

**Infrastructure Services &
Economic Development**

Long-Term Parking Strategy



Table of Contents

| | |
|---|----|
| 1.0 Executive Summary | 2 |
| 2.0 Policy Scan..... | 4 |
| 3.0 Current Situation..... | 9 |
| 4.0 Long-Term Parking Analysis..... | 11 |
| Estimating Long-Term Parking Demand Growth | 11 |
| Hot Spot Analysis | 20 |
| Implications for Transportation Demand Management (TDM) | 21 |
| Zoning Bylaw Parking Analysis..... | 21 |
| Downtown Competitiveness Analysis..... | 22 |
| Long-Term Financial Analysis..... | 25 |
| 5.0 Conclusions | 27 |
| 6.0 Recommendations | 28 |
| 7.0 Goals of the Long-Term Parking Strategy..... | 29 |
| 8.0 Appendix..... | 31 |

Long-Term Parking Strategy

The planning framework in Ontario has shifted dramatically. Urban intensification, rapid transit and environmental sustainability are said to be the way of the future. But with Waterloo Region still largely car dependent, the challenge is to understand how to get to an intensified Downtown Kitchener in a manner that:

- a) shifts drivers out of their cars and into alternate modes of transportation;
- b) shifts parked cars off of surface lots and into structures;
- c) enables the redevelopment of surface parking lots for higher intensity uses; and,
- d) is fiscally responsible and doesn't require the construction of numerous publicly funded parking structures.

Consider this: 72% of downtown employees currently drive to work. This means that for every 100 new jobs that could be created downtown, 72 parking spaces would have to be built. Downtown Kitchener's employment is estimated to grow by 4,700 by 2031, which would translate to a need for up to 3,200 new parking spaces – a number that is most likely not feasible to build. Such demand would also hinder the City's ability to redevelop its surface lots.

Analysis:

The analysis of the long-term parking strategy looks beyond the policy framework and gets down to the facts. To not simply assume that nicely aligned policies and programs at the Provincial, Regional and Municipal levels will eliminate the need for parking spaces, but rather, to better understand the four main factors that might influence commuting habits, thus reducing long-term parking demand:

1. Residential development;
2. Price of gas;
3. Price of parking; and,
4. Convenience of rapid transit.

In fact, the goal on the analysis is to understand how these four factors can impact demand, so that the City of Kitchener can establish policies, strategies and actions to direct future parking demands toward a preferred scenario. What is clear from the analysis is that the cost of transportation will be the most influential factor on long-term parking demand. As costs increase, commuters contemplate alternative modes:

- If municipal parking rates increase by 10% from 2011-2014 and 6% every year after, parking demand could reduce by ~1,500 spaces by the year 2031;
- If average gas prices rise to \$1.60 by 2031, parking demand could reduce by up to an additional ~1,875 spaces; and,

These factors work hand-in-hand with an improved transit system. The majority of parkers displaced by rising parking rates, and a portion of parkers displaced by rising gas prices, are likely to switch to transit. Less predictable are the number of downtown employees who might choose rapid transit for reasons of convenience – ranging from a reduction of 160 spaces to ~4,800 spaces by 2031.

In addition, if an average of 75 new residential units are built each year, in and around Downtown Kitchener, parking demand could reduce by ~475 spaces by 2031.

To further test these factors, a variety of scenarios were developed. The scenarios suggest that by 2031, the demand for long-stay parking spaces is highly variable. Depending on how significant the impacts of the four factors are, the City could find itself with a surplus of spaces, or with a severe parking shortage. An integrated scenario suggests anywhere from a surplus of 1,275 spaces to a deficit of 775 spaces.

If the City finds itself with a parking shortage, three scenarios are likely. The lack of parking supply could prevent employment growth; the City could continue to build parking to satisfy demand; or, the City could transfer some of the responsibility for providing parking to the private sector.

If the City finds itself with a parking surplus, increased employment growth could be accommodated and/or surface lots could be redeveloped with higher and better uses. As a result, striving to create a long-term surplus of parking would put the City in the best position to achieve its goals of a 'Dynamic Downtown'. However, the analysis also concludes that it may take a number of years to achieve this surplus, thus, an additional parking garage may be needed in the core in order to accommodate growth until 2014.

Conclusions and Recommendations:

Ultimately, the City must balance downtown employment growth with environmental sustainability, an effective transportation network and fiscal responsibility. To do so, the City needs to monitor the influence the four factors will have on commuting habits. In particular, the City needs to continue with aggressive annual monthly parking rate increases as its primary tool for effecting parking demand and develop TDM programs which can assist downtown employees in shifting away from auto dependency. Encouraging residential development and reviewing the parking requirements of the City's Zoning Bylaw can further ensure a balanced approach to long-term parking.

The findings and recommendations of a long-term parking strategy must be arrived at after reviewing the various layers of policies, strategies and plans currently in place. Each of the items listed below relates directly or indirectly to the manner in which downtown parking should be provided and the environmental, economical and design considerations that should be addressed:

Places 2 Grow: Growth Plan for the Greater Golden Horseshoe

Province of Ontario

The Growth Plan provides a framework for building stronger, prosperous communities by better managing growth to 2031. It is intended to guide municipal planning and infrastructure decisions related to land development and the movement of people and goods. Potential implications for the Downtown Parking Strategy include:

- A significant portion of new growth shall be directed to Downtown Kitchener, at targeted densities of 200 residents and jobs combined per hectare;
- Downtown Kitchener will be planned (residential and employment densities) to accommodate and support major transit infrastructure;
- Municipalities will promote economic development and competitiveness by ensuring the necessary infrastructure to support forecasted employment needs; and,
- Population and employment growth will be accommodated through reduced dependence on the automobile and the development of mixed-use, transit supportive, pedestrian-friendly environments.

This plan would suggest that parking needs to be provided to accommodate future Downtown density, but that a portion of that demand should be accommodated through greater use of alternative modes of transportation.

Regional Growth Management Strategy (RGMS)

Region of Waterloo

The RGMS provides high level direction on the future growth of Waterloo Region. Downtown Kitchener is identified as being part of a Primary Reurbanization Area/Central Transit Corridor, where urban intensification will be planned for. Such intensification should occur with respect for the following goals:

1. Enhancing our Natural Environment
2. Building Vibrant Urban Places
3. Providing Greater Transportation Choice
4. Protecting our Countryside
5. Fostering a Strong Economy

Providing greater transportation choice suggests shifting away from an automobile dominated society to a balanced system. This could be achieved through improved transit service, integration of various transportation modes (cycling, walking, etc.) and creating more pedestrian friendly environments.

Rapid Transit in Waterloo Region

Region of Waterloo

The Region of Waterloo recently approved plans for the development of a rapid transit corridor to connect Waterloo, Kitchener and Cambridge with a higher speed light rail line. The corridor through Downtown Kitchener is proposed to follow King St to Victoria St and then divert to Charles St and Duke St, reconnecting at Benton and Charles, before continuing on towards Fairview Mall.

Stations are anticipated in the King & Victoria, Charles Street Terminal, Ontario & Duke and Market areas. One of the benefits of rapid transit is the increased density that typically locates adjacent to station locations. Over time, this density could alleviate some of the pressures on downtown parking demand, provided the new density accommodates downtown employees.

Ridership growth on rapid transit lines typically result from two factors: improved convenience or cost competitiveness. Cost-competitiveness is directly attributable to the cost of parking and the price of gas commuters must pay. If these costs remain low, ridership growth will be low. Improved convenience is expected to occur for those that live within walking distance of rapid transit station. However, those that must take connecting bus routes to reach the transit lines are less likely to experience shorter commute times.

Kitchener Growth Management Strategy

City of Kitchener

Approved in 2009, the KGMS provides vision and strategic direction on the growth of Kitchener to 2031. Notably, the strategy stresses the need to develop complete communities which have a balance of residential, employment, commercial and service uses. Of the six goals identified, those that in some way can be linked to parking include:

Create Vibrant Urban Places – stresses the need for well-designed and well-located public spaces; identifies the need to add a 6,600 new residents and 3,400 new jobs in Downtown Kitchener by 2031, to achieve a resident to job ration of 40:60.

Ensure Greater Transportation Choice – intensification is to be focused on major transit corridors to support a rapid transit system, while cycling planning and transportation demand management will help provide more convenient options for the use of alternative modes of transportation.

Foster a Strong Economy – large employment developments should be focused in Downtown Kitchener and along the Central Transit Corridor.

In essence, the strategy calls for balanced, but extensive, intensification in Downtown Kitchener and it's surrounding urban areas, while providing transportation options that shift demand away from single occupant vehicles.

Municipal Plan & Downtown Design Policies

City of Kitchener

The Municipal Plan sets out the direction for future planning decision making of the City, as it relates to land use planning and development. Transportation policies within this plan recommend that within the Downtown, an emphasis be placed on providing short-term parking while acknowledging the need for minimal all day parking facilities. Parking facilities should be designed to be safe for motorists and pedestrians and should result in an aesthetically acceptable appearance that blends in with the surrounding environment.

Also included in this plan are policies specific to the design of new buildings downtown. Within the City Centre District, unlimited building heights are permitted to encourage high density infill development. To accommodate vehicles, new parking structures (underground and above grade) are encouraged, while surface parking lots are discouraged.

Plan for a Healthy Kitchener

City of Kitchener

Intended to guide all municipal decisions until 2027, Kitchener healthy community plan encompasses six areas of focus, which include:

- Development – carefully planning growth to attract the right type of growth, even if it means restricting some new developments;
- Dynamic Downtown - continuing to focus on cluster development and urban vitality as a solid approach to economic health; and,
- Environment – shows leadership in the development of an environmentally sustainable community, and develops a Transportation Demand Management Strategy as an umbrella for environmentally friendly transportation policies.

Downtown Strategic Plan

City of Kitchener

The Implementation Plan (Vol. III) is an action oriented document approved in late 2004. The action plans are rapidly being implemented with an emphasis on creating economic success in a sustainable community. Catalyst investments in post secondary campus locations have already stimulated an optimistic investment environment in a vibrant and authentic urban environment. The plan for parking was to have accessible spaces that do not intrude on the urban character, favouring structured or underground parking alternatives. New residential developments and lower commercial vacancy rates have created accelerated demands for current and future parking.

TDM Program

City of Kitchener

The City of Kitchener, like many municipalities, recognizes that growth can not continue unabated. This not only applies to the development of new residential subdivisions, but also to the supporting infrastructure of roads, parking facilities, and the associated impact on the environment. While the single occupant vehicle has been the norm, changes must be implemented that promote sustainable modes of transport. Numerous initiatives need to be developed, both incentives and disincentives, to encourage the community to modify their travel choices

Transportation Demand Management (TDM) is a wide range of policies, programs, services and products that influence how, when, where and why people and goods are moved. In recognition of the benefits to the Corporation as well as the community, a consultant has been hired to assist in the development of a complete TDM program that will provide the basis for the City of Kitchener to positively influence travel mode choices, initially to and from the Downtown, but eventually city wide.

The TDM study with specific steps, recommendations and implementation guidelines to form a comprehensive TDM strategy including an operational program will be considered in 2009.

One of the benefits of a TDM program is the potential to free up parking spaces for new or expanding businesses. However, TDM programs involve a long-term paradigm shift in attitudes towards travel choices. Significant immediate results can not be expected.

2009 Downtown Parking Usage Study

City of Kitchener

Every second year, a snapshot is taken of parking usage in the Downtown. The intent is to capture occupancy, duration and turnover data and analyze trends from previous surveys. The 2009 data indicated a continuing high level of demand for both on-street and off-street parking spaces. The free on-street spaces are averaging a peak occupancy of 93% while the off-street spaces (excluding the garages) are averaging 73% occupancy.

What these average figures don't reflect is the fact that the prime parking facilities in the core (near City Hall and King/Queen) are running at an even higher occupancy while more remote lots are bringing the average down.

2005 Parking Study

City of Kitchener

The 2005 Feasibility Study for the Development of Short and Long-term Parking Solutions for Downtown Kitchener, completed by Marshall Macklin Monaghan, assessed both the short and long-term parking demands for Downtown Kitchener and alternative ways of addressing those parking needs in support of growth and other initiatives, including a rapid transit corridor.

This study recognized the immediate need for the construction of additional parking structures in the downtown and recommended a structure at Charles & Water Sts as well as part of the Centre Block development. It acknowledged that parking was integral to the health of the Downtown and is necessary to support existing as well as future developments in the core.

Capital Investment Philosophy

City of Kitchener

The City's capital investment philosophy ensures that any increases in debt charges from one year to the next do not exceed assessment growth. As well, the overall contribution from the tax base through taxes and debt charges will not increase more than assessment growth plus inflation from one year to the next. This philosophy has ensured that the impact on the taxpayer does not exceed inflation and that the City must prioritize projects to fit the funding available. However, there is one exception. The City's capital investment philosophy provides for debt financing for projects which have a business plan showing revenues generated over a reasonable "pay back period" covering the capital cost and interest of the project. This philosophy results in a capital project selection process within which projects must compete for funding based on the strength of their business cases and their alignment with the City's strategic directions.

As such, any investments in new parking facilities would likely have to demonstrate a reasonable pay back period and out-compete other projects for funding approval.

Air Quality in 2006

Environment Committee, City of Kitchener

A series of actions are recommended to improve the overall air quality in Kitchener, by reducing green house gas emissions, and helping to slow down the effects of climate change. Recommendations include:

- Reducing emissions from automobiles by encouraging alternative modes of transit;
- Implementing the LEED rating system for new developments;
- Incorporating clean air goals into long range transportation plans; and,
- Supporting compact development.

Our Future is Now: 2007-2010 Economic Development Strategy

City of Kitchener

The City's economic strategy includes six key areas of focus, including 'building a vibrant downtown'. It is anticipated that the next evolution of the City's economic strategy will be to initiate a plan to systematically attract private sector redevelopment of the City's strategic downtown properties and surface parking lots. The intent is to see these properties redeveloped with high density residential, office or mixed use developments, with high expectations for the quality of urban design and environmental standards.

This section provides a basic demographic profile of Downtown Kitchener's employment supply and statistics on the current parking supply:

Downtown Employment Profile

Currently, Downtown Kitchener has an estimated total employment population of 12,214.¹ Not all of these employees are employed between normal office hours of 8am and 6pm. While no exact statistic exists, current demand suggests that an estimated 86% of employees are currently employed during normal office hours.²

Between 2004 and 2007, downtown employment grew by 11%, approximately 6% annually.³ This includes the addition of several large companies such as Stantec Consulting, The Record and Arvado Services. Recently, the redevelopment of the Tannery District is adding Google, the Communitech Hub and a growing Desire2Learn to the core. The future redevelopment of the Breithaupt Block could add an additional 750 employees. The top five downtown industries, comprising 60% of all employment, are in the following fields:

- Professional, Scientific and Technical Services (15%)
- Finance and Insurance (15%)
- Administrative and Support (11%)
- Public Administration (10%)
- Information and Cultural Services (9%)⁴

63% of employees work full-time hours, while 37% work part-time or seasonal hours. 40% of downtown employees are under the age of 35, 47% fall between the ages of 35 and 54, and 13% are 55 years of age or older. 28% are under the age of 30. 46% of employees earn less than \$30,000 per year, while 54% earn \$30,000 or more.⁵ Employees under 30, and over 55, and earning less than \$30,000 per year are the most likely to switch to alternative modes of transportation.

Chart 3.1 – 2006 Personal Income Distribution of Downtown Employees

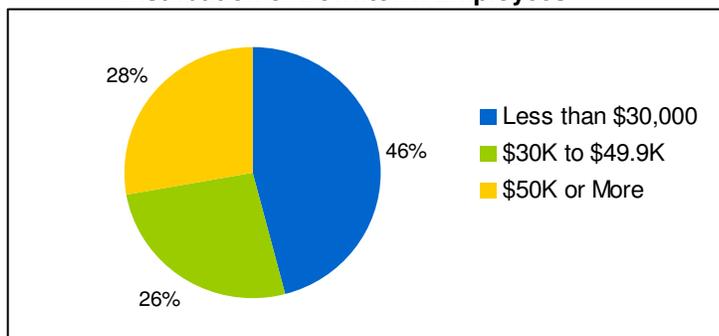
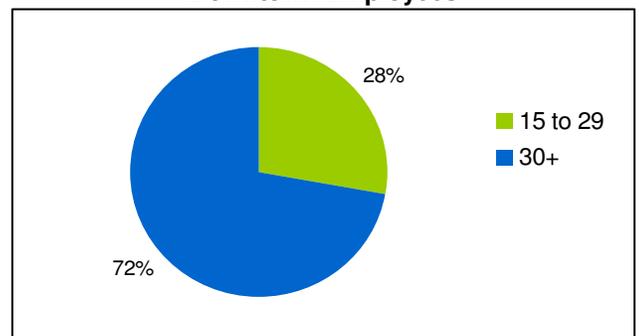


Chart 3.2 – 2006 Age Distribution of Downtown Employees



¹ Source: City of Kitchener Downtown Database.

² Assumption that 86% of employees work during normal business hours (~8am to 6pm) was calculated based on the current modal split and assumed current parking demands.

³ From 2007 Downtown Kitchener Trends & Indicators, City of Kitchener.

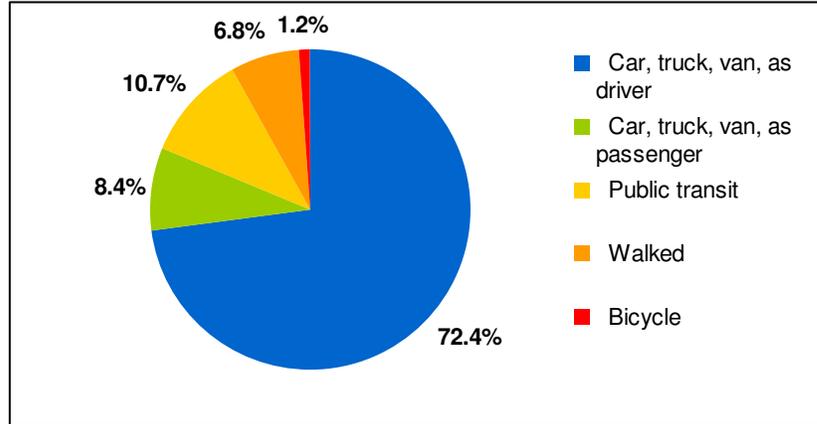
⁴ 2006 Census, Statistics Canada.

⁵ 2006 Census, Statistics Canada.

Downtown Model Split

Modal split represents the proportion of downtown employees who use certain modes as their primary means of transportation. In 2006, 72% of downtown employees drove to work as the primary driver. 28% used alternative modes of transportation, such as car pooling and transit. In comparison, only 22% of people employed in the entire City of Kitchener use alternative modes of transportation.⁶

Chart 3.3 – 2006 Modal Split of Downtown Employees



Existing Parking Supply

A 2005 study identified approximately 5,050 privately operated long stay and mixed stay parking spaces in Downtown Kitchener.⁷ The City of Kitchener currently operates 2,011 long stay parking spaces. The addition of the Charles-Benton parking garage will increase this number to approximately 2,210.⁸ Once completed, the total number of spaces available for long stay parking will be approximately 7,260. A new underground parking structure in the Civic District will add approximately 300 additional long-stay parking spaces in 2012.

Table 3.4 – Proportion of Parking Operated Publicly vs. Privately

| | Spaces | Percentage |
|-----------------------------------|--------|------------|
| Publicly Operated Parking | 2,210 | 30.4% |
| Privately Operated Parking | 5,050 | 69.6% |

⁶ Based on 2006 Census, Place of Work, data for census tract 0017, which generally includes the City Centre and Market Districts.

⁷ Feasibility Study for the Development of Short and Long-term Parking Solutions for Downtown Kitchener, Marshall Macklin Monaghan, 2005.

⁸ Source: City of Kitchener, Transportation Planning.

Long-Term Parking Analysis

The following section includes an estimation of parking demand, a hot spot analysis, implications for transportation demand management (TDM), a zoning bylaw analysis, a downtown competitiveness analysis and a long-term financial analysis.

Estimating Long-Term Parking Demand Growth

Methodology & Assumptions

The basic approach to estimating parking demand growth, in this analysis, is as follows:

- Phase 1** - project employment growth during peak hours (8am to 6pm) and translate growth into long stay parking space demand;
- Phase 2** - understand how a variety of reduction factors might impact demand, such as rising gas prices; and,
- Phase 3** - develop a series of scenarios to test the implications of each reduction factor.

The goal of this analysis is not to try and accurately predict parking space demand (phase 1). Rather – the goal is to understand how various factors (phase 2) can impact demand, so that the City of Kitchener can establish policies, strategies and actions to direct future parking demands toward a preferred scenario (phase 3).

A variety of assumptions are identified in each analytical section. Most are based on external studies, analysis or data, whose findings have been used to infer potential implications for Downtown Kitchener. Most notably, Census Canada data gathered for census tract 5410017 (City Centre District and Market District) is used to infer overall demography for the entire downtown area. Data for the Civic District and portions of the Warehouse District are contained within much larger census tracts that are unusable for this analysis. Census tract 5410017 contains approximately 59% of all downtown employment.

PHASE 1 - Employment Growth Projections & Gross Long Stay Parking Space Demand

While employment growth over the past few years has grown consistently at approximately 3.5% annually, it is unrealistic to assume similar natural growth will occur annually until 2031. This would translate into a downtown employment population in excess of 27,368 – more than a 2-fold increase. Rather, employment growth has been projected in proportion to growth projections for the overall population for Kitchener. This translates into a more reasonable annual growth rate that fluctuates around 1.07%.⁹ As comparables, employment projections for three standard growth rates of 1%, 2% and 3% are included in the appendix.

Based on the 1.07% growth rate, Downtown Kitchener would see ~4,710 new employees by 2031. This would exceed the Kitchener Growth Management Strategy direction to accommodate 3,400 new jobs over the same period of time. If 86% of all new employment growth occurs during peak office hours, and if the modal split remains constant at 72%, the total demand for long stay parking would be 2,920 additional parking spaces by 2031:

⁹ Source: Region of Waterloo, Planning, Housing and Community Services.

Table 4.1 - Projected Employment and Gross Parking Space Demand at 1.07% Growth¹⁰

| | 2008 | 2016 | 2026 | 2031 |
|--|--------|--------|--------|---------|
| Projected Downtown Employment | 12,214 | 13,557 | 15,896 | 16,925 |
| Projected Downtown Employment Growth | - | +1,343 | +3,682 | +4,711 |
| Resultant Increase in Demand for Long Stay Parking Spaces | - | +832 | +2,280 | +2,920 |
| Total Projected Gross Demand for Long Stay Parking Spaces | | +1,132 | +2,580 | +3,220* |

*Assumes an estimated current shortfall of 300 parking spaces.

PHASE 2 - Parking Space Demand Reduction Factors

The calculations in phase 1 assume a constant modal split of 72% primary drivers, with only 28% using alternative modes of transportation, such as walking and transit. A variety of factors, however, could increase the modal split. The following four factors are most prevalent in impacting a person or corporation's desire to rent a parking space:

- 1) Downtown Residential Development
- 2) Price of Gas
- 3) Price of Parking
- 4) Convenience of Rapid Transit

1) Downtown Residential Development Reduction Factor

People who live within walking distance of their place of work, and who don't require a vehicle as part of their employment, theoretically do not need a parking space for work. Thus, adding new residential units in or near Downtown Kitchener should reduce the demand for parking.

As part of this analysis, residents of six high density downtown residential buildings were surveyed to understand the commuting habits of downtown residents. Based on the 269 respondents, 16.4% work downtown and do not require a car at work every day. When converted to residential units, for every 100 new residential units built within walking distance of downtown, the number of long stay parking spaces could be reduced by 27.4 spaces.

Over a seven year period, 2001 to 2007, an average of 160 building permits have been issued annually for new residential units within close proximity of downtown. However, permits have fluctuated annually, from as many as 296 units in 2001 to as few as 25 units in 2004.¹¹ Research conducted as part of the Kitchener Growth Management Strategy suggests that the number of residential units in Downtown Kitchener should increase by 1747 units by 2031.¹² This equates to approximately 75 new units per year.

The following table identifies the number of parking spaces that could be reduced from the gross number identified in Table 4.2, based on various residential growth rates:

Table 4.2 – Number of Parking Spaces to be Reduced from Projected Demand Based on Increased Residential Intensification¹³

| | 2008 | 2016 | 2026 | 2031 |
|---------------------------|------|------|------|------|
| At 25 new units per year | - | 55 | 123 | 157 |
| At 75 new units per year | - | 164 | 370 | 472 |
| At 100 new units per year | - | 219 | 493 | 639 |
| At 125 new units per year | - | 274 | 616 | 787 |

¹⁰ Refer to the appendix for complete tables of all growth rates.

¹¹ From 2007 Downtown Kitchener Trends & Indicators, City of Kitchener.

¹² Kitchener Growth Management Strategy: Background Study – using 50% build out scenario.

¹³ Figures shown are cumulative. For example, 472 represents the total number of parking spaces reduced between 2008 and 2031.

While these reductions are specific to new construction, the refurbishment of existing units (such as upper storey units along King and Queen Street) could cause increased demand, as many do not have access to parking. Since the commencement of the City's Upper-Storey Renovation Program, approximately 6 units have been renovated each year. With an estimated 40-60 units still in need of renovation, the City could experience additional demand for as many as one parking space per unit.

2) Price of Gas Reduction Factor

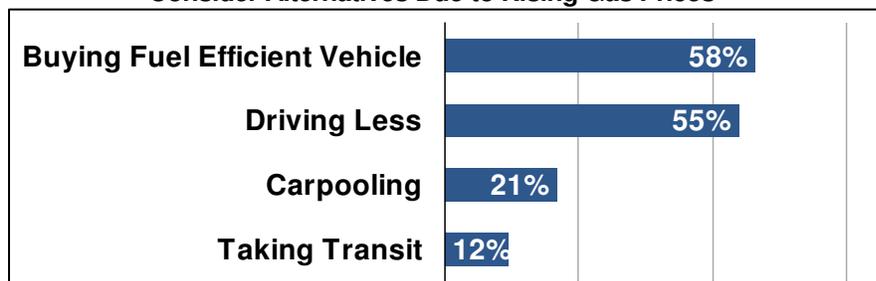
There are several published studies that have calculated the price elasticity for vehicle usage relative to rising gas prices. Meta-analysis of over 100 studies found that for every 10% increase in the cost of gas, sustained over a five year period, the number of vehicles on the road decreases by up to 3%¹⁴. Using Toronto's average monthly gas pump prices, from 1990 to 2008, a standard deviation price forecast was developed to project high, low and average expected gas prices.¹⁵ Table 4.3 summarizes potential parking reductions based on a baseline 2008 cost of fuel of \$1.00 per litre:

Table 4.3 – Projected Number of Parking Spaces that could be Reduced from Projected Demand Based on Increased Gas Prices¹⁶

| | 2016 | 2026 | 2031 |
|--|-----------|-----------|-----------|
| Average Projected Gas Price per Litre | \$ 1.1512 | \$ 1.4477 | \$ 1.5960 |
| Parking Space Demand Reduction (Average) | 381 | 1,322 | 1,874 |

While Table 4.3 suggests significant reductions in demand, evolving vehicle technology could counteract a portion of the reductions. For example, as hybrid and electric vehicles become more affordable, the impact of gas prices will lessen. A study from the PEW Research Centre found that, under rising fuel costs, 58% of Americans consider buying a fuel efficient vehicle, 55% consider driving less, 21% consider carpooling, and 12% consider taking transit.¹⁷

Chart 4.4 – Percentage of Americans who would Consider Alternatives Due to Rising Gas Prices



According to a similar transportation elasticity study, rising fuel prices can have relatively little impact on transit ridership.¹⁸ This would suggest that rising gas prices may not translate into a reduced number of monthly parking permits issued. For example, downtown employees may be more likely to telecommute on various days throughout the week, in order to make fewer overall trips to work, but still require a parking permit. However, studies from the American Public Transportation Association noted that when gas prices peaked in 2008, transit ridership across the United States was at its highest since 1956. Further study may be required to truly understand which alternatives Waterloo Region residents will choose when faced with rising gas prices.

¹⁴ P. Goodwin, J. Dargay & M. Hanly; "Elasticities of Road Traffic and Fuel Consumption with Respect to Price and Income: A Review", 2004.

¹⁵ Statistics Canada, using CANSIM (Canadian Socio-Economic Information Management System).

¹⁶ Refer to the appendix for the complete table, including low and high projected gas prices. Reductions assume that for every 10% increase above \$1/litre, parking demands will decrease by 3%.

¹⁷ P. Taylor, C. Funk & P. Craighill; "As the Price of Gas Goes Up, The Nation's Odometer Slows Down", Pew Research Centre, 2006.

¹⁸ T. Litman; "Transportation Elasticities: How Prices and Other Factors Affect Travel Behaviour", Victoria Transport Policy Institute, 2008.

3) Price of Parking Reduction Factor

Parking rates also have an impact on the number of spaces needed. As rates increase, fewer people will choose to park. A Parking Cost Elasticity Study, found that every 10% increase in parking rates, within a Central Business District, will cause a 5.41% reduction in parking demand.¹⁹ Table 4.4 shows the decrease in parking spot demand if parking rates increase by 10% annually between 2011-2014 and 6% every other year:

Table 4.5 – Projected Number of Parking Spaces that could be Reduced from Projected Demand Based on Increased Parking Prices²⁰

| | 2008 | 2016 | 2026 | 2031 |
|---|----------|-----------|-----------|-----------|
| Surface Lot Price @ 10%/6% Annual Increases | \$96.20 | \$ 177.82 | \$ 318.44 | \$ 426.14 |
| Structured Parking Price @ 10%/6% Annual Increase | \$111.01 | \$ 205.19 | \$ 367.46 | \$ 491.75 |
| Total <i>Municipal</i> Parking Space Reduction Factor ²¹ | | 600 | 1,207 | 1,513 |
| Total <i>Downtown</i> Parking Space Reduction Factor ²² | | 1,811 | 3,640 | 4,560 |

Note: 10%/6% = 10% increase between 2011-2014 with 6% increase every other year.

Rising parking rates can significantly impact transit ridership.²³ Since trip reduction is typically not an option for monthly parking permit holders (unless they opt to pay daily rates), they are more likely to search for cheaper rates or use alternative modes of transportation to eliminate the need for a monthly permit altogether. A variety of studies suggest that parking price increases combined with an efficient transit system will result primarily in increased transit ridership. Parking price increases combined with an inefficient transit system will result in greater carpooling or parking substitutes (ex: finding an alternate, cheaper parking space further from work).

An analysis of 2008 parking permits suggests that 63% of municipal monthly parking permits are paid for by employers. The remaining 37% is paid for by individual employees.²⁴ It could be argued that individual employees paying for their own permits will be more sensitive to rate increases, than those paid for by employers.

Table 4.6 – Who is Paying for Monthly Parking Permits

| | Percentage |
|-----------------------------|------------|
| Paid for by Employer | 63% |
| Paid for by Employee | 37% |

4) Convenience of Rapid Transit Reduction Factor

While rising costs of gas and parking are motivations for using transit (calculated in the previous two factors), convenience also plays a role. Logically speaking, the downtown employees most likely to find transit more convenient than driving are those within walking distance of a future rapid transit station. Census 2006 place of work flow data was used to determine that approximately 22.7% of all downtown employees live within walking distance of the proposed rapid transit line. Of those, 11.6% currently take public transit to work.²⁵ Thus, in 2015, rapid transit would likely impact the transportation choices of approximately 2,970 downtown employees, of which 345 would be existing transit users. These figures represent the likely minimum and maximum number of initial riders in 2015.

The introduction of a rapid transit system in 2015 is expected to boost transit ridership system-wide at a rate of 3.58% per year. Parking projections in Table 4.3 already assume a 1.07% annual increase in transit ridership. The difference between the ridership growth already accounted for (1.07% annually) and the increased growth (3.58% annually)

¹⁹ Wilson & Company, "Parking Cost Elasticity Study", 2006.

²⁰ Refer to the appendix for complete tables. Rate impacts based on increases over and above 2% annual inflation rate.

²¹ Includes all municipally owned parking spaces.

²² Includes all downtown parking spaces, both municipally and privately owned. Reductions assume that all private parking rates would also increase at 6% per year.

²³ T. Litman; "Transportation Elasticities: How Prices and Other Factors Affect Travel Behaviour", Victoria Transport Policy Institute, 2008.

²⁴ Source: City of Kitchener, Transportation Planning.

²⁵ 2006 Census, Statistics Canada, includes Census Tracts 0002.01, 0003, 0004.01, 0004.01, 0005, 0006, 0011, 0012,0013, 0017, 0020, 0100, 0102, 0103, 0105, 0101.03, 0106.02, 0107.01, 0107.02, 0109.01.

provides a 'convenience of rapid transit' reduction. In other words, more parking spaces that do not need to be accounted for because more downtown employees would be using the rapid transit system. Table 4.7 summarizes the range of potential new transit users over and above that which is already accounted for as natural growth:

Table 4.7 – Number of Parking Spaces to be Reduced from Projected Demand Based on Estimated New RT Riders due to Convenience (Non-Cost-Based Reasons)²⁶

| | 2015 | 2016 | 2026 | 2031 |
|---|-------|-------|-------|-------|
| Minimum Projected Net New RT Riders (initial base ridership of 345) ²⁷ | 0 | 0 | 89 | 160 |
| Maximum Projected Net New RT Riders (initial base ridership of 2,970) ²⁸ | 2,625 | 2,719 | 3,954 | 4,768 |

Note - the figures shown in table 4.7 should not be interpreted as the entire ridership growth resulting from a new rapid transit system, but only those that are likely to choose rapid transit for reasons of convenience. Those who can't afford increasing parking rates and gas prices, could also be transit riders.

While there is significant difference between the minimum and maximum projections, the Region's technical studies suggest that the majority of transit ridership growth will result from rising transportation costs, and not from convenience. If the region's road network becomes as congested as Toronto, convenience might play a more significant role. But the region's lack of congestion suggests that the minimum ridership projections are likely more realistic than the maximum projections.

PHASE 3 – Demand Scenarios

The following charts pulls together all of the analysis of this section. To illustrate the implications of the various factors, four scenarios have been developed, all assuming an annual growth rate of ~1.07%.

Each scenario includes a range of parking space demand estimates. As the projected reductions from the rising cost of gas are highly variable, and that the reductions projected based on the rising costs of gas and parking may not be mutually exclusive, demand estimate is represented as a range. The high estimate excludes the Price of Gas reduction factor, while the low estimate includes all four reduction factors. The actual demand would fall somewhere between these two numbers. Tables 4.8A and 4.8C show the parking demand where only municipal parking rates increase, while tables 4.8B and 4.8D show the parking demand where municipal and private parking rates increase.

Table 4.8A – Impact on Downtown Parking Space Demand by 2031 – Scenarios Where Only Municipal Parking Rates Increase

| | Low Estimated Demand Change (in parking spaces) | High Estimated Demand Change (in parking spaces) |
|--------------------------|---|--|
| A) Anticipated Scenario | -798 | + 1,075 |
| B) Conservative Scenario | +1,724 | +2,903 |
| C) Aggressive Scenario | -6,759 | -3,690 |
| D) Integrated Scenario | -1,277 | +777 |

Note: A positive number represents a deficit of parking spaces. A negative number represents a surplus of parking spaces

²⁶ Refer to the appendix for the complete table. Figures shown do not include the 227 riders that would already be using transit. Figures only represent *new* riders.

²⁷ Assumes all transit riders in 2015 will switch from bus ridership to rapid transit ridership, and growth will occur at 3.58% per year.

²⁸ Assumes all employees within walking distance of rapid transit lines will become rapid transit riders, and growth will occur at 3.58% per year.

Table 4.8B – Impact on Downtown Parking Space Demand by 2031 – Scenarios Where All Downtown Parking Rates Increase

| | Low Estimated Demand Change (in parking spaces) | High Estimated Demand Change (in parking spaces) |
|--------------------------|--|---|
| A) Anticipated Scenario | -3,842 | -1,968 |
| B) Conservative Scenario | +1,724 | +2,903 |
| C) Aggressive Scenario | -9,802 | -6,733 |
| D) Integrated Scenario | -3,695 | -2,266 |

*Note: A positive number represents a deficit of parking spaces.
A negative number represents a surplus of parking spaces*

The sensitivity analysis, later in this section, suggests confidence in the statistical model until 2014. The following chart shows each scenario in 2014:

Table 4.8C – Impact on Downtown Parking Space Demand by 2014 – Scenarios Where Only Municipal Parking Rates Increase

| | Low Estimated Demand Change (in parking spaces) | High Estimated Demand Change (in parking spaces) |
|--------------------------|--|---|
| A) Anticipated Scenario | -4 | +217 |
| B) Conservative Scenario | +848 | +966 |
| C) Aggressive Scenario | -533 | +176 |
| D) Integrated Scenario | +131 | +131 |

*Note: A positive number represents a deficit of parking spaces.
A negative number represents a surplus of parking spaces*

Table 4.8D – Impact on Downtown Parking Space Demand by 2014 – Scenarios Where All Downtown Parking Rates Increase

| | Low Estimated Demand Change (in parking spaces) | High Estimated Demand Change (in parking spaces) |
|--------------------------|--|---|
| A) Anticipated Scenario | -872 | +651 |
| B) Conservative Scenario | +848 | +966 |
| C) Aggressive Scenario | -1,401 | +692 |
| D) Integrated Scenario | +342 | +243 |

*Note: A positive number represents a deficit of parking spaces.
A negative number represents a surplus of parking spaces*

A) Scenario Based on Anticipated Rates of Change

The rates selected in this scenario represent what is believed to be the most likely to occur. Under this scenario, the net parking demand in 2031 would range between a surplus of ~800 parking spaces and a deficit of 1,075 spaces. The surplus suggests that the rising price of gas could, in the long run, more than offset the projected demand. Of the four demand reduction factors, the rising prices of gas and parking will have the greatest impact on demand. By 2014, the net parking demand would be between a surplus of 4 spaces and a deficit of ~220 spaces.

B) Scenario Based on Conservative Rates of Change

The rates selected in this example represent a scenario with the least amount of influence on personal transportation habits. Transportation costs remain low, residential growth is limited, and transit ridership growth is limited. Under this scenario, the net parking demand would necessitate the need for between 1,700 and 2,900 additional spaces. This suggests that if the price of gas and parking remain low, Downtown Kitchener could either face a significant parking shortage or fail to attract or increase employment. By 2014, the demand for municipal parking spaces could increase by 850-970 spaces.

C) Scenario Based on Aggressive Rates of Change

The rates selected in this example represent a scenario with the greatest influence on personal commuting habits - transportation costs are high while residential and transit ridership growth is strong. Under this scenario, the net parking surplus would range between 3,600 and 6,800 spaces. This suggests that extensive employment growth in Downtown Kitchener could be accommodated if the price of gas and parking escalate, and rapid transit successfully reshapes commuter transportation choices. If private parking rates also increase at aggressive rates, Downtown Kitchener could have a surplus of 6,700 to 9,800 spaces. Under this scenario, very few downtown employees would be able to afford to drive to work.

D) Integrated Scenario Based on Varying Rates of Change

It is highly unlikely that change will occur at consistent rates, until 2031, as depicted in the previous three scenarios. Rather, it is more likely that we'll see conservative rates of change in the short-term, anticipated rates of change following the delivery of a rapid transit system, and aggressive rates of change as we approach 2031. In addition, business cycles (economic climate) are also likely to impact rates of change. During periods of economic contraction, gas prices typically don't increase leading to higher than usual car usage. During periods of economic expansion, gas prices typically increase, leading to reduced car usage. Business cycles in Canada typically include one year of contraction for every seven years of expansion.

For this scenario, a constant growth rate of 1.07% was used, with a constant parking rate increase of 10% during 2011-2014 and 6% for all other years. Contraction was accounted for in 2009, 2017 and 2025. Conservative rates of change were utilized until 2016, anticipated rates of change until 2025, and aggressive rates of change until 2031. A rapid transit rate of change of 3.58% growth was used between 2015 and 2025. This rate was tripled to 10.74% between 2026 and 2031.

Under this scenario, the demand for downtown parking spaces would range between a surplus of ~1,300 spaces and a deficit of ~800 spaces. By 2014, demand would increase by ~130 spaces.

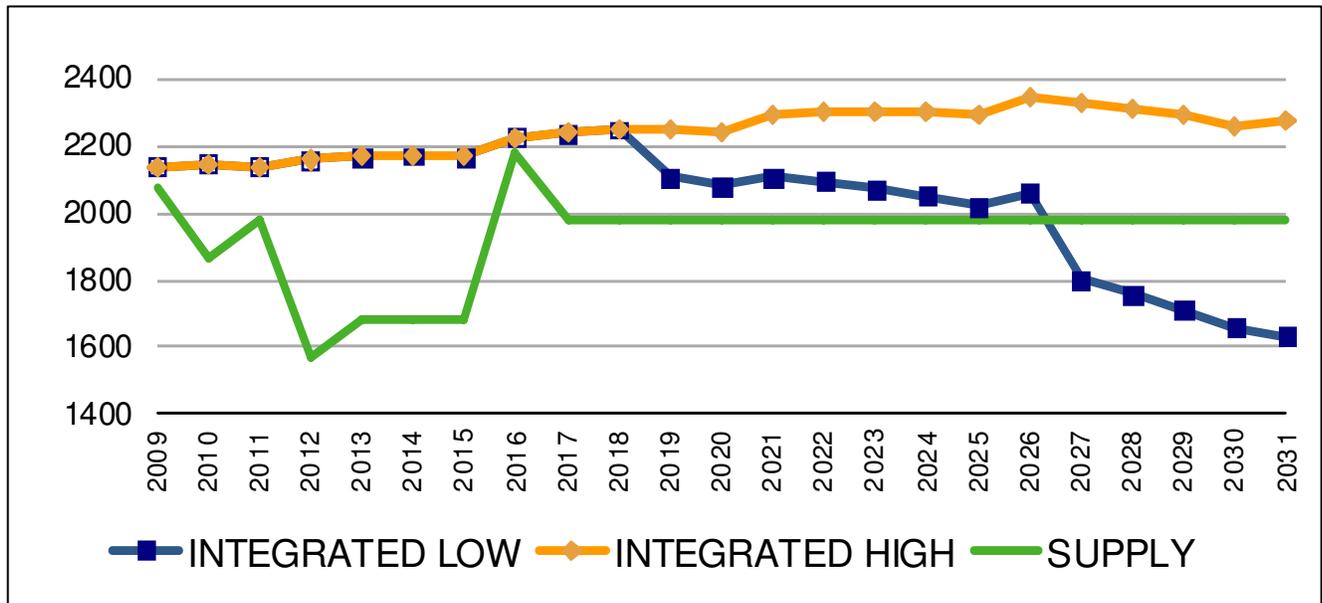
Potential Demand for Municipal Parking Spaces

The figures used in the previous scenarios reflect the entire downtown parking situation. Using the integrated scenario, the following chart identifies projected supply and demand for municipal parking spaces only.²⁹ Supply includes:

- the introduction of the Charles and Benton Parking Garage;
- the construction of underground parking in the Civic District and Centre Block;
- the potential construction of a 500 space parking garage in 2016; and,
- the removal of 200 surface parking spaces in 2017 for future development.

²⁹ Demand projections assume that municipal parking spaces will always constitute 28% of the total parking supply.

Chart 4.9 – Projected Municipal Parking Space Supply and Demand (Integrated Scenario)



If long-term demand exceeds supply, the following advantages and disadvantages will likely be experienced:

- Advantages:*
- parking revenues will consistently remain high;
 - parking rate increases shouldn't result in fewer monthly parking permits being issued;
 - easier to allocate revenues to service delivery enhancements;
 - downtown employees will be more likely to opt for alternative modes of transportation and more likely to consider living downtown;
 - easier to engage employees in TDM initiatives; and,
 - private sector will need to provide their own parking to meet office needs.

- Disadvantages:*
- difficult to justify redeveloping surface parking lots;
 - difficult to attract new office employment;
 - could result in the loss of existing businesses due to lack of supply or rising rates;
 - Downtown Kitchener would be perceived as difficult to find a parking space;
 - increased pressure to convert short-stay parking spaces to long-stay;
 - could result in the demolition of existing buildings to satisfy private sector parking needs; and,
 - could create pressure on surrounding neighbourhoods to supply parking (demolition of houses, use of church parking lots, etc.).

On the other hand, if long-term supply exceeds demand, the following advantages and disadvantages will likely be experienced:

- Advantages:*
- surface parking lots could be redeveloped for higher and better uses;
 - surplus spaces could accommodate new or growing businesses; and,
 - additional short-stay spaces could be allocated for retail use.

- Disadvantages:*
- uncertain parking revenues;
 - parking rate increases could result in fewer permits issued, thus a potential loss of revenue; and,
 - more difficult to engage employees in TDM measures.

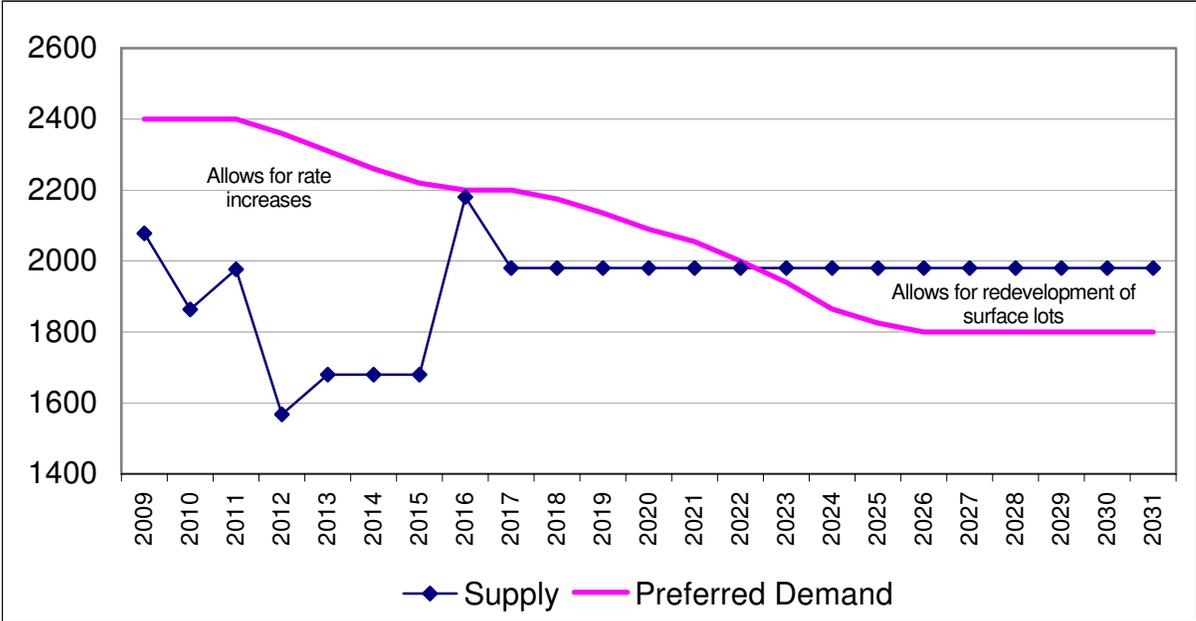
Preferred Long-term Demand Scenario for Municipal Parking Spaces

If the goal of the City of Kitchener was to simply operate a profitable parking enterprise, the preferred outcome would be simple – opt not to influence parking reduction factors to ensure demand always exceeds supply. However, the municipality must balance fiscal objectives with economic development, growth management, environmental and transportation objectives. As such, the preferred scenario is to influence parking reduction factors to achieve parking demand as follows:

- Operate with a deficit of parking spaces in the short term to ensure high occupancy of existing spaces. Doing so will allow for annual parking rate increases to more closely align monthly fees with true capital and operating costs. The intensification or attraction of new downtown employees will have to be accommodated by the private sector, through site specific developments, or through the use of alternative modes of transportation; and,
- In the medium to long-term, encourage a supply that exceeds demand. Doing so will allow for the redevelopment of select surface parking lots, or the long-term attraction and expansion of businesses.

Based on the Integrated Scenario, the demand for municipal parking spaces aligns closely with the preferred demand. However, this assumes the private sector will accommodate its share of downtown parking. If the private sector does not build its share, the actual demand for municipal spaces could be quite higher. Under this scenario, the City would likely fund itself under continuous pressure from businesses and building owners to provide parking. Requiring cash-in-lieu of parking to offset private sector parking shortfalls is an alternative to satisfying the supply.

Chart 4.10 – Preferred Municipal Parking Space Supply



Sensitivity Analysis

To assess the quality of the statistical model, a sensitivity analysis was conducted to determine the range of outcomes (10th percentile and 90th percentile) the best-fit outcome and the median outcome. Based on the variables used, there are 1024 possible total outcomes. When all outcomes are graphed, the model shows a narrow range of possibilities until 2014, after which the range of possibilities widen considerably. This is attributable to the uncertainty of rapid transit ridership in 2015 and beyond.

Hot Spot Analysis

This section will identify downtown areas which could be subject to significant employment intensification. In most cases, the potential growth is above and beyond the natural growth analyzed in the previous section:

Intensification of Existing Office Space

Popularity of cubicle work stations has lead to larger number of employees working within a given office floor plate. “Call-centre” type offices typically allocate an average of 200 square feet per employee (including all common areas, service areas, etc.). “Executive” type offices typically allocate an average of 300 square feet per employee (comparable to current City Hall allocations). An analysis of 31 existing downtown office buildings suggests that the following number of new, additional employees could be accommodated through intensification:

Table 4.11 – Intensification Potential of Existing Downtown Office Space³⁰

| | Potential Additional Employees | Potential New Parking Space Demand from Additional Employees ³¹ | Potential Parking Space Demand In Excess of Non-Municipal Capacity ³² |
|---------------------------------------|--------------------------------|--|--|
| @ 200 Square Feet Per Employee | 6,400 | 4,600 | 5,770 |
| @ 250 Square Feet Per Employee | 3,700 | 2,660 | 3,580 |
| @ 300 Square Feet Per Employee | 2,230 | 1,610 | 2,200 |

Of the seven buildings which possess the greatest potential impact on parking space demand, five are located within the City Centre District and two in the Market District. The zoning bylaw does not require land owners to provide new parking spaces for the intensification of existing office space.

Conversion of Space in the Warehouse District

There are at least five large industrial buildings in the Warehouse District, including the Tannery Breithaupt Block, that could be converted into office space. These five buildings alone could create over 950,000 square feet of employment space, generating the need for 2,280 to 3,430 parking spaces.³³ Under these situations, the zoning bylaw could be amended to require the provision of parking spaces prior to conversion, or a cash-in-lieu contribution.

Development of New Office Space on the Health Sciences Campus

It is expected that the long-term growth of the Health Sciences Campus will add additional education uses as well as spin-off office or laboratory space. The campus could potentially accommodate approximately 1 million square feet of new office space, generating the need for 1,370 to 2,400 parking spaces.³⁴ Under this situation, the zoning bylaw requires the provision of parking spaces as part of the development, or a cash-in-lieu contribution.

³⁰ Based on 31 existing downtown buildings. Floor area data courtesy of Municipal Property Assessment Corporation. Existing employment data courtesy 2007 Dunn Business Directory.

³¹ Based on 72% of new employees arriving as primary drivers.

³² Based on 72% of new employees arriving as primary drivers. This figured was calculated on a building-by-building basis, by combining the potential increase in parking space demand with the current deficit/surplus.

³³ Based on 72% of new employees arriving as primary drivers. The minimum estimate reflects 300 square feet per employee, while the maximum estimate reflects 200 square feet per employee.

³⁴ 1,370 spaces is based on current zoning bylaw requirements of 1 space per 69 square metres. 2,400 is based on 300 square feet per employee, with 72% of employees arriving as primary drivers of vehicles.

Parking Needs in the Civic District

The Civic District is a collection of cultural and administrative uses, with varying parking needs. The Centre in the Square, for example, requires close to 1,000 parking spaces to accommodate large performances. The following table identifies the projected parking needs in the Civic District:

Table 4.12 – Civic District Parking Projections³⁵

| | On Performance Days | Non Performance Days |
|----------------------------------|--------------------------------|---------------------------------|
| Projected Daytime Parking | 1485 | 545 |
| Projected Evening Parking | 1332 | 212 |
| Projected Weekend Parking | 1327 | 212 |

These numbers include the proposed expansion of the KPL main branch, but do not account for the reuse of the current Provincial and Regional courthouses. New buildings built on the existing surface parking lots could also add in excess of 300,000 square feet of employment space. A new parking structure currently under construction will add an additional 300 long-stay parking spaces.

Implications for Transportation Demand Management (TDM)

TDM is defined as a wide range of policies, programs, services, and products that affect whether, why, when, where, and how people travel. TDM programs and strategies are meant to encourage greater use of sustainable modes of transportation and trip decision making that reduces, combines, or shortens vehicle trips. This analysis has determined that transportation costs will have the greatest impact on modal choice. Rising parking rates cause people to consider alternative modes (such as transit), while rising fuel costs cause people to reduce the number of trips they take. Increased residential development within walking distance of Downtown Kitchener will also lead to a reduction in parking demand.

The City is currently developing a TDM Plan for Kitchener. The elements of a TDM strategy that would most likely affect the travel habits of downtown employees, and thus reduce parking demands, would be:

1. To increase parking rates annually at levels that cause employers and employees to consider reducing single occupancy vehicle trips;
2. In response to rising transportation costs, to develop carpooling programs, to improve cycling lanes/facilities, and to develop payment methods (ex: pay-as-you-park) that enable fewer single occupant vehicle trips;
3. In collaboration with Economic Development, to focus initiatives on new businesses and new employees who have not yet established commuting habits;
4. To continue to encourage residential development in Downtown Kitchener and the Central Neighbourhoods;
5. To work with Grand River Transit to enhance the quality of service for downtown transit riders;
6. To work with the Region of Waterloo to coordinate enhancements to Kitchener's cycling network on regional and local roads;
7. To work with Cambridge and Waterloo to encourage consistent parking rates in all core areas; and,
8. To work with the Region of Waterloo and the Province to introduce inter-city train service (ex: Go Transit).

Zoning Bylaw Parking Analysis

The primary tool for requiring private sector provision of parking is the City's zoning bylaw. Requirements are generally calculated based on fixed physical elements, such as square footage. In some instances, parking requirements are

³⁵ Includes projections provided by Centre in the Square, Kitchener Public Library, KW Art Gallery, Regional Municipality of Waterloo and the Registry Theatre.

based on the number of employees of a given shift, although this application is rarely used. Parking requirements need to be satisfied before a new user can occupy a building or site.

As the bylaw currently reads, the intensification of an existing use (ex: an office user adding 20 new employees to their current work space) does not require the provision of additional parking spaces. Likewise, parking spaces are not required when converting existing space to a new use (ex: a former factory being converted to office space). In these instances, parking is often insufficient to accommodate all users, and the municipality is pressured to accommodate the shortfall.

When a new building is constructed a parking requirement is imposed. Parking can either be provided on site, on a property within 300 metres, or through a cash-in-lieu contribution to the municipality, to be used towards the development of a future parking facility. Table 4.13 illustrates the number of spaces required for a new office building compared to those observed through place of work census data:

Table 4.13 – Zoning Bylaw Compared to Actual Model Split

| | Current Requirement³⁶ | Actual Based on 2006 Model Split³⁷ |
|--|---|--|
| At 200 Square Feet per Employee | 1 space for every 3.7 employees | 1 space for every 1.4 employees |
| At 250 Square Feet per Employee | 1 space for every 3.0 employees | 1 space for every 1.4 employees |
| At 300 Square Feet per Employee | 1 space for every 2.5 employees | 1 space for every 1.4 employees |

The municipality could transfer the responsibility for providing parking for future growth, in part, through the following changes to the zoning bylaw:

- 1) Eliminate the current exemption applied to existing floor space, whereby any conversion of space would have to provide a prescribed number of parking spaces;
- 2) In combination with #1, calculate parking space requirements for office uses based on the number of employees, rather than square footage. This option, however, is difficult, if not impossible, to establish, track regulate and enforce; and/or
- 3) In combination with #1, modify the parking requirements for office users to more accurately reflect downtown’s modal split.

Downtown Competitiveness Analysis

Raising parking rates is a means of reducing parking demand while funding the true costs of new parking space construction. However, increased parking rates also affect Downtown Kitchener’s competitive advantage of having low office lease rates. An analysis was undertaken to determine the year in which downtown office lease rates, for buildings where tenants must lease parking spaces from the City, lose their competitive advantage in the K-W marketplace.

Two downtown buildings, with current lease rates of \$17.50 and \$19.50 per square foot, were compared to seven other current office lease rates where parking is included in the lease rate. Rates ranged from \$24.25 to \$28.41 per square foot.

Using 250 square feet per employee, and barring any major lease rate fluctuations, Downtown Office A (\$17.50) remains generally competitive until 2025 when coupled with surface parking rates, and until 2021 when coupled with

³⁶ Current zoning requirement is 1 parking space for every 69 square metres (or 743 square feet).

³⁷ Based on 2006 Place of Work Census Data for Census Tract 0017.

underground parking. Downtown Office B (\$19.50) remains generally competitive until 2019 when coupled with surface parking rates, and until 2015 when coupled with underground parking.

Table 4.14A – Year of Median Competitiveness Loss for a Downtown Office Charging \$17.50 per square foot³⁸

| Compared to (2008 rate): | 250 sf/e with SP | 250 sf/e with UP |
|---|-----------------------------|-----------------------------|
| Downtown Kitchener #1 with Parking (\$24.25) | 2018 | 2014 |
| Downtown Kitchener #2 with Parking (\$26.65) | 2026 | 2022 |
| Kitchener Suburban Office (\$26.50) | 2025 | 2021 |
| Kitchener Central Neighbourhoods Office (\$25.45) | 2022 | 2018 |
| Kitchener Business Park Office (\$24.95) | 2020 | 2017 |
| Uptown Waterloo New Office with Parking (\$28.41) | 2030 | 2026 |
| Uptown Waterloo Office with Parking (\$27.58) | 2028 | 2024 |

- 250 sf/e with SP = 250 square feet per employee with surface parking
- 250 sf/e with UP = 250 square feet per employee with underground or structured parking
- The years noted in this table represent the year in which the combined lease and parking rates for Downtown Office A exceed the corresponding lease rate.

Table 4.14B – Year of Median Competitiveness Loss for a Downtown Office Charging \$19.50 per square foot³⁹

| Compared to (2008 rate): | 250 sf/e with SP | 250 sf/e with UP |
|---|-----------------------------|-----------------------------|
| Downtown Kitchener #1 with Parking (\$24.25) | 2011 | 2011 |
| Downtown Kitchener #2 with Parking (\$26.65) | 2019 | 2016 |
| Kitchener Suburban Office (\$26.50) | 2019 | 2015 |
| Kitchener Central Neighbourhoods Office (\$25.45) | 2014 | 2013 |
| Kitchener Business Park Office (\$24.95) | 2013 | 2011 |
| Uptown Waterloo New Office with Parking (\$28.41) | 2025 | 2021 |
| Uptown Waterloo Office with Parking (\$27.58) | 2022 | 2019 |

- 250 sf/e with SP = 250 square feet per employee with surface parking
- 250 sf/e with UP = 250 square feet per employee with underground or structured parking
- The years noted in this table represent the year in which the combined lease and parking rates for Downtown Office A exceed the corresponding lease rate.

³⁸ Based on 2% annual increase to all lease rates, 10% annual increase for 2011-2014 and 6% annual increase afterwards on municipal parking rates.

³⁹ Based on 2% annual increase to all lease rates, 10% annual increase for 2011-2014 and 6% annual increase afterwards on municipal parking rates.

Short-Stay Parking Demand

Short-stay parking is provided in two manners: free on-street parking spaces and spaces within lots and structures. Occupancy levels are monitored every two years to ensure an appropriate supply of spaces and turnover rate are achieved.

On-Street Parking Spaces

The City currently operates approximately 365 on-street parking spaces. Their primary function is to service downtown retail, services and restaurant patrons. The average optimum occupancy level of these spaces is 85%. This ensures available spaces for incoming shoppers while suggesting an active commercial environment.

A 2005 study (by MMM Group) identified that the majority of prime on-street parking spaces (on or within close proximity to King Street) are at occupancy levels of 90-100%. Spaces a block or more away from King Street are typically occupied at less than 75%.

A 2007 study (by the City of Kitchener) found average occupancy rates of 63%, but average peak occupancy rates of 95%. This suggests that at peak times of the day, on-street spaces are heavily used. However, throughout the course of the day, spaces are readily available. The highest average occupancy rates (above 80%) were along King Street, across from the GRT Terminal, and on Duke Street (Frederick to Ontario). Vehicles turned over 5.7 times per day, with an average stay of 71 minutes.

A similar, abbreviated analysis was conducted in April of 2009 with results mirroring those found in 2007. The areas which saw average daily usage greater than 80% were near high volume, high turnover: destinations, such as:

- Around City Hall
- Around the RBC Towers
- Across from the GRT Terminal
- Around New City Supermarket

It should be noted that the parking spaces along King Street (between Gaukel and Queen) were under construction. High demands would have been expected given the presence of TD Canada Trust, Scotia Bank, BMO and CIBC.

All three studies suggest the same patterns of usage: optimum occupancy levels on King Street and near high volume destinations; with an ample supply of spaces available as you move away from these key locations. On-street parking spaces are always available, assuming downtown patrons are willing to park a few blocks from their intended destination.

However, the proposed rapid transit line could eliminate as many as 90 of the 365 on-street spaces. This will certainly create higher parking usage of all spaces across downtown. To address this potential loss, the City will continue to add on-street spaces, where possible and appropriate, as part of any future streetscape project.

In terms of parking rates, the City of Guelph recently removed parking metres from its prime on-street parking spaces. The City of Cambridge, on the other hand, has just adopted a strategy that would see a charge for prime on-street parking spaces. Spaces further from main commercial streets would be charged a reduced rate or remain free. Such a strategy is intended to ensure turnover and space availability for retail patrons. While it may be necessary to institute a parking rate for on-street spaces in Downtown Kitchener, in proximity to key destinations, the current retail climate in Downtown Kitchener would suggest this is not the appropriate time to explore such an option. However, the City will continue to monitor occupancy levels every two years to determine if any changes need to be made.

Short-Stay Spaces in Parking Lots & Structures

To support short-stay users of office buildings, restaurants, shops and other services (such as banks, City Hall, etc.) the City tries to ensure a suitable supply of short-term spaces within surface lots and structures. These spaces are monitored every two years to evaluate occupancy levels.

In 2007, the average peak occupancy of all short-stay spaces was at its lowest. However, at the same time, average occupancies and turnover rates stayed consistent, while the duration of stays increased. This could suggest that short-

stay parking spaces are being used more consistently throughout the day, rather than being focused during peak times of the day.

Table 4.15 – Off Street Short-Stay Parking Usage

| | 2001 | 2003 | 2005 | 2007 | 2009 |
|----------------------------------|------|------|------|------|------|
| Peak Occupancy | 93% | 81% | 81% | 77% | 81% |
| Average Occupancy | 63% | 53% | 55% | 54% | 58% |
| Turnover (vehicles/space/day) | 2.8 | 3.4 | 3.1 | 2.8 | 2.5 |
| Duration (minutes/vehicle) | 125 | 103 | 114 | 140 | 196 |

Like on-street parking spaces, the optimal average and peak parking occupancy is 85%. These studies suggest that, currently, there is a sufficient supply of short-stay spaces. Where surplus spaces exist, the City will continue to make these available for monthly parking.

All off-street parking is subject to fees during normal business hours. These spaces provide the greatest revenue stream, and as such, take priority over monthly spaces. The City will continue to evaluate parking rates to ensure pricing is competitive and appropriate, balancing revenue generation with turnover and availability rates. New technologies, such as pay by phone, will be considered in the future.

Given the provincial, regional and local growth management strategies, all surface lost should be considered potential redevelopment sites. These sites will be evaluated from time to time to determine if a higher and better use could be developed, without detrimentally affecting the downtown parking supply and revenue stream.

Long-Term Financial Analysis

A detailed, long-term financial analysis is provided as part of the 'Parking Organization Review Business Case'. Based on projected revenues, the City has committed to constructing the Charles-Benton garage in 2011, the Civic District garage in 2012 and potentially the completion of the City Centre garage in 2013. There is sufficient financial capacity (in the associated business case) to support the construction of the Charles and Water garage in 2015, provided that the appropriate partnerships can be developed. The City would also have the capacity to lose an average of 10 surface parking spaces per year for land redevelopment.

Sampling of Parking Rates Across Canada

A 2010 report from Colliers International compiled parking rates for all major cities in North America. Kitchener's parking rates are generally lower than any of the cities studied, and far lower than the national average:

Table 4.16 – 2009 Parking Rate Survey

| | Median Monthly Unreserved Rate | Median Daily Parking Rate |
|-------------------------|-----------------------------------|------------------------------|
| Calgary | \$452.38 | \$22.00 |
| Toronto | \$336.25 | \$23.00 |
| Montreal | \$280.62 | \$17.00 |
| Edmonton | \$275.00 | \$14.00 |
| Vancouver | \$266.81 | \$18.50 |
| National Average | \$225.77 | \$14.83 |
| Ottawa | \$200.00 | \$18.00 |
| Victoria | \$180.00 | \$11.00 |
| Saskatoon | \$167.00 | \$9.50 |
| Regina | \$162.25 | \$10.00 |
| Halifax | \$158.20 | \$16.00 |
| Winnipeg | \$152.25 | \$9.00 |
| Kitchener-Waterloo | \$116.94 | \$10.00 |

Cost of Construction Over Time

The cost to construct new structured parking increases annually. The Charles-Benton above ground garage cost approximately \$32,000 per space, while the Civic District underground garage is expected to cost \$58,000 per space. When amortized over 20 years, the total cost of building a garage at \$35,000 per space actually costs ~\$58,000 per space. This equates to a monthly cost of ~\$250 per space. Assuming an annual inflationary increase of 3%, the cost to finance new structured parking in the future is estimated as follows:

Table 4.17 – Projected Capital Costs of Constructing New Structured Parking Spaces

| | 2009 | 2016 | 2026 | 2031 |
|---|----------|----------|----------|-----------|
| Monthly Cost per Space | \$250 | \$310 | \$410 | \$478 |
| Total Cost per Space (amortized over 20 years) | \$58,140 | \$71,510 | \$96,100 | \$111,410 |

If Kitchener's parking rates increase annually at 10% annually from 2011-2014 and 6% every year thereafter, the monthly capital cost of building a new structured parking space would not equal the monthly parking rate until 2031.

Effects of an Accelerated Parking Rate Increase

If the municipality were to rapidly increase parking rates by 25% per year until 2013 (ie: aligning the monthly parking rate with the monthly capital cost for constructing a space within a four year span), parking space demand would decrease by approximately 1,030 spaces (or roughly half the current supply). Given that 45% of the current downtown employment base earn salaries that are highly sensitive to rate increases, such a loss of demand would be very likely. Accelerated rate increases could result in significant pressure on surrounding neighbourhoods to provide commercial parking lots, political backlash and a potential loss of downtown businesses.

Based on the policy scan, current situation and long-term parking analysis, the following list of conclusions can be drawn:

- Urban intensification should result in natural downtown employment growth of at least 4,700 new people by 2031. By today's standards, this alone would create an increased demand for ~2,900 additional long-stay parking spaces;
- Demand for long-stay parking spaces will increase as existing office space is intensified and former industrial/commercial buildings are converted to office. With no zoning recourse, the municipality could face increased pressure to satisfy parking demands should transportation costs remain low. Proper zoning standards should shift much of the responsibility for providing parking to the private sector;
- Various factors will help reduce parking space demand – the price of gas and the price of parking will likely play the most significant role. The price of parking is the most influential factor the City of Kitchener has control over. Significant demand reductions as a result of the convenience of rapid transit is not expected. However, rapid transit will provide downtown employees with a more affordable form of transportation during times of rising gas and parking prices.
- Increasing parking rates will not affect the short-term competitiveness of downtown office lease rates;
- Transportation demand management can play a key role in supporting a downtown employee's shift to alternative modes of transportation. An effective TDM strategy can facilitate parking surpluses which can be used to attract new downtown employment; and,
- If successful, reduced parking demand over time could create opportunities to reurbanize existing city parking lots.

Based on the policy scan, current situation, long-term parking analysis and conclusions, the following action items are recommended:

Specific Long-Term Parking Recommendations:

1. Continue with annual monthly parking rate increases in excess of inflation to i) reduce demand and support TDM measures; ii) to more closely align parking rates with the true costs of structured parking; and iii) establish a user-pay funding model that is more in line with total cost recovery to support future capital expenditures.
2. Monitor long-stay parking supply and demand on a bi-annual basis. Establish policies that encourage a parking inventory where demand should always exceed supply.
3. Anticipate increased intensification of existing office space within the City Centre District by exploring public-private partnership opportunities for a future municipal parking structure on Lot 3 (Charles Street and Water Street).
4. Anticipate the conversion of industrial space to office space in the Warehouse District by review parking requirements of the zoning bylaw to capture increased parking demand resulting from higher intensity uses.
5. Through the Redevelopment Strategy for City-Owned Downtown Lands, assess redevelopment opportunities for surface parking lots and assess all implications (such as revenue, parking supply, parking demand, etc.).
6. Review the parking requirements of the zoning bylaw to more accurately reflect the current modal split.

General Recommendations:

7. As part of the TDM strategy, focus on measures that encourage downtown employees, when faced with rising transportation costs, to use alternative modes of transportation.
8. Link TDM efforts with economic development efforts to encourage new businesses to consider alternative modes of transportation for their employees.
9. In conjunction with Planning staff, and through the implementation of both the Redevelopment Strategy for City-Owned Downtown Lands and the Kitchener Growth Management Strategy, explore opportunities for increasing residential development in and around Downtown.
10. Update this long-term parking strategy every five years.

Goals of the Long-Term Parking Strategy

Based on the analysis, conclusions and recommendations, the City's long-term parking goals, intended to help guide municipal decision making, policy development and financial expenditures, are as follows:

Supply

1. To continue in the parking business to help the City achieve and balance its economic development, growth management and transportation objectives;
2. To have a downtown parking inventory (public and private) sufficient to accommodate business demand;
3. To have all new major developments provide on-site parking in structures. Consideration will be given to cash-in-lieu for parking in publicly owned structures;
4. To introduce additional short-stay parking spaces within structures and lots, as demand allows, to service commercial businesses;
5. To have long-term parking spaces provided in structures, short-stay users in structures and surface lots, utilizing available on-street spaces for retail and restaurant patrons;

Operations

6. To operate parking as an enterprise providing an annual dividend to the City;
7. To maximize the use of City parking resources;
8. To account for parking subsidies within the City's budgets;
9. To offer parking structures which are well maintained, safe and accessible;
10. To provide customers with the most current and automated payment methods available;
11. To explore opportunities for providing 'parking availability' services (such as directional supply signage, GPS-based services, etc.);

Design of New Structures

12. To build *multi-use* parking facilities, which integrate commercial, office and/or residential uses;
13. To build only high quality, well-designed exterior facades, which meet the intent of the City's downtown design policies and contribute aesthetically to the urban streetscape;

Environment

14. To support Transportation Demand Management initiatives as a means of stabilizing or decreasing parking demands;
15. To provide facilities that accommodate for changing transportation modes and vehicle types;
16. To operate a downtown parking operation in a manner that supports the Regional Transportation Master Plan;

Redevelopment

17. To redevelop surface parking lots with viable reurbanization projects as demand allows; and,
18. To develop a methodology to adjust the annual dividend paid by the Parking operation to the City when a surface lot is removed from the parking inventory for redevelopment.

Table 4.1A – Projected Total Downtown Employment Population⁴⁰

| | 2008 | 2016 | 2026 | 2031 |
|-------------------|-------|-------|-------|-------|
| 1.00% | 12214 | 13226 | 14610 | 15355 |
| Varying ~1.07% | 12214 | 13557 | 15896 | 16925 |
| 2.00% | 12214 | 14310 | 17445 | 19260 |
| 3.00% | 12214 | 15472 | 20794 | 24105 |

Table 4.1B - Projected Downtown Employment Growth

| | 2008 | 2016 | 2026 | 2031 |
|-------------------|------|-------|-------|--------|
| 1.00% | - | +1012 | +2396 | +3141 |
| Varying ~1.07% | - | +1343 | +3682 | +4711 |
| 2.00% | - | +2096 | +5231 | +7046 |
| 3.00% | - | +3258 | +8580 | +11891 |

Table 4.1C – Resultant Increase in Demand for Long Stay Parking Spaces⁴¹

| | 2008 | 2016 | 2026 | 2031 |
|-------------------|------|-------|-------|-------|
| 1.00% | - | +627 | +1484 | +1945 |
| Varying ~1.07% | - | +832 | +2280 | +2917 |
| 2.00% | - | +1299 | +3239 | +4363 |
| 3.00% | - | +2017 | +4942 | +7363 |

Table 4.1D – Total Projected Gross Demand for Long Stay Parking Spaces⁴²

| | 2008 | 2016 | 2026 | 2031 |
|-------------------|------|--------|--------|--------|
| 1.00% | - | +927 | +1,784 | +2,245 |
| Varying ~1.07% | - | +1,132 | +2,580 | +3,217 |
| 2.00% | - | +1,599 | +3,539 | +4,663 |
| 3.00% | - | +2,317 | +5,242 | +7,663 |

⁴⁰ Based on Region of Waterloo growth projections, where rates vary year to year averaging ~1.07%.

⁴¹ Figures do not account for exact current parking space deficiencies.

⁴² For the purposes of this analysis, an assumption has been made that there is a current shortfall of 300 parking spaces.

Table 4.3 – Reduced Parking Space Demand Based on Estimated Increased Gas Prices⁴³

| | 2016 | 2026 | 2031 |
|--|-----------|-----------|-----------|
| Projected Low Gas Price per Litre | \$ 1.0009 | \$ 1.2504 | \$ 1.3751 |
| Projected Average Gas Price per Litre | \$ 1.1512 | \$ 1.4477 | \$ 1.5960 |
| Projected High Gas Price per Litre | \$ 1.3744 | \$ 1.7755 | \$ 1.9760 |
| Parking Space Demand Reduction (Low) | -2 | -739 | -1,179 |
| Parking Space Demand Reduction (Average) | -381 | -1,322 | -1,874 |
| Parking Space Demand Reduction (High) | -943 | -2,290 | -3,069 |

Table 4.5A – Reduced *Municipal* Parking Space Demand Based on Estimated Increased Parking Prices

| | 2008 | 2016 | 2026 | 2031 |
|--|----------|-----------|-----------|-----------|
| Surface Lot Price @ 10%/6% Annual Increases | \$96.20 | \$ 177.82 | \$ 318.44 | \$ 426.14 |
| Structured Parking Price @ 10%/6% Annual Increase | \$111.01 | \$ 205.19 | \$ 367.46 | \$ 491.75 |
| Projected Municipal Parking Space Demand Based on Variable 1% Employment Growth and 2% Annual Inflationary Parking Rate Increase | 2510 | 2786 | 3267 | 3478 |
| Resultant Parking Space Demand Based on 10%/6% Annual Parking Rate Increase ⁴⁴ | | 2186 | 2059 | 1965 |
| Total Municipal Parking Space Reduction Factor | | -600 | -1207 | -1513 |

Note: 10%/6% = 10% increase between 2011-2014 with 6% increase every other year.

Table 4.5B – Reduced *Downtown* Parking Space Demand Based on Estimated Increased Parking Prices

| | 2008 | 2016 | 2026 | 2031 |
|--|------|-------|-------|-------|
| Projected Downtown Parking Space Demand Based on Variable 1% Employment Growth and 2% Annual Inflationary Increase | 7560 | 8395 | 9843 | 10480 |
| Resultant Parking Space Demand Based on 10%/6% Annual Increase | | 6584 | 6203 | 5920 |
| Total Downtown Parking Space Reduction Factor | | -1811 | -3640 | -4560 |

Note: 10%/6% = 10% increase between 2011-2014 with 6% increase every other year.

Table 4.7 – Minimum and Maximum Projected New LRT Riders Based on Estimated New RT Riders due to Non-Cost-Based Reasons (ex: Convenience)

| | 2015 | 2016 | 2026 | 2031 |
|--|----------------|----------------|----------------|----------------|
| Minimum Projected Net New RT Riders (total projected riders including natural growth) ⁴⁵ | 0 (345) | 0 (357) | 89 (334) | 160 (399) |
| Medium Projected Net New RT Riders based on Variable 1% Growth (total projected riders including natural growth) ⁴⁶ | 2625 (2970) | 2719 (3076) | 3188 (3607) | 3395 (3841) |
| Maximum Projected Net New RT Riders based on 3.58% Growth (total projected riders including natural growth) ⁴⁷ | 2625 (2970) | 2719 (3076) | 3954 (4373) | 4768 (5214) |

⁴³ Assumes that for every 10% increase above \$1/litre, parking demands will decrease by 3%.

⁴⁴ Assumes inflation will not impact demand. For example, 6% increase translates into a 4% increase over and above inflation (2%).

⁴⁵ Assumes all transit riders in 2015 will switch from bus ridership to rapid transit ridership, and growth will occur at 3.58% per year.

⁴⁶ Assumes all employees within walking distance of rapid transit lines will become rapid transit riders, and growth will occur in proportion to natural downtown employment growth.

⁴⁷ Assumes all employees within walking distance of rapid transit lines will become rapid transit riders, and growth will occur at 3.58% per year.

Table 4.8A – Anticipated Scenario

| | Selected Rate | # of Parking Spaces |
|---|----------------------|----------------------------|
| Employment Growth Rate | 1.07% | |
| Forecasted Employment in 2031 (growth) | 16,925 (+4,711) | |
| Gross Forecasted Additional Parking Needs in 2031 | | + 3,220 |
| Annual Residential Growth Rate | 75 units per year | |
| Residential Reduction Factor | | -472 |
| Annual Gas Price Increase | Average | |
| Price of Gas Reduction Factor | | -1,874 |
| Annual Parking Rate Increase | 10% from 2011-14 | |
| Price of Parking Reduction Factor | 6% all other years | -1,513 |
| Annual Transit Ridership Growth | Minimum | |
| Rapid Transit Ridership Growth Reduction Factor | | -160 |
| Low Estimated Demand Change (in parking spaces) | | -798 |
| High Estimated Demand Change (in parking spaces) | | +1,075 |

Table 4.8B – Conservative Scenario

| | Selected Rate | # of Parking Spaces |
|---|----------------------|----------------------------|
| Employment Growth Rate | 1.07% | |
| Forecasted Employment in 2031 (growth) | 16,925 (+4,711) | |
| Gross Forecasted Additional Parking Needs in 2031 | | + 3,220 |
| Annual Residential Growth Rate | 25 units per year | |
| Residential Reduction Factor | | -157 |
| Annual Gas Price Increase | Low | |
| Price of Gas Reduction Factor | | -1,179 |
| Annual Parking Rate Increase | 2% | |
| Price of Parking Reduction Factor | | 0 |
| Annual Transit Ridership Growth | Minimum | |
| Rapid Transit Ridership Growth Reduction Factor | | -160 |
| Low Estimated Demand Change (in parking spaces) | | +1,724 |
| High Estimated Demand Change (in parking spaces) | | +2,903 |

Table 4.8C – Aggressive Scenario

| | Selected Rate | # of Parking Spaces |
|---|----------------------|----------------------------|
| Employment Growth Rate | 1.07% | |
| Forecasted Employment in 2031 (growth) | 16,925 (+4,711) | |
| Gross Forecasted Additional Parking Needs in 2031 | | + 3,220 |
| Annual Residential Growth Rate | 100 units per year | |
| Residential Reduction Factor | | -630 |
| Annual Gas Price Increase | High | |
| Price of Gas Reduction Factor | | -3,069 |
| Annual Parking Rate Increase | 10% from 2011-14 | |
| Price of Parking Reduction Factor | 6% all other years | -1,170 |
| Annual Transit Ridership Growth | Maximum | |
| Rapid Transit Ridership Growth Reduction Factor | | -4,187 |
| Low Estimated Demand Change (in parking spaces) | | -6,759 |
| High Estimated Demand Change (in parking spaces) | | -3,690 |

Table 4.8D – Integrated Scenario

| | Selected Rate | # of Parking Spaces |
|---|----------------------|----------------------------|
| Employment Growth Rate | 1.07% | |
| Forecasted Employment in 2031 (growth) | 16,925 (+4,711) | |
| Gross Forecasted Additional Parking Needs in 2031 | | + 3,220 |
| Residential Reduction Factor | | -472 |
| Parking Rate Reduction Factor | 6.0% | -1,513 |
| Gas Price Reduction Factor | | -2,054 |
| Rapid Transit Ridership Growth Reduction Factor | | -458 |
| Low Estimated Demand Change (in parking spaces) | | -1,277 |
| High Estimated Demand Change (in parking spaces) | | +777 |

Table 4.8D(2) – Rates of Change Used to Develop Integrated Scenario

| Year(s) | Business Cycle | Residential Rate | Gas Rate | Parking Rate | Transit Rate |
|----------------|-----------------------|-------------------------|-----------------|---------------------|---------------------|
| 2009-2010 | Contraction | 25 units per year | Zero | 6% | Zero |
| 2011-2013 | Expansion | 75 units per year | Low | 10% | Zero |
| 2014-2015 | Expansion | 75 units per year | Low | 6% | Zero |
| 2016 | Expansion | 75 units per year | Low | 6% | Minimum |
| 2017 | Contraction | 25 units per year | Zero | 6% | Minimum |
| 2018-2024 | Expansion | 75 units per year | Average | 6% | Minimum |
| 2025 | Contraction | 25 units per year | Zero | 6% | Minimum |
| 2026-2031 | Expansion | 100 units per year | High | 6% | Medium |