

Parking Management in Canada

Overview

Parking management refers to programs and policies aimed at achieving a more efficient use of parking resources. While conventional parking management in Canada has largely focused on increasing the supply of parking facilities, newer approaches are targeting parking demand to reduce the number of parking spaces required, encourage the use of more sustainable transportation options, and reduce the costs associated with automobile dependency.

Often working together, governments and businesses across Canada are implementing parking management programs aimed at reducing the need for increased parking facilities and optimizing the use of existing ones. By taking an integrated approach to planning parking, institutions can reduce costs to consumers, decrease demands on developers, mitigate environmental impacts associated with automobile use, and in the end, create more livable communities. The following issue paper summarizes the challenges and successes of parking management in Canada, looking at key examples from government and the private sector from across North America.

Selected Resources

There are numerous resource sites in both Canada and the U.S. that provide information on parking management.

The Victoria Transport Policy Institute's report, *Parking Management: Strategies Evaluation and Planning*, is an excellent resource available at www.vtpi.org/park_man.pdf.

Information on parking planning in Calgary can be found on the Calgary Parking Authority's website at www.calgaryparking.com.

The University of British Columbia's TREK program can be found at www.trek.ubc.ca.

References are found at the end of this issue paper.

Context

Parking resources are strained in communities across Canada, resulting from growing populations, increased development, and greater vehicle use. With the average vehicle being parked for 23 hours

per day, there is a growing need to ensure that parking shortages do not increase traffic, hinder business activity, and reduce the livability of a community. However, simply increasing the supply of parking facilities is not always the answer, as this can often increase the strain on local transportation systems. Increasing parking supply alone, in many cases, can lead to greater automobile dependency, promote the dispersal of new residential and commercial developments, and undermine more sustainable travel alternatives. These impacts also have a tendency to perpetuate the perceived need for more facilities which, in turn, perpetuates the cycle of expansion.

With a legacy now extending back several decades, the supply-centred approach to parking has been the standard in communities across Canada, particularly those with proportionally larger land bases. But in recent years, as a result of growing congestion and parking shortages, a newer approach to planning has emerged that seeks to manage existing facilities with greater efficiency, reduce overall parking demand, and integrate parking facilities into broader multi-modal transportation programs. This approach to "parking management" has shown to lessen the need for increased parking supply while reducing the cost burden on taxpayers, businesses, the land base, and the environment.

This demand-side approach to parking management is fast gaining the attention of governments, businesses and communities who are seeking to create more livable communities by providing a broader range of affordable, efficient, and healthy transportation options.

Policy context

Parking management represents a fundamental change in how parking shortages are addressed by planners and decision-makers. It is relatively new in that it represents an integrated approach to parking planning, linking parking facilities to broader transportation initiatives including Transportation Demand Management programs. Parking management can be found in numerous municipal transportation plans and policies, as well as in the efforts of private sector businesses, universities, and land developers.

For example, in 2006 the City of Calgary established an integrated parking strategy as part of its 2006 Land Use Bylaw Review activities. Working with stakeholders from the private sector, community groups and municipal departments, the City compiled a plan that seeks to:

- Promote use of Transportation Demand Management;
- Encourage efficient use of land;
- Encourage transit supportive uses/mixed uses;
- Encourage housing intensification;
- Encourage alternate modes of transport; and,
- Provide adequate parking.

In addition, the Calgary Parking Authority adopted a specific parking strategy for its downtown core aimed at reducing parking demand and surface lot development. Calgary's Downtown Parking Strategy key policies include:

- Using parking supply and demand as a specific transportation demand management tool.
- Managing the supply of long-stay parking in the downtown core to match a modal split objective of 50% percent by 2024.
- Reducing gradually the supply of long-stay parking per employee by absorbing peripheral surface lots for development.
- Preventing any further surface lot developments in Downtown.

Some initiatives that resulted from the Calgary's new strategic parking management approach include:

- Reducing on street parking during peak traffic hours

- Increasing on-street metered parking rates in the downtown core, particularly on weekdays.
- Establishing reserved parking permits for daily users of peripheral C-Train location
- Providing rechargeable SmartPay parking cards to reduce the consumer's need for change, hence, saving time.
- Establishing shorter parking maximums to increase parking turnover and maximize short-term parking to accommodate business customers.

Parking management policy can take many forms and often seeks to target multiple, complex objectives. According to the Victoria Transportation Policy Institute in B.C., there are a number of key principles to consider for guiding planning and decision-making for parking services, some of which are examined below.

- **User information.** Motorists should be provided up-to-date information on parking availability and alternatives, reducing congestion in facilities as people search for spaces
- **Sharing.** Parking facilities should serve multiple users and destinations. Operations with contrasting operating hours can share facilities and save costs (e.g. office buildings and night clubs).
- **Efficient utilization.** Parking facilities should be sized and managed so spaces are frequently occupied.
- **Flexibility.** Parking plans should accommodate uncertainty and change. Adaptive management approaches can reduce reactivity and negative impacts.
- **Prioritization.** The most desirable spaces should be managed to favour higher-priority uses (e.g. emergency, transit, bicycles, etc).
- **Pricing.** As much as possible users should pay directly for the parking facilities they use. Increasing parking costs can oftentimes reduce usage.
- **Peak Management.** Special efforts should be made to deal with peak demand such as time restrictions, increased rates, or closures that promote traffic flows.

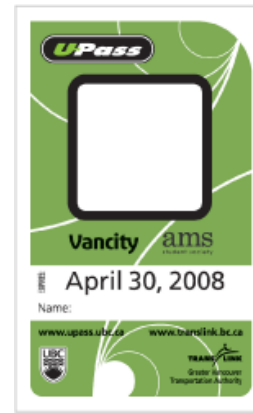
Rationale and objectives

Parking management programs are intended to prevent the proliferation of cost- and land-intensive surface parking facilities, while encouraging a modal shift from single occupant vehicles to a variety of transit-oriented alternatives, when available. The following examples provide a series of parking management objectives and approaches to achieving them utilized by institutions across Canada.

University of British Columbia

As an urban commuter campus, the University of British Columbia has experienced a steady increase in parking demand while surface lot supplies have steadily decreased due to residential and commercial development in and around the campus. Rather than accepting the burden of cost for developing expensive new facilities, UBC has implemented a parking management program aimed at reducing single occupancy vehicle use by 20% while subsequently increasing transit use by 20%. This has resulted in substantial **facility cost savings** by preventing the need for new and expensive parking facilities. It has also helped to **reduce land consumption** for parking purposes.

As a result of UBC's various management approaches (e.g. universal transit passes, dedicated truck routes and drop-off locations; an integrated transportation demand management strategy), commuter parking supply has now been decreased to under 1,000 stalls. As a result, UBC has experienced **decreased traffic congestion**, air quality has improved with a **reduction of greenhouse gas emissions**, and access to facilities is more efficient in locations across the campus. Moving ahead, the University has since targeted a further 20% reduction in single occupancy vehicle (SOV) trips.



*U-Pass Card,
University of British Columbia*

Quebec City

In Quebec City, a number of parking management approaches have sought **to improve quality of service** to consumers through the provision of better information, increased transit options, and **increased mobility management** alternatives.

In the early 1990s Quebec City determined to find a solution for increased summer parking demand within the walls of the Old City. As a response, electronic signs were designed and assigned locations to provide **parking availability information** to drivers entering the Old City. This program was to be **integrated with transit services** (a shuttle bus) that would bring people who were forced to park outside the walls into the core of the Old City.

Unfortunately, the program was never implemented to the full extent. Although some signs were installed, full coordination with shuttle services was never established, a result of budgetary constraints and a lack of integrated transportation demand management planning. Nevertheless, during major events that take place in the Old City, **increased transit services** to the Old City are often made available.



Electronic Parking Availability Sign

eBay

eBay's Corporation's Customer Support Centre in Burnaby, BC has a shortage of parking facilities in the office park in which it operates. Working with the Greater Vancouver Transportation Authority (TransLink), eBay established a parking management program that has sought to **boost transit use** while **decreasing car commutes** among employees. Components of eBay's TDM program include:

- A Commuting Committee of employee stakeholders and a part-time Commuter Coordinator staff position.
- Membership in TransLink's Employer Pass Program to provide transit pass discounts to employees
- Increased fees for onsite parking.
- Parking subsidies for rideshares/carpools.
- Cost-sharing partnership with neighbours to provide transportation to and from a nearby transit stop.
- Umbrella loan program for employees who use transit or walk to work.

As a result of eBay's approaches to parking demand management, single occupancy automobile commuters have reduced by almost 5% while increasing employee transit use by almost 10% in the first year alone. In addition, eBay **generates revenues** from increasing parking facility usage rates to fund programs for users of public transit and other non-automobile modes of transportation.

Calgary Parking Authority

The Calgary Parking Authority (CPA) has also begun to generate revenues through parking

management strategies. By establishing a monthly "park and ride" pass for regular users of the Fish Creek-Lacombe C-Train Station, the CPA has increased their budget to fund parking facilities maintenance and other transit improvements. The \$50 monthly parking pass fee guarantees users a convenient and accessible parking spot without the hassle of everyday payments. The income generated from this program is then used to improve maintenance of facility and provide increased security measures at C-Train locations.

Additional Rationale

The Victoria Transport Policy Institute, a BC-based research organization that seeks to develop solutions to transportation problems, has identified a number of additional benefits that can result from parking management programs. Others to consider include:

- **Support for Smart Growth.** Parking management can lead to more accessible and efficient land use patterns, while supporting other land use planning objectives.
- **Improved walkability.** By promoting clustered development and on-street accessibility of buildings, parking management helps create more walkable communities.
- **Reduced stormwater management costs.** Parking management can reduce total pavement area while incorporating design features such as landscaping and shading to reduce stormwater flow, water pollution, and solar heat gain.
- **Support of equity objectives.** Parking management strategies often reduce the need for parking subsidies, improve travel options for non-drivers, provide financial savings to lower-income households, and in some cases, increase housing affordability.
- **More livable communities.** Parking management can create more attractive and efficient urban environments by reducing total paved areas, allowing more flexible building design, increasing walkability and improving parking facility design. .

Actions

Parking management strategies aim to achieve a balance of economic, social and environmental benefits, while maintaining a high degree of flexibility to changing needs. These alternatives employ a mix of incentives and disincentives that allow users to choose from a set of more specific options. The following provides a list of select parking management actions and examples of their use from across North America.

Shared Parking: Different occupancies often have parking demands that differ with the time of day or week. This allows sharing of parking spaces between occupancies, reducing the site area dedicated to car storage (e.g. office staff during the day and restaurant customers in the evenings). In Santa Monica, California, shared parking has been incorporated into the City's green building guidelines for appropriate industrial/commercial sites, light industrial buildings, commercial retail, multi-family residences, and hotels/motels. As part of its Sustainable City Program, the shared parking guidelines seek to reduce excessive land and resource consumption while minimizing excessive costs of burdens on developers, business owners, and occupants. In addition, the City of Portland, Oregon has developed a handbook on shared parking that includes model bylaws, model parking agreements, and templates for implementation

Financial Incentives: Many institutions, particularly in suburban areas, provide their commuters with free parking regardless of their use of the facilities. This encourages automobile use and subsequently disconnects the costs of parking with the choice to drive. By providing financial incentives such as "parking cash out" to shift modes of transportation allows employees/students/etc to be reimbursed in lieu of their use of parking facilities. In Ottawa, ON, a parking cash out program for government staff has provided a \$72 cash incentive to over 3500 people, resulting in 18% reduction in parking demand. In Burnaby, BC, eBay Inc. is in the process of establishing a voucher program to provide employees who commute to work with six free parking passes (in addition to a transit pass). This was seen as a more cost-effective

alternative to cash-out program as cash refunds were not required.

Unbundled Parking: The costs of residential or commercial parking are often indirectly passed on to occupants by being bundled into their purchase or lease costs. In many cases this results in some tenants who do not have access to enough parking facilities while others are paying for facilities that they do not use. Unbundling parking, renting or selling spaces exclusive from a property, can help to reduce the total amount of parking required for a building while promoting a "user pays" approach to parking facilities management. New residential developments across Canada are now offering unbundled parking alternatives, where properties are discounted when parking facilities are not included in rent or purchase agreements. In addition, the City of Vancouver has offered a 10% reduction in parking requirements for unbundled parking supplies in its South East False Creek Official Development Plan.

Parking Maximums: Parking maximums are established through the reduction of spaces, by imposing special taxes, and/or by enforcing regulations to limit temporary parking facilities. Establishing a maximum allowable amount of parking can prevent developers from building excessively large lots, or limit the parking supply in an area based on roadway capacity or community priorities. In 1975, the City of Portland, Oregon set an overall cap of approximately 40,000 parking spaces in its downtown core, which included both new and existing parking facilities. The cap was increased to about 44,000 spaces by the 1980's and increased again in the 1990's. The City, however, is generally satisfied with its parking policies and believes it has helped increase transit use from 20-25% in the early 1970's to 48% in the mid-1990s. In addition, Portland now sets maximum parking limits based on type of use and availability and frequency of transit service, and allows transfer of unused parking entitlements. The City of Seattle, Washington established a policy that allows a maximum of one parking space per 1,000 square feet of office space in its downtown. Due to its success and increased transit usage, Seattle is now

considering extending this limit to areas outside of downtown as well.

Parking Regulations: Regulations are used to control who, when, and how long vehicles may park at a particular location. These regulations can be implemented to favour higher-value uses such as service vehicles, deliveries, customers, quick errands, and people with special needs. In Santa Monica, California, these higher-value parking priorities have been institutionalized in the city's Municipal Code. Specifically, for all new commercial and industrial developments greater than 50,000 sq. ft. in size, at least 10% of parking spaces must be reserved for carpools or vanpools. Other non-residential developments of this size are prescribed to allocate 5% of parking spaces for these types of commuters.

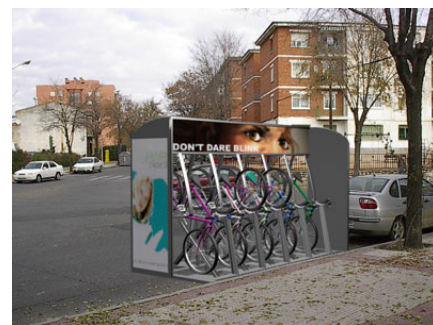
More Flexible Requirements: Most communities have standards for the minimum amount of parking required for new developments written into their zoning code. However, the lack of flexibility associated with these standards can result in poor results in contexts that diverge from the norm. By incorporating flexibility into parking requirements, standards can become more applicable to unique local conditions. Aspects for consideration when creating flexible standards include: access to transit, walking/biking distances, shared parking opportunities, auto ownership rates, etc. For example, in Seattle, Washington, the City allows for reduction in minimum parking requirements for affordable housing (based on income, location and unit size), housing for seniors and disabled peoples, multi-family development with car-sharing programs, and dense, mixed-use neighbourhoods. These flexibilities not only reduce the burden on the local land base but can reduce costs to builders and developers as well.

Parking Pricing: Charging for parking is one of the simplest ways to manage parking demand. If free on-street parking results in a lack of available spaces, charging for parking can improve business by making them more attractive and accessible to customers. There are a number of issues to consider when setting parking rates.

- What costs should be covered by the revenue generated by the pricing?
- What are rates in comparable locations?
- How do rates compare to private facilities (e.g. parking garages)?
- What will the rate structure be? Do hourly rates increase for longer stays?
- What time of the day or week will the rates be in effect?

In the City of Boston, Massachusetts, the Metropolitan Area Planning Council has sought to encourage turnover and discourage long-term parking by setting parking rates to rise for longer stays, (\$1 per hour for the first hour, \$2 per hour for the second hour, \$3 per hour for each additional hour). This has encouraged shorter stays without establishing time limits. Drivers can stay as long as they want but it gets progressively more expensive the longer they stay.

Bicycle Facilities: Providing storage, shower, and changing facilities can make bicycle transport a more attractive alternative to driving. For short-term users (e.g. shoppers) convenient parking close to building entrances are generally most attractive. Long-term users tend to value security and protection from the elements as their greatest priority. And employees and bicycle commuters are most likely to prefer shower and changing facilities at their destinations. In addition to new facilities, some communities are using policy measures to promote bicycle parking as an alternative to car parking. In Portland, Oregon, for example, every five bicycle parking space beyond the required number can substitute for 1 required automobile parking space. This incentive can significantly reduce parking costs for new developments near bicycle routes and transit corridors.



Bicycle Storage Facility

Remote Parking: Remote parking facilities can provide off-site or urban fringe parking and can be coupled with a shuttle services or public transit to reduce traffic congestion. These facilities are particularly useful outside of downtown centres as they encourage people to park on the outskirts rather than driving into the city core and making multiple stops. Remote facilities can also be useful for special events, attractions with limited parking, and other peak demands (as part of an overflow parking plan). In addition, to allow commuters to forgo driving altogether, remote parking facilities can be linked to transit stops so that commuters can access shuttle services from locations throughout their community. For example, in Chattanooga, Tennessee the city has developed two public parking garages on either side of the outskirts of their Central Business District. These pay parking facilities provide a free electric-powered shuttle service into the city core every five minutes of every day. Each year, over one million people use these remote facilities and the revenues generated from them fully fund the shuttle services and the facilities' maintenance.



Park & Ride Shuttle

Results

For the most part, parking management strategies have modest impacts that reduce parking requirements between 5-15%. However, these impacts can be cumulative when the parking management strategy uses the right combination of approaches for a particular context. In some cases parking reductions can be upwards of 40% while providing other economic, social and environmental benefits.

However, not every parking management strategy is right for every situation, particularly where broad geographic and demographic discrepancies exist. For example:

- Impacts tend to be higher where there are more parking and transportation alternatives.
- Pricing of parking will often lead to greater demand reductions when combined with improvements to transit services or rideshare programs.
- Financial incentives tend to achieve greater results in lower-income communities.
- Shared parking programs tend to be more effective when implemented with regulatory, pricing, and walkability improvements.
- Impacts of parking management tend to increase over time as the programs mature and familiarity increases.

Challenges

Although parking management strategy alternatives are often less cost and resource intensive than supply-side approaches, there are a number of obstacles and challenges to be considered when implementing a management program.

Supportive Policy: Parking management requires a political will and the supporting organizational structure to monitor, evaluate, adjust, and modify approaches to meet changing demands and the dynamic conditions created by new development. A policy framework must be in place that supports a flexible and integrated parking management approach. With an outdated and rigid policy framework in place, parking planners are provided with little flexibility to shift to more sustainable demand-side approaches. Such was the condition in the City of Calgary, where an outdated 1972 Downtown Parking Strategy had established rigid guidelines for parking that included parking minimums, resulting in huge reservoirs of surface parking.

Financing: Although parking management alternatives are often less resource intensive than traditional supply-side approaches, funding is often required for ongoing management of programs (as opposed to funding for infrastructure). In Quebec

City, an integrated parking management program was proposed that would provide information on available parking facilities within the Old City while providing shuttle services from peripheral lots outside the city walls. The signage was implemented with relative success. However, funding limitation prevented the shuttle program from taking off. As a result the one-off signage program has not achieved the success anticipated as the program does not provide efficient parking alternatives for drivers to the Old City.

Coordination: Some approaches require a significant amount of communication and coordination – towards consumers but also between agencies that do not necessarily ordinarily work together. In order to develop parking management program that integrated parking providers and managers across a community or region, it is important to have efficient information flows and, when possible, joint planning initiatives. And without input and coordination with stakeholders, program options could be developed that are not appropriate to the context and thus, less frequently utilized.

Resources

The major benefit of parking management is its ability to reduce the cost of developing new parking facilities through more efficient management of demand. The annualized cost of increasing parking supply can range from \$250 per space on unused land to upwards of \$2000 for a space in an attended facility. Although less capital intensive, on-street parking can also impose high opportunity costs on a community through the loss of road space for traffic, bicycles, or sidewalks. Parking management approaches can require substantial management and/or infrastructure costs (e.g. bicycle facilities, signage, expanded transit, purchasing technology, etc). However, in most cases, these costs are substantially less than the costs associated with expanding parking infrastructure, particularly in urban settings with a limited available land base.

In many cases, parking management approaches can be significant revenue generators as well. For example, by unbundling parking so that spaces are rented separately from building space, revenues can

be accrued from high-intensity users while providing discounts to those that use less than their allocated share. In addition, shared parking programs can generate additional revenues during off-peak hours, allowing businesses to rent parking facilities to consumers during hours of closure. This approach is particularly useful in urban centres where businesses can rent out their parking to restaurant, night club, or other off-peak consumers.

Lessons Learned

- **Consider partnerships.** Partnerships can be both cost-efficient and successful due to the resources and expertise of each partner.
- **Involve stakeholders.** Involve all appropriate stakeholders in a collaborative manner throughout the planning, deployment, and operations of the parking management program. They often have good ideas as they are the ones affected by parking issues most often. Getting stakeholders involved early will only help to build support for parking management programs early.
- **Define roles and responsibilities.** Identify the roles and responsibilities of each agency involved in operations and maintenance early in the planning process. Failure to clarify roles and responsibilities will reduce credibility and public acceptance will be negatively impacted.
- **Be aware of budget and capacity limitations.** Ensure that parking management alternatives selected are within the budget and resources of the implementing organization. If budget limitations prevent the expansion of parking facilities, high-cost alternatives such as new technologies should perhaps be postponed to the longer-term.

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