

Appendix E

Transportation Impact Assessment Summary



Infrastructure Ontario (IO)

TRANSPORTATION IMPACT ASSESSMENT (NOV 2022)

Ontario Place Redevelopment

Executive Summary

May 2023
22233

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1 INTRODUCTION

LEA Consulting Ltd. (LEA) completed a Transportation Impact Study (TIS), dated November 2022 to assess the full redevelopment of Ontario Place which consists of new major attractions including an all-season destination constructed by Therme Group, the redevelopment of the existing amphitheatre by Live Nation, an adventure playground, the construction of a science-based entrance pavilion on the mainland, 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 a series of new animated and fully accessible open spaces across the island. 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 November 2022 TIS was to assess the redevelopment from a transportation perspective during the weekday AM, PM, and weekend peak hours, to determine the traffic impacts on the adjacent road network and identify any required mitigation measures to support the Ontario Place redevelopment. It is noted that additional analysis was also undertaken to analyze the traffic impacts during 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 November 2022 TIS, and the summer event analysis, as it relates to the public realm.

To note, an update to the November 2022 TIS is currently underway and anticipated for completion in July 2023.

2 TRAFFIC ANALYSIS

2.1 TRIP GENERATION

The resulting trip generation for all uses during the weekday AM, weekday PM, weekend, and event day peak hours are summarized in **Table 2-1**. **Table 2-2** summarizes the total trip generation results for passive uses only.

Of the 481 new auto trips in the AM peak hour, 998 new auto trips in the PM peak hour, 1,422 new auto trips in the weekend peak hour, and 1,012 new auto trips during the event day peak hour, the public realm elements contribute approximately 5% (24 trips), 5% (51 trips), 9% (134 trips), and 9% (89 trips) to the AM, PM, weekend, and event day 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		Adventure Park		Science-Based Uses		Passive Uses		Total	
	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out
Weekday AM Peak (9 AM - 10 AM)												
Auto Trips	135	55	80	0	151	29	7	1	16	8	388	93
Passengers	152	33	2	0	161	0	13	0	0	0	327	33
Rideshare-PUDO (Passenger)	33	8	0	0	38	0	3	0	0	0	74	8
Non-TTC Bus (School Bus) (Passenger)	0	0	0	0	45	0	11	0	0	0	56	0
Transit	89	20	31	0	210	0	14	0	0	0	343	20
Walk + Cycle Trips	40	9	0	0	12	0	1	0	55	49	108	58
Weekday PM Peak (6 PM - 7 PM)												
Auto Trips	140	190	499	99	3	16	0	0	25	26	667	331
Passengers	134	207	600	0	0	17	0	0	0	0	734	224
Rideshare-PUDO (Passenger)	30	48	143	0	0	4	0	0	0	0	173	52
Non-TTC Bus (School Bus) (Passenger)	0	0	0	0	0	4	0	0	0	0	0	4
Transit	77	120	3,764	2	0	22	0	0	0	0	3,841	143
Walk + Cycle Trips	35	54	0	0	0	1	0	0	231	152	266	207
Weekend Peak (6 PM - 7 PM)												
Auto Trips	255	415	499	99	3	17	0	0	66	68	823	599
Passengers	226	468	600	0	0	18	0	0	0	0	826	486
Rideshare-PUDO (Passenger)	50	103	143	0	0	4	0	0	0	0	192	107
Non-TTC Bus (School Bus) (Passenger)	0	0	0	0	0	1	0	0	0	0	0	1
Transit	130	268	3,764	2	0	23	0	0	0	0	3,894	293
Walk + Cycle Trips	58	121	0	0	0	1	0	0	254	203	312	325
Event Peak (5 PM - 6 PM)												
Auto Trips	310	370	4	4	4	20	48	164	41	48	406	606
Passengers	312	397	0	0	0	21	30	322	0	0	342	740
Rideshare-PUDO (Passenger)	70	89	0	0	0	5	7	79	0	0	77	173
Non-TTC Bus (School Bus) (Passenger)	0	0	0	0	0	0	2	28	0	0	2	28
Transit	178	228	2	2	0	27	32	341	0	0	211	598
Walk + Cycle Trips	80	103	0	0	0	1	2	19	233	190	315	313

Table 2-2: Passive Use Trip Generation Summary

Mode	Passive Uses				Total Site			
	AM Peak	PM Peak	Wknd	Event	AM Peak	PM Peak	Wknd	Event
	Total (In + Out)							
Auto Trips	24	51	134	95	481	998	1,422	1,012
Passengers	0	0	0	0	360	958	1,312	1,082
Rideshare-PUDO (Passenger)	0	0	0	0	82	225	299	250
Non-TTC Bus (School Bus) (Passenger)	0	0	0	0	56	4	1	30
Transit	0	0	0	0	363	3,984	4,187	809
Walk + Cycle Trips	104	383	457	423	166	473	637	628

2.2 INTERSECTION CAPACITY ANALYSIS

Intersection capacity analysis was conducted to understand the future transportation conditions of the study area during the AM, PM, weekend, and event day 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 63% (104 trips), 81% (383 trips), 72% (457 trips), and 67% (423 trips) to the new active transportation trips (walk + cycle) during the AM, PM, weekend, and event day 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 during the expected time of arrival and departure of concert attendees. Furthermore, the proposed public realm improvements to the Martin Goodman Trail including the separation and widening of bicycle and pedestrian space as well as improved protected signals will accommodate the anticipated pedestrian and cyclist traffic generated by the Ontario Place redevelopment.

The proposed public realm improvements including 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 2,132 and 2,569, respectively, the maximum parking demand for public realm elements is 55 parking spaces on weekdays and 148 parking spaces on weekend. Based on the preferred parking solution, an underground parking structure consisting of 2,118 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, the Ontario Place Pods + Cinesphere, 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.

All long-term bicycle parking should be provided in secured and weather-protected locations. Upon full-build out of the Ontario Place redevelopment, a contemporary underground bike parking facility is recommended to be integrated into the proposed mobility hub on the mainland. The underground bike facility will accommodate approximately 362 bicycle parking spaces and support multi-modal travel.



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