For Information Only

Parking Update

Presented To:	Finance and Administration Committee
Presented:	Tuesday, May 14, 2019
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Resolution

For Information Only

Relationship to the Strategic Plan / Health Impact Assessment

This report refers to operational matters.

Report Summary

This report informs City Council on work progressing in 2019 and recaps the options available to create customer efficiency and add parking supply in the future.

Financial Implications

There are no financial implications associated with this report.

Signed By

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BACKGROUND

Previous reports on downtown parking were presented to Council on December 12th, 2017 and to members of the Finance and Administration Committee on July 10th, 2018. The purpose for these reports were to address concerns that projects in the downtown, in particular, Place des Arts and the Elgin Greenway, will result in the loss of municipal parking spaces. On February 19th, 2019, Council directed staff to examine alternate locations for large projects in the downtown. Changing locations will affect the supply of parking spaces. Parking recommendations will be incorporated into the Large Projects Update report being presented at the May 28th, 2019 City Council meeting.

The purpose of this report is to inform City Council on work progressing in 2019 and to recap the options available to create customer efficiency and add parking supply in the future. This report also reviews parking demand and acknowledges that there is a balance to be struck between our sustainable mobility aspirations and the acute, near term impacts of projects and changes in the downtown.

ANALYSIS

Parking Lot Utilization

In 2011, IBI Group completed a Strategic Parking Plan for the City of Greater Sudbury. Where the parking plan identified that the existing parking system at the time may not have been sufficient to accommodate the projected 2026 parking demand, it did conclude at that time "that Sudbury's Downtown parking system was sufficient to meet the demand". Taking into account parking supply and demand changes since 2011, in late 2018, IBI Group completed another downtown parking study for the City of Greater Sudbury.

The purpose of the study was to estimate current and post-construction parking operations in Downtown Sudbury, in order to determine whether a parking supply expansion was required to support redevelopment projects and associated parking lot closures. The study aimed to estimate the number of additional spaces required to meet future demand.

The IBI Group study reported that "parking systems are effectively full at an occupancy rate of approximately 85-90%". Using this threshold, IBI Group confirmed that the "overall Downtown Sudbury parking system is considered sufficient to accommodate the existing demand". The report found that seven of fourteen municipal off-street lots (near the central core) were operating above the 85% threshold and that on-street parking was generally operating below effective capacity (with the exception of Cedar Street, Larch Street and Lisgar Street). The report continued to cite that, while off-street lots in the downtown core were near capacity, "sufficient parking opportunities were available within close proximity of all parking facilities operating near or at capacity".

Written prior to the loss of 59 parking spaces at the Larch Street Lot (Place des Arts) and forecasting further losses associated with large projects such as the Junction, the report confirms that "*a significant parking supply expansion, or tactics to deal with the excess parking demand are considered necessary to meet the Downtown parking needs once the Places Des Arts and The Junction are constructed*". To achieve an off-street utilization of 90% and assuming current council approved projects will contribute toward a loss of municipal parking

that could range between 170-305 spaces, the report forecasts that all municipal off-street lots would be operating near or at capacity. Listed strategies to address this concern include construction of a centrally located parking facility within the downtown core. Further, where the City of Greater Sudbury is working diligently at a number of transportation demand initiatives, the report suggests continued work toward improved transit service, cycling infrastructure (bike lanes and parking) and investigation into shared parking agreements with private entities.

Review of On-Street Spaces

A formal review of current on-street parking spaces will be completed while looking for any opportunity to expand the number of spaces. These would include only those minor adjustments that could be made to maximize additional spaces without significant capital work. (e.g. areas in the downtown with no on-street parking spaces that could be easily added by By-law and booked via pay by plate machine).

On-street parking machines will allow a more streamlined approach to any addition to the supply of on-street spaces, where there would no longer be a requirement to install a coin operated meter head. With on-street pay by plate machines planned for 2019, it is anticipated that the additional spaces would require on-street painting while adding signage to educate the parker of what zone they are in for payment on the pay by plate app or machine.

Parking Management at Centre for Life

The City, YMCA and adjacent business owners are reviewing potential steps that would support vehicular and pedestrian traffic flow into and out of the garage while and maximizing available space at both the YMCA lot on Elgin and in the garage / parking lot adjacent to the YMCA and Center for Life. Whether there is a need for an automated gate system or a simply a pay by plate machine, it is anticipated costs for construction and system improvements will be supported through the Parking Reserve Fund.

Dufferin Street Road Allowance

The City owns a parcel of property described as the Dufferin Street road allowance, at the east end of Pine Street that could be opened up to create an additional 40 spaces. The location of the lot is slightly outside of the downtown core; however it is certainly within walking distance (particularly to the School of Architecture) and would not present any traffic issues and would increase parking capacity for long-term stays.

The cost to open this lot would be approximately $40,000 which would be required to grade, provide drainage, fencing, signage and a pay by plate machine. It is currently a gravel lot and the intention would be to keep it in this condition. This is a viable option to add increased parking supply in the downtown core and would be relatively quick to implement.

Louis Street/Vincent Street

The City of Greater Sudbury owns an area of land, designated as parkland, that is part of the linear park known as the Junction Creek Waterway Park, connecting users through to Hnatyshyn Park. This is a gravel lot intended to be used by patrons of the park. Enforcement staff report that the lot attracts unauthorized daily users who work in the downtown core. This lot is a 375 metre walk from the South East corner of Paris and Elm Street.

A further review of revenues and costs associated with lighting, grading, drainage and installation of a pay by plate parking machine, is required. Specific consultation will be completed to consider any environmental risks for the use of this area by vehicles when considering the proximity to Junction Creek.

CUSTOMER EFFICIENCIES

Lighting and Wayfinding Improvements

In order to address areas where there was limited or outdated systems in place, improvements to lighting were completed in the Fall of 2018 to three (3) municipal parking lots on Shaughnessy and Minto Street. Existing high pressure sodium (HPS) lights were replaced with more efficient LED lights to provide for safer and more accessible parking at night.

Further, for a majority of municipal lots, wayfinding signage improvements were completed in the Fall of 2018, replacing outdated plywood signs with 12' high aluminum signs. Signs are better positioned, perpendicular to the roadway, to allow drivers and pedestrians the ability to read the sign as they pass. Signs are highly visible and include a wayfinding map for all municipal parking lots in the downtown core.

Figure 1- Shaughnessy Street West Lot Sign

Pay by Plate Parking App

The City has established a relationship with HotSpot Parking Inc (https://htsp.ca/) to provide mobile parking technology for (at least initially) on-street parking spaces in the downtown. With an implementation and communication date of June 1st, 2019, this system will allow customers to pay for on-street or off-street parking for a specified period with a single action (payments must be available through multiple options ie; app, website, SMS/text, etc). With a variety of payment options available to users (Visa, MasterCard, American Express and Debit) this system will allow customers to pay for additional parking time (while adhering to maximum parking time regulations).

This application will allow businesses to validate paid parking (on and off-street) and support other ways to enhance the overall customer experience for downtown visitors.

Where current meter heads do not allow for utilization reports, the implementation of this system will allow staff multiple options for back end reporting to better monitor utilization / trending / revenue of municipal parking.

The implementation of this system will support expansion for overall parking management solutions including management of monthly passes and lots with further opportunities to pair the system with transit services.

Pay by Plate Machines

The City of Greater Sudbury released RFP CPS19-44 on March 14th, 2019, which closed on April 16th, 2019 with a total of four (4) proponent submissions. Through this procurement process, the City of Greater Sudbury is seeking qualified proponents to supply, deliver, install and commission twenty-five (25) on-street pay by plate parking machines. Without jeopardizing accessibility, efficiency and utilization of the machines, with a goal of replacing as many as possible of the current meter heads , the specific placement of on-street machines will be focused within the core business area of Downtown Sudbury. The machines will be fully operational no later than October 31st, 2019.

Downtown Parking between 5pm and 6pm

Through the Downtown Business Improvement Area (BIA) Association, the City of Greater Sudbury has received a request to consider adjusting the current Traffic and Parking By-law restrictions that provide free on-street parking at meters after 6 p.m.

Parking revenue for on street parking during the period between 5 p.m. and 6 p.m. is estimated to be approximately $54,312 per year. Revenue for parking in a Municipal lot during this hour of the day is approximately $11,000.

The annual average number of tickets issued specifically in the downtown core between 5 p.m. and 6 p.m. in the in last three years is 404. The approximate available annual fine revenue for parking infractions issued in that time period is $8,645.

Date Period	Total Tickets Issued- 5pm to 6pm	Potential Fine Revenue
April 01, 2016- April 01, 2017	261	$5,760
April 01, 2017- April 01, 2018	615	$13,035
April 01, 2018- April 01, 2019	336	$7,140

Parking enforcement in the downtown core is completed by a contract service provider. The current hourly rate for enforcement is $21.34/hr. Reducing for Stat Holidays where there is no service provision, enforcement after 5 p.m. accounts for approximately 248 hours annually. The annual cost for this enforcement activity is $5,292.32.

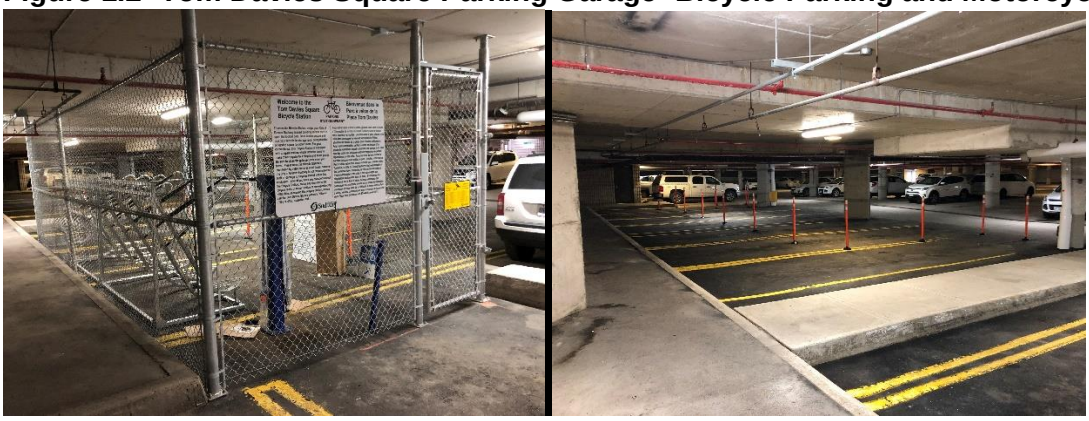
Considering loss of revenue for meter use ($65,312), loss of fine revenue ($8,645) and recoup of enforcement costs ($5,292), the estimated annual cost of this change is approximately $68,665. As a Staff initiative, a business case will be submitted as an option for the 2020 budget.

Bike and Motorcycle Parking - Tom Davies Square

Encouraging active transportation, a secure bicycle parking area is available in the parking garage at Tom Davies Square. The area is located on the 199 Larch side of the underground parking garage. This secured area is accessible with a CGS issued building access card and features bicycle racks and a repair station for bicycle users. The area has been updated with improved lighting and video surveillance.

Adjacent to this area is a dedicated motorcycle parking area for up to eleven motorcycles. The area was created by reducing the length of six (6) parking spaces that were larger than a standard space, marked off with highly visible impact recovery posts. Line painting to properly denote the area is the last step in the completion of this work (higher temperatures are required for painting). Staff will be working toward developing a dedicated fee structure for motorcycle parking and for inclusion within the User Fee By-law.

Figure 1.2- Tom Davies Square Parking Garage- Bicycle Parking and Motorcycle Parking



CONCLUSION

Downtown development with Place des Arts and the Junction project present significant opportunities, while also placing strain on existing municipal parking supply. While the IBI report has confirmed that the current system met parking demand requirements prior to the closure of the Elgin Street lot (when construction of the Place des Arts commenced) any elimination of existing supply will increase utilization beyond a sustainable capacity level. Keeping this in mind, work will continue toward the completion of a variety of customer efficiencies that may support a more accessible parking system. The direction for staff to consider an alternate location for the Junction project in the South District may lead to significant additional pressure on existing parking supply. Consideration for this requirement as well as construction phase parking supply will form a part of the Library/Art Gallery site alternatives report anticipated at the May 28th meeting of City Council.

Final Report

City of Greater Sudbury Downtown Parking Study

Prepared for City of Greater Sudbury
by IBI Group

November 28, 2018

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1 Introduction

Parking is an important component of public policy in any municipality, but is especially important for Downtown commercial districts. Altering the existing parking system in a Downtown environment can be a complex process, requiring the consideration of different user groups, geographic zones, price ranges, and time periods. Parking in Downtown areas must cater to various users ranging from employees and residents with long-term parking needs, to visitors with short-term parking needs.

1.1 Study Background and Objectives

In January 2011, IBI Group completed the Strategic Parking Plan for the City of Greater Sudbury. The key study objective was to assess existing and future parking needs, and develop a forward-looking and sustainable parking plan for the next 15-20 years. The Strategic Parking Plan assessed existing parking needs and policies, developed future forecasts of parking demand, and identified alternative methods of providing and managing parking.

The Strategic Parking Plan identified that the existing parking system may not be sufficient to accommodate the projected 2026 parking demand. The study recommended the Energy Court Lot (Lot 13) to be reopened, and recommended consideration for consolidating the surface lots in the Downtown's southeastern area into a parking structure. This strategy would free up land to support future growth and development proposals.

Currently, two new developments are planned for Downtown Sudbury in the near future. The Places Des Arts, a development led by a number of local agencies, and The Junction, a City led development consisting of a Library, an Arts Gallery, and a Convention Centre with a hotel component. These new developments are planned to be located in such a manner that they would replace the following three municipal lots:

- Sudbury Arena Annex Lot (Lot 5)
- Sudbury Arena Lot (Lot 6); and
- Larch Street Lot (Lot 11).

This study is intended to estimate post-construction parking operations in Downtown Sudbury to determine whether a parking supply expansion is required to support the planned redevelopment projects and associated parking lot closures, and if so, to estimate the number of spaces required to meet future demand.

1.2 Report Structure

This report summarizes the key study findings, and is divided into the following components:

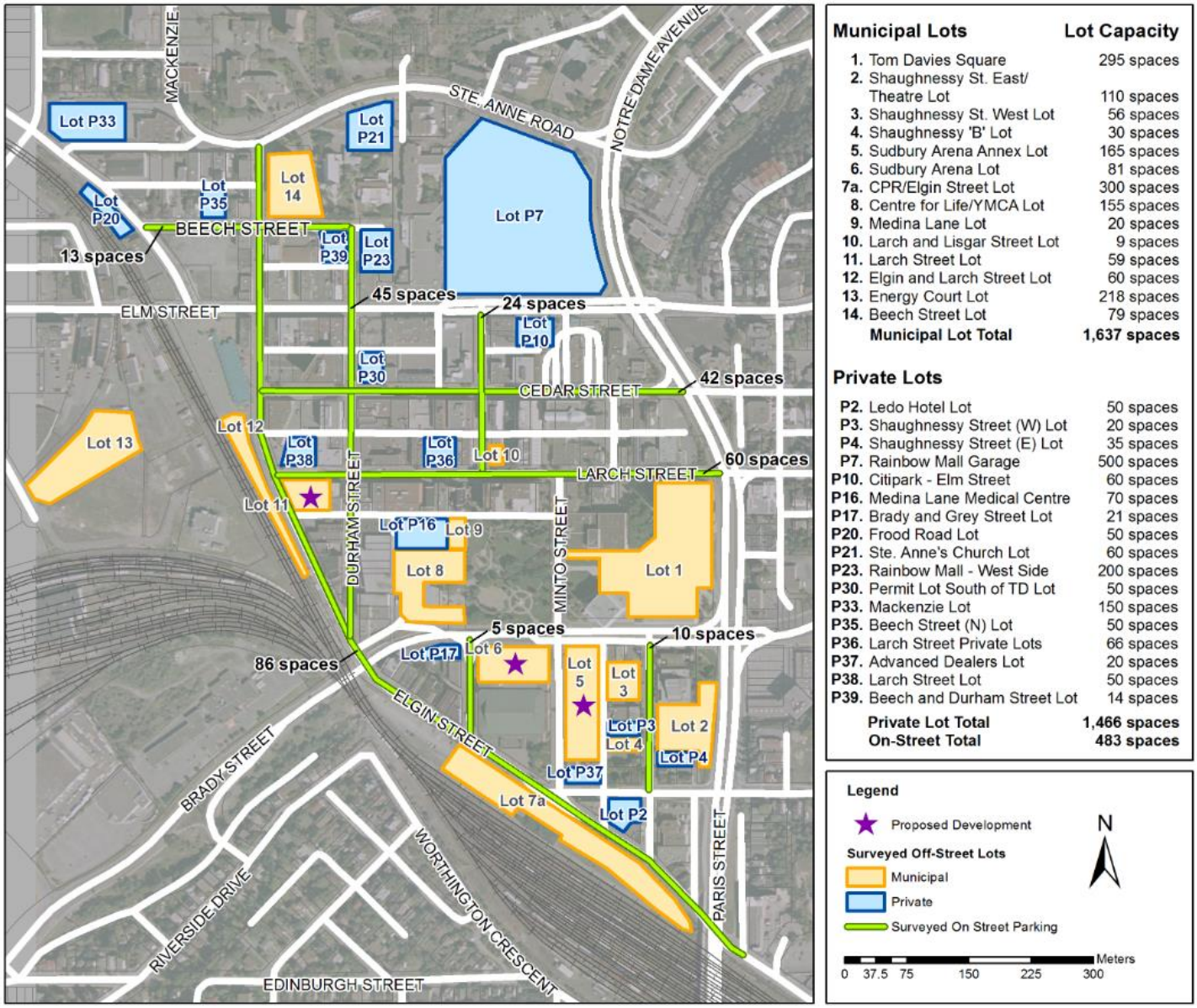
- **Existing Conditions Assessment**: Examines the parking supply and demand changes that have occurred since 2011, and given these known changes, estimates and assesses existing parking operations.
- **Post-Construction Parking Operations**: Estimates the parking demand generated by the proposed developments, projects post-construction parking operations, estimates the number of additional parking spaces required to meet the projected parking demand (if needed), identifies the most appropriate expansion type (surface lot, above ground structure, or underground garage), and provides a high level cost-estimate.

- **Conclusions and Recommendations**: Summarizes the study conclusions and recommendations.

1.3 Study Area

The Downtown Sudbury study area is maintained from the 2011 Strategic Parking Plan. The study area, and the municipal and private parking inventory is illustrated in **Exhibit 1-1**.

Exhibit 1-1: Downtown Sudbury Study Area



Municipal Lots	Lot Capacity
1. Tom Davies Square	295 spaces
2. Shaughnessy St. East/ Theatre Lot	110 spaces
3. Shaughnessy St. West Lot	56 spaces
4. Shaughnessy 'B' Lot	30 spaces
5. Sudbury Arena Annex Lot	165 spaces
6. Sudbury Arena Lot	81 spaces
7a. CPR/Elgin Street Lot	300 spaces
8. Centre for Life/YMCA Lot	155 spaces
9. Medina Lane Lot	20 spaces
10. Larch and Lisgar Street Lot	9 spaces
11. Larch Street Lot	59 spaces
12. Elgin and Larch Street Lot	60 spaces
13. Energy Court Lot	218 spaces
14. Beech Street Lot	79 spaces
Municipal Lot Total	**1,637 spaces**

Private Lots	
P2. Ledo Hotel Lot	50 spaces
P3. Shaughnessy Street (W) Lot	20 spaces
P4. Shaughnessy Street (E) Lot	35 spaces
P7. Rainbow Mall Garage	500 spaces
P10. Citipark - Elm Street	60 spaces
P16. Medina Lane Medical Centre	70 spaces
P17. Brady and Grey Street Lot	21 spaces
P20. Frood Road Lot	50 spaces
P21. Ste. Anne's Church Lot	60 spaces
P23. Rainbow Mall - West Side	200 spaces
P30. Permit Lot South of TD Lot	50 spaces
P33. Mackenzie Lot	150 spaces
P35. Beech Street (N) Lot	50 spaces
P36. Larch Street Private Lots	66 spaces
P37. Advanced Dealers Lot	20 spaces
P38. Larch Street Lot	50 spaces
P39. Beech and Durham Street Lot	14 spaces
Private Lot Total	**1,466 spaces**
On-Street Total	**483 spaces**

The following parking opportunities are provided in Downtown Sudbury:

- Municipal off-street: 1,637 spaces;
- Municipal on-street: 483 spaces; and
- Private off-street: 1,466 spaces.

Note that several private parking lots (P6, P11, P12, and P13) included in the 2011 study were excluded from this study. These lots are dedicated to serving specific land uses (TD Bank, Scotia Bank, etc.) and are not open for general public parking. Additionally, a portion of the Elgin Street Lot (Lot 7B) was excluded as these spaces are leased to the YMCA and are not open for general public parking.

The on-street parking supply was updated from the 2011 study through discussions with City of Greater Sudbury staff (an increase from 285 spaces in 2011 to 483 spaces in 2018). Note that the on-street parking patterns are assumed to remain relatively unchanged from 2011. Additional on-street parking opportunities exist in the residential areas surrounding the Downtown core.

The Downtown parking system provides two types of parking opportunities, permit and pay parking. Permit parking allows users to purchase monthly parking passes, while pay parking allows users to purchase parking time on demand on an hourly basis.

2 Existing Conditions Assessment

This section assesses existing parking operations and identifies which facilities are under-utilized or over-utilized. Existing parking operations were estimated by adjusting the data collected during the 2011 Strategic Parking Plan study using known parking supply changes and new developments between 2011 and 2018. This information was provided by the City of Greater Sudbury.

2.1 2011 Strategic Parking Plan Study Findings

During the 2011 Strategic Parking Plan study, parking utilization surveys were conducted every two-three hours on one weekday from 1:00 PM to 8:00 PM, and on a second weekday from 7:30 AM to 6:30 PM. The survey objective was to gain an understanding of existing parking patterns and to identify parking facilities operating near or at capacity.

Parking systems are considered “effectively full” at an occupancy of approximately 85-90%, depending on lot size and other characteristics. This represents the point where finding a space is challenging for drivers, resulting in an increased likelihood of a driver having to search for an available parking space. This analysis was completed assuming that the City of Sudbury’s parking system will also aim for the 85% parking utilization threshold. This is a common target for planning exercises, but can be adjusted higher or lower, depending on desired operating levels of service.

Based on the 2011 parking utilization survey findings, Sudbury’s parking system was determined to be sufficient to meet the existing parking demand at all times. During the period of peak parking demand, which occurred during the weekday business hours, the following occupancies were observed:

- Municipal off-street: 79% utilization;
- Municipal on-street: 71% utilization; and
- Private off-street: 65% utilization.

While the parking system operated under capacity, several on- and off-street parking facilities were observed to operate near or at capacity during peak parking operations. However, sufficient parking opportunities were available within close proximity of all parking facilities operating near or at capacity. Based on industry research, the publically-accepted walking

distance between a parking space and the user's final destination ranges between 300 – 400 metres.

Given that the system wide parking utilization was below the 85-90% effective capacity threshold, and that parking opportunities were available nearby individual lots operating near or at capacity, the 2011 study concluded that Sudbury's Downtown parking system was sufficient to meet the demand.

2.2 Parking Supply and Demand Changes

Since the 2011, the following parking supply and demand changes have occurred:

Parking Supply

- Shaughnessy B Street Lot (Lot 4): new 30 space lot serving permit parking users;
- CPR Lot / Eglin Street Lot (Lot 7): supply has been increased from 225 to 300 parking spaces;
- Elgin at Larch Street Lot (Lot 12): supply has been reduced from 197 to 60 spaces. Additionally, the parking lot now only serves pay parking users;
- Energy Court Lot (Lot 13): new 218 space lot serving both pay and permit parking users;
- Beech Street Lot (Lot 14): supply has been decreased from 107 spaces to 79 spaces;
- Private Cedar Street Garage (P15): 70 space parking structure has been closed;
- Private Beech Street South Lot (P34): 200 space parking lot has been redeveloped into a Shoppers Drug Mart; and
- Private Beech Street and Durham Street Lot: new 14 space lot serving permit parking users.

Parking Demand

- Shoppers Drug Mart: sufficient parking is provided on-site to meet parking demand; and
- Laurentian University McEwen School of Architecture: generated approximately 75 parking users during the period of peak parking demand, who are accommodated in the Energy Court Lot (Lot 13).

As a whole, 98 parking spaces have been lost while demand has increased by 75 vehicles.

2.3 2018 Existing Parking Operations

To estimate existing conditions parking operations, the parking supply and demand data collected in 2011 was adjusted given the changes discussed in Section 2.2. The following overarching principles were adopted when estimating existing parking operations:

- Considering the parking supply losses (lot closures and supply reductions), parking demand was redistributed to nearby parking lots with available capacity. The parking lots targeted for redistribution were limited to lots within acceptable walking distance (300 – 400m) that provide the same type of parking opportunities as the affected lot (pay versus permit parking);

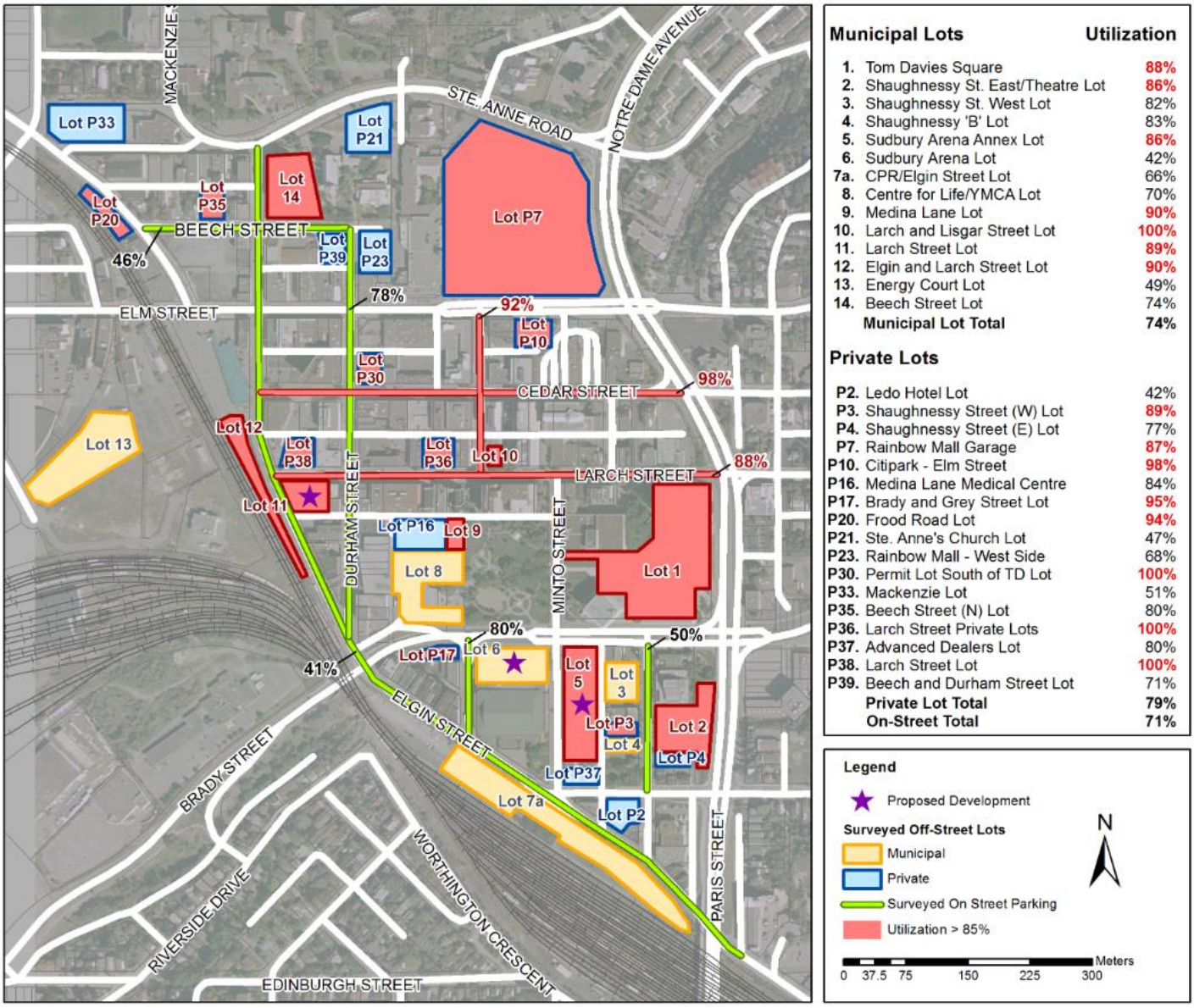
- Through discussions with City of Greater Sudbury staff, the parking demand generated by the McEwen School of Architecture was determined to be accommodated in the Energy Court Lot (Lot 13); and
- 50% utilization was targeted for the Energy Court Lot (Lot 13) based on known parking patterns. Demand was reallocated to the Energy Court Lot (Lot 13) from nearby parking lots operating over effective capacity;
- No direct impacts associated with parking supply increases. However, these lots were generally targeted for parking demand redistribution given the increased capacity.

The 2018 existing conditions assessment was completed considering a parking utilization target of 85%. Under 2018 existing conditions, the following system wide occupancies are estimated:

- Municipal off-street: 74% utilization;
- Municipal on-street: 71% utilization; and
- Private off-street: 79% utilization.

The overall Downtown Sudbury parking system is considered sufficient to accommodate the existing demand. While sufficient parking opportunities are provided system wide, individual lots are observed to operate near or at capacity. On-street parking is estimated to operate above effective capacity along several centrally located streets that are adjacent to small retail and restaurants. **Exhibit 2-1** geographically displays the lot-by-lot parking utilization in Downtown Sudbury.

Exhibit 2-1: Existing Conditions Parking Utilization



Considering the findings illustrated in **Exhibit 2-1**, the following observations are made:

- Seven of 14 municipal off-street lots are operating above the 85% effective capacity threshold. These lots are observed to be near the central core of the Downtown study area with available capacity in lots near the southern and western periphery, which is to be expected.
- Looking at the private parking system, eight of 17 off-street lots are operating above effective capacity. A similar distribution of parking demand is observed when compared to the municipal off-street parking system.
- On-street parking is generally operating below effective capacity with the exception of Cedar Street (98% utilization), Larch Street (88% utilization), and Lisgar Street (92% utilization).

- While parking operations are near capacity in the central core of the study area, sufficient parking opportunities were available within close proximity of all parking facilities operating near or at capacity.

Based on the observations described, it is likely valid that some users perceive a shortage in parking with occasional difficulty in finding a spot at some of the busier parking lots or on-street adjacent to small retail and restaurant land uses. However it was determined that sufficient parking opportunities are provided within acceptable walking distance. Therefore, the existing parking system is considered sufficient to meet existing demand.

3 Post-Construction Parking Assessment

While the existing parking supply is sufficient to meet the current parking demand, significant changes to Downtown parking operations are anticipated in the near future. Two new developments are planned for Downtown Sudbury in the near future. The Places Des Arts, a development led by a number of local agencies, and The Junction, a City led development consisting of a Library, an Arts Gallery, and a Convention Centre with a hotel component.

This section estimates post-construction parking operations in Downtown Sudbury to determine whether a parking supply expansion is required to support the planned redevelopment projects, and if so, to estimate the number of spaces required to meet future demand. Post-construction parking operations are anticipated to change in two ways:

- Loss of municipal parking supply; and
- New parking demand generated by the two developments.

Using the 85-90% effective capacity threshold and the projected parking utilization, post-construction parking operations are evaluated.

3.1 Municipal Parking Supply Losses

Through discussions with City of Greater Sudbury staff, the following three municipal off-street parking lots were determined to be redeveloped to support the two proposed developments:

- Sudbury Arena Annex Lot (Lot 5): 165 spaces lost;
- Sudbury Arena Lot (Lot 6): 81 spaces lost; and
- Larch Street Lot (Lot 11): 59 spaces lost.

A total of 305 parking spaces are anticipated to be lost, which represents a municipal off-street parking supply reduction of 18.6%. Post-construction, the municipal off-street parking system will consist of 11 lots with a total supply of 1,332 spaces.

For the purposes of this investigation, the parking demand currently parking in the three lots planned to be redeveloped was redistributed to nearby parking lots with available capacity. The parking lots targeted for redistribution were limited to lots within acceptable walking distance (300 – 400m) that provide the same type of parking opportunities as the affected lot (pay versus permit parking). The following number of vehicles were redistributed:

- Sudbury Arena Annex Lot (Lot 5): 142 vehicles;
- Sudbury Arena Lot (Lot 6): 34 vehicles; and
- Larch Street Lot (Lot 11): 53 vehicles.

3.2 Proposed Development Parking Generation

The parking demand anticipated to be generated by the two proposed developments was provided by City staff. Note that the provided estimates are projections for weekday business hours. The proposed developments are anticipated to generate higher parking demand during weekday evenings and weekends. However, while the generated demand is estimated to be higher, the Downtown parking system is anticipated to have more than sufficient parking capacity available to meet the generated parking demand at these times. This assessment focuses on weekday business hours as system wide parking demand is known to peak during these periods. The proposed developments are anticipated to generate the following demand:

- Places Des Arts: 30 permit parking vehicles; and
- The Junction:
    - Library and Art Gallery: The Library currently provides 40 on-site parking spaces while the Art Gallery provides 16 on-site parking spaces. Given The Junction redevelopment, an increase in Library and Art Gallery demand is projected, resulting in the need for an additional 75 “no charge spaces”. These vehicles can park in either permit or pay parking spaces;
    - Convention Centre: 20 permit parking vehicles and 180 pay parking vehicles; and
    - Hotel: 10 permit parking vehicles and 90 pay parking vehicles. Note that to attract a hotel investor, the parking spaces serving the hotel will need to be attached, adjacent to, or in close proximity to the hotel. 100 parking spaces are anticipated to be reserved for hotel patrons in Lots 2 and 3. Lot 2 has a supply of 110 parking spaces while Lot 3 supplies 56 spaces.

The parking demand generated by the proposed developments is distributed to nearby parking lots with available capacity. The parking lots targeted for redistribution were limited to lots within acceptable walking distance (300 – 400m) that provides the required parking type (permit vs pay parking).

While the Energy Court Lot (Lot 13) is located outside of acceptable walking distance of The Junction, a portion of the Downtown core is within the generally accepted walking distance of the lot. Some vehicles currently parking in the Downtown core’s northern periphery are assumed (through an awareness or incentive campaign noting price and proximity) to shift to the Energy Court Lot (Lot 13). The shift is anticipated to increase available supply in the northern lots which could result in a further shift in parking demand from more centrally located parking lots. In other words, an increased use of the Energy Court Lot (Lot 13) could be anticipated to facilitate a parking demand shift that results in some parking supply becoming available in close proximity of The Junction. As the Energy Court lot (Lot 13) is located further from the Downtown core than other lots and therefore less attractive to users, the post-construction utilization of 70% was targeted (compared to the generally targeted utilization of 85%).

To validate the parking demand projections provided by the City of Greater Sudbury, the two development’s parking requirements were calculated using the Institute of Transportation Engineers Parking Generation Manual (4th Edition) and the City of Greater Sudbury Zoning By-law 2010-100Z. **Exhibit 3-1** compares the provided parking demand projections to the parking requirements. The development statistics were provided by City of Greater Sudbury staff.

Exhibit 3-1: Parking Demand Validation

Land Use	Stated Demand (vehicles)	Parking Generation Manual				Zoning By-law 2010-100Z			
		Rate	Size	Req. (spaces)	Diff.	Rate	Size	Req. (spaces)	Diff.
Places Des Arts	30	1 per 4 seats	299 seats	75	+45	1 per 4 seats	299 seats	75	+45
Library	75	1.48x + 27 (x=1,000 ft^2)	65,700 ft^2	124	+75	1 per 25 m^2	6,104 m^2	244	+232
Art Gallery		0.98 per 1,000 ft^2	27,000 ft^2	26		1 per 40 m^2	2,508 m^2	63	
Convention Centre	200	0.31 per attendee	900 attendees	279	+79	1 per 20 m^2	5,621 m^2	281	+81
Hotel	100	1.1x - 59 (x=rooms)	150 rooms	106	+6	1 per room + 1 per 10 m^2 of public space	150 rooms	150	+50

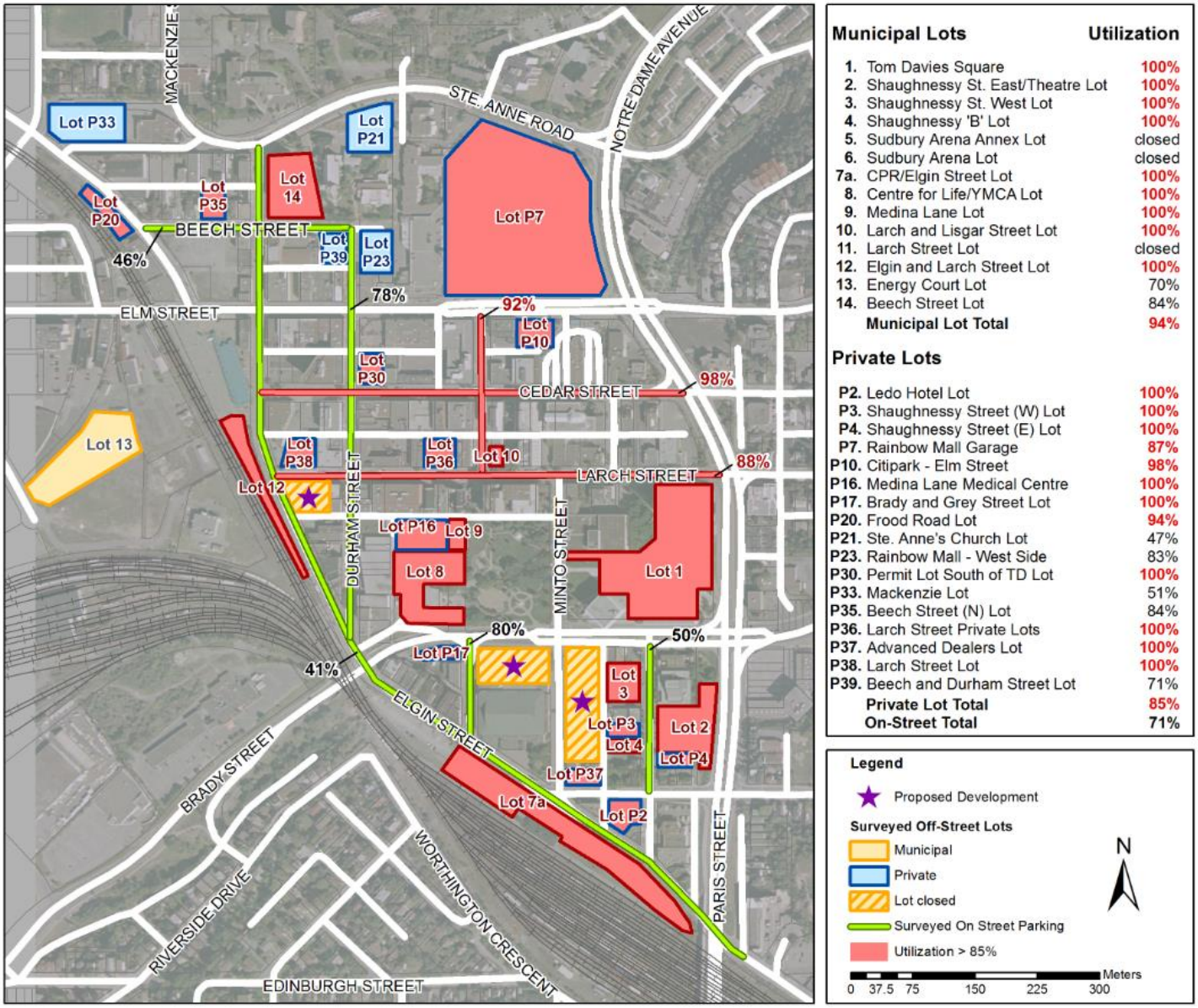
As displayed in **Exhibit 3-1**, the provided parking demand projections are lower than the parking requirements in all cases. Given that the proposed developments are anticipated to peak during weekday evenings and weekends, and that the estimated development parking demand is for weekday business hours, the parking requirements exceeding the projected parking demand is justified due to the differing peak times.

3.3 Post-Construction Parking Operations

This section consolidates the parking supply and demand changes outlined in Sections 3.1 and 3.2, and examines the Downtown core's post-construction parking operations.

The post-construction parking assessment was completed considering a parking utilization target of 85%. Overall, both municipal and private off-street systems are anticipated to operate over the 85% effective capacity threshold. **Exhibit 3-2** geographically displays the lot-by-lot parking utilization in Downtown Sudbury.

Exhibit 3-2: Post-Construction Parking Utilization



Considering the findings illustrated in **Exhibit 3-2**, the following observations are made:

- All municipal off-street lots are anticipated to operate near or at capacity, excluding the Energy Court Lot (Lot 13) which is projected to operate at 70% utilization. Both proposed developments are located outside of the 300-400m acceptable walking distance of Lot 13.
- Considering the private parking system, 12 of 17 off-street lots are anticipated to operate near or at capacity. Lots P21, P23, P33, P35, and P39 are anticipated to operate with available capacity. However, these lots are all located along the study area's northern periphery and outside of acceptable walking distance of The Junction.

- On-street parking operations remain unchanged from existing conditions. This occurs since patrons of the two proposed developments are anticipated to require parking for periods longer than the 2 hour maximum on-street limit allows.

While the demand generated by the Places Des Arts is anticipated to be accommodated by the existing system, 271 of the vehicles generated by The Junction could not be allocated. Based on these findings, a significant parking supply expansion, or tactics to deal with the excess parking demand, are considered necessary to meet the Downtown parking needs once the Places Des Arts and The Junction are constructed.

While the on-street parking system is not anticipated to directly serve the parking needs of the proposed developments due to the parking duration needed for visitors of the developments, vehicles currently parking off-street for periods less than 2 hours may shift on-street given the projected overcapacity off-street operations. In other words, available on-street parking is anticipated to facilitate some off-street parking supply becoming available in close proximity of the proposed developments. In 2011, the on-street parking system operated below effective capacity (71% utilized) indicating some available capacity. Additionally, between 2011 and 2018, 198 on-street metered parking spaces were added. Therefore, on-street parking could potentially accommodate a significant number of additional vehicles.

3.4 Parking Supply Expansion

3.4.1 Required Number of Spaces

An iterative process was adopted when estimating the parking supply expansion required to meet post-construction parking needs, while providing efficient parking operations. The number of additional parking spaces was continuously adjusted until the municipal off-street parking system utilization decreased below the 85% effective capacity threshold.

In order to achieve the targeted 85% utilization, a parking supply expansion of 500 spaces is anticipated to be required.

3.4.2 Recommended Strategy

To achieve the targeted utilization of 85% (which requires 500 spaces), the City is recommended to construct a centrally located parking facility**.** Considering the high density central business district land uses, a structured parking supply expansion is considered most appropriate. The parking structure is recommended to be centrally located, ideally between the Places Des Arts and The Junction to support both developments and to maximize the number of near capacity lots within close proximity.

3.4.3 High Level Cost Estimate

Based on high level industry estimates, an aboveground parking structure costs approximately $25,000 per space. Given this value, the high level cost estimate for the recommended parking structure is $12,500,000.

Since this study estimated existing parking operations by adjusting the 2011 data using known parking supply and demand changes, the City is recommended to complete comprehensive parking demand surveys to confirm the findings. Significant cost savings are attributed to even minimal reductions to the required number of spaces.

3.5 Sensitivity Analysis

The generally accepted industry practice is to provide parking supply that targets a peak system wide utilization of 85%. However, this strategy may be overly conservative for Sudbury's context for the following reasons:

- The Convention Centre is not anticipated to be fully occupied on a regular basis. In other words, the parking demand is anticipated to be 200 vehicles lower than discussed in Section 3.3 during the periods the Convention Centre is inactive.
- Nominal population and employment growth is projected for the City of Greater Sudbury in the foreseeable future.

A sensitivity assessment is conducted to evaluate the parking supply expansion requirements considering a targeted off-street utilization of 90%.

3.5.1 Required Number of Spaces

To achieve an off-street utilization of 90%, a parking supply expansion of 315 spaces is anticipated to be required. When compared to the required number of spaces targeting 85% utilization, this value is significantly lower than the 500 parking spaces required.

By targeting an off-street utilization of 90% instead of 85%, the post-construction parking requirements can be achieved for approximately $7,875,000 (compared to $12,500,000).

When the Convention Centre is inactive, the off-street parking system is anticipated to operate at 84% utilization.

The City is recommended to decide whether the Convention Centre will be active during sufficient periods of time to justify providing an increased parking supply, or whether high system-wide utilization is acceptable during the periods the Convention Centre is active.

3.6 Additional Parking Strategies for Consideration

In addition to the structured parking supply expansion, the following strategies can be considered to reduce the centrally located parking structure's required number of spaces:

Transportation Demand Management (TDM): Investigate TDM as a strategy to reduce overall Downtown parking demand. Potential TDM strategies include improving transit service, cycling infrastructure (bike lanes and more bicycling parking), promoting the existing carpool program, and bringing a carshare service provider to Sudbury. TDM strategies can conservatively be estimated to reduce personal vehicle mode split by approximately 5% over a 10 year period.

Specific to the proposed developments, the City could consider providing free transit service with a valid Arts Gallery, Places Des Arts, or Convention Centre pass. Based on statistics collected following the 2015 Toronto Pan Am Games, Transit Ticket Integration increased transit ridership by approximately 12% of all spectator trips. While such success required significant supporting strategies and public communication, parking demand could be reduced by up to 5%.

Investigate shared parking agreements with private entities: The City could consider negotiating share parking agreements with private entities with available parking supply near The Junction. A preliminary review identified Grotto Park as a potential location with available supply.

Surface parking expansion outside Downtown core: As an alternative to provide structured parking, the City could investigate the opportunity to construct a surface lot outside of the Downtown core where space is more abundant and provide a shuttle bus connection to the

Downtown core. Through discussions with City staff, the option to construct a 40 parking spaces lot on Dufferin Street at a cost of approximately $40,000 was identified.

Free parking at Energy Court Lot (Lot 13): Through a review of parking prices in the municipal off-street lots, parking at the Energy Court Lot (Lot 13) was determine to be discounted when compared to the more centrally located lots. In an attempt to further increase the appeal of Energy Court Lot (Lot 13) and therefore the Lot's utilization, the City could consider providing free parking.

4 Conclusions and Recommendations

Two new developments are planned for Downtown Sudbury in the near future. The Places Des Arts, a development led by a number of local agencies, and The Junction, a City led development consisting of a Library, an Arts Gallery, and a Convention Centre with a hotel component. This study is intended to estimate post-construction parking operations in Downtown Sudbury to determine whether a parking supply expansion is required for support the planned redevelopment projects, and if so, to estimate the number of spaces required to meet future demand. The following summarizes the study findings and directions.

2018 Existing Conditions Assessment

Based on an analysis of existing parking demand, it was found that sufficient parking is provided within the Downtown core, on an overall system basis. However, individual lots are observed to operate near or at capacity. Considering the municipal off-street parking system, 7 of 14 lots operate above the 85% effective capacity threshold, while 8 of 17 private off-street lots operate above effective capacity.

Based on the observations described, it is likely valid that some users perceive a shortage in parking with occasional difficulty in finding a spot at some of the busier parking lots or on-street adjacent to small retail and restaurant land uses. However, it was determined that sufficient parking opportunities are provided within acceptable walking distance. Therefore, the existing parking system is considered sufficient to meet existing demand.

Post-Construction Parking Assessment

Significant changes to Downtown parking operations are anticipated considering the planned Places Des Arts and The Junction developments.

Based on an analysis of post-construction parking supply and demand, insufficient parking capacity is projected to be available to accommodate future parking needs. The findings suggest a significant parking supply expansion, or tactics to deal with the excess parking demand, are necessary to meet the post-construction parking needs. To attract a hotel investor, the parking spaces serving the hotel will need to be attached, adjacent to, or in close proximity to the hotel. 100 parking spaces are anticipated to be reserved for hotel patrons in Lots 2 and 3. Lot 2 has a supply of 110 parking spaces while Lot 3 supplies 56 spaces

To achieve the targeted 85% utilization, a parking supply expansion of 500 spaces is anticipated to be required. A centrally located parking structure is recommended to meet post-construction parking needs. The high level construction cost is estimated to be approximately $12,500,000.

Given that this assessment estimated existing parking operations by adjusting the 2011 data using known parking supply and demand changes, the City is recommended to complete comprehensive parking demand surveys to confirm this study's findings. Significant cost savings are attributed to even minimal reductions to the required number of spaces.

Sensitivity Analysis

A sensitivity assessment is conducted to evaluate the parking supply expansion requirements considering a targeted off-street utilization of 90%.

To achieve the targeted 90% utilization, a parking supply expansion of 315 spaces is anticipated to be required. By targeting an off-street utilization of 90% instead of 85%, the post-construction parking requirements can be achieved for approximately $7,875,000 (compared to $12,500,000).

The City is recommended to decide whether the Convention Centre is anticipated to be active during sufficient periods of time to justify providing an increased parking supply, or whether the high system-wide utilization is acceptable during the periods the Convention Centre is active.

Additional Strategies for Considerations

The following strategies can be considered to further reduce the centrally located parking structure's required number of spaces:

- Transportation demand management;
- Investigate shared parking agreements with private entities;
- Surface parking expansion outside Downtown core; and
- Free parking at Energy Court Lot (Lot 13).