

SUBJECT
3777 Strandherd Drive – Transportation Technical
Memorandum for SPA Amendment

DATE
25 November 2025

DEPARTMENT
Transportation Engineering

COPIES TO
Steve Bishop, NADG
Pegah Abhari, NADG

TO
Noah Emerson, Senior Associate – Development Services,
NADG

OUR REF
30259645 – 149226-Barrhaven Town Centre (3777
Strandherd) – Documents \Project\05 Project
execution\Inputs\03_Reports

PROJECT NUMBER
30259645

NAME
Bomo Dambo, P.Eng.
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Introduction

Arcadis was retained by NADG to complete a transportation study for a proposed development labelled as “Pad C”, located within the existing shopping centre at 3777 Strandherd Drive, Ottawa, Ontario. A site plan for Pad C was previously approved; however, the site plan has been updated to include a drive-through facility. In accordance with the requirements for a site plan amendment application, this technical memorandum has been prepared to support the proposed change.

The purpose of this study is to verify the parking requirements for the updated development and assess whether the overall parking supply on site is sufficient to accommodate the proposed drive-through use. The updated site plan highlighting the SPA extents for this study is provided in **Appendix A**.

Following a pre-consultation meeting with City staff held on July 18, 2025, and subsequent comments received on July 25, 2025, it was confirmed that a technical memorandum would be sufficient to support the application. As such, the following memorandum has been prepared to verify the parking requirements and the site’s ability to accommodate the updated parking needs, as well as an overview of the site’s relative change in trip generation.

This memorandum is intended to satisfy the transportation study component of the site plan amendment application, as required.

Proposed Development

The subject property is located at 3777 Strandherd Drive in the Barrhaven Town Centre, an Evolving Neighbourhood, and a Hub as indicated in Schedule B6 of the City of Ottawa Official Plan. It is currently zoned as Mixed-Use Centre (MC) which permits a wide range of complimentary land uses such as residential, commercial, institutional and office. The subject site is currently occupied by a shopping center with a total gross leasable floor area of 16,433 m². The shopping centre originally included 973 formal parking spaces, which has been revised to 915 spaces based on the updated site plan.

The current Site Plan Application (SPA) amendment is limited to Pad C, a proposed standalone commercial building within the existing shopping centre. No changes are proposed to the remainder of the property as part of this application. Surrounding land uses include a mix of other retail and commercial uses consistent with the Town Centre designation. The amendment proposes to expand the Pad C building footprint by approximately 272 m²,

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 NADG
 November 25, 2025

resulting in a total footprint of 729 m² and introduce a drive-through facility as part of Pad C to support the proposed commercial use. From a parking perspective, the amendment results in a net reduction of 58 spaces relative to the original approval, with a revised site-wide parking supply of 915 spaces.

Trip Generation

Peak hour vehicular traffic volumes associated with 3777 Strandherd Drive development were estimated using the Institute of Transportation Engineers (ITE) Trip Generation Manual (11th Edition). For the purposes of this study, only vehicular trips have been reported as a full transportation analysis is not required for this application amendment.

Based on the previously approved site plan, the vehicular trip generation results for the subject site are provided in **Table 1**.

Table 1 – Peak Hour Vehicular Trip Generation Results - Old Site Plan

Land Use	Size (GFA)	AM Peak Hour (veh/h)			PM Peak Hour (veh/h)			SAT Peak Hour (veh/h)		
		In	Out	Total	In	Out	Total	In	Out	Total
821 – Shopping Plaza w/ Supermarket	9180 m ²	216	133	349	428	464	892	467	448	915
934 – Fast-Food Restaurant w/ Drive-Through Window	496 m ²	121	117	238	92	84	176	150	145	295
932 – High-Turnover (Sit-Down) Restaurant	534 m ²	30	25	55	32	20	52	33	31	64
944 – Gasoline/Service Station	241 m ²	13	14	27	18	18	36	17	16	33
912 – Drive-in Bank	484 m ²	30	25	55	55	54	109	70	67	137
942 – Automobile Care Centre	159 m ²	3	1	4	3	2	5	3	2	5
712 – Small Office Building	288 m ²	4	1	5	2	5	7	2	5	7
930 – Fast Casual Restaurant	279 m ²	2	2	4	21	17	38	54	44	98
863 – Electronics Superstore	2400 m ²	6	3	9	55	55	110	82	85	167
815 – Free-Standing Discount Store	2386 m ²	21	9	30	62	63	125	92	89	181
933 – Fast-Food Restaurant without Drive-Through Window	431 m ²	87	62	149	57	58	115	92	97	189
Total		533	389	922	825	840	1665	1062	1029	2091

As summarized in **Table 1**, based on the previously approved site plan, the subject site is projected to generate 922 and 1,665 veh/h during the weekday morning and afternoon peak hours, respectively. Additionally, during the weekend peak hour, the site is expected to generate 2091 veh/h.

Based on the New Site Plan, the vehicular trip generation results for the subject site are provided in **Table 2**.

Table 2 – Peak Hour Vehicular Trip Generation Results - New Site Plan

Land Use	Size (GFA)	AM Peak Hour (veh/h)			PM Peak Hour (veh/h)			SAT Peak Hour (veh/h)		
		In	Out	Total	In	Out	Total	In	Out	Total
821 – Shopping Plaza w/ Supermarket	9180 m ²	216	133	349	428	464	892	467	448	915
934 – Fast-Food Restaurant w/ Drive-Through Window	496 m ²	121	117	238	92	84	176	150	145	295
932 – High-Turnover (Sit-Down) Restaurant	534 m ²	30	25	55	32	20	52	33	31	64
944 – Gasoline/Service Station	241 m ²	13	14	27	18	18	36	17	16	33
912 – Drive-in Bank	484 m ²	30	22	52	55	54	109	70	67	137
942 – Automobile Care Centre	159 m ²	3	1	4	3	2	5	3	2	5
712 – Small Office Building	288 m ²	4	1	5	2	5	7	2	5	7
930 – Fast Casual Restaurant	279 m ²	2	2	4	21	17	38	54	44	98
934 – Fast-Food Restaurant w/ Drive-Through Window	729 m ²	178	172	350	101	124	259	221	212	433
492 – Health/Fitness Club	4773 m ²	34	33	67	101	76	177	80	84	164
Total		631	520	1151	887	865	1752	1097	1055	2152

With the inclusion of the revised Pad C to include an expanded footprint and a drive-through use, and the health/fitness club, the total site traffic is estimated at approximately 1151 veh/h during the weekday morning peak hour and 1752 veh/h during the weekday afternoon peak hour with a provided parking supply of 915 parking spaces. Additionally, during the weekend peak hour, the site is expected to generate a total of an approximate two-way total of 2152 veh/h.

The relative change in trip generation between the previously approved and the New Site Plan, including the net difference for Pad C and the overall site, is summarized in **Table 3**.

Table 3 - Relative Change in Trip Generation - Old Site Plan vs New Site Plan

Component	Peak Period	Old Site Plan (veh/h)	New Site Plan (veh/h)	Net Change (veh/h)	% Change
Pad C Building	AM	149	350	+201	+135%
	PM	115	259	+144	+125%
	SAT	189	433	+244	+129%
Overall Site	AM	922	1151	+229	+24%

Component	Peak Period	Old Site Plan (veh/h)	New Site Plan (veh/h)	Net Change (veh/h)	% Change
	PM	1665	1752	+87	+5%
	SAT	2091	2152	+61	+3%

As shown in **Table 3**, the comparison of trip generation between the Old Site Plan and the New Site Plan indicates an increase at the Pad C building level, with volumes rising from 149 to 350 veh/h in the AM peak hour and from 115 to 259 veh/h in the PM peak hour. This represents an approximate 135% in the AM peak period and 125% increase in the PM peak period. This reflects the larger drive-through use introduced under the New Site Plan. Similarly, during Saturday peak hour, Pad C trips increase from 189 to 433 veh/h, also an approximate 129% increase.

At the site-wide level, the relative impact is more moderate. The AM peak increases by 229 veh/h, or 24%, while the PM peak increases by 87 veh/h, or 5%. During the Saturday peak hour, site-wide trips increase by 61 veh/h, or 3%, rising from 2,091 to 2,152 veh/h. These increments are proportionally small compared to the overall scale of activity on the site and remain within the capacity of the revised parking supply of 915 parking spaces.

The results confirm that although Pad C generates substantially higher traffic under the New Site Plan, the incremental effect on the overall site is limited. When considered alongside the available parking supply of 915 spaces, the site retains adequate capacity to accommodate the change in land use.

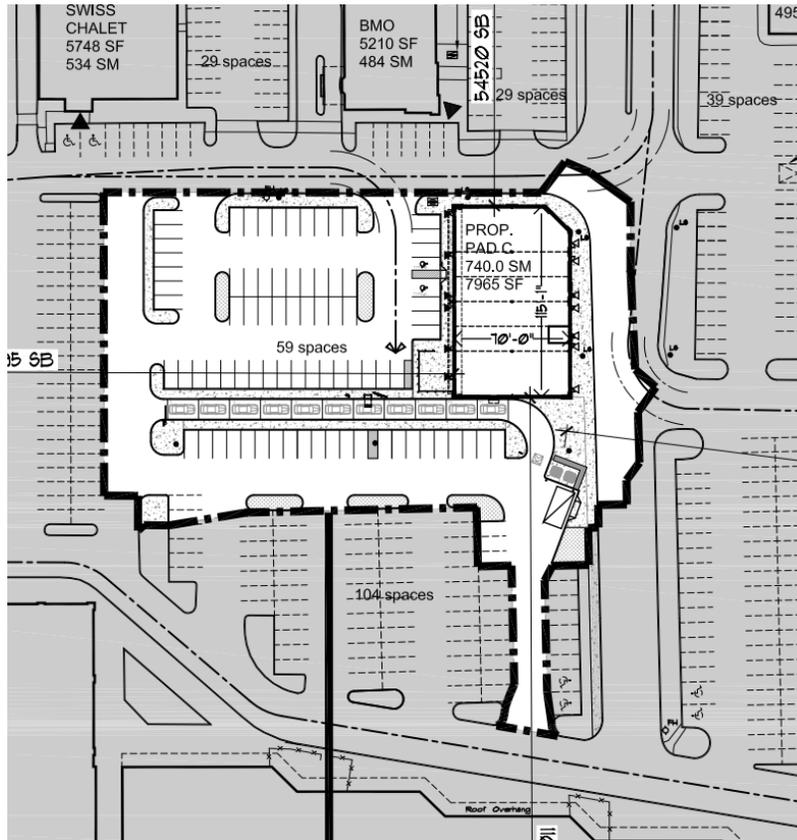
Development Design

Parking Supply

A Parking Utilization Study was previously completed for the subject site by Arcadis in January, 2025 to provide an overview of the existing parking demand and utilization prior to redevelopment. This study is included in **Appendix B**.

The New Site Plan will provide a total of 915 parking spaces for the overall site compared to 973 spaces under the Old Site Plan. For the Pad C building specifically, 59 parking spaces are proposed as shown in **Figure 1**.

Figure 1 - New Site Plan – Proposed Parking Spaces for Pad C Building



Zoning By-Law Parking Requirements

For zoning purposes, the subject site is considered as one lot, as it functions as a shopping centre. However, for the purposes of this SPA, the Pad C building has also been reviewed independently to assess compliance with parking requirements, where applicable.

Vehicular Parking Supply

The center of the subject site is located approximately 430m from the Barrhaven Centre Transitway station. Since the site is within 600m (direct distance) of a rapid-transit station, the reduced parking requirement from Table 101A of the Zoning By-law (2008-250) applies. Specifically, a shopping centre located in Area C on Schedule 1A requires a minimum parking space rate of 3.4 per 100 m² of gross leasable floor area (GLFA).

For the Pad C building, per Subsection (6)(b)(i) of the Zoning By-law, if a restaurant includes a drive-through facility, its minimum parking requirement may be reduced by 20 percent.

The following **Table 4** summarizes the applicable minimum vehicle parking rates, minimum parking requirements and proposed parking spaces for the subject site.

Table 4 – Vehicular Parking Supply (Minimum Parking Requirements)

Land Use	Size	Zoning Requirement	Minimum Parking Requirement	Proposed Parking Supply
Shopping Centre	16,433 m ²	3.4 per 100 m ² GLFA	559	915
Drive -Through Restaurant	729 m ²	10 per 100 m ² GLFA (less 20%)	58	59

As shown in **Table 4**, the minimum vehicle parking space requirement for the subject development with the New Site Plan is 559 parking spaces. The New Site Plan provides 915 parking spaces and therefore exceeds this minimum requirement by approximately 356 spaces. For the Pad C building specifically, 59 parking spaces are provided which also exceeds the Zoning By-Law minimum requirements for that land use.

Because of its proximity to a rapid transit station, the maximum number of parking spaces permitted for the overall site was also reviewed with reference to Table 103 of the Zoning By-law (2008-250).

Table 5 summarizes the appropriate maximum vehicle parking rates, maximum parking requirements and proposed parking spaces for the subject site.

Table 5 – Vehicular Parking Supply (Maximum Parking Requirements)

Land Use	Size	Zoning Requirement	Minimum Parking Requirement	Proposed Parking Supply
Shopping Centre	16,433 m ²	4.0 per 100 m ² GLFA	657	915

As shown in **Table 5**, the maximum number of parking spaces permitted for the subject development with the New Site Plan is 657 spaces. As such, there is a surplus of 258 parking spaces provided. However, it should be noted that there has always been a surplus of parking spaces on this subject site with the existing site having a parking surplus of 241 spaces as reported in the Parking Utilization Study completed in January 2025. For the purpose of this redevelopment, it is noted that this SPA amendment is limited to the Pad C building within the existing shopping centre, and parking adjustments have been made only to accommodate the building expansion and the addition of the drive-through facility.

Bike Parking Supply

As outlined under Section 111 of the City's Zoning By-Law, bike parking is to be calculated using the rates found in **Table 6**.

Table 6 - Bike Parking Supply

Land Use	Size	Zoning Requirement	Minimum Parking Requirement	Proposed Bike Parking Supply
Shopping Centre	16,433 m ²	1 per 500 m ² of GFA	33	35
Restaurant	729 m ²	1 per 250 m ² of GFA	2	2

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NADG
November 25, 2025

As shown in **Table 6** above, the overall site is required to have a minimum of 33 bike parking spaces. The New Site Plan provides a parking supply of 35 bike parking spaces which satisfies the Zoning By-Law requirements. For Pad C specifically, the provided bike parking supply meets the minimum requirement.

Loading Zone Spaces

As outlined under Section 113 of the City’s Zoning By-Law, loading zone spaces are to be calculated using the rates found in **Table 7**.

Table 7 - Loading Zone Spaces

Land Use	Size	Zoning Requirement	Minimum Parking Requirement	Proposed Loading Zone Supply
Shopping Centre	16,433 m ²	15,000 – 24,999 m ² of GFA	2	6

As shown in **Table 7**, the proposed development will provide 6 loading spaces for the shopping centre, exceeding the minimum requirement.

Parking Utilization

The Parking Utilization Study completed in January 2025 confirmed that peak weekday utilization was observed at approximately 40% and weekend utilization at 50%, well below the 85% effective capacity threshold. Sensitivity analysis confirmed that a 25% reduction in parking supply from 919 spaces could be accommodated without operational issues, and even a reduction of up to 50% would continue to exceed observed demand, though it could result in some operational concerns and on-site traffic congestion.

Building on this baseline, the New Site Plan proposes a total parking supply of 915 spaces, representing only a 0.4% decrease from the parking supply observed at the time of the Parking Utilization Study. Given that the current utilization remains well below the effective capacity threshold and even considering the projected increase in trips generated with this redevelopment (estimated at 350 trips during the weekday morning peak hour, 259 during the afternoon peak, and 433 during the weekend peak), the proposed parking supply is expected to comfortably meet operational needs.

Transportation Demand Management

The City of Ottawa is committed to implementing Transportation Demand Management (TDM) measures on a City-wide basis to reduce automobile dependence, particularly during the weekday peak travel periods. TDM initiatives are aimed at encouraging individuals to use non-auto modes of travel during the peak periods.

Given the site’s close proximity to the Barrhaven Centre Transitway station (approximately 430m), easy access to rapid transit services is provided. The site is also integrated into the surrounding community with existing sidewalks and planned improvements to active transportation infrastructure, ensuring convenient connections for pedestrians and cyclists.

For the purposes of this redevelopment, no TDM measures are being proposed by the developer at this time. The TDM Supportive Infrastructure Checklist has been completed and included in **Appendix C**.

Conclusion

The New Site Plan for the Pad C development at 3777 Strandherd Drive has been reviewed with respect to parking supply, trip generation, and compliance with the City of Ottawa Zoning By-law. The proposed expansion of Pad C includes an increase in building footprint to approximately 729 m² and the addition of a drive-through facility within the existing shopping centre. The updated plan provides a total of 915 parking spaces, exceeding the minimum Zoning By-law requirement of 657 spaces. The site also meets or surpasses other Zoning By-Law requirements, including loading zones (6 provided vs. 2 required) and bicycle parking (35 spaces provided vs. 33 required). Additionally, the site is located approximately 430 metres from the Barrhaven Centre Transitway Station, providing convenient access to transit and active transportation facilities

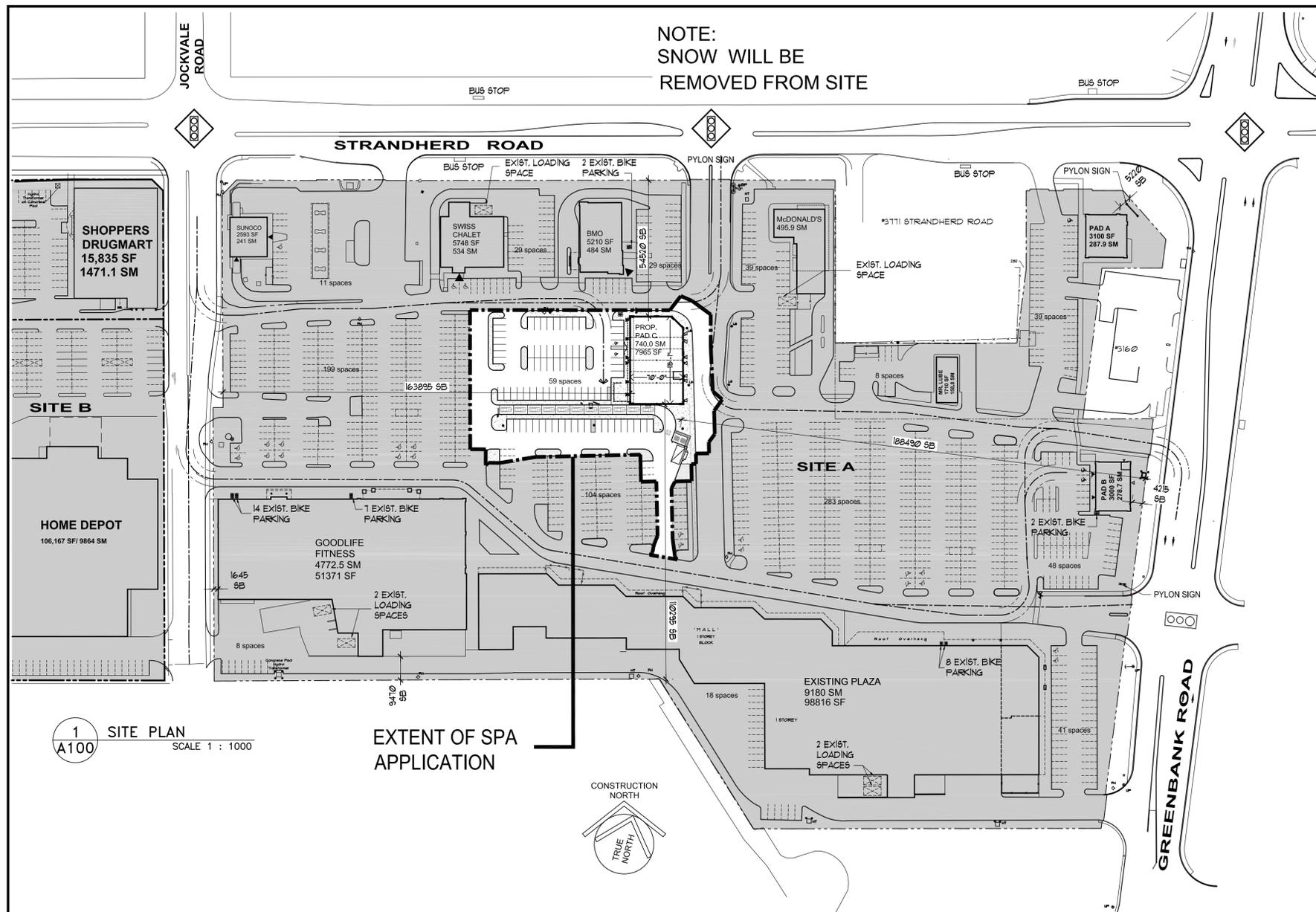
Trip generation estimates indicate that the overall site is expected to generate approximately 1151 veh/h in the weekday AM peak, 1752 veh/h in the weekday PM peak, and 2152 veh/h in the weekend peak. For the Pad C building specifically, the anticipated trips to be generated are approximately 350 veh/h in the weekday AM peak, 259 veh/h in the weekday PM peak, and 433 veh/h in the weekend peak. With regards to parking utilization, previous studies have confirmed that the existing demand is well below the 85% effective capacity threshold and the proposed parking supply is expected to comfortably meet operational needs.

From a transportation perspective, the proposed development can be accommodated within the existing site framework and is considered acceptable.

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NADG
November 25, 2025

Appendix A

Updated Site Plan



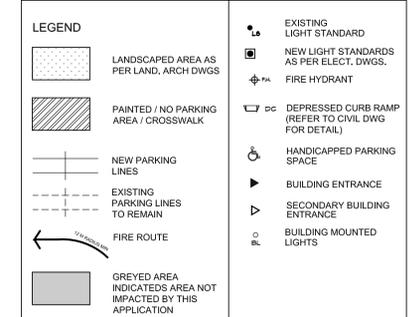
NOTE:
SNOW WILL BE
REMOVED FROM SITE

SITE STATISTIC

SITE AREA	77926.0 SM	±19.26 AC
SITE COVERAGE		22.7%
LOT WIDTH		±200 M
EX. BUILDING AREA	BLDG AREA	GLA
PLAZA	9180.0 SM	
SUNOCO	241.0 SM	
SWISS CHALET	534.0 SM	
BMO	484.0 SM	
McDONALD'S	495.9 SM	
GOODLIFE FITNESS	4772.5 SM	
PAD A (HAKIM)	287.9 SM	
MR.LUBE	158.8 SM	
PAD B	278.7 SM	
BUILDING AREA (GLA)	16432.8 SM	176881 SF
PROP BUILDING AREA	BLDG AREA	GLA
PAD C	729.0 SM	7845 SF
BUILDING AREA	17161.8 SM	184726 SF
TOTAL SPACES	915 SPACES	5.33/100SM
		4.95/1000SF

MC (187H(20)) - ZONE PROVISIONS

ZONING MECHANISMS	II PROVISIONS	PROVIDED
(a) Minimum lot area	No Minimum	77926 sm
(b) Minimum lot width	No Minimum	±1,370 m
(c) Minimum front yard and corner side yard setback	(i) abutting a lot in a residential zone	3 m
	(ii) abutting the rapid transit corridor	2 m
	(iii) other cases	No Minimum (GREENBANK ROAD) Site: 4.2m Pad C: 188.4m No Minimum (STRANDHERD ROAD) Site: 5.2m Pad C: 54.5m
(d) Minimum interior side yard setback (JOCKVALE RD)	(i) abutting a lot in a residential zone	3 m
	(ii) abutting the rapid transit corridor	2 m
	(iii) other cases	No Minimum Site: 1.6m Pad C: 183.8m
(e) Minimum rear yard setback	(i) abutting a lot in a residential zone	6 m
	(ii) abutting the rapid transit corridor	2 m
	(iii) other cases	No Minimum Site: 9.5m Pad C: 110.2m
(f) Maximum floor space index	2.0	0.22
(g) Min. building height	for all uses within 400m of a rapid transit station, other than a gas bar	6.7M
		6.7M
(h) Maximum building height	20.0m	6.7M
(i) Minimum width of landscaped area	No minimum, except that where a yard is provided and not used for required driveways, alleys, parking, loading spaces or outdoor commercial pads, the whole yard must be landscaped	N/A
Exception: max. gross leasable floor area	35,000 sm	17161.8 SM EAST OF JOCKVALE RD.
Parking	MIN 3.6/100 SM GLA	601 SPACES 915 SPACES
Loading (3.5m x 7.0m)		MIN 2 6
Bicycle parking	1/500sm g/s Shopping Centre	Pad C: 2 Pad C: 2 Total: 35
DRIVE THRU QUEUEING		7 AT THE BOARD 11 TOTAL

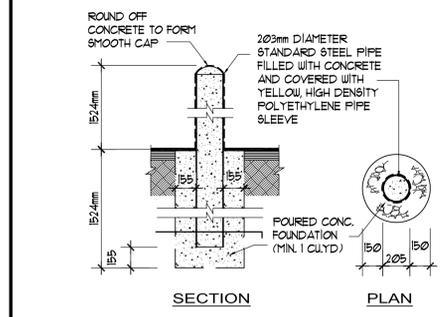


SURVEY INFO TAKEN FROM:
SURVEYOR'S REAL PROPERTY REPORT - PART 1
PLAN OF PART OF LOT 15
CONCESSION 3 (Rideau Front)
GEOGRAPHIC TOWNSHIP OF NEPEAN
Now CITY OF OTTAWA

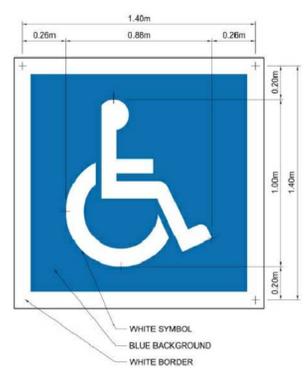
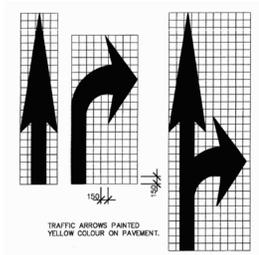
PREPARED BY:
FAIRHALL, MOFFATT & WOODLAND LIMITED
ONTARIO LAND SURVEYORS
JUNE 12 2012

1 SITE PLAN
A100 SCALE 1 : 1000

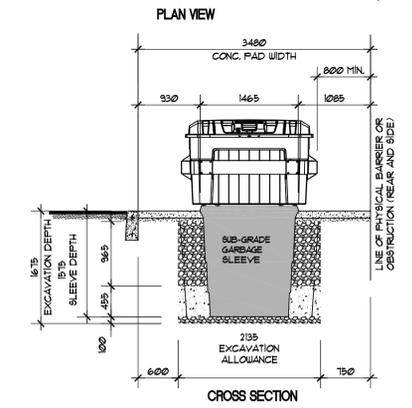
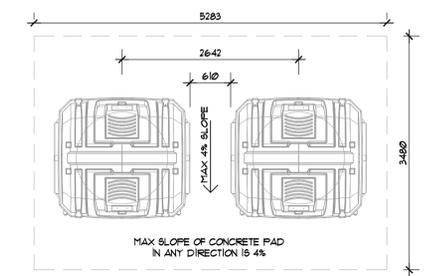
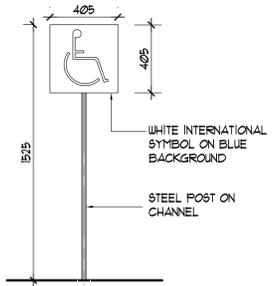
EXTENT OF SPA APPLICATION



3 ROAD PAINTING
A100 SCALE NTS



4 HANDICAPPED PARKING SIGN
A100 SCALE 1:20



6 SUB-GRADE GARBAGE SYSTEM
A100 SCALE 1:50

NO.	BY	DATE	ISSUED
1	AB	NOV21,25	SPA

VERIFY ALL DIMENSIONS AND CONDITIONS AT THE JOB DO NOT SCALE PRINTS
PLANS AND SPECIFICATIONS ARE THE PROPERTY OF THE ARCHITECT AND MUST BE RETURNED AT COMPLETION OF THE WORK OR UPON REQUEST

THIS DRAWING MUST NOT BE USED FOR CONSTRUCTION UNLESS APPROVED AT RIGHT

APPROVED: _____
DATE: _____

BARRHAVEN TOWN CENTRE INC.

OWNER : STEVE BISHOP
NORTH AMERICAN DEVELOPMENT GROUP.
2851 JOHN ST, SUITE ONE, MARKHAM, ONTARIO, L3R 5R7
TEL: (905)477-9200



SCOLER LEE BORENSTEIN + ASSOCIATES ARCHITECTS INC.
ARCHITECT: ALLAN BORENSTEIN
STE 900, 60 ST. CLAIR AVE E TEL: (416)362-7753
TORONTO, ONTARIO M4T 1N5 FAX: (416)362-8519

PROJECT
BARRHAVEN TOWN CENTRE
3777 STRANDHERD DRIVE
NEPEAN, ONTARIO

DRAWING TITLE
SITE PLAN, DETAILS

ONTARIO ASSOCIATION OF ARCHITECTS ALLAN MICHAEL BORENSTEIN LICENCE 7172	DRAWN	JL	FOLIO
	CHECKED	AB	25078
	DATE	OCT 2025	DWG. NO.
	SCALE	AS NOTED	A100
	X-REFS:		

DRAWINGS REVISED: _____ LAST UPDATED: _____

Noah Emerson
NAGD
November 25, 2025

Appendix B

Parking Occupancy Survey Data

SUBJECT
3777 Strandherd Drive – Parking Utilization Study

TO
Noah Emerson, Senior Associate – Development Services,
North American Development Group (NADG)

DATE
09 January 2025

OUR REF
149226 - 3777 Strandherd Parking -
Documents\6.0_Technical\6.23_Traffic\03_Reports

DEPARTMENT
Transportation Engineering

PROJECT NUMBER
149226

COPIES TO
Steve Bishop, NADG
Pegah Abhari, NADG

NAME
Eric McLaren, P.Eng.
eric.mclaren@arcadis.com

Introduction

Arcadis was retained by North American Development Group to undertake a Parking Utilization Study for the existing shopping centre at 3777 Strandherd Drive, Ottawa, Ontario. This study will provide an overview of existing parking demand and utilization during both weekdays and weekends in order to inform the future re-development planning of the subject site.

Study Context

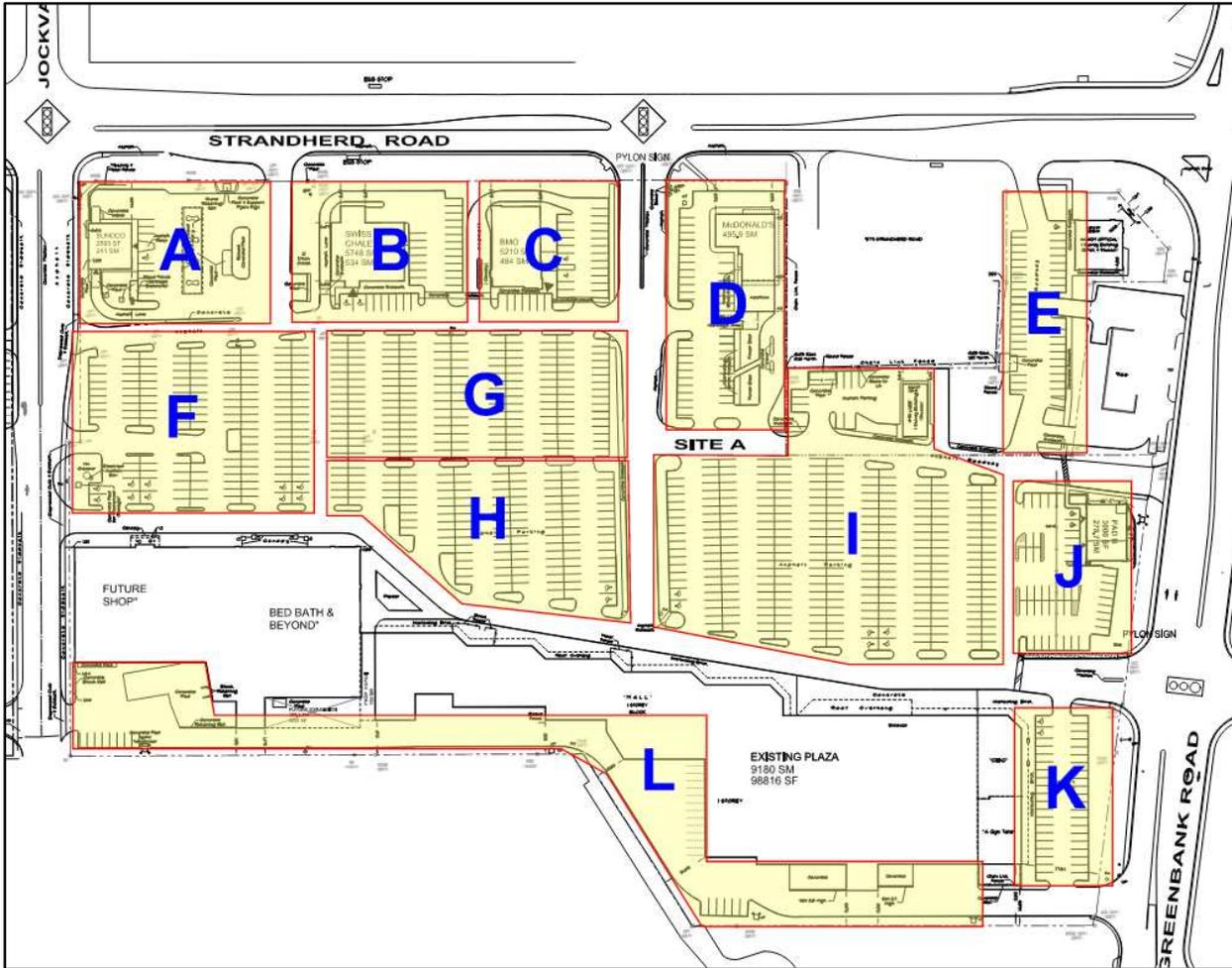
The subject site is currently occupied by a shopping centre with approximately 16,952 square metre of gross leasable floor area and a total of 919 formal parking spaces.

The property is located in the Barrhaven Town Centre, an Evolving Neighbourhood, and a Hub as indicated in Schedule B6 of the City of Ottawa Official Plan. It is currently zoned as Mixed-Use Centre (MC) which permits a wide range of complimentary land uses such as residential, commercial, institutional and office.

For the purposes of this parking study, the parking lot has been subdivided into 12 zones (Zones A to L). Zones A to E provide parking for outparcel commercial retail units, while Zones F to K provide parking for the strip retail plaza. Zone L provides parking for 'back of house' operations and employee-only use.

Subdividing the site into parking assessment zones allows for the identification of areas with excess parking capacity which will be useful in determining how to incrementally redevelop the property with minimal impact to existing businesses. **Figure 1** below shows the extents of each parking zone.

Noah Emerson
North American Development Group
October 31, 2025
Figure 1 Existing Site Plan - Parking Zones



Existing Parking Supply

The existing parking facilities at the subject site broken into 12 zones. **Table 1** provides a summary of the parking supply by zone.

Table 1 Existing Parking Supply by Zone

Zone	Effective Parking Spaces
A	9
B	29
C	29
D	39
E	40
F	182
G	123
H	114
I	269
J	39
K	41
L	5
Total	919

Parking Demand and Utilization

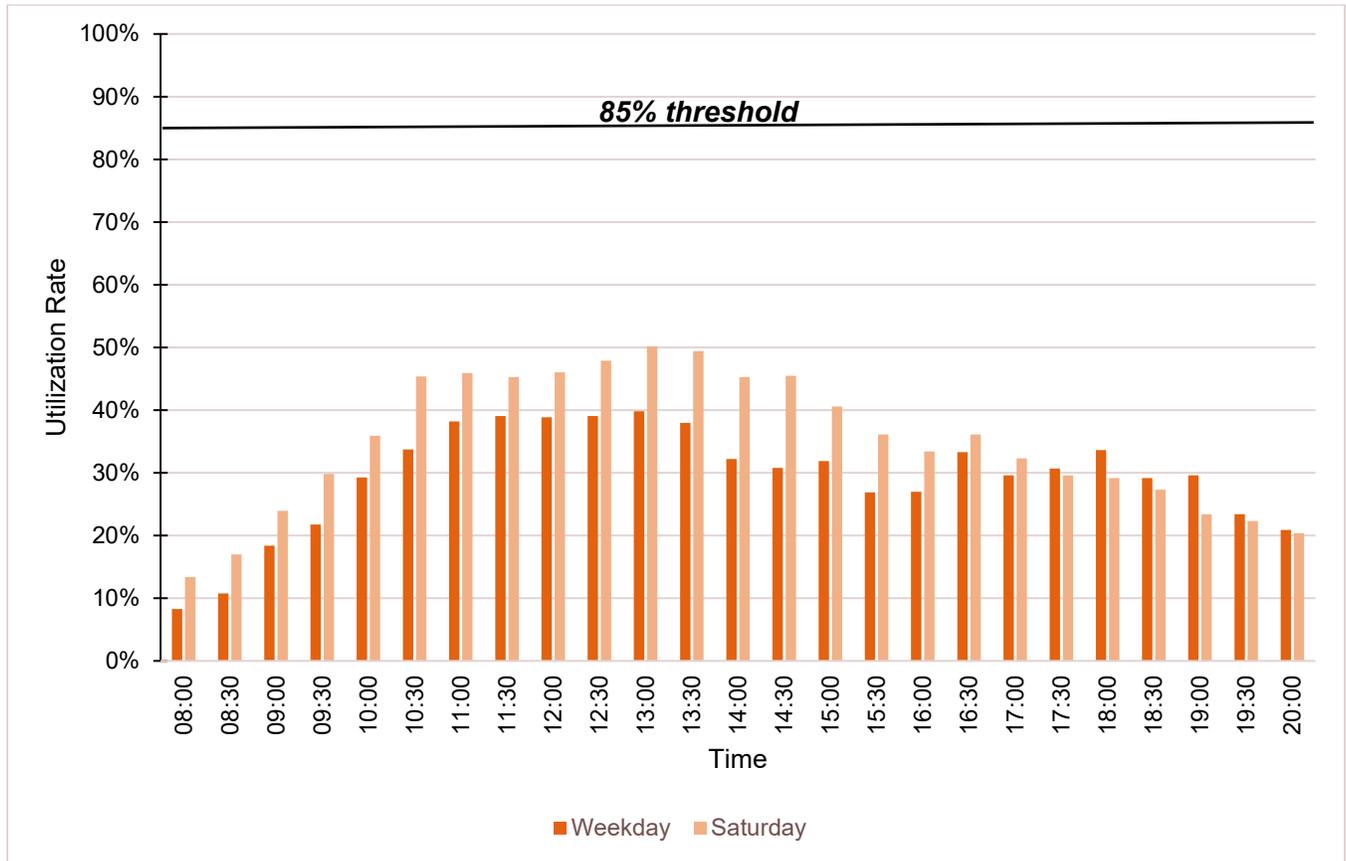
To properly assess the existing parking utilization of the subject site, a parking occupancy survey was completed both on a weekday and weekend to identify how parking demand varies throughout the day. The parking survey was undertaken on Tuesday, December 10, 2024, and on Saturday, December 7, 2024, from 8:00 AM to 8:00 PM with parking demand recorded every 30 minutes. It is important to note that the month in which the survey was undertaken represents peak seasonal demand. The raw parking occupancy survey data is provided in **Appendix A**. Notes are provided at the bottom of each data sheet to document any observations made during the survey.

Parking Utilization

A parking utilization analysis was conducted to identify zones where parking operates at or near capacity and those lots that are oversized for the demand. Parking systems are generally at “operational capacity” once the system as-a-whole reaches approximately 85% utilization, depending on lot size and other characteristics. Once a parking system reaches the operational capacity, it can lead to increased traffic circulation and on-site traffic congestion. This threshold represents the point where finding a space to park becomes increasingly difficult for drivers. Small individual lots can approach 100% utilization and are not considered an issue if there are alternative parking options in close proximity.

Figure 2 illustrates the parking utilization by time of day for both the weekday and weekend.

Figure 2 Overall Parking Utilization by Time of Day



As shown in **Figure 2**, the entire parking system is operating well below the 85% threshold with an observed peak parking utilization of 40% at 1:00 PM on the weekday and 50% at 1:00 PM on the weekend. This indicates there is significant excess parking supply available during periods of peak demand and that Saturdays generally represent the peak parking demand of the site across most hours of the day.

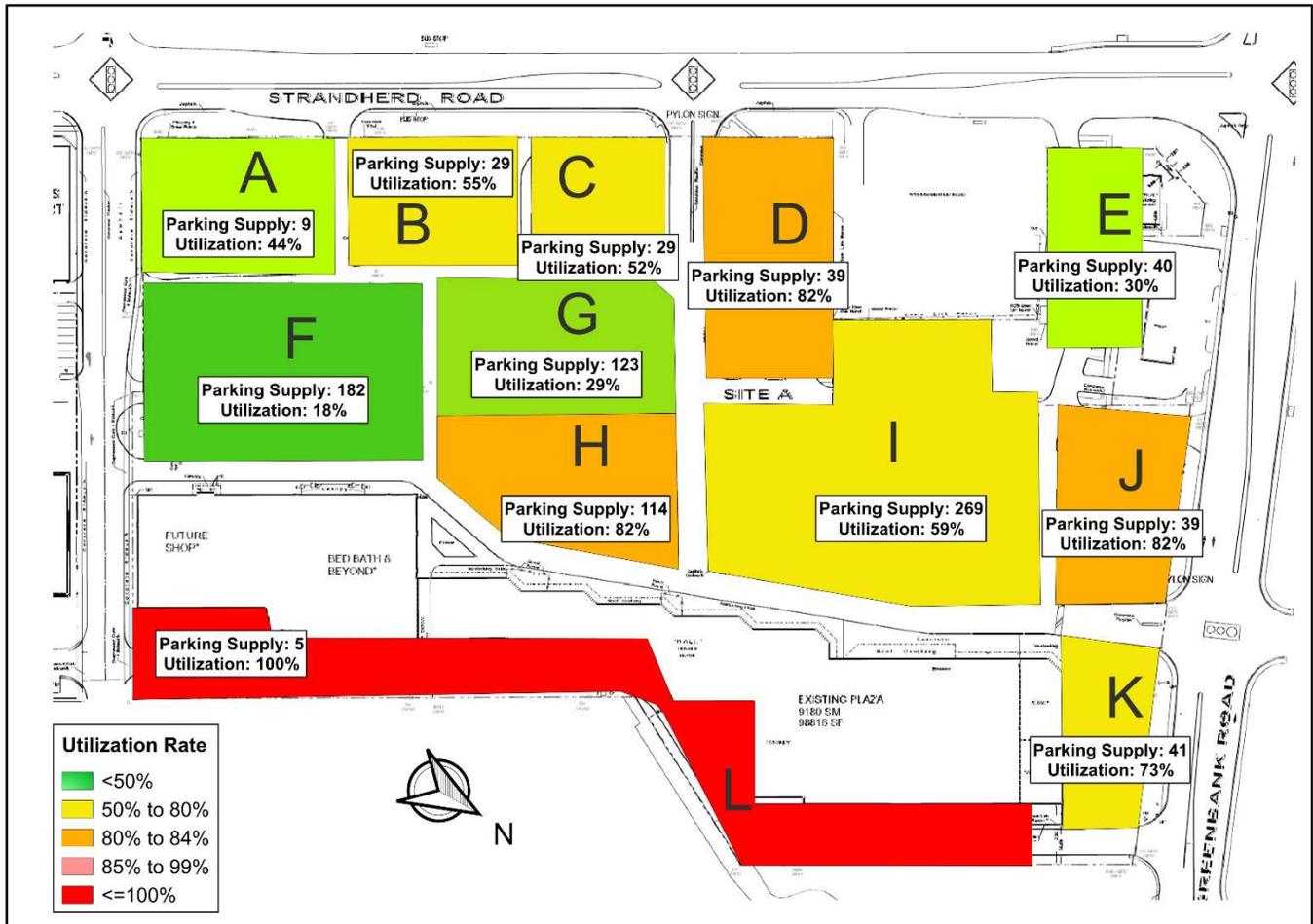
Noah Emerson
 North American Development Group
 October 31, 2025

While the overall parking demand is well below the 85% effective capacity threshold, there are certain zones within the site that were observed to operate at or near the effective capacity. **Figure 3** and **Figure 4** display the peak parking utilization for each zone as observed during the survey period for the weekday.

Figure 3 Heatmap - Existing Peak Demand Parking Utilization - Weekday

Time of Day	Zone A	Zone B	Zone C	Zone D	Zone E	Zone F	Zone G	Zone H	Zone I	Zone J	Zone K	Zone L	Overall
08:00	11%	0%	0%	21%	0%	3%	0%	25%	11%	8%	2%	20%	8%
08:30	22%	0%	3%	21%	3%	3%	2%	29%	14%	13%	2%	40%	11%
09:00	0%	0%	7%	41%	8%	4%	9%	46%	21%	38%	7%	40%	18%
09:30	22%	0%	7%	31%	13%	3%	16%	54%	25%	38%	24%	20%	22%
10:00	22%	0%	31%	31%	23%	4%	19%	59%	40%	41%	37%	20%	29%
10:30	11%	3%	38%	31%	23%	8%	21%	68%	44%	62%	34%	20%	34%
11:00	11%	7%	17%	41%	20%	14%	29%	79%	48%	56%	41%	20%	38%
11:30	44%	10%	28%	38%	25%	10%	27%	82%	50%	62%	32%	20%	39%
12:00	11%	21%	34%	41%	25%	13%	24%	75%	48%	79%	37%	40%	39%
12:30	22%	28%	31%	46%	30%	18%	21%	70%	47%	72%	34%	40%	39%
13:00	11%	28%	24%	54%	23%	16%	23%	68%	52%	72%	34%	40%	40%
13:30	11%	28%	24%	46%	23%	17%	24%	60%	49%	67%	41%	40%	38%
14:00	44%	21%	45%	33%	25%	13%	11%	34%	49%	54%	46%	40%	32%
14:30	11%	14%	52%	26%	23%	16%	10%	25%	49%	64%	39%	40%	31%
15:00	22%	24%	21%	23%	28%	15%	9%	23%	51%	82%	59%	40%	32%
15:30	11%	17%	34%	21%	20%	7%	9%	25%	46%	51%	44%	20%	27%
16:00	11%	17%	24%	31%	18%	10%	8%	25%	45%	51%	39%	40%	27%
16:30	11%	17%	41%	33%	23%	9%	11%	26%	59%	59%	46%	80%	33%
17:00	33%	31%	24%	26%	28%	10%	7%	37%	43%	44%	68%	60%	30%
17:30	22%	41%	0%	64%	15%	12%	6%	40%	41%	44%	73%	80%	31%
18:00	33%	52%	0%	82%	13%	17%	14%	47%	43%	38%	41%	100%	34%
18:30	44%	55%	0%	56%	18%	10%	11%	39%	39%	46%	34%	100%	29%
19:00	22%	55%	7%	41%	10%	7%	10%	44%	42%	54%	44%	100%	30%
19:30	11%	45%	7%	44%	3%	4%	6%	42%	29%	38%	56%	80%	23%
20:00	22%	45%	0%	41%	0%	3%	5%	35%	27%	28%	54%	80%	21%
Capacity	9	29	29	39	40	182	123	114	269	39	41	5	919

Figure 4 Existing Peak Demand Parking Utilization - Weekday



As shown in **Figure 4**, Zones A, E, F, and G exhibit significant excess capacity on weekdays, with peak utilization rates below 50%. Zones D, H, and J are approaching the practical capacity limit, with peak utilization rates observed at 82% each.

Zone L stands out with a peak utilization rate of 100%, though it is important to note that this zone effectively has only 5 parking spaces and are not for general public use. Parking in this zone also occurs informally where physical space is available.

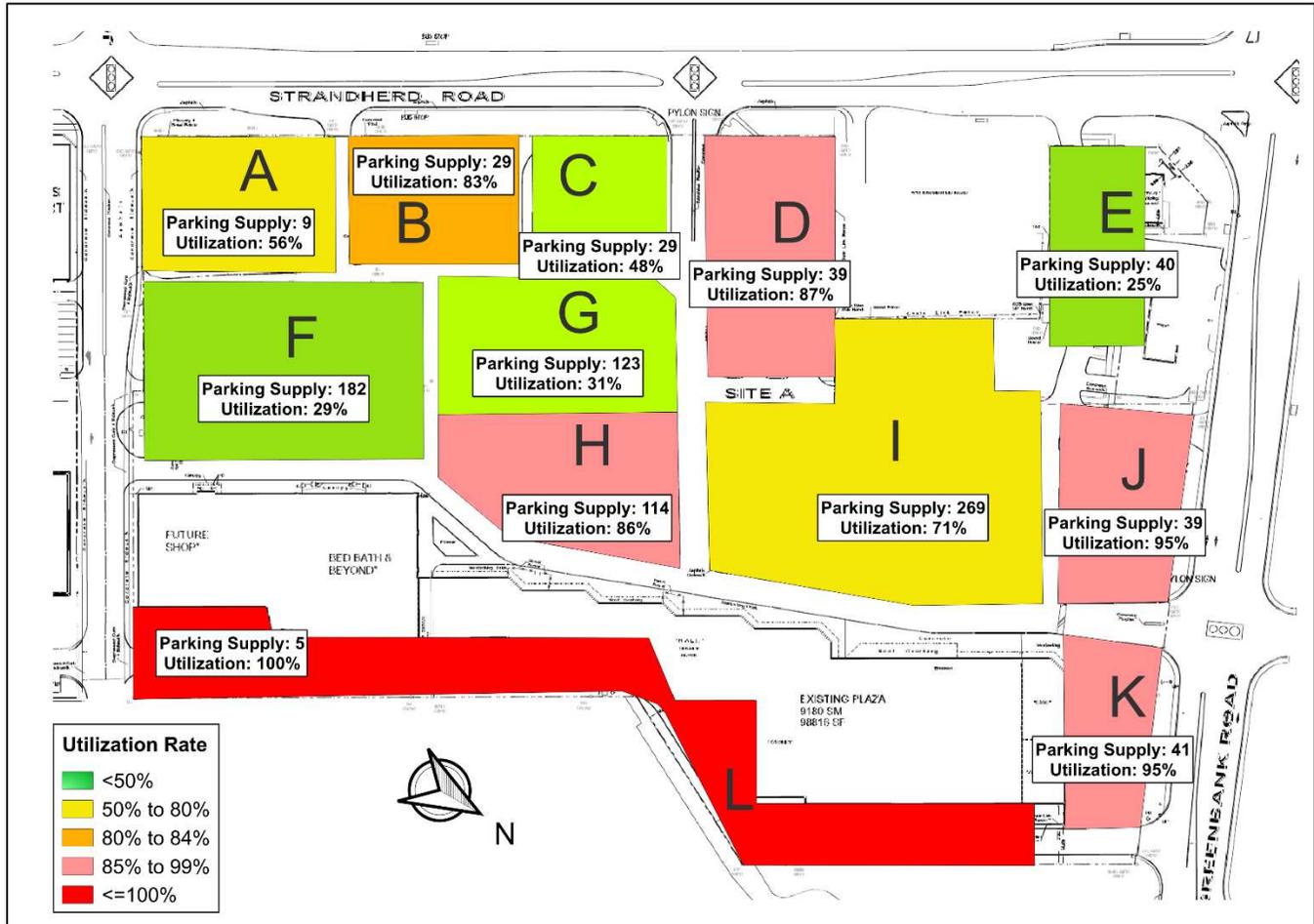
Noah Emerson
 North American Development Group
 October 31, 2025

Figure 5 and **Figure 6** display the peak parking utilization for each zone as observed during the survey period for the weekend.

Figure 5 Heatmap - Existing Peak Demand Parking Utilization - Weekend

Time of Day	Zone A	Zone B	Zone C	Zone D	Zone E	Zone F	Zone G	Zone H	Zone I	Zone J	Zone K	Zone L	Overall
08:00	11%	0%	3%	21%	0%	1%	4%	38%	17%	23%	22%	0%	13%
08:30	0%	0%	3%	26%	3%	1%	7%	38%	21%	21%	61%	40%	17%
09:00	11%	0%	7%	54%	8%	2%	12%	67%	23%	21%	63%	60%	24%
09:30	0%	0%	24%	59%	10%	3%	20%	70%	31%	38%	71%	60%	30%
10:00	11%	0%	41%	46%	13%	9%	16%	79%	42%	54%	78%	60%	36%
10:30	22%	10%	28%	49%	20%	17%	30%	86%	51%	82%	95%	60%	45%
11:00	22%	17%	24%	64%	13%	23%	31%	75%	54%	69%	90%	60%	46%
11:30	56%	21%	31%	54%	25%	19%	24%	72%	58%	64%	85%	60%	45%
12:00	44%	34%	38%	51%	20%	24%	24%	71%	57%	69%	85%	60%	46%
12:30	33%	31%	21%	69%	18%	29%	20%	75%	59%	69%	88%	60%	48%
13:00	44%	34%	34%	82%	20%	25%	21%	56%	70%	95%	83%	60%	50%
13:30	22%	45%	45%	87%	20%	24%	19%	48%	71%	79%	88%	60%	49%
14:00	44%	34%	38%	59%	23%	18%	12%	50%	69%	69%	95%	60%	45%
14:30	22%	21%	48%	41%	20%	24%	10%	42%	71%	85%	95%	80%	45%
15:00	22%	28%	31%	38%	13%	19%	7%	36%	68%	77%	83%	80%	41%
15:30	22%	38%	21%	23%	25%	19%	8%	37%	54%	67%	78%	80%	36%
16:00	22%	38%	21%	41%	18%	14%	7%	34%	51%	67%	61%	100%	33%
16:30	22%	52%	0%	54%	10%	20%	10%	53%	49%	51%	61%	100%	36%
17:00	22%	79%	0%	59%	3%	17%	12%	37%	43%	41%	59%	80%	32%
17:30	33%	83%	0%	51%	8%	15%	12%	42%	32%	46%	56%	80%	30%
18:00	22%	66%	0%	79%	0%	14%	15%	43%	29%	38%	61%	100%	29%
18:30	22%	72%	3%	56%	0%	14%	11%	48%	27%	28%	56%	100%	27%
19:00	0%	55%	0%	44%	0%	12%	8%	54%	20%	28%	49%	100%	23%
19:30	0%	45%	0%	46%	0%	10%	7%	60%	16%	23%	51%	100%	22%
20:00	11%	41%	0%	44%	0%	7%	6%	61%	14%	15%	44%	100%	20%
Capacity	9	29	29	39	40	182	123	114	269	39	41	5	919

Figure 6 Existing Peak Demand Parking Utilization - Weekend



As shown in **Figure 6**, Zones C, E, F and G exhibit significant excess capacity, with peak utilization rates below 50%. Zones D, H, J and K are operating above the operational capacity threshold, though sufficient parking opportunities are available in immediately-adjacent zones, notably Zone I which is central to each of these zones and has a significant amount of available parking spaces being the largest of the zones.

Similarly to weekday conditions, Zone L is operating with a peak utilization rate of 100% on weekends. As discussed previously, there are no concerns associated with this high utilization rate as this zone is not for general use and there are ample opportunities for informal parking for employees based on the physical space available.

Summary of Parking Utilization Findings

Given that the system-wide peak parking utilization is well below the 85% effective capacity threshold on both weekdays and weekends, and that parking opportunities remain available near zones that are operating near or above their effective capacity, the existing parking supply is considered sufficient to accommodate the existing parking demand.

Sensitivity Analysis

A sensitivity analysis was conducted to assess the impact of a reduced parking supply on the peak utilization rate of the entire system. The analysis involved reducing the parking supply by 25% and 50% to determine the point at which parking utilization would approach or exceed the effective capacity threshold. The results of this analysis are summarized in **Table 2** below.

Table 2 Sensitivity Analysis Results for the Entire Parking System

	Parking System Utilization Rate		
	At Existing Parking Supply	With 25% Reduced Parking	With 50% Reduced Parking
Weekday	40%	53%	80%
Weekend	45%	60%	91%

As shown in **Table 2**, the existing parking system is able to easily withstand an overall 25% reduction in supply, from a functional perspective. A 50% reduction is likely to result in some operational concerns and on-site congestion.

Based on the distribution of parking demand between the various zones, there is an opportunity to redevelop some of the western zones (e.g., Zone F and G). Alternatively, it may be feasible to relocate parking demand from Zone J to Zone I and establish infill development in Zone J.

Zoning By-Law Parking Requirements

The centre of the subject site is located approximately 430m from the Barrhaven Centre Transitway station. Since the site is within 600m (direct distance) of a rapid-transit station, the reduced parking requirement from Table 101A of the Zoning By-law (2008-250) apply. Based on the approximate size of the existing shopping centre, it is calculated that a minimum of 577 vehicle parking spaces are required. The site currently provides 919 parking spaces and therefore exceeds this minimum requirement by approximately 59% or 342 spaces.

According to Table 103 of the Zoning By-law (2008-250), as a result of its proximity to a rapid transit station, the maximum number of parking spaces permitted for this site is 678 spaces. As such, there is currently a surplus of 241 parking spaces provided on the subject site.

It is important to note that an update to the existing Zoning By-Law (2008-250) is underway. As such, parking requirements may change at the time of future re-development. The draft Zoning By-law suggests that in the future there may be no parking minimum applicable to the site, although there may still be a maximum of 678 spaces permitted.

Findings and Recommendations

Based on the analysis presented in this report, the existing parking supply is sufficient to accommodate existing parking demand. With an observed peak utilization rate of only 40% during the weekday and 50% during the weekend, there is an abundance of available parking that greatly exceeds both the operational and bylaw requirements of the site.

Peak parking demand was confirmed to occur on the weekend (Saturday) through most hours of the day. Based on a review of both weekday and weekend conditions for each parking Zone with the subject property, the greatest excess parking supply can be found in Zones F and G, followed by Zone I. Zone I, however, is central to several parking zones that are shown to operate at or above the operational capacity though and there is vast number of available parking spaces within this zone.

Parking zones associated with the outparcel commercial retail units are found to be appropriately-sized for their respective demand, while zones providing parking for the strip retail plaza experience high demand in central and eastern portions of the property (i.e. Zones H, J and K), particularly on Saturday, though Zone I provides ample opportunity to accommodate any overflow from these adjacent zones.

Overall, the system-wide peak parking utilization remains well below the 85% effective capacity threshold on both weekdays and weekends. This demonstrates that the existing parking supply is well beyond the operation needs of the site. Further, as the site provides 919 parking spaces, it was found to exceed the minimum bylaw requirements by approximately 59% or 342 spaces, and even exceeds the maximum parking supply permitted by the Zoning By-law for sites in close proximity to a rapid transit station.

Sensitivity analysis confirms that an overall 25% reduction in parking supply can be easily accommodated by the existing demand, but that a reduction as high as 50% could result in some operational concerns and on-site traffic congestion, though would still provide more parking than the observed demand.

Based on the results of this analysis, there is opportunity to develop under-utilized portions of the property at the west end of the site (i.e. Zone F), or at the east end of the site by relocating demand from Zone J into Zone I and establishing infill development in Zone J and the eastern portion of Zone I.

Enclosed: **Appendix A** – Parking Occupancy Survey Data

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NAGD
November 25, 2025

Appendix C

TDM Supportive Infrastructure Checklist

TDM-Supportive Development Design and Infrastructure Checklist: Non-Residential Developments (office, institutional, retail or industrial)

Legend	
REQUIRED	The Official Plan or Zoning By-law provides related guidance that must be followed
BASIC	The measure is generally feasible and effective, and in most cases would benefit the development and its users
BETTER	The measure could maximize support for users of sustainable modes, and optimize development performance

TDM-supportive design & infrastructure measures: <i>Non-residential developments</i>		Check if completed & add descriptions, explanations or plan/drawing references
1. WALKING & CYCLING: ROUTES		
1.1 Building location & access points		
BASIC	1.1.1 Locate building close to the street, and do not locate parking areas between the street and building entrances	<input checked="" type="checkbox"/>
BASIC	1.1.2 Locate building entrances in order to minimize walking distances to sidewalks and transit stops/stations	<input checked="" type="checkbox"/>
BASIC	1.1.3 Locate building doors and windows to ensure visibility of pedestrians from the building, for their security and comfort	<input checked="" type="checkbox"/>
1.2 Facilities for walking & cycling		
REQUIRED	1.2.1 Provide convenient, direct access to stations or major stops along rapid transit routes within 600 metres; minimize walking distances from buildings to rapid transit; provide pedestrian-friendly, weather-protected (where possible) environment between rapid transit accesses and building entrances; ensure quality linkages from sidewalks through building entrances to integrated stops/stations (see <i>Official Plan policy 4.3.3</i>)	<input checked="" type="checkbox"/>
REQUIRED	1.2.2 Provide safe, direct and attractive pedestrian access from public sidewalks to building entrances through such measures as: reducing distances between public sidewalks and major building entrances; providing walkways from public streets to major building entrances; within a site, providing walkways along the front of adjoining buildings, between adjacent buildings, and connecting areas where people may congregate, such as courtyards and transit stops; and providing weather protection through canopies, colonnades, and other design elements wherever possible (see <i>Official Plan policy 4.3.12</i>)	<input checked="" type="checkbox"/>

TDM-supportive design & infrastructure measures: <i>Non-residential developments</i>		Check if completed & add descriptions, explanations or plan/drawing references
REQUIRED	1.2.3 Provide sidewalks of smooth, well-drained walking surfaces of contrasting materials or treatments to differentiate pedestrian areas from vehicle areas, and provide marked pedestrian crosswalks at intersection sidewalks (<i>see Official Plan policy 4.3.10</i>)	<input checked="" type="checkbox"/>
REQUIRED	1.2.4 Make sidewalks and open space areas easily accessible through features such as gradual grade transition, depressed curbs at street corners and convenient access to extra-wide parking spaces and ramps (<i>see Official Plan policy 4.3.10</i>)	<input checked="" type="checkbox"/>
REQUIRED	1.2.5 Include adequately spaced inter-block/street cycling and pedestrian connections to facilitate travel by active transportation. Provide links to the existing or planned network of public sidewalks, multi-use pathways and on-road cycle routes. Where public sidewalks and multi-use pathways intersect with roads, consider providing traffic control devices to give priority to cyclists and pedestrians (<i>see Official Plan policy 4.3.11</i>)	<input checked="" type="checkbox"/>
BASIC	1.2.6 Provide safe, direct and attractive walking routes from building entrances to nearby transit stops	<input checked="" type="checkbox"/>
BASIC	1.2.7 Ensure that walking routes to transit stops are secure, visible, lighted, shaded and wind-protected wherever possible	<input checked="" type="checkbox"/>
BASIC	1.2.8 Design roads used for access or circulation by cyclists using a target operating speed of no more than 30 km/h, or provide a separated cycling facility	<input type="checkbox"/>
1.3 Amenities for walking & cycling		
BASIC	1.3.1 Provide lighting, landscaping and benches along walking and cycling routes between building entrances and streets, sidewalks and trails	<input checked="" type="checkbox"/>
BASIC	1.3.2 Provide wayfinding signage for site access (where required, e.g. when multiple buildings or entrances exist) and egress (where warranted, such as when directions to reach transit stops/stations, trails or other common destinations are not obvious)	<input type="checkbox"/>

TDM-supportive design & infrastructure measures: <i>Non-residential developments</i>		Check if completed & add descriptions, explanations or plan/drawing references
2. WALKING & CYCLING: END-OF-TRIP FACILITIES		
2.1 Bicycle parking		
REQUIRED	2.1.1 Provide bicycle parking in highly visible and lighted areas, sheltered from the weather wherever possible (see <i>Official Plan policy 4.3.6</i>)	<input checked="" type="checkbox"/>
REQUIRED	2.1.2 Provide the number of bicycle parking spaces specified for various land uses in different parts of Ottawa; provide convenient access to main entrances or well-used areas (see <i>Zoning By-law Section 111</i>)	<input checked="" type="checkbox"/>
REQUIRED	2.1.3 Ensure that bicycle parking spaces and access aisles meet minimum dimensions; that no more than 50% of spaces are vertical spaces; and that parking racks are securely anchored (see <i>Zoning By-law Section 111</i>)	<input checked="" type="checkbox"/>
BASIC	2.1.4 Provide bicycle parking spaces equivalent to the expected number of commuter cyclists (assuming the cycling mode share target is met), plus the expected peak number of customer/visitor cyclists	<input type="checkbox"/>
BETTER	2.1.5 Provide bicycle parking spaces equivalent to the expected number of commuter and customer/visitor cyclists, plus an additional buffer (e.g. 25 percent extra) to encourage other cyclists and ensure adequate capacity in peak cycling season	<input type="checkbox"/>
2.2 Secure bicycle parking		
REQUIRED	2.2.1 Where more than 50 bicycle parking spaces are provided for a single office building, locate at least 25% of spaces within a building/structure, a secure area (e.g. supervised parking lot or enclosure) or bicycle lockers (see <i>Zoning By-law Section 111</i>)	<input type="checkbox"/>
BETTER	2.2.2 Provide secure bicycle parking spaces equivalent to the expected number of commuter cyclists (assuming the cycling mode share target is met)	<input type="checkbox"/>
2.3 Shower & change facilities		
BASIC	2.3.1 Provide shower and change facilities for the use of active commuters	<input type="checkbox"/>
BETTER	2.3.2 In addition to shower and change facilities, provide dedicated lockers, grooming stations, drying racks and laundry facilities for the use of active commuters	<input type="checkbox"/>
2.4 Bicycle repair station		
BETTER	2.4.1 Provide a permanent bike repair station, with commonly used tools and an air pump, adjacent to the main bicycle parking area (or secure bicycle parking area, if provided)	<input type="checkbox"/>

TDM-supportive design & infrastructure measures: <i>Non-residential developments</i>		Check if completed & add descriptions, explanations or plan/drawing references
3. TRANSIT		
3.1 Customer amenities		
BASIC	3.1.1 Provide shelters, lighting and benches at any on-site transit stops	<input type="checkbox"/>
BASIC	3.1.2 Where the site abuts an off-site transit stop and insufficient space exists for a transit shelter in the public right-of-way, protect land for a shelter and/or install a shelter	<input type="checkbox"/>
BETTER	3.1.3 Provide a secure and comfortable interior waiting area by integrating any on-site transit stops into the building	<input type="checkbox"/>
4. RIDESHARING		
4.1 Pick-up & drop-off facilities		
BASIC	4.1.1 Provide a designated area for carpool drivers (plus taxis and ride-hailing services) to drop off or pick up passengers without using fire lanes or other no-stopping zones	<input type="checkbox"/>
4.2 Carpool parking		
BASIC	4.2.1 Provide signed parking spaces for carpools in a priority location close to a major building entrance, sufficient in number to accommodate the mode share target for carpools	<input type="checkbox"/>
BETTER	4.2.2 At large developments, provide spaces for carpools in a separate, access-controlled parking area to simplify enforcement	<input type="checkbox"/>
5. CARSHARING & BIKESHARING		
5.1 Carshare parking spaces		
BETTER	5.1.1 Provide carshare parking spaces in permitted non-residential zones, occupying either required or provided parking spaces (<i>see Zoning By-law Section 94</i>)	<input type="checkbox"/>
5.2 Bikeshare station location		
BETTER	5.2.1 Provide a designated bikeshare station area near a major building entrance, preferably lighted and sheltered with a direct walkway connection	<input type="checkbox"/>

TDM-supportive design & infrastructure measures: <i>Non-residential developments</i>		Check if completed & add descriptions, explanations or plan/drawing references
6. PARKING		
6.1 Number of parking spaces		
REQUIRED	6.1.1 Do not provide more parking than permitted by zoning, nor less than required by zoning, unless a variance is being applied for	<input checked="" type="checkbox"/>
BASIC	6.1.2 Provide parking for long-term and short-term users that is consistent with mode share targets, considering the potential for visitors to use off-site public parking	<input type="checkbox"/>
BASIC	6.1.3 Where a site features more than one use, provide shared parking and reduce the cumulative number of parking spaces accordingly (<i>see Zoning By-law Section 104</i>)	<input type="checkbox"/>
BETTER	6.1.4 Reduce the minimum number of parking spaces required by zoning by one space for each 13 square metres of gross floor area provided as shower rooms, change rooms, locker rooms and other facilities for cyclists in conjunction with bicycle parking (<i>see Zoning By-law Section 111</i>)	<input type="checkbox"/>
6.2 Separate long-term & short-term parking areas		
BETTER	6.2.1 Separate short-term and long-term parking areas using signage or physical barriers, to permit access controls and simplify enforcement (i.e. to discourage employees from parking in visitor spaces, and vice versa)	<input type="checkbox"/>
7. OTHER		
7.1 On-site amenities to minimize off-site trips		
BETTER	7.1.1 Provide on-site amenities to minimize mid-day or mid-commute errands	<input type="checkbox"/>