LANSDOWNE 2.0

Transportation Impact Assessment

Revised Development Concept

Technical Memorandum

Stantec

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Reference: Lansdowne 2.0 Transportation Impact Assessment Technical Memorandum (Revised Development Concept)

1. INTRODUCTION

The City of Ottawa and the Ottawa Sports and Entertainment Group (OSEG) engaged Stantec to undertake a Transportation Impact Assessment (TIA) and Transportation Demand Management (TMD) Strategy as part of a Zoning By-Law Amendment in support of Lansdowne 2.0.

The initial TIA study, which as completed in June 2023, was developed in support of a plan to redevelop the north stadium stands with three towers consisting of 1,200 new residential dwelling units, replacing the existing ground level 41,000 ft^2 commercia retail and box office annex TD Place with 79,176 ft^2 of new podium-level commercial retail space, a new 27,845 ft^2 music hall with a capacity for 1,500 people.

As a result of comments received through public consultant efforts, and City Staff review, as well as an internal revaluation of the development program, the proposed development has been amended as detailed below.

The proposed concept, as outlined in the June 2023 submission, has been revised to remove the third residential tower located closest to the Aberdeen Pavilion, resulting in a two-tower concept of 40 and 25 storeys in height. In addition to the removal of one residential tower, the proposed floorplate sizes of the remaining two-towers have been reduced from approximately 900 square metres to approximately 800 square metres.

These two major revisions to the plan have resulted in a decrease in residential unit yield from 1,200 units to approximately 770 units (distributed between the two towers and potential residential podium). The revised concept has also allowed for additional tower separation, with an opportunity to now provide spacing between towers ranging from 40 to 60 metres, exceeding the distance required in the Zoning By-law and the Urban Design Guidelines for High Rise Buildings. Associated parking for the residential towers has also been reduced from the June 2023 proposal by almost half, decreasing from 739 spaces to 386 spaces. Of the 386 spaces proposed, approximately 35 spaces allocated to non-residential uses. The remaining parking spaces will be allocated to the two residential towers. No visitor or commercial parking will be provided in the proposed new parking garage, as the existing 1,089 paid underground spaces (including the 230 nested Whole Foods / LCBO spaces) are expected to accommodate those vehicles. A bicycle parking count ratio of one space per unit continues to be proposed.

The retail podium is proposed to be developed as a two-storey built form; consistent with the June 2023 submission. As in the previous submission, the residential portion of the podium will be stepped back from the edge of the retail podium, providing a terrace for the residents of the building. The revised concept also results in the podium to decrease in size from approximately 10,003 square metres to approximately 4,611 square metres. This decrease is a result of the removal of the music hall and one upper-level of retail space, which has been replaced by residential amenity area on the second floor of the podium. The reduction in the retail space still allows for an active ground floor that contributes to the year-round activation of Lansdowne.

The removal of the third residential tower adjacent to Aberdeen Pavilion has created an opportunity for the introduction of a new public realm space approximately 1,858 square metres in size. This new public realm space provides an opportunity for activation between the Aberdeen Pavilion and the new Event Centre. Key elements of the proposal such as the ceremonial stairs and raised promenade, as well as views to protected heritage assets are retained in the revised design.

This Technical Memorandum examines the changes in transportation demands associated with the revised development concept, and the implications on the initial transportation analysis findings and recommendations for the recently completed Transportation Impact Assessment (TIA) Report.

2. REVISED DEVELOPMENT CONCEPT

The site currently consists of the Stadium at TD Place: a 24,000 person outdoor stadium that is home to the Canadian Football League's (CFL) Ottawa RedBlacks and Canadian Premier League's (CPL) Ottawa Atlético, the Arena at TD Place: a 9,800 person indoor multipurpose venue and arena (formerly known as the Civic Center) that is home to the Ontario Hockey League's (OHL) Ottawa 67's and the Canadian Elite Basketball League's (CEBL) Ottawa BlackJacks, two condominium towers and townhomes with a total of 280 residential units, approximately 360,000 ft^2 of varied commercial retail and office space, and an 18-acre urban park that includes the historic Aberdeen Pavilion and Horticulture Building. As part of the Lansdowne Revitalization project, the previous ground-level surface parking, which previously supported activities at Lansdowne Park, was replaced with an underground parking garage that provides 1,380 spaces for public and residential use.

The revised Lansdowne 2.0 concept includes the following elements:

- Replacing the existing functionally obsolete north stadium stands and arena complex with a new 11,200 seat (12,100 spectator) north stand structure for the Stadium at TD Place. This new facility replaces the existing north stadium stands, which currently has a capacity of 14,028 spectators, and would result in a reduction of approximately 2,000 spectator capacity at the Stadium at TD Place. This venue will continue to be the home of the CFL's Ottawa RedBlacks and the CPL's Ottawa Atlético.

- Replace the existing 9,800 seat indoor arena and event space attached to the north stadium stands with a new standalone 5,500 seat (6,500 spectator) multi-purpose event center that will be home to the OHL's Ottawa 67's, the CEBL's Ottawa BlackJacks, and other indoor ticketed events such concerts.

- Construction of two new residential towers with up to 770 dwelling units that include a mixture of rental, market and affordable housing units.

- Replacing the existing 41,000 ft^2 of commercial retail and box office annex to the Stadium on Exhibition Way with 49,635 ft^2 of new podium-level commercial retail space. This represents a net increase of 8,635 ft^2 of commercial retail space from what is currently provided today.

- Replacing the existing 10,760 ft^2 of office space currently provided within the Stadium at TD Place north stands with 25,000 ft^2 of new office space. This represents a net increase of 14,240 ft^2 of office space from what is currently provided today.

There are no changes to the three phase approach to Lansdowne 2.0 build-out under the revised development concept:

- *Phase 1* consists of building the new 5,500 seat multipurpose event center which is planned to be completed in mid-2026. This phase of development replaces existing land uses and activities currently provided at Lansdowne. This phase of development is not expected to generate any additional transportation demands.

- *Phase 2* consists of building the new 11,200 seat North Stand Stadium structure and a portion of the podium level retail space. This phase is anticipated to be completed in late-2028 or early 2029 and replaces existing land uses

and activities currently provided at Lansdowne. This phase of development is not expected to generate any additional transportation demands.

- *Phase 3* consists of building the three new residential towers with up to 770 new residential units. This phase is anticipated to be completed in phases between 2032 and 2036 and is representative of additional land use density to the site. This phase of development is anticipated to generate additional transportation demands.

3. TRANSPORTATION DEMAND FORECASTING

3.1 Initial Development Concept

The *Institute of Transportation (ITE) Trip Generation Manual (11th Edition)* and *RANS Trip Generation Manual* were used in the Lansdowne 2.0 Transportation Impact Assessment Study to forecast additional trips to Lansdowne associated with the redevelopment.

Under the original site plan concept, Lansdowne 2.0 additional development person trips ranged between 789 to 1,198 peak hour person trips during the Weekday AM, Weekday PM, and Weekend Peak Hour.

Table 1 provides a summary of Lansdowne 2.0 peak hour person trips per mode under the initial three tower concept.

Detailed forecasting and trip generation information is included in **Annex A** for reference.

Table 1 – Lansdowne 2.0 Additional Trips (Original Three Tower Concept)

	Travel Mode	Weekday AM Peak Hour			Weekday PM Peak Hour			Weekend PM Peak Hour		
		In	Out	Total	In	Out	Total	In	Out	Total
Lansdowne 2.0 Additional Trips By Mode Original Concept (Three Towers)	Auto Driver	41	163	204	131	89	220	176	145	321
	Auto Passenger	10	50	60	35	21	56	45	36	80
	Transit	34	153	187	111	70	181	144	117	261
	Cycling	8	34	42	25	16	41	33	27	60
	Walking	61	235	295	193	133	325	260	216	476
	Total Person Trips	154	635	**789**	495	328	**824**	658	540	**1,198**

3.2 Revised Development Concept

As part of this Technical Memorandum, the trip generation potential of the proposed Lansdowne 2.0 development was revised based on the two-tower concept. The base assumptions used in the original transportation study were adopted as part of this assessment, with the exception of the Trip Internalization factors. No Trip Internalization factors were applied to provide a conservative estimate of the trip generation potential of additional land uses.

Under the revised development concept, Lansdowne 2.0 additional development person trips are estimated to range between 505 to 628 peak hour person trips during the Weekday AM, Weekday PM, and Weekend Peak hours.

A summary of Lansdowne 2.0 peak hour person trips per mode under the two-tower development concept is outlined below in **Table 2**.

Detailed forecasting and trip generation information is included in **Annex A** for reference.

Table 2 – Lansdowne 2.0 Additional Trips (Two Tower Concept)

	Travel Mode	Weekday AM Peak Hour			Weekday PM Peak Hour			Weekend PM Peak Hour		
		In	Out	Total	In	Out	Total	In	Out	Total
Lansdowne 2.0 Additional Trips By Mode Revise Concept (Two Towers)	Auto Driver	32	103	135	73	53	126	91	73	164
	Auto Passenger	8	32	40	21	14	35	27	21	48
	Transit	26	98	124	67	45	111	83	66	149
	Cycling	6	22	28	15	10	26	19	15	34
	Walking	33	146	178	103	65	168	129	103	233
	Total Person Trips	**105**	**400**	**505**	**280**	**186**	**466**	**350**	**278**	**628**

In comparison to the original three tower concept adopted in the Lansdowne 2.0 Transportation Impact Assessment report, the two-tower development concept is estimated to generate approximately 42% less Peak Hour Person Trips from the original trip generation estimates of the initial Lansdowne 2.0 development concept.

A summary of the changes in two-way (i.e. inbound and outbound) Peak Hour demands for are outlined below:

Vehicular Traffic (Auto Driver):

- Weekday AM Peak Hour demands reduced from **204** veh trips / hr to **135** veh trips / hr
- Weekday PM Peak Hour demands reduced from **220** veh trips / hr to **126** veh trips / hr
- Weekday PM Peak Hour demands reduced from **321** veh trips / hr to **164** veh trips / hr

Transit Demands:

- Weekday AM Peak Hour demands reduced from **187** trips / hr to **124** trips / hr
- Weekday PM Peak Hour demands a reduced from **181** trips / hr to **111** trips / hr
- Weekday PM Peak Hour demands reduced from **261** trips / hr to **149** trips / hr

Cycling Demands:

- Weekday AM Peak Hour demands reduced from **42** trips / hr to **28** trips / hr
- Weekday PM Peak Hour demands reduced from **41** trips / hr to **26** trips / hr
- Weekday PM Peak Hour demands reduced from **60** trips / hr to **34** trips / hr

Walking Demands:

- Weekday AM Peak Hour demands reduced from **295** trips / hr to **178** trips / hr
- Weekday PM Peak Hour demands reduced from **325** trips / hr to **168** trips / hr
- Weekday PM Peak Hour demands a reduced from **476** trips / hr to **233** trips / hr

The Trip Distribution and Assignment assumptions used in the Lansdowne 2.0 Transportation Impact Assessment report were maintained as part of this Technical Memorandum.

For reference, Trip Distribution and Trip Assignment assumptions are included in **Annex A**.

Based on the original trip distribution and assignment assumptions, the revised trip assignment for newly generated auto trips are summarized below in **Table 3**.

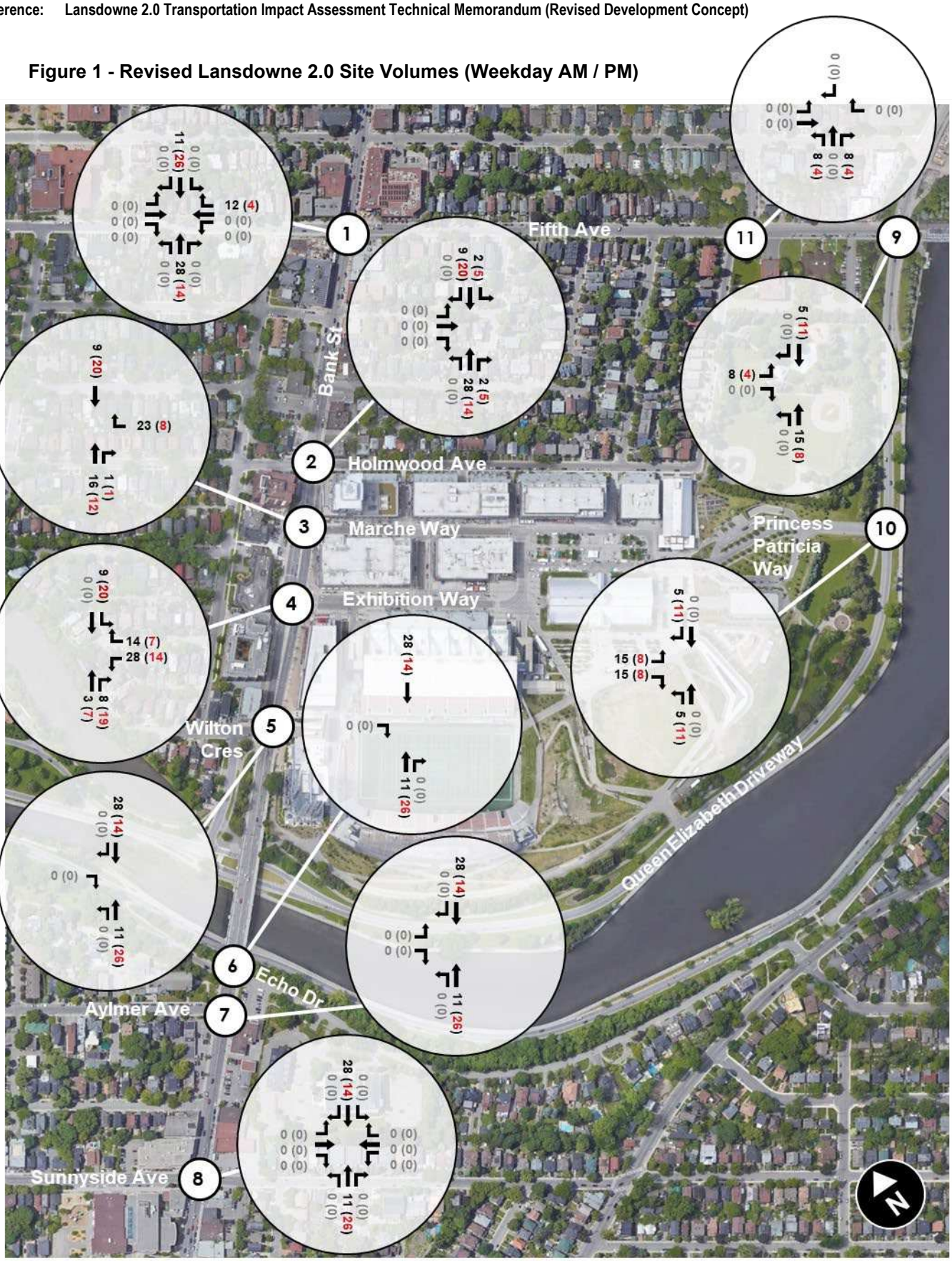
Table 3 - Vehicle Trip Assignment for Newly Generated Trips (Two Tower Concept)

Access	Weekday AM Peak Hour		Weekday PM Peak Hour		Weekend Peak Hour	
	In	Out	In	Out	In	Out
Bank Street	18	57	40	29	50	40
Queen Elizabeth Driveway	10	31	22	16	27	22
Holmwood Private Garage Access	5	15	11	8	14	11
Total	**32**	**103**	**73**	**53**	**91**	**73**

Revised site generated trips for the Weekday AM/PM Peak Hours, and Weekday Saturday Peak Hour are illustrated in **Figure 1** and **Figure** 2, respectively.

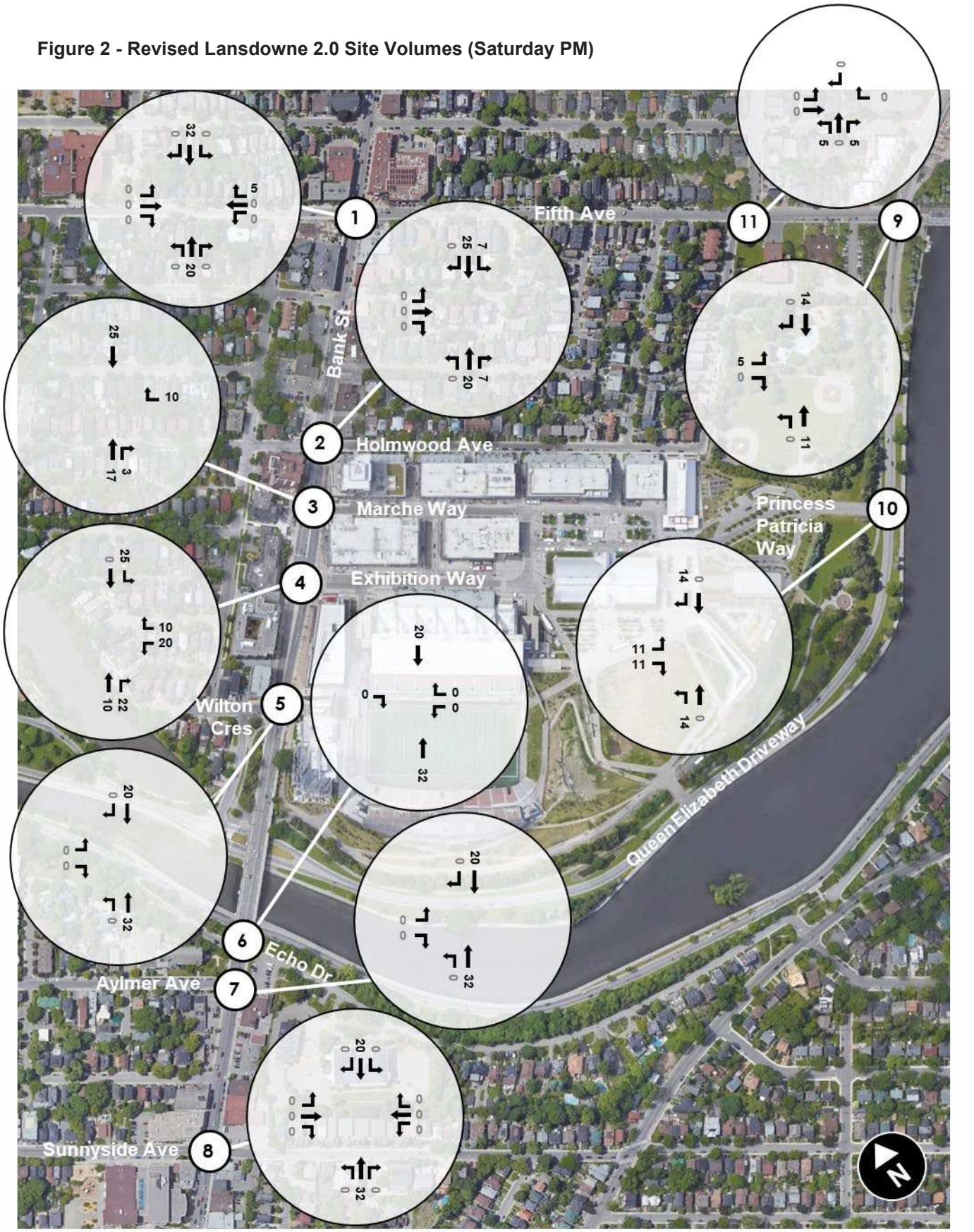
Reference: **Lansdowne 2.0 Transportation Impact Assessment Technical Memorandum (Revised Development Concept)**

Figure 1 - Revised Lansdowne 2.0 Site Volumes (Weekday AM / PM)



Lansdowne 2.0 Site Volumes (Weekday AM and PM Peak Hours)
AM Peak Hour (PM Peak Hour)

Figure 2 - Revised Lansdowne 2.0 Site Volumes (Saturday PM)



Lansdowne 2.0 Site Volumes (Saturday Peak Hour)

4. TRANSPORTATION STRATEGY

The Lansdowne 2.0 two-tower development concept is not expected to result in significant changes to the transportation strategies outlined in the Lansdowne 2.0 Transportation Impact Assessment report.

4.1 Design for Sustainable Modes

Under the two-tower Lansdowne 2.0 concept, the design for sustainable modes is maintained.

Bicycle facilities: Lansdowne is designed to accommodate cycling connectivity throughout the site. Many of the internal pathways, particularly Exhibition Way, Marche Way, and Princess Patricia Way, are designed as Pedestrian Priority Zones. Cycling access points are currently to Lansdowne are provided at Bank Street at Exhibition Way and Marche Way, as well as three cycling connections to internal pathways on Holmwood Avenue. On the east and south side of Lansdowne, connections to the multi-use pathways on Queen Elizabeth Driveway are provided at numerous locations. Improved cycling crossing facilities are currently contemplated at the Queen Elizabeth Driveway and Princess Patricia Way site access intersection to Lansdowne. Surface bicycle parking is provided throughout the public realm at Lansdowne. In addition, for major events held on site (such as RedBlacks games), free valet bike parking storage is provided.

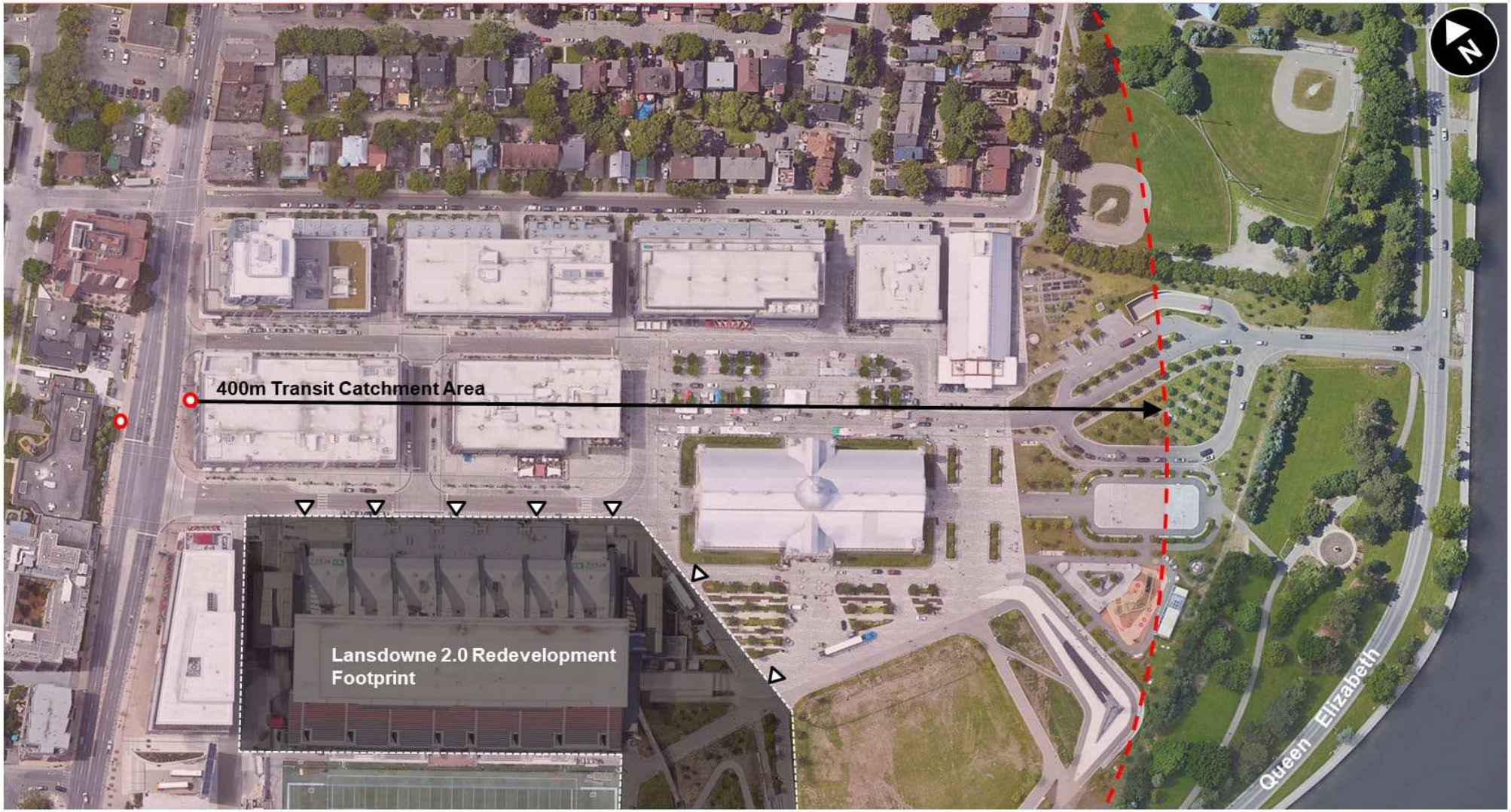
Pedestrian facilities: Lansdowne is designed to accommodate pedestrian movements throughout the site. Many of the internal pathways, particularly Exhibition Way, Marche Way, and Princess Patricia Way, are designed as Pedestrian Priority Zones. In recent years, the section of Princess Patricia Way between Exhibition Way and Marche Way (along the north side of the Aberdeen Pavilion) has been fully closed to vehicular traffic to better accommodate pedestrian flow. Pedestrian access points are currently to Lansdowne with pedestrian connections to Bank Street at Exhibition Way and Marche Way, as well as three pedestrian connections to sidewalks on Holmwood Avenue. On the east and south side of Lansdowne, pedestrian connections to the multi-use pathways on Queen Elizabeth Driveway are provided at numerous locations. Improved sidewalk and crossing facilities are currently contemplated at the Queen Elizabeth Driveway and Princess Patricia Way site access intersection to Lansdowne.

Parking areas: Lansdowne currently features an underground parking garage with a total of 1,376 spaces for public and residential use. Under the revised Lansdowne 2.0 concept, the underground parking garage is proposed to be expanded to include an additional 386 underground parking spaces (351 allocated for residential use, and 35 spaces allocated for non-residential use) for a total of 1,762 parking spaces. Similar to today, access to the underground parking garage will be provided through two garage ramp entrances: one on Exhibition Way east of Bank Street, the other on Princess Patricia Way west of Queen Elizabeth Driveway. A residents-only private access to the underground garage is also available on Holmwood Avenue.

Transit facilities: Transit stops for OC Transpo routes 6 and 7 are currently serviced by stops located at the intersection of Bank Street and Exhibition Way. In addition, these bus stops accommodate 450-series enhanced transit service during Major Events held at Lansdowne. There are sidewalks along both sides of Bank Street as well as adequate pedestrian crosswalks to access the transit stops. The proposed Lansdowne 2.0 development is located within the 400m transit catchment area.

Figure 3 illustrates the distance between existing transit stops serving Lansdowne and the proposed Lansdowne 2.0 development footprint.

Figure 3 - Lansdowne 2.0 Transit Service Access



4.2 Circulation and Access

Under the revised Lansdowne 2.0 concept, site access and circulation at Lansdowne is expected to continue to be provided at the existing site access intersections on Bank Street and QED for general public access, as well as Holmwood Avenue at the restricted, residents-only underground garage access.

Internal site circulation for vehicular traffic and deliveries is provided through Bank Street and Exhibition Way.

Currently, Princess Patricia Way along the north side of the Aberdeen Pavilion is restricted to vehicular traffic and serves as a pedestrian only zone. Vehicular circulation through the site is maintained via Marche Way.

Figure 4 illustrates current site circulation and access for Lansdowne.

Consistent with the Lansdowne 2.0 Transportation Impact Assessment, access to Lansdowne is assumed to be generally provided at both Bank Street and QED. It is acknowledged that QED is a federal parkway under the jurisdiction of the NCC Irrespective of Lansdowne 2.0, QED is an integral part of the city's transportation network and plays a crucial role in supporting a balanced, safe and efficient access program to Lansdowne, particularly during major events.

It is assumed that the QED will generally remain as a viable secondary vehicular access point to Lansdowne. Should this assumption change, the integrity of the Lansdowne 2.0 program, and likely current Lansdowne operations, would be severely compromised from a transportation perspective.

4.3 Parking

Lansdowne currently features an underground parking garage with a total of 1,376 spaces for public and residential use. Out of the 1,376 spaces currently provided, 287 are currently designated for residential use within restricted, resident-only access zones. The remaining 1,089 spaces are accessible by the general public.

Under the revised Lansdowne 2.0 development concept, the following parking provisions are proposed:

Minimum Vehicle Parking: As part of the proposed two-tower concept, 351 parking spaces are proposed for the residential portion of the redevelopment. A minimum parking rate of 0.4 spaces per dwelling unit is proposed for the site, which would require a total of 308 spaces for residential uses. The proposed decrease in parking rate represents a decrease of 0.1 spaces/unit from the current requirement of 0.5 spaces/unit. As the City of Ottawa moves towards a decrease in parking where alternative modes of travel are available, the minor reduction in the parking minimum will allow for greater uptake of the Transportation Demand Management (TDM) measures that are proposed as part of the Lansdowne 2.0 redevelopment. To offset the reduced parking, a bicycle parking ratio of one space per dwelling unit is proposed.

Visitor Parking Requirement: Based on the City of Ottawa Zoning By-Laws, the minimum visitor parking requirement for residential uses on the subject property is 0.1 spaces per dwelling unit. As Lansdowne is already developed with an underground parking garage with 1,089 publicly accessible spaces, no additional visitor parking is proposed as part of the proposed development. Visitors of the future residential buildings will be permitted to use the paid parking that is available to all other visitors of Lansdowne. Additional TDM measures are proposed as part of the proposed development, and as such, the removal of the visitor parking is considered to be appropriate. The removal of the visitor parking requirement will eliminate an additional 60 vehicle parking spaces, reducing the number of vehicles accessing Lansdowne.

Bicycle Parking Requirement: Based on the City of Ottawa Zoning By-Laws, the minimum bicycle parking requirement for the subject property is 0.5 spaces per dwelling unit. To offset the reduced parking requirements and to encourage alternative modes of transportation, the residential bicycle parking rate is proposed to be increased to 1 space per dwelling unit, for a total of 770 bicycle parking spaces. All other bicycle parking requirements for non-residential uses are not proposed to be changed and will comply with the applicable requirements of Section 111 of the Zoning By-law.

Figure 4 - Lansdowne Site Access, Circulation, and Traffic Control

4.4 Transportation Demand Management

The Lansdowne 2.0 Transportation Demand Management Strategy Report (June 30, 2023) outlines the strategies to accommodate additional transportation demands at Lansdowne through sustainable and alternative modes of transportation. The revised development concept for Lansdowne 2.0, which features less density than initially proposed, is not expected to result in a change to the modal share targets set for Lansdowne 2.0, or the TMD strategies proposed to reduce the reliance on the single occupancy vehicle. The proposed TDM measures outlined in the Lansdowne 2.0 Transportation Demand Management Strategy report (June 30, 2023) continues to be valid under the revised concept.

4.5 Neighbourhood Traffic Management

Since the opening of the redeveloped Lansdowne Park in 2014, a series of traffic calming measures have been implemented. This includes the closure of Princess Patricia Way to vehicular traffic, as well as traffic calming measures on Holmwood Avenue that included the removal of on-street parking on the north side of the road, restricting parking to residential permit-only parking, and reducing posted speeds from 40 km/h to 30 km/h. No additional traffic calming measures are proposed for the Lansdowne 2.0 development concept.

4.6 Transit

Transit modal shares of 25%, 14%, and 29% were assumed for the proposed Multi-Family Residential, Commercial Retail, and Office land-uses, respectively.

Under the revised Lansdowne 2.0 development concept, this is expected to result in a peak hour net increase in transit trips of 124 trips during the Weekday AM peak hour, 111 transit trips in the Weekday PM Peak hour, and 149 transit trips in the Weekend Saturday peak hour.

Currently, OC Transpo Route 6 and Route 7 provide service along Bank Street with connections to key destinations in Ottawa. Service is provided on weekdays and weekends with an average headway of 12 minutes for each route in both directions. This translates to a total of 20 two-way transit trips on Bank Street at Lansdowne (5 trips per bus route, per direction).

The OC Transpo fleet is comprised of various bus types including 40’ standard buses, higher capacity 60’ articulated buses, and double-decker buses.

Depending on the fleet vehicle used, the passenger capacity across the fleet varies between 57 to 110 passengers per bus, depending on the bus type. On average, the following capacities are provided:

- For Standard 40’ buses, the total carrying capacity per bus ranges between 57 to 85 passengers (standing and seated). An assumed carrying capacity of 70 passengers is assumed for Standard 40’ buses.
- For Articulated 60’ buses, the total carrying capacity per bus is 110 passengers (standing and seated).
- For Double Decker buses, the total carrying capacity per bus ranges between 96 to 105 passengers (standing and seated). An assumed carrying capacity of 100 passenger per bus is assumed for Double Decker buses.

OC Transpo currently utilizes a mix of buses from the fleet to provide service. Based on the current 20 two-way transit trips along Bank Street, current transit passenger carrying capacity ranges between 1,400 passengers / hr to 2200 passengers per hour, depending on the fleet mix used.

For planning purposes, an average two-way transit carrying capacity of 1,870 passengers per hour is assumed.

OC Transpo currently utilizes all bus types on Routes 6 and 7 along Bank Street. OC Transpo plans vehicle fleet mix for each trip booking to match observed and projected ridership. Based on information provided by OC Transpo, the following passenger demands are to be assumed for current ridership by bus type:

Standard 40' Buses:

- 40 passengers per vehicle, averaged over an hour during off-peaks.
- 45 passengers per vehicle, averaged over an hour during peak periods.

Articulated 60' Buses:

- 60 passengers per vehicle, averaged over an hour during off-peaks.
- 70 passengers per vehicle, averaged over an hour during peak periods.

Double Decker Buses:

- 85 passengers per vehicle, averaged over an hour during off-peaks.
- 90 passengers per vehicle, averaged over an hour during peak periods.

Based on the transit ridership data provided by OC Transpo, current two-way transit demands along Bank Street range between 900 passengers / hr to 1,800 passengers per hour depending on the fleet mix used.

For planning purposes, an average two-way transit demand of 1,400 passengers / hr is assumed for current service along Bank Street on Routes 6 and 7.

Based on the assumed two-way transit capacity and ridership demand assumptions outlined above (i.e. current two-way transit ridership demand of 1,400 passengers / hr versus carrying capacity of 1,870 passengers / hr), approximately 75% of current transit capacity is utilized, resulting in 25% available transit capacity (470 passengers / hr).

It is anticipated that the current two-way transit demands generated by Lansdowne 2.0, which ranges between 111 to 149 passengers / hr, can be accommodated within the current scheduled services on Bank Street.

4.7 Intersection Capacity and Multi-Modal Level of Service (MMLOS)

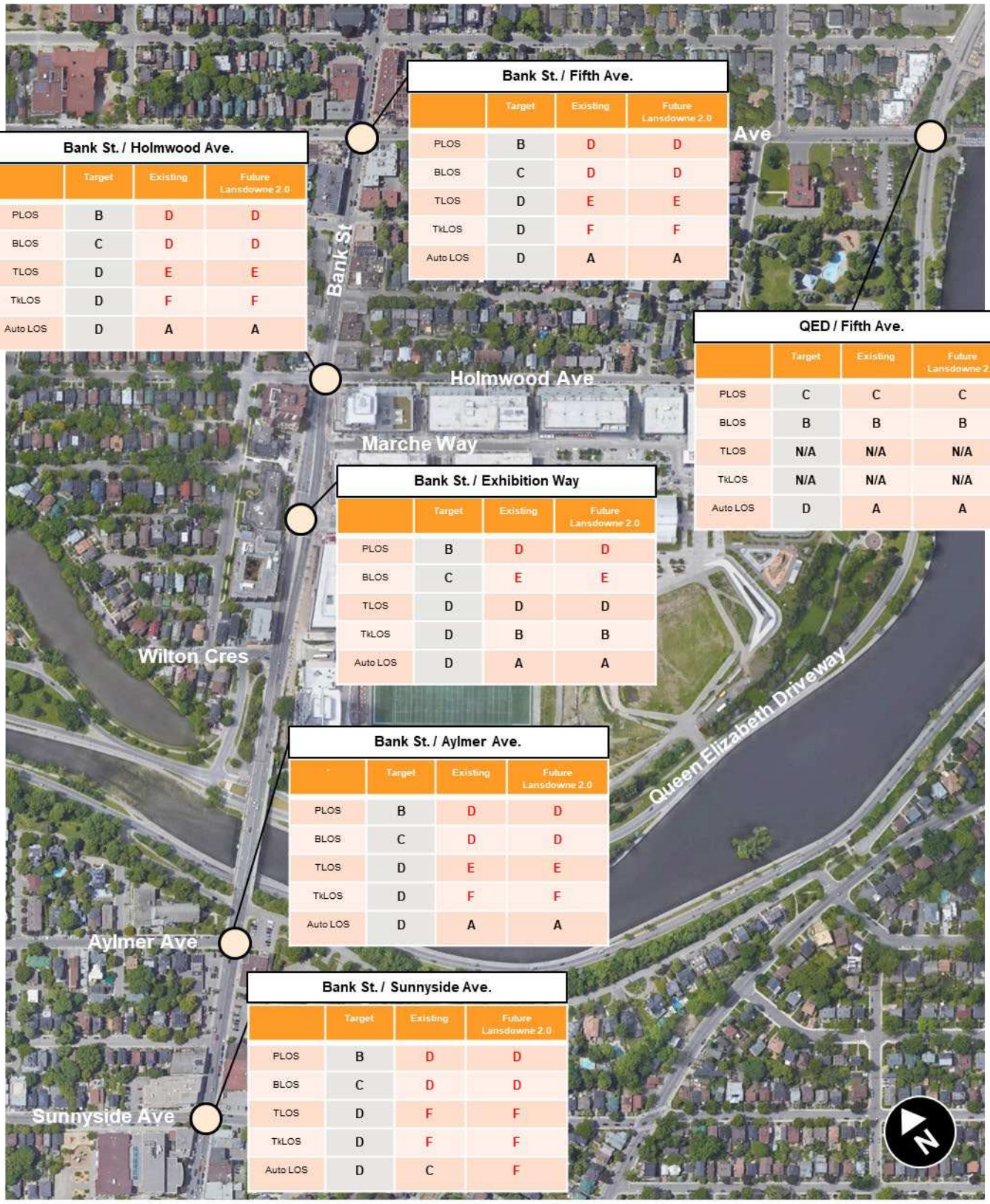
The revised Lansdowne 2.0 development concept, which reflects a reduction in proposed development density, is expected to generate less person trips than originally estimated in the Lansdowne 2.0 Transportation Impact Assessment report.

While this is expected to result in lower transportation demands on the transportation network, particularly for vehicular access, these changes are not expected to materially change the materially change the intersection capacity analysis or MMLOS assessments completed under the revised Lansdowne 2.0 concept.

A summary of the MMLOS analysis results, under Existing and Lansdowne 2.0 Full-Build Out, are illustrated in **Figure 5**.

Reference: **Lansdowne 2.0 Transportation Impact Assessment Technical Memorandum (Revised Development Concept)**

Figure 5 - Lansdowne 2.0 MMLOS Summary



Lansdowne 2.0 MMLOS Summary

Note: Results based on analyses documented in the Lansdowne 2.0 Transportation Impact Assessment Study (June 2023)

5. SUMMARY & CONCLUSIONS

This Technical Memorandum was undertaken to examine the changes in transportation demands associated with the revised Lansdowne 2.0 development concept, and the implications on the initial transportation analysis findings and recommendations to the Lansdowne 2.0 Transportation Impact Assessment (TIA) study.

The revised Lansdowne 2.0 development concept, which features two residential towers with up to 770 units and reduced podium-level commercial retail that is similar to what is currently provided today, is expected to generate significantly lower peak hour transportation demands with 42% less new trips than originally estimated in the transportation study.

The revised Lansdowne 2.0 development is anticipated to generate 135, 126, and 164 net new auto trips (two-way) during the Weekday AM, Weekday PM, and Weekend Saturday peak hours, respectively. The trip generation accounted for transit modal shares identified for the Ottawa Inner Urban Area. This included an assumed transit modal share of 25% for the multi-family residential units, and 14% for the commercial retail, and 29% for the office components of the development. The additional transit trips forecasted for Lansdowne 2.0 range between 111 to 149 additional two-way transit trips during peak hours.

Active modes of transportation are expected to continue to play a critical role in accommodating Lansdowne 2.0. In order to achieve the identified modal shares, additional Transportation Demand Management (TMD) measures are accounted for in the development to support transit, walking, and cycling. This includes measures such as implementing transit operational improvements along Bank Street, increased bike parking, as well as improved pedestrian and bicycle crossings at both Bank Street and Queen Elizabeth Driveway to further support walking and cycling.

A full list of supplemental transportation demand management measures are discussed in the *Lansdowne 2.0 Transportation Demand Management Strategy* report.

Consistent with the findings of the Lansdowne 2.0 Transportation Impact Assessment study, the transportation network in the immediate area of Lansdowne is anticipated to be able to accommodate Lansdowne 2.0 traffic generated demands with no additional improvements required to support vehicular traffic or access to the site. This assumes that the current access provisions to Lansdowne continue to be provided with Bank Street functioning as the primary access, and the intersection of QED and Princess Patricia Way as a secondary access point.

Respectfully,

STANTEC CONSULTING LTD.

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Attachment: Annex A – Trip Generation Assumptions

ANNEX A – TRIP GENERATION ASSUMPTIONS

A.1 - Original Development Concept

(Lansdowne 2.0 Transportation Impact Assessment Study – June 2023)

Future Land Uses and Trip Generation Rates (Lansdowne 2.0 Original Concept)

LUC	Land Use	Trip Type ITE Manual	Units / GFA (1000 sq-ft)	Weekday AM Peak Hour			Weekday PM Peak Hour			Weekend (Saturday) Peak Hour		
				In	Out	Rate	In	Out	Total	In	Out	Rate
222	Multi-unit Residential (High-Rise)	Person Trips	1,199 units	16%	84%	**0.76 / unit**	64%	36%	**0.58 / unit**	56%	44%	**0.74 / unit**
820	Shopping Center	Vehicle Trips	66 ksf	62%	38%	**0.84 / ksf**	48%	52%	**3.4 / ksf**	52%	48%	**4.40 / ksf**
710	General Office	Person Trips	8 ksf	*Existing Land Use at Lansdowne. Net Zero Increase.* *No Additional / New Trips are forecasted for these Land Uses.*								
N/A	CFL Football Stadium	Person Trips	25,000 Seats									
N/A	Indoor Arena	Person Trips	5,000 Seats									

Mode Share by Land Use (Lansdowne 2.0 Original Concept)

Mode	222 - Multiuse Family			820 - Commercial Retail		
	AM	PM	Average	AM	PM	Average
Auto	26%	25%	**26%**	39%	22%	**31%**
Passenger	7%	9%	**8%**	2%	4%	**3%**
Transit	28%	21%	**25%**	16%	12%	**14%**
Cycling	5%	6%	**6%**	3%	4%	**4%**
Walking	34%	39%	**37%**	40%	58%	**49%**

Future Person Trips Generated by Land Use (Lansdowne 2.0 Original Concept)

LUC	Land Use	Trip Conversion	Weekday AM Peak			Weekday PM Peak			Weekend Peak Hour		
			In	Out	Total	In	Out	Total	In	Out	Total
222	Multi-Unit Residential (High-Rise)	Person Trips *(Peak Period)*	146	765	911	445	250	695	497	390	887
		Peak Period to Peak Hour Factor (TRANS)	0.80			0.90			1.00		
		Person Trips (Peak Hour)	**117**	**612**	**729**	**401**	**225**	**626**	**497**	**390**	**887**
820	Commercial Retail	Auto Trips (Peak Hour)	34	21	55	106	115	221	149	137	286
		Person Trip Factor	1.28								
		Person Trips (Peak Hour)	**43**	**27**	**70**	**136**	**147**	**283**	**190**	**176**	**366**
		Internal Reduction Factor	15%			30%			15%		
		Internal Reduction	-6	-4	-10	-41	-44	-85	-29	-26	-55
		Net Person Trips (Peak Period)	**37**	**23**	**60**	**95**	**103**	**198**	**161**	**150**	**311**
Lansdowne 2.0 Additional Development **New Total Person Trips (Peak Hour)**			154	635	**789**	495	328	**824**	658	540	**1,198**

Future Trip Generation by Travel Mode (Lansdowne 2.0 Original Concept)

LUC	Land Use	Modal Share %		Weekday AM Peak Hour			Weekday PM Peak Hour			Weekend Saturday Peak Hour		
				In	Out	Total	In	Out	Total	In	Out	Total
222	Multi – Unit (High-Rise)	Auto Driver	26%	30	156	186	102	57	160	127	100	226
		Auto Passenger	8%	9	49	58	32	18	50	40	31	71
		Transit	25%	29	150	179	98	55	153	122	96	217
		Cycling	6%	6	34	40	22	12	34	27	21	49
		Walking	37%	43	224	266	146	82	228	181	142	324
820	Shopping Center	Auto Driver	31%	11	7	18	29	31	60	49	46	95
		Auto Passenger	3%	1	1	2	3	3	6	5	4	9
		Transit	14%	5	3	8	13	14	28	23	21	44
		Cycling	4%	1	1	2	3	4	7	6	5	11
		Walking	49%	18	11	29	46	51	97	79	73	152
Lansdowne 2.0 Additional Development Trips		**Auto Driver**		**41**	**163**	**204**	**131**	**89**	**220**	**176**	**145**	**321**
		Auto Passenger		**10**	**50**	**60**	**35**	**21**	**56**	**45**	**36**	**80**
		Transit		**34**	**153**	**187**	**111**	**70**	**181**	**144**	**117**	**261**
		Cycling		**8**	**34**	**42**	**25**	**16**	**41**	**33**	**27**	**60**
		Walking		**61**	**235**	**295**	**193**	**133**	**325**	**260**	**216**	**476**
		Total Person Trips		**154**	**635**	**789**	**495**	**328**	**824**	**658**	**540**	**1,198**

A.2 – Revised Development Concept
(Two Tower Concept)

Future Land Uses and Trip Generation Rates (Lansdowne 2.0 Revised Concept)

LUC	Land Use	Trip Type ITE Manual	Units / GFA (1000 sq-ft)	Weekday AM Peak Hour			Weekday PM Peak Hour			Weekend (Saturday) Peak Hour		
				In	Out	Rate	In	Out	Total	In	Out	Rate
222	Multi-unit Residential (High-Rise)	Person Trips	779 units	16%	84%	**0.76 / unit**	64%	36%	**0.58 / unit**	56%	44%	**0.74 / unit**
820	Shopping Center	Vehicle Trips	8.6 ksf	62%	38%	**0.84 / ksf**	48%	52%	**3.4 / ksf**	52%	48%	**4.40 / ksf**
710	General Office	Person Trips	14.2 ksf	88%	12%	**1.52 / ksf**	17%	83%	**1.44 / ksf**	54%	46%	**0.53 / ksf**
N/A	CFL Football Stadium	Person Trips	25,000 Seats	*Existing Land Use at Lansdowne. Net Zero Increase.* *No Additional / New Trips are forecasted for these Land Uses.*								
N/A	Indoor Arena	Person Trips	5,000 Seats									

Future Person Trips Generated by Land Use (Lansdowne 2.0 Revised Concept)

LUC	Land Use	Trip Conversion	Weekday AM Peak			Weekday PM Peak			Weekend Peak Hour		
			In	Out	Total	In	Out	Total	In	Out	Total
222	Multi-Unit Residential (High-Rise)	Person Trips *(Peak Period)*	94	492	585	286	161	447	319	251	570
		Peak Period to Peak Hour Factor (TRANS)	0.80			0.90			1.00		
		Person Trips (Peak Hour)	**75**	**393**	**468**	**257**	**145**	**402**	**319**	**251**	**570**
820	Commercial Retail	Auto Trips (Peak Hour)	4	3	7	14	15	29	20	18	38
		Person Trip Factor	1.28								
		Person Trips (Peak Hour)	**6**	**4**	**9**	**18**	**20**	**38**	**25**	**23**	**49**
820	Office	Auto Trips (Peak Hour)	19	3	22	3	17	21	4	3	8
		Person Trip Factor	1.28								
		Person Trips (Peak Hour)	**24**	**3**	**28**	**4**	**22**	**26**	**5**	**4**	**10**
Lansdowne 2.0 Additional Development **New Total Person Trips (Peak Hour)**			105	400	**505**	280	186	**466**	350	278	**628**

Mode Share by Land Use (Lansdowne 2.0 Revised Concept)

Mode	222 - Multiuse Family			820 - Commercial Retail			710 – Office
	AM	PM	Average	AM	PM	Average	
Auto	26%	25%	**26%**	39%	22%	**31%**	**45%**
Passenger	7%	9%	**8%**	2%	4%	**3%**	**7%**
Transit	28%	21%	**25%**	16%	12%	**14%**	**29%**
Cycling	5%	6%	**6%**	3%	4%	**4%**	**8%**
Walking	34%	39%	**37%**	40%	58%	**49%**	**11%**

Future Trip Generation by Travel Mode (Lansdowne 2.0 Revised Concept)

LUC	Land Use	Modal Share %		Weekday AM Peak Hour			Weekday PM Peak Hour			Weekend Saturday Peak Hour		
				In	Out	Total	In	Out	Total	In	Out	Total
222	Multi – Unit (High-Rise)	Auto Driver	26%	19	100	119	66	37	102	81	64	145
		Auto Passenger	8%	6	31	37	21	12	32	26	20	46
		Transit	25%	18	96	115	63	35	98	78	61	140
		Cycling	6%	4	22	26	14	8	22	18	14	31
		Walking	37%	27	144	171	94	53	147	116	92	208
820	Shopping Center	Auto Driver	31%	2	1	3	6	6	11	8	7	15
		Auto Passenger	3%	0	0	0	1	1	1	1	1	1
		Transit	14%	1	0	1	3	3	5	4	3	7
		Cycling	4%	0	0	0	1	1	1	1	1	2
		Walking	49%	3	2	5	9	10	18	12	11	24
710	Office	Auto Driver	45%	11	1	12	2	10	12	2	2	4
		Auto Passenger	7%	2	0	2	0	2	2	0	0	1
		Transit	29%	7	1	8	1	6	8	2	1	3
		Cycling	8%	2	0	2	0	2	2	0	0	1
		Walking	11%	3	0	3	0	2	3	1	0	1
Lansdowne 2.0 Additional Development Trips		**Auto Driver**		**32**	**103**	**135**	**73**	**53**	**126**	**91**	**73**	**164**
		Auto Passenger		**8**	**32**	**40**	**21**	**14**	**35**	**27**	**21**	**48**
		Transit		**26**	**98**	**124**	**67**	**45**	**111**	**83**	**66**	**149**
		Cycling		**6**	**22**	**28**	**15**	**10**	**26**	**19**	**15**	**34**
		Walking		**33**	**146**	**178**	**103**	**65**	**168**	**129**	**103**	**233**
		Total Person Trips		**105**	**400**	**505**	**280**	**186**	**466**	**350**	**278**	**628**

A.3 – Trip Distribution and Assignment Assumptions
(Lansdowne 2.0 Transportation Impact Assessment Study – June 2023)

Site Trip Directional Distribution

Direction	Trip Distribution
North	35%
East	21%
South	32%
West	13%
Total	**100%**

Refined Directional Trip Distribution Assumptions on Bank Street / QED

Direction	Refined Trip Distribution
North	50%
South	50%

Site Access Assumptions:

- **55%** of new site generated trips for Lansdowne 2.0 are assumed to utilize Lansdowne accesses on Bank Street
- **30%** of new site generated trips for Lansdowne 2.0 are assumed to utilize the Lansdowne access at Queen Elizabeth Driveway
- **15%** of new site generated trips for Lansdowne 2.0, specifically a proportion of new residential trips, are assumed to utilize the private garage access on Holmwood Avenue