



# DALHOUSIE UNIVERSITY

## ANNUAL PARKING LOT SURVEY (2019)

Dalhousie University  
Office of Sustainability

## Contents

<a href="#">Executive Summary</a> .....	3
<a href="#">Background</a> .....	4
<a href="#">Dalhousie Commuting Patterns</a> .....	9
<a href="#">2019 Parking Survey Results</a> .....	11
<a href="#">General Parking Results</a> .....	11
<a href="#">Results by Parking Space Type</a> .....	12
<a href="#">General Unreserved Parking</a> .....	13
<a href="#">Campus Specific Parking Results</a> .....	14
<a href="#">Studley Campus</a> .....	14
<a href="#">Carleton Campus</a> .....	19
<a href="#">Sexton Campus</a> .....	21
<a href="#">Agricultural Campus</a> .....	23
<a href="#">Survey Recommendations</a> .....	29
<a href="#">Conclusion</a> .....	30
<a href="#">References</a> .....	30
<a href="#">Appendices</a> .....	31
<a href="#">Appendix A – Parking Permit Targets and Sales</a> .....	31
<a href="#">Appendix B – Current Parking Permit Pricing (Fall, 2019)</a> .....	31
<a href="#">Appendix C – Parking Spaces by Type and Lot</a> .....	33
<a href="#">Appendix D – Parking Lot Map Example</a> .....	36
<a href="#">Appendix E – Dalhousie Faculty Association Collective Agreement (Regarding Parking)</a> .....	37

<i>Figure 1 - Context Map Showing Locations of Dalhousie Campuses</i> .....	4
<i>Figure 2 - Primary Commuting Mode for Dalhousie University Survey Respondents (2020)</i> .....	9
<i>Figure 3 – Parking Locations for Dalhousie University Survey Respondents (2020)</i> .....	10
<i>Figure 4 – Parking Permit Purchases for Dalhousie University Survey Respondents (2019)</i> .....	10
<i>Figure 5 – Dalhousie University Parking Occupancy over Time (Halifax Campuses)</i> .....	11
<i>Figure 6 – Comparing General Unreserved Parking Occupancy to Average Parking Occupancy over the Day (Halifax Campuses)</i> .....	13
<i>Figure 7 - Studley General Unreserved Parking Occupancies (2019 vs 2018/17/16/15)</i> .....	14
<i>Figure 8 – Sexton General Unreserved Parking Occupancies (2019 vs 2018/17/16/15)</i> .....	14
<i>Figure 9 – Studley Campus Peak Occupancy by Lot Number (Vehicles / Space)</i> .....	16
<i>Figure 10 – Studley Campus Daily Turnover by Lot Number (Vehicles / Space / Day)</i> .....	17
<i>Figure 11 – Carleton Campus Peak Occupancy by Lot Number (Vehicles / Space)</i> .....	20
<i>Figure 12 – Carleton Campus Daily Turnover by Lot Number (Vehicles / Space / Day)</i> .....	20
<i>Figure 13 – Sexton Campus Peak Occupancy by Lot Number (Vehicles / Space)</i> .....	22
<i>Figure 14 – Sexton Campus Daily Turnover by Lot Number (Vehicles / Space / Day)</i> .....	22
<i>Figure 15 – Agricultural Campus Peak Occupancy by Lot Number (Vehicles / Space)</i> .....	24
<i>Figure 16 – Agricultural Campus Daily Turnover by Lot Number (Vehicles / Space / Day)</i> .....	25
<i>Table 1 - Definitions of Parking Statistics</i> .....	7
<i>Table 2 – Dalhousie University Parking Statistics (Halifax Campuses)</i> .....	11
<i>Table 3 – Parking Statistics by Parking Space Type (Halifax Campuses)</i> .....	12
<i>Table 4 – Parking Statistics for Studley Campus Lots</i> .....	18
<i>Table 5 – Parking Statistics for Carleton Campus Lots</i> .....	19
<i>Table 6 – Parking Statistics for Sexton Campus Lots</i> .....	23
<i>Table 7 – Parking Statistics for Agricultural Campus Lots</i> .....	26
<i>Table 8 – Parking Management Recommendations</i> .....	27
<i>Table 9 – Future Parking Survey Recommendations</i> .....	29

## Executive Summary

Dalhousie University conducts annual parking surveys to make informed parking management decisions. This survey provides information on the parking capacity, peak-occupancy, daily average occupancy, daily turnover, and average parking duration of Dalhousie University parking lots. The Parking Survey Report provides an update to the baseline of parking information produced from the Fall 2019 parking survey. This report builds upon previous work by considering how parking use varies by parking space type and by providing analysis about the general unreserved parking system. The Fall 2019 parking survey confirmed that there are approximately 2779 parking spaces across all four Dalhousie campuses with a peak occupancy of 81.6% at 11am, and an average daily parking turnover of 1.32 vehicles per space per day at the four campuses.

Based on the results from the 2019 parking survey, actions are recommended for Dalhousie's parking management including the adoption of peak-occupancy targets and the adjustment of lot oversell targets and parking prices in order to meet the peak-occupancy targets. Peak occupancy rates are used to adjust over sell targets.

## Background

Dalhousie University conducts annual parking surveys to make informed parking management decisions. The Fall 2019 Dalhousie Parking Survey is the ninth of its kind, with Dalhousie's first parking survey conducted in 2011 to support the creation of Dalhousie's Transportation Demand Management (TDM) Plan.

The first comprehensive parking survey was conducted in Fall 2015, which set a baseline of parking information for Dalhousie University and gathered detailed information on the number and location of rideshare spaces for use in LEED applications. The Fall 2019 survey provides an update to understand how parking conditions have changed at Dalhousie University since Fall 2015. Additionally, this report considers how parking use varies by parking space type, and also provides additional analysis into the general unreserved parking system.

Since Fall 2015, Dalhousie has redirected the University's short-term parking management approach from metered spaces to pay and display lots, with parking spaces converted to pay and display in the LeMarchant Place Pay and Display and the Killam Loop on the Studley Campus. Metered spots are still available in some Dalhousie parking lots and on city streets bordering the Halifax campuses.

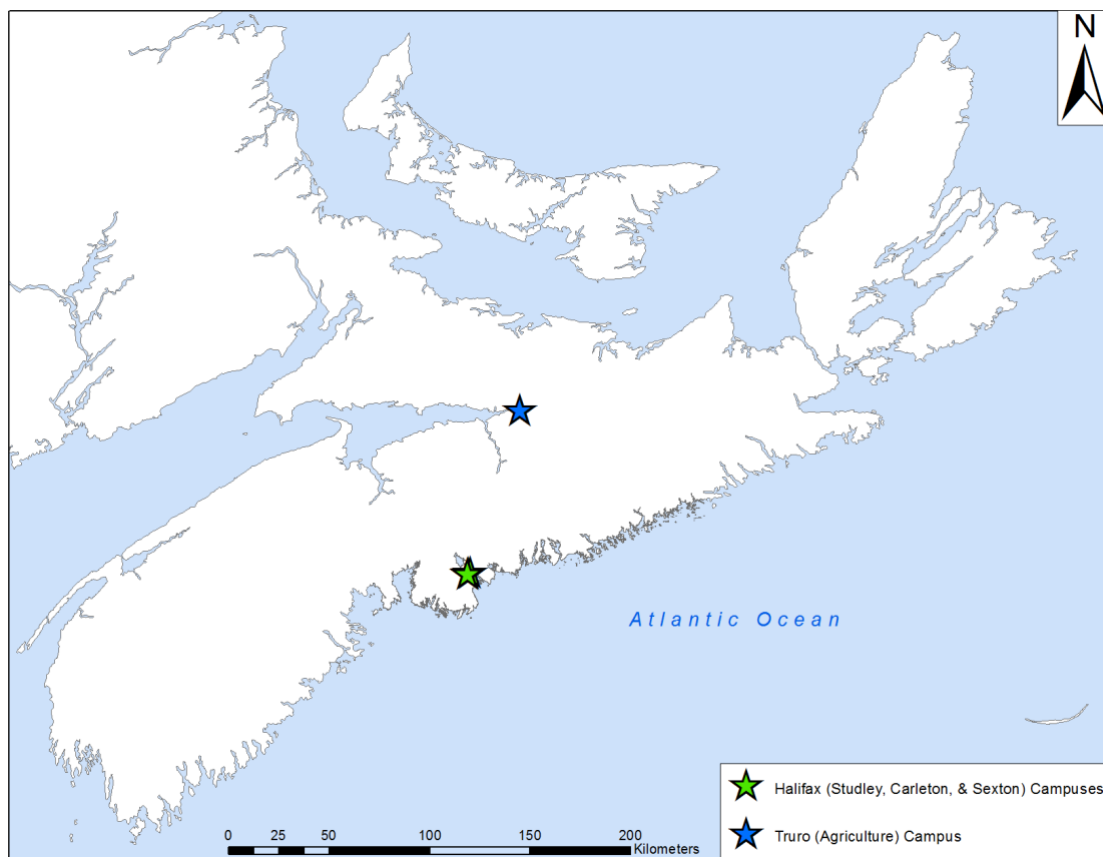


Figure 1 - Context Map Showing Locations of Dalhousie Campuses

Dalhousie's parking survey collects information on the capacity, peak occupancy, daily average occupancy, turnover, and average duration of parking on campus, and this information is important for many reasons.

The Halifax Regional Municipality's (HRM) current land use bylaws require parking spaces according to development (on the Studley and Carleton campuses), and Dalhousie University continues to develop additional buildings. However, parking is expensive to provide. Facilities Management estimates from contracts quotes outline costs between \$40,000 to \$70,000 for each underground parking space. Consequently, the data collected from the parking survey is necessary for Dalhousie University to identify appropriate parking space requirements and parking management strategies to the HRM and the Dalhousie community. Further, land is scarce and expensive in downtown Halifax, and more reliance on automobiles creates many external costs including congestion, emissions, and adverse health impacts. The provision of additional parking also imposes environmental costs including a potential reduction in green space, an exacerbation of the heat island effect, and an increase in the volume of polluted storm water runoff. As such, Dalhousie's parking management decisions impact more than just the Dalhousie community.

The parking survey information is important for informing key goals within Dalhousie University's plans. For example, Dalhousie University's Sustainability Plan aims to reduce single occupancy vehicle (SOV) commuting by 15% from 2008 levels by 2020, and to reduce university GHG emissions by 55% by 2030. Parking management decisions (including availability, pricing, and location) can influence a commuter's decision to drive or not. However, the Dalhousie Faculty Association's Collective Agreement currently constrains the alteration of parking pricing and supply (Appendix E). Consequently, this data is important for informing and justifying various non-price, transportation demand management (TDM) parking strategies that could help to both improve the efficiency of currently available parking, and to reduce the annual parking deficit.

Further, a mismatch between the supply and demand for parking within a given lot can create unnecessary costs like 'circling for parking,' which wastes time and increases vehicle emissions. Also, there are different kinds of parking demand (ex. short-term and long-term), and meeting the specific demand profile of those parking within a particular lot with the appropriate parking management strategy is important for maximizing the efficiency of the parking system. The results from the parking survey are important for understanding the types of parking demand within a given lot, which provides the information necessary to make changes to the parking management strategy for individual lots.

Dalhousie offers several different kinds of parking spaces including reserved, unreserved, metered, accessible, motorcycle, rideshare etc. Observing the occupancy, turnover, and average parking duration of these various kinds of parking spaces across Dalhousie University can be helpful for further improving the efficiency of Dalhousie's parking system.

## Methodology

The 2019 Fall Parking Survey was conducted with eight auditors surveying all parking lots on Dalhousie's Halifax campuses on both September 24<sup>th</sup> and 25<sup>th</sup>, and one auditor surveying the Agricultural campus parking lots on October 1<sup>st</sup> and 2<sup>nd</sup>, 2019. A license-plate survey was conducted, and each lot was observed five times over the course of each day. For data quality purposes, the timing of survey rounds were predetermined and consistent across all campuses. Before the survey, parking lot maps were verified for each parking lot, denoting the survey order for consistency and data quality, and identifying parking space typologies in order to maintain an accurate inventory of parking spaces on campus by parking space type<sup>1</sup>. For each survey round, the parking spaces were checked in the order specified on the parking lot maps, and the first three digits of each parked vehicle was recorded each time. Throughout this process, any parking spots unavailable due to construction or any changes in parking space typology were noted. Building upon lessons from previous surveys, a methodology for including vehicles parked illegally in 'non-spaces' was developed and implemented in order to improve the accuracy of the occupancy and turnover statistics. In order to deal with variations in parking capacity due to construction, parking spaces closed during the survey for construction were included in the calculation of parking statistics (unlike in 2016 they were not included). These temporarily closed spaces were recorded as a space, but unavailable during the survey round. This change will help in the overall accuracy of the data analysis.

Although license-plate surveys are more time consuming than simply counting the number of parked vehicles within a lot, the former methodology is superior because it allows for an understanding of parking duration and turnover as well as occupancy. By recording license plate information, the license plates of vehicles can be compared for each parking space between each observation period to get a general understanding of how long vehicles are parking within a given lot. This additional information can be important for informing various parking management strategies capable of improving the efficiency of currently available parking. Like the previous survey, the averaged results of the two survey days were used to calculate the parking capacity, peak-occupancy, daily parking turnover, and average parking duration of all Dalhousie University's parking lots<sup>2</sup>. See Table 1 below for definitions of the parking statistics presented within this report.

---

<sup>1</sup> See Appendix D for an example parking lot map

<sup>2</sup> In order to provide an adequate representation of the parking situation experienced during the survey period, the parking lot capacities used for the calculation of peak-occupancies, daily average occupancies, and daily parking turnover did not include spaces closed due to construction.

Table 1 - Definitions of Parking Statistics

Statistic	Definition
Parking Capacity	Parking capacity is the total number of parking spaces available within a defined area
Parking Occupancy	Parking occupancy is the percentage of the parking capacity that is occupied by vehicles at a specific point in time (vehicles/spaces*100)
Peak Occupancy	Peak-occupancy is the highest measured parking occupancy within a given period of time
Daily Average Occupancy	Daily average occupancy provides the average occupancy of a parking facility over the whole day. Alongside the measure of peak occupancy, the daily average occupancy provides a measure of how spread out the parking demand for a particular lot is over the course of the day <sup>3</sup> . If the difference between these two statistics are high, alternative parking management strategies can be adopted to better temporally distribute parking demand and to improve the efficiency of the parking facility
Time of Peak Occupancy	The time of peak occupancy shows the time of day that a parking facility has the highest parking demand. For this report, the time of peak

---

<sup>3</sup> For example, if the daily average occupancy is similar to the peak occupancy, then parking demand over the course of the day is reasonably consistent. Conversely, if the peak occupancy is notably higher than the daily average occupancy, it is likely that parking demand is very time sensitive, and has notably more parking demand at certain parts of the day.



occupancy was determined by averaging the occupancy between the two survey days, and the resulting time period with the highest averaged peak occupancy was identified as the time of peak occupancy<sup>4</sup>

### Daily Parking Turnover

Parking turnover provides an understanding of the average number of vehicles parked within a parking space over a given period of time (vehicles/space/day)

Generally, a high vehicle turnover implies more parking demand and/or a shorter parking duration, and a low parking turnover implies a lower parking demand and/or a longer parking duration

### Average Parking Duration

Average parking duration is the average length of time a vehicle spends within a given parking space<sup>5</sup>

Although daily parking turnover is sometimes used to provide a general comparison of parking duration between lots, it can be misleading<sup>6</sup>; Consequently, it is important to have a statistic specifically measuring parking duration

---

<sup>4</sup> This statistic can be misleading as it implies a stable time of maximum parking demand for a particular lot (which may not be the case). Additionally, some lots may have a less pronounced 'peak' than other lots. In other words, a lot may have a pretty consistent occupancy over the course of the day, with just a slightly higher occupancy in a given period of time. Consequently, it is important to also look at the difference between the peak occupancy and the average daily occupancy statistics when you are considering the time of peak occupancy; the magnitude of the difference between these two statistics can help illustrate how pronounced the peak may be.

<sup>5</sup> Because the survey had 2-hour intervals between survey rounds, average parking duration could not be presented accurately as a discrete measurement of time. Consequently, average parking duration was presented as a ranking of parking lots from shortest to longest average parking durations.

<sup>6</sup> Ex. A parking turnover of 1 may imply that a lot is full with the same vehicles for an entire day (high parking duration), or that the lot is full for only one hour of the day with the same vehicles (short parking duration) and empty for the rest of the day.

## Dalhousie Commuting Patterns

The results from Dalhousie's Annual Sustainability Survey provide important contextual information for Dalhousie's parking situation. The primary parking locations and parking permit purchases from survey respondents are presented in Figure 3. and Figure 4. Of the survey respondents that commute by automobile, the majority park in Dalhousie lots and purchase general annual permits.

The parking system is managed somewhat differently between the Agricultural Campus (AC) and the Halifax campuses, and there are also notable differences between the commuting patterns of respondents from these campuses. Figure 2. shows the primary commuting modes of both the AC and the Halifax Campus respondents from the 2019-2020 survey. In general, AC respondents tend to be more auto-dependent. This is not surprising given the lack of transit options at the AC.

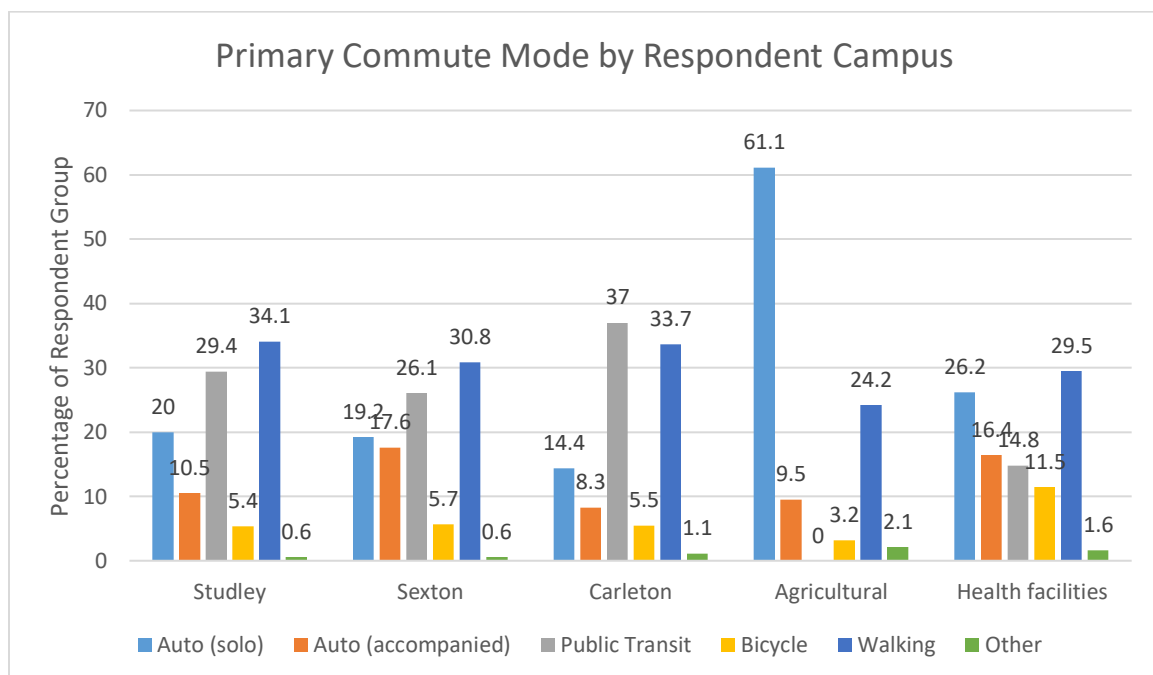


Figure 2 - Primary Commuting Mode for Dalhousie University Survey Respondents (2020)

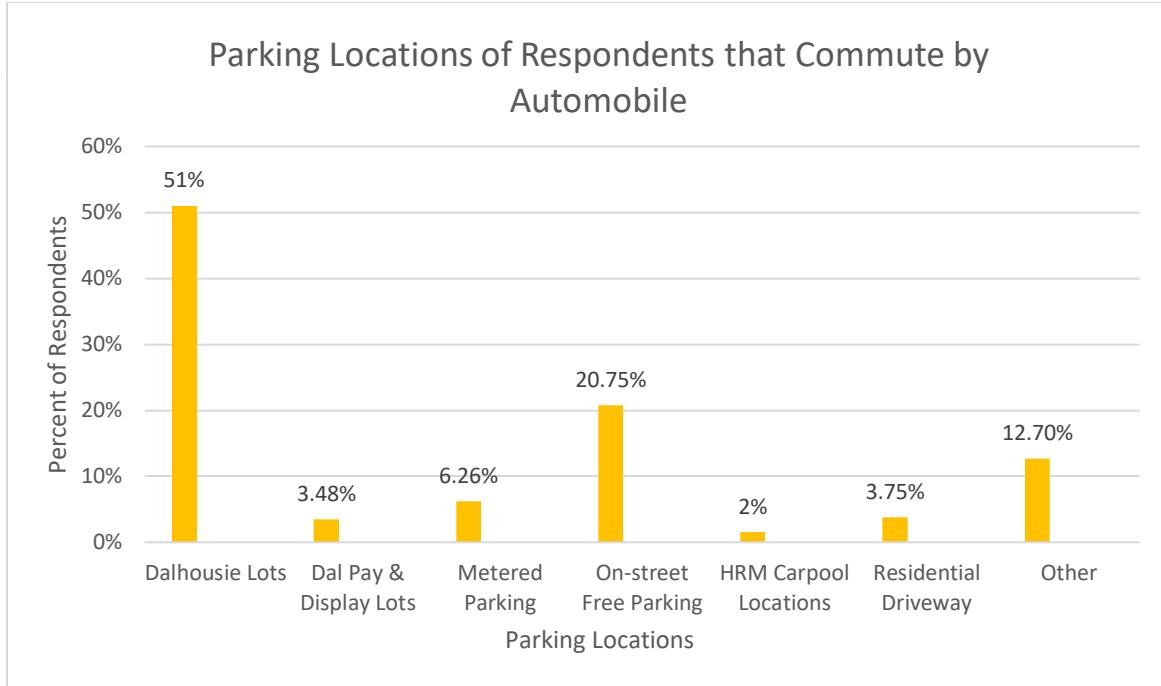


Figure 3 – Parking Locations for Dalhousie University Survey Respondents (2020)

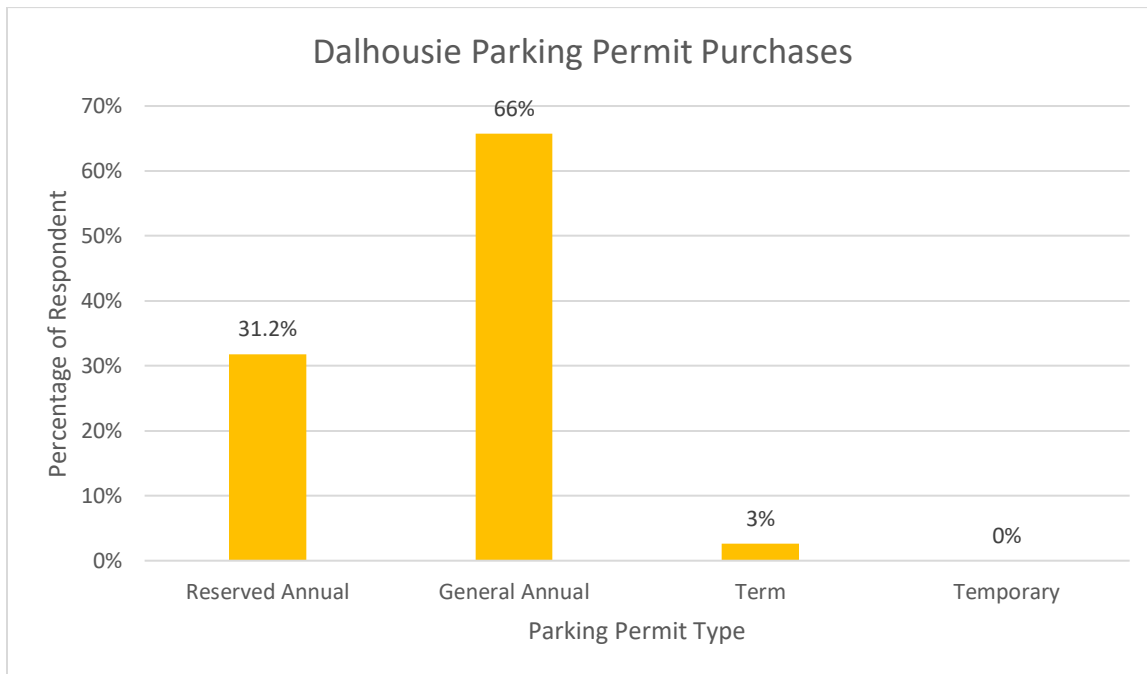


Figure 4 – Parking Permit Purchases for Dalhousie University Survey Respondents (2020)

## 2019 Parking Survey Results

### Full Parking Supply Results

During the Fall 2019 survey, Dalhousie's Halifax campuses<sup>7</sup> had a total of 2000 parking spaces; 1948 of those parking spaces were available; the remainder were not due to construction interference (Table 2). According to the survey results, parking occupancies change substantially over the day, with the lowest occupancy rates occurring in the early morning and late afternoon (*Figure 5*). Additionally, parking behaviour varies significantly between the three Halifax campuses:

- Average daily turnover varies between 0.84 and 1.33 vehicles per space per day;
- Daily average occupancy varies between 51% and 76%; and
- Peak occupancy varies between 67% and 95%.

Table 2 – Dalhousie University Parking Statistics (Halifax Campuses)

Campus	Total Parking Capacity (Construction)	Daily Average Occupancy	Peak Occupancy	Total Peak Available Spaces (G)	Peak Time	Daily Turnover	Parking Duration Rank
Studley	1447 (1409)	68%	85%	29.65	11am	1.33	1
Carleton	159 (158)	51%	67%	5.4	2pm	0.84	2
Sexton	394 <sup>8</sup> (381)	76%	95%	33.3	11am	1.29	3
<b>Halifax Total</b>	<b>2000 (1948)</b>	<b>68%</b>	<b>85%</b>		<b>11am</b>	<b>1.28</b>	

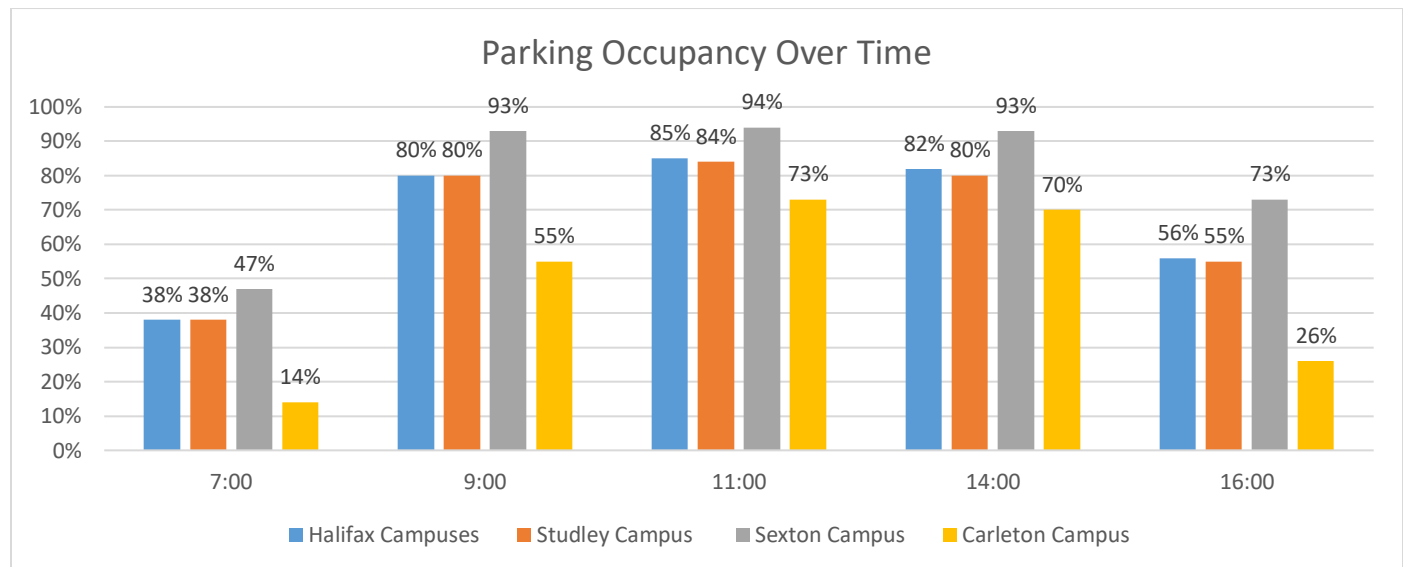


Figure 5 – Dalhousie University Parking Occupancy over Time (Halifax Campuses)

<sup>7</sup> The Agricultural Campus is not included in this section. Parking information for the AC Campus is covered later in the report.

<sup>8</sup> There are three parking spaces on Sexton Campus marked as Canadian Longitudinal Study on Aging spots.

## Results by Parking Space Type

The 2019 Annual Parking Survey Report explores the difference in parking use according to parking space type for the Halifax Campuses (*Table 3*).

*Table 3 – Parking Statistics by Parking Space Type (Halifax Campuses)*

Space Type	Parking Capacity Available <sup>9</sup>	Daily Average Occupancy	Peak Occupancy	Daily Turnover	Parking Duration Rank
General Unreserved (G)	925	80%	97%	1.44	14
Reserved General (RG)	604	61%	78%	1.14	13
Pay and Display (P&D)	95	70%	98%	1.83	6
Metered (M)	61	64%	91%	1.94	5
Motorcycle (MC)	41	15%	24%	.26	16
Reserved Other (RB)	46	45%	63%	.87	12
Reserved Accessible (RA)	21	36%	59%	1.02	4
Rideshare (RS)	21	48%	67%	.90	15
Accessible (A)	36	27%	42%	.69	9
Reserved Dal Veh. (RY)	31	63%	74%	1.21	11
Dalplex (D)	34	81%	100%	1.82	10
Compact (CO)	3	60%	100%	1.17	17
Carshare (CS)	3	37%	62%	1.00	3
Reserved Electric (RE)*	10	37%	63%	.95	8
P&D Accessible	4	27%	62%	1.00	1
P&D Reserve Electric	1	62%	45%	1.25	7
Security	7	37%	43%	1.21	2
<b>TOTAL</b>	<b>1948</b>	<b>68%</b>	<b>85%</b>	<b>1.32</b>	

As shown in *Table 3*, General Unreserved and General Reserved parking spaces account for the majority of all available parking spaces on the Halifax campuses (47% and 31% respectively). With Carshare spots, the lower the average occupancy the more the cars are being used. \*Six EV spots are the Dalplex had meters added into the 2019 year making them metered spaces. This change will be noted for the next report. The new dual head EV station at Sexton main lot is not in a Pay and Display lot; however is metered as a short-term parking space.

General Unreserved<sup>10</sup>, Pay & Display and Dalplex parking spaces have relatively high parking utilization, with daily average occupancies of more than 70% and peak occupancies above the overall average (85%). These three parking space types also exhibit relatively high daily turnover (vehicles/space/day).

Reserved General parking spaces exhibit moderate parking utilization, with daily average occupancies of 61%, peak occupancy of 78% and a daily turnover 1.14 vehicle/space/day.

<sup>9</sup> Only includes spaces that were available for parking during the survey; does not include spaces temporarily closed for construction.

<sup>10</sup> General Unreserved parking spaces exhibit the highest utilization of all parking space types.

In contrast, Accessible, Motorcycle, Reserved Accessible, P&D Accessible, Reserved Other, Ride Share, Reserved Electric parking spaces have relatively low parking utilization, with daily average occupancies lower than 50%. Accessible, Reserved Electric and Reserved Other have peak occupancies lower than 65%, and a daily turnover lower than 1 vehicle/space/day. Reserved Electric parking space type showed a decrease compared to 2018 in daily average occupancy 37% (64%), peak occupancy 63% (94%) and a decrease in the daily turnover .95 (1.50). This is likely due to paid meters being added to the six EV stations at the Dalplex to charge for the short-term parking space.

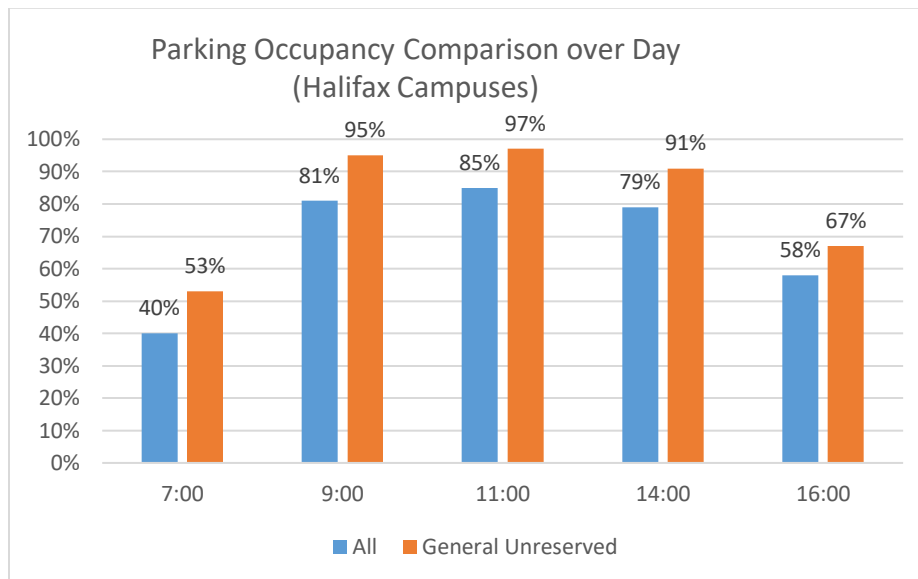
Regarding parking duration, Metered, Pay and Display, and Reserve Electric parking spaces exhibit short-term parking behaviour. With the exception of Pay and Display Accessible spaces, these parking space types also have the highest daily turnover with between 1.50 and 1.98 vehicles per space per day. The daily turnover rate for Dalplex saw a decrease from 2018 (2.00 to 1.82).

### General Unreserved Parking

The general unreserved parking management system at Dalhousie University is at capacity during peak times throughout the day. Particular issues raised at the Transportation and Security Committee and through annual commuter data collected by the Office of Sustainability include the following:

- frustration for permit holders unable to find a parking spot; and
- additional congestion and emissions caused by circling for parking s.

As shown in *Figure 6*, the parking occupancy for general unreserved parking spaces is substantially higher than the parking occupancy for all parking spaces, with occupancies for general unreserved spaces reaching above 90% at 9am, 11am and 2pm across all Halifax Campuses.



*Figure 6 – Comparing General Unreserved Parking Occupancy to Average Parking Occupancy over the Day (Halifax Campuses)*

The general unreserved occupancies have remained reasonably similar between 2015 and 2019 on the Studley Campus (Figure 7), occupancies on the Sexton Campus have mostly stayed the same in the early morning and increased at end of day (Figure 8). For Sexton Campus the general unreserved parking space

peak occupancy went from 97.0% in 2018 to 100.0% in 2019. At Studley campus there was a decrease from 97.8 (2018) to 95.0 (2019).

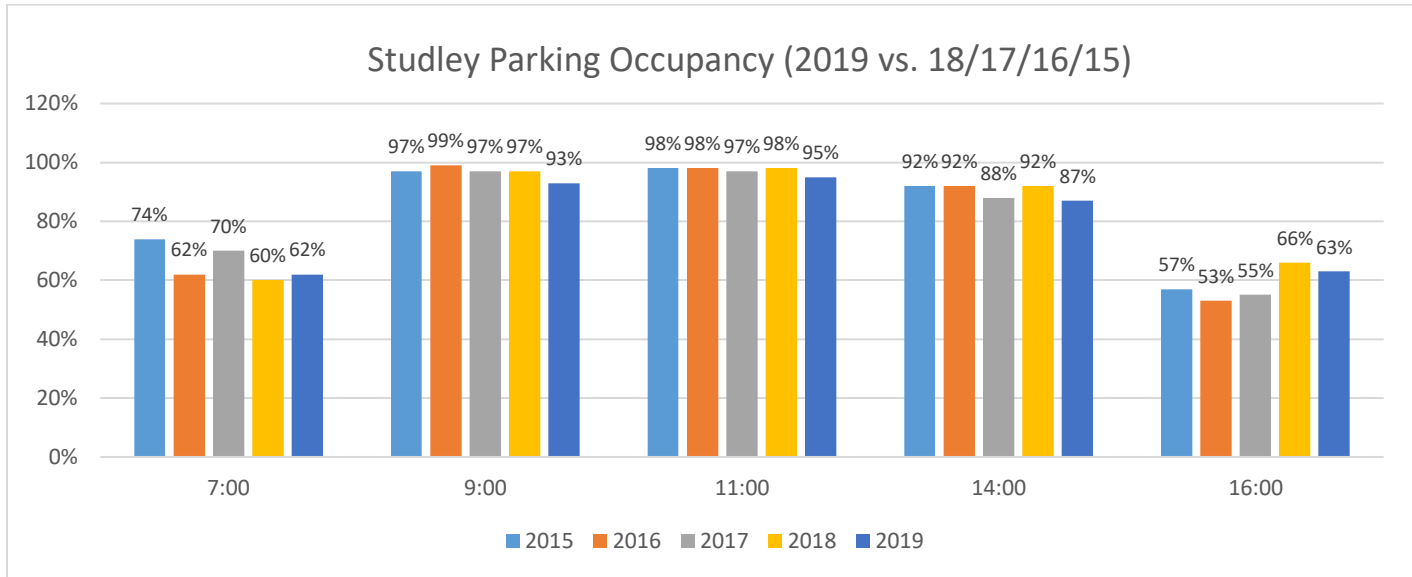


Figure 7 - Studley General Unreserved Parking Occupancies (2019 vs 2018/17/16/15)

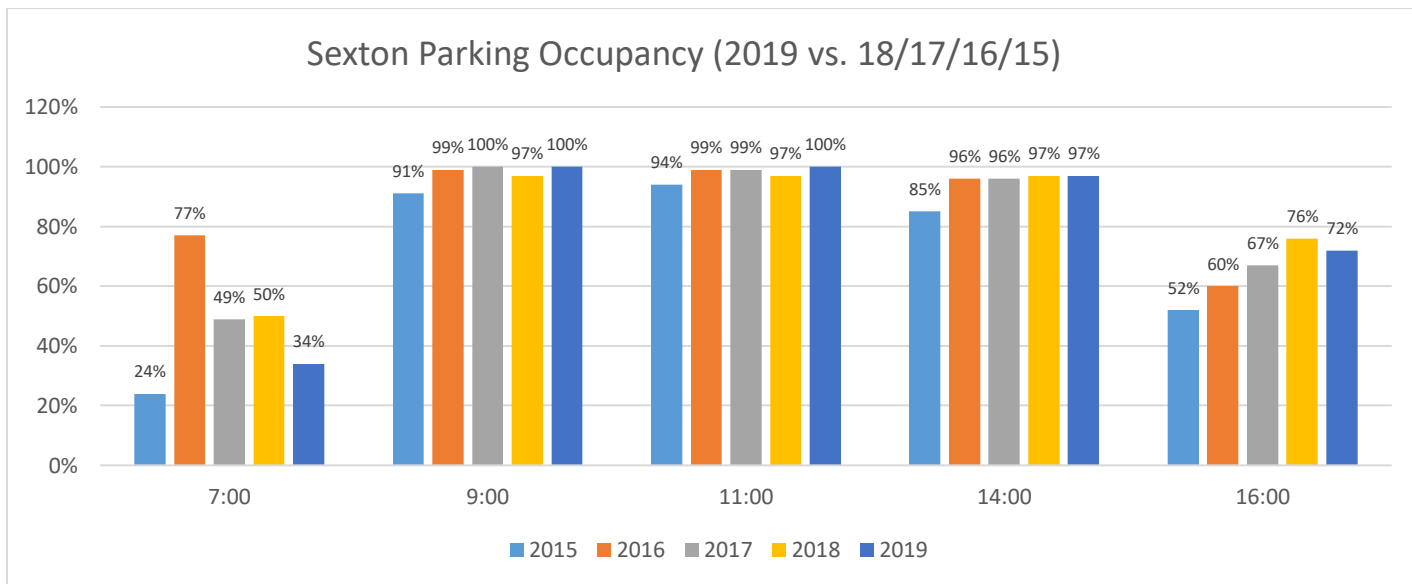


Figure 8 – Sexton General Unreserved Parking Occupancies (2019 vs 2018/17/16/15)

## Campus Specific Parking Results

### Studley Campus

Studley Campus is Dalhousie’s largest campus and is located along University Avenue in the South End of the Halifax Peninsula. Presently, Dalhousie’s Studley Campus has a total parking capacity of 1447 spaces, although only 1409 parking spaces were available during the parking survey due to construction

interference. In 2016, LeMarchant Place lot was converted to Pay and Display and an additional 25 parking spaces were added. In 2017 the Killam Loop saw an increase in Pay and Display parking also. In 2018 the Dalplex lot saw an increase in parking with the addition of 6 Reserved Electric Vehicle spots.

The survey results show an average peak parking occupancy of 85% at 11am, a daily average occupancy of 68%, and an average daily parking turnover of approximately 1.36<sup>11</sup> on Studley Campus (Table 4). This represents a 2% increase in average daily occupancy and 1% increase in peak occupancy from the Fall 2018 survey. The daily vehicle turnover increased from 1.18 to 1.36%, which suggests that more vehicles are parking on campus over the course of the day, possibly for shorter periods of time.

*Figure 9 and Figure 10 graphically represent the peak occupancy and daily turnover of the Studley Campus parking lots respectively. Additionally, Table 4 includes each parking lot's total parking capacity and daily average occupancy and ranks the parking lots according to their average parking duration from shortest (1) to longest (25). A detailed inventory of parking spaces for the Studley Campus parking lots can be found within Appendix C.*

---

<sup>11</sup> A decrease of almost 14% from the Fall 2016 survey.



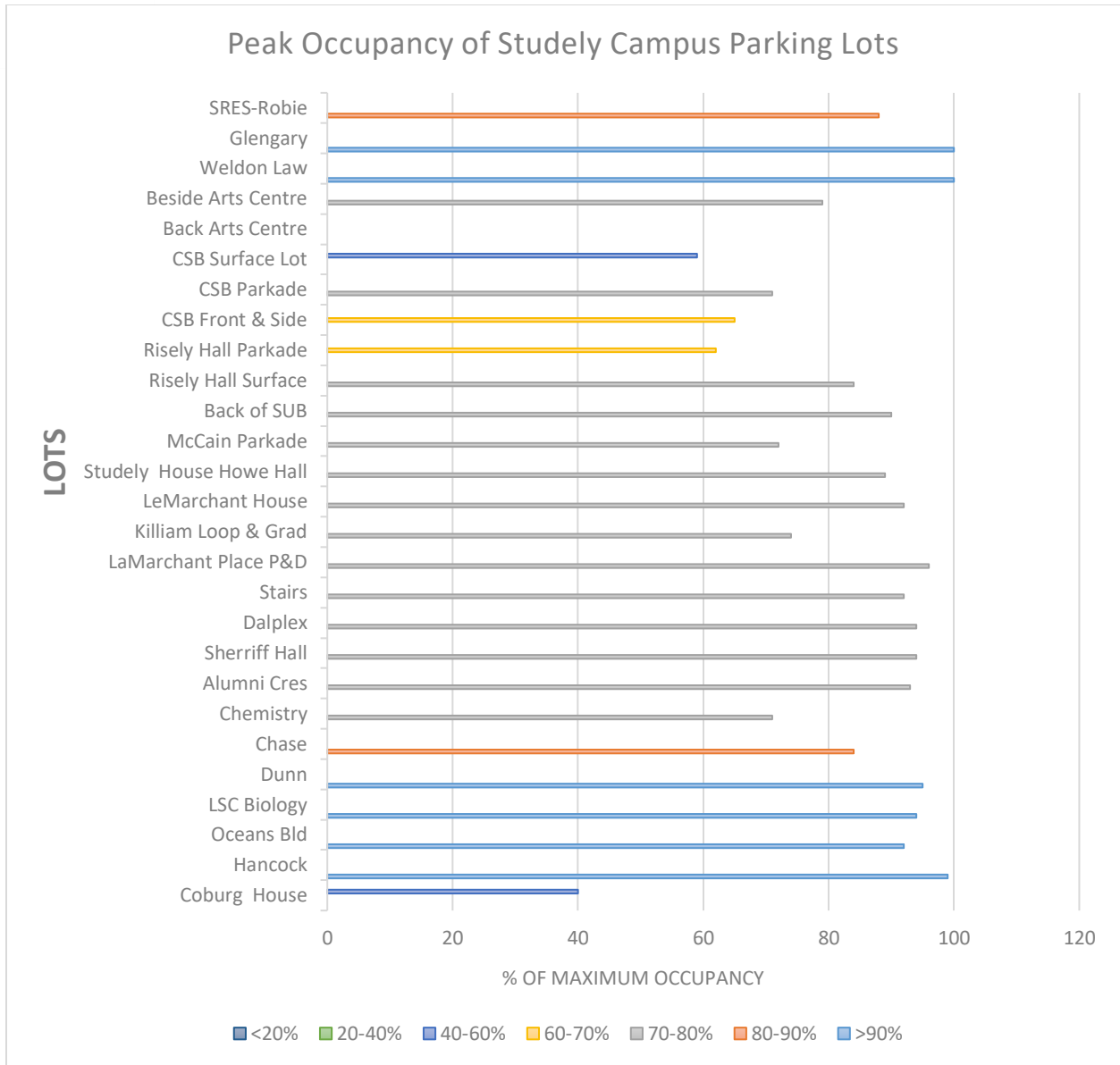


Figure 9 – Studely Campus Peak Occupancy by Lot Number (Vehicles / Space)

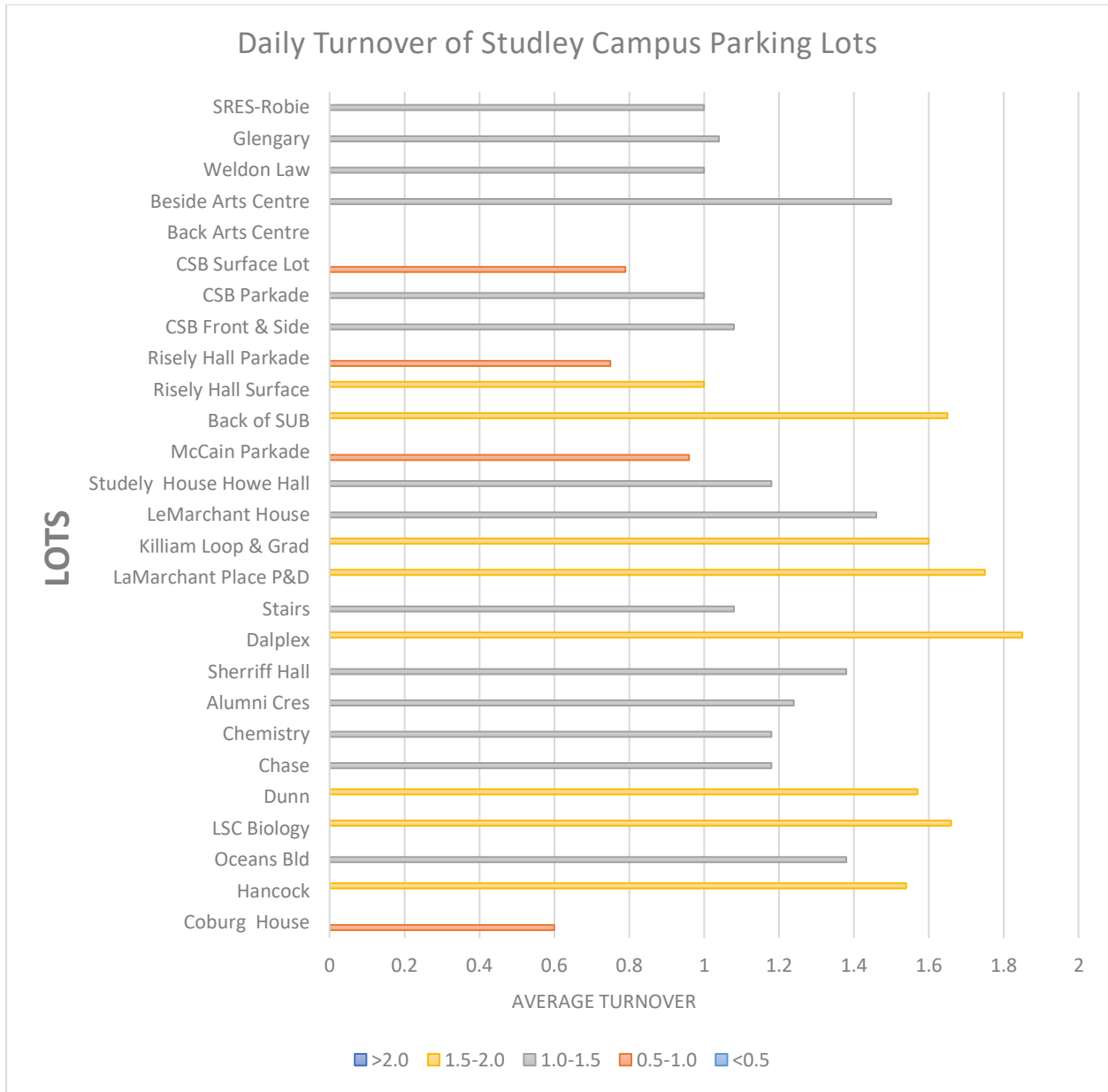


Figure 10 – Studley Campus Daily Turnover by Lot Number (Vehicles / Space / Day)

Table 4 – Parking Statistics for Studley Campus Lots

Lot #	Lot Name	Parking Capacity (Construction)	Daily Average Occupancy	Peak Occupancy	Time of Peak Occupancy	Daily Turnover	Parking Duration Rank
1	Coburg Houses Lot	5	20%	40%	9am- 2pm	.60	3
2	Hancock	104	73%	99%	11am	1.54	9
3	Oceans Bld Lot	39	75%	92%	11am	1.38	12
4	LSC Biology	80	83%	94%	9-11am	1.66	11
5	Dunn	207	74%	95%	11am	1.57	8
6	Chase	19	70%	84%	9am	1.18	19
7	Chemistry Lot	17	56%	71%	11am	1.18	10
8	Alumni Cres.	116	80%	93%	11am	1.24	21
9	Shirreff Hall	8	72%	94%	11am	1.38	16
10	Dalplex	185	77%	93%	11am	1.85	5
12	Stairs	18	82%	92%	9am	1.08	25
13	LaMarchant Place P&D	83	69%	96%	11am	1.75	4
14	Killam Loop & Grad	(25) 26	51%	74%	2pm	1.60	2
15	LeMarchant House	12	87%	92%	9-11am	1.46	17
16	Studley Hs. Howe	37	69%	89%	9am	1.18	20
17	McCain Parkade	98	52%	72%	9am	.76	14
18	Back of the SUB	10	68%	90%	2pm	1.65	6
19	Risley Hall Surface	43	71%	84%	11am	1.00	24
20	Risley Hall Parkade	(63) 66	54%	62%	2pm	.75	23
21	CSB Front and Side	13	59%	65%	9-11am	1.08	13
22	CSB Parkade	(133) 162	54%	72%	11am	1.00	15
23	CSB Surface Lot	(40) 42	46%	59%	11am	.79	22
24	Back Arts Centre	(0) 2	0%	0%	n/a	0	n/a
25	Beside Arts Centre	12	69%	79%	9-11am	1.50	7
26	Weldon Law	2	30%	100%	2pm	1.00	1
27	Glengary	14	78%	100%	7-9am	1.04	26
28	SRES - Robie	25	51%	88%	9am	1.00	18
	<b>TOTAL</b>	(1409) 1447	68%	85%	11am	1.36	

## Carleton Campus

Dalhousie's Carleton Campus is located between the Studley and Sexton campuses in the South End of the Halifax Peninsula. Presently, Dalhousie's Carleton Campus has a total of 159 parking spaces. The majority of parking on the Carleton Campus is reserved

The survey results show an average peak parking occupancy of 67% at 2:00 pm, a daily average occupancy of 51%, and an average daily parking turnover of approximately 0.85 vehicles per space per day. The Carleton Campus had 1 parking space lost due to construction interference. Figure 11 and Figure 12 graphically represent the peak occupancy and daily parking turnover of the Carleton Campus parking lots respectively. Additionally, Table 5 includes each parking lot's total parking capacity and daily average occupancy and ranks the parking lots according to their average parking duration from shortest (1) to longest (5).

Carleton Campus has a notably lower parking utilization than the other campuses; this is due to the large proportion of reserved lot parking, which tends to have a lower permit oversell rate than the general unreserved parking. A parking space inventory for the Carleton Campus parking lots can be found within Appendix C. It is important to note that campus members with a Dal parking pass can park anywhere in any Dalhousie lot as according to their parking pass. For example, a Dalhousie employee or student with class or an office in the Carleton campus could be using an unreserved pass and be parking in unreserved lots in Studley or Sexton campus.

*Table 5 – Parking Statistics for Carleton Campus Lots*

Lot #	Lot Name	Parking Capacity	Daily Average Occupancy	Peak Occupancy	Time of Peak Occupancy	Daily Turnover	Parking Duration Rank
1	Dentistry-Forrest	18	65%	79%	2pm	1.53	1
2	Burbidge	2	85%	100%	7am-2pm	1.00	5
3	Tupper	85	53%	71%	2pm	.85	2
4	LSRI <sup>12</sup>	42	49%	62%	11am 2pm	.71	3
5	Tupper MC Lot	12	20%	29%	11 am 2pm	.29	4
	<b>TOTAL</b>	159	51%	67%	2 pm	.85	

<sup>12</sup> Although there are 62 parking spaces in the LSRI parkade in total, only 42 of these spaces are available for use by Dalhousie; 20 parking spaces in the LSRI lot are reserved for Innovacorp.

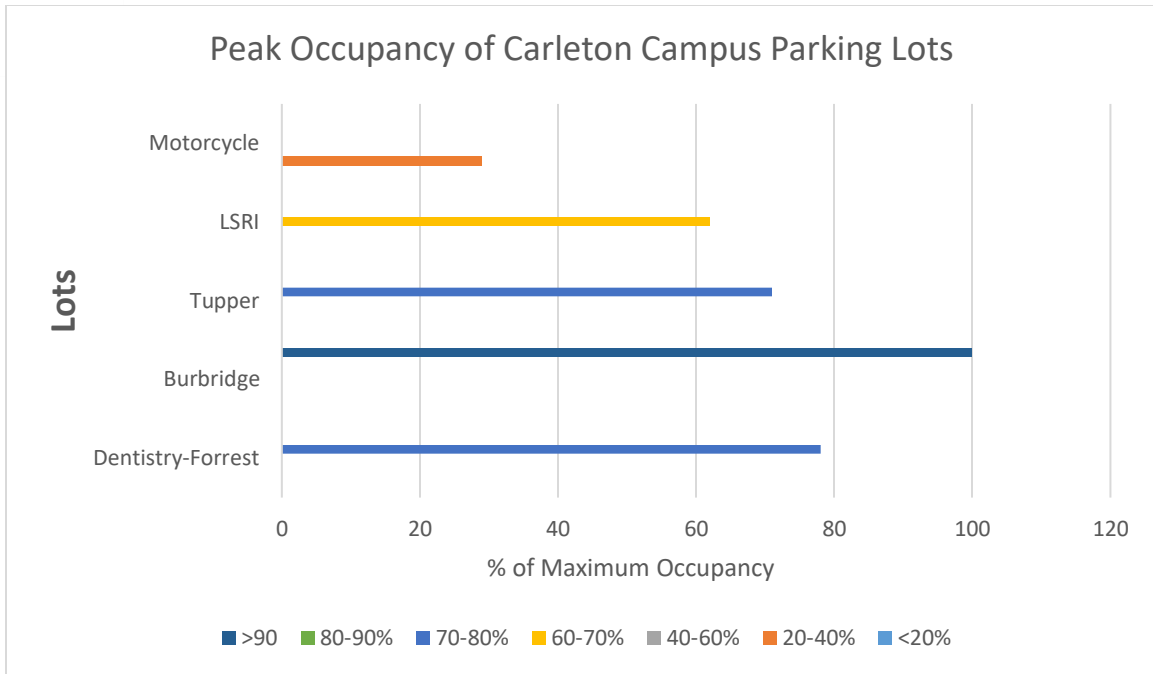


Figure 11 – Carleton Campus Peak Occupancy by Lot Number (Vehicles / Space)

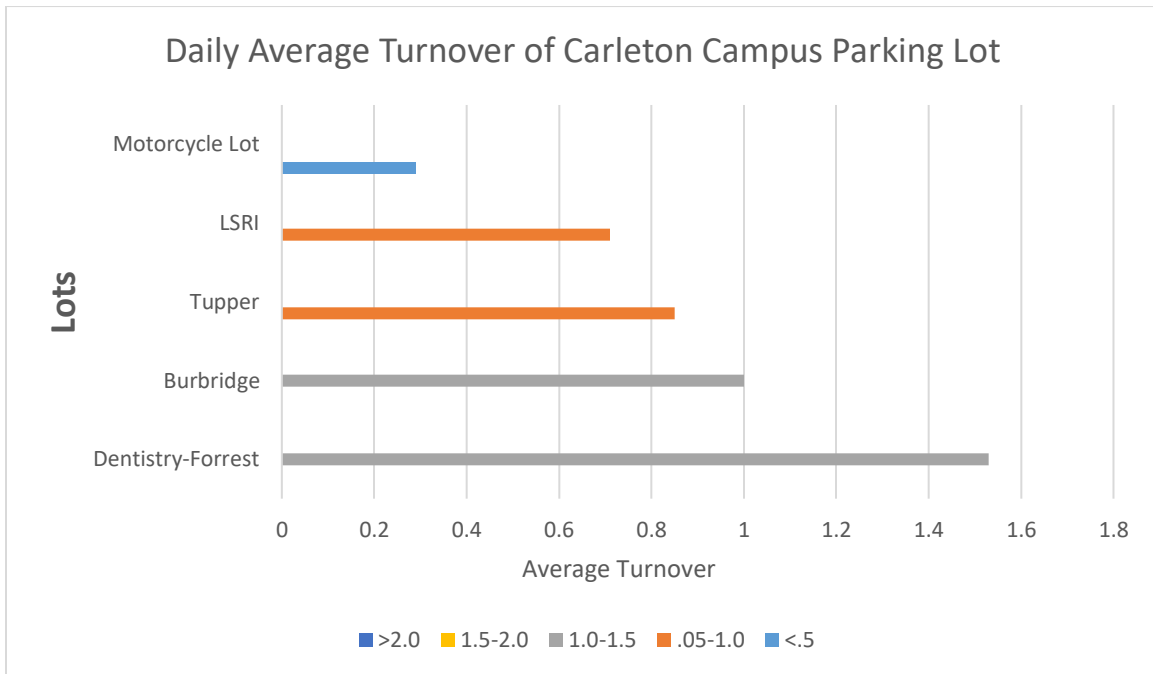


Figure 12 – Carleton Campus Daily Turnover by Lot Number (Vehicles / Space / Day)

## Sexton Campus

Dalhousie's Sexton Campus is located in the South End of the Halifax Peninsula, and includes the faculties of Engineering and Architecture and Planning. As of Fall 2019, Dalhousie's Sexton Campus had a total of 394 parking spaces, 12 of those parking spaces were unavailable during the parking survey due to construction interference. The historical parking capacity in 2014 was 343 spaces. In 2015, additional temporary parking capacity was added with the purchase of the Rosina lot (a future development site) creating a total parking capacity of 541. With the completion of the IDEA Project in 2018 a reconfiguration of the parking lots has been complete. Rosina Lot now has 195, the Main-Drive lot has increased to 23 spots with 17 metered parking spaces. Perhaps the biggest change has been in the new Spring Garden-Morris lot. A total of 51 spots currently exist, whereas in 2018 there were 37 parking spaces and 58 in 2017. Most lost paces have been reassigned to the existing Sexton lots.

The 2019 Survey Report shows slight changes in all the main parking categories. Daily vehicle turnover 1.33 (1.24 in 2018) vehicles/space/day, peak parking occupancy stayed the same 94% (94% in 2018) between 9-2, and daily average occupancy decreased to 75% (80% in 2018). The increase in the number of available spaces (11) may have caused the increase in daily vehicle turnover and decrease in daily average occupancy. Whereas last year with the increase in daily turnover, peak parking and daily average occupancy likely due to general unreserved permit-holders arriving on campus earlier to ensure they get a parking space, the new numbers show a return to normal parking patterns. The resolution of the shortage of parking due to construction and increasing the number of parking spaces on other lots may have contributed to this normalization.

Figure 13 and Figure 14 graphically represent the peak occupancy and daily parking turnover of each Sexton Campus parking lot respectively. Additionally,

*Table 6* includes each parking lot's total parking capacity and daily average occupancy and ranks the parking lots according to their average parking duration from shortest (1) to longest (9). A parking space inventory for the Sexton Campus parking lots can be found within Appendix C.

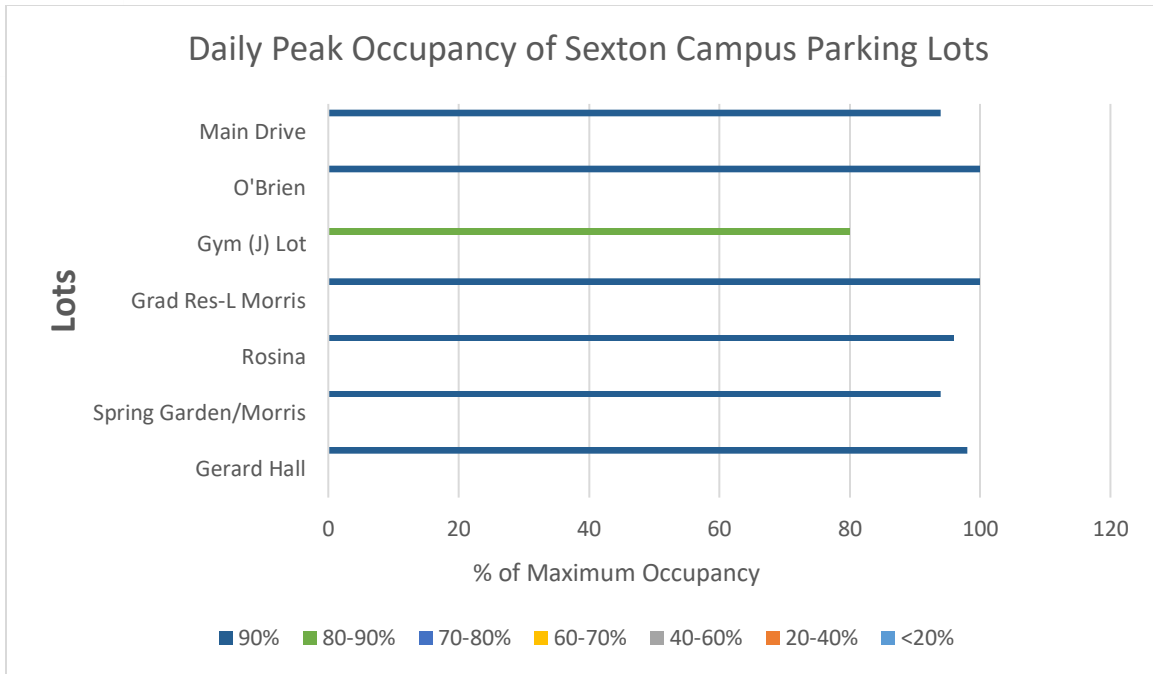


Figure 13 – Sexton Campus Peak Occupancy by Lot Number (Vehicles / Space)

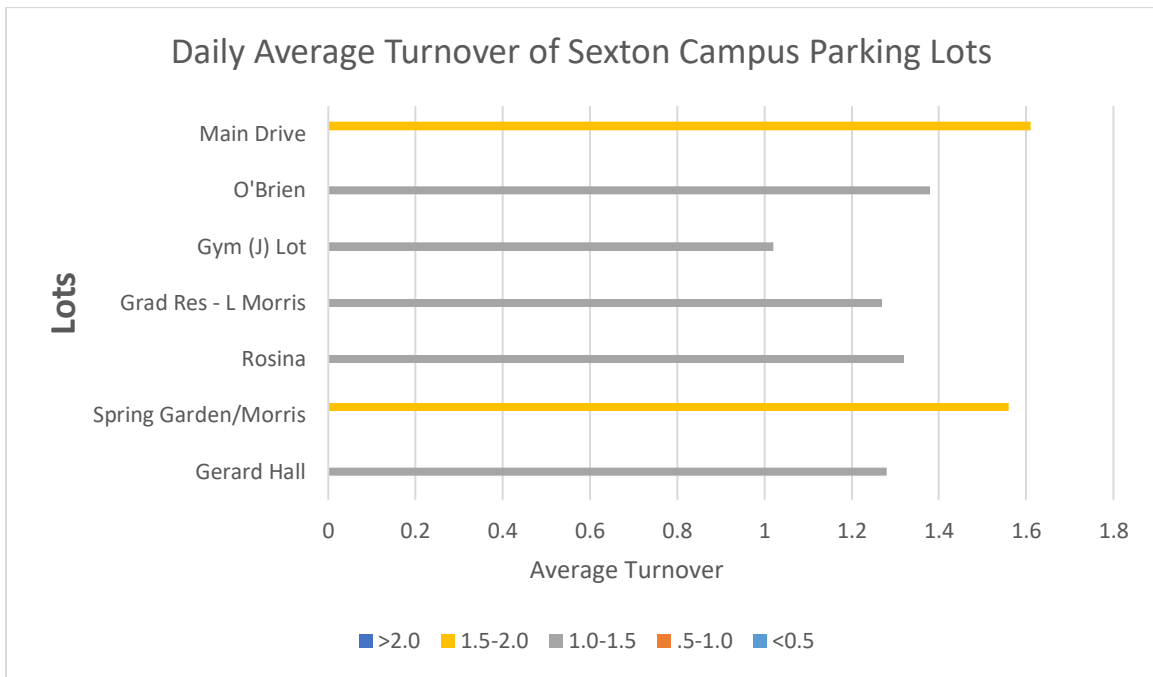


Figure 14 – Sexton Campus Daily Turnover by Lot Number (Vehicles / Space / Day)

Table 6 – Parking Statistics for Sexton Campus Lots

Lot #	Lot Name	Parking Capacity (Construction)	Daily Average Occupancy	Peak Occupancy	Time of Peak Occupancy	Daily Turnover	Parking Duration Rank
1	Gerard Hall	80	76%	97%	2pm	1.28	4
2	Spring Garden/Morris	51(39)	79%	95%	9-11am	1.56	2
3	Rosina	195	77%	96%	11am	1.32	3
4	Grad Res – L Morris	11	80%	100%	9am-2pm	1.27	7
5	Gym (J) Lot	30	62%	80%	11am	1.02	6
6	O'Brien	4	90%	100%	9-4pm	1.38	5
7	Main Drive	23	73%	93%	11-2pm	1.61	1
	<b>TOTAL</b>	394(382)	76%	95%	9-11am	1.33	

### Agricultural Campus (AC)

Dalhousie's AC is located in Bible Hill, Nova Scotia, which is approximately 100 kms from Halifax (Figure 1). The AC is more automobile reliant than the Halifax campuses. According to the results from the 2020 Dalhousie Sustainability Survey, 61% of Agricultural Campus respondents primarily drove to campus (SOV and carpool) compared to only 10.5-20% of respondents from the Halifax Campuses. This is due to the lower density and lack of public transit in Bible Hill.

Presently, the AC has a total of 779<sup>13</sup> parking spaces and a peak parking occupancy of 78% at 9am (71% in 2018). With a daily average occupancy of 61% (58% in 2018). Parking demand varies notably between the different lots on the Agricultural Campus, both regarding peak occupancy and parking turnover 1.35 (1.07 in 2018) vehicles/space/day, but also according to the type of parking demand (short-term, long-term, time of peak parking demand etc.). Figure 15 graphically represents the peak occupancy of the Agricultural Campus parking lots. Additionally,

<sup>13</sup> 711 parking spaces were available during the survey due to construction on campus



Table 7 includes each parking lot's total parking capacity.

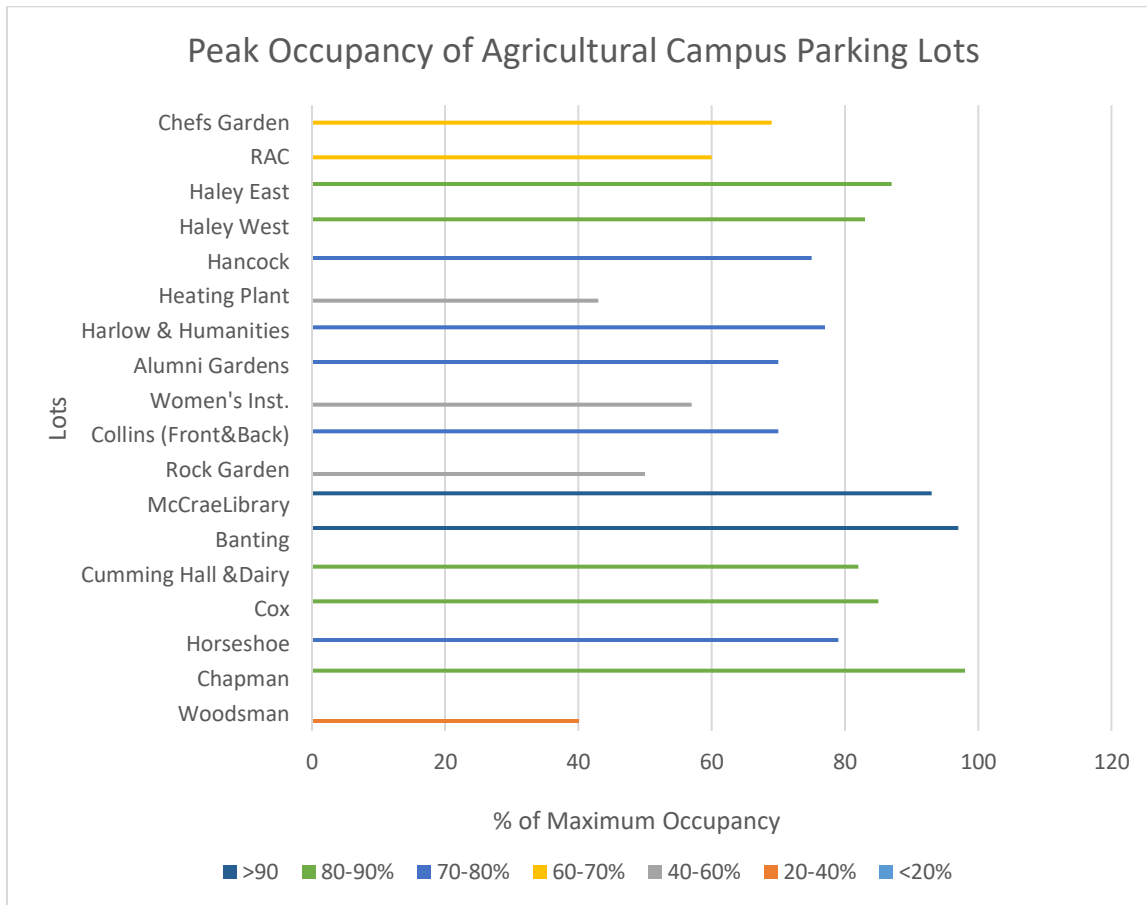


Figure 15 – Agricultural Campus Peak Occupancy by Lot Number (Vehicles / Space)

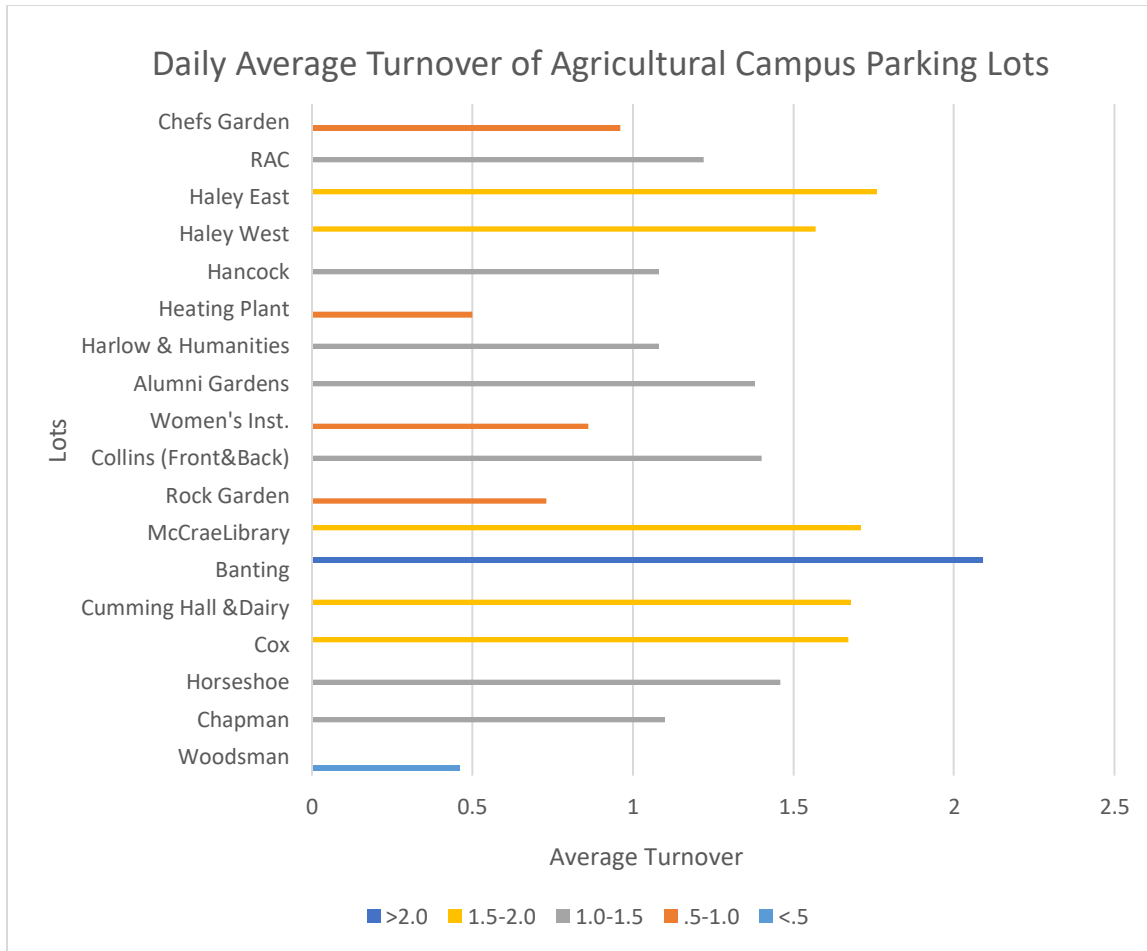


Figure 16 – Agricultural Campus Daily Turnover by Lot Number (Vehicles / Space / Day)

Table 7 – Parking Statistics for Agricultural Campus Lots

Lot #	Lot Name	Parking Capacity (Construction)	Daily Average Occupancy	Peak Occupancy	Time of Peak Occupancy	Daily Turnover
1	Woodsman	34	37%	40%	11am	.46
2	Chapman	100	92%	97%	9am	1.10
3	Horseshoe	14	69%	79%	2pm	1.46
4	Cox	88 (36)	68%	85%	9-2pm	1.67
5	Cumming Hall & Dairy	62	67%	82%	9am	1.68
6	Banting	50	72%	97%	2pm	2.09
7	McCrae Library	61	65%	93%	9am	1.71
8	Rock Garden	(13)16	35%	50%	9am	.73
9	Collins (Front & Back)	(15)22	53%	70%	9am	1.40
10	Women's Institute	(3)9	37%	57%	2pm	.86
11	Alumni Gardens	30	51%	70%	11am	1.38
12	Harlow and Humanities	45	44%	77%	9am	1.08
13	Heating Plant	14	35%	43%	7-9am	.50
14	Hancock	20	55%	75%	9am	1.08
15	Haley West	55	55%	83%	9am	1.57
16	Haley East	45	67%	87%	9am	1.76
17	RAC	52	43%	60%	9am	1.22
18	Chef's Garden	62	45%	69%	11am	.96
	<b>TOTAL</b>	779 (711')	61%	78%	9am	1.35

## Parking Management Recommendations

Based on the results from the Fall 2019 parking surveys, several actions are recommended for Dalhousie's parking management. The need for additional parking can be reduced by optimizing the usage of currently existing parking; this optimization can be accomplished by more evenly distributing parking demand spatially across parking lots and temporally throughout the day, or by altering parking pricing to better equate parking supply and demand. With a significant reliance on general under market rate unreserved parking, Dalhousie University's current parking management system has limited tools to improve parking efficiency in this way. Changing the parking management structure to price and manage general unreserved spots more effectively could make a difference. The DFA collective agreement is currently a barrier to making pricing changes. In comparison, there are tools available for increasing the efficiency of Dalhousie's reserved parking lots (Table 8).

*Table 8 – Parking Management Recommendations*

Recommendations	Description
1. Consider increasing the proportion of reserved lots	With a heavy reliance on unreserved parking, there are limited tools for temporally and spatially distributing parking demand to improve parking system efficiency. In order to better spatially distribute parking demand, it is recommended that Dalhousie University consider increasing the proportion of reserved lots, prioritizing unreserved lots currently facing high peak and daily average occupancies (Ex. the Hancock lot on the Studley Campus or Gerard Hall at the Sexton Campus). Beyond parking efficiency, the additional revenue from more reserved parking could help address Dalhousie's financial parking deficit.
2. Adopt peak-occupancy target for key parking lots (best practices review)	Within the past few years, Dalhousie University has moved from a reserved parking space system to an oversold, reserved lot system. Since some percentage of parking permit holders don't make it to campus every day, an oversold, reserved-lot system is capable of improving overall parking occupancy. In order to optimize the oversell targets for each lot, it is recommended that Dalhousie University adopt a peak-occupancy target based on best practices from other employer or institution-based parking strategies and year over year data from the parking lot surveys. This will provide a legitimate framework for determining whether reserved permit oversell targets should be adjusted according to the measured peak-occupancy rates within specific lots.

3. Adjust oversell targets and parking prices to meet peak-occupancy targets  
Some of the reserved lots are not meeting their current oversell targets (see Appendix A). The parking permit sales for the Risley parkade falls significantly below its oversell target; consequently, permit prices could be slightly reduced to improve permit sales and, consequently, parking occupancy. Although the McCain and CSB parkades have essentially met their oversell targets, their peak and daily average occupancies are reasonably low; consequently, it may be worth exploring the opportunity to increase the oversell targets for these lots to improve occupancy and parking efficiency. Conversely, the Dunn lot has met their oversell targets and currently have waiting lists for parking permits. In this case, if possible, additional parking should be provided nearby, or parking prices should be increased slightly to shift parking to more underutilized lots. This would be a way of distributing parking demand more evenly across the campus, and improving the efficiency of currently available parking.

## Survey Recommendations

The 2019 parking audit was carried out by a dedicated team of auditors who braved ever changing Nova Scotia weather conditions and still provided accurate data collection. A more in-depth training process, recommended in the 2017 report, bore fruit in 2019. The implementation of ‘hands on surveyor training’ had a strong positive impact on the data quality from all surveyors that participated. This in turn allowed the writing team to input data quicker and more accurately. Continuation of this training system will be a key component of the annual Dalhousie parking audit.

Similarly, minor issues arising from this survey have also provided learning opportunities capable of improving the data quality resulting from future parking surveys. Table 9 provides specific recommendations for future parking surveys at Dalhousie University.

*Table 9 – Future Parking Survey Recommendations*

Recommendations	Description
1. Surveyor training and shift design	<p>Continue with the ‘hands on training’ approach. As part of the hands-on training, ensure surveyors do one full survey round immediately after training. This allows surveyors to get used to where their lots are located, what survey order the spaces are in, and to update the parking lot maps correctly (E.g. lot layout changes and parking space type changes) without the time pressure of also trying to collect all the licence plate information within the limited 2-hour survey round time. Although this change will improve the accuracy of all resulting parking statistics, it will particularly improve the resulting count of parking spaces by type, lot, and campus.</p> <p>Additionally, ensure all surveyors are able to receive the full training, and ensure that any participating surveyors are able to commit to an entire survey day; splitting a survey shift between two surveyors increases the risk of missing data or other survey errors.</p>
2. Survey methods	<p>Have the Parking Survey Coordinator verify and update parking lot maps before the survey commences, thus reducing error of surveyors.</p>
3. Consider a qualitative study on the impact of	<p>By comparing peak and daily average occupancies, it’s clear that many of Dalhousie’s parking lots have low occupancy for the majority of the day with short periods of high occupancy. Spreading parking demand out more</p>

class scheduling on parking occupancy evenly throughout the day is a TDM strategy capable of improving the efficiency of currently available parking. It is possible that class scheduling issues could be contributing to this inefficient temporal distribution of parking demand. Further information is needed to understand to what extent altering class scheduling may improve the efficiency of currently available parking.

## Conclusion

Given the implications of providing additional parking, the regular collection of parking data is crucial for making informed parking management decisions capable of better utilizing currently available parking. The Fall 2019 parking survey was comprehensive, and this report provides information on the capacity, peak occupancy, time of peak occupancy, daily average occupancy, daily turnover, and parking duration for all Dalhousie Campus parking lots. This report provides recommendations for Dalhousie's parking management moving forward, and for improving the data quality of future parking surveys.

## References

- Dalhousie University Office of Sustainability (2010). Dalhousie University Sustainability Plan. Retrieved on June 1, 2015 from:  
[http://www.dal.ca/content/dam/dalhousie/pdf/sustainability/Dalhousie\\_University\\_Sustainability\\_Plan\\_June\\_2010%20%28389%20KB%29.pdf](http://www.dal.ca/content/dam/dalhousie/pdf/sustainability/Dalhousie_University_Sustainability_Plan_June_2010%20%28389%20KB%29.pdf)
- IBI Group (2011). TDM Plan for Dalhousie University. Retrieved on June 1, 2015 from:  
<http://www.dal.ca/content/dam/dalhousie/pdf/sustainability/2012Dalhousie%20Transportation%20Demand%20Management%20Report%20Final%20November.pdf>
- IBI Group (2011). TDM Technical Appendix. Retrieved on June 1, 2015 from:  
<http://www.dal.ca/content/dam/dalhousie/pdf/sustainability/2012Dalhousie%20Transportation%20Demand%20Management%20Report%20Appendices%20Final.pdf>

## Appendices

### Appendix A – Parking Permit Targets and Sales

Parking Lot	Number of Spaces	Permit Sales Target (Including Oversell)	Permits Sold (as of Feb 28, 2019)	Available Permit	Percent of Permit Target Sold	Waiting List
CSB Level 1-3	123	129	107	22	83%	0
CSB Level 4	40	42	42	0	100%	122
Risley Parkade	67	70	44	26	63%	0
McCain Parkade	90	95	95	0	100%	0
Dunn Parkade	193	222	223	0	100%	143
Tupper Parkade	85	90	90	0	100%	6
LSRI Parkade	42 (1 tiny space)	Not overselling	40	2 temp permit due to med leave	95%	1
Sexton			18			
Outdoors & RS			27	RS 15		
Access			23			

### Appendix B – Current Parking Permit Pricing (Fall 2019)

Permit type	Base	HST	Total
General - faculty/staff	344.78	51.72	396.49
General – student	310.06	46.51	356.57
Motorcycle	168.72	25.31	194.03
Reserved (outdoor)	698.95	104.84	803.79
Reserved (Tupper)	1649.81	247.47	1897.28



Reserved (Risley)	1649.81	247.47	1897.28
Reserved (McCain)	1375.08	206.26	1581.34
Reserved (CSB 1-3)	1375.08	206.26	1581.34
Reserved (CSB 4)	698.95	104.84	803.79
Reserved (Dunn)	698.95	104.84	803.79
Reserved (LSRI)	1649.81	247.47	1897.28
Term (faculty/staff)	208.76	31.31	240.07
Term (student)	185.90	27.89	213.81
Monthly	N/A	N/A	N/A
Ride share	698.95	104.84	803.79
Metered Parking - Per hour			2.00
Pay & Display Parking: LMU			2.00
Pay & Display Parking: McCain			6.00

## Appendix C – Parking Spaces by Type and Lot

### Studley Campus Parking Spaces by Type and Lot

Lot #	Lot Name	General Permit	Accessible (General)	Metered	Metered Accessible	Motor-cycle	Compact Only	Non-Dal Spaces	Security	Pay & Display	P&D ACC	Res. Total	Total Spaces
1	Coburg Houses Lot	5	0	0	0	0	0	0	0	0	0	0	5
2	Hancock	101	2	1	0	0	0	0	0	0	0	0	104
3	Oceans Bld Lot	30	2	0	0	2	0	0	0	0	0	5	39
4	LSC Biology	69	0	7	0	0	0	0	1	0	0	3	80
5	Dunn	0	0	0	0	10	0	0	0	0	0	197	207
6	Chase Chemistry Lot	13	0	3	0	0	0	0	0	0	0	3	19
7	Alumni Cres.	11	2	0	0	0	0	0	0	0	0	4	17
8	Shirreff Hall	94	4	6	0	1	0	0	0	0	0	11	116
9	Dalplex*	7	1	0	0	0	0	0	0	0	0	0	8
10	Stairs	119	5	19	0	0	0	34	0	0	0	8	185
12	LaMarchant Place P&D	17	1	0	0	0	0	0	0	0	0	0	18
13	Killam Loop and Grad Hs	0	0	0	0	0	0	0	0	79	2	2	83
14	LeMarchant Houses	2	1	0	5	0	0	0	0	16	2	2	28
15	Studley House - Howe	10	0	0	0	0	0	0	0	0	0	2	12
16	McCain Parkade	27	4	1	0	0	0	0	1	0	0	4	37
17	Back of the SUB	0	0	0	0	4	0	0	3	0	0	91	98
18	Risley Hall Surface Lot	0	0	5	0	0	0	0	0	0	0	5	10
19	Risley Hall Parkade	31	2	0	0	6	0	0	0	0	0	4	43
20	CSB in Front and Side	0	0	0	0	0	0	0	0	0	0	66	66
21	CSB Parkade	6	0	0	0	3	0	0	0	0	0	4	13
22	CSB Surface Lot	0	0	0	0	0	0	0	0	0	0	162	162
23	Back Arts Centre	33	1	0	0	0	0	0	0	0	0	8	42
24	Beside the Arts Centre	2	0	0	0	0	0	0	0	0	0	0	2
25	Weldon Law	7	0	0	0	0	0	0	0	0	0	5	12
26	Glengary	0	0	0	0	0	0	0	0	0	0	2	2
27	SRES - Robie	12	0	0	0	0	0	0	0	0	0	2	14
28		9	5	0	0	0	3	0	0	0	0	8	25
	<b>TOTAL</b>	605	30	42	5	26	3	34	5	95	4	598	1447

### Studley Campus Reserved Spaces by Type and Lot

Lot #	Lot Name	Reserved General (RG)	Reserved Accessible (RA)	Reserved Carshare (CS)	Reserved Rideshare (RS)	Reserved Dal Veh. (RY)	Reserved Electric Veh. (RE)	Reserved Other (RB)	P&D RE	Total Reserved Spaces
1	Coburg Houses Lot	0	0	0	0	0	0	0	0	0
2	Hancock	0	0	0	0	0	0	0	0	0
3	Oceans Bld Lot	0	0	0	0	4	1	0	0	5
4	LSC Biology	0	0	0	2	0	0	1	0	3
5	Dunn	194	0	0	0	3	0	0	0	197
6	Chase	0	3	0	0	0	0	0	0	3
7	Chemistry Lot	0	2	0	0	0	0	2	0	4
8	Alumni Cres.	0	1	0	0	0	0	10	0	11
9	Shirreff Hall	0	0	0	0	0	0	0	0	0
10	Dalplex*	0	2	0	0	0	6	0	0	8
12	Stairs	0	0	0	0	0	0	0	0	0
13	LaMarchant Place P&D	0	0	0	0	0	1	0	2	2
14	Killam Loop and Grad Hs	0	0	1	0	1	0	0	0	2
15	LeMarchant Houses	0	0	0	1	0	0	1	0	2
16	Studley House - Howe	0	2	0	0	0	0	2	0	4
17	McCain Parkade	87	0	0	0	4	0	0	0	91
18	Back of the SUB	0	0	1	0	3	0	1	0	5
19	Risley Hall Surface Lot	0	0	0	1	0	0	3	0	4
20	Risley Hall Parkade	65	0	0	0	0	0	1	0	66
21	CSB in Front and Side	0	0	0	0	4	0	0	0	4
22	CSB Parkade	162	0	0	0	0	0	0	0	162
23	CSB Surface Lot	0	2	0	4	1	0	1	0	8
24	Back Arts Centre	0	0	0	0	0	0	0	0	0
25	Beside the Arts Centre	0	0	0	1	3	0	1	0	5
26	Weldon Law	0	2	0	0	0	0	0	0	2
27	Glengary	0	0	0	1	0	0	1	0	2
28	SRES - Robie	0	0	0	7	0	0	1	0	8
	<b>TOTAL</b>	<b>508</b>	<b>14</b>	<b>2</b>	<b>17</b>	<b>23</b>	<b>8</b>	<b>25</b>	<b>2</b>	<b>598</b>

### Carleton Campus Parking Spaces by Type and Lot

Lot #	Lot Name	General Permit	Accessible (General)	Metered	Motorcycle	Compact Only	Security	Non-Dal Spaces	Reserved Total	Total Spaces
1	Dentistry-Forrest	6	0	2	0	0	1	0	9	18
2	Burbidge	0	0	0	0	0	0	0	2	2
3	Tupper	0	0	0	0	0	0	0	85	85
4	LSRI	0	0	0	0	0	0	20	42	42
5	MC Lot	0	0	0	12	0	0	0	0	12
	<b>Total</b>	6	0	2	12	0	1	20 <sup>ii</sup>	138	159

### Carleton Campus Reserved Parking Spaces by Type and Lot

Lot #	Lot Name	Reserved General (Parkade)	Reserved Accessible	Reserved Carshare	Reserved Rideshare	Reserved Dal Veh. (RY)	Reserved Electric Vehicle	Reserved Other (RB)	Total Reserved Spaces
1	Dentistry-Forrest	0	5	1	3	0	0	0	9
2	Burbidge	0	0	0	0	2	0	0	2
3	Tupper	85	0	0	0	0	0	0	85
4	LSRI	42	0	0	0	0	0	0	42
	<b>Total</b>	127	5	1	3	2	0	0	138

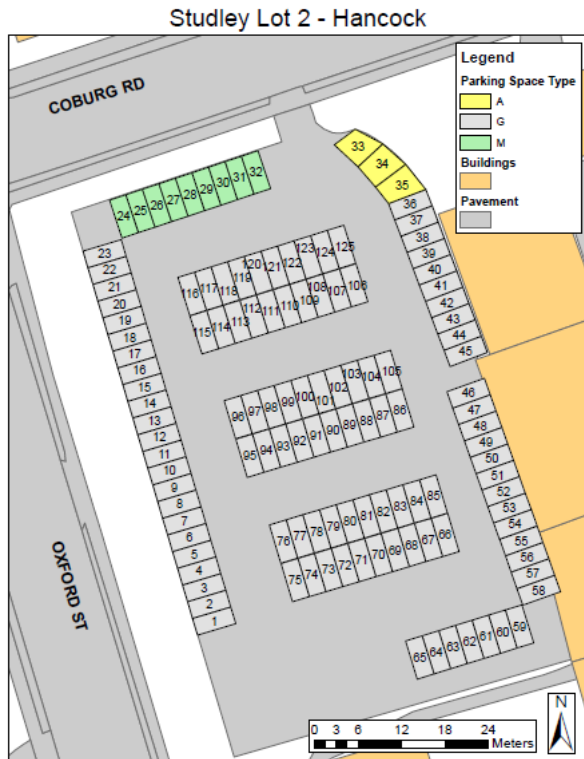
### Sexton Campus Parking Spaces by Type and Lot

Lot #	Lot Name	General Permit	Accessible (General)	Metered	Metered Accessible	Motorcycle	Compact Only	Non-Dal Spaces	Security	Pay & Display	Reserved Total	Total Spaces
1	Gerard Hall Spring	76	2	0	0	0	0	0	0	0	2	80
2	Garden/Morris	38	4	0	0	5	0	0	0	0	4	51
3	Rosina	178	0	0	0	0	0	0	0	0	17	195
4	Grad Res	11	0	0	0	0	0	3	0	0	0	14
5	Gym (J) parking	20	1	0	0	2	0	0	1	0	6	30
6	O'Brien	4	0	0	0	0	0	0	0	0	0	4
7	Sexton Main Drive	5	0	17	1	0	0	0	0	0	0	23
	<b>Total</b>	332	7	17	1	7	0	3	1	0	29	397

### Sexton Campus Reserved Parking Spaces by Type and Lot

Lot #	Lot Name	Reserved General (Parkade)	Reserved Accessible	Reserved Carshare	Reserved Rideshare	Reserved Dal Veh. (RY)	Reserved Electric Vehicle	Reserved Other (RB)	Total Reserved Spaces
1	Gerard Hall	0	0	1	0	1	0	0	2
2	Spring Garden/Morris	0	1	0	0	0	3	0	3
3	Rosina	0	0	0	0	5	0	11	17
4	Grad Res	0	0	0	0	0	0	0	0
5	Gym (J) parking	0	1	0	1	0	0	4	6
6	O'Brien	0	0	0	0	0	0	0	0
7	Sexton Main Drive	0	0	0	0	0	0	0	0
	<b>Total</b>	0	2	1	1	6	4	15	29

### Appendix D – Parking Lot Map Example



## Appendix E – Dalhousie Faculty Association Collective Agreement (Regarding Parking)

### 32.10 The Board agrees that:

- (a) the present annual general parking fees to be paid by Members for unreserved, outdoor parking on Dalhousie University parking lots shall not be increased beyond the Income Maintenance Change awarded to Members for the year preceding that for which the fees apply. If the Parking Committee can demonstrate that a larger increase is required in response to increased annual operating costs, a special increase proposal shall be brought to the Association-Board Committee for a final decision, subject to the Parties right to grieve;
- (b) the fees for reserved outdoor parking shall not be increased beyond the Income Maintenance Change awarded to Members for the year preceding that for which the fees apply. If the Parking Committee can demonstrate that a larger increase is required in response to increased annual operating costs, a special increase proposal shall be brought to the Association-Board Committee for a final decision, subject to the Parties right to grieve;
- (c) the fees for reserved indoor parking shall not be increased beyond the percentage equivalent of the average overall change in salary to Members for the year preceding that for which the fees apply, unless it can be demonstrated through the Parking Committee to the Association-Board Committee that a larger increase is required to cover increased operating costs;
- (d) the Board may make significant changes to the capacity and accessibility of Dalhousie University parking lots by agreement with the Association, but lacking such agreement the Board may make such changes if it has a bona fide case for doing so in terms of the actual costs necessary, the needs of staff for such parking space and the building requirements of the University, and if the change will not result in a reduction in the overall number of parking spaces available to the University community;
- (e) Members whose offices are on the Sexton campus and who are precluded from acquiring term parking permits by virtue of the “near zone” parking policy of Sexton campus will be sold, on request at the commencement of each term, eight daily parking passes.

---

<sup>i</sup> A total of 68 spaces were unavailable due to construction during time of auditing.

<sup>ii</sup> There were 20 non-Dalhousie parking spaces counted in Lot 4 LRSI. We did not include them in the total number of parking spaces Carleton Campus 2018 Audit.