

---

Background Report:  
**Sustainable Mobility Program Review**



CITY OF HAMILTON  
**TRANSPORTATION MASTER PLAN**  
REVIEW AND UPDATE

## Sustainable Mobility Implementation (Transportation Demand Management) Program Review and Policy Background Report

### 1.0 Introduction

The City of Hamilton has made significant progress in Sustainable Mobility Implementation (also referred to as Transportation Demand Management [TDM]) since the inception of the program in 2009. Major milestones over the last seven years include:

- Successful launch of Hamilton's public bike share system with 750 bicycles and 115 stations in a 35 square kilometer service area;
- Well-established Smart Commute program for workplaces (23 major workplaces, representing over 91,000 commuters) in partnership with Metrolinx, including the development of carpool parking programs, reserved parking at workplaces, secure bicycle parking, workplace cycling programs and transit promotions;
- Development of the *TDM Land Development Guidelines* and bicycle parking requirements in new zoning by-laws;
- Audit, planning and installation of general bicycle parking and secure bicycle parking facilities (detailed as part of an Appendix to the Cycling Master Plan Review and Update);
- Signing of the Active and Sustainable School Transportation (ASST) Charter;
- Development and implementation of a School Travel Planning Program;
- Hosted five Transportation Summits;
- Annual events including Bike Month, Smart Commute Month, 100in1 Day and Open Streets; and,
- Implementation of community-based social marketing programs (e.g. Queen Street Hill construction mitigation and Pan Am Games).

The current success of the Sustainable Mobility Implementation Program (also referred to as TDM) at the City contributes to shifting travel modes, reducing the numbers of trips people make, driving reductions, drivers making fewer trips by car and to closer destinations, and time and route shifting. These successes are achieved through existing projects, programs and events. The impact of this program is quantified through observed behaviour change. A four to eight percent increase across worksites in non-single occupant vehicle mode use has been observed, which is significant<sup>1</sup>. In 2016, a scan of TDM programs in the GTHA and across Canada was conducted. The results of this review reaffirmed that since its establishment in 2005, the Sustainable Mobility Program (TDM) has achieved substantial success, especially since its renewal in 2009. However, a number of current programs run by the Sustainable Mobility Program are lacking resources. With additional resources, the program can continue to maintain the

---

<sup>1</sup> Based on 2015-2017 Smart Commute survey data.

existing program at full capacity, as well as to further develop the program in the specific areas described in this report.

## 2.0 Sustainable Mobility

Sustainable mobility is defined as “Mobility that meets the needs of society to move freely, gain access, communicate, trade and establish relationships without sacrificing other essential human or ecological requirements today or in the future”<sup>2</sup>. The principles of sustainable mobility include<sup>3</sup>:

- Preserve the natural environment
- Maintain human health and safety
- Meet the travel needs of the population
- Support a good economy
- Minimize transport costs for access and mobility
- Minimize infrastructure costs
- Maintain energy security, the percentage of a region’s energy supply coming from outside the region or from “insecure” sources.
- Ensure long-term viability of the transport system

Figure 1 below shows the eight (8) interconnected elements of sustainable mobility: policy, travel planning, TDM strategies, mobility options, sustainable development, environment, health and modal integration (Association for Commuter Transportation of Canada [ACT]).

**Figure 1 Elements of Sustainable Mobility<sup>4</sup>**



<sup>2</sup> World Business Council for Sustainable Development, Mobility Project 2030

<sup>3</sup> Ibid.

<sup>4</sup> Association for Commuter Transportation of Canada (ACT)

The overlapping colours of the wheel are intended to show that the various elements are interconnected.

The concept of sustainable mobility is aligned with the overall vision and goals of the Transportation Master Plan review and update. The TMP was created to develop policies and strategies for the transportation network for the 2031 planning horizon. This network includes roads, transit, cycling, walking facilities, and the City's connections to rail, marine and aviation facilities. The vision of this TMP review and update is:

*To provide a comprehensive and attainable transportation blueprint for Hamilton as a whole that balances all modes of transportation to become a healthier city. The success of the Plan will be based on specific, measurable, achievable, relevant and programmed results.*

The ultimate goals of the TMP are to:

- Reduce dependence on single occupant vehicles;
- Promote accessibility;
- Improve options for walking, cycling, transit; and,
- Maintain and improve the efficiency of goods movement.

This TMP review and update includes a number of themes of which the following are directly related to sustainable mobility:

- Active Transportation
- Climate Change
- Complete-Livable-Better Streets
- Connectivity
- Emerging Technology
- Land Use and Travel Patterns
- Sustainable Mobility
- The Role of Health in the Built Environment: Transportation and Land Use Planning
- Transit

The Sustainable Mobility Program integrates these principles and strategies into a suite of programs that implement the goals and vision of the TMP.

### **3.0 Sustainable Mobility Implementation Program (also referred to as TDM)**

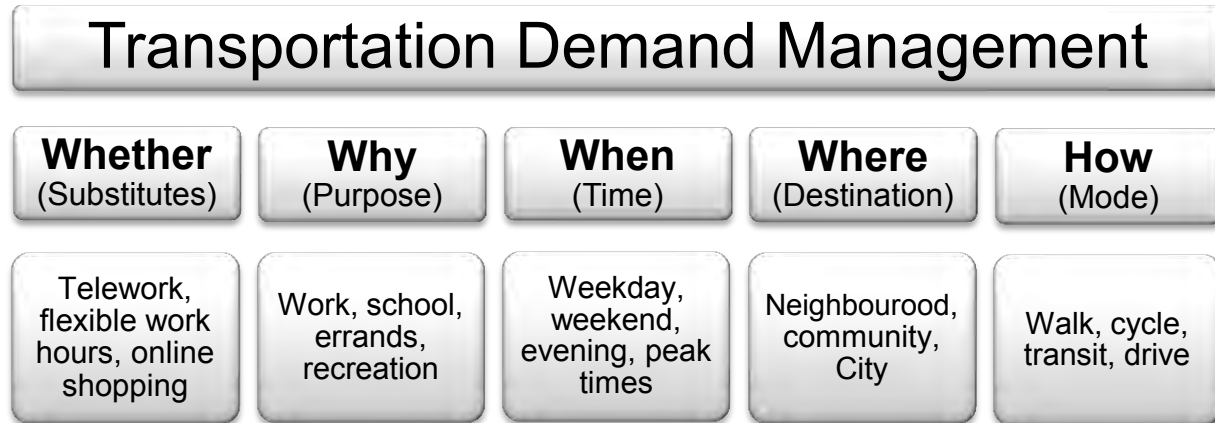
TDM, an implementation tool to facilitate sustainable mobility, is defined as “The use of policies, programs, services and products to influence whether, why, when, where and how people travel”<sup>5</sup>. TDM also helps to shape and measure the economic and social

---

<sup>5</sup> Transportation Demand Management for Canadian Communities: A Guide to Understanding, Planning and Delivering TDM Programs. Transport Canada. 2011.

factors behind personal travel decisions. Figure 2 below illustrates the guiding questions that influence behaviour change.

**Figure 2 Overview of Transportation Demand Management Guiding Questions**



The implementation of TDM measures can result in travel behaviour change, including<sup>6</sup>:

- **Shifting travel modes** (e.g., walking, cycling, taking transit or carpooling instead of driving alone)
- **Driving reductions** (e.g., more drivers making fewer trips by car and to closer destinations)
- **Reducing the numbers of trips people make** (e.g., more people choosing to telework, shop online or combining trips)
- **Time and route shifting** (e.g., more drivers changing the time or route of their driving trip to avoid traffic congestion)

There are numerous benefits of TDM. A few examples include, but are not limited to:

- Increased active transportation and physical activity levels
- Improved air quality
- Improved public health outcomes
- Increased walkability and bikeability of communities through sustainable development
- Engagement and education of citizens, employers and employees
- Reduced traffic congestion
- Reduced road maintenance costs
- Reduced impacts of construction
- Reduced dependency on non-renewable resources
- Enhanced quality of life
- Reduced need for parking and associated costs,

#### 4.0 Policy Context

Hamilton is part of the Greater Golden Horseshoe and is one of the fastest growing regions in North America. By 2041, this area is forecast to grow to 13.5 million people and 6.3 million jobs. In the Hamilton context, Council has approved planning forecasts

<sup>6</sup> Ibid.

for 2031, which identifies a population of 660,000 and 300,000 jobs. The magnitude and pace of this growth necessitates a plan for building healthy and balanced communities and maintaining and improving overall quality of life.

Several Provincial planning documents have been developed that provide guidance and direction on growth in the Province such as Places to Grow, The Big Move (Regional Transportation Plan), and Ontario's Climate Change Strategy and Action Plan. These Provincial documents are supportive of Sustainable Mobility including support for Complete-Livable-Better Streets, active transportation networks, moving people and goods, and applying TDM measures. These have been incorporated into the development of policies within the TMP.

## **5.0 Sustainable Mobility Implementation (TDM) in the Greater Toronto and Hamilton Area and Other Municipalities in Canada**

The following sections discuss the history and status of sustainable mobility implementation (TDM) in the Greater Toronto and Hamilton Area (GTHA) as part of the Metrolinx's Smart Commute program<sup>7</sup> as well as a review of other programs operated by local municipalities outside of the mandate of Metrolinx. In addition, a scan of municipalities outside the GTHA was undertaken to provide a snapshot of best practices.

### **5.1 Smart Commute and Metrolinx**

From 2004 to March 2007, the Smart Commute Initiative operated as a partnership of the towns, cities and regions of the GTHA, with funding from Transport Canada and private sector partners. The Smart Commute Initiative was designed to be a showcase for Canada's efforts to curb traffic congestion and reduce greenhouse gas emissions. This was achieved by promoting commuter options such as carpooling, transit, cycling and telework — an approach known as TDM.

In 2008, Smart Commute became a Metrolinx program, based on The Regional Transportation Plan (RTP), *The Big Move*. The Smart Commute Program includes thirteen Smart Commute Transportation Management Associations in the GTHA, including Smart Commute Hamilton. Within the Smart Commute regional network, there are over 330 employers, and 721,000 employees and post-secondary students<sup>8</sup>. Of that, Smart Commute Hamilton engages with 23 employers and over 91,000 employees and post-secondary students (Table 1).

---

<sup>7</sup> The following section is based on information from the Transportation Demand Management Background Paper produced by Metrolinx. 2015.

<sup>8</sup> Smart Commute Website. <http://smartcommute.ca/about-us/what-is-smart-commute/>. November 8, 2016.

**Table 1 Overview of Smart Commute Hamilton Workplaces and Commuters**

<b>Workplace</b>	<b>Commuter Population</b>
CAA South Central Ontario	140
Canada Bread Company, Limited	300
City of Hamilton	8500
Good Shepherd Centres Hamilton	400
Hamilton Chamber of Commerce	4000
Hamilton Health Sciences	11000
Hamilton Conservation Authority	70
Hamilton Spectator	600
Hamilton-Wentworth Catholic District School Board	2000
Hamilton-Wentworth District School Board	400
Alectra Utilities	345
IBI Group - Hamilton Office	30
ILR Industries	50
Indwell	70
McMaster Centre for Continuing Education	200
McMaster Innovation Park	400
McMaster University	30000
CoMotion	50
Redeemer University College	1200
St. Joseph's Health System	6200
Seedworks Urban Offices	50
Mohawk College	24000
Maple Leaf Foods	900

Metrolinx's Smart Commute program coordinates the majority of regional TDM programming in the GTHA. This program is sub-divided into three (3) programs: workplace, community and school, as outlined below.

#### 1. Workplace Program

- Provides travel demand services and programming through partnerships with the regional municipalities and cities which include online ride matching, emergency ride home, workplace events and outreach, regional and local marketing, education and training for all forms of travel including walking, cycling, transit, carpooling and driving tuned up vehicles
- Works with commuters across the region at partner workplaces to promote sustainable travel options
- Provides assistance in planning for business continuity during special events and regional construction projects (e.g., Queen Street Hill construction, TORONTO 2015 Pan Am/ Parapan Am Games)

- Provides design, incentives and funding support for bicycle and carpool parking infrastructure as well as other end of trip facilities such as showers and lockers
2. Community Program
    - Strategy developed in 2014 to strengthen community outreach
    - Initiatives include campaigns to build awareness of mobility options, and broadening the availability, quality and awareness of options to GO stations
    - Provides GO station access options (e.g., car-share vehicles, electric vehicle charging stations, bicycle parking)
    - Hamilton designed an extended community program that includes community-based social marketing, education and training and additional infrastructure including the public bike sharing program and the bicycle parking program.
  3. School Program
    - From 2009 to 2011 Metrolinx and its partners led the Stepping It Up (school travel planning) pilot, which included schools in Hamilton
    - Since 2011, Metrolinx is now focusing on the development of broader support for Active and Sustainable School Transportation (ASST). Smart Commute has developed strong partnerships with local and municipal programs as part of the GTHA ASST Regional Hub.
    - Various sections at the City, including Public Health, Public Works and Planning, developed, deliver and support ASST programming to schools in Hamilton which include the development and implementation of School Travel Plans, organization of events including Wear Yellow Day, and work on policy improvements and school site design.

## **5.2 Municipal Approach to Sustainable Mobility Implementation (TDM): Review and Inventory of Current TDM Programs**

In 2016, an inventory and review of municipal TDM programs within the GTHA and across Canada was undertaken. This inventory and review was conducted by phone and email interviews, and included information about the number and scope of existing TDM programs, as well as staffing and funding resource levels. Results of this review are summarized in this section.

In Ontario, TDM programs at the municipal level were largely initiated by *The Big Move* (2008). *The Big Move* recommended the inclusion of TDM strategies as part of key planning policies at the municipal level.

At the policy level, the review and inventory indicated that:

- 80% of the larger municipalities have a robust high-level policy framework for TDM (Official Plan and Transportation Master Plan)
- While 57% of municipalities have development planning TDM regulations, only two have detailed processes for requirements, assessment and monitoring



- More than half of the municipalities have basic TDM programs or initiatives (education, encouragement, marketing, etc.) however, focus is primarily on providing infrastructure for transportation alternatives (e.g. sidewalks, cycling network, transit, carpool lots, parking)
- A significant number of municipalities look to their upper-tier regional partners to provide non-infrastructure TDM programming

TDM staffing resources were also evaluated as part of this review. Table 2 below presents the number of full-time employee equivalents (FTEs) working on TDM initiatives by municipality, per 100,000 residents. For the purposes of this exercise, only full-time permanent employees were included.

**Table 2 TDM Program Resources (FTEs) (based on 2016 inventory)**

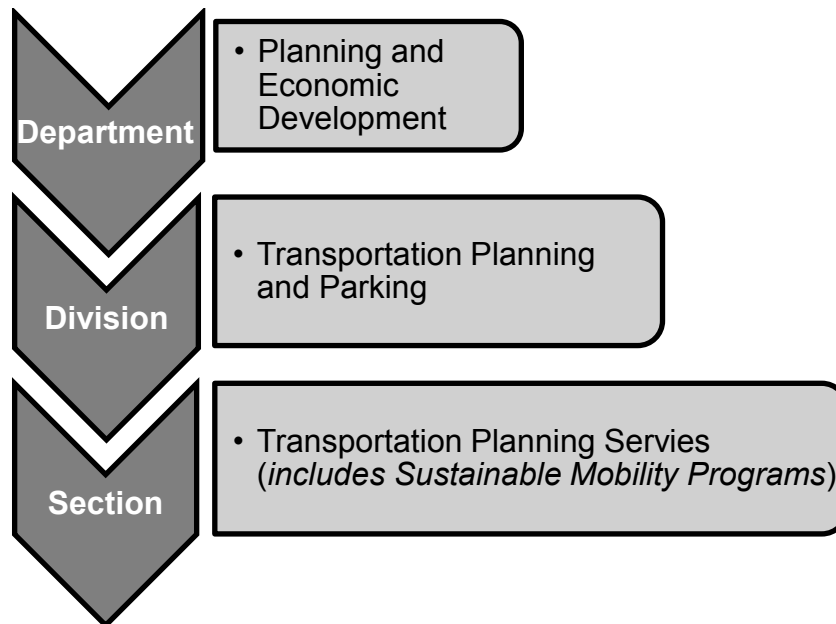
Municipality	FTEs per 100,000 residents
City of Winnipeg	0.30
City of Hamilton	0.48
Regional Municipality of Halifax	0.77
Halton Region	0.80
City of Guelph	0.87
Peel Region	0.89
York Region	0.97
City of Ottawa	1.02
Durham Region	1.03
Waterloo Region	1.18
City of Calgary	1.28

As of the end of 2017, the City of Hamilton has 0.48 FTEs working on TDM per 100,000 residents. With the exception of Winnipeg, Hamilton has the fewest resources on a per-capita basis compared to all other cities involved in this review. Based on these findings, Hamilton’s program would appear to be under-resourced.

### **6.0 The City of Hamilton’s Sustainable Mobility Program**

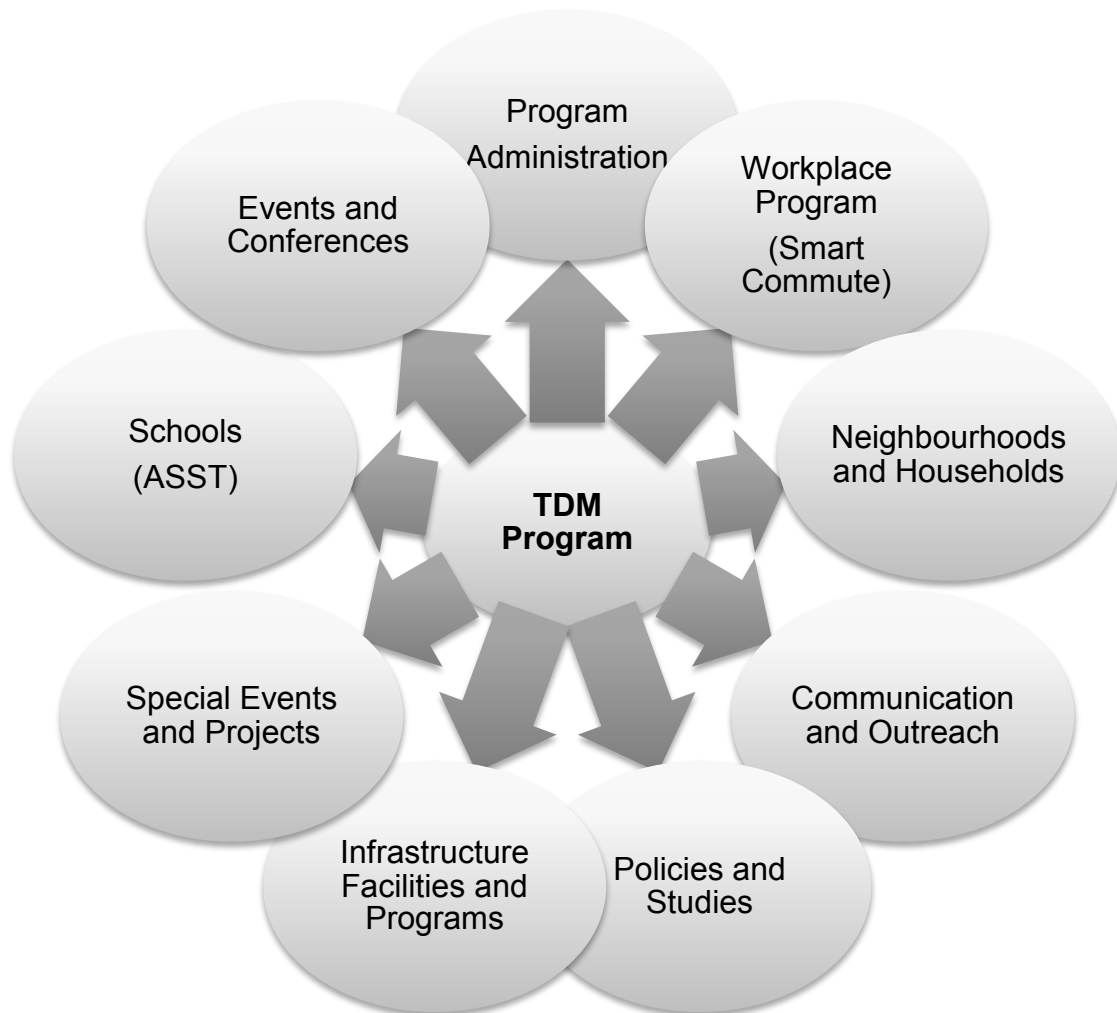
In 2007, TDM was identified as a priority in the city-wide TMP. As part of the TMP, a policy paper on TDM was developed which included seven recommended TDM policies for inclusion in Hamilton’s TMP. A recommendation identified in the policies, which was implemented, was a *TDM Coordinator position*. The *TDM Coordinator* is responsible for leading and managing the City’s implementation of the recommended TDM policies in the TMP. This position was temporary between 2007 and 2009, and has since become a full-time permanent position and more recently renamed as *Project Manager – Sustainable Mobility Programs*. The organization of the Sustainable Mobility Program as of the end of 2017 is provided in Figure 3.

**Figure 3 Organization of the Sustainable Mobility Program at the City of Hamilton**



Funding for the program comes from two main sources: Metrolinx’s Smart Commute Program and the Roads portion of the City’s Capital Budget. Funding is allocated from the Roads portion of the budget because sustainable mobility reduces the need for road widenings and extensions, while reducing dependence on single occupant vehicles (SOV). There are other funding sources available including Development Charges, public-private partnerships (PPP) and project-specific private and public grants. Several projects, such as secure bicycle parking installations, School Travel Planning, portions of the Smart Commute program, car share and the public bike share system are funded through such alternative funding sources. Figure 4 on the following page presents an overview of the City’s current Sustainable Mobility Implementation Program. The key programs and projects are described in the following sections, and are outlined in more detail in Appendix A to this report.

**Figure 4 Overview of the City of Hamilton's current Sustainable Mobility Implementation (TDM) Program.**



Since its establishment, Hamilton's Sustainable Mobility Implementation (TDM) program has experienced a number of milestones including:

- 2005: Development of the Smart Commute Hamilton TMA
- 2009: Renewal and re-launch of the Smart Commute Hamilton TMA
- 2009-2015: Five Transportation Summits
- 2009-present: Co-development of the School Travel Planning Program with Public Health Services including the establishment of the School Travel Planning certification program
- 2010: First Open Streets Hamilton organized with the City and the community as partners
- 2011: New employers recruited to Smart Commute and tripling of carpools formed on the Smart Commute ride-matching on-line tool
- 2011-present: Car Share Corporate Membership program

- 2012: Development of the Community in Motion Awards
- 2013: WALK Friendly Community Silver Designation from Green Communities
- 2013: Individualized marketing and construction mitigation for the closure of the Queen Street Hill having over 4,000 people engaged and over 900 individualized travel plans
- 2013-present: Development of the Travelwise App and website, including the development of Social Cyclist smart phone trip logging tool
- 2014-2015: A City-wide bicycle parking audit and plan to install additional bicycle racks
- 2015: Launch of SoBi Hamilton, the City's public bike share program with 750 bicycles and 115 stations (see Appendix B for a full analysis of the system)
- 2015: Implementation of the *TDM Land Use and Development Guidelines* to guide development within the City
- 2015: Development and implementation of the Bicycle Friendly Business Program, in partnership with Share The Road
- 2015: Signing of the Active and Sustainable School Transportation Charter
- 2016: Exceeded projected ridership targets of Hamilton's public bike share system including over 12,000 members, 500,000 trips and 1,000,000 kilometres traveled
- 2016: First cycling education and outreach event for newly installed infrastructure (Herkimer-Charlton Bicycle Lanes at Durand Park)
- 2016-present: Development of the "Everyone Rides Initiative Pilot Program" through the FCM Green Municipal Fund (a \$550,000 pilot project) with the Hamilton Community Foundation and City Urban Renewal section as partners resulting in new public bike share stations, bicycles and subsidized passes (additional details are provided in Appendix B to this report)
- 2016-present: Participation in the Bicycle/Walking Friendly Community and Bicycle/Walking Friendly Business Programs
- Ongoing: Annual events (Bike to Work Day, Bike Month, Smart Commute Week, Carpool Week, Open Streets Hamilton, 100in1 Day, etc.) that have seen increased annual attendance
- Ongoing: Active participant in numerous community initiatives (e.g., Mobility Lab facilitated by Evergreen)

The following sections summarize the elements of Hamilton's Sustainable Mobility Implementation (TDM) program. Further information regarding project and program details can be found in Appendices A and B.

### **6.1 Smart Commute Hamilton Workplace Program**

In 2005, Smart Commute Hamilton began as a local office of the regional Smart Commute program and by 2008 it was part of the renewed program partially funded by

Metrolinx. Smart Commute Hamilton continues to add new employer members. Currently, 23 local employers are actively involved. Below is a list of the activities included in the Smart Commute Workplace Program.

- Program delivery services and administration of the program through contracted resources
- On-line ride matching and physical carpool parking management
- Workplace carpool parking plan and facilities development
- Bus schedule analysis and facilitation of bus schedule and shift accommodations
- Enhanced Services Program (ESP)
- Shuttle management
- Operation of the Transportation Management Association (the official organization of the employer partners)
- Workplace outreach and safety and skills training
- Workplace secure bicycle parking facilities planning and development
- Corporate car share planning and implementation
- Discounted Transit Pass Programs for employees
- Emergency Ride Home commuter insurance

## **6.2 Infrastructure, Facilities and Programs**

Infrastructure, Facilities and Programs include cycling and carpooling infrastructure and programming, Hamilton's public bicycle share program, and more. Below is a list of the Infrastructure, Facilities and Programs activities.

- Right-of-Way Bicycle Parking Plan (within an Appendix to the Cycling Master Plan)
  - Audit and analysis
  - Bicycle parking installations
- Secure bicycle parking planning and installations
- Bicycle valet equipment management and support of valets at events
- Carpool Parking Program (for City locations)
- Interactive cycling map
- School Bike Rack Seed Program
- Car Share Corporate Membership Program
- Smart Travel webpage – a one-stop integrated transportation options portal on the City of Hamilton website
- Hamilton Public Bike Share Program (see Appendix B for a full analysis)
  - Operations monitoring
  - Contract administration
  - Program management
  - Media relations and outreach
  - Sponsorship

- Station location management
- Expansion planning, grants and pilots

### 6.3 Schools Program

The Schools program is centred on the School Travel Planning process which engages the school community through walkabouts, modal split evaluation and surveys and action identification and implementation. Schools with travel plans and implemented actions qualify for the bicycle rack seed program and are encouraged to participate in up to three “Wear Yellow Days” which encourage students to walk and cycle to school and be recognized for doing so. Below is a list of the Schools program activities.

- Active and Sustainable School Travel (ASST) Charter implementation
- ASST Certification and School Travel Plan implementation
- Wear Yellow Day event, outreach and recognition
- Coordination with Public Health Services on the overall ASST Program

### 6.4 Neighbourhoods and Households Programs

Neighbourhoods and Households include behaviour-change TDM initiatives aimed at citizens, as opposed to programs that are intended to reach employees and students. Below is a list of the Neighbourhoods and Households program activities.

- Construction mitigation and public transit terminal/station access
- Community-based social marketing (individualized marketing)
- Community safety and education training for walking, cycling and transit

### 6.5 Communication and Outreach Programs

Below is a list of the Communication and Outreach program activities.

- Bicycle and pedestrian education and safety training
- Social media and newsletters
- Education program development, video production, and media relations
- Bicycle lane promotions and community-based social marketing
- Transit education, marketing and promotion
- Targeted training/skills workshops for students, seniors and newcomers

### 6.6 Policies and Studies

Research and policy analysis and development is an important part of the Sustainable Mobility program. As a relatively new field of study, it is important to understand new trends and research and develop policy that best supports the program. Below is a list of the Policies and Studies program activities.

- TDM Plans for Developments – review of plans and development of enhancements (for example, the *TDM Land Development Guidelines* assist developers with creating and submitting TDM Option Reports)
- Development application review support
- TDM strategy and Zoning By-Law integration
- GTHA TDM Leaders Forum and coordination with Metrolinx

- Carpool and parking management
- Complete streets education and outreach

### **6.7 Special Projects**

Special Projects include one-time projects that are specific to ongoing local and regional events and initiatives.

### **6.8 Events**

Below is a summary of the annual events which build awareness, integrate education and training, engage the media and normalize active transportation behaviours.

- Cycling outreach and training events (year-round)
- Carpool Week (February)
- Biennial Transportation Summit (Spring)
- Community in Motion Awards (May)
- Bike Month and related activities (May-June)
- Open Streets support (June)
- 100In1 Day support (June)
- Smart Commute Month (September-October)

### **6.9 Program Administration**

Below is a list of the Program Administration activities.

- Data collection and reporting
- TDM Framework and Communications Plan
- City-wide integrated work plan
- Sustainable Mobility Annual Report
- GTHA Coordination Committee

### **7.0 Review of Existing Sustainable Mobility Implementation (also referred to as TDM) Program Resources**

A detailed review of the current Sustainable Mobility Implementation Program at the City of Hamilton was undertaken in 2016, including all current programs, projects and events.

This review identified whether current resources are meeting the needs of all current activities, and also identified projects and programs that are currently not funded, but would support the vision and goals of the TMP review and update (summarized below). The results of this review reaffirmed that since its establishment in 2005, the Sustainable Mobility Implementation program has achieved substantial success, especially since its renewal in 2009. However, a number of current programs are lacking resources. In order to maintain and strengthen the existing program, additional resources are required. Further information on project and programs can be found in Appendix A.

Below is a summary of the current programs and projects that would benefit from additional resources:

- Bicycle lane safety training, cycling education, marketing and promotions
- Review of TDM Options reports submitted by developers
- Grant writing to fund new programs and initiatives
- Improvement of operations and station planning relating to Hamilton's public bike share system
- Improvement of the Rural Routes Program
- Branding and marketing of workplace programs and workplace recruitment
- Bus schedule analysis and planning for employer sites through the Smart Commute program
- Discounted Transit Pass Program
- Employer shuttle and vanpool management
- ASST Certification with the goal to have every school enrolled
- School Travel Planning with the goal to have a plan for every school in the city
- Implementation of endorsed ASST Charter

Below is a summary of future projects and programs (unfunded) and noting that these span different divisions such as HSR and Traffic Safety:

- Bus training for students and seniors who haven't used transit before
- Bicycle and Pedestrian Friendly Business Improvement Areas (BIAs) program
- Community engagement and partnerships relating to sustainable mobility
- Community-based social marketing and individualized marketing
- Complete-Livable-Better Streets engagement
- Construction mitigation
- Cycling network gap analysis and priority identification
- Cycle training/ tours and kick-off events in neighbourhoods with new infrastructure
- Employer TDM infrastructure inventory
- End-of-trip facilities planning and implementation including showers, lockers and bicycle parking
- Expand School Travel Planning into a permanent program in order to implement the ASST Charter
- Expand Smart Commute Program from 23 to 100 workplaces
- Individualized trip planning tool
- Integration of TDM with Planning (Official Plan, Secondary Plans, Neighbourhood Plans)
- Micro-transit (using technology and innovation for first and last mile trips)



- Park-and-ride facilities at major shopping and community centres for commuter carpooling and bus access
- Support for transit marketing and outreach
- TDM key performance indicator (KPI) identification, monitoring and reporting
- Traffic road safety/positive contribution to Vision Zero – using TDM as another Vision Zero tool

In 2014, a second position was added to the Sustainable Mobility Implementation (TDM) Program (temporary FTE, a *Sustainable Mobility Program Student Intern* (2)), along with a long-term contract with a consultant operating the Workplace TDM program (Smart Commute Hamilton beginning in 2015 (3)). Additional support is provided to the *Project Manager – Sustainable Mobility Programs* including that of a project management coordinator, a co-op student, three Project Managers and support by a technician (Table 3). Cumulatively the City of Hamilton has 5.5 FTEs working on TDM however only 2.5 FTE are permanent full-time employees. The other positions are temporary contract positions. Other surveyed municipalities and cities did not include non-permanent positions. In addition to the resources identified, the delivery of Sustainable Mobility Programs also relies on partnerships.

**Table 3 Summary of Staffing Resources for the Sustainable Mobility Implementation (TDM) Program (as of the end of 2017)**

Position Title	FTE	Status
Manager - Transportation Planning	0.05	Permanent
Senior Project Manager- Transportation Management	0.05	Permanent
Project Manager- Sustainable Mobility Programs (1)	1.0	Permanent
Sustainable Mobility Program Student Intern (2)	1.0	Temporary
Smart Commute Hamilton, External Workplace TDM Program Consultant (3)	0.75	Temporary
Co-op Student – Sustainable Mobility	1.0	Temporary
Project Manager - TMP implementation	0.25	Permanent
Project Manager - Transportation Management	0.33	Permanent
Project Manager - Alternative Transportation (Cycling)	0.33	Permanent
Project Management Coordinator	0.33	Temporary
Transportation/Transit Technologist	0.4	Permanent
Total	5.5	

### 7.1 Recommended Actions

This summary demonstrates the importance of the Sustainable Mobility Program and the success of the TDM policies, interventions, infrastructure and programs. The staffing resources and funding for this program was set out in 2007, when Sustainable Mobility was in its infancy. At the time there were only four employer partners in the Smart Commute program (there are now over 20 and growing) and the public bike share program did not exist. Furthermore, secure bicycle parking development, school

travel planning and certification, TDM Plans for developments, community-based social marketing in neighbourhoods, construction mitigation and station access were not envisioned at that time. Many elements of these programs are under-resourced would benefit from additional resources.

Sustainable Mobility's return on investment (ROI) is significant. Small expenditures can lead to important improvements in a citizen's commute that:

- Reduce the need for additional roads or expansions;
- Reduce wear and tear on roads;
- Contribute to sense of place and safety helping to achieve the goals of Vision Zero;
- Improve air quality and reduce climate change impacts;
- Encourage physical active and contribute to positive health outcomes.

In summary, to maintain the existing Sustainable Mobility Implementation (TDM) program at full capacity, as well as to further develop the program in the specific areas described above, additional resources are recommended.

By applying a phased approach over seven years, a first step could be to establish a Program Manager position. This will improve program coordination and help to manage all the partnerships necessary to implement the program. By 2020, this position would lay the ground work for implementing additional programs and enhancing current programs. This would meet the immediate need for dedicated program resources.

In year two to three, as these programs gain even more momentum, a marketing and outreach coordinator should be hired (2023), along with an increased budget for the Sustainable Mobility Program (2020). This would allow further outreach into the community in the form of community-based social marketing, safety training and outreach. A second position should also be considered in year five to seven with a focus on infrastructure, named the Active Transportation Coordinator. This employee would support the Cycling Master Plan and the Pedestrian Mobility Plan and oversee its implementation. They would coordinate with the Traffic Engineering section on bicycle lane implementation and the Vision Zero approach to road safety.

Under the current funding model for Sustainable Mobility Implementation (TDM), this would require a phased contribution from capital from 2019 to 2025 with zero or minimal net levy impact. Expansion of the sustainable mobility program will be considered as part of annual budgeting processes and applicable approval processes.

In conjunction with the enhancement and growth of the Sustainable Mobility Program, the following actions are recommended for inclusion in the TMP:

- Expand the reach and effectiveness of current Sustainability Mobility programs (Transportation Demand Management, TDM) to help achieve mode shift targets. This includes continued application of the TDM and Land Development Guidelines as part of development approvals.
- As part of future Official Plan and zoning by-law amendments, integrate TDM requirements such as end-of-trip facilities, car share, and public bike share.
- Expand Smart Commute services to include a wider range of businesses and geographic coverage.
- Apply individualized marketing (IM) and community-based social marketing (CBSM) as part of Sustainable Mobility programs.
- Coordinate School Travel Plans for every elementary school in the Hamilton-Wentworth District School Board (HWDSB) and Hamilton-Wentworth Catholic District School Board (HWCDSB) by 2022 in partnership with Healthy and Safe Communities (HSC), the Hamilton Strategic Road Safety Program, other City departments and local schools to identify safety and TDM opportunities.

## List of Appendices

**Appendix A:** Sustainable Mobility Implementation (TDM) Program Review

**Appendix B:** Hamilton Bike Share Background Information



**Appendix A: Sustainable Mobility (TDM) Implementation Program Review**

## Appendix A

### Sustainable Mobility Program Review

A detailed review of the Sustainable Mobility Program was undertaken as part of the TMP review and update. This review included the identification of current programs and projects that have sufficient resources, current programs/projects that do not have sufficient resources, and potential programs and projects for future consideration. These are summarized in Tables 1, 2 and 3, respectively. A complete list of all current and future programs and projects is provided in Table 4, including a brief description and link to the TMP review and update.

**Table 1 Current Sustainable Mobility Programs with Sufficient Resources**

Program Type	Program/Project Name
<b>Community</b>	100in1 Day
	Bike Month, Bike to Work Day and Bike to School Week
	Bicycle Parking Audit, Secure Installations, Strategy and Implementation
	Bicycle Valet
	Community in Motion Awards
	Complete-Livable-Better Streets Engagement
	Hamilton Bike Share - Marketing, Media and Outreach*, Program and Contract Management, Station Location Coordination*
	Maintenance of Interactive Cycling Map
	Open Streets Hamilton*
	Research and analysis (general and policy)
	Social Cyclist cycling route online app
	Transportation Master Plan (TMP) and TDM Framework integration
	Transportation Forum
	Travel Wise website maintenance
	Zoning By-law reform
<b>Workplace</b>	Bicycle Friendly Businesses
	Bike to Work Day
	Carpool Parking Management
	Carpool Week
	Emergency Ride Home Program
	Enhanced Services Program
	Metrolinx Reporting
	Smart Commute Website, Social Media and Newsletter
	Smart Commute Month
<b>School</b>	Bicycle Rack Seed Funding Program
	Bike to School Week
	Wear Yellow Day
<b>Program Admin.</b>	Annual Report
	GTHA Leaders Forum and Ontario Leaders Forum

**Table 2 Current Sustainable Mobility Programs with Insufficient Resources**

<b>Program Type</b>	<b>Program/Project Name</b>
<b>Community</b>	Bicycle Lane Safety Training, Cycling Education, Marketing and Promotions
	Review of TDM Reports Submitted By Developers
	Grant Writing to Fund New Programs and Initiatives
	Improvement of operational issues relating to Hamilton Bike Share
	Improvement of the Rural Routes Program
<b>Workplace</b>	Branding and marketing of workplace programs and workplace recruitment
	Bus schedule analysis and planning
	Discounted Transit Pass Program
	Shuttle Management
<b>School</b>	Active and Sustainable School Certification
	School Travel Planning
	Implementation of Endorsed ASST Charter
<b>Program Admin.</b>	Participation on committees.

**Table 3 Future Sustainable Mobility Programs and Programs on Hold**






<b>Program Type</b>	<b>Program/Project Name</b>
<b>Community</b>	Bus and Bicycle Training for Students and Seniors
	Bike and Pedestrian Friendly BIAs
	Community Engagement and Partnerships (Mobility Lab)
	Community-based Social Marketing, Individualized Marketing and Construction Mitigation
	Complete, Liveable and Safe Streets Engagement
	Construction Mitigation
	Cycling network gap analysis and priority identification
	Cycle training/cycle kick-off events for new infrastructure
	Park and Ride Facilities at Major Shopping and Community Centres for Commuter Carpooling and Bus Access
	TDM KPI Identification, Monitoring and Reporting
	Integration of TDM with City Planning (Official Plan, Secondary Plans, Neighbourhood Plans)
	Traffic Road Safety/Positive Contribution to Vision Zero
	Transit Marketing and Social Media
<b>Workplace</b>	End of trip facilities
	Expand Smart Commute Program from 20 to 100 workplaces
	Individualized Trip Planning and Reward Tool
	Micro-transit
	Employer TDM infrastructure inventory
<b>Schools</b>	Expand School Travel Planning into a permanent program
<b>Program Admin.</b>	In the future, in order to develop the aforementioned projects, programs and events increased resources are required to assist with project coordination.

**Table 4 Summary of Current and Future Sustainable Mobility Programs**















Name of Program/Project	Type	Description	Status	Relevant TMP Outcome(s)
100in1 Day	C	This program works with community groups and citizens to re-envision public spaces to encourage active travel by encouraging 100 actions in 1 day. This event is used to perform outreach and engagement on active transportation goals for the City.	Current	
Active and Sustainable School Certification	S	Active and Sustainable School Transportation (ASST) Certification helps schools in Hamilton complete actions to improve walking and cycling rates to school and earn recognition for their efforts. The goals of ASST Certification are to: raise awareness of transportation modes and options; collect data to understand and track current and future trends in travel behaviours of students and school staff; develop and build an ASST culture; connect the school to ASST resources. More staff resources are required to deliver this program to all schools in the city.	Current	
Annual Report	PA	Provide an annual report of all sustainable mobility events, programs and projects undertaken over the past year. This includes metrics and achievements.	Current	
Bicycle Friendly Businesses	W	This program seeks to foster a cycling friendly environment for businesses and customers in Hamilton. It also strives to create a stronger cycling culture in the City of Hamilton and work in partnership with the BIAs to promote local businesses and active transportation.	Current	
Bicycle and Pedestrian Friendly BIAs	C	This project would involve the provision of resources to BIAs as incentives for customers and employees to use sustainable transportation to get to and within BIAs around the City. It would also provide BIAs an opportunity to get certified for their efforts in attracting and providing amenities for customer cyclists in partnership with Ontario By Bicycle (OBB).	Future	
Bicycle Lane Safety Training, Cycling Education, Marketing & Promotions	C	Leading up to installation of bicycle lanes around the City, promotions for the bicycle lanes are unveiled. This may include promotional information for nearby residents or a grand opening event promoting safe use of the new bicycle lanes. Further outreach events promoting safe cycling require more resources to continue.	Current	
Bike Month	C	Bike Month is an annual event hosted by Smart Commute regionally in the GTHA. The month is designed to promote cycling as a viable active transportation option and normalize the behaviour. The event also creates a supportive environment for new cyclists to try cycling to work or school for the first time and includes training and safety messaging.	Current	
Bicycle Parking - Audit	C	This project aims to assess all existing bicycle parking in the City of Hamilton at regular intervals and ensure that racks are maintained and gaps in the bicycle parking network are identified and eliminated by future bicycle rack installations.	Current	
Bicycle Parking - Secure installations	C	According to the bicycle parking strategy and Bike Linx program, secure bicycle parking is installed at appropriate locations for those requiring long term storage throughout the day.	Current	
Bicycle Parking - Strategy and Implementation	C	This develops a strategy for increasing bicycle parking, including replacing and fixing exiting infrastructure. It includes requirements for bicycle parking at various locations and is tied to the auditing process.	Current	

Name of Program/Project	Type	Description	Status	Relevant TMP Outcome(s)
Bicycle Rack Seed Funding Program	S	As an ASST initiative, the City funds up to \$600 for a multi-ring bicycle rack for schools that request a bicycle rack. Schools must meet a set criteria in order to be eligible to receive funding. Site visits are also conducted and a relationship with the school is required through the School Travel Planning Process.	Current	
Bike to School Week	C/S	An annual campaign that takes place during the first week of Bike Month. Students are encouraged to bicycle to school for a week to receive prizes and incentives provided by the City and Metrolinx.	Current	
Bike to Work Day	C/W	Bike to Work Day is an annual event celebrating, and encouraging, people who cycle to work. The day is designed to promote cycling as a viable active transportation option. It also incorporates cycle training sessions and guided rides. The media are highly encouraged in this event to help establish cycling as a normative behaviour.	Current	
Bicycle Valet	C	Similar to coat check (but for bicycles), the goal is to have one available at every major event in the City. Equipment is provided by the City but run by local non-profit organizations and/or event organizers.	Current	
Branding and marketing of workplace programs and workplace recruitment	W	As part of the workplace program, Smart Commute seeks to reach employers in Hamilton. Currently, due to lack of resources we are unable to reach as many employers as targeted, significantly reducing our influence. Secondly, local Business Improvement Areas (BIAs) are currently not being included in the workplace program and thus require assistance for TDM initiatives. While the majority of Hamilton's largest employers are currently part of the Smart Commute program, the goal is to move from 25 workplaces to 100 workplaces. Additional resources are required to achieve this.	Current	
Bus schedule analysis and planning	W	In order to better serve the needs of workplaces and employees TDM programs aim to provide improved service to employers. Improved service may be in the form of providing more transit focused approaches to sustainable transportation for employees through working with employers and HSR to determine best fit bus times and adjust schedules accordingly. Additionally, transit use could be increased through improving the marketing of transportation options, developing micro-transit programs, and providing new-hire sustainable transportation information packages.	Current	
Bus and Bicycle Training for Students and Seniors	C	The City has an opportunity to partner with one or more not-for-profit organizations to help students and seniors learn how to use the HSR and travel by bicycle. This program could be in the form of a targeted campaign and occur around new infrastructure improvements or areas of high need. A bus would come to a gathering of students or seniors and staff would educate on using the bus in an entertaining and interactive way.	Future	
Carpool Parking Management	W	Providing parking spaces throughout the City to those who carpool and administrating the passes for these spaces. This is done both for City lots and Employer Parking areas through the Smart Commute program.	Current	
Carpool Week	W	An annual, week-long event focused on increasing awareness and participation in carpooling and associated programs. Incentives are provided for those who carpool to work and register on-line.	Current	
Committee Participation	PA	Participation in coordination committees including the Public Health – Public Works Joint Committee.	Current	
Community Engagement and	C	The development and maintenance of community partnerships is an important part of the current TDM program. Through this analysis, it was identified that there is a great opportunity to expand and grow these partnerships to	Future	



Name of Program/Project	Type	Description	Status	Relevant TMP Outcome(s)
Partnerships (Mobility Lab)		benefit the Hamilton community, building on the Complete Streets engagement process. There are many great organizations within the City working to improve transportation options for residents. Partnering with such organizations will help to reach and engage more residents, coordinate efforts, and ensure that community initiatives are not being duplicated. This would include targeted outreach to community groups, not-for-profits, and neighbourhood associations. The first step occurred with the development of a "Mobility Lab" in partnership with various organizations and Evergreen.		
Community in Motion Awards	C	The Community in Motion Award is an award to recognize members of the community who have made an effort to actively support and promote the use of healthy and sustainable forms of transportation such as walking, cycling, and public transit. It is awarded on Bike to Work Day annually to recipients in 5 categories.	Current	
Community-based Social Marketing, Individualized Marketing and Construction Mitigation	C	Community-Based Social Marketing (CBSM) is the leading intervention strategy to change travel behaviour to more sustainable modes; thereby encouraging and incentivizing communities to reduce their impact on the environment. CBSM relies on market research to discover the perceived barriers to behaviour change and the ways to overcome those including commitments, prompts, social norms, social diffusion, feedback and incentives. To better reach the Hamilton community, it is proposed that the CBSM intervention process be undertaken in identified communities. This includes behavioural surveys, provision of resources to aid in sustainable travel, education and workshops. Pre- and Post- intervention surveys would help demonstrate program successes and challenges and interventions will include public forums. This is especially true where new infrastructure is being built in a community so that residents are aware of the changes and feel like they can make positive and healthier use of the new infrastructure in a safe and informed way. A policy goal is to perform CBSM interventions when transit routes are changed or built and when infrastructure is installed.	Future	
Complete-Liveable-Better Streets Engagement	C	This is an on-going program to ensure complete streets concepts, evaluations, interventions and designs are properly understood by the public and City staff. This includes public outreach, Staff engagement and education around complete streets and their implementation. This will continue to be important as the Complete Streets Policy and Framework is implemented.	Future	
Construction Mitigation	C	To reduce the impact of construction projects the flow of traffic within the community, while also increasing the use of sustainable modes, it is proposed that TDM tools be used on a more regular basis to help communicate with commuters and residents about upcoming and current projects.	Future	
Cycle training/cycle tour and kick-off event in neighbourhoods with new infrastructure	C	Another gap that was identified as part of the TDM review was providing communication and education about new cycling infrastructure. This program would promote new cycling infrastructure, including community kickoff events for larger projects. It would also facilitate cycling training in neighbourhoods where new cycling infrastructure is installed. This training would include a refresher on safe cycling, and information about how to safely use the new infrastructure. This connects to Vision Zero policies and provides another opportunity for positive community engagement.	Future	














Name of Program/Project	Type	Description	Status	Relevant TMP Outcome(s)
Cycling network gap analysis and priority identification	C	As part of continuing to build cycling infrastructure around the City, an interconnected cycling network must be established. Working towards identifying current gaps in the cycling network is crucial in future cycling infrastructure planning and, identifying which areas are priorities for further development. With additional resources a coordinated approach to gap identification and elimination can improve the network significantly.	Future	
Discounted Transit Pass Program	W	The DTP promotes sustainable transportation by offering employers discounted HSR transit passes for their employees. It eliminates two key barriers to transit uptake: lack of knowledge regarding transit routes and timing, as well as cost barriers. This program requires increased funding and resources to reach additional employers.	Current	
Emergency Ride Home Program	W	Employees at a participating Smart Commute workplace are eligible for Emergency Ride Home (ERH) reimbursement. The ERH is to be used in the case of an unforeseen emergency on any day a sustainable method to commute to work was taken and pays for a taxi ride to home. It is a form of commuter insurance to eliminate employee worries about getting home in the event of an emergency.	Current	
Employer TDM infrastructure inventory	W	This project involves an audit of current infrastructure: carpool parking, electric vehicle parking and charging stations, secure bicycle parking, showers and lockers and bus shelters available at workplaces. From this inventory new programs and projects can be initiated to fit the needs of workplaces. These programs may also involve financial contributions from employers or incentives for employees to build end of trip facilities	Future	
End of trip facilities	W	This program would work with Smart Commute employers to improve, or create, end of trip facilities such as the installation of showers, change and locker facilities as well as the design and implementation of short term bicycle parking and long term, card accessed bicycle parking. Resources to provide seed funding to employers would help catalyse this process.	Future	
Enhanced Services Program	W	Providing value-added services to Smart Commute employers (such as relocation studies) at an additional cost. This enables the City to provide depth to employer TDM programs while not incurring additional costs to run the program.	Current	
Expand School Travel Planning into a permanent program in order to implement the ASST Charter	S	School travel plans are currently in a light phase. The ASST Charter calls for a school travel plan for every school but currently we only service 30 per year at maximum. Components of the Charter should be taken into consideration. A school travel plan should be required for every school and renewed every 2 years. Moving from school travel “light”, to a full school travel plan, as was conducted in the Stepping It Up Pilot, will require more resources.	Future	
Expand Smart Commute Program from 20 to 100 workplaces	W	Currently, the Smart Commute Hamilton Transportation Management Association (TMA) includes approximately twenty-three (23) local employers and over 90,000 commuters. In order to reach more employees, it is proposed that the program be expanded to include approximately 100 local employers. This would substantially increase the reach of the existing TDM workplace program. The enhanced program would also include new services such as employee relocation studies, discounted transit and bike share pass programs, a rewards program and passive tracking smart phone application and an individualized trip planning on-line platform development and implementation.	Future	

Name of Program/Project	Type	Description	Status	Relevant TMP Outcome(s)
Grant Writing to Fund New Programs and Initiatives	C	New programs and initiatives are often funded through grants, such as the FCM Green Municipal Fund for the Hamilton Bike Share Everyone Rides Initiative. The resources required to research and apply for these grants are substantial. There is substantial potential to increase grant funding, given increased resources for the application and research process.	Current	
GTHA Leaders Forum and Ontario Leaders Forum	PA	Meetings to collaborate and coordinate TDM and related activities across the region and province. The Committee seeks to inspire TDM professionals through knowledge sharing, support and encouragement of TDM innovation, and drives progress in establishing TDM as a foundational piece of planning, transportation and development in the GTHA	Current	
Hamilton Bike Share - Marketing, Media and Outreach*	C	In partnership with Hamilton Bike Share Inc, the local non-profit operator of the system, increasing the presence and knowledge of Hamilton Bike Share to the community.	Current	 
Hamilton Bike Share - Program and Contract Management	C	This includes presence at city events, workshops, lunch and learns and demo rides.	Current	
Hamilton Bike Share - Station Location Coordination*	C	Contract management for the Hamilton Bike Share system to continue the program and our contract with Social Bicycles Inc., the for-profit bike share vendor and operator of the system. This includes monitoring of the system's performance and ensuring service levels are maintained.	Current	
Implementation of Endorsed Active and Sustainable School Transportation Charter	S	In October 2015, the Active and Sustainable School Transportation Charter was signed by the City of Hamilton and the two local school boards. The goal of the Charter is to facilitate a measurable shift in travel behaviour towards active and sustainable transportation through: policy change, infrastructure improvements, capacity building and education and awareness. Now that the Charter has been signed, there is great potential to develop and grow the current Active and Sustainable School Transportation Charter.	Current	 
Improvement of operational issues relating to Hamilton Bike Share	C	As Hamilton Bike share continues to expand and adapt to the needs of citizens, it is inevitable that operational issues will arise. These issues are resolved in cooperation with the bike share operator; however, the resources to do so are currently lacking. Coordination needs to occur between City departments, external partners, event planners and citizens. The Sustainable Mobility Team does not have the necessary resources to properly serve the bike share system or oversee any enhancements or expansion.	Current	
Improvement of the Rural Routes Program	C	Rural Routes is a joint project with local non-profits, piloted in 2010. The program aims to provide urban Hamiltonians with the opportunity to learn about local food, experience public transit, and purchase goods through visiting local farms. The program has seen increased interest since its conception however, due to lack of resources it has not expanded to its full potential. Improved connections with HSR are required to further develop the program.	Current	 
Individualized Trip Planning and Reward	W	This program would assist individual employees in determining the best way to get to work by evaluating multiple modes through interactive mapping and potential one-on-one support. It would also allow employees to collect	Future	  

Name of Program/Project	Type	Description	Status	Relevant TMP Outcome(s)
Tool		points for sustainable behaviours to be redeemed for prizes and incentives, similar to “Air Miles” programs.		
Integration of TDM with City Planning (Official Plan, Secondary Plans, Neighbourhood Plans)	C	One of the recommended TDM policies from the City of Hamilton Transportation Master Plan (2007) was, “Explicitly consider TDM in all municipal transportation plans and studies (e.g. Class EA projects and Neighbourhood Traffic Management Plans)”. Due to resource limitations, there is currently no formalized process to complete this action. Incorporating TDM into these plans would require additional consultation and participation by TDM staff in the planning process, but it would contribute towards the TMP and help to reinforce TDM within the community.	Future	
Maintenance of Interactive Cycling Map on Smart Commute Hamilton and City of Hamilton websites	C	Continue to develop, update and innovate with interactive on-line mapping systems for the cycling network. This is meant to complement the physical cycling map and be consistent with it.	Current	
Metrolinx Reporting	W	Preparing reports, updates and financial records to Metrolinx as well as project plans and project results summaries. This includes the planning and reporting for all custom projects delivered in partnership with Metrolinx.	Current	
Micro-transit	W	Micro-transit is a program which could be developed for using on-demand technology-based inter-site transportation service for employers with multiple sites. It can also be used by the city to complement main bus routes with an on-demand feeder system where routes do not exist or are underperforming	Future	
Open Streets Hamilton*	C	Open Streets Hamilton is a community-based partnership dedicated to promoting active, healthy, and inclusive lifestyles by temporarily transforming streets into a shared space for everyone to experience. It is operated by a non-profit group that the City provides support to.	Current	
Park and Ride Facilities	C	A possibility to further sustainable transportation options for communities is through establishing park-and-ride facilities in areas of high traffic (e.g. major shopping centres and community centres). Parking in these areas would allow for individuals or groups to carpool to work, events or activities or to catch a bus at a major transit node.	Future	
Research and analysis (general and policy)	C	Building the business case and monitoring results of sustainable mobility is important. A considerable amount of time is spent researching and preparing reports on events, conducting background information, developing programs and projects and analysing collected data related to all aspects of TDM. This ultimately feeds the annual report and demonstrates the success of the program.	Current	
Review of TDM Reports Submitted By Developers	C	Developer submitted TDM Option Reports are required in the development approvals process for developments that meet the criteria. These guidelines contain information about ways to integrate TDM into new developments, redevelopment and existing buildings. They are submitted by developers for review by the Sustainable Mobility Programs team, in alignment with the Official Plan to achieve sustainable transportation and TDM goals. It is difficult to review reports in a time efficient manner given the volume and lack of staff resources.	Current	

Name of Program/Project	Type	Description	Status	Relevant TMP Outcome(s)
School Travel Planning	S	An important part of the ASST certification is to have a School Travel Plan. School Travel Planning is a community based approach to increase the number of adults and students choosing active and sustainable transportation, thereby addressing safety, physical activity and environmental issues. Currently 50 schools across Hamilton have School Travel Plans which include: various events and initiatives held throughout the year; studies on student travel behaviour; and action plans for the school, public health and public works. Additional schools have the potential to be involved. The above goals are not currently being met at over 100 additional schools and the schools with current plans need support to more effectively implement their actions. Additional resources are required to move this process forward and ensure a school travel plan in every school.	Current	
Shuttle Management	W	The shuttle management program involves such services as vanpool coordination, employer owned vehicles being driven to and from work; micro-transit, an on-demand transit service employers can hail via a smart phone app; and shuttles between employer sites. These programs require further development, resources and funding.	Current	
Smart Commute Newsletter, Social Media and Website	W	Smart commute interacts online with local commuters and the public through the following three main methods: a) Monthly newsletter to subscribers with information on upcoming events and success of previous events. It also provides general interest articles, helpful tips and notice of upcoming transportation initiatives; b) Promote events, articles and images relating to Smart Commute and alternative transportation on various platforms i.e., Facebook and Twitter and c) an up to date website that provides further information on services provided, additional resources, events and trip planners as well as the explore tool: <a href="http://www.explore.smartcommute.ca">www.explore.smartcommute.ca</a> which allows commuters to make carpool matches and route their sustainable trips.	Current	
Smart Commute Month	W	Smart Commute Month aims to inspire and engage those living and working in the GTHA to try a different and more efficient transportation option, usually occurring in September around Car Free Day (Sept. 22nd). Participants are encouraged to log their travel and win prizes, driving traffic and data monitoring to the SCH online environment	Current	
Social Cyclist cycling route online app	C	This app collects actionable data on a City-wide scale to improve our community through recording rides, reporting road conditions, requesting bicycle parking and bike share stations. The data can be used for City planning activities.	Current	
TDM Key Performance Indicator (KPI) Identification, Monitoring and Reporting	C	Another major gap that was identified in the current program was the identification, monitoring and reporting of key performance indicators (KPIs) associated with TDM activities. Currently, data is collected on a regular basis regarding travel patterns of Smart Commute Hamilton workplace employers; however, the goal would be to expand this to learn more about the entire Hamilton community. This information would help the TDM program improve over time; including car share data, taxi data, transit data, bike share data, traffic counts, AT count data, injuries and accident data and other sources. More resources are required to develop a comprehensive report card on the state of infrastructure and the interventions required to improve the multi-modal and active transport experience.	Future	



Name of Program/Project	Type	Description	Status	Relevant TMP Outcome(s)
Traffic Road Safety/Positive Contribution to Vision Zero	C	TDM and Sustainable Mobility are keys to achieving Vision Zero targets. Vision Zero cannot be achieved by infrastructure improvements alone; nor can they be achieved through City-wide advertising campaigns. A comprehensive approach that includes community-based social marketing, individualized marketing, cycle training, policy integration, multi-level government coordination, integration into curriculum and much more, is required to fully achieve vision zero. The TDM program is well positioned to help implement a fully comprehensive program, but additional resources are required to achieve this.	Future	 
Transit Marketing and Social Media	C	Through working with HSR a program to develop improved marketing for transit in Hamilton is required. The TDM program can support the HSR in achieving these goals, by better integrating transit marketing and promotions into the TDM and Smart Commute outreach and promotions.	Future	 
TMP and TDM Framework integration	C	Ongoing review of current and future TDM programs based on recommendations from the TMP and other guiding documents. Adherence and progress on this is reported through the Sustainable Mobility Annual Report.	Current	 
Transportation Forum	C	This event brings together municipal staff, community groups, engaged citizens, and local businesses for a day-long look at various transportation issues around the City fostering new ideas and developing action strategies. This occurs every second year alternating with the Upwind/Downwind Conference organized by Clean Air Hamilton. The forum is actioned through the two year-long Mobility Lab.	Current	 
Travel Wise website maintenance	C	The Travel Wise website provides extensive trip planning and travel options to residents and visitors. This includes, walking, cycling, carpooling, car share, transit, bike share, taxi and accessible transit. It is hosted on the City's website <a href="https://www.hamilton.ca/streets-transportation/smart-travel/travel-wise">https://www.hamilton.ca/streets-transportation/smart-travel/travel-wise</a> .	Current	
Wear Yellow Day	S	A school event that promotes active modes of travel where students wear yellow clothing and walk or wheel to school instead of getting dropped off. There are three WYDs throughout the year on International Walk to School Day, Winter Walk Day and Spring into Spring. Schools collect leaves from students to put on their tree of transportation and take a photo.	Current	 
Zoning By-law reform	C	This project incorporates the integration of bicycle parking requirements and other TDM measures into by-law. The goal of the project is to take all of the recommendations in the TDM Guide for Developments and ensure they are incorporated into the City's zoning by-law where possible.	Current	 

**Legend:**

**C** – Community Program/Project

**W** – Workplace Program/Project

**S** – School Program/Project

**PA** – Program Administration Program/Project

 Sustainable and Balanced Transportation System

 Healthy and Safe Communities

 Economic Prosperity and Growth

## Appendix B: Hamilton Bike Share Background Information



**B**

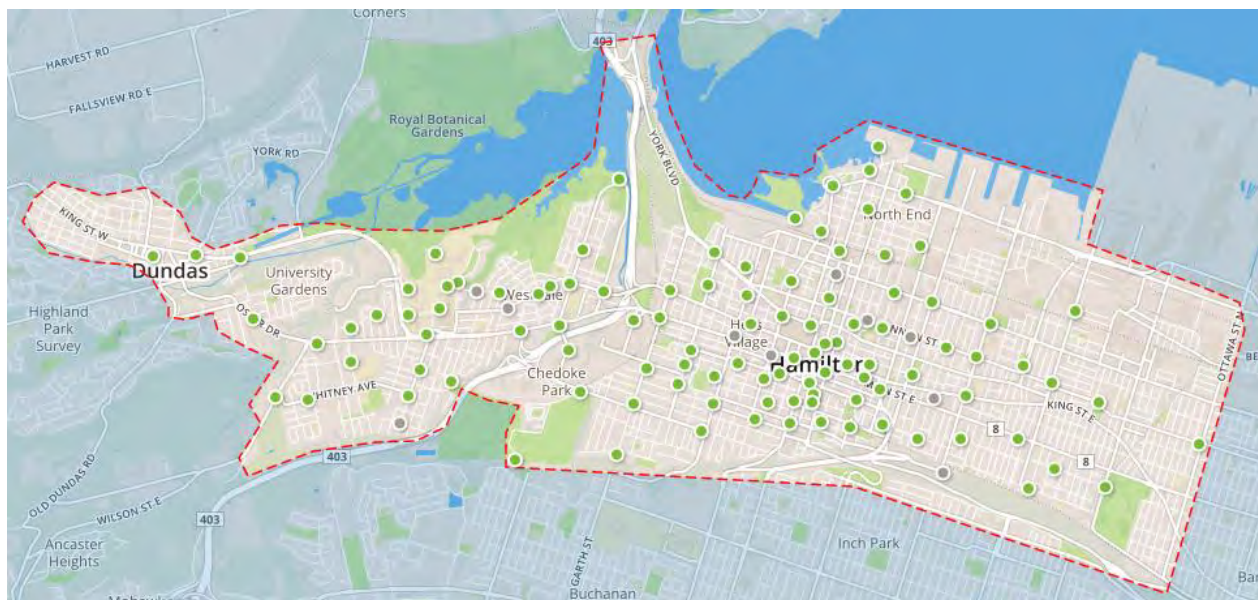
## Appendix B

### Hamilton Public Bike Share Background, Usage and Analysis, Challenges and Expansion

#### 1.0 Introduction

Hamilton's public bike share system launched on March 20, 2015. Since then, the system has been widely embraced as an integral and exciting part of Hamilton's transportation system and cultural landscape. Hamilton's public bike share system spans across approximately thirty-eight (38) square kilometres with 750 bicycles and 116 hubs centered on the downtown and areas east and west of the core from Dundas to Ottawa Street (as of December 2016). The system is largely used for commuting by Hamilton residents, and is a convenient solution for first/last mile connectivity to transit. There are currently over 13,500 active users and over 18,000 people have used the system at least once. The system has generated over 500,000 trips and over 1,500,000 kilometers have been traveled as of December 2016. Ridership in the two years of operation exceeded that which was predicted in the initial business case. Results from a member survey in September 2015 revealed a high degree of member satisfaction, and media coverage has reinforced this. The service area and bicycle station locations as of November 2016 are shown in Figure 1 below.

**Figure 1 Map of Hamilton's public bike share system service area (as of November 2016). Station locations are identified by green and gray circles.**



Key goals of the bike share program include reducing single occupancy vehicle (SOV) use, decreasing greenhouse gas emissions associated with automobile use, improving air quality, increasing physical activity for residents, providing opportunities for residents



and visitors to connect to the urban and natural environments and improving the safety of cyclists.

To date, the program has seen great success, especially in terms of ridership. Table 1 below provides a summary of SoBi ridership data from the launch of the program to December 31, 2016.

**Table 1 Summary of Hamilton’s public bike share system ridership data**

Year	Days of Operation	Trips	Distance (km)	Trips per day	km per day	km per trip
2015 <sup>1</sup>	349	218,628	445,881.9	626.4	1277.6	2.04
2016 <sup>2</sup>	365	316,172	632,801.5	866	1733.7	2.00
<b>Total</b>	<b>653</b>	<b>492,493</b>	<b>1,008,975.2</b>	<b>754.2</b>	<b>1545.1</b>	<b>2.05</b>

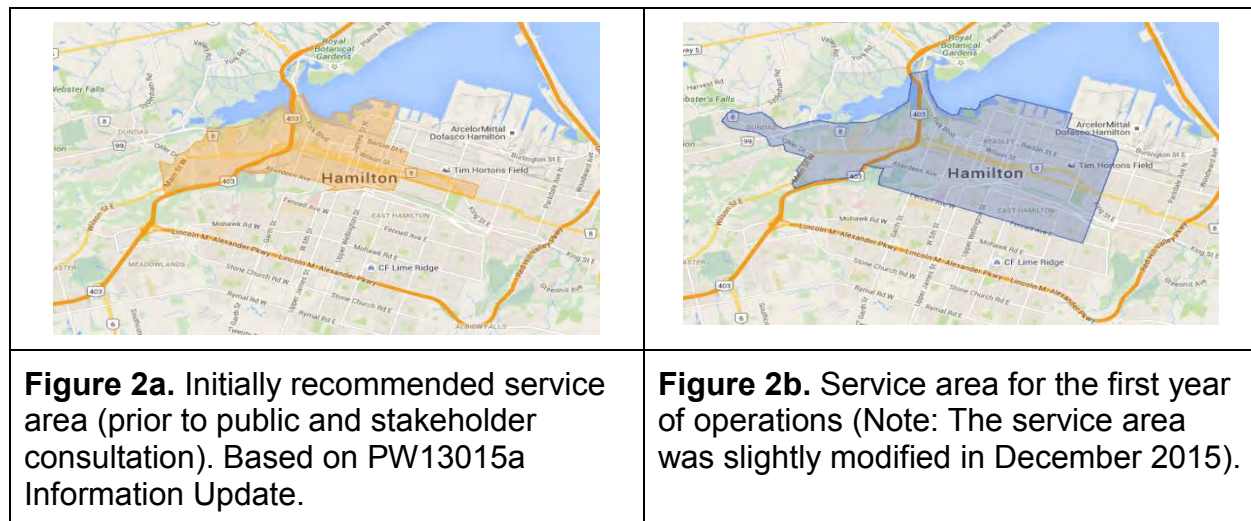
<sup>1</sup> Represents data from January 17, 2015 to December 31, 2015 (Winter Testing Period extended from January 17, 2015 to March 20, 2015. System officially launched on March 21, 2015)

<sup>2</sup> Represents data from January 1, 2016 to December 31, 2016

## 2.0 Current Challenges

The current public bike share service area is significantly larger than what was originally planned (38 square km versus 21 square km; Figure 2 below).

**Figure 2 Initial recommended public bike share service area.**



Because the size of the service area was expanded after funding for the project had been secured and the procurement process had been initiated, the result was a lower density of both bicycles and stations than dictated by engineering best practices (ITDP Bike Share Planning Guidelines; 2013). It has also resulted in additional operational costs associated with a more dispersed service area, which are borne by the local not-for-profit operator, SoBi Hamilton. It is anticipated that bike share service enhancements will be required in the future in order to address these challenges.

### 3.0 Public Bike Share Service Enhancements

Two potential service enhancements that are expected to help address the challenges outlined in the previous section are enhancements as part of the Everyone Rides Initiative Pilot Project (ERIPP) and expansion of the system to other areas of the City.

#### 3.1 Everyone Rides Initiative Pilot Project

The City of Hamilton, in partnership with the local non-profit operator of Hamilton's public bike share system, SoBi Hamilton, have developed an innovative program aimed at providing equitable access to the City's public bike share system for all citizens.

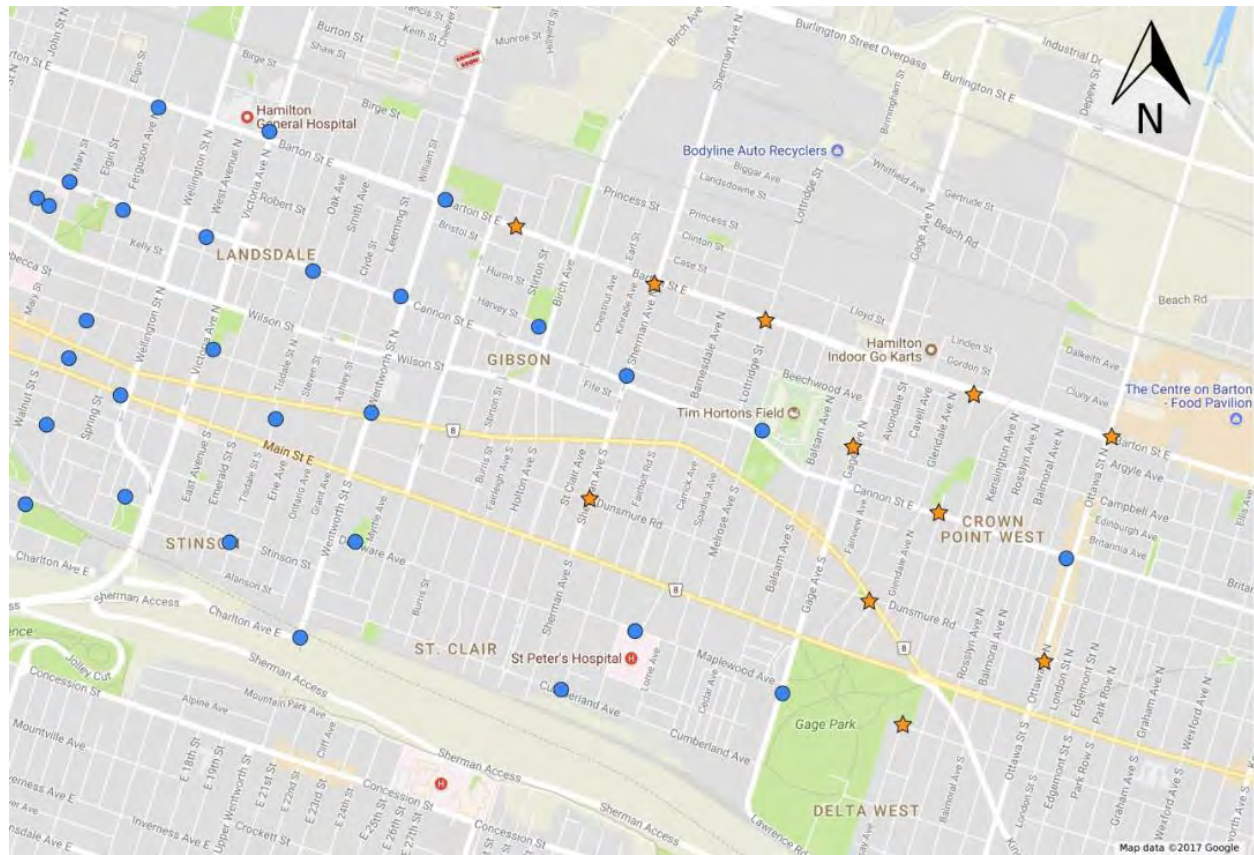
The Everyone Rides Initiative Pilot Project (ERIPP) involves the installation of bike share stations in currently underserved neighbourhoods that are identified in Hamilton's Neighborhood Action Strategy. This pilot is focused on lower density neighbourhoods that are traditionally underserved by bike share, compared to high density neighbourhoods. Subsidized bike share memberships are also provided to individuals who cannot afford the full cost of accessing bike share. Once enrolled in the program, ERIPP members receive training on how to use bike share, and how to cycle safely. They will also have access to group rides that explore the neighbourhoods in a fun and informative way. The pilot program is made possible through a contribution from the Federation of Canadian Municipalities' Green Municipal Fund and the Hamilton Community Foundation, as well as funding from the Urban Renewal and Sustainable Mobility Programs.

The three-year pilot includes:

- Providing 14 new public bike share stations and 75 new bicycles
- Skills and cycle safety training
- Guided group neighbourhood bicycle rides
- Collecting and analyzing usage data to inform improvements and possible future projects
- Consolidating results of surveys and focus groups as well as usage data
- Evaluating effectiveness of membership subsidies and training programs

The pilot is projected to increase the mode share of cycling within the immediate vicinity of new stations by 0.6%. This would represent a significant increase compared to the current cycling mode split. If the pilot is successful, the City will look to replicate the program in other areas of the City, as the public bike share system expands. The ERIPP station locations are shown in Figure 3. The pilot is currently in its first of three years.

**Figure 3 Map of current public bike share station locations as of December 2016 (circles) and ERIPP stations (stars).**



*Note: Not all of the service area is shown on this map.*

### 3.2 East End Enhancement Plan

There is also potential to expand the current public bike share service area in the East end. Currently, the station density is sub-standard according to the international standards outlined in the ITDP Bike Share Planning Guidelines (2013) and needs to be enhanced in order to ease the operational issues in this section of the service area. This expansion includes the system area between Wellington Street and Kenilworth Avenue (the current service area extends to Ottawa Street).

The proposed expansion includes approximately 500 additional bicycles and approximately 50 additional stations, 25 of which would be in new locations (between Ottawa Street and Kenilworth) and 25 of which would enhance the current service area (west of Ottawa Street). Potential station locations are currently not known and would be confirmed based on technical feasibility and public input.

### 4.0 Potential Public Bike Share Expansions

In addition to increasing the density of bicycles and stations within the service area, there is also interest in expanding the system beyond the current service area. Two of the key areas that have been identified for potential future expansions include the

Hamilton Escarpment (“the Mountain”), and a potential Burlington partnership. These two potential expansion areas are described in the following sections.

#### 4.1 Mountain Bike Share Feasibility

During the first year of operation, four stations were located in Hamilton Escarpment neighbourhoods (“the Mountain”):

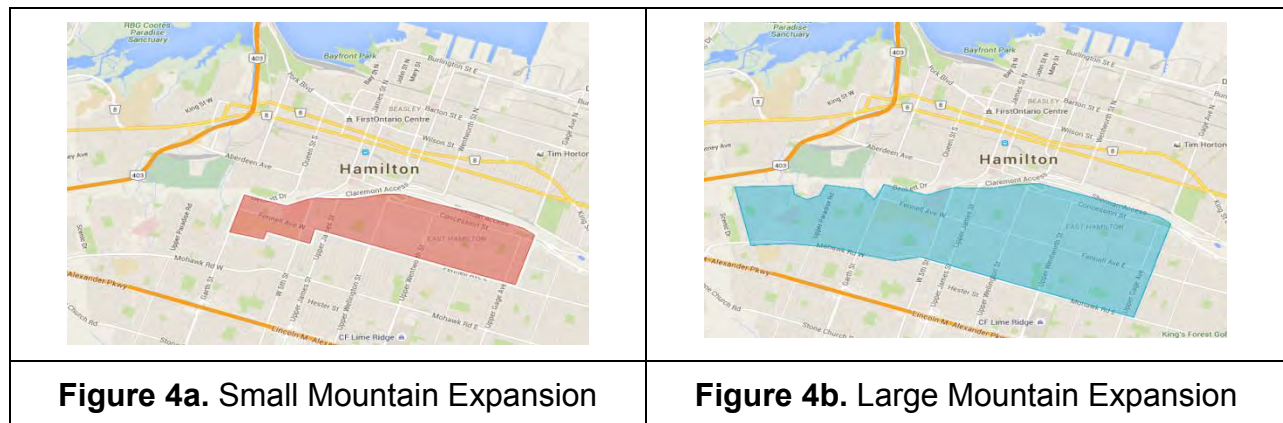
- Concession at E26th
- Concession at Mountain Drive
- Upper Wentworth at Mountain Park
- Fennell at West 5th

Ridership associated with these stations was lower compared to other stations within the service area. Various factors played a role in low ridership including low station density, nearby road reconstruction activities and the physical barrier of the Escarpment crossing. These four stations as well as underperforming stations within the lower City were subsequently removed in December 2015. This decreased the operating cost associated with re-balancing bicycles.

In 2016 an expansion plan to the program was requested by the City of Hamilton Public Works Committee. A feasibility study was then undertaken and reported back to this committee. The study concluded that expansion on the Mountain is feasible. The proposed service area is shown in

Figure 4, noting the consideration of a small scale expansion or a large scale expansion.

**Figure 4 Two system design options considered as part the Mountain Bike Share Feasibility Study.**



An expansion of the public bike share system to the Mountain is possible but will require additional capital funds for bicycles and stations, as well as operational funding. The potential Mountain system has a similar residential density to the current public bike



share service area in the lower city, but does not have the same density of destinations and workplaces. This may be a challenge to revenue neutrality for the Mountain system.

The next step will be to undertake a business plan for the Mountain expansion to:

- Identify the number of bicycles, stations, station locations for the service area and any associated engineering designs
- Evaluate locations for a Mountain operations office
- Develop an operational plan including staffing and related equipment
- Undertake a financial analysis including capital and operating costs requirements
- Develop a revenue generation and cost recovery plan

#### **4.2 Potential Burlington Partnership**

In the spring of 2015, a joint Hamilton-Burlington Economic Summit was held at the Royal Botanical Gardens. Summit delegates from both cities expressed excitement regarding the various partnerships that have been formed between the two cities. One important shared connection that was constantly highlighted was the shared transit, cycling and trail network between the two cities. A Hamilton-Burlington Public Bike Sharing System would better connect the Aldershot and Burlington GO stations, downtown Burlington, waterfront trail, the Royal Botanical Gardens and residential density at Plains Road and Brant Street with the City of Hamilton. Transportation Tomorrow Survey (TTS) results indicate significant commuter flows and other trips between the two cities and a public bike share system would strengthen these connections, while feeding higher order transit and express bus routes in both cities at the same time. City of Burlington staff have been engaged in conversations about an expanded public bike share system between the two cities and are seeking a partnership with Metrolinx to assist in funding the capital for a system. The expansion would result in 500 more bicycles in Hamilton for a total of 1,250 bicycles and an additional 50 stations for a total of 160 stations; it would also result in 250 bicycles and 30 stations in Burlington.

#### **4.3 Connectivity with LRT and Transit**

As part of the Moving Ontario Forward plan, the Ontario government is investing up to \$1.2 billion and will cover 100% of the capital costs of building the LRT in Hamilton. Eventually, the LRT will run from McMaster University to Eastgate Square. Enhanced transit will help drive economic growth, reduce travel and connection times and improve quality of life in the Hamilton community.

Bike share supports the LRT and transit by providing an on-demand first/last mile connection to major transit bus stops and in the future, LRT stations, increasing potential ridership beyond what is projected. From McMaster to Ottawa Street (the current public bike share service area) the system has been designed to feed future LRT stations and current B-Line stations. In addition, bike share provides an excellent

opportunity to accommodate for construction-related changes in travel routes and traffic volume. For example, while key east-west arterials are undergoing construction, bike share can be used to feed busses that run along alternative routes. This would provide a flexible and on-demand option for residents of Hamilton, and would also reduce pressure on the local road network. There is also potential for bike share expansions along the LRT corridor and integration within the LRT stations and system. This needs to be further explored as LRT development plans are determined.

An expansion beyond Ottawa Street would be significant in terms of capital and operating costs. This could be built into the project costs and also come from other funding sources.

## **5.0 Replacement Plan**

As the public bike share system ages there are costs associated with the replacement of bicycles. An understanding of bicycle replacement costs as they pertain to the sustainability of the public bike share system is required. Currently, the City owns the bicycles and stations and is responsible for the system's operation (which is contracted out to a third party). In the first five years of system operations, the majority of parts on each bicycle will be replaced. Presently, the end of life of a bike share bicycle is unknown, as no North American systems are more than ten years old and most still have original bicycles in their fleets. It is possible that SoBi bicycles will last longer than ten years given the significant amount of routine maintenance that they undergo. Depending on the City's operating arrangements at that time, the City could be liable for replacements. However, to ensure success of bike share systems, some cities such as Toronto have used various revenue tools such as Development Charges to accommodate operational and capital needs for future bike share enhancements. Other financial tools can also be used to plan for future operating costs and capital replacements, this includes: sponsorship revenues, additional user revenues, government grants, foundation money, parking revenues and City funding. A further exploration of the aforementioned different funding mechanisms for future bicycle replacement costs is required. It is planned that capital replacement funds should be collected starting in 2018 to plan for replacements of bicycles in 2023 to 2025.

## **6.0 Bike Share and Safety**

Research demonstrates that riding a bike share bicycle is safer compared to a non-bike share bicycle, which supports the *Safety in Numbers Theory* identified within the Road Safety Policy paper and also identified within the Cycling Master Plan review and update. Research conducted on bike share systems across North America indicates that currently, bike sharing cycling activity results in reduced injury and fatality rates as compared with non-bike share cycling activity.

The reasons for this include:

- The design of bike share bicycles is heavy and rigid; these bicycles are equipped with wider tires, which aid in the navigation of potholes and uneven roads. Given the design, bike share bicycles are not designed to travel as quickly as a non-bike share bicycle thus decreasing the risk of injury as higher cycling speeds show a positive correlation to more serious accidents (Fishman & Schepers, 2016).
- In Ontario, all bike share bicycles come equipped with working lights and bells, in compliance with the Highway Traffic Act. Whereas, bicycles purchased by individuals do not always come equipped with lights and bells. Ultimately equipping a bicycle with proper safety instruments is the responsibility of the user.
- Statistically bike share riders are not everyday cyclists and are therefore more cautious while cycling (Martin et al., 2016).
- Experienced cyclists opting to ride bike share bicycles are often more hesitant and cautious while riding a borrowed bicycle as they are unfamiliar with the bicycles and are responsible for them (Martin et al., 2016).
- Bike share programs are often located in cities with existing bicycling infrastructure enhancing the safety for all cyclists.
- Bike share users contribute to the increase in cyclists, thus motorists become more aware and adapt their behaviours around this increase in cycling activity, as outlined in *Safety in Numbers Theory*.

## References

Fishman, E., & Schepers, P. (2016). Global bike share: what the data tells us about road safety. *Journal of Safety Research*, 56, 41-45.

Jacobsen, P. L. (2003). Safety in numbers: more walkers and bicyclists, safer walking and bicycling. *Injury Prevention*, 9(3), 205-209.

Martin, E., Cohen, A., Botha, J., Shaheen, S. (2016). *Bikesharing and bicycle safety*. San José: Mineta Transport Institute.