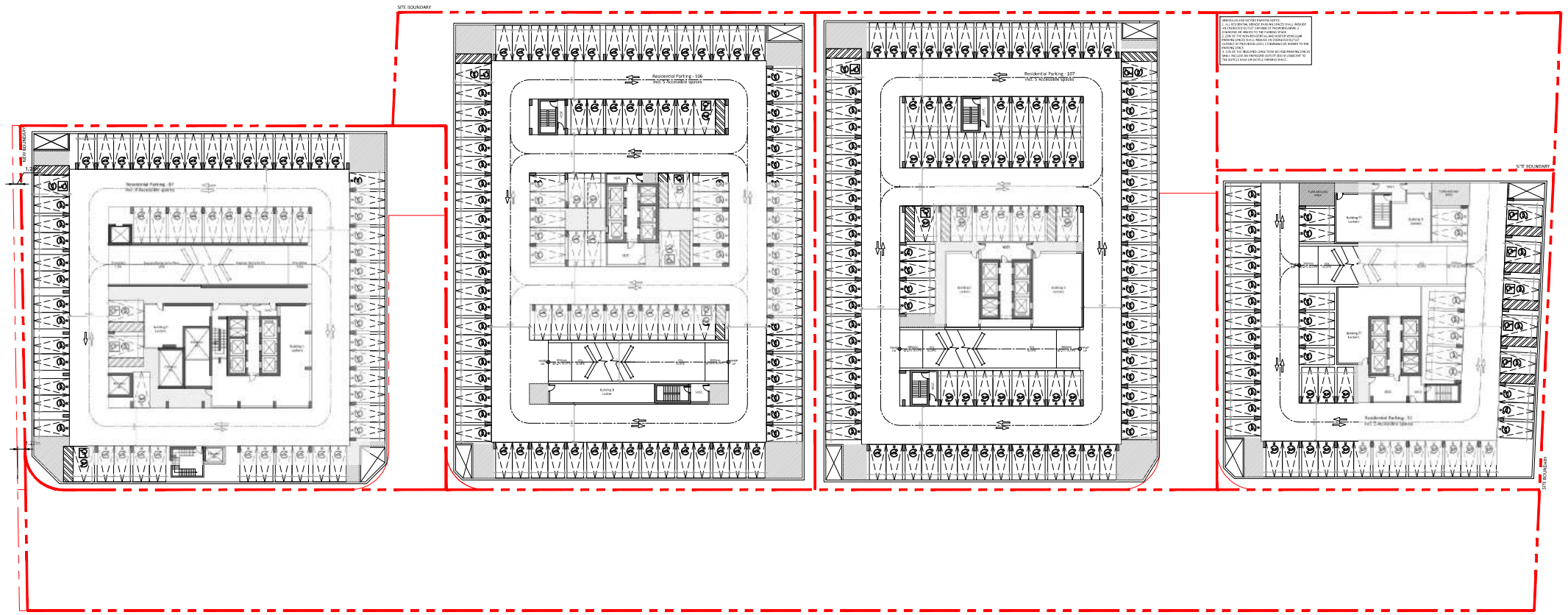
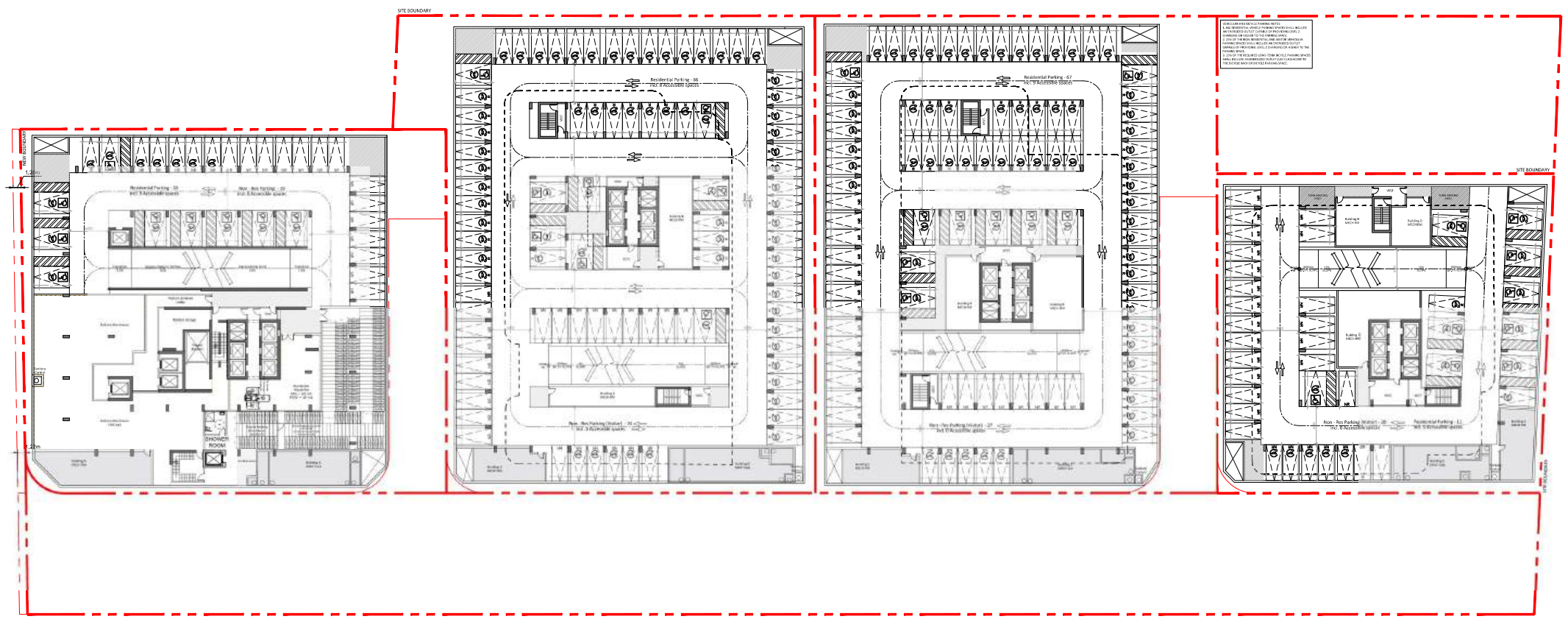
Appendix A:
Reduced Scale Architectural Plan



PARKING LEVEL P2



PARKING LEVEL P1

General Notes:

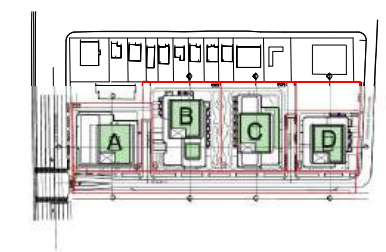
1. These Contract Documents are the property of the Architect. The Architect bears no responsibility for the interpretations clarification or supplementary information regarding the intent of the Contract Documents. The Architect will review Shop Drawings submitted by the Contractor for design conformance only.

2. Drawings are not to be scaled for construction. Contractor to verify all existing conditions and dimensions required to perform the Work and report any discrepancies with the Contract Documents to the Architect before commencing work.

3. Positions of exposed or finished mechanical or electrical devices, fittings, and fixtures are indicated on the Electrical drawings. Those items not clearly located will be Architectural drawings govern over the Mechanical and Electrical drawings. Those items not clearly located as by the Architect.

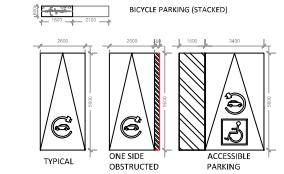
Project North

Key Plan (NTS)



LEGEND

- PARKING SPACE WITH ENERGIZED OUTLET CAPABLE OF PROVIDING LEVEL 2 CHARGING OR HIGHER TO THE SPACE
- (R) RESIDENTIAL PARKING SPACE
- (NR) VISITOR / NON-RESIDENTIAL PARKING SPACE
- ACCESSIBLE PARKING
- BICYCLE PARKING (STACKED)



PARKING NOTES:

1. MINIMUM PARKING SPACE SIZES (UNLESS OTHERWISE NOTED):
   - 2600mm WIDE X 5600mm LONG (NO SIDES OBSTRUCTED)
   - 2900mm WIDE X 5600mm LONG (ONE SIDE OBSTRUCTED)
   - 3200mm WIDE X 5600mm LONG (TWO SIDES OBSTRUCTED)
2. MAINTAIN MINIMUM DRIVE AISLE WIDTH OF 6000mm UNLESS OTHERWISE NOTED.
3. MAINTAIN MINIMUM HEADROOM CLEARANCE OF 2100mm THROUGHOUT.

Rev.	Issue / Description	Date
02	ISSUED FOR CLIENT COORDINATION	JAN 12, 2024

Architect of Record:

HARIRI PONTARINI ARCHITECTS
235 Carlaw Avenue
Suite 301
Toronto, Canada M4M 2S1
TEL 416 929 4901
FAX 416 929 8924
info@hp-arch.com
hariripontarini.com

Project Title:

THE QUEENSWAY & ALGIE STREET DEVELOPMENT

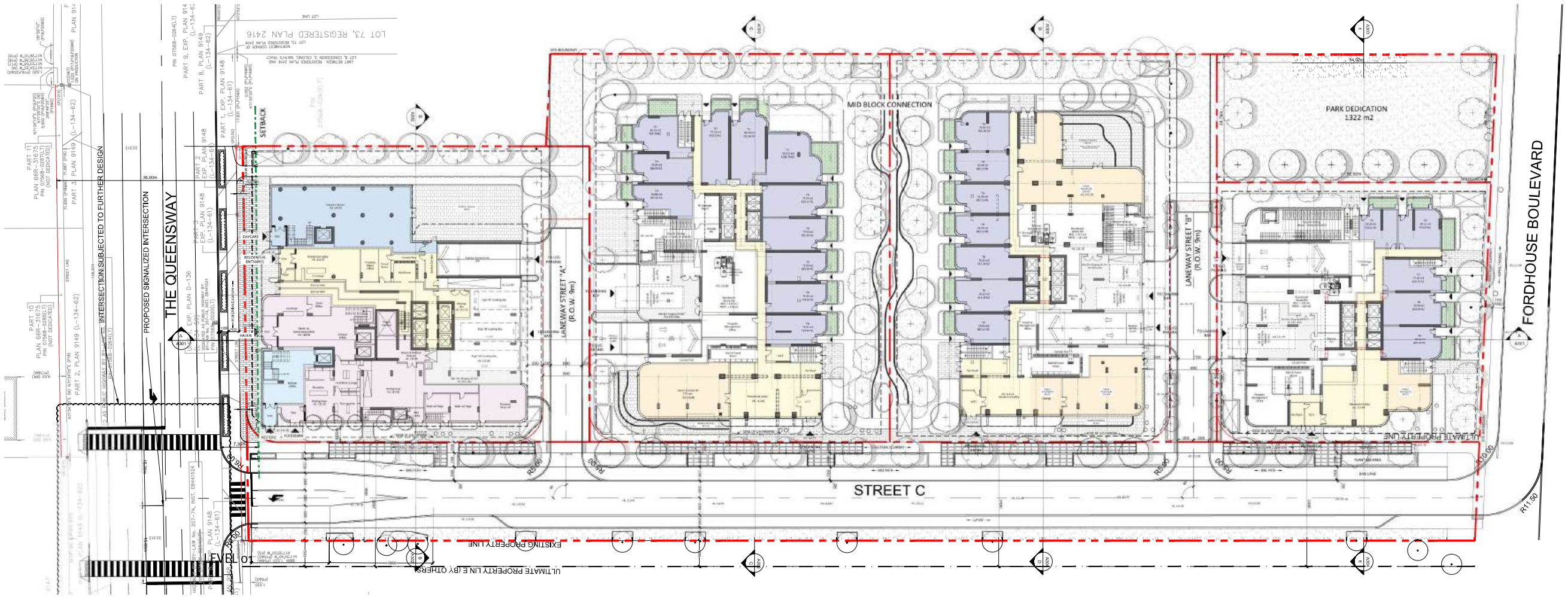
Address: 1543-1551 The Queensway & Algie Street & 66 & 76 Ford House Blvd., Etobicoke

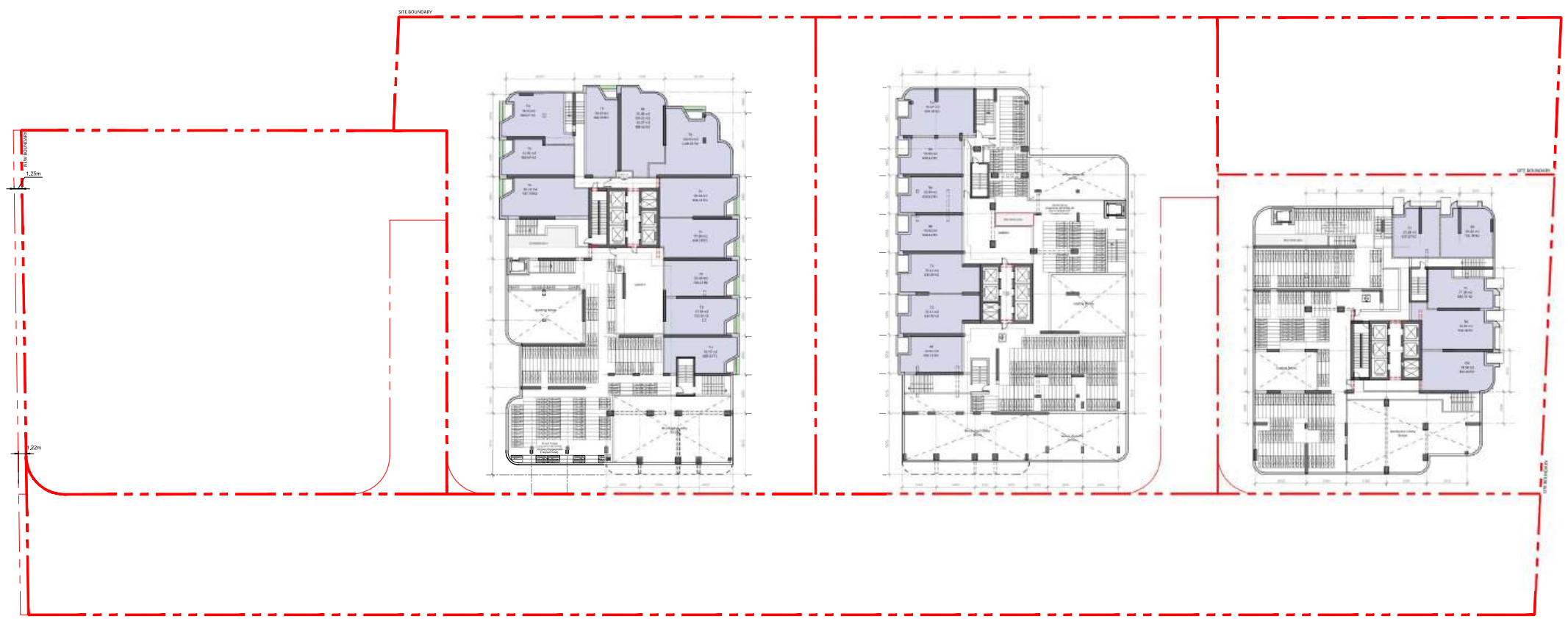
PARKING LEVEL P1 & P2

Project number:	2313
Scale:	1:400
Date:	2024-11-27
Drawn by:	HPA

Drawing No.: A-103

Revision: 01





LEVEL 01 MEZZANINE

General Notes:

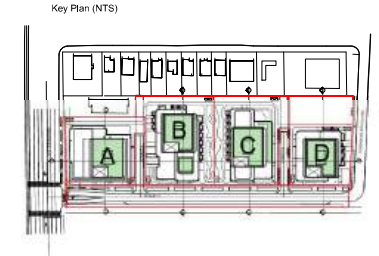
1. These Contract Documents are the property of the Architect. The Architect bears no responsibility for the interpretations clarification or supplementary information regarding the intent of the Contract Documents. The Architect will review Shop Drawings submitted by the Contractor for design conformance only.

2. Drawings are not to be scaled for construction. Contractor to verify all existing conditions and dimensions required to perform the Work and report any discrepancies with the Contract Documents to the Architect before commencing work.

3. Positions of exposed or finished mechanical or electrical devices, fittings, and fixtures are indicated on the Electrical drawings. Those items not clearly located will be Architectural drawings govern over the Mechanical and Electrical drawings. Those items not clearly located as by the Architect.

Project North

Key Plan (NTS)



LEGEND

PARKING SPACE WITH ENERGIZED OUTLET CAPABLE OF PROVIDING LEVEL 2 CHARGING OR HIGHER TO THE SPACE

R — RESIDENTIAL PARKING SPACE

NR — VISITOR / NON-RESIDENTIAL PARKING SPACE

ACCESSIBLE PARKING

BIKE RACK (1200L X 350W)

VERTICAL BIKE PARKING LOCKER (1200L X 600W X 1900H)

HORIZONTAL BIKE PARKING LOCKER (1800L X 600W X 1900H)

STACKER BIKE PARKING SPACE

Rev	Issue / Description	Date
02	ISSUED FOR DESIGN COORDINATION	JAN 12, 2024

Architect of Record:

HARIRI PONTARINI ARCHITECTS
235 Carlaw Avenue
Suite 301
Toronto, Canada M4M 2S1
TEL 416 929 4901
FAX 416 929 8924
info@hp-arch.com
hariripontarini.com

Project Title:

THE QUEENSWAY & ALGIE STREET DEVELOPMENT

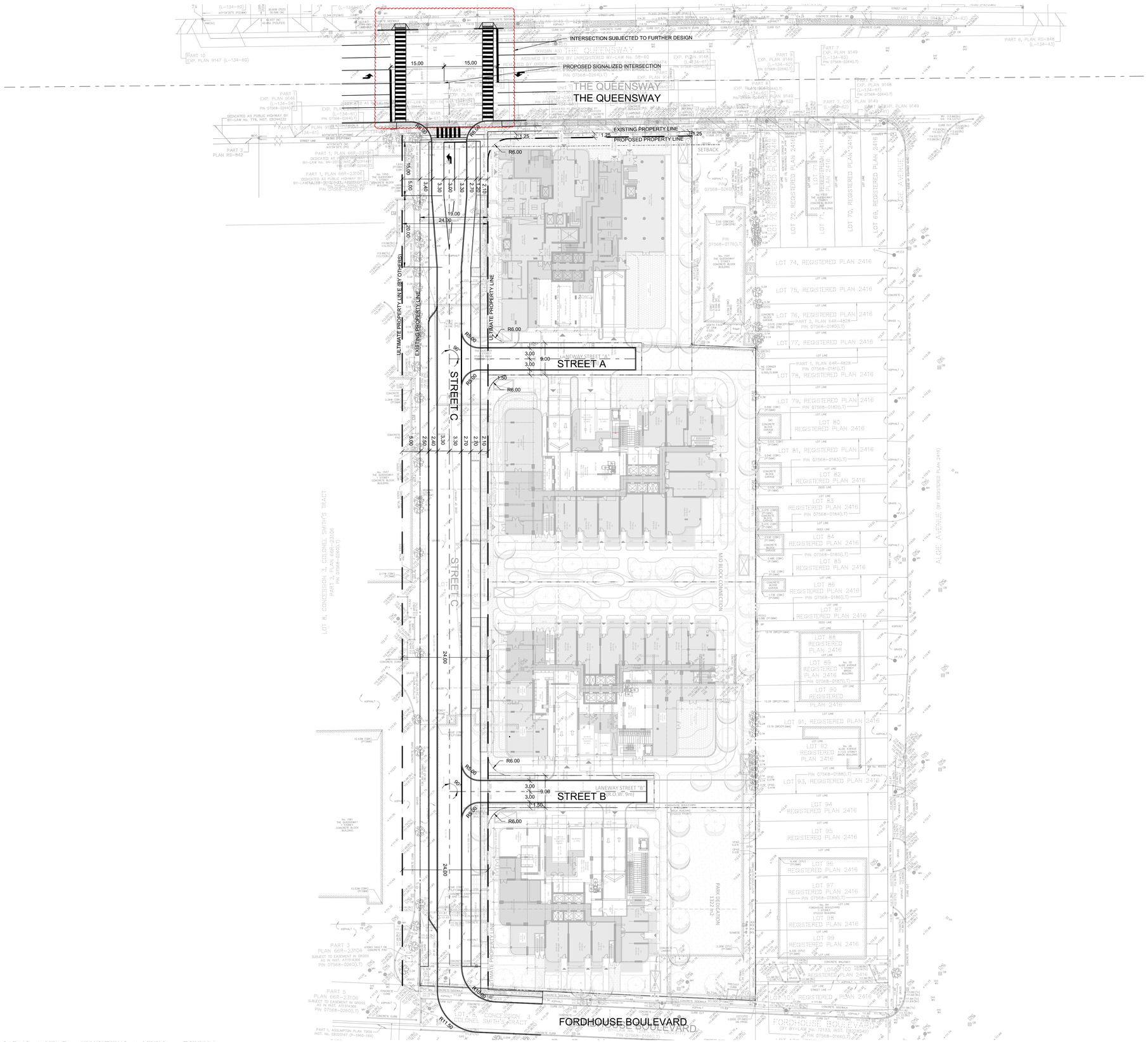
Address: 1543-1551 The Queensway & Algie Street & 66 & 76 Ford House Blvd., Etobicoke

LEVEL 01 & LEVEL 01 MEZZANINE

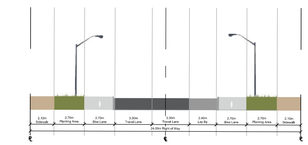
Project number: 2313
Scale: 1:400
Date: 2024-11-27
Drawn by: HPA

Drawing No.: A-104
Revision: 01

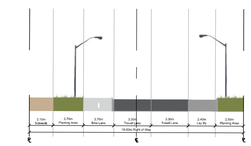
Appendix B:
Functional Road Plan



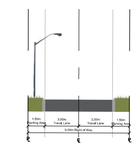
GENERAL NOTES:



STREET 'C' ULTIMATE



STREET 'C' INTERIM



STREET 'A' & STREET 'B' ULTIMATE

BA Group
BA Consulting Group Ltd.
300 – 45 St. Clair Ave. W.
Toronto ON M4V 1K9
TEL 416 961 7110
EMAIL bagroup@bagroup.com
MOVEMENT IN URBAN ENVIRONMENTS
BAGROUP.COM

QUEENSWAY & ALGIE

CONCEPTUAL
FUNCTIONAL ROAD PLAN

Date: December 6, 2024

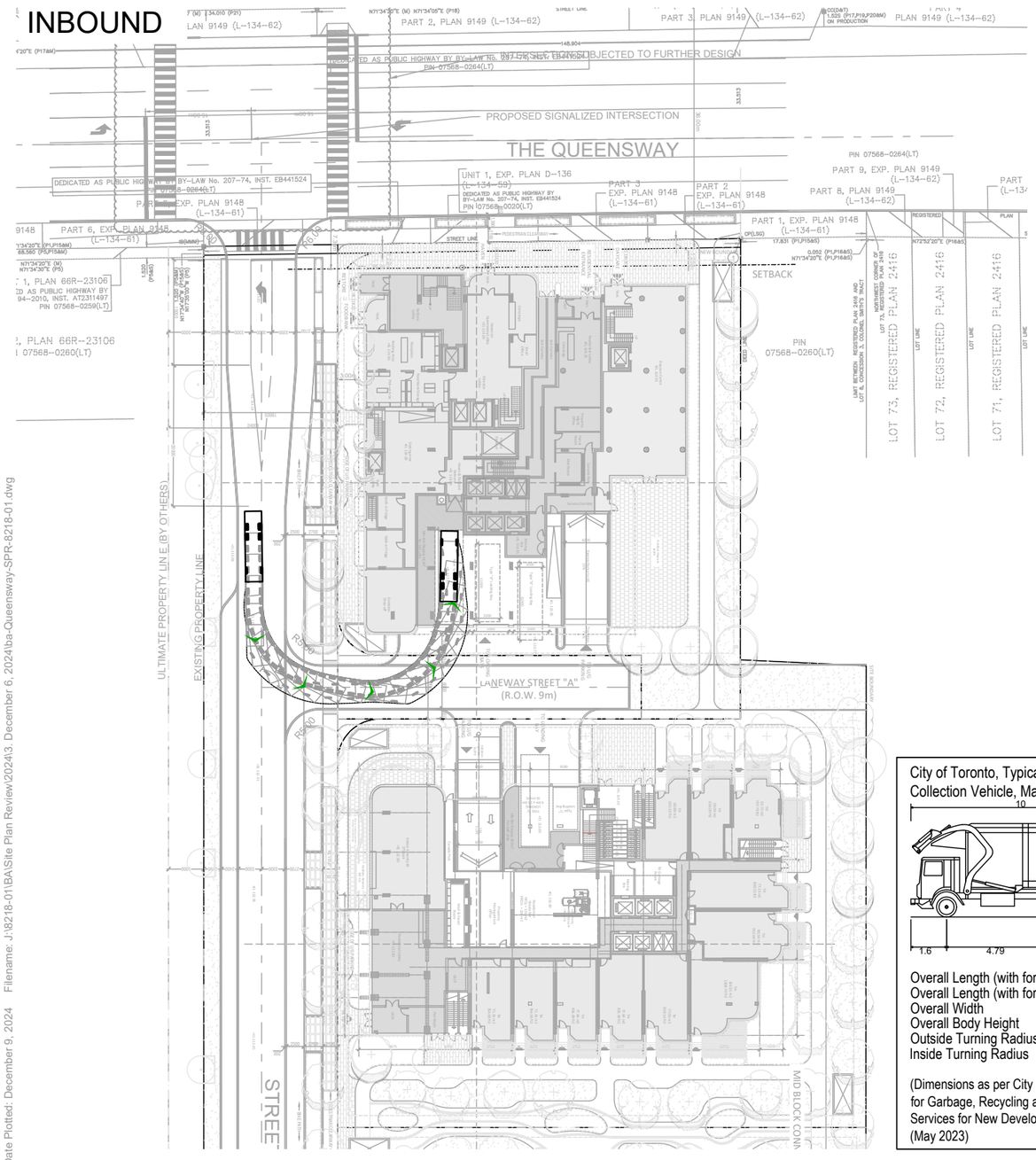
Project No.: 8218-01

Scale: 1:500 (0 5 10 15 20m)

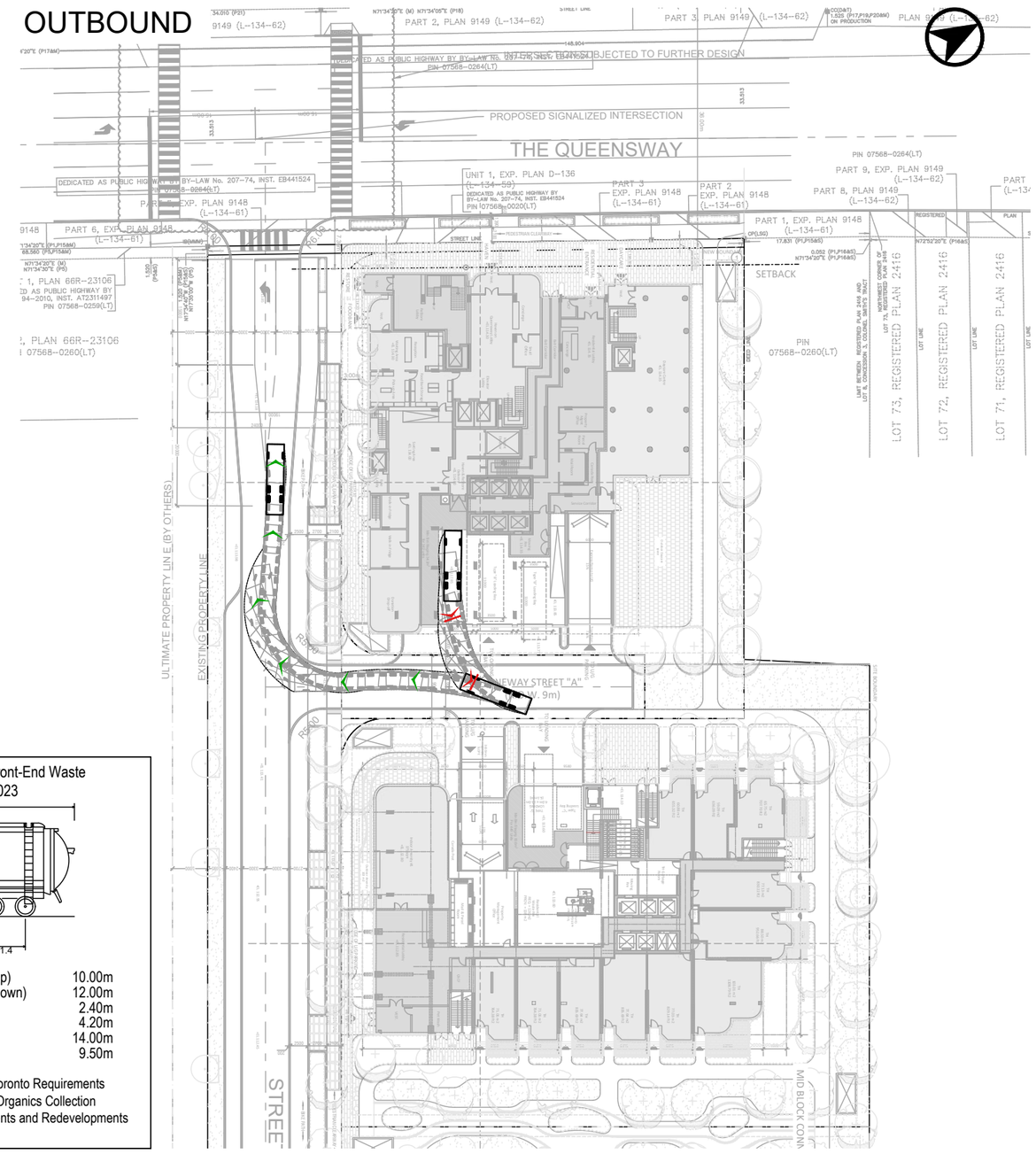
FD-01

Appendix C:
Vehicle Manoeuvring Diagrams

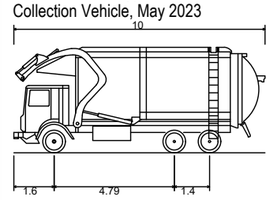
INBOUND



OUTBOUND



City of Toronto, Typical Front-End Waste Collection Vehicle, May 2023



Overall Length (with forks up)	10.00m
Overall Length (with forks down)	12.00m
Overall Width	2.40m
Overall Body Height	4.20m
Outside Turning Radius	14.00m
Inside Turning Radius	9.50m

(Dimensions as per City of Toronto Requirements for Garbage, Recycling and Organics Collection Services for New Developments and Redevelopments (May 2023)

Date Plotted: December 9, 2024 Filename: J:\8218-01\BA\Site Plan Review\2024\3. December 6, 2024\ba-Queensway-SPR-8218-01.dwg

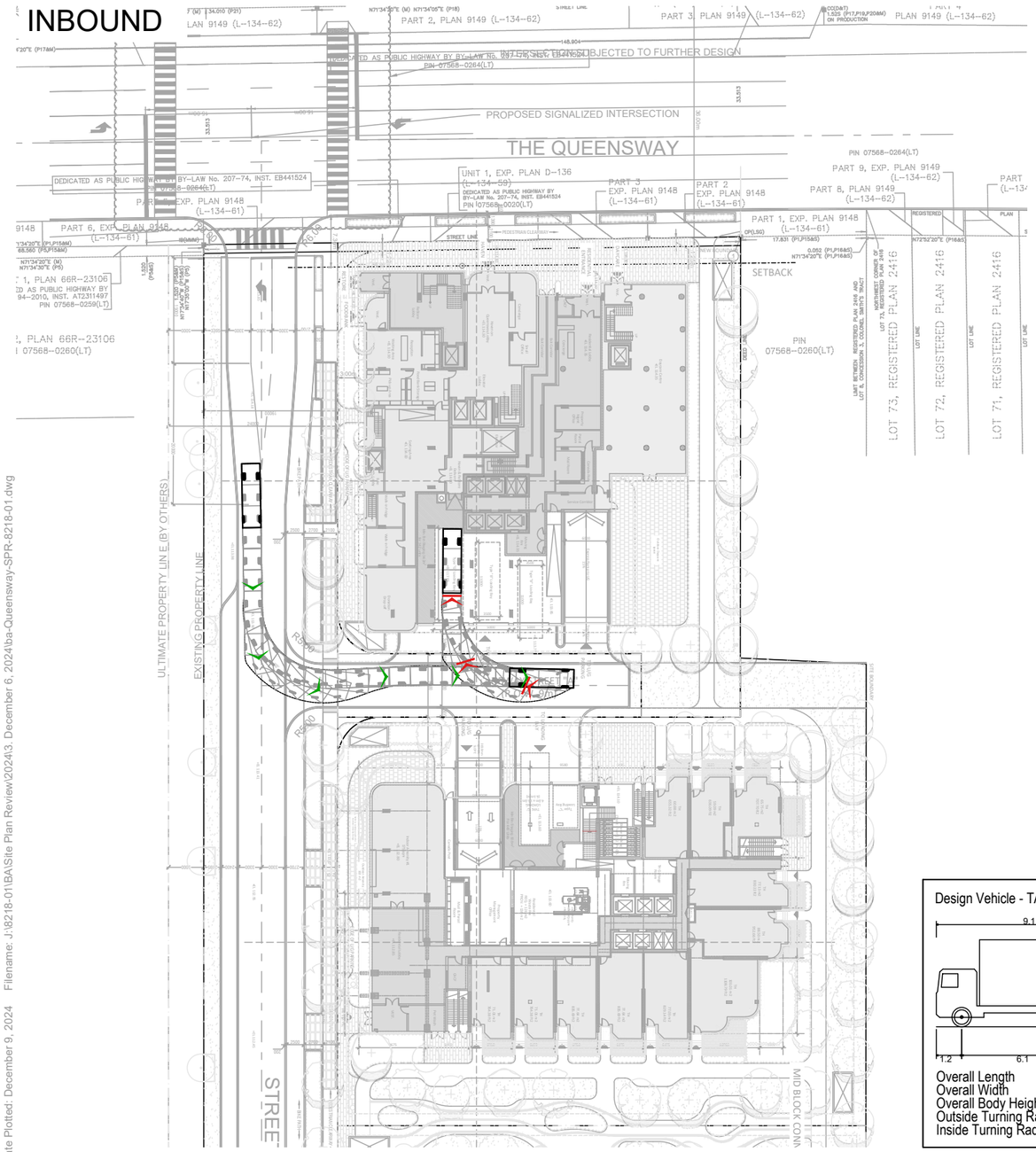
BA Group

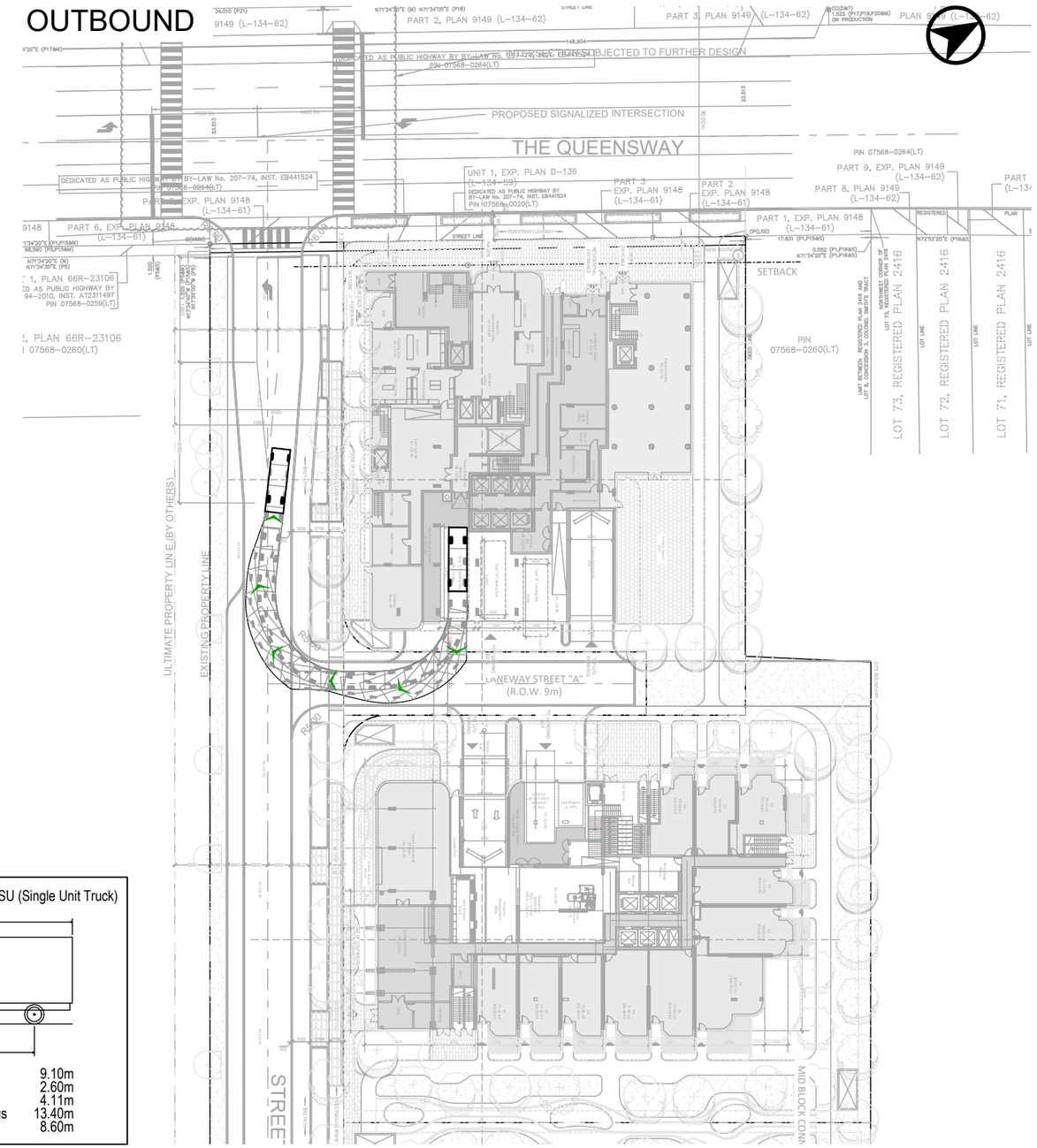
QUEENSWAY
VEHICLE MANOEUVRING DIAGRAM
GROUND FLOOR - BUILDING A
CITY OF TORONTO - FRONT LOADER

Project:	Queensway
Project No.	8218-01
Date:	December 9, 2024
Revised:	--

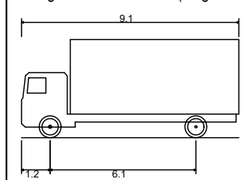
Scale 1:750 — 0 15 30m

Drawing No. VMD-01





Design Vehicle - TAC SU (Single Unit Truck)



Overall Length	9.10m
Overall Width	2.60m
Overall Body Height	4.11m
Outside Turning Radius	13.40m
Inside Turning Radius	8.60m

Date Plotted: December 9, 2024 Filename: J:\8218-01\BA\Site Plan Review\2024\3. December 6, 2024\ba-Queensway-SPR-8218-01.dwg

BA Group

QUEENSWAY

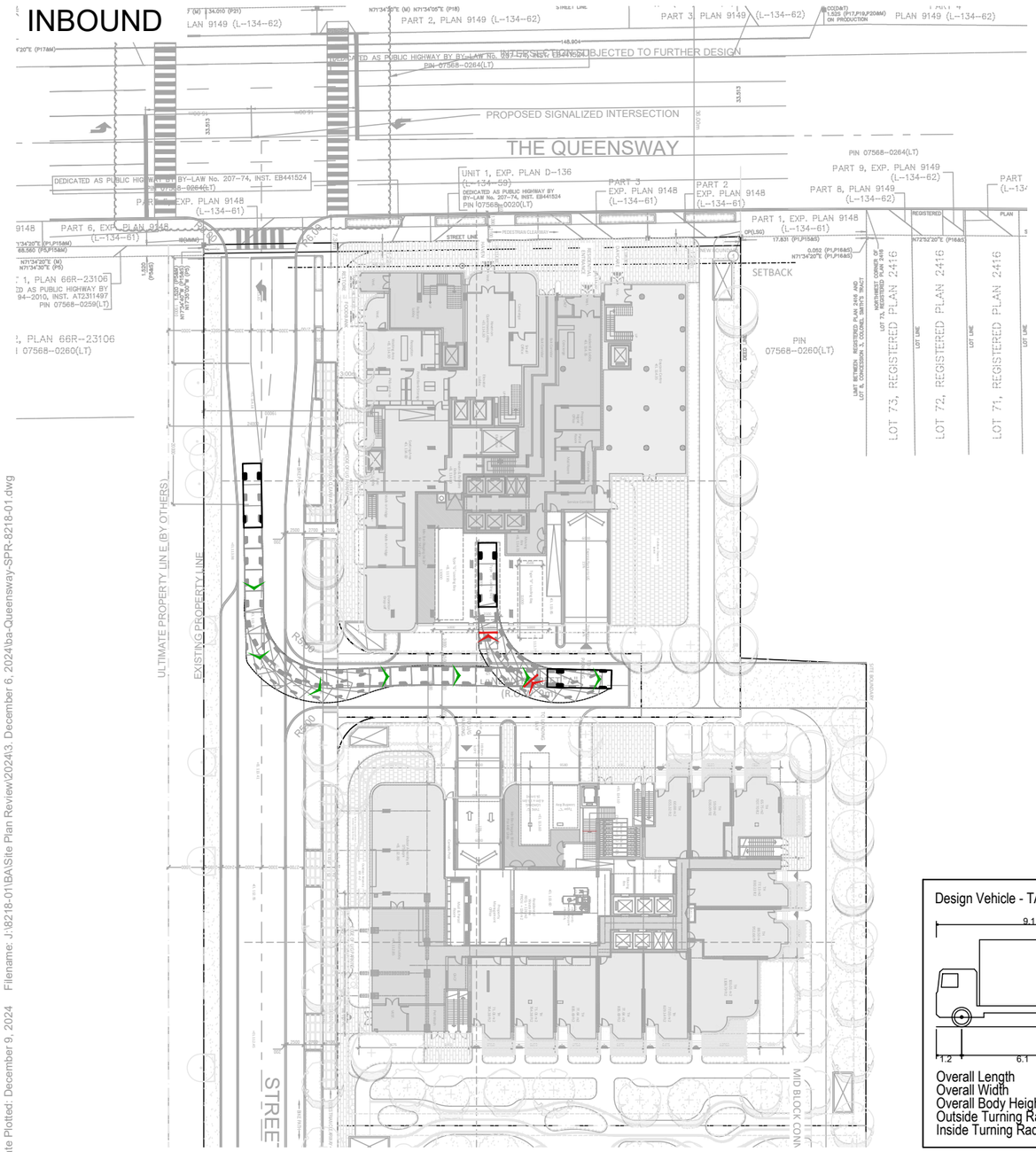
VEHICLE MANOEUVRING DIAGRAM
GROUND FLOOR - BUILDING A
SINGLE UNIT (SU) TRUCK

Project:	Queensway
Project No.	8218-01
Date:	December 9, 2024
Revised:	--

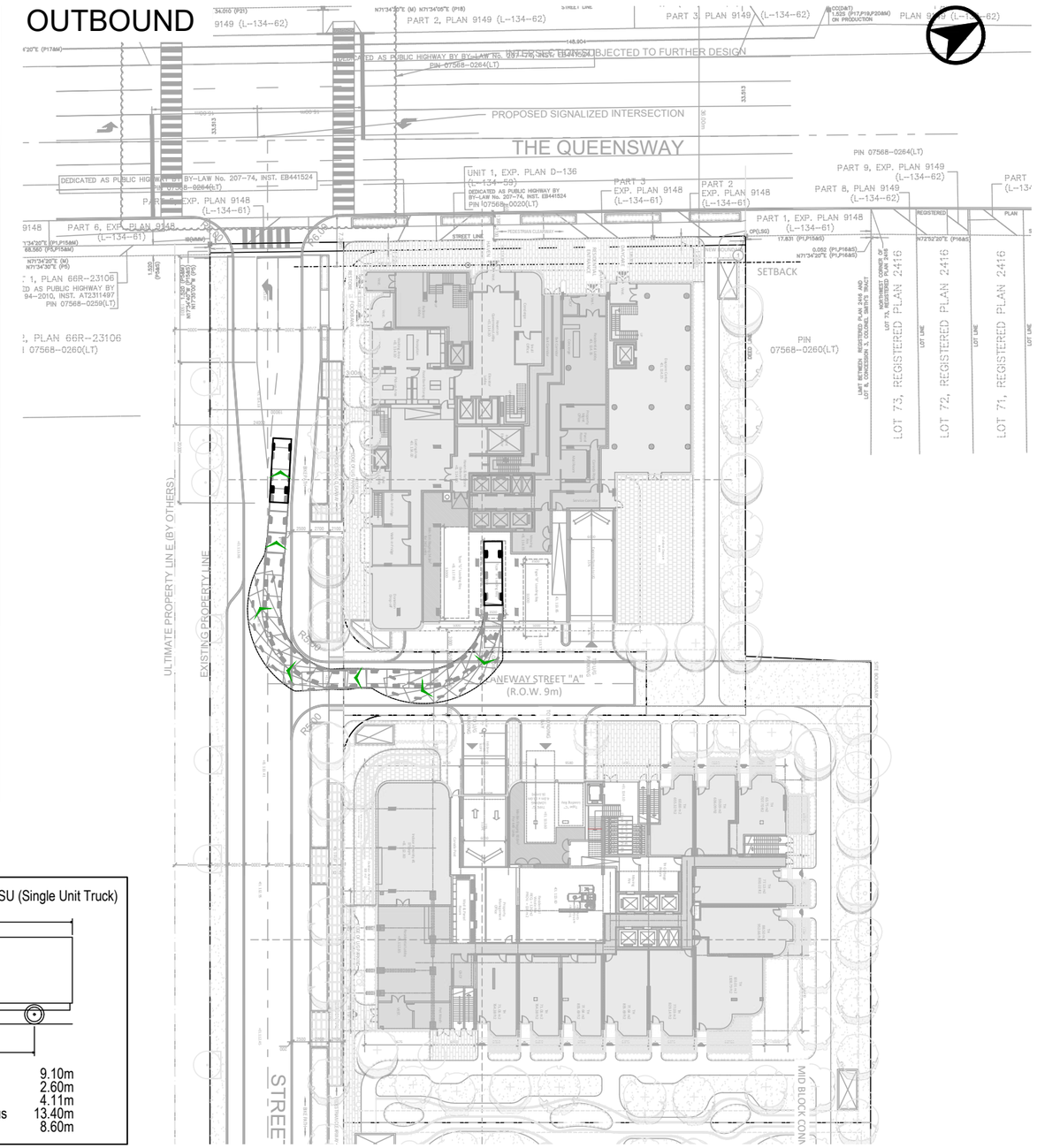
Scale 1:750 (0 – 15 – 30m)

Drawing No. VMD-02

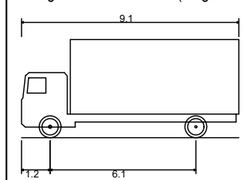
INBOUND



OUTBOUND



Design Vehicle - TAC SU (Single Unit Truck)



Overall Length	9.10m
Overall Width	2.60m
Overall Body Height	4.11m
Outside Turning Radius	13.40m
Inside Turning Radius	8.60m

Date Plotted: December 9, 2024 Filename: J:\8218-01\BA\Site Plan Review\2024\3. December 6, 2024\ba-Queensway-SPR-8218-01.dwg

BA Group

QUEENSWAY

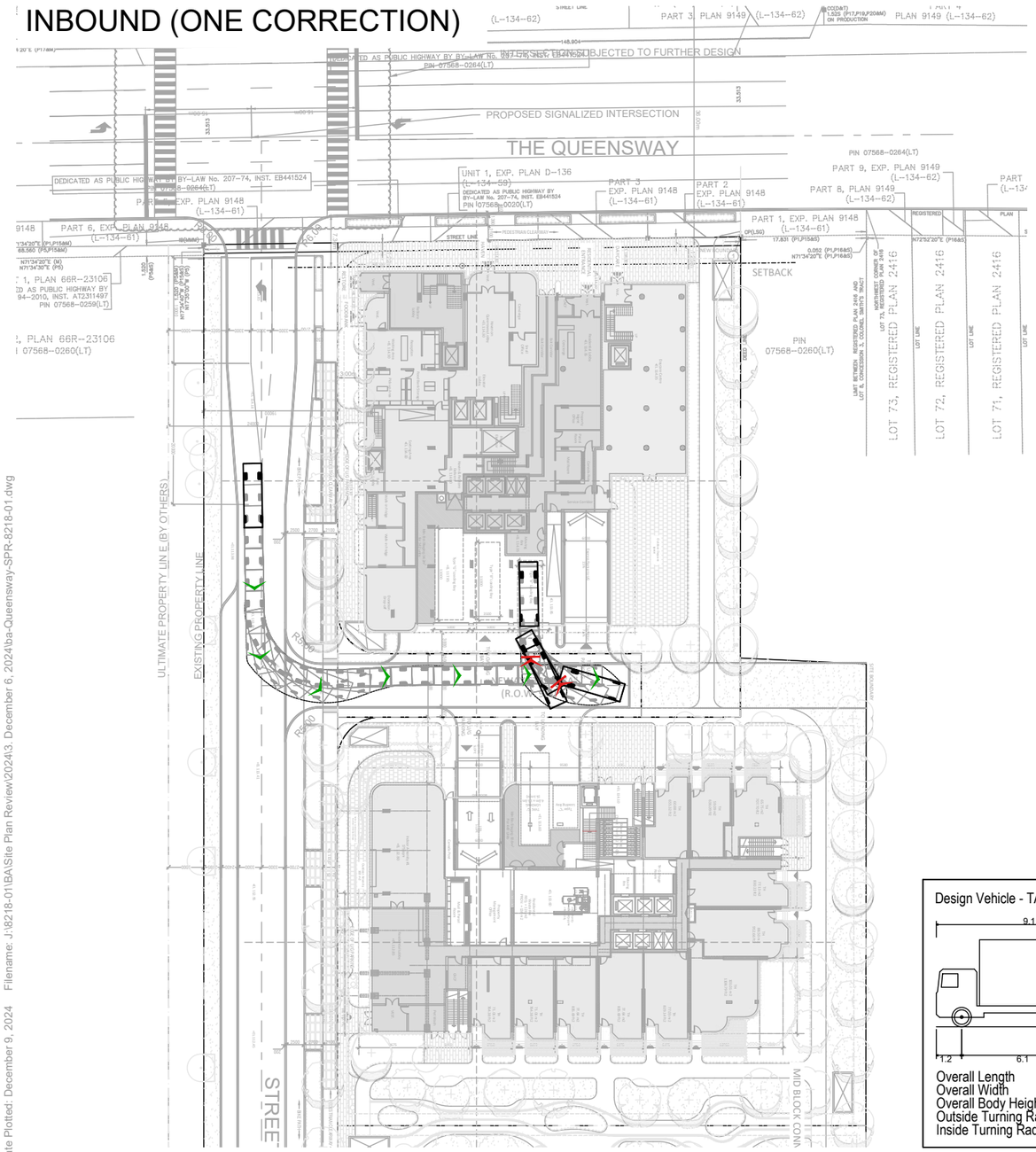
VEHICLE MANOEUVRING DIAGRAM
GROUND FLOOR - BUILDING A
SINGLE UNIT (SU) TRUCK

Project:	Queensway
Project No.	8218-01
Date:	December 9, 2024
Revised:	--

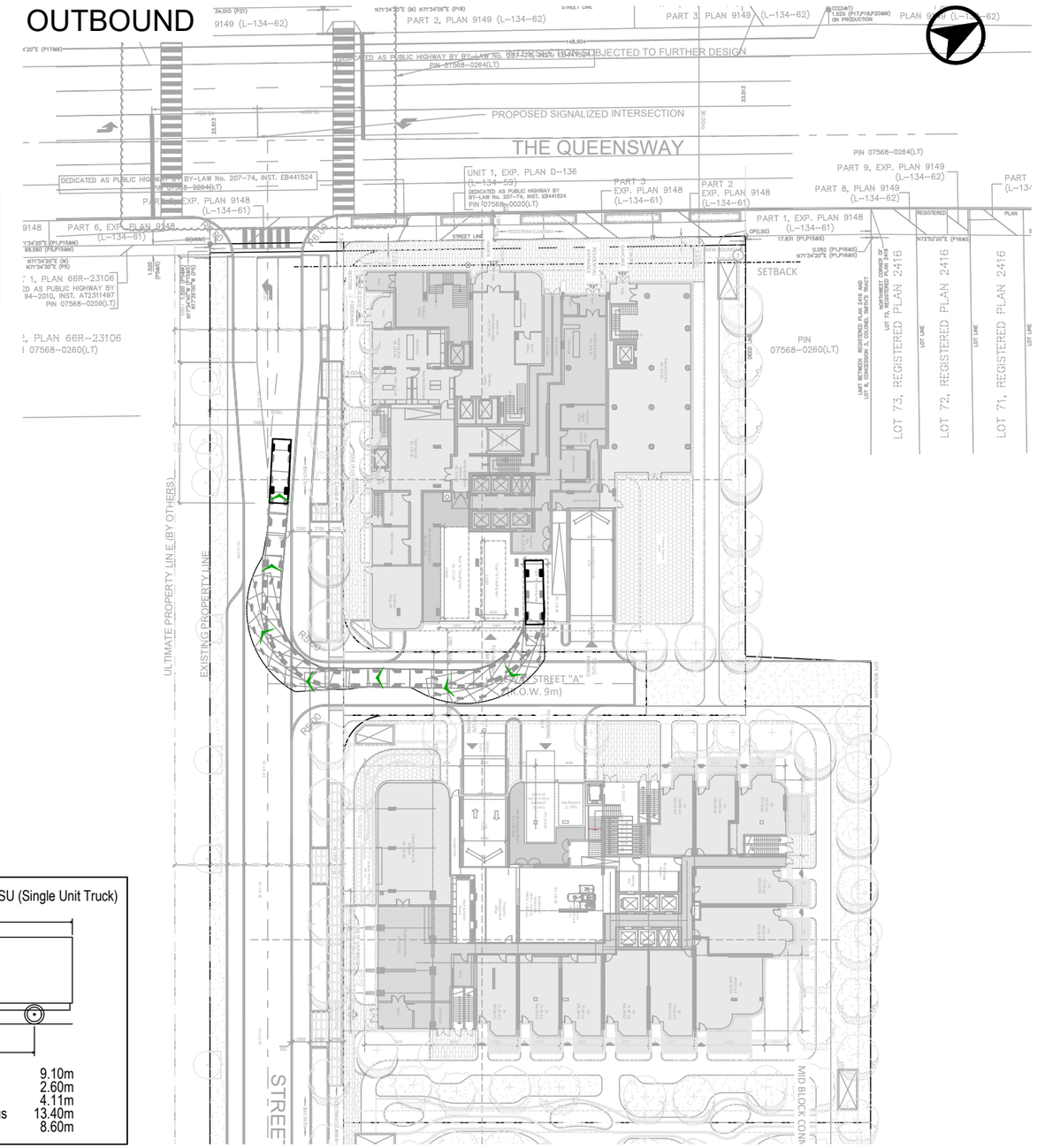
Scale 1:750 — 0 15 30m

Drawing No. VMD-03

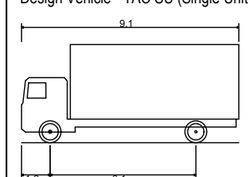
INBOUND (ONE CORRECTION)



OUTBOUND



Design Vehicle - TAC SU (Single Unit Truck)



Overall Length	9.10m
Overall Width	2.60m
Overall Body Height	4.11m
Outside Turning Radius	13.40m
Inside Turning Radius	8.60m

Date Plotted: December 9, 2024 Filename: J:\8218-01\BA\Site Plan Review\2024\3. December 6, 2024\ba-Queensway-SPR-8218-01.dwg

BA Group

QUEENSWAY

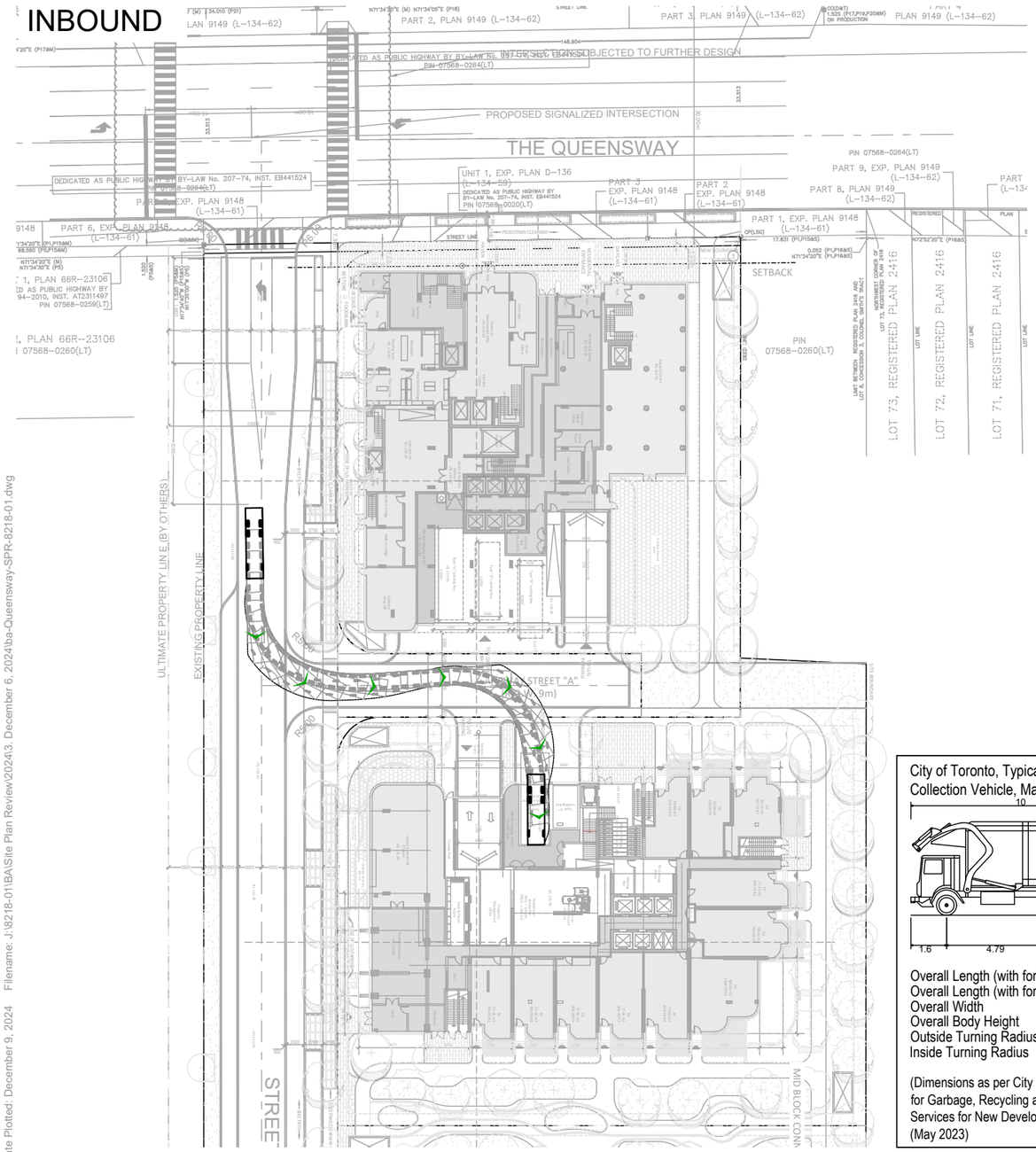
VEHICLE MANOEUVRING DIAGRAM
GROUND FLOOR - BUILDING A
SINGLE UNIT (SU) TRUCK

Project:	Queensway
Project No.	8218-01
Date:	December 9, 2024
Revised:	--

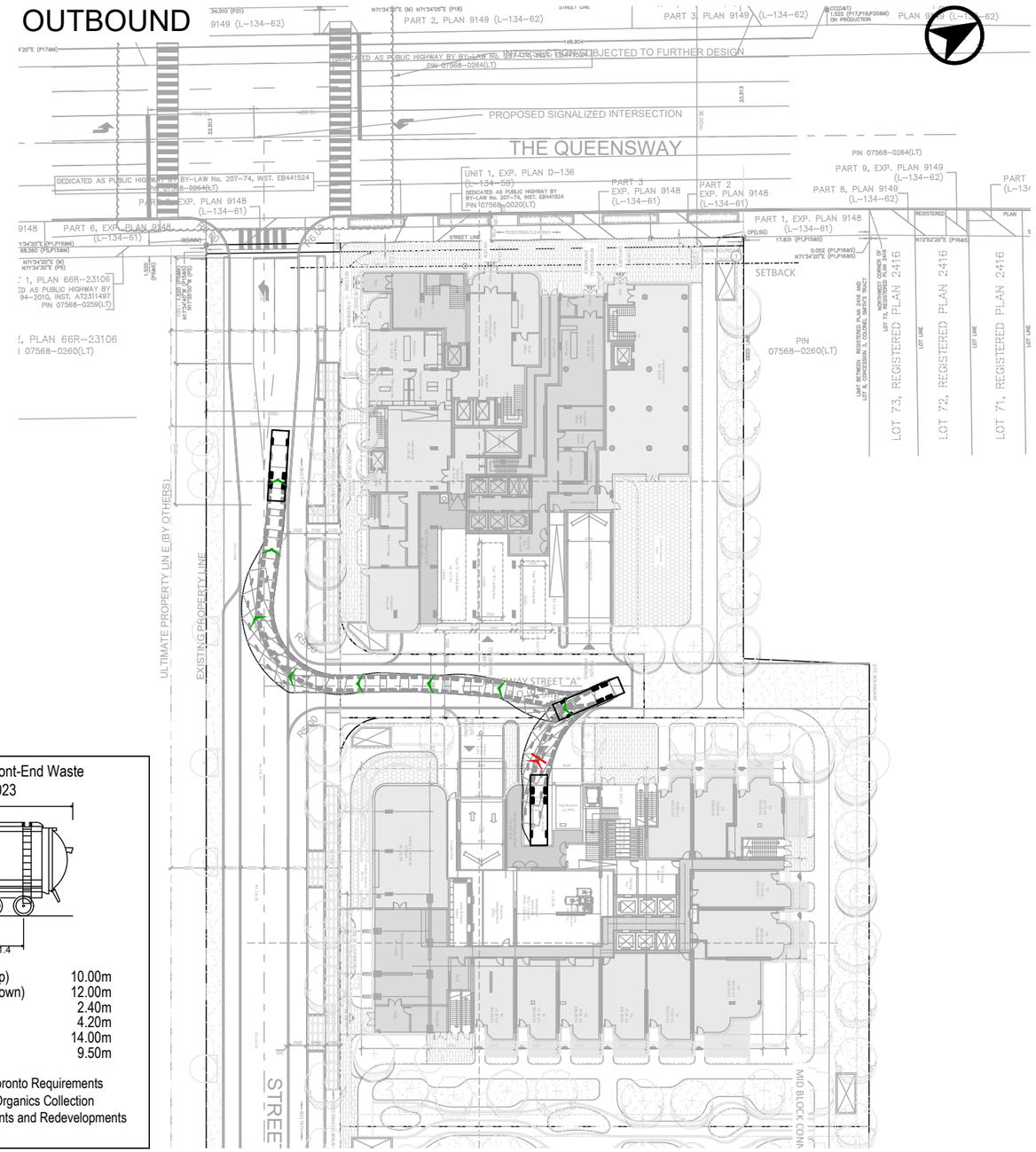
Scale 1:750 — 0 15 30m

Drawing No. VMD-04

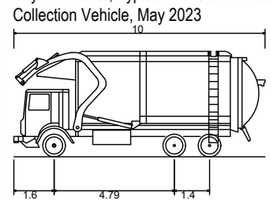
INBOUND



OUTBOUND



City of Toronto, Typical Front-End Waste Collection Vehicle, May 2023



Overall Length (with forks up)	10.00m
Overall Length (with forks down)	12.00m
Overall Width	2.40m
Overall Body Height	4.20m
Outside Turning Radius	14.00m
Inside Turning Radius	9.50m

(Dimensions as per City of Toronto Requirements for Garbage, Recycling and Organics Collection Services for New Developments and Redevelopments (May 2023)

Date Plotted: December 9, 2024 Filename: J:\8218-01\BA\Site Plan Review\2024\3. December 6, 2024\ba-Queensway-SPR-8218-01.dwg

BA Group

QUEENSWAY

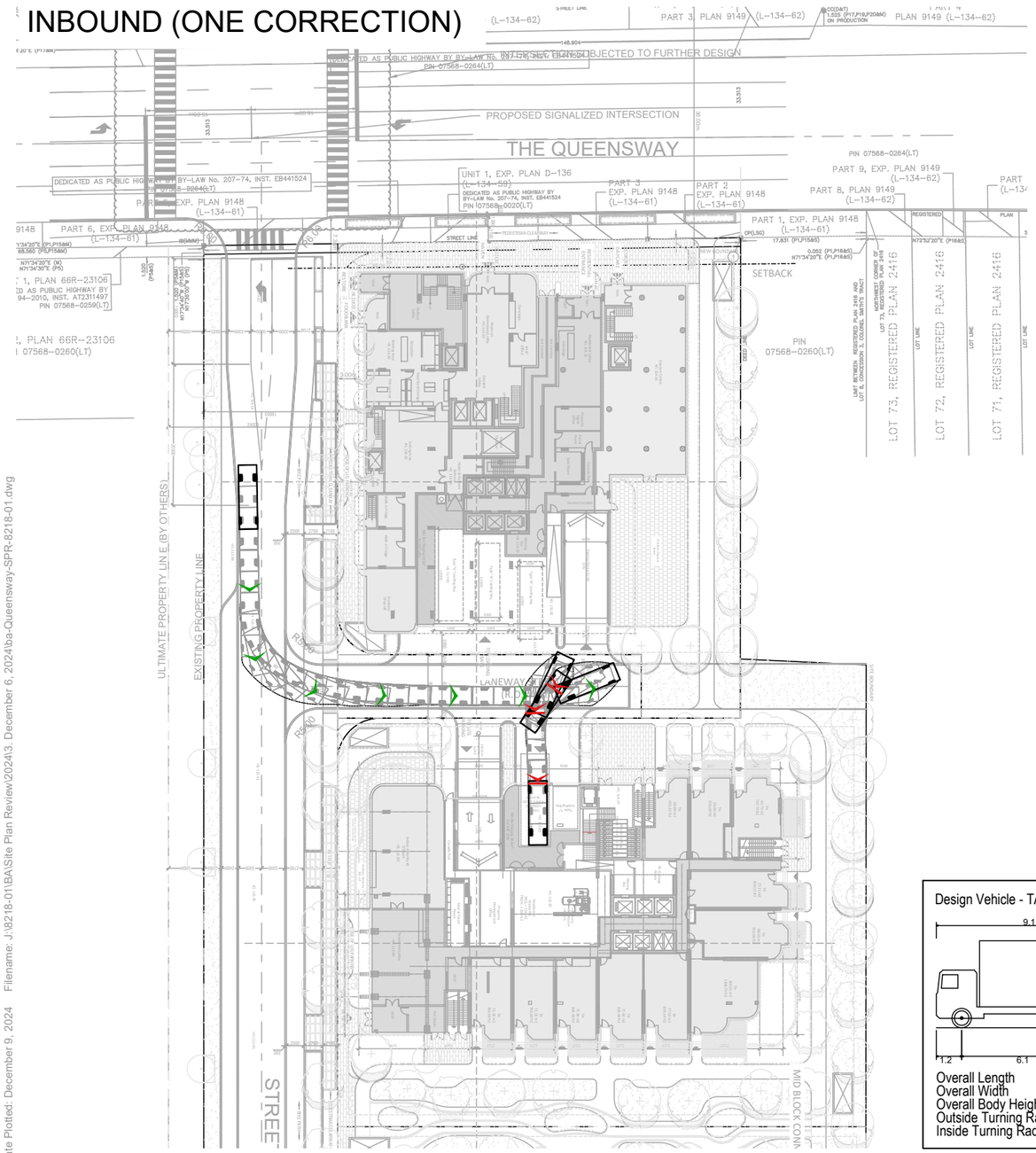
VEHICLE MANOEUVRING DIAGRAM
GROUND FLOOR - BUILDING B
CITY OF TORONTO - FRONT LOADER

Project:	Queensway
Project No.	8218-01
Date:	December 9, 2024
Revised:	--

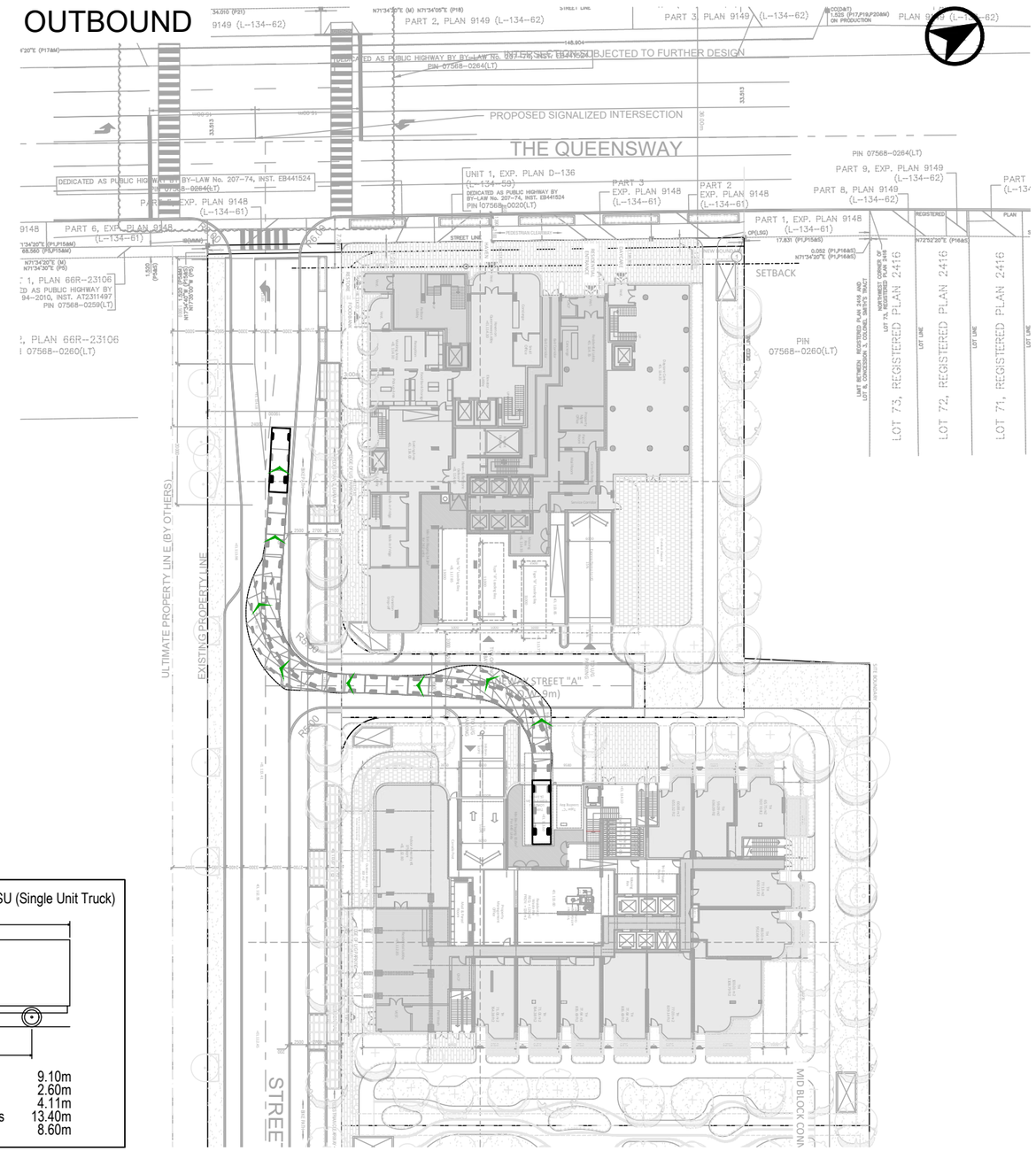
Scale 1:750 (0 – 15 – 30m)

Drawing No. VMD-05

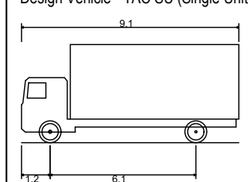
INBOUND (ONE CORRECTION)



OUTBOUND



Design Vehicle - TAC SU (Single Unit Truck)



Overall Length	9.10m
Overall Width	2.60m
Overall Body Height	4.11m
Outside Turning Radius	13.40m
Inside Turning Radius	8.60m

Date Plotted: December 9, 2024 Filename: J:\8218-01\BA\Site Plan Review\2024\3. December 6, 2024\ba-Queensway-SPR-8218-01.dwg

BA Group

QUEENSWAY

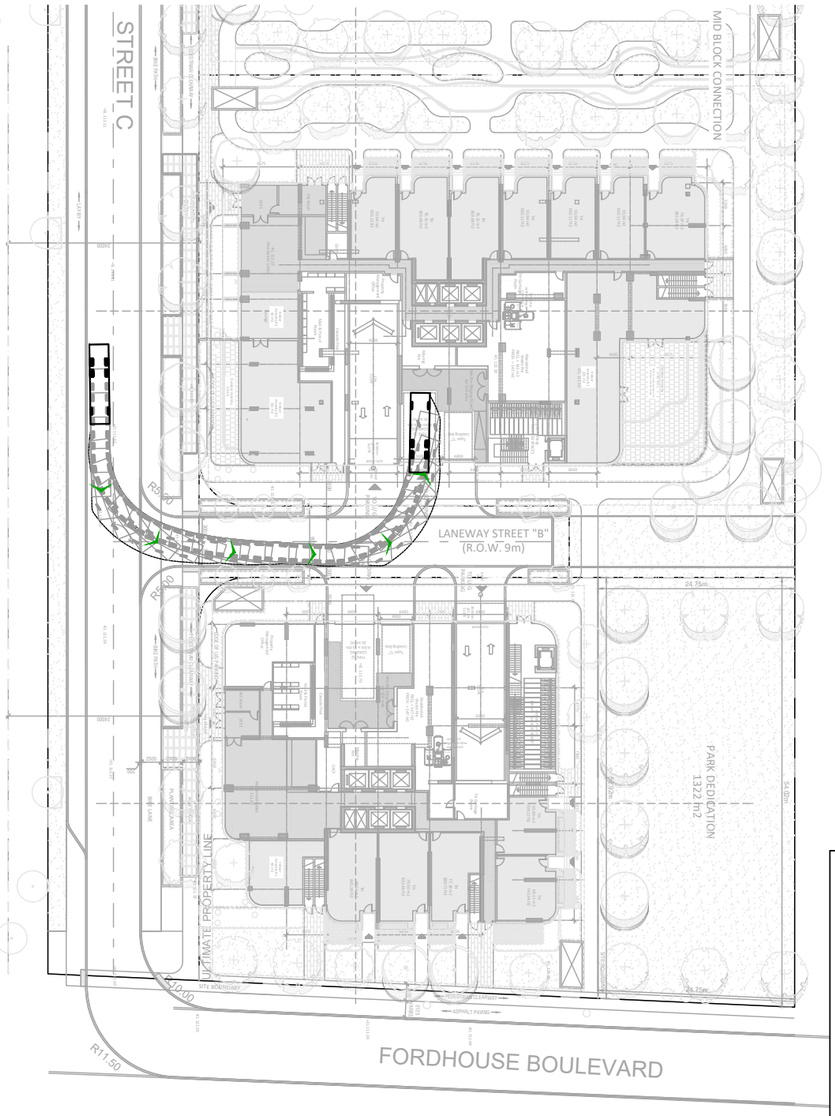
VEHICLE MANOEUVRING DIAGRAM
GROUND FLOOR - BUILDING B
SINGLE UNIT (SU) TRUCK

Project:	Queensway
Project No.	8218-01
Date:	December 9, 2024
Revised:	--

Scale 1:750 (0 15 30m)

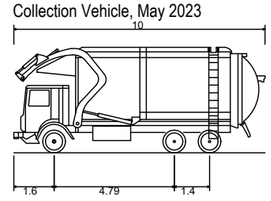
Drawing No. VMD-06

INBOUND



OUTBOUND

City of Toronto, Typical Front-End Waste Collection Vehicle, May 2023



Overall Length (with forks up)	10.00m
Overall Length (with forks down)	12.00m
Overall Width	2.40m
Overall Body Height	4.20m
Outside Turning Radius	14.00m
Inside Turning Radius	9.50m

(Dimensions as per City of Toronto Requirements for Garbage, Recycling and Organics Collection Services for New Developments and Redevelopments (May 2023)

Date Plotted: December 9, 2024 Filename: J:\8218-01\BA\Site Plan Review\2024\3. December 6, 2024\ba-Queensway-SPR-8218-01.dwg

BA Group

QUEENSWAY

VEHICLE MANOEUVRING DIAGRAM
GROUND FLOOR - BUILDING C
CITY OF TORONTO - FRONT LOADER

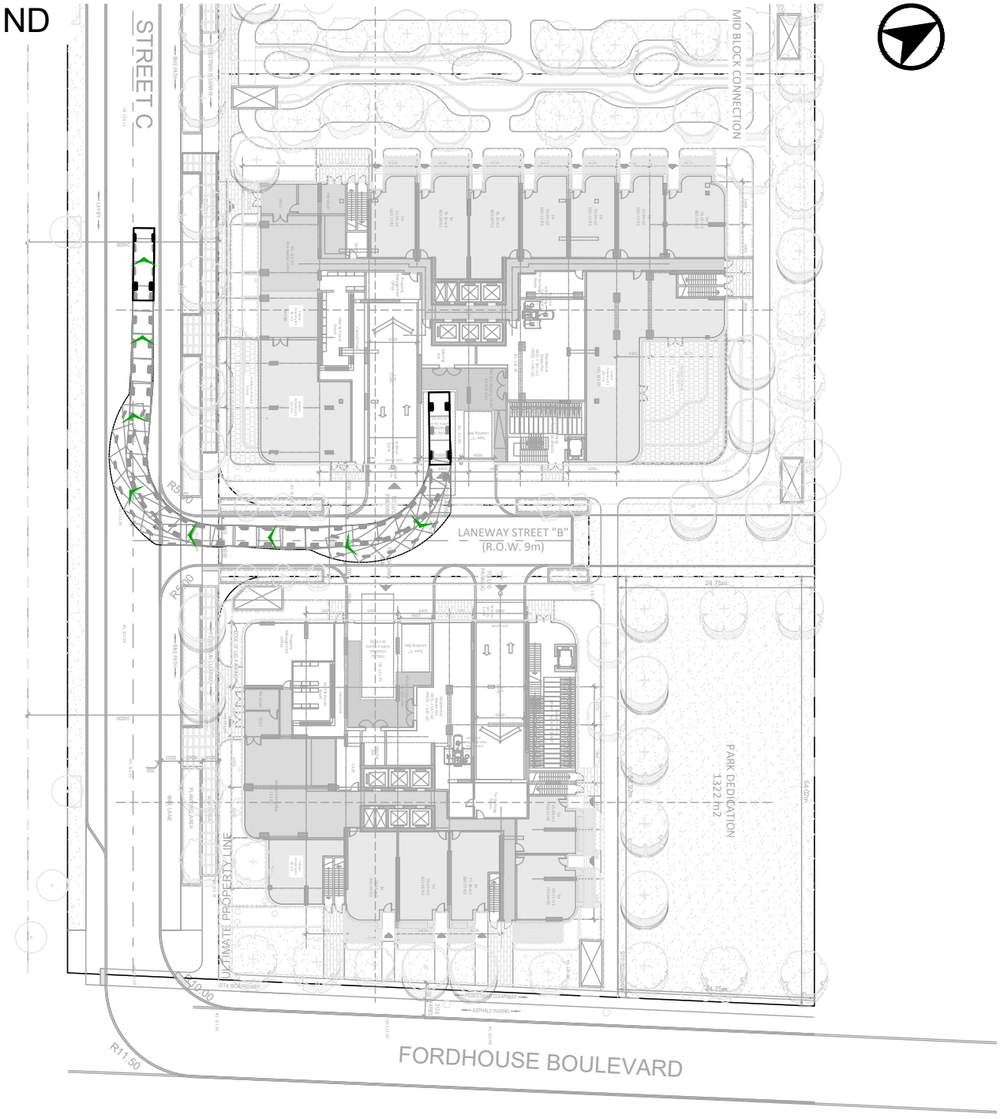
Project:	Queensway
Project No.	8218-01
Date:	December 9, 2024
Revised:	--

Scale 1:750 (0 – 15 – 30m)

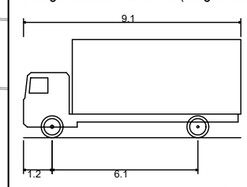
Drawing No. VMD-07

INBOUND (ONE CORRECTION)

OUTBOUND



Design Vehicle - TAC SU (Single Unit Truck)



Overall Length	9.10m
Overall Width	2.60m
Overall Body Height	4.11m
Outside Turning Radius	13.40m
Inside Turning Radius	8.60m

Date Plotted: December 9, 2024 Filename: J:\8218-01\BA\Site Plan Review\2024\3. December 6, 2024\ba-Queensway-SPR-8218-01.dwg

BA Group

QUEENSWAY

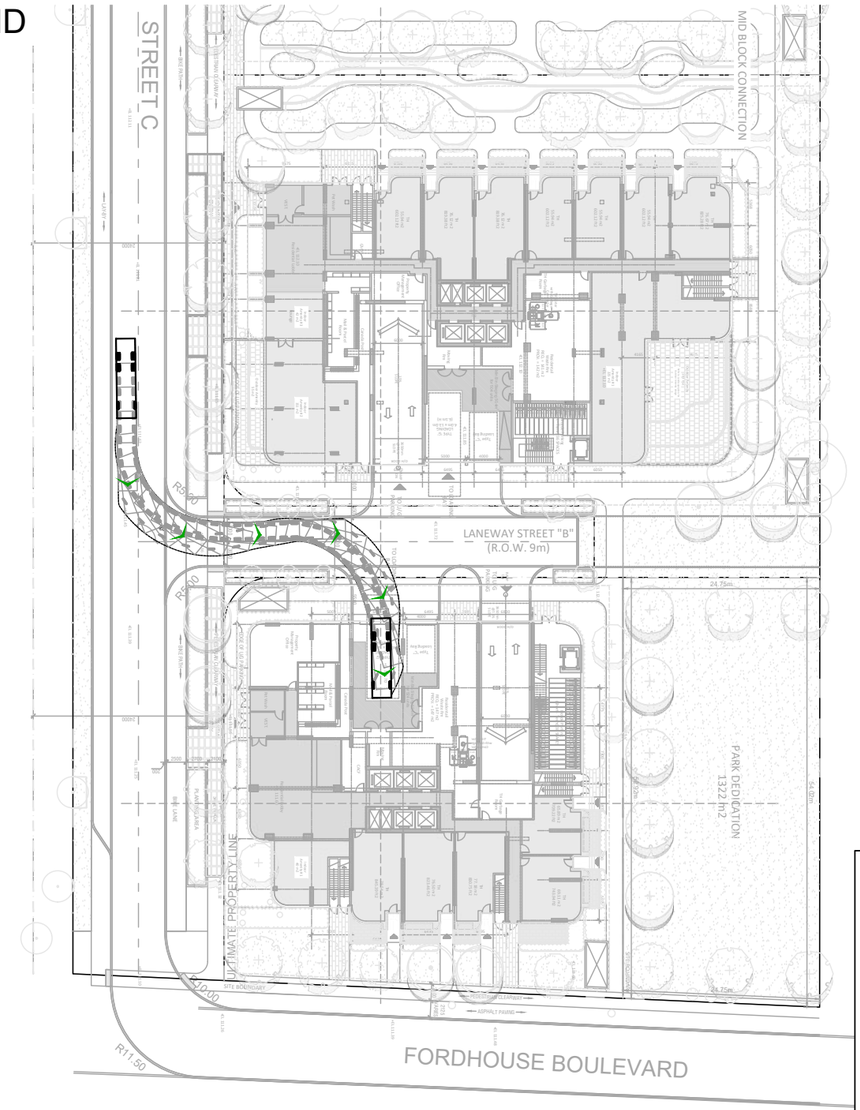
VEHICLE MANOEUVRING DIAGRAM
GROUND FLOOR - BUILDING C
SINGLE UNIT (SU) TRUCK

Project:	Queensway
Project No.	8218-01
Date:	December 9, 2024
Revised:	--

Scale 1:750 (0 – 15 – 30m)

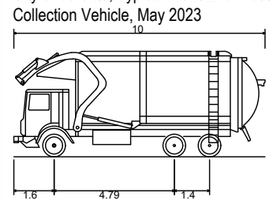
Drawing No. VMD-08

INBOUND



OUTBOUND

City of Toronto, Typical Front-End Waste Collection Vehicle, May 2023



Overall Length (with forks up)	10.00m
Overall Length (with forks down)	12.00m
Overall Width	2.40m
Overall Body Height	4.20m
Outside Turning Radius	14.00m
Inside Turning Radius	9.50m

(Dimensions as per City of Toronto Requirements for Garbage, Recycling and Organics Collection Services for New Developments and Redevelopments (May 2023)

Date Plotted: December 9, 2024 Filename: J:\8218-01\BA\Site Plan Review\2024\3. December 6, 2024\ba-Queensway-SPR-8218-01.dwg

BA Group

QUEENSWAY

VEHICLE MANOEUVRING DIAGRAM
GROUND FLOOR - BUILDING D
CITY OF TORONTO - FRONT LOADER

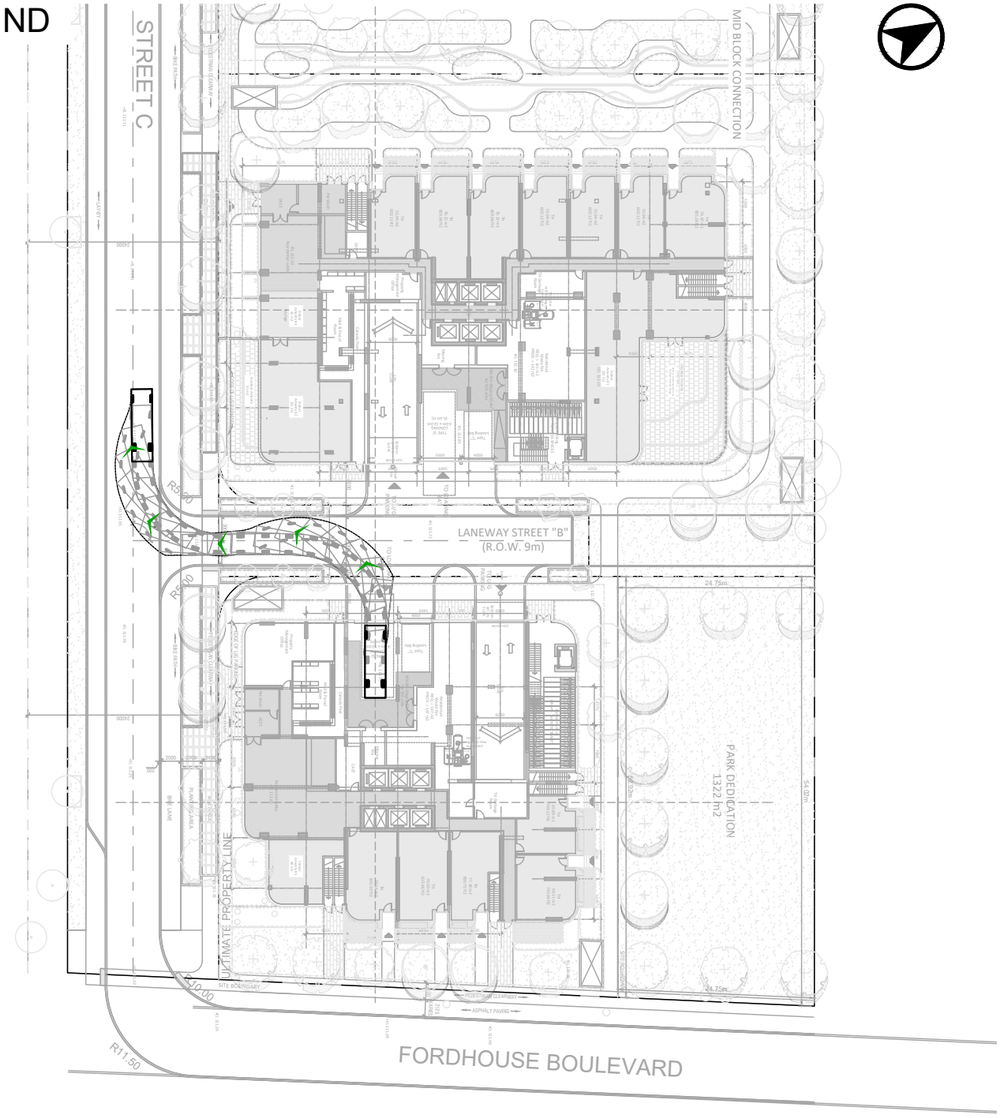
Project:	Queensway
Project No.	8218-01
Date:	December 9, 2024
Revised:	--

Scale 1:750 — 0 15 30m

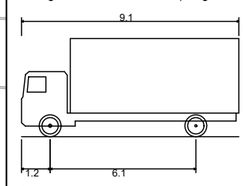
Drawing No. VMD-09

INBOUND (ONE CORRECTION)

OUTBOUND



Design Vehicle - TAC SU (Single Unit Truck)



Overall Length	9.10m
Overall Width	2.60m
Overall Body Height	4.11m
Outside Turning Radius	13.40m
Inside Turning Radius	8.60m

Date Plotted: December 9, 2024 Filename: J:\8218-01\BA\Site Plan Review\2024\3. December 6, 2024\ba-Queensway-SPR-8218-01.dwg

BA Group

QUEENSWAY

VEHICLE MANOEUVRING DIAGRAM
GROUND FLOOR - BUILDING D
SINGLE UNIT (SU) TRUCK

Project:	Queensway
Project No.	8218-01
Date:	December 9, 2024
Revised:	--

Scale 1:750 — 0 15 30m

Drawing No. VMD-10

Appendix D:
Turning Movement Counts (TMCs)

Spectrum

Turning Movement Count
Location Name: THE QUEENSWAY & ATOMIC AVE
Date: Thu, Nov 14, 2024 Deployment Lead: Rey Fernandez

BA Group
1000 95 ST. CLAIR AVE W
TORONTO ONTARIO, M4V 1N6
CANADA

Turning Movement Count (1 . THE QUEENSWAY & ATOMIC AVE) MioID: 1249452

Start Time	N Approach ATOMIC AVE						E Approach THE QUEENSWAY						S Approach SOUTH DRIVEWAY						W Approach THE QUEENSWAY						Int. Total (15 min)	Int. Total (1 hr)
	Right N:W	Thru N:S	Left N:E	UTurn N:N	Peds N:	Approach Total	Right E:N	Thru E:W	Left E:S	UTurn E:E	Peds E:	Approach Total	Right S:E	Thru S:N	Left S:W	UTurn S:S	Peds S:	Approach Total	Right W:S	Thru W:E	Left W:N	UTurn W:W	Peds W:	Approach Total		
2024-11-14 07:30:00	12	0	6	0	4	18	14	151	3	0	1	168	0	0	0	0	2	0	2	190	22	0	0	214	400	
2024-11-14 07:45:00	8	0	9	0	3	17	4	195	0	0	0	199	0	1	0	0	3	1	5	230	23	0	0	258	475	
2024-11-14 08:00:00	7	1	5	0	5	13	15	187	5	0	1	207	2	0	0	0	1	2	4	251	10	0	2	265	487	
2024-11-14 08:15:00	8	0	5	0	4	13	14	201	4	0	3	219	4	0	3	0	2	7	7	210	20	0	2	237	476	1838
2024-11-14 08:30:00	10	2	8	0	2	20	7	206	5	0	2	218	2	0	1	0	1	3	4	211	14	0	0	229	470	1908
2024-11-14 08:45:00	7	1	7	0	4	15	11	211	5	0	1	227	0	1	2	0	1	3	6	225	13	0	1	244	489	1922
2024-11-14 09:00:00	11	3	13	0	2	27	14	155	6	1	2	176	2	2	2	0	2	6	4	212	16	0	1	232	441	1876
2024-11-14 09:15:00	10	0	8	0	0	18	10	174	4	0	1	188	2	0	4	0	3	6	2	197	14	1	0	214	426	1826
BREAK																										
2024-11-14 16:00:00	12	3	8	0	1	23	20	254	1	0	1	275	5	2	6	0	5	13	1	246	8	0	3	255	566	
2024-11-14 16:15:00	13	2	12	0	2	27	20	254	0	0	1	274	3	1	3	0	4	7	2	276	15	0	2	293	601	
2024-11-14 16:30:00	14	2	15	0	4	31	18	232	0	0	2	250	5	1	2	0	3	8	4	260	10	0	3	274	563	
2024-11-14 16:45:00	14	0	11	0	3	25	17	286	2	0	1	305	3	2	3	0	4	8	2	296	9	0	0	307	645	2375
2024-11-14 17:00:00	28	2	23	0	3	53	16	243	2	1	6	262	8	3	21	0	4	32	2	277	16	1	4	296	643	2452
2024-11-14 17:15:00	8	0	13	0	2	21	16	264	0	0	5	280	5	0	2	0	3	7	0	304	14	0	0	318	626	2477
2024-11-14 17:30:00	6	0	9	0	0	15	17	240	0	0	0	257	3	0	3	0	2	6	2	272	9	0	1	283	561	2475
2024-11-14 17:45:00	15	0	10	0	4	25	13	250	1	0	0	264	1	2	6	0	0	9	1	264	16	0	1	281	579	2409
Grand Total	183	16	162	0	43	361	226	3503	38	2	27	3769	45	15	58	0	40	118	48	3921	229	2	20	4200	**8448**	-
Approach%	50.7%	4.4%	44.9%	0%		-	6%	92.9%	1%	0.1%		-	38.1%	12.7%	49.2%	0%		-	1.1%	93.4%	5.5%	0%		-	-	-
Totals %	2.2%	0.2%	1.9%	0%		4.3%	2.7%	41.5%	0.4%	0%		44.6%	0.5%	0.2%	0.7%	0%		1.4%	0.6%	46.4%	2.7%	0%		49.7%	-	-
Heavy	23	0	15	0		-	17	165	0	0		-	0	0	0	0		-	0	176	39	0		-	-	-
Heavy %	12.6%	0%	9.3%	0%		-	7.5%	4.7%	0%	0%		-	0%	0%	0%	0%		-	0%	4.5%	17%	0%		-	-	-
Bicycles	0	0	0	0		-	0	3	0	0		-	0	0	0	0		-	0	3	0	0		-	-	-
Bicycle %	0%	0%	0%	0%		-	0%	0.1%	0%	0%		-	0%	0%	0%	0%		-	0%	0.1%	0%	0%		-	-	-

Spectrum

Turning Movement Count
Location Name: THE QUEENSWAY & ATOMIC AVE
Date: Thu, Nov 14, 2024 Deployment Lead: Rey Fernandez

BA Group
1000 95 ST. CLAIR AVE W
TORONTO ONTARIO, M4V 1N6
CANADA

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

Start Time	N Approach ATOMIC AVE						E Approach THE QUEENSWAY						S Approach SOUTH DRIVEWAY						W Approach THE QUEENSWAY						Int. Total (15 min)
	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	
2024-11-14 08:00:00	7	1	5	0	5	13	15	187	5	0	1	207	2	0	0	0	1	2	4	251	10	0	2	265	487
2024-11-14 08:15:00	8	0	5	0	4	13	14	201	4	0	3	219	4	0	3	0	2	7	7	210	20	0	2	237	476
2024-11-14 08:30:00	10	2	8	0	2	20	7	206	5	0	2	218	2	0	1	0	1	3	4	211	14	0	0	229	470
2024-11-14 08:45:00	7	1	7	0	4	15	11	211	5	0	1	227	0	1	2	0	1	3	6	225	13	0	1	244	489
Grand Total	32	4	25	0	15	61	47	805	19	0	7	871	8	1	6	0	5	15	21	897	57	0	5	975	**1922**
Approach%	52.5%	6.6%	41%	0%		-	5.4%	92.4%	2.2%	0%		-	53.3%	6.7%	40%	0%		-	2.2%	92%	5.8%	0%		-	-
Totals %	1.7%	0.2%	1.3%	0%		3.2%	2.4%	41.9%	1%	0%		45.3%	0.4%	0.1%	0.3%	0%		0.8%	1.1%	46.7%	3%	0%		50.7%	-
PHF	0.8	0.5	0.78	0		0.76	0.78	0.95	0.95	0		0.96	0.5	0.25	0.5	0		0.54	0.75	0.89	0.71	0		0.92	0.98
Heavy	6	0	6	0		12	3	65	0	0		68	0	0	0	0		0	0	59	9	0		68	148
Heavy %	18.8%	0%	24%	0%		19.7%	6.4%	8.1%	0%	0%		7.8%	0%	0%	0%	0%		0%	0%	6.6%	15.8%	0%		7%	7.7%
Lights	26	4	19	0		49	44	740	19	0		803	8	1	6	0		15	21	838	48	0		907	1774
Lights %	81.3%	100%	76%	0%		80.3%	93.6%	91.9%	100%	0%		92.2%	100%	100%	100%	0%		100%	100%	93.4%	84.2%	0%		93%	92.3%
Single-Unit Trucks	6	0	3	0		9	3	48	0	0		51	0	0	0	0		0	0	35	7	0		42	102
Single-Unit Trucks %	18.8%	0%	12%	0%		14.8%	6.4%	6%	0%	0%		5.9%	0%	0%	0%	0%		0%	0%	3.9%	12.3%	0%		4.3%	5.3%
Buses	0	0	0	0		0	0	6	0	0		6	0	0	0	0		0	0	8	0	0		8	14
Buses %	0%	0%	0%	0%		0%	0%	0.7%	0%	0%		0.7%	0%	0%	0%	0%		0%	0%	0.9%	0%	0%		0.8%	0.7%
Articulated Trucks	0	0	3	0		3	0	11	0	0		11	0	0	0	0		0	0	16	2	0		18	32
Articulated Trucks %	0%	0%	12%	0%		4.9%	0%	1.4%	0%	0%		1.3%	0%	0%	0%	0%		0%	0%	1.8%	3.5%	0%		1.8%	1.7%
Pedestrians	-	-	-	-	15	-	-	-	-	-	7	-	-	-	-	-	5	-	-	-	-	-	5	-	-
Pedestrians%	-	-	-	-	46.9%		-	-	-	-	21.9%		-	-	-	-	15.6%		-	-	-	-	15.6%		-
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
Bicycles on Crosswalk%	-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		-
Bicycles on Road	0	0	0	0		-	0	1	0	0		-	0	0	0	0		-	0	0	0	0		-	-
Bicycles on Road%	0%	0%	0%	0%			0%	100%	0%	0%			0%	0%	0%	0%			0%	0%	0%	0%			-

Spectrum

Turning Movement Count
Location Name: THE QUEENSWAY & ATOMIC AVE
Date: Thu, Nov 14, 2024 Deployment Lead: Rey Fernandez

BA Group
1000 95 ST. CLAIR AVE W
TORONTO ONTARIO, M4V 1N6
CANADA

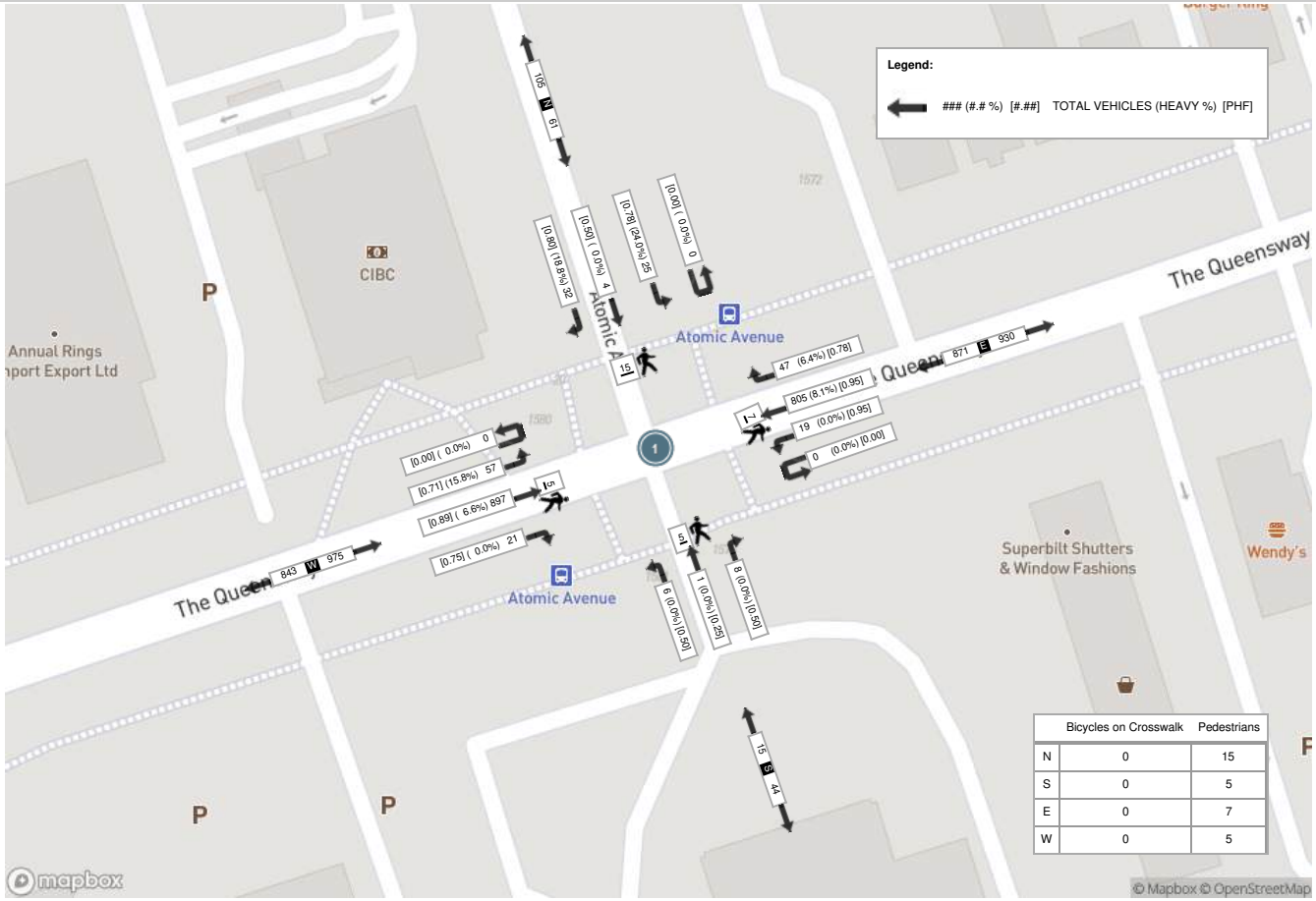
Peak Hour: 04:30 PM - 05:30 PM Weather:

Start Time	N Approach ATOMIC AVE						E Approach THE QUEENSWAY						S Approach SOUTH DRIVEWAY						W Approach THE QUEENSWAY						Int. Total (15 min)
	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	
2024-11-14 16:30:00	14	2	15	0	4	31	18	232	0	0	2	250	5	1	2	0	3	8	4	260	10	0	3	274	563
2024-11-14 16:45:00	14	0	11	0	3	25	17	286	2	0	1	305	3	2	3	0	4	8	2	296	9	0	0	307	645
2024-11-14 17:00:00	28	2	23	0	3	53	16	243	2	1	6	262	8	3	21	0	4	32	2	277	16	1	4	296	643
2024-11-14 17:15:00	8	0	13	0	2	21	16	264	0	0	5	280	5	0	2	0	3	7	0	304	14	0	0	318	626
Grand Total	64	4	62	0	12	130	67	1025	4	1	14	1097	21	6	28	0	14	55	8	1137	49	1	7	1195	**2477**
Approach%	49.2%	3.1%	47.7%	0%		-	6.1%	93.4%	0.4%	0.1%		-	38.2%	10.9%	50.9%	0%		-	0.7%	95.1%	4.1%	0.1%		-	-
Totals %	2.6%	0.2%	2.5%	0%		5.2%	2.7%	41.4%	0.2%	0%		44.3%	0.8%	0.2%	1.1%	0%		2.2%	0.3%	45.9%	2%	0%		48.2%	-
PHF	0.57	0.5	0.67	0		0.61	0.93	0.9	0.5	0.25		0.9	0.66	0.5	0.33	0		0.43	0.5	0.94	0.77	0.25		0.94	0.96
Heavy	1	0	1	0		2	4	15	0	0		19	0	0	0	0		0	0	37	12	0		49	70
Heavy %	1.6%	0%	1.6%	0%		1.5%	6%	1.5%	0%	0%		1.7%	0%	0%	0%	0%		0%	0%	3.3%	24.5%	0%		4.1%	2.8%
Lights	63	4	61	0		128	63	1010	4	1		1078	21	6	28	0		55	8	1100	37	1		1146	2407
Lights %	98.4%	100%	98.4%	0%		98.5%	94%	98.5%	100%	100%		98.3%	100%	100%	100%	0%		100%	100%	96.7%	75.5%	100%		95.9%	97.2%
Single-Unit Trucks	1	0	1	0		2	3	9	0	0		12	0	0	0	0		0	0	27	9	0		36	50
Single-Unit Trucks %	1.6%	0%	1.6%	0%		1.5%	4.5%	0.9%	0%	0%		1.1%	0%	0%	0%	0%		0%	0%	2.4%	18.4%	0%		3%	2%
Buses	0	0	0	0		0	1	4	0	0		5	0	0	0	0		0	0	5	0	0		5	10
Buses %	0%	0%	0%	0%		0%	1.5%	0.4%	0%	0%		0.5%	0%	0%	0%	0%		0%	0%	0.4%	0%	0%		0.4%	0.4%
Articulated Trucks	0	0	0	0		0	0	2	0	0		2	0	0	0	0		0	0	5	3	0		8	10
Articulated Trucks %	0%	0%	0%	0%		0%	0%	0.2%	0%	0%		0.2%	0%	0%	0%	0%		0%	0%	0.4%	6.1%	0%		0.7%	0.4%
Pedestrians	-	-	-	-	11	-	-	-	-	-	13	-	-	-	-	-	13	-	-	-	-	-	7	-	-
Pedestrians%	-	-	-	-	23.4%		-	-	-	-	27.7%		-	-	-	-	27.7%		-	-	-	-	14.9%		-
Bicycles on Crosswalk	-	-	-	-	1	-	-	-	-	-	1	-	-	-	-	-	1	-	-	-	-	-	0	-	-
Bicycles on Crosswalk%	-	-	-	-	2.1%		-	-	-	-	2.1%		-	-	-	-	2.1%		-	-	-	-	0%		-
Bicycles on Road	0	0	0	0		-	0	1	0	0		-	0	0	0	0		-	0	2	0	0		-	-
Bicycles on Road%	0%	0%	0%	0%			0%	100%	0%	0%			0%	0%	0%	0%			0%	100%	0%	0%			-

Turning Movement Count
Location Name: THE QUEENSWAY & ATOMIC AVE
Date: Thu, Nov 14, 2024 Deployment Lead: Rey Fernandez

BA Group
1000 95 ST. CLAIR AVE W
TORONTO ONTARIO, M4V 1N6
CANADA

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

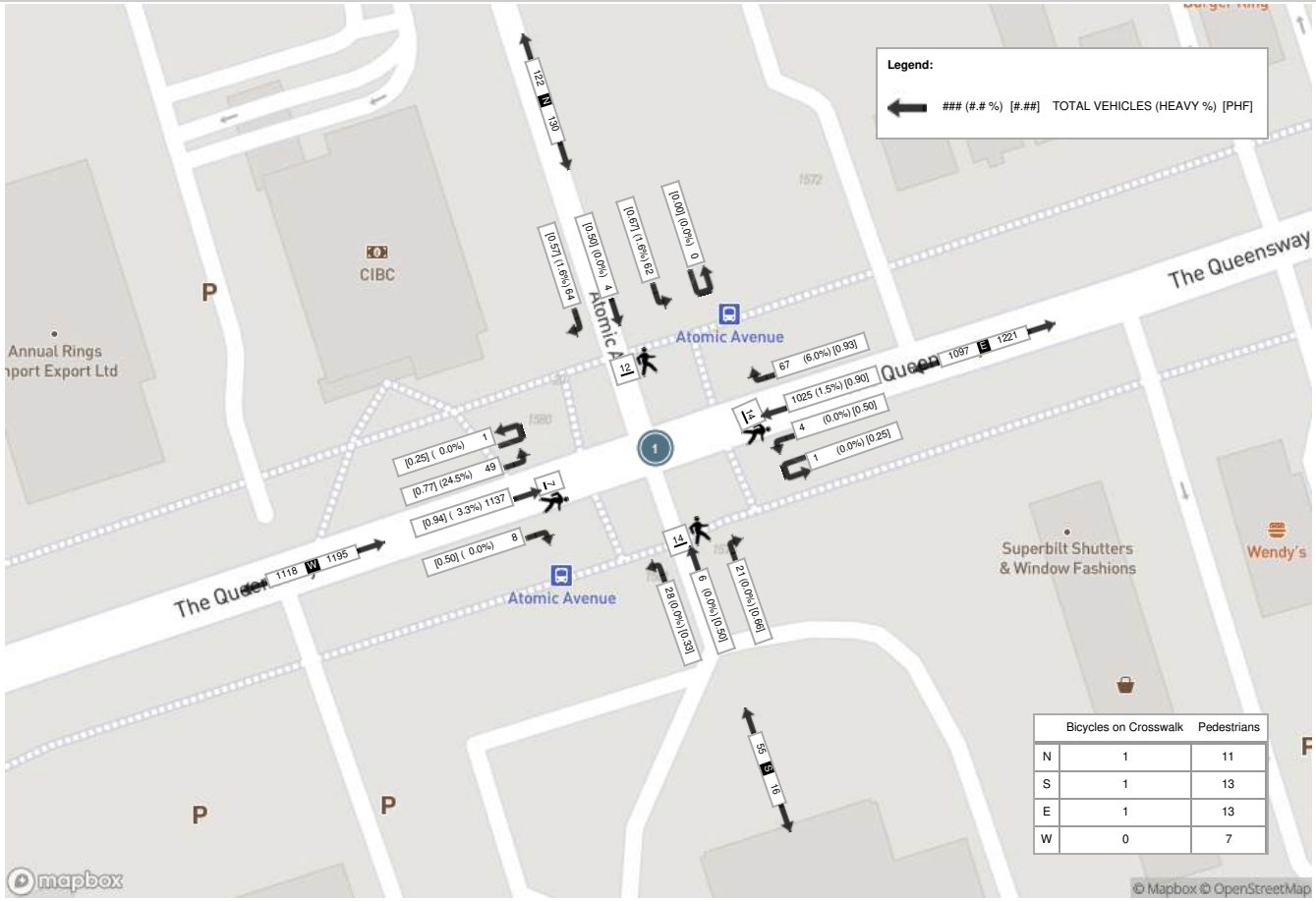


	Bicycles on Crosswalk	Pedestrians
N	0	15
S	0	5
E	0	7
W	0	5

Turning Movement Count
Location Name: THE QUEENSWAY & ATOMIC AVE
Date: Thu, Nov 14, 2024 Deployment Lead: Rey Fernandez

BA Group
1000 95 ST. CLAIR AVE W
TORONTO ONTARIO, M4V 1N6
CANADA

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



	Bicycles on Crosswalk	Pedestrians
N	1	11
S	1	13
E	1	13
W	0	7

Spectrum

Turning Movement Count
Location Name: THE QUEENSWAY & IKEA ACCESS
Date: Thu, Nov 14, 2024 Deployment Lead: Rey Fernandez

BA Group
1000 95 ST. CLAIR AVE W
TORONTO ONTARIO, M4V 1N6
CANADA

Turning Movement Count (2 . THE QUEENSWAY & IKEA ACCESS) MioID: 1249455

Start Time	N Approach NORTH DRIVEWAY						E Approach THE QUEENSWAY						S Approach IKEA ACCESS						W Approach THE QUEENSWAY						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		
07:30:00	1	0	0	0	0	1	3	165	2	0	2	170	1	0	0	0	1	1	3	173	2	0	0	178	350	
07:45:00	0	0	1	0	1	1	0	196	0	0	3	196	1	0	2	0	2	3	5	220	1	0	0	226	426	
08:00:00	2	0	1	0	1	3	4	199	2	0	0	205	1	0	1	0	2	2	4	240	2	1	0	247	457	
08:15:00	1	0	1	0	2	2	0	200	1	0	1	201	2	0	2	0	1	4	7	197	1	0	1	205	412	1645
08:30:00	3	0	0	0	0	3	0	218	5	0	0	223	5	0	3	0	4	8	4	205	3	0	0	212	446	1741
08:45:00	1	0	0	0	2	1	2	231	2	2	2	237	2	0	2	0	3	4	1	212	1	0	3	214	456	1771
09:00:00	2	0	1	0	1	3	1	162	6	2	2	171	2	0	4	0	2	6	3	206	1	0	2	210	390	1704
09:15:00	4	0	0	0	0	4	2	160	6	0	1	168	4	0	2	0	4	6	8	163	2	1	1	174	352	1644
BREAK																										
16:00:00	3	0	1	0	2	4	0	241	17	0	0	258	18	0	13	0	2	31	22	229	1	0	4	252	545	
16:15:00	4	0	2	0	2	6	3	247	15	0	3	265	19	0	23	0	4	42	15	264	1	0	2	280	593	
16:30:00	5	0	2	0	1	7	1	216	11	1	6	229	14	0	21	0	3	35	14	259	0	0	3	273	544	
16:45:00	2	0	0	0	1	2	0	259	16	1	12	276	11	0	11	0	5	22	17	266	0	2	0	285	585	2267
17:00:00	3	0	6	0	1	9	1	250	14	0	3	265	10	0	15	0	2	25	24	292	1	0	2	317	616	2338
17:15:00	2	0	0	0	0	2	0	211	26	3	0	240	10	0	19	0	1	29	27	272	0	0	0	299	570	2315
17:30:00	5	0	2	0	4	7	3	234	19	0	8	256	9	0	20	0	5	29	24	242	1	0	3	267	559	2330
17:45:00	2	0	1	0	1	3	0	236	25	0	0	261	14	0	17	0	1	31	27	233	1	1	1	262	557	2302
Grand Total	40	0	18	0	19	58	20	3425	167	9	43	3621	123	0	155	0	42	278	205	3673	18	5	22	3901	**7858**	-
Approach%	69%	0%	31%	0%		-	0.6%	94.6%	4.6%	0.2%		-	44.2%	0%	55.8%	0%		-	5.3%	94.2%	0.5%	0.1%		-	-	-
Totals %	0.5%	0%	0.2%	0%		0.7%	0.3%	43.6%	2.1%	0.1%		46.1%	1.6%	0%	2%	0%		3.5%	2.6%	46.7%	0.2%	0.1%		49.6%	-	-
Heavy	0	0	0	0		-	0	188	2	0		-	0	0	1	0		-	0	191	0	0		-	-	-
Heavy %	0%	0%	0%	0%		-	0%	5.5%	1.2%	0%		-	0%	0%	0.6%	0%		-	0%	5.2%	0%	0%		-	-	-
Bicycles	0	0	0	0		-	1	2	0	0		-	0	0	0	0		-	0	4	0	0		-	-	-
Bicycle %	0%	0%	0%	0%		-	5%	0.1%	0%	0%		-	0%	0%	0%	0%		-	0%	0.1%	0%	0%		-	-	-

Spectrum

Turning Movement Count
Location Name: THE QUEENSWAY & IKEA ACCESS
Date: Thu, Nov 14, 2024 Deployment Lead: Rey Fernandez

BA Group
1000 95 ST. CLAIR AVE W
TORONTO ONTARIO, M4V 1N6
CANADA

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

Start Time	N Approach NORTH DRIVEWAY						E Approach THE QUEENSWAY						S Approach IKEA ACCESS						W Approach THE QUEENSWAY						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	
08:00:00	2	0	1	0	1	3	4	199	2	0	0	205	1	0	1	0	2	2	4	240	2	1	0	247	457
08:15:00	1	0	1	0	2	2	0	200	1	0	1	201	2	0	2	0	1	4	7	197	1	0	1	205	412
08:30:00	3	0	0	0	0	3	0	218	5	0	0	223	5	0	3	0	4	8	4	205	3	0	0	212	446
08:45:00	1	0	0	0	2	1	2	231	2	2	2	237	2	0	2	0	3	4	1	212	1	0	3	214	456
Grand Total	7	0	2	0	5	9	6	848	10	2	3	866	10	0	8	0	10	18	16	854	7	1	4	878	**1771**
Approach%	77.8%	0%	22.2%	0%		-	0.7%	97.9%	1.2%	0.2%		-	55.6%	0%	44.4%	0%		-	1.8%	97.3%	0.8%	0.1%		-	-
Totals %	0.4%	0%	0.1%	0%		0.5%	0.3%	47.9%	0.6%	0.1%		48.9%	0.6%	0%	0.5%	0%		1%	0.9%	48.2%	0.4%	0.1%		49.6%	-
PHF	0.58	0	0.5	0		0.75	0.38	0.92	0.5	0.25		0.91	0.5	0	0.67	0		0.56	0.57	0.89	0.58	0.25		0.89	-
Heavy	0	0	0	0		0	0	73	2	0		75	0	0	0	0		0	0	67	0	0		67	-
Heavy %	0%	0%	0%	0%		0%	0%	8.6%	20%	0%		8.7%	0%	0%	0%	0%		0%	0%	7.8%	0%	0%		7.6%	-
Lights	7	0	2	0		9	6	775	8	2		791	10	0	8	0		18	16	787	7	1		811	-
Lights %	100%	0%	100%	0%		100%	100%	91.4%	80%	100%		91.3%	100%	0%	100%	0%		100%	100%	92.2%	100%	100%		92.4%	-
Single-Unit Trucks	0	0	0	0		0	0	55	2	0		57	0	0	0	0		0	0	47	0	0		47	-
Single-Unit Trucks %	0%	0%	0%	0%		0%	0%	6.5%	20%	0%		6.6%	0%	0%	0%	0%		0%	0%	5.5%	0%	0%		5.4%	-
Buses	0	0	0	0		0	0	7	0	0		7	0	0	0	0		0	0	8	0	0		8	-
Buses %	0%	0%	0%	0%		0%	0%	0.8%	0%	0%		0.8%	0%	0%	0%	0%		0%	0%	0.9%	0%	0%		0.9%	-
Articulated Trucks	0	0	0	0		0	0	11	0	0		11	0	0	0	0		0	0	12	0	0		12	-
Articulated Trucks %	0%	0%	0%	0%		0%	0%	1.3%	0%	0%		1.3%	0%	0%	0%	0%		0%	0%	1.4%	0%	0%		1.4%	-
Pedestrians	-	-	-	-	5	-	-	-	-	-	3	-	-	-	-	-	10	-	-	-	-	-	4	-	-
Pedestrians%	-	-	-	-	22.7%		-	-	-	-	13.6%		-	-	-	-	45.5%		-	-	-	-	18.2%		-
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%		-
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
Bicycles on Crosswalk%	-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		-

Spectrum

Turning Movement Count
Location Name: THE QUEENSWAY & IKEA ACCESS
Date: Thu, Nov 14, 2024 Deployment Lead: Rey Fernandez

BA Group
1000 95 ST. CLAIR AVE W
TORONTO ONTARIO, M4V 1N6
CANADA

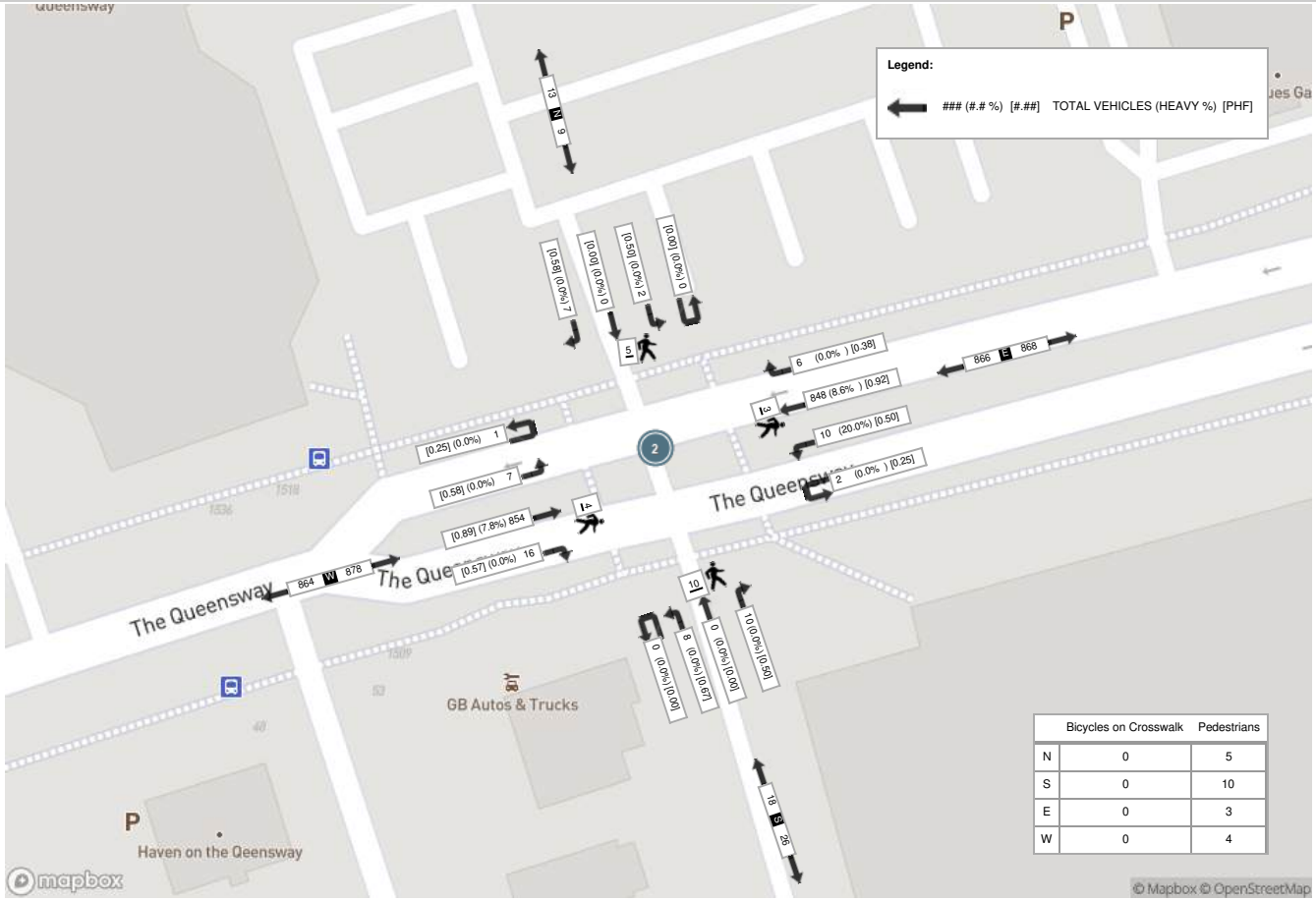
Peak Hour: 04:15 PM - 05:15 PM Weather:

Start Time	N Approach NORTH DRIVEWAY						E Approach THE QUEENSWAY						S Approach IKEA ACCESS						W Approach THE QUEENSWAY						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	
16:15:00	4	0	2	0	2	6	3	247	15	0	3	265	19	0	23	0	4	42	15	264	1	0	2	280	593
16:30:00	5	0	2	0	1	7	1	216	11	1	6	229	14	0	21	0	3	35	14	259	0	0	3	273	544
16:45:00	2	0	0	0	1	2	0	259	16	1	12	276	11	0	11	0	5	22	17	266	0	2	0	285	585
17:00:00	3	0	6	0	1	9	1	250	14	0	3	265	10	0	15	0	2	25	24	292	1	0	2	317	616
Grand Total	14	0	10	0	5	24	5	972	56	2	24	1035	54	0	70	0	14	124	70	1081	2	2	7	1155	**2338**
Approach%	58.3%	0%	41.7%	0%		-	0.5%	93.9%	5.4%	0.2%		-	43.5%	0%	56.5%	0%		-	6.1%	93.6%	0.2%	0.2%		-	-
Totals %	0.6%	0%	0.4%	0%		1%	0.2%	41.6%	2.4%	0.1%		44.3%	2.3%	0%	3%	0%		5.3%	3%	46.2%	0.1%	0.1%		49.4%	-
PHF	0.7	0	0.42	0		0.67	0.42	0.94	0.88	0.5		0.94	0.71	0	0.76	0		0.74	0.73	0.93	0.5	0.25		0.91	-
Heavy	0	0	0	0		0	0	27	0	0		27	0	0	0	0		0	0	36	0	0		36	-
Heavy %	0%	0%	0%	0%		0%	0%	2.8%	0%	0%		2.6%	0%	0%	0%	0%		0%	0%	3.3%	0%	0%		3.1%	-
Lights	14	0	10	0		24	5	945	56	2		1008	54	0	70	0		124	70	1045	2	2		1119	-
Lights %	100%	0%	100%	0%		100%	100%	97.2%	100%	100%		97.4%	100%	0%	100%	0%		100%	100%	96.7%	100%	100%		96.9%	-
Single-Unit Trucks	0	0	0	0		0	0	18	0	0		18	0	0	0	0		0	0	26	0	0		26	-
Single-Unit Trucks %	0%	0%	0%	0%		0%	0%	1.9%	0%	0%		1.7%	0%	0%	0%	0%		0%	0%	2.4%	0%	0%		2.3%	-
Buses	0	0	0	0		0	0	5	0	0		5	0	0	0	0		0	0	4	0	0		4	-
Buses %	0%	0%	0%	0%		0%	0%	0.5%	0%	0%		0.5%	0%	0%	0%	0%		0%	0%	0.4%	0%	0%		0.3%	-
Articulated Trucks	0	0	0	0		0	0	4	0	0		4	0	0	0	0		0	0	6	0	0		6	-
Articulated Trucks %	0%	0%	0%	0%		0%	0%	0.4%	0%	0%		0.4%	0%	0%	0%	0%		0%	0%	0.6%	0%	0%		0.5%	-
Pedestrians	-	-	-	-	5	-	-	-	-	-	24	-	-	-	-	-	11	-	-	-	-	-	7	-	-
Pedestrians%	-	-	-	-	10%		-	-	-	-	48%		-	-	-	-	22%		-	-	-	-	14%		-
Bicycles on Road	0	0	0	0	0	-	0	1	0	0	0	-	0	0	0	0	0	-	0	2	0	0	0	-	-
Bicycles on Road%	-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		-
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	3	-	-	-	-	-	0	-	-
Bicycles on Crosswalk%	-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	6%		-	-	-	-	0%		-

Turning Movement Count
Location Name: THE QUEENSWAY & IKEA ACCESS
Date: Thu, Nov 14, 2024 Deployment Lead: Rey Fernandez

BA Group
1000 95 ST. CLAIR AVE W
TORONTO ONTARIO, M4V 1N6
CANADA

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

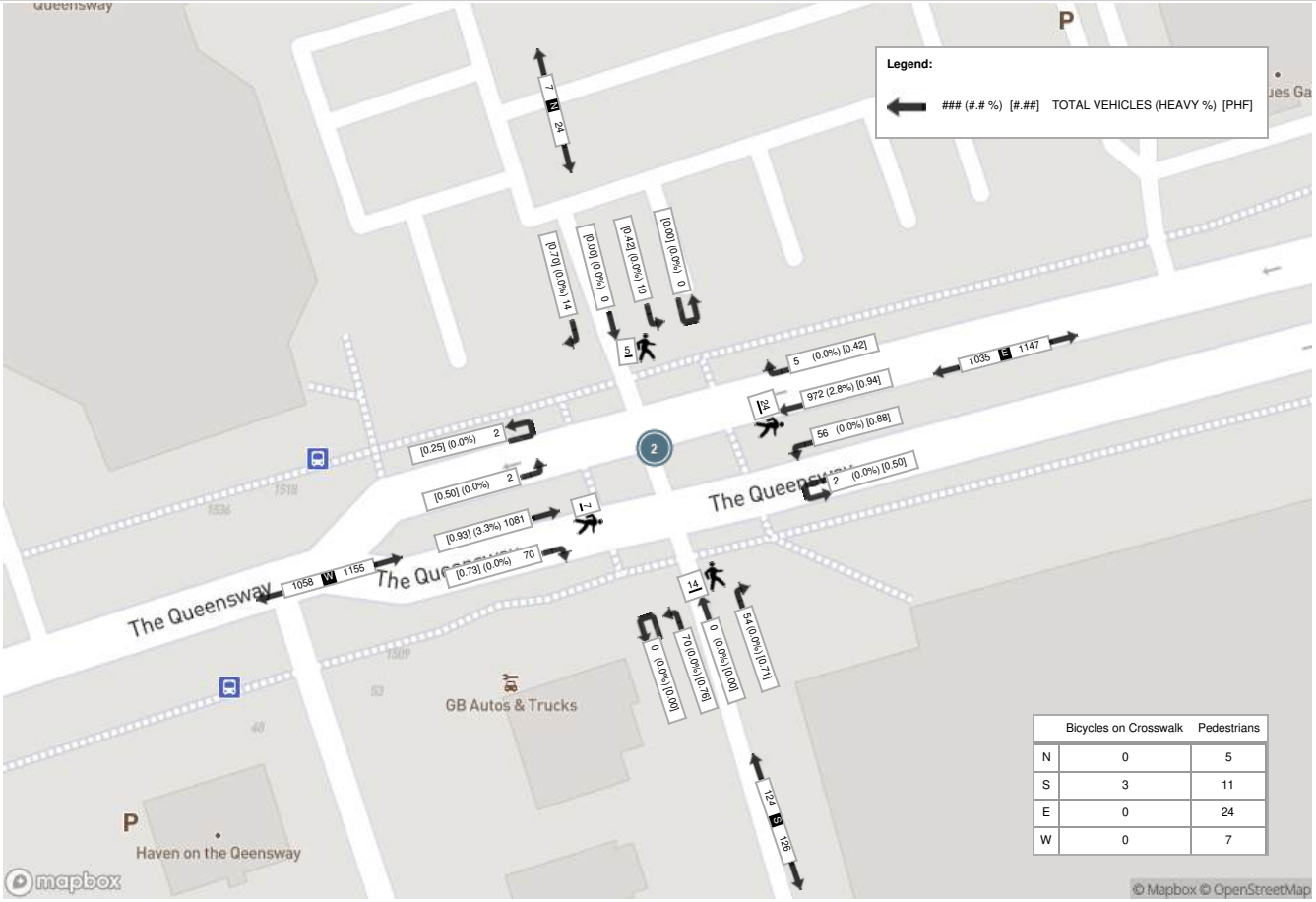


	Bicycles on Crosswalk	Pedestrians
N	0	5
S	0	10
E	0	3
W	0	4

Turning Movement Count
Location Name: THE QUEENSWAY & IKEA ACCESS
Date: Thu, Nov 14, 2024 Deployment Lead: Rey Fernandez

BA Group
1000 95 ST. CLAIR AVE W
TORONTO ONTARIO, M4V 1N6
CANADA

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

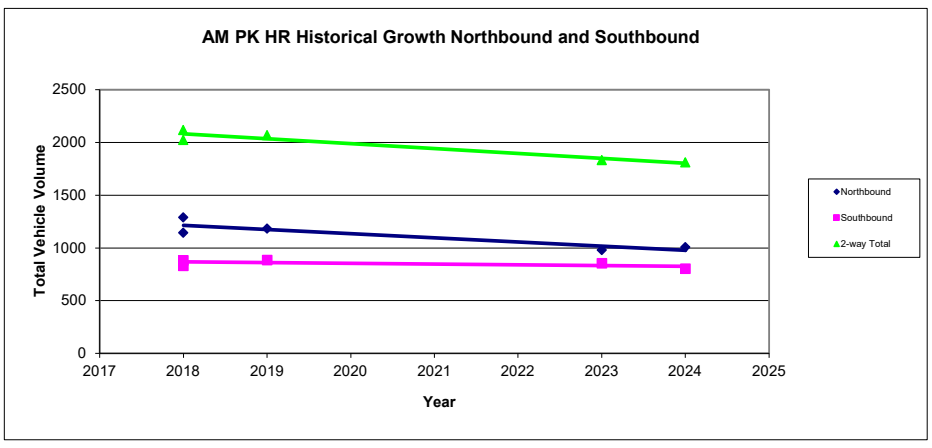


	Bicycles on Crosswalk	Pedestrians
N	0	5
S	3	11
E	0	24
W	0	7

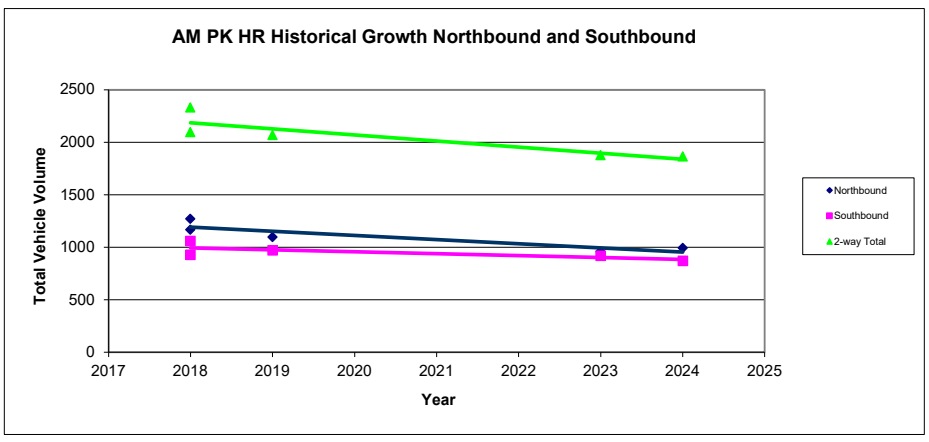
Appendix E:
Corridor Growth Calculations

Project: The Queensway & Algie Road
Project ID: 8218-01
Intersection: The Queensway / Kipling Avenue
Peak Hour: AM

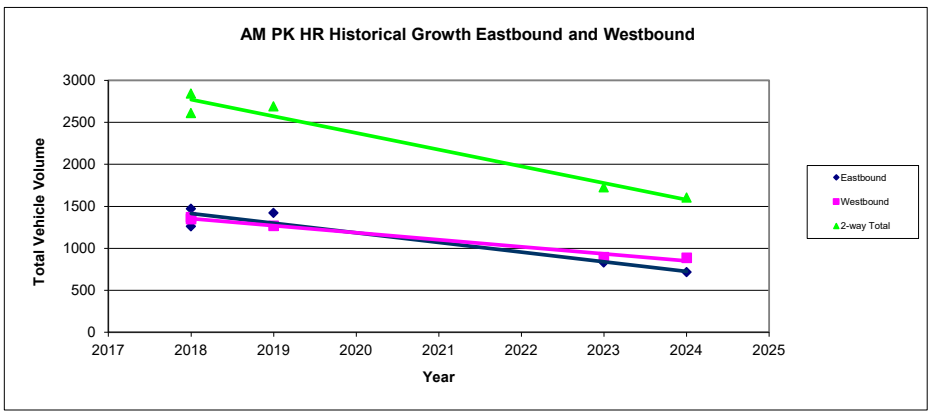
Count Information		North of The Queensway / Kipling Avenue		
Date	Year	Northbound	Southbound	2-way
Wednesday, November 07, 2018	2018	1287	829	2116
Thursday, December 13, 2018	2018	1141	881	2022
Tuesday, June 11, 2019	2019	1182	885	2067
Thursday, November 2, 2023	2023	977	853	1830
Thursday, April 18, 2024	2024	1007	803	1810
Trend Point		1218.53	863.94	2082.47
Slope		-47.85	-1.29	-49.15
Growth		**-3.93%**	**-0.15%**	**-2.36%**



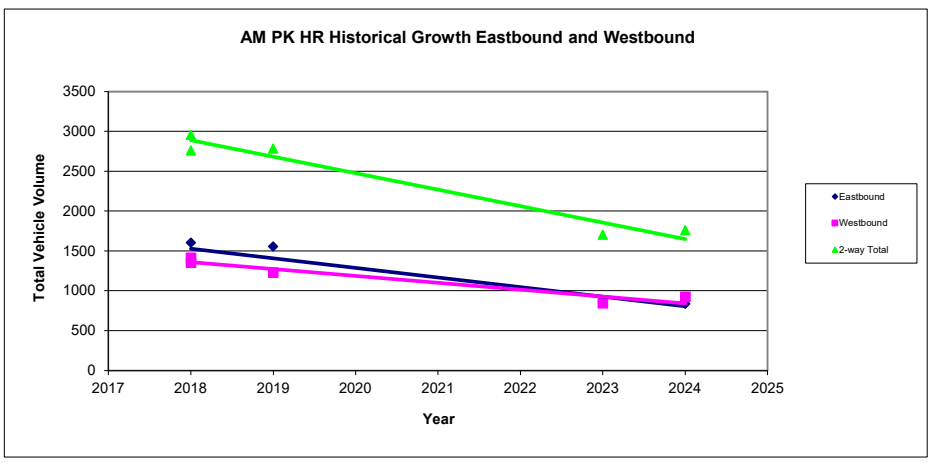
Count Information		South of The Queensway / Kipling Avenue		
Date	Year	Northbound	Southbound	2-way
Wednesday, November 07, 2018	2018	1269	1060	2329
Thursday, December 13, 2018	2018	1166	929	2095
Tuesday, June 11, 2019	2019	1097	970	2067
Thursday, November 2, 2023	2023	958	919	1877
Thursday, April 18, 2024	2024	991	872	1863
Trend Point		1197.32	991.74	2189.06
Slope		-49.88	-14.82	-64.71
Growth		**-4.17%**	**-1.49%**	**-2.96%**



Count Information		East of The Queensway / Kipling Avenue		
Date	Year	Eastbound	Westbound	2-way
Wednesday, November 07, 2018	2018	1472	1372	2844
Thursday, December 13, 2018	2018	1260	1350	2610
Tuesday, June 11, 2019	2019	1422	1268	2690
Thursday, November 2, 2023	2023	829	897	1726
Thursday, April 18, 2024	2024	716	887	1603
Trend Point		1414.06	1360.94	2775.00
Slope		-112.21	-92.79	-205.00
Growth		**-7.94%**	**-6.82%**	**-7.39%**

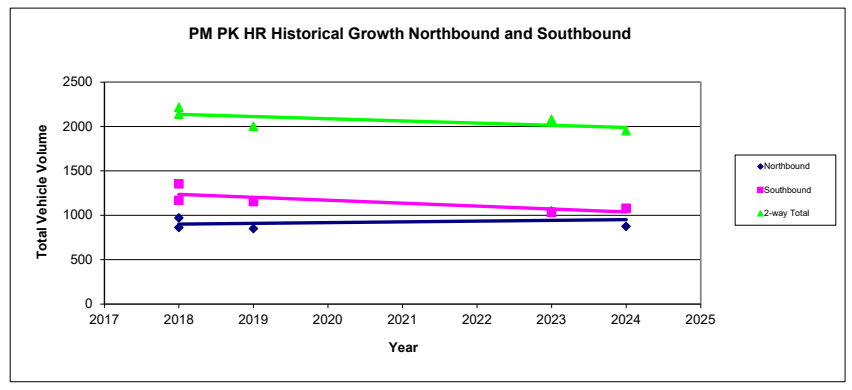


Count Information		West of The Queensway / Kipling Avenue		
Date	Year	Eastbound	Westbound	2-way
Wednesday, November 07, 2018	2018	1602	1353	2955
Thursday, December 13, 2018	2018	1347	1414	2761
Tuesday, June 11, 2019	2019	1555	1231	2786
Thursday, November 2, 2023	2023	860	843	1703
Thursday, April 18, 2024	2024	838	924	1762
Trend Point		1534.323529	1370.441176	2904.76
Slope		-128.8823529	-106.794118	-235.68
Growth		**-8.40%**	**-7.79%**	**-8.11%**

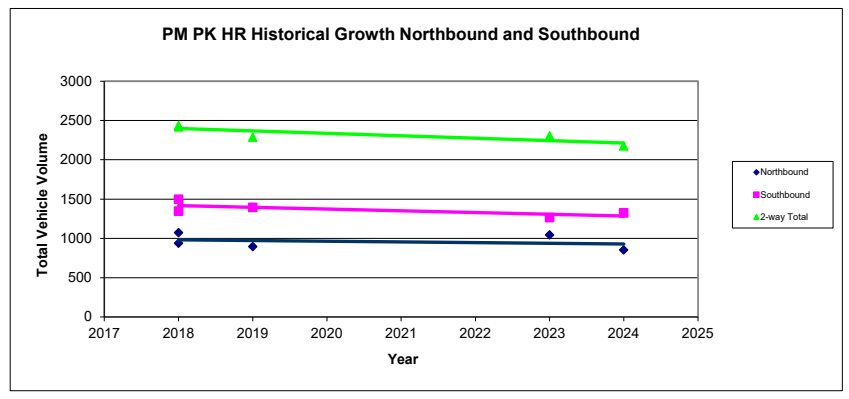


Project: The Queensway & Algie Road
Project ID: 8218-01
Intersection: The Queensway / Kipling Avenue
Peak Hour: PM

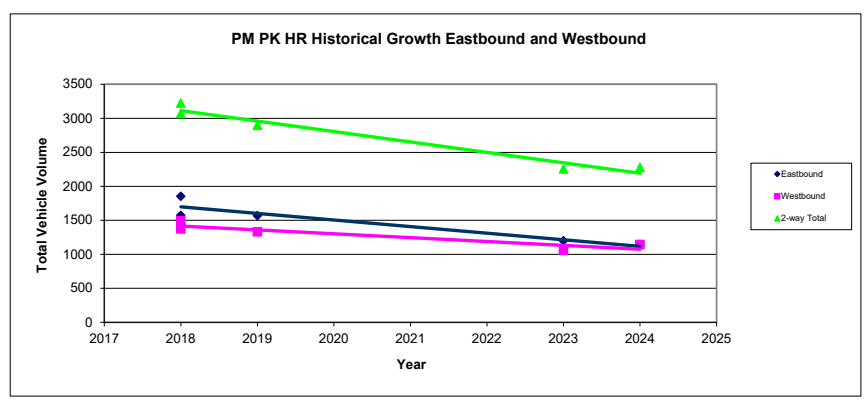
Count Information		North of The Queensway / Kipling Avenue		
Date	Year	Northbound	Southbound	2-way
Wednesday, November 07, 2018	2018	971	1168	2139
Thursday, December 13, 2018	2018	862	1354	2216
Tuesday, June 11, 2019	2019	849	1154	2003
Thursday, November 2, 2023	2023	1047	1034	2081
Thursday, April 18, 2024	2024	875	1078	1953
Trend Point		888.97	1242.88	2131.85
Slope		8.57	-33.11	-24.54
Growth		**0.96%**	**-2.66%**	**-1.15%**



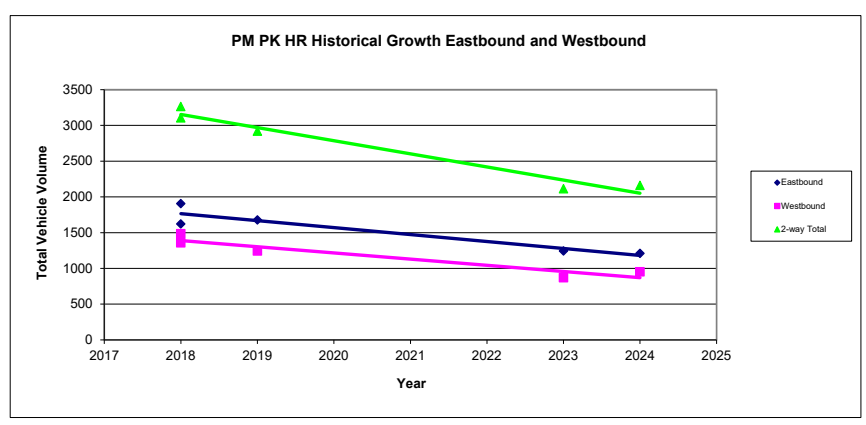
Count Information		South of The Queensway / Kipling Avenue		
Date	Year	Northbound	Southbound	2-way
Wednesday, November 07, 2018	2018	1071	1347	2418
Thursday, December 13, 2018	2018	938	1498	2436
Tuesday, June 11, 2019	2019	894	1394	2288
Thursday, November 2, 2023	2023	1043	1263	2306
Thursday, April 18, 2024	2024	853	1322	2175
Trend Point		969.74	1423.50	2393.24
Slope		11.18	-32.00	-20.82
Growth		**1.15%**	**-2.25%**	**-0.87%**



Count Information		East of The Queensway / Kipling Avenue		
Date	Year	Eastbound	Westbound	2-way
Wednesday, November 07, 2018	2018	1573	1495	3068
Thursday, December 13, 2018	2018	1852	1372	3224
Tuesday, June 11, 2019	2019	1568	1329	2897
Thursday, November 2, 2023	2023	1198	1056	2254
Thursday, April 18, 2024	2024	1135	1144	2279
Trend Point		1700.26	1424.97	3125.24
Slope		-101.68	-74.65	-176.32
Growth		**-5.98%**	**-5.24%**	**-5.64%**



Count Information		West of The Queensway / Kipling Avenue		
Date	Year	Eastbound	Westbound	2-way
Wednesday, November 07, 2018	2018	1621	1484	3105
Thursday, December 13, 2018	2018	1906	1358	3264
Tuesday, June 11, 2019	2019	1677	1243	2920
Thursday, November 2, 2023	2023	1244	869	2113
Thursday, April 18, 2024	2024	1209	952	2161
Trend Point		1768.62	1401.12	3169.74
Slope		-97.16	-86.58	-183.74
Growth		**-5.49%**	**-6.18%**	**-5.80%**



Appendix F:
Transportation Tomorrow Survey (TTS) Data

The Queensway/Algie

8218-01

Residential Vehicular Site Traffic Distribution (AM Peak Hour)

Outbound

BA Group

2024-12-06

Wed Nov 13 2024 15:05:32 GMT-0500 (Eastern Standard Time) - Run Time: 2630ms

Cross Tabulation Query Form - Trip - 2016

Row: Planning district of destination - pd_dest

Column: 2006 GTA zone of origin - gta06_orig

Filters:

Start time of trip - start_time In 600-859

and

Trip purpose of origin - purp_orig In H

and

Primary travel mode of trip - mode_prime In D,M,P,T,U

and

2006 GTA zone of origin - gta06_orig In 288, 292, 297, 298, 299,300, 301, 309

and

Type of dwelling unit - dwell_type In 2

Trip 2016

Table:

		288	298	300	301	309	**Total**
PD 1 of Toronto		240	27	0	42	38	**347**
PD 2 of Toronto		92	0	27	62	0	**181**
PD 3 of Toronto		0	0	33	46	0	**79**
PD 4 of Toronto		40	0	30	0	0	**70**
PD 5 of Toronto		46	0	0	0	26	**72**
PD 6 of Toronto		0	0	9	26	0	**35**
PD 7 of Toronto		28	52	59	0	62	**201**
PD 8 of Toronto		292	105	29	28	118	**572**
	299	*25*	*0*	*0*	*0*	*0*	***25***
	300	*88*	*105*	*0*	*0*	*0*	***193***
	301	*0*	*0*	*13*	*0*	*56*	***69***
	307	*13*	*0*	*0*	*0*	*0*	***13***
	308	*42*	*0*	*0*	*0*	*17*	***59***
	310	*0*	*0*	*0*	*0*	*20*	***20***
	316	*122*	*0*	*0*	*0*	*0*	***122***
	335	*0*	*0*	*0*	*28*	*0*	***28***
	342	*0*	*0*	*16*	*0*	*26*	***42***
PD 9 of Toronto		34	0	30	14	62	**140**
PD 10 of Toronto		59	47	17	57	27	**207**
PD 13 of Toronto		29	0	0	0	0	**29**
PD 16 of Toronto		0	0	0	0	29	**29**
Whitby		0	0	0	0	7	**7**
Markham		0	0	0	0	26	**26**
Vaughan		82	0	19	0	38	**139**
Brampton		13	0	0	0	38	**51**
Mississauga		249	256	51	38	54	**648**
Oakville		0	0	0	0	76	**76**
Hamilton		0	0	0	62	0	**62**
St. Catharines		42	0	0	0	0	**42**
Waterloo		0	0	27	0	0	**27**
		1246	**487**	**331**	**375**	**601**	**3040**

Wed Nov 13 2024 15:12:45 GMT-0500 (Eastern Standard Time) - Run Time: 2345ms

Cross Tabulation Query Form - Trip - 2016

Row: 2006 GTA zone of destination - gta06_dest

Column: 2006 GTA zone of origin - gta06_orig

Filters:

Start time of trip - start_time In 600-859

and

Trip purpose of origin - purp_orig In H

and

Primary travel mode of trip - mode_prime In D,M,P,T,U

and

2006 GTA zone of origin - gta06_orig In 288, 292, 297, 298, 299,300, 301, 309

and

Type of dwelling unit - dwell_type In 2

and

Planning district of destination - pd_dest In 8,

Trip 2016

Table:

	288	298	300	301	309	**Total**
299	25	0	0	0	0	**25**
300	88	105	0	0	0	**193**
301	0	0	13	0	56	**69**
307	13	0	0	0	0	**13**
308	42	0	0	0	17	**59**
310	0	0	0	0	20	**20**
316	122	0	0	0	0	**122**
335	0	0	0	28	0	**28**
342	0	0	16	0	26	**42**
	290	**105**	**29**	**28**	**119**	**571**

The Queensway/Algie

8218-01

Residential Vehicular Site Traffic Distribution (PM Peak Hour)

Inbound

BA Group

2024-12-06

Wed Nov 13 2024 15:20:17 GMT-0500 (Eastern Standard Time) - Run Time: 2594ms

Cross Tabulation Query Form - Trip - 2016

Row: Planning district of origin - pd_orig

Column: 2006 GTA zone of destination - gta06_dest

Filters:

Start time of trip - start_time In 1500-1759

and

Trip purpose of destination - purp_dest In H

and

Primary travel mode of trip - mode_prime In D,M,P,T,U

and

2006 GTA zone of destination - gta06_dest In 288, 292, 297, 298, 299,300, 301, 309

and

Type of dwelling unit - dwell_type In 2

undefined

Table:

		288	297	298	300	301	309	**Total**
PD 1 of Toronto		238	0	27	0	42	20	**327**
PD 2 of Toronto		22	0	0	27	62	0	**111**
PD 3 of Toronto		77	0	0	33	46	0	**156**
PD 4 of Toronto		18	0	0	30	0	0	**48**
PD 5 of Toronto		46	0	0	0	0	0	**46**
PD 6 of Toronto		8	0	0	9	26	0	**43**
PD 7 of Toronto		41	0	34	29	0	37	**141**
PD 8 of Toronto		391	27	105	39	47	26	**635**
	299	*25*	*0*	*0*	*0*	*0*	*0*	***25***
	300	*147*	*0*	*105*	*9*	*0*	*0*	***261***
	301	*29*	*0*	*0*	*0*	*0*	*0*	***29***
	306	*0*	*0*	*0*	*0*	*18*	*0*	***18***
	307	*42*	*0*	*0*	*0*	*0*	*0*	***42***
	310	*25*	*0*	*0*	*0*	*0*	*0*	***25***
	317	*93*	*0*	*0*	*0*	*0*	*0*	***93***
	324	*0*	*27*	*0*	*0*	*0*	*0*	***27***
	328	*29*	*0*	*0*	*0*	*0*	*0*	***29***
	335	*0*	*0*	*0*	*0*	*28*	*0*	***28***
	342	*0*	*0*	*0*	*0*	*0*	*26*	***26***
	350	*0*	*0*	*0*	*30*	*0*	*0*	***30***
PD 9 of Toronto		49	0	0	30	0	62	**141**
PD 10 of Toronto		44	0	47	17	57	0	**165**
Richmond Hill		16	0	0	0	0	0	**16**
Markham		25	0	0	0	0	26	**51**
Vaughan		82	0	0	19	0	38	**139**
Brampton		13	0	0	0	0	64	**77**
Mississauga		214	0	200	38	0	165	**617**
Burlington		0	0	0	26	0	0	**26**
Waterloo		0	0	0	27	0	0	**27**
Bradford-West Gwillimbury		0	0	0	16	0	0	**16**
		1284	**27**	**413**	**340**	**280**	**438**	**2782**

Wed Nov 13 2024 15:22:02 GMT-0500 (Eastern Standard Time) - Run Time: 2441ms

Cross Tabulation Query Form - Trip - 2016

Row: 2006 GTA zone of origin - gta06_orig

Column: 2006 GTA zone of destination - gta06_dest

Filters:

Start time of trip - start_time In 1500-1759

and

Trip purpose of destination - purp_dest In H

and

Primary travel mode of trip - mode_prime In D,M,P,T,U

and

2006 GTA zone of destination - gta06_dest In 288, 292, 297, 298, 299,300, 301, 309

and

Type of dwelling unit - dwell_type In 2

and

Planning district of origin - pd_orig In 8

undefined

Table:

	288	297	298	300	301	309	**Total**
299	25	0	0	0	0	0	**25**
300	147	0	105	9	0	0	**261**
301	29	0	0	0	0	0	**29**
306	0	0	0	0	18	0	**18**
307	42	0	0	0	0	0	**42**
310	25	0	0	0	0	0	**25**
317	93	0	0	0	0	0	**93**
324	0	27	0	0	0	0	**27**
328	29	0	0	0	0	0	**29**
335	0	0	0	0	28	0	**28**
342	0	0	0	0	0	26	**26**
350	0	0	0	30	0	0	**30**
							633

The Queensway/Algie

8218-01

Residential Vehicular Site Traffic Distribution (AM Peak Hour)

Outbound

BA Group

2024-12-06

			Traffic Volume Allocation					Route Split Totals				
			East	West	North	East	TOTAL	East	West	North	East	TOTAL
Zone	**Trips**	**%**	**The Queensway**	**The Queensway**	**Atomic Avenue (via The Queensway)**	**Fordhouse Boulevard**		**The Queensway**	**The Queensway**	**Atomic Avenue (via The Queensway)**	**Fordhouse Boulevard**	
PD 1 of Toronto	347	11%	50%			50%	100%	5.71%	0.00%	0.00%	5.71%	11.4%
PD 2 of Toronto	181	6%	60%		5%	35%	100%	3.57%	0.00%	0.30%	2.08%	6.0%
PD 3 of Toronto	79	3%	25%	75%			100%	0.65%	1.95%	0.00%	0.00%	2.6%
PD 4 of Toronto	70	2%	40%	50%		10%	100%	0.92%	1.15%	0.00%	0.23%	2.3%
PD 5 of Toronto	72	2%	30%	50%		20%	100%	0.71%	1.18%	0.00%	0.47%	2.4%
PD 6 of Toronto	35	1%	60%			40%	100%	0.69%	0.00%	0.00%	0.46%	1.2%
PD 7 of Toronto	201	7%	20%	50%		30%	100%	1.32%	3.31%	0.00%	1.98%	6.6%
PD 8 of Toronto												
299	*25*	*1%*	50%	50%			100%	0.41%	0.41%	0.00%	0.00%	0.8%
300	*193*	*6%*	100%				100%	6.35%	0.00%	0.00%	0.00%	6.4%
301	*69*	*2%*	100%				100%	2.27%	0.00%	0.00%	0.00%	2.3%
307	*13*	*0%*	100%				100%	0.43%	0.00%	0.00%	0.00%	0.4%
308	*59*	*2%*			100%		100%	0.00%	0.00%	1.94%	0.00%	1.9%
310	*20*	*1%*		100%			100%	0.00%	0.66%	0.00%	0.00%	0.7%
316	*122*	*4%*	100%				100%	4.01%	0.00%	0.00%	0.00%	4.0%
335	*28*	*1%*		100%			100%	0.00%	0.92%	0.00%	0.00%	0.9%
342	*42*	*1%*	50%	50%			100%	0.69%	0.69%	0.00%	0.00%	1.4%
PD 9 of Toronto	140	5%		100%			100%	0.00%	4.61%	0.00%	0.00%	4.6%
PD 10 of Toronto	207	7%		100%			100%	0.00%	6.81%	0.00%	0.00%	6.8%
PD 13 of Toronto	29	1%	40%	50%		10%	100%	0.38%	0.48%	0.00%	0.10%	1.0%
PD 16 of Toronto	29	1%	20%	80%			100%	0.19%	0.76%	0.00%	0.00%	1.0%
Whitby	7	0%	20%	80%			100%	0.05%	0.18%	0.00%	0.00%	0.2%
Markham	26	1%	25%	75%			100%	0.21%	0.64%	0.00%	0.00%	0.9%
Vaughan	139	5%		100%			100%	0.00%	4.57%	0.00%	0.00%	4.6%
Brampton	51	2%		100%			100%	0.00%	1.68%	0.00%	0.00%	1.7%
Mississauga	648	21%		100%			100%	0.00%	21.32%	0.00%	0.00%	21.3%
Oakville	76	3%	50%	50%			100%	1.25%	1.25%	0.00%	0.00%	2.5%
Hamilton	62	2%	100%				100%	2.04%	0.00%	0.00%	0.00%	2.0%
St. Catharines	42	1%	80%	20%			100%	1.11%	0.28%	0.00%	0.00%	1.4%
Waterloo	27	1%	20%	80%			100%	0.18%	0.71%	0.00%	0.00%	0.9%
Total Trips	**3039**	**100%**						**33.2%**	**53.6%**	**2.2%**	**11.0%**	100.0%
						Assumed Split		**35%**	**55%**	**0%**	**10%**	**100%**

The Queensway/Algie

8218-01

Residential Vehicular Site Traffic Distribution (PM Peak Hour)

Inbound

BA Group

2024-12-06

			Traffic Volume Allocation					Route Split Totals				
			East	West	North	East	TOTAL	East	West	North	East	TOTAL
Zone	**Trips**	**%**	**The Queensway**	**The Queensway**	**Atomic Avenue (via The Queensway)**	**Fordhouse Boulevard**		**The Queensway**	**The Queensway**	**Atomic Avenue (via The Queensway)**	**Fordhouse Boulevard**	
PD 1 of Toronto	327	12%	50%			50%	100%	5.88%	0.00%	0.00%	5.88%	11.8%
PD 2 of Toronto	111	4%	60%		5%	35%	100%	2.40%	0.00%	0.20%	1.40%	4.0%
PD 3 of Toronto	156	6%	25%	75%			100%	1.40%	4.21%	0.00%	0.00%	5.6%
PD 4 of Toronto	48	2%	40%	50%		10%	100%	0.69%	0.86%	0.00%	0.17%	1.7%
PD 5 of Toronto	46	2%	30%	50%		20%	100%	0.50%	0.83%	0.00%	0.33%	1.7%
PD 6 of Toronto	43	2%	60%			40%	100%	0.93%	0.00%	0.00%	0.62%	1.5%
PD 7 of Toronto	141	5%	20%	50%		30%	100%	1.01%	2.54%	0.00%	1.52%	5.1%
PD 8 of Toronto												
299	*25*	*1%*	50%	50%			100%	0.45%	0.45%	0.00%	0.00%	0.9%
300	*261*	*9%*	100%				100%	9.39%	0.00%	0.00%	0.00%	9.4%
301	*29*	*1%*	100%				100%	1.04%	0.00%	0.00%	0.00%	1.0%
306	*18*	*1%*	100%				100%	0.65%	0.00%	0.00%	0.00%	0.6%
307	*42*	*2%*	100%				100%	1.51%	0.00%	0.00%	0.00%	1.5%
310	*25*	*1%*		100%			100%	0.00%	0.90%	0.00%	0.00%	0.9%
317	*93*	*3%*	100%				100%	3.35%	0.00%	0.00%	0.00%	3.3%
324	*27*	*1%*		100%			100%	0.00%	0.97%	0.00%	0.00%	1.0%
328	*29*	*1%*		100%			100%	0.00%	1.04%	0.00%	0.00%	1.0%
335	*28*	*1%*		100%			100%	0.00%	1.01%	0.00%	0.00%	1.0%
342	*26*	*1%*	50%	50%			100%	0.47%	0.47%	0.00%	0.00%	0.9%
350	*30*	*1%*	50%	50%			100%	0.54%	0.54%	0.00%	0.00%	1.1%
PD 9 of Toronto	141	5%		100%			100%	0.00%	5.07%	0.00%	0.00%	5.1%
PD 10 of Toronto	165	6%		100%			100%	0.00%	5.94%	0.00%	0.00%	5.9%
Richmond Hill	16	1%		100%			100%	0.00%	0.58%	0.00%	0.00%	0.6%
Markham	51	2%	25%	75%			100%	0.46%	1.38%	0.00%	0.00%	1.8%
Vaughan	139	5%		100%			100%	0.00%	5.00%	0.00%	0.00%	5.0%
Brampton	77	3%		100%			100%	0.00%	2.77%	0.00%	0.00%	2.8%
Mississauga	617	22%		100%			100%	0.00%	22.19%	0.00%	0.00%	22.2%
Burlington	26	1%		100%			100%	0.00%	0.94%	0.00%	0.00%	0.9%
Waterloo	27	1%	20%	80%			100%	0.19%	0.78%	0.00%	0.00%	1.0%
Bradford-West Gwillimbury	16	1%		100%			100%	0.00%	0.58%	0.00%	0.00%	0.6%
Total Trips	**2780**	**100%**						**30.9%**	**59.0%**	**0.2%**	**9.9%**	100.0%
						Assumed Split		**30%**	**60%**	**0%**	**10%**	**100%**

Appendix G:
Signal Timing Plans (STPs)

LOCATION:	**The Queensway & Atomic Ave**	***ATO / DISTRICT / WARD:***	**Area 2 / Etobicoke – York / Ward 3**
TCS:	**570**	***COMPUTER SYSTEM:***	**TransSuite**
MODE/COMMENT:	**SA2 with PR & LPI**	***CONTROLLER/CABINET TY***	**Peek ATC-1000 / TS2T1**
PREPARED BY / DATE:	**Parsons / Marie-Sophie Wint / July 18, 2023**	***CONFLICT FLASH:***	**Red & Red**
CHECKED BY / DATE:	**Parsons / Matheos Tsiaras / July 20, 2023**	***DESIGN WALK SPEED:***	**1.0 m/s(FDW based on full crossing at 1.2 m/s)**
CITY STAFF:	**Ameneh Dialameh**	***CHANNEL/DROP:***	**6052/7**
IMPLEMENTATION DATE:	**September 18, 2023**	***CONTROLLER FIRMWARE:***	**3.018.1.2976**

N ↑

NEMA Phase		**OFF All Other Times**	**AM 06:30-09:30 M - F**	**PM 15:00-19:00 M - F**	**NGHT 23:00-06:30 Daily**	**WKND 10:00-19:00 Sat-Sun**	**Phase Mode (Fixed/Demanded or Callable)**	**Remarks**
	Local Plan	Pattern 1	Pattern 2	Pattern 3	Pattern 4	Pattern 5		
	Split Table	Split 1	Split 2	Split 3	Split 4	Split 5		
1 NOT USED	WLK							Pedestrian Minimums: EWWK = 7 sec, EWFD = 13 sec; NSWK = 12 sec, NSFD = 23 sec
	FDW							'NS phase is callable by vehicle or pedestrian actuation. If a vehicle call is received, the minimum NSG is 7 seconds. If ongoing vehicle demand exists on the stopbar loop, the NSG is capable of providing vehicle extensions up to the maximum green split. If a pedestrian call is received, the pedestrian minimums will be served. The NSWK & NSFD are only displayed on the pedestrian signal heads if a pedestrian call is received. Extension time is based on vehicle demand. Unused extension time is given to the EWG.
	MIN							
	MAX1							
	AMB							
	ALR							
	SPLIT							
2 The Queensway	WLK	7					Fixed	
	FDW	13						
	MIN	20						
	MAX1	73						
	AMB	3.8						
	ALR	2.0						
	SPLIT		79	97	97	67	91	Side Street Passage Time = 3 sec
3 NOT USED	WLK							Left Turn Passage Time = 2 sec; The following grades were used to calculate the amber intervals; West leg = -0.3%; East leg = -0.52%; South leg = 0.16%; North leg = -0.89%
	FDW							
	MIN							
	MAX1							
	AMB							
	ALR							
	SPLIT							
4 Atomic Ave	WLK DLY	5						NS Leading Pedestrian Interval - NSWK comes up 5 sec before NS vehicle green
	WLK	12						
	FDW	23					Callable by Stopbar Loop &/or Push Button. Extendable by Stopbar Loop. Split shown includes 5 sec of NS LPI	
	MIN	7						
	MAX1	30						
	AMB	3.4						
	ALR	3.8						
	SPLIT		43	43	43	43	43	
5	WLK						Callable/Extendable by 9m setback loop	
	FDW							
	MIN	6						
	MAX1	7						
	AMB	3.7						
	ALR	3.7						
	SPLIT		14	14	14		14	
6 The Queensway	WLK	7					Fixed	
	FDW	13						
	MIN	20						
	MAX1	59						
	AMB	3.8						
	ALR	2.0						
	SPLIT		65	83	83	67	77	
7 NOT USED	WLK						,	
	FDW							
	MIN							
	MAX1							
	AMB							
	ALR							
	SPLIT							
8 Atomic Ave	WLK DLY	5						
	WLK	12						
	FDW	23					Callable by Stopbar Loop &/or Push Button. Extendable by Stopbar Loop. Split shown includes 5 sec of NS LPI	
	MIN	7						
	MAX1	30						
	AMB	3.4						
	ALR	3.8						
	SPLIT		43	43	43	43	43	
	CL		122	140	140	110	134	
	OF		117	15	112	87	120	

NOTE:

CITY OF TORONTO – TRANSPORTATION SERVICES
TRAFFIC SYSTEMS OPERATIONS – TRAFFIC SIGNALS
703 Don Mills Rd, Fifth Floor, Toronto ON M3C 3N3
Phone: 416-397-5770 Email: signaltimings@toronto.ca

CURRENT SIGNAL TIMING INFORMATION

Location: The Queensway & 60 m East of Algie Ave / IKEA Access
TCS #: 1892
Our Ref: 2024_0261
Staff: Junaid Aleem / Syed Qasim
Preparation Date: November 27, 2024
Controller Type: PEEK ATC-1000 / TS2T1
Mode of Control: SA2 with PR & LPI
Design Walk Speed: 1.0 m/s (FDW based on full crossing @ 1.2 m/s)
N/S FDW Duration: 23 secs
E/W FDW Duration: 17 secs
Issued To: BA Consulting Group Ltd. (Andrew T. Pasco)

Control Level	TYPICAL					SCATS				
Plan	OFF	AM	PM	NGHT	WKND	OFF	AM	PM	NGHT	WKND
Time of Operation	All Other Times, M-F	06:30-09:30, M-F	15:00-19:00, M-F	23:00 - 06:30 Daily	10:00 - 19:00 Sat & Sun	All Other Times, M-F	06:30-09:30, M-F	15:00-19:00, M-F	23:00 - 06:30 Daily	10:00 - 19:00 Sat & Sun
Signal Aspect										
East-West Phase										
*WBLA/WBG/EWWK (South Side Only)	7	7	7	-	8	6 - 32	6 - 32	6 - 32	-	6 - 32
*WBLY/WBG/EWWK (South Side Only)	3.7	3.7	3.7	-	3.7	3.7	3.7	3.7	-	3.7
*WBG/EWWK (South Side Only)	3.6	3.6	3.6	-	3.6	3.6	3.6	3.6	-	3.6
EWG/EWWK	32	32	32	37	31	7 - 33	7 - 33	7 - 33	7 - 46	7 - 33
EWG/EWFDW	17	17	17	17	17	17	17	17	17	17
EWY/EWDW	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8
ALLR	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
North-South Phase										
**NSWK	5	5	5	5	5	5	5	5	5	5
NSG/NSDW or NSG/NSWK	7	7	7	7	7	7 - 33	7 - 33	7 - 33	7 - 46	7 - 33
NSG/NSDW or NSG/NSFDW	23	23	23	23	23	23	23	23	23	23
NSY/NSDW	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
ALLR	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Cycle Length/Range	110	110	110	102	110	85 - 110	85 - 110	85 - 118	72 - 110	85 - 128

NOTE

NS phase is callable by vehicle or pedestrian actuation. If a vehicle call is received, the minimum NSG is 7 seconds. If ongoing vehicle demand exists on the stopbar, the NSG is capable of providing vehicle extensions up to the maximum. If a pedestrian call is received, the pedestrian minimums will be served. The NSWK & NSFD are only displayed on the pedestrian signal heads if a pedestrian call is received. Extension time is based on vehicle/ pedestrian demand. Unused extension time is given to the EWG.

**Leading Pedestrian Interval - NSWK comes up 5 sec before vehicle green.

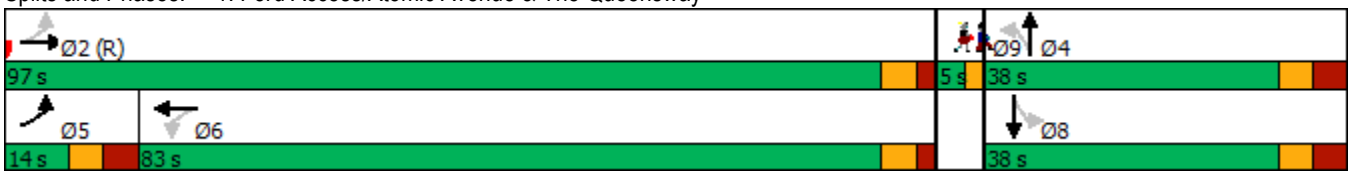
Appendix H:
Synchro Worksheets

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	Ø9
Lane Configurations									
Traffic Volume (vph)	55	895	20	805	5	0	25	5	
Future Volume (vph)	55	895	20	805	5	0	25	5	
Lane Group Flow (vph)	56	933	20	867	0	15	0	62	
Turn Type	pm+pt	NA	Perm	NA	Perm	NA	Perm	NA	
Protected Phases	5	2		6		4		8	9
Permitted Phases	2		6		4		8		
Detector Phase	5	2	6	6	4	4	8	8	
Switch Phase									
Minimum Initial (s)	6.0	20.0	20.0	20.0	7.0	7.0	7.0	7.0	1.0
Minimum Split (s)	13.4	25.8	25.8	25.8	42.2	42.2	42.2	42.2	5.0
Total Split (s)	14.0	97.0	83.0	83.0	38.0	38.0	38.0	38.0	5.0
Total Split (%)	10.0%	69.3%	59.3%	59.3%	27.1%	27.1%	27.1%	27.1%	4%
Yellow Time (s)	3.7	3.8	3.8	3.8	3.4	3.4	3.4	3.4	2.0
All-Red Time (s)	3.7	2.0	2.0	2.0	3.8	3.8	3.8	3.8	0.0
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0		-1.0		-1.0	
Total Lost Time (s)	6.4	4.8	4.8	4.8		6.2		6.2	
Lead/Lag	Lead		Lag	Lag					
Lead-Lag Optimize?	Yes		Yes	Yes					
Recall Mode	None	C-Min	Min	Min	None	None	None	None	None
v/c Ratio	0.13	0.22	0.05	0.23		0.07		0.50	
Control Delay	3.0	2.1	6.0	5.3		0.7		48.1	
Queue Delay	0.0	0.0	0.0	0.0		0.0		0.0	
Total Delay	3.0	2.1	6.0	5.3		0.7		48.1	
Queue Length 50th (m)	2.2	14.0	1.3	24.5		0.0		8.8	
Queue Length 95th (m)	5.6	22.8	4.5	36.4		0.0		23.9	
Internal Link Dist (m)		106.6		366.8		24.1		138.7	
Turn Bay Length (m)	30.0		30.0						
Base Capacity (vph)	432	4170	410	3720		410		305	
Starvation Cap Reductn	0	0	0	0		0		0	
Spillback Cap Reductn	0	0	0	0		0		0	
Storage Cap Reductn	0	0	0	0		0		0	
Reduced v/c Ratio	0.13	0.22	0.05	0.23		0.04		0.20	

Intersection Summary

Cycle Length: 140
Actuated Cycle Length: 140
Offset: 15 (11%), Referenced to phase 2:EBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated

Splits and Phases: 1: Ford Access/Atomic Avenue & The Queensway



HCM Signalized Intersection Capacity Analysis
1: Ford Access/Atomic Avenue & The Queensway

<Existing> Weekday AM

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	55	895	20	20	805	45	5	0	10	25	5	30
Future Volume (vph)	55	895	20	20	805	45	5	0	10	25	5	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.0	3.5	3.5	3.0	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Total Lost time (s)	6.4	4.8		4.8	4.8			6.2			6.2	
Lane Util. Factor	1.00	0.91		1.00	0.91			1.00			1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00			0.99			0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00			1.00	
Frt	1.00	1.00		1.00	0.99			0.91			0.93	
Flt Protected	0.95	1.00		0.95	1.00			0.98			0.98	
Satd. Flow (prot)	1448	4781		1677	4698			1659			1419	
Flt Permitted	0.29	1.00		0.29	1.00			0.88			0.86	
Satd. Flow (perm)	443	4781		519	4698			1485			1242	
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)	56	913	20	20	821	46	5	0	10	26	5	31
RTOR Reduction (vph)	0	1	0	0	2	0	0	14	0	0	29	0
Lane Group Flow (vph)	56	932	0	20	865	0	0	1	0	0	33	0
Confl. Peds. (#/hr)	15		5	5		15	5		5	5		5
Heavy Vehicles (%)	16%	7%	0%	0%	8%	6%	0%	0%	0%	24%	0%	19%
Bus Blockages (#/hr)	0	0	4	0	0	4	0	0	0	0	0	0
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	5	2			6			4			8	
Permitted Phases	2			6			4			8		
Actuated Green, G (s)	118.7	118.7		105.9	105.9			8.3			8.3	
Effective Green, g (s)	119.7	119.7		106.9	106.9			9.3			9.3	
Actuated g/C Ratio	0.86	0.86		0.76	0.76			0.07			0.07	
Clearance Time (s)	7.4	5.8		5.8	5.8			7.2			7.2	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)	424	4087		396	3587			98			82	
v/s Ratio Prot	0.01	c0.19			c0.18							
v/s Ratio Perm	0.11			0.04				0.00			c0.03	
v/c Ratio	0.13	0.23		0.05	0.24			0.01			0.40	
Uniform Delay, d1	1.8	1.8		4.1	4.8			61.1			62.7	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	0.1	0.1		0.1	0.0			0.0			3.2	
Delay (s)	2.0	2.0		4.1	4.8			61.1			65.9	
Level of Service	A	A		A	A			E			E	
Approach Delay (s)		2.0			4.8			61.1			65.9	
Approach LOS		A			A			E			E	

Intersection Summary			
HCM 2000 Control Delay	5.7	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.26		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	19.4
Intersection Capacity Utilization	57.0%	ICU Level of Service	B
Analysis Period (min)	15		

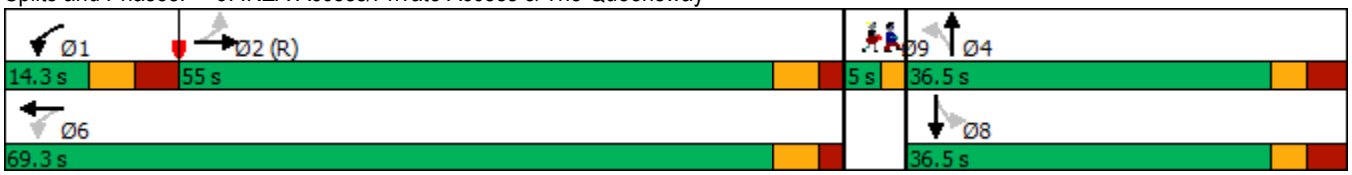
c Critical Lane Group

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBT	Ø9
Lane Configurations								
Traffic Volume (vph)	5	910	10	855	10	0	0	
Future Volume (vph)	5	910	10	855	10	0	0	
Lane Group Flow (vph)	5	953	10	886	10	10	5	
Turn Type	Perm	NA	pm+pt	NA	Perm	NA	NA	
Protected Phases		2	1	6		4	8	9
Permitted Phases	2		6		4			
Detector Phase	2	2	1	6	4	4	8	
Switch Phase								
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	1.0
Minimum Split (s)	58.6	58.6	12.3	58.6	36.5	36.5	36.5	5.0
Total Split (s)	55.0	55.0	14.3	69.3	36.5	36.5	36.5	5.0
Total Split (%)	49.6%	49.6%	12.9%	62.5%	32.9%	32.9%	32.9%	5%
Yellow Time (s)	3.8	3.8	3.7	3.8	3.0	3.0	3.0	2.0
All-Red Time (s)	2.2	2.2	3.6	2.2	3.5	3.5	3.5	0.0
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	
Total Lost Time (s)	5.0	5.0	6.3	5.0	5.5	5.5	5.5	
Lead/Lag	Lag	Lag	Lead					
Lead-Lag Optimize?	Yes	Yes	Yes					
Recall Mode	C-Min	C-Min	Min	Min	None	None	None	None
v/c Ratio	0.01	0.26	0.02	0.20	0.08	0.03	0.02	
Control Delay	4.4	3.9	1.7	1.1	49.3	0.2	0.2	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	4.4	3.9	1.7	1.1	49.3	0.2	0.2	
Queue Length 50th (m)	0.2	11.3	0.1	0.0	2.2	0.0	0.0	
Queue Length 95th (m)	1.4	32.0	1.2	14.9	7.8	0.0	0.0	
Internal Link Dist (m)		366.8		167.5		162.8	36.5	
Turn Bay Length (m)	15.0		110.0					
Base Capacity (vph)	430	3736	419	4379	493	610	577	
Starvation Cap Reductn	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.01	0.26	0.02	0.20	0.02	0.02	0.01	

Intersection Summary

Cycle Length: 110.8
Actuated Cycle Length: 110.8
Offset: 0 (0%), Referenced to phase 2:EBTL, Start of Green
Natural Cycle: 115
Control Type: Actuated-Coordinated

Splits and Phases: 3: IKEA Access/Private Access & The Queensway



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	910	15	10	855	5	10	0	10	0	0	5
Future Volume (vph)	5	910	15	10	855	5	10	0	10	0	0	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.0	3.5	3.5	3.0	3.5	3.5	3.0	3.5	3.0	3.0	3.5	3.5
Total Lost time (s)	5.0	5.0		6.3	5.0		5.5	5.5			5.5	
Lane Util. Factor	1.00	0.91		1.00	0.91		1.00	1.00			1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.98			0.98	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		0.99	1.00			1.00	
Frt	1.00	1.00		1.00	1.00		1.00	0.85			0.85	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00			1.00	
Satd. Flow (prot)	1682	4742		1403	4703		1675	1569			1569	
Flt Permitted	0.31	1.00		0.26	1.00		1.00	1.00			1.00	
Satd. Flow (perm)	547	4742		388	4703		1764	1569			1569	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	5	938	15	10	881	5	10	0	10	0	0	5
RTOR Reduction (vph)	0	1	0	0	0	0	0	10	0	0	5	0
Lane Group Flow (vph)	5	952	0	10	886	0	10	0	0	0	0	0
Confl. Peds. (#/hr)	5		10	10		5	5		5	5		5
Heavy Vehicles (%)	0%	8%	0%	20%	9%	0%	0%	0%	0%	0%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	4	0	0	0	0	0	0
Turn Type	Perm	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases		2		1	6			4			8	
Permitted Phases	2			6			4			8		
Actuated Green, G (s)	82.4	82.4		95.3	95.3		3.0	3.0			3.0	
Effective Green, g (s)	83.4	83.4		96.3	96.3		4.0	4.0			4.0	
Actuated g/C Ratio	0.75	0.75		0.87	0.87		0.04	0.04			0.04	
Clearance Time (s)	6.0	6.0		7.3	6.0		6.5	6.5			6.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0			3.0	
Lane Grp Cap (vph)	411	3569		397	4087		63	56			56	
v/s Ratio Prot		c0.20		0.00	c0.19			0.00			0.00	
v/s Ratio Perm	0.01			0.02			c0.01					
v/c Ratio	0.01	0.27		0.03	0.22		0.16	0.01			0.00	
Uniform Delay, d1	3.4	4.2		1.2	1.2		51.8	51.5			51.5	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00			1.00	
Incremental Delay, d2	0.1	0.2		0.0	0.0		1.2	0.0			0.0	
Delay (s)	3.5	4.4		1.3	1.2		53.0	51.5			51.5	
Level of Service	A	A		A	A		D	D			D	
Approach Delay (s)		4.4			1.2			52.2			51.5	
Approach LOS		A			A			D			D	

Intersection Summary			
HCM 2000 Control Delay	3.5	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.27		
Actuated Cycle Length (s)	110.8	Sum of lost time (s)	18.8
Intersection Capacity Utilization	62.5%	ICU Level of Service	B
Analysis Period (min)	15		

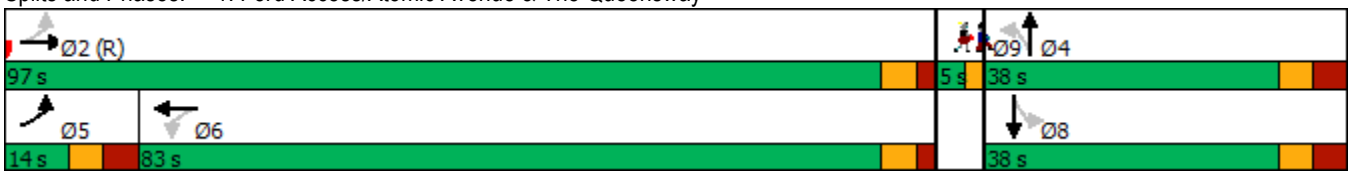
c Critical Lane Group

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	Ø9
Lane Configurations									
Traffic Volume (vph)	50	1135	5	1025	30	5	60	5	
Future Volume (vph)	50	1135	5	1025	30	5	60	5	
Lane Group Flow (vph)	52	1192	5	1136	0	57	0	136	
Turn Type	pm+pt	NA	Perm	NA	Perm	NA	Perm	NA	
Protected Phases	5	2		6		4		8	9
Permitted Phases	2		6		4		8		
Detector Phase	5	2	6	6	4	4	8	8	
Switch Phase									
Minimum Initial (s)	6.0	20.0	20.0	20.0	7.0	7.0	7.0	7.0	1.0
Minimum Split (s)	13.4	25.8	25.8	25.8	42.2	42.2	42.2	42.2	5.0
Total Split (s)	14.0	97.0	83.0	83.0	38.0	38.0	38.0	38.0	5.0
Total Split (%)	10.0%	69.3%	59.3%	59.3%	27.1%	27.1%	27.1%	27.1%	4%
Yellow Time (s)	3.7	3.8	3.8	3.8	3.4	3.4	3.4	3.4	2.0
All-Red Time (s)	3.7	2.0	2.0	2.0	3.8	3.8	3.8	3.8	0.0
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0		-1.0		-1.0	
Total Lost Time (s)	6.4	4.8	4.8	4.8		6.2		6.2	
Lead/Lag	Lead		Lag	Lag					
Lead-Lag Optimize?	Yes		Yes	Yes					
Recall Mode	None	C-Min	Min	Min	None	None	None	None	None
v/c Ratio	0.18	0.31	0.02	0.32		0.30		0.61	
Control Delay	7.0	5.3	11.8	10.1		38.7		52.3	
Queue Delay	0.0	0.0	0.0	0.0		0.0		0.0	
Total Delay	7.0	5.3	11.8	10.1		38.7		52.3	
Queue Length 50th (m)	2.8	27.9	0.4	42.4		10.2		29.2	
Queue Length 95th (m)	10.3	60.5	3.0	79.7		20.9		44.7	
Internal Link Dist (m)		106.6		366.8		24.1		138.7	
Turn Bay Length (m)	30.0		30.0						
Base Capacity (vph)	286	3902	276	3520		310		357	
Starvation Cap Reductn	0	0	0	0		0		0	
Spillback Cap Reductn	0	0	0	0		0		0	
Storage Cap Reductn	0	0	0	0		0		0	
Reduced v/c Ratio	0.18	0.31	0.02	0.32		0.18		0.38	

Intersection Summary

Cycle Length: 140
Actuated Cycle Length: 140
Offset: 112 (80%), Referenced to phase 2:EBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated

Splits and Phases: 1: Ford Access/Atomic Avenue & The Queensway



HCM Signalized Intersection Capacity Analysis
1: Ford Access/Atomic Avenue & The Queensway

<Existing> Weekday PM

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	50	1135	10	5	1025	65	30	5	20	60	5	65
Future Volume (vph)	50	1135	10	5	1025	65	30	5	20	60	5	65
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.0	3.5	3.5	3.0	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Total Lost time (s)	6.4	4.8		4.8	4.8			6.2			6.2	
Lane Util. Factor	1.00	0.91		1.00	0.91			1.00			1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00			0.99			0.99	
Flpb, ped/bikes	1.00	1.00		0.99	1.00			1.00			0.99	
Frt	1.00	1.00		1.00	0.99			0.95			0.93	
Flt Protected	0.95	1.00		0.95	1.00			0.97			0.98	
Satd. Flow (prot)	1347	4972		1668	5002			1715			1652	
Flt Permitted	0.20	1.00		0.22	1.00			0.72			0.84	
Satd. Flow (perm)	289	4972		394	5002			1271			1428	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	52	1182	10	5	1068	68	31	5	21	62	5	68
RTOR Reduction (vph)	0	0	0	0	3	0	0	16	0	0	28	0
Lane Group Flow (vph)	52	1192	0	5	1133	0	0	41	0	0	108	0
Confl. Peds. (#/hr)	10		15	15		10	5		15	15		5
Heavy Vehicles (%)	25%	3%	0%	0%	1%	6%	0%	0%	0%	2%	0%	2%
Bus Blockages (#/hr)	0	0	4	0	0	4	0	0	0	0	0	0
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	5	2			6			4			8	
Permitted Phases	2			6			4			8		
Actuated Green, G (s)	108.8	108.8		95.5	95.5			18.2			18.2	
Effective Green, g (s)	109.8	109.8		96.5	96.5			19.2			19.2	
Actuated g/C Ratio	0.78	0.78		0.69	0.69			0.14			0.14	
Clearance Time (s)	7.4	5.8		5.8	5.8			7.2			7.2	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)	278	3899		271	3447			174			195	
v/s Ratio Prot	0.01	c0.24			c0.23							
v/s Ratio Perm	0.14			0.01				0.03			c0.08	
v/c Ratio	0.19	0.31		0.02	0.33			0.23			0.55	
Uniform Delay, d1	4.3	4.3		6.8	8.7			53.8			56.4	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	0.3	0.2		0.0	0.1			0.7			3.3	
Delay (s)	4.6	4.5		6.9	8.8			54.5			59.7	
Level of Service	A	A		A	A			D			E	
Approach Delay (s)		4.5			8.8			54.5			59.7	
Approach LOS		A			A			D			E	

Intersection Summary			
HCM 2000 Control Delay	10.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.38		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	19.4
Intersection Capacity Utilization	65.7%	ICU Level of Service	C
Analysis Period (min)	15		

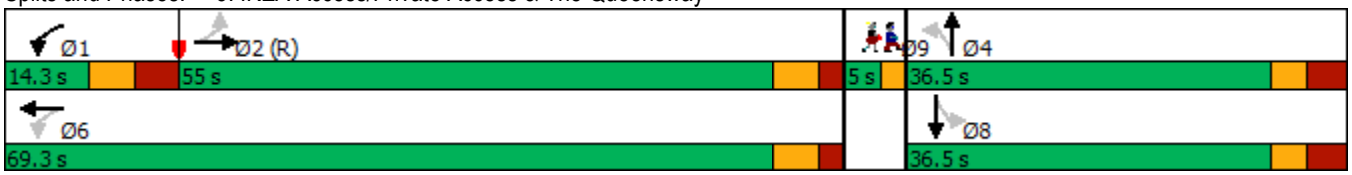
c Critical Lane Group

Lane Group	EBT	WBL	WBT	NBL	NBT	SBL	SBT	Ø9
Lane Configurations								
Traffic Volume (vph)	1145	55	1010	70	0	10	0	
Future Volume (vph)	1145	55	1010	70	0	10	0	
Lane Group Flow (vph)	1279	58	1068	74	58	11	16	
Turn Type	NA	pm+pt	NA	Perm	NA	Perm	NA	
Protected Phases	2	1	6		4		8	9
Permitted Phases		6		4		8		
Detector Phase	2	1	6	4	4	8	8	
Switch Phase								
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	1.0
Minimum Split (s)	58.6	12.3	58.6	36.5	36.5	36.5	36.5	5.0
Total Split (s)	55.0	14.3	69.3	36.5	36.5	36.5	36.5	5.0
Total Split (%)	49.6%	12.9%	62.5%	32.9%	32.9%	32.9%	32.9%	5%
Yellow Time (s)	3.8	3.7	3.8	3.0	3.0	3.0	3.0	2.0
All-Red Time (s)	2.2	3.6	2.2	3.5	3.5	3.5	3.5	0.0
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	
Total Lost Time (s)	5.0	6.3	5.0	5.5	5.5	5.5	5.5	
Lead/Lag	Lag	Lead						
Lead-Lag Optimize?	Yes	Yes						
Recall Mode	C-Min	None	Min	None	None	None	None	None
v/c Ratio	0.37	0.18	0.27	0.41	0.15	0.07	0.05	
Control Delay	10.4	6.4	4.6	47.6	0.8	36.8	0.3	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	10.4	6.4	4.6	47.6	0.8	36.8	0.3	
Queue Length 50th (m)	42.7	2.5	18.9	16.1	0.0	2.3	0.0	
Queue Length 95th (m)	85.4	10.2	47.5	25.7	0.0	6.4	0.0	
Internal Link Dist (m)	366.8		167.5		162.8		36.5	
Turn Bay Length (m)		110.0				20.0		
Base Capacity (vph)	3447	336	3981	368	578	347	542	
Starvation Cap Reductn	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.37	0.17	0.27	0.20	0.10	0.03	0.03	

Intersection Summary

Cycle Length: 110.8
Actuated Cycle Length: 110.8
Offset: 0 (0%), Referenced to phase 2:EBTL, Start of Green
Natural Cycle: 115
Control Type: Actuated-Coordinated

Splits and Phases: 3: IKEA Access/Private Access & The Queensway



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1145	70	55	1010	5	70	0	55	10	0	15
Future Volume (vph)	0	1145	70	55	1010	5	70	0	55	10	0	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.0	3.5	3.5	3.0	3.5	3.5	3.0	3.5	3.0	3.0	3.5	3.5
Total Lost time (s)		5.0		6.3	5.0		5.5	5.5		5.5	5.5	
Lane Util. Factor		0.91		1.00	0.91		1.00	1.00		1.00	1.00	
Frpb, ped/bikes		1.00		1.00	1.00		1.00	0.96		1.00	0.98	
Flpb, ped/bikes		1.00		1.00	1.00		0.99	1.00		0.97	1.00	
Frt		0.99		1.00	1.00		1.00	0.85		1.00	0.85	
Flt Protected		1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		4939		1684	4977		1676	1535		1642	1569	
Flt Permitted		1.00		0.17	1.00		0.75	1.00		0.72	1.00	
Satd. Flow (perm)		4939		298	4977		1318	1535		1243	1569	
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)	0	1205	74	58	1063	5	74	0	58	11	0	16
RTOR Reduction (vph)	0	4	0	0	0	0	0	51	0	0	14	0
Lane Group Flow (vph)	0	1275	0	58	1068	0	74	7	0	11	2	0
Confl. Peds. (#/hr)	5		15	15		5	5		25	25		5
Heavy Vehicles (%)	0%	3%	0%	0%	3%	0%	0%	0%	0%	0%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	5	0	0	0	0	0	0
Turn Type	Perm	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases		2		1	6			4			8	
Permitted Phases	2			6			4			8		
Actuated Green, G (s)		72.6		85.4	85.4		12.9	12.9		12.9	12.9	
Effective Green, g (s)		73.6		86.4	86.4		13.9	13.9		13.9	13.9	
Actuated g/C Ratio		0.66		0.78	0.78		0.13	0.13		0.13	0.13	
Clearance Time (s)		6.0		7.3	6.0		6.5	6.5		6.5	6.5	
Vehicle Extension (s)		3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		3280		313	3880		165	192		155	196	
v/s Ratio Prot		c0.26		0.01	c0.21			0.00			0.00	
v/s Ratio Perm				0.13			c0.06			0.01		
v/c Ratio		0.39		0.19	0.28		0.45	0.04		0.07	0.01	
Uniform Delay, d1		8.4		3.9	3.4		44.9	42.6		42.8	42.4	
Progression Factor		1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.3		0.3	0.0		1.9	0.1		0.2	0.0	
Delay (s)		8.8		4.2	3.5		46.8	42.7		42.9	42.4	
Level of Service		A		A	A		D	D		D	D	
Approach Delay (s)		8.8			3.5			45.0			42.7	
Approach LOS		A			A			D			D	

Intersection Summary			
HCM 2000 Control Delay	8.7	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.41		
Actuated Cycle Length (s)	110.8	Sum of lost time (s)	18.8
Intersection Capacity Utilization	73.2%	ICU Level of Service	D
Analysis Period (min)	15		

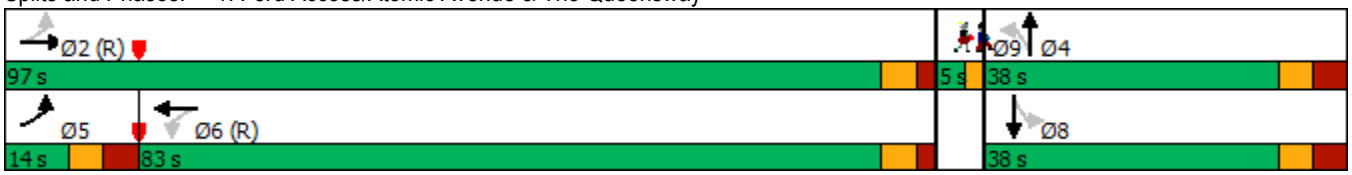
c Critical Lane Group

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	Ø9
Lane Configurations									
Traffic Volume (vph)	80	930	20	875	5	0	30	5	
Future Volume (vph)	80	930	20	875	5	0	30	5	
Lane Group Flow (vph)	82	969	20	949	0	15	0	67	
Turn Type	pm+pt	NA	Perm	NA	Perm	NA	Perm	NA	
Protected Phases	5	2		6		4		8	9
Permitted Phases	2		6		4		8		
Detector Phase	5	2	6	6	4	4	8	8	
Switch Phase									
Minimum Initial (s)	6.0	20.0	20.0	20.0	7.0	7.0	7.0	7.0	1.0
Minimum Split (s)	13.4	25.8	25.8	25.8	42.2	42.2	42.2	42.2	5.0
Total Split (s)	14.0	97.0	83.0	83.0	38.0	38.0	38.0	38.0	5.0
Total Split (%)	10.0%	69.3%	59.3%	59.3%	27.1%	27.1%	27.1%	27.1%	4%
Yellow Time (s)	3.7	3.8	3.8	3.8	3.4	3.4	3.4	3.4	2.0
All-Red Time (s)	3.7	2.0	2.0	2.0	3.8	3.8	3.8	3.8	0.0
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0		-1.0		-1.0	
Total Lost Time (s)	6.4	4.8	4.8	4.8		6.2		6.2	
Lead/Lag	Lead		Lag	Lag					
Lead-Lag Optimize?	Yes		Yes	Yes					
Recall Mode	None	C-Min	C-Min	C-Min	None	None	None	None	None
v/c Ratio	0.21	0.23	0.05	0.27		0.07		0.53	
Control Delay	3.6	2.3	6.5	6.0		0.7		52.1	
Queue Delay	0.0	0.0	0.0	0.0		0.0		0.0	
Total Delay	3.6	2.3	6.5	6.0		0.7		52.1	
Queue Length 50th (m)	3.3	15.4	1.4	28.5		0.0		10.8	
Queue Length 95th (m)	8.1	25.1	4.8	42.6		0.0		26.5	
Internal Link Dist (m)		106.6		203.0		24.1		138.7	
Turn Bay Length (m)	30.0		30.0						
Base Capacity (vph)	400	4150	378	3557		411		301	
Starvation Cap Reductn	0	0	0	0		0		0	
Spillback Cap Reductn	0	0	0	0		0		0	
Storage Cap Reductn	0	0	0	0		0		0	
Reduced v/c Ratio	0.20	0.23	0.05	0.27		0.04		0.22	

Intersection Summary

Cycle Length: 140
Actuated Cycle Length: 140
Offset: 15 (11%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated

Splits and Phases: 1: Ford Access/Atomic Avenue & The Queensway



HCM Signalized Intersection Capacity Analysis
1: Ford Access/Atomic Avenue & The Queensway

<Future Background> Weekday AM

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	80	930	20	20	875	55	5	0	10	30	5	30
Future Volume (vph)	80	930	20	20	875	55	5	0	10	30	5	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.0	3.5	3.5	3.0	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Total Lost time (s)	6.4	4.8		4.8	4.8			6.2			6.2	
Lane Util. Factor	1.00	0.91		1.00	0.91			1.00			1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00			0.99			0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00			1.00	
Frt	1.00	1.00		1.00	0.99			0.91			0.94	
Flt Protected	0.95	1.00		0.95	1.00			0.98			0.98	
Satd. Flow (prot)	1449	4782		1677	4693			1659			1420	
Flt Permitted	0.26	1.00		0.28	1.00			0.88			0.84	
Satd. Flow (perm)	401	4782		500	4693			1487			1227	
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)	82	949	20	20	893	56	5	0	10	31	5	31
RTOR Reduction (vph)	0	1	0	0	3	0	0	14	0	0	27	0
Lane Group Flow (vph)	82	968	0	20	946	0	0	1	0	0	40	0
Confl. Peds. (#/hr)	15		5	5		15	5		5	5		5
Heavy Vehicles (%)	16%	7%	0%	0%	8%	6%	0%	0%	0%	24%	0%	19%
Bus Blockages (#/hr)	0	0	4	0	0	4	0	0	0	0	0	0
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	5	2			6			4			8	
Permitted Phases	2			6			4			8		
Actuated Green, G (s)	118.1	118.1		103.7	103.7			8.9			8.9	
Effective Green, g (s)	119.1	119.1		104.7	104.7			9.9			9.9	
Actuated g/C Ratio	0.85	0.85		0.75	0.75			0.07			0.07	
Clearance Time (s)	7.4	5.8		5.8	5.8			7.2			7.2	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)	401	4068		373	3509			105			86	
v/s Ratio Prot	0.01	c0.20			c0.20							
v/s Ratio Perm	0.16			0.04				0.00			c0.03	
v/c Ratio	0.20	0.24		0.05	0.27			0.01			0.47	
Uniform Delay, d1	2.1	2.0		4.6	5.6			60.5			62.5	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	0.3	0.1		0.3	0.2			0.0			3.9	
Delay (s)	2.4	2.1		4.9	5.8			60.5			66.5	
Level of Service	A	A		A	A			E			E	
Approach Delay (s)		2.1			5.7			60.5			66.5	
Approach LOS		A			A			E			E	

Intersection Summary			
HCM 2000 Control Delay	6.3	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.30		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	19.4
Intersection Capacity Utilization	57.8%	ICU Level of Service	B
Analysis Period (min)	15		

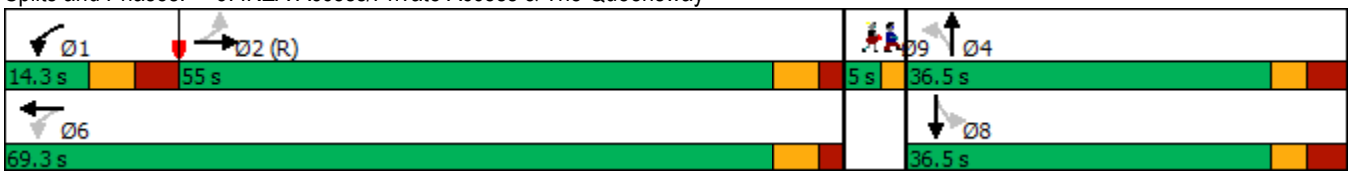
c Critical Lane Group

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBT	Ø9
Lane Configurations								
Traffic Volume (vph)	5	950	10	935	10	0	0	
Future Volume (vph)	5	950	10	935	10	0	0	
Lane Group Flow (vph)	5	994	10	969	10	10	5	
Turn Type	Perm	NA	pm+pt	NA	Perm	NA	NA	
Protected Phases		2	1	6		4	8	9
Permitted Phases	2		6		4			
Detector Phase	2	2	1	6	4	4	8	
Switch Phase								
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	1.0
Minimum Split (s)	58.6	58.6	12.3	58.6	36.5	36.5	36.5	5.0
Total Split (s)	55.0	55.0	14.3	69.3	36.5	36.5	36.5	5.0
Total Split (%)	49.6%	49.6%	12.9%	62.5%	32.9%	32.9%	32.9%	5%
Yellow Time (s)	3.8	3.8	3.7	3.8	3.0	3.0	3.0	2.0
All-Red Time (s)	2.2	2.2	3.6	2.2	3.5	3.5	3.5	0.0
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	
Total Lost Time (s)	5.0	5.0	6.3	5.0	5.5	5.5	5.5	
Lead/Lag	Lag	Lag	Lead					
Lead-Lag Optimize?	Yes	Yes	Yes					
Recall Mode	C-Min	C-Min	Min	Min	None	None	None	None
v/c Ratio	0.01	0.27	0.03	0.22	0.08	0.03	0.02	
Control Delay	4.6	4.0	1.8	1.1	49.3	0.2	0.2	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	4.6	4.0	1.8	1.1	49.3	0.2	0.2	
Queue Length 50th (m)	0.2	12.0	0.1	0.0	2.2	0.0	0.0	
Queue Length 95th (m)	1.4	33.6	1.2	16.5	7.8	0.0	0.0	
Internal Link Dist (m)		139.8		167.5		162.8	36.5	
Turn Bay Length (m)	15.0		110.0					
Base Capacity (vph)	394	3736	404	4379	493	606	559	
Starvation Cap Reductn	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.01	0.27	0.02	0.22	0.02	0.02	0.01	

Intersection Summary

Cycle Length: 110.8
Actuated Cycle Length: 110.8
Offset: 0 (0%), Referenced to phase 2:EBTL, Start of Green
Natural Cycle: 115
Control Type: Actuated-Coordinated

Splits and Phases: 3: IKEA Access/Private Access & The Queensway



HCM Signalized Intersection Capacity Analysis
3: IKEA Access/Private Access & The Queensway

<Future Background> Weekday AM

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	950	15	10	935	5	10	0	10	0	0	5
Future Volume (vph)	5	950	15	10	935	5	10	0	10	0	0	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.0	3.5	3.5	3.0	3.5	3.5	3.0	3.5	3.0	3.0	3.5	3.5
Total Lost time (s)	5.0	5.0		6.3	5.0		5.5	5.5			5.5	
Lane Util. Factor	1.00	0.91		1.00	0.91		1.00	1.00			1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.98			0.98	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		0.99	1.00			1.00	
Frt	1.00	1.00		1.00	1.00		1.00	0.85			0.85	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00			1.00	
Satd. Flow (prot)	1682	4743		1403	4704		1675	1569			1569	
Flt Permitted	0.28	1.00		0.25	1.00		1.00	1.00			1.00	
Satd. Flow (perm)	502	4743		370	4704		1764	1569			1569	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	5	979	15	10	964	5	10	0	10	0	0	5
RTOR Reduction (vph)	0	1	0	0	0	0	0	10	0	0	5	0
Lane Group Flow (vph)	5	993	0	10	969	0	10	0	0	0	0	0
Confl. Peds. (#/hr)	5		10	10		5	5		5	5		5
Heavy Vehicles (%)	0%	8%	0%	20%	9%	0%	0%	0%	0%	0%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	4	0	0	0	0	0	0
Turn Type	Perm	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases		2		1	6			4			8	
Permitted Phases	2			6			4			8		
Actuated Green, G (s)	82.4	82.4		95.3	95.3		3.0	3.0			3.0	
Effective Green, g (s)	83.4	83.4		96.3	96.3		4.0	4.0			4.0	
Actuated g/C Ratio	0.75	0.75		0.87	0.87		0.04	0.04			0.04	
Clearance Time (s)	6.0	6.0		7.3	6.0		6.5	6.5			6.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0			3.0	
Lane Grp Cap (vph)	377	3570		383	4088		63	56			56	
v/s Ratio Prot		c0.21		0.00	c0.21			0.00			0.00	
v/s Ratio Perm	0.01			0.02			c0.01					
v/c Ratio	0.01	0.28		0.03	0.24		0.16	0.01			0.00	
Uniform Delay, d1	3.4	4.3		1.3	1.2		51.8	51.5			51.5	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00			1.00	
Incremental Delay, d2	0.1	0.2		0.0	0.0		1.2	0.0			0.0	
Delay (s)	3.5	4.5		1.3	1.2		53.0	51.5			51.5	
Level of Service	A	A		A	A		D	D			D	
Approach Delay (s)		4.5			1.2			52.2			51.5	
Approach LOS		A			A			D			D	

Intersection Summary			
HCM 2000 Control Delay	3.5	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.29		
Actuated Cycle Length (s)	110.8	Sum of lost time (s)	18.8
Intersection Capacity Utilization	62.5%	ICU Level of Service	B
Analysis Period (min)	15		

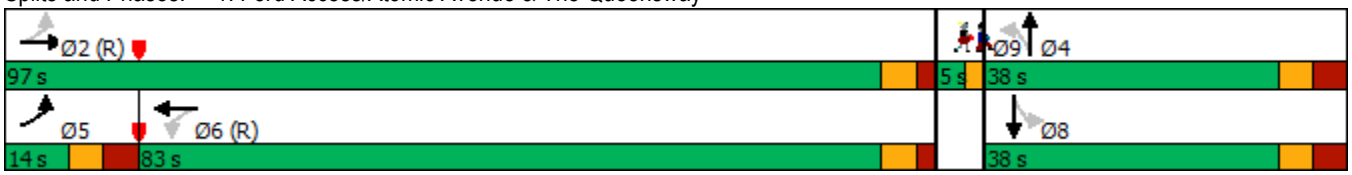
c Critical Lane Group

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	Ø9
Lane Configurations									
Traffic Volume (vph)	75	1195	5	1065	30	5	70	5	
Future Volume (vph)	75	1195	5	1065	30	5	70	5	
Lane Group Flow (vph)	78	1255	5	1182	0	57	0	156	
Turn Type	pm+pt	NA	Perm	NA	Perm	NA	Perm	NA	
Protected Phases	5	2		6		4		8	9
Permitted Phases	2		6		4		8		
Detector Phase	5	2	6	6	4	4	8	8	
Switch Phase									
Minimum Initial (s)	6.0	20.0	20.0	20.0	7.0	7.0	7.0	7.0	1.0
Minimum Split (s)	13.4	25.8	25.8	25.8	42.2	42.2	42.2	42.2	5.0
Total Split (s)	14.0	97.0	83.0	83.0	38.0	38.0	38.0	38.0	5.0
Total Split (%)	10.0%	69.3%	59.3%	59.3%	27.1%	27.1%	27.1%	27.1%	4%
Yellow Time (s)	3.7	3.8	3.8	3.8	3.4	3.4	3.4	3.4	2.0
All-Red Time (s)	3.7	2.0	2.0	2.0	3.8	3.8	3.8	3.8	0.0
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0		-1.0		-1.0	
Total Lost Time (s)	6.4	4.8	4.8	4.8		6.2		6.2	
Lead/Lag	Lead		Lag	Lag					
Lead-Lag Optimize?	Yes		Yes	Yes					
Recall Mode	None	C-Min	C-Min	C-Min	None	None	None	None	None
v/c Ratio	0.28	0.32	0.02	0.35		0.31		0.71	
Control Delay	7.2	4.9	10.2	10.3		40.9		62.0	
Queue Delay	0.0	0.0	0.0	0.0		0.0		0.0	
Total Delay	7.2	4.9	10.2	10.3		40.9		62.0	
Queue Length 50th (m)	4.7	32.4	0.4	48.0		10.0		34.9	
Queue Length 95th (m)	11.3	50.3	2.6	71.1		23.0		56.7	
Internal Link Dist (m)		106.6		203.0		24.1		138.7	
Turn Bay Length (m)	30.0		30.0						
Base Capacity (vph)	278	3914	250	3403		293		349	
Starvation Cap Reductn	0	0	0	0		0		0	
Spillback Cap Reductn	0	0	0	0		0		0	
Storage Cap Reductn	0	0	0	0		0		0	
Reduced v/c Ratio	0.28	0.32	0.02	0.35		0.19		0.45	

Intersection Summary

Cycle Length: 140
Actuated Cycle Length: 140
Offset: 112 (80%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated

Splits and Phases: 1: Ford Access/Atomic Avenue & The Queensway



HCM Signalized Intersection Capacity Analysis
1: Ford Access/Atomic Avenue & The Queensway

<Future Background> Weekday PM

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	75	1195	10	5	1065	70	30	5	20	70	5	75
Future Volume (vph)	75	1195	10	5	1065	70	30	5	20	70	5	75
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.0	3.5	3.5	3.0	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Total Lost time (s)	6.4	4.8		4.8	4.8			6.2			6.2	
Lane Util. Factor	1.00	0.91		1.00	0.91			1.00			1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00			0.99			0.99	
Flpb, ped/bikes	1.00	1.00		0.99	1.00			1.00			0.99	
Frt	1.00	1.00		1.00	0.99			0.95			0.93	
Flt Protected	0.95	1.00		0.95	1.00			0.97			0.98	
Satd. Flow (prot)	1347	4972		1669	4999			1715			1652	
Flt Permitted	0.19	1.00		0.21	1.00			0.70			0.84	
Satd. Flow (perm)	272	4972		369	4999			1227			1426	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	78	1245	10	5	1109	73	31	5	21	73	5	78
RTOR Reduction (vph)	0	0	0	0	4	0	0	16	0	0	29	0
Lane Group Flow (vph)	78	1255	0	5	1178	0	0	41	0	0	127	0
Confl. Peds. (#/hr)	10		15	15		10	5		15	15		5
Heavy Vehicles (%)	25%	3%	0%	0%	1%	6%	0%	0%	0%	2%	0%	2%
Bus Blockages (#/hr)	0	0	4	0	0	4	0	0	0	0	0	0
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	5	2			6			4			8	
Permitted Phases	2			6			4			8		
Actuated Green, G (s)	109.2	109.2		94.2	94.2			17.8			17.8	
Effective Green, g (s)	110.2	110.2		95.2	95.2			18.8			18.8	
Actuated g/C Ratio	0.79	0.79		0.68	0.68			0.13			0.13	
Clearance Time (s)	7.4	5.8		5.8	5.8			7.2			7.2	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)	280	3913		250	3399			164			191	
v/s Ratio Prot	0.02	c0.25			c0.24							
v/s Ratio Perm	0.20			0.01				0.03			c0.09	
v/c Ratio	0.28	0.32		0.02	0.35			0.25			0.67	
Uniform Delay, d1	4.5	4.2		7.3	9.4			54.3			57.6	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	0.5	0.2		0.1	0.3			0.8			8.5	
Delay (s)	5.1	4.5		7.4	9.7			55.1			66.1	
Level of Service	A	A		A	A			E			E	
Approach Delay (s)		4.5			9.6			55.1			66.1	
Approach LOS		A			A			E			E	

Intersection Summary			
HCM 2000 Control Delay	11.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.41		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	19.4
Intersection Capacity Utilization	68.2%	ICU Level of Service	C
Analysis Period (min)	15		

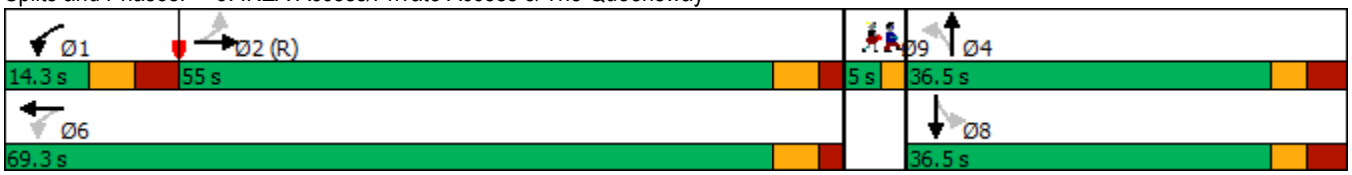
c Critical Lane Group

Lane Group	EBT	WBL	WBT	NBL	NBT	SBL	SBT	Ø9
Lane Configurations								
Traffic Volume (vph)	1215	55	1055	70	0	10	0	
Future Volume (vph)	1215	55	1055	70	0	10	0	
Lane Group Flow (vph)	1353	58	1116	74	58	11	16	
Turn Type	NA	pm+pt	NA	Perm	NA	Perm	NA	
Protected Phases	2	1	6		4		8	9
Permitted Phases		6		4		8		
Detector Phase	2	1	6	4	4	8	8	
Switch Phase								
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	1.0
Minimum Split (s)	58.6	12.3	58.6	36.5	36.5	36.5	36.5	5.0
Total Split (s)	55.0	14.3	69.3	36.5	36.5	36.5	36.5	5.0
Total Split (%)	49.6%	12.9%	62.5%	32.9%	32.9%	32.9%	32.9%	5%
Yellow Time (s)	3.8	3.7	3.8	3.0	3.0	3.0	3.0	2.0
All-Red Time (s)	2.2	3.6	2.2	3.5	3.5	3.5	3.5	0.0
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	
Total Lost Time (s)	5.0	6.3	5.0	5.5	5.5	5.5	5.5	
Lead/Lag	Lag	Lead						
Lead-Lag Optimize?	Yes	Yes						
Recall Mode	C-Min	Min	Min	None	None	None	None	None
v/c Ratio	0.40	0.18	0.27	0.50	0.16	0.08	0.05	
Control Delay	8.7	4.7	3.3	56.4	1.0	42.6	0.3	
Queue Delay	0.2	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	8.9	4.7	3.3	56.4	1.0	42.6	0.3	
Queue Length 50th (m)	46.2	2.5	20.0	16.1	0.0	2.3	0.0	
Queue Length 95th (m)	66.5	6.5	31.4	30.3	0.0	7.6	0.0	
Internal Link Dist (m)	139.8		167.5		162.8		36.5	
Turn Bay Length (m)		110.0				20.0		
Base Capacity (vph)	3418	324	4099	368	574	347	536	
Starvation Cap Reductn	1101	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.58	0.18	0.27	0.20	0.10	0.03	0.03	

Intersection Summary

Cycle Length: 110.8
Actuated Cycle Length: 110.8
Offset: 0 (0%), Referenced to phase 2:EBTL, Start of Green
Natural Cycle: 115
Control Type: Actuated-Coordinated

Splits and Phases: 3: IKEA Access/Private Access & The Queensway



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1215	70	55	1055	5	70	0	55	10	0	15
Future Volume (vph)	0	1215	70	55	1055	5	70	0	55	10	0	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.0	3.5	3.5	3.0	3.5	3.5	3.0	3.5	3.0	3.0	3.5	3.5
Total Lost time (s)		5.0		6.3	5.0		5.5	5.5		5.5	5.5	
Lane Util. Factor		0.91		1.00	0.91		1.00	1.00		1.00	1.00	
Frpb, ped/bikes		1.00		1.00	1.00		1.00	0.96		1.00	0.98	
Flpb, ped/bikes		1.00		1.00	1.00		0.99	1.00		0.97	1.00	
Frt		0.99		1.00	1.00		1.00	0.85		1.00	0.85	
Flt Protected		1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		4941		1684	4977		1676	1535		1642	1569	
Flt Permitted		1.00		0.16	1.00		0.75	1.00		0.72	1.00	
Satd. Flow (perm)		4941		275	4977		1318	1535		1243	1569	
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)	0	1279	74	58	1111	5	74	0	58	11	0	16
RTOR Reduction (vph)	0	3	0	0	0	0	0	52	0	0	14	0
Lane Group Flow (vph)	0	1350	0	58	1116	0	74	6	0	11	2	0
Confl. Peds. (#/hr)	5		15	15		5	5		25	25		5
Heavy Vehicles (%)	0%	3%	0%	0%	3%	0%	0%	0%	0%	0%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	5	0	0	0	0	0	0
Turn Type	Perm	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases		2		1	6			4			8	
Permitted Phases	2			6			4			8		
Actuated Green, G (s)		74.3		88.0	88.0		10.3	10.3		10.3	10.3	
Effective Green, g (s)		75.3		89.0	89.0		11.3	11.3		11.3	11.3	
Actuated g/C Ratio		0.68		0.80	0.80		0.10	0.10		0.10	0.10	
Clearance Time (s)		6.0		7.3	6.0		6.5	6.5		6.5	6.5	
Vehicle Extension (s)		3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		3357		314	3997		134	156		126	160	
v/s Ratio Prot		c0.27		0.01	c0.22			0.00			0.00	
v/s Ratio Perm				0.14			c0.06			0.01		
v/c Ratio		0.40		0.18	0.28		0.55	0.04		0.09	0.01	
Uniform Delay, d1		7.8		3.4	2.8		47.3	44.8		45.1	44.7	
Progression Factor		1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.4		0.3	0.0		4.9	0.1		0.3	0.0	
Delay (s)		8.2		3.7	2.8		52.2	44.9		45.4	44.7	
Level of Service		A		A	A		D	D		D	D	
Approach Delay (s)		8.2			2.8			49.0			45.0	
Approach LOS		A			A			D			D	

Intersection Summary			
HCM 2000 Control Delay	8.2	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.43		
Actuated Cycle Length (s)	110.8	Sum of lost time (s)	18.8
Intersection Capacity Utilization	73.2%	ICU Level of Service	D
Analysis Period (min)	15		

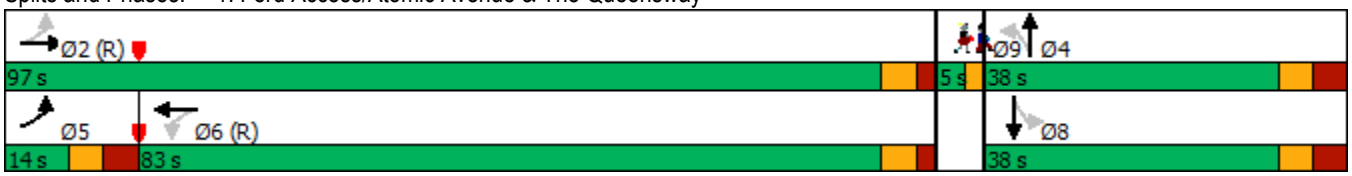
c Critical Lane Group

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	Ø9
Lane Configurations									
Traffic Volume (vph)	80	1025	20	1145	5	0	30	5	
Future Volume (vph)	80	1025	20	1145	5	0	30	5	
Lane Group Flow (vph)	82	1066	20	1224	0	15	0	67	
Turn Type	pm+pt	NA	Perm	NA	Perm	NA	Perm	NA	
Protected Phases	5	2		6		4		8	9
Permitted Phases	2		6		4		8		
Detector Phase	5	2	6	6	4	4	8	8	
Switch Phase									
Minimum Initial (s)	6.0	20.0	20.0	20.0	7.0	7.0	7.0	7.0	1.0
Minimum Split (s)	13.4	25.8	25.8	25.8	42.2	42.2	42.2	42.2	5.0
Total Split (s)	14.0	97.0	83.0	83.0	38.0	38.0	38.0	38.0	5.0
Total Split (%)	10.0%	69.3%	59.3%	59.3%	27.1%	27.1%	27.1%	27.1%	4%
Yellow Time (s)	3.7	3.8	3.8	3.8	3.4	3.4	3.4	3.4	2.0
All-Red Time (s)	3.7	2.0	2.0	2.0	3.8	3.8	3.8	3.8	0.0
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0		-1.0		-1.0	
Total Lost Time (s)	6.4	4.8	4.8	4.8		6.2		6.2	
Lead/Lag	Lead		Lag	Lag					
Lead-Lag Optimize?	Yes		Yes	Yes					
Recall Mode	None	C-Min	C-Min	C-Min	None	None	None	None	None
v/c Ratio	0.26	0.26	0.06	0.34		0.07		0.53	
Control Delay	4.5	2.4	5.3	6.1		0.7		52.1	
Queue Delay	0.0	0.0	0.0	0.0		0.0		0.0	
Total Delay	4.5	2.4	5.3	6.1		0.7		52.1	
Queue Length 50th (m)	3.3	17.5	1.3	30.6		0.0		10.8	
Queue Length 95th (m)	8.1	28.1	m3.2	34.5		0.0		26.5	
Internal Link Dist (m)		106.6		203.0		24.1		138.7	
Turn Bay Length (m)	30.0		30.0						
Base Capacity (vph)	316	4150	342	3567		411		301	
Starvation Cap Reductn	0	0	0	0		0		0	
Spillback Cap Reductn	0	0	0	0		0		0	
Storage Cap Reductn	0	0	0	0		0		0	
Reduced v/c Ratio	0.26	0.26	0.06	0.34		0.04		0.22	

Intersection Summary

Cycle Length: 140
Actuated Cycle Length: 140
Offset: 15 (11%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Ford Access/Atomic Avenue & The Queensway



HCM Signalized Intersection Capacity Analysis
1: Ford Access/Atomic Avenue & The Queensway

<Future Total> Weekday AM

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	80	1025	20	20	1145	55	5	0	10	30	5	30
Future Volume (vph)	80	1025	20	20	1145	55	5	0	10	30	5	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.0	3.5	3.5	3.0	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Total Lost time (s)	6.4	4.8		4.8	4.8			6.2			6.2	
Lane Util. Factor	1.00	0.91		1.00	0.91			1.00			1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00			0.99			0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00			1.00	
Frt	1.00	1.00		1.00	0.99			0.91			0.94	
Flt Protected	0.95	1.00		0.95	1.00			0.98			0.98	
Satd. Flow (prot)	1451	4783		1678	4705			1659			1420	
Flt Permitted	0.19	1.00		0.26	1.00			0.88			0.84	
Satd. Flow (perm)	292	4783		452	4705			1487			1227	
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)	82	1046	20	20	1168	56	5	0	10	31	5	31
RTOR Reduction (vph)	0	1	0	0	2	0	0	14	0	0	27	0
Lane Group Flow (vph)	82	1065	0	20	1222	0	0	1	0	0	40	0
Confl. Peds. (#/hr)	15		5	5		15	5		5	5		5
Heavy Vehicles (%)	16%	7%	0%	0%	8%	6%	0%	0%	0%	24%	0%	19%
Bus Blockages (#/hr)	0	0	4	0	0	4	0	0	0	0	0	0
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	5	2			6			4			8	
Permitted Phases	2			6			4			8		
Actuated Green, G (s)	118.1	118.1		103.7	103.7			8.9			8.9	
Effective Green, g (s)	119.1	119.1		104.7	104.7			9.9			9.9	
Actuated g/C Ratio	0.85	0.85		0.75	0.75			0.07			0.07	
Clearance Time (s)	7.4	5.8		5.8	5.8			7.2			7.2	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)	314	4068		338	3518			105			86	
v/s Ratio Prot	0.01	c0.22			c0.26							
v/s Ratio Perm	0.21			0.04				0.00			c0.03	
v/c Ratio	0.26	0.26		0.06	0.35			0.01			0.47	
Uniform Delay, d1	2.5	2.0		4.7	6.0			60.5			62.5	
Progression Factor	1.00	1.00		0.79	0.93			1.00			1.00	
Incremental Delay, d2	0.4	0.2		0.3	0.3			0.0			3.9	
Delay (s)	2.9	2.2		4.0	5.8			60.5			66.5	
Level of Service	A	A		A	A			E			E	
Approach Delay (s)		2.2			5.8			60.5			66.5	
Approach LOS		A			A			E			E	

Intersection Summary			
HCM 2000 Control Delay	6.1	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.37		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	19.4
Intersection Capacity Utilization	59.6%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBT	WBL	WBT	NBL	NBR
Lane Configurations					
Traffic Volume (vph)	970	45	950	270	175
Future Volume (vph)	970	45	950	270	175
Lane Group Flow (vph)	1184	50	1056	300	194
Turn Type	NA	Perm	NA	Perm	Perm
Protected Phases	2		6		
Permitted Phases		6		4	4
Detector Phase	2	6	6	4	4
Switch Phase					
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	23.8	23.8	23.8	25.2	25.2
Total Split (s)	97.0	97.0	97.0	43.0	43.0
Total Split (%)	69.3%	69.3%	69.3%	30.7%	30.7%
Yellow Time (s)	3.8	3.8	3.8	3.4	3.4
All-Red Time (s)	2.0	2.0	2.0	3.8	3.8
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	0.0
Total Lost Time (s)	4.8	4.8	4.8	6.2	7.2
Lead/Lag					
Lead-Lag Optimize?					
Recall Mode	C-Min	Min	Min	None	None
v/c Ratio	0.33	0.18	0.29	0.81	0.46
Control Delay	7.2	10.9	8.7	67.8	19.8
Queue Delay	0.0	0.0	0.3	0.0	0.0
Total Delay	7.2	10.9	9.0	67.8	19.8
Queue Length 50th (m)	29.9	4.6	39.1	83.4	16.4
Queue Length 95th (m)	33.0	13.0	56.6	110.0	37.7
Internal Link Dist (m)	203.0		139.8	56.0	
Turn Bay Length (m)		30.0		15.0	
Base Capacity (vph)	3573	274	3612	449	485
Starvation Cap Reductn	0	0	1696	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.33	0.18	0.55	0.67	0.40

Intersection Summary

Cycle Length: 140
Actuated Cycle Length: 140
Offset: 0 (0%), Referenced to phase 2:EBT, Start of Green
Natural Cycle: 55
Control Type: Actuated-Coordinated

Splits and Phases: 2: Private Street & The Queensway

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	970	95	45	950	270	175
Future Volume (vph)	970	95	45	950	270	175
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.5	3.5	3.5	3.0	3.0
Total Lost time (s)	4.8		4.8	4.8	6.2	7.2
Lane Util. Factor	0.91		1.00	0.91	1.00	1.00
Frt	0.99		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	5060		1785	5129	1685	1507
Flt Permitted	1.00		0.21	1.00	0.95	1.00
Satd. Flow (perm)	5060		388	5129	1685	1507
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	1078	106	50	1056	300	194
RTOR Reduction (vph)	7	0	0	0	0	99
Lane Group Flow (vph)	1177	0	50	1056	300	95
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Turn Type	NA		Perm	NA	Perm	Perm
Protected Phases	2			6		
Permitted Phases			6		4	4
Actuated Green, G (s)	97.0		97.0	97.0	30.0	30.0
Effective Green, g (s)	98.0		98.0	98.0	31.0	30.0
Actuated g/C Ratio	0.70		0.70	0.70	0.22	0.21
Clearance Time (s)	5.8		5.8	5.8	7.2	7.2
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	3542		271	3590	373	322
v/s Ratio Prot	c0.23			0.21		
v/s Ratio Perm			0.13		c0.18	0.06
v/c Ratio	0.33		0.18	0.29	0.80	0.30
Uniform Delay, d1	8.2		7.2	7.9	51.6	46.1
Progression Factor	0.81		1.00	1.00	1.00	1.00
Incremental Delay, d2	0.2		0.3	0.0	11.9	0.5
Delay (s)	6.9		7.6	8.0	63.5	46.6
Level of Service	A		A	A	E	D
Approach Delay (s)	6.9			8.0	56.9	
Approach LOS	A			A	E	

Intersection Summary			
HCM 2000 Control Delay	16.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	53.1%	ICU Level of Service	A
Analysis Period (min)	15		

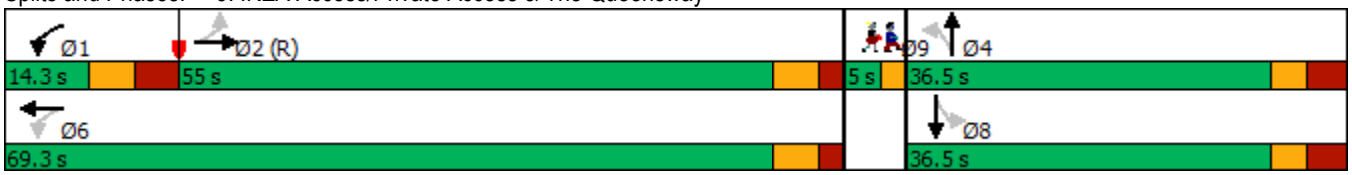
c Critical Lane Group

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBT	Ø9
Lane Configurations								
Traffic Volume (vph)	5	1125	10	980	10	0	0	
Future Volume (vph)	5	1125	10	980	10	0	0	
Lane Group Flow (vph)	5	1175	10	1015	10	10	5	
Turn Type	Perm	NA	pm+pt	NA	Perm	NA	NA	
Protected Phases		2	1	6		4	8	9
Permitted Phases	2		6		4			
Detector Phase	2	2	1	6	4	4	8	
Switch Phase								
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	1.0
Minimum Split (s)	58.6	58.6	12.3	58.6	36.5	36.5	36.5	5.0
Total Split (s)	55.0	55.0	14.3	69.3	36.5	36.5	36.5	5.0
Total Split (%)	49.6%	49.6%	12.9%	62.5%	32.9%	32.9%	32.9%	5%
Yellow Time (s)	3.8	3.8	3.7	3.8	3.0	3.0	3.0	2.0
All-Red Time (s)	2.2	2.2	3.6	2.2	3.5	3.5	3.5	0.0
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	
Total Lost Time (s)	5.0	5.0	6.3	5.0	5.5	5.5	5.5	
Lead/Lag	Lag	Lag	Lead					
Lead-Lag Optimize?	Yes	Yes	Yes					
Recall Mode	C-Min	C-Min	Min	Min	None	None	None	None
v/c Ratio	0.01	0.31	0.03	0.23	0.08	0.03	0.02	
Control Delay	4.6	4.2	1.8	1.1	49.3	0.2	0.2	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	4.6	4.2	1.8	1.1	49.3	0.2	0.2	
Queue Length 50th (m)	0.2	15.0	0.1	0.0	2.2	0.0	0.0	
Queue Length 95th (m)	1.4	41.0	1.2	17.4	7.8	0.0	0.0	
Internal Link Dist (m)		139.8		167.5		162.8	36.5	
Turn Bay Length (m)	15.0		110.0					
Base Capacity (vph)	376	3735	347	4379	493	590	551	
Starvation Cap Reductn	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.01	0.31	0.03	0.23	0.02	0.02	0.01	

Intersection Summary

Cycle Length: 110.8
Actuated Cycle Length: 110.8
Offset: 0 (0%), Referenced to phase 2:EBTL, Start of Green
Natural Cycle: 115
Control Type: Actuated-Coordinated

Splits and Phases: 3: IKEA Access/Private Access & The Queensway



HCM Signalized Intersection Capacity Analysis
3: IKEA Access/Private Access & The Queensway

<Future Total> Weekday AM

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	1125	15	10	980	5	10	0	10	0	0	5
Future Volume (vph)	5	1125	15	10	980	5	10	0	10	0	0	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.0	3.5	3.5	3.0	3.5	3.5	3.0	3.5	3.0	3.0	3.5	3.5
Total Lost time (s)	5.0	5.0		6.3	5.0		5.5	5.5			5.5	
Lane Util. Factor	1.00	0.91		1.00	0.91		1.00	1.00			1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.98			0.98	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		0.99	1.00			1.00	
Frt	1.00	1.00		1.00	1.00		1.00	0.85			0.85	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00			1.00	
Satd. Flow (prot)	1683	4744		1404	4704		1675	1569			1569	
Flt Permitted	0.27	1.00		0.20	1.00		1.00	1.00			1.00	
Satd. Flow (perm)	478	4744		300	4704		1764	1569			1569	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	5	1160	15	10	1010	5	10	0	10	0	0	5
RTOR Reduction (vph)	0	0	0	0	0	0	0	10	0	0	5	0
Lane Group Flow (vph)	5	1175	0	10	1015	0	10	0	0	0	0	0
Confl. Peds. (#/hr)	5		10	10		5	5		5	5		5
Heavy Vehicles (%)	0%	8%	0%	20%	9%	0%	0%	0%	0%	0%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	4	0	0	0	0	0	0
Turn Type	Perm	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases		2		1	6			4			8	
Permitted Phases	2			6			4			8		
Actuated Green, G (s)	82.4	82.4		95.3	95.3		3.0	3.0			3.0	
Effective Green, g (s)	83.4	83.4		96.3	96.3		4.0	4.0			4.0	
Actuated g/C Ratio	0.75	0.75		0.87	0.87		0.04	0.04			0.04	
Clearance Time (s)	6.0	6.0		7.3	6.0		6.5	6.5			6.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0			3.0	
Lane Grp Cap (vph)	359	3570		326	4088		63	56			56	
v/s Ratio Prot		c0.25		0.00	c0.22			0.00			0.00	
v/s Ratio Perm	0.01			0.02			c0.01					
v/c Ratio	0.01	0.33		0.03	0.25		0.16	0.01			0.00	
Uniform Delay, d1	3.4	4.5		1.4	1.2		51.8	51.5			51.5	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00			1.00	
Incremental Delay, d2	0.1	0.2		0.0	0.0		1.2	0.0			0.0	
Delay (s)	3.5	4.8		1.5	1.2		53.0	51.5			51.5	
Level of Service	A	A		A	A		D	D			D	
Approach Delay (s)		4.7			1.2			52.2			51.5	
Approach LOS		A			A			D			D	

Intersection Summary			
HCM 2000 Control Delay	3.7	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.33		
Actuated Cycle Length (s)	110.8	Sum of lost time (s)	18.8
Intersection Capacity Utilization	62.5%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	25	240	205	10	85	55
Future Volume (Veh/h)	25	240	205	10	85	55
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	28	267	228	11	94	61
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)						80
pX, platoon unblocked						
vC, conflicting volume	482	234			239	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	482	234			239	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	94	67			93	
cM capacity (veh/h)	508	811			1340	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	295	239	155
Volume Left	28	0	94
Volume Right	267	11	0
cSH	767	1700	1340
Volume to Capacity	0.38	0.14	0.07
Queue Length 95th (m)	14.5	0.0	1.8
Control Delay (s)	12.6	0.0	5.0
Lane LOS	B		A
Approach Delay (s)	12.6	0.0	5.0
Approach LOS	B		

Intersection Summary			
Average Delay	6.5		
Intersection Capacity Utilization	45.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	25	205	10	10	55	25
Future Volume (Veh/h)	25	205	10	10	55	25
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	28	228	11	11	61	28
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)						176
pX, platoon unblocked						
vC, conflicting volume	166	16			22	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	166	16			22	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	96	79			96	
cM capacity (veh/h)	797	1068			1607	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	256	22	89
Volume Left	28	0	61
Volume Right	228	11	0
cSH	1030	1700	1607
Volume to Capacity	0.25	0.01	0.04
Queue Length 95th (m)	7.9	0.0	0.9
Control Delay (s)	9.6	0.0	5.1
Lane LOS	A		A
Approach Delay (s)	9.6	0.0	5.1
Approach LOS	A		

Intersection Summary			
Average Delay	8.0		
Intersection Capacity Utilization	31.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	0	0	20	50	0
Future Volume (Veh/h)	0	0	0	20	50	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	0	0	22	56	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	22				11	11
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	22				11	11
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				94	100
cM capacity (veh/h)	1607				1014	1076

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	0	22	56
Volume Left	0	0	56
Volume Right	0	22	0
cSH	1700	1700	1014
Volume to Capacity	0.00	0.01	0.06
Queue Length 95th (m)	0.0	0.0	1.4
Control Delay (s)	0.0	0.0	8.8
Lane LOS			A
Approach Delay (s)	0.0	0.0	8.8
Approach LOS			A

Intersection Summary			
Average Delay	6.3		
Intersection Capacity Utilization	13.3%	ICU Level of Service	A
Analysis Period (min)	15		

Queues
1: Ford Access/Atomic Avenue & The Queensway

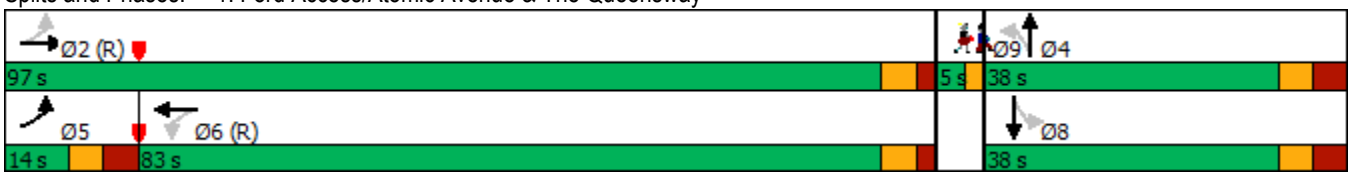
<Future Total> Weekday PM

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	Ø9
Lane Configurations									
Traffic Volume (vph)	75	1450	5	1205	30	5	70	5	
Future Volume (vph)	75	1450	5	1205	30	5	70	5	
Lane Group Flow (vph)	78	1520	5	1328	0	57	0	156	
Turn Type	pm+pt	NA	Perm	NA	Perm	NA	Perm	NA	
Protected Phases	5	2		6		4		8	9
Permitted Phases	2		6		4		8		
Detector Phase	5	2	6	6	4	4	8	8	
Switch Phase									
Minimum Initial (s)	6.0	20.0	20.0	20.0	7.0	7.0	7.0	7.0	1.0
Minimum Split (s)	13.4	25.8	25.8	25.8	42.2	42.2	42.2	42.2	5.0
Total Split (s)	14.0	97.0	83.0	83.0	38.0	38.0	38.0	38.0	5.0
Total Split (%)	10.0%	69.3%	59.3%	59.3%	27.1%	27.1%	27.1%	27.1%	4%
Yellow Time (s)	3.7	3.8	3.8	3.8	3.4	3.4	3.4	3.4	2.0
All-Red Time (s)	3.7	2.0	2.0	2.0	3.8	3.8	3.8	3.8	0.0
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0		-1.0		-1.0	
Total Lost Time (s)	6.4	4.8	4.8	4.8		6.2		6.2	
Lead/Lag	Lead		Lag	Lag					
Lead-Lag Optimize?	Yes		Yes	Yes					
Recall Mode	None	C-Min	C-Min	C-Min	None	None	None	None	None
v/c Ratio	0.32	0.39	0.03	0.39		0.31		0.71	
Control Delay	8.0	5.3	15.4	13.2		40.9		62.0	
Queue Delay	0.0	0.0	0.0	0.0		0.0		0.0	
Total Delay	8.0	5.3	15.4	13.2		40.9		62.0	
Queue Length 50th (m)	4.7	42.4	0.4	48.4		10.0		34.9	
Queue Length 95th (m)	11.3	64.6	m2.5	96.6		23.0		56.7	
Internal Link Dist (m)		106.6		203.0		24.1		138.7	
Turn Bay Length (m)	30.0		30.0						
Base Capacity (vph)	246	3914	190	3407		293		349	
Starvation Cap Reductn	0	0	0	0		0		0	
Spillback Cap Reductn	0	0	0	0		0		0	
Storage Cap Reductn	0	0	0	0		0		0	
Reduced v/c Ratio	0.32	0.39	0.03	0.39		0.19		0.45	

Intersection Summary

Cycle Length: 140
Actuated Cycle Length: 140
Offset: 112 (80%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Ford Access/Atomic Avenue & The Queensway



HCM Signalized Intersection Capacity Analysis
1: Ford Access/Atomic Avenue & The Queensway

<Future Total> Weekday PM

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	75	1450	10	5	1205	70	30	5	20	70	5	75
Future Volume (vph)	75	1450	10	5	1205	70	30	5	20	70	5	75
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.0	3.5	3.5	3.0	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Total Lost time (s)	6.4	4.8		4.8	4.8			6.2			6.2	
Lane Util. Factor	1.00	0.91		1.00	0.91			1.00			1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00			0.99			0.99	
Flpb, ped/bikes	1.00	1.00		0.99	1.00			1.00			0.99	
Frt	1.00	1.00		1.00	0.99			0.95			0.93	
Flt Protected	0.95	1.00		0.95	1.00			0.97			0.98	
Satd. Flow (prot)	1347	4974		1674	5008			1715			1652	
Flt Permitted	0.16	1.00		0.16	1.00			0.70			0.84	
Satd. Flow (perm)	226	4974		280	5008			1227			1426	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	78	1510	10	5	1255	73	31	5	21	73	5	78
RTOR Reduction (vph)	0	0	0	0	3	0	0	16	0	0	29	0
Lane Group Flow (vph)	78	1520	0	5	1325	0	0	41	0	0	127	0
Confl. Peds. (#/hr)	10		15	15		10	5		15	15		5
Heavy Vehicles (%)	25%	3%	0%	0%	1%	6%	0%	0%	0%	2%	0%	2%
Bus Blockages (#/hr)	0	0	4	0	0	4	0	0	0	0	0	0
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	5	2			6			4			8	
Permitted Phases	2			6			4			8		
Actuated Green, G (s)	109.2	109.2		94.2	94.2			17.8			17.8	
Effective Green, g (s)	110.2	110.2		95.2	95.2			18.8			18.8	
Actuated g/C Ratio	0.79	0.79		0.68	0.68			0.13			0.13	
Clearance Time (s)	7.4	5.8		5.8	5.8			7.2			7.2	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)	246	3915		190	3405			164			191	
v/s Ratio Prot	0.02	c0.31			0.26							
v/s Ratio Perm	0.23			0.02				0.03			c0.09	
v/c Ratio	0.32	0.39		0.03	0.39			0.25			0.67	
Uniform Delay, d1	5.0	4.6		7.3	9.7			54.3			57.6	
Progression Factor	1.00	1.00		1.48	1.23			1.00			1.00	
Incremental Delay, d2	0.7	0.3		0.2	0.3			0.8			8.5	
Delay (s)	5.8	4.9		11.0	12.3			55.1			66.1	
Level of Service	A	A		B	B			E			E	
Approach Delay (s)		4.9			12.3			55.1			66.1	
Approach LOS		A			B			E			E	

Intersection Summary			
HCM 2000 Control Delay	12.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	19.4
Intersection Capacity Utilization	73.1%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBT	WBL	WBT	NBL	NBR
Lane Configurations					
Traffic Volume (vph)	1280	130	1135	145	90
Future Volume (vph)	1280	130	1135	145	90
Lane Group Flow (vph)	1540	130	1135	145	90
Turn Type	NA	Perm	NA	Perm	Perm
Protected Phases	2		6		
Permitted Phases		6		4	4
Detector Phase	2	6	6	4	4
Switch Phase					
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	23.8	23.8	23.8	25.2	25.2
Total Split (s)	97.0	97.0	97.0	43.0	43.0
Total Split (%)	69.3%	69.3%	69.3%	30.7%	30.7%
Yellow Time (s)	3.8	3.8	3.8	3.4	3.4
All-Red Time (s)	2.0	2.0	2.0	3.8	3.8
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	0.0
Total Lost Time (s)	4.8	4.8	4.8	6.2	7.2
Lead/Lag					
Lead-Lag Optimize?					
Recall Mode	C-Min	Min	Min	None	None
v/c Ratio	0.39	0.61	0.28	0.66	0.35
Control Delay	5.2	22.7	4.5	71.1	16.3
Queue Delay	0.0	0.0	0.3	0.0	0.0
Total Delay	5.2	22.7	4.7	71.1	16.3
Queue Length 50th (m)	37.6	13.1	27.7	40.8	2.1
Queue Length 95th (m)	54.3	#58.5	41.2	61.7	18.0
Internal Link Dist (m)	203.0		139.8	56.0	
Turn Bay Length (m)		30.0		15.0	
Base Capacity (vph)	3963	212	4051	442	446
Starvation Cap Reductn	0	0	2036	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.39	0.61	0.56	0.33	0.20

Intersection Summary

Cycle Length: 140
Actuated Cycle Length: 140
Offset: 0 (0%), Referenced to phase 2:EBT, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 2: Private Street & The Queensway

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1280	260	130	1135	145	90
Future Volume (vph)	1280	260	130	1135	145	90
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.5	3.5	3.5	3.0	3.0
Total Lost time (s)	4.8		4.8	4.8	6.2	7.2
Lane Util. Factor	0.91		1.00	0.91	1.00	1.00
Frt	0.97		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	4999		1785	5129	1685	1507
Flt Permitted	1.00		0.14	1.00	0.95	1.00
Satd. Flow (perm)	4999		269	5129	1685	1507
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	1280	260	130	1135	145	90
RTOR Reduction (vph)	13	0	0	0	0	72
Lane Group Flow (vph)	1527	0	130	1135	145	18
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Turn Type	NA		Perm	NA	Perm	Perm
Protected Phases	2			6		
Permitted Phases			6		4	4
Actuated Green, G (s)	109.6		109.6	109.6	17.4	17.4
Effective Green, g (s)	110.6		110.6	110.6	18.4	17.4
Actuated g/C Ratio	0.79		0.79	0.79	0.13	0.12
Clearance Time (s)	5.8		5.8	5.8	7.2	7.2
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	3949		212	4051	221	187
v/s Ratio Prot	0.31			0.22		
v/s Ratio Perm			c0.48		c0.09	0.01
v/c Ratio	0.39		0.61	0.28	0.66	0.10
Uniform Delay, d1	4.4		6.0	4.0	57.8	54.3
Progression Factor	1.08		1.00	1.00	1.00	1.00
Incremental Delay, d2	0.3		5.2	0.0	6.8	0.2
Delay (s)	5.1		11.2	4.0	64.6	54.6
Level of Service	A		B	A	E	D
Approach Delay (s)	5.1			4.7	60.8	
Approach LOS	A			A	E	

Intersection Summary			
HCM 2000 Control Delay	9.2	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	58.9%	ICU Level of Service	B
Analysis Period (min)	15		

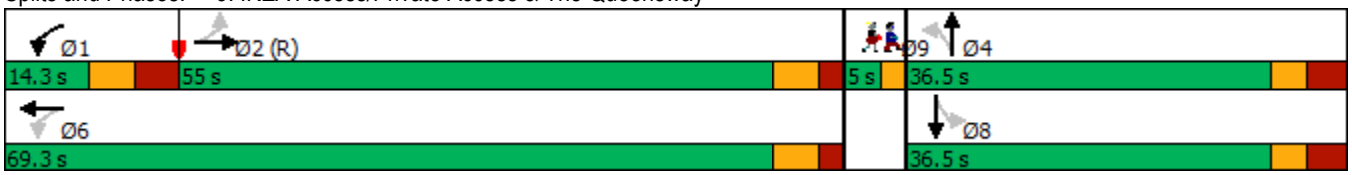
c Critical Lane Group

Lane Group	EBT	WBL	WBT	NBL	NBT	SBL	SBT	Ø9
Lane Configurations								
Traffic Volume (vph)	1305	55	1180	70	0	10	0	
Future Volume (vph)	1305	55	1180	70	0	10	0	
Lane Group Flow (vph)	1448	58	1247	74	58	11	16	
Turn Type	NA	pm+pt	NA	Perm	NA	Perm	NA	
Protected Phases	2	1	6		4		8	9
Permitted Phases		6		4		8		
Detector Phase	2	1	6	4	4	8	8	
Switch Phase								
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	1.0
Minimum Split (s)	58.6	12.3	58.6	36.5	36.5	36.5	36.5	5.0
Total Split (s)	55.0	14.3	69.3	36.5	36.5	36.5	36.5	5.0
Total Split (%)	49.6%	12.9%	62.5%	32.9%	32.9%	32.9%	32.9%	5%
Yellow Time (s)	3.8	3.7	3.8	3.0	3.0	3.0	3.0	2.0
All-Red Time (s)	2.2	3.6	2.2	3.5	3.5	3.5	3.5	0.0
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	
Total Lost Time (s)	5.0	6.3	5.0	5.5	5.5	5.5	5.5	
Lead/Lag	Lag	Lead						
Lead-Lag Optimize?	Yes	Yes						
Recall Mode	C-Min	Min	Min	None	None	None	None	None
v/c Ratio	0.42	0.20	0.30	0.50	0.17	0.08	0.06	
Control Delay	8.9	4.9	3.4	56.4	1.0	42.6	0.4	
Queue Delay	0.3	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	9.2	4.9	3.4	56.4	1.0	42.6	0.4	
Queue Length 50th (m)	50.8	2.5	23.1	16.1	0.0	2.3	0.0	
Queue Length 95th (m)	72.8	6.5	35.9	30.3	0.0	7.6	0.0	
Internal Link Dist (m)	139.8		167.5		162.8		36.5	
Turn Bay Length (m)		110.0				20.0		
Base Capacity (vph)	3418	300	4099	368	572	347	526	
Starvation Cap Reductn	1070	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.62	0.19	0.30	0.20	0.10	0.03	0.03	

Intersection Summary

Cycle Length: 110.8
Actuated Cycle Length: 110.8
Offset: 0 (0%), Referenced to phase 2:EBTL, Start of Green
Natural Cycle: 115
Control Type: Actuated-Coordinated

Splits and Phases: 3: IKEA Access/Private Access & The Queensway



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1305	70	55	1180	5	70	0	55	10	0	15
Future Volume (vph)	0	1305	70	55	1180	5	70	0	55	10	0	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.0	3.5	3.5	3.0	3.5	3.5	3.0	3.5	3.0	3.0	3.5	3.5
Total Lost time (s)		5.0		6.3	5.0		5.5	5.5		5.5	5.5	
Lane Util. Factor		0.91		1.00	0.91		1.00	1.00		1.00	1.00	
Frpb, ped/bikes		1.00		1.00	1.00		1.00	0.96		1.00	0.98	
Flpb, ped/bikes		1.00		1.00	1.00		0.99	1.00		0.97	1.00	
Frt		0.99		1.00	1.00		1.00	0.85		1.00	0.85	
Flt Protected		1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		4944		1685	4977		1676	1535		1642	1569	
Flt Permitted		1.00		0.14	1.00		0.75	1.00		0.72	1.00	
Satd. Flow (perm)		4944		244	4977		1318	1535		1243	1569	
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)	0	1374	74	58	1242	5	74	0	58	11	0	16
RTOR Reduction (vph)	0	3	0	0	0	0	0	52	0	0	14	0
Lane Group Flow (vph)	0	1445	0	58	1247	0	74	6	0	11	2	0
Confl. Peds. (#/hr)	5		15	15		5	5		25	25		5
Heavy Vehicles (%)	0%	3%	0%	0%	3%	0%	0%	0%	0%	0%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	5	0	0	0	0	0	0
Turn Type	Perm	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases		2		1	6			4			8	
Permitted Phases	2			6			4			8		
Actuated Green, G (s)		74.3		88.0	88.0		10.3	10.3		10.3	10.3	
Effective Green, g (s)		75.3		89.0	89.0		11.3	11.3		11.3	11.3	
Actuated g/C Ratio		0.68		0.80	0.80		0.10	0.10		0.10	0.10	
Clearance Time (s)		6.0		7.3	6.0		6.5	6.5		6.5	6.5	
Vehicle Extension (s)		3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		3359		292	3997		134	156		126	160	
v/s Ratio Prot		c0.29		0.01	c0.25			0.00			0.00	
v/s Ratio Perm				0.15			c0.06			0.01		
v/c Ratio		0.43		0.20	0.31		0.55	0.04		0.09	0.01	
Uniform Delay, d1		8.0		3.7	2.9		47.3	44.8		45.1	44.7	
Progression Factor		1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.4		0.3	0.0		4.9	0.1		0.3	0.0	
Delay (s)		8.4		4.0	2.9		52.2	44.9		45.4	44.7	
Level of Service		A		A	A		D	D		D	D	
Approach Delay (s)		8.4			3.0			49.0			45.0	
Approach LOS		A			A			D			D	

Intersection Summary			
HCM 2000 Control Delay	8.2	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	110.8	Sum of lost time (s)	18.8
Intersection Capacity Utilization	73.2%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	15	135	100	25	210	180
Future Volume (Veh/h)	15	135	100	25	210	180
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.90	0.90	0.95	0.90	0.90	0.95
Hourly flow rate (vph)	17	150	105	28	233	189
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)						80
pX, platoon unblocked						
vC, conflicting volume	774	119			133	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	774	119			133	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	95	84			84	
cM capacity (veh/h)	311	938			1464	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	167	133	422
Volume Left	17	0	233
Volume Right	150	28	0
cSH	778	1700	1464
Volume to Capacity	0.21	0.08	0.16
Queue Length 95th (m)	6.5	0.0	4.5
Control Delay (s)	10.9	0.0	5.0
Lane LOS	B		A
Approach Delay (s)	10.9	0.0	5.0
Approach LOS	B		

Intersection Summary			
Average Delay	5.4		
Intersection Capacity Utilization	47.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	10	100	25	20	180	15
Future Volume (Veh/h)	10	100	25	20	180	15
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.90	0.90	0.95	0.90	0.90	0.95
Hourly flow rate (vph)	11	111	26	22	200	16
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)						176
pX, platoon unblocked						
vC, conflicting volume	453	37			48	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	453	37			48	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	98	89			87	
cM capacity (veh/h)	496	1041			1572	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	122	48	216
Volume Left	11	0	200
Volume Right	111	22	0
cSH	947	1700	1572
Volume to Capacity	0.13	0.03	0.13
Queue Length 95th (m)	3.5	0.0	3.5
Control Delay (s)	9.4	0.0	7.1
Lane LOS	A		A
Approach Delay (s)	9.4	0.0	7.1
Approach LOS	A		

Intersection Summary			
Average Delay	6.9		
Intersection Capacity Utilization	30.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	0	0	45	25	0
Future Volume (Veh/h)	0	0	0	45	25	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.90	0.95	0.95	0.90	0.90	0.90
Hourly flow rate (vph)	0	0	0	50	28	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	50				25	25
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	50				25	25
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				97	100
cM capacity (veh/h)	1570				996	1057

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	0	50	28
Volume Left	0	0	28
Volume Right	0	50	0
cSH	1700	1700	996
Volume to Capacity	0.00	0.03	0.03
Queue Length 95th (m)	0.0	0.0	0.7
Control Delay (s)	0.0	0.0	8.7
Lane LOS			A
Approach Delay (s)	0.0	0.0	8.7
Approach LOS			A

Intersection Summary			
Average Delay	3.1		
Intersection Capacity Utilization	13.3%	ICU Level of Service	A
Analysis Period (min)	15		