

# **TRANSPORTATION PLANNING FOR THE TRUE NORTH CENTRE PERCEPTION VS. REALITY**

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## **ABSTRACT**

A new multi-use entertainment complex, the True North Centre, is currently under construction in downtown Winnipeg on the site of the former Eaton's building. Before construction of the complex could begin, a number of approvals were applied for and granted by the City of Winnipeg. Among the application supporting documents was a review of transportation issues related to the proposed facility. A common public perception was that there is insufficient parking and traffic capacity to support this type of facility in downtown Winnipeg. ND LEA examined traffic, parking, transit and pedestrian issues to report on the actual situation as opposed to the perceptions. This paper looks at specific issues that were evaluated for the True North Centre from the perspective of fitting a facility of this nature into a well-established downtown area.

For patrons of a multi-use entertainment complex, parking is a primary consideration that can affect the viability of a facility. Patrons are looking for parking that is available close to their destination, easy to access and reasonably priced. One of the primary obstacles that needed to be overcome with the True North Centre was the perception that a large supply of reasonably priced, accessible parking was not available close to the proposed facility. To overcome perceptions regarding parking at a downtown entertainment complex, the proponents had to take advantage of inherent excess capacity in the downtown system that would be available during off-peak hours.

Numerous concerns were also raised that streets would be overcapacity if a large facility were built in the downtown instead of a suburban location. The study identified excess capacity in the downtown arterial system that was built to handle weekday peak volumes.

The paper will illustrate how the existing excess capacity can accommodate the expected demand with the new complex without requiring construction of new parking facilities or additional street capacity.

## **1.0 BACKGROUND**

Downtown Winnipeg has seen renewed interest in development after a period of inactivity. This has included new office and retail activity such as Mountain Equipment Co-op on Portage Avenue, and the construction of a new road along the Red River, which has sparked interest in reuse of many lots now used for surface parking. The opening of CanWest Global Park, home of the Winnipeg Goldeyes baseball team, has also brought many Winnipeggers downtown. The success of the ballpark is evident from the current addition of 1,215 seats, increasing capacity to 7,480.

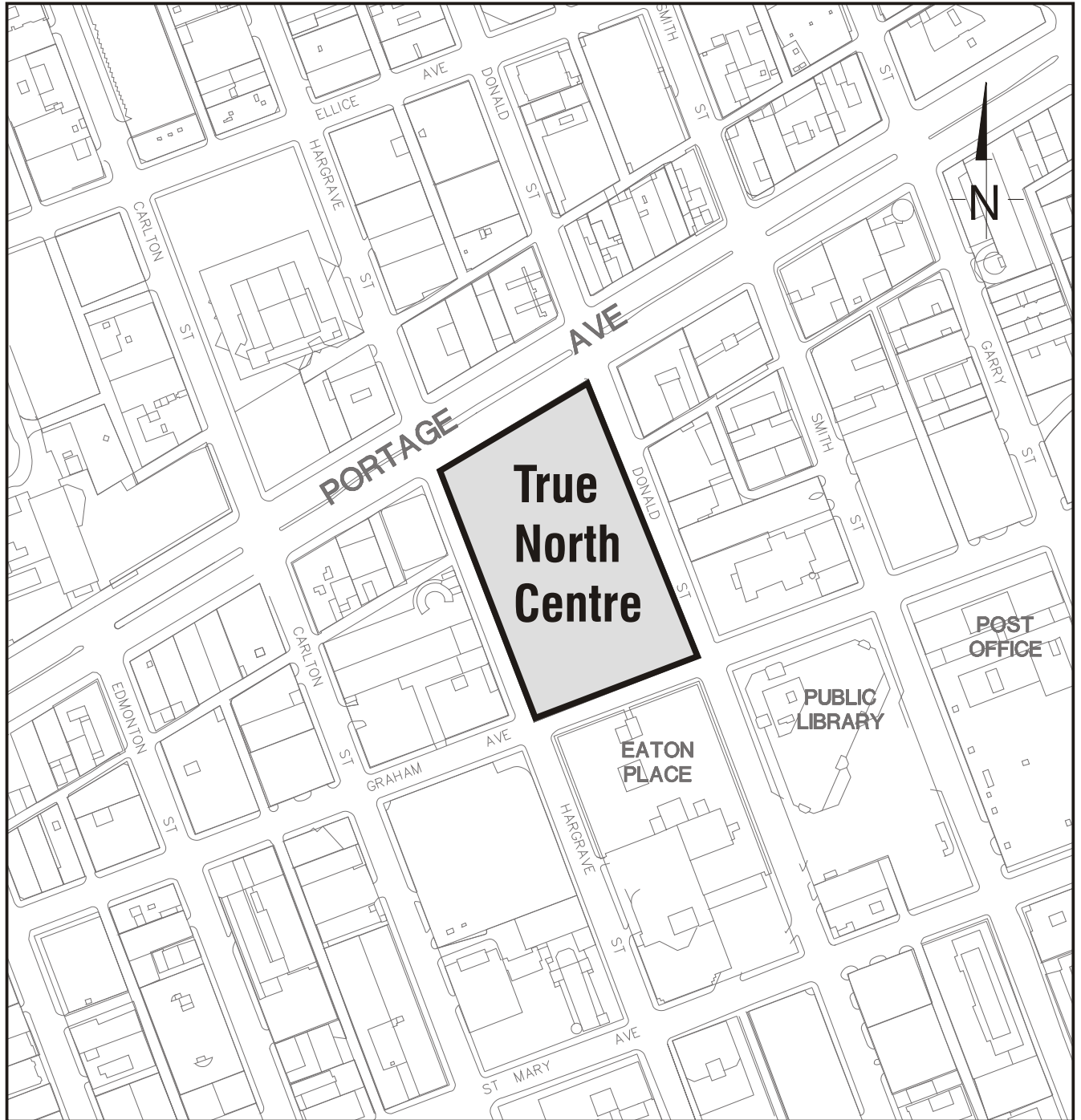
Discussions for a replacement of the existing Winnipeg Arena have been ongoing for many years, back to when the NHL's Winnipeg Jets were in town. At that time plans for an arena at the site of the current Goldeyes ballpark had been prepared. The Winnipeg Arena, built in 1955, currently seats 14,000 for hockey, with up to 15,000 for concerts.

Winnipeg is now home to the AHL's Manitoba Moose. The Moose owners have expressed interest in a new centre since bringing the franchise to Winnipeg. A variety of sites were considered, leading to current plans for a new facility in the heart of the downtown. A new multi-use entertainment complex, the True North Centre, is currently under construction on the site of the former Eaton's building on Portage Avenue (see Figure 1).

## **2.0 TRANSPORTATION ISSUES**

ND LEA was retained to address transportation issues that were being raised in response to the proposed entertainment complex, including traffic capacity of the downtown street system, parking requirements, pedestrian accommodation, and the ability of transit to handle peak flows at the facility.

Perhaps the single most common question asked concerned how many parking spaces were being built as part of the project. Other questions raised by the public included: where will people be able to park; does the downtown have sufficient street capacity for this type of facility; is there sufficient transit service; and how will pedestrians be accommodated. This paper will focus on the specific issues raised by the public and how these issues were addressed.



**Figure 1:**  
**True North Centre**

### **3.0 TRUE NORTH EVENT FORECASTS**

The True North Centre is being designed for a variety of events. Examples of varying seating arrangements that will be accommodated include:

- 12,900 for rodeo and motocross events
- 12,240 for an ice show
- 15,015 for hockey or curling
- 15,980 for basketball
- 16,625 for end stage concerts
- 17,145 for centre stage concerts
- 17,645 for festival seating events

Initial forecasts by True North management identified 131 events per year in the new facility, excluding additional hockey playoff games. Overall, True North is forecasting average attendance levels of approximately 6,250 people per event. This is based on the following assumptions:

- 40 hockey games, average of 7,500 people per game
- 28 family shows, average of 5,000 per event
- 20 “A” events (e.g., WWF, ice shows), average of 8,000 people per event
- 10 convention/trade shows, average of 3,000 people per event
- 10 community events, average of 2,000 people per event
- 8 minor concerts, average of 5,000 people per event
- 6 major concerts, average of 12,500 people per event
- 5 signature events (e.g., world curling championship), average of 5,500 people per event
- 4 “B” events (e.g., rodeo, monster trucks), average of 4,500 people per event

## **4.0 PARKING**

### **4.1 Introduction**

A number of questions and comments were made by the public about the True North proposal specifically related to parking, including:

- There's no parking downtown.
- How can anyone build a 15,000 seat facility and not build a few thousand parking spaces?
- Where will I be able to park?
- Parking is too expensive downtown.
- Where will I park when other things are happening downtown?

ND LEA was asked to examine the parking implications of the True North Centre in order to respond to the perception that sufficient, reasonably priced, accessible parking was not available close to the proposed facility. Items that were examined included:

- Parking demand.
- Parking supply and availability.
- Parking charges.

### **4.2 Parking Demand**

Parking demand was estimated for two different event scenarios. One was based on a forecast of 7,500 people (average attendance at a hockey game), and the second was based on a full sell-out for the maximum seating arrangement of 17,645 people.

The forecast parking demand was based on the assumption that transit would capture a 15 percent mode split and there would be an average vehicle occupancy of 2.4 people per vehicle. These assumptions are expected to yield a conservative parking demand given discussions with Winnipeg Transit, who are forecasting a mode split of 20 to 25 percent, and measured values for vehicle occupancy for similar Canadian locations that range from 2.4 to 2.6 people per vehicle for sporting events, and higher occupancy levels for non-sporting events.

The forecast parking demand for the first scenario is 2,655 vehicles. The demand for a full sell-out of the maximum seating arrangement is 6,250 vehicles.

### **4.3 Parking Supply and Availability**

Off-street and on-street parking supply was identified based on City records and field reviews by ND LEA. The supply was examined for the area of the downtown that is potentially in the catchment area for the True North Centre. Parking lots with less than

20 spaces were not included in the supply since these tend to be related to a specific building and are generally not available to the public.

Available parking in off-street lots was taken as total parking, less 24 hour reserved spaces, less the measured parking usage for other purposes. Reserved parking for True North Centre staff was assumed to be 50 spaces at the former Eaton's parkade on the west side of the site. On-street parking was measured within the area bounded by Ellice Avenue to the north, York Avenue to the south, Fort Street to the east, and Memorial Boulevard to the west.

Walking times were also estimated. Walking distance was based on an assumed average walking speed of 1.2 metres per second, which is a typical walking speed used for timing pedestrian walk lights at signalized intersections. Walking times were also verified by field measurements of walking times from the True North Centre site to a number of lots, with on-street and walkway connected routes measured.

Off-street parking locations are illustrated in Figure 2 and summarized in Table 1. Spaces within two time ranges are identified. A five minute walking distance was assumed reasonable for event parking, with a five to 10 minute distance for full sell-out events, especially for locations with connections to the weather-protected walkway system as illustrated in Figure 2. Available parking and walking contours are also illustrated in Figure 2.

**Table 1: Available Off-Street Parking**

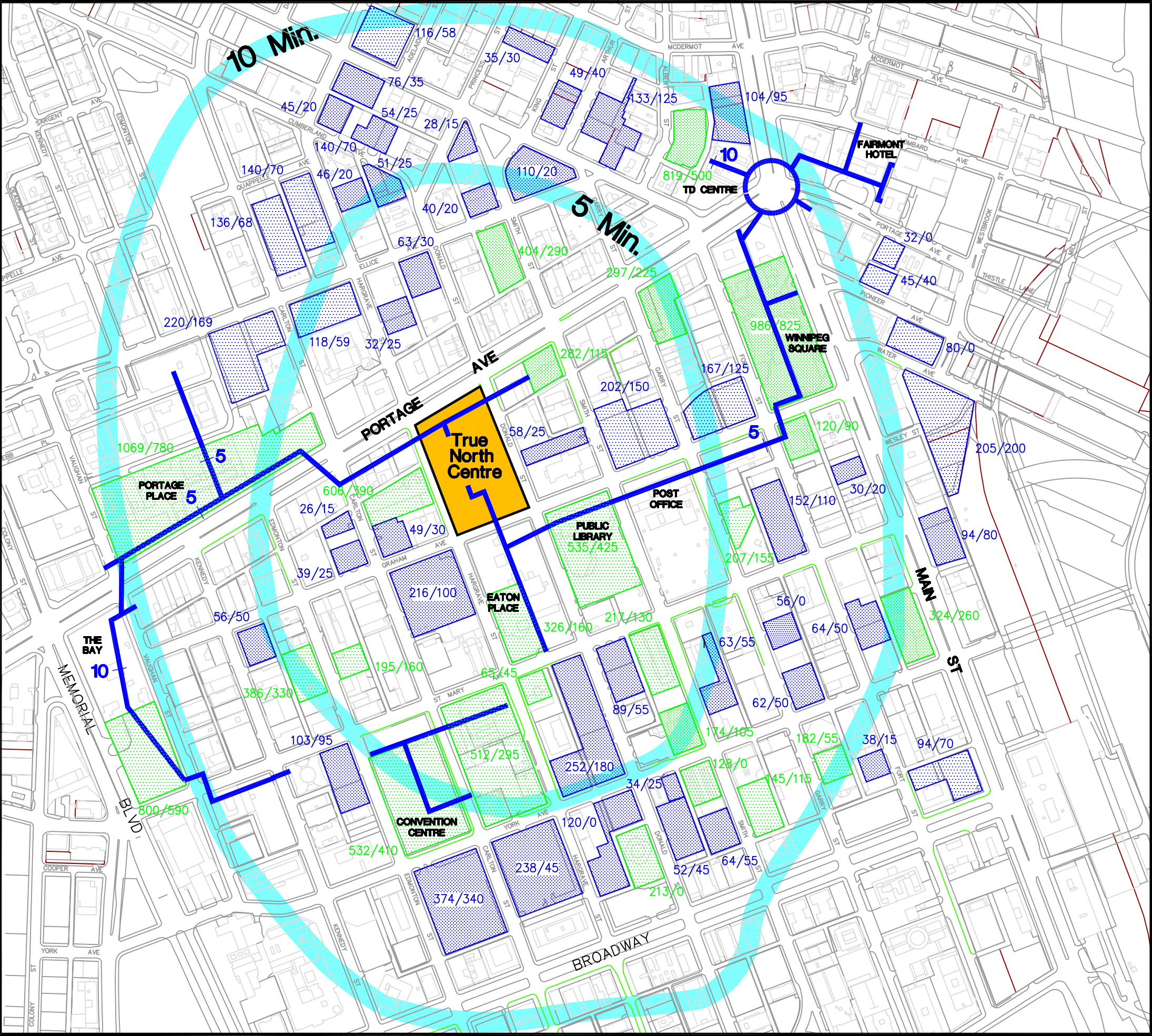
<b>Walking Time</b>	<b>Total Spaces</b>	<b>Available Spaces</b>
0 - 5 minutes	7,085	4,655
5 - 10 minutes	5,990	4,040
<b>TOTAL (0-10 minutes)</b>	<b>13,075</b>	<b>8,695</b>

The total on-street parking supply within the area is 820 metered and loading spaces. Walking times to all on-street spaces included in the total are 10 minutes or less. The total parking supply within a ten-minute walk of the True North site is therefore 13,895 spaces.

The estimated parking demand is 2,655 spaces for an average hockey game and 6,250 spaces for a sell-out of the maximum seating arrangement. Parking for each scenario was first assigned to those locations closest to the True North Centre and then to available locations radiating outward as demand required. The estimate should be considered conservative because on-street parking stalls were not included in the calculation.

Demand for an average hockey game could be accommodated within a four-minute walk of the True North Centre and demand for a sell-out of the maximum seating arrangement could be accommodated within an eight-minute walk.





# THE TRUE NORTH CENTRE

## LEGEND:

- SURFACE PARKING
- PARKING STRUCTURES
- WALKING CONTOUR
- INDOOR WALKWAY

107/40 Total Parking/ Available Evening and Weekend Parking

Available Parking = Total Parking Less  
24 Hour Reserved Spaces Less  
Measured Parking Demand

e.g. Total Stalls 500  
minus 24 Hour Reserved 100  
Balance = 400  
Minus Other Parking Demand 100 (Evening & Weekends)  
Available Parking = 300 Stalls

Consultant:

**NLEA**™

Title:

**Figure 2**  
**Off-Street**  
**Parking Supply**



#### 4.4 Parking During Conflicting Events

Parking availability near the True North Centre was also examined when conflicting events are taking place in the downtown area. This was estimated by removing parking at the Convention Centre, City Place, Portage Place, The Bay, and the Delta Hotel from the available parking supply, based on the assumption of concurrent events and peak Christmas shopping parking demands in the area.

Available off-street parking when conflicting events are occurring is summarized in Table 2. It was assumed that no on-street parking would be available.

**Table 2: Available Off-Street Parking (Conflicting Events)**

<b>Walking Time</b>	<b>Total Spaces</b>	<b>Available Spaces</b>
0 - 5 minutes	7,085	3,010
5 - 10 minutes	5,990	3,450
<b>TOTAL (0-10 minutes)</b>	<b>13,075</b>	<b>6,460</b>

The remaining available off-street parking, assuming conflicting events, could accommodate the demand for an average hockey game within a five-minute walk of the True North Centre. Demand for a sell-out of the maximum seating arrangement could be accommodated within a 10-minute walk of the True North Centre.

#### 4.5 Parking Charges

Evening and weekend parking rates were recorded at several parking lots in the vicinity of the proposed True North Centre. Rates ranged from \$2.00 to \$6.25 in the evening, with \$1.00 to \$7.50 on weekends.

The above noted charges are comparable to Winnipeg Enterprises current charge of \$4.00 to \$7.00 for parking during an event at the arena or stadium. The Winnipeg Goldeyes charge \$2.50 for parking during a Goldeyes game at the ballpark.

### 5.0 TRAFFIC CAPACITY

#### 5.1 Introduction

A number of questions and comments were made by the public about the True North proposal specifically related to the traffic capacity of adjacent streets, including:

- The streets can't handle the additional traffic.
- What street improvements will be needed?
- How can portions of some streets be closed to accommodate the facility?

Changes to traffic flows in and out of the downtown area before and after an event at the True North Centre were analyzed using assumed event start and end times. The time frames selected for the analysis were deemed to be reflective of the “worst case” scenario for True North Centre traffic. Time frames such as the post-event on a weekday were not considered, as non-True North Centre traffic volumes in the downtown area are generally low during these time periods. The selected analysis time periods were 6:00 p.m. to 7:00 p.m. for the pre-event analysis on a weekday, assuming a 7:00 p.m. start time, and 4:00 p.m. to 5:00 p.m. for the post-event analysis on a Saturday.

## **5.2 Existing Conditions**

Existing traffic volumes were assembled from the latest available downtown cordon counts taken by the City of Winnipeg. Cordon counts refer to traffic data collected annually by the City of Winnipeg for every hour of a one-week period for traffic entering and exiting the downtown. These counts were used as a basis for determining the changes to traffic flows in and out of the downtown area before and after an event at the True North Centre.

## **5.3 Trip Generation**

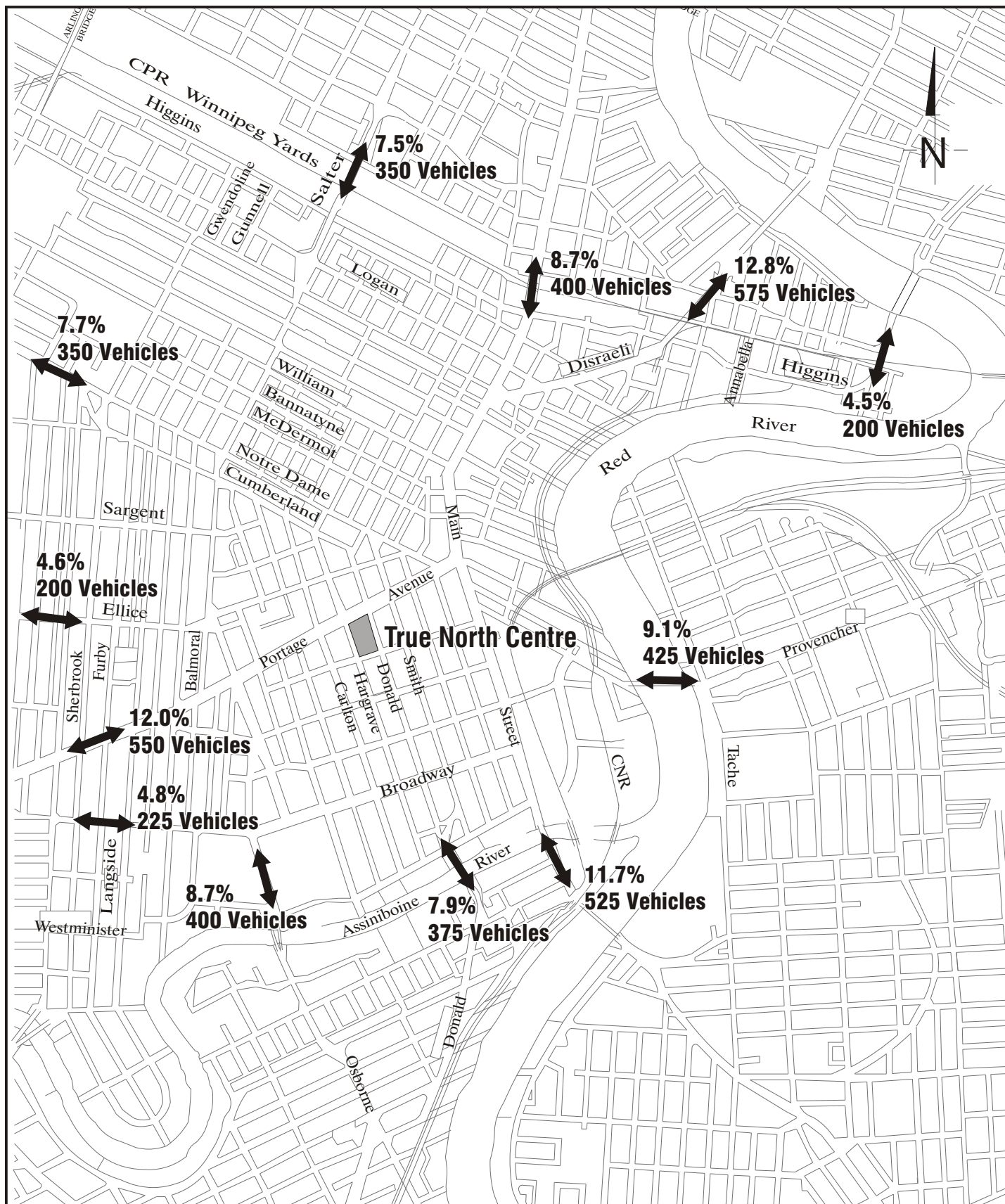
Vehicular trip generation for the analysis was based on a 95 percent attendance level at a hockey game, which equates to approximately 14,265 people. To estimate the vehicular traffic generated, the following factors were applied:

- A 15 percent mode split to transit.
- An average of 2.4 people per vehicle.
- 90 percent of traffic arrives or departs in a one-hour period.

The resultant trip generation is approximately 4,550 vehicles per hour. It should be noted that the above factors are conservative given that Winnipeg Transit anticipates a mode split between 20 and 25 percent and that measured vehicle occupancy values for Canadian arenas range from 2.4 to 2.6 for sporting events. A five percent change in mode split would result in an increase or decrease of approximately 270 vehicles. A 0.1 change in the average number of people per vehicle would result in an increase or decrease of approximately 190 vehicles.

## **5.4 Trip Distribution and Assignment**

Distribution and assignment of vehicular trips was based on the distribution of traffic obtained from the cordon counts on main routes entering and exiting the downtown during an average weekday p.m. peak hour between 4:00 and 5:00 p.m. The distribution is assumed to be the same for weekday pre-event (6:00 to 7:00 p.m.) and Saturday post-event (4:00 to 5:00 p.m.) traffic. The distribution and volume assignment is illustrated in Figure 3. A previous study by ND LEA compared this method of distribution to the actual distribution of Winnipeg Jets season ticket holders and found the two to be similar.



**Figure 3:**  
**Peak Hour Trip**  
**Distribution & Assignment**

## 5.5 Traffic Flow Comparison

Tables 4 and 5 compare existing p.m. peak hour traffic flows to the projected traffic flows for the weekday pre-event (6:00 to 7:00 p.m.) and Saturday post-event (4:00 to 5:00 p.m.) hours.

**Table 4: Pre-Event (6:00 to 7:00 p.m.) Traffic Volume Comparison**

Location	Total Two-Way Traffic Volumes			
	Current Weekday Pre-Event Hour	Forecast True North Centre Pre-Event Hour	Current and True North Centre Pre-Event Hour	Current Weekday P.M. Peak Hour
Main Street Bridge	2,700	525	3,225	4,300
Midtown (Donald) Bridge	1,600	350	1,950	2,900
Osborne Bridge	2,300	400	2,700	3,200
Broadway at Furby	1,200	225	1,425	1,800
Portage at Furby	2,800	550	3,350	4,400
Ellice at Furby	1,000	200	1,200	1,700
Cumberland and Notre Dame at Furby	1,600	350	1,950	2,800
Salter at the Slaw Rebchuk Bridge	1,500	350	1,850	2,700
Main Street Underpass at the CPR Tracks	1,900	400	2,300	3,200
Disraeli Overpass at the CPR Tracks	2,700	575	3,275	4,600
Higgins South of the Louise Bridge	900	200	1,100	1,600
Provencher at the Provencher Bridge	1,600	425	2,025	1,300
<b>TOTAL</b>	<b>21,800</b>	<b>4,550</b>	<b>26,350</b>	<b>36,500</b>

The traffic volume comparison indicates that the combined background traffic plus pre and post-event traffic is not forecast to exceed existing traffic volumes during the weekday p.m. peak hour on any of the routes in and out of the downtown. Pre and post-event traffic is anticipated to be up to 75 percent of current weekday p.m. peak hour traffic. The results suggest that the reduced traffic volumes during non-peak hour periods provide the residual street capacity necessary to accommodate True North Centre traffic entering and exiting the downtown. Most events are forecast to have

attendance levels below the value assumed for this review, resulting in lower trip volumes.

**Table 5: Post-Event (4:00 to 5:00 p.m.) Traffic Volume Comparison**

Location	Total Two-Way Traffic Volumes			
	Current Saturday Post-Event Hour	Forecast True North Centre Post-Event Hour	Current and True North Centre Post-Event Hour	Current Weekday P.M. Peak Hour
Main Street Bridge	2,600	525	3,125	4,300
Midtown (Donald) Bridge	*1,300	350	1,650	2,900
Osborne Bridge	2,500	400	2,900	3,200
Broadway at Furby	1,400	225	1,625	1,800
Portage at Furby	2,800	550	3,350	4,400
Ellice at Furby	1,200	200	1,400	1,700
Cumberland and Notre Dame at Furby	1,600	350	1,950	2,800
Salter at the Slaw Rebchuk Bridge	1,600	350	1,950	2,700
Main Street Underpass at the CPR Tracks	2,100	400	2,500	3,200
Disraeli Overpass at the CPR Tracks	2,800	575	3,375	4,600
Higgins South of the Louise Bridge	1,100	200	1,300	1,600
Provencher at the Provencher Bridge	1,700	425	2,125	1,300
<b>TOTAL</b>	<b>22,700</b>	<b>4,550</b>	<b>27,250</b>	<b>36,500</b>

\* Based on 1994 counts.

The proposed True North Centre development is not a new facility in terms of trip generation. Many of the True North Centre events would replace events currently occurring at the existing Winnipeg Arena.

Traffic to the proposed True North Centre would not have a significant impact on the City's street system, and in fact may reduce the number of event-related trips due to the anticipated increase in transit mode split over the existing Winnipeg Arena. However, there will be a redistribution of trips due to the change in destination from the Polo Park area to the downtown.



The significant residual capacity on the downtown street system, which is designed to accommodate a.m. and p.m. peak hour traffic flows, can accommodate True North Centre related traffic.

## 5.6 Street and Lane Closures

### *Hargrave Street Closure*

Hargrave Street currently operates as a northbound one-way street on the west side of the True North Centre. The current roadway is four lanes wide; the two outside lanes are used for metered parking and loading and the two inside lanes are used to accommodate through traffic. Figure 4 illustrates Hargrave Street south of Portage Avenue. To accommodate the proposed footprint of the True North facility, the two east lanes on Hargrave Street must be closed between Graham Avenue and Portage Avenue and through traffic on Hargrave Street must shift to the two west lanes.



**Figure 4: Portage Avenue & Hargrave Street at 4:30 p.m. Looking North**

The two intersections along Hargrave Street adjacent to the True North Centre, at Portage Avenue and Graham Avenue, were analyzed using the latest version of the Highway Capacity Software, HCS 2000.

The results of the intersection analysis are summarized in Table 6. The City of Winnipeg generally considers LOS D or better to be acceptable during the peak hour, with LOS E or better acceptable in the downtown.

**Table 6: Intersection Analysis**

Location	Scenario	Intersection	
		LOS	Delay (sec)
Hargrave at Portage	Existing a.m.	C	22
	Existing p.m.	C	21
	Two Lane Hargrave a.m.	C	22
	Two Lane Hargrave p.m. *	C	33
Hargrave at Graham	Existing a.m.	B	12
	Existing p.m.	B	13
	Two Lane Hargrave a.m.	B	14
	Two Lane Hargrave p.m.	B	16

\* Phasing at the Hargrave and Portage intersection during the p.m. peak was optimized.

The intersection of Portage Avenue and Hargrave Street is currently operating at LOS C in the a.m. and p.m. peak hours. With the True North Centre in place and the number of lanes on Hargrave Street reduced from four to two, the intersection LOS remains at C.

The intersection of Graham Avenue and Hargrave Street is currently operating at LOS B in the a.m. and p.m. peak hours. With the True North Centre in place and the number of lanes on Hargrave Street reduced from four to two, the intersection LOS remains at B.

### ***Donald Street Modifications***

The west lane on Donald Street between Portage Avenue and Graham Avenue has been identified as a potential drop-off and pick-up zone for non-Winnipeg Transit buses and other vehicles servicing the True North Centre. The west lane of Donald Street adjacent to the True North Centre currently features a bus stop and an unrestricted loading zone. Figure 5 illustrates Donald Street looking south from Portage Avenue.

The proposed modifications to the west lane include bulbing out the west curb line at the Portage Avenue/Donald Street intersection in the vicinity of the exit doors from the True North Centre. A bulb would also be constructed in the west lane at the Donald Street/Graham Avenue intersection. The bulbs would create more space for pedestrians exiting the True North Centre after an event, as well as define the loading area. A 375-foot loading zone would be created on Donald Street for buses and patron pick-up and drop-off activities.



**Figure 5: Graham Avenue & Donald Street at 4:45 p.m. Looking South**

The intersections of Portage Avenue at Donald Street and Graham Avenue at Donald Street were analyzed to determine the traffic implications of reducing the number of lanes on Donald Street from four to three to accommodate the proposed loading zone.

The results of the intersection analysis are summarized in Table 7.

**Table 7: Intersection Analysis**

Location	Scenario	Intersection	
		LOS	Delay (sec)
Donald at Portage	Existing a.m.	D	37
	Existing p.m.	E	57
	Loading Area a.m.	D	42
	Loading Area p.m.	E	66
Donald at Graham	Existing a.m.	B	18
	Existing p.m.	B	19
	Loading Area a.m.	C	22
	Loading Area p.m.	C	23

The intersection of Portage Avenue and Donald Street is currently operating at LOS D in the a.m. peak hour. With the loading area on Donald Street in operation and the number of lanes on Donald reduced from four to three, the intersection LOS remains at D. The intersection of Portage Avenue and Donald Street is currently operating at LOS E in the p.m. peak hour. With the loading area on Donald Street in operation and the number of lanes reduced from four to three, the intersection LOS remains at E.

The intersection of Graham Avenue and Donald Street is currently operating at LOS B in the a.m. and p.m. peak hours. With the loading area on Donald Street in operation and the number of lanes reduced from four to three, the intersection LOS is reduced to C for both the a.m. and p.m. peak hour, within the City's acceptable limits for the peak hour.

The reduction of one traffic lane on Donald Street can be accommodated from an operational perspective.

## **6.0 TRANSIT SERVICE**

### **6.1 Impact on Regular or Downtown Spirit Bus Routes**

A new downtown transit network has been established to connect several areas of the downtown. The four new routes, known as the Downtown Spirit Network, began operation in June 2002 and will connect the University of Winnipeg, the Red River Community College campus, the Forks, and the Exchange District. The True North Centre site will be directly served by three of the Spirit bus routes.

A location in the downtown between Portage and Graham Avenues is considered an ideal location from a transit perspective due to the high concentration of routes that currently exist in the area. These routes provide service to most areas of the City.

## **7.0 CONCLUSIONS**

The following conclusions are offered:

- The forecast parking demand for an average hockey game is 2,655 vehicles. The demand for a full sell-out of the maximum seating arrangement is 6,250 vehicles.
- The total available parking supply within a 10-minute walk of the True North Centre is 13,895 spaces.
- Demand for an average hockey game could be accommodated within a four-minute walk of the True North Centre and demand for a sell-out of the maximum seating arrangement could be accommodated within an eight-minute walk.
- The True North parking demand, assuming conflicting events, could be accommodated within a five-minute walk of the True North Centre for an average

hockey game. Demand for a sell-out of the maximum seating arrangement could be accommodated within a 10-minute walk of the True North Centre.

- The current evening charges for lots in the vicinity of the True North Centre are comparable to charges for parking at the Winnipeg Arena and Canad Inn Stadium.
- Pre and post-event traffic volumes are anticipated to be below current weekday p.m. peak hour traffic volumes.
- The intersections located at the corners of the proposed True North Centre are projected to operate at acceptable levels of service with the lane modifications required for the True North Centre on Hargrave Street and Donald Street.

## REFERENCES

ND LEA, True North Centre: Street Closing Hearing – Hargrave Street, Transportation Review, Prepared for Number Ten Architectural Group, May 2002.

True North Centre Web Site: [www.truenorthproject.mb.ca](http://www.truenorthproject.mb.ca).