

## The Opportunity Cost of Surface Parking in Downtown Winnipeg



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## Abstract

The provision of parking is a necessary land use in any city. However, there can be a point at which there is too much parking. Such may be the case in Downtown Winnipeg. The excessive amount of parking in the downtown may represent a high opportunity cost in the form of lost tax revenue. Measurement of lot usage indicated that contrary to popular belief, there is parking available in Downtown Winnipeg, even during peak parking periods. The revenue generated by these lots is sufficient to cover costs, even turn a profit, but the value of the land would be significantly higher if it were occupied by buildings. In this study, I predicted that property values for the sites with parking would be higher than for those without. This ultimately proved not to be the case, with no significant difference between the two. The implications of these findings are discussed, followed by suggestions for meeting the need for parking in Downtown Winnipeg.

## Introduction

The surface parking lot has become a ubiquitous element in the urban landscape. While the need for a reasonable amount of parking in order to accommodate automobile use cannot be denied, in many cities parking lots occupy large areas of the downtown. Other uses often represent a more intensive use of the land, and parking lots often represent an opportunity cost for further development. In this case a parking lot may be an opportunity cost which represents the loss of another more valuable development alternative.

The downtown area of cities has traditionally been characterized by high density, compact development. With the automobile being the predominant mode of transportation, the city has developed in order to accommodate its use. Nowhere is that more true than in downtown Winnipeg. The effects of traffic flows have been studied extensively, however the parked automobile does not seem to garner the same level of attention. Drivers expect that upon reaching a destination, there will be a place to park. As such, the parking lot becomes just as important a land use as the road taken to get there. With a rise in automobile use comes a concurrent need for additional parking. On-street, curb-side parking is less desirable, given that it slows traffic down. The alternative is off-street parking, either structured (a parkade or underground), or surface parking lots. There is a high cost associated with building and maintaining structured parking, leaving surface parking as the less costly alternative. While it may not cost as much to build and maintain surface parking lots, there is still a high opportunity cost associated with their presence in the downtown.

It is hypothesized that there is a high opportunity cost associated with surface parking lots in Downtown Winnipeg. The sub-hypotheses are as follows:

- Parking lots represent a source of lost potential tax revenue for the City of Winnipeg
- Parking lots will not be full during peak parking times, indicating there is not a lack of adequate parking in the downtown
- The revenue generated for each lot will exceed the cost, including taxes, thereby providing no incentive to develop the land
- City blocks with parking will have higher property values than those without, likely due to the perceived need for close proximity to the final destination point.

## Literature Review

Jacobs (1961) suggested the possibility of "erosion of cities by automobiles" as a result of the incompatibility of extensive automobile use and compact development. This process occurs slowly over time rather than occurring all at once, but never the less slowly erodes the downtown landscape. Beginning in the early 1900's, and significantly intensifying following the post World War II period, the decentralization of the city with the movement of residents and commercial activity to the suburbs, coincided with a heavy increase in traffic congestion, especially in downtown areas. As mobility became increasingly auto-dependent, the traditional downtown had to be reconfigured in an attempt to compete with the emerging suburban landscape. This largely entailed reducing the amount of traffic congestion and increasing the supply of parking. Surface parking lots became the means by which both these problems were addressed. As buildings became under-utilized or redundant, they were razed in order to make way for parking lots. This had the effect of providing needed parking for the remaining downtown uses, as well as alleviating traffic problems by removing cars from the street, since curbside parking was discouraged in favour of free flowing traffic (Jakle and Sculle 2004).

The operation of surface parking lots on the sites of former buildings has customarily been regarded by both landowners and city planners as interim uses. They are meant to be a means of revenue generation until a better, more profitable land use arises (Belaiff 2002). For landowners, surface parking has traditionally been a way to hold on to land until the market improved, while making money to pay the taxes. While these lots often start out as interim uses they may last for decades. In response to parking shortages, zoning ordinances in most cities set a min-

imum parking requirement, often a certain number of parking spaces per unit or square footage of development. Set to accommodate peak parking times, parking requirements are meant to accomplish what off street parking was initially set to do, maintain traffic flow. Winnipeg's minimum parking requirement has been in effect until 2004, when a new Downtown zoning bylaw was adopted and minimum parking requirements were no longer required (City of Winnipeg 2004). However, the effect of these minimum parking requirements will be evident for some time, given the resistance of the built environment to change.

The assessment of property value for parking lots is often low, unless land is in short supply, driving up costs. A low assessment results in low taxes paid on the land, regardless of the profit made. Under the market value assessment system, property assessment is based on the potential selling price at a specific point in time, under normal conditions, the year in which the reassessment is performed. In order to determine this market value, a reference year is used, establishing the market conditions at a specific point. This reference year is established as the year immediately following the last reassessment. The value of a parking lot is determined using a direct sales comparison of a parking lot which has previously been sold on the open market possessing similar characteristics (City of Winnipeg 2007). Taxation is based on improvement upon the land, not the land itself. Therefore, given the low assessment value, taxation levels for surface parking lots remain low since there is no structure. Low taxation does not provide the incentive to develop the land in a more intensive manner in an effort to raise revenue (Kitchen 1992)

Setting parking requirements as a minimum, many developers add more parking spaces than those required under zoning ordinances. Given that these minimums are based on peak parking periods, any additional parking provided is likely redundant (Shoup 1999). This is linked to revitalization attempts in many downtowns, including Winnipeg. The perception of limited available parking in the downtown is persistent, particularly when compared to suburban areas. As such, the provision of parking has been an integral part of revitalization attempts. In the rush to provide as much parking as possible, the tendency is to lower the most important aspect of a downtown, its high density (Robertson 1995). The resultant fragmentation of the downtown urban landscape has, as Kunstler (1993) describes it, made the area home to many little "noplaces", which when added together form a "great big noplacement", a loss of the sense of place which used to be so prevalent in the downtown.

There has been an increasing realization that excessive parking, in the form of surface parking lots, can do more harm than good, particularly concerning the vitality of a downtown. Shoup (2005) focused on the idea that while parking is often provided free of charge, or at a low price, this does not represent its true cost. The subsidization of parking is quite large, so much so that everyone ends up paying, even if they do not make use of the parking, through higher prices for goods and services and lower values of land. To simplify, the cost of parking is much more than what the individual pays to fulfill his own need. This cost is spread out over a long period of time and becomes the responsibility of many. With mandated parking, in the form of minimum requirements, auto ownership is effectively subsidized, given that there is no need to find alternative forms of transportation. Additionally, employee parking costs are frequently tax exempt, representing a parking subsidy in the form of forgone taxes (VTPI 2007a) In regards to the built environment, when minimum parking requirements are in effect, there will be no building without parking (Manville and Shoup 2005).

It is accepted that parking is a necessity, however, consistently increasing parking supply is not viable for the downtown. Rather than increasing supply, a decrease in demand through parking management techniques is a desirable alternative (Litman 2007). The notion that a lack of significant, proximity parking in Downtown Winnipeg seems to persist (Coriolis Consulting Corp. 2002, ND LEA 2003, CentreVenture 2007), and that increasing supply in some manner is needed to meet this demand. The city's primary planning document, *Plan Winnipeg*, however, advocates parking management as a means of meeting parking demands, with an emphasis on improving public transit (City of Winnipeg 2000).

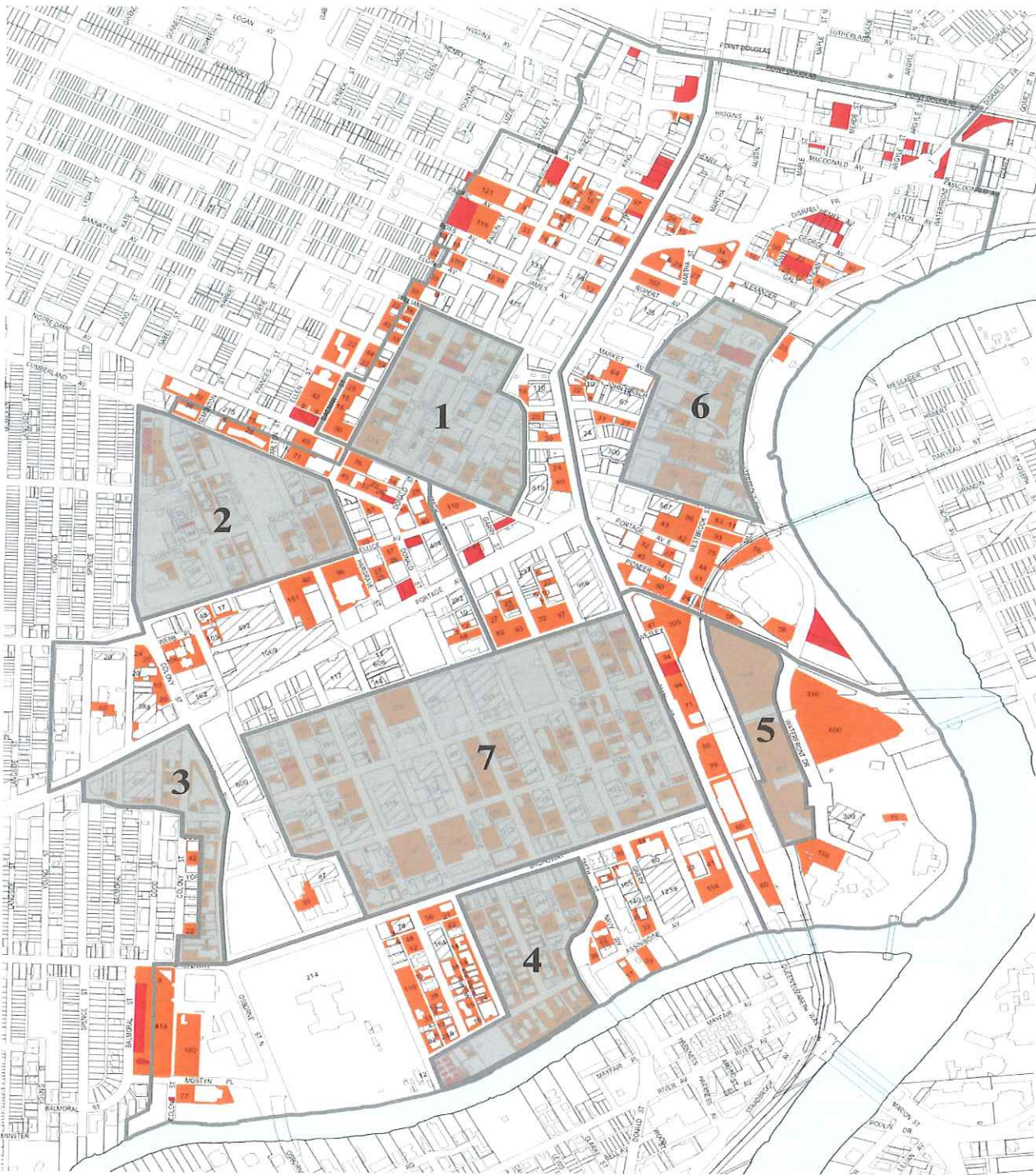
## Methodology

The data used for this project was obtained from the City of Winnipeg and an observational analysis of parking supply and demand. The idea of assessing the opportunity cost represented by parking lots is derived from the Center for Neighborhood Technology's report entitled "Paved Over: Surface Parking Lots or Opportunities for Tax-Generating, Sustainable Development?" (2006). A map, courtesy of the City of Winnipeg Planning, Property, and



Development department depicts the number of parking spaces and the type of parking located in the downtown. This map was segmented based on three levels. City blocks were numbered, allowing for easy identification and comparison. The same is true for the surface parking lots, which were also numbered. The map was then divided into seven regions, allowing for comparison on a geographical level (Figure 1).

Figure 1: Downtown Winnipeg, Segmented into Seven Geographical Regions





The property assessment for each site was obtained from the City of Winnipeg Assessment and Taxation Department's website ([www.winnipegassessment.ca](http://www.winnipegassessment.ca)). For each property, the classification, assessed value and land area was obtained, along with the property use code, tax status, zoning and property influences. Property in Winnipeg is placed by city assessors in one of ten classifications for taxation purposes. The majority of property in downtown Winnipeg falls under the commercial/industrial classification, which dictates that 65% of the assessed value is taxed. Each property is also assigned a property use code, of which Winnipeg has 59 applicable to the downtown. Tax status indicates whether the property is exempt, exempt upon the city receiving a grant, taxable, or municipally taxable but exempt from paying school board taxes. Finally, there are 14 possible property influences in the downtown, and may include location on an external corner, bus route, or near a school. City assessors take these influences into account when assessing the value of property, and these therefore play an important role in final assessment values. The frontage of properties possessing the property use code 12, surface parking lot, were measured using the current value map associated with the assessment website. The values for each property, except frontage, were entered into SPSS and organized by block as well as region. The category indicating whether there was parking located on site was also added, coded such that 1 = yes, 2 = no. This information was located on the parking map obtained from the Property, Planning and Development Department. An independent samples t test was used to compare the property values, using the parking on site indicator as the grouping variable.

Calculation of the opportunity cost of surface parking lots was based on taxation values and required both an actual value as well as a theoretical one, the foregone alternative of having a more valuable development. Deriving this projected alternative cost required several steps. The first involved determining which parking lots to include. While some lots located on sites with existing buildings would be large enough to be developed for other uses, this is a complex issue involving subdivision of the land, and is beyond the scope of this work. Therefore, only lots located on sites by themselves were considered. These properties were entered into a spreadsheet, along with the aforementioned frontage values, assessed value and land area. They were identified by address and the block in which they were located. The theoretical value of development for each parking lot was determined by using the assessment values of the properties located within the same block. The predominant form of development for some blocks was the surface parking lot. In these cases, the values of adjacent developed property in surrounding blocks was used in determining theoretical development values. The sum of actual property values for each block, excluding the parking lot value, were divided by the sum of the land area of each property used in the calculation. The result was a price per square foot for a developed site, which was multiplied by the assessed land area of the parking lot, with the final outcome being the theoretical value of development. Both the actual and theoretical property values were entered into the spreadsheet. The information was then used to obtain an estimate of property tax collected by the City of Winnipeg using a property tax estimator ([www.winnipeg.ca/tax/TaxCalculator/](http://www.winnipeg.ca/tax/TaxCalculator/)). The tax paid on the actual value of the property as a parking lot was then subtracted from an estimate of the taxes that would be collected given the alternative theoretical value of development. The result was the opportunity cost of the surface parking lot.

In order to obtain parking lot usage data, parking lots were surveyed within seven geographical regions of Downtown Winnipeg. The available spaces for these lots were indicated on the parking lot map. The number of occupied spaces for each lot was surveyed from one visit to each region from the end of February to mid March, 2008. Each visit was conducted during peak parking periods, Monday - Friday, between 2 and 4 P.M. These values were used to compute the percentage of the spaces used and also entered into SPSS along with the variables mentioned above. Lot usage data was calculated from this data. It also allowed calculation of parking lot revenue, using income per stall revenue data from the City of Winnipeg (2006).

### Limitations

The most obvious limitation is that development cannot be predicted. Development is often a long process. When it will occur and the form it will take cannot be anticipated. As a result, the derived opportunity cost, resulting from a proposed development scenario, may not be entirely accurate. While a typology based on property use codes would be desirable, the multitude of various property uses made developing a plausible one difficult. Such a classification scheme would make proposing a development scenario based on the type of surrounding develop-

ment easier and possibly more accurate. However, using surrounding property values did allow for reasonable development values given the effect zoning has on building use compatibility.

The limitation presented by data quality falls within two categories—date of parking survey and assessment date discrepancy. Collection of parking lot usage data occurred only once for each region, during winter months. Multiple visits, preferably during different times of the year would increase the accuracy of observances. Car usage may decline in warmer months given the feasibility of alternative modes of transportation, such as walking or cycling. This would have an effect on parking lot usage. The issue of an assessment date discrepancy pertains to the dates of data collection. The property assessment is from 2006, the last reassessment year, which relies on market values from 2003 as the basis for assessment. Given the upswing of the market in recent years, this may have the effect of using assessment values which are not representative of current values. Additionally, while the parking map is reasonably up to date, there were instances where parking lots were found that were not on the map.

## Results

The null hypothesis was rejected and the alternate hypothesis accepted—there is a high opportunity cost associated with surface parking lots (Table 1).

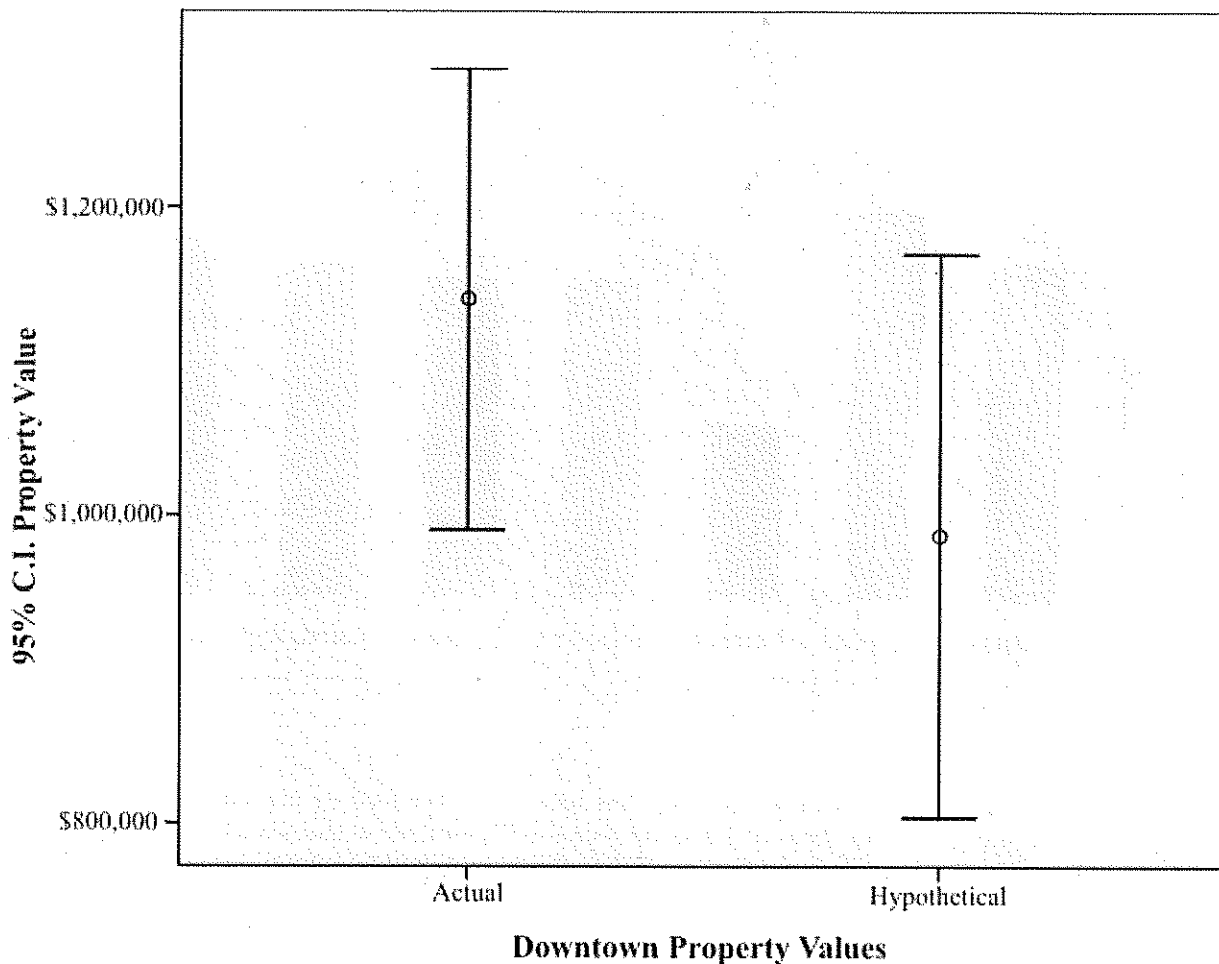
Table 1: Opportunity Cost of Surface Parking<sup>1</sup>

|                                           | Actual Assessed Parking Lot | Hypothetical Parking Lot Development | Opportunity Cost |
|-------------------------------------------|-----------------------------|--------------------------------------|------------------|
| Total Number of Lots                      | 140                         | 140                                  |                  |
| Total Assessed Property Value             | \$43,114,650                | \$138,161,390                        | \$95,046,740     |
| Mean Assessed Value (per surface lot)     | \$307,962                   | \$986,867                            | \$678,905        |
| Mean Property Tax Value (per surface lot) | \$5,365                     | \$16,251                             | \$10,886/year    |

<sup>1</sup>The parking lots associated with region 5, the Forks, have been omitted from the analysis of opportunity cost. The size and nature of the site are not representative of the downtown. School division taxes and the provincial education support levy are not included in the opportunity cost.

Error bars indicate the hypothetical mean property value for parking lot development (Table 1) is representative of the actual mean property values in Downtown Winnipeg (Figure 2). The error bars show the distribution of values within each category, actual downtown property values and the hypothetical values, as well as the mean for each group. The upper error bar for the hypothetical values overlaps the range for the actual property values, indicating the difference between the two is not significant. Were the parking lots developed, the hypothetical values could reasonably be the value of the alternative development.

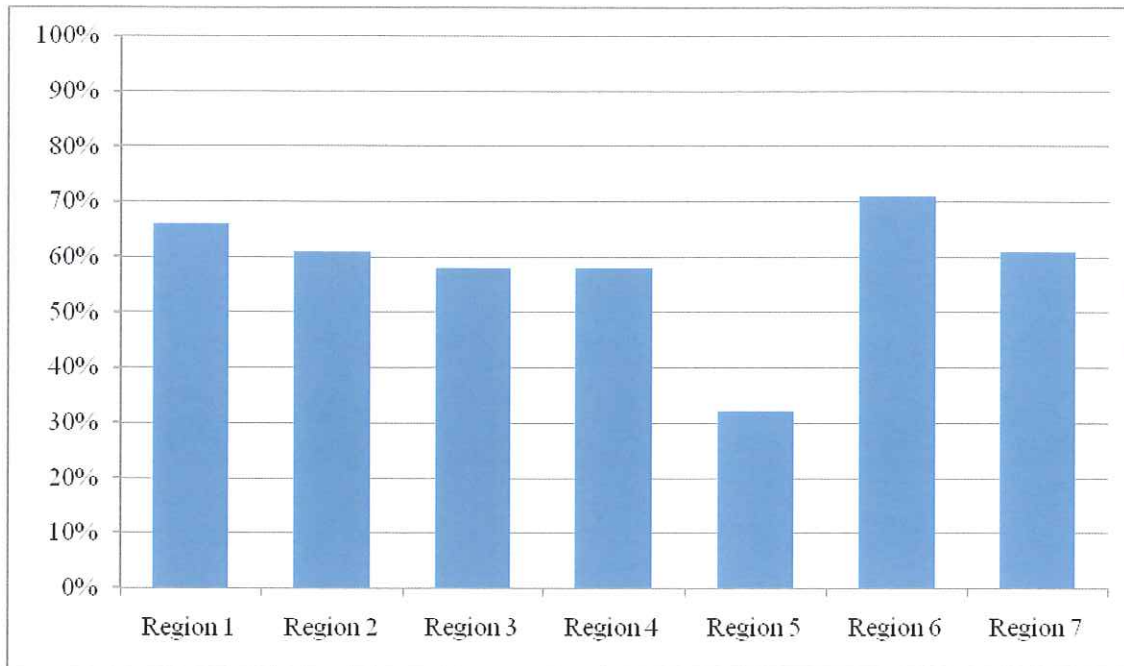
Figure 2: Error Bars for Actual and Hypothetical Property Values<sup>2</sup>



<sup>2</sup>Actual property valued at more than \$15 million removed. The 29 properties valued at more than \$15 million significantly raised the mean actual value, in turn, making it unrepresentative of the 897 properties whose value were below \$15 million.

Parking lot surveys confirmed that the lots were not full during peak parking periods, illustrating there is not a lack of adequate parking in the downtown (Figure 3) and confirming the second sub-hypothesis. Region 6 had the highest lot usage at 71 % of capacity.

Figure 3: Lot Utilization in Seven Regions of Downtown Winnipeg, February - March 2008, 2 - 4 pm.



The net average income per parking stall, after taxes and operating expenses, is \$37 (City of Winnipeg 2006). Parking fees provide the revenue in the form of both monthly and daily rates. Operating expenses include the cost of maintenance (routine, structural and equipment), as well as supplies, security and insurance (VTPI 2007a).

Table 2: Mean Parking Lot Revenue, by Region<sup>3</sup>

|                              | Region 1 | Region 2 | Region 3 | Region 4 | Region 6 | Region 7 |
|------------------------------|----------|----------|----------|----------|----------|----------|
| Mean Number of Spaces        | 28       | 27       | 19       | 25       | 50       | 41       |
| Net Average Income per Stall | \$37     | \$37     | \$37     | \$37     | \$37     | \$37     |
| Total Mean Monthly Revenue   | \$1,036  | \$999    | \$703    | \$925    | \$1,850  | \$1,517  |
| Total Mean Annual Revenue    | \$12,432 | \$11,988 | \$8,436  | \$11,100 | \$22,200 | \$18,204 |

<sup>3</sup>Region 5 has been excluded. The area is not representative of the downtown given the large number of parking spaces and characteristics of the lots. The area is divided into only 2 lots, making the mean number of spaces 743. Many of the features of downtown lots, such as security equipment, are not present, and only one lot is paved, altering the cost of operating.

The third sub-hypothesis postulating higher property values for property with parking on site, as opposed to property lacking parking, was rejected. There was no significant difference ( $p > 0.05$ ) between the mean assessed value for property with parking and that without (Table 3).

Table 3: Independent Samples t test

|                                     | Region 1  | Region 2    | Region 3    | Region 4    | Region 5     | Region 6    | Region 7    |
|-------------------------------------|-----------|-------------|-------------|-------------|--------------|-------------|-------------|
| Assessed Mean Value with Parking    | \$544,494 | \$1,851,782 | \$2,176,059 | \$730,809   | \$14,188,550 | \$914,375   | \$3,637,283 |
| Assessed Mean Value without Parking | \$373,526 | \$614,419   | \$324,582   | \$1,205,220 | \$1,284,000  | \$1,450,894 | \$5,196,886 |
| t =                                 | 1.73      | 1.79        | 1.56        | 0.982       | 11.46        | 0.699       | 1.162       |
| df =                                | 62        | 60          | 31          | 55          | 1            | 23          | 125         |
| p =                                 | 0.088     | 0.078       | 0.127       | 0.33        | 0.055        | 0.491       | 0.247       |

This was an unexpected result, given the emphasis people place on proximity parking. It was expected parking located on the same site as the building would increase property value.

## Discussion

This study was designed to assess the opportunity cost associated with surface parking in the downtown. There is no presumption made that development can either be directed or predicted. Instead, the intent was to provoke thought on the benefits of intensification of downtown development and question the need for greater amounts of parking in the downtown. The results indicate that currently surface parking lots in the downtown carry with them a high opportunity cost, illustrated by the rejection of the null hypothesis, which states that there is no opportunity cost associated with surface parking lots in Downtown Winnipeg. If these lots were to be developed, the city would have the opportunity to collect a significantly higher amount of property taxes. Given that the downtown is a built up area with an established infrastructure, the provision of services would not need to be extended, as in suburban development. Water, sewage, roads and bus lines already run through the downtown, and therefore developers do not incur significant additional cost for infrastructure. The opportunity cost of these lots is not limited to being only an issue of taxation. Intensification of these spaces devoid of activity would contribute greatly to the revitalization efforts already underway. Restoration of high density development is important to any downtown, making it unique in the city (Robertson 1995).

The effect of minimum parking requirements is quite evident in Downtown Winnipeg. The lot utilization levels obtained for each of the seven regions fell well below lot capacity at peak parking periods. This is similar to Shoup's (2005) finding that not only are minimum parking requirements often too high, they usually are set based on levels established in other cities, not local needs. Not only is the land occupied by cars devoid of activity, the land does not even fully realize its potential as a parking lot. This finding also dispels the myth of limited available parking in the downtown. The region with the highest lot usage still had 29% of the total possible spaces available for use during peak periods. This finding supports other studies of parking in downtown Winnipeg (Coriolis Consulting Corp 2002, ND LEA 2003) which suggest that there is a lack of proximity parking in Downtown Winnipeg rather than an overall shortage. While there are many spaces available, they may not be in close proximity to the destination of the user.



Revenue generated by the lots is not large, but does exceed the cost of operating the lot. The lots are frequently owned by business, but run by parking management companies to accommodate customers or staff. For the owner, they are meant to serve to increase the profit of the primary source of revenue, the business. The same is true of offices having lots for employees to park in. The employee must travel to work for the office to operate, and parking is therefore viewed as simply a necessity, a cost associated with doing business. The fact that parking lots in Downtown Winnipeg return a profit is a bonus to many owners of these lots. In terms of incentive to develop the land for other uses, the revenue generated provides further disincentive for development. Unless the revenue generated from the sale of the land exceeds the benefit to the owner that the parking currently provides, the land is likely to remain a parking lot.

Finding that buildings with parking located on site were not significantly different in value than those without parking was unexpected. While little research has been done on this particular aspect, Shoup (2005), Jakle & Sculle (2004), and Manville & Shoup (2005) all indicate the importance developers place on parking in the construction of new buildings, particularly apartments or condominiums. It is reasonable to assume that the provision of parking on site would play a factor in the assessment value of the building. This is further supported by the lot usage findings, where parking is available, but the perception that is not enough persists. The results of the parking lot surveys point to the opposite. Region 6, which has the highest lot usage in the downtown area, also provides the strongest indication that the assessed values between buildings with and without parking on site are not statistically different. This may be due to the nature of the area. Located in the historic Exchange District, many buildings were constructed before widespread automobile use, and therefore have no parking. The assessment value is based on similar buildings, also possessing no parking on site. The high lot usage would also be accounted for by the lack of onsite parking.

## Conclusion

Downtowns across North America have been undergoing revitalization attempts for decades, and Winnipeg is no exception. The provision of additional parking, often in the form of surface parking lots, has formed an integral part of any revitalization attempt. There is an increasing awareness that these parking lots may be doing more harm than good, given that they do not encourage a feeling of place within the urban landscape, reduce density and alter the streetscape. There is lost potential for the city to collect higher levels of property tax, reducing an important source of revenue for any city. Essentially, these lots represent an opportunity cost to the City of Winnipeg.

The situation in Winnipeg is similar to many cities across North America facing a slow growth economy and development occurring at the edge of the city. Land values are not high in Downtown Winnipeg compared to many other cities, there has been a loss of significant amounts of commercial activity over the past 50 years, and offices form the primary property use. The combination of these forces has led to an increase in the supply of parking rather than attracting alternative forms of development. Low land values, in relation to other cities, does not necessitate intensification, making surface parking lots viable land uses. The low cost of land does not justify building structured parking in many cases, so vast surface lots are employed instead. The remaining commercial activity has pushed for the addition of parking spaces, particularly proximity parking, in an attempt to compete with its suburban counterparts. Offices employ vast numbers of people, many of whom commute in from the suburbs. The provision of parking is a necessary component of having an office in the downtown.

Ideally, the provision of parking will cease being linked with revitalization efforts. The damage that parking lots do to the vitality of the urban landscape must be acknowledged. Increased parking does not make a downtown attractive if there is nothing to go to except extensive parking lots. At the same time, however, alternative forms of transportation must be considered as viable alternatives to the automobile. Increasing the speed and efficiency of transit would go a long way in this regard. The idea is not to take away parking without presenting alternatives, but rather, get people to voluntarily leave their cars behind. This can be accomplished in many ways. Downtown employers could offer transit subsidies, rather than parking subsidies, to employees. Winnipeg Transit already has such a program in place. The provision of rapid transit and cycling paths connected to the downtown would also accomplish much in the way of offering alternatives. In combination with alternative forms of transportation, there must be a reason for those who do not work in the downtown to use the downtown. The infill development

of the former parking lot sites would best serve the downtown by becoming shops, housing and other uses that not only are needed in the downtown, but also unique to it.

At the very least, Downtown Winnipeg is in need of a comprehensive parking management strategy and education campaign. Litman (2007) has suggested decreasing demand rather than increasing supply. The simplest way to do this is to cease subsidization of parking, making the motorist pay the full cost. While this may work for those who must come downtown, it may be enough to dissuade people from coming downtown who are accustomed to free parking in the suburbs. This would require city-wide implementation, a sort of leveling of the playing field. Alternatively, given the importance of proximity parking, a system is needed to make parking easier at underused lots, further away from the destination points. The perceived need for more parking in the downtown may then diminish. For instance, the Downtown Spirit, operated by Winnipeg Transit, operates as a shuttle to various locations. Were its route and purpose altered, the shuttle could act as a means of transporting people to these underused lots. The need to be close to the destination point may be alleviated by a short ride from the parking lot. This would result in a more effective use of existing supply, without increasing it. Parking that makes use of different peak parking periods, such as offices during the day and entertainment at night, will also serve to alleviate the need for parking.

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