DILLON CONSULTING

LIVERPOOL ROAD LIMITED PARTNERSHIP

Transportation Brief

640 Liverpool Road Residential Development, Pickering, Ontario

January 2026 – 25-2038

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Attention: Mr. Greg Silas

Transportation Brief – 640 Liverpool Road, Pickering, Ontario

Please find enclosed the revised version of the Transportation Brief prepared for the envisioned residential development at 640 Liverpool Road in the City of Pickering, Ontario.

Should you have any questions or wish to discuss our findings, please contact the undersigned at (613) 745-2213 (ext. 3013) or via email at *iborsuk@dillon.ca*.

Yours sincerely,

DILLON CONSULTING LIMITED

Ian Borsuk, P. Eng.

Our File: 25-2038

Table of Contents

Figures

Tables

1.0 Introduction

This report documents the potential transportation impacts of a proposed mixed-use development to be located at 640 Liverpool Road in Pickering, Ontario. As per the provided site plan, the development will include 91 residential units and a commercial unit with a gross floor area (GFA) of 298 m^2 (3,208 sq.ft). The report follows the format of a transportation brief, documenting existing traffic operations within the vicinity of the site, the number of trips expected to be generated by the new mixed-use development and the future traffic operations within the vicinity of the site.

Figure 1 illustrates the context of the site location denoted in red as well as its immediate surroundings, including the study intersections denoted in blue.

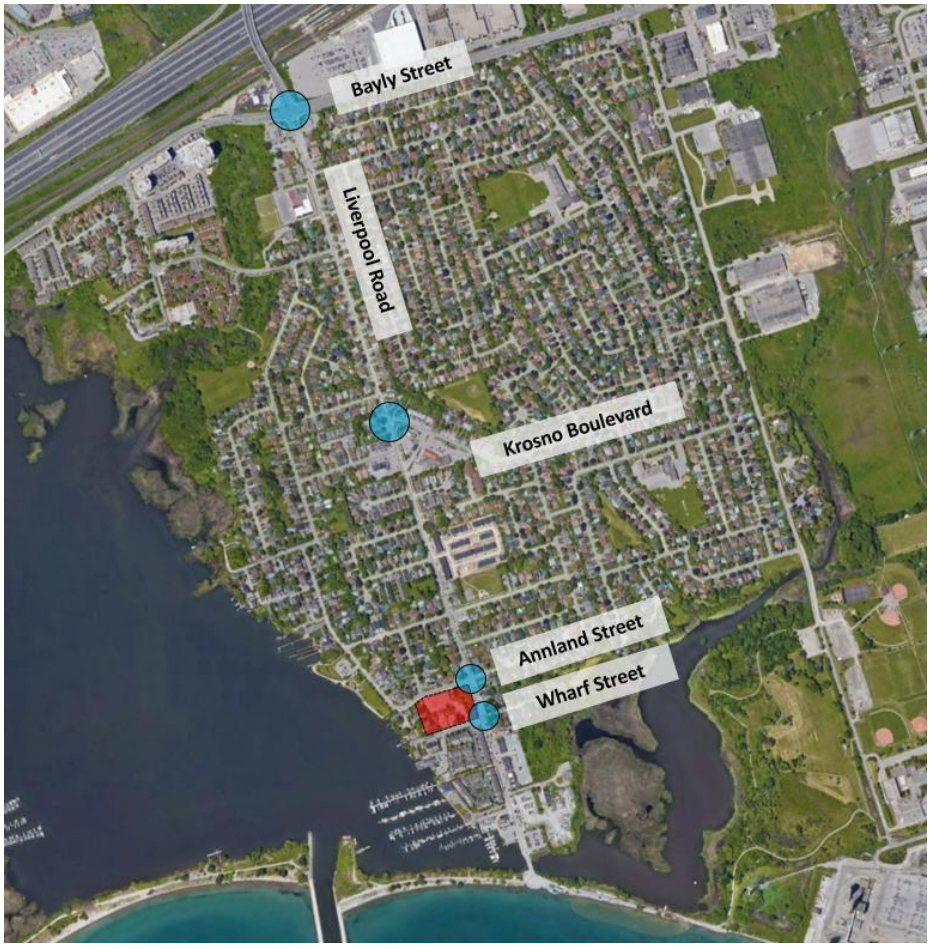

Figure 1: Local Context

1.1 Proposed Development

The development is located on: Liverpool Road,
between Annland Street and Wharf Street.

The development will consist of: 91 residential units,
a commercial unit with a GFA of 298 m^2 (3,208 sq. ft).

The site plan includes vehicle accesses: via Wharf Street, and via Annland Street.

The internal roadway network includes: four (4) lanes for vehicles with adjacent sidewalks;
Lane A provides north/south access to both Wharf Street and Annland Street,
Lane D provides north/south access to Annland Street,
Lane B and Lane C run east/west between Lane A and Lane D.

Additional non-vehicle accesses include: a midblock sidewalk connecting to Liverpool Road, and
a connection to the "Passive Open Space" west of the site.

On site vehicle parking include: 163 total stalls as follows:
18 stalls for Block A (2 stalls x 9 stacked units)
51 stalls for Blocks B-C-G-H-I (1 stall x 51 stacked units)
12 stalls for Block D (2 stalls x 6 traditional townhomes)
40 stalls for Block E-F (2 stalls x 20 back-to-back townhomes)
42 additional surface parking stalls (including 2 accessible).

A vehicle loading space is provided adjacent to the commercial unit.

Figure 2 illustrates the conceptual development plan for 640 Liverpool Road.

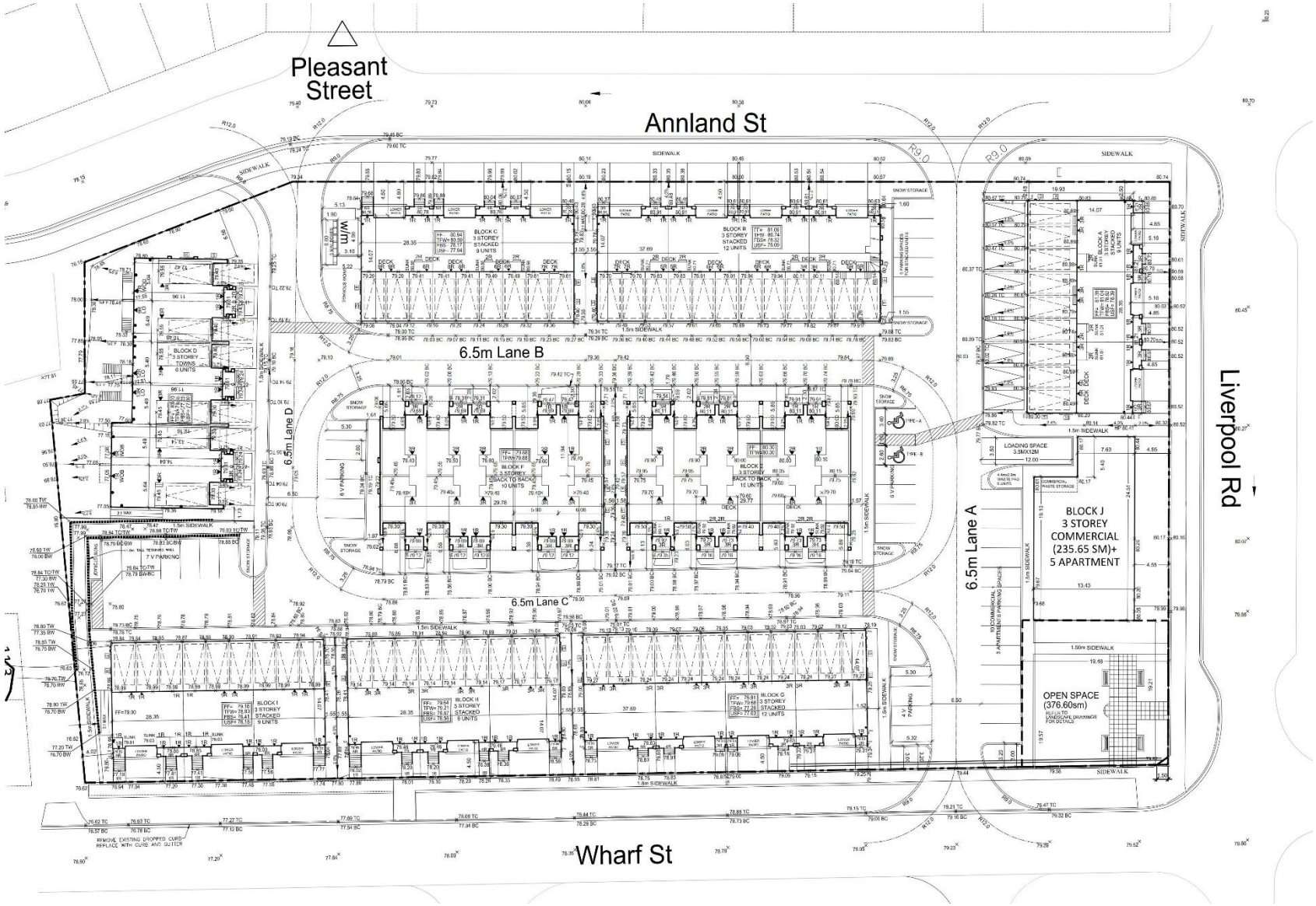

Figure 2: Conceptual Development Plan

1.2 Scope of Analysis

During the proposal stage, the City of Pickering indicated that a Transportation Impact Brief would be sufficient to accommodate their requirements in support of the development application. The study area includes the following intersections:

- Liverpool Road and Bayly Street,
- Liverpool Road and Krosno Boulevard,
- Liverpool Road and Annland Street, and
- Liverpool Road and Wharf Street.

Traffic analyses have been completed for the weekday AM and PM peak hours. One horizon year has been assessed, 2027, corresponding to the anticipated build-out year. The traffic analysis discusses existing and future conditions and considers the impacts of traffic generated by the proposed residential development during the AM and PM peak hours.

In addition, a review of the proposed parking supply on site and a review of vehicular swept path-analysis for MSU and waste management vehicles was conducted to assess internal circulation.

2.0 Existing Conditions

2.1 Existing Road Network

Figure 3 illustrates the existing lane configurations and traffic controls at the study intersections.

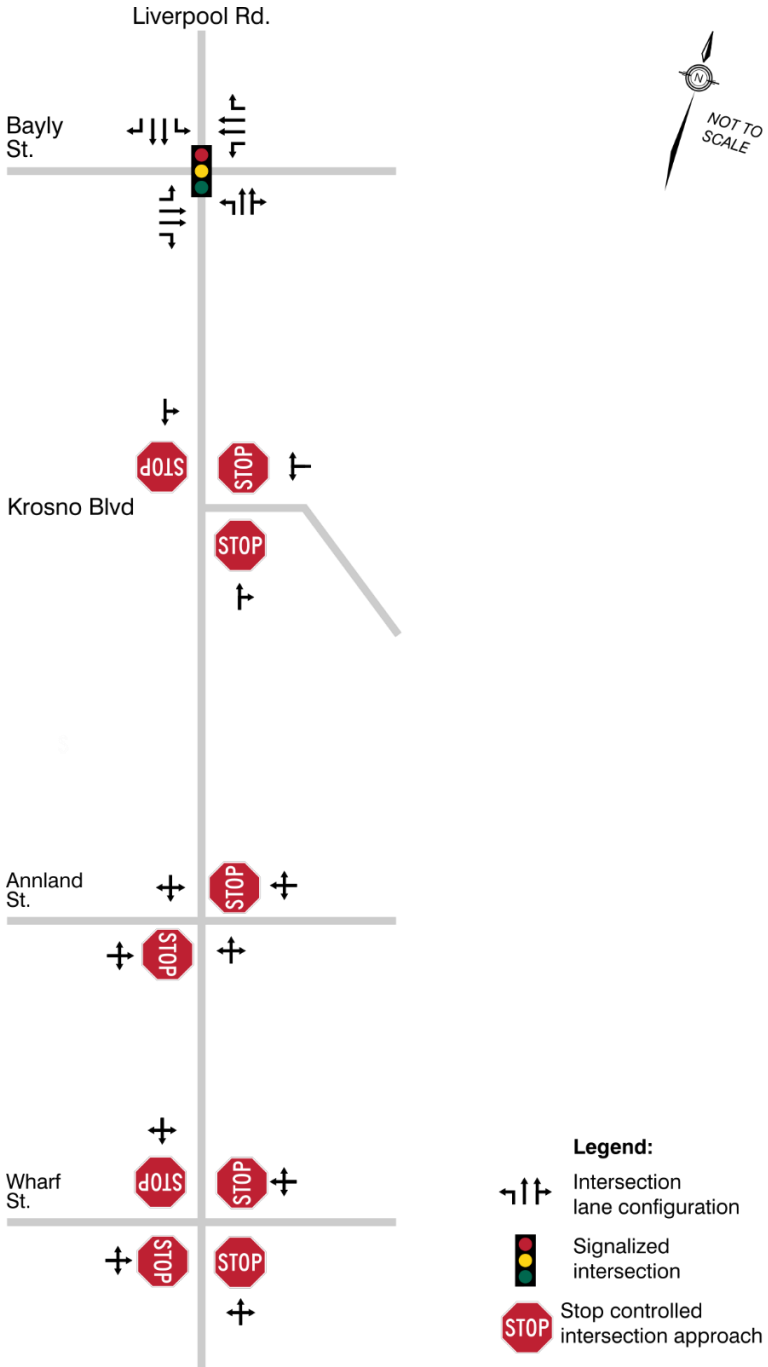

Figure 3: Existing Lane Configurations and Traffic Controls

The following describes the existing road network in the immediate study area.

Liverpool Road is a north-south road that falls partially under the jurisdiction of the City of Pickering and partially under the jurisdiction of the Region of Durham. South of Bayly Street, Liverpool Road is under City jurisdiction and is classified as a Collector road with a posted speed limit of 40km/h. It has a two-lane urban cross section with sidewalks on both sides for its entire length south of Bayly Street. On-street parking is provided on both sides of Liverpool Road south of Annland Street as well as on the west side of Liverpool Road between Commerce Street and Annland Street.

Liverpool Road is an Arterial road north of Bayly Street and under the jurisdiction of the Region of Durham. Here, the road widens to a four-lane cross section with sidewalks on both sides and a posted speed limit of 50 km/h.

Bayly Street is under the jurisdiction of the Region of Durham; it runs east-west and spans across Pickering and Ajax. The street is classified as an Arterial road that has a four-lane cross section with a posted speed limit of 50 km/h. Bayly Street has sidewalks on the south side west of Liverpool Road and sidewalks on both sides east of Liverpool Road.

Krosno Boulevard is a two-lane east-west Collector road under the jurisdiction of the City of Pickering. It forms a T-intersection with Liverpool Road. Sidewalks are present on both sides of road and the speed limit is posted at 40 km/h.

Annland Street is a two-lane east-west Collector road under the jurisdiction of the City of Pickering. To the west of Liverpool Road, Annland Street turns north into Front Road, which runs approximately north-south parallel to Frenchman's Bay. To the east of Liverpool Road, Annland Street turns north and runs approximately north-south to Krosno Boulevard, where it terminates. A sidewalk is located on the south side of the street, and it has a posted speed limit of 40 km/h.

Wharf Street is under the jurisdiction of the City of Pickering. The street is a two-lane east-west Local road with a posted speed limit of 40 km/h. Both sides of the street lead to cul-de-sacs, and the west leg also leads to a restaurant.

2.2 Existing Transit Network

Durham Region Transit (DRT) operates four transit routes in the study area. The Pickering GO Station is located on Bayly Street just east of Liverpool Road. The study area is also within an Urban On-Demand Area, which provides an on-demand shared ride service to transit stops within the area. **Table 1** provides a summary of the DRT and GO Transit routes that serve the Study Area.

Table 1: Summary of DRT and GO Transit Service

Bus/Route	Approximately Headways during Peak Periods
Liverpool Road	
101 Bay Ridges	Weekday AM – 30 Minutes Weekday PM – 30 Minutes
Bayly Street	
120 Whites (DRT)	Weekday AM – 30 Minutes Weekday PM – 30 Minutes
291 Hardwood-Kingston (DRT)	Weekday PM – 120 Minutes
917 Bayly-Consumers (DRT)	Weekday AM – 30 Minutes Weekday PM – 30 Minutes
GO Transit	
Lakeshore East Train (GO)	Weekday AM – 15 Minutes Westbound, 30 Eastbound Weekday PM – 30 Minutes Westbound, 15 Eastbound
41, 45, 47, 48 – Hamilton/Pickering (GO)	Weekday AM – 25 to 40 Minutes Westbound, 40 Minutes Eastbound Weekday PM – 30 to 60 Minutes Westbound, 30 Minutes Eastbound
94 – Pickering/Square One	Weekday AM – Approximately 60 Minutes Weekday PM – Approximately 60 Minutes

2.3 Existing Active Transportation Network

Sidewalks and bike sharrows are located on both sides of Liverpool Road, providing connections to commercial plazas, parks and transit stops to the north and to the Fairport Yacht Club and Waterfront Trail to the south. There is a standard 1.5m sidewalk on the north side of Wharf Street connecting to Liverpool Road and continuing west for approximately 105m, however it does not continue to the end of Wharf Street. There is an approximately 2.5m sidewalk on the south side of Annland Street as part of the waterfront trail; it travels west from Liverpool Road to the waterfront and continues north into Progress Frenchman's Bay East Park.

2.4 Existing (2025) Traffic Volumes

Dillon Consulting Limited (Dillon) initially conducted turning movement counts on September 12th, 2023, for all study area intersections. The weekday AM and PM peak hour volumes for all the study area intersections were determined by applying a 0.5% annual growth rate to the 2023 turning movement counts, factoring the data to a 2025 Existing Year.

Turning movement count data is available in **Appendix A**.

Figure 4 shows the Existing 2025 AM and PM peak hour traffic volumes at the study intersections.

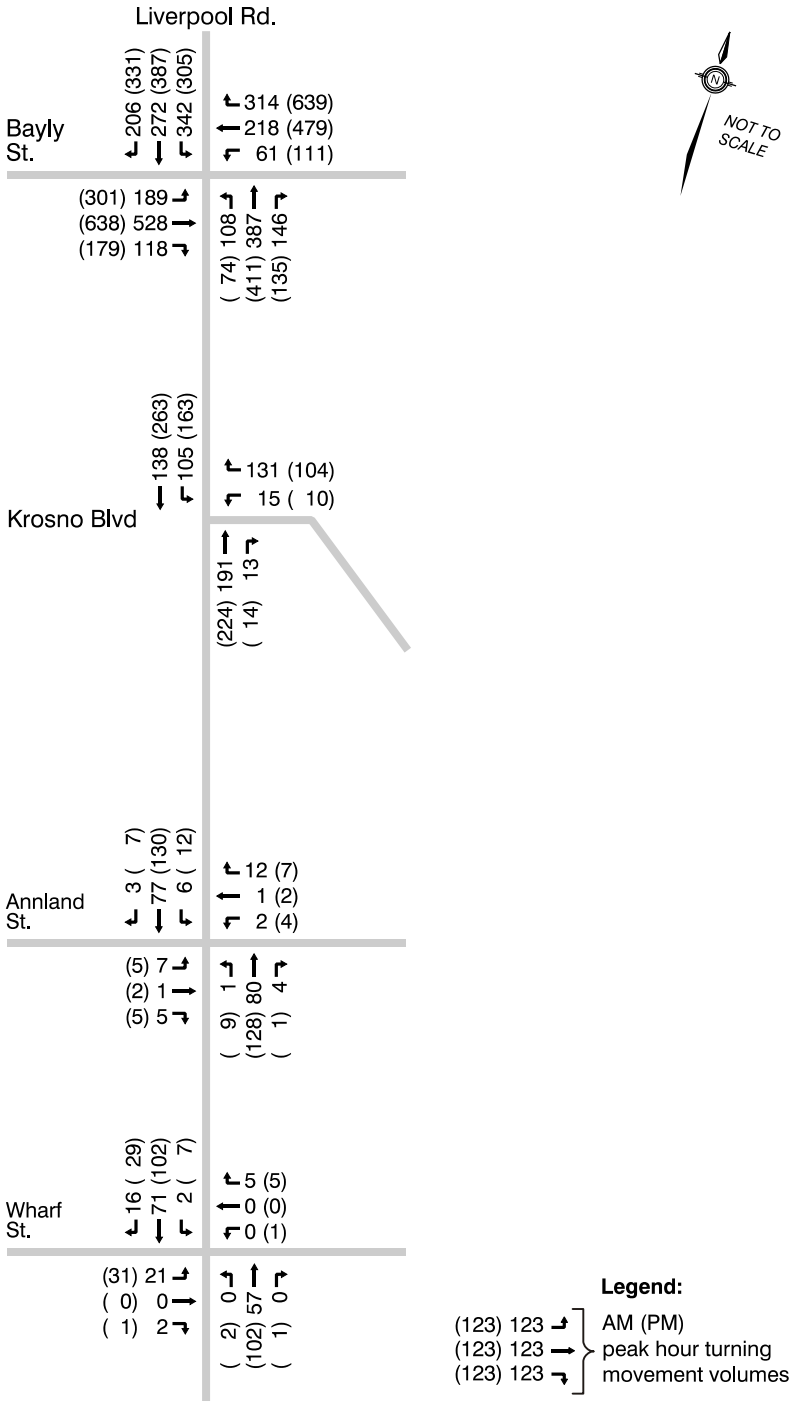

Figure 4: Existing (2025) Traffic Volumes

2.5 Existing Intersection Operations

Intersection operational analyses were completed using Trafficware's Synchro software (Version 12), which is based on the Highway Capacity Manual (HCM) methodology.

The volume-to-capacity (v/c) ratio, delay and level of service (LOS) were noted for all movements at signalized intersections. At unsignalized intersection, the volume-to-capacity (v/c) ratio, delay and level of service (LOS) were noted for stop-controlled movements. Synchro analysis worksheets reports are provided in **Appendix B**.

A 100-second signal cycle length was utilized at the intersection of Liverpool Road and Bayly Street, consistent with the 591 Liverpool Road Traffic Report. Signal timings were optimized accordingly under existing conditions.

The following subsections summarize the study area intersections' operations for 2025 traffic conditions. Critical movements are also identified, which the City of Pickering TIA Guidelines define as:

- Any individual through or shared through/turning movement operating at a v/c ratio of 0.85 or greater,
- Any individual exclusive turning movement operating at a v/c ratio of 0.90 or greater,
- Any individual movement at a signalized intersection operating at LOS F, and
- Any individual movement at an unsignalized intersection operating at LOS D or worse.

2.5.1 Liverpool Road and Bayly Street

Table 2 summarizes the intersection operations at Liverpool Road and Bayly Street.

Table 2: Existing Intersection Operations at Liverpool Road and Bayly Street

Movement	AM peak hour				PM peak hour			
	v/c	LOS[1]	Delay *(s/veh)*	95th %ile queue *(m)*	v/c	LOS	Delay *(s/veh)*	95th %ile queue *(m)*
Existing (2022)								
EB left	0.44	C	25.3	45	0.82	D	39.8	81
EB through	0.63	D	37.3	71	0.64	C	34.0	82
EB right	0.26	A	5.5	11	0.33	A	5.7	16
WB left	0.24	C	22.5	17	0.41	C	22.6	26
WB through	0.30	C	33.4	31	0.55	C	34.8	63
WB right	0.41	A	8.0	35	0.83	C	27.5	152
NB left	0.28	B	14.8	19	0.13	B	13.3	16
NB through	0.65	C	34.9	68	0.66	D	35.9	70
SB left	0.64	B	18.8	61	0.64	C	21.5	57
SB through	0.19	B	18.6	28	0.46	C	34.4	52
SB right	0.23	A	2.0	9	0.42	A	3.8	16
Overall	—	**C**	**23.7**	—	—	**C**	**28.3**	—

[1] *Level of Service (LOS), applied to an intersection, is a measure qualifying the amount of delay experienced by motorists, expressed either for specific turning movements or for the intersection as a whole. A more detailed explanation of LOS is provided in* ***Appendix C****.*

The intersection currently operates below capacity and with an overall LOS C during both the AM peak hour and PM peak hour. All individual movements operate with a LOS D or better during both peak hours.

2.5.2 Liverpool Road and Krosno Boulevard

Table 3 summarizes the intersection operations at Liverpool Road and Krosno Boulevard.

Table 3: Existing Intersection Operations at Liverpool Road and Krosno Boulevard

Movement	AM peak hour			PM peak hour		
	v/c	LOS	Delay *(s/veh)*	v/c	LOS	Delay *(s/veh)*
Existing (2025)						
WB approach	0.22	A	9.0	0.18	A	9.2
NB Approach	0.31	A	9.7	0.35	B	10.3
SB approach	0.37	B	10.5	0.60	B	14.5
Overall	**—**	**A**	**9.9**	**—**	**B**	**12.4**

The intersection of Liverpool Road and Krosno Boulevard is currently operating below capacity; the westbound approach operates at LOS A during both peak hours. The northbound approach operates at LOS A during the AM peak and LOS B during the PM peak while the southbound approach operates at LOS B during both peaks.

2.5.3 Liverpool Road and Annland Street

Table 4 summarizes the intersection operations at Liverpool Road and Annland Street.

Table 4: Existing Intersection Operations at Liverpool Road and Annland Street

Movement	AM peak hour			PM peak hour		
	v/c	LOS	Delay *(s/veh)*	v/c	LOS	Delay *(s/veh)*
Existing (2025)						
EB approach	0.03	B	10.3	0.02	B	10.6
WB approach	0.03	A	9.6	0.02	B	10.2
Overall	**—**	**A**	**1.7**	**—**	**A**	**1.4**

The intersection of Liverpool Road and Annland Street is currently operating below capacity; the eastbound and westbound approaches at the intersection currently operate at LOS A during the AM peak hour and LOS B during the PM peak hour, with minimal delays. Further, both approaches operate well within capacity for both analysis periods.

2.5.4 Liverpool Road and Wharf Street

Table 5 summarizes the intersection operations at Liverpool Road and Wharf Street.

Table 5: Existing Intersection Operations at Liverpool Road and Wharf Street

Movement	AM peak hour			PM peak hour		
	v/c	LOS	Delay *(s/veh)*	v/c	LOS	Delay *(s/veh)*
Existing (2025)						
EB approach	0.05	A	7.8	0.05	A	7.9
WB approach	0.01	A	6.9	0.01	A	7.1
NB approach	0.11	A	7.7	0.14	A	7.8
SB approach	0.16	A	7.8	0.18	A	7.9
Overall	—	**A**	**1.7**	—	**A**	**7.9**

The all-way stop-controlled intersection at Liverpool Road and Wharf Street is operating below capacity under existing conditions; all approaches operate at LOS A during both the AM and PM peak hours, with limited delay (approximately seven (7) to eight (8) seconds of delay per vehicle).

3.0 Future Background Conditions

Future background traffic volumes reflect the volume of traffic that is anticipated to be on the road network during the horizon years without the subject development in place. Typically, this is comprised of two factors:

- The application of a growth rate to reflect general background traffic growth on the road network; and
- The application of the site-specific traffic volumes for any background developments in the immediate vicinity of the site.

Within the future background analyses, one horizon year has been assessed, 2027, corresponding to the anticipated build-out year.

Future background traffic volumes were calculated by applying a background growth rate of 0.5% per year to the existing traffic volumes. This growth rate was applied to all movements at all study area intersections.

3.1 Background Developments

A Traffic Impact Study (TIS) was completed in November 2019 by HDR for the development of 591 Liverpool Road. This proposed development is south of 640 Liverpool Road and is planned to consist of 428 condominium units as well as 20,451 sq.ft of commercial space.

Figure 5 presents the traffic volumes associated with the proposed 591 Liverpool Road TIS.

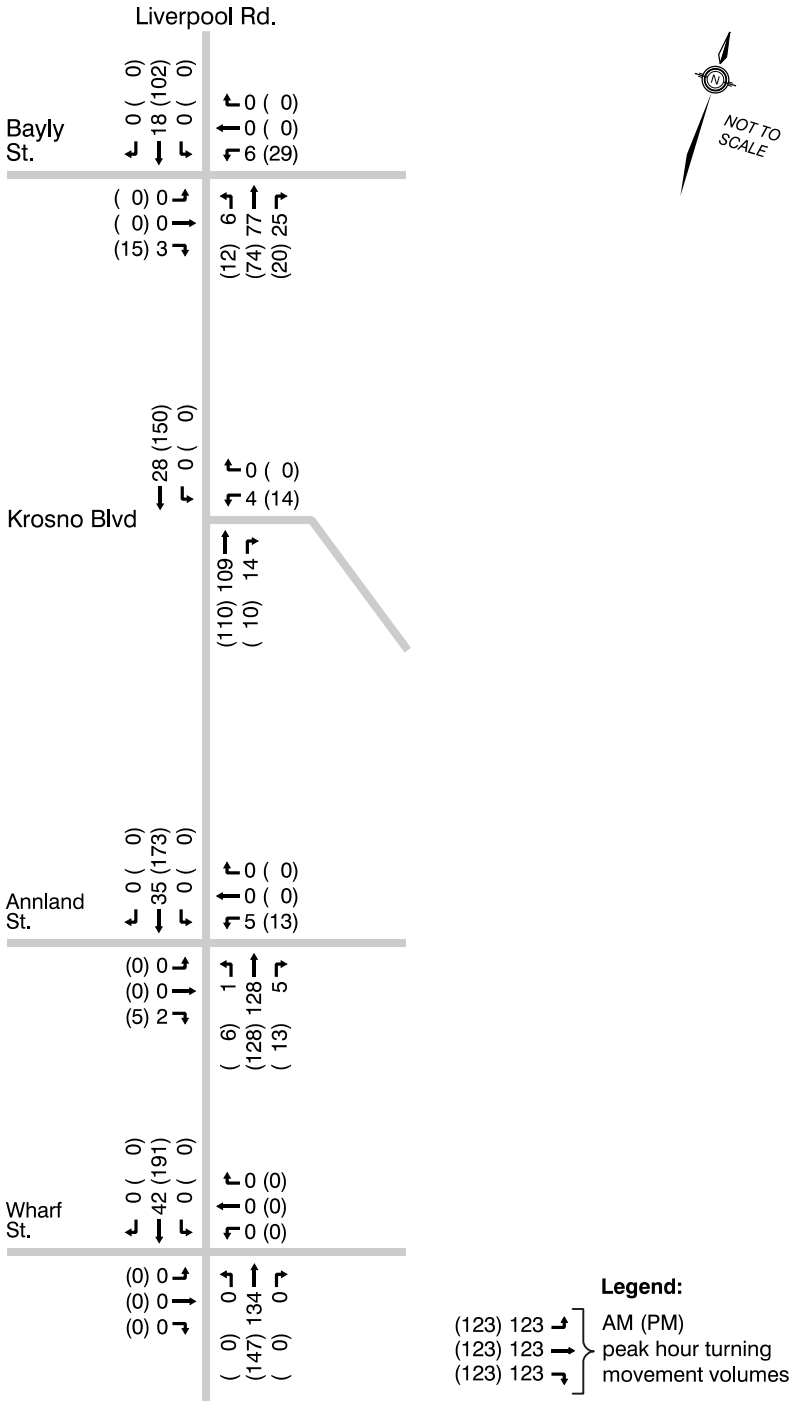

Figure 5: Background Development Volumes for 591 Liverpool Road

3.2 Future Background (2027) Traffic Volumes

The resulting future background traffic volumes for the 2027 horizon year is presented in **Figure 6**.

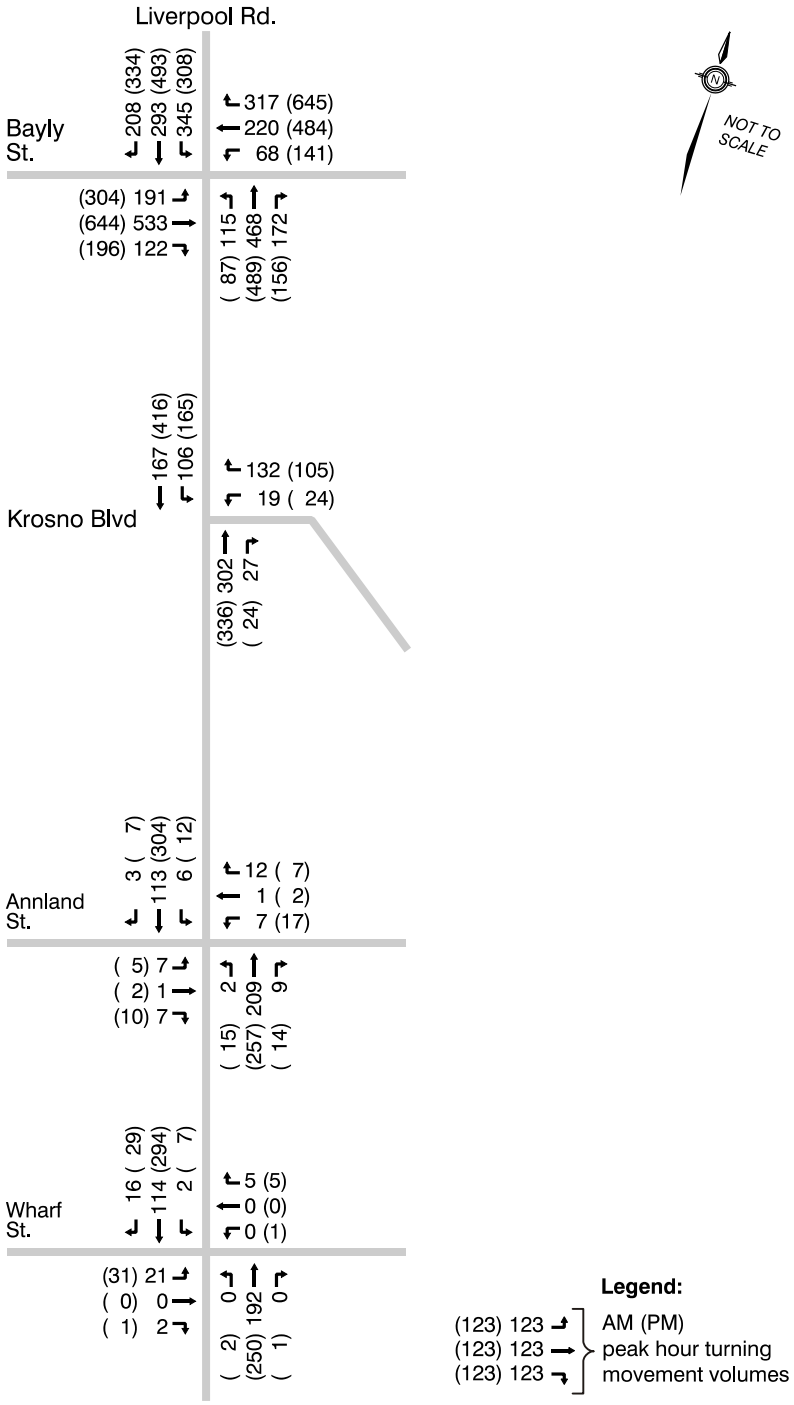

Figure 6: Future Background (2027) Traffic Volumes

3.3 Future Background (2027) Intersection Operations

3.3.1 Liverpool Road and Bayly Street

Table 6 summarizes the intersection operations at Liverpool Road and Bayly Street.

Table 6: Future Background Intersection Operations at Liverpool Road and Bayly Street

Movement	AM peak hour				PM peak hour			
	v/c	LOS	Delay *(s/veh)*	95th %ile queue *(m)*	v/c	LOS	Delay *(s/veh)*	95th %ile queue *(m)*
Future Background (2027)								
EB left	0.45	C	25.5	46	0.83	D	41.2	83
EB through	0.64	D	37.4	72	0.65	C	34.1	82
EB right	0.27	A	6.0	12	0.35	A	5.7	17
WB left	0.26	C	22.9	19	0.53	C	26.2	32
WB through	0.30	C	33.4	32	0.55	C	34.9	64
WB right	0.42	A	9.6	40	0.84	C	28.1	157
NB left	0.30	B	15.1	20	0.17	B	13.6	18
NB through	0.78	D	40.2	84	0.78	D	40.6	85
SB left	0.70	C	24.8	76	0.71	C	27.0	68
SB through	0.21	B	18.8	30	0.59	D	36.8	66
SB right	0.23	A	2.0	9	0.42	A	3.8	17
Overall	—	**C**	**26.0**	—	—	**C**	**30.2**	—

With the addition of corridor growth and background development traffic, the intersection overall LOS is expected to remain at LOS C in both the AM and PM peak hours. All individual movements are expected to operate with a LOS D or better during both peak hours. In the AM peak hour, the anticipated 95th percentile queue for the southbound left-turn movement is anticipated to exceed the provided storage by approximately 30 metres. During the PM peak hour, this same movement is expected to exceed storage by about 20 metres. Additionally, in the PM peak hour, the eastbound left-turn movement is anticipated to slightly exceed the storage length by approximately 5 metres.

3.3.2 Liverpool Road and Krosno Boulevard

Table 7 summarizes the intersection operations at Liverpool Road and Krosno Boulevard.

Table 7: Future Background Intersection Operations at Liverpool Road and Krosno Boulevard

Movement	AM peak hour			PM peak hour		
	v/c	LOS	Delay *(s/veh)*	v/c	LOS	Delay *(s/veh)*
Future Background (2027)						
WB approach	0.25	A	9.8	0.23	B	10.7
NB approach	0.50	B	12.6	0.56	B	14.6
SB approach	0.43	B	11.7	0.88	D	32.6
Overall	—	**B**	**11.7**	—	**C**	**23.9**

With the addition of corridor growth and background development traffic, the intersection overall LOS is expected to worsen from LOS A to LOS B in the AM peak hour and from LOS B to LOS C in the PM peak hour. In the PM peak hour, the southbound approach is anticipated to begin operating as critical, with a v/c ratio of 0.88 and LOS D. All other movements are anticipated to operate with v/c ratio below critical levels.

3.3.3 Liverpool Road and Annland Street

Table 8 summarizes the intersection operations at Liverpool Road and Annland Street.

Table 8: Future Background Intersection Operations at Liverpool Road and Annland Street

Movement	AM peak hour			PM peak hour		
	v/c	LOS	Delay *(s/veh)*	v/c	LOS	Delay *(s/veh)*
Future Background (2027)						
EB approach	0.05	B	12.2	0.04	B	13.1
WB approach	0.06	B	12.3	0.08	C	15.6
Overall	**—**	**A**	**1.4**	**—**	**A**	**1.4**

With the addition of background growth and background development traffic, the intersection LOS is expected to remain unchanged in both peak hours with overall intersection LOS A. All movements are anticipated to continue to operate with a LOS C or better during both peak hours, with v/c ratios below 0.1 and no vehicular queuing concerns.

3.3.4 Liverpool Road and Wharf Street

Table 9 summarizes the intersection operations at Liverpool Road and Wharf Street.

Table 9: Future Background Intersection Operations at Liverpool Road and Wharf Street

Movement	AM peak hour			PM peak hour		
	v/c	LOS	Delay *(s/veh)*	v/c	LOS	Delay *(s/veh)*
Future Background (2027)						
EB approach	0.05	A	8.5	0.06	B	8.9
WB approach	0.01	A	7.5	0.01	A	8.0
NB approach	0.37	A	9.7	0.36	A	9.9
SB approach	0.25	A	8.8	0.46	B	10.9
Overall	**—**	**A**	**9.3**	**—**	**A**	**7.9**

With the addition of corridor growth and background development traffic, the overall LOS in both peak hours is anticipated to remain unchanged at LOS A. No critical movements or operational issues are anticipated.

4.0 Total Future Conditions

4.1 Site Traffic Volumes

This section outlines the estimated number of new trips produced by the development at 640 Liverpool Road, and the anticipated impacts these trips will have on the surrounding road network.

4.1.1 Pass-by Trips

Pass-by trips are made by motorists that are already passing by the site and are choosing to stop along the way at the subject site; these trips are assigned to the site driveways but do not represent an increase in overall traffic on the road network.

Given the nature of the proposed development, pass-by rates should be considered only for the commercial components. However, The ITE *Trip Generation Manual* (11th Edition) does not identify a pass-by rate for Land Use Code 822 ("Shopping Plaza (<40k)", therefore no pass-by rate was incorporated into the analysis representing a conservative approach.

4.1.2 Internal Capture

Typically, with the presence of commercial land uses, internal capture trips are calculated and incorporated into the analysis. Internal capture trips are applied as some trips are projected to remain within the site between the residential and commercial land uses. A 9% internal capture rate (8% inbound, 12% outbound) was calculated during the PM peak hour.

However, given the low overall trip generation, internal capture trips were not incorporated into the analysis to maintain a conservative approach.

4.2 Trip Generation

The estimated vehicle trip generation was calculated based on the published rates within the Institute of Transportation Engineers' (ITE) Trip Generation Manual (11th edition). Trips were generated based on

- ITE Land Use Code 220 ("Multifamily Housing (Low-Rise)") and
- ITE Land Use Code 822 ("Strip Retail Plaza (<40k)").

Table 10 presents the trip generation calculations applied to the subject site.

Table 10: Estimated Number of Vehicle Trips Generated by Development at 640 Liverpool Road

	AM peak hour			PM peak hour		
	In	Out	Total	In	Out	Total
Multi-Family Housing *(ITE Land Use Code 220)* – Peak Hour of Adjacent Street Traffic						
% in/out, trip generation rates	24%	76%	0.40	63%	37%	0.51
Vehicle trips (91 Units)	9	27	36	29	17	45
Strip Retail Plaza (<40k) *(ITE Land Use Code 822)* – Peak Hour of Adjacent Street Traffic						
% in/out, trip generation rates	60%	78%	2.36	50%	50%	6.59
Vehicle trips (298 m^2 (3,208 sq. ft))	4	3	7	10	9	19
Net trips:	**13**	**30**	**43**	**39**	**26**	**65**

The proposed development is projected to generate 43 total trips during the weekday AM peak hour (13 inbound, 30 outbound) and 65 total trips in the PM peak hour (39 inbound, 26 outbound). A preliminary site plan assessed in August 2025 included a proposed development with 89 residential units and a commercial unit with a gross floor area (GFA) of 266 m^2 (2, 863 sq.ft). The updated December site plan slightly increases the number of residential units as well as the commercial space.

The preliminary analysis determined the following trip generation:

- Weekday AM Peak Hour: 43 total trips (13 inbound, 30 outbound)
- Weekday PM Peak Hour: 64 total trips (38 inbound, 26 outbound)

The resulting vehicle trips generated due to the revised site plan with 91 residential units are virtually unchanged. The AM peak remains unchanged and the PM peak sees one additional inbound trip. The traffic capacity analysis previously completed is still considered representative of future traffic conditions. **Figure 7**, **Figure 8** and the analysis completed in **Section 4.5** are reflect the previous site plan since the +/- 1 peak hour vehicle trips would have a negligible impact on the results.

4.3 Trip Distribution and Assignment

The directional distribution of the site generated vehicle trips for the proposed development was distributed based on a combination of existing travel patterns and engineering judgment. As a result, the following trip distribution was utilized:

- 50% to/from the north on Liverpool Road,
- 25% to/from the east on Bayly Street, and
- 25% to/from the west on Bayly Street.

It is important to note that 65% of the residential site traffic is expected to access the development via Annland Street, while the remaining 35% is expected to access via Wharf Street. Given the location of the commercial land use on the proposed site, all commercial trips were assumed to access the site via Wharf Street.

Figure 7 shows the resulting site trips.

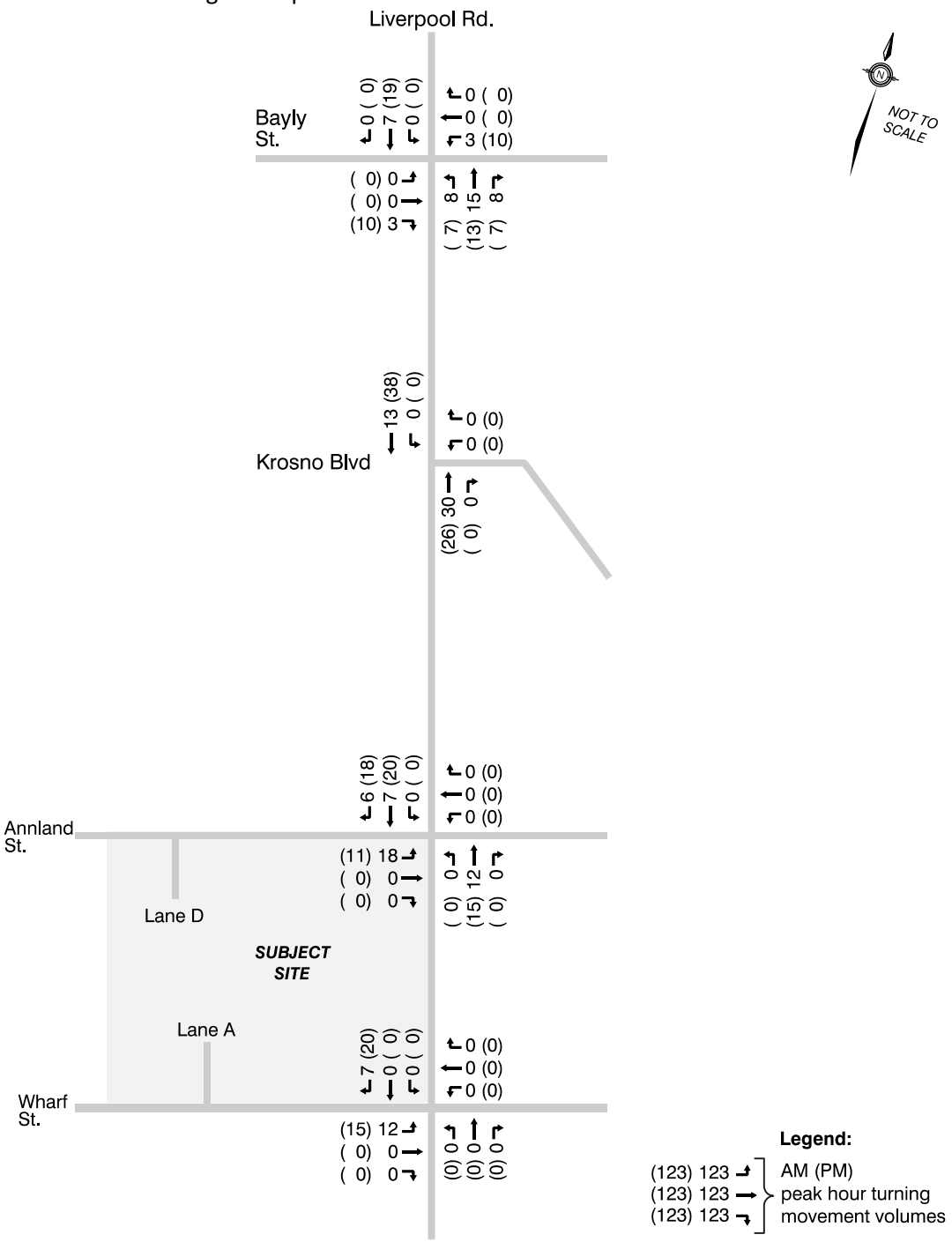

Figure 7: Site Trips

4.4 Total Future (2027) Traffic Volumes

Total future traffic volumes represent conditions anticipated with the proposed development in place and are calculated by adding the site traffic volumes to the projected future background traffic volumes. **Figure 8** illustrates the projected total future traffic volumes during the 2027 horizon year.

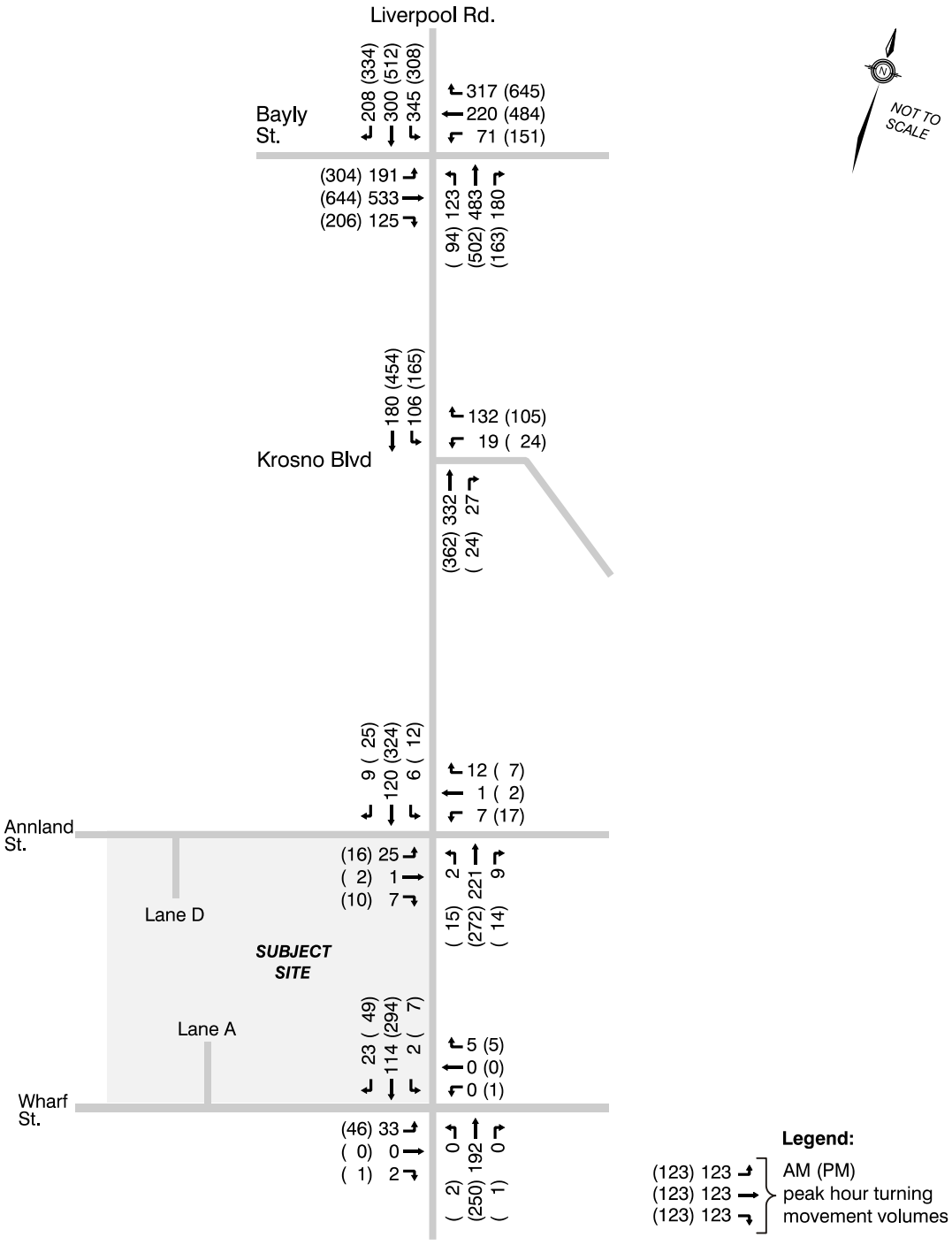

Figure 8: Total Future (2027) Traffic Volumes

4.5 Total Future (2027) Intersection Operations

4.5.1 Liverpool Road and Bayly Street

Table 11 summarizes the intersection operations at Liverpool Road and Bayly Street.

Table 11: Total Future Intersection Operations at Liverpool Road and Bayly Street

Movement	AM peak hour				PM peak hour			
	v/c	LOS	Delay *(s/veh)*	95th %ile queue *(m)*	v/c	LOS	Delay *(s/veh)*	95th %ile queue *(m)*
Total Future (2027)								
EB left	0.45	C	25.5	46	0.83	D	41.2	83
EB through	0.64	D	37.4	72	0.65	C	34.1	82
EB right	0.28	A	6.3	13	0.36	A	5.7	17
WB left	0.27	C	23.0	19	0.57	C	27.6	34
WB through	0.30	C	33.4	32	0.55	C	34.9	64
WB right	0.42	A	9.8	41	0.84	C	28.1	157
NB left	0.32	B	15.4	21	0.19	B	13.8	19
NB through	0.81	D	41.7	88	0.81	D	42.1	89
SB left	0.71	C	26.5	78	0.72	C	28.8	71
SB through	0.21	B	18.8	30	0.61	D	37.2	69
SB right	0.23	A	2.0	9	0.42	A	3.8	17
Overall	—	**C**	**26.6**	—	—	**C**	**30.7**	—

With the addition of site traffic, this intersection is expected to operate with overall LOS C. It is noted that the westbound right turn, the eastbound left turn, and the northbound through movement indicate v/c ratios of between 0.81 and 0.84 in the PM peak hour suggesting the intersection will be approaching, but not yet exceeding, critical levels.

The southbound left-turn movement is anticipated to continue to exceed the provided storage length in both the AM and PM peak hour by approximately 3 metres. However, no site traffic was assigned to either the southbound or eastbound left-turn movements. The slight increase in queue lengths for the southbound left-turn is attributed to Synchro's modeling methodology, which incorporates the effect of opposing movements into its calculations. This indicates that the spillback in queue lengths for the southbound and eastbound left-turn movements is attributable to background traffic, rather than the subject site traffic.

The impact of site traffic on the study intersection is minimal, and no geometric improvements are warranted or recommended as a result of the site traffic.

4.5.2 Liverpool Road and Krosno Boulevard

Table 12 summarizes the intersection operations at Liverpool Road and Krosno Boulevard.

Table 12: Total Future Intersection Operations at Liverpool Road and Krosno Boulevard

Movement	AM peak hour			PM peak hour		
	v/c	LOS	Delay *(s/veh)*	v/c	LOS	Delay *(s/veh)*
Total Future (2027)						
WB approach	0.25	A	10.0	0.24	B	11.0
NB approach	0.55	B	13.7	0.62	C	16.2
SB approach	0.46	B	12.2	0.95	E	43.8
Overall	**—**	**B**	**12.5**	**—**	**D**	**30.7**

With the addition of site traffic, this intersection is expected to continue to operate with LOS C for all approaches except for the southbound approach, which will operate at LOS E during the PM peak hour. The southbound approach is anticipated to increase from v/c ratio of 0.88 to 0.95 (a 7% increase). All other movements are anticipated to operate with v/c ratio below critical levels

The impact of site traffic on the study intersection is minimal, and no geometric improvements are warranted or recommended due to the site traffic.

4.5.3 Liverpool Road and Annland Street

Table 13 summarizes the intersection operations at Liverpool Road and Annland Street.

Table 13: Total Future Intersection Operations at Liverpool Road and Annland Street

Movement	AM peak hour			PM peak hour		
	v/c	LOS	Delay *(s/veh)*	v/c	LOS	Delay *(s/veh)*
Total Future (2027)						
EB approach	0.13	B	14.8	0.09	C	16.0
WB approach	0.07	B	12.7	0.09	C	16.5
Overall	**—**	**A**	**2.0**	**—**	**A**	**1.7**

With the addition of corridor growth and background development traffic, the overall intersection LOS is expected to remain unchanged at LOS A in both peak hours. All movements are anticipated to operate with a LOS C or better in both peak hours, with no critical movements.

4.5.4 Liverpool Road and Wharf Street

Table 14 summarizes the intersection operations at Liverpool Road and Wharf Street.

Table 14: Total Future Intersection Operations at Liverpool Road and Wharf Street

Movement	AM peak hour			PM peak hour		
	v/c	LOS	Delay *(s/veh)*	v/c	LOS	Delay *(s/veh)*
Total Future (2027)						
EB approach	0.08	A	8.7	0.09	A	9.2
WB approach	0.01	A	7.6	0.01	A	8.1
NB approach	0.37	A	9.9	0.37	B	10.2
SB approach	0.27	A	8.9	0.49	B	11.5
Overall	—	**A**	**9.4**	—	**B**	**10.8**

With the addition of site traffic, the overall LOS in the AM peak hour is anticipated to remain unchanged. In the PM peak hour, the overall LOS is anticipated to worsen to LOS B. No critical movements or operational issues are anticipated.

5.0 Site Plan Review

5.1 Vehicle Swept Path Analysis

Dillon Consulting has undertaken Vehicle Swept Path Analysis utilizing the industry standard AutoTurn software. The analysis presents the expected vehicle paths for waste collection and loading/unloading. The results confirm that the proposed site plan can adequately accommodate the required design vehicles and their expected movements, with one exception.

The commercial waste collection vehicle (Region of Durham Front-End Loader) has limited maneuvering space for access to the designated loading area. The detailed results of the swept path analysis are provided in **Appendix D**. Further refinement of the plan will be conducted as part of the Site Plan Application stage.

5.2 Parking Considerations

The site is subject to the City of Pickering Zoning By-Law (ZBL)8149/24. Table 5.1 of the ZBL set out the residential and non-residential parking requirements for new developments. Rounding provisions are set forth in the ZBL. Where parking spaces are calculated using the gross leasable floor area (GLFA) or a similar calculation, and the resulting number of parking spaces is a fraction, the number of parking spaces shall be rounded down to the nearest whole number.

Table 15 identifies the parking requirements relevant to the site and the corresponding parking supply required.

Table 15: Zoning By-Law 8149/24 Parking Requirements

Land Use	Parking Space Type	Parking Rate	Development Magnitude	Required Spaces
Stacked Units	Residential	1.25 spaces/ unit	65 units	81
Back-to-Back Townhouses	Residential	2.0 spaces/ unit	20 units	40
Traditional Townhouses	Residential	2.0 spaces/ unit	6 units	12
Commercial Space	Commercial	5.0 spaces/100m^2	298 m^2 Gross floor area, (235.65 m^2 leasable for parking calculation)	11
Total Residential/Commercial Spaces				**144**
Total Visitor		0.25 spaces/unit	91 units	22
Total				**166**

Based on the City of Pickering ZBL requirements, the site would require 133 resident parking spaces, 22 visitor parking spaces and 11 commercial parking spaces, for a total of 166 parking spaces. The development proposal provides 163 parking spaces.

Although the parking supply is short by 3 spaces compared to the estimated demand, the internal capture rate of 12% for the mixed-use development during the PM peak hour reduces overall parking demand. This reduction occurs because some trips are expected to be internal residents accessing commercial uses within the development lowering demand for visitor parking. Additionally, the development's location within walking distance of transit stops suggests that some residents will use transit, further decreasing parking demand. The proposed parking supply is expected to adequately meet demand, despite the minor shortfall.

6.0 Summary and Conclusions

6.1 Summary

Dillon has been retained by Liverpool Road Limited Partnership to undertake a transportation impact brief for a residential development to be located at 640 Liverpool Road in Pickering, Ontario.

The proposed development is to be located on Liverpool Road between Annland Street and Wharf Street. The development will include 91 residential units and a commercial unit with a gross floor area (GFA) of 298 m2 (3,208 sq.ft). A total of 163 parking spaces including 22 visitor spaces and 2 accessible spaces will be provided on site.

The traffic analysis considered the impacts of traffic generated by the proposed residential development during the AM and PM peak hours. The proposed development is projected to generate 43 total trips during the weekday AM peak hour (13 inbound, 30 outbound) and 65 total trips in the PM peak hour (39 inbound, 26 outbound).

The following intersections were analyzed as part of this transportation impact brief:

- Liverpool Road and Bayly Street,
- Liverpool Road and Krosno Boulevard,
- Liverpool Road and Annland Street, and
- Liverpool Road and Wharf Street.

None of the intersections exceed capacity with the build-out of the proposed development.

6.2 Conclusions

The following summarize the results of the traffic analysis completed:

- The stop-controlled intersections at Liverpool Road/Annland Street, and Liverpool Road/Wharf Street presently operate well, and are anticipated to continue to operate well with the addition of trips from the proposed development under future conditions.
- All approaches at the All-way stop-controlled intersection at Liverpool Road/Krosno Boulevard presently operate well with v/c of 0.60 and below. Under future background conditions the southbound approach operates with a critical v/c ratio of 0.88 in the PM peak hour and is expected to increase to 0.95 with the addition of site traffic.
- The signalized intersection at Liverpool Road/Bayly Street presently operates acceptably and will continue to operate with no critical movements under future background and future total conditions with critical v/c of 0.81 and 0.84 in the AM and PM peak hours respectively. Site trips are anticipated to have an insignificant impact on the overall intersection performance due to the high capacity of the intersection as well as the movements that will be affected by the additional trips.

- The City may consider signal timing adjustments at Liverpool Road/Bayly Street to provide more vehicle green time to the movements with greater demand.
- Ultimately, the anticipated trips generated by the development at 640 Liverpool Road are not high enough to have a noticeable effect on the surrounding transportation network.
- A Vehicle Swept Path Analysis confirms that the proposed site plan can accommodate the required design vehicles for waste collection and loading/unloading. The only exception is the commercial waste collection vehicle (Region of Durham Front-End Loader), which requires minor curb modifications to ensure adequate maneuverability and can be addressed during the Site Plan Application stage.

Appendix A

Traffic Survey Data

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Project #23-286 - Dillon Consulting

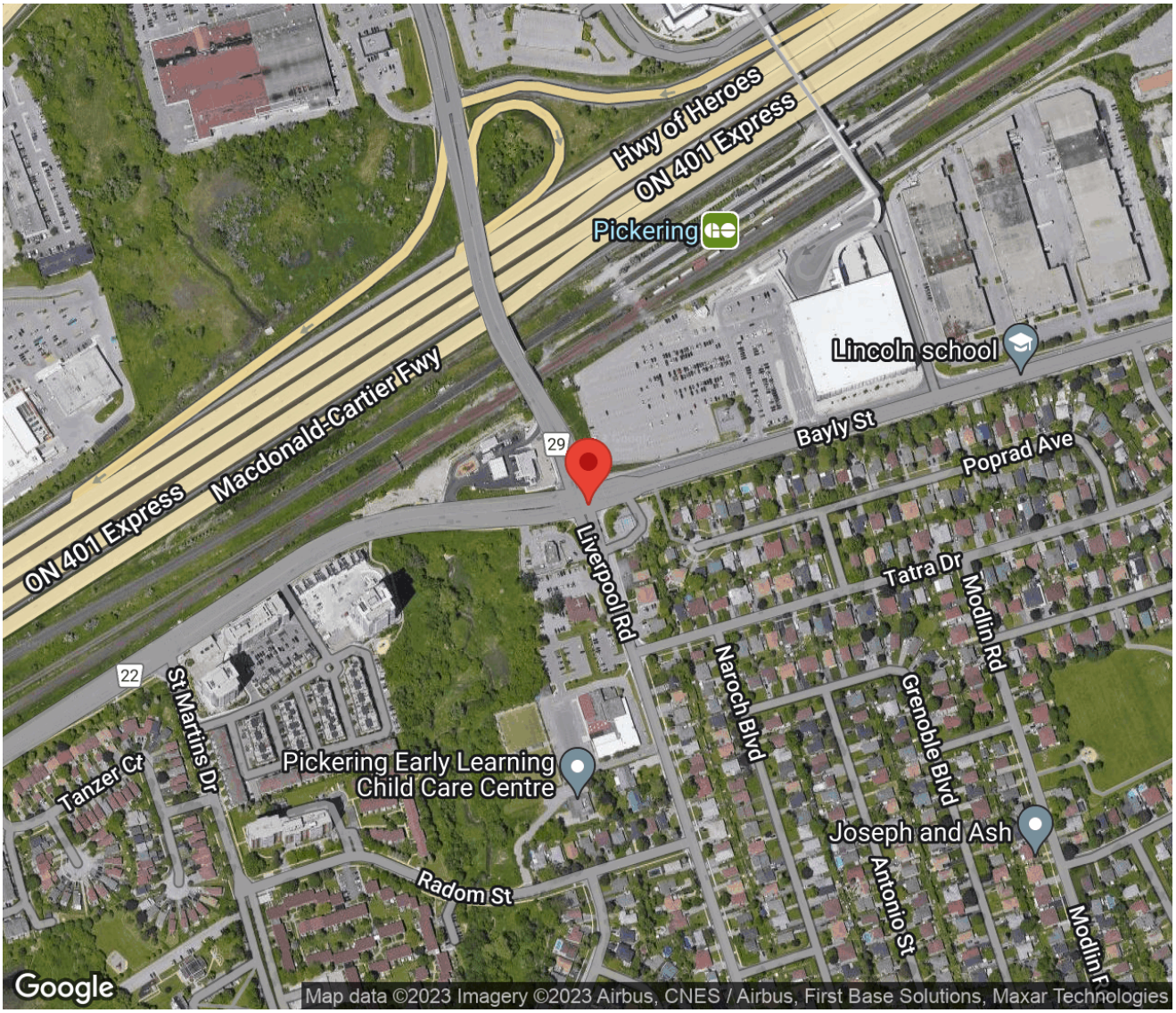
Intersection Count Report

Intersection:	Liverpool Rd & Bayly St
Municipality:	Pickering
Count Date:	Tuesday, Sep 12, 2023
Site Code:	2328600001
Count Categories:	Cars, Trucks, Bicycles, Pedestrians
Count Period:	07:00-10:00, 11:30-13:30, 15:00-18:00
Weather:	Clear
Comments:	

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Map

Intersection:	Liverpool Rd & Bayly St
Site Code:	2328600001
Municipality:	Pickering
Count Date:	Sep 12, 2023



Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Summary

Intersection:	Liverpool Rd & Bayly St
Site Code:	2328600001
Municipality:	Pickering
Count Date:	Sep 12, 2023

Liverpool Rd - Traffic Summary

	North Approach Totals						South Approach Totals						
	Includes Cars, Trucks, Bicycles						Includes Cars, Trucks, Bicycles						
Hour	Left	Thru	Right	U-Turn	Total	Peds	Left	Thru	Right	U-Turn	Total	Peds	Total
07:00 - 08:00	393	136	101	0	630	11	64	317	93	0	474	17	1104
08:00 - 09:00	339	269	204	0	812	10	107	383	145	0	635	22	1447
09:00 - 10:00	264	207	159	0	630	3	55	317	108	0	480	6	1110
BREAK													
11:30 - 12:00	155	162	109	0	426	6	25	126	64	0	215	19	641
12:00 - 13:00	299	334	216	1	850	5	49	330	117	0	496	12	1346
13:00 - 13:30	142	127	119	0	388	5	31	138	37	0	206	7	594
BREAK													
15:00 - 16:00	226	347	290	0	863	14	93	407	114	0	614	9	1477
16:00 - 17:00	301	413	311	0	1025	13	75	416	131	1	623	29	1648
17:00 - 18:00	323	402	311	0	1036	18	61	381	128	0	570	27	1606
GRAND TOTAL	**2442**	**2397**	**1820**	**1**	**6660**	**85**	**560**	**2815**	**937**	**1**	**4313**	**148**	**10973**

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Summary

Intersection:	Liverpool Rd & Bayly St
Site Code:	2328600001
Municipality:	Pickering
Count Date:	Sep 12, 2023

Bayly St - Traffic Summary

	East Approach Totals						West Approach Totals						
	Includes Cars, Trucks, Bicycles						Includes Cars, Trucks, Bicycles						
Hour	Left	Thru	Right	U-Turn	Total	Peds	Left	Thru	Right	U-Turn	Total	Peds	Total
07:00 - 08:00	43	199	316	0	558	36	114	488	49	0	651	15	1209
08:00 - 09:00	60	239	311	0	610	16	187	523	117	0	827	17	1437
09:00 - 10:00	53	197	310	0	560	14	208	385	96	0	689	4	1249
BREAK													
11:30 - 12:00	40	92	207	0	339	17	111	164	51	0	326	9	665
12:00 - 13:00	75	202	413	0	690	19	246	293	107	0	646	16	1336
13:00 - 13:30	28	113	178	0	319	8	109	170	36	0	315	10	634
BREAK													
15:00 - 16:00	88	321	530	3	942	15	274	448	144	0	866	24	1808
16:00 - 17:00	107	394	597	3	1101	44	281	599	173	0	1053	33	2154
17:00 - 18:00	108	436	641	1	1186	37	302	644	192	0	1138	33	2324
GRAND TOTAL	**602**	**2193**	**3503**	**7**	**6305**	**206**	**1832**	**3714**	**965**	**0**	**6511**	**161**	**12816**

Ontario Traffic Inc.
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Traffic Count Data

Intersection: Liverpool Rd & Bayly St
Site Code: 2328600001
Municipality: Pickering
Count Date: Sep 12, 2023

North Approach - Liverpool Rd

Start Time	Cars					Trucks					Bicycles					Total Peds
	↰	↑	↱	↻	Total	↰	↑	↱	↻	Total	↰	↑	↱	↻	Total	
07:00	79	20	16	0	115	4	1	0	0	5	0	0	0	0	0	3
07:15	96	37	22	0	155	5	1	0	0	6	0	0	0	0	0	2
07:30	100	30	19	0	149	2	1	0	0	3	0	0	0	0	0	2
07:45	103	46	43	0	192	4	0	1	0	5	0	0	0	0	0	4
08:00	86	70	39	0	195	7	3	1	0	11	0	0	0	0	0	2
08:15	76	76	46	0	198	12	2	1	0	15	0	0	0	0	0	2
08:30	74	58	55	0	187	4	2	1	0	7	0	0	0	0	0	3
08:45	71	57	60	0	188	9	1	1	0	11	0	0	0	0	0	3
09:00	66	61	50	0	177	5	0	1	0	6	0	0	0	0	0	0
09:15	70	39	26	0	135	6	0	0	0	6	0	0	0	0	0	1
09:30	54	59	43	0	156	2	0	0	0	2	0	0	0	0	0	2
09:45	59	48	38	0	145	2	0	1	0	3	0	0	0	0	0	0
SUBTOTAL	934	601	457	0	1992	62	11	7	0	80	0	0	0	0	0	24

Ontario Traffic Inc.
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Traffic Count Data

Intersection: Liverpool Rd & Bayly St
Site Code: 2328600001
Municipality: Pickering
Count Date: Sep 12, 2023

North Approach - Liverpool Rd

Start Time	Cars					Trucks					Bicycles					Total Peds
	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	
11:30	64	59	58	0	181	3	0	1	0	4	0	0	0	0	0	4
11:45	84	102	49	0	235	4	1	1	0	6	0	0	0	0	0	2
12:00	63	80	50	0	193	3	3	0	0	6	0	0	0	0	0	1
12:15	64	85	50	0	199	4	1	1	0	6	0	0	0	0	0	2
12:30	73	97	53	0	223	6	1	1	0	8	0	0	0	0	0	2
12:45	81	66	61	1	209	5	1	0	0	6	0	0	0	0	0	0
13:00	66	60	58	0	184	3	0	0	0	3	0	0	0	0	0	3
13:15	69	67	61	0	197	4	0	0	0	4	0	0	0	0	0	2
SUBTOTAL	564	616	440	1	1621	32	7	4	0	43	0	0	0	0	0	16

Ontario Traffic Inc.
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Traffic Count Data

Intersection: Liverpool Rd & Bayly St
Site Code: 2328600001
Municipality: Pickering
Count Date: Sep 12, 2023

North Approach - Liverpool Rd

Start Time	Cars					Trucks					Bicycles					Total Peds
	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	
15:00	46	85	70	0	201	2	0	0	0	2	0	0	0	0	0	4
15:15	52	82	81	0	215	5	1	0	0	6	0	0	0	0	0	2
15:30	50	92	75	0	217	4	2	0	0	6	0	1	0	0	1	7
15:45	64	83	64	0	211	3	1	0	0	4	0	0	0	0	0	1
16:00	74	101	78	0	253	3	0	0	0	3	0	0	0	0	0	3
16:15	78	102	71	0	251	2	1	1	0	4	0	0	0	0	0	2
16:30	74	102	84	0	260	2	1	0	0	3	0	0	0	0	0	7
16:45	65	106	77	0	248	3	0	0	0	3	0	0	0	0	0	1
17:00	74	72	86	0	232	3	1	0	0	4	0	0	0	0	0	4
17:15	79	101	81	0	261	2	0	0	0	2	0	0	0	0	0	5
17:30	84	120	73	0	277	1	0	0	0	1	0	0	0	0	0	4
17:45	79	107	71	0	257	1	1	0	0	2	0	0	0	0	0	5
SUBTOTAL	819	1153	911	0	2883	31	8	1	0	40	0	1	0	0	1	45
GRAND TOTAL	**2317**	**2370**	**1808**	**1**	**6496**	**125**	**26**	**12**	**0**	**163**	**0**	**1**	**0**	**0**	**1**	**85**

Ontario Traffic Inc.
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Traffic Count Data

Intersection: Liverpool Rd & Bayly St
Site Code: 2328600001
Municipality: Pickering
Count Date: Sep 12, 2023

South Approach - Liverpool Rd

Start Time	Cars					Trucks					Bicycles					Total Peds
	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	
07:00	10	60	19	0	89	0	0	1	0	1	0	0	0	0	0	2
07:15	9	78	32	0	119	1	2	0	0	3	0	0	0	0	0	4
07:30	16	80	30	0	126	1	2	0	0	3	0	0	0	0	0	5
07:45	26	94	10	0	130	1	1	1	0	3	0	0	0	0	0	6
08:00	17	76	44	0	137	0	0	0	0	0	0	0	0	0	0	7
08:15	25	109	36	0	170	2	4	3	0	9	0	0	0	0	0	6
08:30	33	103	27	0	163	2	0	0	0	2	0	0	0	0	0	7
08:45	26	88	34	0	148	2	3	1	0	6	0	0	0	0	0	2
09:00	18	74	30	0	122	0	2	0	0	2	0	0	0	0	0	2
09:15	15	94	21	0	130	0	0	2	0	2	0	0	0	0	0	1
09:30	11	62	26	0	99	0	3	0	0	3	0	0	0	0	0	3
09:45	11	80	28	0	119	0	2	1	0	3	0	0	0	0	0	0
SUBTOTAL	217	998	337	0	1552	9	19	9	0	37	0	0	0	0	0	45

Ontario Traffic Inc.
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Traffic Count Data

Intersection: Liverpool Rd & Bayly St
Site Code: 2328600001
Municipality: Pickering
Count Date: Sep 12, 2023

South Approach - Liverpool Rd

Start Time	Cars					Trucks					Bicycles					Total Peds
	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	
11:30	14	62	34	0	110	1	1	0	0	2	0	0	0	0	0	6
11:45	10	61	29	0	100	0	2	1	0	3	0	0	0	0	0	13
12:00	8	87	32	0	127	2	2	0	0	4	0	0	0	0	0	3
12:15	11	79	19	0	109	1	0	0	0	1	0	0	0	0	0	3
12:30	10	76	35	0	121	0	1	1	0	2	0	0	0	0	0	5
12:45	17	84	27	0	128	0	1	3	0	4	0	0	0	0	0	1
13:00	16	69	19	0	104	0	1	2	0	3	0	0	0	0	0	3
13:15	14	65	16	0	95	1	1	0	0	2	0	2	0	0	2	4
SUBTOTAL	100	583	211	0	894	5	9	7	0	21	0	2	0	0	2	38

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Traffic Count Data

Intersection: Liverpool Rd & Bayly St
Site Code: 2328600001
Municipality: Pickering
Count Date: Sep 12, 2023

South Approach - Liverpool Rd

Start Time	Cars					Trucks					Bicycles					Total Peds
	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	
15:00	13	99	24	0	136	0	5	0	0	5	0	0	0	0	0	1
15:15	33	124	20	0	177	1	0	0	0	1	0	0	0	0	0	1
15:30	24	82	38	0	144	1	2	0	0	3	0	0	0	0	0	2
15:45	21	93	31	0	145	0	2	1	0	3	0	0	0	0	0	5
16:00	15	116	33	0	164	1	2	1	0	4	0	0	0	0	0	9
16:15	16	93	28	0	137	0	1	0	0	1	0	0	0	0	0	10
16:30	15	112	27	1	155	0	0	0	0	0	0	0	0	0	0	4
16:45	28	92	41	0	161	0	0	1	0	1	0	0	0	0	0	6
17:00	13	109	30	0	152	1	1	0	0	2	0	0	0	0	0	7
17:15	16	93	35	0	144	0	0	0	0	0	0	0	0	0	0	5
17:30	12	83	26	0	121	0	1	0	0	1	0	0	0	0	0	5
17:45	19	94	37	0	150	0	0	0	0	0	0	0	0	0	0	10
SUBTOTAL	225	1190	370	1	1786	4	14	3	0	21	0	0	0	0	0	65
GRAND TOTAL	**542**	**2771**	**918**	**1**	**4232**	**18**	**42**	**19**	**0**	**79**	**0**	**2**	**0**	**0**	**2**	**148**

Ontario Traffic Inc.
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Traffic Count Data

Intersection: Liverpool Rd & Bayly St
Site Code: 2328600001
Municipality: Pickering
Count Date: Sep 12, 2023

East Approach - Bayly St

Start Time	Cars					Trucks					Bicycles					Total Peds
	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	
07:00	3	47	66	0	116	0	3	4	0	7	0	0	0	0	0	5
07:15	15	37	72	0	124	1	3	7	0	11	0	0	0	0	0	8
07:30	11	55	69	0	135	0	2	6	0	8	0	0	0	0	0	11
07:45	13	48	80	0	141	0	4	12	0	16	0	0	0	0	0	12
08:00	13	59	61	0	133	1	6	8	0	15	0	0	0	0	0	5
08:15	16	45	72	0	133	0	4	11	0	15	0	23	0	0	23	4
08:30	11	42	63	0	116	1	1	13	0	15	0	0	0	0	0	4
08:45	18	56	74	0	148	0	3	9	0	12	0	0	0	0	0	3
09:00	8	46	75	0	129	1	6	12	0	19	0	0	0	0	0	5
09:15	15	52	72	0	139	1	4	7	0	12	0	0	0	0	0	2
09:30	16	38	73	0	127	0	5	7	0	12	0	0	0	0	0	4
09:45	12	41	59	0	112	0	5	5	0	10	0	0	0	0	0	3
SUBTOTAL	151	566	836	0	1553	5	46	101	0	152	0	23	0	0	23	66

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Data

Intersection: Liverpool Rd & Bayly St
Site Code: 2328600001
Municipality: Pickering
Count Date: Sep 12, 2023

East Approach - Bayly St

Start Time	Cars					Trucks					Bicycles					Total Peds
	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	
11:30	21	43	82	0	146	0	2	12	0	14	0	0	0	0	0	9
11:45	19	44	108	0	171	0	3	5	0	8	0	0	0	0	0	8
12:00	16	49	92	0	157	1	3	12	0	16	0	0	0	0	0	5
12:15	22	52	90	0	164	0	2	15	0	17	0	0	0	0	0	5
12:30	13	44	104	0	161	0	3	11	0	14	0	0	0	0	0	8
12:45	20	43	80	0	143	3	6	9	0	18	0	0	0	0	0	1
13:00	17	62	83	0	162	0	0	4	0	4	0	0	0	0	0	3
13:15	10	45	85	0	140	1	6	6	0	13	0	0	0	0	0	5
SUBTOTAL	138	382	724	0	1244	5	25	74	0	104	0	0	0	0	0	44

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Data

Intersection: Liverpool Rd & Bayly St
Site Code: 2328600001
Municipality: Pickering
Count Date: Sep 12, 2023

East Approach - Bayly St

Start Time	Cars					Trucks					Bicycles					Total Peds
	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	
15:00	17	89	152	1	259	0	4	7	0	11	0	0	0	0	0	6
15:15	25	69	113	1	208	1	2	10	0	13	0	0	0	0	0	3
15:30	21	73	129	0	223	0	4	4	0	8	0	0	0	0	0	4
15:45	23	79	111	1	214	1	1	4	0	6	0	0	0	0	0	2
16:00	32	96	174	1	303	0	2	6	0	8	0	0	0	0	0	12
16:15	22	80	116	0	218	1	2	2	0	5	0	0	0	0	0	12
16:30	27	133	165	0	325	0	0	4	0	4	0	0	0	0	0	13
16:45	24	80	125	2	231	1	1	5	0	7	0	0	0	0	0	7
17:00	30	134	169	0	333	0	0	4	0	4	0	0	0	0	0	9
17:15	27	124	154	0	305	1	2	7	0	10	0	0	0	0	0	12
17:30	25	110	161	0	296	0	3	3	0	6	0	0	0	0	0	7
17:45	23	63	138	1	225	2	0	5	0	7	0	0	0	0	0	9
SUBTOTAL	296	1130	1707	7	3140	7	21	61	0	89	0	0	0	0	0	96
GRAND TOTAL	**585**	**2078**	**3267**	**7**	**5937**	**17**	**92**	**236**	**0**	**345**	**0**	**23**	**0**	**0**	**23**	**206**

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Data

Intersection: Liverpool Rd & Bayly St
Site Code: 2328600001
Municipality: Pickering
Count Date: Sep 12, 2023

West Approach - Bayly St

Start Time	Cars					Trucks					Bicycles					Total Peds
	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	
07:00	18	95	5	0	118	0	2	0	0	2	0	0	0	0	0	4
07:15	31	105	9	0	145	1	0	1	0	2	0	0	0	0	0	3
07:30	22	146	12	0	180	1	1	0	0	2	0	0	0	0	0	4
07:45	41	134	21	0	196	0	5	1	0	6	0	0	0	0	0	4
08:00	46	145	22	0	213	1	3	0	0	4	0	0	0	0	0	5
08:15	41	121	19	0	181	1	3	0	0	4	0	0	0	0	0	6
08:30	42	125	33	0	200	0	6	0	0	6	0	0	0	0	0	2
08:45	55	113	42	0	210	1	7	1	0	9	0	0	0	0	0	4
09:00	54	132	33	0	219	0	11	1	0	12	0	0	0	0	0	1
09:15	52	85	20	0	157	1	2	1	0	4	0	0	0	0	0	2
09:30	49	72	19	0	140	2	4	0	0	6	0	0	0	0	0	1
09:45	48	75	22	0	145	2	4	0	0	6	0	0	0	0	0	0
SUBTOTAL	499	1348	257	0	2104	10	48	5	0	63	0	0	0	0	0	36

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Data

Intersection: Liverpool Rd & Bayly St
Site Code: 2328600001
Municipality: Pickering
Count Date: Sep 12, 2023

West Approach - Bayly St

Start Time	Cars					Trucks					Bicycles					Total Peds
	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	
11:30	53	72	27	0	152	1	6	2	0	9	0	0	0	0	0	4
11:45	57	82	21	0	160	0	4	1	0	5	0	0	0	0	0	5
12:00	57	66	21	0	144	1	7	2	0	10	0	0	0	0	0	9
12:15	68	72	33	0	173	0	4	0	0	4	0	0	0	0	0	1
12:30	56	59	20	0	135	1	2	1	0	4	0	0	0	0	0	5
12:45	63	75	30	0	168	0	8	0	0	8	0	0	0	0	0	1
13:00	52	81	20	0	153	2	5	0	0	7	0	0	0	0	0	3
13:15	55	81	16	0	152	0	3	0	0	3	0	0	0	0	0	7
SUBTOTAL	461	588	188	0	1237	5	39	6	0	50	0	0	0	0	0	35

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Data

Intersection: Liverpool Rd & Bayly St
Site Code: 2328600001
Municipality: Pickering
Count Date: Sep 12, 2023

West Approach - Bayly St

Start Time	Cars					Trucks					Bicycles					Total Peds
	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	
15:00	51	90	29	0	170	0	5	0	0	5	0	0	0	0	0	4
15:15	72	94	50	0	216	1	3	0	0	4	0	0	0	0	0	6
15:30	68	115	32	0	215	3	3	2	0	8	0	0	0	0	0	8
15:45	77	133	31	0	241	2	5	0	0	7	0	0	0	0	0	6
16:00	55	127	51	0	233	0	11	0	0	11	0	0	0	0	0	11
16:15	83	151	38	0	272	0	5	1	0	6	0	0	0	0	0	13
16:30	72	132	43	0	247	0	7	0	0	7	0	0	0	0	0	6
16:45	69	161	40	0	270	2	5	0	0	7	0	0	0	0	0	3
17:00	72	177	48	0	297	0	3	0	0	3	0	0	0	0	0	8
17:15	83	143	46	0	272	0	4	0	0	4	0	0	0	0	0	3
17:30	64	141	46	0	251	0	4	0	0	4	0	0	0	0	0	10
17:45	82	168	52	0	302	1	4	0	0	5	0	0	0	0	0	12
SUBTOTAL	848	1632	506	0	2986	9	59	3	0	71	0	0	0	0	0	90
GRAND TOTAL	1808	3568	951	0	6327	24	146	14	0	184	0	0	0	0	0	161

Peak Hour Diagram

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Specified Period		One Hour Peak	
From:	07:00:00	From:	08:00:00
To:	10:00:00	To:	09:00:00

Intersection: Liverpool Rd & Bayly St
Site Code: 2328600001
Count Date: Sep 12, 2023

Weather conditions: Clear

**** Signalized Intersection ****

Major Road: Bayly St runs E/W

North Approach

	Out	In	Total
Cars	768	830	1598
Trucks	44	51	95
Bicycles	0	0	0
	812	**881**	**1693**

Liverpool Rd

Bicycles	0	0	0	0
Trucks	4	8	32	0
Cars	200	261	307	0
Totals	**204**	**269**	**339**	**0**

East Approach

	Out	In	Total
Cars	530	952	1482
Trucks	57	55	112
Bicycles	23	0	23
	610	**1007**	**1617**

Peds: 10

Bayly St

Bicycles	Trucks	Cars	Totals
0	0	0	**0**
0	3	184	**187**
0	19	504	**523**
0	1	116	**117**

Peds: 17

Peds: 16

Bayly St

Totals	Cars	Trucks	Bicycles
0	0	0	0
311	270	41	0
239	202	14	23
60	58	2	0

Peds: 22

West Approach

	Out	In	Total
Cars	804	503	1307
Trucks	23	24	47
Bicycles	0	23	23
	827	**550**	**1377**

Liverpool Rd

Totals	**107**	**383**	**145**	**0**
Cars	101	376	141	0
Trucks	6	7	4	0
Bicycles	0	0	0	0

South Approach

	Out	In	Total
Cars	618	435	1053
Trucks	17	11	28
Bicycles	0	0	0
	635	**446**	**1081**

Cars - Trucks - Bicycles

Comments

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Peak Hour Summary

Intersection:	Liverpool Rd & Bayly St
Site Code:	2328600001
Count Date:	Sep 12, 2023
Period:	07:00 - 10:00

Peak Hour Data (08:00 - 09:00)

Start Time	North Approach Liverpool Rd						South Approach Liverpool Rd						East Approach Bayly St						West Approach Bayly St						Total Vehicles
	↰	↑	↱	↶	Peds	Total	↰	↑	↱	↶	Peds	Total	↰	↑	↱	↶	Peds	Total	↰	↑	↱	↶	Peds	Total	
08:00	93	73	40	0	2	206	17	76	44	0	7	137	14	65	69	0	5	148	47	148	22	0	5	217	708
08:15	88	78	47	0	2	213	27	113	39	0	6	179	16	72	83	0	4	171	42	124	19	0	6	185	748
08:30	78	60	56	0	3	194	35	103	27	0	7	165	12	43	76	0	4	131	42	131	33	0	2	206	696
08:45	80	58	61	0	3	199	28	91	35	0	2	154	18	59	83	0	3	160	56	120	43	0	4	219	732
Grand Total	**339**	**269**	**204**	**0**	**10**	**812**	**107**	**383**	**145**	**0**	**22**	**635**	**60**	**239**	**311**	**0**	**16**	**610**	**187**	**523**	**117**	**0**	**17**	**827**	**2884**
Approach %	41.7	33.1	25.1	0		-	16.9	60.3	22.8	0		-	9.8	39.2	51	0		-	22.6	63.2	14.1	0		-	
Totals %	11.8	9.3	7.1	0		28.2	3.7	13.3	5	0		22	2.1	8.3	10.8	0		21.2	6.5	18.1	4.1	0		28.7	
PHF	**0.91**	**0.86**	**0.84**	**0**		**0.95**	**0.76**	**0.85**	**0.82**	**0**		**0.89**	**0.83**	**0.83**	**0.94**	**0**		**0.89**	**0.83**	**0.88**	**0.68**	**0**		**0.94**	**0.96**
Cars	307	261	200	0		768	101	376	141	0		618	58	202	270	0		530	184	504	116	0		804	2720
% Cars	90.6	97	98	0		94.6	94.4	98.2	97.2	0		97.3	96.7	84.5	86.8	0		86.9	98.4	96.4	99.1	0		97.2	94.3
Trucks	32	8	4	0		44	6	7	4	0		17	2	14	41	0		57	3	19	1	0		23	141
% Trucks	9.4	3	2	0		5.4	5.6	1.8	2.8	0		2.7	3.3	5.9	13.2	0		9.3	1.6	3.6	0.9	0		2.8	4.9
Bicycles	0	0	0	0		0	0	0	0	0		0	0	23	0	0		23	0	0	0	0		0	23
% Bicycles	0	0	0	0		0	0	0	0	0		0	0	9.6	0	0		3.8	0	0	0	0		0	0.8
Peds					10	-					22	-					16	-					17	-	65
% Peds					15.4	-					33.8	-					24.6	-					26.2	-	

Peak Hour Diagram

Specified Period
From: 11:30:00
To: 13:30:00

One Hour Peak
From: 11:45:00
To: 12:45:00

Intersection: Liverpool Rd & Bayly St
Site Code: 2328600001
Count Date: Sep 12, 2023

Weather conditions: Clear

**** Signalized Intersection ****

Major Road: Bayly St runs E/W

North Approach

	Out	In	Total
Cars	850	935	1785
Trucks	26	50	76
Bicycles	0	0	0
	876	**985**	**1861**

Liverpool Rd

Bicycles	0	0	0	0
Trucks	3	6	17	0
Cars	202	364	284	0
Totals	**205**	**370**	**301**	**0**

East Approach

	Out	In	Total
Cars	653	678	1331
Trucks	55	36	91
Bicycles	0	0	0
	708	**714**	**1422**

Bayly St

			Totals
0	0	0	**0**
0	2	238	**240**
0	17	279	**296**
0	4	95	**99**

Peds: 7

Peds: 20

Peds: 26

Peds: 24

Bayly St

Totals			
0	0	0	0
437	394	43	0
200	189	11	0
71	70	1	0

West Approach

	Out	In	Total
Cars	612	430	1042
Trucks	23	17	40
Bicycles	0	0	0
	635	**447**	**1082**

Liverpool Rd

Totals	**42**	**308**	**117**	**0**
Cars	39	303	115	0
Trucks	3	5	2	0
Bicycles	0	0	0	0

South Approach

	Out	In	Total
Cars	457	529	986
Trucks	10	11	21
Bicycles	0	0	0
	467	**540**	**1007**

Cars - Trucks - Bicycles

Comments

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Peak Hour Summary

Intersection:	Liverpool Rd & Bayly St
Site Code:	2328600001
Count Date:	Sep 12, 2023
Period:	11:30 - 13:30

Peak Hour Data (11:45 - 12:45)

Start Time	North Approach Liverpool Rd						South Approach Liverpool Rd						East Approach Bayly St						West Approach Bayly St						Total Vehicles
					Peds	Total					Peds	Total					Peds	Total					Peds	Total	
11:45	88	103	50	0	2	241	10	63	30	0	13	103	19	47	113	0	8	179	57	86	22	0	5	165	688
12:00	66	83	50	0	1	199	10	89	32	0	3	131	17	52	104	0	5	173	58	73	23	0	9	154	657
12:15	68	86	51	0	2	205	12	79	19	0	3	110	22	54	105	0	5	181	68	76	33	0	1	177	673
12:30	79	98	54	0	2	231	10	77	36	0	5	123	13	47	115	0	8	175	57	61	21	0	5	139	668
Grand Total	**301**	**370**	**205**	**0**	**7**	**876**	**42**	**308**	**117**	**0**	**24**	**467**	**71**	**200**	**437**	**0**	**26**	**708**	**240**	**296**	**99**	**0**	**20**	**635**	**2686**
Approach %	34.4	42.2	23.4	0		-	9	66	25.1	0		-	10	28.2	61.7	0		-	37.8	46.6	15.6	0		-	
Totals %	11.2	13.8	7.6	0		32.6	1.6	11.5	4.4	0		17.4	2.6	7.4	16.3	0		26.4	8.9	11	3.7	0		23.6	
PHF	**0.86**	**0.9**	**0.95**	**0**		**0.91**	**0.88**	**0.87**	**0.81**	**0**		**0.89**	**0.81**	**0.93**	**0.95**	**0**		**0.98**	**0.88**	**0.86**	**0.75**	**0**		**0.9**	**0.98**
Cars	284	364	202	0		850	39	303	115	0		457	70	189	394	0		653	238	279	95	0		612	2572
% Cars	94.4	98.4	98.5	0		97	92.9	98.4	98.3	0		97.9	98.6	94.5	90.2	0		92.2	99.2	94.3	96	0		96.4	95.8
Trucks	17	6	3	0		26	3	5	2	0		10	1	11	43	0		55	2	17	4	0		23	114
% Trucks	5.6	1.6	1.5	0		3	7.1	1.6	1.7	0		2.1	1.4	5.5	9.8	0		7.8	0.8	5.7	4	0		3.6	4.2
Bicycles	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0
% Bicycles	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0
Peds					7	-					24	-					26	-					20	-	77
% Peds					9.1	-					31.2	-					33.8	-					26	-	

Peak Hour Diagram

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

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

One Hour Peak
From: 16:30:00
To: 17:30:00

Intersection: Liverpool Rd & Bayly St
Site Code: 2328600001
Count Date: Sep 12, 2023

Weather conditions: Clear

**** Signalized Intersection ****

Major Road: Bayly St runs E/W

North Approach

	Out	In	Total
Cars	1001	1315	2316
Trucks	12	23	35
Bicycles	0	0	0
	1013	**1338**	**2351**

Liverpool Rd

Bicycles	0	0	0	0
Trucks	0	2	10	0
Cars	328	381	292	0
Totals	**328**	**383**	**302**	**0**

East Approach

	Out	In	Total
Cars	1194	1040	2234
Trucks	25	30	55
Bicycles	0	0	0
	1219	**1070**	**2289**

Peds: 17

Bayly St

Bicycles	Trucks	Cars	Totals
0	0	0	**0**
0	2	296	**298**
0	19	613	**632**
0	0	177	**177**

Peds: 20

Peds: 41

Bayly St

Totals	Cars	Trucks	Bicycles
2	2	0	0
633	613	20	0
474	471	3	0
110	108	2	0

Peds: 22

West Approach

	Out	In	Total
Cars	1086	871	1957
Trucks	21	4	25
Bicycles	0	0	0
	1107	**875**	**1982**

Liverpool Rd

Totals	**73**	**407**	**134**	**1**
Cars	72	406	133	1
Trucks	1	1	1	0
Bicycles	0	0	0	0

South Approach

	Out	In	Total
Cars	612	667	1279
Trucks	3	4	7
Bicycles	0	0	0
	615	**671**	**1286**

Cars - Trucks - Bicycles

Comments

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Peak Hour Summary

Intersection:	Liverpool Rd & Bayly St
Site Code:	2328600001
Count Date:	Sep 12, 2023
Period:	15:00 - 18:00

Peak Hour Data (16:30 - 17:30)

Start Time	North Approach Liverpool Rd						South Approach Liverpool Rd						East Approach Bayly St						West Approach Bayly St						Total Vehicles
					Peds	Total					Peds	Total					Peds	Total					Peds	Total	
16:30	76	103	84	0	7	263	15	112	27	1	4	155	27	133	169	0	13	329	72	139	43	0	6	254	1001
16:45	68	106	77	0	1	251	28	92	42	0	6	162	25	81	130	2	7	238	71	166	40	0	3	277	928
17:00	77	73	86	0	4	236	14	110	30	0	7	154	30	134	173	0	9	337	72	180	48	0	8	300	1027
17:15	81	101	81	0	5	263	16	93	35	0	5	144	28	126	161	0	12	315	83	147	46	0	3	276	998
Grand Total	**302**	**383**	**328**	**0**	**17**	**1013**	**73**	**407**	**134**	**1**	**22**	**615**	**110**	**474**	**633**	**2**	**41**	**1219**	**298**	**632**	**177**	**0**	**20**	**1107**	**3954**
Approach %	29.8	37.8	32.4	0		-	11.9	66.2	21.8	0.2		-	9	38.9	51.9	0.2		-	26.9	57.1	16	0		-	
Totals %	7.6	9.7	8.3	0		25.6	1.8	10.3	3.4	0		15.6	2.8	12	16	0.1		30.8	7.5	16	4.5	0		28	
PHF	**0.93**	**0.9**	**0.95**	**0**		**0.96**	**0.65**	**0.91**	**0.8**	**0.25**		**0.95**	**0.92**	**0.88**	**0.91**	**0.25**		**0.9**	**0.9**	**0.88**	**0.92**	**0**		**0.92**	**0.96**
Cars	292	381	328	0		1001	72	406	133	1		612	108	471	613	2		1194	296	613	177	0		1086	3893
% Cars	96.7	99.5	100	0		98.8	98.6	99.8	99.3	100		99.5	98.2	99.4	96.8	100		97.9	99.3	97	100	0		98.1	98.5
Trucks	10	2	0	0		12	1	1	1	0		3	2	3	20	0		25	2	19	0	0		21	61
% Trucks	3.3	0.5	0	0		1.2	1.4	0.2	0.7	0		0.5	1.8	0.6	3.2	0		2.1	0.7	3	0	0		1.9	1.5
Bicycles	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0
% Bicycles	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0
Peds					17	-					22	-					41	-					20	-	100
% Peds					17	-					22	-					41	-					20	-	

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Project #23-286 - Dillon Consulting

Intersection Count Report

Intersection:	Liverpool Rd & Krosno Blvd
Municipality:	Pickering
Count Date:	Tuesday, Sep 12, 2023
Site Code:	2328600002
Count Categories:	Cars, Trucks, Bicycles, Pedestrians
Count Period:	07:00-10:00, 11:30-13:30, 15:00-18:00
Weather:	Clear
Comments:	

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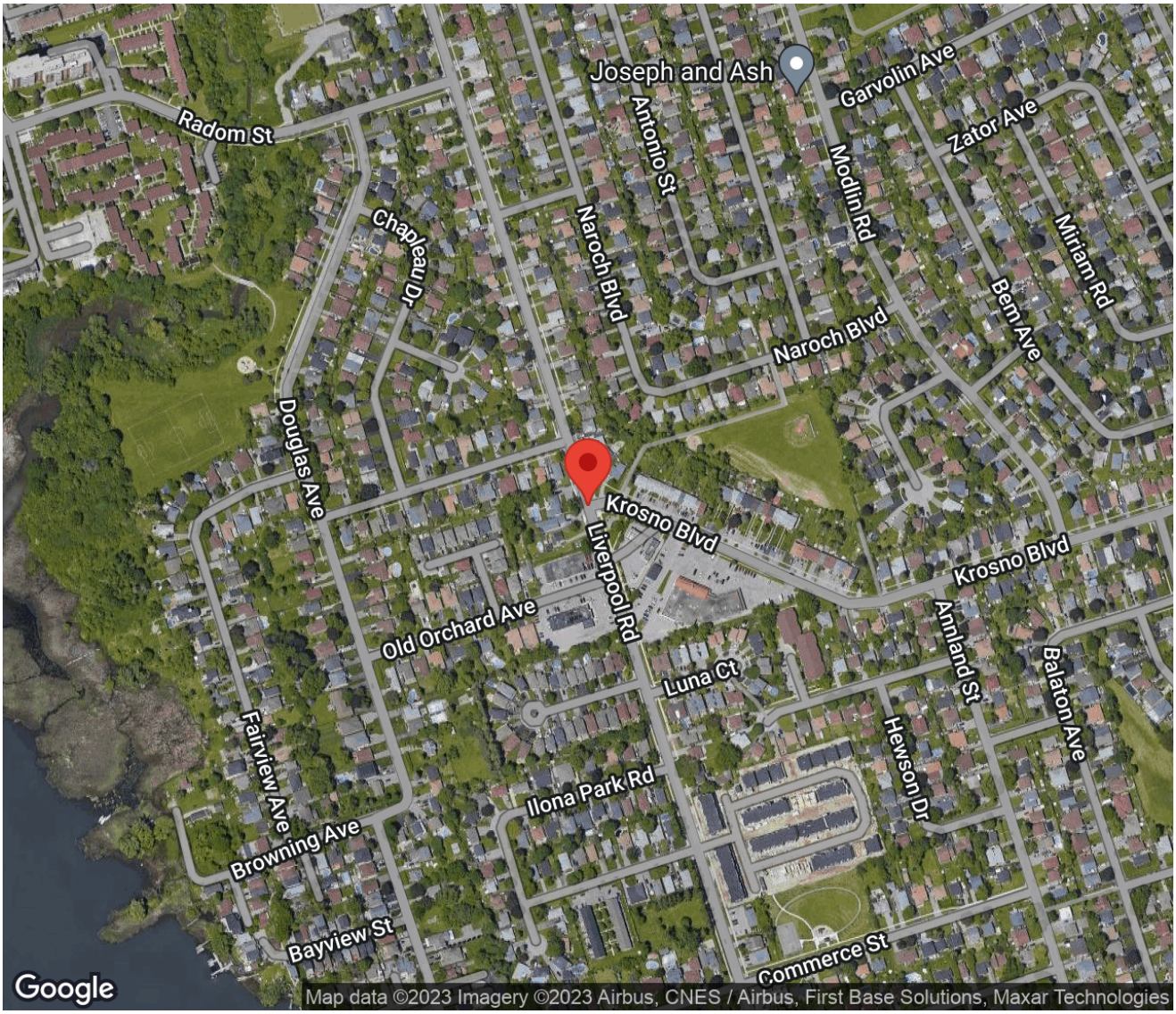
Traffic Count Map

Intersection:	Liverpool Rd & Krosno Blvd
Site Code:	2328600002
Municipality:	Pickering
Count Date:	Sep 12, 2023



Ontario Traffic Inc.
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Traffic Count Summary

Intersection: Liverpool Rd & Krosno Blvd
Site Code: 2328600002
Municipality: Pickering
Count Date: Sep 12, 2023

Liverpool Rd - Traffic Summary

Hour	North Approach Totals (Includes Cars, Trucks, Bicycles)						South Approach Totals (Includes Cars, Trucks, Bicycles)						Total
	Left	Thru	Right	U-Turn	Total	Peds	Left	Thru	Right	U-Turn	Total	Peds	
07:00 - 08:00	30	73	0	0	103	0	0	155	7	0	162	1	265
08:00 - 09:00	94	143	0	0	237	0	0	198	14	0	212	20	449
09:00 - 10:00	71	143	0	0	214	0	0	162	9	0	171	4	385
BREAK													
11:30 - 12:00	37	98	0	0	135	0	0	73	4	0	77	4	212
12:00 - 13:00	110	174	0	0	284	0	0	169	11	0	180	7	464
13:00 - 13:30	43	75	0	0	118	0	0	89	2	0	91	2	209
BREAK													
15:00 - 16:00	145	213	0	0	358	0	0	191	19	0	210	28	568
16:00 - 17:00	148	255	0	0	403	0	0	202	13	0	215	3	618
17:00 - 18:00	146	254	0	0	400	0	0	167	16	0	183	6	583
GRAND TOTAL	**824**	**1428**	**0**	**0**	**2252**	**0**	**0**	**1406**	**95**	**0**	**1501**	**75**	**3753**

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Summary

Intersection: Liverpool Rd & Krosno Blvd
Site Code: 2328600002
Municipality: Pickering
Count Date: Sep 12, 2023

Krosno Blvd - Traffic Summary

Hour	East Approach Totals (Includes Cars, Trucks, Bicycles)						West Approach Totals (Includes Cars, Trucks, Bicycles)						Total
	Left	Thru	Right	U-Turn	Total	Peds	Left	Thru	Right	U-Turn	Total	Peds	
07:00 - 08:00	0	0	80	0	80	13	0	0	0	0	0	0	80
08:00 - 09:00	14	0	110	0	124	6	0	0	0	0	0	0	124
09:00 - 10:00	10	0	112	0	122	0	0	0	0	0	0	0	122
BREAK													
11:30 - 12:00	1	0	42	0	43	0	0	0	0	0	0	0	43
12:00 - 13:00	4	0	82	0	86	9	0	0	0	0	0	0	86
13:00 - 13:30	2	0	32	0	34	2	0	0	0	0	0	0	34
BREAK													
15:00 - 16:00	15	0	132	0	147	18	0	0	0	0	0	0	147
16:00 - 17:00	11	0	103	0	114	6	0	0	0	0	0	0	114
17:00 - 18:00	14	0	100	0	114	7	0	0	0	0	0	0	114
GRAND TOTAL	**71**	**0**	**793**	**0**	**864**	**61**	**0**	**0**	**0**	**0**	**0**	**0**	**864**

Ontario Traffic Inc.
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Traffic Count Data

Intersection: Liverpool Rd & Krosno Blvd
Site Code: 2328600002
Municipality: Pickering
Count Date: Sep 12, 2023

North Approach - Liverpool Rd

Start Time	Cars					Trucks					Bicycles					Total Peds
	↰	↑	↱	↩	Total	↰	↑	↱	↩	Total	↰	↑	↱	↩	Total	
07:00	3	10	0	0	13	0	1	0	0	1	0	0	0	0	0	0
07:15	3	21	0	0	24	0	1	0	0	1	0	0	0	0	0	0
07:30	8	15	0	0	23	0	0	0	0	0	0	0	0	0	0	0
07:45	15	25	0	0	40	1	0	0	0	1	0	0	0	0	0	0
08:00	14	34	0	0	48	0	2	0	0	2	0	0	0	0	0	0
08:15	14	21	0	0	35	0	1	0	0	1	0	0	0	0	0	0
08:30	21	43	0	0	64	1	0	0	0	1	1	1	0	0	2	0
08:45	42	38	0	0	80	1	2	0	0	3	0	1	0	0	1	0
09:00	25	30	0	0	55	0	2	0	0	2	0	0	0	0	0	0
09:15	14	27	0	0	41	0	0	0	0	0	0	0	0	0	0	0
09:30	16	37	0	0	53	0	1	0	0	1	0	0	0	0	0	0
09:45	15	46	0	0	61	1	0	0	0	1	0	0	0	0	0	0
SUBTOTAL	190	347	0	0	537	4	10	0	0	14	1	2	0	0	3	0

Ontario Traffic Inc.
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Traffic Count Data

Intersection: Liverpool Rd & Krosno Blvd
Site Code: 2328600002
Municipality: Pickering
Count Date: Sep 12, 2023

North Approach - Liverpool Rd

Start Time	Cars					Trucks					Bicycles					Total Peds
	↰	↑	↱	↻	Total	↰	↑	↱	↻	Total	↰	↑	↱	↻	Total	
11:30	17	40	0	0	57	0	2	0	0	2	0	0	0	0	0	0
11:45	19	55	0	0	74	1	1	0	0	2	0	0	0	0	0	0
12:00	28	41	0	0	69	2	1	0	0	3	0	0	0	0	0	0
12:15	26	46	0	0	72	0	1	0	0	1	0	0	0	0	0	0
12:30	28	41	0	0	69	0	1	0	0	1	0	0	0	0	0	0
12:45	24	40	0	0	64	2	3	0	0	5	0	0	0	0	0	0
13:00	21	35	0	0	56	0	0	0	0	0	0	0	0	0	0	0
13:15	22	40	0	0	62	0	0	0	0	0	0	0	0	0	0	0
SUBTOTAL	185	338	0	0	523	5	9	0	0	14	0	0	0	0	0	0

Ontario Traffic Inc.
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Traffic Count Data

Intersection: Liverpool Rd & Krosno Blvd
Site Code: 2328600002
Municipality: Pickering
Count Date: Sep 12, 2023

North Approach - Liverpool Rd

Start Time	Cars					Trucks					Bicycles					Total Peds
	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	
15:00	41	43	0	0	84	1	0	0	0	1	0	0	0	0	0	0
15:15	25	45	0	0	70	0	0	0	0	0	0	0	0	0	0	0
15:30	31	59	0	0	90	1	2	0	0	3	0	0	0	0	0	0
15:45	45	64	0	0	109	0	0	0	0	0	1	0	0	0	1	0
16:00	25	62	0	0	87	2	1	0	0	3	0	0	0	0	0	0
16:15	47	74	0	0	121	1	1	0	0	2	0	0	0	0	0	0
16:30	40	58	0	0	98	1	0	0	0	1	0	0	0	0	0	0
16:45	32	59	0	0	91	0	0	0	0	0	0	0	0	0	0	0
17:00	34	51	0	0	85	2	0	0	0	2	0	0	0	0	0	0
17:15	40	73	0	0	113	0	1	0	0	1	0	0	0	0	0	0
17:30	35	54	0	0	89	1	0	0	0	1	0	0	0	0	0	0
17:45	34	74	0	0	108	0	1	0	0	1	0	0	0	0	0	0
SUBTOTAL	429	716	0	0	1145	9	6	0	0	15	1	0	0	0	1	0
GRAND TOTAL	**804**	**1401**	**0**	**0**	**2205**	**18**	**25**	**0**	**0**	**43**	**2**	**2**	**0**	**0**	**4**	**0**

Ontario Traffic Inc.
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Traffic Count Data

Intersection: Liverpool Rd & Krosno Blvd
Site Code: 2328600002
Municipality: Pickering
Count Date: Sep 12, 2023

South Approach - Liverpool Rd

Start Time	Cars					Trucks					Bicycles					Total Peds
	↰	↑	↱	↩	Total	↰	↑	↱	↩	Total	↰	↑	↱	↩	Total	
07:00	0	28	0	0	28	0	0	0	0	0	0	0	0	0	0	0
07:15	0	41	3	0	44	0	2	0	0	2	0	1	0	0	1	0
07:30	0	36	0	0	36	0	2	0	0	2	0	0	0	0	0	1
07:45	0	44	4	0	48	0	1	0	0	1	0	0	0	0	0	0
08:00	0	48	4	0	52	0	0	0	0	0	0	0	0	0	0	3
08:15	0	48	0	0	48	0	4	0	0	4	0	0	0	0	0	0
08:30	0	56	1	0	57	0	0	2	0	2	0	0	0	0	0	4
08:45	0	40	7	0	47	0	1	0	0	1	0	1	0	0	1	13
09:00	0	39	3	0	42	0	1	0	0	1	0	0	0	0	0	0
09:15	0	40	0	0	40	0	0	1	0	1	0	0	0	0	0	3
09:30	0	43	1	0	44	0	2	0	0	2	0	0	0	0	0	1
09:45	0	36	3	0	39	0	1	1	0	2	0	0	0	0	0	0
SUBTOTAL	0	499	26	0	525	0	14	4	0	18	0	2	0	0	2	25

Ontario Traffic Inc.
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Traffic Count Data

Intersection: Liverpool Rd & Krosno Blvd
Site Code: 2328600002
Municipality: Pickering
Count Date: Sep 12, 2023

South Approach - Liverpool Rd

Start Time	Cars					Trucks					Bicycles					Total Peds
	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	
11:30	0	33	2	0	35	0	1	0	0	1	0	0	0	0	0	1
11:45	0	37	2	0	39	0	2	0	0	2	0	0	0	0	0	3
12:00	0	42	3	0	45	0	0	0	0	0	0	0	0	0	0	2
12:15	0	40	3	0	43	0	0	0	0	0	0	0	0	0	0	3
12:30	0	45	3	0	48	0	1	0	0	1	0	0	0	0	0	2
12:45	0	41	2	0	43	0	0	0	0	0	0	0	0	0	0	0
13:00	0	42	1	0	43	0	3	0	0	3	0	0	0	0	0	1
13:15	0	44	1	0	45	0	0	0	0	0	0	0	0	0	0	1
SUBTOTAL	0	324	17	0	341	0	7	0	0	7	0	0	0	0	0	13

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Traffic Count Data

Intersection: Liverpool Rd & Krosno Blvd
Site Code: 2328600002
Municipality: Pickering
Count Date: Sep 12, 2023

South Approach - Liverpool Rd

Start Time	Cars					Trucks					Bicycles					Total Peds
	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	
15:00	0	40	5	0	45	0	1	0	0	1	0	0	0	0	0	4
15:15	0	42	6	0	48	0	1	0	0	1	0	0	0	0	0	5
15:30	0	41	2	0	43	0	1	0	0	1	0	0	0	0	0	11
15:45	0	65	6	0	71	0	0	0	0	0	0	0	0	0	0	8
16:00	0	53	4	0	57	0	0	0	0	0	0	0	0	0	0	3
16:15	0	48	3	0	51	0	1	0	0	1	0	0	0	0	0	0
16:30	0	54	1	0	55	0	1	0	0	1	0	0	0	0	0	0
16:45	0	45	5	0	50	0	0	0	0	0	0	0	0	0	0	0
17:00	0	46	4	0	50	0	0	0	0	0	0	0	0	0	0	0
17:15	0	44	3	0	47	0	0	1	0	1	0	0	0	0	0	2
17:30	0	41	3	0	44	0	0	0	0	0	0	0	0	0	0	1
17:45	0	36	5	0	41	0	0	0	0	0	0	0	0	0	0	3
SUBTOTAL	0	555	47	0	602	0	5	1	0	6	0	0	0	0	0	37
GRAND TOTAL	0	1378	90	0	1468	0	26	5	0	31	0	2	0	0	2	75

Ontario Traffic Inc.
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Traffic Count Data

Intersection: Liverpool Rd & Krosno Blvd
Site Code: 2328600002
Municipality: Pickering
Count Date: Sep 12, 2023

East Approach - Krosno Blvd

Start Time	Cars					Trucks					Bicycles					Total Peds
	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	
07:00	0	0	17	0	17	0	0	0	0	0	0	0	0	0	0	6
07:15	0	0	24	0	24	0	0	2	0	2	0	0	0	0	0	1
07:30	0	0	19	0	19	0	0	0	0	0	0	0	0	0	0	2
07:45	0	0	17	0	17	0	0	1	0	1	0	0	0	0	0	4
08:00	1	0	28	0	29	0	0	0	0	0	0	0	0	0	0	0
08:15	4	0	21	0	25	0	0	3	0	3	0	0	0	0	0	5
08:30	4	0	24	0	28	1	0	0	0	1	0	0	0	0	0	0
08:45	4	0	32	0	36	0	0	2	0	2	0	0	0	0	0	1
09:00	2	0	47	0	49	0	0	1	0	1	0	0	0	0	0	0
09:15	4	0	22	0	26	1	0	0	0	1	0	0	0	0	0	0
09:30	1	0	18	0	19	0	0	0	0	0	0	0	0	0	0	0
09:45	2	0	23	0	25	0	0	1	0	1	0	0	0	0	0	0
SUBTOTAL	22	0	292	0	314	2	0	10	0	12	0	0	0	0	0	19

Ontario Traffic Inc.
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Traffic Count Data

Intersection: Liverpool Rd & Krosno Blvd
Site Code: 2328600002
Municipality: Pickering
Count Date: Sep 12, 2023

East Approach - Krosno Blvd

Start Time	Cars					Trucks					Bicycles					Total Peds
	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	
11:30	1	0	18	0	19	0	0	2	0	2	0	0	0	0	0	0
11:45	0	0	22	0	22	0	0	0	0	0	0	0	0	0	0	0
12:00	0	0	24	0	24	0	0	4	0	4	0	0	0	0	0	3
12:15	1	0	19	0	20	0	0	1	0	1	0	0	0	0	0	3
12:30	2	0	13	0	15	0	0	0	0	0	0	0	0	0	0	2
12:45	1	0	19	0	20	0	0	2	0	2	0	0	0	0	0	1
13:00	1	0	17	0	18	0	0	0	0	0	0	0	0	0	0	2
13:15	1	0	14	0	15	0	0	0	0	0	0	0	1	0	1	0
SUBTOTAL	7	0	146	0	153	0	0	9	0	9	0	0	1	0	1	11

Ontario Traffic Inc.
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Traffic Count Data

Intersection: Liverpool Rd & Krosno Blvd
Site Code: 2328600002
Municipality: Pickering
Count Date: Sep 12, 2023

East Approach - Krosno Blvd

Start Time	Cars					Trucks					Bicycles					Total Peds
	↰	↑	↱	↷	Total	↰	↑	↱	↷	Total	↰	↑	↱	↷	Total	
15:00	2	0	23	0	25	0	0	0	0	0	0	0	0	0	0	3
15:15	7	0	44	0	51	0	0	1	0	1	0	0	0	0	0	4
15:30	3	0	36	0	39	0	0	0	0	0	0	0	0	0	0	7
15:45	2	0	27	0	29	1	0	1	0	2	0	0	0	0	0	4
16:00	1	0	18	0	19	0	0	0	0	0	0	0	0	0	0	2
16:15	4	0	22	0	26	0	0	1	0	1	0	0	0	0	0	2
16:30	2	0	34	0	36	0	0	0	0	0	0	0	0	0	0	1
16:45	4	0	27	0	31	0	0	1	0	1	0	0	0	0	0	1
17:00	4	0	24	0	28	0	0	1	0	1	0	0	0	0	0	2
17:15	3	0	27	0	30	0	0	0	0	0	0	0	0	0	0	3
17:30	5	0	20	0	25	0	0	2	0	2	0	0	0	0	0	1
17:45	2	0	26	0	28	0	0	0	0	0	0	0	0	0	0	1
SUBTOTAL	39	0	328	0	367	1	0	7	0	8	0	0	0	0	0	31
GRAND TOTAL	68	0	766	0	834	3	0	26	0	29	0	0	1	0	1	61

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Peak Hour Diagram

Specified Period		One Hour Peak	
From:	07:00:00	From:	08:15:00
To:	10:00:00	To:	09:15:00

Intersection: Liverpool Rd & Krosno Blvd
Site Code: 2328600002
Count Date: Sep 12, 2023

Weather conditions: Clear

**** Unsignalized Intersection ****

Major Road: Liverpool Rd runs N/S

North Approach

	Out	In	Total
Cars	234	307	541
Trucks	7	12	19
Bicycles	3	1	4
	244	**320**	**564**

Liverpool Rd

Bicycles	2	1	0
Trucks	5	2	0
Cars	132	102	0
Totals	**139**	**105**	**0**

Peds: 0

Peds: 0

Peds: 6

Peds: 17

East Approach

	Out	In	Total
Cars	138	113	251
Trucks	7	4	11
Bicycles	0	1	1
	145	**118**	**263**

Krosno Blvd

	Totals	Cars	Trucks	Bicycles
	0	0	0	0
	130	124	6	0
	15	14	1	0

Liverpool Rd

Totals	**190**	**13**	**0**
Cars	183	11	0
Trucks	6	2	0
Bicycles	1	0	0

South Approach

	Out	In	Total
Cars	194	146	340
Trucks	8	6	14
Bicycles	1	2	3
	203	**154**	**357**

Cars - Trucks - Bicycles

Comments

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Peak Hour Summary

Intersection:	Liverpool Rd & Krosno Blvd
Site Code:	2328600002
Count Date:	Sep 12, 2023
Period:	07:00 - 10:00

Peak Hour Data (08:15 - 09:15)

Start Time	North Approach Liverpool Rd						South Approach Liverpool Rd						East Approach Krosno Blvd						West Approach						Total Vehicles
					Peds	Total					Peds	Total					Peds	Total					Peds	Total	
08:15	14	22		0	0	36		52	0	0	0	52	4		24	0	5	28					0		116
08:30	23	44		0	0	67		56	3	0	4	59	5		24	0	0	29					0		155
08:45	43	41		0	0	84		42	7	0	13	49	4		34	0	1	38					0		171
09:00	25	32		0	0	57		40	3	0	0	43	2		48	0	0	50					0		150
Grand Total	**105**	**139**		**0**	**0**	**244**		**190**	**13**	**0**	**17**	**203**	**15**		**130**	**0**	**6**	**145**					**0**	**0**	**592**
Approach %	43	57		0		-		93.6	6.4	0		-	10.3		89.7	0		-						-	
Totals %	17.7	23.5		0		41.2		32.1	2.2	0		34.3	2.5		22	0		24.5						0	
PHF	**0.61**	**0.79**		**0**		**0.73**		**0.85**	**0.46**	**0**		**0.86**	**0.75**		**0.68**	**0**		**0.73**						**0**	**0.87**
Cars	102	132		0		234		183	11	0		194	14		124	0		138						0	566
% Cars	97.1	95		0		95.9		96.3	84.6	0		95.6	93.3		95.4	0		95.2						0	95.6
Trucks	2	5		0		7		6	2	0		8	1		6	0		7						0	22
% Trucks	1.9	3.6		0		2.9		3.2	15.4	0		3.9	6.7		4.6	0		4.8						0	3.7
Bicycles	1	2		0		3		1	0	0		1	0		0	0		0						0	4
% Bicycles	1	1.4		0		1.2		0.5	0	0		0.5	0		0	0		0						0	0.7
Peds					0	-					17	-					6	-					0	-	23
% Peds					0	-					73.9	-					26.1	-					0	-	

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Peak Hour Diagram

Specified Period		One Hour Peak	
From:	11:30:00	From:	11:45:00
To:	13:30:00	To:	12:45:00

Intersection: Liverpool Rd & Krosno Blvd
Site Code: 2328600002
Count Date: Sep 12, 2023

Weather conditions: Clear

**** Unsignalized Intersection ****

Major Road: Liverpool Rd runs N/S

North Approach

	Out	In	Total
Cars	284	242	526
Trucks	7	8	15
Bicycles	0	0	0
	291	**250**	**541**

Liverpool Rd

Bicycles	0	0	0
Trucks	4	3	0
Cars	183	101	0
Totals	**187**	**104**	**0**

Peds: 0

Peds: 0

Peds: 8

Peds: 10

Totals	**167**	**11**	**0**
Cars	164	11	0
Trucks	3	0	0
Bicycles	0	0	0

Liverpool Rd

East Approach

	Out	In	Total
Cars	81	112	193
Trucks	5	3	8
Bicycles	0	0	0
	86	**115**	**201**

Krosno Blvd

	Totals	Cars	Trucks	Bicycles
	0	0	0	0
	83	78	5	0
	3	3	0	0

South Approach

	Out	In	Total
Cars	175	186	361
Trucks	3	4	7
Bicycles	0	0	0
	178	**190**	**368**

- Cars - Trucks - Bicycles

Comments

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Peak Hour Summary

Intersection:	Liverpool Rd & Krosno Blvd
Site Code:	2328600002
Count Date:	Sep 12, 2023
Period:	11:30 - 13:30

Peak Hour Data (11:45 - 12:45)

Start Time	North Approach Liverpool Rd						South Approach Liverpool Rd						East Approach Krosno Blvd						West Approach						Total Vehicles
					Peds	Total					Peds	Total					Peds	Total					Peds	Total	
11:45	20	56		0	0	76		39	2	0	3	41	0		22	0	0	22					0		139
12:00	30	42		0	0	72		42	3	0	2	45	0		28	0	3	28					0		145
12:15	26	47		0	0	73		40	3	0	3	43	1		20	0	3	21					0		137
12:30	28	42		0	0	70		46	3	0	2	49	2		13	0	2	15					0		134
Grand Total	**104**	**187**		**0**	**0**	**291**		**167**	**11**	**0**	**10**	**178**	**3**		**83**	**0**	**8**	**86**					**0**	**0**	**555**
Approach %	35.7	64.3		0		-		93.8	6.2	0		-	3.5		96.5	0		-						-	
Totals %	18.7	33.7		0		52.4		30.1	2	0		32.1	0.5		15	0		15.5						0	
PHF	**0.87**	**0.83**		**0**		**0.96**		**0.91**	**0.92**	**0**		**0.91**	**0.38**		**0.74**	**0**		**0.77**						**0**	**0.96**
Cars	101	183		0		284		164	11	0		175	3		78	0		81						0	540
% Cars	97.1	97.9		0		97.6		98.2	100	0		98.3	100		94	0		94.2						0	97.3
Trucks	3	4		0		7		3	0	0		3	0		5	0		5						0	15
% Trucks	2.9	2.1		0		2.4		1.8	0	0		1.7	0		6	0		5.8						0	2.7
Bicycles	0	0		0		0		0	0	0		0	0		0	0		0						0	0
% Bicycles	0	0		0		0		0	0	0		0	0		0	0		0						0	0
Peds					0	-					10	-					8	-					0	-	18
% Peds					0	-					55.6	-					44.4	-					0	-	

Ontario Traffic Inc.
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Peak Hour Diagram

Specified Period		One Hour Peak	
From:	15:00:00	From:	15:45:00
To:	18:00:00	To:	16:45:00

Intersection: Liverpool Rd & Krosno Blvd
Site Code: 2328600002
Count Date: Sep 12, 2023

Weather conditions: Clear

**** Unsignalized Intersection ****

Major Road: Liverpool Rd runs N/S

North Approach

	Out	In	Total
Cars	415	321	736
Trucks	6	4	10
Bicycles	1	0	1
	422	**325**	**747**

Liverpool Rd

Bicycles	0	1	0
Trucks	2	4	0
Cars	258	157	0
Totals	**260**	**162**	**0**

Peds: 0

Peds: 0

Peds: 9

Peds: 11

Totals	**222**	**14**	**0**
Cars	220	14	0
Trucks	2	0	0
Bicycles	0	0	0

Liverpool Rd

East Approach

	Out	In	Total
Cars	110	171	281
Trucks	3	4	7
Bicycles	0	1	1
	113	**176**	**289**

Krosno Blvd

	Totals	Cars	Trucks	Bicycles
	0	0	0	0
	103	101	2	0
	10	9	1	0

South Approach

	Out	In	Total
Cars	234	267	501
Trucks	2	3	5
Bicycles	0	0	0
	236	**270**	**506**

Cars - Trucks - Bicycles

Comments

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Peak Hour Summary

Intersection:	Liverpool Rd & Krosno Blvd
Site Code:	2328600002
Count Date:	Sep 12, 2023
Period:	15:00 - 18:00

Peak Hour Data (15:45 - 16:45)

Start Time	North Approach Liverpool Rd						South Approach Liverpool Rd						East Approach Krosno Blvd						West Approach						Total Vehicles
					Peds	Total					Peds	Total					Peds	Total					Peds	Total	
15:45	46	64		0	0	110		65	6	0	8	71	3		28	0	4	31					0		212
16:00	27	63		0	0	90		53	4	0	3	57	1		18	0	2	19					0		166
16:15	48	75		0	0	123		49	3	0	0	52	4		23	0	2	27					0		202
16:30	41	58		0	0	99		55	1	0	0	56	2		34	0	1	36					0		191
Grand Total	**162**	**260**		**0**	**0**	**422**		**222**	**14**	**0**	**11**	**236**	**10**		**103**	**0**	**9**	**113**					**0**	**0**	**771**
Approach %	38.4	61.6		0		-		94.1	5.9	0		-	8.8		91.2	0		-						-	
Totals %	21	33.7		0		54.7		28.8	1.8	0		30.6	1.3		13.4	0		14.7						0	
PHF	**0.84**	**0.87**		**0**		**0.86**		**0.85**	**0.58**	**0**		**0.83**	**0.63**		**0.76**	**0**		**0.78**						**0**	**0.91**
Cars	157	258		0		415		220	14	0		234	9		101	0		110						0	759
% Cars	96.9	99.2		0		98.3		99.1	100	0		99.2	90		98.1	0		97.3						0	98.4
Trucks	4	2		0		6		2	0	0		2	1		2	0		3						0	11
% Trucks	2.5	0.8		0		1.4		0.9	0	0		0.8	10		1.9	0		2.7						0	1.4
Bicycles	1	0		0		1		0	0	0		0	0		0	0		0						0	1
% Bicycles	0.6	0		0		0.2		0	0	0		0	0		0	0		0						0	0.1
Peds					0	-					11	-					9	-					0	-	20
% Peds					0	-					55	-					45	-					0	-	

Ontario Traffic Inc.
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Project #23-286 - Dillon Consulting

Intersection Count Report

Intersection:	Liverpool Rd & Annland St
Municipality:	Pickering
Count Date:	Tuesday, Sep 12, 2023
Site Code:	2328600003
Count Categories:	Cars, Trucks, Bicycles, Pedestrians
Count Period:	07:00-10:00, 11:30-13:30, 15:00-18:00
Weather:	Clear
Comments:	

Ontario Traffic Inc.
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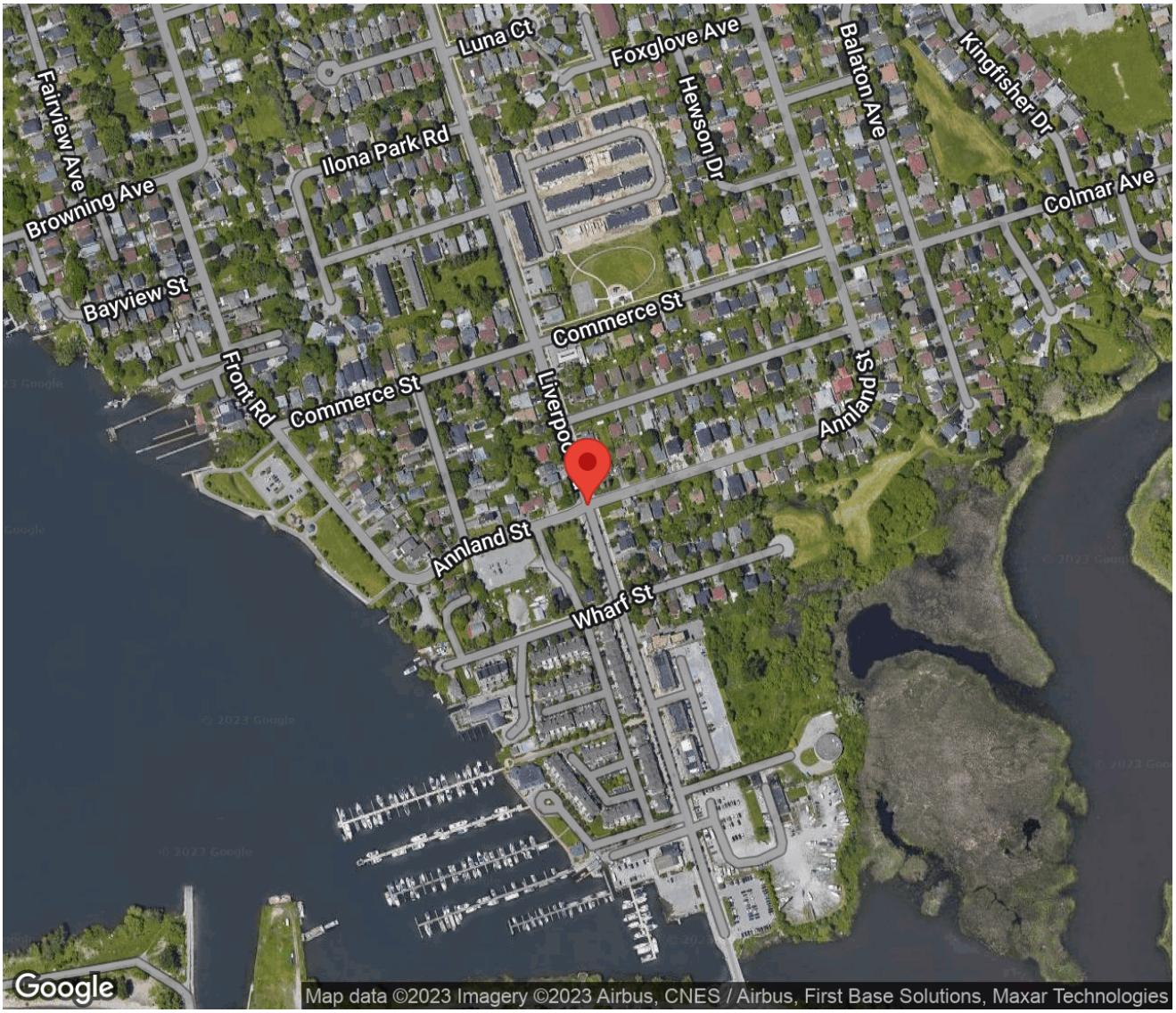
Traffic Count Map

Intersection:	Liverpool Rd & Annland St
Site Code:	2328600003
Municipality:	Pickering
Count Date:	Sep 12, 2023



Ontario Traffic Inc.
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Traffic Count Summary

Intersection:	Liverpool Rd & Annland St
Site Code:	2328600003
Municipality:	Pickering
Count Date:	Sep 12, 2023

Liverpool Rd - Traffic Summary

	North Approach Totals						South Approach Totals						
	Includes Cars, Trucks, Bicycles						Includes Cars, Trucks, Bicycles						
Hour	Left	Thru	Right	U-Turn	Total	Peds	Left	Thru	Right	U-Turn	Total	Peds	Total
07:00 - 08:00	4	26	3	1	34	4	2	51	0	0	53	4	87
08:00 - 09:00	6	76	3	0	85	1	1	79	4	0	84	1	169
09:00 - 10:00	1	74	4	0	79	0	1	57	1	0	59	1	138
BREAK													
11:30 - 12:00	7	53	2	0	62	0	2	27	2	0	31	2	93
12:00 - 13:00	2	90	4	0	96	0	7	73	2	0	82	5	178
13:00 - 13:30	4	30	9	0	43	0	7	29	3	0	39	0	82
BREAK													
15:00 - 16:00	8	102	6	0	116	0	6	107	2	0	115	1	231
16:00 - 17:00	16	108	7	1	132	0	6	106	1	0	113	4	245
17:00 - 18:00	9	116	7	0	132	0	6	84	4	1	95	3	227
GRAND TOTAL	**57**	**675**	**45**	**2**	**779**	**5**	**38**	**613**	**19**	**1**	**671**	**21**	**1450**

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Summary

Intersection: Liverpool Rd & Annland St
Site Code: 2328600003
Municipality: Pickering
Count Date: Sep 12, 2023

Annland St - Traffic Summary

Hour	East Approach Totals (Includes Cars, Trucks, Bicycles)						West Approach Totals (Includes Cars, Trucks, Bicycles)						Total
	Left	Thru	Right	U-Turn	Total	Peds	Left	Thru	Right	U-Turn	Total	Peds	
07:00 - 08:00	0	0	6	0	6	7	1	0	2	0	3	8	9
08:00 - 09:00	2	1	13	0	16	7	7	1	5	0	13	3	29
09:00 - 10:00	3	0	6	0	9	2	2	0	1	0	3	0	12
BREAK													
11:30 - 12:00	0	1	8	0	9	2	3	1	1	0	5	5	14
12:00 - 13:00	8	1	6	0	15	52	3	1	2	0	6	10	21
13:00 - 13:30	0	0	1	0	1	47	3	1	6	0	10	5	11
BREAK													
15:00 - 16:00	9	4	9	0	22	8	6	3	6	0	15	9	37
16:00 - 17:00	1	1	8	0	10	4	5	0	9	0	14	7	24
17:00 - 18:00	3	1	10	0	14	13	3	2	7	0	12	22	26
GRAND TOTAL	**26**	**9**	**67**	**0**	**102**	**142**	**33**	**9**	**39**	**0**	**81**	**69**	**183**

Ontario Traffic Inc.
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Traffic Count Data

Intersection: Liverpool Rd & Annland St
Site Code: 2328600003
Municipality: Pickering
Count Date: Sep 12, 2023

North Approach - Liverpool Rd

Start Time	Cars					Trucks					Bicycles					Total Peds
					Total					Total					Total	
07:00	0	3	0	1	4	0	0	0	0	0	0	0	0	0	0	2
07:15	1	8	0	0	9	0	1	0	0	1	0	0	0	0	0	2
07:30	1	3	1	0	5	0	0	0	0	0	0	0	0	0	0	0
07:45	2	11	2	0	15	0	0	0	0	0	0	0	0	0	0	0
08:00	1	13	0	0	14	1	0	0	0	1	0	0	0	0	0	0
08:15	0	14	0	0	14	0	1	0	0	1	0	0	0	0	0	1
08:30	1	32	2	0	35	0	0	0	0	0	0	0	0	0	0	0
08:45	3	16	1	0	20	0	0	0	0	0	0	0	0	0	0	0
09:00	0	16	0	0	16	0	1	0	0	1	0	0	0	0	0	0
09:15	0	13	1	0	14	0	1	0	0	1	0	0	0	0	0	0
09:30	1	19	0	0	20	0	1	0	0	1	0	0	0	0	0	0
09:45	0	23	3	0	26	0	0	0	0	0	0	0	0	0	0	0
SUBTOTAL	10	171	10	1	192	1	5	0	0	6	0	0	0	0	0	5

Ontario Traffic Inc.
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Traffic Count Data

Intersection: Liverpool Rd & Annland St
Site Code: 2328600003
Municipality: Pickering
Count Date: Sep 12, 2023

North Approach - Liverpool Rd

Start Time	Cars					Trucks					Bicycles					Total Peds
					Total					Total					Total	
11:30	4	25	1	0	30	0	0	0	0	0	0	0	0	0	0	0
11:45	3	27	1	0	31	0	1	0	0	1	0	0	0	0	0	0
12:00	0	21	1	0	22	0	1	0	0	1	0	0	0	0	0	0
12:15	0	22	1	0	23	0	1	0	0	1	0	0	0	0	0	0
12:30	0	21	2	0	23	0	1	0	0	1	0	0	0	0	0	0
12:45	2	22	0	0	24	0	1	0	0	1	0	0	0	0	0	0
13:00	3	15	5	0	23	0	0	1	0	1	0	0	0	0	0	0
13:15	1	15	3	0	19	0	0	0	0	0	0	0	0	0	0	0
SUBTOTAL	13	168	14	0	195	0	5	1	0	6	0	0	0	0	0	0

Ontario Traffic Inc.
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Traffic Count Data

Intersection: Liverpool Rd & Annland St
Site Code: 2328600003
Municipality: Pickering
Count Date: Sep 12, 2023

North Approach - Liverpool Rd

Start Time	Cars					Trucks					Bicycles					Total Peds
	↰	↑	↱	↷	Total	↰	↑	↱	↷	Total	↰	↑	↱	↷	Total	
15:00	0	18	2	0	20	0	0	0	0	0	0	1	0	0	1	0
15:15	3	15	1	0	19	0	0	0	0	0	0	0	0	0	0	0
15:30	2	32	3	0	37	1	0	0	0	1	0	0	0	0	0	0
15:45	1	36	0	0	37	1	0	0	0	1	0	0	0	0	0	0
16:00	3	29	0	0	32	0	0	0	0	0	0	0	0	0	0	0
16:15	4	31	4	1	40	0	1	0	0	1	0	0	0	0	0	0
16:30	6	22	2	0	30	0	0	0	0	0	0	0	1	0	1	0
16:45	3	25	0	0	28	0	0	0	0	0	0	0	0	0	0	0
17:00	2	23	4	0	29	0	0	0	0	0	0	2	0	0	2	0
17:15	3	29	1	0	33	0	0	0	0	0	0	0	0	0	0	0
17:30	1	29	2	0	32	0	0	0	0	0	0	0	0	0	0	0
17:45	3	33	0	0	36	0	0	0	0	0	0	0	0	0	0	0
SUBTOTAL	31	322	19	1	373	2	1	0	0	3	0	3	1	0	4	0
GRAND TOTAL	54	661	43	2	760	3	11	1	0	15	0	3	1	0	4	5

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Data

Intersection: Liverpool Rd & Annland St
Site Code: 2328600003
Municipality: Pickering
Count Date: Sep 12, 2023

South Approach - Liverpool Rd

Start Time	Cars					Trucks					Bicycles					Total Peds
	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	
07:00	0	9	0	0	9	0	0	0	0	0	0	0	0	0	0	1
07:15	0	12	0	0	12	0	1	0	0	1	0	0	0	0	0	2
07:30	1	13	0	0	14	0	1	0	0	1	0	0	0	0	0	1
07:45	1	15	0	0	16	0	0	0	0	0	0	0	0	0	0	0
08:00	0	14	0	0	14	0	0	0	0	0	0	0	0	0	0	0
08:15	0	17	0	0	17	0	0	0	0	0	0	0	0	0	0	0
08:30	0	32	2	0	34	0	1	0	0	1	0	0	0	0	0	0
08:45	1	15	2	0	18	0	0	0	0	0	0	0	0	0	0	1
09:00	0	11	0	0	11	0	0	0	0	0	0	0	0	0	0	0
09:15	0	14	0	0	14	0	0	0	0	0	0	0	0	0	0	0
09:30	1	14	1	0	16	0	3	0	0	3	0	0	0	0	0	1
09:45	0	15	0	0	15	0	0	0	0	0	0	0	0	0	0	0
SUBTOTAL	4	181	5	0	190	0	6	0	0	6	0	0	0	0	0	6

Ontario Traffic Inc.
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Traffic Count Data

Intersection: Liverpool Rd & Annland St
Site Code: 2328600003
Municipality: Pickering
Count Date: Sep 12, 2023

South Approach - Liverpool Rd

Start Time	Cars					Trucks					Bicycles					Total Peds
					Total					Total					Total	
11:30	1	13	0	0	14	0	0	0	0	0	0	0	0	0	0	1
11:45	1	13	2	0	16	0	1	0	0	1	0	0	0	0	0	1
12:00	2	11	0	0	13	0	0	0	0	0	0	0	0	0	0	2
12:15	1	25	0	0	26	0	1	0	0	1	0	0	0	0	0	1
12:30	2	23	1	0	26	0	1	0	0	1	0	0	0	0	0	1
12:45	2	11	1	0	14	0	1	0	0	1	0	0	0	0	0	1
13:00	2	17	2	0	21	0	1	0	0	1	0	0	0	0	0	0
13:15	5	11	1	0	17	0	0	0	0	0	0	0	0	0	0	0
SUBTOTAL	16	124	7	0	147	0	5	0	0	5	0	0	0	0	0	7

Ontario Traffic Inc.
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Traffic Count Data

Intersection: Liverpool Rd & Annland St
Site Code: 2328600003
Municipality: Pickering
Count Date: Sep 12, 2023

South Approach - Liverpool Rd

Start Time	Cars					Trucks					Bicycles					Total Peds
	↰	↑	↱	↷	Total	↰	↑	↱	↷	Total	↰	↑	↱	↷	Total	
15:00	2	16	1	0	19	0	0	0	0	0	0	2	0	0	2	1
15:15	0	21	0	0	21	0	1	0	0	1	0	0	0	0	0	0
15:30	1	29	0	0	30	0	0	0	0	0	0	0	0	0	0	0
15:45	3	38	1	0	42	0	0	0	0	0	0	0	0	0	0	0
16:00	2	33	0	0	35	0	0	0	0	0	0	0	0	0	0	1
16:15	3	27	0	0	30	0	0	0	0	0	0	0	0	0	0	2
16:30	0	22	1	0	23	0	0	0	0	0	0	0	0	0	0	1
16:45	1	24	0	0	25	0	0	0	0	0	0	0	0	0	0	0
17:00	2	18	1	0	21	0	0	0	0	0	0	0	0	0	0	0
17:15	3	18	0	0	21	0	0	0	0	0	0	0	1	0	1	3
17:30	1	24	1	0	26	0	0	0	0	0	0	0	0	0	0	0
17:45	0	24	1	1	26	0	0	0	0	0	0	0	0	0	0	0
SUBTOTAL	18	294	6	1	319	0	1	0	0	1	0	2	1	0	3	8
GRAND TOTAL	38	599	18	1	656	0	12	0	0	12	0	2	1	0	3	21

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Data

Intersection: Liverpool Rd & Annland St
Site Code: 2328600003
Municipality: Pickering
Count Date: Sep 12, 2023

East Approach - Annland St

Start Time	Cars					Trucks					Bicycles					Total Peds
	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	
07:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
07:15	0	0	3	0	3	0	0	0	0	0	0	0	0	0	0	4
07:30	0	0	1	0	1	0	0	1	0	1	0	0	0	0	0	2
07:45	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0
08:00	0	0	3	0	3	0	0	0	0	0	0	0	0	0	0	0
08:15	0	0	1	0	1	0	0	1	0	1	0	0	0	0	0	5
08:30	0	0	7	0	7	0	0	0	0	0	0	0	1	0	1	1
08:45	2	1	0	0	3	0	0	0	0	0	0	0	0	0	0	1
09:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:15	1	0	2	0	3	0	0	0	0	0	0	0	0	0	0	0
09:30	2	0	4	0	6	0	0	0	0	0	0	0	0	0	0	1
09:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
SUBTOTAL	5	1	22	0	28	0	0	2	0	2	0	0	1	0	1	16

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Data

Intersection: Liverpool Rd & Annland St
Site Code: 2328600003
Municipality: Pickering
Count Date: Sep 12, 2023

East Approach - Annland St

Start Time	Cars					Trucks					Bicycles					Total Peds
					Total					Total					Total	
11:30	0	1	4	0	5	0	0	0	0	0	0	0	0	0	0	1
11:45	0	0	4	0	4	0	0	0	0	0	0	0	0	0	0	1
12:00	2	0	5	0	7	0	0	0	0	0	0	0	0	0	0	4
12:15	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	3
12:30	3	0	0	0	3	0	0	0	0	0	0	0	0	0	0	42
12:45	2	1	1	0	4	0	0	0	0	0	0	0	0	0	0	3
13:00	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0
13:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	47
SUBTOTAL	8	2	15	0	25	0	0	0	0	0	0	0	0	0	0	101

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Data

Intersection: Liverpool Rd & Annland St
Site Code: 2328600003
Municipality: Pickering
Count Date: Sep 12, 2023

East Approach - Annland St

Start Time	Cars					Trucks					Bicycles					Total Peds
	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	
15:00	2	0	2	0	4	0	0	0	0	0	0	1	0	0	1	5
15:15	4	2	2	0	8	0	0	0	0	0	0	0	0	0	0	3
15:30	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
15:45	2	1	4	0	7	0	0	0	0	0	0	0	1	0	1	0
16:00	0	1	1	0	2	0	0	0	0	0	0	0	0	0	0	1
16:15	1	0	2	0	3	0	0	0	0	0	0	0	0	0	0	1
16:30	0	0	4	0	4	0	0	0	0	0	0	0	0	0	0	1
16:45	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	1
17:00	1	0	1	0	2	0	0	0	0	0	0	0	0	0	0	5
17:15	1	0	2	0	3	0	0	0	0	0	0	0	0	0	0	1
17:30	0	1	2	0	3	0	0	0	0	0	0	0	0	0	0	4
17:45	1	0	5	0	6	0	0	0	0	0	0	0	0	0	0	3
SUBTOTAL	13	5	26	0	44	0	0	0	0	0	0	1	1	0	2	25
GRAND TOTAL	**26**	**8**	**63**	**0**	**97**	**0**	**0**	**2**	**0**	**2**	**0**	**1**	**2**	**0**	**3**	**142**

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Data

Intersection: Liverpool Rd & Annland St
Site Code: 2328600003
Municipality: Pickering
Count Date: Sep 12, 2023

West Approach - Annland St

Start Time	Cars					Trucks					Bicycles					Total Peds
	↰	↑	↱	↩	Total	↰	↑	↱	↩	Total	↰	↑	↱	↩	Total	
07:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
07:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
07:30	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	1
07:45	1	0	1	0	2	0	0	0	0	0	0	0	0	0	0	0
08:00	1	0	1	0	2	0	0	0	0	0	0	0	0	0	0	0
08:15	3	0	0	0	3	0	0	0	0	0	0	0	0	0	0	1
08:30	2	0	2	0	4	0	0	0	0	0	0	0	0	0	0	1
08:45	1	1	2	0	4	0	0	0	0	0	0	0	0	0	0	1
09:00	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0
09:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:30	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0
09:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SUBTOTAL	10	1	8	0	19	0	0	0	0	0	0	0	0	0	0	11

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Data

Intersection: Liverpool Rd & Annland St
Site Code: 2328600003
Municipality: Pickering
Count Date: Sep 12, 2023

West Approach - Annland St

Start Time	Cars					Trucks					Bicycles					Total Peds
					Total					Total					Total	
11:30	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	3
11:45	1	1	1	0	3	0	0	0	0	0	0	0	0	0	0	2
12:00	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	2
12:15	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	2
12:30	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	3
12:45	1	0	1	0	2	0	1	0	0	1	0	0	0	0	0	3
13:00	2	1	3	0	6	0	0	0	0	0	0	0	0	0	0	2
13:15	1	0	3	0	4	0	0	0	0	0	0	0	0	0	0	3
SUBTOTAL	9	2	9	0	20	0	1	0	0	1	0	0	0	0	0	20

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Data

Intersection: Liverpool Rd & Annland St
Site Code: 2328600003
Municipality: Pickering
Count Date: Sep 12, 2023

West Approach - Annland St

Start Time	Cars					Trucks					Bicycles					Total Peds
	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	
15:00	3	0	2	0	5	0	0	0	0	0	0	0	0	0	0	0
15:15	1	1	1	0	3	0	0	0	0	0	0	0	0	0	0	0
15:30	0	1	2	0	3	0	0	0	0	0	0	0	0	0	0	2
15:45	2	1	1	0	4	0	0	0	0	0	0	0	0	0	0	7
16:00	0	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0
16:15	3	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0
16:30	1	0	5	0	6	0	0	0	0	0	0	0	0	0	0	6
16:45	1	0	2	0	3	0	0	0	0	0	0	0	0	0	0	1
17:00	1	0	2	0	3	0	0	0	0	0	0	0	0	0	0	3
17:15	1	0	1	0	2	0	0	0	0	0	0	2	0	0	2	6
17:30	1	0	2	0	3	0	0	0	0	0	0	0	0	0	0	9
17:45	0	0	2	0	2	0	0	0	0	0	0	0	0	0	0	4
SUBTOTAL	14	3	22	0	39	0	0	0	0	0	0	2	0	0	2	38
GRAND TOTAL	**33**	**6**	**39**	**0**	**78**	**0**	**1**	**0**	**0**	**1**	**0**	**2**	**0**	**0**	**2**	**69**

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Peak Hour Diagram

Specified Period		One Hour Peak	
From:	07:00:00	From:	08:00:00
To:	10:00:00	To:	09:00:00

Intersection: Liverpool Rd & Annland St
Site Code: 2328600003
Count Date: Sep 12, 2023

Weather conditions: Clear

**** Unsignalized Intersection ****

Major Road: Liverpool Rd runs N/S

North Approach

	Out	In	Total
Cars	83	96	179
Trucks	2	2	4
Bicycles	0	1	1
	85	**99**	**184**

Liverpool Rd

Bicycles	0	0	0	0
Trucks	0	1	1	0
Cars	3	75	5	0
Totals	**3**	**76**	**6**	**0**

East Approach

	Out	In	Total
Cars	14	10	24
Trucks	1	1	2
Bicycles	1	0	1
	16	**11**	**27**

Peds: 1

Annland St

Bicycles	Trucks	Cars	Totals
0	0	0	**0**
0	0	7	**7**
0	0	1	**1**
0	0	5	**5**

Peds: 3

Peds: 7

Annland St

Totals	Cars	Trucks	Bicycles
0	0	0	0
13	11	1	1
1	1	0	0
2	2	0	0

Peds: 1

West Approach

	Out	In	Total
Cars	13	5	18
Trucks	0	0	0
Bicycles	0	0	0
	13	**5**	**18**

Liverpool Rd

Totals	**1**	**79**	**4**	**0**
Cars	1	78	4	0
Trucks	0	1	0	0
Bicycles	0	0	0	0

South Approach

	Out	In	Total
Cars	83	82	165
Trucks	1	1	2
Bicycles	0	0	0
	84	**83**	**167**

Cars - Trucks - Bicycles

Comments

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Peak Hour Summary

Intersection:	Liverpool Rd & Annland St
Site Code:	2328600003
Count Date:	Sep 12, 2023
Period:	07:00 - 10:00

Peak Hour Data (08:00 - 09:00)

Start Time	North Approach Liverpool Rd						South Approach Liverpool Rd						East Approach Annland St						West Approach Annland St						Total Vehicles
					Peds	Total					Peds	Total					Peds	Total					Peds	Total	
08:00	2	13	0	0	0	15	0	14	0	0	0	14	0	0	3	0	0	3	1	0	1	0	0	2	34
08:15	0	15	0	0	1	15	0	17	0	0	0	17	0	0	2	0	5	2	3	0	0	0	1	3	37
08:30	1	32	2	0	0	35	0	33	2	0	0	35	0	0	8	0	1	8	2	0	2	0	1	4	82
08:45	3	16	1	0	0	20	1	15	2	0	1	18	2	1	0	0	1	3	1	1	2	0	1	4	45
Grand Total	**6**	**76**	**3**	**0**	**1**	**85**	**1**	**79**	**4**	**0**	**1**	**84**	**2**	**1**	**13**	**0**	**7**	**16**	**7**	**1**	**5**	**0**	**3**	**13**	**198**
Approach %	7.1	89.4	3.5	0		-	1.2	94	4.8	0		-	12.5	6.3	81.3	0		-	53.8	7.7	38.5	0		-	
Totals %	3	38.4	1.5	0		42.9	0.5	39.9	2	0		42.4	1	0.5	6.6	0		8.1	3.5	0.5	2.5	0		6.6	
PHF	**0.5**	**0.59**	**0.38**	**0**		**0.61**	**0.25**	**0.6**	**0.5**	**0**		**0.6**	**0.25**	**0.25**	**0.41**	**0**		**0.5**	**0.58**	**0.25**	**0.63**	**0**		**0.81**	**0.6**
Cars	5	75	3	0		83	1	78	4	0		83	2	1	11	0		14	7	1	5	0		13	193
% Cars	83.3	98.7	100	0		97.6	100	98.7	100	0		98.8	100	100	84.6	0		87.5	100	100	100	0		100	97.5
Trucks	1	1	0	0		2	0	1	0	0		1	0	0	1	0		1	0	0	0	0		0	4
% Trucks	16.7	1.3	0	0		2.4	0	1.3	0	0		1.2	0	0	7.7	0		6.3	0	0	0	0		0	2
Bicycles	0	0	0	0		0	0	0	0	0		0	0	0	1	0		1	0	0	0	0		0	1
% Bicycles	0	0	0	0		0	0	0	0	0		0	0	0	7.7	0		6.3	0	0	0	0		0	0.5
Peds					1	-					1	-					7	-					3	-	12
% Peds					8.3	-					8.3	-					58.3	-					25	-	

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Peak Hour Diagram

Specified Period		One Hour Peak	
From:	11:30:00	From:	11:45:00
To:	13:30:00	To:	12:45:00

Intersection: Liverpool Rd & Annland St
Site Code: 2328600003
Count Date: Sep 12, 2023

Weather conditions: Clear

**** Unsignalized Intersection ****

Major Road: Liverpool Rd runs N/S

North Approach

	Out	In	Total
Cars	99	84	183
Trucks	4	3	7
Bicycles	0	0	0
	103	**87**	**190**

Liverpool Rd

Bicycles	0	0	0	0
Trucks	0	4	0	0
Cars	5	91	3	0
Totals	**5**	**95**	**3**	**0**

East Approach

	Out	In	Total
Cars	15	7	22
Trucks	0	0	0
Bicycles	0	0	0
	15	**7**	**22**

Peds: 0

Annland St

Bicycles	Trucks	Cars	Totals
0	0	0	**0**
0	0	3	**3**
0	0	1	**1**
0	0	2	**2**

Peds: 9

Peds: 50

Annland St

Totals	Cars	Trucks	Bicycles
0	0	0	0
9	9	0	0
0	0	0	0
6	6	0	0

Peds: 5

West Approach

	Out	In	Total
Cars	6	11	17
Trucks	0	0	0
Bicycles	0	0	0
	6	**11**	**17**

Totals	**6**	**75**	**3**	**0**
Cars	6	72	3	0
Trucks	0	3	0	0
Bicycles	0	0	0	0

Liverpool Rd

South Approach

	Out	In	Total
Cars	81	99	180
Trucks	3	4	7
Bicycles	0	0	0
	84	**103**	**187**

Cars - Trucks - Bicycles

Comments

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Peak Hour Summary

Intersection:	Liverpool Rd & Annland St
Site Code:	2328600003
Count Date:	Sep 12, 2023
Period:	11:30 - 13:30

Peak Hour Data (11:45 - 12:45)

Start Time	North Approach Liverpool Rd						South Approach Liverpool Rd						East Approach Annland St						West Approach Annland St						Total Vehicles
					Peds	Total					Peds	Total					Peds	Total					Peds	Total	
11:45	3	28	1	0	0	32	1	14	2	0	1	17	0	0	4	0	1	4	1	1	1	0	2	3	56
12:00	0	22	1	0	0	23	2	11	0	0	2	13	2	0	5	0	4	7	0	0	1	0	2	1	44
12:15	0	23	1	0	0	24	1	26	0	0	1	27	1	0	0	0	3	1	1	0	0	0	2	1	53
12:30	0	22	2	0	0	24	2	24	1	0	1	27	3	0	0	0	42	3	1	0	0	0	3	1	55
Grand Total	**3**	**95**	**5**	**0**	**0**	**103**	**6**	**75**	**3**	**0**	**5**	**84**	**6**	**0**	**9**	**0**	**50**	**15**	**3**	**1**	**2**	**0**	**9**	**6**	**208**
Approach %	2.9	92.2	4.9	0		-	7.1	89.3	3.6	0		-	40	0	60	0		-	50	16.7	33.3	0		-	
Totals %	1.4	45.7	2.4	0		49.5	2.9	36.1	1.4	0		40.4	2.9	0	4.3	0		7.2	1.4	0.5	1	0		2.9	
PHF	**0.25**	**0.85**	**0.63**	**0**		**0.8**	**0.75**	**0.72**	**0.38**	**0**		**0.78**	**0.5**	**0**	**0.45**	**0**		**0.54**	**0.75**	**0.25**	**0.5**	**0**		**0.5**	**0.93**
Cars	3	91	5	0		99	6	72	3	0		81	6	0	9	0		15	3	1	2	0		6	201
% Cars	100	95.8	100	0		96.1	100	96	100	0		96.4	100	0	100	0		100	100	100	100	0		100	96.6
Trucks	0	4	0	0		4	0	3	0	0		3	0	0	0	0		0	0	0	0	0		0	7
% Trucks	0	4.2	0	0		3.9	0	4	0	0		3.6	0	0	0	0		0	0	0	0	0		0	3.4
Bicycles	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0
% Bicycles	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0
Peds					0	-					5	-					50	-					9	-	64
% Peds					0	-					7.8	-					78.1	-					14.1	-	

Peak Hour Diagram

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

One Hour Peak
From: 15:30:00
To: 16:30:00

Intersection: Liverpool Rd & Annland St
Site Code: 2328600003
Count Date: Sep 12, 2023

Weather conditions: Clear

**** Unsignalized Intersection ****

Major Road: Liverpool Rd runs N/S

North Approach

	Out	In	Total
Cars	146	140	286
Trucks	3	0	3
Bicycles	0	1	1
	149	**141**	**290**

Liverpool Rd

Bicycles	0	0	0	0
Trucks	0	1	2	0
Cars	7	128	10	1
Totals	**7**	**129**	**12**	**1**

East Approach

	Out	In	Total
Cars	13	13	26
Trucks	0	2	2
Bicycles	1	0	1
	14	**15**	**29**

Annland St

Bicycles	Trucks	Cars	Totals	
0	0	0	**0**	
0	0	5	**5**	
0	0	2	**2**	
0	0	5	**5**	

Peds: 0

Peds: 9

Peds: 2

Peds: 3

Annland St

Totals	Cars	Trucks	Bicycles
0	0	0	0
8	7	0	1
2	2	0	0
4	4	0	0

West Approach

	Out	In	Total
Cars	12	18	30
Trucks	0	0	0
Bicycles	0	0	0
	12	**18**	**30**

Liverpool Rd

Totals	**9**	**127**	**1**	**0**
Cars	9	127	1	0
Trucks	0	0	0	0
Bicycles	0	0	0	0

South Approach

	Out	In	Total
Cars	137	137	274
Trucks	0	1	1
Bicycles	0	0	0
	137	**138**	**275**

Cars - Trucks - Bicycles

Comments

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Peak Hour Summary

Intersection:	Liverpool Rd & Annland St
Site Code:	2328600003
Count Date:	Sep 12, 2023
Period:	15:00 - 18:00

Peak Hour Data (15:30 - 16:30)

Start Time	North Approach Liverpool Rd						South Approach Liverpool Rd						East Approach Annland St						West Approach Annland St						Total Vehicles
					Peds	Total					Peds	Total					Peds	Total					Peds	Total	
15:30	3	32	3	0	0	38	1	29	0	0	0	30	1	0	0	0	0	1	0	1	2	0	2	3	72
15:45	2	36	0	0	0	38	3	38	1	0	0	42	2	1	5	0	0	8	2	1	1	0	7	4	92
16:00	3	29	0	0	0	32	2	33	0	0	1	35	0	1	1	0	1	2	0	0	2	0	0	2	71
16:15	4	32	4	1	0	41	3	27	0	0	2	30	1	0	2	0	1	3	3	0	0	0	0	3	77
Grand Total	**12**	**129**	**7**	**1**	**0**	**149**	**9**	**127**	**1**	**0**	**3**	**137**	**4**	**2**	**8**	**0**	**2**	**14**	**5**	**2**	**5**	**0**	**9**	**12**	**312**
Approach %	8.1	86.6	4.7	0.7		-	6.6	92.7	0.7	0		-	28.6	14.3	57.1	0		-	41.7	16.7	41.7	0		-	
Totals %	3.8	41.3	2.2	0.3		47.8	2.9	40.7	0.3	0		43.9	1.3	0.6	2.6	0		4.5	1.6	0.6	1.6	0		3.8	
PHF	**0.75**	**0.9**	**0.44**	**0.25**		**0.91**	**0.75**	**0.84**	**0.25**	**0**		**0.82**	**0.5**	**0.5**	**0.4**	**0**		**0.44**	**0.42**	**0.5**	**0.63**	**0**		**0.75**	**0.85**
Cars	10	128	7	1		146	9	127	1	0		137	4	2	7	0		13	5	2	5	0		12	308
% Cars	83.3	99.2	100	100		98	100	100	100	0		100	100	100	87.5	0		92.9	100	100	100	0		100	98.7
Trucks	2	1	0	0		3	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	3
% Trucks	16.7	0.8	0	0		2	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	1
Bicycles	0	0	0	0		0	0	0	0	0		0	0	0	1	0		1	0	0	0	0		0	1
% Bicycles	0	0	0	0		0	0	0	0	0		0	0	0	12.5	0		7.1	0	0	0	0		0	0.3
Peds					0	-					3	-					2	-					9	-	14
% Peds					0	-					21.4	-					14.3	-					64.3	-	

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Project #23-286 - Dillon Consulting

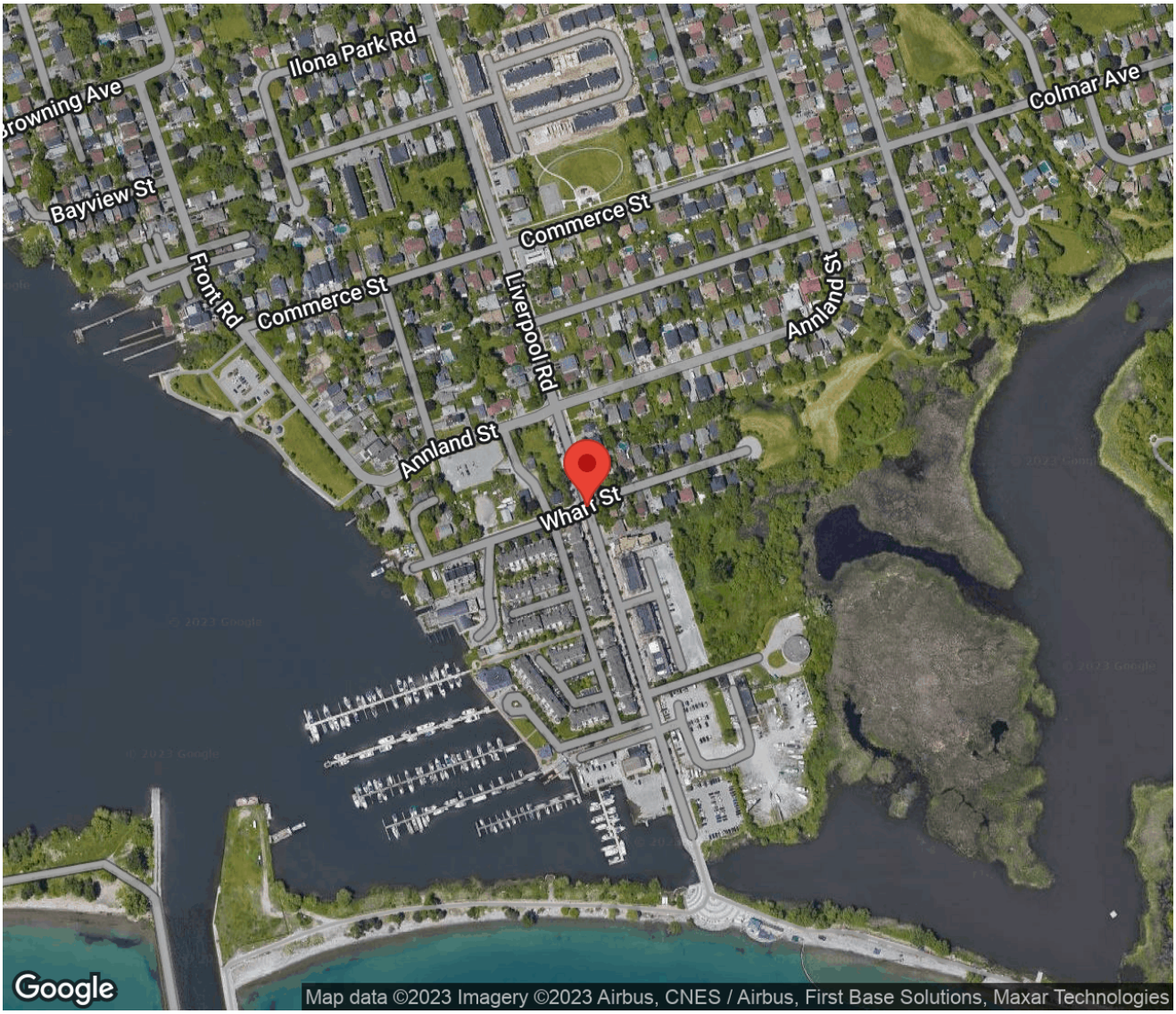
Intersection Count Report

Intersection:	Liverpool Rd & Wharf St
Municipality:	Pickering
Count Date:	Tuesday, Sep 12, 2023
Site Code:	2328600004
Count Categories:	Cars, Trucks, Bicycles, Pedestrians
Count Period:	07:00-10:00, 11:30-13:30, 15:00-18:00
Weather:	Clear
Comments:	

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Map

Intersection:	Liverpool Rd & Wharf St
Site Code:	2328600004
Municipality:	Pickering
Count Date:	Sep 12, 2023



Ontario Traffic Inc.
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Traffic Count Summary

Intersection: Liverpool Rd & Wharf St
Site Code: 2328600004
Municipality: Pickering
Count Date: Sep 12, 2023

Liverpool Rd - Traffic Summary

	North Approach Totals						South Approach Totals						
	Includes Cars, Trucks, Bicycles						Includes Cars, Trucks, Bicycles						
Hour	Left	Thru	Right	U-Turn	Total	Peds	Left	Thru	Right	U-Turn	Total	Peds	Total
07:00 - 08:00	1	22	5	0	28	0	0	35	0	0	35	0	63
08:00 - 09:00	2	71	11	0	84	4	0	59	0	0	59	1	143
09:00 - 10:00	3	62	12	0	77	0	1	37	0	0	38	1	115
BREAK													
11:30 - 12:00	0	42	13	0	55	0	1	21	1	0	23	0	78
12:00 - 13:00	5	65	29	0	99	1	2	64	0	0	66	0	165
13:00 - 13:30	4	24	8	0	36	0	1	29	0	0	30	2	66
BREAK													
15:00 - 16:00	8	83	26	0	117	0	0	87	2	0	89	2	206
16:00 - 17:00	6	77	35	0	118	0	5	78	0	0	83	1	201
17:00 - 18:00	2	81	44	0	127	0	4	79	0	0	83	3	210
GRAND TOTAL	**31**	**527**	**183**	**0**	**741**	**5**	**14**	**489**	**3**	**0**	**506**	**10**	**1247**

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Summary

Intersection:	Liverpool Rd & Wharf St
Site Code:	2328600004
Municipality:	Pickering
Count Date:	Sep 12, 2023

Wharf St - Traffic Summary

	East Approach Totals						West Approach Totals						
	Includes Cars, Trucks, Bicycles						Includes Cars, Trucks, Bicycles						
Hour	Left	Thru	Right	U-Turn	Total	Peds	Left	Thru	Right	U-Turn	Total	Peds	Total
07:00 - 08:00	0	0	2	0	2	7	16	0	0	0	16	6	18
08:00 - 09:00	0	0	4	0	4	3	21	0	2	0	23	8	27
09:00 - 10:00	0	0	5	0	5	4	16	0	0	0	16	1	21
BREAK													
11:30 - 12:00	1	0	3	0	4	0	7	1	1	0	9	7	13
12:00 - 13:00	2	0	4	0	6	57	13	0	2	0	15	15	21
13:00 - 13:30	0	0	2	0	2	46	9	0	1	0	10	13	12
BREAK													
15:00 - 16:00	2	0	7	0	9	10	22	0	0	0	22	12	31
16:00 - 17:00	0	0	3	0	3	4	30	0	2	0	32	11	35
17:00 - 18:00	0	0	2	0	2	16	15	0	5	0	20	31	22
GRAND TOTAL	**5**	**0**	**32**	**0**	**37**	**147**	**149**	**1**	**13**	**0**	**163**	**104**	**200**

Ontario Traffic Inc.
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Traffic Count Data

Intersection: Liverpool Rd & Wharf St
Site Code: 2328600004
Municipality: Pickering
Count Date: Sep 12, 2023

North Approach - Liverpool Rd

Start Time	Cars					Trucks					Bicycles					Total Peds
	↰	↑	↱	↩	Total	↰	↑	↱	↩	Total	↰	↑	↱	↩	Total	
07:00	0	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0
07:15	0	6	2	0	8	0	1	0	0	1	0	0	0	0	0	0
07:30	0	3	1	0	4	0	0	0	0	0	0	0	0	0	0	0
07:45	1	9	2	0	12	0	0	0	0	0	0	0	0	0	0	0
08:00	1	11	2	0	14	0	0	0	0	0	0	0	0	0	0	0
08:15	0	12	2	0	14	0	0	0	0	0	0	0	0	0	0	1
08:30	0	30	3	0	33	0	1	0	0	1	0	0	0	0	0	3
08:45	1	16	4	0	21	0	1	0	0	1	0	0	0	0	0	0
09:00	1	10	7	0	18	0	0	0	0	0	0	0	0	0	0	0
09:15	0	10	2	0	12	0	0	1	0	1	0	0	0	0	0	0
09:30	0	21	1	0	22	1	0	0	0	1	0	0	0	0	0	0
09:45	1	21	1	0	23	0	0	0	0	0	0	0	0	0	0	0
SUBTOTAL	5	152	27	0	184	1	3	1	0	5	0	0	0	0	0	4

Ontario Traffic Inc.
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Traffic Count Data

Intersection: Liverpool Rd & Wharf St
Site Code: 2328600004
Municipality: Pickering
Count Date: Sep 12, 2023

North Approach - Liverpool Rd

Start Time	Cars					Trucks					Bicycles					Total Peds
					Total					Total					Total	
11:30	0	19	6	0	25	0	0	0	0	0	0	0	0	0	0	0
11:45	0	22	7	0	29	0	1	0	0	1	0	0	0	0	0	0
12:00	1	14	8	0	23	0	1	0	0	1	0	0	0	0	0	1
12:15	1	16	6	0	23	0	0	1	0	1	0	0	0	0	0	0
12:30	3	15	6	0	24	0	1	0	0	1	0	0	0	0	0	0
12:45	0	17	8	0	25	0	1	0	0	1	0	0	0	0	0	0
13:00	3	11	4	0	18	0	0	0	0	0	0	0	0	0	0	0
13:15	1	12	4	0	17	0	0	0	0	0	0	1	0	0	1	0
SUBTOTAL	9	126	49	0	184	0	4	1	0	5	0	1	0	0	1	1

Ontario Traffic Inc.
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Traffic Count Data

Intersection: Liverpool Rd & Wharf St
Site Code: 2328600004
Municipality: Pickering
Count Date: Sep 12, 2023

North Approach - Liverpool Rd

Start Time	Cars					Trucks					Bicycles					Total Peds
	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	
15:00	2	14	5	0	21	0	0	0	0	0	0	1	0	0	1	0
15:15	1	14	6	0	21	0	0	0	0	0	0	0	0	0	0	0
15:30	4	22	9	0	35	0	0	0	0	0	0	0	0	0	0	0
15:45	1	32	6	0	39	0	0	0	0	0	0	0	0	0	0	0
16:00	1	23	6	0	30	0	0	0	0	0	0	0	0	0	0	0
16:15	1	24	8	0	33	0	0	0	0	0	0	0	0	0	0	0
16:30	1	16	10	0	27	1	0	0	0	1	0	0	0	0	0	0
16:45	2	14	11	0	27	0	0	0	0	0	0	0	0	0	0	0
17:00	0	17	9	0	26	0	0	0	0	0	0	0	2	0	2	0
17:15	0	21	10	0	31	0	0	0	0	0	0	0	0	0	0	0
17:30	0	21	10	0	31	0	0	0	0	0	0	0	0	0	0	0
17:45	2	22	13	0	37	0	0	0	0	0	0	0	0	0	0	0
SUBTOTAL	15	240	103	0	358	1	0	0	0	1	0	1	2	0	3	0
GRAND TOTAL	29	518	179	0	726	2	7	2	0	11	0	2	2	0	4	5

Ontario Traffic Inc.
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Traffic Count Data

Intersection: Liverpool Rd & Wharf St
Site Code: 2328600004
Municipality: Pickering
Count Date: Sep 12, 2023

South Approach - Liverpool Rd

Start Time	Cars					Trucks					Bicycles					Total Peds
					Total					Total					Total	
07:00	0	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0
07:15	0	7	0	0	7	0	1	0	0	1	0	0	0	0	0	0
07:30	0	11	0	0	11	0	1	0	0	1	0	0	0	0	0	0
07:45	0	10	0	0	10	0	0	0	0	0	0	0	0	0	0	0
08:00	0	10	0	0	10	0	0	0	0	0	0	0	0	0	0	0
08:15	0	11	0	0	11	0	0	0	0	0	0	0	0	0	0	0
08:30	0	27	0	0	27	0	1	0	0	1	0	0	0	0	0	1
08:45	0	10	0	0	10	0	0	0	0	0	0	0	0	0	0	0
09:00	0	7	0	0	7	0	0	0	0	0	0	0	0	0	0	0
09:15	0	9	0	0	9	0	0	0	0	0	0	0	0	0	0	0
09:30	1	11	0	0	12	0	0	0	0	0	0	0	0	0	0	0
09:45	0	10	0	0	10	0	0	0	0	0	0	0	0	0	0	1
SUBTOTAL	1	128	0	0	129	0	3	0	0	3	0	0	0	0	0	2

Ontario Traffic Inc.
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Traffic Count Data

Intersection: Liverpool Rd & Wharf St
Site Code: 2328600004
Municipality: Pickering
Count Date: Sep 12, 2023

South Approach - Liverpool Rd

Start Time	Cars					Trucks					Bicycles					Total Peds
					Total					Total					Total	
11:30	1	8	1	0	10	0	0	0	0	0	0	0	0	0	0	0
11:45	0	12	0	0	12	0	1	0	0	1	0	0	0	0	0	0
12:00	1	11	0	0	12	0	0	0	0	0	0	0	0	0	0	0
12:15	0	21	0	0	21	0	1	0	0	1	0	0	0	0	0	0
12:30	1	21	0	0	22	0	0	0	0	0	0	0	0	0	0	0
12:45	0	10	0	0	10	0	0	0	0	0	0	0	0	0	0	0
13:00	1	13	0	0	14	0	2	0	0	2	0	0	0	0	0	0
13:15	0	14	0	0	14	0	0	0	0	0	0	0	0	0	0	2
SUBTOTAL	4	110	1	0	115	0	4	0	0	4	0	0	0	0	0	2

Ontario Traffic Inc.
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Traffic Count Data

Intersection: Liverpool Rd & Wharf St
Site Code: 2328600004
Municipality: Pickering
Count Date: Sep 12, 2023

South Approach - Liverpool Rd

Start Time	Cars					Trucks					Bicycles					Total Peds
	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	
15:00	0	11	1	0	12	0	0	0	0	0	0	2	0	0	2	0
15:15	0	15	0	0	15	0	1	0	0	1	0	0	0	0	0	0
15:30	0	21	1	0	22	0	0	0	0	0	0	0	0	0	0	0
15:45	0	37	0	0	37	0	0	0	0	0	0	0	0	0	0	2
16:00	2	20	0	0	22	0	0	0	0	0	0	0	0	0	0	0
16:15	0	23	0	0	23	0	0	0	0	0	0	0	0	0	0	1
16:30	2	18	0	0	20	0	0	0	0	0	0	0	0	0	0	0
16:45	1	17	0	0	18	0	0	0	0	0	0	0	0	0	0	0
17:00	0	18	0	0	18	0	0	0	0	0	0	0	0	0	0	0
17:15	2	15	0	0	17	0	0	0	0	0	0	1	0	0	1	0
17:30	1	24	0	0	25	0	0	0	0	0	0	0	0	0	0	3
17:45	1	21	0	0	22	0	0	0	0	0	0	0	0	0	0	0
SUBTOTAL	9	240	2	0	251	0	1	0	0	1	0	3	0	0	3	6
GRAND TOTAL	14	478	3	0	495	0	8	0	0	8	0	3	0	0	3	10

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Data

Intersection: Liverpool Rd & Wharf St
Site Code: 2328600004
Municipality: Pickering
Count Date: Sep 12, 2023

East Approach - Wharf St

Start Time	Cars					Trucks					Bicycles					Total Peds
	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	
07:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
07:15	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	4
07:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
07:45	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	1
08:00	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0
08:15	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0
08:30	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	2
08:45	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	1
09:00	0	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0
09:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
09:30	0	0	1	0	1	0	0	1	0	1	0	0	0	0	0	2
09:45	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0
SUBTOTAL	0	0	9	0	9	0	0	2	0	2	0	0	0	0	0	14

Ontario Traffic Inc.
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Traffic Count Data

Intersection: Liverpool Rd & Wharf St
Site Code: 2328600004
Municipality: Pickering
Count Date: Sep 12, 2023

East Approach - Wharf St

Start Time	Cars					Trucks					Bicycles					Total Peds
					Total					Total					Total	
11:30	1	0	3	0	4	0	0	0	0	0	0	0	0	0	0	0
11:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5
12:15	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	2
12:30	1	0	2	0	3	0	0	0	0	0	0	0	0	0	0	45
12:45	0	0	2	0	2	0	0	0	0	0	0	0	0	0	0	5
13:00	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	2
13:15	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	44
SUBTOTAL	3	0	9	0	12	0	0	0	0	0	0	0	0	0	0	103

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Data

Intersection: Liverpool Rd & Wharf St
Site Code: 2328600004
Municipality: Pickering
Count Date: Sep 12, 2023

East Approach - Wharf St

Start Time	Cars					Trucks					Bicycles					Total Peds
					Total					Total					Total	
15:00	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	4
15:15	1	0	3	0	4	0	0	0	0	0	0	0	0	0	0	3
15:30	1	0	1	0	2	0	0	0	0	0	0	0	0	0	0	2
15:45	0	0	2	0	2	0	0	0	0	0	0	0	0	0	0	1
16:00	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	1
16:15	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	1
16:30	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0
16:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
17:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5
17:15	0	0	2	0	2	0	0	0	0	0	0	0	0	0	0	3
17:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
17:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
SUBTOTAL	2	0	12	0	14	0	0	0	0	0	0	0	0	0	0	30
GRAND TOTAL	5	0	30	0	35	0	0	2	0	2	0	0	0	0	0	147

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Data

Intersection: Liverpool Rd & Wharf St
Site Code: 2328600004
Municipality: Pickering
Count Date: Sep 12, 2023

West Approach - Wharf St

Start Time	Cars					Trucks					Bicycles					Total Peds
					Total					Total					Total	
07:00	5	0	0	0	5	0	0	0	0	0	0	0	0	0	0	2
07:15	3	0	0	0	3	0	0	0	0	0	0	0	0	0	0	4
07:30	3	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0
07:45	5	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0
08:00	3	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0
08:15	5	0	2	0	7	0	0	0	0	0	0	0	0	0	0	2
08:30	6	0	0	0	6	0	0	0	0	0	0	0	0	0	0	3
08:45	7	0	0	0	7	0	0	0	0	0	0	0	0	0	0	3
09:00	3	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0
09:15	4	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0
09:30	3	0	0	0	3	1	0	0	0	1	0	0	0	0	0	0
09:45	5	0	0	0	5	0	0	0	0	0	0	0	0	0	0	1
SUBTOTAL	52	0	2	0	54	1	0	0	0	1	0	0	0	0	0	15

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Data

Intersection: Liverpool Rd & Wharf St
Site Code: 2328600004
Municipality: Pickering
Count Date: Sep 12, 2023

West Approach - Wharf St

Start Time	Cars					Trucks					Bicycles					Total Peds
					Total					Total					Total	
11:30	3	1	1	0	5	0	0	0	0	0	0	0	0	0	0	2
11:45	4	0	0	0	4	0	0	0	0	0	0	0	0	0	0	5
12:00	2	0	2	0	4	0	0	0	0	0	0	0	0	0	0	1
12:15	5	0	0	0	5	0	0	0	0	0	0	0	0	0	0	5
12:30	3	0	0	0	3	1	0	0	0	1	0	0	0	0	0	6
12:45	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	3
13:00	6	0	0	0	6	0	0	0	0	0	0	0	0	0	0	6
13:15	3	0	1	0	4	0	0	0	0	0	0	0	0	0	0	7
SUBTOTAL	28	1	4	0	33	1	0	0	0	1	0	0	0	0	0	35

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Data

Intersection: Liverpool Rd & Wharf St
Site Code: 2328600004
Municipality: Pickering
Count Date: Sep 12, 2023

West Approach - Wharf St

Start Time	Cars					Trucks					Bicycles					Total Peds
	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	
15:00	7	0	0	0	7	0	0	0	0	0	0	0	0	0	0	2
15:15	3	0	0	0	3	0	0	0	0	0	0	0	0	0	0	3
15:30	8	0	0	0	8	0	0	0	0	0	0	0	0	0	0	1
15:45	4	0	0	0	4	0	0	0	0	0	0	0	0	0	0	6
16:00	13	0	1	0	14	0	0	0	0	0	0	0	0	0	0	0
16:15	6	0	0	0	6	0	0	0	0	0	0	0	0	0	0	4
16:30	4	0	0	0	4	0	0	0	0	0	0	0	0	0	0	4
16:45	7	0	1	0	8	0	0	0	0	0	0	0	0	0	0	3
17:00	4	0	1	0	5	0	0	0	0	0	0	0	0	0	0	1
17:15	4	0	2	0	6	0	0	0	0	0	0	0	0	0	0	11
17:30	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	8
17:45	5	0	2	0	7	0	0	0	0	0	0	0	0	0	0	11
SUBTOTAL	67	0	7	0	74	0	0	0	0	0	0	0	0	0	0	54
GRAND TOTAL	147	1	13	0	161	2	0	0	0	2	0	0	0	0	0	104

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Peak Hour Diagram

Specified Period		One Hour Peak	
From:	07:00:00	From:	08:15:00
To:	10:00:00	To:	09:15:00

Intersection: Liverpool Rd & Wharf St
Site Code: 2328600004
Count Date: Sep 12, 2023

Weather conditions: Clear

**** Unsignalized Intersection ****

Major Road: Liverpool Rd runs N/S

North Approach

	Out	In	Total
Cars	86	81	167
Trucks	2	1	3
Bicycles	0	0	0
	88	**82**	**170**

Liverpool Rd

Bicycles	0	0	0	0
Trucks	0	2	0	0
Cars	16	68	2	0
Totals	**16**	**70**	**2**	**0**

Peds: 4

East Approach

	Out	In	Total
Cars	5	2	7
Trucks	0	0	0
Bicycles	0	0	0
	5	**2**	**7**

Wharf St

Bicycles	Trucks	Cars	Totals
0	0	0	**0**
0	0	21	**21**
0	0	0	**0**
0	0	2	**2**

Peds: 8

Peds: 3

Wharf St

Totals	Cars	Trucks	Bicycles
0	0	0	0
5	5	0	0
0	0	0	0
0	0	0	0

Peds: 1

West Approach

	Out	In	Total
Cars	23	16	39
Trucks	0	0	0
Bicycles	0	0	0
	23	**16**	**39**

Liverpool Rd

Totals	**0**	**56**	**0**	**0**
Cars	0	55	0	0
Trucks	0	1	0	0
Bicycles	0	0	0	0

South Approach

	Out	In	Total
Cars	55	70	125
Trucks	1	2	3
Bicycles	0	0	0
	56	**72**	**128**

Cars - Trucks - Bicycles

Comments

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Peak Hour Summary

Intersection:	Liverpool Rd & Wharf St
Site Code:	2328600004
Count Date:	Sep 12, 2023
Period:	07:00 - 10:00

Peak Hour Data (08:15 - 09:15)

Start Time	North Approach Liverpool Rd						South Approach Liverpool Rd						East Approach Wharf St						West Approach Wharf St						Total Vehicles
	↰	↑	↱	↶	Peds	Total	↰	↑	↱	↶	Peds	Total	↰	↑	↱	↶	Peds	Total	↰	↑	↱	↶	Peds	Total	
08:15	0	12	2	0	1	14	0	11	0	0	0	11	0	0	1	0	0	1	5	0	2	0	2	7	33
08:30	0	31	3	0	3	34	0	28	0	0	1	28	0	0	1	0	2	1	6	0	0	0	3	6	69
08:45	1	17	4	0	0	22	0	10	0	0	0	10	0	0	1	0	1	1	7	0	0	0	3	7	40
09:00	1	10	7	0	0	18	0	7	0	0	0	7	0	0	2	0	0	2	3	0	0	0	0	3	30
Grand Total	**2**	**70**	**16**	**0**	**4**	**88**	**0**	**56**	**0**	**0**	**1**	**56**	**0**	**0**	**5**	**0**	**3**	**5**	**21**	**0**	**2**	**0**	**8**	**23**	**172**
Approach %	2.3	79.5	18.2	0		-	0	100	0	0		-	0	0	100	0		-	91.3	0	8.7	0		-	
Totals %	1.2	40.7	9.3	0		51.2	0	32.6	0	0		32.6	0	0	2.9	0		2.9	12.2	0	1.2	0		13.4	
PHF	**0.5**	**0.56**	**0.57**	**0**		**0.65**	**0**	**0.5**	**0**	**0**		**0.5**	**0**	**0**	**0.63**	**0**		**0.63**	**0.75**	**0**	**0.25**	**0**		**0.82**	**0.62**
Cars	2	68	16	0		86	0	55	0	0		55	0	0	5	0		5	21	0	2	0		23	169
% Cars	100	97.1	100	0		97.7	0	98.2	0	0		98.2	0	0	100	0		100	100	0	100	0		100	98.3
Trucks	0	2	0	0		2	0	1	0	0		1	0	0	0	0		0	0	0	0	0		0	3
% Trucks	0	2.9	0	0		2.3	0	1.8	0	0		1.8	0	0	0	0		0	0	0	0	0		0	1.7
Bicycles	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0
% Bicycles	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0
Peds					4	-					1	-					3	-					8	-	16
% Peds					25	-					6.3	-					18.8	-					50	-	

Ontario Traffic Inc.
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Peak Hour Diagram

Specified Period		One Hour Peak	
From:	11:30:00	From:	11:45:00
To:	13:30:00	To:	12:45:00

Intersection: Liverpool Rd & Wharf St
Site Code: 2328600004
Count Date: Sep 12, 2023

Weather conditions: Clear

**** Unsignalized Intersection ****

Major Road: Liverpool Rd runs N/S

North Approach

	Out	In	Total
Cars	99	81	180
Trucks	4	3	7
Bicycles	0	0	0
	103	**84**	**187**

Liverpool Rd

Bicycles	0	0	0	0
Trucks	1	3	0	0
Cars	27	67	5	0
Totals	**28**	**70**	**5**	**0**

East Approach

	Out	In	Total
Cars	4	5	9
Trucks	0	0	0
Bicycles	0	0	0
	4	**5**	**9**

Peds: 1

Wharf St

Bicycles	Trucks	Cars	Totals
0	0	0	**0**
0	1	14	**15**
0	0	0	**0**
0	0	2	**2**

Peds: 17

Peds: 52

Wharf St

Totals	Cars	Trucks	Bicycles
0	0	0	0
2	2	0	0
0	0	0	0
2	2	0	0

Peds: 0

West Approach

	Out	In	Total
Cars	16	29	45
Trucks	1	1	2
Bicycles	0	0	0
	17	**30**	**47**

Liverpool Rd

Totals	**2**	**67**	**0**	**0**
Cars	2	65	0	0
Trucks	0	2	0	0
Bicycles	0	0	0	0

South Approach

	Out	In	Total
Cars	67	71	138
Trucks	2	3	5
Bicycles	0	0	0
	69	**74**	**143**

Cars - Trucks - Bicycles

Comments

Ontario Traffic Inc.
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Peak Hour Summary

Intersection:	Liverpool Rd & Wharf St
Site Code:	2328600004
Count Date:	Sep 12, 2023
Period:	11:30 - 13:30

Peak Hour Data (11:45 - 12:45)

Start Time	North Approach Liverpool Rd						South Approach Liverpool Rd						East Approach Wharf St						West Approach Wharf St						Total Vehicles
					Peds	Total					Peds	Total					Peds	Total					Peds	Total	
11:45	0	23	7	0	0	30	0	13	0	0	0	13	0	0	0	0	0	0	4	0	0	0	5	4	47
12:00	1	15	8	0	1	24	1	11	0	0	0	12	0	0	0	0	5	0	2	0	2	0	1	4	40
12:15	1	16	7	0	0	24	0	22	0	0	0	22	1	0	0	0	2	1	5	0	0	0	5	5	52
12:30	3	16	6	0	0	25	1	21	0	0	0	22	1	0	2	0	45	3	4	0	0	0	6	4	54
Grand Total	**5**	**70**	**28**	**0**	**1**	**103**	**2**	**67**	**0**	**0**	**0**	**69**	**2**	**0**	**2**	**0**	**52**	**4**	**15**	**0**	**2**	**0**	**17**	**17**	**193**
Approach %	4.9	68	27.2	0		-	2.9	97.1	0	0		-	50	0	50	0		-	88.2	0	11.8	0		-	
Totals %	2.6	36.3	14.5	0		53.4	1	34.7	0	0		35.8	1	0	1	0		2.1	7.8	0	1	0		8.8	
PHF	**0.42**	**0.76**	**0.88**	**0**		**0.86**	**0.5**	**0.76**	**0**	**0**		**0.78**	**0.5**	**0**	**0.25**	**0**		**0.33**	**0.75**	**0**	**0.25**	**0**		**0.85**	**0.89**
Cars	5	67	27	0		99	2	65	0	0		67	2	0	2	0		4	14	0	2	0		16	186
% Cars	100	95.7	96.4	0		96.1	100	97	0	0		97.1	100	0	100	0		100	93.3	0	100	0		94.1	96.4
Trucks	0	3	1	0		4	0	2	0	0		2	0	0	0	0		0	1	0	0	0		1	7
% Trucks	0	4.3	3.6	0		3.9	0	3	0	0		2.9	0	0	0	0		0	6.7	0	0	0		5.9	3.6
Bicycles	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0
% Bicycles	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0
Peds					1	-					0	-					52	-					17	-	70
% Peds					1.4	-					0	-					74.3	-					24.3	-	

Ontario Traffic Inc.
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Peak Hour Diagram

Specified Period		One Hour Peak	
From:	15:00:00	From:	15:30:00
To:	18:00:00	To:	16:30:00

Intersection: Liverpool Rd & Wharf St
Site Code: 2328600004
Count Date: Sep 12, 2023

Weather conditions: Clear

**** Unsignalized Intersection ****

Major Road: Liverpool Rd runs N/S

North Approach

	Out	In	Total
Cars	137	137	274
Trucks	0	0	0
Bicycles	0	0	0
	137	**137**	**274**

Liverpool Rd

Bicycles	0	0	0	0
Trucks	0	0	0	0
Cars	29	101	7	0
Totals	**29**	**101**	**7**	**0**

East Approach

	Out	In	Total
Cars	6	8	14
Trucks	0	0	0
Bicycles	0	0	0
	6	**8**	**14**

Peds: 0

Wharf St

Bicycles	Trucks	Cars	Totals
0	0	0	**0**
0	0	31	**31**
0	0	0	**0**
0	0	1	**1**

Peds: 11

Peds: 5

Wharf St

Totals	Cars	Trucks	Bicycles
0	0	0	0
5	5	0	0
0	0	0	0
1	1	0	0

Peds: 3

West Approach

	Out	In	Total
Cars	32	31	63
Trucks	0	0	0
Bicycles	0	0	0
	32	**31**	**63**

Liverpool Rd

Totals	**2**	**101**	**1**	**0**
Cars	2	101	1	0
Trucks	0	0	0	0
Bicycles	0	0	0	0

South Approach

	Out	In	Total
Cars	104	103	207
Trucks	0	0	0
Bicycles	0	0	0
	104	**103**	**207**

Cars - Trucks - Bicycles

Comments

Ontario Traffic Inc.
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Peak Hour Summary

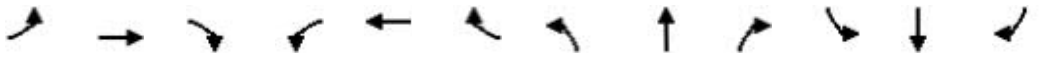
Intersection:	Liverpool Rd & Wharf St
Site Code:	2328600004
Count Date:	Sep 12, 2023
Period:	15:00 - 18:00

Peak Hour Data (15:30 - 16:30)

Start Time	North Approach Liverpool Rd						South Approach Liverpool Rd						East Approach Wharf St						West Approach Wharf St						Total Vehicles
					Peds	Total					Peds	Total					Peds	Total					Peds	Total	
15:30	4	22	9	0	0	35	0	21	1	0	0	22	1	0	1	0	2	2	8	0	0	0	1	8	67
15:45	1	32	6	0	0	39	0	37	0	0	2	37	0	0	2	0	1	2	4	0	0	0	6	4	82
16:00	1	23	6	0	0	30	2	20	0	0	0	22	0	0	1	0	1	1	13	0	1	0	0	14	67
16:15	1	24	8	0	0	33	0	23	0	0	1	23	0	0	1	0	1	1	6	0	0	0	4	6	63
Grand Total	**7**	**101**	**29**	**0**	**0**	**137**	**2**	**101**	**1**	**0**	**3**	**104**	**1**	**0**	**5**	**0**	**5**	**6**	**31**	**0**	**1**	**0**	**11**	**32**	**279**
Approach %	5.1	73.7	21.2	0		-	1.9	97.1	1	0		-	16.7	0	83.3	0		-	96.9	0	3.1	0		-	
Totals %	2.5	36.2	10.4	0		49.1	0.7	36.2	0.4	0		37.3	0.4	0	1.8	0		2.2	11.1	0	0.4	0		11.5	
PHF	**0.44**	**0.79**	**0.81**	**0**		**0.88**	**0.25**	**0.68**	**0.25**	**0**		**0.7**	**0.25**	**0**	**0.63**	**0**		**0.75**	**0.6**	**0**	**0.25**	**0**		**0.57**	**0.85**
Cars	7	101	29	0		137	2	101	1	0		104	1	0	5	0		6	31	0	1	0		32	279
% Cars	100	100	100	0		100	100	100	100	0		100	100	0	100	0		100	100	0	100	0		100	100
Trucks	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0
% Trucks	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0
Bicycles	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0
% Bicycles	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0
Peds					0	-					3	-					5	-					11	-	19
% Peds					0	-					15.8	-					26.3	-					57.9	-	

Appendix B

Synchro Analysis Worksheets

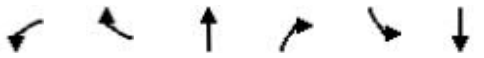


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	189	528	118	61	218	314	108	387	146	342	272	206
Future Volume (vph)	189	528	118	61	218	314	108	387	146	342	272	206
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	70.0		70.0	35.0		145.0	50.0		60.0	40.0		50.0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Ped Bike Factor	0.99		0.92	0.98		0.97	0.98	0.99		0.99		0.96
Frt			0.850			0.850		0.959				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3471	1599	1752	3406	1429	1703	3350	0	1656	3505	1583
Flt Permitted	0.552			0.336			0.578			0.266		
Satd. Flow (perm)	1017	3471	1471	605	3406	1389	1016	3350	0	460	3505	1520
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			139			165		52				215
Link Speed (k/h)		50			50			40			50	
Link Distance (m)		252.8			279.7			148.3			189.4	
Travel Time (s)		18.2			20.1			13.3			13.6	
Confl. Peds. (#/hr)	10		22	22		10	17		16	16		17
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	2%	4%	1%	3%	6%	13%	6%	2%	3%	9%	3%	2%
Adj. Flow (vph)	197	550	123	64	227	327	113	403	152	356	283	215
Shared Lane Traffic (%)												
Lane Group Flow (vph)	197	550	123	64	227	327	113	555	0	356	283	215
Turn Type	pm+pt	NA	Perm	pm+pt	NA	pm+ov	pm+pt	NA		pm+pt	NA	pm+ov
Protected Phases	5	2		1	6	7	3	8		7	4	5
Permitted Phases	2		2	6		6	8			4		4
Minimum Split (s)	9.5	24.4	24.4	9.5	24.4	9.5	9.5	24.7		9.5	24.7	9.5
Total Split (s)	12.0	31.4	31.4	9.6	29.0	28.0	10.1	31.0		28.0	48.9	12.0
Total Split (%)	12.0%	31.4%	31.4%	9.6%	29.0%	28.0%	10.1%	31.0%		28.0%	48.9%	12.0%
Maximum Green (s)	9.0	25.0	25.0	6.6	22.6	25.0	7.1	24.3		25.0	42.2	9.0
Yellow Time (s)	3.0	4.1	4.1	3.0	4.1	3.0	3.0	3.8		3.0	3.8	3.0
All-Red Time (s)	0.0	2.3	2.3	0.0	2.3	0.0	0.0	2.9		0.0	2.9	0.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	3.0	6.4	6.4	3.0	6.4	3.0	3.0	6.7		3.0	6.7	3.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lead	Lag		Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Walk Time (s)		7.0	7.0		7.0			7.0			7.0	
Flash Don't Walk (s)		11.0	11.0		11.0			11.0			11.0	
Pedestrian Calls (#/hr)		17	17		16			22			10	
Act Effct Green (s)	37.4	25.0	25.0	32.6	22.6	51.0	35.1	24.3		56.0	42.2	54.9
Actuated g/C Ratio	0.37	0.25	0.25	0.33	0.23	0.51	0.35	0.24		0.56	0.42	0.55
v/c Ratio	0.44	0.63	0.26	0.24	0.30	0.41	0.28	0.65		0.64	0.19	0.23
Control Delay (s/veh)	25.3	37.3	5.5	22.5	33.4	8.0	14.8	34.9		18.8	18.6	2.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay (s/veh)	25.3	37.3	5.5	22.5	33.4	8.0	14.8	34.9		18.8	18.6	2.0
LOS	C	D	A	C	C	A	B	C		B	B	A
Approach Delay (s/veh)		30.1			18.8			31.5			14.5	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS		C			B			C			B	
Queue Length 50th (m)	27.6	52.7	0.0	8.3	20.3	16.3	10.2	48.7		38.3	18.6	0.0
Queue Length 95th (m)	45.4	71.1	11.3	17.3	31.3	34.6	18.7	67.5		61.2	27.6	9.4
Internal Link Dist (m)		228.8			255.7			124.3			165.4	
Turn Bay Length (m)	70.0		70.0	35.0		145.0	50.0			40.0		50.0
Base Capacity (vph)	448	867	472	272	769	799	405	853		556	1479	937
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Reduced v/c Ratio	0.44	0.63	0.26	0.24	0.30	0.41	0.28	0.65		0.64	0.19	0.23

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 10 (10%), Referenced to phase 2:EBTL, Start of Green			
Natural Cycle: 75			
Control Type: Pretimed			
Maximum v/c Ratio: 0.65			
Intersection Signal Delay (s/veh): 23.7		Intersection LOS: C	
Intersection Capacity Utilization 77.8%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 100: Liverpool Rd & Bayly Street



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Stop			Stop
Traffic Volume (vph)	15	131	191	13	105	138
Future Volume (vph)	15	131	191	13	105	138
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	17	151	220	15	121	159

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total (vph)	168	235	280
Volume Left (vph)	17	0	121
Volume Right (vph)	151	15	0
Hadj (s)	-0.43	0.03	0.14
Departure Headway (s)	4.7	4.7	4.7
Degree Utilization, x	0.22	0.31	0.37
Capacity (veh/h)	701	735	727
Control Delay (s/veh)	9.0	9.7	10.5
Approach Delay (s/veh)	9.0	9.7	10.5
Approach LOS	A	A	B

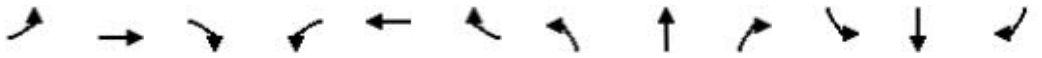
Intersection Summary			
Delay	9.9		
Level of Service	A		
Intersection Capacity Utilization	43.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	7	1	5	2	1	12	1	80	4	6	77	3
Future Volume (Veh/h)	7	1	5	2	1	12	1	80	4	6	77	3
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60
Hourly flow rate (vph)	12	2	8	3	2	20	2	133	7	10	128	5
Pedestrians		3			7			1			1	
Lane Width (m)		3.6			3.6			3.6			3.6	
Walking Speed (m/s)		1.2			1.2			1.2			1.2	
Percent Blockage		0			1			0			0	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	316	305	135	308	304	145	136			147		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	316	305	135	308	304	145	136			147		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.3	4.1			4.3		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.4	2.2			2.4		
p0 queue free %	98	100	99	100	100	98	100			99		
cM capacity (veh/h)	614	602	917	629	602	881	1457			1340		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	22	25	142	143
Volume Left	12	3	2	10
Volume Right	8	20	7	5
cSH	697	812	1457	1340
Volume to Capacity	0.03	0.03	0.00*	0.00*
Queue Length 95th (m)	0.8	0.8	0.0	0.2
Control Delay (s/veh)	10.3	9.6	0.1	0.6
Lane LOS	B	A	A	A
Approach Delay (s/veh)	10.3	9.6	0.1	0.6
Approach LOS	B	A		

Intersection Summary				
Average Delay	1.7			
Intersection Capacity Utilization	18.8%	ICU Level of Service	A	
Analysis Period (min)	15			

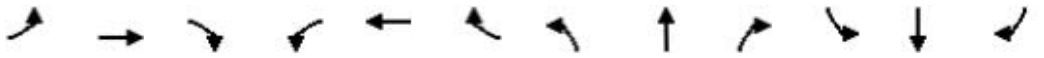
* Value less than 0.01.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	21	0	2	0	0	5	0	57	0	2	71	16
Future Volume (vph)	21	0	2	0	0	5	0	57	0	2	71	16
Peak Hour Factor	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62
Hourly flow rate (vph)	34	0	3	0	0	8	0	92	0	3	115	26

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	37	8	92	144
Volume Left (vph)	34	0	0	3
Volume Right (vph)	3	8	0	26
Hadj (s)	0.14	-0.60	0.03	-0.06
Departure Headway (s)	4.6	3.8	4.2	4.0
Degree Utilization, x	0.05	0.01	0.11	0.16
Capacity (veh/h)	749	874	838	877
Control Delay (s/veh)	7.8	6.9	7.7	7.8
Approach Delay (s/veh)	7.8	6.9	7.7	7.8
Approach LOS	A	A	A	A

Intersection Summary				
Delay	7.7			
Level of Service	A			
Intersection Capacity Utilization	22.9%	ICU Level of Service	A	
Analysis Period (min)	15			



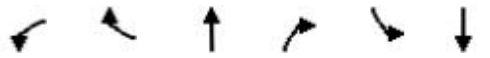
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	301	638	179	111	479	639	74	411	135	305	387	331
Future Volume (vph)	301	638	179	111	479	639	74	411	135	305	387	331
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	70.0		70.0	35.0		145.0	50.0		60.0	40.0		50.0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Ped Bike Factor	0.99		0.92	0.98		0.96	0.98	0.98		0.98		0.96
Frt			0.850			0.850		0.963				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1787	3505	1615	1770	3574	1568	1787	3400	0	1752	3574	1615
Flt Permitted	0.316			0.296			0.443			0.287		
Satd. Flow (perm)	588	3505	1486	540	3574	1506	819	3400	0	517	3574	1543
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			186			106		42				345
Link Speed (k/h)		50			50			40			50	
Link Distance (m)		198.9			279.7			153.4			188.0	
Travel Time (s)		14.3			20.1			13.8			13.5	
Confl. Peds. (#/hr)	17		22	22		17	20		41	41		20
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	1%	3%	0%	2%	1%	3%	1%	0%	1%	3%	1%	0%
Adj. Flow (vph)	314	665	186	116	499	666	77	428	141	318	403	345
Shared Lane Traffic (%)												
Lane Group Flow (vph)	314	665	186	116	499	666	77	569	0	318	403	345
Turn Type	pm+pt	NA	Perm	pm+pt	NA	pm+ov	pm+pt	NA		pm+pt	NA	pm+ov
Protected Phases	5	2		1	6	7	3	8		7	4	5
Permitted Phases	2		2	6		6	8			4		4
Minimum Split (s)	9.5	24.4	24.4	9.5	24.4	9.5	9.5	24.7		9.5	24.7	9.5
Total Split (s)	14.0	36.0	36.0	10.0	32.0	23.0	23.0	31.0		23.0	31.0	14.0
Total Split (%)	14.0%	36.0%	36.0%	10.0%	32.0%	23.0%	23.0%	31.0%		23.0%	31.0%	14.0%
Maximum Green (s)	11.0	29.6	29.6	7.0	25.6	20.0	20.0	24.3		20.0	24.3	11.0
Yellow Time (s)	3.0	4.1	4.1	3.0	4.1	3.0	3.0	3.8		3.0	3.8	3.0
All-Red Time (s)	0.0	2.3	2.3	0.0	2.3	0.0	0.0	2.9		0.0	2.9	0.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	3.0	6.4	6.4	3.0	6.4	3.0	3.0	6.7		3.0	6.7	3.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lead	Lag		Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Walk Time (s)		7.0	7.0		7.0			7.0			7.0	
Flash Don't Walk (s)		11.0	11.0		11.0			11.0			11.0	
Pedestrian Calls (#/hr)		20	20		41			22			17	
Act Effct Green (s)	43.0	29.6	29.6	36.0	25.6	49.0	48.0	24.3		48.0	24.3	39.0
Actuated g/C Ratio	0.43	0.30	0.30	0.36	0.26	0.49	0.48	0.24		0.48	0.24	0.39
v/c Ratio	0.82	0.64	0.33	0.41	0.55	0.83	0.13	0.66		0.64	0.46	0.42
Control Delay (s/veh)	39.8	34.0	5.7	22.6	34.8	27.5	13.3	35.9		21.5	34.4	3.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay (s/veh)	39.8	34.0	5.7	22.6	34.8	27.5	13.3	35.9		21.5	34.4	3.8
LOS	D	C	A	C	C	C	B	D		C	C	A
Approach Delay (s/veh)		31.0			29.9			33.2			20.6	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS		C			C			C			C	
Queue Length 50th (m)	43.2	61.7	0.0	14.1	46.3	88.5	7.7	51.2		37.1	37.0	0.0
Queue Length 95th (m)	#80.8	81.6	15.9	25.6	63.2	#152.0	15.5	70.2		57.0	52.0	16.3
Internal Link Dist (m)		174.9			255.7			129.4			164.0	
Turn Bay Length (m)	70.0		70.0	35.0		145.0	50.0			40.0		50.0
Base Capacity (vph)	384	1037	570	280	914	804	586	857		495	868	820
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Reduced v/c Ratio	0.82	0.64	0.33	0.41	0.55	0.83	0.13	0.66		0.64	0.46	0.42

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 10 (10%), Referenced to phase 2:EBTL, Start of Green			
Natural Cycle: 75			
Control Type: Pretimed			
Maximum v/c Ratio: 0.83			
Intersection Signal Delay (s/veh): 28.3		Intersection LOS: C	
Intersection Capacity Utilization 86.7%		ICU Level of Service E	
Analysis Period (min) 15			

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

Splits and Phases: 100: Liverpool Rd & Bayly Street



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Stop			Stop
Traffic Volume (vph)	10	104	224	14	163	263
Future Volume (vph)	10	104	224	14	163	263
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	11	114	246	15	179	289

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total (vph)	125	261	468
Volume Left (vph)	11	0	179
Volume Right (vph)	114	15	0
Hadj (s)	-0.48	-0.02	0.10
Departure Headway (s)	5.1	4.8	4.7
Degree Utilization, x	0.18	0.35	0.60
Capacity (veh/h)	626	725	754
Control Delay (s/veh)	9.2	10.3	14.5
Approach Delay (s/veh)	9.2	10.3	14.5
Approach LOS	A	B	B

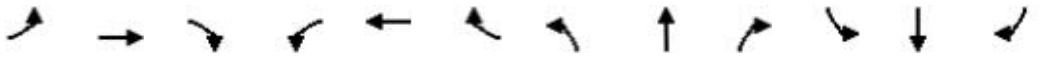
Intersection Summary			
Delay	12.4		
Level of Service	B		
Intersection Capacity Utilization	52.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	2	5	4	2	7	9	128	1	12	130	7
Future Volume (Veh/h)	5	2	5	4	2	7	9	128	1	12	130	7
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Hourly flow rate (vph)	6	2	6	5	2	8	11	151	1	14	153	8
Pedestrians		9			2			3				
Lane Width (m)		3.6			3.6			3.6				
Walking Speed (m/s)		1.2			1.2			1.2				
Percent Blockage		1			0			0				
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	377	370	169	371	374	154	170			154		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	377	370	169	371	374	154	170			154		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.3		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.4		
p0 queue free %	99	100	99	99	100	99	99			99		
cM capacity (veh/h)	561	547	871	570	545	896	1409			1338		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	14	15	163	175
Volume Left	6	5	11	14
Volume Right	6	8	1	8
cSH	660	702	1409	1338
Volume to Capacity	0.02	0.02	0.00*	0.01
Queue Length 95th (m)	0.5	0.5	0.2	0.3
Control Delay (s/veh)	10.6	10.2	0.6	0.7
Lane LOS	B	B	A	A
Approach Delay (s/veh)	10.6	10.2	0.6	0.7
Approach LOS	B	B		

Intersection Summary			
Average Delay	1.4		
Intersection Capacity Utilization	22.5%	ICU Level of Service	A
Analysis Period (min)	15		

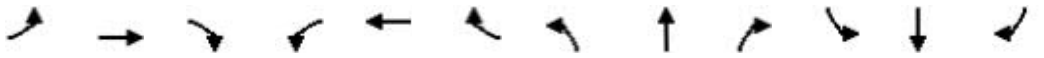
* Value less than 0.01.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	31	0	1	1	0	5	2	102	1	7	102	29
Future Volume (vph)	31	0	1	1	0	5	2	102	1	7	102	29
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Hourly flow rate (vph)	36	0	1	1	0	6	2	120	1	8	120	34

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	37	7	123	162
Volume Left (vph)	36	1	2	8
Volume Right (vph)	1	6	1	34
Hadj (s)	0.18	-0.49	0.00	-0.12
Departure Headway (s)	4.7	4.1	4.2	4.0
Degree Utilization, x	0.05	0.01	0.14	0.18
Capacity (veh/h)	712	811	842	881
Control Delay (s/veh)	7.9	7.1	7.8	7.9
Approach Delay (s/veh)	7.9	7.1	7.8	7.9
Approach LOS	A	A	A	A

Intersection Summary				
Delay	7.9			
Level of Service	A			
Intersection Capacity Utilization	26.5%	ICU Level of Service	A	
Analysis Period (min)	15			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	191	533	122	68	220	317	115	468	172	345	293	208
Future Volume (vph)	191	533	122	68	220	317	115	468	172	345	293	208
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	70.0		70.0	35.0		145.0	50.0		60.0	40.0		50.0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Ped Bike Factor	0.99		0.92	0.98		0.97	0.98	0.99		0.99		0.96
Frt			0.850			0.850		0.960				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3471	1599	1752	3406	1429	1703	3354	0	1656	3505	1583
Flt Permitted	0.551			0.332			0.566			0.185		
Satd. Flow (perm)	1015	3471	1471	598	3406	1389	996	3354	0	320	3505	1520
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			139			133		49				217
Link Speed (k/h)		50			50			40			50	
Link Distance (m)		252.8			279.7			148.3			189.4	
Travel Time (s)		18.2			20.1			13.3			13.6	
Confl. Peds. (#/hr)	10		22	22		10	17		16	16		17
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	2%	4%	1%	3%	6%	13%	6%	2%	3%	9%	3%	2%
Adj. Flow (vph)	199	555	127	71	229	330	120	488	179	359	305	217
Shared Lane Traffic (%)												
Lane Group Flow (vph)	199	555	127	71	229	330	120	667	0	359	305	217
Turn Type	pm+pt	NA	Perm	pm+pt	NA	pm+ov	pm+pt	NA		pm+pt	NA	pm+ov
Protected Phases	5	2		1	6	7	3	8		7	4	5
Permitted Phases	2		2	6		6	8			4		4
Minimum Split (s)	9.5	24.4	24.4	9.5	24.4	9.5	9.5	24.7		9.5	24.7	9.5
Total Split (s)	12.0	31.4	31.4	9.6	29.0	28.0	10.1	31.0		28.0	48.9	12.0
Total Split (%)	12.0%	31.4%	31.4%	9.6%	29.0%	28.0%	10.1%	31.0%		28.0%	48.9%	12.0%
Maximum Green (s)	9.0	25.0	25.0	6.6	22.6	25.0	7.1	24.3		25.0	42.2	9.0
Yellow Time (s)	3.0	4.1	4.1	3.0	4.1	3.0	3.0	3.8		3.0	3.8	3.0
All-Red Time (s)	0.0	2.3	2.3	0.0	2.3	0.0	0.0	2.9		0.0	2.9	0.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	3.0	6.4	6.4	3.0	6.4	3.0	3.0	6.7		3.0	6.7	3.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lead	Lag		Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Walk Time (s)		7.0	7.0		7.0			7.0			7.0	
Flash Don't Walk (s)		11.0	11.0		11.0			11.0			11.0	
Pedestrian Calls (#/hr)		17	17		16			22			10	
Act Effct Green (s)	37.4	25.0	25.0	32.6	22.6	51.0	35.1	24.3		56.0	42.2	54.9
Actuated g/C Ratio	0.37	0.25	0.25	0.33	0.23	0.51	0.35	0.24		0.56	0.42	0.55
v/c Ratio	0.45	0.64	0.27	0.26	0.30	0.42	0.30	0.78		0.70	0.21	0.23
Control Delay (s/veh)	25.5	37.4	6.0	22.9	33.4	9.6	15.1	40.2		24.8	18.8	2.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay (s/veh)	25.5	37.4	6.0	22.9	33.4	9.6	15.1	40.2		24.8	18.8	2.0
LOS	C	D	A	C	C	A	B	D		C	B	A
Approach Delay (s/veh)		30.2			19.7			36.4			17.1	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS		C			B			D			B	
Queue Length 50th (m)	27.9	53.3	0.0	9.2	20.5	20.5	10.9	62.4		42.2	20.2	0.0
Queue Length 95th (m)	45.7	71.9	12.1	18.8	31.5	39.9	19.7	84.1		75.7	29.6	9.4
Internal Link Dist (m)		228.8			255.7			124.3			165.4	
Turn Bay Length (m)	70.0		70.0	35.0		145.0	50.0			40.0		50.0
Base Capacity (vph)	447	867	472	271	769	783	399	852		513	1479	938
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Reduced v/c Ratio	0.45	0.64	0.27	0.26	0.30	0.42	0.30	0.78		0.70	0.21	0.23

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 10 (10%), Referenced to phase 2:EBTL, Start of Green			
Natural Cycle: 75			
Control Type: Pretimed			
Maximum v/c Ratio: 0.78			
Intersection Signal Delay (s/veh): 26.0		Intersection LOS: C	
Intersection Capacity Utilization 81.1%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 100: Liverpool Rd & Bayly Street

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Stop			Stop
Traffic Volume (vph)	19	132	302	27	106	167
Future Volume (vph)	19	132	302	27	106	167
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	22	152	347	31	122	192

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total (vph)	174	378	314
Volume Left (vph)	22	0	122
Volume Right (vph)	152	31	0
Hadj (s)	-0.41	0.02	0.13
Departure Headway (s)	5.1	4.8	5.0
Degree Utilization, x	0.25	0.50	0.43
Capacity (veh/h)	629	725	693
Control Delay (s/veh)	9.8	12.6	11.7
Approach Delay (s/veh)	9.8	12.6	11.7
Approach LOS	A	B	B

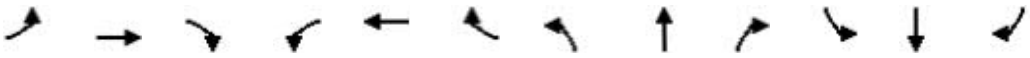
Intersection Summary			
Delay	11.7		
Level of Service	B		
Intersection Capacity Utilization	51.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	7	1	7	7	1	12	2	209	9	6	113	3
Future Volume (Veh/h)	7	1	7	7	1	12	2	209	9	6	113	3
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60
Hourly flow rate (vph)	12	2	12	12	2	20	3	348	15	10	188	5
Pedestrians		3			7			1			1	
Lane Width (m)		3.6			3.6			3.6			3.6	
Walking Speed (m/s)		1.2			1.2			1.2			1.2	
Percent Blockage		0			1			0			0	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	597	590	195	593	585	364	196			370		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	597	590	195	593	585	364	196			370		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.3	4.1			4.3		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.4	2.2			2.4		
p0 queue free %	97	100	99	97	100	97	100			99		
cM capacity (veh/h)	396	415	849	404	418	664	1385			1104		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	26	34	366	203
Volume Left	12	12	3	10
Volume Right	12	20	15	5
cSH	528	526	1385	1104
Volume to Capacity	0.05	0.06	0.00*	0.00*
Queue Length 95th (m)	1.2	1.7	0.1	0.2
Control Delay (s/veh)	12.2	12.3	0.1	0.5
Lane LOS	B	B	A	A
Approach Delay (s/veh)	12.2	12.3	0.1	0.5
Approach LOS	B	B		

Intersection Summary				
Average Delay	1.4			
Intersection Capacity Utilization	22.8%	ICU Level of Service	A	
Analysis Period (min)	15			

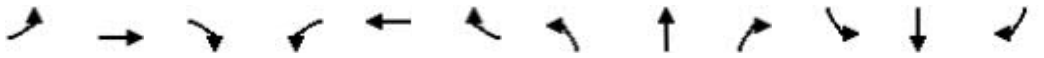
* Value less than 0.01.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	21	0	2	0	0	5	0	192	0	2	114	16
Future Volume (vph)	21	0	2	0	0	5	0	192	0	2	114	16
Peak Hour Factor	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62
Hourly flow rate (vph)	34	0	3	0	0	8	0	310	0	3	184	26

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	37	8	310	213
Volume Left (vph)	34	0	0	3
Volume Right (vph)	3	8	0	26
Hadj (s)	0.14	-0.60	0.03	-0.03
Departure Headway (s)	5.2	4.5	4.3	4.3
Degree Utilization, x	0.05	0.01	0.37	0.25
Capacity (veh/h)	623	701	825	808
Control Delay (s/veh)	8.5	7.5	9.7	8.8
Approach Delay (s/veh)	8.5	7.5	9.7	8.8
Approach LOS	A	A	A	A

Intersection Summary				
Delay	9.3			
Level of Service	A			
Intersection Capacity Utilization	25.2%	ICU Level of Service	A	
Analysis Period (min)	15			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	304	644	196	141	484	645	87	489	156	308	493	334
Future Volume (vph)	304	644	196	141	484	645	87	489	156	308	493	334
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	70.0		70.0	35.0		145.0	50.0		60.0	40.0		50.0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Ped Bike Factor	0.99		0.92	0.98		0.96	0.99	0.98		0.98		0.96
Frt			0.850			0.850		0.964				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1787	3505	1615	1770	3574	1568	1787	3405	0	1752	3574	1615
Flt Permitted	0.312			0.291			0.335			0.204		
Satd. Flow (perm)	581	3505	1486	531	3574	1506	622	3405	0	370	3574	1543
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			204			106		41				348
Link Speed (k/h)		50			50			40			50	
Link Distance (m)		198.9			279.7			153.4			188.0	
Travel Time (s)		14.3			20.1			13.8			13.5	
Confl. Peds. (#/hr)	17		22	22		17	20		41	41		20
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	1%	3%	0%	2%	1%	3%	1%	0%	1%	3%	1%	0%
Adj. Flow (vph)	317	671	204	147	504	672	91	509	163	321	514	348
Shared Lane Traffic (%)												
Lane Group Flow (vph)	317	671	204	147	504	672	91	672	0	321	514	348
Turn Type	pm+pt	NA	Perm	pm+pt	NA	pm+ov	pm+pt	NA		pm+pt	NA	pm+ov
Protected Phases	5	2		1	6	7	3	8		7	4	5
Permitted Phases	2		2	6		6	8			4		4
Minimum Split (s)	9.5	24.4	24.4	9.5	24.4	9.5	9.5	24.7		9.5	24.7	9.5
Total Split (s)	14.0	36.0	36.0	10.0	32.0	23.0	23.0	31.0		23.0	31.0	14.0
Total Split (%)	14.0%	36.0%	36.0%	10.0%	32.0%	23.0%	23.0%	31.0%		23.0%	31.0%	14.0%
Maximum Green (s)	11.0	29.6	29.6	7.0	25.6	20.0	20.0	24.3		20.0	24.3	11.0
Yellow Time (s)	3.0	4.1	4.1	3.0	4.1	3.0	3.0	3.8		3.0	3.8	3.0
All-Red Time (s)	0.0	2.3	2.3	0.0	2.3	0.0	0.0	2.9		0.0	2.9	0.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	3.0	6.4	6.4	3.0	6.4	3.0	3.0	6.7		3.0	6.7	3.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lead	Lag		Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Walk Time (s)		7.0	7.0		7.0			7.0			7.0	
Flash Don't Walk (s)		11.0	11.0		11.0			11.0			11.0	
Pedestrian Calls (#/hr)		20	20		41			22			17	
Act Effct Green (s)	43.0	29.6	29.6	36.0	25.6	49.0	48.0	24.3		48.0	24.3	39.0
Actuated g/C Ratio	0.43	0.30	0.30	0.36	0.26	0.49	0.48	0.24		0.48	0.24	0.39
v/c Ratio	0.83	0.65	0.35	0.53	0.55	0.84	0.17	0.78		0.71	0.59	0.42
Control Delay (s/veh)	41.2	34.1	5.7	26.2	34.9	28.1	13.6	40.6		27.0	36.8	3.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay (s/veh)	41.2	34.1	5.7	26.2	34.9	28.1	13.6	40.6		27.0	36.8	3.8
LOS	D	C	A	C	C	C	B	D		C	D	A
Approach Delay (s/veh)		31.1			30.5			37.4			24.4	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS		C			C			D			C	
Queue Length 50th (m)	43.7	62.5	0.0	18.2	46.9	90.0	9.2	63.6		37.6	48.9	0.0
Queue Length 95th (m)	#83.4	82.4	16.5	31.5	63.9	#157.2	17.6	85.3		68.0	66.4	16.5
Internal Link Dist (m)		174.9			255.7			129.4			164.0	
Turn Bay Length (m)	70.0		70.0	35.0		145.0	50.0			40.0		50.0
Base Capacity (vph)	382	1037	583	277	914	804	531	858		454	868	821
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Reduced v/c Ratio	0.83	0.65	0.35	0.53	0.55	0.84	0.17	0.78		0.71	0.59	0.42

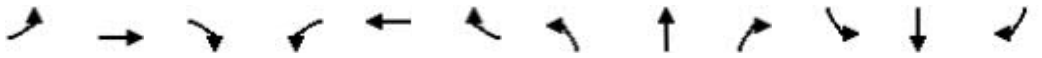
Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 10 (10%), Referenced to phase 2:EBTL, Start of Green			
Natural Cycle: 75			
Control Type: Pretimed			
Maximum v/c Ratio: 0.84			
Intersection Signal Delay (s/veh): 30.2		Intersection LOS: C	
Intersection Capacity Utilization 90.0%		ICU Level of Service E	
Analysis Period (min) 15			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 100: Liverpool Rd & Bayly Street

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Stop			Stop
Traffic Volume (vph)	24	105	336	24	165	416
Future Volume (vph)	24	105	336	24	165	416
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	26	115	369	26	181	457

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total (vph)	141	395	638
Volume Left (vph)	26	0	181
Volume Right (vph)	115	26	0
Hadj (s)	-0.39	-0.02	0.08
Departure Headway (s)	6.0	5.1	5.0
Degree Utilization, x	0.23	0.56	0.88
Capacity (veh/h)	566	670	719
Control Delay (s/veh)	10.7	14.6	32.6
Approach Delay (s/veh)	10.7	14.6	32.6
Approach LOS	B	B	D

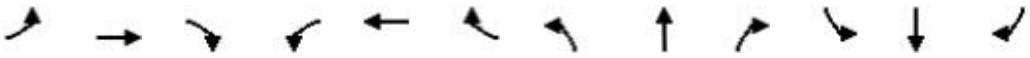
Intersection Summary			
Delay	23.9		
Level of Service	C		
Intersection Capacity Utilization	68.0%	ICU Level of Service	C
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	2	10	17	2	7	15	257	14	12	304	7
Future Volume (Veh/h)	5	2	10	17	2	7	15	257	14	12	304	7
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Hourly flow rate (vph)	6	2	12	20	2	8	18	302	16	14	358	8
Pedestrians		9			2			3				
Lane Width (m)		3.6			3.6			3.6				
Walking Speed (m/s)		1.2			1.2			1.2				
Percent Blockage		1			0			0				
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	754	755	374	754	751	312	375			320		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	754	755	374	754	751	312	375			320		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.3		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.4		
p0 queue free %	98	99	98	94	99	99	98			99		
cM capacity (veh/h)	312	328	670	311	330	732	1186			1158		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	20	30	336	380
Volume Left	6	20	18	14
Volume Right	12	8	16	8
cSH	462	369	1186	1158
Volume to Capacity	0.04	0.08	0.02	0.01
Queue Length 95th (m)	1.1	2.1	0.4	0.3
Control Delay (s/veh)	13.1	15.6	0.6	0.4
Lane LOS	B	C	A	A
Approach Delay (s/veh)	13.1	15.6	0.6	0.4
Approach LOS	B	C		

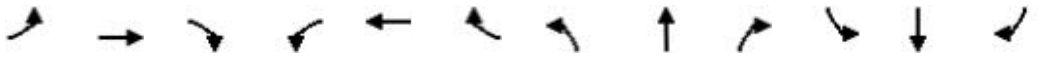
Intersection Summary				
Average Delay	1.4			
Intersection Capacity Utilization	31.3%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	31	0	1	1	0	5	2	250	1	7	294	29
Future Volume (vph)	31	0	1	1	0	5	2	250	1	7	294	29
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Hourly flow rate (vph)	36	0	1	1	0	6	2	294	1	8	346	34

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	37	7	297	388
Volume Left (vph)	36	1	2	8
Volume Right (vph)	1	6	1	34
Hadj (s)	0.18	-0.49	0.00	-0.05
Departure Headway (s)	5.6	5.0	4.4	4.3
Degree Utilization, x	0.06	0.01	0.36	0.46
Capacity (veh/h)	570	619	793	819
Control Delay (s/veh)	8.9	8.0	9.9	10.9
Approach Delay (s/veh)	8.9	8.0	9.9	10.9
Approach LOS	A	A	A	B

Intersection Summary				
Delay	10.4			
Level of Service	B			
Intersection Capacity Utilization	36.6%	ICU Level of Service	A	
Analysis Period (min)	15			



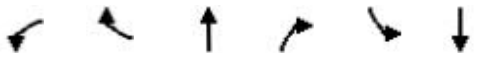
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	191	533	125	71	220	317	123	483	180	345	300	208
Future Volume (vph)	191	533	125	71	220	317	123	483	180	345	300	208
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	70.0		70.0	35.0		145.0	50.0		60.0	40.0		50.0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Ped Bike Factor	0.99		0.92	0.98		0.97	0.98	0.99		0.99		0.96
Frt			0.850			0.850		0.959				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3471	1599	1752	3406	1429	1703	3350	0	1656	3505	1583
Flt Permitted	0.551			0.332			0.562			0.169		
Satd. Flow (perm)	1015	3471	1471	598	3406	1389	989	3350	0	293	3505	1520
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			139			129		51				217
Link Speed (k/h)		50			50			40			50	
Link Distance (m)		252.8			279.7			148.3			189.4	
Travel Time (s)		18.2			20.1			13.3			13.6	
Confl. Peds. (#/hr)	10		22	22		10	17		16	16		17
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	2%	4%	1%	3%	6%	13%	6%	2%	3%	9%	3%	2%
Adj. Flow (vph)	199	555	130	74	229	330	128	503	188	359	313	217
Shared Lane Traffic (%)												
Lane Group Flow (vph)	199	555	130	74	229	330	128	691	0	359	313	217
Turn Type	pm+pt	NA	Perm	pm+pt	NA	pm+ov	pm+pt	NA		pm+pt	NA	pm+ov
Protected Phases	5	2		1	6	7	3	8		7	4	5
Permitted Phases	2		2	6		6	8			4		4
Minimum Split (s)	9.5	24.4	24.4	9.5	24.4	9.5	9.5	24.7		9.5	24.7	9.5
Total Split (s)	12.0	31.4	31.4	9.6	29.0	28.0	10.1	31.0		28.0	48.9	12.0
Total Split (%)	12.0%	31.4%	31.4%	9.6%	29.0%	28.0%	10.1%	31.0%		28.0%	48.9%	12.0%
Maximum Green (s)	9.0	25.0	25.0	6.6	22.6	25.0	7.1	24.3		25.0	42.2	9.0
Yellow Time (s)	3.0	4.1	4.1	3.0	4.1	3.0	3.0	3.8		3.0	3.8	3.0
All-Red Time (s)	0.0	2.3	2.3	0.0	2.3	0.0	0.0	2.9		0.0	2.9	0.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	3.0	6.4	6.4	3.0	6.4	3.0	3.0	6.7		3.0	6.7	3.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lead	Lag		Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Walk Time (s)		7.0	7.0		7.0			7.0			7.0	
Flash Don't Walk (s)		11.0	11.0		11.0			11.0			11.0	
Pedestrian Calls (#/hr)		17	17		16			22			10	
Act Effct Green (s)	37.4	25.0	25.0	32.6	22.6	51.0	35.1	24.3		56.0	42.2	54.9
Actuated g/C Ratio	0.37	0.25	0.25	0.33	0.23	0.51	0.35	0.24		0.56	0.42	0.55
v/c Ratio	0.45	0.64	0.28	0.27	0.30	0.42	0.32	0.81		0.71	0.21	0.23
Control Delay (s/veh)	25.5	37.4	6.3	23.0	33.4	9.8	15.4	41.7		26.5	18.8	2.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay (s/veh)	25.5	37.4	6.3	23.0	33.4	9.8	15.4	41.7		26.5	18.8	2.0
LOS	C	D	A	C	C	A	B	D		C	B	A
Approach Delay (s/veh)		30.2			19.9			37.6			17.8	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS		C			B			D			B	
Queue Length 50th (m)	27.9	53.3	0.0	9.6	20.5	21.0	11.7	65.2		44.6	20.7	0.0
Queue Length 95th (m)	45.7	71.9	13.0	19.4	31.5	40.5	20.9	#88.0		78.4	30.4	9.4
Internal Link Dist (m)		228.8			255.7			124.3			165.4	
Turn Bay Length (m)	70.0		70.0	35.0		145.0	50.0			40.0		50.0
Base Capacity (vph)	447	867	472	271	769	781	397	852		504	1479	938
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Reduced v/c Ratio	0.45	0.64	0.28	0.27	0.30	0.42	0.32	0.81		0.71	0.21	0.23

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 10 (10%), Referenced to phase 2:EBTL, Start of Green			
Natural Cycle: 80			
Control Type: Pretimed			
Maximum v/c Ratio: 0.81			
Intersection Signal Delay (s/veh): 26.6		Intersection LOS: C	
Intersection Capacity Utilization 81.8%		ICU Level of Service D	
Analysis Period (min) 15			

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

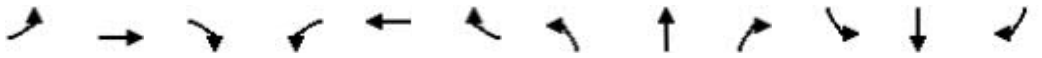
Splits and Phases: 100: Liverpool Rd & Bayly Street



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Stop			Stop
Traffic Volume (vph)	19	132	332	27	106	180
Future Volume (vph)	19	132	332	27	106	180
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	22	152	382	31	122	207

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total (vph)	174	413	329
Volume Left (vph)	22	0	122
Volume Right (vph)	152	31	0
Hadj (s)	-0.41	0.02	0.13
Departure Headway (s)	5.2	4.8	5.0
Degree Utilization, x	0.25	0.55	0.46
Capacity (veh/h)	613	721	686
Control Delay (s/veh)	10.0	13.7	12.2
Approach Delay (s/veh)	10.0	13.7	12.2
Approach LOS	B	B	B

Intersection Summary			
Delay	12.5		
Level of Service	B		
Intersection Capacity Utilization	53.7%	ICU Level of Service	A
Analysis Period (min)	15		

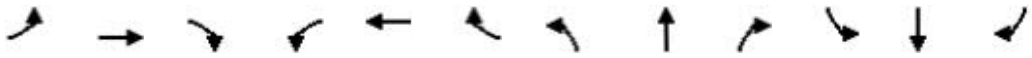


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	25	1	7	7	1	12	2	221	9	6	120	9
Future Volume (Veh/h)	25	1	7	7	1	12	2	221	9	6	120	9
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60
Hourly flow rate (vph)	42	2	12	12	2	20	3	368	15	10	200	15
Pedestrians		3			7			1			1	
Lane Width (m)		3.6			3.6			3.6			3.6	
Walking Speed (m/s)		1.2			1.2			1.2			1.2	
Percent Blockage		0			1			0			0	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	634	627	212	630	627	384	218			390		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	634	627	212	630	627	384	218			390		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.3	4.1			4.3		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.4	2.2			2.4		
p0 queue free %	89	99	99	97	99	97	100			99		
cM capacity (veh/h)	374	395	831	381	395	647	1360			1085		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	56	34	386	225
Volume Left	42	12	3	10
Volume Right	12	20	15	15
cSH	425	504	1360	1085
Volume to Capacity	0.13	0.07	0.00*	0.00*
Queue Length 95th (m)	3.6	1.7	0.1	0.2
Control Delay (s/veh)	14.8	12.7	0.1	0.5
Lane LOS	B	B	A	A
Approach Delay (s/veh)	14.8	12.7	0.1	0.5
Approach LOS	B	B		

Intersection Summary				
Average Delay	2.0			
Intersection Capacity Utilization	23.7%	ICU Level of Service	A	
Analysis Period (min)	15			

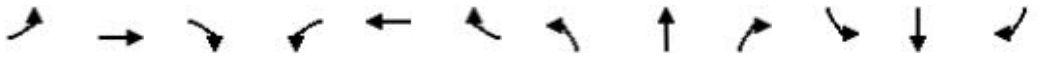
* Value less than 0.01.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	33	0	2	0	0	5	0	192	0	2	114	23
Future Volume (vph)	33	0	2	0	0	5	0	192	0	2	114	23
Peak Hour Factor	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62
Hourly flow rate (vph)	53	0	3	0	0	8	0	310	0	3	184	37

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	56	8	310	224
Volume Left (vph)	53	0	0	3
Volume Right (vph)	3	8	0	37
Hadj (s)	0.16	-0.60	0.03	-0.05
Departure Headway (s)	5.2	4.6	4.3	4.3
Degree Utilization, x	0.08	0.01	0.37	0.27
Capacity (veh/h)	618	687	809	799
Control Delay (s/veh)	8.7	7.6	9.9	8.9
Approach Delay (s/veh)	8.7	7.6	9.9	8.9
Approach LOS	A	A	A	A

Intersection Summary				
Delay	9.4			
Level of Service	A			
Intersection Capacity Utilization	25.9%	ICU Level of Service	A	
Analysis Period (min)	15			

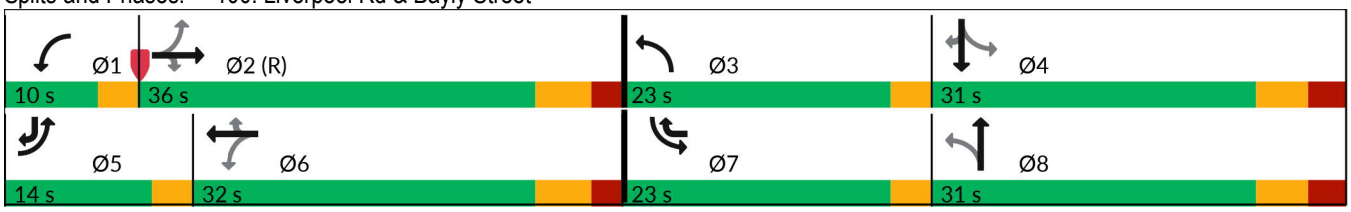


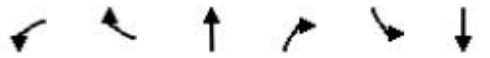
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	304	644	206	151	484	645	94	502	163	308	512	334
Future Volume (vph)	304	644	206	151	484	645	94	502	163	308	512	334
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	70.0		70.0	35.0		145.0	50.0		60.0	40.0		50.0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Ped Bike Factor	0.99		0.92	0.98		0.96	0.99	0.98		0.98		0.96
Frt			0.850			0.850		0.963				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1787	3505	1615	1770	3574	1568	1787	3401	0	1752	3574	1615
Flt Permitted	0.312			0.291			0.318			0.188		
Satd. Flow (perm)	581	3505	1486	531	3574	1506	591	3401	0	341	3574	1543
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			215			106		41				348
Link Speed (k/h)		50			50			40			50	
Link Distance (m)		198.9			279.7			153.4			188.0	
Travel Time (s)		14.3			20.1			13.8			13.5	
Confl. Peds. (#/hr)	17		22	22		17	20		41	41		20
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	1%	3%	0%	2%	1%	3%	1%	0%	1%	3%	1%	0%
Adj. Flow (vph)	317	671	215	157	504	672	98	523	170	321	533	348
Shared Lane Traffic (%)												
Lane Group Flow (vph)	317	671	215	157	504	672	98	693	0	321	533	348
Turn Type	pm+pt	NA	Perm	pm+pt	NA	pm+ov	pm+pt	NA		pm+pt	NA	pm+ov
Protected Phases	5	2		1	6	7	3	8		7	4	5
Permitted Phases	2		2	6		6	8			4		4
Minimum Split (s)	9.5	24.4	24.4	9.5	24.4	9.5	9.5	24.7		9.5	24.7	9.5
Total Split (s)	14.0	36.0	36.0	10.0	32.0	23.0	23.0	31.0		23.0	31.0	14.0
Total Split (%)	14.0%	36.0%	36.0%	10.0%	32.0%	23.0%	23.0%	31.0%		23.0%	31.0%	14.0%
Maximum Green (s)	11.0	29.6	29.6	7.0	25.6	20.0	20.0	24.3		20.0	24.3	11.0
Yellow Time (s)	3.0	4.1	4.1	3.0	4.1	3.0	3.0	3.8		3.0	3.8	3.0
All-Red Time (s)	0.0	2.3	2.3	0.0	2.3	0.0	0.0	2.9		0.0	2.9	0.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	3.0	6.4	6.4	3.0	6.4	3.0	3.0	6.7		3.0	6.7	3.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lead	Lag		Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Walk Time (s)		7.0	7.0		7.0			7.0			7.0	
Flash Don't Walk (s)		11.0	11.0		11.0			11.0			11.0	
Pedestrian Calls (#/hr)		20	20		41			22			17	
Act Effct Green (s)	43.0	29.6	29.6	36.0	25.6	49.0	48.0	24.3		48.0	24.3	39.0
Actuated g/C Ratio	0.43	0.30	0.30	0.36	0.26	0.49	0.48	0.24		0.48	0.24	0.39
v/c Ratio	0.83	0.65	0.36	0.57	0.55	0.84	0.19	0.81		0.72	0.61	0.42
Control Delay (s/veh)	41.2	34.1	5.7	27.6	34.9	28.1	13.8	42.1		28.8	37.2	3.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay (s/veh)	41.2	34.1	5.7	27.6	34.9	28.1	13.8	42.1		28.8	37.2	3.8
LOS	D	C	A	C	C	C	B	D		C	D	A
Approach Delay (s/veh)		30.9			30.6			38.6			25.3	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS		C			C			D			C	
Queue Length 50th (m)	43.7	62.5	0.0	19.5	46.9	90.0	9.9	66.4		38.5	51.1	0.0
Queue Length 95th (m)	#83.4	82.4	16.8	33.5	63.9	#157.2	18.7	#88.7		#71.2	69.1	16.5
Internal Link Dist (m)		174.9			255.7			129.4			164.0	
Turn Bay Length (m)	70.0		70.0	35.0		145.0	50.0			40.0		50.0
Base Capacity (vph)	382	1037	591	277	914	804	522	857		445	868	821
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Reduced v/c Ratio	0.83	0.65	0.36	0.57	0.55	0.84	0.19	0.81		0.72	0.61	0.42

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 10 (10%), Referenced to phase 2:EBTL, Start of Green			
Natural Cycle: 75			
Control Type: Pretimed			
Maximum v/c Ratio: 0.84			
Intersection Signal Delay (s/veh): 30.7		Intersection LOS: C	
Intersection Capacity Utilization 90.6%		ICU Level of Service E	
Analysis Period (min) 15			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 100: Liverpool Rd & Bayly Street





Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Stop			Stop
Traffic Volume (vph)	24	105	362	24	165	454
Future Volume (vph)	24	105	362	24	165	454
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	26	115	398	26	181	499

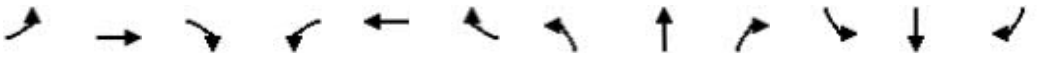
Direction, Lane #	WB 1	NB 1	SB 1
Volume Total (vph)	141	424	680
Volume Left (vph)	26	0	181
Volume Right (vph)	115	26	0
Hadj (s)	-0.39	-0.02	0.07
Departure Headway (s)	6.1	5.2	5.0
Degree Utilization, x	0.24	0.62	0.95
Capacity (veh/h)	560	678	706
Control Delay (s/veh)	11.0	16.2	43.8
Approach Delay (s/veh)	11.0	16.2	43.8
Approach LOS	B	C	E

Intersection Summary			
Delay	30.7		
Level of Service	D		
Intersection Capacity Utilization	71.4%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	16	2	10	17	2	7	15	272	14	12	324	25
Future Volume (Veh/h)	16	2	10	17	2	7	15	272	14	12	324	25
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Hourly flow rate (vph)	19	2	12	20	2	8	18	320	16	14	381	29
Pedestrians		9			2			3				
Lane Width (m)		3.6			3.6			3.6				
Walking Speed (m/s)		1.2			1.2			1.2				
Percent Blockage		1			0			0				
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	806	807	408	806	813	330	419			338		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	806	807	408	806	813	330	419			338		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.3		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.4		
p0 queue free %	93	99	98	93	99	99	98			99		
cM capacity (veh/h)	287	306	642	286	303	715	1142			1140		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	33	30	354	424
Volume Left	19	20	18	14
Volume Right	12	8	16	29
cSH	361	342	1142	1140
Volume to Capacity	0.09	0.09	0.02	0.01
Queue Length 95th (m)	2.4	2.3	0.4	0.3
Control Delay (s/veh)	16.0	16.5	0.6	0.4
Lane LOS	C	C	A	A
Approach Delay (s/veh)	16.0	16.5	0.6	0.4
Approach LOS	C	C		

Intersection Summary				
Average Delay	1.7			
Intersection Capacity Utilization	33.6%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	46	0	1	1	0	5	2	250	1	7	294	49
Future Volume (vph)	46	0	1	1	0	5	2	250	1	7	294	49
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Hourly flow rate (vph)	54	0	1	1	0	6	2	294	1	8	346	58

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	55	7	297	412
Volume Left (vph)	54	1	2	8
Volume Right (vph)	1	6	1	58
Hadj (s)	0.19	-0.49	0.00	-0.08
Departure Headway (s)	5.7	5.1	4.5	4.3
Degree Utilization, x	0.09	0.01	0.37	0.49
Capacity (veh/h)	564	601	775	811
Control Delay (s/veh)	9.2	8.1	10.2	11.5
Approach Delay (s/veh)	9.2	8.1	10.2	11.5
Approach LOS	A	A	B	B

Intersection Summary				
Delay	10.8			
Level of Service	B			
Intersection Capacity Utilization	39.6%	ICU Level of Service	A	
Analysis Period (min)	15			

Appendix C

Level of Service Definitions

Highway Capacity Manual 2010

Signalized intersection level of service (LOS) is defined in terms of a weighted average control delay for the entire intersection. Control delay quantifies the increase in travel time that a vehicle experiences due to the traffic signal control as well as provides a surrogate measure for driver discomfort and fuel consumption. Signalized intersection LOS is stated in terms of average control delay per vehicle (in seconds) during a specified time period (e.g., weekday PM peak hour). Control delay is a complex measure based on many variables, including signal phasing and coordination (i.e., progression of movements through the intersection and along the corridor), signal cycle length, and traffic volumes with respect to intersection capacity and resulting queues. Table 1 summarizes the LOS criteria for signalized intersections, as described in the *Highway Capacity Manual 2010* (Transportation Research Board, 2010).

Table 1. Level of Service Criteria for Signalized Intersections

Level of Service	Average Control Delay (seconds/vehicle)	General Description
A	≤10	Free Flow
B	>10 – 20	Stable Flow (slight delays)
C	>20 – 35	Stable flow (acceptable delays)
D	>35 – 55	Approaching unstable flow (tolerable delay, occasionally wait through more than one signal cycle before proceeding)
E	>55 – 80	Unstable flow (intolerable delay)
F[1]	>80	Forced flow (congested and queues fail to clear)

Source: *Highway Capacity Manual 2010*, Transportation Research Board, 2010.

1. If the volume-to-capacity (v/c) ratio for a lane group exceeds 1.0 LOS F is assigned to the individual lane group. LOS for overall approach or intersection is determined solely by the control delay.

Unsignalized intersection LOS criteria can be further reduced into three intersection types: all-way stop, two-way stop, and roundabout control. All-way stop and roundabout control intersection LOS is expressed in terms of the weighted average control delay of the overall intersection or by approach. Two-way stop-controlled intersection LOS is defined in terms of the average control delay for each minor-street movement (or shared movement) as well as major-street left-turns. This approach is because major-street through vehicles are assumed to experience zero delay, a weighted average of all movements results in very low overall average delay, and this calculated low delay could mask deficiencies of minor movements. Table 2 shows LOS criteria for unsignalized intersections.

Table 2. Level of Service Criteria for Unsignalized Intersections

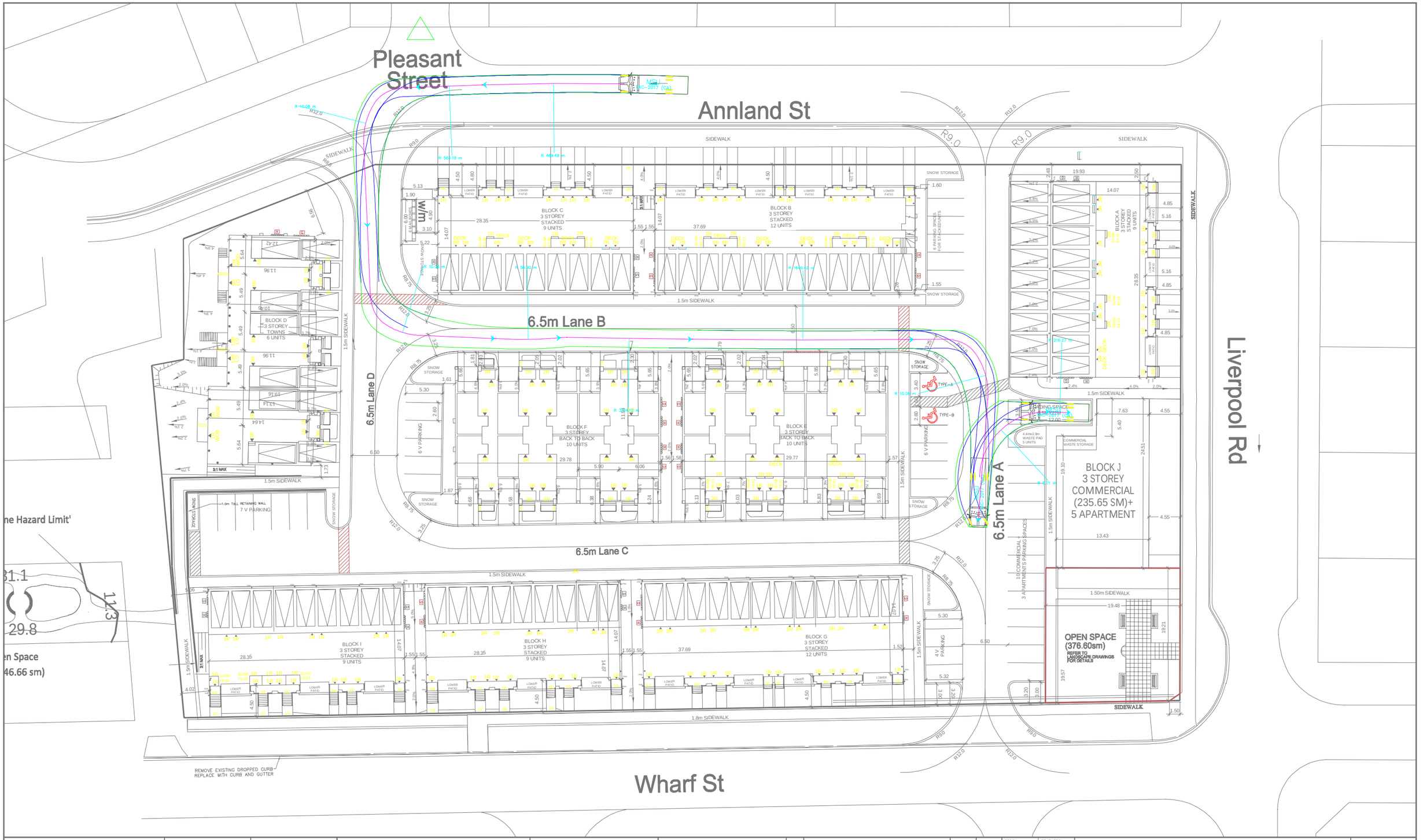
Level of Service	Average Control Delay (seconds/vehicle)
A	0 – 10
B	>10 – 15
C	>15 – 25
D	>25 – 35
E	>35 – 50
F[1]	>50

Source: *Highway Capacity Manual 2010*, Transportation Research Board, 2010.

1. If the volume-to-capacity (v/c) ratio exceeds 1.0, LOS F is assigned an individual lane group for all unsignalized intersections, or minor street approach at two-way stop-controlled intersections. Overall intersection LOS is determined solely by control delay.

Appendix D

Vehicular Swept Path Analysis



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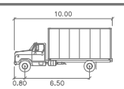


MSU

	meters
Width	: 2.60
Track	: 2.60
Lock to Lock Time	: 6.0
Steering Angle	: 40.2

DILLON CONSULTING

No.	ISSUED FOR	DATE	BY
2	Vehicle Swept Path Analysis	2025-12-05	MS
1	Vehicle Swept Path Analysis	2025-09-04	MS

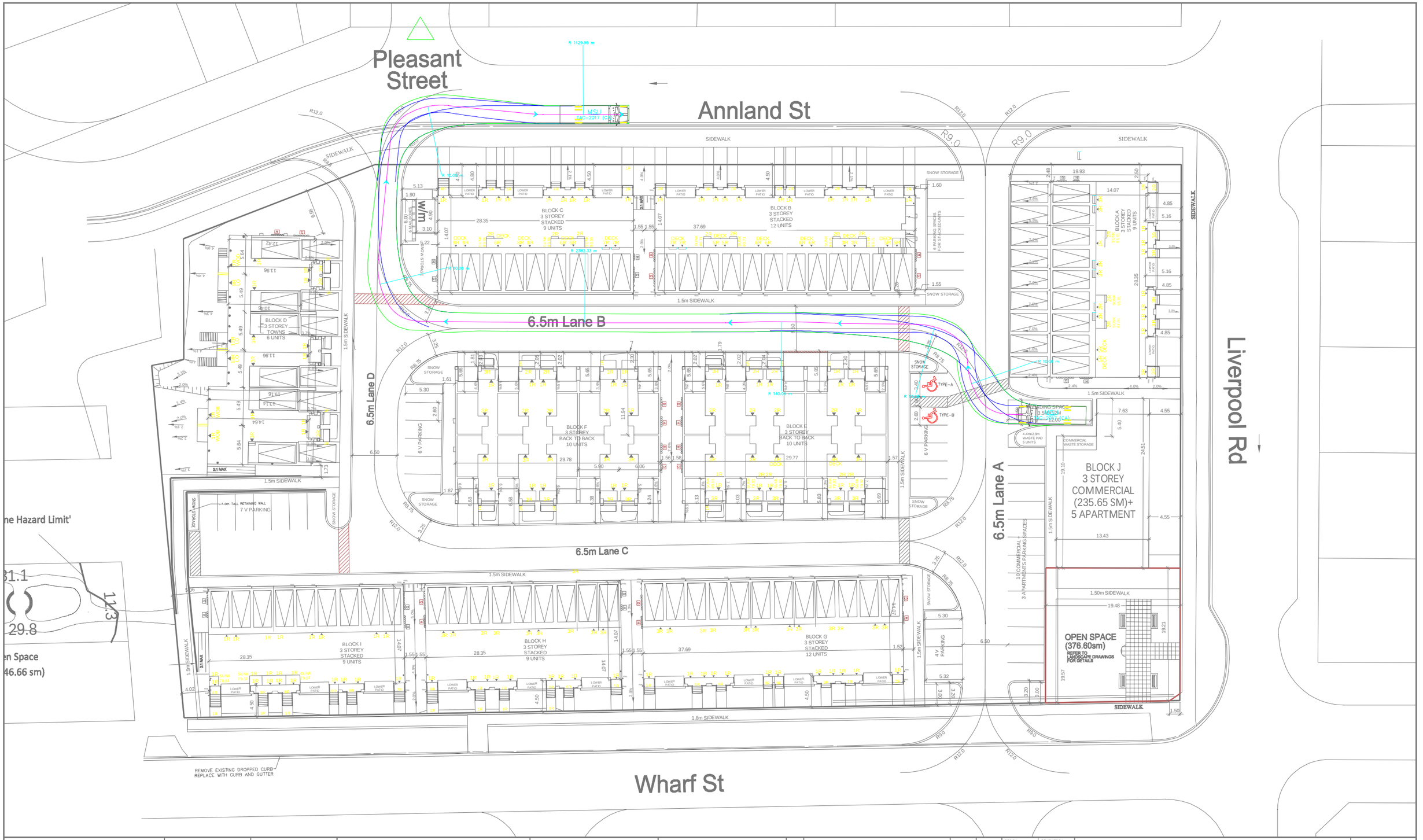
DESIGN	MS
REVIEWED BY	IB
DRAWN	MS
CHECKED BY	IB
DATE	2025-12-05
SCALE	1:500

PROPOSED DEVELOPMENT AT 640 LIVERPOOL ROAD
TOWN OF PICKERING

SITE CIRCULATION
(MSU)

PROJECT NO. 25-2038

SHEET NO. T-1



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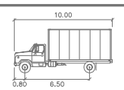

MSU

	meters
Width	: 2.60
Track	: 2.60
Lock to Lock Time	: 6.0
Steering Angle	: 40.2

DILLON CONSULTING

No.	ISSUED FOR	DATE	BY
2	Vehicle Swept Path Analysis	2025-12-05	MS
1	Vehicle Swept Path Analysis	2025-09-04	MS

DESIGN	MS
REVIEWED BY	IB
DRAWN	MS
CHECKED BY	IB
DATE	2025-12-05
SCALE	1:500

PROPOSED DEVELOPMENT AT 640 LIVERPOOL ROAD
TOWN OF PICKERING

SITE CIRCULATION
(MSU)

PROJECT NO. 25-2038

SHEET NO. T-2

Pleasant Street

Annland St

Liverpool Rd

Wharf St

6.5m Lane B

6.5m Lane C

6.5m Lane D

6.5m Lane A

BLOCK C
3 STOREY
STACKED
9 UNITS

BLOCK B
3 STOREY
STACKED
12 UNITS

BLOCK A
3 STOREY
STACKED
9 UNITS

BLOCK D
3 STOREY
TOWNS
6 UNITS

BLOCK F
3 STOREY
BACK TO BACK
10 UNITS

BLOCK E
3 STOREY
BACK TO BACK
10 UNITS

BLOCK I
3 STOREY
STACKED
9 UNITS

BLOCK H
3 STOREY
STACKED
9 UNITS

BLOCK G
3 STOREY
STACKED
12 UNITS

BLOCK J
3 STOREY
COMMERCIAL
(235.65 SM)+
5 APARTMENT

OPEN SPACE
(376.60sm)
REFER TO LANDSCAPE DRAWINGS FOR DETAILS

7 V PARKING

6 V PARKING

4 V PARKING

SIDEWALK

1.5m SIDEWALK

1.8m SIDEWALK

SNOW STORAGE

REMOVE EXISTING DROPPED CURB
REPLACE WITH CURB AND GUTTER

MSU
SC-2017 (CA)

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MSU

	meters
Width	: 2.60
Track	: 2.60
Lock to Lock Time	: 6.0
Steering Angle	: 40.2

DILLON CONSULTING

No.	ISSUED FOR	DATE	BY
2	Vehicle Swept Path Analysis	2025-12-05	MS
1	Vehicle Swept Path Analysis	2025-09-04	MS

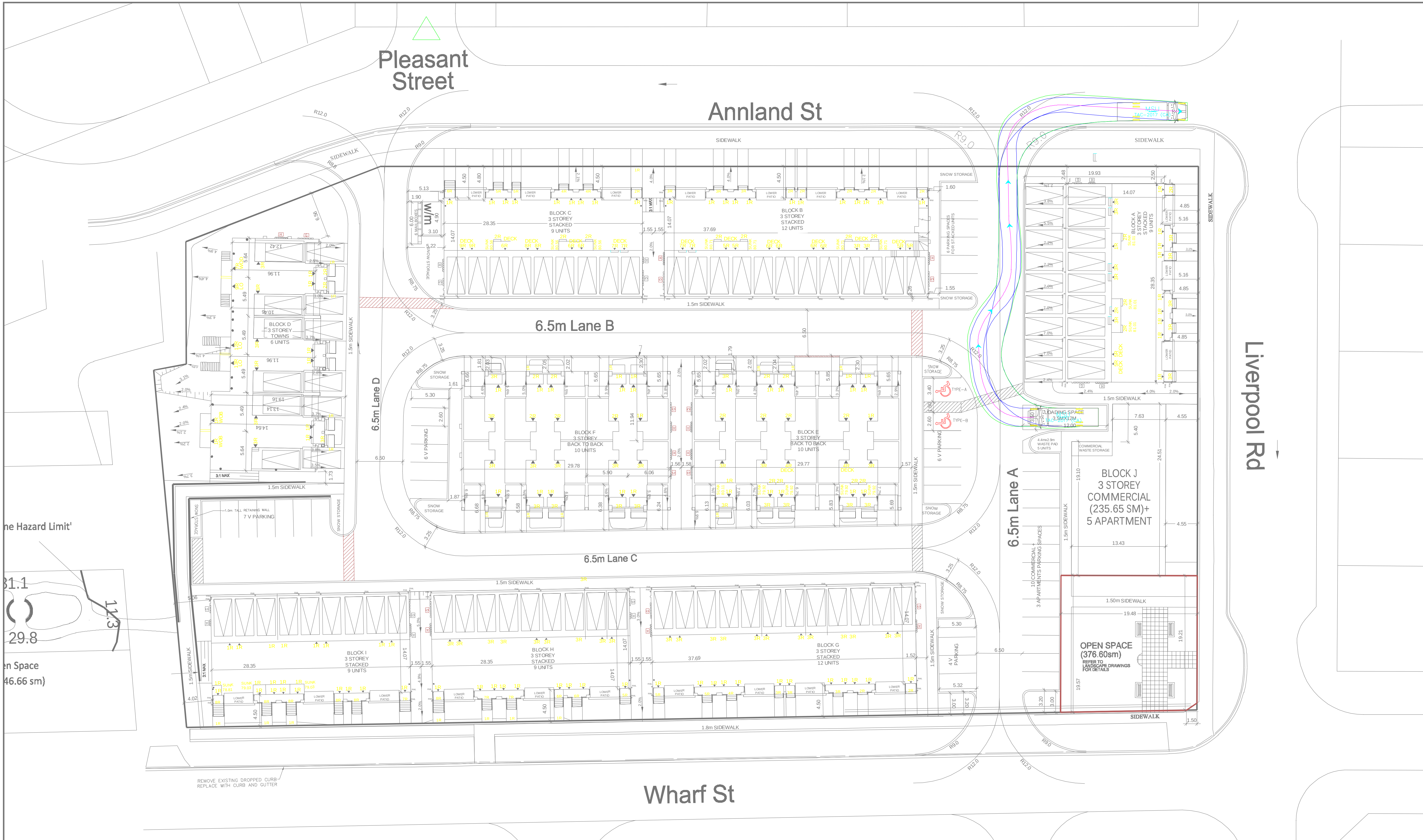
DESIGN: MS | REVIEWED BY: IB
DRAWN: MS | CHECKED BY: IB
DATE: 2025-12-05
SCALE: 1:500

PROPOSED DEVELOPMENT AT 640 LIVERPOOL ROAD
TOWN OF PICKERING

SITE CIRCULATION
(MSU)

PROJECT NO. 25-2038

SHEET NO. T-3



No.	ISSUED FOR	DATE	BY	
2	Vehicle Swept Path Analysis	2025-12-05	MS	
1	Vehicle Swept Path Analysis	2025-09-04	MS	

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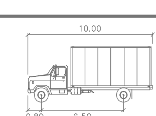


MSU

	meters
Width	: 2.60
Track	: 2.60
Lock to Lock Time	: 6.0
Steering Angle	: 40.2

DILLON CONSULTING

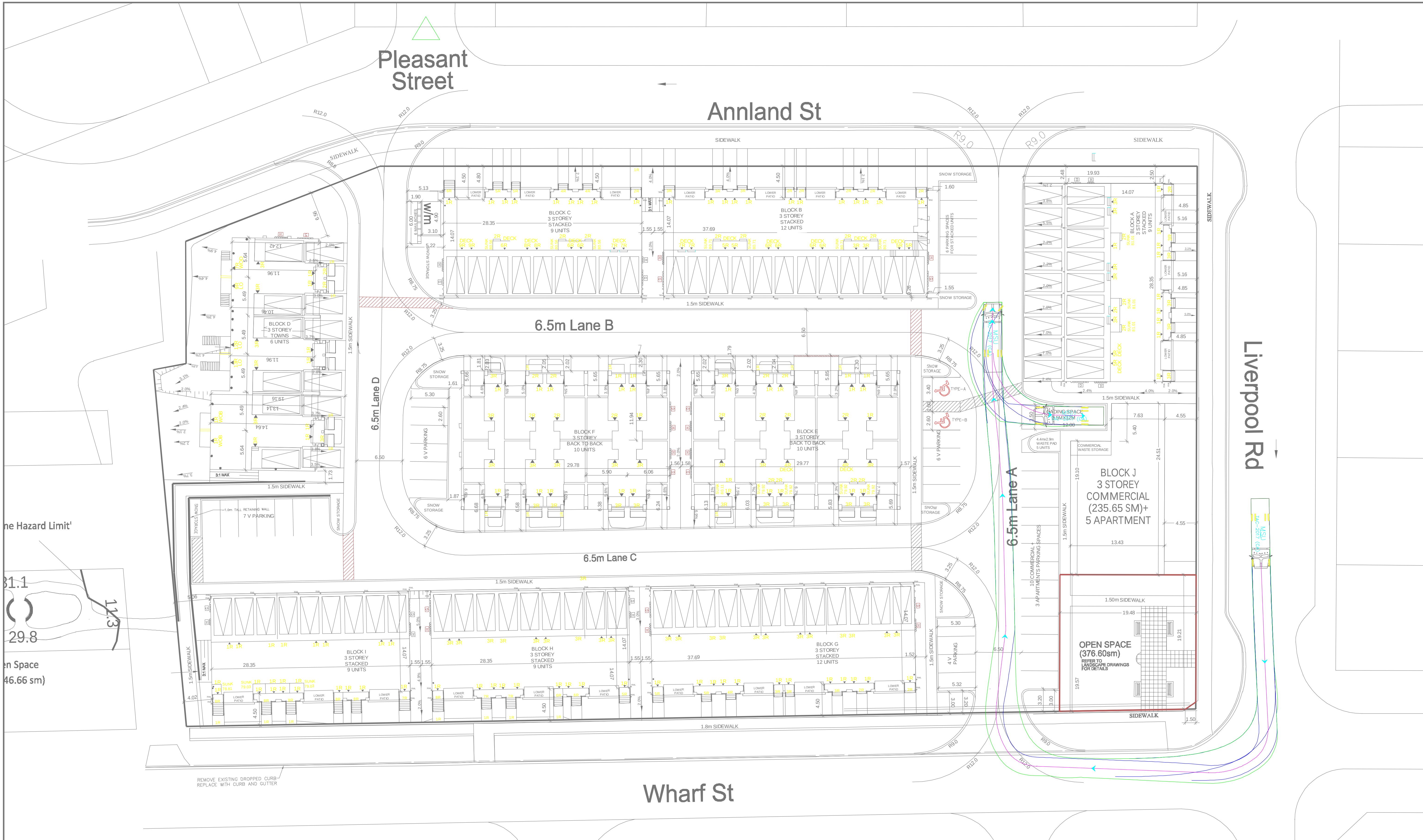
DESIGN: MS	REVIEWED BY: IB
DRAWN: MS	CHECKED BY: IB
DATE: 2025-12-05	
SCALE: 1:500	

PROPOSED DEVELOPMENT AT 640 LIVERPOOL ROAD
TOWN OF PICKERING

SITE CIRCULATION
(MSU)

PROJECT NO. 25-2038

SHEET NO. T-4


Pleasant Street
Annland St
Liverpool Rd
Wharf St
6.5m Lane A
6.5m Lane B
6.5m Lane C
6.5m Lane D
BLOCK A 3 STOREY STACKED 9 UNITS
BLOCK B 3 STOREY STACKED 12 UNITS
BLOCK C 3 STOREY STACKED 9 UNITS
BLOCK D 3 STOREY TOWNS 6 UNITS
BLOCK E 3 STOREY BACK TO BACK 10 UNITS
BLOCK F 3 STOREY BACK TO BACK 10 UNITS
BLOCK G 3 STOREY STACKED 12 UNITS
BLOCK H 3 STOREY STACKED 9 UNITS
BLOCK I 3 STOREY STACKED 9 UNITS
BLOCK J 3 STOREY COMMERCIAL (235.65 SM)+ 5 APARTMENT
OPEN SPACE (376.60sm)
REFER TO LANDSCAPE DRAWINGS FOR DETAILS
LOADING SPACE
COMMERCIAL WASTE STORAGE
10 COMMERCIAL + 3 APARTMENTS PARKING SPACES
7 V PARKING
6 V PARKING
4 V PARKING
1.5m SIDEWALK
1.8m SIDEWALK
SIDEWALK
SNOW STORAGE
REMOVE EXISTING DROPPED CURB REPLACE WITH CURB AND GUTTER
ne Hazard Limit'
en Space
46.66 sm)
TYPE-A
TYPE-B

Conditions of Use

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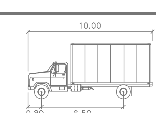

	meters
Width	: 2.60
Track	: 2.60
Lock to Lock Time	: 6.0
Steering Angle	: 40.2

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No.	ISSUED FOR	DATE	BY
2	Vehicle Swept Path Analysis	2025-12-05	MS
1	Vehicle Swept Path Analysis	2025-09-04	MS

DESIGN	REVIEWED BY
MS	IB
DRAWN	CHECKED BY
MS	IB

DATE: 2025-12-05

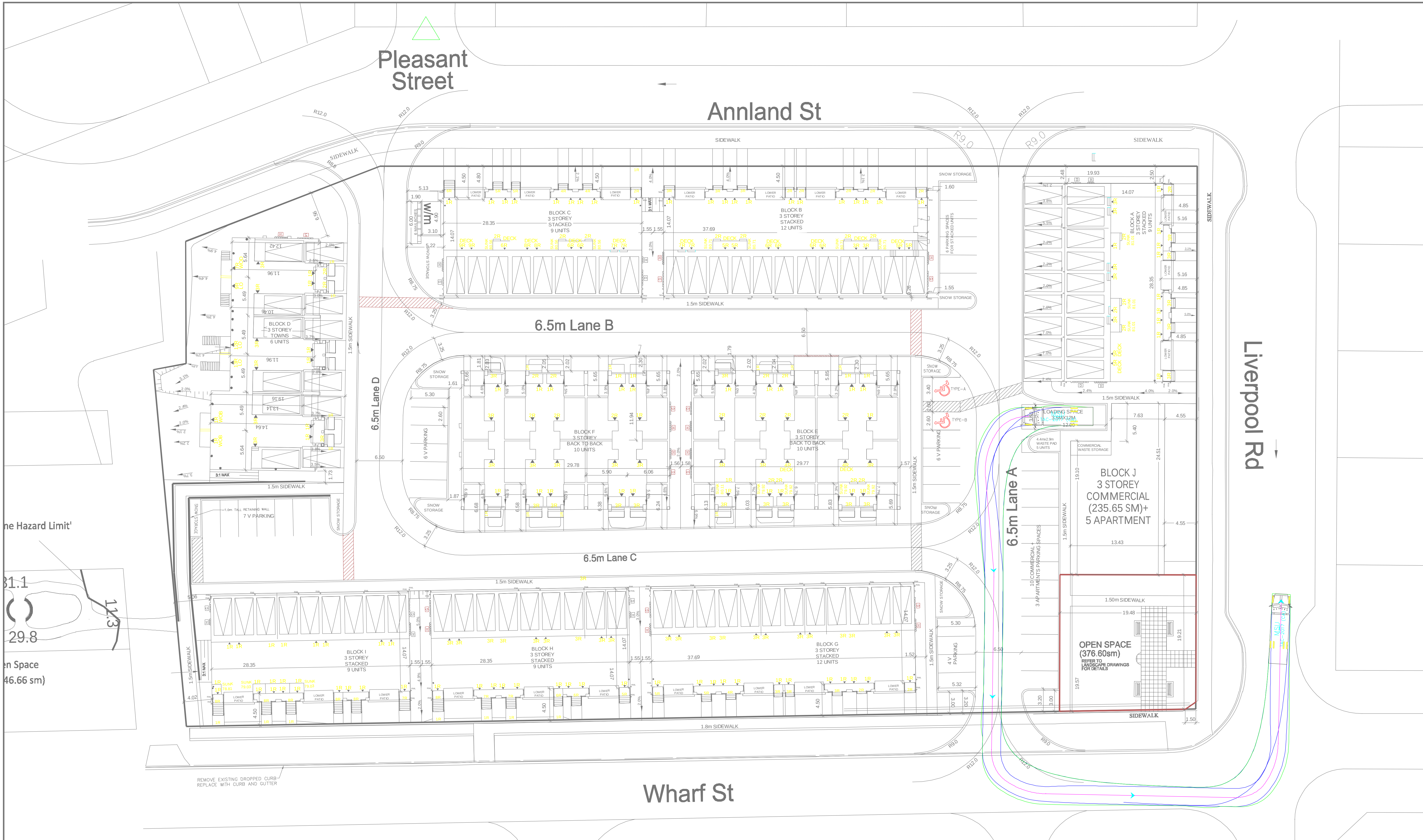
SCALE: 1:500

PROPOSED DEVELOPMENT AT 640 LIVERPOOL ROAD
TOWN OF PICKERING

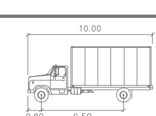
SITE CIRCULATION
(MSU)

PROJECT NO. 25-2038

SHEET NO. T-5



Pleasant Street
Annland St
Liverpool Rd
Wharf St
SIDEWALK
6.5m Lane B
6.5m Lane C
6.5m Lane D
6.5m Lane A
BLOCK A
3 STOREY
STACKED
9 UNITS
BLOCK B
3 STOREY
STACKED
12 UNITS
BLOCK C
3 STOREY
STACKED
9 UNITS
BLOCK D
3 STOREY
TOWNS
6 UNITS
BLOCK E
3 STOREY
BACK TO BACK
10 UNITS
BLOCK F
3 STOREY
BACK TO BACK
10 UNITS
BLOCK G
3 STOREY
STACKED
12 UNITS
BLOCK H
3 STOREY
STACKED
9 UNITS
BLOCK I
3 STOREY
STACKED
9 UNITS
BLOCK J
3 STOREY
COMMERCIAL
(235.65 SM)+
5 APARTMENT
OPEN SPACE
(376.60sm)
REFER TO LANDSCAPE DRAWINGS FOR DETAILS
LOADING SPACE
COMMERCIAL WASTE STORAGE
10 COMMERCIAL + 3 APARTMENTS PARKING SPACES
7 V PARKING
6 V PARKING
4 V PARKING
SNOW STORAGE
1.5m SIDEWALK
1.8m SIDEWALK
1.50m SIDEWALK
REMOVE EXISTING DROPPED CURB REPLACE WITH CURB AND GUTTER
TYPE-A
TYPE-B
ne Hazard Limit'
n Space
46.66 sm)



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No.	ISSUED FOR	DATE	BY
2	Vehicle Swept Path Analysis	2025-12-05	MS
1	Vehicle Swept Path Analysis	2025-09-04	MS

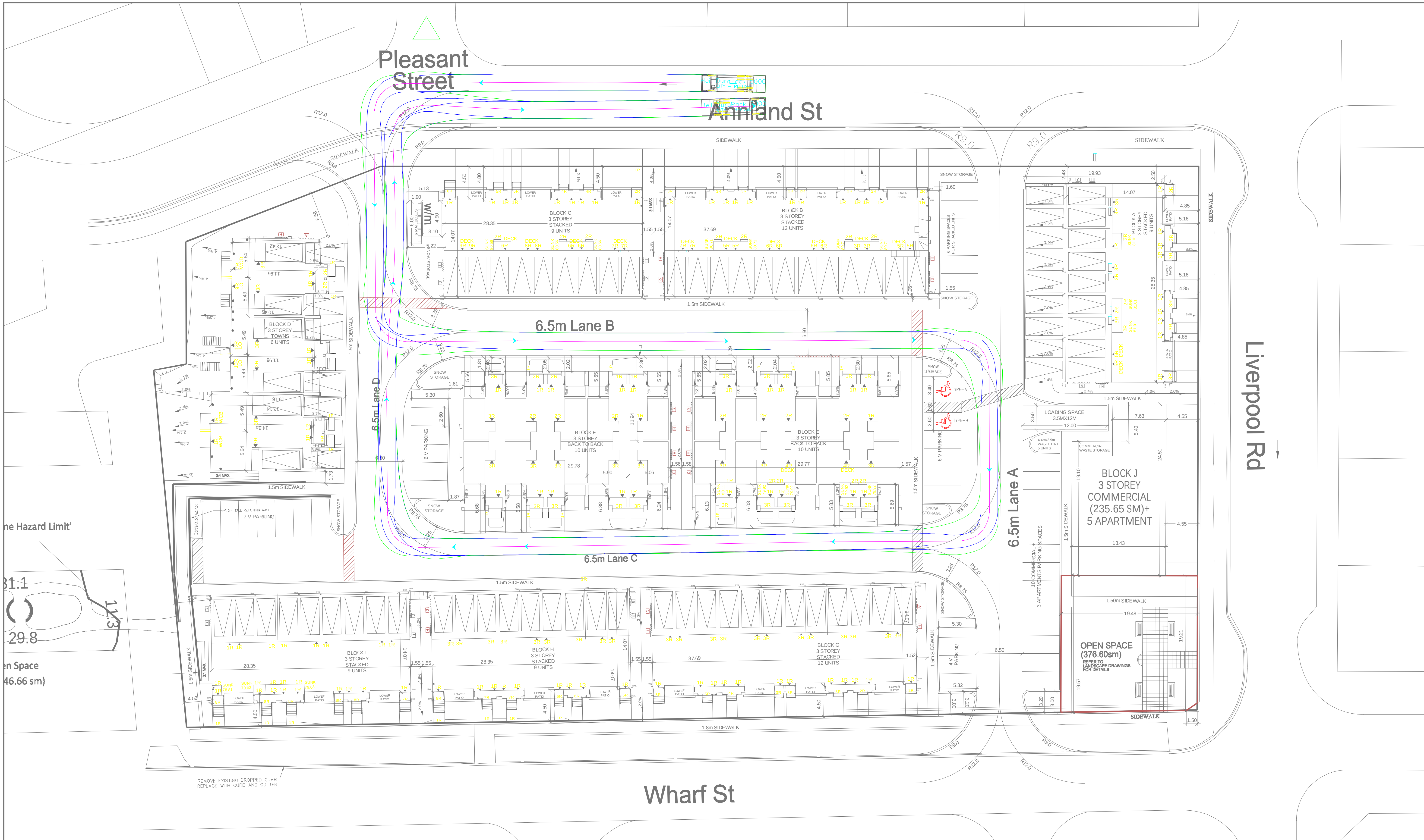
DESIGN: MS	REVIEWED BY: IB
DRAWN: MS	CHECKED BY: IB
DATE: 2025-12-05	
SCALE: 1:500	

PROPOSED DEVELOPMENT AT 640 LIVERPOOL ROAD
TOWN OF PICKERING

SITE CIRCULATION
(MSU)

PROJECT NO. 25-2038

SHEET NO. T-6



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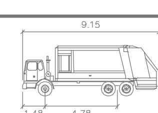


Heil DuraPack 5000

	meters
Width	: 2.44
Track	: 2.44
Lock to Lock Time	: 6.0
Steering Angle	: 45.0

DILLON CONSULTING

No.	ISSUED FOR	DATE	BY
2	Vehicle Swept Path Analysis	2025-12-05	MS
1	Vehicle Swept Path Analysis	2025-09-04	MS

DESIGN MS | REVIEWED BY IB | DRAWN MS | CHECKED BY IB | DATE 2025-12-05 | SCALE 1:500

PROPOSED DEVELOPMENT AT 640 LIVERPOOL ROAD
TOWN OF PICKERING

SITE CIRCULATION
(WASTE COLLECTION VEHICLE)

PROJECT NO. 25-2038

SHEET NO. T-7

Pleasant Street

Annland St

Liverpool Rd

Wharf St

SIDEWALK

1.5m SIDEWALK

1.8m SIDEWALK

6.5m Lane B

6.5m Lane C

6.5m Lane A

6.5m Lane D

BLOCK A
3 STOREY
STACKED
9 UNITS

BLOCK B
3 STOREY
STACKED
12 UNITS

BLOCK C
3 STOREY
STACKED
9 UNITS

BLOCK D
3 STOREY
TOWNS
6 UNITS

BLOCK E
3 STOREY
BACK TO BACK
10 UNITS

BLOCK F
3 STOREY
BACK TO BACK
10 UNITS

BLOCK G
3 STOREY
STACKED
12 UNITS

BLOCK H
3 STOREY
STACKED
9 UNITS

BLOCK I
3 STOREY
STACKED
9 UNITS

BLOCK J
3 STOREY
COMMERCIAL
(235.65 SM)+
5 APARTMENT

OPEN SPACE
(376.60sm)
REFER TO LANDSCAPE DRAWINGS FOR DETAILS

LOADING SPACE
3.5MX12M

COMMERCIAL WASTE STORAGE

SNOW STORAGE

6 V PARKING

7 V PARKING

4 V PARKING

6 PARKING SPACES FOR STACKED UNITS

TYPE-A

TYPE-B

REMOVE EXISTING DROPPED CURB
REPLACE WITH CURB AND GUTTER

'ne Hazard Limit'

31.1

29.8

113

en Space
46.66 sm)

Heil DuraPack 5000

	meters
Width	: 2.44
Track	: 2.44
Lock to Lock Time	: 6.0
Steering Angle	: 45.0

DILLON CONSULTING

No.	ISSUED FOR	DATE	BY
2	Vehicle Swept Path Analysis	2025-12-05	MS
1	Vehicle Swept Path Analysis	2025-09-04	MS

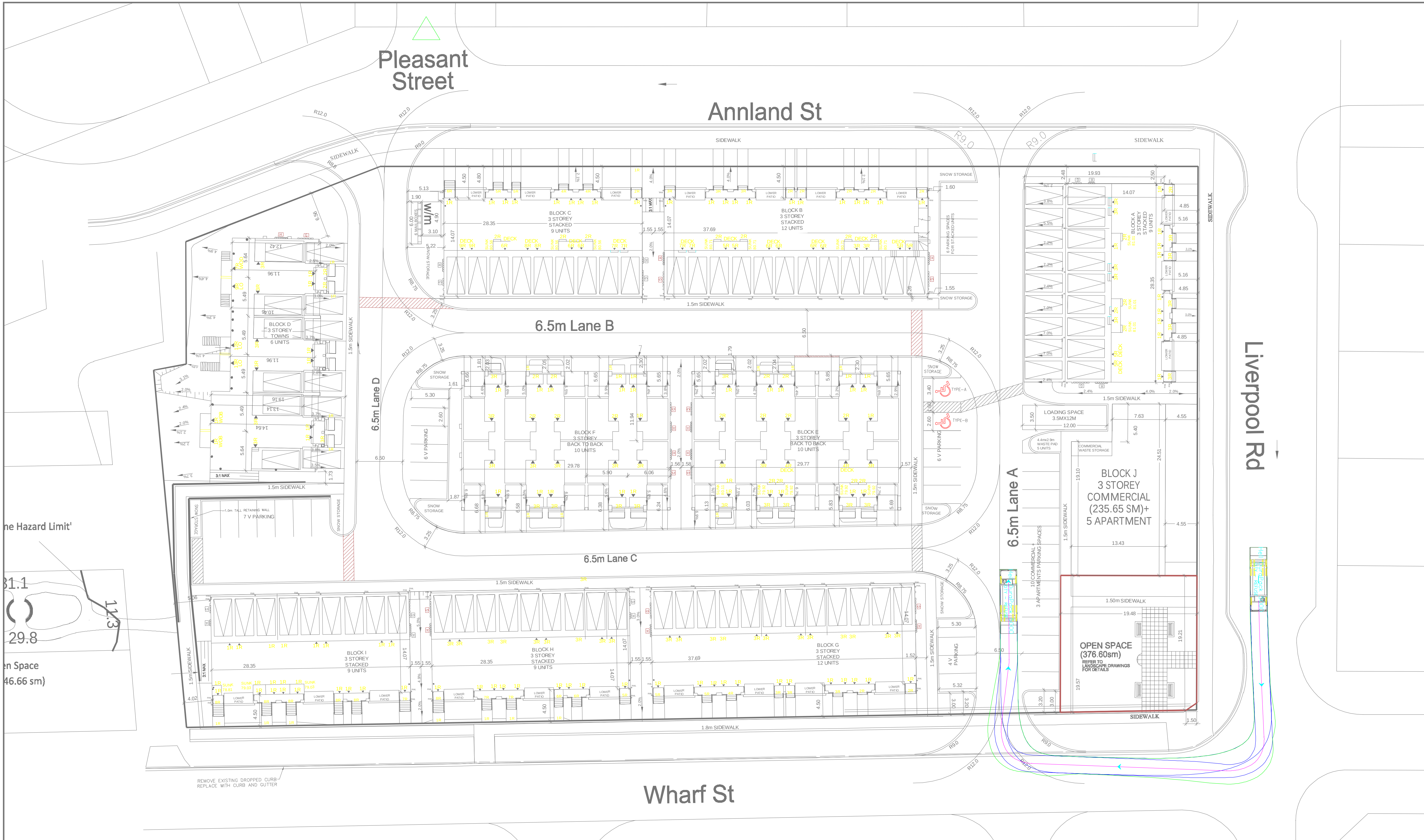
DESIGN	MS
REVIEWED BY	IB
DRAWN	MS
CHECKED BY	IB
DATE	2025-12-05
SCALE	1:500

PROPOSED DEVELOPMENT AT 640 LIVERPOOL ROAD
TOWN OF PICKERING

SITE CIRCULATION
(WASTE COLLECTION VEHICLE)

PROJECT NO. 25-2038

SHEET NO. T-8



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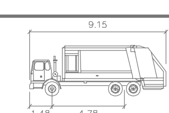

Heil DuraPack 5000

	meters
Width	: 2.44
Track	: 2.44
Lock to Lock Time	: 6.0
Steering Angle	: 45.0

DILLON CONSULTING

No.	ISSUED FOR	DATE	BY
2	Vehicle Swept Path Analysis	2025-12-05	MS
1	Vehicle Swept Path Analysis	2025-09-04	MS

DESIGN: MS	REVIEWED BY: IB
DRAWN: MS	CHECKED BY: IB
DATE: 2025-12-05	
SCALE: 1:500	

PROPOSED DEVELOPMENT AT 640 LIVERPOOL ROAD
TOWN OF PICKERING

SITE CIRCULATION
(WASTE COLLECTION VEHICLE)

PROJECT NO. 25-2038

SHEET NO. T-9

Pleasant Street

Annland St

Liverpool Rd

Wharf St

6.5m Lane B

6.5m Lane C

6.5m Lane D

6.5m Lane A

BLOCK C
3 STOREY
STACKED
9 UNITS

BLOCK B
3 STOREY
STACKED
12 UNITS

BLOCK D
3 STOREY
TOWNS
6 UNITS

BLOCK F
3 STOREY
BACK TO BACK
10 UNITS

BLOCK E
3 STOREY
BACK TO BACK
10 UNITS

BLOCK I
3 STOREY
STACKED
9 UNITS

BLOCK H
3 STOREY
STACKED
9 UNITS

BLOCK G
3 STOREY
STACKED
12 UNITS

BLOCK A
3 STOREY
STACKED
9 UNITS

BLOCK J
3 STOREY
COMMERCIAL
(235.65 SM)+
5 APARTMENT

OPEN SPACE
(376.60sm)
REFER TO
LANDSCAPE DRAWINGS
FOR DETAILS

LOADING SPACE
3.5MX12M

7 V PARKING

6 V PARKING

4 V PARKING

6 PARKING SPACES FOR STACKED UNITS

16 COMMERCIAL/ 3 APARTMENTS PARKING SPACES

SNOW STORAGE

SIDEWALK

1.5m SIDEWALK

1.8m SIDEWALK

REMOVE EXISTING DROPPED CURB
REPLACE WITH CURB AND GUTTER

TYPE-A

TYPE-B

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9.15
1.48 4.78

Heil DuraPack 5000

	meters
Width	: 2.44
Track	: 2.44
Lock to Lock Time	: 6.0
Steering Angle	: 45.0

DILLON CONSULTING

No.	ISSUED FOR	DATE	BY
2	Vehicle Swept Path Analysis	2025-12-05	MS
1	Vehicle Swept Path Analysis	2025-09-04	MS

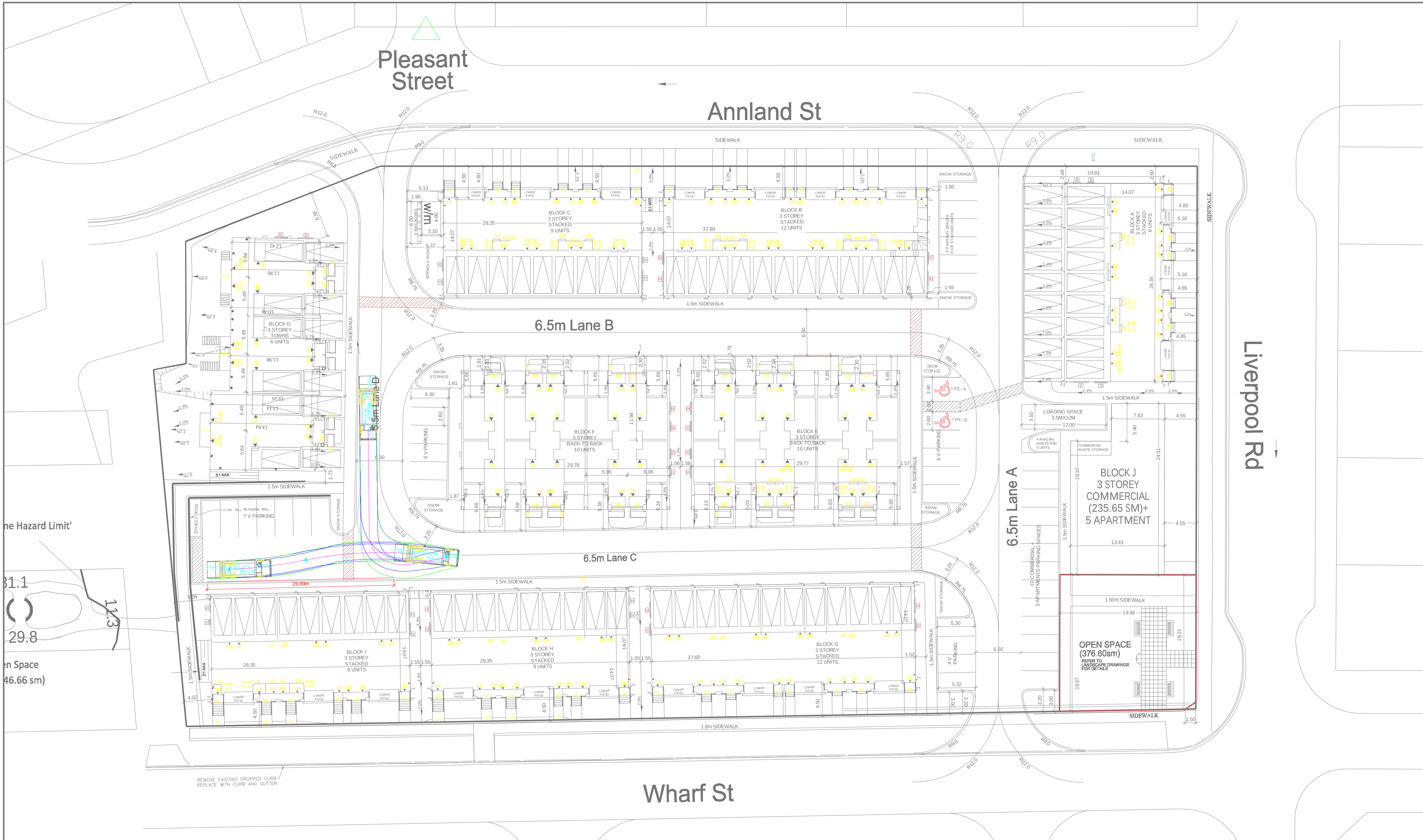
DESIGN: MS | REVIEWED BY: IB
DRAWN: MS | CHECKED BY: IB
DATE: 2025-12-05
SCALE: 1:500

PROPOSED DEVELOPMENT AT 640 LIVERPOOL ROAD
TOWN OF PICKERING

SITE CIRCULATION
(WASTE COLLECTION VEHICLE)

PROJECT NO. 25-2038

SHEET NO. T-10



Conditions of Use

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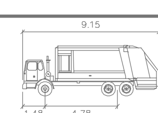

DILLON CONSULTING

No.	ISSUED FOR	DATE	BY
2	Vehicle Swept Path Analysis	2025-12-05	MS
1	Vehicle Swept Path Analysis	2025-09-04	MS

DESIGN: MS	REVIEWED BY: IB
DRAWN: MS	CHECKED BY: IB
DATE: 2025-12-05	
SCALE: 1:500	

PROPOSED DEVELOPMENT AT 640 LIVERPOOL ROAD
TOWN OF PICKERING

SITE CIRCULATION
(WASTE COLLECTION VEHICLE)

PROJECT NO. 25-2038

SHEET NO. T-11

Pleasant Street

Annland St

Liverpool Rd

Wharf St

6.5m Lane B

6.5m Lane C

6.5m Lane D

6.5m Lane A

BLOCK C
3 STOREY
STACKED
9 UNITS

BLOCK B
3 STOREY
STACKED
12 UNITS

BLOCK D
3 STOREY
TOWNS
6 UNITS

BLOCK F
3 STOREY
BACK TO BACK
10 UNITS

BLOCK E
3 STOREY
BACK TO BACK
10 UNITS

BLOCK I
3 STOREY
STACKED
9 UNITS

BLOCK H
3 STOREY
STACKED
9 UNITS

BLOCK G
3 STOREY
STACKED
12 UNITS

BLOCK A
3 STOREY
STACKED
9 UNITS

BLOCK J
3 STOREY
COMMERCIAL
(235.65 SM)+
5 APARTMENT

OPEN SPACE
(376.60sm)
REFER TO
LANDSCAPE DRAWINGS
FOR DETAILS

SNOW STORAGE

SIDEWALK

1.5m SIDEWALK

1.8m SIDEWALK

7 V PARKING

6 V PARKING

4 V PARKING

6 PARKING SPACES FOR STACKED UNITS

TYPE-A

TYPE-B

REMOVE EXISTING DROPPED CURB
REPLACE WITH CURB AND GUTTER

Region of Durham Front Loader

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Region of Durham Front Loader
meters
Width : 2.77
Track : 2.60
Lock to Lock Time : 6.0
Steering Angle : 26.0

DILLON CONSULTING

No.	ISSUED FOR	DATE	BY
2	Vehicle Swept Path Analysis	2025-12-05	MS
1	Vehicle Swept Path Analysis	2025-09-04	MS

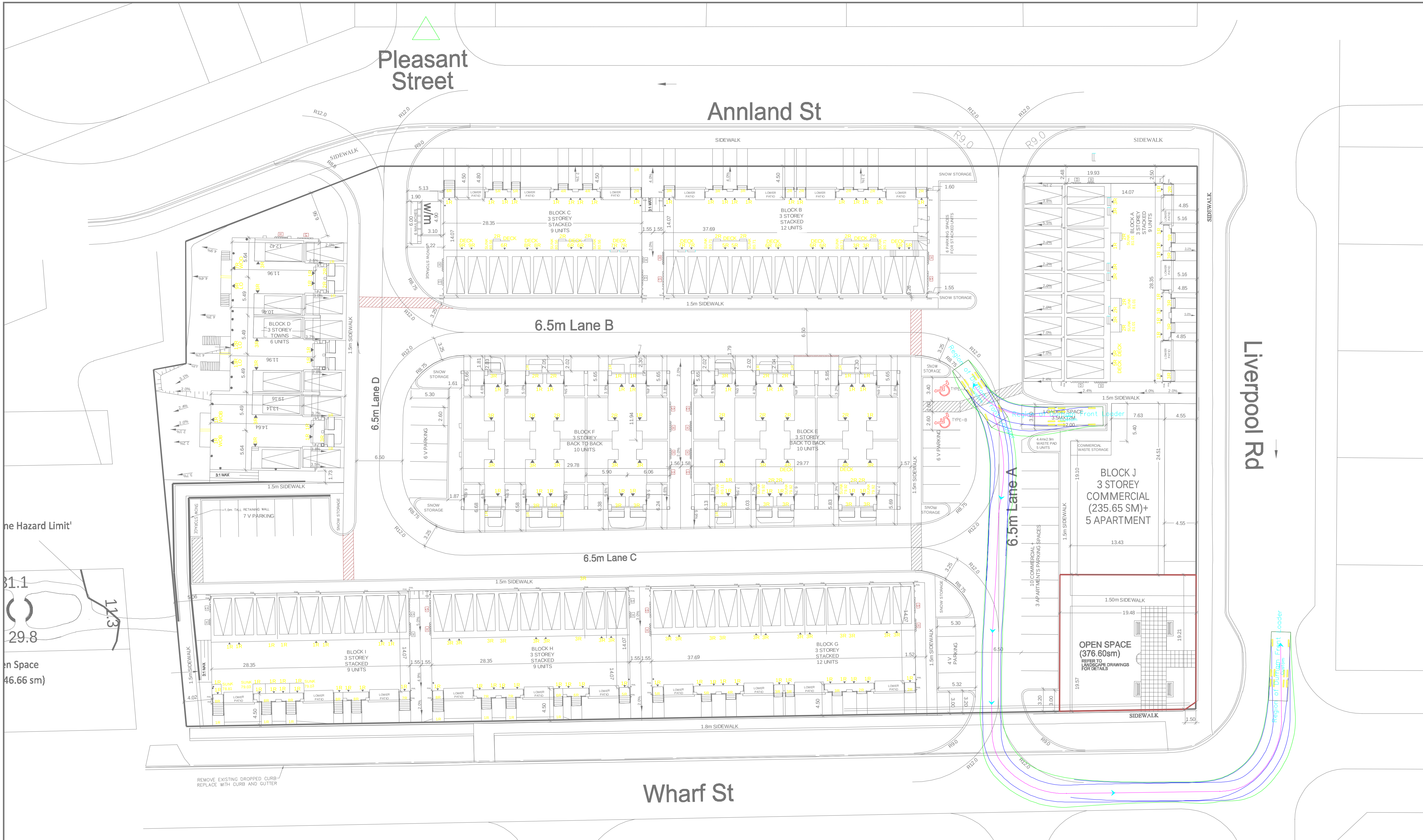
DESIGN: MS | REVIEWED BY: IB
DRAWN: MS | CHECKED BY: IB
DATE: 2025-12-05
SCALE: 1:500

PROPOSED DEVELOPMENT AT 640 LIVERPOOL ROAD
TOWN OF PICKERING

SITE CIRCULATION
(WASTE COLLECTION VEHICLE)

PROJECT NO. 25-2038

SHEET NO. T-12


Pleasant Street
Annland St
Liverpool Rd
Wharf St
6.5m Lane A
6.5m Lane B
6.5m Lane C
6.5m Lane D
BLOCK A
3 STOREY
STACKED
9 UNITS
BLOCK B
3 STOREY
STACKED
12 UNITS
BLOCK C
3 STOREY
STACKED
9 UNITS
BLOCK D
3 STOREY
TOWNS
6 UNITS
BLOCK E
3 STOREY
BACK TO BACK
10 UNITS
BLOCK F
3 STOREY
BACK TO BACK
10 UNITS
BLOCK G
3 STOREY
STACKED
12 UNITS
BLOCK H
3 STOREY
STACKED
9 UNITS
BLOCK I
3 STOREY
STACKED
9 UNITS
BLOCK J
3 STOREY
COMMERCIAL
(235.65 SM)+
5 APARTMENT
OPEN SPACE
(376.60sm)
REFER TO LANDSCAPE DRAWINGS FOR DETAILS
LOADING SPACE
3.5MX12M
COMMERCIAL WASTE STORAGE
10 COMMERCIAL + 3 APARTMENTS PARKING SPACES
7 V PARKING
6 V PARKING
4 V PARKING
1.5m SIDEWALK
1.8m SIDEWALK
1.50m SIDEWALK
SIDEWALK
SNOW STORAGE
REMOVE EXISTING DROPPED CURB
REPLACE WITH CURB AND GUTTER

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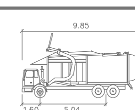

Region of Durham Front Loader

	meters
Width	: 2.77
Track	: 2.60
Lock to Lock Time	: 6.0
Steering Angle	: 26.0

DILLON CONSULTING

No.	ISSUED FOR	DATE	BY
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1	Vehicle Swept Path Analysis	2025-09-04	MS

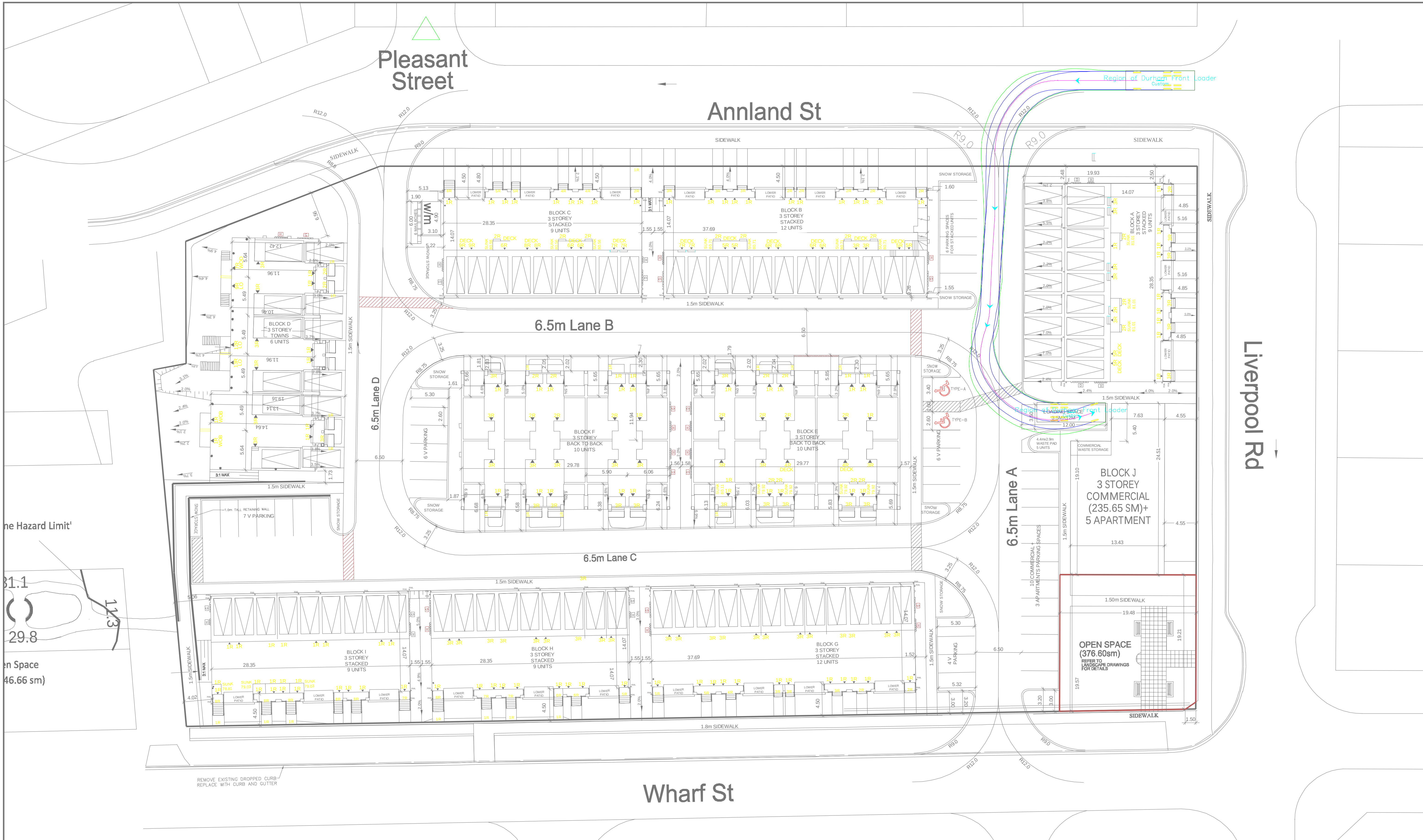
DESIGN: MS	REVIEWED BY: IB
DRAWN: MS	CHECKED BY: IB
DATE: 2025-12-05	
SCALE: 1:500	

PROPOSED DEVELOPMENT AT 640 LIVERPOOL ROAD
TOWN OF PICKERING

SITE CIRCULATION
(WASTE COLLECTION VEHICLE)

PROJECT NO. 25-2038

SHEET NO. T-13



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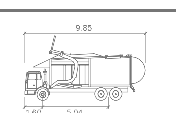


Region of Durham Front Loader

	meters
Width	: 2.77
Track	: 2.60
Lock to Lock Time	: 6.0
Steering Angle	: 26.0

DILLON CONSULTING

No.	ISSUED FOR	DATE	BY
2	Vehicle Swept Path Analysis	2025-12-05	MS
1	Vehicle Swept Path Analysis	2025-09-04	MS

DESIGN	REVIEWED BY
MS	IB
DRAWN	CHECKED BY
MS	IB

DATE: 2025-12-05

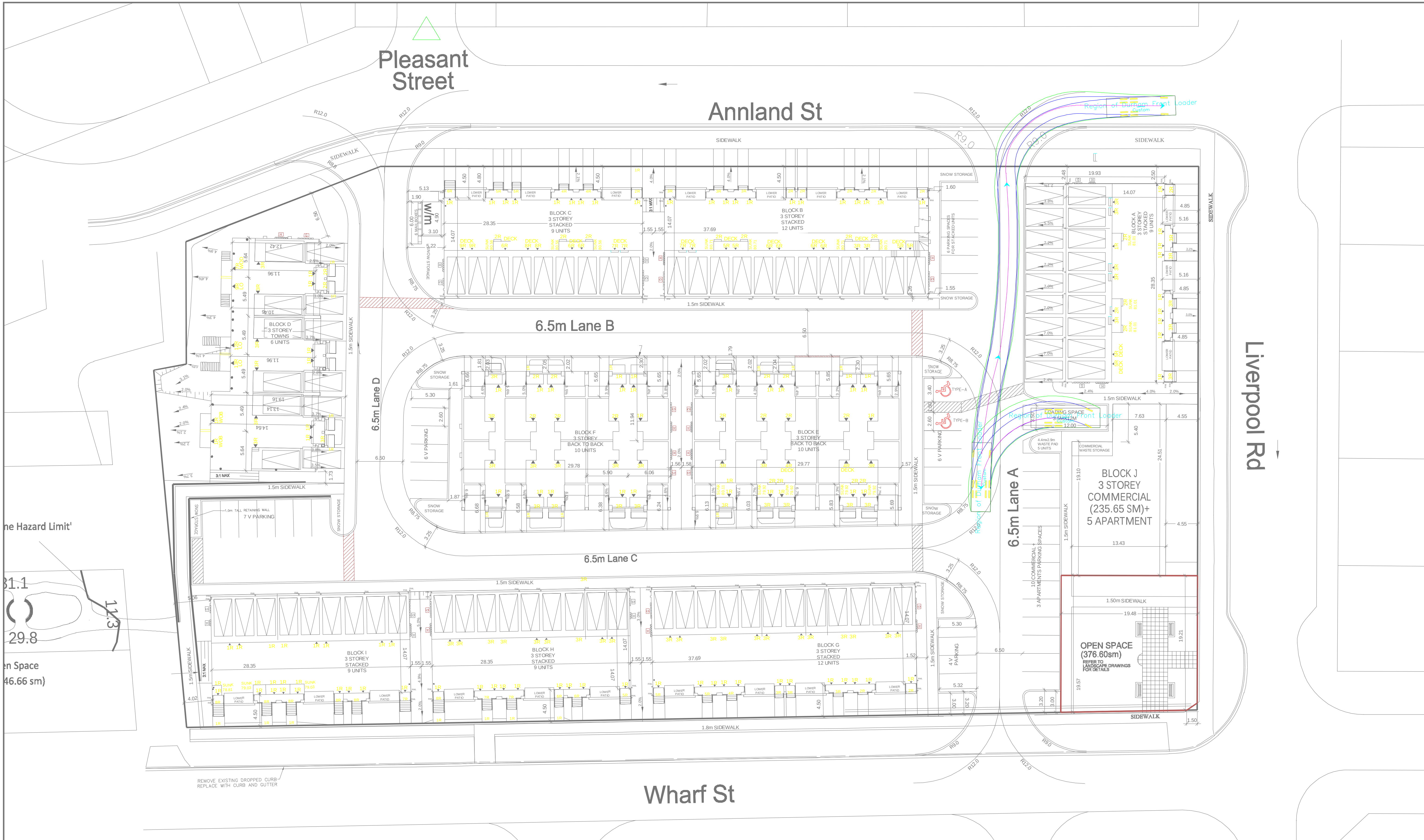
SCALE: 1:500

PROPOSED DEVELOPMENT AT 640 LIVERPOOL ROAD
TOWN OF PICKERING

SITE CIRCULATION
(WASTE COLLECTION VEHICLE)

PROJECT NO.: 25-2038

SHEET NO.: T-14



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Region of Durham Front Loader

	meters
Width	: 2.77
Track	: 2.60
Lock to Lock Time	: 6.0
Steering Angle	: 26.0

DILLON CONSULTING

No.	ISSUED FOR	DATE	BY
2	Vehicle Swept Path Analysis	2025-12-05	MS
1	Vehicle Swept Path Analysis	2025-09-04	MS

DESIGN: MS — REVIEWED BY: IB
DRAWN: MS — CHECKED BY: IB
DATE: 2025-12-05
SCALE: 1:500

PROPOSED DEVELOPMENT AT 640 LIVERPOOL ROAD
TOWN OF PICKERING

SITE CIRCULATION
(WASTE COLLECTION VEHICLE)

PROJECT NO. 25-2038

SHEET NO. T-15