Mid-Centretown Community Design Plan
Mobility Position Paper

Prepared for:

City of Ottawa

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1. Introduction

1.1 Rationale / Objective

This report has been prepared in support of the Mid-Centretown Community Design Plan (CDP) currently being undertaken by the City of Ottawa. The objective of this report is to assist in developing a transportation vision and policy objectives for the Mid-Centretown Community Design Plan (CDP) by providing the following information:

- A summary of the transportation context within the framework of the City of Ottawa's Official Plan and other strategic planning documents;
- A qualitative overview of existing land use and transportation conditions within the study area;
- An overview of current and emerging transportation trends;
- An overview of transportation issues within the study area to be addressed by the CDP, and;
- An outline of future directions and next steps to be undertaken in further developing a transportation vision and framework as part of the CDP study.

A CDP is an urban design and land use planning tool that guides physical development of private and public lands, and undertakings of public works.

The CDP will develop a vision for the physical environment of the Mid-Centretown community. The CDP creates a planning and design framework for that vision and the strategy to implement it. Relevant strategic directions regarding development according to the City of Ottawa's Official Plan (OP) include:

- Direct growth to the existing urban area
- Achieve compact mixed-use communities
- Provide a transportation system that emphasizes transit, walking and cycling
- Achieve a balance between intensification and compatibility through good design
- Preserve environmental integrity

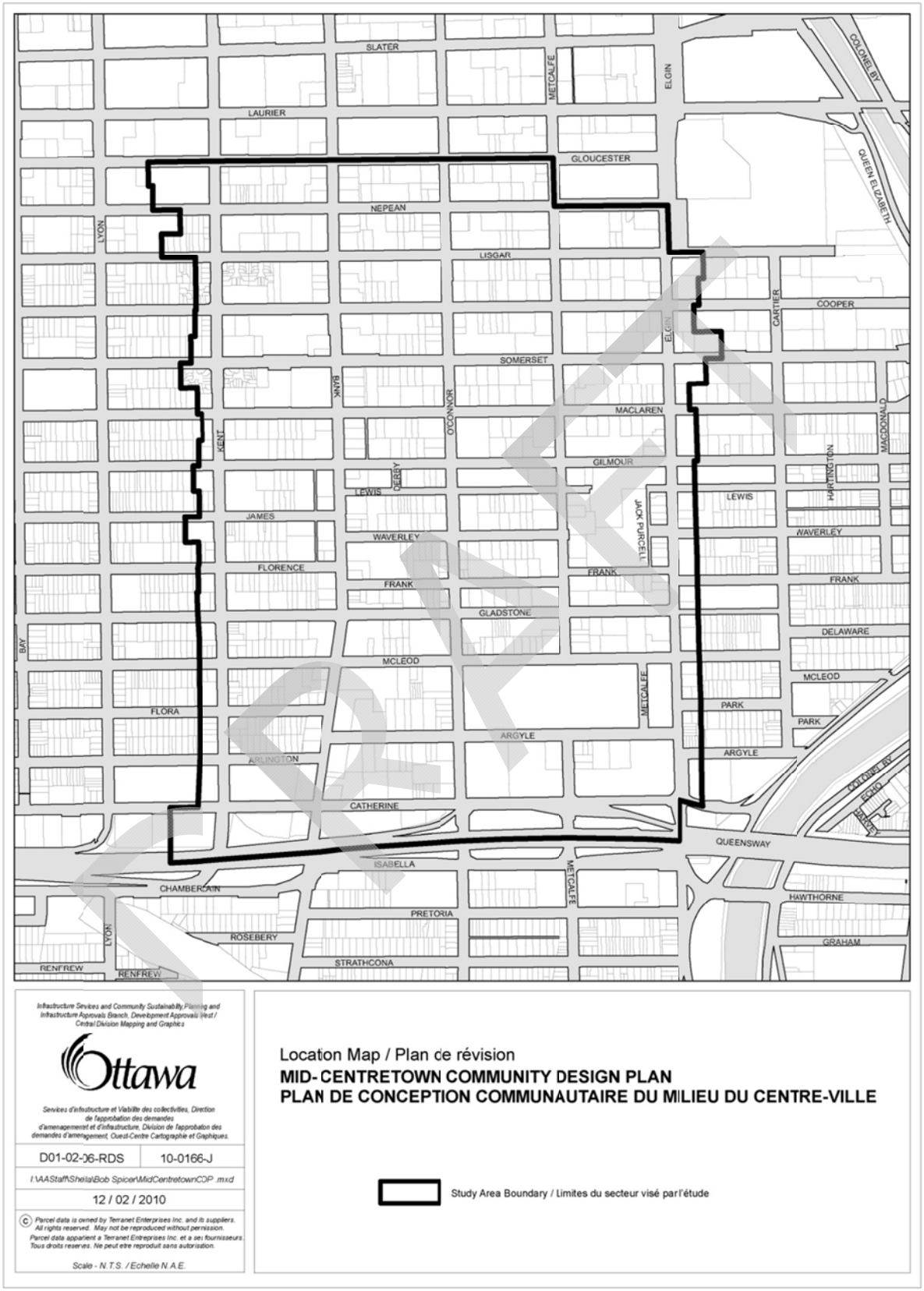
The CDP must reflect the broader goals of the City's OP, while balancing local conditions. A transportation analysis is critical to evaluating the proposed vision of the CDP in order to assess the broad implications which future development in the study area may have on the existing transportation network (roads, transit and pedestrian/cycling facilities). It is also necessary to identify potential strategies to accommodate future travel demand, as well as any potential mitigation measures needed to address issues of community concern.

1.2 Study Area

The Mid-Centretown community is located to the south of Ottawa's Central Business District. The CDP study area extends from Kent Street in the west to Elgin Street in the east, and from Highway 417 (The Queensway) in the south to Gloucester Street in the north. Within this study area, a dense grid of arterial, collector and local city streets provides for the movement of people and goods. This street network is the backbone of all transportation networks (pedestrian, cycling, transit, private automobile and goods movement) within the study area.

The CDP study area is identified in Figure 1.

Figure 1: Mid-Centretown CDP Study Area



1.3 Mobility Context

Due to its location and mixture of land uses and density, the Mid-Centretown community enjoys excellent access to major employment, shopping, institutional and recreational destinations. These factors encourage strong use of walking and cycling for short trips within the CDP area and to adjacent neighbourhoods. The community also enjoys access to major transportation facilities, such as proximity to Highway 417 (The Queensway), the Transitway, major arterial roads, local transit and City/NCC multi-use pathways. These links provide for mobility to and from other major destinations within the City of Ottawa and beyond. Existing travel patterns display a high degree of walking, cycling and transit use (over 30% of trips to/from the area are made by non-auto travel modes during the weekday morning and afternoon peak periods).

Land use within the study area is highly urban in nature, with a strong mixture of retail, office, residential and community uses throughout. Retail uses tend to be focused on the traditional mainstreets in the study area (Bank and Elgin) with lesser activity found along portions of Somerset and Gladstone. Most retail buildings on the mainstreets contain residential apartments or office uses on upper stories. The major north-south streets and east-west local streets are typically more residential in nature, with a mixture of small and large-scale apartment blocks mixed in with house-form buildings. Many houses have been converted to office or restaurant uses. Surface parking lots are scattered throughout the study area, primarily providing long-term parking in support of office uses both within the study area and in the Central Business District adjacent to the north. These surface parking lots are potential sites for significant redevelopment.

A major traffic issue within the community is caused by the location of the community between the Central Business District and the Queensway (which is the major east-west transportation corridor for private automobiles and goods movement in the City of Ottawa). This proximity creates significant vehicular travel demand during the weekday peak periods on the north-south arterial roadways (Kent, O'Connor, Metcalfe) running through the study area which have direct access to the Queensway. The solution to this issue has been creation of a one-way network of streets throughout the study area which, while accommodating auto demand and limiting traffic infiltration along residential streets, has created circulation issues for some transportation modes (e.g. transit, cycling), and generally contributes to a negative urban environment along these streets with respect to the volume and speed of traffic, use of road space, landscaping and viability of commercial retail along the one-way arterial roadways. It is noteworthy that while not as much of an issue as the north-south arterial roadways, the majority of east-west local streets within the study area are also one-way. The one-way system of local streets (combined with turn prohibitions) serves to reduce traffic infiltration but affects access to individual properties, particularly for cyclists.

Existing Travel Patterns

An extensive regional Origin-Destination (O-D) Survey was conducted in 2005 by the agencies responsible for overseeing transportation planning in the National Capital Region. This survey was undertaken to gather data used to understand existing travel patterns and behaviours, and forecast future travel demands. For the purposes of the survey, the National Capital Region is broken down into 26 Planning Districts. The subject study area is contained within the Ottawa Inner Area Planning District, which is a 16.4 km^2 area consisting of approximately 88,400 persons and 44,200 households. The key travel findings for the area are as follows:

- 463,500 person-trips originate within or are destined to the Planning District in a typical day;

- 22% (102,000 trips) of all daily person-trips stay within the Planning District;
- During the weekday morning peak period 88% of trips destined to the Planning District originate from the Ontario side of the Ottawa River, with 12% coming from Quebec. 24% of trips are self-contained trips within the Planning District.
- During the weekday morning peak period, for trips destined to the Planning District from other areas of the City of Ottawa, the major originating districts are: Alta Vista (9%); Orléans (8%); Merivale (7%), and; Ottawa East (6%).

The O-D Survey also provides an indication of existing modal shares for travel to, from and within the Planning District. The key findings for the area are as follows:

- Based on daily (24 hour) travel, modal shares for person-trips contained within the Planning District are: 24% auto driver; 7% auto passenger; 10% public transit; 4% bicycle; 53% walk, and; 2% other;
- Based on daily (24 hour) travel, modal shares for trips to and from the Planning District are: 48% auto driver; 11% auto passenger; 26% public transit; 2% bicycle; 11% walk, and; 2% other;
- During the weekday morning and afternoon peak periods, transit modal shares for trips *to and from* the District range between 24% and 37%

These findings reflect the highly urbanized nature of the study area, with its mix of residential, employment and shopping uses. The extensive network of transit, cycling and pedestrian links which connect the study area with the rest of the city allows residents of the Mid-Centretown community to be less auto-dependent than those in other neighbourhoods of the City of Ottawa.

General Urban Transportation Trends

The City of Ottawa's Official Plan and Transportation Master Plan (TMP) reflect recent trends towards the creation of more sustainable transportation networks which address current and future needs. The TMP outlines a multi-billion dollar rapid transit expansion the centerpiece of which is the conversion of a substantial part of the existing Bus Transitway to Light Rail Transit (LRT) technology and the construction of a downtown LRT tunnel to improve the speed and reliability of transit in the downtown area while eliminating existing bus congestion issues in the Albert and Slater Street corridors. Building on the objectives of the TMP, the Ottawa Cycling Plan and draft Pedestrian Plan articulate visions and establish future networks for these specific modes.

Of relevance to the Mid-Centretown community, a recent trend towards consideration of the conversion of one-way street networks back to two-way traffic operation has manifested itself in order to address broader urban planning issues, to improve circulation for cyclists and transit, and to improve the pedestrian environment.

2. Transportation Issues

2.1 Pedestrian Mobility

The pedestrian network within the study area is comprised almost exclusively of sidewalks, which are located on both sides of all streets within the study area. There are some off-street pathways within parks which can provide pedestrian short-cuts between blocks (e.g. Minto Park). Bank Street and Elgin Street experience the highest levels of pedestrian activity due to the strong retail presence along these streets. Wider sidewalks, particularly on Elgin Street would improve pedestrian circulation by eliminating chokepoints which occur where street furniture or transit stops are located.

There are few barriers to pedestrian movement through the study area due to the regular and small size of the blocks, however, linkages to areas to the south and east are affected by the limited number of crossings under the Queensway to the south and the limited number of crossings of the Rideau Canal to the east. It is noteworthy that the relatively recent construction of the Corktown Footbridge, linking Somerset Streets East and West across the Rideau Canal has been a huge success for both pedestrian and bicycle travel, whether it be commuter travelers, recreational travelers or tourists.

2.2 Cycling Mobility

The cycling network within the study area consists almost entirely of on-street facilities, with some multi-use pathways located within neighbourhood parks. The tight grid of streets provides for multiple route choices although the one-way network of streets has impacts on ease of bicycle circulation. The only dedicated cycling facility in existence on the study area road network is a short stretch of bicycle lane on O'Connor Street which provides a dedicated cycling connection under the Queensway, in the southbound direction.

The Ottawa Cycling Plan identifies Bank, O'Connor, Metcalfe, Elgin, Somerset and Gladstone as "Spine or City-wide Cycling Routes", while Lisgar Street (east of Elgin Street) is identified as "Community Cycling Route". In terms of planned facilities, the Ottawa Cycling Plan proposes installation of bicycle lanes on O'Connor and Metcalfe Streets, and the creation of "shared use lanes" along Bank Street, Somerset Street, Gladstone Avenue, Elgin Street and Lisgar Street. None of these facilities have been implemented to date. It is noteworthy that the Ottawa Cycling Plan indicates that the cycling network proposed for the downtown core area of Ottawa (within which much of the Mid-Centretown CDP study area lies) will be subject to further review. A key consideration for cycling network improvements should be linkages with the city-wide network of NCC and City multi-use pathways.

Other on-going cycling initiatives that may impact cycling activity within the study area include a pilot project for an east-west segregated bicycling facility and a possible NCC bike-share program.

East-West Segregated Bicycling Facility
City staff are currently working on a segregated east-west downtown bike lane pilot project with implementation planned for 2011. A staff report will be presented for Transportation Committee and Council approval in the fall of 2010. Staff are looking at several corridor options, including Somerset Street within the CDP study area.

NCC Bike-share Program
This proposed initiative would see the creation of a network of automated bicycle rental stations providing convenient access to bicycles for shorter trips. Similar systems have been implemented in Montreal, Paris and London and have been successful in increasing cycling mobility and mode share. A small-scale trial was undertaken within downtown Ottawa and Gatineau in 2009. It is noteworthy that successful implementation of a bicycle rental program is greatly assisted by provision of corresponding cycling network infrastructure (e.g. cycling lanes and pathways).

The NCC bike-share program is currently on-hold pending re-issuance of a Request for Proposals to private-sector partners. There is currently no timing associated with the project.

2.3 Transit Mobility

Public transit services within the study area are focused on Bank Street (Routes 1, 2, 4, 7), Somerset Street (Routes 2, 153), Gladstone Avenue (Routes 14, 153), Catherine Street (Routes 4, 101 and 102) and Elgin Street (Routes 5, 6, 14). All local transit routes passing through the study area provide connections to the City's downtown rapid transit network. Transit stops within the study area typically consist of a signed stop or "flag", with shelters provided at busier stops or where space permits. Lack of sidewalk width constrains the ability to provide for amenities at many locations, and creates conflicts between people waiting for buses and other pedestrians.

Rapid transit service within the study area is provided by Routes 101 and 102, which are cross-town services bypassing the downtown. Within the study area, these routes operate in the westbound direction only, along Catherine Street. Eastbound buses operate along Isabella Street, which is outside of the study area on the south side of The Queensway.

All bus routes within the study area operate in mixed traffic conditions and are subject to delays during peak periods caused by traffic congestion, incidents and planned/unplanned events. The City's Transportation Master Plan identifies Bank Street, Somerset Street and the Catherine/Isabella/Queensway corridor as "Transit Priority Corridors". Transit priority measures which could be considered include queue-jump lanes, transit signal priority, and improved shelters and other amenities for transit users.

The northern edge of the study area is located approximately 180 m south of Slater Street and 250 m south of Albert Street which are, respectively, the eastbound and westbound rapid transit corridors through downtown. Buses on these streets operate within a dedicated bus lane, with stops located at Kent, Bank and Metcalfe Streets.

The future rapid transit network identified in the TMP proposes converting the existing BRT system to Light Rail Transit (LRT) and construction of a transit tunnel under the downtown, to be made operational by 2019. The nearest stations to the Mid-Centretown area would be Downtown West and Downtown East, which would be approximately 250 – 300 m walking distance from the northern edge of the study area along Bank and Kent Streets, respectively. Additionally, Campus Station is approximately 500 m to the east of the study area, via the Corktown Footbridge.

Ottawa's inter-city bus terminal is located within the study area, on Catherine Street west of Kent Street. The location of the facility provides for easy access to the central area of downtown by walking, cycling or transit and its proximity to the Queensway allows for easy access to the highway network for taxis and automobiles, as well as the inter-city buses destined to or from Ottawa. There is currently a planning study underway which is looking at the site's redevelopment options should the bus company decide to relocate elsewhere. If this occurs, traffic currently associated with the bus terminal will be removed from the study area road network, although development of a mixed-use development on the site, as currently proposed, will generate new trip-making activity in the surrounding area. In terms of access to inter-city travel, relocation of the bus terminal will reduce access for local residents but the new location currently proposed (adjacent to the VIA rail train station) will provide for inter-modal connections between rapid transit (future LRT), inter-city buses and rail.

2.4 Vehicular Mobility

The road network within the study area consists of a dense grid of arterial, collector and local roadways. As mentioned above, a system of one-way streets has been implemented to accommodate traffic demand on north-south arterials roadways (Kent, O'Connor, Metcalfe) providing connections to and from the Queensway, and on east-west local streets to reduce traffic infiltration.

The following is a brief description of the key roadway links within the study area:

- ***Kent Street***: arterial; one-way northbound from Chamberlain to Wellington; direct access from eastbound Queensway; access from westbound Queensway via Catherine Street (at Metcalfe)
- ***Bank Street***: arterial; two-way northbound/southbound from south of Ottawa to Wellington; access to eastbound Queensway via Isabella (beyond Metcalfe) and from eastbound Queensway via Chamberlain (at Bronson); access to westbound Queensway via Catherine (at Lyon) and from westbound Queensway via Catherine Street (at Metcalfe)
- ***O'Connor Street***: arterial; one-way southbound from Wellington to Isabella (no through traffic); access to westbound Queensway via direct ramp at Catherine; access to eastbound Queensway via Isabella (beyond Metcalfe)
- ***Metcalfe Street***: arterial; one-way northbound from Monkland to Wellington (discontinuous between Argyle and McLeod – Museum of Nature); direct access from westbound Queensway; access from eastbound Queensway via Chamberlain (at Bronson)
- ***Elgin Street***: arterial; two-way northbound/southbound from Queen Elizabeth Driveway to Wellington; access to eastbound Queensway via Hawthorne/Lees and from eastbound Queensway via Isabella/Metcalfe/Argyle; access to westbound Queensway via Catherine (at O'Connor) and from westbound Queensway via Metcalfe/Argyle
- ***Catherine Street***: arterial; one-way westbound from Queen Elizabeth Driveway to Bronson; provides access to/from ramps serving westbound Queensway (Metcalfe off-ramp, O'Connor on-ramp, Lyon on-ramp, etc.)
- ***McLeod Street***: local; one-way westbound from east of Elgin to Bronson
- ***Gladstone Avenue***: collector; two-way eastbound/westbound from east of Elgin to Parkdale
- ***Gilmour Street***: local; one-way eastbound from Bronson to the Driveway
- ***McLaren Street***: local; one-way westbound from the Driveway to Bronson
- ***Somerset Street West***: arterial; two-way eastbound/westbound from Wellington West to Queen Elizabeth Driveway
- ***Cooper Street***: local; one-way eastbound from Bronson to the Driveway
- ***Lisgar Street***: local; one-way westbound from east of Elgin to Bronson
- ***Nepean Street***: local; one-way eastbound from Bay to east of Elgin

It is noteworthy that all north-south streets within the study area are arterial roads. The range of existing traffic volumes on the major north-south arterial roads during the commuting peak hours, as well as the number of available travel lanes with on-street parking restrictions applied, are summarized as follows:

Northbound (AM Peak)

• Kent Street	3-lanes	1,400 to 1,600 veh/h
• Bank Street	2-lanes	500 to 600 veh/h
• Metcalfe Street	3-lanes	800 to 1,100 veh/h
• Elgin Street	2-lanes	600 to 700 veh/h
Total	***10-lanes***	***3,300 to 4,000 veh/h***

Southbound (PM Peak)

• Bank Street	2-lanes	500 to 600 veh/h
• O'Connor Street	4-lanes	1,300 to 2,600 veh/h
• Elgin Street	2-lanes	700 to 800 veh/h
Total	***8-lanes***	***2,500 to 4,000 veh/h***

Note that there are two additional northbound travel lanes (compared to southbound) through the study area. However, Lyon Street, which is just west of the study area, provides additional southbound travel lanes.

The one-way north-south streets of Kent, O'Connor and Metcalfe are noted to carry considerably more traffic than the two-way streets of Bank and Elgin. In the northbound direction the two one-way streets provide 60% of the available travel lanes and carry almost 70% of the maximum volume. In the southbound direction the single one-way street provides 50% of the available travel lanes 65% of the maximum volume.

2.5 One-way Street Conversion Issues

Conceptually, compelling reasons exist for both one-way and two-way street operation. At a high-level only (i.e., not specific to the Mid Centretown CDP), possible reasons for converting to two-way street operation would include:

- slower travel speeds;
- decreased circuitous travel as a result of eliminating indirect routes (i.e., driving around the block);
- safer for pedestrian (in terms of slower speeds); and
- reduced volumes (although traffic has to go somewhere).

Possible reasons for maintain one-way street operation would include:

- increased roadway capacity (thereby decreasing congestion) resulting from better opportunity to coordinate traffic signal timings, thereby improving traffic flow and decreased time spent idling (and therefore lower GHG/pollution);
- better opportunity for on-street parking;
- fewer turn prohibitions (compared to heavily travelled two-way streets);
- safer for pedestrian (in terms of fewer potential conflicts at intersections);
- cost of conversion; and
- conversion may be somewhat dysfunctional at Queensway on/off ramps.

Additional study is required to assess the impacts of converting the existing series of one-way streets within the CDP study area to two-way operation. The upcoming Mobility Overlay Study being undertaken by the City of Ottawa will be able to address the larger issues associated with conversion discussed above, while the CDP will develop local objectives for improvements such as streetscaping and infrastructure necessary to support pedestrian, cycling, transit and automobile travel within the study area.

2.6 Parking

The demand for parking within the study area is considered quite high based on the urban nature of the land use described previously. Parking supply is provided in the form of on-street parking (mostly metered), surface lots, and private driveways. On the major north-south arterials, peak period parking restrictions are present that result in additional travel lanes during the typical weekday commute times. Parking on the majority of the local side streets is comprised of metered parking on one side only (with no parking on the other).
The CDP transportation strategy should discuss the role and function of on and off-street parking within the context of meeting existing and future demand. For example, the provision of on-street parking along the traditional main streets such as Bank and Elgin to meet short-term parking needs of residents, visitors and merchants must be balanced with desire for expanded pedestrian and cycling infrastructure.

3. Transportation Strategy

3.1 Relevant Policy Documents

The transportation strategy for the CDP will be guided by existing policy documents, namely the Transportation Master Plan, Ottawa Pedestrian Plan and Ottawa Cycling Plan. Other documents which may influence the transportation strategy, particularly on design issues include City of Ottawa Design Guidelines. Policy documents and case studies from other jurisdictions will be reviewed to provide guidance on issues such as one-way street conversion, travel lane reductions, pedestrian, cycling and transit network improvements appropriate at the CDP level.

3.2 Compatibility with Other Studies

The City of Ottawa will be undertaking a "Mobility Overlay Study" which will look at addressing transportation issues within the downtown area not addressed by the recent Transportation Master Plan. This includes issues such as the reallocation of road space in the Albert and Slater Street corridors with implementation of the City's new rapid transit network (i.e. downtown LRT tunnel), and the downtown bicycle network. One issue which will be looked at in detail is the conversion of one-way streets back to two-way operation, primarily to address planning and urban design issues.

In relation to the Mid-Centretown CDP, the conversion of the one-way arterial roadways running through the study area has potential impacts well beyond the scope of the study area.

3.3 Future Directions

- Existing travel patterns to, from and within the Mid-Centretown community are currently at or above the goals of Ottawa's Official Plan with respect to modal share for walking, cycling and transit and are reflective of the community's location and highly urbanized environment. The transportation strategy to be developed as part of the CDP study should determine if new goals are warranted and what infrastructure would be required to reach those goals.

- The transportation strategy should provide input into larger downtown transportation issues which will be examined by the Mobility Overlay Study.

- Future development within the study area will be under additional scrutiny to minimize traffic impacts in the face of continued traffic growth caused by through traffic destined to and from other areas of the City of Ottawa.

- If large sites are developed, the potential for new pedestrian links through these sites needs to be considered.