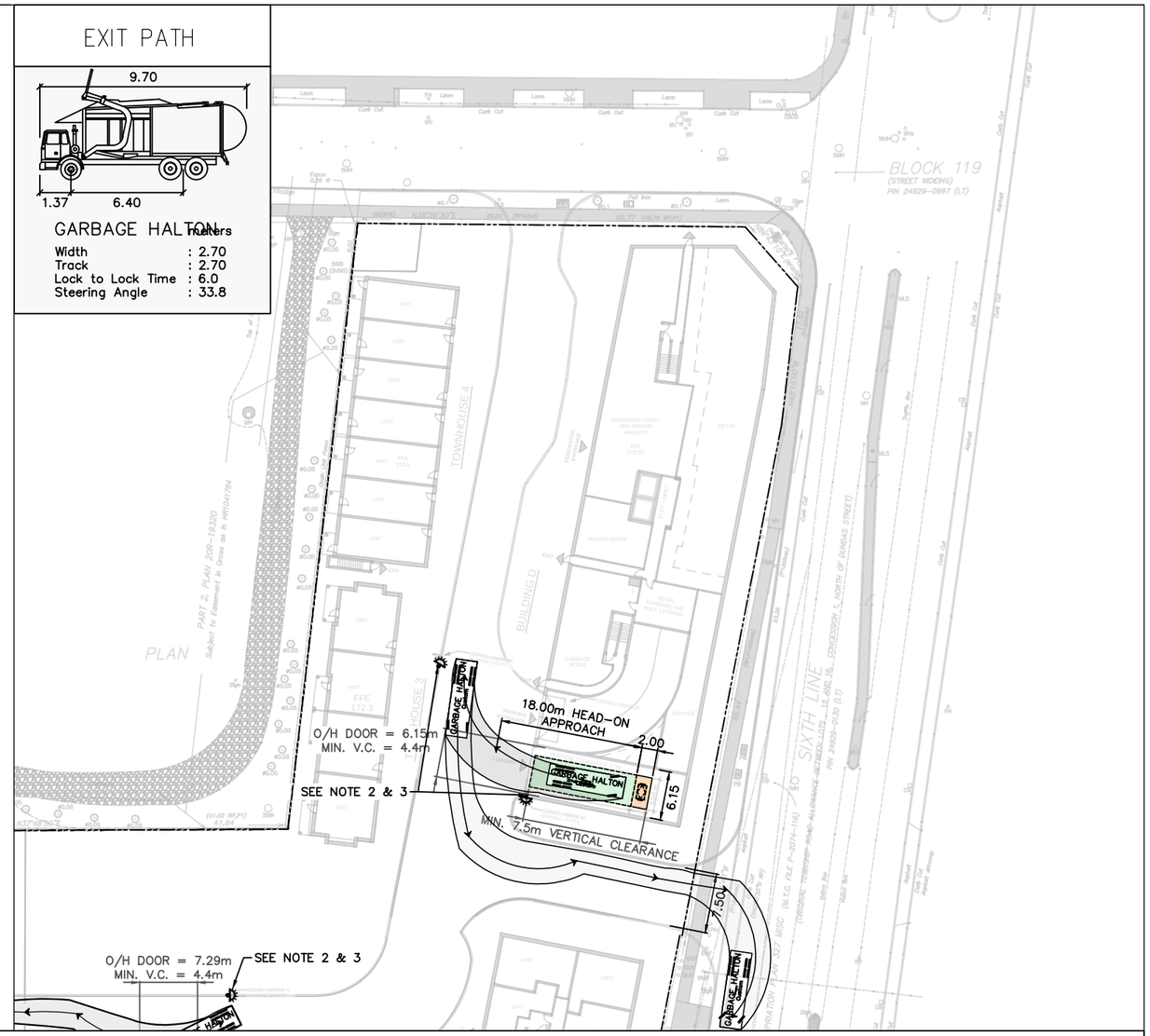
	Meters
Width	: 2.70
Track	: 2.70
Lock to Lock Time	: 6.0
Steering Angle	: 33.8



EXIT PATH

GARBAGE HALTON

	Meters
Width	: 2.70
Track	: 2.70
Lock to Lock Time	: 6.0
Steering Angle	: 33.8



NOTE:

1. A TRAINED ON-SITE STAFF TO BE AVAILABLE TO MANEUVER THE WASTE COLLECTION BINS TO THE FRONT OF THE TRUCK FOR THE COLLECTION DRIVER, AND ACT AS A FLAGMAN WHEN THE TRUCK IS REVERSING. IN THE EVENT WHEN THE ON-SITE STAFF MEMBER IS UNAVAILABLE AT THE TIME THE COLLECTION VEHICLE ARRIVES AT THE SITE, THE COLLECTION VEHICLE WILL LEAVE THE SITE AND NOT RETURN UNTIL THE NEXT SCHEDULED COLLECTION DAY.
2. FLASHING WARNING LIGHT TO BE ACTIVATED WHEN TRUCKS ENTER AND EXIT THE SITE. THE SYSTEM TO REMAIN ACTIVATED DURING THE GARBAGE COLLECTION ACTIVITY AND UNTIL THE TRUCK EXITS THE SITE. WARNING SIGN TO BE MOUNTED BELOW THE FLASH LIGHT.

PER REGION OF HALTON WASTE COLLECTION GUIDELINE

3. ALL ROADWAYS, INCLUDING PUBLIC LANEWAYS, SHALL HAVE A MIN. WIDTH OF 6.0m
4. TRUCK MUST HAVE A MIN. TURNING RADII OF 11.5m FOR THE FRONT LOADING GARBAGE TRUCK
5. SLOPE OF THE ACCESS ROUTE SHALL NOT EXCEED 8% AND SLOPE OF LOADING AREA SHALL NOT EXCEED 2%.
6. A MIN. OF 18m HEAD-ON APPROACH TO THE COLLECTION POINT
7. MIN. OVERHEAD CLEARANCE OF 7.5m

WATCH FOR TURNING TRUCKS WHEN FLASHING

(600x300)
BLACK LEGEND & BORDER,
WHITE REFL. BACKGROUND.

PLOT DATE: October 10, 2024

DRAWN BY: CNELSON

LEA Consulting Ltd.
Consulting Engineers and Planners
www.LEA.ca

Project No. 24030

Date Oct. 01, 2024

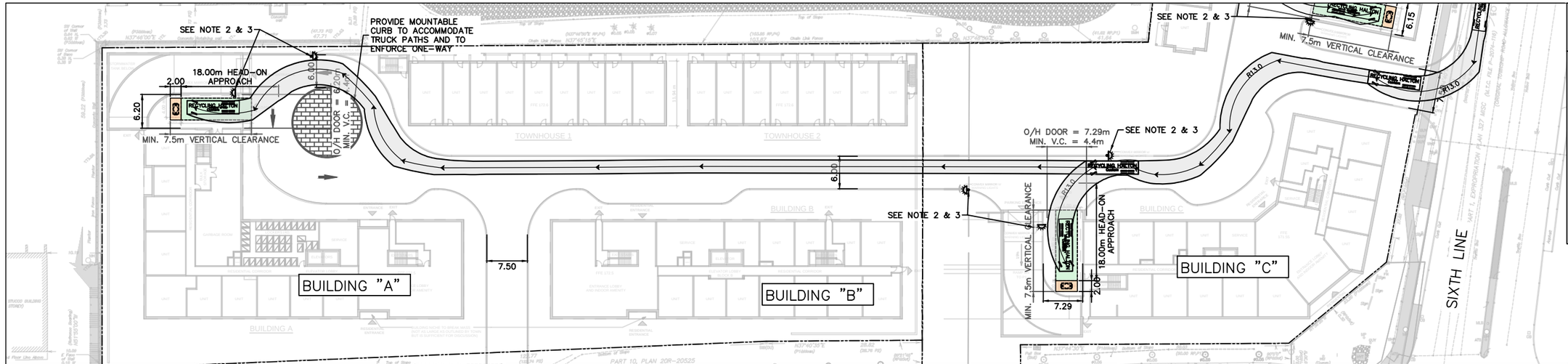
DUNDAS STREET E & SIXTH LINE
OAKVILLE ONTARIO

7 0 7 14 21m
1:700

GROUND FLOOR LOADING REVIEW
REGION FRONT LOADER GARBAGE TRUCK
ENTRY & EXIT PATHS

Drawing No. 004

DRAWING NAME: F:\24030\Drafting\24030 – WF007 ultimate.dwg



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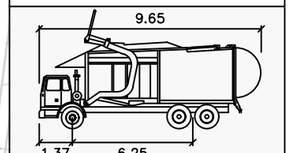
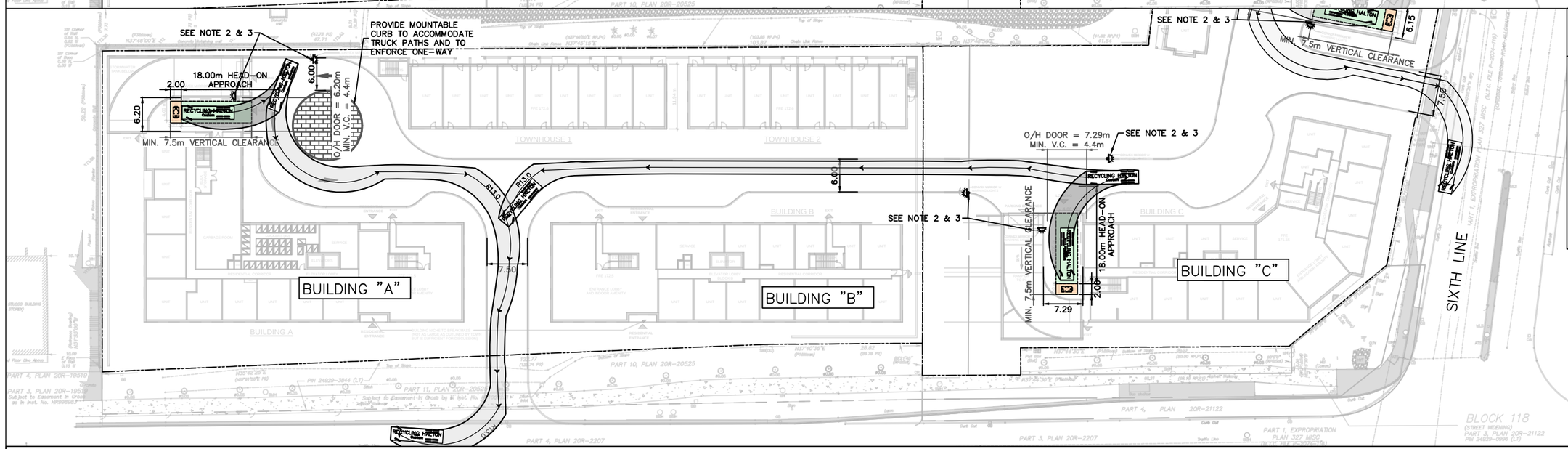
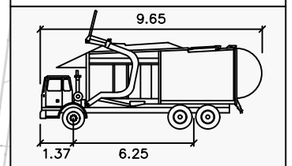


RECYCLING HALTON

	Metres
Width	: 2.44
Track	: 2.44
Lock to Lock Time	: 6.0
Steering Angle	: 28.7



EXIT PATH



RECYCLING HALTON

	Metres
Width	: 2.44
Track	: 2.44
Lock to Lock Time	: 6.0
Steering Angle	: 28.7

NOTE:

1. A TRAINED ON-SITE STAFF TO BE AVAILABLE TO MANEUVER THE WASTE COLLECTION BINS TO THE FRONT OF THE TRUCK FOR THE COLLECTION DRIVER, AND ACT AS A FLAGMAN WHEN THE TRUCK IS REVERSING. IN THE EVENT WHEN THE ON-SITE STAFF MEMBER IS UNAVAILABLE AT THE TIME THE COLLECTION VEHICLE ARRIVES AT THE SITE, THE COLLECTION VEHICLE WILL LEAVE THE SITE AND NOT RETURN UNTIL THE NEXT SCHEDULED COLLECTION DAY.
2. FLASHING WARNING LIGHT TO BE ACTIVATED WHEN TRUCKS ENTER AND EXIT THE SITE. THE SYSTEM TO REMAIN ACTIVATED DURING THE GARBAGE COLLECTION ACTIVITY AND UNTIL THE TRUCK EXITS THE SITE. WARNING SIGN TO BE MOUNTED BELOW THE FLASH LIGHT.

PER REGION OF HALTON WASTE COLLECTION GUIDELINE

3. ALL ROADWAYS, INCLUDING PUBLIC LANEWAYS, SHALL HAVE A MIN. WIDTH OF 6.0m
4. TRUCK MUST HAVE A MIN. TURNING RADII OF 11.5m FOR THE FRONT LOADING GARBAGE TRUCK
5. SLOPE OF THE ACCESS ROUTE SHALL NOT EXCEED 8% AND SLOPE OF LOADING AREA SHALL NOT EXCEED 2%.
6. A MIN. OF 18m HEAD-ON APPROACH TO THE COLLECTION POINT
7. MIN. OVERHEAD CLEARANCE OF 7.5m

WATCH FOR TURNING TRUCKS WHEN FLASHING

(600x300)
BLACK LEGEND & BORDER,
WHITE REFL. BACKGROUND.

PLOT DATE: October 10, 2024

DRAWN BY: CNELSON

LEA Consulting Ltd.
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Project No. 24030

Date Oct. 01, 2024

DUNDAS STREET E & SIXTH LINE
OAKVILLE ONTARIO

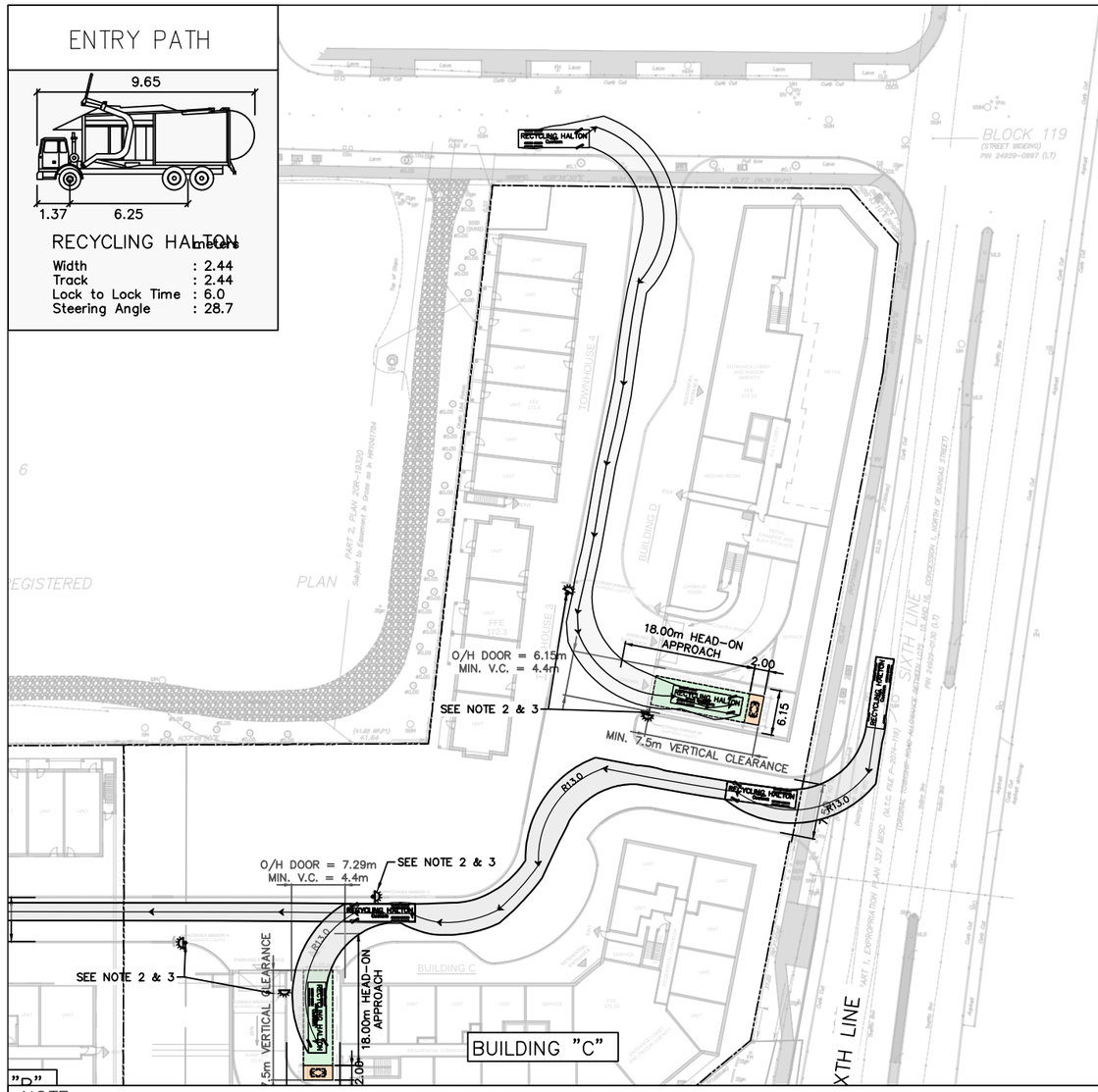
8 0 8 16 24
1:800

GROUND FLOOR LOADING REVIEW
REGION RECYCLING TRUCK
ENTRY & EXIT PATHS

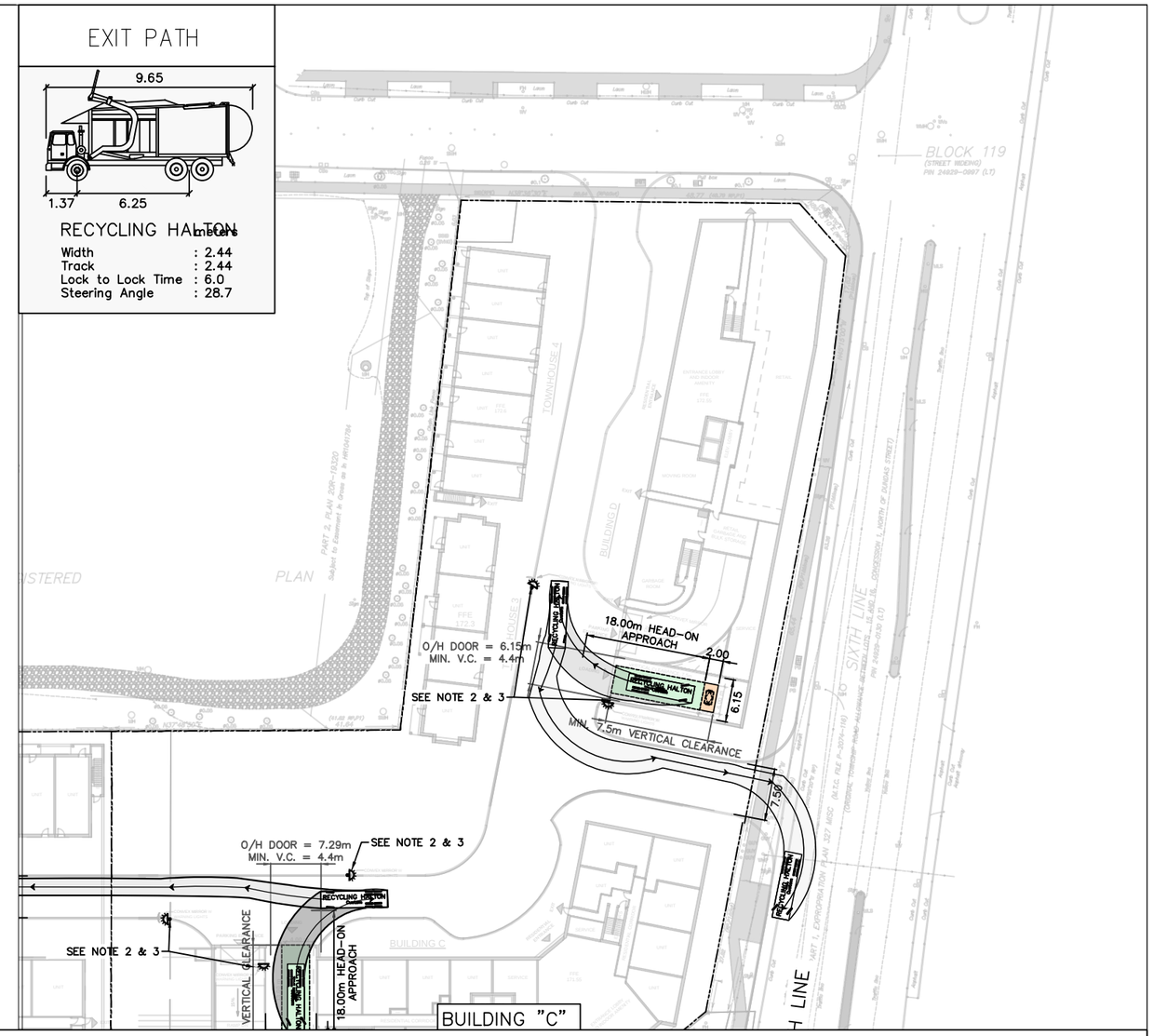
Drawing No. 005

DRAWING NAME: F:\24030\Drafting\24030 – WF007 ultimate.dwg

ENTRY PATH



EXIT PATH



NOTE:

1. A TRAINED ON-SITE STAFF TO BE AVAILABLE TO MANEUVER THE WASTE COLLECTION BINS TO THE FRONT OF THE TRUCK FOR THE COLLECTION DRIVER, AND ACT AS A FLAGMAN WHEN THE TRUCK IS REVERSING. IN THE EVENT WHEN THE ON-SITE STAFF MEMBER IS UNAVAILABLE AT THE TIME THE COLLECTION VEHICLE ARRIVES AT THE SITE, THE COLLECTION VEHICLE WILL LEAVE THE SITE AND NOT RETURN UNTIL THE NEXT SCHEDULED COLLECTION DAY.
2. FLASHING WARNING LIGHT TO BE ACTIVATED WHEN TRUCKS ENTER AND EXIT THE SITE. THE SYSTEM TO REMAIN ACTIVATED DURING THE GARBAGE COLLECTION ACTIVITY AND UNTIL THE TRUCK EXITS THE SITE. WARNING SIGN TO BE MOUNTED BELOW THE FLASH LIGHT.

PER REGION OF HALTON WASTE COLLECTION GUIDELINE

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4. TRUCK MUST HAVE A MIN. TURNING RADII OF 11.5m FOR THE FRONT LOADING GARBAGE TRUCK
5. SLOPE OF THE ACCESS ROUTE SHALL NOT EXCEED 8% AND SLOPE OF LOADING AREA SHALL NOT EXCEED 2%.
6. A MIN. OF 18m HEAD-ON APPROACH TO THE COLLECTION POINT
7. MIN. OVERHEAD CLEARANCE OF 7.5m

WATCH FOR TURNING TRUCKS WHEN FLASHING

(600x300)
BLACK LEGEND & BORDER,
WHITE REFL. BACKGROUND.

PLOT DATE: October 10, 2024

DRAWN BY: CNELSON

LEA Consulting Ltd.
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Project No. 24030

Date Oct. 01, 2024

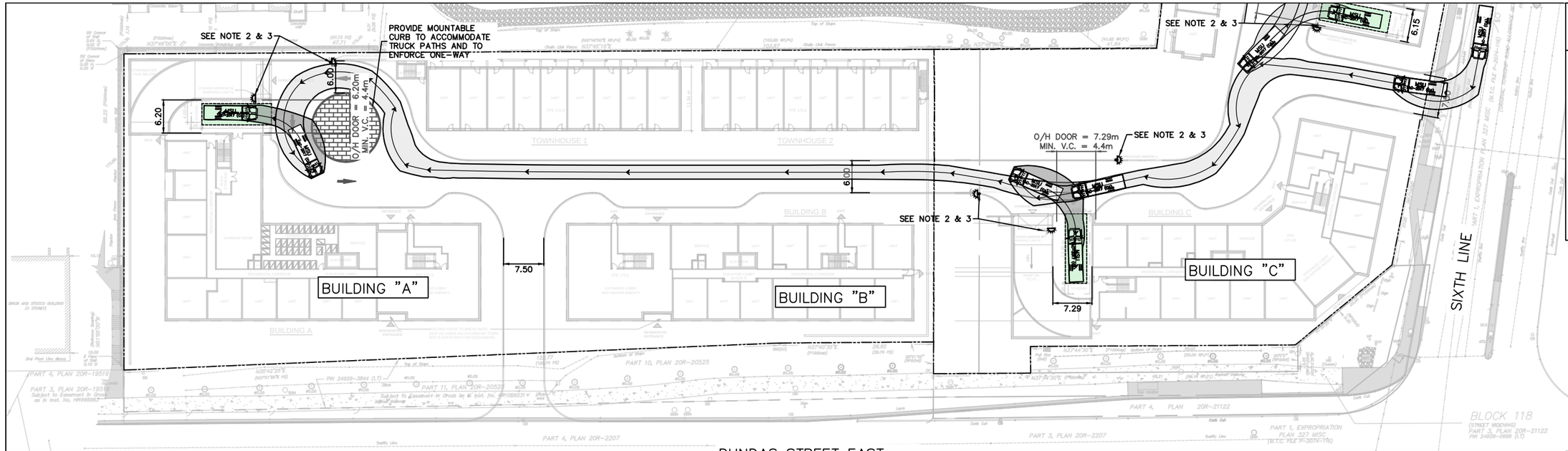
DUNDAS STREET E & SIXTH LINE
OAKVILLE ONTARIO

8 0 8 16 24
1:800

GROUND FLOOR LOADING REVIEW
REGION RECYCLING TRUCK
ENTRY & EXIT PATHS

Drawing No. 006

DRAWING NAME: F:\24030\Drafting\24030 – WF007 ultimate.dwg



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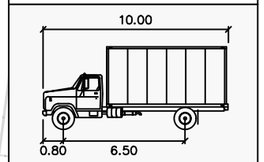
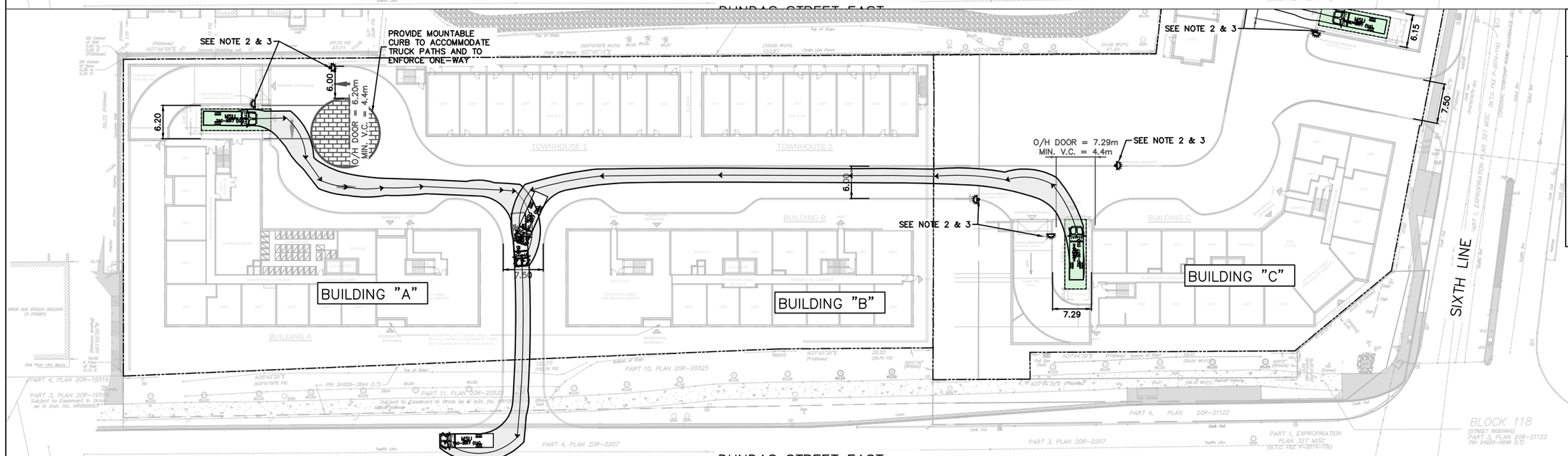


MSU

	meters
Width	: 2.60
Track	: 2.60
Lock to Lock Time	: 6.0
Steering Angle	: 40.2



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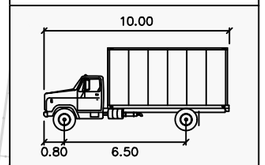

MSU

	meters
Width	: 2.60
Track	: 2.60
Lock to Lock Time	: 6.0
Steering Angle	: 40.2

NOTE:
1. A TRAINED ON-SITE STAFF TO BE AVAILABLE WHEN TRUCK IS REVERSING.
2. FLASHING WARNING LIGHT TO BE ACTIVATED WHEN TRUCKS ENTER AND EXIT THE SITE. THE SYSTEM TO REMAIN ACTIVATED DURING THE GARBAGE COLLECTION ACTIVITY AND UNTIL THE TRUCK EXITS THE SITE.
3. WARNING SIGN TO BE MOUNTED BELOW THE FLASH LIGHT.

WATCH FOR TURNING TRUCKS WHEN FLASHING

(600x300)
BLACK LEGEND & BORDER,
WHITE REFL. BACKGROUND.

PLOT DATE: October 10, 2024

DRAWN BY: CNELSON

LEA Consulting Ltd.
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Project No. 24030

Date Oct. 01, 2024

DUNDAS STREET E & SIXTH LINE
OAKVILLE ONTARIO

8 0 8 16 24
1:800

GROUND FLOOR LOADING REVIEW
MSU (DELIVERY) TRUCK
ENTRY & EXIT PATHS

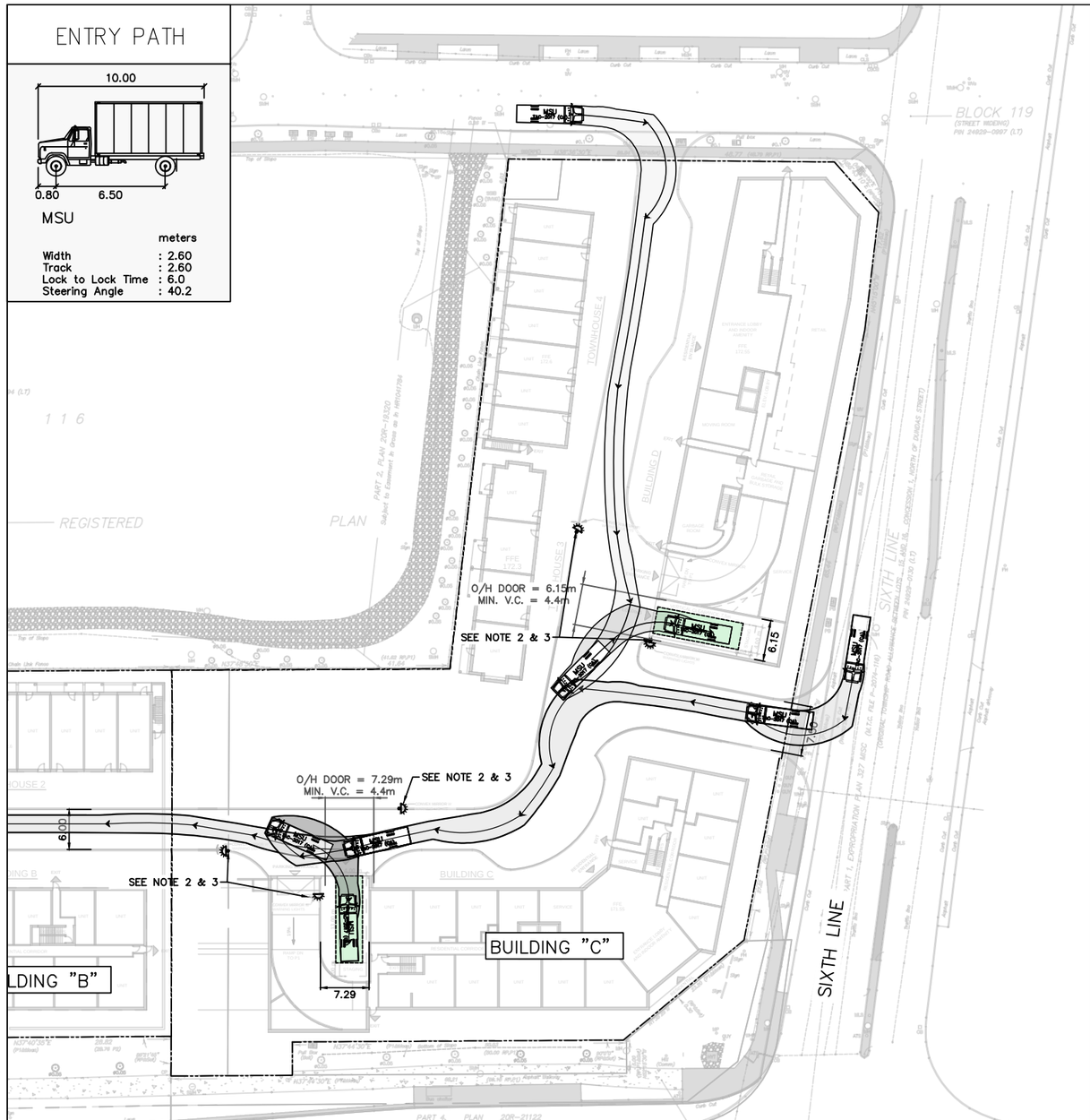
Drawing No. 007

DRAWING NAME: F:\24030\Drafting\24030 – WF007 ultimate.dwg

ENTRY PATH

MSU

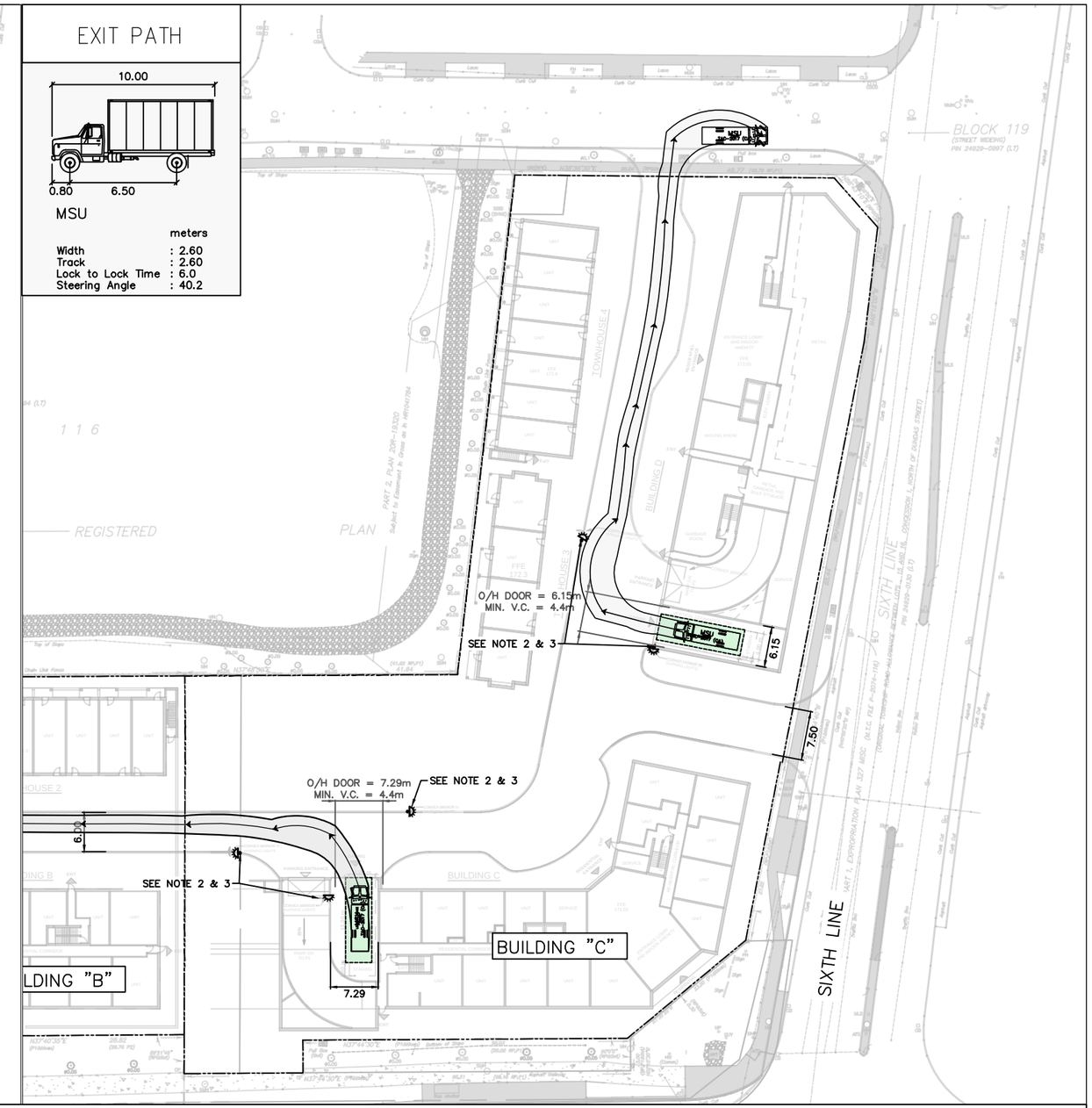
	meters
Width	: 2.60
Track	: 2.60
Lock to Lock Time	: 6.0
Steering Angle	: 40.2



EXIT PATH

MSU

	meters
Width	: 2.60
Track	: 2.60
Lock to Lock Time	: 6.0
Steering Angle	: 40.2



NOTE:
1. A TRAINED ON-SITE STAFF TO BE AVAILABLE WHEN TRUCK IS REVERSING.
2. FLASHING WARNING LIGHT TO BE ACTIVATED WHEN TRUCKS ENTER AND EXIT THE SITE. THE SYSTEM TO REMAIN ACTIVATED DURING THE GARBAGE COLLECTION ACTIVITY AND UNTIL THE TRUCK EXITS THE SITE.
3. WARNING SIGN TO BE MOUNTED BELOW THE FLASH LIGHT.

WATCH FOR TURNING TRUCKS WHEN FLASHING

(600x300)
BLACK LEGEND & BORDER,
WHITE REFL. BACKGROUND.

PLOT DATE: October 10, 2024

DRAWN BY: CNELSON

LEA Consulting Ltd.
Consulting Engineers and Planners
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Project No. 24030

Date Oct. 01, 2024

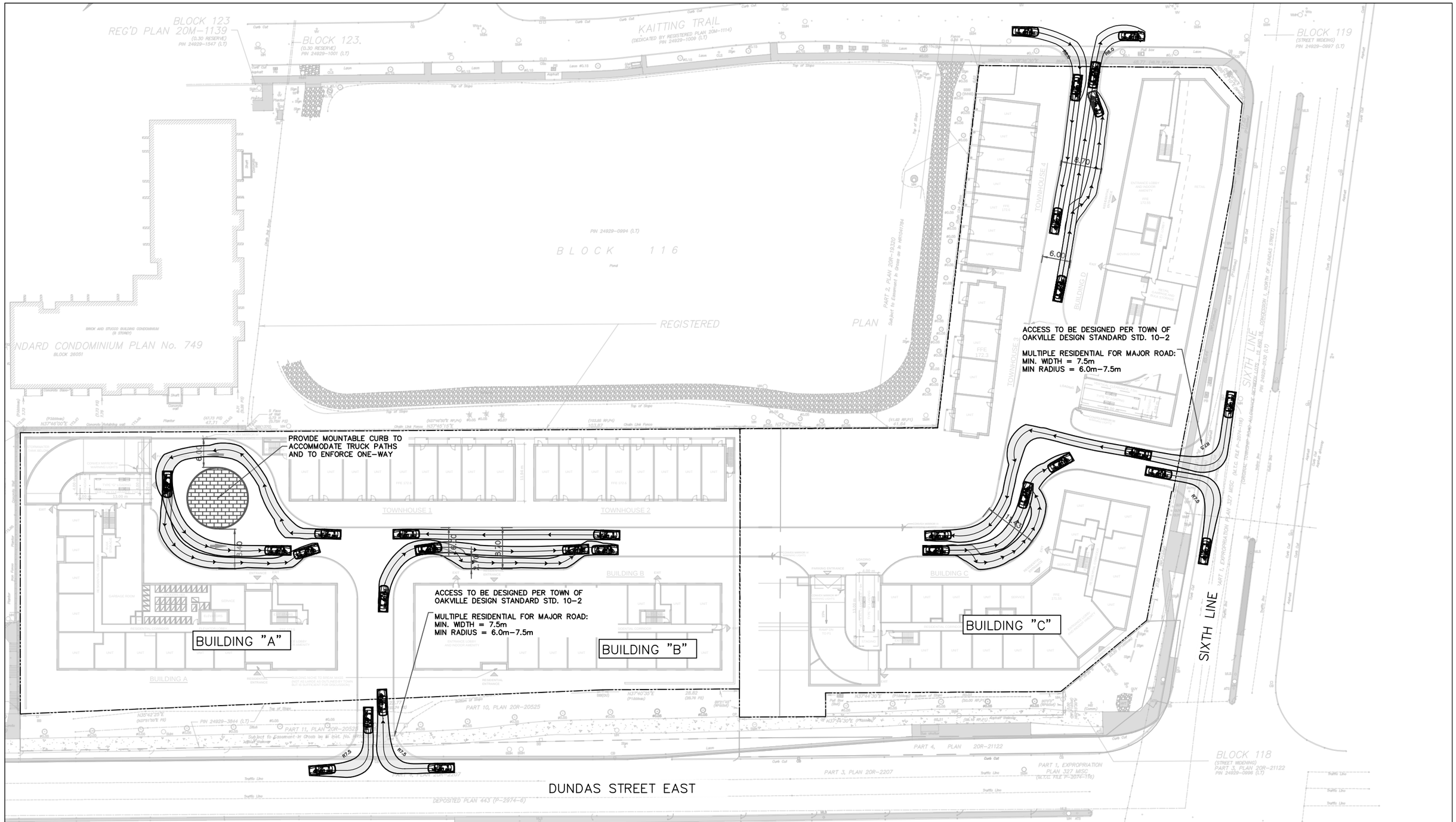
DUNDAS STREET E & SIXTH LINE
OAKVILLE ONTARIO

8 0 8 16 24
1:800

GROUND FLOOR LOADING REVIEW
MSU (DELIVERY) TRUCK
ENTRY & EXIT PATHS

Drawing No. 008

DRAWING NAME: F:\24030\Drafting\24030 – WF007 ultimate.dwg



PLOT DATE: October 10, 2024

DRAWN BY: CNELSON

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Consulting Engineers and Planners
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Project No.
24030

Date
Oct. 01, 2024

DUNDAS STREET E & SIXTH LINE
OAKVILLE ONTARIO

7.5 0 7.5 15 22.5m
1:750

GROUND FLOOR – PARKING AND ACCESS REVIEW

Drawing No.
009

DRAWING NAME: F:\24030\Drafting\24030 – WF007 ultimate.dwg

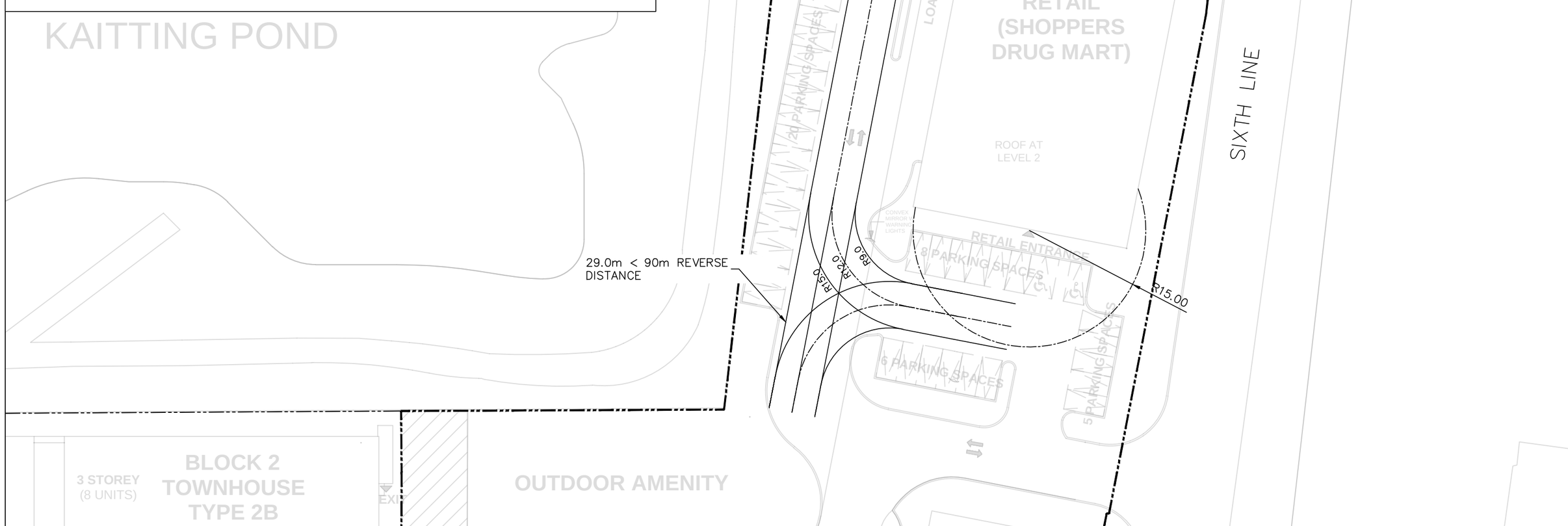
ONTARIO BUILDING CODE – FIRE ACCESS ROUTE:
PER ONTARIO BUILDING CODE SECTION 3.2.5.5:

1. ACCESS ROUTES REQUIRE THAT THE PRINCIPAL ENTRANCES ARE LOCATED NOT LESS THAN 3m AND NOT MORE THAN 15m FROM THE CLOSEST PORTION OF THE ACCESS ROUTE REQUIRED FOR FIRE DEPARTMENT USE, MEASURED HORIZONTALLY FROM THE FACE OF THE BUILDING.
2. FIRE HYDRANTS TO BE LOCATED AS SPECIFIED.

PER ONTARIO BUILDING CODE SECTION 3.2.5.6

3. A PORTION OF A ROADWAY OR YARD PROVIDED AS A REQUIRED ACCESS ROUTE FOR FIRE DEPARTMENT USE SHALL:

a. HAVE A CLEAR WIDTH NOT LESS THAN 6m, UNLESS IT CAN BE SHOWN THAT LESSER WIDTHS ARE SATISFACTORY;
b. HAVE A CENTRELINE RADIUS NOT LESS THAN 12m;
c. HAVE AN OVERHEAD CLEARANCE NOT LESS THAN 5m;
d. HAVE A CHANGE OF GRADIENT NOT MORE THAN 1 IN 12.5 OVER A MINIMUM DISTANCE OF 15m;
e. BE DESIGNED TO SUPPORT THE EXPECTED LOADS IMPOSED BY FIREFIGHTING EQUIPMENT AND BE SURFACED WITH CONCRETE, ASPHALT OR OTHER MATERIAL DESIGNED TO PERMIT ACCESSIBILITY UNDER ALL CLIMATIC CONDITIONS;
f. HAVE TURNAROUND FACILITIES FOR ANY DEAD–END PORTION OF THE ACCESS ROUTE MORE THAN 90m LONG AND;
g. BE CONNECTED WITH A PUBLIC THROUGHFARE.



PLOT DATE: October 10, 2024

DRAWN BY: CNELSON

LEA Consulting Ltd.
Consulting Engineers and Planners
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Project No. 24030

Date Oct. 01, 2024

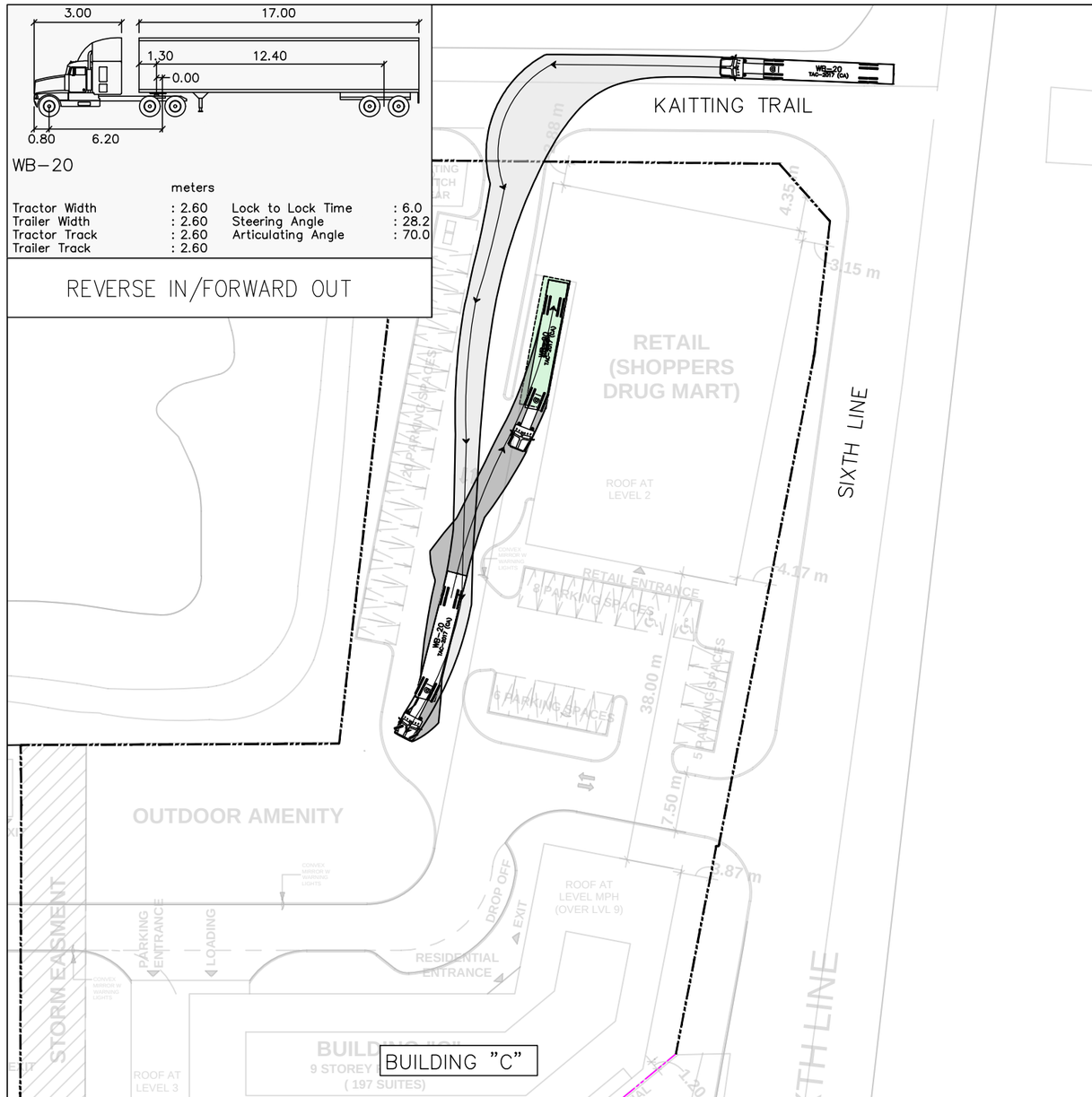
DUNDAS STREET E & SIXTH LINE
OAKVILLE ONTARIO

5 0 5 10 15m
1:500

SITE PLAN – FIRE ROUTE REVIEW

Drawing No. 001

DRAWING NAME: F:\24030\Drafting\24030 – WF007 interim.dwg



NOTE:
1. A TRAINED ON-SITE STAFF TO BE AVAILABLE TO MANEUVER THE WASTE COLLECTION BINS TO THE FRONT OF THE TRUCK FOR THE COLLECTION DRIVER, AND ACT AS A FLAGMAN WHEN THE TRUCK IS REVERSING. IN THE EVENT WHEN THE ON-SITE STAFF MEMBER IS UNAVAILABLE AT THE TIME THE COLLECTION VEHICLE ARRIVES AT THE SITE, THE COLLECTION VEHICLE WILL LEAVE THE SITE AND NOT RETURN UNTIL THE NEXT SCHEDULED COLLECTION DAY.

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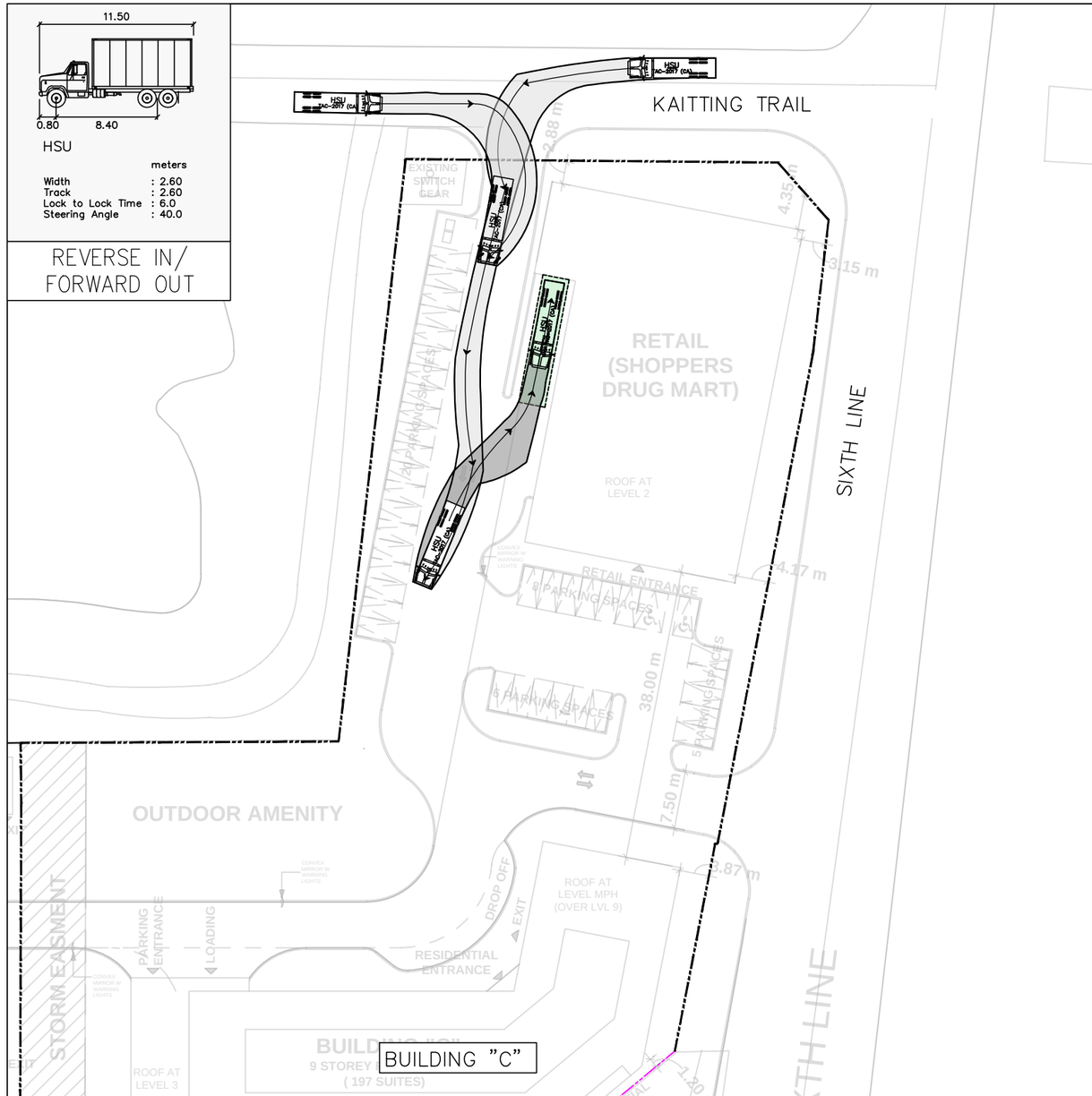
DUNDAS STREET E & SIXTH LINE
OAKVILLE ONTARIO

7 0 7 14 21m
1:700

GROUND FLOOR LOADING REVIEW
WD-20 (DELIVERY) TRUCK
ENTRY & EXIT PATHS

Drawing No. 002

DRAWING NAME: F:\24030\Drafting\24030 – WF007 interim.dwg



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DUNDAS STREET E & SIXTH LINE
OAKVILLE ONTARIO

7 0 7 14 21m
1:700

GROUND FLOOR LOADING REVIEW
HSU (DELIVERY) TRUCK
ENTRY & EXIT PATHS

Drawing No. 002

DRAWING NAME: F:\24030\Drafting\24030 – WF007 interim.dwg

TOWN OF OAKVILLE ZONING BY-LAW 2009-189:

1. IF THE CENTRELINE OF A PARKING SPACE IS AT AN INTERIOR ANGLE OF 70 TO 90 DEGREES TO THE CENTRELINE OF THE DRIVE AISLE PROVIDING VEHICLE ACCESS, THE MINIMUM WIDTH FOR THAT ONE OR TWO LANE DRIVE AISLE IS 7.0 METRES.
2. A PARKING SPACE MUST HAVE THE FOLLOWING MINIMUM DIMENSIONS:

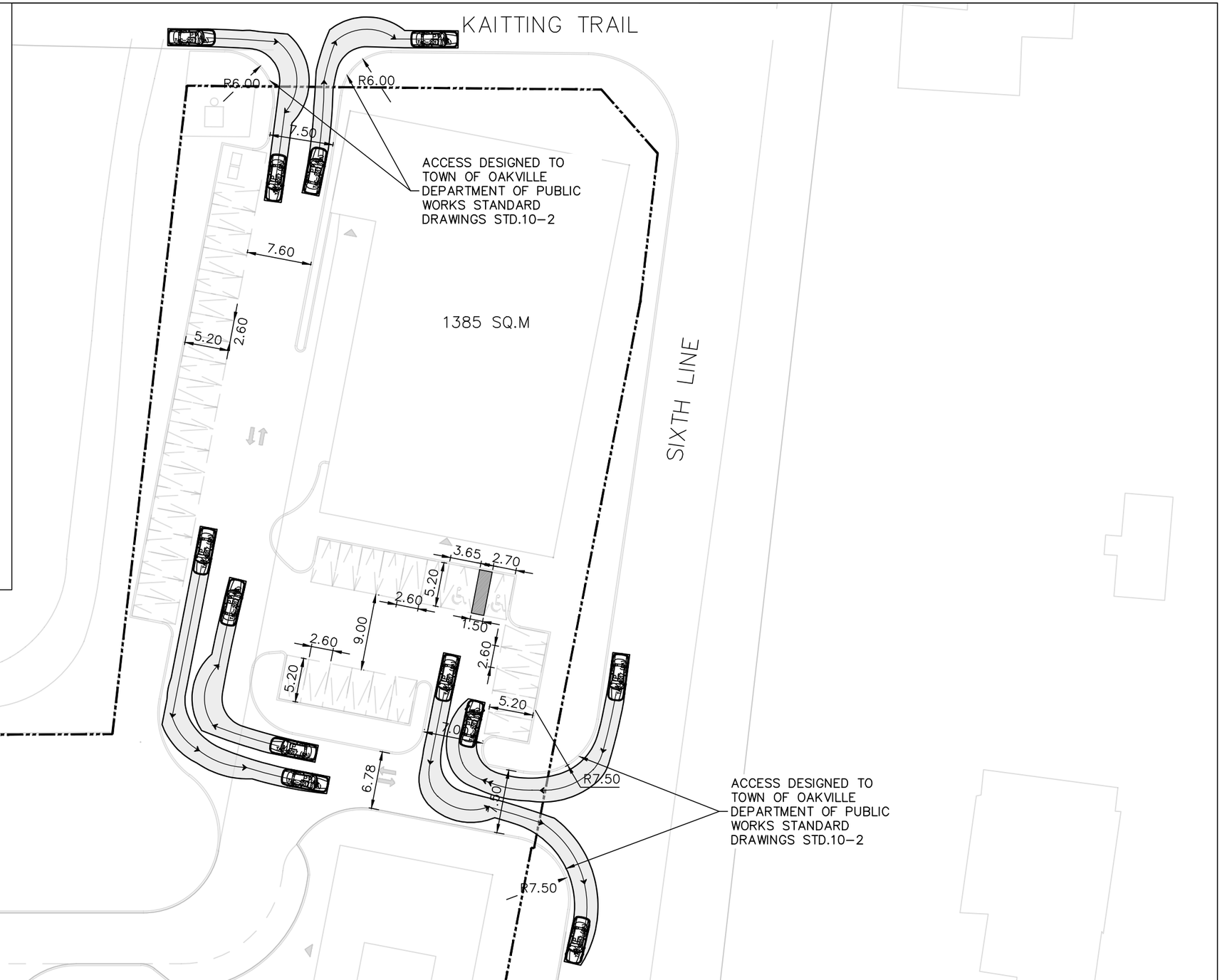
(i) LENGTH OF 5.2 METRES;
(ii) WIDTH OF 2.6 METRES; AND
(iii) THE MINIMUM WIDTH IN (II) MUST BE INCREASED BY 0.3 METRES FOR EACH SIDE OF THE PARKING SPACE THAT IS OBSTRUCTED.
(iij) OBSTRUCTIONS WITHIN 1.15 METRES OF EITHER STALL END DO NOT REQUIRE AN INCREASE IN STALL WIDTH..

3. AN ACCESSIBLE PARKING SPACE MUST HAVE THE FOLLOWING MINIMUM DIMENSIONS:

TYPE A:
(i) LENGTH OF 5.7 METRES;
(ii) WIDTH OF 3.65 METRES; AND
(iii) BARRIER-FREE PATH OF 1.5 METRES IN WIDTH.

TYPE B:
(i) LENGTH OF 5.7 METRES;
(ii) WIDTH OF 2.7 METRES; AND
(iii) BARRIER-FREE PATH OF 1.5 METRES IN WIDTH.

4. THE SIDE OF A PARKING SPACE IS OBSTRUCTED IF ANY PART OF A FIXED OBJECT SUCH AS A WALL, COLUMN, BOLLARD, FENCE OR PIPE IS SITUATED: (I)WITHIN 0.3 METRES OF THE SIDE OF THE PARKING SPACE, MEASURED AT RIGHT ANGLES, AND (II)MORE THAN 1.15 METRE FROM THE FRONT OR REAR OF THE PARKING SPACE PROVIDED THE OBSTRUCTION PROJECTS NO MORE THAN 0.15M INTO THE PARKING SPACE



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DUNDAS STREET E & SIXTH LINE
OAKVILLE ONTARIO

5 0 5 10 15m
1:500

GROUND FLOOR – PARKING AND ACCESS REVIEW

Drawing No. 004

DRAWING NAME: F:\24030\Drafting\24030 – WF007 interim.dwg