

Appendix E

Transportation Impact Assessment Summary



Infrastructure Ontario (IO)

TRANSPORTATION IMPACT ASSESSMENT (SEPT 2023)

Ontario Place Redevelopment

Executive Summary

September 2023
22233

Disclaimer

This Report represents the work of LEA Consulting Ltd (“LEA”). This Report may not be relied upon for detailed implementation or any other purpose not specifically identified within this Report. This Document is confidential and prepared solely for the use of Infrastructure Ontario. Neither LEA, its sub-consultants nor their respective employees assume any liability for any reason, including, but not limited to, negligence, to any party other than Infrastructure Ontario for any information or representation herein.

TABLE OF CONTENTS

1	Introduction	1
2	Traffic Analysis	1
2.1	<i>Trip Generation</i>	1
2.2	<i>Intersection Capacity Analysis</i>	3
3	Multi-Modal Transportation Analysis	3
4	Vehicular Parking	4
5	Bicycle Parking	4

LIST OF TABLES

Table 2-1:	Trip Generation Summary (Auto Trips, Transit Trips, Walk + Cycle Trips).....	2
Table 2-2:	Passive Use Trip Generation Summary	3

1 INTRODUCTION

LEA Consulting Ltd. (LEA) completed a Transportation Impact Assessment (TIA), dated November 2022 and subsequent TIS Update, dated September 2023 to assess the full redevelopment of Ontario Place which consists of new major attractions including an all-seasons destination constructed by Therme Group, the redevelopment of the existing amphitheatre by Live Nation, the adaptive reuse of the existing Pods + Cinesphere and new mainland pavilion for science-based programming by the Ontario Science Centre (OSC), and an expansion to the existing public open space.

A centerpiece of this revitalization is the comprehensive investment in publicly accessible park space and site-wide upgrades to the entire public realm. This includes upwards of 50 acres of new and improved publicly accessible open space, a series of new open spaces across the mainland, a large new park on the East Island, and a new West Island shoreline and roof park that features public gathering spaces and water recreation activities. Approximately 6.2 acres of existing open space/hardscape will be converted into greenspace on the east island and mainland, with enhancements to the existing event space on the east island, totaling 13.7 acres of park space. In addition, new open space and public boardwalks are proposed on the mainland forming a comprehensive park and public realm network across Ontario Place.

The purpose of the TIA was to assess the redevelopment from a transportation perspective during the weekday AM, PM, Saturday, and event day peak periods, to determine the traffic impacts on the adjacent road network and identify any required mitigation measures to support the Ontario Place redevelopment. Since the original November 2022 assessment, additional analysis periods were documented to understand the peak weekend activity associated with a Toronto FC (TFC) game as well as during large summer events (e.g., the Canadian National Exhibition (CNE) and the Toronto Caribbean Festival) hosted at Exhibition Place every year. Accordingly, the following provides a summary of the September 2023 TIS, and the summer event analysis, as it relates to the public realm.

2 TRAFFIC ANALYSIS

2.1 TRIP GENERATION

The resulting trip generation for all uses during the weekday AM, weekday PM, Saturday, TFC Saturday, and CNE Saturday peak hours under ultimate buildout are summarized in **Table 2-1**. **Table 2-2** summarizes the total trip generation results for passive uses only.

Of the 387 new auto trips in the AM peak hour, 1,021 new auto trips in the PM peak hour, 1,427 new auto trips in the Saturday and CNE Saturday peak hour, and 2,506 new auto trips during the TFC Saturday peak hour, the public realm elements contribute approximately 14% (53 trips), 8% (83 trips), 10% (149 trips), and 5% (116 trips) to the AM, PM, Saturday/CNE Saturday, and TFC Saturday peaks, respectively. The new auto trips noted are the sum of the driver trips, rideshare-PUDO (first passenger in a pick-up/drop-off vehicle) trips, and non-TTC bus (school bus) (driver of a non-TTC bus) trips.

To note, public realm elements are not anticipated to contribute to passenger, rideshare passenger, non-TTC (school bus) passenger, or transit trips.

Table 2-1: Trip Generation Summary (Auto Trips, Transit Trips, Walk + Cycle Trips)

Mode	Therme		Live Nation		OSC		Passive Uses		Total	
	In	Out	In	Out	In	Out	In	Out	In	Out
Weekday AM Peak (9AM - 10AM)										
Auto Trips	105	25	68	0	50	0	33	20	256	45
Passengers	152	33	2	0	124	0	0	0	278	33
Rideshare-PUDO (Passenger)	33	8	0	0	30	0	0	0	63	8
Non-TTC Bus (School Bus) (Passenger)	0	0	0	0	115	0	0	0	115	0
Transit	89	20	27	0	128	0	0	0	244	20
Walk + Cycle Trips	40	9	0	0	8	0	123	75	171	84
Weekday PM Peak (6PM - 7PM)										
Auto Trips	90	140	404	4	0	0	38	45	532	189
Passengers	134	207	600	0	0	0	0	0	734	207
Rideshare-PUDO (Passenger)	30	48	150	0	0	0	0	0	180	48
Non-TTC Bus (School Bus) (Passenger)	0	0	0	0	0	0	0	0	0	0
Transit	77	120	4,015	2	0	0	0	0	4,092	122
Walk + Cycle Trips	35	54	0	0	0	0	143	166	178	220
Saturday and CNE Saturday Peak (6PM - 7PM)										
Auto Trips	150	310	404	4	0	0	68	81	622	395
Passengers	226	468	600	0	0	0	0	0	826	468
Rideshare-PUDO (Passenger)	50	103	150	0	0	0	0	0	200	103
Non-TTC Bus (School Bus) (Passenger)	0	0	0	0	0	0	0	0	0	0
Transit	130	268	4,015	2	0	0	0	0	4,145	270
Walk + Cycle Trips	58	121	0	0	0	0	254	299	312	420
TFC Saturday Peak (7PM - 8PM)										
Auto Trips	165	325	1,120	0	0	0	51	65	1,336	390
Passengers	242	482	1,680	0	0	0	0	0	1,922	482
Rideshare-PUDO (Passenger)	54	108	420	0	0	0	0	0	474	108
Non-TTC Bus (School Bus) (Passenger)	0	0	0	0	0	0	0	0	0	0
Transit	140	278	11,237	0	0	0	0	0	11,377	278
Walk + Cycle Trips	63	125	0	0	0	0	191	240	254	365

Table 2-2: Passive Use Trip Generation Summary

Mode	Passive Uses				Total Site			
	AM Peak	PM Peak	Sat/CNE Sat	TFC Sat	AM Peak	PM Peak	Sat/CNE Sat	TFC Sat
	Total (In + Out)							
Auto Trips	53	83	149	116	387	1,021	1,427	2,506
Passengers	0	0	0	0	311	941	1,294	2,404
Rideshare-PUDO (Passenger)	0	0	0	0	71	228	303	582
Non-TTC Bus (School Bus) (Passenger)	0	0	0	0	115	0	0	0
Transit	0	0	0	0	264	4,214	732	11,655
Walk + Cycle Trips	198	309	553	431	255	398	637	619

2.2 INTERSECTION CAPACITY ANALYSIS

Intersection capacity analysis was conducted to understand the future transportation conditions of the study area during the AM, PM, Saturday, TFC Saturday, and CNE Saturday peak hours. Overall, intersection improvements are recommended as a result of the public realm improvements and the redevelopment of Ontario Place as a whole. Specifically, it is recommended that the westbound approach along Lake Shore Boulevard W at all three (3) site accesses be modified to extend the storage length to accommodate the expected WBL queues into the subject site. With the recommended geometry, lane modifications, and optimized signal timing plans that properly account for turning movements, it is expected that the site access intersections will operate acceptably and within capacity during all analyzed time periods.

3 MULTI-MODAL TRANSPORTATION ANALYSIS

As displayed in **Table 2-1** and **Table 2-2**, the public realm elements contribute approximately 78% (198 trips), 78% (309 trips), 87% (553 trips), and 70% (431 trips) to the new active transportation trips (walk + cycle) during the AM, PM, Saturday/CNE Saturday, and TFC Saturday peak hours.

A multi-modal transportation assessment was conducted to understand the future pedestrian and cycling level of service (LOS) with redevelopment at Ontario Place. Overall, the pedestrian network is sufficient to accommodate the redevelopment, including improvements to the public realm. The exceptions are the crossing links between Live Nation and the mainland. However, crowded conditions are only expected during the time of arrival and departure of concert attendees.

Planned active transportation improvements are proposed as part of the redevelopment to encourage active transportation. This includes a new pedestrian promenade on the mainland aimed at cultivating a more pedestrian-centric environment as well as improved intersection designs for trail users along the Martin Goodman Trail. These improvements include best practice designs to slow turning vehicles, protect cyclists, and minimize conflicts between trail users and auto drivers to accommodate the anticipated pedestrian and cyclist traffic generated by the Ontario Place redevelopment. Furthermore, the redevelopment will support future active transportation and transit infrastructure to strengthen the connection between Exhibition Station and Ontario Place. The proposed public realm improvements, upgrades to active transportation infrastructure, ample pedestrian connections, and attractive open spaces support the robust set of Transportation Demand Management (TDM) measures recommended

for the Ontario Place redevelopment. These measures will enhance the multi-modal travel experience for visitors and support the reduction of single-occupancy vehicle trips generated by the site.

4 VEHICULAR PARKING

As part of the Ontario Place Redevelopment Project Class Environmental Assessment (Class EA), Jacobs undertook an evaluation to determine the preferred parking solution for the Ontario Place redevelopment. Based on an evaluation of sub-criteria including natural environment, social environment, cultural environment, technical considerations, and economic environment, it was determined that a combination of a surface parking lot and a below grade structure is the preferred parking solution as it provides the greatest on-site parking and flexibility in parking options for site users.

Of the total anticipated weekday and weekend parking demand of 2,148 and 2,592, respectively, the maximum parking demand for public realm elements is 137 parking spaces on weekdays and 243 parking spaces on weekend. Based on the preferred parking solution, an underground parking structure consisting of 1,891 spaces and above grade parking lot consisting of 632 spaces are proposed to accommodate the anticipated parking demand.

While the parking supply is proposed to double from existing conditions, the redevelopment anticipates a significant shift to more sustainable modes (i.e., approximately 70% of visitors are anticipated to arrive by sustainable modes versus 35% under existing conditions). Therefore, the redevelopment exhibits a modest increase in parking. Furthermore, the decision to locate intensification at Ontario Place compared to suburban or exurban locations outside downtown Toronto supports the anticipated travel choices and is more in line with climate change policy direction. Given on-going studies for Exhibition Place that would result in the removal of parking spaces in favour of a focus on pedestrians and cyclists, it was determined that parking would not be shared between Ontario Place and Exhibition Place. The proposed parking supply was developed based on the anticipated visitor mode splits to accommodate the auto demand generated by Ontario Place patrons, allowing parking to be right-sized for the redevelopment.

5 BICYCLE PARKING

It is recommended that approximately 100 short-term covered bicycle parking spaces be provided and distributed throughout the open public space and at key destinations to accommodate the demand for passive and public realm uses including Trillium Park and future amenities at the Ontario Place marina. Providing short-term bicycle parking at key destinations would further encourage cycling movement and provide a dedicated space for cyclists to store their bicycles within the public realm. Short-term bicycle parking should be provided at-grade near building entrances, along bike paths, and at all major destinations.

950+ bicycle parking spaces will be provided on site and shared between all uses. Of the 950 spaces, 194+ bicycle parking spaces will be scattered throughout the Ontario Place west and east islands for passive and public realm uses. Space within the public realm will also be dedicated to bike sharing facilities to further encourage cycling movement.



**Infrastructure
Ontario**