

Transportation Association of Canada
Sustainable Urban Transportation Award

Step Forward: Pedestrian Mobility Plan

City of Hamilton, O'Connor
Mokrycke Consultants, McKibbin
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Associates Ltd.

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Appendix A

1. Introduction

The Corporation of the City of Hamilton (City) and its consulting team for the Step Forward: Pedestrian Mobility Plan (2012) has been nominated for the **Transportation Association of Canada (TAC), Sustainable Urban Transportation Award (SUTA)**. The City's consulting team for Step Forward is comprised of O'Connor Mokrycke Consultants (OMC), McKibbin Wakefield Inc. (MWI), CIMA Canada Inc. (CIMA), Toole Design Group (TDG), and DMD & Associates Ltd. (DMD).

2. Step Forward: Pedestrian Mobility Plan¹

The **Step Forward: Pedestrian Mobility Plan** is a 20-year planning framework for improving pedestrian mobility in Hamilton. The City initiated the Pedestrian Mobility Plan to support its commitment to the International Charter for Walking (signed in 2008), and to develop an effective plan to achieve the pedestrian goals and objectives of local and provincial mandate.

The **goals** of the Pedestrian Plan are to:

- + Create healthy, efficient and sustainable communities where people choose to walk.
- + Increase the number of people walking in the City.
- + Provide pedestrian environs that improve personal safety and are attractive or interesting.
- + Increase public health, active transportation and pedestrian links or connections.
- + Improve pedestrian movement by focusing on access to community institutions, recreational and leisure opportunities, and employment and retail services.
- + Create a walkable City to attract new residents and businesses.

The **objectives** of the Plan are to:

- + Increase the number of daily walking trips in the short and long term.
- + Encourage walking as a transportation mode between home, work and other destinations.
- + Increase awareness of non-motorized networks, safety requirements, and appropriate standards to support increased pedestrian activity.
- + Enhance coordination of multimodal trips with pedestrian movement to support pedestrian, cycling and transit facilities.
- + Improve pedestrian environs with supportive infrastructure, streetscape, and development.
- + Develop a framework prescribing how to implement improvements to pedestrian mobility.
- + Support and integrate the pedestrian realm with tourism and economic development.
- + Develop a framework that is consistent with existing City and Provincial policies.

Development of the Plan followed Phases 1 and 2 of the Municipal Engineers Association *Municipal Class Environmental Assessment* (October 2000, as amended in 2007 and 2011), at a broad level. The Plan serves as a backgrounder for future projects recommended as a result of its implementation, which may be subject to additional, detailed assessments.

¹ Step Forward Hamilton Pedestrian Mobility Plan. December 2012. Prepared by G. O'Connor Consultants Inc.

2.1 Development and Enhancement of Sustainable Urban Transportation²

The Pedestrian Mobility Plan supports the **development** of sustainable transportation by promoting active transportation, such as walking, as a viable alternative mode of travel. Specifically, the Plan supports modified and new approaches to increase walking opportunities within the City's existing and future neighbourhoods.

Providing for active transportation, such as walking, encourages active lifestyles. This is a benefit to the social and natural environment as it potentially improves community health through increased mobility and reduced vehicular emissions. From the literature reviewed, the lack of sidewalks and appropriately designed sidewalks and walking trails, and the lack of promotion of public transit, walking and cycling have been identified as built environmental factors that affect personal weight and associated health risks. Furthermore, the City has initiated many programs to conserve energy, reduce greenhouse gases and improve air quality. Increased opportunities for pedestrian movement can have a positive effect on personal health and can be a means to achieve the City's environmental objectives.

Implementation of this Plan will **enhance** traditional approaches to planning for sustainable transportation in Hamilton. Specifically, the Plan introduces:

- + **Mobility as a term inclusive to walking, running, and movement with assisted devices such as strollers, scooters, wheelchairs, and walkers.** This inclusive definition of mobility is a benefit to the social environment by recognizing the need to improve accessibility for pedestrians of varying mobility needs and of all ages.
- + **A paradigm shift in traditional road design to rebalance pedestrian and vehicular needs, supporting alternative choices to vehicular travel.** The common approach to transportation geometric design over the past 50 years has been to begin with design considerations at the centre line of the roadway and then toward the right-of-way line. The main objective was to ensure adequate space for vehicular traffic. The remaining space, if available and appropriate, would be designed for pedestrian and cycling needs. This Plan focuses on rebalancing pedestrian and vehicular needs by first considering pedestrians and cyclists at the right-of-way line and then working toward the centre line.
- + **"Routine accommodation" to implement pedestrian improvements over time as part of pre-approved projects.** The recommended improvements of the Plan will be implemented using a process called "routine accommodation". Pedestrian improvements will be implemented as part of ongoing streetscape and road improvements, including road reconstruction for infrastructure repair, replacement or upgrades. A safer and more interesting pedestrian environment will be created over time, which will encourage more functional pedestrian trips (e.g., pedestrian trips for shopping, work and play). This approach is economically beneficial as implementation is carried out as part of existing planning and detail design projects rather than as a series of new infrastructure projects.

In 2013, the Pedestrian Mobility Plan received a joint Healthy Communities Award from the Ontario Professional Planners Institute (OPPI) and the Heart and Stroke Foundation of Ontario.

² Step Forward Hamilton Pedestrian Mobility Plan. December 2012. Prepared by G. O'Connor Consultants Inc.



2.2 Degree of Innovation³

The Pedestrian Mobility Plan adopted an innovative study approach, focusing on three main areas for innovation.

(1) Application of the Urban Transect and Pedestrian Context Areas

As shown in Appendix A, **Development Patterns - Context Areas**, the project team characterized and mapped streetscape patterns into context zones using an urban transect. The transect displayed aerial plan views of the existing street and intersection pattern, showing the relationship between buildings, streets and sidewalks. Photographs of typical streets are shown, to characterize the pedestrian environment within each zone.

Pedestrian context areas were described as:

- + Natural, primarily characterized by natural heritage features
- + Rural, primarily characterized by rural residential lots and farms
- + Village/Hamlets, primarily characterized by older, agricultural service centres
- + Suburban, primarily characterized by residential neighbourhoods built after 1949
- + Urban General, primarily characterized by areas of mixed use along arterial roads and interior residential neighbourhoods
- + Urban Core, primarily characterized by residential streets built before 1949 surrounded by downtown office and commercial uses
- + Downtown, primarily characterized by office, commercial and residential development

The urban transect was adapted to include additional Context Areas relevant to Hamilton:

- + Industrial Context Area to represent industry and the port along the Hamilton Harbour
- + Urban Village Context Area to represent former rural settlements surrounded by urban growth

The Urban Transect and Pedestrian Context Areas were used to:

- + Understand existing pedestrian infrastructure;
- + Identify opportunities and constraints for pedestrian mobility; and
- + Recommend appropriate design solutions, policies and programs for implementation within each zone.

The recommended design solutions, policies and programs address the goals and objectives of this Plan. The routine accommodation decision-making process described below is used to select the appropriate designs, policies and programs for implementation alongside other City projects.

³ Step Forward Hamilton Pedestrian Mobility Plan. December 2012. Prepared by G. O'Connor Consultants Inc.

(2) Utilization of on-line forms of consultation and communication

Public participation was encouraged during Plan development through various, traditional forms of communication, such as:

- + Advertising notices in the local newspapers and through a mail out to potentially interested agencies.
- + Meetings with a Pedestrian Advisory Group (PAG) to receive guidance and review at key stages of Plan development.
- + Organizing two sets of Public Information Centres (PICs) in different areas of the city to invite and gather public input.
- + Presenting interactive booths at community locations/events, such as at Farmer's Markets, the Open Streets Festival, and the Transportation and Healthy Living Fair, to bring information to the public and gather additional input.
- + Updates to the project website at www.hamilton.ca/PedestrianMP to provide public access to project updates, notices and other forms of communication.

The consultation program was supplemented with non-traditional forms of communication, which notably enhanced the quantity and quality of comments received. Public participation was encouraged through social media such as Facebook and Twitter; and an on-line interactive map and pedestrian mobility survey.

Facebook and Twitter were used by the City to announce PICs, courtesy of SmartCommute Hamilton. TDG developed and managed the online survey and interactive mapping tool, with input from the project team and PAG, using the "CommunityWalk" platform. The survey and map were advertised through the project website, PICs, local media, the Notice of Study Commencement, and project newsletter.

Appendix A, **Interactive Map**, shows a screen shot of the online mapping tool with information from the public. The public were invited to mark locations of good and poor walking experiences directly onto the map of the city. In two months, the map was viewed over 1,600 times.

Comments received through the online mapping tool were imported to ArcGIS to assist with data analysis. Appendix A, **Density Map**, shows the comments on the map and the density of comments using a kernel density method. The density map was produced to identify opportunities and constraints.

The survey was open for approximately two months. Four hundred and fifty-nine (459) people responded to the survey online, with 294 of the on-line respondents completing the survey. Nineteen (19) respondents completed the survey in hard copy.

Response rates were approximately two (2) times higher than response rates generated in other North American cities where similar tools were used.



(3) Introduction of “Routine Accommodation”

The Pedestrian Mobility Plan introduces a decision-making process called routine accommodation, where improvements to the pedestrian environment are made through the selection of appropriate pedestrian toolbox solutions during the onset of each project. As roads are planned for reconstruction, City staff will use the decision-making tool to assess existing pedestrian facilities and determine which improvements can be implemented concurrently with construction. Improvements will be achieved over a 20 year period by transforming routine maintenance activities into opportunities that create safer and functional pedestrian environments.

Routine accommodation, as shown in Appendix A, comprises four steps: Site inventory; Review; Evaluation; and Implementation. The decision-making process includes a screening, scoring and selection tool. This process is designed to implement changes during reconstruction, maintenance, streetscaping or other capital projects. The intended outcome is decision-making that is “appropriate, objective, traceable and defensible”.

The concept of routine accommodation recognizes the need to improve pedestrian facilities systematically across the City with consideration for site specific conditions. The Plan offers the following resources to make this possible:

- + Pedestrian checklist to provide background information for the application of design toolbox solutions;
- + Context sensitive areas differentiating between streetscapes throughout the City to identify unique design opportunities;
- + Design toolbox solutions, policies and programs to improve pedestrian safety and increase pedestrian mobility; and
- + Decision process involving City Departments and stakeholders to improve pedestrian mobility.

The application of design toolbox solutions, including new City standards, will enhance pedestrian mobility over time and eliminate the need for a specific list of capital projects. Historically, improvements to pedestrian mobility focused on applying uniform sidewalk and crosswalk standards across the City within space that remained after vehicular traffic requirements were met. This Plan will help to rebalance vehicular and pedestrian traffic requirements by consistently focusing on pedestrian needs.

From a financial perspective, routine accommodation may add approximately 5 to 10% to the cost of each project. However, significant pedestrian improvements on most City streets are expected to be implemented over the next 20 years as part of maintenance, reconstruction or other City work.

*In 2013, the Pedestrian Mobility Plan received a Planning Excellence Award in the category of **Innovation for Sustaining Places** from the Western New York Section of the Upstate New York Chapter of the American Planning Association.*

2.3 Transferability to other Canadian Communities and Organizations⁴

Pedestrian mobility is a relevant concept to other Canadian cities and organizations. Various municipalities in Canada and across the world have signed the International Charter for Walking with the common goal to create healthy, efficient and sustainable communities where people choose to walk. Recent enhancements to provincial legislation such as the *Accessibility for Ontarians with Disabilities Act* were made to improve access for people of all mobility levels. Municipal planning documents such as Official Plans and Transportation Master Plans (TMPs) include policies and recommendations to achieve walkable communities and support active transportation.

Hamilton's Pedestrian Mobility Plan aims to achieve the goals and objectives of the City's commitment to the International Charter and the City's TMP and New Official Plan. These commitments are similar to those made by other Canadian cities and government organizations. The methods employed and solutions recommended in the Plan are transferable to communities with similar commitments. For example, the Urban Transect and Pedestrian Context Areas can be adapted to suit the unique characteristics of any community and to meet the specific goals and objectives of a community's plans and policies. The on-line communication tools are web-based and available for use by any community, with costs ranging from a nominal fee to none. The implementation process outlined in the Plan can be used as a blueprint for routine accommodation.

The similarities among North American cities in the location and frequency of pedestrian collisions make this Plan relevant to problems and opportunities concerning pedestrian mobility identified elsewhere. As part of Plan development, CIMA carried out a collision analysis to understand the characteristics of pedestrian collisions within Hamilton. Most pedestrian involved collisions occurred on major roads and at intersections with major roads. Pedestrian activities appeared to be more prevalent in the City's centre than in the suburban areas. Higher frequencies of collisions in the City's centre were expected as relatively high numbers of pedestrians are exposed to reasonably high traffic volumes in City centres, which is a similar pattern to other North American cities.

The Plan was initially developed based on a review of applicable legislation and planning considerations, as well as lessons learned from pedestrian policies, programs and actions implemented by other communities throughout North America. A literature search was performed to identify successful practices related to pedestrian activities and mobility from across the country and the world. The definition of "Best Practices" from the "Best Practices for the Technical Delivery of Long-Term Planning Studies in Canada" (TAC, 2008) was used to determine "Practices proven successful".

Literature sources and best practices were matched to areas of opportunities in a matrix format. Applying best practices can vary depending on the problems encountered and the land use characteristics involved. **Toolbox design solutions**, as shown in Appendix A, were developed from North American best practices and are documented in the Plan for the City's use and reference by other communities.

⁴ Step Forward Hamilton Pedestrian Mobility Plan. December 2012. Prepared by G. O'Connor Consultants Inc.



2.4 Added Value⁵

In addition to the innovative study approach described throughout this submission, the Pedestrian Mobility Plan recommended a streamlined approach to implementation. The following resources are recommended by the Plan to streamline work between departments:

- + Pedestrian Coordinator to oversee implementation of the Pedestrian Mobility Plan.
- + Staff Training Workshop to smoothen the transition from plan to action.
- + Pedestrian Mobility Advisory Committee (PMAC) to advise the City regarding pedestrian issues.

PMAC can be modelled after the City's existing cycling advisory committee which focuses on cycling issues; or the Clean Air Hamilton Coordinating Committee which addresses more than pedestrian issues.

As added value, implementation of the Plan would also:

- + Improve public health and wellbeing;
- + Address Provincial and Municipal policies regarding energy, public transit, greenhouse gas emissions, and air quality;
- + Address economic development issues; and
- + Address the Neighbourhood Development Strategy.

Membership for the advisory committee can be drawn from the City's ongoing efforts to increase pedestrian activity, which would build upon existing support and collaboration for pedestrian initiatives.

*In 2013, the Pedestrian Mobility Plan received an award for **Research/New Directions** from OPPI.*

3. Closing

In closing, the City of Hamilton and its consulting team of OMA, MWI, CIMA, TDG and DMD appreciate the opportunity to showcase the Hamilton Pedestrian Mobility Plan for the TAC SUTA. The project team views this Plan as an innovative contribution to the development and enhancement of sustainable urban transportation. The Plan also supports TAC's New Vision for Urban Transportation by offering more opportunities for walking thereby potentially lessening the dependence on single occupant auto trips. The project team looks forward to receiving the results of the review and decision of the judging panel.

⁵ Step Forward Hamilton Pedestrian Mobility Plan. December 2012. Prepared by G. O'Connor Consultants Inc.

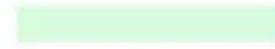
Appendix A



Hamilton



CONTEXT AREA:
NATURAL



PEDESTRIAN MOBILITY
INFRASTRUCTURE SUCH
AS:
• MULTI-USE
RECREATIONAL TRAILS

CONTEXT AREA:
RURAL



PEDESTRIAN MOBILITY
INFRASTRUCTURE SUCH
AS:
• MULTI-USE
RECREATIONAL TRAILS
• PAVED SHOULDERS

CONTEXT AREA:
VILLAGE-HAMLET



PEDESTRIAN MOBILITY
INFRASTRUCTURE SUCH
AS:
• MULTI-USE
RECREATIONAL TRAILS
• PAVED SHOULDERS

CONTEXT AREA:
URBAN-VILLAGE



PEDESTRIAN MOBILITY
INFRASTRUCTURE SUCH
AS:
• RECREATIONAL TRAILS
• SIDEWALKS
• STREET TREES
• STREET FURNITURE
• CROSSWALK
• ILLUMINATION
• BIKE LANES

CONTEXT AREA:
SUBURBAN



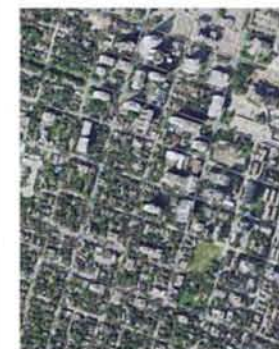
PEDESTRIAN MOBILITY
INFRASTRUCTURE SUCH
AS:
• RECREATIONAL TRAILS
• SIDEWALKS
• STREET TREES
• ILLUMINATION
• BIKE LANES

CONTEXT AREA:
URBAN GENERAL



PEDESTRIAN MOBILITY
INFRASTRUCTURE SUCH
AS:
• SIDEWALKS
• STREET TREES
• ILLUMINATION
• BIKE LANES

CONTEXT AREA:
URBAN CORE



PEDESTRIAN MOBILITY
INFRASTRUCTURE SUCH
AS:
• SIDEWALKS
• STREET TREES
• STREET FURNITURE
• ILLUMINATION
• CROSSWALKS
• BIKE LANES

CONTEXT AREA:
DOWNTOWN



PEDESTRIAN MOBILITY
INFRASTRUCTURE SUCH
AS:
• SIDEWALKS
• PEDESTRIAN
MALLS
• STREET TREES
• PEDESTRIAN PLAZAS
• ILLUMINATION
• STREET FURNITURE
• CROSSWALKS
• BIKE LANES

CONTEXT AREA:
INDUSTRIAL



PEDESTRIAN MOBILITY
INFRASTRUCTURE SUCH
AS:
• LIMITED SIDEWALKS
• ILLUMINATION

←
RURAL

→
URBAN

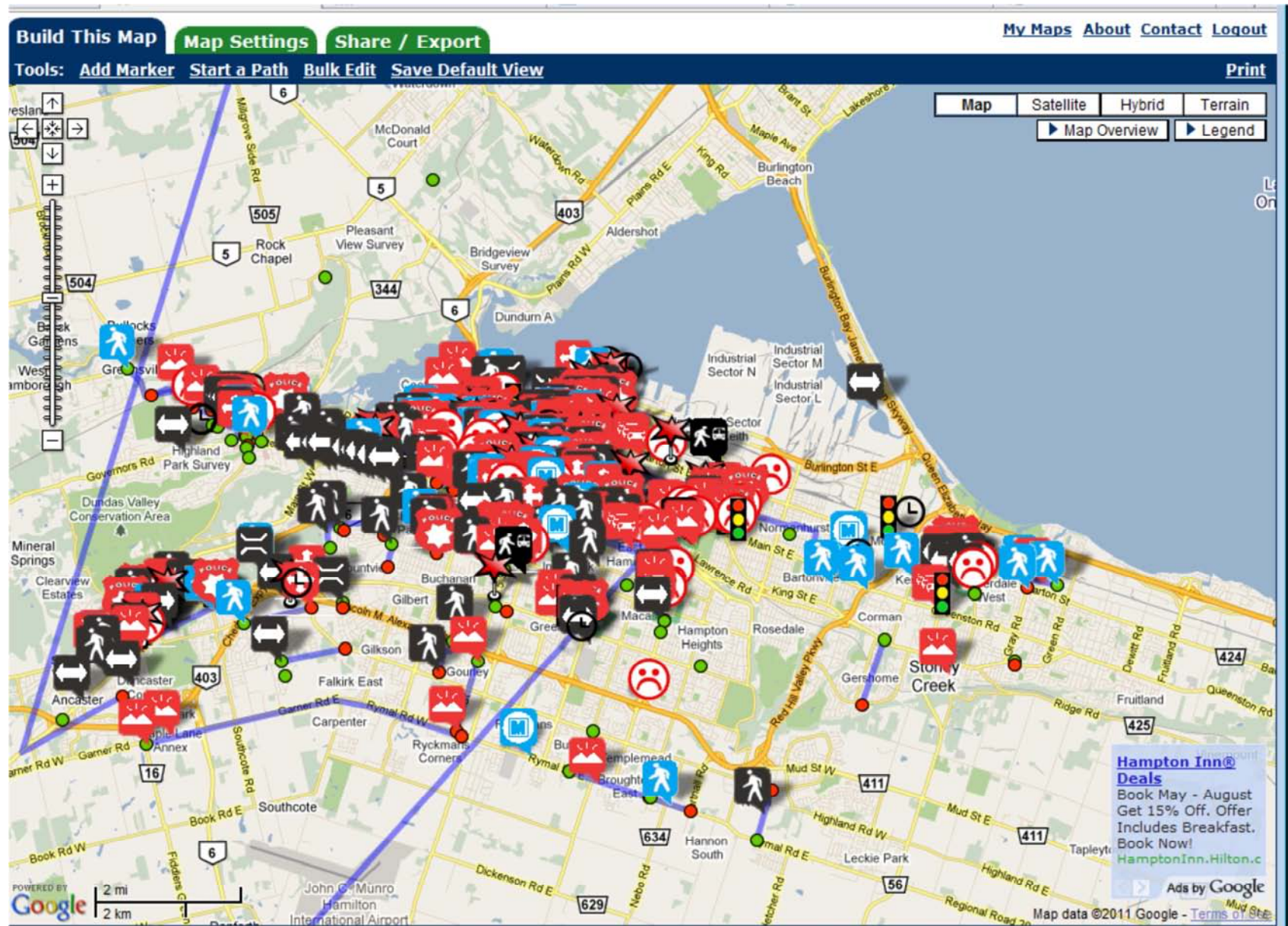
Development Patterns Context Areas

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FIGURE 7

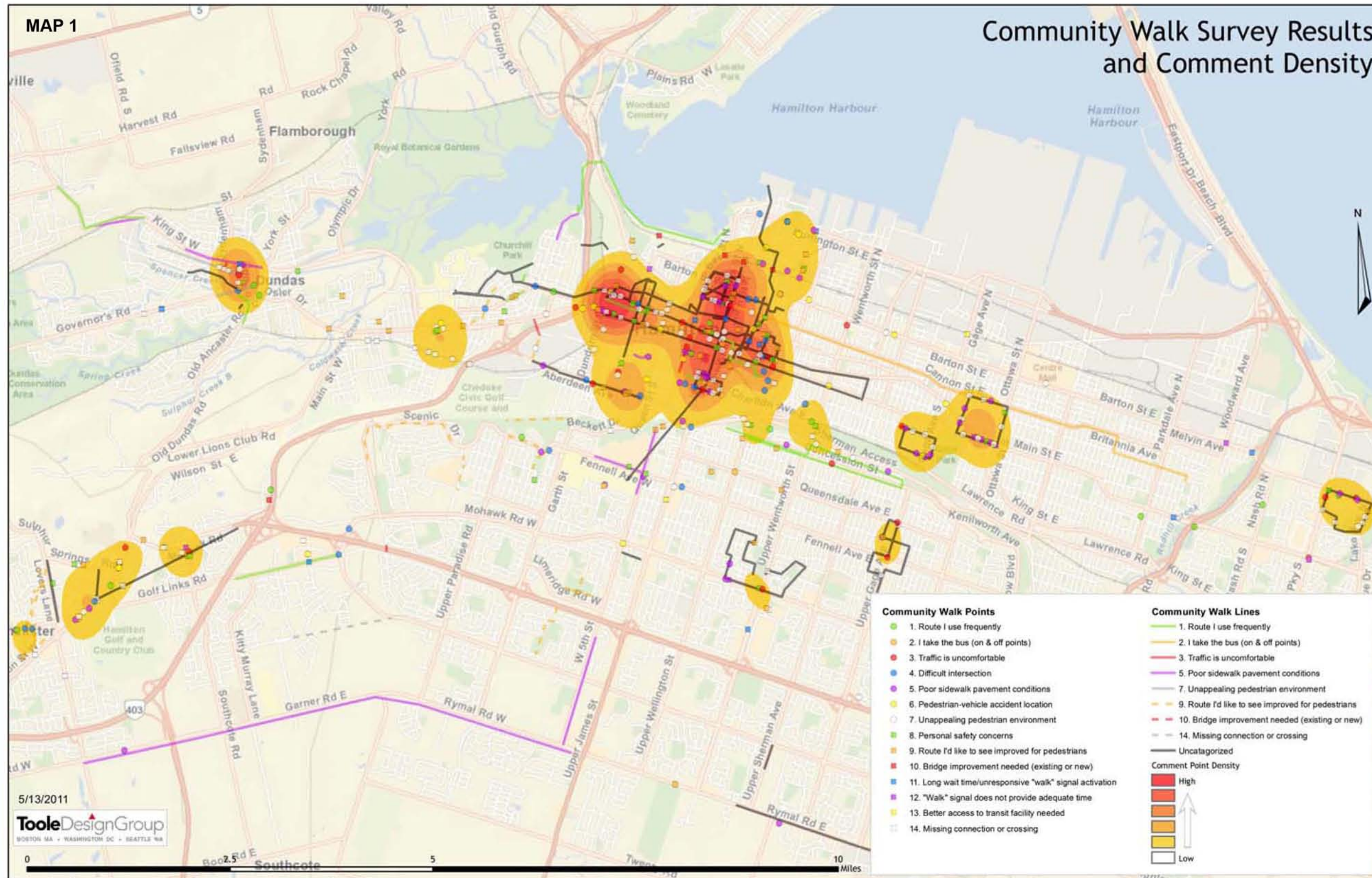
Screen Shot of the Interactive Map



Step Forward Hamilton Pedestrian Mobility Plan. December 2012. Prepared by G. O'Connor Consultants Inc.

MAP 1

Community Walk Survey Results and Comment Density



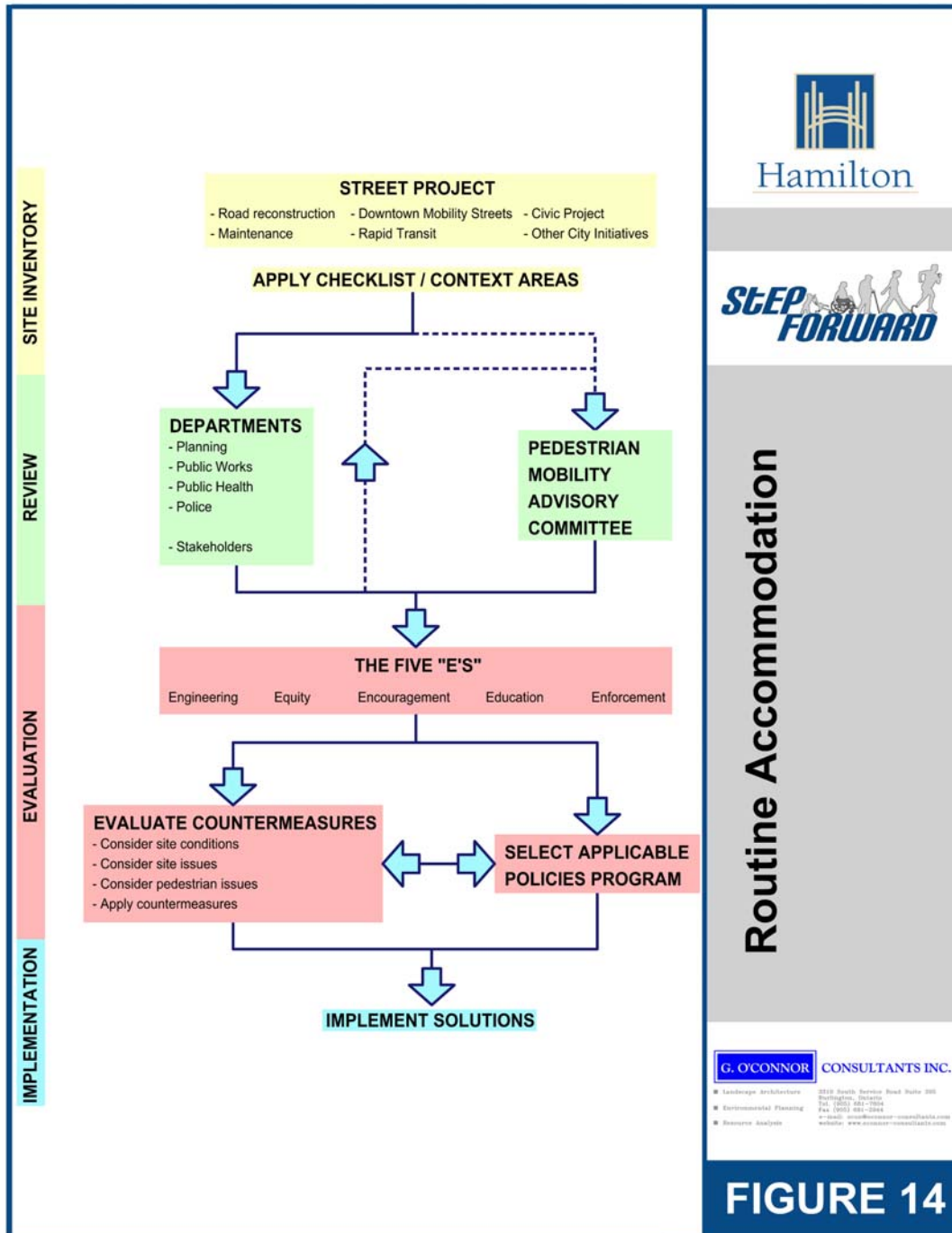
Community Walk Survey Results

Summary of Public Comments (Common Themes for Improvement)

- | | | | | | | |
|--|--|---|---|---|--|---|
| <p>Pedestrian Crossings</p> <ul style="list-style-type: none"> • Pedestrian activated crossing light • Longer times to cross at stoplights/pedestrian signals • Highly visible and clearly marked/defined crosswalks • Crosswalks that line up safely | <p>Sidewalks</p> <ul style="list-style-type: none"> • More sidewalks, do not take away from enjoyment of nature • Wider sidewalks to allow two people to walk side by side • Level ramps into driveways with room to walk • Even sidewalk surface • Slopes at street corners | <p>Trails and Pathways</p> <ul style="list-style-type: none"> • More marked, trails/paths • Continuous connections of trails/paths | <p>Traffic Management</p> <ul style="list-style-type: none"> • All way stop and stoplight, where needed • Foot bridge, where needed • Pedestrian Mall and Traffic Free Zones • Traffic calming | <p>Pedestrian Comfort</p> <ul style="list-style-type: none"> • Space for the replanting of shade trees • Sidewalks, crosswalks and roads ploughed or shoveled in winter • Facilities for shared use of scooters and bicycles • Covered bus shelters at all stops, more frequent bus schedule | <p>Environmental Considerations</p> <ul style="list-style-type: none"> • Maintained cultural heritage • Enhanced access to natural environments | <p>Other considerations</p> <ul style="list-style-type: none"> • Promotional materials for walking/hiking trails • Past and ongoing, relevant Master Plans |
|--|--|---|---|---|--|---|

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Figure 14: Routine Accommodation

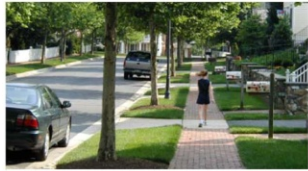


14 POTENTIAL COUNTERMEASURES

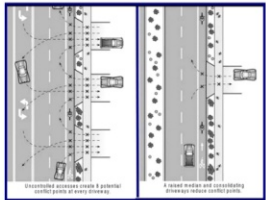
Walking along the Street



Improved Sidewalks



Buffered Medians/Street Trees



Safer Driveway



Lane Diet (Narrower Lanes)



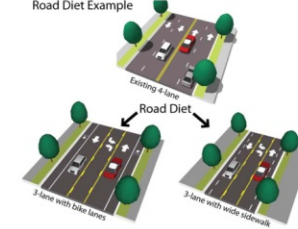
Reverse Angle Parking



Crossing at Access



Clearance from Obstruction



Road Diet (Reduced No. of Lanes)



Roadside Parking Management



Restrictions at Intersections

Crossing the Street



Midblock Signals



High Visibility Crosswalks



Lighting at Crosswalk



Reduced Crossing Widths



No Right on Red



Midblock Staggered



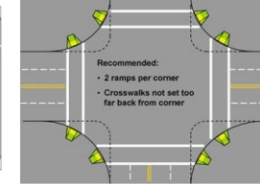
Countdown Signals



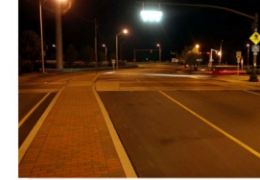
Signal Timing



Better Pedestrian Wait Areas



Intersection Design/Geometry

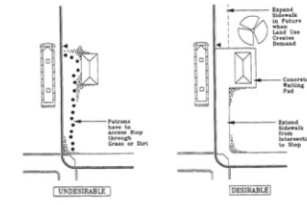


Lighting along Street



Marked Crosswalk Locations

Policies



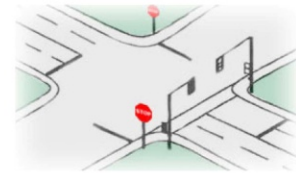
Transit Connections



Crosswalk Near Stop



Wider Area at Stop



IPS DIAGRAM

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