



mountain  
**brow**trail

## FEASIBILITY MASTER PLAN



2018





## Acknowledgments & Notes

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 St. Joseph's Hospital  
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 SoBi Hamilton  
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### Notes:

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Ward boundaries shown on all maps in this report are based on 2018 ward boundary lines. Ward boundary lines will be changing in 2019.



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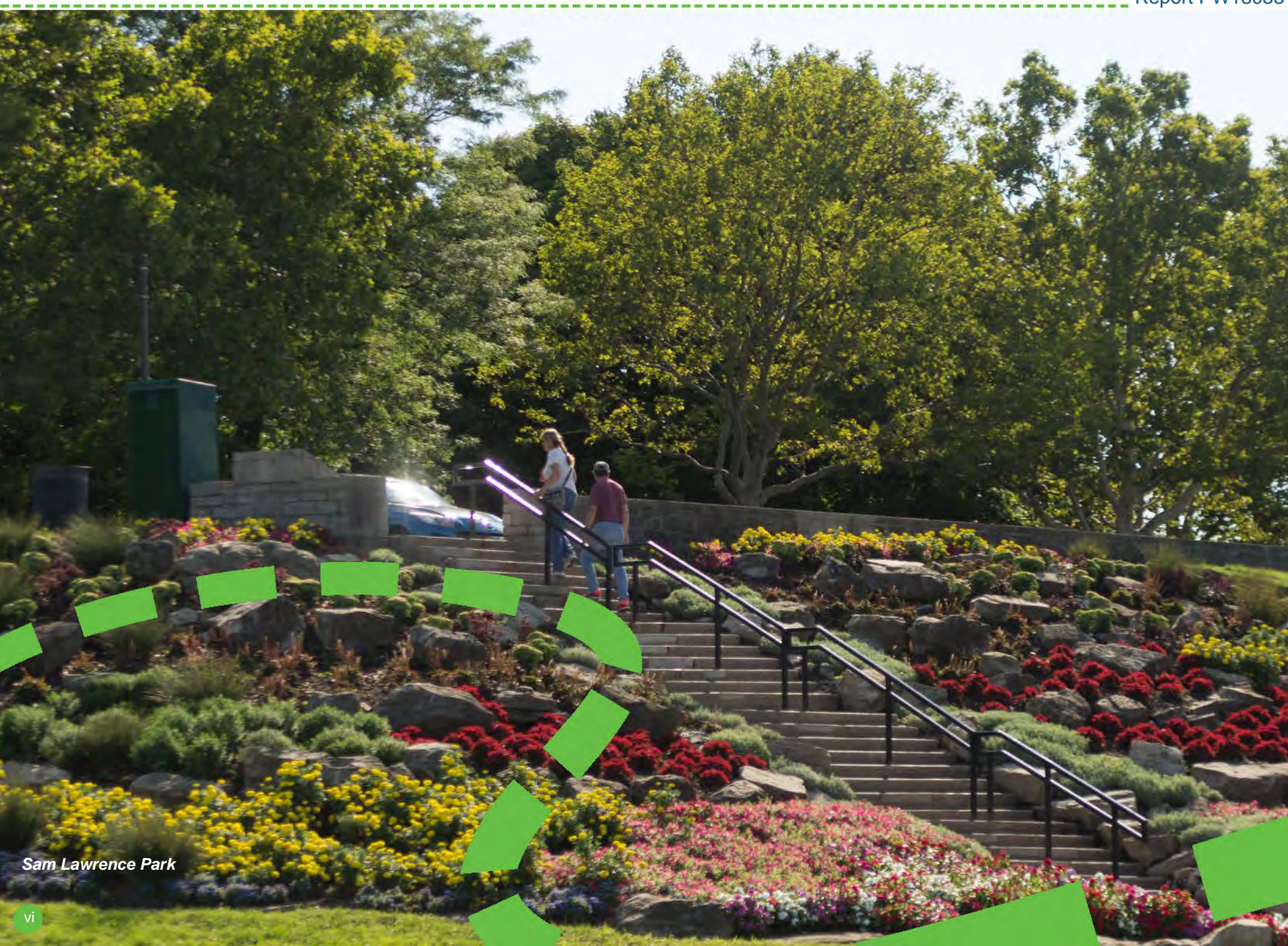
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*Sam Lawrence Park*



# 1.0 EXECUTIVE SUMMARY

The primary purpose of this study is to develop a concept plan for a continuous multi-use path traversing from Scenic Drive to Ridge Road to be known as the Mountain Brow Trail. This study provides a framework for the reconstruction and renovation of the existing trail segments, the extension of the trail into undeveloped areas, and possible integration with existing and proposed pedestrian and cycling infrastructure along the route. The recommended trail route was developed through a combination of field investigations, public and stakeholder consultations and research.

This study focuses on the identification and development of the Mountain Brow Trail, a continuous route that meets the following vision:

*The Mountain Brow Trail will be developed as a recreational trail that follows the escarpment edge as closely as possible to take advantage of views and provide connectivity between wards. The trail shall include a mixture of facility types with a preference towards accessible off-road, multi-use trails that are wide enough for pedestrians and cyclists.*

Over the course of the study, a route was developed and refined based on an iterative process consisting of field visits, public consultation, feasibility assessment and stakeholder input. Following the mandate, the majority of the route follows the Niagara Escarpment edge, except where challenging site conditions and spatial constraints limit implementation opportunities. The recommended route was also informed by the Recreational Trails Master Plan, the Cycling Master Plan, the Transportation Master Plan and the Mountain Brow Vista Study and Management Plan, to maximize connections and take advantage of existing and planned viewsheds.

Although the primary facility type along most of the proposed route is multi-use path or trail, other facility types were also identified to address site-specific challenges, roadway context and ensure connectivity. Overall, the route will consist of a combination of multi-use paths and trails; sidewalks and signed cycling routes along quiet streets; sidewalks and bicycle lanes along urban roads where necessary; and, paved shoulders in rural areas.

The recommended trail route has been divided into fifty-one (51) segments, based on existing conditions, roadway context (i.e. speed limit, volume, etc.), access

to destinations and major intersection crossings. However, the 51 segments have been further grouped into twenty-six (26) project groups for implementation purposes. Each of the 26 project groupings has been assigned a project phase that clearly identifies the anticipated project timeline. The phasing provides for the construction of the length of the trail over a twenty-year period, prioritized based on potential trail impact, safety, feasibility and project costs, among other factors.

In addition to defining the route, this study identifies Mountain Brow Trail-specific branding and wayfinding elements to help create a cohesive trail identity, and identifies amenities to be considered along the length of the route. These elements will help to define the Mountain Brow Trail as a unique trail destination.

Once complete, the Mountain Brow Trail will be a continuous and connected multi-use route that will provide significant recreational opportunities for the city's residents. The route connects multiple wards, provides access to many community destinations and facilities, and will provide a unique experience that showcases the role of the Niagara Escarpment in Hamilton's geography.







## 2.0 INTRODUCTION

### 2.1 Overview

The Mountain Brow Feasibility Study began in the fall of 2017 as a collaborative effort between the City of Hamilton and IBI Group to assess the feasibility of a continuous and integrated recreational trail along the upper edge of the escarpment from the west terminus at Iroquoia Heights Conservation Area in Ward 8, to the east terminus of Devil's Punch bowl in Ward 9. The recommended trail route spans four wards and has the potential to be a city wide tourist destination, offering connections to natural vistas, recreational amenities and heritage destinations across the area that is locally known as the Mountain Brow.

In determining the recommended trail route, the study involved conducting a comprehensive review of the area context; existing site conditions; relevant documents, policies, legislation, master plans and studies; best practices in trail design; public safety; and a public engagement process.

This feasibility study is an extension of the City of Hamilton Recreational Trails Master Plan (RTMP) 2007 & 2016 update.





## 1.1 Study Overview & Process

*View of the lower city from the Jolley Cut*

## 2.2 Vision Statement and Mandate

### Vision Statement

The vision was developed through consultation with internal City of Hamilton staff and external stakeholders, including the communities along the Mountain Brow.

The existing section of the Mountain Brow Trail in Ward 6 from Oakcrest Drive to Mohawk Road East is an important community asset that provides a precedent example of the desired trail characteristics. The trail width, lighting, fencing and site furniture shall be applied to all sections of the recommended trail where feasible and appropriate.

The Mountain Brow Trail vision is as follows:

***The Mountain Brow Trail will be developed as a recreational trail that follows the escarpment edge as closely as possible to take advantage of views and provide connectivity between wards. The trail shall include a mixture of facility types with a preference towards accessible off-road, multi-use trails that are wide enough for pedestrians and cyclists.***



*Sam Lawrence Park*

## Mandate

The study mandate is to determine the feasibility of the trail from the west terminus at Iroquoia Heights Conservation Area in Ward 8, to the east terminus of Devil's Punch Bowl in Ward 9.

A feasible trail route is to be illustrated at a conceptual level and project sections are to be identified for future capital budgets. The study aims to develop a design program including the development of a thematic vision for the trail, branding, identification of the trail facility types and accompanying facilities, the approximate location of the recommended trail location, along with high level costing.

Considerations of user safety, existing conditions, visibility, maintenance, Crime Prevention Through Environmental Design (CPTED), and innovative low-impact development technology opportunities guided the route selection and are noted as considerations on individual project sheets for future work.

Trail sections and site improvements were analyzed for cost, safety, connectivity, anticipated usership, and projected neighbourhood growth patterns to identify phasing opportunities and rank trail sections by priority for future construction. Locations and implementation priorities for landscape improvements, equipment, site furniture

and viewpoints along the escarpment are identified on individual project sheets for future consideration.

*Exhibit 1 - Existing Mountain Brow Trail*





*View of the lower city from the Cliffview Lookout*

## 2.3 Goals and Objectives

Goals and objectives for the trail were identified as a means of achieving the study mandate.

The goals and objectives are drawn directly from the Recreational Trails Master Plan (RTMP), which include:

### Goals:

- Develop a trail facility that is a recreational tourist destination (RTMP Economic Benefits);
- Encourage physical connectivity between wards by increasing continuity along the Brow (RTMP Social Benefits);
- Enhance area stewardship; achieve greater awareness of the existing natural heritage features that are located along the escarpment (RTMP

Environmental/Ecological Benefits);

- Preserve and enhance vistas (RTMP Environmental/Ecological Benefits)

### Objectives:

- Provide an identifiable and attractive recreational route to experience the brow;
- Provide branding and wayfinding to enhance the user experience and to create a sense of identity;
- Develop responsible connections to the natural heritage features through thoughtful trail design;
- Provide strategic facilities for passive activities, e.g. lookout points, rest areas, etc.;
- Encourage trail connections to the

City's current and future recreational and active transportation network.

While the goals and objectives remained the same, the process refined these options further with a shift towards determining feasibility. This shift was achieved through field verification, public engagement, stakeholder feedback, safety considerations, data analysis and re-assessing the subsequent opportunities and constraints.

It is these goals and objectives that directed the development of the recommended route for the Mountain Brow Trail.



Park Signage



## 2.4 Process

This study employed a multi-step process to select the recommended Mountain Brow Trail route. This process is presented in Exhibit 2 and an overview of each step is provided in this chapter.



Exhibit 2 - Study Process





*Bruce Trail*

## Conduct Field Surveys & Review Background Documentation

Early in the process (Summer/Fall 2017), multiple site visits were conducted by the team to assess existing conditions along the route and document the findings. The results of the field surveys are further discussed in Chapter 4.2 Summary of Findings.

The information gathered from the field surveys along with thorough review of relevant documents, including the Mountain Brow Vista Study and Management Plan (2018), Recreational Trail Master Plan, Cycling Master Plan, and Niagara Escarpment Mapping, among others, is the primary means of informing the preliminary

route and developing a list of opportunities and constraints.

## Identify Opportunities & Constraints

Through field analysis, consultation with stakeholders and public engagement, the team identified opportunities and constraints to inform the recommended Trail route. Existing conditions, forecasted capital projects, safety issues, infrastructure and stakeholder input are some of the opportunities and challenges identified. Further information on the opportunities and challenges are identified in Chapter 3.4 Opportunities and Constraints.

## Prepare Preliminary Route Mapping

Based on preliminary analysis and background review, a preliminary recommended route was mapped and presented for comment at the first round of public consultations in November 2017. This mapping offered alternatives for the public to provide feedback on for further review and consideration by the team.

## Seek Public Feedback

In November 2017, the project team conducted four (4) public information centres and created an online survey to engage the public and gain feedback. The goal of the sessions and survey was to collect information in order to



*Claremont Access Spur*

further refine the route, identify potential opportunities and constraints, and gain a general understanding of how residents use the existing sections of trail and identify their priorities. Further information regarding public engagement is discussed in Chapter 5 - Public and Stakeholder Engagement and Appendix I - Blue Sky Ideas

### **Undertake Data Analysis & Route Revision**

Following the close of the on-line survey in January 2018, the project team began the task of analyzing the information gathered from public engagement and preparing a summary that was used to inform further refinement of the route. Alternatives were eliminated or validated, and a new revised

recommended route was prepared to be presented to the public as an update. For further information regarding the data analysis and public engagement including the route alternatives, please refer to Chapter 5 - Public & Stakeholder Engagement.

### **Provide Update to Public**

In March 2018, the project team presented the revised recommended route to the public in an open house setting. The route was identified as being “preferred” with minor exceptions. Further comments from the public were taken into consideration in the preparation of the final recommended route and noted on the individual project sheets, as applicable.

### **Prepare Study Master Plan Document**

#### **Draft & Final Report and Presentation to Council**

Through a series of drafts, this study master plan document was prepared by the project team, vetted through municipal staff and presented to council for adoption in July 2018.

Using this sequential process, a preferred route for the recommended Mountain Brow Trail - both desired and feasible within the scope of this study - is generated and communicated in a manner that accounts for environmental and economic realities and community desires.





*Albion Falls*



## 3.0 CONTEXT

### 3.1 Planning Context

In addition to the Recreational Trails Master Plan, the context for this report includes policy direction provided by a number of City of Hamilton planning documents. The Urban Hamilton Official Plan guides all development within the urban area of the City, supported by Secondary Plans and Policies, as well as area-specific design guidelines and a variety of other influences that extend beyond the limits of the City, such as the Niagara Escarpment Commission Plan.

The Mountain Brow Trail feasibility study is a complex undertaking that involves the interests of a wide variety of stakeholders, a range of infrastructure, and many important environmentally sensitive and culturally significant places. As a result, a review of the on-site and documented contextual conditions is critical in order to gain an accurate understanding of existing conditions and planned efforts.

The contextual review explored connections to existing recreational trails, the lower city centre and surrounding neighbourhoods; proximity to natural features, vistas, current and forecasted development, and open space along the Brow; the impact on/of existing property ownership and forecasted (future) infrastructure plans; as well as feedback through public engagement.

In addition to the planning context, as it relates to master plans, the Official Plan and policies, the review of current best practices in design and accessibility of trails in Ontario further define the parameters of the Mountain Brow Trail and help to identify the scope of the study.





### 3.1.1 Relevant Plans and Policy Framework

#### Urban and Rural Hamilton Official Plans

The Urban and Rural Hamilton Official plans are the primary sources of direction for all Urban and Rural land use designations in Hamilton, and “guide development by identifying where and under what circumstances specific types of land uses can be located” (City of Hamilton website). High level parent policies dictating elements such as the urban structure, road classifications, and natural heritage features are supported further by Secondary Plans and other more area-specific plans, guides, policies and by-laws.

With particular focus on open space land use designations, Section B of the Urban Hamilton Official Plan designates a large portion of the Mountain Brow Trail study within natural and general open space areas (Schedule B – Natural Heritage System). Objectives of these designations include ensuring that parks and open spaces are retained, linked wherever possible and enhanced to include provisions for accessibility. Likewise, the Rural Hamilton Official Plan Chapter B notes the use of lands designated as open space shall be utilized for both active and passive recreational uses, community or recreational facilities, and other open space uses.

#### Natural Heritage & Open Space Systems

Sections of the recommended Mountain Brow Trail route directly interact with the Niagara Escarpment and other areas holding natural heritage significance and therefore fall under Natural Heritage policy. Lands designated as Natural Open Space often have significant environmental features and are intended to be preserved in their natural state. Section B – Urban Hamilton Official Plan outlines that where appropriate, limited recreational activities or uses may be permitted, including trails, picnic areas, and forest and conservation management.

In addition to the parks hierarchy outlined in Policy B.3.5.3.4, there are two open space





*Devil's Punch Bowl*

categories not considered 'parks' but are used for both active and passive recreational activities and contribute to the City's open space system and are relevant to the Mountain Brow Trail. They include:

- a) General Open Space (golf courses, urban farms, community gardens, pedestrian and bicycle trails, walkways, picnic areas, beaches, squares and core spaces); and,
- (b) Natural Open Space (woodlots, slopes, creek/ravine corridors, the Niagara Escarpment, environmentally sensitive areas and areas of wildlife habitat).

Environmental Impact Statements (EIS) and archaeological reviews may be required in areas under these designations and should be considered in the planning stages.

Other area specific policies – namely neighbourhood secondary plans- further these guides and provide policy on a case-by-case basis. Two such plans with direct relevance to the development of the Mountain Brow Trail include the Nash Neighbourhood and Chedmac Secondary Plans; these plans establish land use and development standards for their respective areas.

### Nash Neighbourhood Secondary Plan

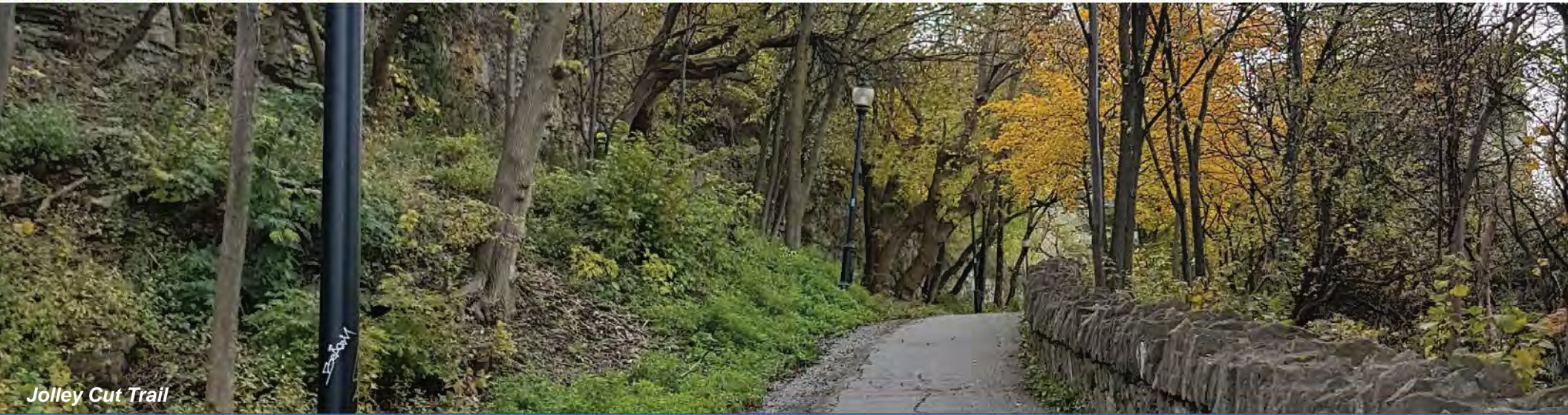
The lands covered by the Nash Neighbourhood Secondary Plan study area contain the former West Quarry Landfill site, the East Quarry Landfill site, small infrastructure and a number of natural and built heritage features including

environmentally sensitive areas and the Niagara Escarpment. Certain areas within the Nash Neighbourhood area are already approved for development, including the Heritage Green Community Park and the lands at the north-east corner of Mud Street West and First Road West. Within the established Heritage Green Neighbourhood Secondary Plan, the Nash Neighbourhood area is designated as a Special Policy Area 'B', which will require a subsequent secondary plan prior to further development.

### Chedmac Secondary Plan

The Chedmac Secondary Plan encompasses areas surrounding the Chedoke Hospital to the west, generally bound by Mohawk Road West to the south, Sanatorium Road to the east, San Pedro Drive to the North and





*Jolley Cut Trail*

Magnolia Drive to the west (Ch. B – Hamilton Secondary Plans). The Secondary Plan provides goals and objectives of the area and outlines specific development guides for low and medium density residential use, parks and open space designations, of which there are three (3) - institutional development, utilities, and transportation designation.

Of particular note, the Secondary Plan highlights the opportunity for an open space linkage from the existing neighbourhood to the recreational facilities located within the Chedmac Planned Area.

### 3.1.2 Contextual Integration

#### Recreational Trails Master Plan (RTMP)

The City of Hamilton produced a comprehensive Master Plan in 2007 outlining a plan for a multi-use, recreational trail system throughout the city. The 2016 update was done to reflect on what had been installed, respond to the installations and revisit planned infrastructure projects and recommended new trail connections. Various trail corridors along the edge of the escarpment were identified in the update, laying the groundwork for the idea of a continuous trail connection across the brow - the Mountain Brow Trail.

The goals and objectives of this Feasibility

Study speak to eight (8) of the ten (10) RTMP objectives:

- Guiding the development of a comprehensive multi-purpose trail system.
- Collaborative trail management and development standards that meet varying commuting needs and opportunities in a manner consistent with municipal land use, transportation, cultural heritage and sustainable development policies.
- Design methods intended to create trail gateways and scenic vistas to enhance a positive public image of the City of Hamilton and to improve the local user and tourist experience.
- Preservation and conservation of wooded areas and sensitive ecological habitat.





*View of the lower city from the Claremont Spur*

- Significant natural features such as the wetlands streams will be protected by new trail development.
- Consideration of applicable City of Hamilton policies, by-laws, documents, guidelines and recommendations.
- Trail facilities developed to serve expanding residential communities.
- Trail safety and security in the community associated with trails.

Many of the features of the recommended Mountain Brow Trail are mentioned as built and natural features in Wards 6, 7, 8 and 9 (See RTMP Table 2: Summary of Individual Ward Characteristics). These features include the Niagara Escarpment and Bruce Trail, the existing portion of the Mountain Brow Trail, Sam Lawrence Park, Mountain

Brow Park, Juravinski General Hospital, St. Joseph's Healthcare Campus, numerous waterfalls, Heritage Green Sports Park and Devil's Punch Bowl Conservation Area. The report also refers to recreational trail design opportunities that align or intersect with the Mountain Brow Trail at various locations. The opportunities identified are the connections along Mountain Brow Boulevard from Mohawk Road East to Limeridge Road, the connection from Mount Albion Pedestrian Bridge to Red Hill parking lot at Mud Street, and the connection from Mud Street West to Green Mountain Road through the Heritage Green Sports Park.

Within the 2007 initiatives to be completed, there is a proposed facility between Mud Street and Mountain Brow Boulevard

(Initiative 6-2) and proposed multi-use trail initiatives known as the Heritage Green Link and First Road West Link (Initiatives 9-2 and 9-3). Neither of the 2007 initiatives were completed at the time of the 2016 update (See RTMP Table 3: Summary of 2007 Initiatives). Additional initiatives were proposed in the updated plan such as the Mountain Brow Boulevard Trail (Initiative 6-7), Heritage Green Sports Park Link, and Devil's Punchbowl Link (Initiatives 9-5 and 9-6) (see RTMP Table 4: Summary of 2015 Trail Initiatives).

For the development of trails, the RTMP emphasizes the consideration of trail users and associated needs (pedestrians, cyclists, wheelchair users), and general trail design parameters which evaluate criteria related





*Viewing platform at Mountain Brow West Park*

to operating space, design speed, stopping distance, alignment and clear zone. The network design must include analysis of:

- Accessibility requirements, with attention paid to conforming to the requirements of the Accessibility for Ontarians with Disabilities Act (AODA).
- Personal security and using Crime Prevention through Environmental Design (CPTED) principles.
- Trail lighting and safety using cost-effective methods (e.g. solar lighting) and focusing on areas of high use (“commuter routes”) and adjacent to stairs.
- Trail hierarchy and surfacing (see RTMP Table 7: Trail Hierarchy and Surfacing).
- Trail crossings, particularly at major or

minor roads, active railways, bridges, underpasses and tunnels.

- Trail structures, such as gates and barriers, bollards, and switchbacks and stairs.
- Trail signage to provide simplified route identification and to improve wayfinding and trail stewardship.
- Trailheads at primary and secondary entrances, and trail amenities (rest areas and bicycle parking).
- Public art along trails at major destinations, as advocated by the Public Art Master Plan (2008).
- Trails in natural areas and environmental buffers that allow the public to experience nature, but must be balanced with the protection of the environment and

sensitive ecological elements.

- Creating new trails in established neighbourhoods, which involve various levels of consultation with the public and stakeholders.
- Lease agreements and land acquisition, including easements.
- Insurance, risk liability and risk management, during construction and maintenance phases; and
- Public outreach and trail promotion through community based social marketing; trail maps, signs and brochures; partnerships with business, local developers and other agencies; and other education, outreach and stewardship activities.





*View of the lower city from Arkledun Avenue*

The Mountain Brow Feasibility Study also follows the RTMP Implementation Plan, which involves developing a trail implementation strategy. This has been accomplished by establishing priorities for the route implementation, developing a system to establish those trail priorities, employing interdepartmental collaboration, and designing a comprehensive strategy. The strategy incorporates flexibility in the anticipation of modifications as the trail development evolves through design reviews, detailed design implementation, and monitoring and maintenance. The RTMP also identifies the need for outreach, promotion and potential funding sources; managing trails and maintenance expectations; and establishing a trail maintenance plan. This information is

presented in Chapter 6.0 Implementation Strategy.

### Public Art Master Plan

Section 2.12 of the RTMP highlights considerations for public art involvement with trails throughout the City, as directed by the City of Hamilton Public Art Master Plan (2016). As outlined by the Master Plan, public art is created by artists or in collaboration with artists through a public process and existing in publicly accessible Municipally owned property.

The Public Art Master Plan identifies fourteen (14) priority project sites, for which installation will take place from 2017-2023, and eighty-five (85) secondary sites, which will be considered if resources (staff and

funding) become available. The selection is based on the plan's associated evaluation matrix (scoring out of 100). Sam Lawrence Park is the only location along the Mountain Brow Trail identified as a priority project site. The secondary list includes, in order of priority, the Niagara Escarpment Stairs at Wentworth (Wentworth stairs), the Niagara Escarpment Stairs at Margate and Mountain Brow (Kenilworth stairs), Cliffview Park, Mud Street and Red Hill Valley Trail Entrance.

### Mountain Brow Vista Study & Management Plan

The Mountain Brow Vista Study and Management Plan (Vista Study) report was created to identify existing and potential vistas along the Brow and to create a long-





Bruce Trail

term management plan. The established vista locations were vetted by the Niagara Escarpment Commission (NEC) as the lands along the Escarpment edge (within Wards 6, 7 & 8) remain under their jurisdiction. The Vista Study is closely tied to the objectives of the NEC, from which the Mountain Brow Trail will take measures to protect the Escarpment ecology and heritage while providing safe recreational opportunities along the escarpment.

In all, eighty-seven (87) vistas were identified as part of the study, of which:

- Forty-one (41) are existing views, and no actions are needed to maintain them now or in the future;
- Twenty-nine (29) are existing views, which will need remedial improvements

and will require maintenance; and

- Seventeen (17) are new locations which may require moderate to intensive improvements to the ecology and site access.

The geographical scope of the Vista Study forms a large portion of the recommended route for the Mountain Brow Trail. The study extends from Scenic Park (Ward 8), at the west end, to Matt Broman Park (Ward 6), at the east end. The recommended Mountain Brow Trail continues south along Mountain Brow Boulevard into Ward 9. Recommendations from the Vista Study include monitoring the 41 existing views, upgrading and establishing the other forty-six (46) views, as necessary, and co-locating amenities (e.g. benches and waste receptacles) with the established views.

The Vista study advocates setting the highest priority to locations of cultural heritage significance (such as Sam Lawrence Park, and Cliffview Park) and those that have had long standing access to vistas (Juravinski Hospital and Cancer Care Center, and Mountain Brow Reserve).

The recommendations of the Vista Study were taken into consideration in the development of the recommended route and location of amenities. Lookout locations have been identified as destinations within each project segment (Chapter 6.4 Project Sheets).





View of the lower city from Sam Lawrence Park

### Cycling Master Plan (2009 & Planned 2018 Update)

The City's Cycling Master Plan is intended to guide the development and operation of cycling infrastructure across the City of Hamilton for the next twenty years. It identifies cycling facilities of various types (shared routes, bike lanes, paved shoulders, cycle tracks and multi-use paths) and provides a prioritization for route implementation over time.

The Mountain Brow Trail is primarily intended to be a recreational facility. Nonetheless, integration with existing and recommended cycling facilities identified in the Cycling Master Plan is critical to provide a seamless user experience.

In particular, the Cycling Master Plan identifies several routes that will “feed” into the Mountain Brow Trail route from the lower city, providing opportunities to expand the potential use of the trail and extend the benefits of the trail to a larger group of residents.

Some recommended key connections from the lower city into the Mountain Brow Trail include:

- **Claremont Access**

A bi-directional multi-use facility is currently being studied along the Claremont Access, which will improve connectivity and safety between downtown Hamilton and the mountain, including the Mountain Brow Trail. This project has received provincial funding

and is anticipated to be built in 2020.

- **Henderson Lift**

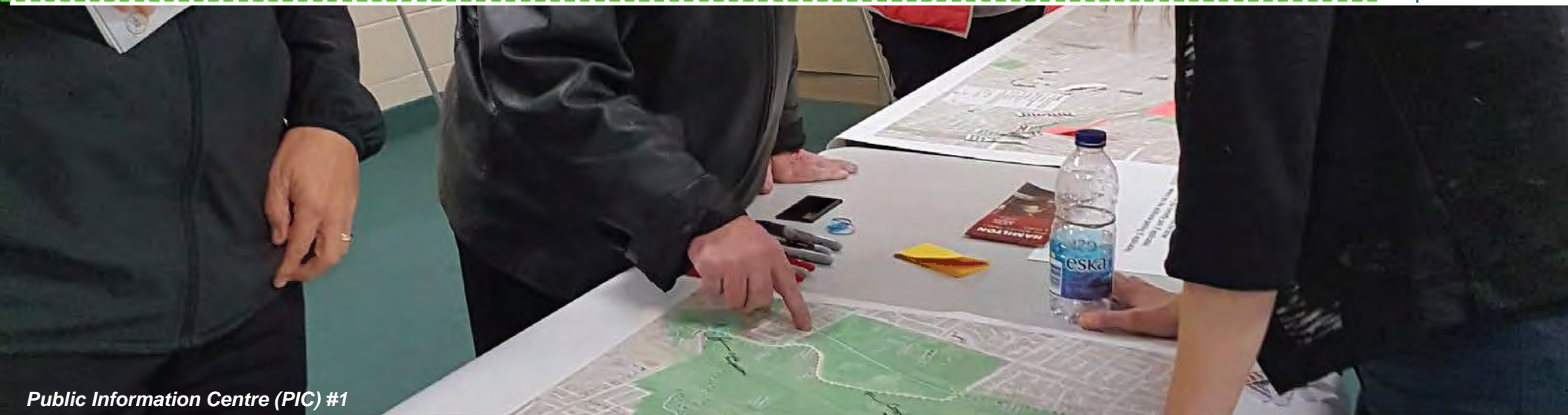
A connection is recommended from Lower to Upper Sherman over the long-term horizon.

- **Greenhill Avenue Connection**

A connection is recommended along an old service road, passing by Glover Falls, while maintaining the connection between Greenhill Avenue and First Road West.

Additionally, the Mountain Brow Trail will overlap and tie into existing and proposed corridors identified in the Cycling Master Plans, providing opportunities for partnerships in implementation.





Public Information Centre (PIC) #1

## 3.2 Stakeholders and Partnerships

As articulated in the City of Hamilton Recreational Trails Master Plan, creating trail networks within established neighbourhoods can be a challenge for many reasons. Overcoming these challenges requires coordination at all levels, as well as extensive consultation with a range of parties – most notably the public.

The cooperation between levels of government, relevant authorities, organizations and land owners will help to address the challenges of determining a feasible route for the Mountain Brow Trail.

In addition to the residents of the communities along the Mountain Brow Trail, there are a number of key local

stakeholders of particular note to trail development:

### Municipal Council

As the City of Hamilton moves forward with the development of the Mountain Brow Trail corridor, Council will have an important role in supporting both the overall Feasibility Master Plan and individual projects.

### City of Hamilton Internal Departments

Although the Mountain Brow Trail Feasibility Master Plan is primarily led by the Landscape Architectural Services (LAS) Section with support from Engineering Services, the delivery and implementation of the trail will require involvement by other sections (buy-ins,

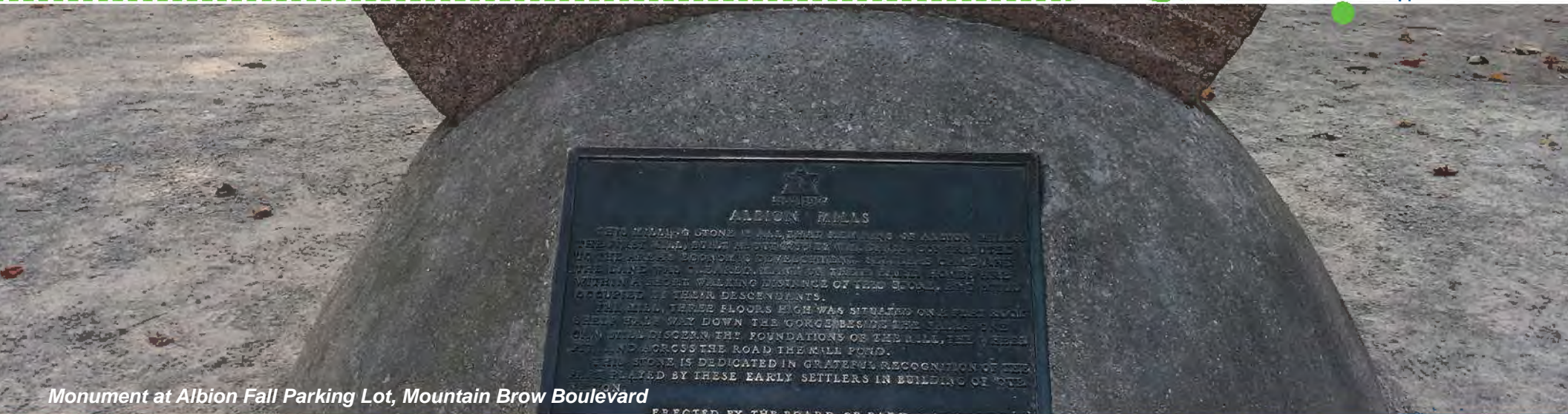
and in some cases approvals), as well as support from a number of other internal stakeholders at the City of Hamilton. Certain projects shall be implemented through road reconstruction projects and other active transportation initiatives - in these cases, the projects will be lead by other City sections with support from LAS.

In particular, the following departments, divisions and sections will be key partners:

#### 1. Public Works

- Environmental Services
  - Landscape Architectural Services
  - Forestry & Horticulture
  - Parks and Cemeteries





*Monument at Albion Fall Parking Lot, Mountain Brow Boulevard*

Landscape Architectural Services will lead the delivery and implementation of certain trail segments, and will support projects spearheaded by other City of Hamilton Sections.

The Forestry & Horticulture Section will be involved in the decision making for any tree planting or removal requirements.

The Parks and Cemeteries Section will have a role in the coordination and budget for on-going maintenance work and issues.

- Engineering Services
  - Asset Management
  - Construction

Certain segments of the trail overlap

with planned capital road works led by Engineering Services, so the trail will need to be scoped and bundled with these planned improvements to ensure efficiency, limit impacts to residents during construction and to maintain consistency in the design elements.

## 2. Planning and Economic Development

- Transportation Planning and Parking
  - Alternative Transportation

The Alternative Transportation Section will assist with the segments of the trail that overlap or tie into existing or planned cycling facilities (per the Cycling Master plan). In cases where the trail development may impact the supply

of parking, the group will provide input related to parking needs.

- Growth Management
  - Infrastructure Planning

Where sections of the trail pass through developing and forecasted communities, the Growth Management division will help to ensure that trail portions are delivered as part of planned development. The priority for particular trail segments will be influenced by future growth initiatives.

- Planning and Chief Planner
  - Development Planning, Heritage & Design

Through the Development Planning,





Southam Park

Heritage & Design Section, input from Natural Heritage planners will be important for areas of the recommended trail that are adjacent to, or fall within, natural core areas and linkages. This section will also assist in determining Environmental Impact Study (EIS) requirements.

Additionally, the City's Cultural Heritage planners will be engaged in dictating any requisite archaeological studies, particularly in areas adjacent to watercourses.

### 3. Economic Development

#### - Real Estate

Real Estate is responsible for property acquisition or potential agreements

between the City of Hamilton and property owners to allow the trail to traverse across non-city owned land. They will be working in coordination with the Legal Section.

### 4. Corporate Services

#### • City Solicitor

#### - Legal

The Legal Section is responsible for property acquisition or potential agreements between the City of Hamilton and property owners to allow the trail to traverse across non-city owned land. They will be working in coordination with the Real Estate Section.

### 5. Healthy and Safe Communities

- Public Health Services, Health - Environments

Public Health can play a role as the trail develops in the promotion and awareness of the Mountain Brow Trail as a key community asset that supports healthier, active lifestyles.

### Niagara Escarpment Commission (NEC)

Where the trail development falls in close proximity to the Niagara Escarpment edge, individual projects may require a permit from the NEC.

There are different designations, including escarpment natural area, that will dictate the





Cliffview Park

types of facilities that can be implemented in the zone.

### Hamilton Conservation Authority (HCA)

Where the trail will pass through lands either under the authority of or owned by the HCA, the appropriate permit must be obtained. The HCA will have approval over the trail configuration in these situations and specific land agreements may be required.

### Various Trail Organizations

There are several intersecting and nearby trails in the proximity of the Mountain Brow Trail that have active organizations. In particular, the Bruce Trail Conservancy and the Hamilton Burlington Trails Council should

be actively included in the development of the Mountain Brow Trail, particularly in locations where the integration of Bruce side trails into the City's multi-use trail network are being recommended.

### Environmental Clubs

The Hamilton Naturalists' Club is actively engaged and has provided suggestions for potential interpretative signage themes to animate the Mountain Brow Trail and to educate trail users about the natural local environment, as well as explore the environmental context in which the trail exists.

### Hillfield Strathallan College (HSC)

HSC has expressed great interest in the trail

development as it runs along the frontage of the institutional property. The potential exists to connect the Mountain Brow Trail into the HSC campus.

### Mohawk College

As one of the City's largest employers and home to over 30,000 students the College is located along the recommended trail and is a potential stakeholder in its development, particularly for segments of the trail along the frontage of the Fennell Campus.

### Hamilton Health Sciences & St. Joseph's Healthcare Hamilton

The recommended route passes through the St. Joseph's Healthcare Hamilton's West 5th Campus and across from the Juravinski





SoBi Station (Source: "Hub 23 Rail Trail at Emerson" by Reaperexpress, licensed under CC BY-SA 4.0)

Hospital and Cancer Centre. These health organizations have vetted the recommended route option but will need to be further consulted on the trail development.

### Infrastructure Ontario/Ministry of Infrastructure

The Ministry of Infrastructure's involvement in the implementation of the trail will be inherent as the owner of the lands on which St. Joseph's Healthcare resides, and through which the recommended route is proposed. The recommended route has been reviewed by Infrastructure Ontario, who manages the parcel on behalf of the Ministry of Infrastructure, but further discussions and agreements will be required.

### Utilities

At various locations along the recommended route, utilities conflict with the preferred layout of the trail. For future work, coordination will be required to create optimal conditions for both parties.

### SoBi Hamilton

The non-profit Bike Share operator in Hamilton, SoBi, has expressed interest to expand its operations to support this project. Since the funding of such an expansion is a challenge, partnerships would be needed. In support of a potential future network expansion, suggested locations to be considered for future bike share stations have been identified on project sheets and is also discussed in Chapter 7.3 - Trail

Amenities.

### Private Land Owners

Existing residents and developments having direct interaction with the trail have been key influences on developing the recommended route outlined in this study and will remain as such throughout the trail design and implementation process.

An overview of key project stakeholders overlaid onto the project route is shown in Exhibit 3.

Note that many stakeholders will have more high-level and generalized input and are therefore not shown specifically on the map.



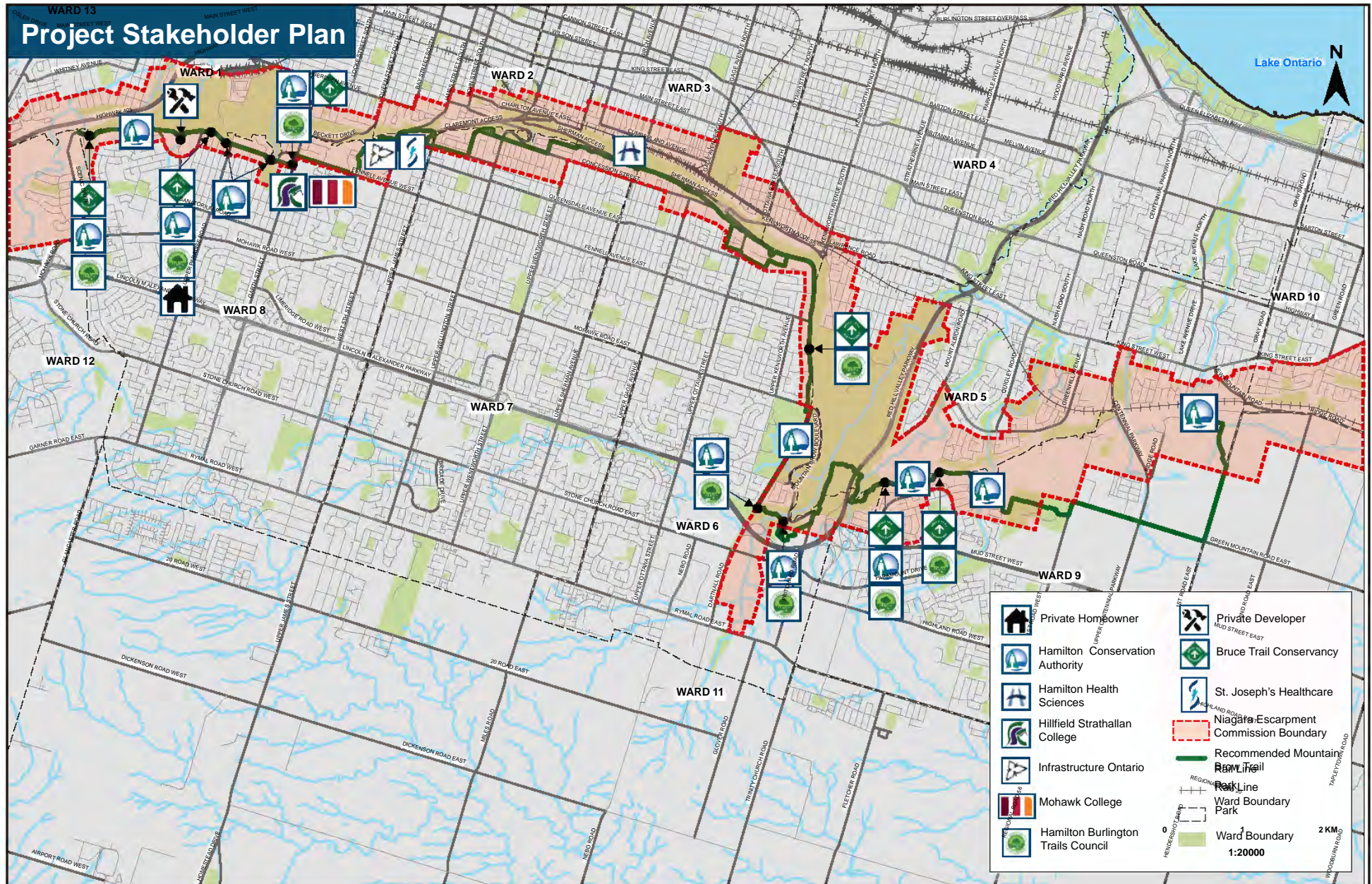
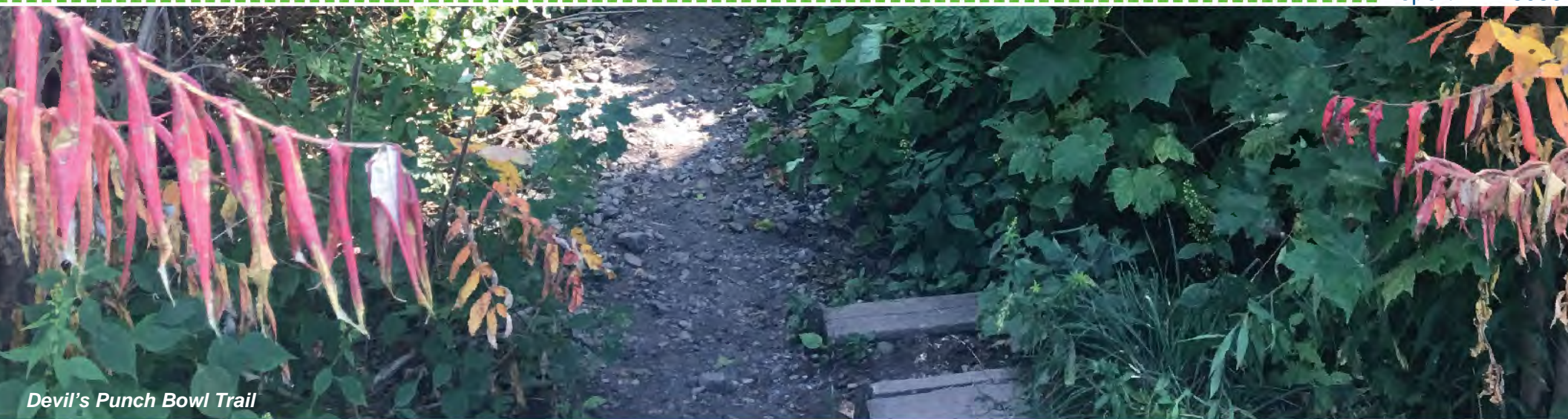


Exhibit 3 - Map showing project stakeholders



*Devil's Punch Bowl Trail*

## 3.3 Benefits of Trail Development

*Exhibit 4 - Sam Lawrence Park*

According to the Ontario Trails Strategy (2005), an increasing number of communities are recognizing that developing quality places is an important factor in where people choose to live, work, and invest. Trails are an ideal opportunity to create such places, as they contribute directly toward healthy lifestyles, social communities, environmental stewardship and economic prosperity.

By promoting active living and alternative modes of transportation, trails attract a range of recreational tourists including cyclists, runners, dog walkers, environmental tourists (bird-watchers, nature-viewers) and other active-minded users; revitalizing businesses, creating jobs, and increasing public revenue.





*Heritage Green Sports Park*

The strategy also suggests that the development of trails has a positive effect on property values. Living near trails offers pleasing views, quiet streets, convenient recreational opportunities, and often is synonymous with enhanced environmental quality.

Trails help connect people of all ages to the places they live, work and play, and provide an ideal setting for walking, bicycling and other modes of physical activity (P. Troped, 2011). Investments in recreational and active transportation opportunities provide people with affordable transportation options that increase their access to employment, education, recreation, and consumer opportunities for vulnerable populations including seniors, children, Canadians with

lower incomes and people with disabilities. (Bergeron & Cragg, 2009)

By developing the Mountain Brow Trail, the community is investing in a healthy lifestyle that is attractive, economically stable, and environmentally conscious. The trail facility will enhance the user's quality of life and value of space, while the ecological, mental health, recreational and physical health benefits can have positive effects on the local and extended community.





*Mountain Brow Trail at Mountain Brow Boulevard*

## 3.4 Opportunities & Constraints

Through the process of identifying potential trail connections, reviewing the feasibility of trail segments, and meeting with the public and stakeholders, various project opportunities and constraints were identified for the Mountain Brow Trail.

### Examples of Opportunities

- a) Naturally occurring views & vistas
- b) Wide existing road widths with low speeds
- c) Wide boulevards
- d) Existing parks
- e) Existing parking lots
- f) Natural destination features such as waterfalls
- g) Existing trails

- h) Current or future roadworks and active transportation projects that provide opportunity to include trail in right of way design or provide opportunity for connections

### Examples of Constraints

- a) Difficult road crossings such as the Kenilworth Traffic Circle, Scenic Drive & Garth Street and Centennial Parkway
- b) Protection of natural heritage features and existing street trees
- c) Safety concerns near escarpment edge
- d) Spatial constraints due to existing natural features, built features and existing infrastructure
- e) Additional permitting required on regulated land

- f) Private ownership of desirable Brow lands
- g) Commercial areas where trail implementation may require removal of on-street parking
- h) Configuration of some residential areas inhibit implementation of a multi-use trail. Alternate facility types recommended in these areas
- i) Rural road cross-section inhibits implementation of a multi-use trail. Alternate facility types recommended in these areas
- j) Steep grades limit universal accessibility in some areas

The escarpment is a naturally occurring feature that people are instinctively



*Claremont Access Spur*

attracted to, which creates the potential for the Mountain Brow Trail to be a destination, similar in profile to the Waterfront Trail. Some constraints may be overcome through design solutions, while others have ecological or structural limitations that require deviation from the Escarpment edge. Together, the opportunities and constraints inform the recommended route put forward in this document.





Bruce Trail





## 4.0 EXISTING INFRASTRUCTURE

In addition to new trail links to be developed as part of the Mountain Brow Trail, there are a number of existing trail pieces that will form a portion of the route. Much of the emphasis of this project is the inventory and documentation of existing assets, both as a way to emphasize the current assets of the corridor, and also to identify areas for upgrade in the formation of the Mountain Brow Trail. This section documents the process used to review existing trail assets, and provides a summary of key findings.





Bruce Trail

## 4.1 Field Methodology

Existing infrastructure was assessed through a series of site visits to inform the local community context, natural environment and conditions of existing assets. Assessments were generally geared toward determining whether or not a trail facility would be feasible at particular locations along the study route. The investigation was to identify steep slopes, erosion issues, alternate route opportunities, informally established paths, spatial constraints, segments that would require upgrades, segments in which the existing infrastructure will be maintained, proposed facilities based on existing constraints, and existing adjacent features (vistas, bridges, waterfalls, parks, and parking lots and lay-bys). Photographs were taken for documentation and future review.

- August 15th 2017**  
 A review of the route was conducted to examine high-use areas and/or areas that may pose future design and construction issues, as well as to review opportunities and constraints in detail. The review began at the existing trail at Sanatorium Road & Scenic Drive, followed by locations at the Ministry of Infrastructure owned land (St. Joseph's Hospital), Southam Park, Mountain Park Avenue, Red Hill Valley Recreational Trail under the Red Hill Valley Parkway to Albion Road, Heritage Green Sports Park area and the Devil's Punch Bowl area.
- September 12th 2017**  
 The Centennial Parkway area was

examined to explore east-to-west trail connection opportunities given the constraint of the speed of travel and slope of Centennial Parkway. Starting at the Battlefield Park car park and walking south towards the escarpment on the east side of Centennial Parkway, areas north and south of the rail corridor were explored, including existing sections of the Bruce Trail.

Following this, the study route was explored from the Ministry of Infrastructure owned land (St. Joseph's Hospital) east along the Claremont Access towards Southam Park, and from Southam Park entering the Bruce Trail adjacent to the Claremont Access towards the Jolley Cut.





*View of Claremont Access from Southam Park*

- **September 19th 2017**

The review began at the Devil's Punch Bowl car park, exploring the Bruce Trail area north of the viewing area heading west towards Centennial Parkway looking for desirable recreational opportunities. The next segment of study began at the north end of First Road West to explore the Bruce Trail and escarpment terrain that is identified in the Secondary Plan as trail connection. Moving farther west, the team visited Upper King's Forest Park on the west side of Albion Falls to review vistas and feasibility of trail routes through this area.

The team continued west towards the west terminus at Scenic Drive, with periodic stops to explore the existing

conditions, to observe changes in pavement (width and surface treatment), and to observe traffic movements, particularly at Inverness Avenue and Upper James Street.

- **November 17th 2017**

West 5th Street to Concession Street - via the Claremont Access Spur, Claremont Access, Arkledun Ave and Jolley Cut - was presented as an opportunity to connect the trail to the lower city. Concerns were raised about cyclists being able to use the Jolley Cut Pedestrian portion where stairs and a path connect Concession Street and Arkledun Avenue. The site review confirmed an existing bike trough - a channel alongside a stairway to facilitate

walking a bicycle up or down the stairway. This area serves as a potential linkage to Downtown Hamilton and the lower city; however, it is not included in the recommended route.



*Exhibit 5 - Canadian Pacific Railway at Devil's Punch Bowl*





Viewing platform at Cliffview Park

## 4.2 Summary of Findings

- The trail presents an opportunity to implement, or at least support, measures recommended by other Hamilton plans such as the Recreational Master Plan, Public Art Master Plan, Cycling Master Plan and the Mountain Brow Vista Study and Management Plan, each of which has identified locations for trail establishment and improvement, public art installations and vista establishment and maintenance. Further review and future report updates will be required for the integration of the trail route with the features of the plans mentioned.
- The Mountain Brow Trail aspires to incorporate branded trail features and amenities (trailheads, fence, benches, lighting, pavement markings), as well as establish and maintain the identity of the trail apart from other trails within the Hamilton trail network. Some portions require simple upgrades to paving, fencing and/or lighting, typically in areas where there is sufficient open space; while others within the road right-of-way (ROW) require more in-depth analysis of the interactions between pedestrians, cyclists and vehicular traffic.
- The recommended trail overlaps with a number of other existing trails such as the Bruce Trail, Escarpment Rail Trail and the Red Hill Valley Trail. While a separate facility with deliberate intersections was preferred, existing conditions would not allow the implementation of the trail within the constraints of typical trail infrastructure. Therefore, the recommended route takes advantage of existing infrastructure that enhances the experience for users who already use these trails, allows safe passage for its users, consolidates maintenance efforts and reduces overall construction costs. This integration will need to be considered in the Design Considerations and Branding initiative (Chapter 7.0) in coordination with the branding of the other trails.
- Existing conditions in some areas present challenges for safe access (e.g. steep slopes falling from the edge, eroding escarpment edge,





Juravinski Drive

traffic patterns). Ecologically sensitive areas will not allow for an accessible, safe multi-use trail without endangering the local environment, and the cost of infrastructure to implement the trail at the Brow fall beyond the typical budgets allotted to trail development. The trail will need to deviate from the Escarpment edge for portions of the trail.

- Multiple facility types will need to be established to maintain a continuous trail along the full length of the corridor. This is necessary in locations that present challenges due to spatial constraints, neighbourhood context and natural heritage features where a full multi-use facility would not be an appropriate application. These facility types were

chosen based on road right-of-way width, road characterization, roadway speed limit and existing infrastructure, and are presented in Chapter 6.2 Facility Types. The specific facility designation is shown in detail in Chapter 6.4 Project Sheets.

- The implementation of the Mountain Brow Trail will require coordination with a number of stakeholders to navigate permitting requirements (e.g. Hamilton Conservation Authority, Niagara Escarpment Commission, City of Hamilton), lease agreements and/or easements (Infrastructure Ontario, Utility Companies), trailheads and trail signage (Trail Organizations, Environmental Clubs and City of Hamilton Internal Departments), and implementation

design and schedule (City of Hamilton Internal Departments). (See also Chapter 3.2 Stakeholder and Partnerships).

- The implementation of the trail will require coordination with stakeholders whose properties or interests lie within the sphere of influence of the recommended route (i.e. the route traverses the property, the property is adjacent to the route, the entity would like to participate in trail design and/or implementation). Such entities include Hillfield Strathallan College, Mohawk College, Hamilton Health Services and St. Joseph's Healthcare, SoBi Hamilton, Hamilton-Burlington Trails Council, Hamilton Naturalists' Club and private Land Owners (See also Chapter 3.2



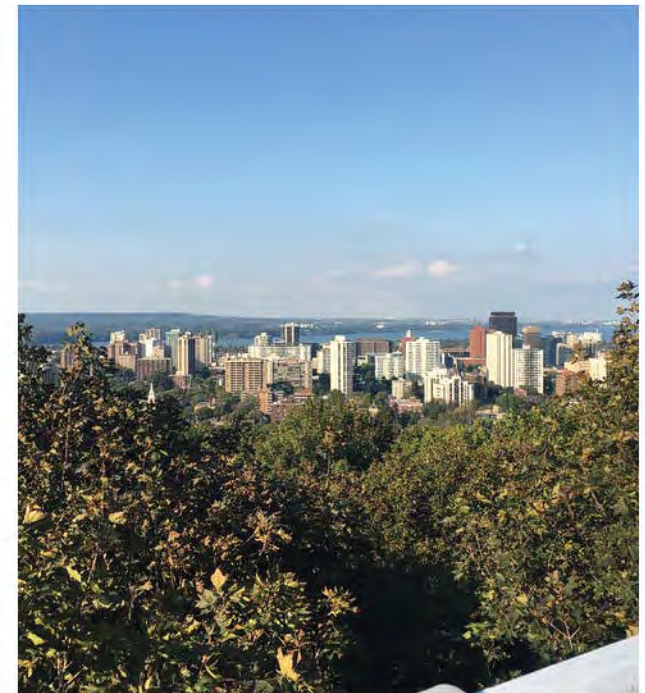


*View of the lower city from Cliffview Park*

Stakeholder and Partnerships).

- In select locations, direct routes would require large up front investments, permitting requirements, coordination and ongoing maintenance investments. With reasonable alternative routes available, these large investments currently do not present benefits to justify the cost of the establishment of the Mountain Brow Trail. However, these projects are not without merit and may be explored should a future cost-benefit analysis prompt further investigation into the implementation of these direct routes.

Such projects are discussed as blue sky ideas (Appendix I) for future consideration should the implementation become feasible.



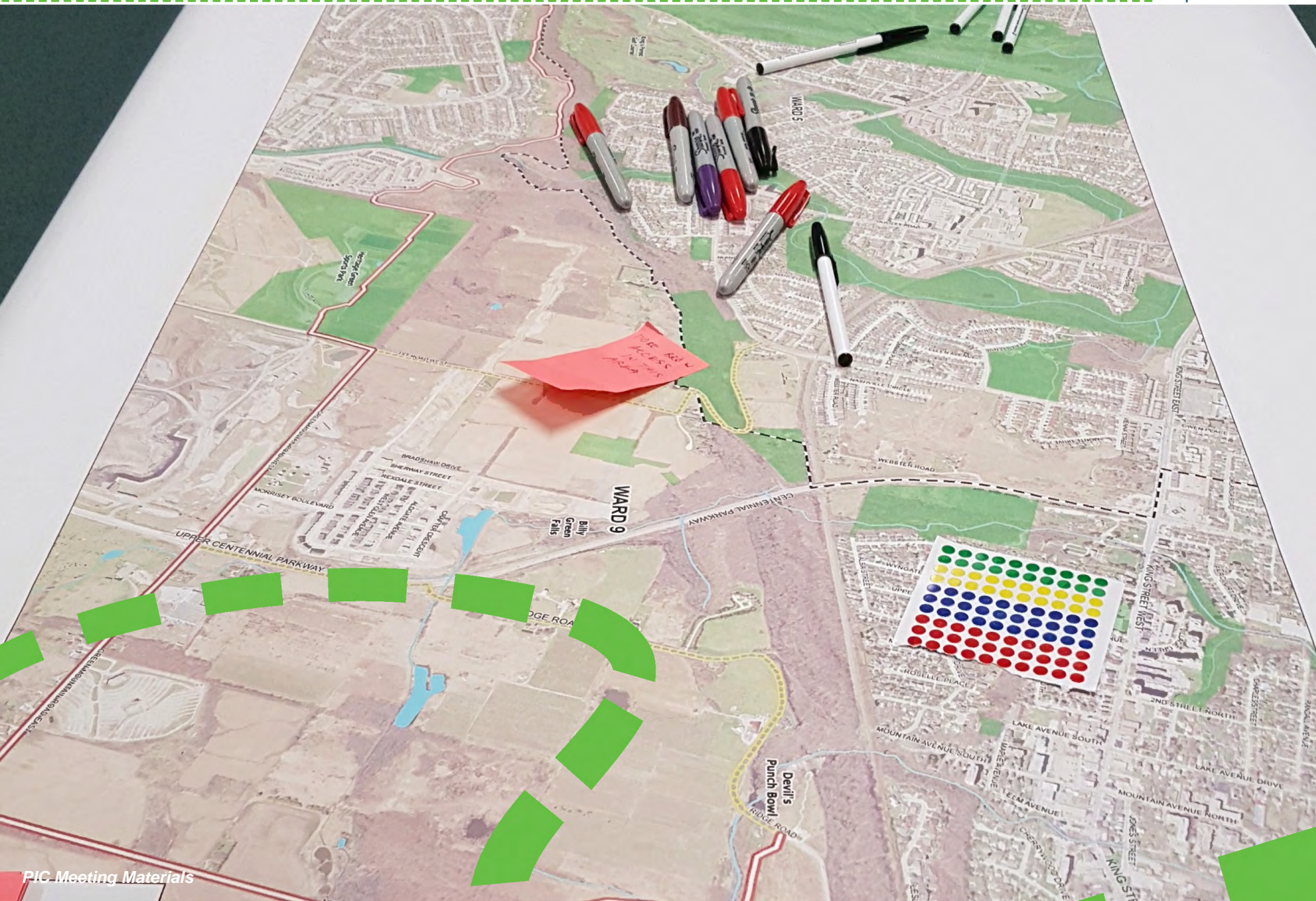
*Exhibit 6 - Views of the lower city from the Brow*





*Mountain Brow Trail at Mountain Brow Boulevard*







## 5.0 PUBLIC & STAKEHOLDER ENGAGEMENT

Public & stakeholder engagement was an important element in the development of the Mountain Brow Trail Feasibility Master Plan. With the trail viewed as an opportunity to connect communities and wards across the Mountain, input from residents, council, city staff, other relevant agencies and interested parties about the development of the trail is critical to project success. This section summarizes engagement activities completed as part of the Master Plan process.



PIC #1



## 5.1 Overview of Public & Stakeholder Engagement Process

### Public Information Centre #1

Two rounds of Public Information Centre (PIC) sessions were held in conjunction with the development of this study.

Four PIC sessions were held in round 1; one for each ward that the trail is recommended to traverse. The dates and times for the PICs

were scheduled as summarized in Exhibit 7.

#### Ward 6

Monday, November 13, 2017

6:00pm-8:30pm

Open House with a presentation from 7:00pm-7:30pm

Sherwood Library Meeting Room,  
467 Upper Ottawa St.

Hamilton L8T3T3

#### Ward 7

Wednesday, November 15, 2017

6:00pm-8:30pm

Open House with a presentation from 7:00pm-7:30pm

Sherwood Library Meeting Room,  
467 Upper Ottawa St.

Hamilton L8T3T3

#### Ward 8

Tuesday, November 21, 2017

7:00pm-9:00pm

Open House with a presentation from 7:30pm-8:00pm

Chedoke Multi-Use Bocce Club,  
91 Chedmac Dr,

Hamilton, ON L9C 7R5

#### Ward 9

Wednesday, November 22, 2017

6:00pm to 8:30pm

Open House with a presentation from 7:00pm-7:30pm

Winterberry Heights Church,  
300 Winterberry Dr,

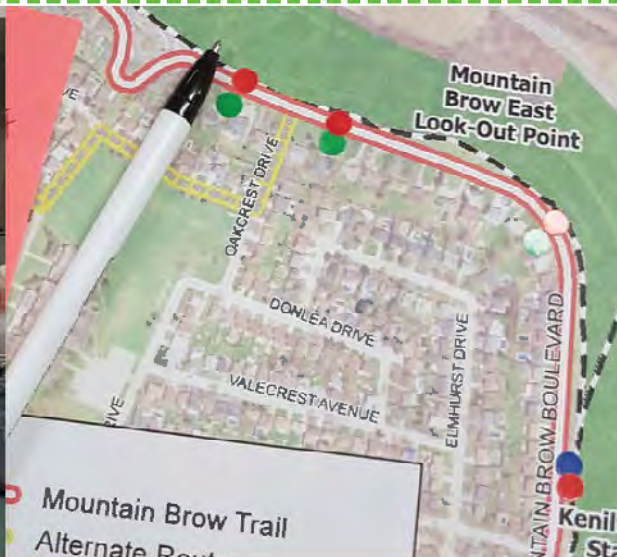
Stoney Creek, ON L8J 3Y1

*Exhibit 7 - PIC #1 Schedule*





Formal presentations at Ward 6 PIC &amp; Ward 8 PIC (PIC #1)



In round 1, the PICs were advertised 1-2 weeks prior to the date of the PIC through the City of Hamilton's website, the City of Hamilton's Twitter Feed and through the local paper – Hamilton Mountain News (Wards, 6, 7 & 8) and Stoney Creek News (Ward 9). The City of Hamilton's Manager of Landscape Architectural Services also did an interview with Cable 14 News on November 30, 2017, providing a summation of the sessions and informing the public that a future session was pending. Residents of properties directly abutting the recommended trail alignment received mailed notices about the PIC. The advertisement and the notice sent to participants is included in Appendix A.

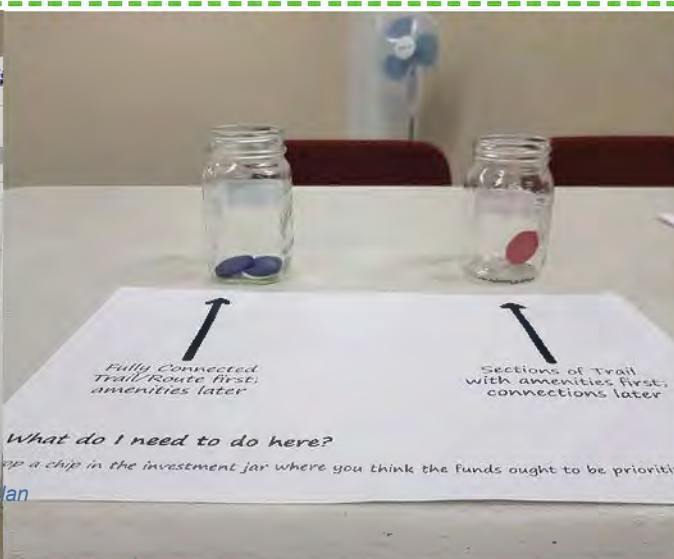
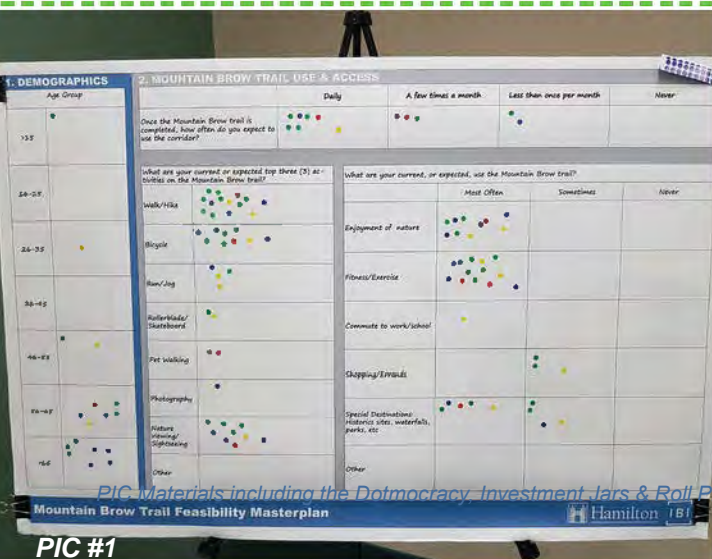
For all of the sessions, City of Hamilton and IBI Group staff (hosts) were on hand to review information and discuss the project with individuals on a one-on-one basis or in small groups (2-3) of participants. This took place as participants entered, in an effort to promote engagement as quickly as possible and one-on-one interactions that could support discussion of individual concerns. Once a quorum of participants were in attendance, the group was assembled for the scheduled presentation, which outlined the objectives of the sessions, the recommended trail route, identified areas of interest (opportunities and constraints), and informed participants about the steps that will follow. For Ward 7 the presentation was withheld - the small number of participants

made it more suitable for one-on-one discussions with facilitators for the length of the session.



Exhibit 8 - City of Hamilton tweet advertising the Mountain Brow Trail Survey





In addition to the formal presentation, participants were guided to one of four stations (any order) to participate in:

1. **Dotmocracy** – a facilitation method that allows participants to respond to questions using sticky ‘dots’ to vote. In a dot matrix questionnaire (Appendix B), consisting of 10 questions, users were asked to place one or more sticky dots in response to individual questions as instructed. This allowed users to show how they currently use the existing trail, how they expect to use the completed trail and improvements they would like to see implemented as part of the completed Mountain Brow Trail. The hosts often walked through the process with participants to clarify or explain any issues that were unclear, or to

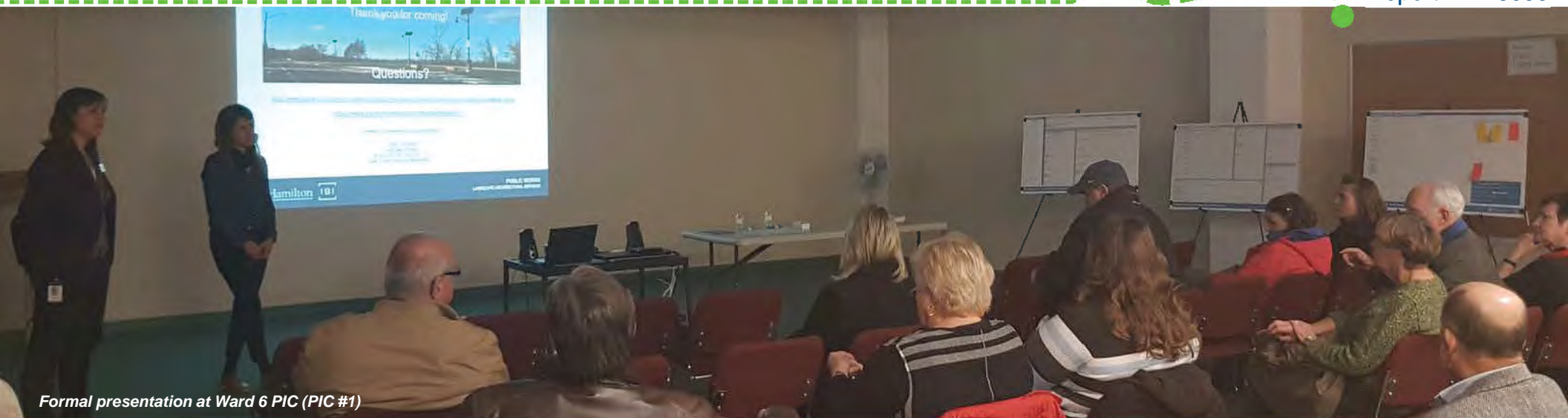
foster additional feedback not necessarily requested by the questionnaire.

2. **Investment Jar** – Two (2) mason jars were placed where users were asked to make a choice between potential investment strategies for the completion of the trail using poker chips dropped in the strategy of choice. Users were asked to indicate their preference for either:
- a fully connected trail route experience, with amenities instituted later on; or
  - sections of trail installed with full amenities, leaving connections to be made later.
3. **Roll Out Plan** – the extent of the Mountain Brow Trail was printed out on two (2) large sheets and laid out on a

table, where users were asked to identify – using dots - where they lived, where they usually access the trail, where they park and where they would like additional parking, based on a preset colour system. They were also asked to mark the route they take to their preferred access point(s) using markers.

4. **Alternate Routes** – Route options were presented across seven (7) boards - a context plan, the recommended route (including alternate routes) broken down into five (5) sections, and a comments board. Users were asked to indicate the preference for the recommended alignment or the alternate route in the locations indicated. Comments, suggestions and concerns were





Formal presentation at Ward 6 PIC (PIC #1)

written onto sticky notes and left on the comments board (Appendix B).

Users were also encouraged to use sticky notes to leave additional comments on the roll-out plan.

Attendees were requested to sign in, and though not mandatory, a total of 39 residents were recorded as having attended across the four (4) PICs, with PICs in Ward 6 and 8 being the most well-attended (20 and 14 persons respectively).

For users who were not able to attend any of the consultation events, an online survey (Appendix C), was made available to allow participation from as many residents as possible. Similar to the PICs, the online

survey was advertised through the City of Hamilton's website, Twitter Feed and advertised in local papers. From this process, ninety-two (92) respondents completed the full, or a portion of the Mountain Brow Trail Survey. Some residents also directly emailed responses to the City Project Manager. Results are a composite of the three methods of resident feedback.





Southam Park

# 5.2 Summary of Public Input

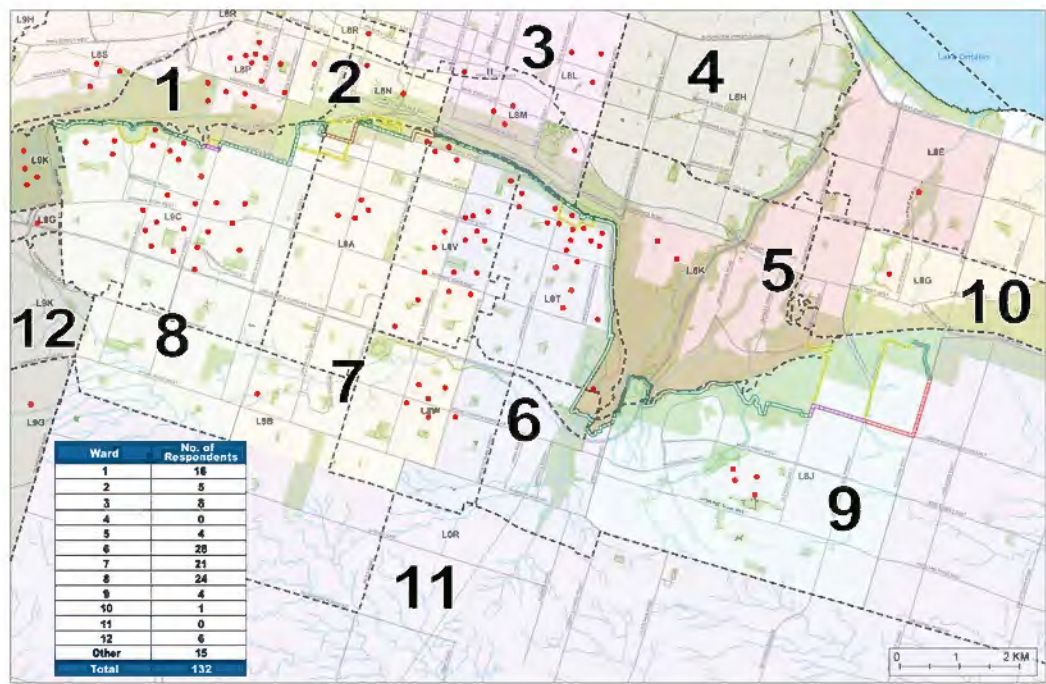


Exhibit 9 - Distribution of respondents

## Demographics

Respondents represented a wide cross-section of Hamilton Wards having vested interests in the development of the new trail (Exhibit 9). There was a fairly even spread across age groups, with the exception of those under 15 years old as shown in Exhibit 10.

	Online Survey	PIC Meetings	Total	Total %
<15	0	1	1	1%
16 - 25	11	0	11	10%
26 - 35	23	1	24	21%
36 - 45	19	0	19	17%
46 - 55	19	4	23	20%
56 - 65	12	9	21	18%
65+	8	8	16	14%
Total Responses	92	23	115	100%

Exhibit 10 - Demographics of respondents



## Trail Use and Access

Most respondents expect to use the trail daily (25%) or a few times per month (52%), with the top three activities being walking/hiking (28%), bicycling (20%) and nature viewing/sightseeing (15%) (refer to Exhibit 11). The majority of respondents use sections of existing trail along the Brow for fitness/exercise (32%), enjoyment of nature (28%) and for access to special destinations: historic sites, waterfalls, parks, etc. (20%) (Refer to Exhibit 12). Throughout the year, the majority of respondents use the trails in the evenings (39%) on weekdays and in the mornings (34%) or afternoons (31%) on weekends.

The majority of the respondents arrive at the existing trails through walking/running (45%), driving (27%) or biking/rollerblading/skateboarding (18%), spend 30 minutes to 2 hours (62% 30 minutes – 1 hour; 32% 1-2 hours) and travel 1-10 kilometers (67% 1-5 kilometers; 24% 6-10 kilometers).

Overall, respondents were comfortable using the different types of facilities that are recommended along the Mountain Brow Trail, as shown in Exhibit 13

## Trail Improvements

Respondents generally prioritized installing a fully connected trail within a shorter timeframe, with amenities added over time

(66%), over installing segments of trail installed within a shorter timeframe, with full amenities installed first, connecting those segments over a longer period of time (34%) (Exhibit 14).

Respondents were asked to indicate their top three (3) wish list improvements for the Mountain Brow Trail (refer to Exhibit 15). The top three responses were scenic views/lookout points (13%), year-round maintenance (12%) and lighting (10%). Other amenities mentioned, but not listed, included free 2-3 hour parking, washrooms, and pedestrian bridges at key locations, such as Kenilworth Access, Upper Centennial Parkway and the Jolley Cut.

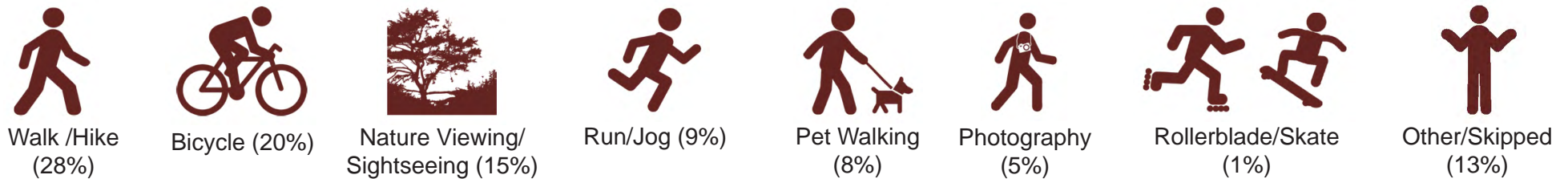


Exhibit 11 - Respondents' top three (3) trail activities

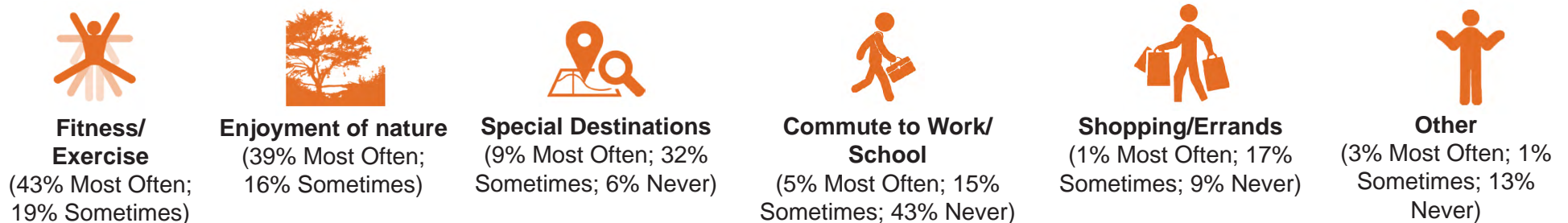


Exhibit 12 - Respondent feedback on trail use





Exhibit 13 - Respondents feedback on level of comfort using various facility types for the Mountain Brow Trail

Segments of the trail installed with full amenities (i.e. drinking fountain, benches, look out points) over a shorter time frame, full connectivity of the trail over a longer period of time.

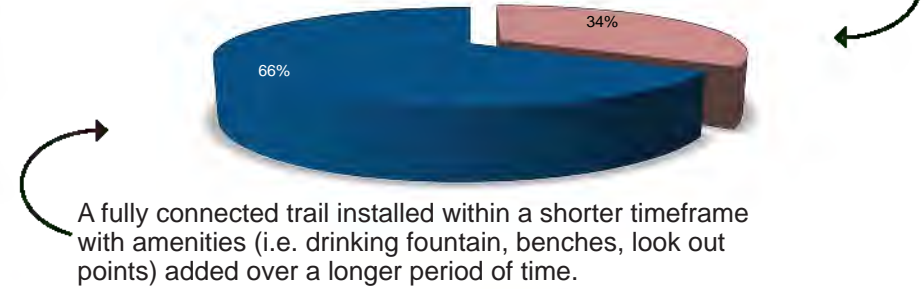


Exhibit 14 - Respondents' investment preference

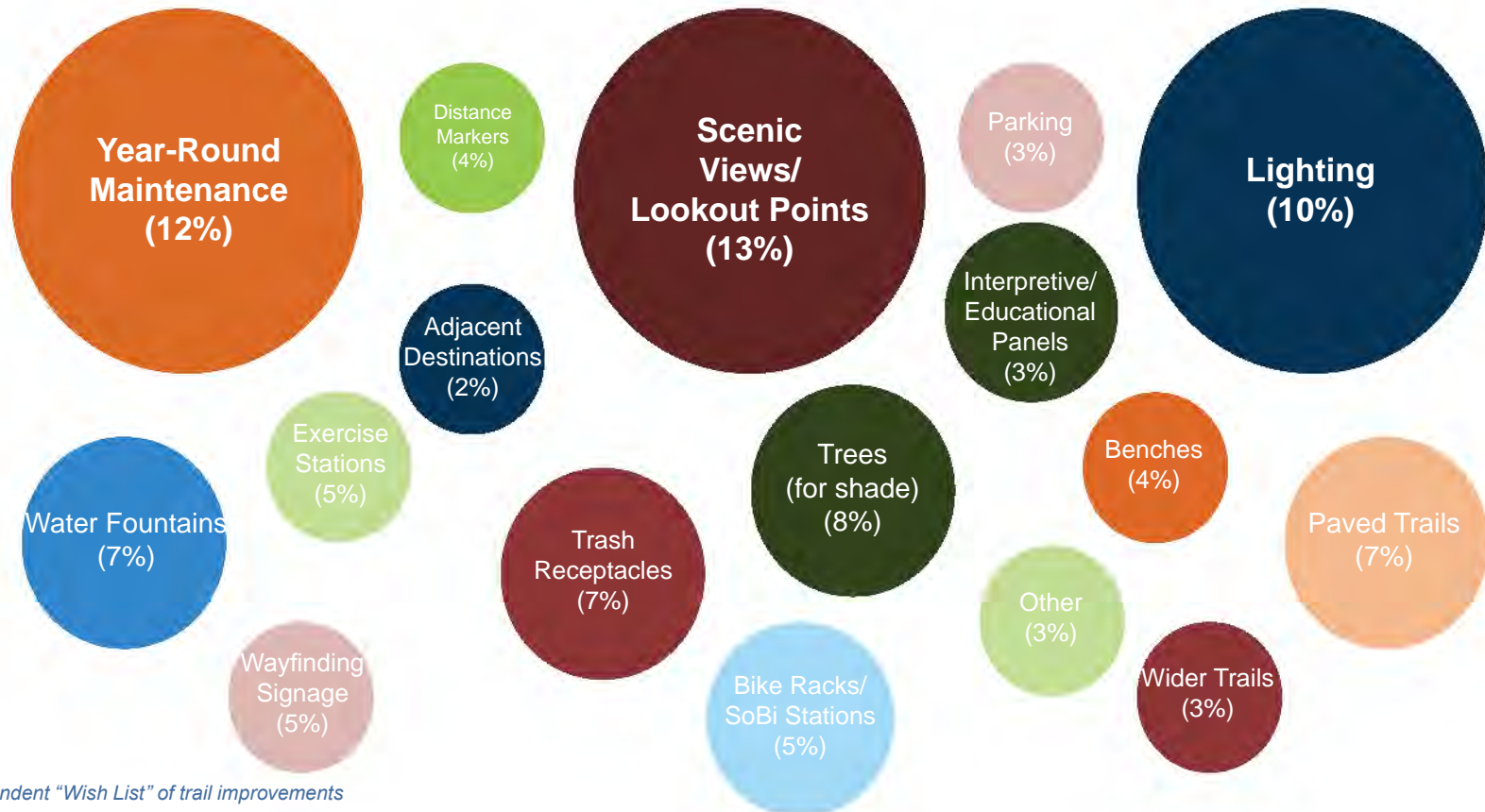
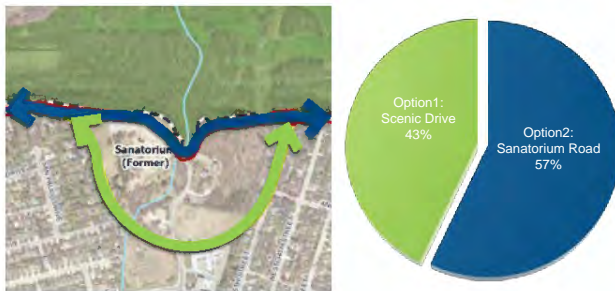


Exhibit 15 - Respondent "Wish List" of trail improvements



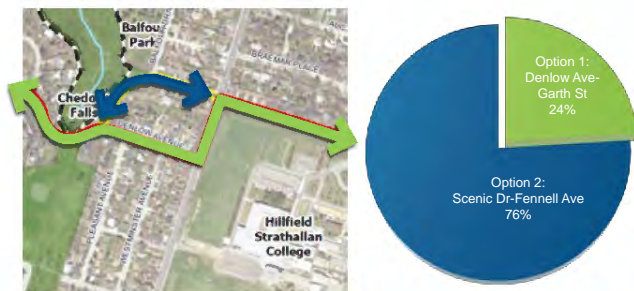
Online respondents were also asked to identify the Ward that should be prioritized for development first or to select a continuous/connected trail that spans all the wards. 62% were in favour of a continuous/connected trail, 18% prioritized the segment in Ward 8, 10% prioritized the segment in Wards 6 & 7, and 2% prioritized the segment in Ward 9.

Exhibits 16-20 show respondents' choices for the recommended route or alternate routes in five (5) locations. Respondents were in favour of the recommended route in two (2) locations – Sanatorium Road (57%) (Exhibit 16), and Mountain Brow Boulevard (75%) (Exhibit 18). Respondents preferred the alternate route of Scenic Drive/Fennell Avenue (76%) to Denlow Avenue/Garth Street (24%) (Exhibit 17). There was no clear preference for either First Road East/Dofasco Trail (50%) versus Upper Centennial Parkway/Ridge Road (50%) (Exhibit 19), or Claremont Drive/Inverness Avenue (47%) versus Claremont Access/Jolley Cut (44%) (Exhibit 20).



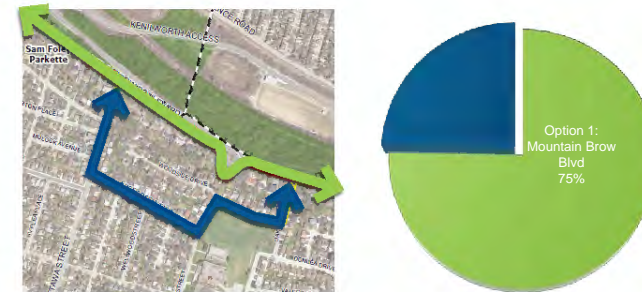
**Scenic Drive vs Sanatorium Road**

*Exhibit 16 - Feedback on alternate routes - Sanatorium Road vs Scenic Drive*



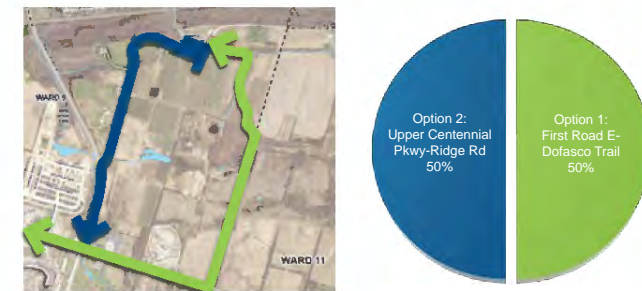
**Denlow Avenue-Garth Street vs Scenic Drive-Fennell Avenue**

*Exhibit 17 - Feedback on alternate routes - Denlow Avenue-Garth Street vs Scenic Drive-Fennell Avenue*



**Mountain Brow Boulevard vs Upper Ottawa Street-Edgewood Avenue-Oakcrest Drive**

*Exhibit 18 - Feedback on alternate routes - Mountain Brow Boulevard vs Upper Ottawa Street-Edgewood Avenue-Oakcrest Drive*



**First Road East-Dofasco Trail vs Upper Centennial Parkway-Ridge Road**

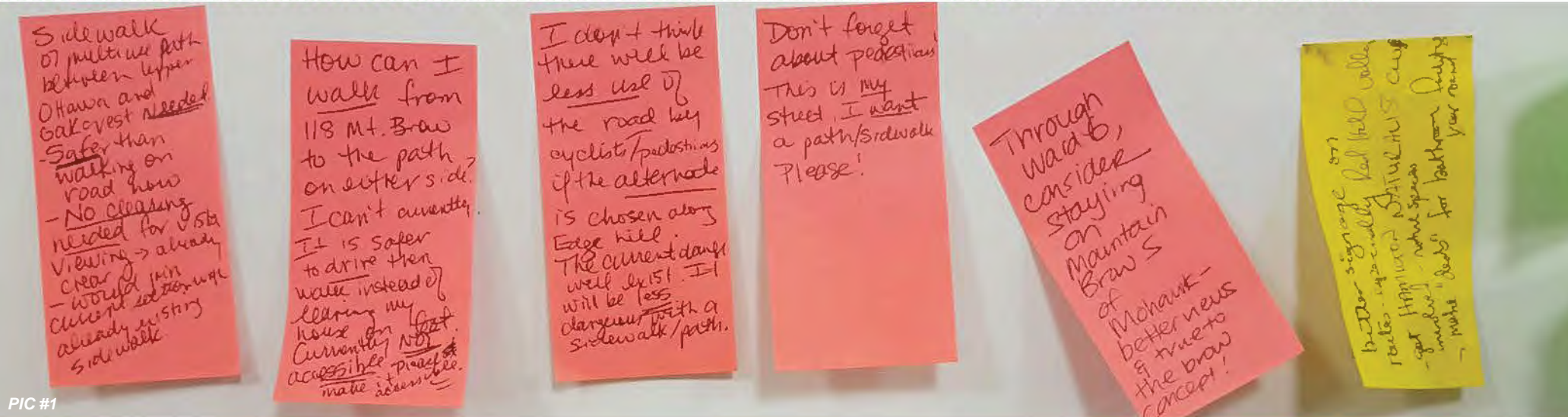
*Exhibit 19 - Feedback on alternate routes - First Road East-Dofasco Trail vs Upper Centennial Parkway-Ridge Road*



**Claremont Access-Southam Park-Inverness Avenue vs Claremont Access-Jolley Cut vs Brantdale Ave-Skyland Drive**

*Exhibit 20 - Feedback on alternate routes - Claremont Access-Southam Park-Inverness Avenue vs Claremont Access-Jolley Cut vs Brantdale Ave-Skyland Drive*





PIC #1

## General Input

Outside of the formal survey, City of Hamilton & IBI Group staff at the PIC #1 noted specific input from residents.

General feedback received included:

- Support for a trail that emphasizes the Brow's natural beauty and unique views. This was accompanied by a desire to emphasize trail alternatives that stayed as close to the Brow as possible.
- Desire for the trail to be respectful of the community context, particularly from a privacy and access perspective; on the other hand, many residents expressed the desire for a continuous multi-use trail (rather than varying facility types) in order

to maintain a consistent, high quality 'trail experience' along the full corridor.

- Residents expressed desires for the trail route to include high level transformational changes such as grand pedestrian bridges where key vista locations coincide with difficult road crossings; road repurposing to provide Hamilton's version of the High Line (Manhattan, New York); and, proposing trail routes that remain close to the Brow despite the current state of ownership and/or those within sensitive natural areas.

While these ideas have merit from a long term visioning perspective for Hamilton Mountain Brow as a destination, these

ideas are not immediately feasible based on the prioritization criteria used in the study and have not been included in the recommended route.

- Desire to use the trail project to improve safety for pedestrians and cyclists, for example where sidewalks are currently missing.
- Desire for trail etiquette education to address safety concerns about multiple users on a single path.

## Public Information Centre #2

Findings from PIC#1 were presented in a subsequent meeting (PIC #2, Exhibit 21), where twenty-four (24) residents were in attendance. Councillors and residents from Wards 6,7 and 8 were represented.





Like PIC #1, participants were engaged one-on-one or in small groups with facilitators to have updates explained and to provide feedback.

A formal presentation was made once a quorum was in attendance. The recommended route was presented and any additional feedback was noted for inclusion in the study. Issues on maintenance, particularly snow removal, were discussed at length. These issues raised by residents are noted on the appropriate Project Sheets (see Chapter 6.4 - Project Sheets)

### PIC #2 Schedule

Tuesday, March 27, 2018

6:00pm-8:30pm

Open House with a presentation from  
7:00pm-7:30pm

Westmount Recreation Centre, Room 'D',  
35 Lynbrook Dr,  
Hamilton, ON L9C 2K6

*Exhibit 21 - PIC#2 Schedule*

### Stakeholder Feedback

Throughout the development of the feasibility study, various stakeholders were asked to provide feedback on the recommended route, alternate routes, existing site conditions and how the route may interact with their interests. Exhibit 22 shows an excerpt of the feedback received throughout the process. This information has been instrumental in the selection of the recommended trail and the Implementation Strategy (see Chapter 6.0).



STAKEHOLDER	COMMENT
Niagara Escarpment Commission (NEC)	Green infrastructure is desirable, e.g. porous pavements, use recycled aggregate, erosion control/ prevention, solar lighting.
	Minimize impact of urban growth on Escarpment Environment (pg.35 Niagara Escarpment Plan-NEP).
	Permitted uses are NOT approved uses and must meet ALL development criteria listed in NEP (pg.50), if we are encroaching on Escarpment Lands.
	Development application will need to occur in future if we will be impacting Bruce Trail.
Ministry of Tourism, Culture and Sport (MTCS)	Provided documentation to determine if site has archaeological potential, marine archaeological potential, or potential for built heritage and cultural heritage landscape. This can be flagged at preliminary planning stages if there appears to be great potential.
Hamilton Conservation Authority (HCA)	HCA regulated properties adjacent to proposed route: Paramount Heights area, Felker's Falls, Mount Albion area and Karst (not adjacent to lands but do connect into the East Mountain Trail Loop), portions of the East Mountain Trail Loop, Iroquois Heights Conservation Area (at west terminus).
Hamilton Conservation Authority (HCA) (cont'd)	Idea to set up counters in key areas.
	Would like to see vistas enhanced ('City of Vistas'), but also ensure safety close to edge of escarpment to prevent user/ nature conflict.
	HCA manages the Dofasco 2000 trail and has an agreement with Dofasco that would need to be considered if linking to this trail.
	The property owned by HCA at the corner of First Road East and Green Mountain Road is under review. It is one of many sites being considered for a water retention area and is undergoing an Environmental Review. HCA should be contacted when trail is being considered near this land.
Bruce Trail Conservancy/ Iroquoia Bruce Trail Club	Cyclist speed is an issue and may be handled by using side by side gates. Also noted that having points of interest along the trail would be beneficial.
	Show other trails on the map and their connections (e.g. Bruce Trail)
	Concerns regarding speeding cyclists on the Jolley Cut and Red Hill Valley, suggest installing dodgeways every 300 feet to slow down cyclists coming down hills.
	Consider opportunity to have bridges over Red Hill Valley Parkway and over Upper Centennial Parkway from Victory Ridge subdivision to a connection on Ridge Road
	Planning to blaze a trail along Ridge Road from the Devil's Punch Bowl parking lot and heading west to a side access on the north side of Ridge Road that connects to the main trail.
Hillfield Strathallan College (HSC)	Of paramount concern is the impact on mountain commuter traffic routes and crossings. Of more direct concern for HSC is Garth-Fennell/Beckett Drive and/or Garth/Denlow intersections. Any institution of a specific pedestrian or 'preferred signal' mechanism at these respective intersections, particularly at peak traffic times, will further exacerbate the current traffic situation.



STAKEHOLDER	COMMENT
Hamilton Naturalist Club (HNC)	Recommends installing interpretive signs in key areas, particularly about bird migration along the escarpment, Hamilton area wildlife and the Carolinian Region in general. Place signage at lower levels for youth.
	Include interpretive signage with a couple of themes (escarpment geology and ecology; ribbon of green; head of lake; bird migration; encouraging stewardship; mental/ physical/ spiritual benefits).
Infrastructure Ontario (IO)	The right-of-way that is within the hospital lands is owned by Ministry of Infrastructure (MOI) and managed by IO. IO has authority to grant an easement on the land but will require permission from St. Joseph's Healthcare Hamilton who leases the land. IO and St. Joseph's are open to discuss the potential of a proposed route and potential agreements/ easements.
<b>City of Hamilton</b>	
Landscape Architectural Services (LAS)	Confirm if visual impact assessment will be required from NEC for locations that are to have lights.
	Include and tie into vista's (where applicable) indicated on 'Mountain Brow Vista Study and Management Plan' dated September 2016.
Planning and Economic Development	Explore connection trail to the Elfrida Growth Area and include Growth Area on Map.
	Chedoke Radial Trail to Fennell Avenue West: Natural Heritage Planning staff is concerned with the portion of the route that has been proposed adjacent to Scenic Drive and Sanatorium Road. This trail would involve the crossing of the watercourse and would be located within Core Areas (Significant Woodland and Hamilton Escarpment Environmentally Significant Area).
	A connection has been proposed from Glover Mountain Road to Greenhill Avenue. The trail would be within Core Areas (Significant Woodland and Felker's Falls Escarpment Environmentally Significant Area (ESA). An Environmental Impact Statement (EIS) would need to be completed if a new trail is proposed within this area.
Forestry and Horticulture	Include and tie into vistas indicated on Mountain Brow Vista Study and Management Plan (September 2016).
	Ensure 'Public tree Bylaw', 15-125 and the Tree Protection and Sustainability Policy is adhered to and the recommendations are in keeping with the overall mandate of the bylaw and policy to preserve and increase overall tree canopy.
	Any resulting development/ construction that may impact a public tree are to be provided to Forestry and Horticulture for comment.
Parks & Operations	There have been requests to add lighting to Mountain Brow Park. Future lighting will need to be explored.
	The fencing has been partially replaced from Mountain Brow West Park to Mountain Brow Drive park. Due to slope failure etc, the fence will need to be installed further from the Brow and will impact the placement of a future trail. Coordination will need to occur and options will need to be identified for pinch points.
Alternative Transportation	Difficult crossings/ grade highlighted on Bikeways Map: Scenic Drive at Garth Street; Mountain Brow Boulevard at Oakcrest Drive; steep section at Albion Falls.





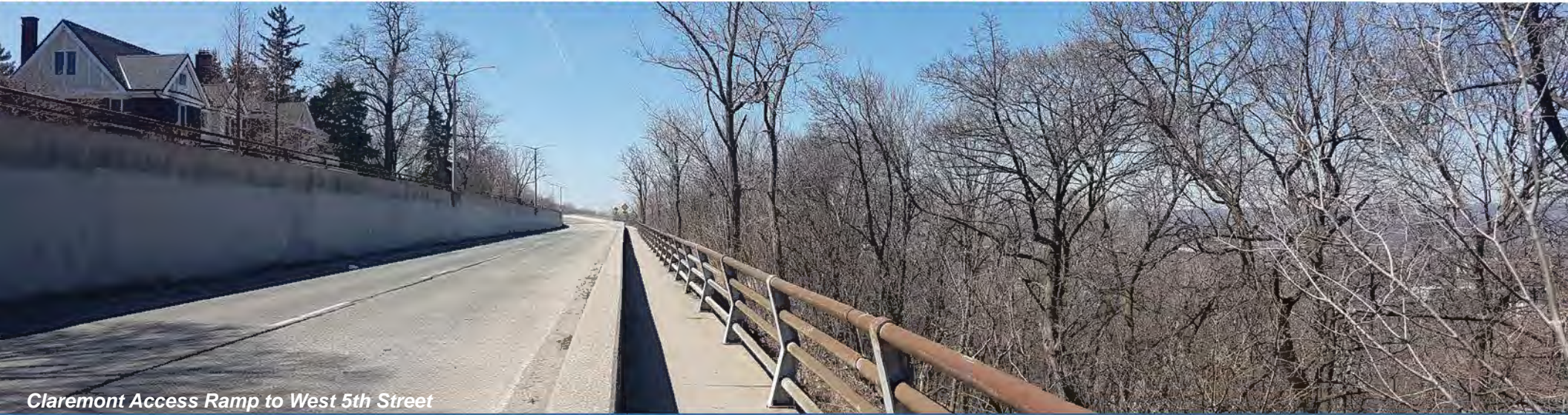
*View of the lower city from the Jolley Cut*



## 6.0 IMPLEMENTATION STRATEGY

The Mountain Brow Trail is currently in different stages of development and requires varying levels of effort, resources and capital investment. Portions of the trail are complete (such as the portion of Ward 6, East Mountain Trail Loop and Red Hill Valley) and require only branding be applied. The completed portion in Ward 6 has become the aesthetic precedent for the length of the trail. With this in mind, this document section provides a breakdown of the recommended trail in terms of the existing infrastructure, and levels of effort, resources and capital investment required to establish each indicated portion of the trail as a part of the larger Mountain Brow Trail System.





Claremont Access Ramp to West 5th Street

## 6.1 Recommended Mountain Brow Trail Route

The recommended route for the Mountain Brow Trail is a result of detailed analysis of the length of the preferred trail route as well as an exploration of alternatives, consultation with various stakeholders and public engagement. While the full implementation of the length of the trail is preferred, implementation through phasing allows for (i) the City to gradually acquire the appropriate capital inputs to fund the effort; (ii) inter-agency coordination on projects that overlap or are adjacent; (iii) the prioritization of the various portions of the recommended trail route according to the existing conditions and required input; and (iv) ensures a cohesive trail design despite multiple project phases.

The recommended route for the trail is presented in the Preferred Route Map (Exhibit 23), and further detailed in the enlarged map (Exhibit 24, page adjacent).



Exhibit 23 - Preferred Route Map (Base Map Source: Snazzy Maps, licensed by CC0 1.0)



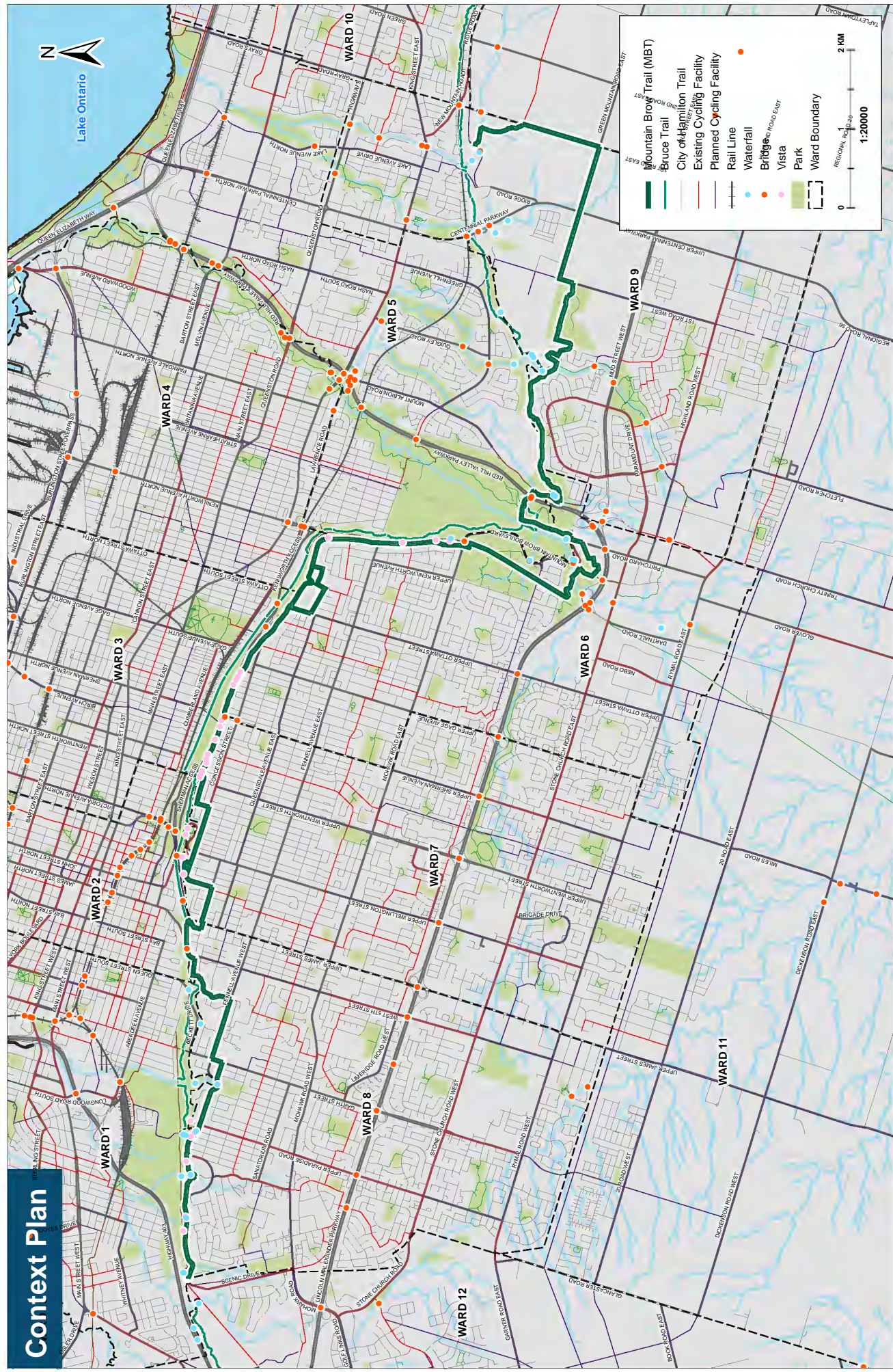


Exhibit 24 - Context Plan





View of the lower city from the Jolley Cut

## 6.2 Facility Types

### Multi-Use Path vs. Multi-Use Trail

Within this report, differentiation is made between multi-use paths and multi-use trails. Paths refer to facilities adjacent to roadways. These facilities are often asphalt or concrete surfaces. Trails are off-road facilities usually located within parks, forests and open spaces or outside of a roadway right-of-way. The Mountain Brow Trail will aim for an asphalt surface; however, a review of surfacing will need to be completed for environmentally sensitive areas.

One of the most important elements in fulfilling the mandate of the Mountain Brow Trail is providing a continuous, high quality facility. Although a multi-use trail is the preferred facility type along the Mountain Brow Trail, certain sections of the route cannot accommodate an off-road facility, so a total of four primary facility types are anticipated as part of the full route.

Based on the current trail concept, the estimated breakdown of the trail will be: 74% multi-use path/trail, 13% sidewalk and bicycle lane, 7% sidewalk and signed cycling route, and 6% paved shoulder. An illustration and description of each of these facility types is provided in Exhibit 25.

In identifying the facility type for segments located along or within the boulevard of a

roadway, the facility selection considered Ontario's Traffic Manual (OTM) Book 18 considerations, including the volume and speeds of motor vehicle traffic. A memo summarizing the application of OTM Book 18's pre-selection nomograph to road segments with recommended cycling facilities is included in Appendix F.





View of the lower city from the Claremont Access ramp



### Multi-Use Trail/Path (Preferred Treatment)

Multi-use trails/paths are located off-road, either in the boulevard or through green space. Both pedestrians and cyclists can use these facilities.



### Bike Lane & Sidewalk

Along some sections of the route, the facility will consist of a sidewalk for pedestrians and an on-road bike lane for cyclists. Bike lanes are travel lanes dedicated exclusively for use by cyclists through a combination of pavement markings and signage.



### Sidewalk & Signed Cycling Route

In quiet residential sections of the route, the facility will consist of a standard sidewalk for pedestrians and a signed route for cyclists. Along low volume and low speed roadways, signed bicycle routes can provide comfortable neighbourhood connections.



### Paved Shoulder

Where the route passes through rural sections of the City, a paved shoulder may be used to make these connections. Along roads with a rural cross-section, a paved shoulder provides space for use by both pedestrians and cyclists.





Red Hill Trail

## 6.3 Considerations for Trail Prioritization

The prioritization of each trail segment depends on the key criteria noted below:

### Potential Trail Impact

In order to assess the potential impact of a trail link, a unique GIS-based prioritization tool was developed. This tool examined the following five criteria to come up with an estimated trail impact score, ranging from 0 (low impact) to 100 (high impact):

**Connectivity** – One of the desired purposes of the trail is to help to connect to existing and planned pieces of cycling and trail infrastructure in order to create a fulsome network that encourages trail use for recreation and transportation purposes. This factor evaluates the number and type of network connections that are made by a

particular link, as well as identifies whether it is a new or upgraded existing link.

**Key Destinations** – At the most basic level, trail access is about providing recreational opportunities, including access to important destinations such as parks, schools, recreation centres, vistas, waterfalls etc. This analysis evaluates the number & types of destinations served by a particular trail link.

**Safety** – Safety remains an important consideration in the development of a practical and user friendly recreational experience. The state of existing infrastructure, and areas with aging infrastructure in particular, should help determine trail prioritization. Also, whether the trail connects an existing ‘gap’ in a

sidewalk network or mitigates inaccessible slopes should be considered prioritization opportunities.

**Population & Employment Density** – Population and employment density can support additional active transportation trips. Areas of higher population and employment density often have built form and land use patterns that support active transportation. In addition, the simple matter of proximity of people to the trail is likely related to higher usage.

**Potential Demand** - Most residents indicated that their use of the trail would be for trips between 1 and 5 km. As a result, this analysis will consider areas where there is currently a higher rate of non-commute walking and cycling trips, based





*View of the lower city from Devil's Punch Bowl*

on data available through the Transportation Tomorrow Survey.

Full details of the Trail Impact Score methodology are presented in Appendix G, the result of each criteria is shown in Appendix H, and the summary of trail impact scores is shown in Exhibit 26.

### Project Cost

The anticipated project cost and the anticipated funding source is a key factor in the prioritization of various trail links. For example, some projects are identified as part of road reconstruction project, and are already flagged for life-cycle replacement costs in the 10-year budget forecast (refer to Coordination with other City Initiatives/ On-going Development below). In other

instances, the trail will be a standalone project and has not yet been identified in a City section's 10-year budget portfolio and as such will need to be planned through the capital budget annual review process. (see Chapter 9.0 – High Level Costing By Initiative)

### Construction Complexity, Land Ownership & Permitting Needs

In addition to project cost, sections of trail that require construction or upgrades directly adjacent to the escarpment edge may present constructibility challenges and require additional permitting, cost, risk mitigation and contingencies, which requires additional time built into the project delivery timelines. In some instances, the Mountain

Brow Trail link is recommended along property that is not currently owned by the City of Hamilton, in which case agreements such as easements or transfers will require negotiation.

### Coordination with other City Initiatives / On-going Development

Many of the trail segments identified along the Mountain Brow Trail will overlap with other initiatives, whether it is an on-road cycling link that is identified in the Cycling Master Plan, or a trail that will be constructed as part of a capital roads project. In these instances, the anticipated timelines will drive the timing and priority of the trail segments. Similarly, some portions of the trail are tied to future development, and will be implemented





Red Hill Valley Parkway Underpass

as development occurs to maximize cost savings and build in conjunction with anticipated usage.

### Network Build-out & Connectivity

As the trail is phased in over time, it is desirable to balance a number of competing considerations:

- It is desirable to build contiguous sections of trail to expand the reach of the existing segments.
- It is desirable to build portions of the trail across each ward in order to build support and momentum for the trail across the Mountain.
- It is desirable to bundle sections of project delivery for cost savings in construction.

These factors together contributed to the grouping of trail projects into the following project horizons:

- Short-term (0-5 years) - 2019-2023
- Medium-Term (5-10 years) - 2024-2028
- Long-Term (10-20years) - 2029-2038
- Ultimate (Beyond 20 years) - 2039+

Exhibit 27 shows the breakdown of the projects by project segment and the anticipated project phasing.

As part of the project phasing, the fifty-one (51) individual trail segments were organized into 26 manageable projects for economies of scale, to expedite delivery and reduce construction impacts to local communities.

Exhibit 28 more clearly illustrates the project

groupings and facility types along the trail (see also Chapter 6.4 - Project Sheets).



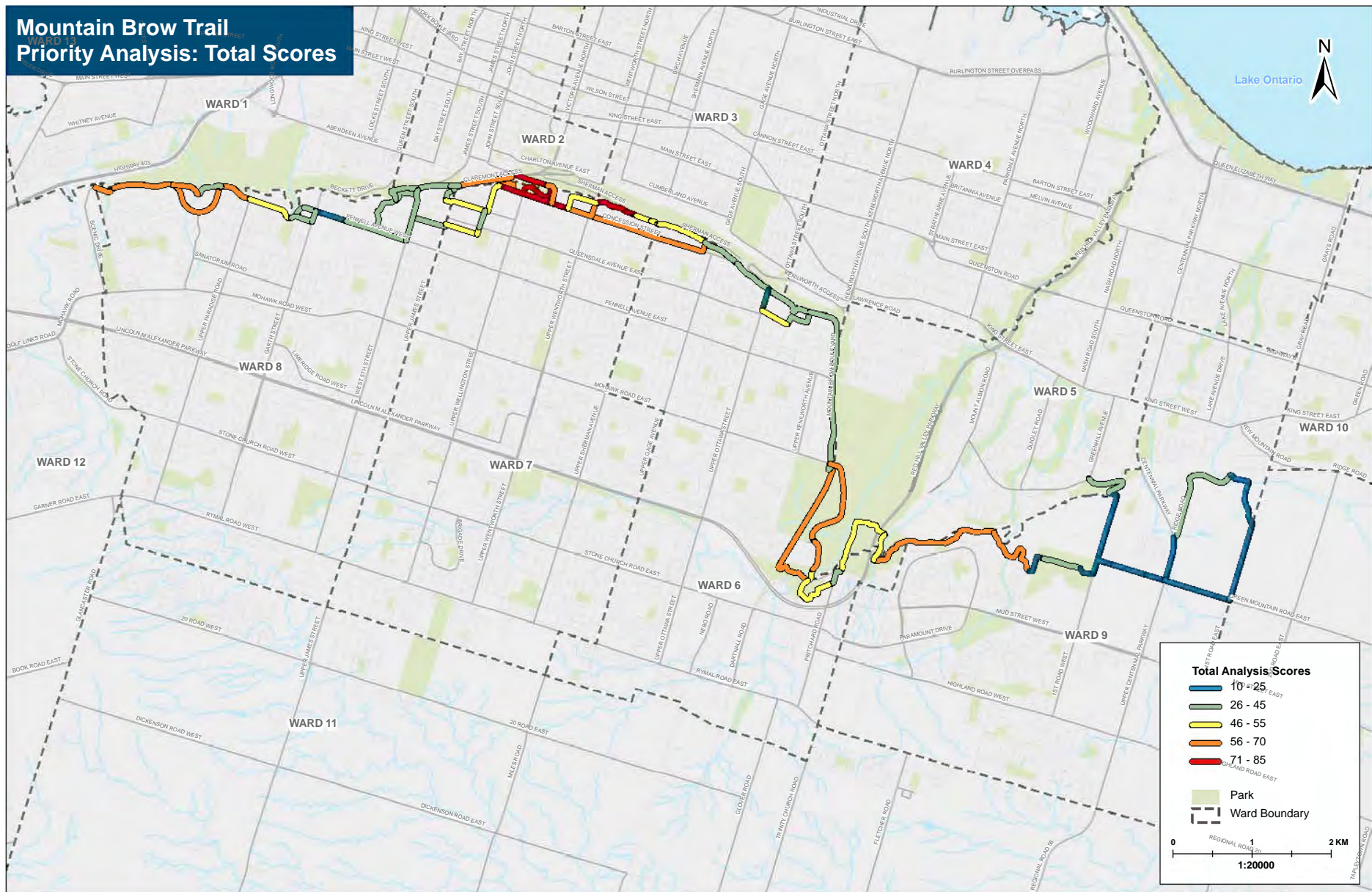


Exhibit 26- Trail Impact Score - refer also to Appendix G



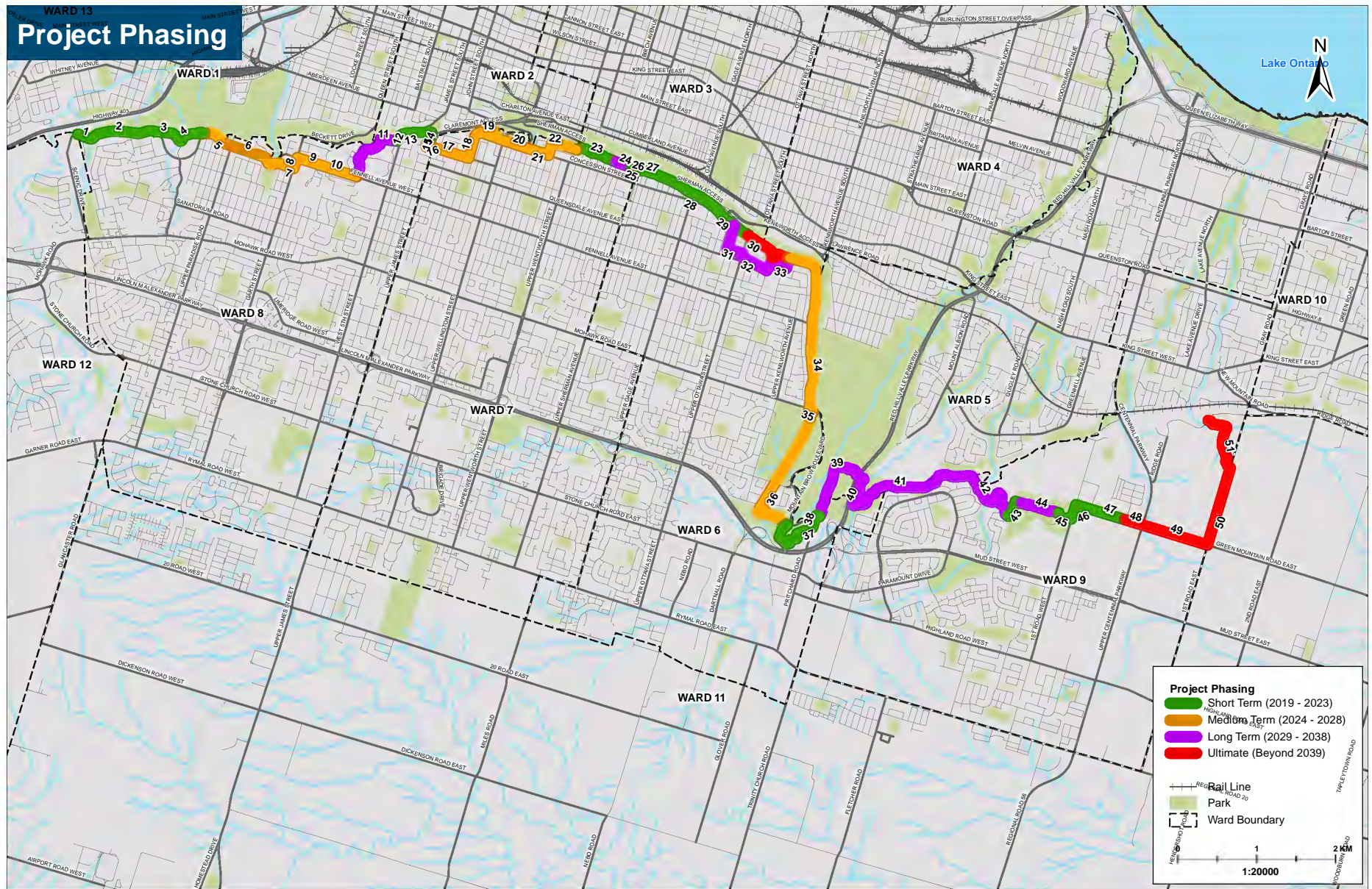


Exhibit 27 - Recommended Project Phasing



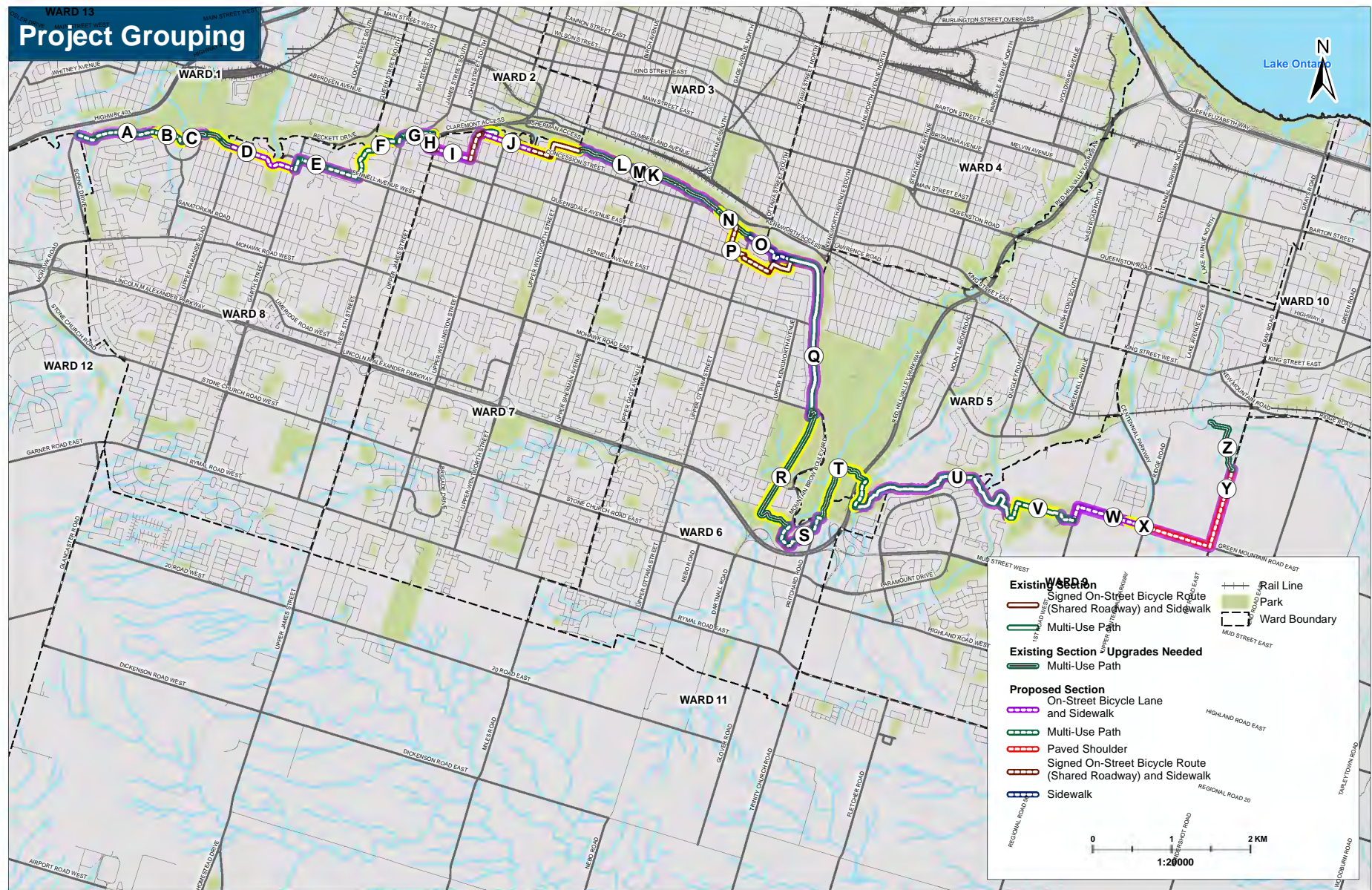
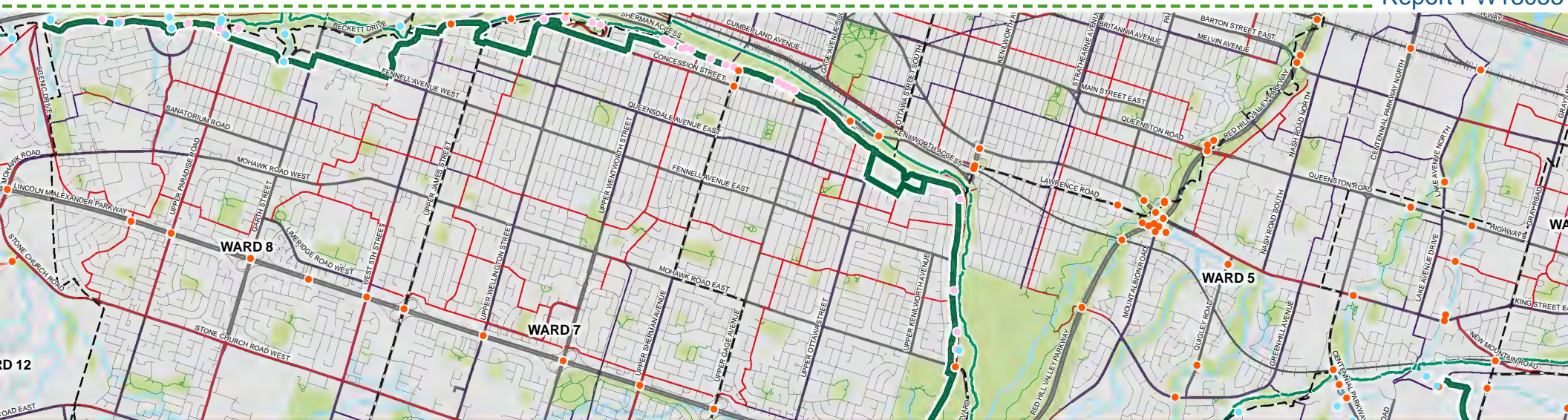


Exhibit 28 - Recommended Project Grouping Map





## 6.4 Project Sheets

The following sections present detailed information for each section of the Mountain Brow Trail.

The Mountain Brow Trail has been divided into fifty-one (51) segments, and summarized in the following project sheets.

Each project sheet is spread across four pages and provides a variety of information related to that portion of the trail.

This information includes:

### General Information

#### Project Section Number & Project

**Section Title** – refers to a defined portion of the trail. Project Section Numbers increase as the Trail moves from West to East as shown in the Project Section Reference Map (Exhibit 29). Project

Section Titles describe the highlighted sections. The information is further clarified in the Section Map and Contextual Reference Map (See Project Sheet Key, Exhibit 30)

**Section Facility Status** – graphically shows the type of facility proposed and the condition it is in.

**Cross Section** – shows the relationship between the existing facilities and proposed facilities. Sections are not drawn to scale and are graphic representations only

**Section Ward** – the ward in which the highlighted segment is located. The Mountain Brow Trail will run through wards 6-9

**Related Projects** - Project segments in

the same project group with the highlighted project sheet

### Context

#### Average Annual Daily Traffic (AADT)

Traffic volume statistics compiled and dissected according to the project portions. This data forms part of High-Level Review of Cycling Facility Selection (Appendix F). As noted in the review, some data has been assumed based on land use context and road classification

**Speed (km/h)** – Posted speed limits along streets within the municipal boundaries of the City of Hamilton. Speed limit assumptions are taken (and noted) where signs have not been erected. According to City of Hamilton Speed Limit Policy (October 2001):



- urban arterials will have a typical speed limit of 60km/h if the road has a sidewalk on at least one side of the road
- collector roads and local roads (other roads) will have typical speed limits of 50km/hr. 40km/h will be considered where conditions warrant such measures
- rural roads that are contiguous to schools will have maximum speed limits 20km/h lower than the speed limit on adjacent sections. The lowest maximum speed limit is 40km/h
- school areas (urban arterials and rural roads) will have lower posted speed limits based on a variety of factors (this may be full time or during defined school hours)

**Number of Lanes** – details the number of vehicular travel lanes along the indicated portion of the roadway. This detail is not applicable to portions of the trail that are not adjacent to an existing roadway, i.e. portions of the trail that are off-road, or within parks or open spaces.

**Right-of-Way (R.O.W.) Width** – the maximum width, in metres, as defined in the Urban Hamilton and Rural Hamilton Official Plans. Width is determined based on the Road Characterization.

**Road Characterization** – Type of road as determined by the City of Hamilton Functional Road Classification system - Major Arterial, Minor Arterial, Collector

and Local Roads. Where the classification system is not applicable, an alternate characterization is used (Private Local Roads and Trails) where appropriate.

**Project Location** – The proposed or existing location of the highlighted portion of the trail, as follows:

- Open Space (typically, other agencies will also have jurisdiction over this land)
- Municipal Park
- City Right of Way
- Private Land

**Destination** – Locations along, or adjacent to (up to 2km), the specified portion of the trail that participants use, including parking facilities (lots or lay-bys), vistas, parks, and landmarks

**Cultural Areas of Interest** – Identification of Cultural Heritage Designations, Buildings, and/or Landmarks of special interest.

### Facilities

**Existing Facility** - The type of facility that exists along the highlighted segment

**Proposed Facility** – Chapter 6.2 defines the types of facilities proposed to be implemented along the Mountain Brow Trail. The facilities types are

- Multi-Use Paths (MUP): a 3.0m wide (typical) path; usually adjacent to, or within, a roadway right-of-way
- Multi-Use Trail (MUT): a 3.0 wide, off-road facility usually located within parks,

forests and open spaces or outside of a roadway right-of-way

- Bike Lanes and Sidewalk
- Shared Routes and Sidewalk
- Paved Shoulder

**Existing Facility Width** – the width of the existing facility for the extent of the segment shown

**Proposed Facility Width** – the width of the proposed facility for the extent of the segment shown

**Segment Length** – the length of the proposed facility highlighted on the specific project sheet

**Average Slope** – the general incline of the segment highlighted. This value is useful in identifying accessibility concerns

**Facility Location** - location of trail in relation to the adjacent roadway.

- North side of roadway
- South side of roadway
- East side of roadway
- West side of roadway
- Not applicable in all cases

**Status** – some portions of the Mountain Brow Trail currently exist or are planned. The status values are:

- Planned Future: the trail does not exist, but the segment has been identified as a project in the capital budget forecast
- Proposed Future: the trail does not exist and a plan and/or funds are required to



design and construct this portion of the trail.

- Upgrades needed: the trail exists but is in need of repair to the surface type, trail width or to address accessibility concerns
- Existing: the trails exists and requires no immediate maintenance or repairs. This portion only requires the implementation of wayfinding and Mountain Brow Trail (MBT) branded signage. Any proposed trail portions will link to these existing segments

**Alternate Route** – whether or not a potential secondary option is available for users to access, usually for accessibility reasons, after which users may return to the formal Mountain Brow Trail route.

**Trail Impact Score** – score generated from a matrix using the criteria explained in the Trail Link Priority Analysis (See Appendix G Trail Priority Analysis). The highest scores indicate that the highlighted segment should take precedence in the design and construction of the trail within the Project Horizon indicated.

**Signage** – recommendations for signage (wayfinding, branding, or trailhead) to foster a unique experience along the Mountain Brow Trail.

**Lighting** – highlights existing street lighting infrastructure. Recommendations for additional infrastructure or study, as needed,

are included.

**Site Furnishings** – recommendations for site furniture, including benches, bike racks, and other amenities.

## Implementation

**Project Horizon** – the anticipated term for the detailed design and implementation of the highlighted segment of the trail: short-term, medium-term, long-term or ultimate (See Chapter 6.3 Considerations for Trail Prioritization)

**Implementation Responsibility** – the entity that will be responsible for funding the design and implementation of the highlighted portion of the trail.

**High Level Cost Estimate** – a preliminary estimate of the construction cost of the highlighted portion of the trail. This information is a starting point for future budget allocation.

**Surface** – the material of the existing, or proposed, surface (e.g. granular, paved – asphalt or concrete, natural ground) along the trail

**Land Ownership** – the entity(s) that owns or has responsibility for the highlighted portion of the trail

**Stakeholders** – the entity(s) that has regulatory jurisdiction, own land(s) on or adjacent to the highlighted portion of the trail, have projects or planned projects that

may overlap with the Mountain Brow Trail development, or have a vested interest in the sustainable development of the trail

**Permits and Studies** – required permits or studies to be obtained or completed in order to facilitate construction of the highlighted portion of the trail

**Archaeological Potential** – whether or not the highlighted portion lies within the Archaeological Potential designated areas as defined in the Urban Hamilton Official Plan, Volume 1, Appendix F-4

**Maintenance** – maintenance considerations based on typical life-cycles of specified materials.

**Public Engagement Recommendation** – recommendations for future public engagement

## Rationale, Comments and Feasibility Considerations

Additional information related to the highlighted portion of the trail that is useful in the consideration of the trail development.

*The Project Sheet Key is illustrated in Exhibit 30 on page 68.*



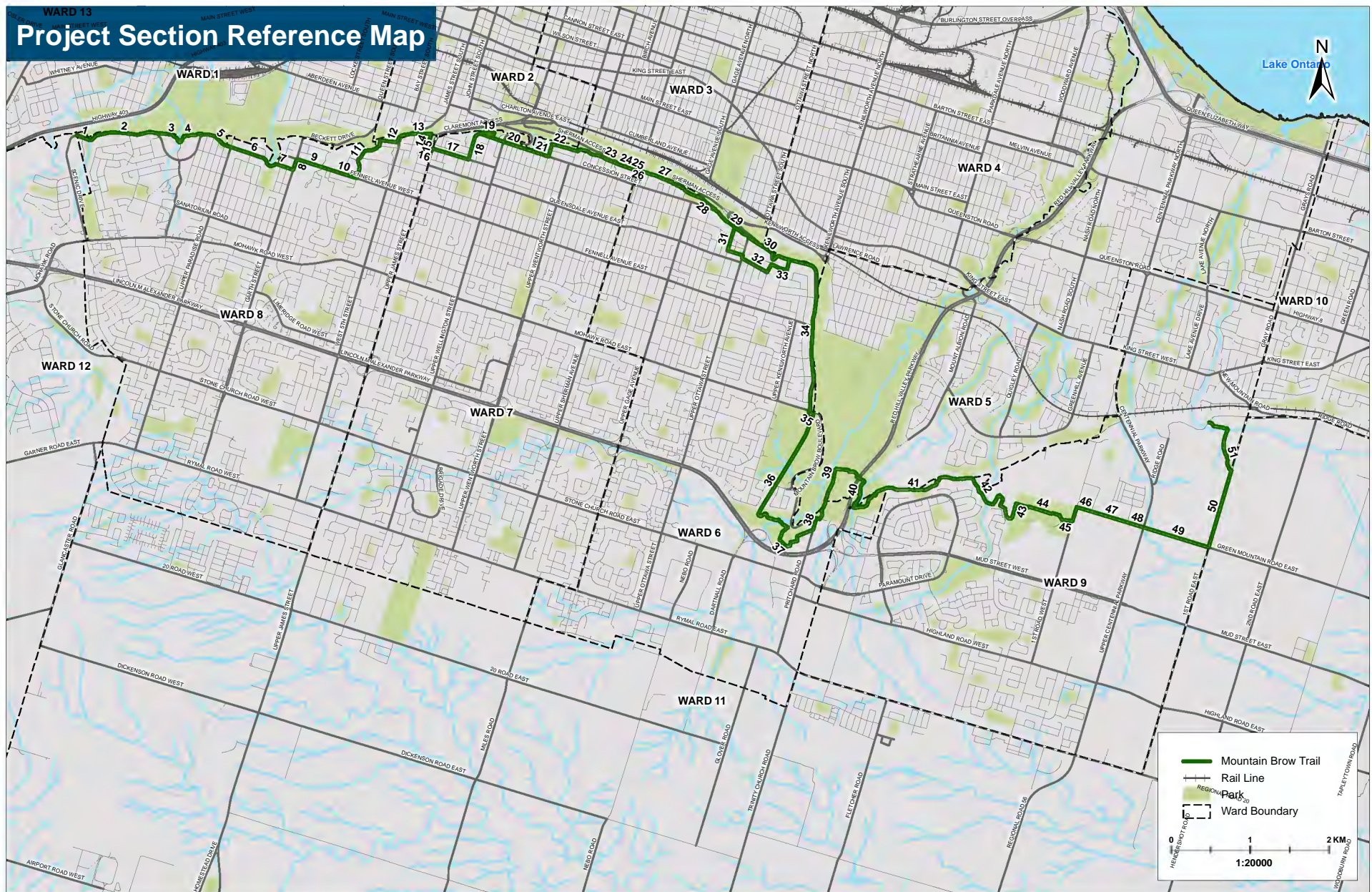


Exhibit 29- Project Section Reference Map



Project Section No.

Contextual Reference Map

Displays current section in relation to the adjacent sections of the trail including facility type

Project Section Title

Current section represented graphically

Section Map

Section Ward

Project Group

Related Projects

Existing Facility Type

Proposed Facility Type

Quick reference symbol identifying level of change recommended to the route

Legend

Section Context

Current Conditions

Cross Section

(where applicable)

Shows physical relationship between existing & proposed street components at key locations

Facilities Information

Recommended design description

Implementation Information

Section particulars and requirements for implementation. Stakeholders.

Comments / Considerations

Exhibit 30 - Project Sheet Key



## Multi-Use Path vs. Multi-Use Trail

**Paths** refer to facilities adjacent to roadways. These facilities are often asphalt or concrete surfaces. **Trails** are off-road facilities usually located within parks, forests and open spaces or outside of a roadway right-of-way. These facilities are often asphalt or a granular surface, but may be natural ground in environmentally-sensitive areas. The Mountain Brow Trail will aim for an asphalt surface; however, a review of surfacing will need to be completed for environmentally sensitive areas.

## Section Facility Status

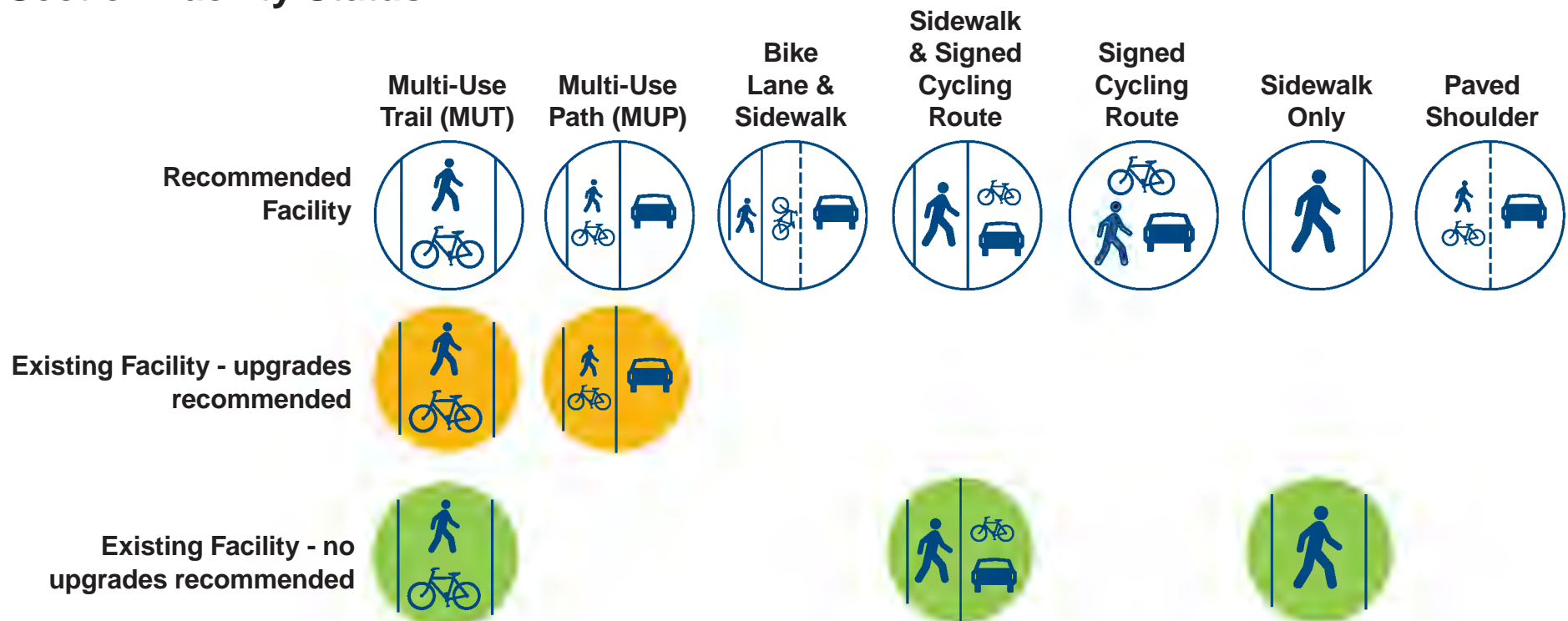


Exhibit 30 - Project Sheet Key (continued)



1

## SCENIC DRIVE Chedoke Radial Trail to Chateau Court



### KEY MAP



### LEGEND





1

**SCENIC DRIVE**

Chedoke Radial Trail to Chateau Court

WARD

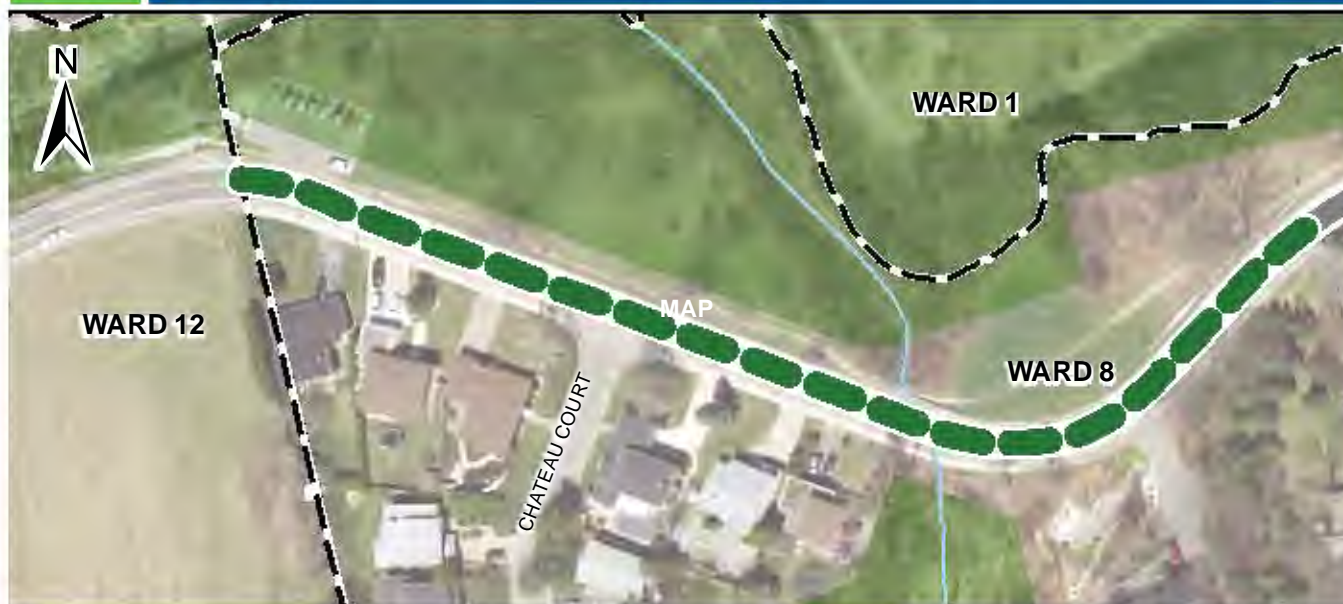
8

PROJECT GROUP

A

RELATED PROJECTS

2



EXISTING FACILITY: NONE

PROPOSED FACILITY: MULTI-USE  
PATH**CONTEXT**

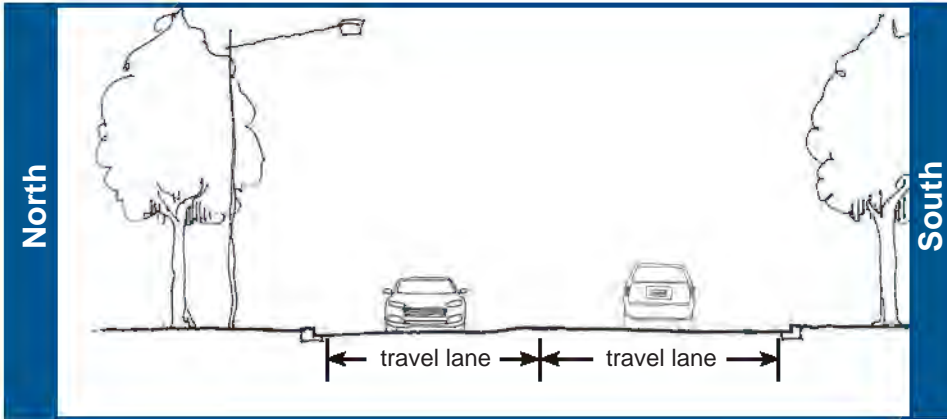
AADT:	9000 <sup>1</sup>
Speed (km/h):	50
No. of Lanes:	2
R.O.W. Width:	26.213m
Road Characterization:	Collector
Project Location:	City R.O.W.
Destinations:	Vistas 83 to 87; Princess Falls; Lower Princess Falls; Chedoke Radial Trail; Iroquoia Heights Conservation Area; Bruce Trail
Cultural Areas of Interest:	Iroquoia Heights Conservation Area



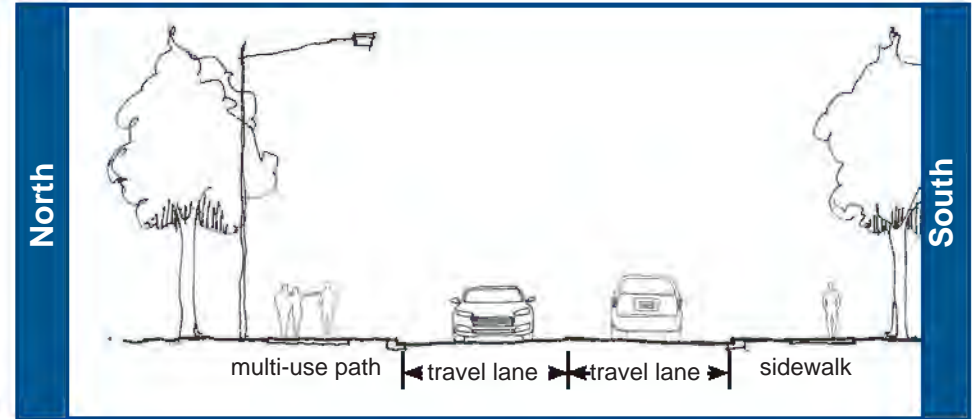
# 1

## SCENIC DRIVE Chedoke Radial Trail to Chateau Court

### EXISTING SECTION



### PROPOSED SECTION



### FACILITIES

Existing Facility:	<b>None</b>	Status:	Planned Future
Proposed Facility:	<b>Multi-Use Path</b>	Alternate Route:	No
Existing Facility Width:	N/A	Trail Impact Score:	67
Proposed Facility Width:	3.0-4.0m	Signage:	Trailhead, Branding
Segment Length:	260m	Lighting:	Existing street lighting may be adequate. Further study required. Application of MBT branded fixture may be desirable
Average Slope:	2.75%	Site Furnishings:	Accessible benches recommended at strategic views and trailheads. Bike rack recommended at Chedoke Radial Trailhead Parking
Facility Location:	North		



## 1

**SCENIC DRIVE**

Chedoke Radial Trail to Chateau Court

**IMPLEMENTATION**

Project Horizon:	Short-Term
Implementation Responsibility:	Engineering Services
High Level Cost Estimate:	\$200,00.00
Surface:	Asphalt
Land Ownership:	City of Hamilton
Stakeholders:	Hamilton Naturalists' Club, Niagara Escarpment Commission, Hamilton Conservation Authority
Permits and Studies:	Permits: N.E.C. H.C.A.; Studies: EIS, Archaeological, Geotechnical
Archaeological Potential:	Yes
Maintenance:	Standard maintenance for asphalt surface
Public Engagement:	Environmental Assessment (EA) Process

**RATIONALE, COMMENTS AND FEASIBILITY CONSIDERATIONS**

- Involves crossing a watercourse and located within Core Areas (Significant Woodland and Hamilton Escarpment Environmentally Significant Area)
- Constraint: Goulding Avenue - culvert and roadside barrier may limit path width
- Anticipated to be completed with a road reconstruction project
- Desirable to deviate facility away from curb where feasible to improve user experience - consideration to be given to impact on mature trees and escarpment edge
- Consideration for expansion of parking lot at the trailhead

NOTES: (1) Assumed based on land use context and road classification



## 2

## SCENIC DRIVE Chateau Court to Sanatorium



### KEY MAP



### LEGEND





2

## SCENIC DRIVE

Chateau Court to Sanatorium

WARD

8

PROJECT GROUP

A

RELATED PROJECTS

1



EXISTING FACILITY: NONE

PROPOSED FACILITY: MULTI-USE  
PATH

### CONTEXT

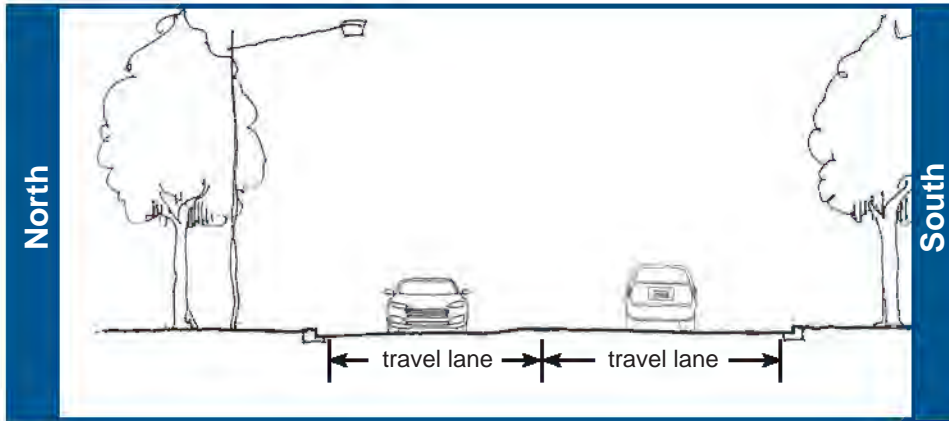
AADT:	9000 <sup>1</sup>
Speed (km/h):	50
No. of Lanes:	2
R.O.W. Width:	26.231m
Road Characterization:	Collector
Project Location:	City R.O.W.
Destination:	Vistas 77 to 82; Mountain View Waterfall; Scenic Park (Langs Park)
Cultural Areas of Interest:	Cultural Heritage Landscape Designation for Scenic Park



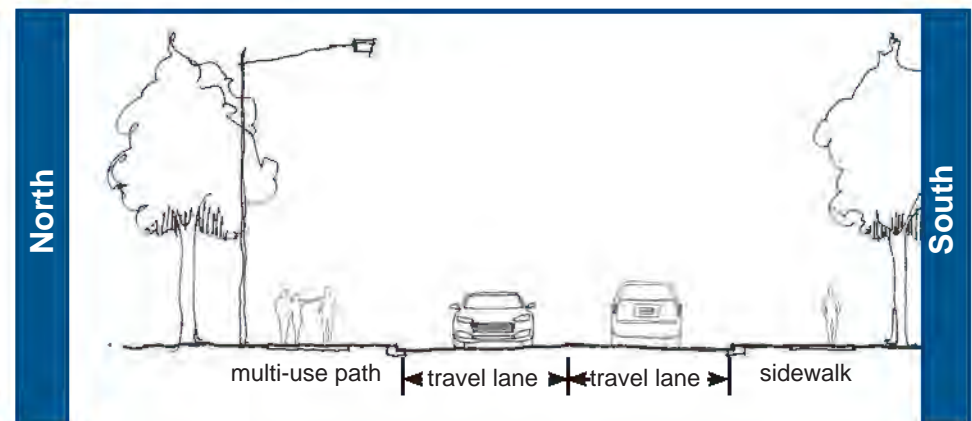
## 2

### SCENIC DRIVE Chateau Court to Sanatorium

#### EXISTING SECTION



#### PROPOSED SECTION



#### FACILITIES

Existing Facility:	<b>None</b>	Status:	Planned Future
Proposed Facility:	<b>Multi-Use Path</b>	Alternate Route:	No
Existing Facility Width:	N/A	Trail Impact Score:	65
Proposed Facility Width:	3.0-4.0m	Signage:	Wayfinding, Branding
Segment Length:	760m	Lighting:	Existing street lighting may be adequate. Further study required. Application of MBT branded fixture may be desirable
Average Slope:	1.41%	Site Furnishings:	Accessible benches recommended at strategic views
Facility Location:	North		



## 2

**SCENIC DRIVE**

Chateau Court to Sanatorium

**IMPLEMENTATION**

Project Horizon:	Short-Term
Implementation Responsibility:	Engineering Services
High Level Cost Estimate:	\$600,00.00
Surface:	Asphalt
Land Ownership:	City of Hamilton
Stakeholders:	Hamilton Naturalists' Club, Niagara Escarpment Commission, Hamilton Conservation Authority
Permits and Studies:	Permits: N.E.C. H.C.A.; Studies: EIS, Archaeological, Geotechnical
Archaeological Potential:	Yes
Maintenance:	Standard maintenance for asphalt surface
Public Engagement:	EA Process

**RATIONALE, COMMENTS AND FEASIBILITY CONSIDERATIONS**

- Anticipated to be completed with a road reconstruction project
- Scenic Drive at Sanatorium Road is constrained by the proximity to the Escarpment edge
- Desirable to deviate facility away from curb where feasible to improve user experience - consideration to be given to impact on mature trees and Escarpment edge
- Existing parking lay-bys generally under-utilized

NOTES: (1) Assumed based on land use context and road classification



# 3

## SANATORIUM ROAD



### KEY MAP



### LEGEND

	Project Segment		Proposed Section On-Street Bicycle Lane and Sidewalk
	Project Group		Multi-Use Path
	Existing Section Signed-On-Street Bicycle Route (Shared Roadway) and Sidewalk		Paved Shoulder
	Multi-Use Path		Signed On-Street Bicycle Route (Shared Roadway) and Sidewalk
	Existing Section - Upgrades Needed Multi-Use Path		Sidewalk



3

SANATORIUM ROAD

WARD8

PROJECT GROUPE

RELATED PROJECTS



EXISTING FACILITY: NONE

PROPOSED FACILITY: MULTI-USE TRAIL



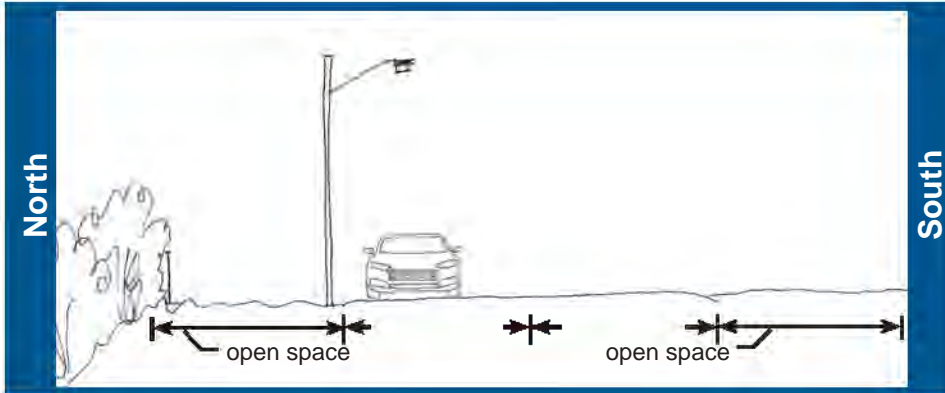
CONTEXT	
AADT:	N/A
Speed (km/h):	N/A
No. of Lanes:	N/A
R.O.W. Width:	N/A
Road Characterization:	Trail
Project Location:	Private Land
Destination:	Bruce Trail
Cultural Areas of Interest:	Sanitorium (Former)

PROPOSED FACILITY: MULTI-USE TRAIL

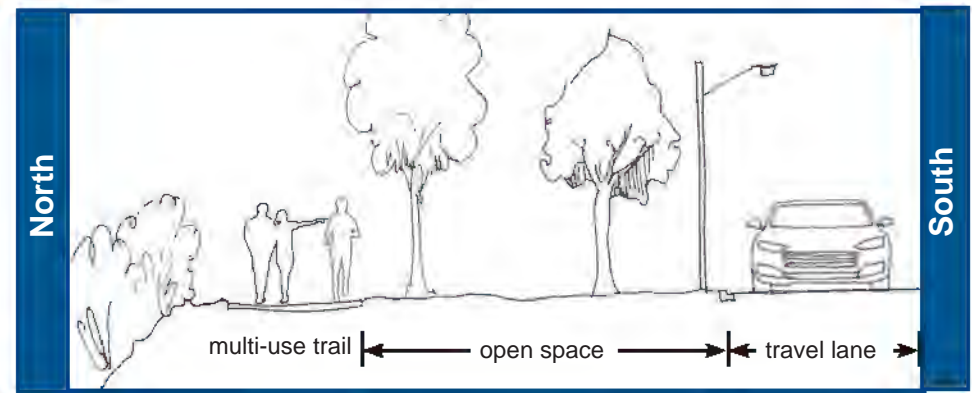


### 3 SANATORIUM ROAD

#### EXISTING SECTION



#### PROPOSED SECTION



#### FACILITIES

Existing Facility:	None	Status:	Proposed Future
Proposed Facility:	Multi-Use Trail	Alternate Route:	Scenic Drive
Existing Facility Width:	N/A	Trail Impact Score:	75
Proposed Facility Width:	3.0-4.0m	Signage:	Wayfinding, Branding
Segment Length:	370m	Lighting:	None recommended
Average Slope:	3.26%	Site Furnishings:	None recommended
Facility Location:	As close to escarpment edge as feasible		



### 3 SANATORIUM ROAD

EXISTING FACILITY: NONE

#### IMPLEMENTATION

Project Horizon:	Short-Term
Implementation Responsibility:	Developer (in consultation with City of Hamilton)
High Level Cost Estimate:	\$290,000.00
Surface:	Asphalt
Land Ownership:	Private Developer
Stakeholders:	Hamilton Naturalists' Club, Niagara Escarpment Commission, Hamilton Conservation Authority, Bruce Trail Conservancy
Permits and Studies:	Permits: N.E.C., H.C.A.; Studies: EIS, Archaeological, Geotechnical
Archaeological Potential:	Yes
Maintenance:	Fence and surface repairs due to erosion of Escarpment edge
Public Engagement:	Site Plan Process

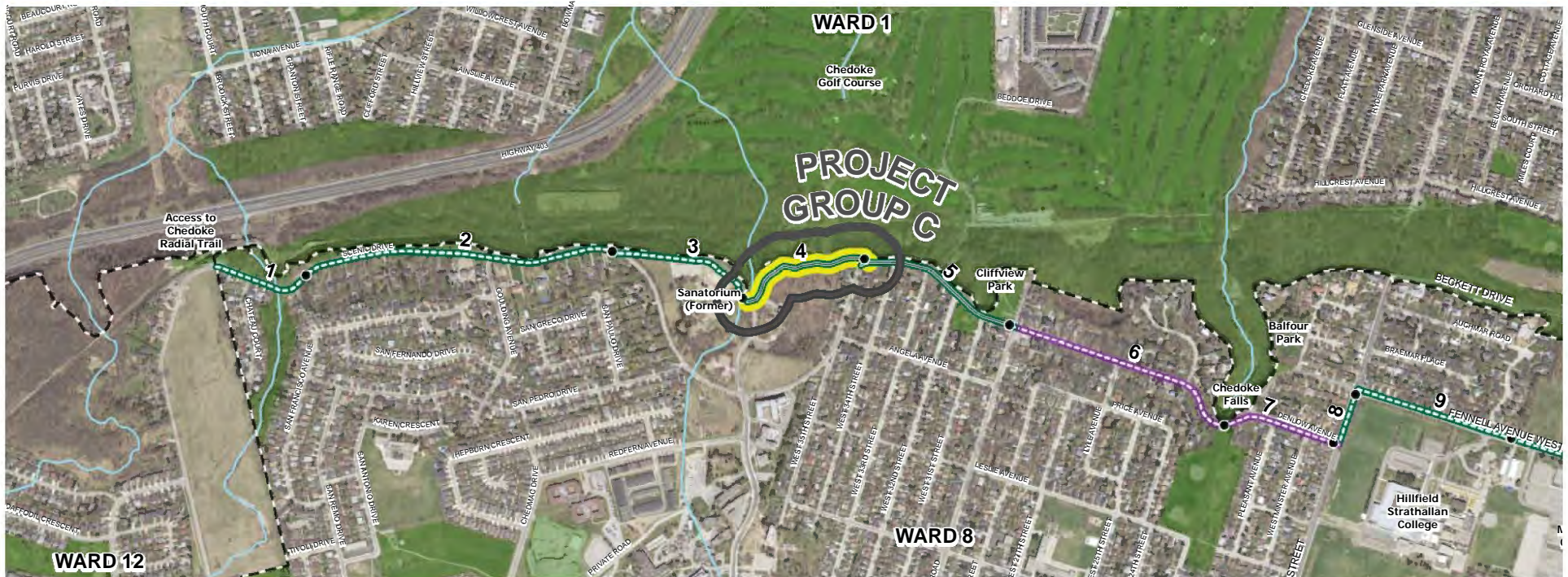
#### RATIONALE, COMMENTS AND FEASIBILITY CONSIDERATIONS

- Sanatorium Road was chosen to facilitate the public's desire to stay as close to the Escarpment edge as possible
- Future planned facility along Scenic Drive provides accessible alternative to Project Segments 3 & 4
- Public desire for a parking node

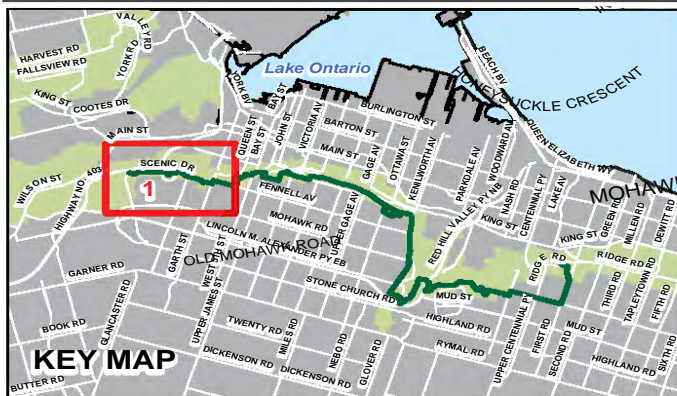


# 4

## BRUCE TRAIL Sanatorium Road to Scenic Drive



### KEY MAP



### LEGEND

	Project Segment		Proposed Section On-Street Bicycle Lane and Sidewalk
	Project Group		Multi-Use Path
	Existing Section Signed-On-Street Bicycle Route (Shared Roadway) and Sidewalk		Paved Shoulder
	Multi-Use Path		Signed On-Street Bicycle Route (Shared Roadway) and Sidewalk
	Existing Section - Upgrades Needed Multi-Use Path		Sidewalk



4

**BRUCE TRAIL**  
Sanatorium Road to Scenic Drive

WARD

1

8

PROJECT GROUP

B

RELATED PROJECTS



EXISTING FACILITY: MULTI-USE TRAIL

PROPOSED FACILITY: MULTI-USE  
TRAIL**CONTEXT**

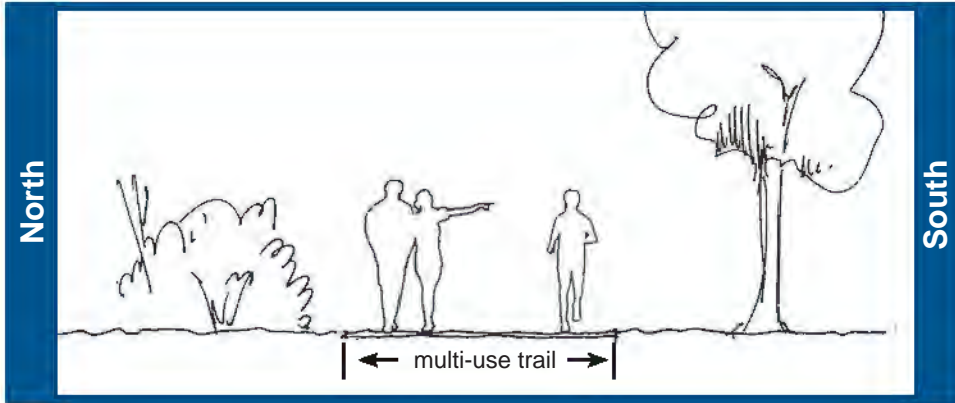
AADT:	N/A
Speed (km/h):	N/A
No. of Lanes:	N/A
R.O.W. Width:	N/A
Road Characterization:	Trail
Project Location:	Open Space
Destination:	Vista 76, Sanitorium Falls, Bruce Trail
Cultural Areas of Interest:	Cross of Loraine



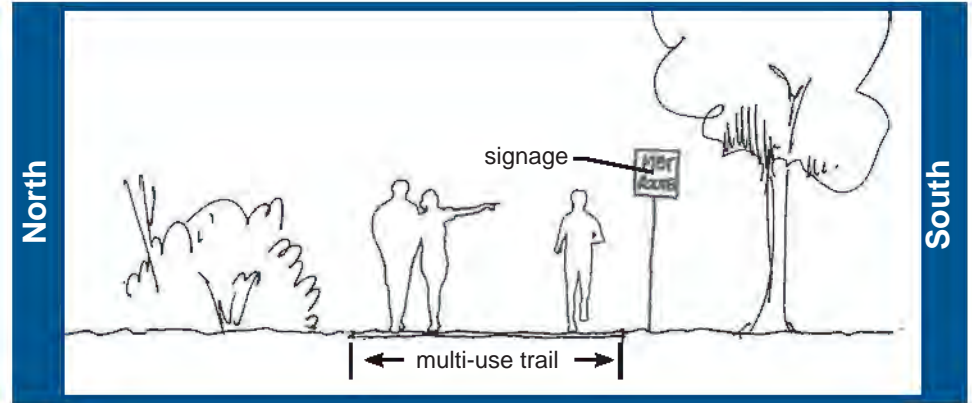
4

# **BRUCE TRAIL** Sanatorium Road to Scenic Drive

## **EXISTING SECTION**



## **PROPOSED SECTION**



## **FACILITIES**

Existing Facility:	<b>Multi-Use Trail (Granular &amp; Natural Ground)</b>	Status:	Upgrades Needed
Proposed Facility:	<b>Multi-Use Trail - Upgrades</b>	Alternate Route:	Scenic Drive
Existing Facility Width:	2.0m	Trail Impact Score:	45
Proposed Facility Width:	2.4m minimum; 3.0m preferred	Signage:	Wayfinding, Branding
Segment Length:	350m	Lighting:	One spotlight existing - natural area - lighting not desirable
Average Slope:	5.23%	Site Furnishings:	Existing lookout to be upgraded to incorporate MBT-branded benches and fencing
Facility Location:	Per existing		



## 4

**BRUCE TRAIL**  
Sanatorium Road to Scenic Drive

EXISTING FACILITY: NONE

**IMPLEMENTATION**

Project Horizon:	Short-Term
Implementation Responsibility:	Landscape Architectural Services
High Level Cost Estimate:	\$180,000.00
Surface:	Granular
Land Ownership:	City of Hamilton, Private Landowner
Stakeholders:	Hamilton Naturalists' Club, Niagara Escarpment Commission, Hamilton Conservation Authority, Bruce Trail Conservancy
Permits and Studies:	Permits: N.E.C. H.C.A.; Studies: EIS, Archaeological, Geotechnical
Archaeological Potential:	Yes
Maintenance:	Standard maintenance for granular surface
Public Engagement:	Per LAS standard practice

**RATIONALE, COMMENTS AND FEASIBILITY CONSIDERATIONS**

- Existing conditions include woodlot and narrow access, making an asphalt trail challenging and perhaps undesirable. Trail to remain granular with branding and amenity upgrades.
- Public expressed a desire for winter maintenance in this area; however, the City provides maintenance only for asphalt trails.
- Future planned facility along Scenic Drive provides accessible alternative to Project Segments 3 & 4



# 5

## SCENIC DRIVE Bruce Trail to Upper Paradise (Cliffview Park)



### KEY MAP



### LEGEND

	Project Segment		Proposed Section On-Street Bicycle Lane and Sidewalk
	Project Group		Multi-Use Path
	Existing Section Signed-On-Street Bicycle Route (Shared Roadway) and Sidewalk		Paved Shoulder
	Multi-Use Path		Signed On-Street Bicycle Route (Shared Roadway) and Sidewalk
	Existing Section - Upgrades Needed Multi-Use Path		Sidewalk



5

SCENIC DRIVE

Bruce Trail to Upper Paradise (Cliffview Park)

WARD 8

PROJECT GROUP D

RELATED PROJECTS

6

7

N

WARD 1

WARD 8

SCENIC DRIVE

WEST 34TH STREET

WEST 33RD STREET

WEST 32ND STREET

UPPER PARADISE ROAD

MAP

EXISTING FACILITY: MULTI-USE PATH

PROPOSED FACILITY: MULTI-USE PATH

CONTEXT	
AADT:	9000 <sup>1</sup>
Speed (km/h):	50
No. of Lanes:	2
R.O.W. Width:	20.117m
Road Characterization:	Collector
Project Location:	
Destination:	Vistas 71 to 75; Westcliffe Falls; Cliffview Falls; Cliffview Park Chedoke Stairs; Chedoke Civic Golf Cours
Cultural Areas of Interest:	Cultural Heritage Landscape Designation for Cliffview Park

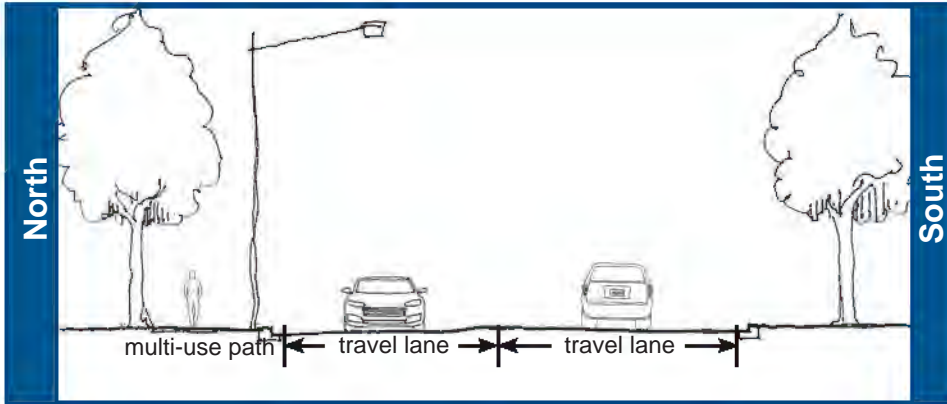


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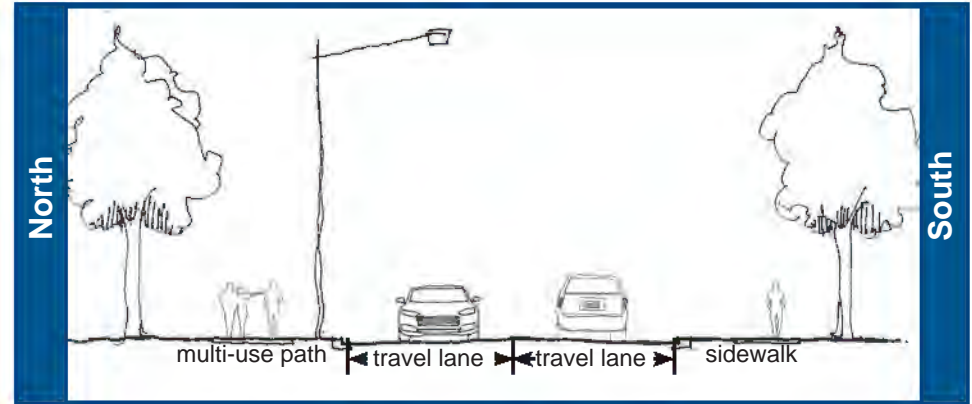
## SCENIC DRIVE

Bruce Trail to Upper Paradise (Cliffview Park)

### EXISTING SECTION



### PROPOSED SECTION



### FACILITIES

Existing Facility:	<b>Multi-Use Path</b>	Status:	Upgrades Needed
Proposed Facility:	<b>Multi-Use Path - Upgrades</b>	Alternate Route:	No
Existing Facility Width:	2.0m	Trail Impact Score:	55
Proposed Facility Width:	3.0-4.0m	Signage:	Trailhead, Wayfinding, Branding
Segment Length:	430m	Lighting:	Application of MBT branded fixture recommended
Average Slope:	2.64%	Site Furnishings:	Existing lookout at Cliffview Falls. Bike racks, water fountains/bottle fillers and benches desirable at Chedoke Stairs
Facility Location:	North		



## 5

**SCENIC DRIVE**

Bruce Trail to Upper Paradise (Cliffview Park)

**IMPLEMENTATION**

Project Horizon:	Medium-Term
Implementation Responsibility:	Engineering Services
High Level Cost Estimate:	\$250,000.00
Surface:	Asphalt
Land Ownership:	City of Hamilton
Stakeholders:	Hamilton Naturalists' Club, Niagara Escarpment Commission, Hamilton Conservation Authority, Bruce Trail Conservancy
Permits and Studies:	Permits: N.E.C., H.C.A.; Studies: EIS, Archaeological, Geotechnical
Archaeological Potential:	Yes
Maintenance:	Standard maintenance for fence and asphalt surface
Public Engagement:	EA Process

**RATIONALE, COMMENTS AND FEASIBILITY CONSIDERATIONS**

- Anticipated to be completed with a road reconstruction project
- Public expressed interest in washroom facilities at Chedoke Stairs

NOTES: (1) Assumed based on land use context and road classification



# 6

## SCENIC DRIVE Upper Paradise to Chedoke Falls



### KEY MAP



### LEGEND





6

**SCENIC DRIVE**

Upper Paradise to Chedoke Falls

WARD

8

PROJECT GROUP

D

RELATED PROJECTS

5

7



EXISTING FACILITY: NONE

PROPOSED FACILITY: BIKE LANES  
AND SIDEWALK**CONTEXT**

AADT:	9000 <sup>1</sup>
Speed (km/h):	50
No. of Lanes:	2
R.O.W. Width:	36.576m
Road Characterization:	Minor Arterial
Project Location:	City R.O.W.
Destination:	Vistas 70 to 71; Cliffview Park; Cliffview Falls; Chedoke Stairs; Chedoke Civic Golf Course;
Cultural Areas of Interest:	Balfour House (Chedoke Estate), Ontario Heritage Trust Easement for Balfour Park, Cultural Heritage Designation for Calquhoun Park

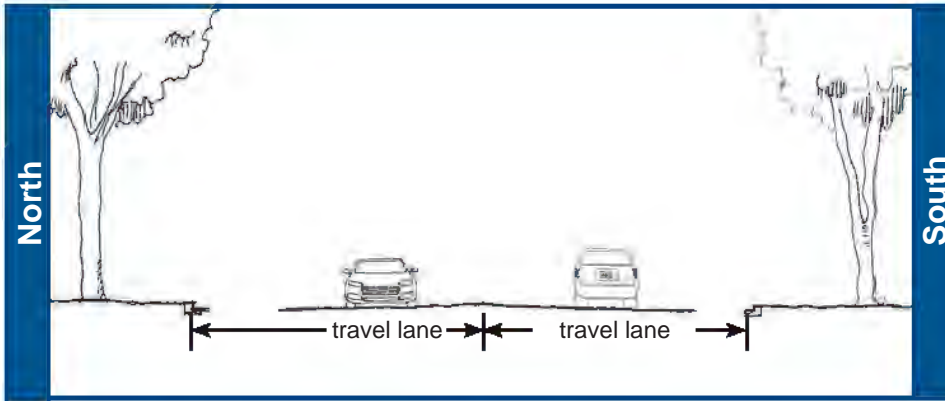


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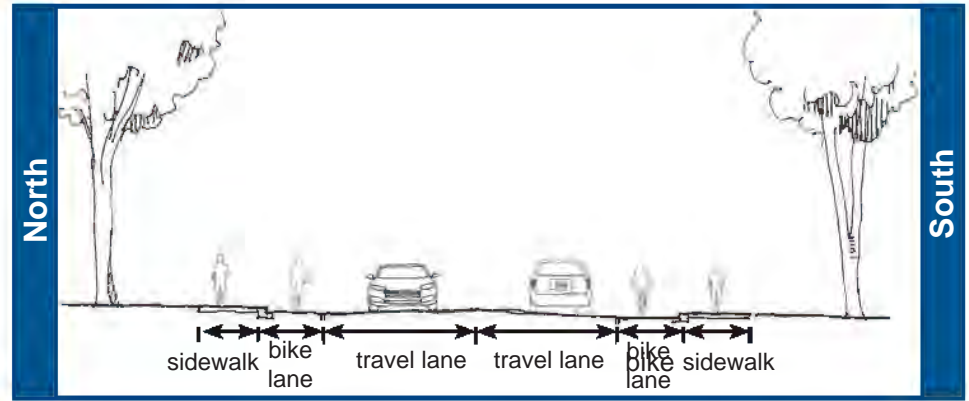
## SCENIC DRIVE

Upper Paradise to Chedoke Falls

### EXISTING SECTION



### PROPOSED SECTION



### FACILITIES

Existing Facility:	None	Status:	Planned Future
Proposed Facility:	Bike Lanes and Sidewalk	Alternate Route:	No
Existing Facility Width:	N/A	Trail Impact Score:	55
Proposed Facility Width:	1.8m sidewalk; 1.8m -2.0m buffered bike lane	Signage:	Wayfinding, Branding
Segment Length:	600m	Lighting:	Standard street lighting
Average Slope:	2.17%	Site Furnishings:	None recommended
Facility Location:	Both sides		



## 6

**SCENIC DRIVE**

Upper Paradise to Chedoke Falls

**IMPLEMENTATION**

Project Horizon:	Medium-Term
Implementation Responsibility:	Engineering Services
High Level Cost Estimate:	\$340,000.00
Surface:	Concrete (sidewalk); Asphalt (bike lane)
Land Ownership:	City of Hamilton
Stakeholders:	Hamilton Naturalists' Club, Niagara Escarpment Commission, Hamilton Conservation Authority, Bruce Trail Conservancy
Permits and Studies:	Permits: N.E.C., H.C.A.; Studies: Archaeological, Geotechnical
Archaeological Potential:	Yes
Maintenance:	Standard maintenance for concrete and asphalt surface
Public Engagement:	EA Process

**RATIONALE, COMMENTS AND FEASIBILITY CONSIDERATIONS**

- Anticipated to be completed with a road reconstruction project
- Need to consider intersection upgrades for cyclists at Upper Paradise Road to facilitate transition from multi-use path to bike lanes
- Proposed facilities are consistent with public feedback

Notes: (1) assumed based on land use context and road classification



# 7 SCENIC DRIVE/DENLOW AVENUE Chedoke Falls to Garth Street



## KEY MAP



## LEGEND

	Project Segment		Proposed Section On-Street Bicycle Lane and Sidewalk
	Project Group		Multi-Use Path
	Existing Section Signed-On-Street Bicycle Route (Shared Roadway) and Sidewalk		Paved Shoulder
	Multi-Use Path		Signed On-Street Bicycle Route (Shared Roadway) and Sidewalk)
	Existing Section - Upgrades Needed Multi-Use Path		Sidewalk



7

**SCENIC DRIVE/DENLOW AVENUE**

Chedoke falls to Garth Street

WARD

8

PROJECT GROUP

D

RELATED PROJECTS

5

6



EXISTING FACILITY: SIDEWALK

PROPOSED FACILITY: BIKE LANES  
AND SIDEWALK**CONTEXT**

AADT:	6000 <sup>1</sup>
Speed (km/h):	30
No. of Lanes:	2
R.O.W. Width:	36.576m
Road Characterization:	Minor Arterial
Project Location:	City R.O.W.
Destination:	Vista 69 to 70, Balfour House, Chedoke Falls, Calquhoun Park, Balfour Park, Hillfield Strathallen College
Cultural Areas of Interest:	Balfour House (Chedoke Estate), Ontario Heritage Trust Easement for Balfour Park, Cultural Heritage Designation for Calquhoun Park

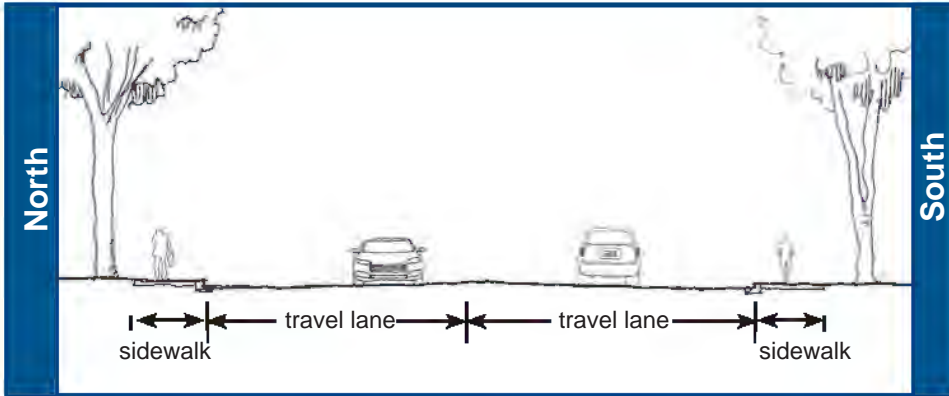


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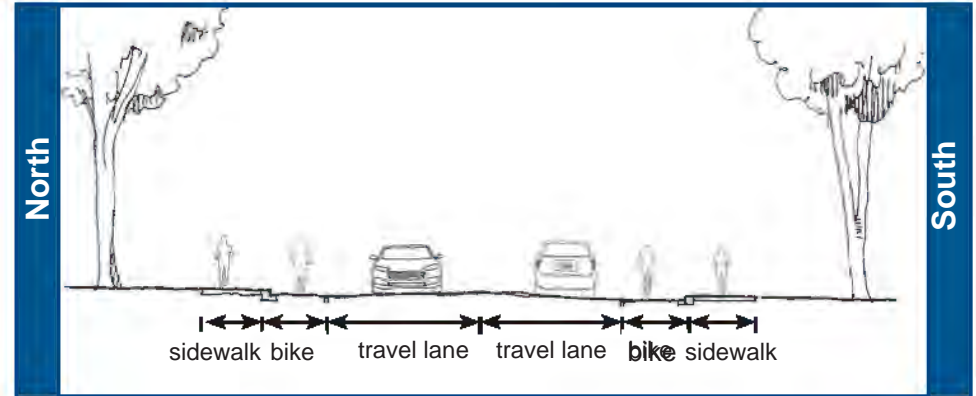
# SCENIC DRIVE/DENLOW AVENUE

Chedoke Falls to Garth Street

## EXISTING SECTION



## PROPOSED SECTION



## FACILITIES

Existing Facility:	<b>Sidewalk (partial)</b>	Status:	Proposed Future
Proposed Facility:	<b>Bike Lanes and Sidewalk</b>	Alternate Route:	Scenic Drive
Existing Facility Width:	1.2-1.8m	Trail Impact Score:	50
Proposed Facility Width:	1.8m sidewalk; 1.8m -2.0m buffered bike lane	Signage:	Wayfinding, Branding
Segment Length:	280m	Lighting:	Standard street lighting
Average Slope:	2.52%	Site Furnishings:	None recommended
Facility Location:	Both sides		



## 7

**SCENIC DRIVE/DENLOW AVENUE**

Chedoke Falls to Garth Street

**IMPLEMENTATION**

Project Horizon:	Medium-Term
Implementation Responsibility:	Engineering Services
High Level Cost Estimate:	\$93,000.00
Surface:	Concrete (sidewalk); Asphalt (bike lane)
Land Ownership:	City of Hamilton
Stakeholders:	Hamilton Naturalists' Club, Niagara Escarpment Commission, Hamilton Conservation Authority, Bruce Trail Conservancy, Hillfield Strathallan College
Permits and Studies:	Permits: N.E.C., H.C.A.; Studies: Archaeological, Geotechnical
Archaeological Potential:	Yes
Maintenance:	Standard maintenance for concrete and asphalt surface
Public Engagement:	EA Process

**RATIONALE, COMMENTS AND FEASIBILITY CONSIDERATIONS**

- Anticipated to be completed with a road reconstruction project
- Need to evaluate crossing opportunities at Garth Street; consider the need for a formalized crossing through a pedestrian crossover or signal application (coordinate with Garth and Fennell signal due to proximity). If not feasible, consider alternative trail route along Scenic Drive to Garth and Fennell

NOTES: (1) 2016 count - based on City count adjusted to AADT based on peak hour volume assuming 10% conversion



# 8

## GARTH STREET Denlow Avenue to Fennell Avenue West



### KEY MAP



### LEGEND





8

**GARTH STREET**  
Denlow Avenue to Fennell Avenue West

WARD

8

PROJECT GROUP

E

RELATED PROJECTS

9

10



EXISTING FACILITY: SIDEWALK

PROPOSED FACILITY: MULTI-USE  
PATH**CONTEXT**

AADT:	23000 <sup>1</sup>
Speed (km/h):	50
No. of Lanes:	4
R.O.W. Width:	36.576m
Road Characterization:	Minor Arterial
Project Location:	City R.O.W.
Destination:	Hillfield Strathallan College
Cultural Areas of Interest:	

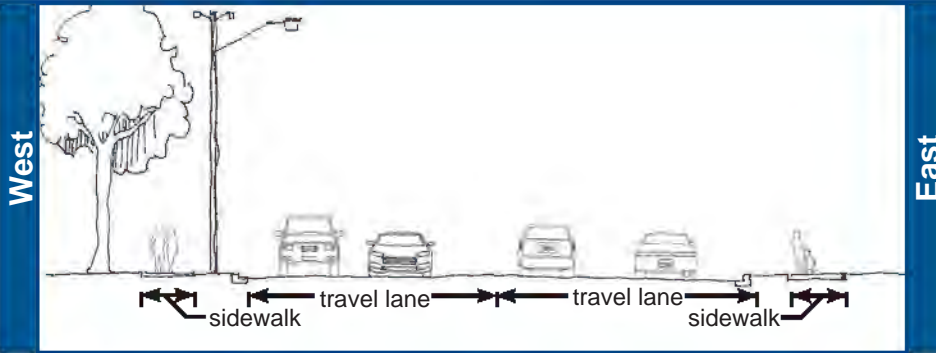


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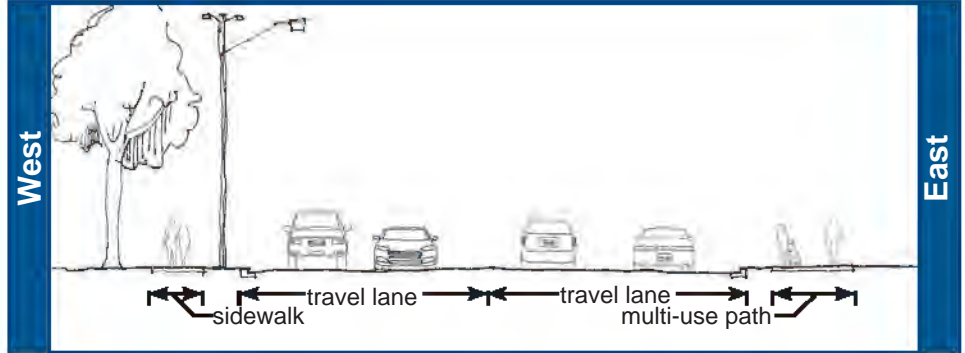
# GARTH STREET

Denlow Avenue to Fennell Avenue West

## EXISTING SECTION



## PROPOSED SECTION



## FACILITIES

Existing Facility:	<b>Sidewalks</b>	Status:	Proposed Future
Proposed Facility:	<b>Multi-Use Path</b>	Alternate Route:	Scenic Drive
Existing Facility Width:	1.2-1.8m	Trail Impact Score:	47
Proposed Facility Width:	3.0-4.0m	Signage:	Wayfinding, Branding
Segment Length:	140m	Lighting:	Existing street lighting
Average Slope:	2.52%	Site Furnishings:	None recommended
Facility Location:	East		



## 8

**GARTH STREET**

Denlow Avenue to Fennell Avenue West

**IMPLEMENTATION**

Project Horizon:	Medium-Term
Implementation Responsibility:	Landscape Architectural Services
High Level Cost Estimate:	\$410,000.00
Surface:	Asphalt
Land Ownership:	City of Hamilton
Stakeholders:	Hillfield Strathallan College
Permits and Studies:	Studies: Archaeological, Geotechnical
Archaeological Potential:	Yes
Maintenance:	Standard maintenance for asphalt surface
Public Engagement:	Per LAS standard practice

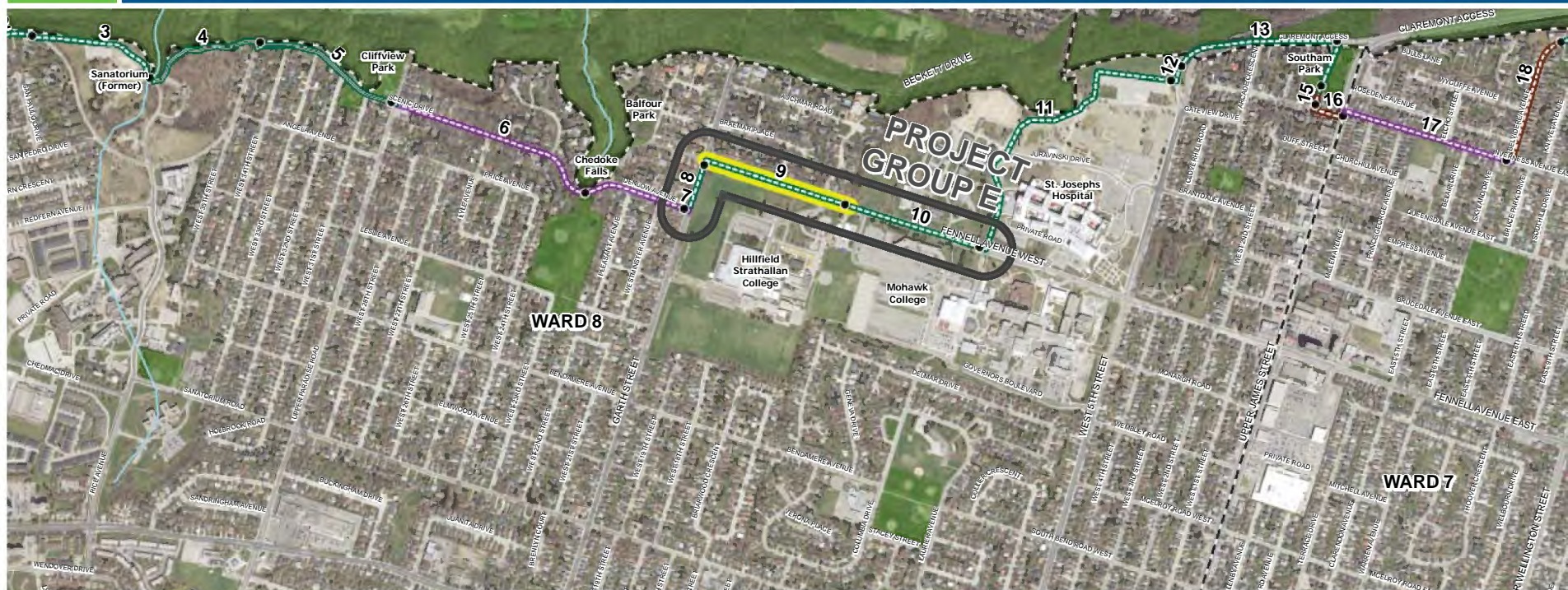
**RATIONALE, COMMENTS AND FEASIBILITY CONSIDERATIONS**

- Need to evaluate crossing opportunities at Garth Street; consider the need for a formalized crossing through a pedestrian crossover or signal application (coordinate with Garth and Fennell signal due to proximity)

NOTES: (1) 2016 count - based on City count adjusted to AADT based on peak hour volume assuming 10% conversion



# 9 FENNEL AVENUE WEST Garth Street to Auchmar Road



## KEY MAP



## LEGEND

	Project Segment		Proposed Section On-Street Bicycle Lane and Sidewalk
	Project Group		Multi-Use Path
	Existing Section Signed-On-Street Bicycle Route (Shared Roadway) and Sidewalk		Paved Shoulder
	Multi-Use Path		Signed On-Street Bicycle Route (Shared Roadway) and Sidewalk
	Existing Section - Upgrades Needed Multi-Use Path		Sidewalk



9

**FENNELL AVENUE WEST**  
Garth Street to Auchmar Road

WARD

8

PROJECT GROUP

E

RELATED PROJECTS

8

10



EXISTING FACILITY: SIDEWALK

PROPOSED FACILITY: MULTI-USE  
PATH**CONTEXT**

AADT:	15000 <sup>1</sup>
Speed (km/h):	50
No. of Lanes:	4
R.O.W. Width:	36.576m
Road Characterization:	Minor Arterial
Project Location:	City R.O.W.
Destination:	Hillfield Strathallan College, Mohawk College
Cultural Areas of Interest:	

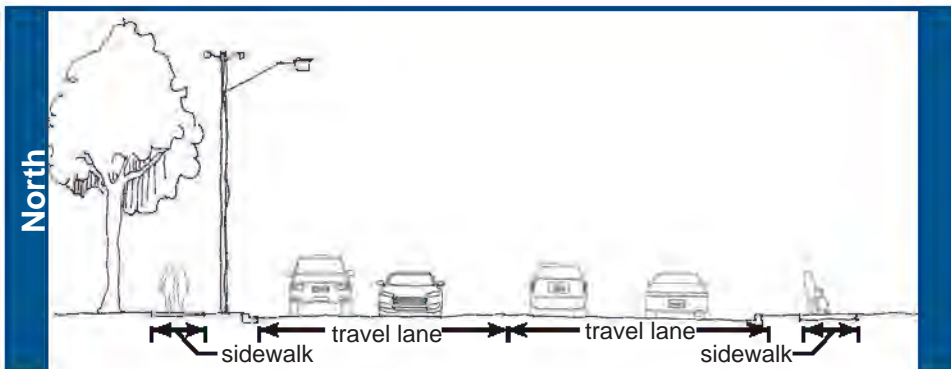


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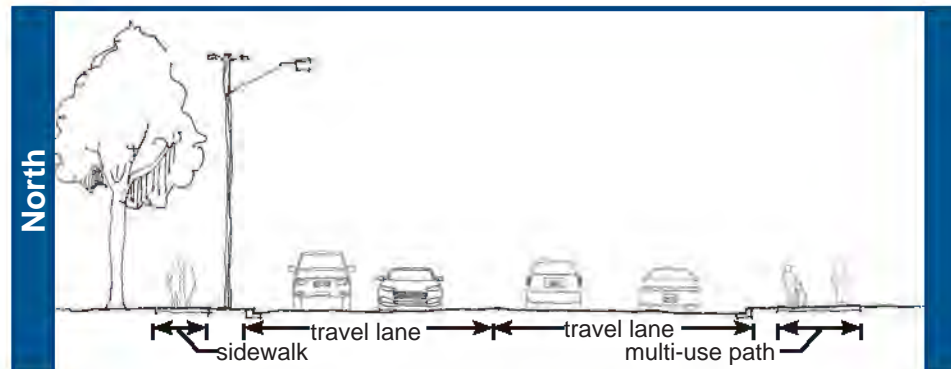
# FENNEL AVENUE WEST

Garth Street to Auchmar Road

## EXISTING SECTION



## PROPOSED SECTION



## FACILITIES

Existing Facility:	<b>Sidewalk</b>	Status:	Proposed Future
Proposed Facility:	<b>Multi-Use Path</b>	Alternate Route:	No
Existing Facility Width:	1.5-1.8m	Trail Impact Score:	40
Proposed Facility Width:	3.0-4.0m	Signage:	Wayfinding, Branding
Segment Length:	410m	Lighting:	Existing street lighting may be sufficient, further study required
Average Slope:	2.52%	Site Furnishings:	None recommended
Facility Location:	South		



## 9

**FENNEL AVENUE WEST**  
Garth Street to Auchmar Road**IMPLEMENTATION**

Project Horizon:	Medium-Term
Implementation Responsibility:	Landscape Architectural Services
High Level Cost Estimate:	\$270,000.00
Surface:	Asphalt
Land Ownership:	City of Hamilton
Stakeholders:	Hillfield Strathallan College
Permits and Studies:	Studies: Archaeological, Geotechnical
Archaeological Potential:	Yes
Maintenance:	Standard maintenance for asphalt surface
Public Engagement:	Per LAS standard practice

**RATIONALE, COMMENTS AND FEASIBILITY CONSIDERATIONS**

- Consideration of the location of existing utilities and trees within the span of the recommended trail
- Public expressed desire to prioritize cycling facilities from the Garth Street and Scenic Drive intersection, along Fennell Avenue and West 5th Street to the Brow or to the Mountain Climber transit stop at West 5th Street and Brantdale Avenue
- Consider trail connection to Hillfield Strathallan College, pending stakeholder involvement

NOTES: (1) 2016 count - based on City count adjusted to AADT based on peak hour volume assuming 10% conversion



# 10 FENNEL AVENUE WEST Auchmar Road to Juravinski



## KEY MAP



## LEGEND

	Project Segment		Proposed Section On-Street Bicycle Lane and Sidewalk
	Project Group		Multi-Use Path
	Existing Section Signed-On-Street Bicycle Route (Shared Roadway) and Sidewalk		Paved Shoulder
	Multi-Use Path		Signed On-Street Bicycle Route (Shared Roadway) and Sidewalk
	Existing Section - Upgrades Needed Multi-Use Path		Sidewalk



10

## FENNELL AVENUE WEST

Auchmar Road to Juravinski

WARD

8

PROJECT GROUP

E

RELATED PROJECTS

8

9



EXISTING FACILITY: SIDEWALK

PROPOSED FACILITY: MULTI-USE PATH



### CONTEXT

AADT:	15000 <sup>1</sup>
Speed (km/h):	50
No. of Lanes:	4
R.O.W. Width:	35.576m
Road Characterization:	Minor Arterial
Project Location:	City R.O.W.
Destination:	Mohawk College, St. Joseph's West 5th Campus
Cultural Areas of Interest:	

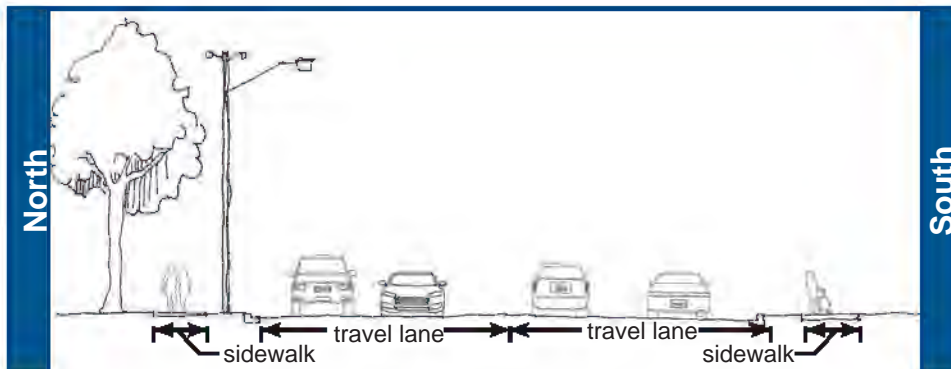


10

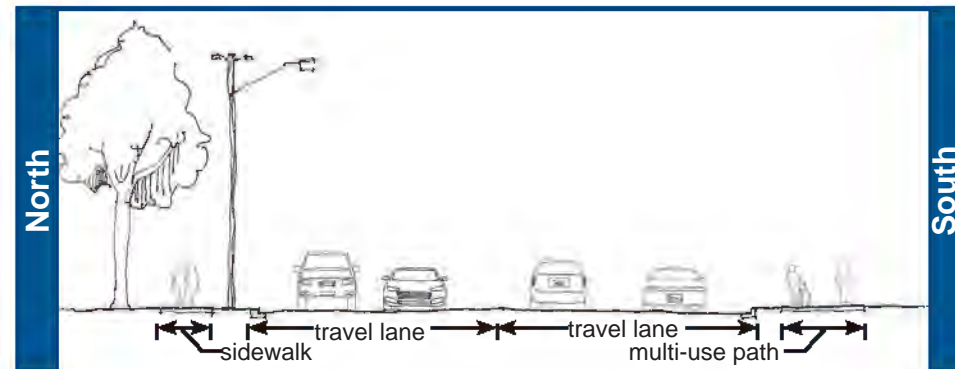
## FENNEL AVENUE WEST

Auchmar Road to Juravinski

### EXISTING SECTION



### PROPOSED SECTION



### FACILITIES

Existing Facility:	<b>Sidewalk</b>	Status:	Proposed Future
Proposed Facility:	<b>Multi-Use Path</b>	Alternate Route:	No
Existing Facility Width:	1.5-1.8m	Trail Impact Score:	28
Proposed Facility Width:	3.0-4.0m	Signage:	Wayfinding, Branding
Segment Length:	380m	Lighting:	Existing street lighting may be sufficient, further study required
Average Slope:	2.03%	Site Furnishings:	None recommended
Facility Location:	South		



10

**FENNELL AVENUE WEST**  
Auchmar Road to Juravinski**IMPLEMENTATION**

Project Horizon:	Medium-Term
Implementation Responsibility:	Landscape Architectural Services
High Level Cost Estimate:	\$250,000.00
Surface:	Asphalt
Land Ownership:	City of Hamilton
Stakeholders:	Hillfield Strathallan College
Permits and Studies:	Studies: Archaeological, Geotechnical
Archaeological Potential:	Yes
Maintenance:	Standard maintenance for asphalt surface
Public Engagement:	Per LAS standard practice

**RATIONALE, COMMENTS AND FEASIBILITY CONSIDERATIONS**

- Consideration of road crossing from the south side of Fennell Avenue West to Juravinski Drive
- Consideration of the location of existing utilities and trees within the span of the recommended trail
- Public expressed desire to prioritize cycling facilities from the Garth Street and Scenic Drive intersection, along Fennell Avenue and West 5th Street to the Brow or to the Mountain Climber transit stop at West 5th Street and Brantdale Avenue
- Consider upgrading trail connection to Mohawk College, pending stakeholder involvement

NOTES: (1) 2016 count - based on City count adjusted to AADT based on peak hour volume assuming 10% conversion

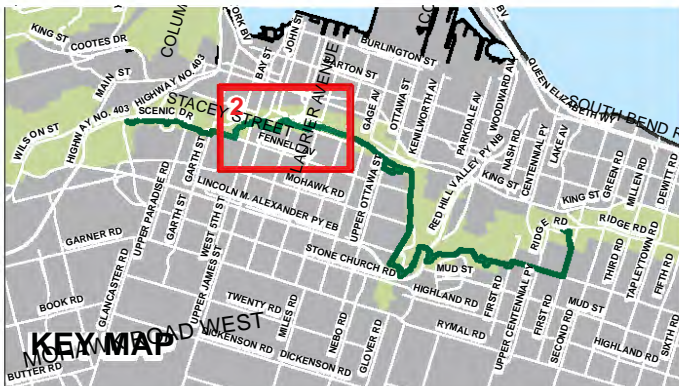


# 11

## JURAVINSKI DRIVE St. Joseph's Hospital Lands



### KEY MAP



### LEGEND





11

**JURAVINSKI DRIVE**  
St. Joseph's Hospital Lands

WARD

8

PROJECT GROUP

F

RELATED PROJECTS



EXISTING FACILITY: NONE

PROPOSED FACILITY: MULTI-USE  
TRAIL**CONTEXT**

AADT:	N/A
Speed (km/h):	N/A
No. of Lanes:	N/A
R.O.W. Width:	N/A
Road Characterization:	Trail
Project Location:	Publicly Owned Land
Destination:	St. Joseph's West 5th Campus, Bruce Trail, Century Manor
Cultural Areas of Interest:	Century manor

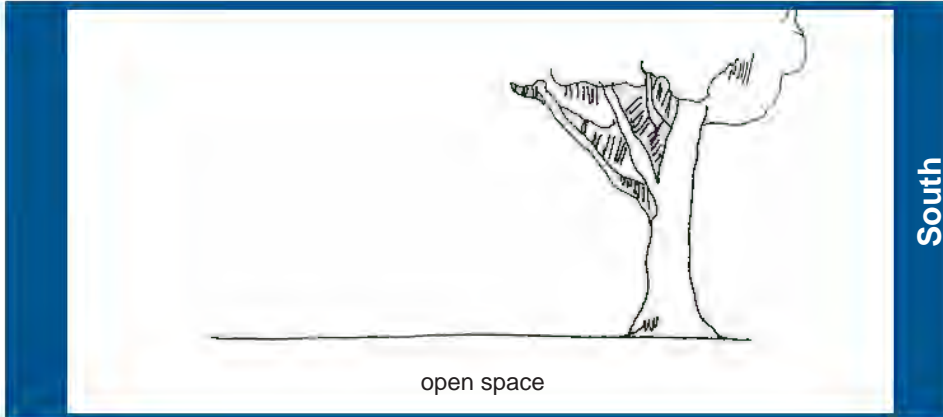


11

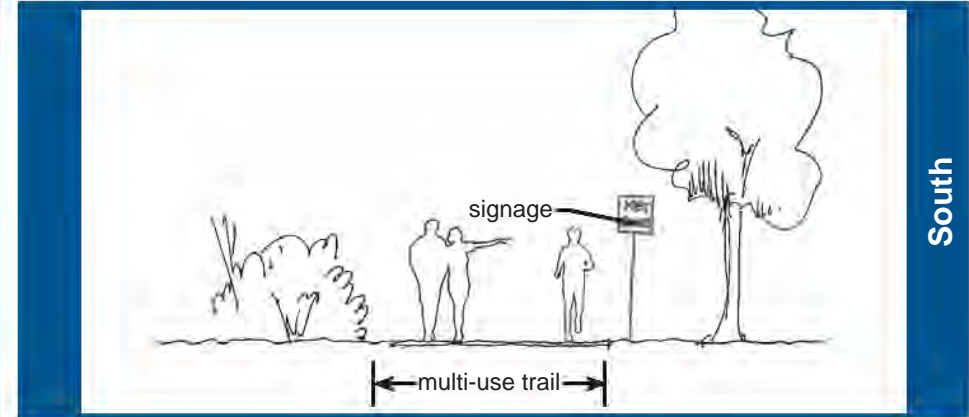
## JURAVINSKI DRIVE

St. Joseph's Hospital Lands

### EXISTING SECTION



### PROPOSED SECTION



### FACILITIES

Existing Facility:	<b>Sidewalk (partial), None (partial)</b>	Status:	Proposed Future
Proposed Facility:	<b>Multi-Use Trail</b>	Alternate Route:	No
Existing Facility Width:	1.8m (sidewalk)	Trail Impact Score:	41
Proposed Facility Width:	3.0-4.0m	Signage:	Wayfinding, Branding
Segment Length:	880m	Lighting:	Application of MBT branded fixtures recommended
Average Slope:	3.11%	Site Furnishings:	None recommended
Facility Location:	To be confirmed		



## 11

**JURAVINSKI DRIVE**  
St. Joseph's Hospital Lands**IMPLEMENTATION**

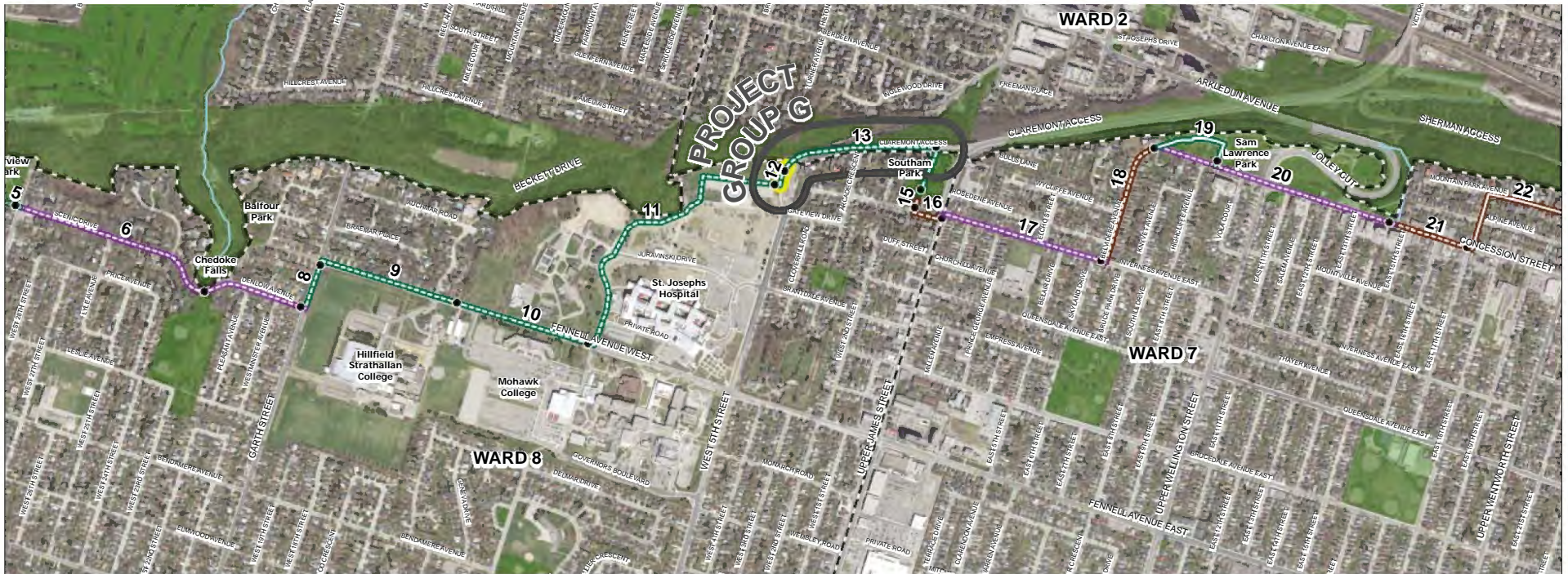
Project Horizon:	Long-Term
Implementation Responsibility:	Landscape Architectural Services
High Level Cost Estimate:	\$580,000.00
Surface:	Asphalt
Land Ownership:	Ministry of Infrastructure (Owner)/St. Joseph's Healthcare (Tenant)
Stakeholders:	Infrastructure Ontario, St. Joseph's Healthcare Hamilton, Niagara Escarpment Commission
Permits and Studies:	Permits: N.E.C.; Studies: EIS, Archaeological, Geotechnical
Archaeological Potential:	Yes
Maintenance:	Maintenance agreement between City and Landowner may be required
Public Engagement:	Per LAS standard practice

**RATIONALE, COMMENTS AND FEASIBILITY CONSIDERATIONS**

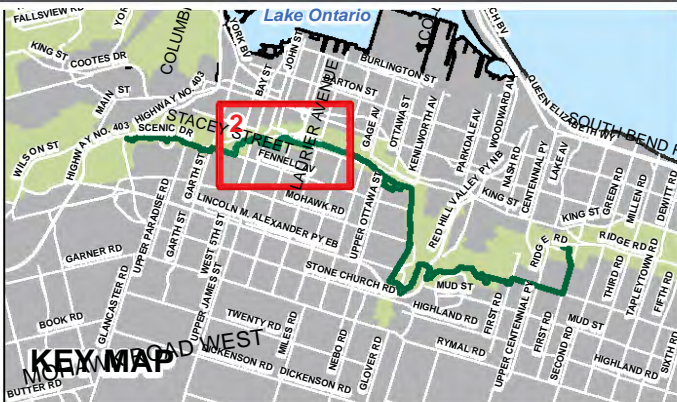
- Dependent upon agreement with Infrastructure Ontario and St. Joseph's Healthcare.
- Alternative route along Fennell Avenue to West 5th Street was explored. Proposed route is more consistent with study mandate.
- Existing sidewalk on Juravinski Drive to be incorporated into the design
- Potential for abandoned roads to be re-purposed.
- Proposed paths to be located as close to the Escarpment as feasible



## 12 CLAREMONT ACCESS SPUR I



### KEY MAP



### LEGEND





# 12 CLAREMONT ACCESS SPUR I

WARD

8

PROJECT GROUP

G

RELATED PROJECTS

13



EXISTING FACILITY: SIDEWALK

PROPOSED FACILITY: MULTI-USE  
PATH

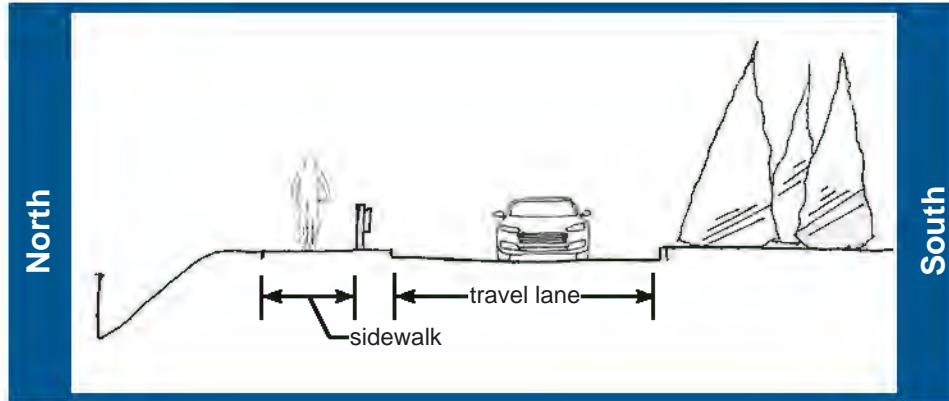
## CONTEXT

AADT:	N/A
Speed (km/h):	N/A
No. of Lanes:	N/A
R.O.W. Width:	N/A
Road Characterization:	Trail
Project Location:	Publicly Owned Lands
Destination:	St. Joseph's West 5th Campus, Bruce Trail
Cultural Areas of Interest:	Century manor

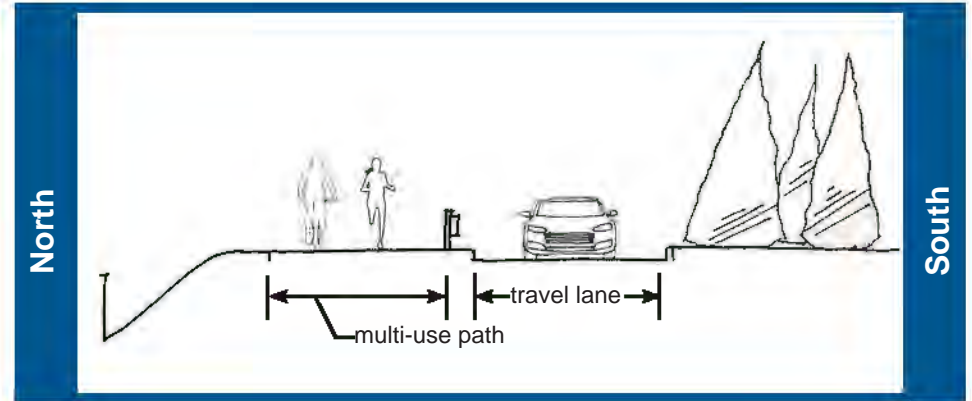


## 12 CLAREMONT ACCESS SPUR I

### EXISTING SECTION



### PROPOSED SECTION



### FACILITIES

Existing Facility:	<b>Sidewalk (west side)</b>	Status:	Proposed Future
Proposed Facility:	<b>Multi-Use Path</b>	Alternate Route:	No
Existing Facility Width:	1.8m	Trail Impact Score:	20
Proposed Facility Width:	3.0-4.0m	Signage:	Wayfinding, Branding
Segment Length:	55m	Lighting:	None recommended
Average Slope:	2.03%	Site Furnishings:	None recommended
Facility Location:	West		



## 12 CLAREMONT ACCESS SPUR I

### IMPLEMENTATION

Project Horizon:	Short-Term
Implementation Responsibility:	Alternative Transportation
High Level Cost Estimate:	\$37,000.00
Surface:	Asphalt
Land Ownership:	City of Hamilton
Stakeholders:	Infrastructure Ontario, St. Joseph's Healthcare Hamilton
Permits and Studies:	Studies: Archaeological, Geotechnical
Archaeological Potential:	Yes
Maintenance:	Standard maintenance for asphalt surface
Public Engagement:	On-going

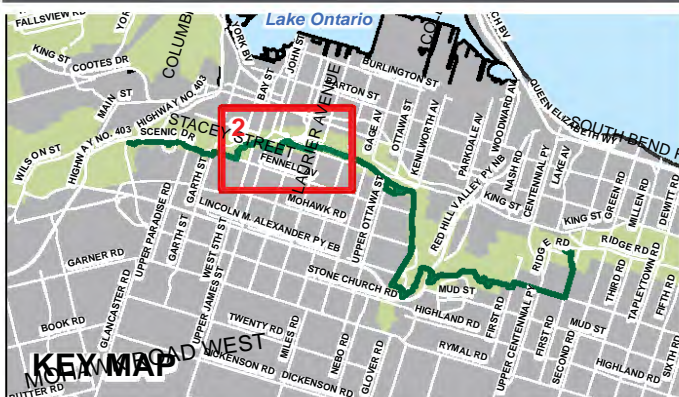
### RATIONALE, COMMENTS AND FEASIBILITY CONSIDERATIONS

- A multi-use facility is currently in design development for construction in a short-term time frame
- Public expressed interest in road closure in favour of park space
- A potential blue sky idea has been identified at this location. Refer to Appendix I for details

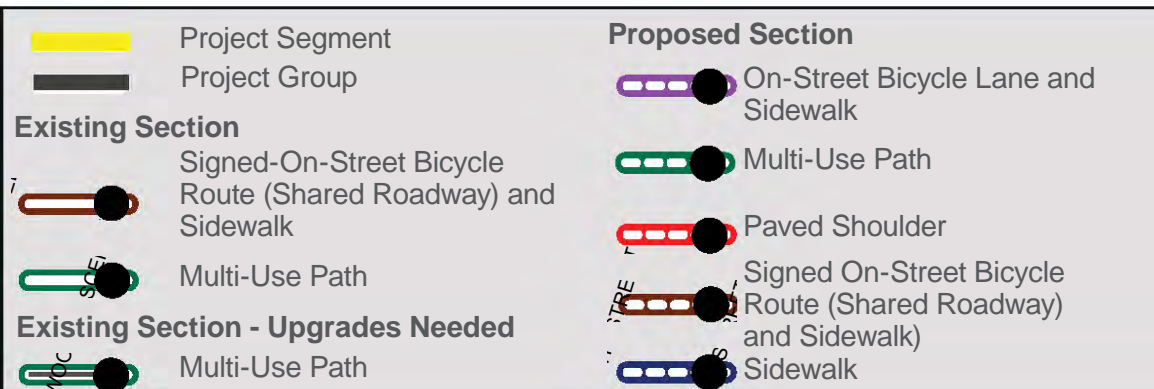
# 13 CLAREMONT ACCESS SPUR II



## KEY MAP



## LEGEND





# 13 CLAREMONT ACCESS SPUR II

WARD

2

8

PROJECT GROUP

G

RELATED PROJECTS

12



EXISTING FACILITY: SIDEWALK

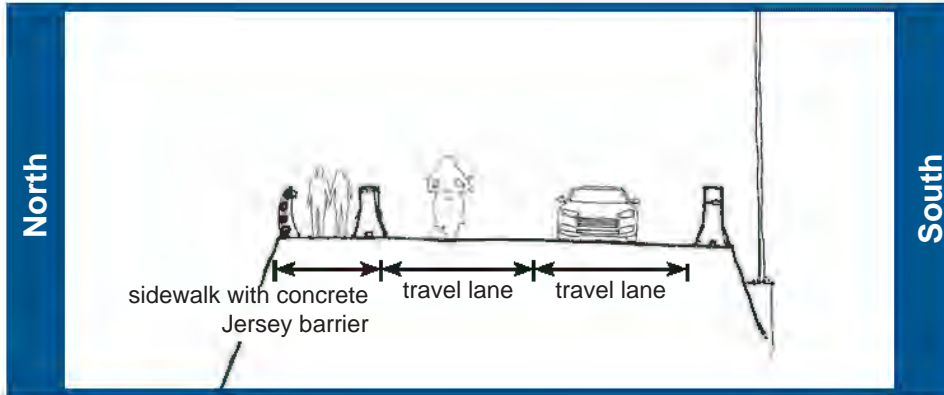
PROPOSED FACILITY: MULTI-USE  
PATH

## CONTEXT

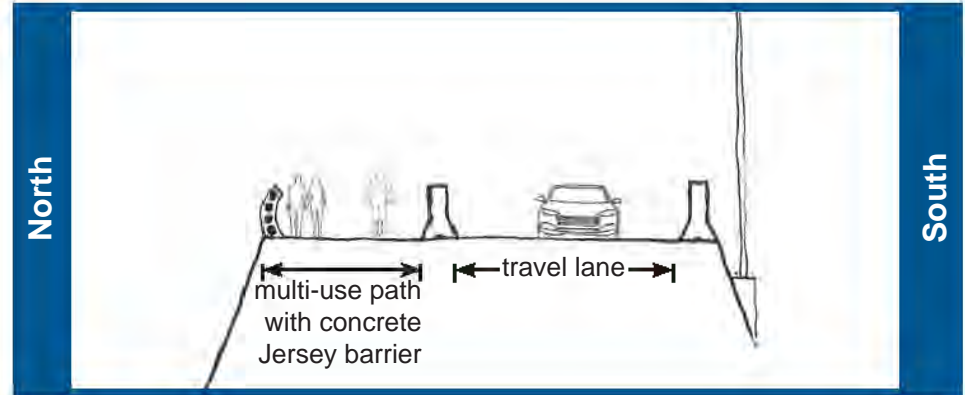
AADT:	10000 <sup>1</sup>
Speed (km/h):	60
No. of Lanes:	2
R.O.W. Width:	45.720m
Road Characterization:	Major Arterial
Project Location:	City R.O.W.
Destination:	St. Joseph's West 5th Campus, Bruce Trail, Southam Park, James Street Stairs, Claremont cycling facility (future)
Cultural Areas of Interest:	Southam Park is a Cultural Heritage Landscape

## 13 CLAREMONT ACCESS SPUR II

### EXISTING SECTION



### PROPOSED SECTION



### FACILITIES

Existing Facility:	<b>Sidewalk (north side only)</b>	Status:	Planned Future
Proposed Facility:	<b>Multi-Use Path</b>	Alternate Route:	No
Existing Facility Width:	1.2-1.5m	Trail Impact Score:	35
Proposed Facility Width:	3.0-4.0m	Signage:	Wayfinding, Branding
Segment Length:	430m	Lighting:	None recommended
Average Slope:	6.22%	Site Furnishings:	Potential location for water fountain/bottle fillers at James Street stairs
Facility Location:	North		



## 13 CLAREMONT ACCESS SPUR II

### IMPLEMENTATION

Project Horizon:	Short-Term
Implementation Responsibility:	Alternative Transportation
High Level Cost Estimate:	\$340,000.00 <sup>2</sup>
Surface:	Asphalt
Land Ownership:	City of Hamilton
Stakeholders:	Niagara Escarpment Commission
Permits and Studies:	Permits: N.E.C; Studies: Archaeological, Geotechnical
Archaeological Potential:	Yes
Maintenance:	Standard maintenance for fence, asphalt surface, and concrete barriers
Public Engagement:	

### RATIONALE, COMMENTS AND FEASIBILITY CONSIDERATIONS

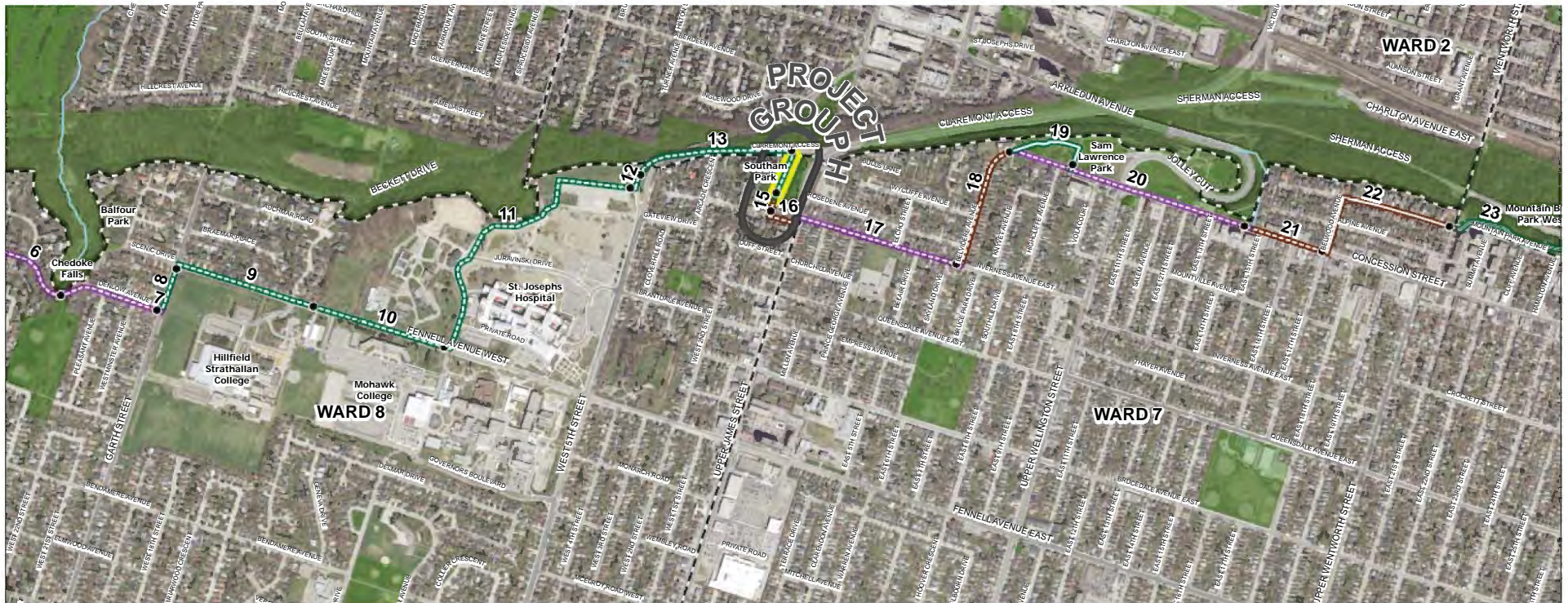
- A multi-use facility is currently in design development for construction in a short-term time frame
- To maintain connectivity to Southam Park the stairs will need to be repaired, and to facilitate accessibility a ramp will need to be installed
- Public expressed interest in road closure in favour of park space
- A potential blue sky idea has been identified at this location. Refer to Appendix I for details
- Provides connection to James Street stairs, consider the need for wayfinding and/or rest area to highlight Mountain Brow Trail route

NOTES: (1) assumed based on land use context and road classification

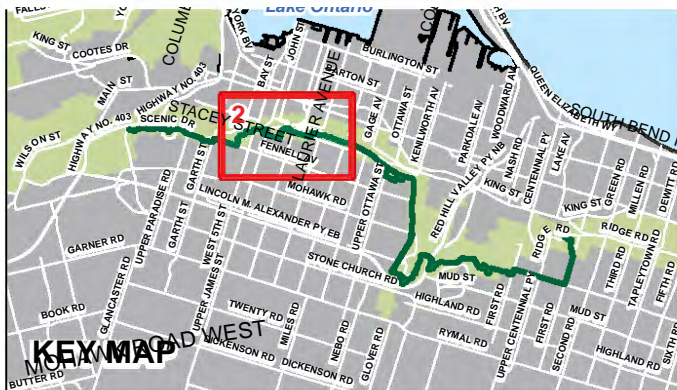
(2) Unique implementation strategy, further detailed costing required



# 14 SOUTHAM PARK



## KEY MAP



## LEGEND





# 14 SOUTHAM PARK

WARD

2

8

PROJECT GROUP

H

RELATED PROJECTS

15



EXISTING FACILITY: NONE

PROPOSED FACILITY: MULTI-USE TRAIL

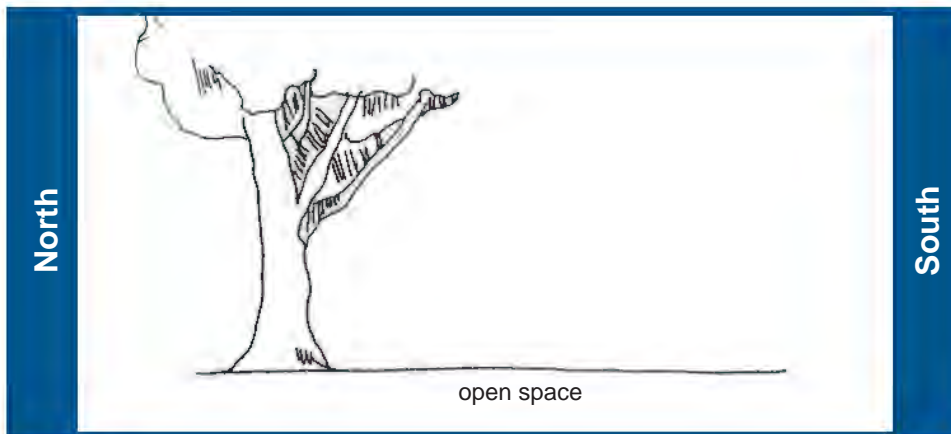


## CONTEXT

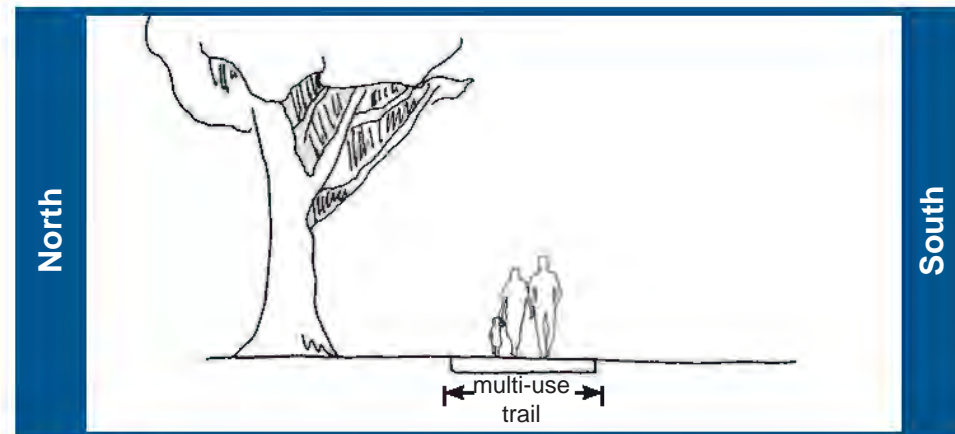
AADT:	N/A
Speed (km/h):	N/A
No. of Lanes:	N/A
R.O.W. Width:	N/A
Road Characterization:	Trail
Project Location:	Municipal Park
Destination:	Southam Park, James Street Stairs, Claremont cycling facility (future)
Cultural Areas of Interest:	Southam Park is a Cultural Heritage Landscape

## 14 SOUTHAM PARK

### EXISTING SECTION



### PROPOSED SECTION



### FACILITIES

Existing Facility:	<b>None</b>	Status:	Proposed Future
Proposed Facility:	<b>Multi-Use Trail</b>	Alternate Route:	No
Existing Facility Width:	N/A	Trail Impact Score:	30
Proposed Facility Width:	3.0-4.0m	Signage:	Trailhead, Wayfinding, Branding
Segment Length:	150m	Lighting:	Lighting typically not provided in municipal parks
Average Slope:	N/A	Site Furnishings:	Accessible benches and bike racks recommended
Facility Location:	N/A		



## 14 SOUTHAM PARK

### IMPLEMENTATION

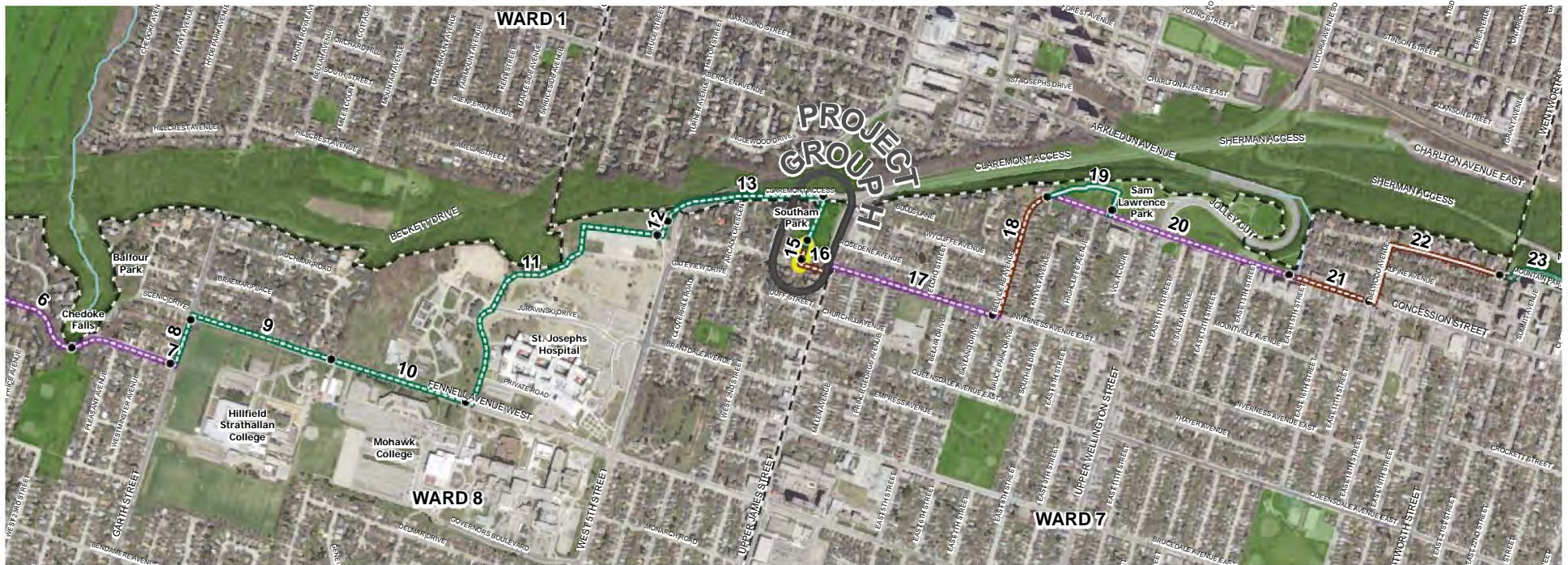
Project Horizon:	Short-Term
Implementation Responsibility:	Landscape Architectural Services
High Level Cost Estimate:	\$79,000.00
Surface:	Asphalt
Land Ownership:	City of Hamilton
Stakeholders:	N/A
Permits and Studies:	Studies: Archaeological, Geotechnical
Archaeological Potential:	Yes
Maintenance:	Standard maintenance for asphalt surface
Public Engagement:	Per LAS standard practice

### RATIONALE, COMMENTS AND FEASIBILITY CONSIDERATIONS

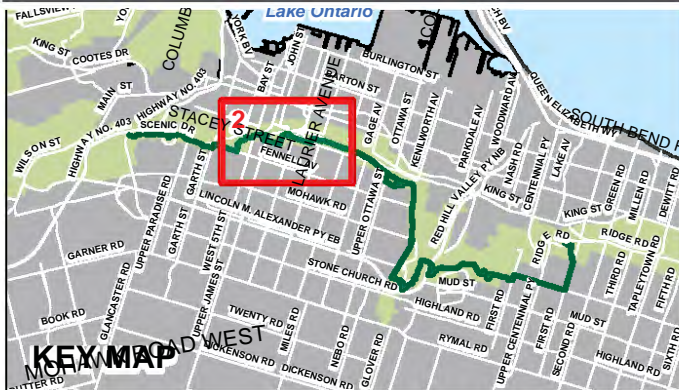
- Provides connection to James Street stairs, consider the need for wayfinding and/or rest area to highlight Mountain Brow Trail route

15

## TANNER STREET Southam Park to Inverness Avenue West



### KEY MAP



### LEGEND

	Project Segment		Proposed Section On-Street Bicycle Lane and Sidewalk
	Project Group		Multi-Use Path
	Existing Section Signed-On-Street Bicycle Route (Shared Roadway) and Sidewalk		Paved Shoulder
	Multi-Use Path		Signed On-Street Bicycle Route (Shared Roadway) and Sidewalk)
	Existing Section - Upgrades Needed Multi-Use Path		Sidewalk



15

## TANNER STREET

Southam Park to Inverness Avenue West

WARD

8

PROJECT GROUP

H

RELATED PROJECTS

14



EXISTING FACILITY: NONE

PROPOSED FACILITY: SIGNED CYCLING  
ROUTE (INTERIM)

### CONTEXT

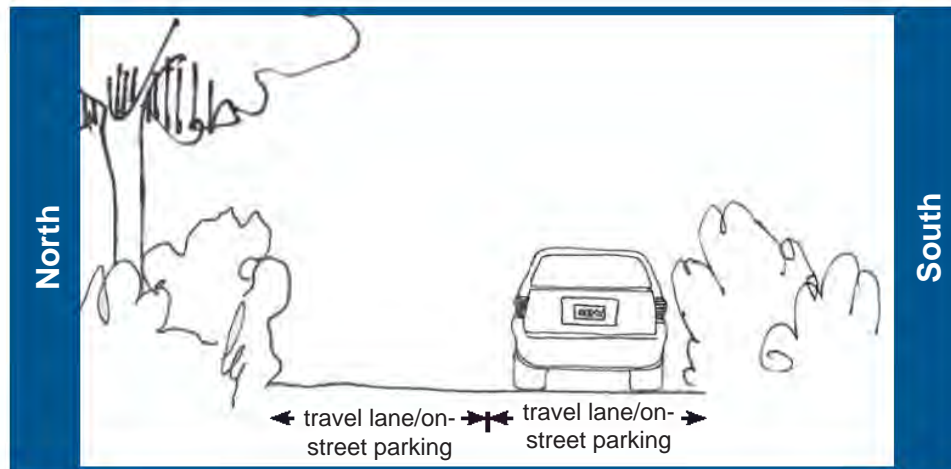
AADT:	<3000 <sup>1</sup>
Speed (km/h):	50
No. of Lanes:	2
R.O.W. Width:	20.117m
Road Characterization:	Local
Project Location:	City R.O.W.
Destination:	Southam Park, James Street Stairs, Claremont cycling facility (future)
Cultural Areas of Interest:	Southam Park is a Cultural Heritage Landscape

15

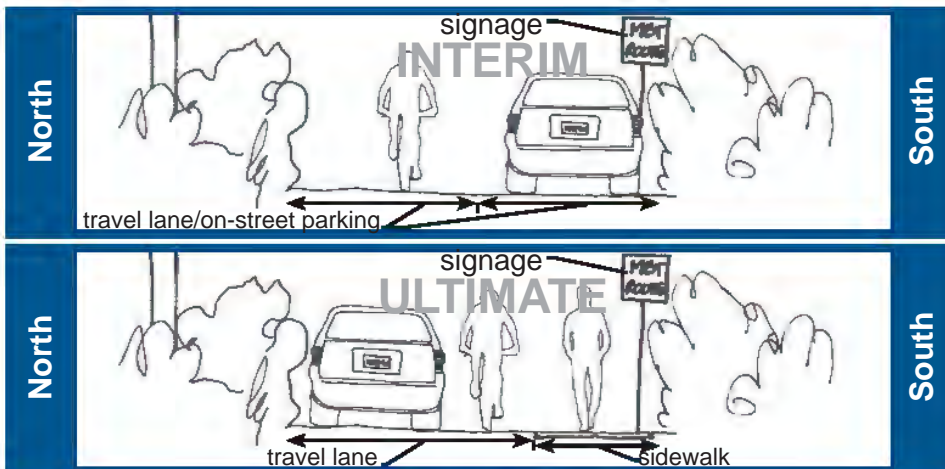
## TANNER STREET

Southam Park to Inverness Avenue West

### EXISTING SECTION



### PROPOSED SECTION



### FACILITIES

Existing Facility:	None	Status:	Planned Future
Proposed Facility:	<b>Signed Cycling Route (Interim) + Sidewalk (Ultimate)</b>	Alternate Route:	No
Existing Facility Width:	N/A	Trail Impact Score:	47
Proposed Facility Width:	1.0m	Signage:	Wayfinding, Branding
Segment Length:	35m	Lighting:	Further study required
Average Slope:	4.00%	Site Furnishings:	None recommended
Facility Location:	South		



15

## TANNER STREET

Southam Park to Inverness Avenue West

### IMPLEMENTATION

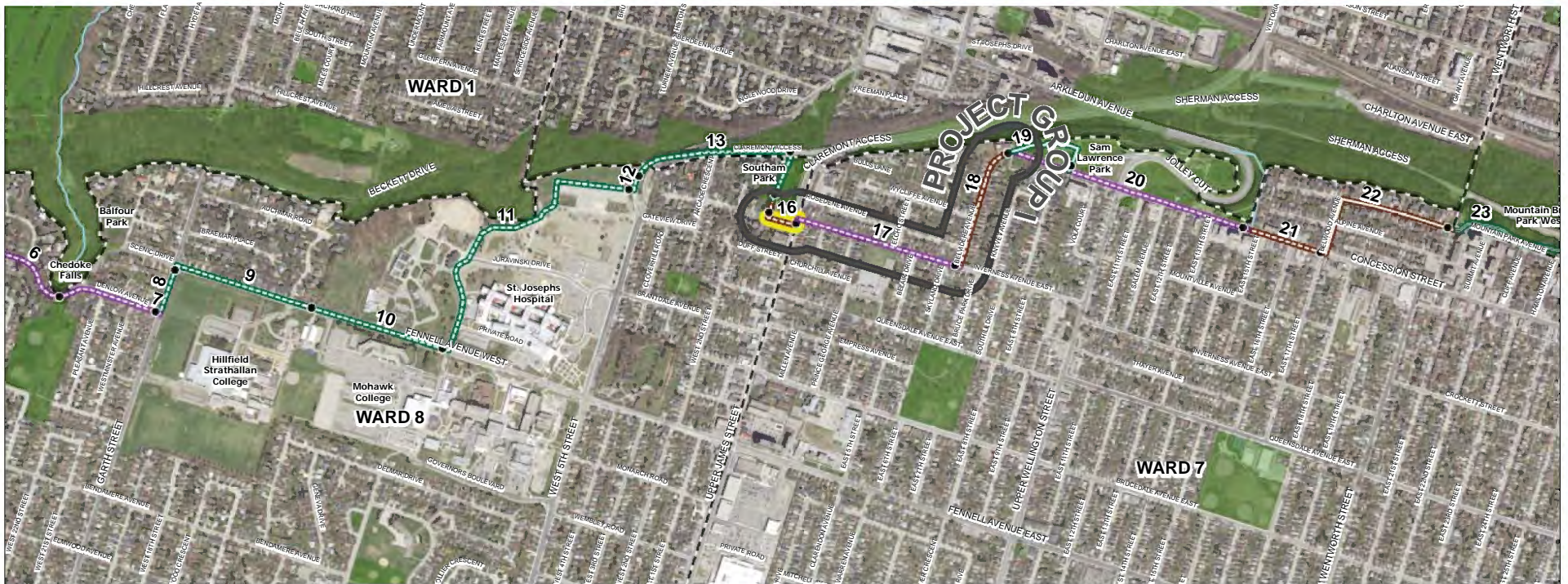
Project Horizon:	Short-Term
Implementation Responsibility:	Alternative Transportation (interim), Engineering Services (ultimate)
High Level Cost Estimate:	\$4,000.00
Surface:	Asphalt
Land Ownership:	City of Hamilton
Stakeholders:	N/A
Permits and Studies:	N/A
Archaeological Potential:	Yes
Maintenance:	Standard maintenance for asphalt surface
Public Engagement:	N/A

### RATIONALE, COMMENTS AND FEASIBILITY CONSIDERATIONS

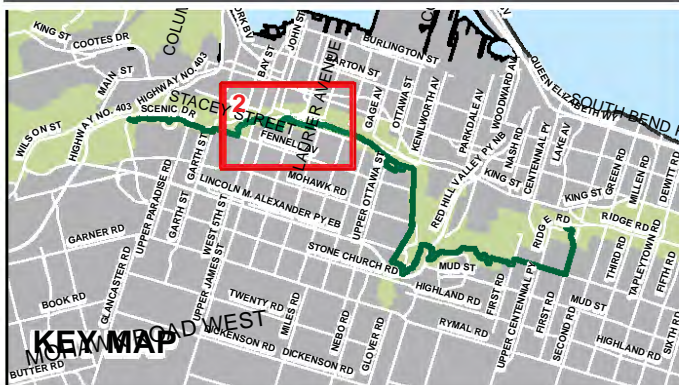
- Segment provides short connection between Southam Park and Inverness Avenue West; Limited right of way and road volumes
- Consider the addition of sidewalks along this corridor as a longer-term initiative when the road is reconstructed

NOTES: (1) assumed based on land use context and road classification

# 16 INVERNESS AVENUE WEST Tanner Street to Upper James Street



## KEY MAP



## LEGEND





16

**INVERNESS AVENUE WEST**  
Tanner Street to Upper James Street

WARD

8

PROJECT GROUP

I

RELATED PROJECTS

17

18



EXISTING FACILITY: SIDEWALK

PROPOSED FACILITY: SIDEWALK AND  
SIGNED CYCLING  
ROUTE**CONTEXT**

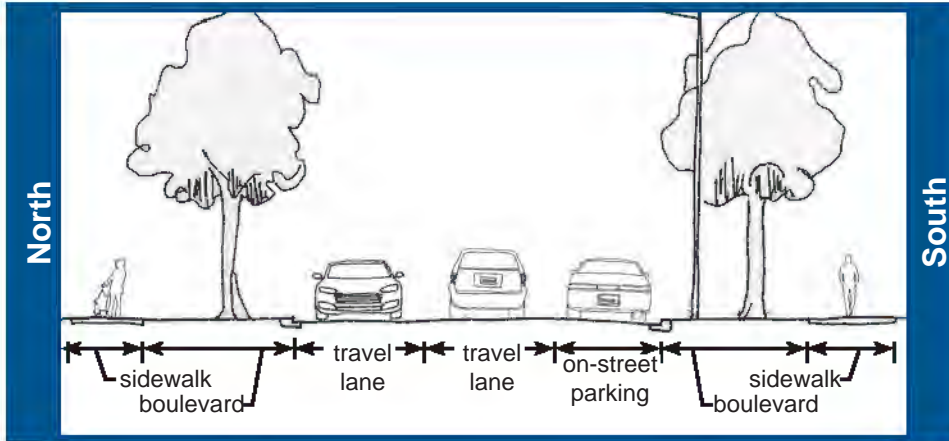
AADT:	N/A
Speed (km/h):	50
No. of Lanes:	2
R.O.W. Width:	20.117m
Road Characterization:	Local
Project Location:	City R.O.W.
Destination:	Southam Park, James Street Stairs, Claremont cycling facility (future)
Cultural Areas of Interest:	Southam Park is a Cultural Heritage Landscape

16

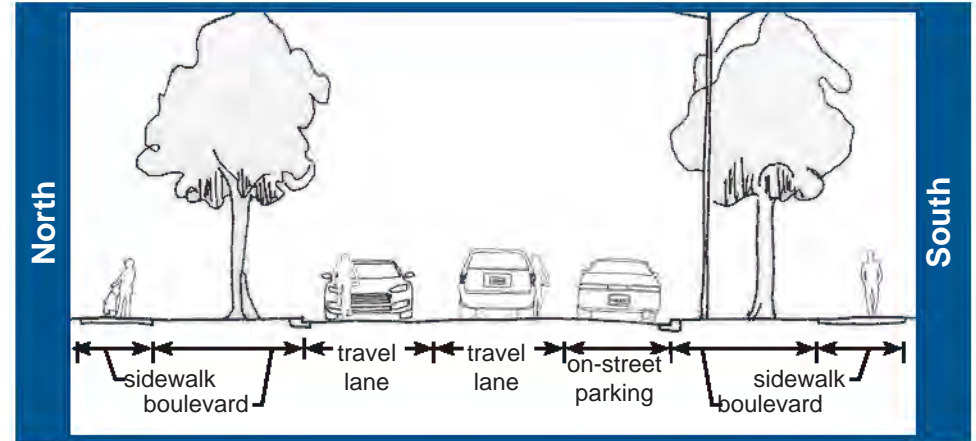
## INVERNESS AVENUE WEST

Tanner Street to Upper James Street

### EXISTING SECTION



### PROPOSED SECTION



### FACILITIES

Existing Facility:	<b>Sidewalk</b>	Status:	Proposed Future
Proposed Facility:	<b>Sidewalk and Signed Cycling Route</b>	Alternate Route:	No
Existing Facility Width:	1.5m	Trail Impact Score:	35
Proposed Facility Width:	1.5m (no upgrades needed)	Signage:	Wayfinding, Branding
Segment Length:	100m	Lighting:	Existing Street Lights
Average Slope:	1.43%	Site Furnishings:	None recommended
Facility Location:	North and South		



16

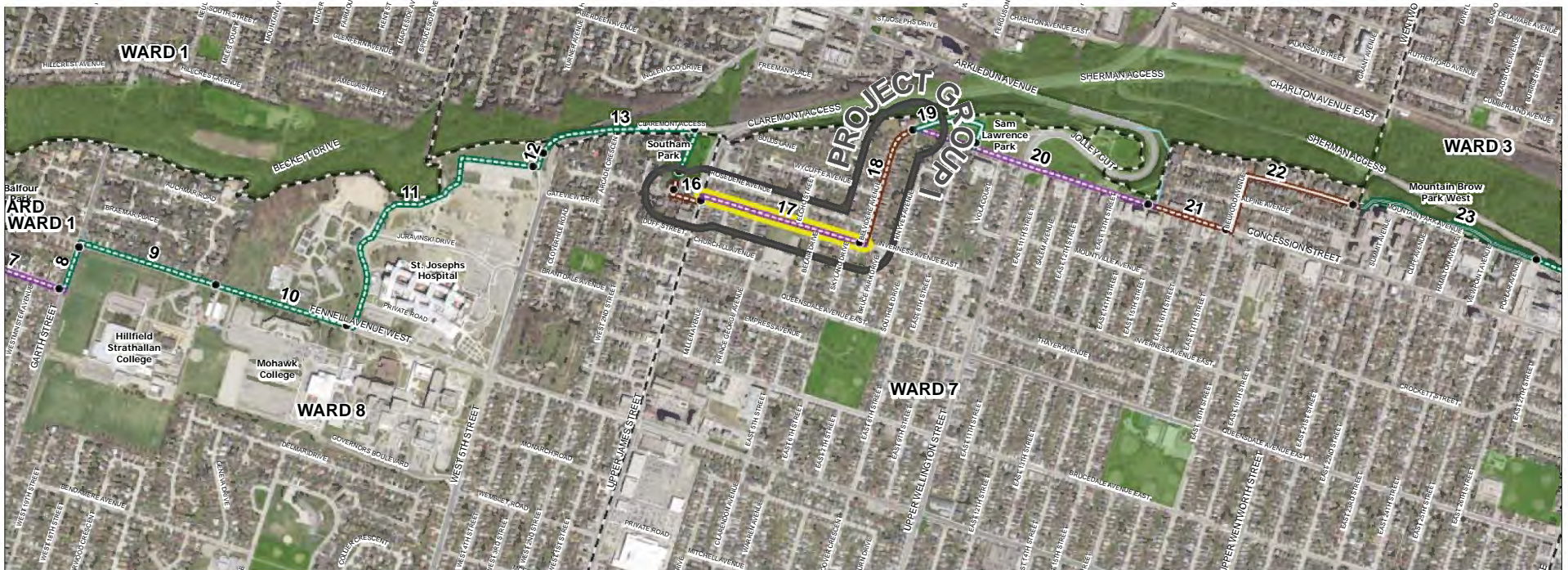
**INVERNESS AVENUE WEST**  
Tanner Street to Upper James Street**IMPLEMENTATION**

Project Horizon:	Medium-Term
Implementation Responsibility:	Alternative Transportation
High Level Cost Estimate:	\$2,000.00
Surface:	N/A
Land Ownership:	City of Hamilton
Stakeholders:	N/A
Permits and Studies:	N/A
Archaeological Potential:	Yes
Maintenance:	N/A
Public Engagement:	N/A

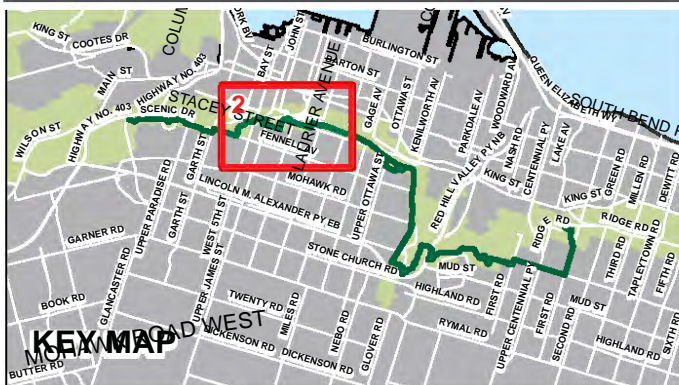
**RATIONALE, COMMENTS AND FEASIBILITY CONSIDERATIONS**

- Review of signalized intersection at Upper James Street to identify potential upgrades for cyclists

# 17 INVERNESS AVENUE EAST Upper James Street to Belvidere



## KEY MAP



## LEGEND

	Project Segment		Proposed Section On-Street Bicycle Lane and Sidewalk
	Project Group		Multi-Use Path
	Existing Section Signed-On-Street Bicycle Route (Shared Roadway) and Sidewalk		Paved Shoulder
	Multi-Use Path		Signed On-Street Bicycle Route (Shared Roadway) and Sidewalk
	Existing Section - Upgrades Needed Multi-Use Path		Sidewalk



17

**INVERNESS AVENUE EAST**  
Upper James Street to Belvidere

WARD

7

8

PROJECT GROUP

I

RELATED PROJECTS

16

18

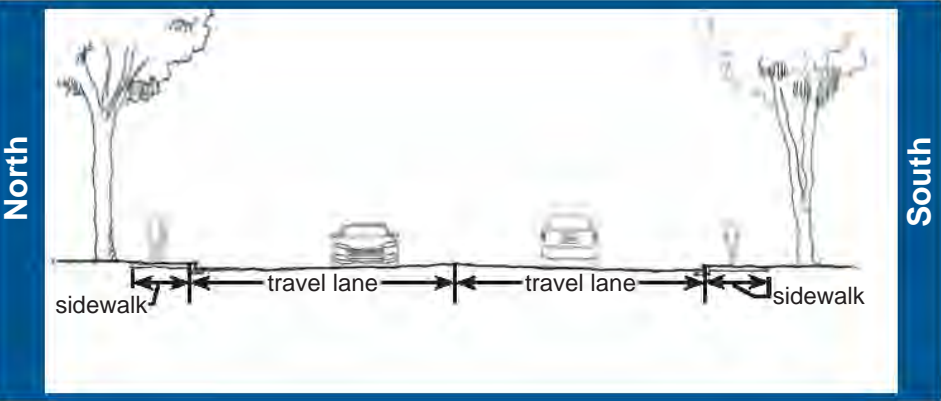
**EXISTING FACILITY: SIDEWALK****PROPOSED FACILITY: BIKE LANES AND SIDEWALK****CONTEXT**

AADT:	3000 <sup>1</sup>
Speed (km/h):	50
No. of Lanes:	2
R.O.W. Width:	26.213m
Road Characterization:	Collector
Project Location:	City R.O.W.
Destination:	Southam Park, Sam Lawrence Park
Cultural Areas of Interest:	Southam Park, Sam Lawrence Park

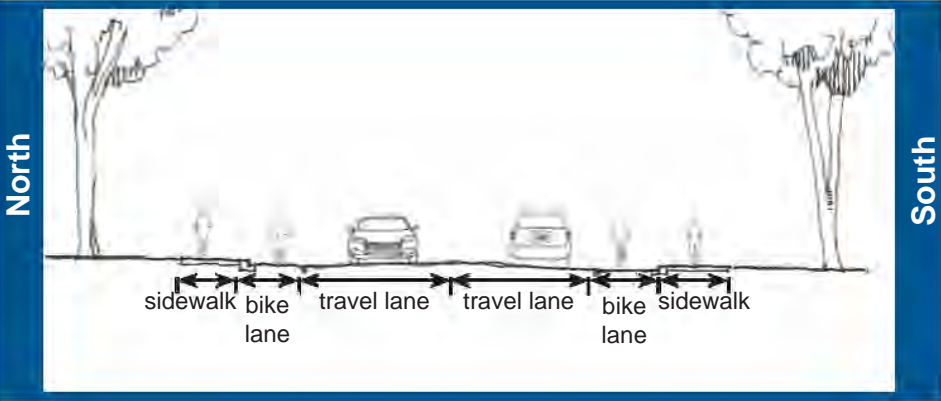
17

# INVERNESS AVENUE EAST Upper James Street to Belvidere

## EXISTING SECTION



## PROPOSED SECTION



## FACILITIES

Existing Facility:	<b>Sidewalk</b>	Status:	Proposed Future
Proposed Facility:	<b>Bike Lanes and Sidewalk</b>	Alternate Route:	No
Existing Facility Width:	1.5m (sidewalk only)	Trail Impact Score:	53
Proposed Facility Width:	1.5m (sidewalk - no upgrades); 1.8-2.0 buffered bike lanes	Signage:	Wayfinding, Branding
Segment Length:	470m	Lighting:	Existing Street Lights
Average Slope:	1.43%	Site Furnishings:	None recommended
Facility Location:	Both sides		



17

**INVERNESS AVENUE EAST**  
Upper James Street to Belvidere**IMPLEMENTATION**

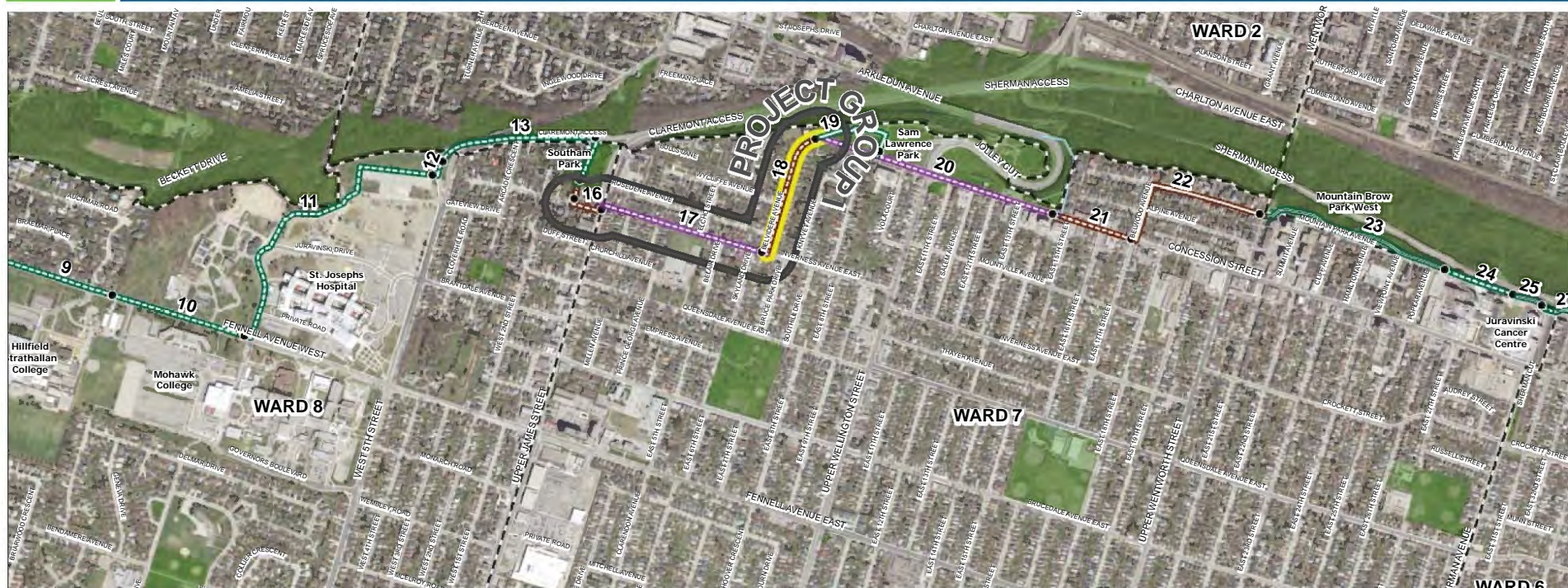
Project Horizon:	Medium-Term
Implementation Responsibility:	Alternative Transportation
High Level Cost Estimate:	\$29,000.00
Surface:	Concrete (sidewalk) (existing) and Asphalt (bike lane)
Land Ownership:	City of Hamilton
Stakeholders:	N/A
Permits and Studies:	N/A
Archaeological Potential:	No
Maintenance:	Standard maintenance for concrete surface and pavement marking
Public Engagement:	EA Process

**RATIONALE, COMMENTS AND FEASIBILITY CONSIDERATIONS**

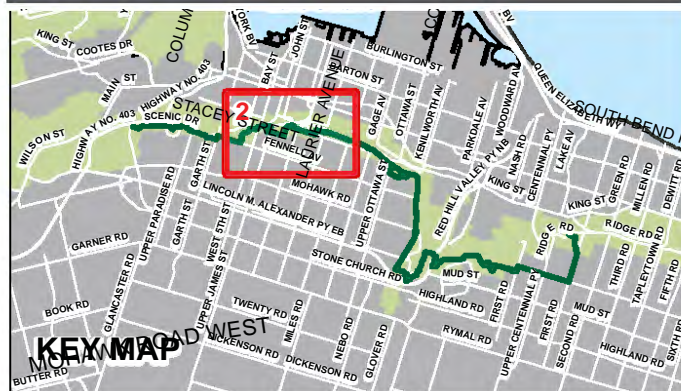
- Few constraints in this segment; sufficient curb-to-curb width to stripe bike lanes

NOTES: (1) count year - based on City count adjusted to AADT based on peak hour volume assuming 10% conversion

# 18 BELVIDERE AVENUE Inverness Avenue East to Concession Street



## KEY MAP



## LEGEND





18

**BELVIDERE AVENUE**

Inverness Avenue East to Concession Street

WARD

7

PROJECT GROUP

I

RELATED PROJECTS

16

17



EXISTING FACILITY: SIDEWALK

PROPOSED FACILITY: SIDEWALK AND  
SIGNED CYCLING  
ROUTE**CONTEXT**

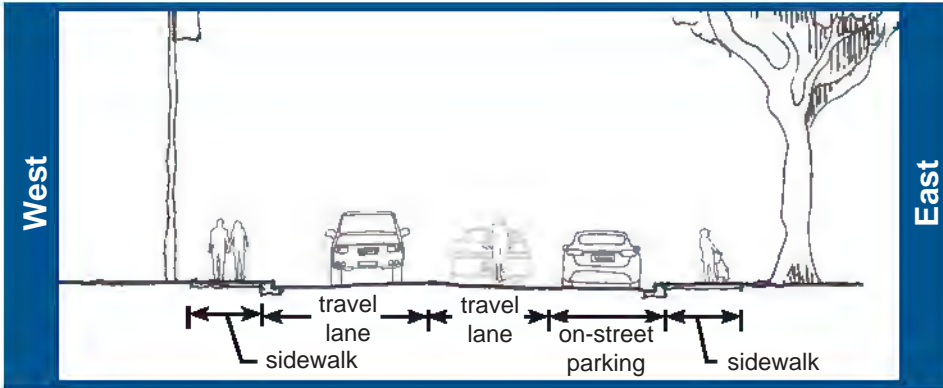
AADT:	<3000 <sup>1</sup>
Speed (km/h):	50
No. of Lanes:	2
R.O.W. Width:	20.117m
Road Characterization:	Local
Project Location:	City R.O.W.
Destination:	Sam Lawrence Park
Cultural Areas of Interest:	Sam Lawrence Park is identified as a cultural heritage landscape

18

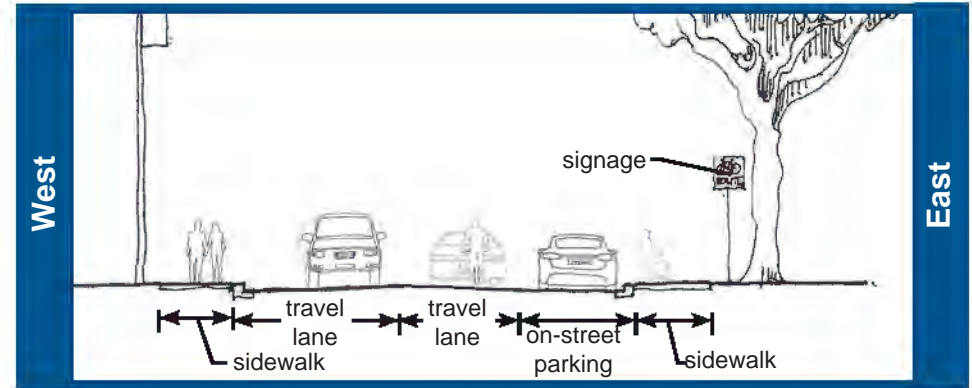
## BELVIDERE AVENUE

Inverness Avenue East to Concession Street

### EXISTING SECTION



### PROPOSED SECTION



### FACILITIES

Existing Facility:	<b>Sidewalk</b>	Status:	Proposed Future
Proposed Facility:	<b>Sidewalk and Signed Cycling Route</b>	Alternate Route:	No
Existing Facility Width:	1.5m (sidewalk only)	Trail Impact Score:	55
Proposed Facility Width:	1.5m (sidewalk - no upgrades required)	Signage:	Wayfinding, Branding
Segment Length:	370m	Lighting:	Existing Street Lights
Average Slope:	1.43%	Site Furnishings:	None recommended
Facility Location:	Both sides		



18

**BELVIDERE AVENUE**

Inverness Avenue East to Concession Street

**IMPLEMENTATION**

Project Horizon:	Medium-Term
Implementation Responsibility:	Alternative Transportation
High Level Cost Estimate:	\$8,000.00
Surface:	Concrete (sidewalk)
Land Ownership:	City of Hamilton
Stakeholders:	N/A
Permits and Studies:	N/A
Archaeological Potential:	No
Maintenance:	Standard maintenance for concrete surface
Public Engagement:	

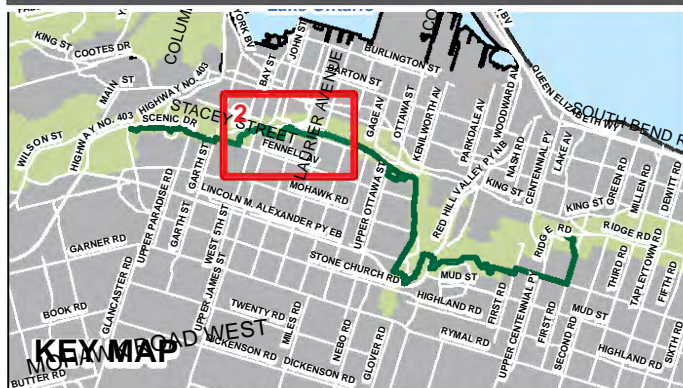
**RATIONALE, COMMENTS AND FEASIBILITY CONSIDERATIONS**

NOTES: (1) assumed based on land use context and road classification

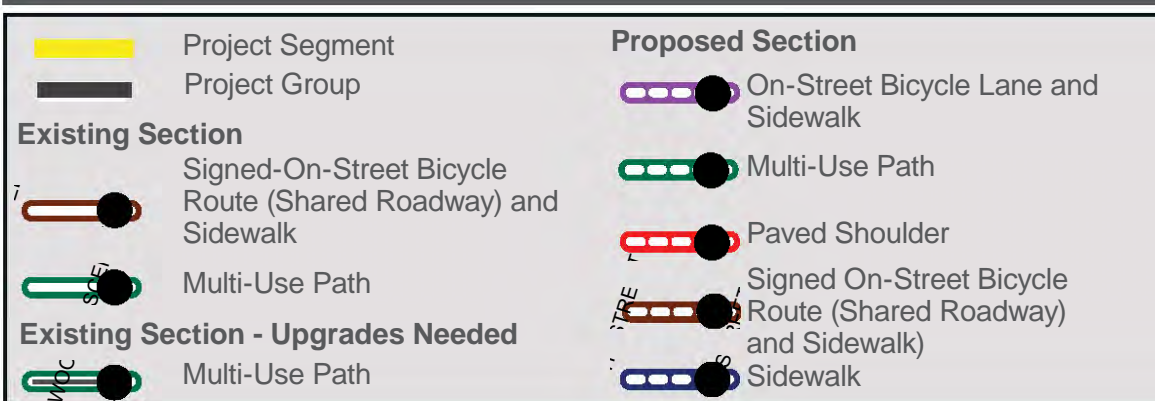
# 19 SAM LAWRENCE PARK - MULTI-USE PATH



## KEY MAP



## LEGEND





# 19 SAM LAWRENCE PARK - MULTI-USE PATH

WARD

7

PROJECT GROUP

J

RELATED PROJECTS

20

21

22



EXISTING FACILITY: MULTI-USE TRAIL

PROPOSED FACILITY: MULTI-USE TRAIL

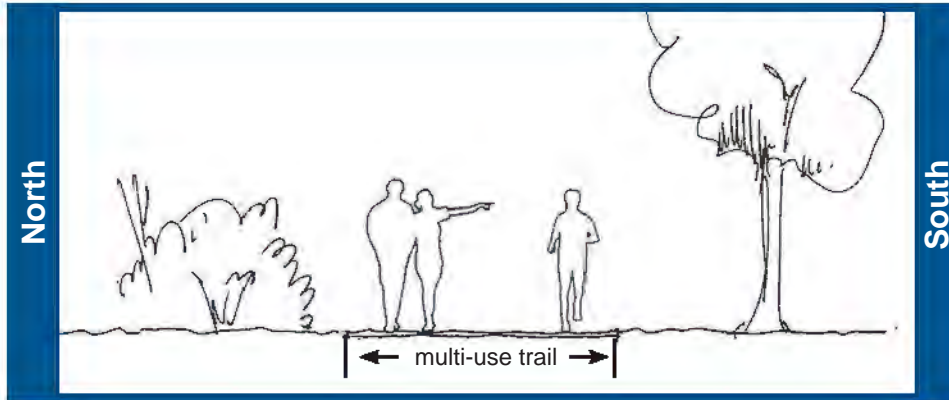


## CONTEXT

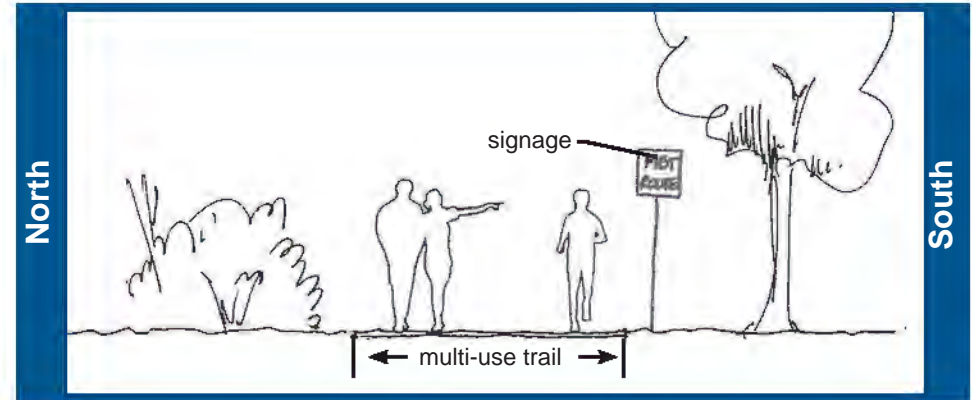
AADT:	N/A
Speed (km/h):	N/A
No. of Lanes:	N/A
R.O.W. Width:	N/A
Road Characterization:	Trail
Project Location:	Municipal Park
Destination:	Vista 65 to 68, Sam Lawrence Park
Cultural Areas of Interest:	Sam Lawrence Park is identified as a cultural heritage landscape

## 19 SAM LAWRENCE PARK - MULTI-USE PATH

### EXISTING SECTION



### PROPOSED SECTION



### FACILITIES

Existing Facility:	<b>Multi-Use Trail</b>	Status:	Existing
Proposed Facility:	<b>Multi-Use Trail</b>	Alternate Route:	No
Existing Facility Width:	2.5m	Trail Impact Score:	65
Proposed Facility Width:	2.5m	Signage:	Wayfinding, Branding
Segment Length:	260m	Lighting:	Existing Park Lighting
Average Slope:	4.82%	Site Furnishings:	No additional furnishings recommended
Facility Location:	N/A		



## 19 SAM LAWRENCE PARK - MULTI-USE PATH

### IMPLEMENTATION

Project Horizon:	Medium-Term
Implementation Responsibility:	Landscape Architectural Services
High Level Cost Estimate:	\$3,000.00
Surface:	Asphalt
Land Ownership:	City of Hamilton
Stakeholders:	N/A
Permits and Studies:	N/A
Archaeological Potential:	Yes
Maintenance:	Standard maintenance for asphalt surface
Public Engagement:	N/A

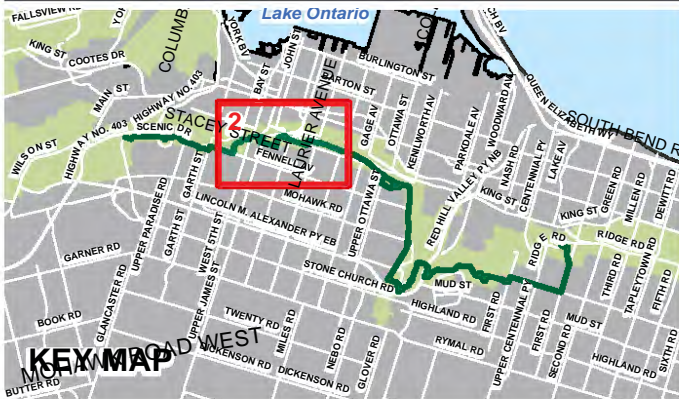
### RATIONALE, COMMENTS AND FEASIBILITY CONSIDERATIONS

- This segment serves as a secondary route into Sam Lawrence Park, and serving the four (4) vista locations identified in the Mountain Brow Vista Study at this location
- Intended as a pedestrian-only facility

# 20 CONCESSION STREET Belvidere Avenue to East 13th Street



## KEY MAP



## LEGEND

	Project Segment		Proposed Section On-Street Bicycle Lane and Sidewalk
	Project Group		Multi-Use Path
	Existing Section Signed-On-Street Bicycle Route (Shared Roadway) and Sidewalk		Paved Shoulder
	Multi-Use Path		Signed On-Street Bicycle Route (Shared Roadway) and Sidewalk)
	Existing Section - Upgrades Needed Multi-Use Path		Sidewalk



20

## CONCESSION STREET

Belvidere Avenue to East 13th Street

WARD

7

PROJECT GROUP

J

RELATED PROJECTS

19

21

22



EXISTING FACILITY: SIDEWALK

PROPOSED FACILITY: BIKE LANE  
AND SIDEWALK  
(INTERIM)



### CONTEXT

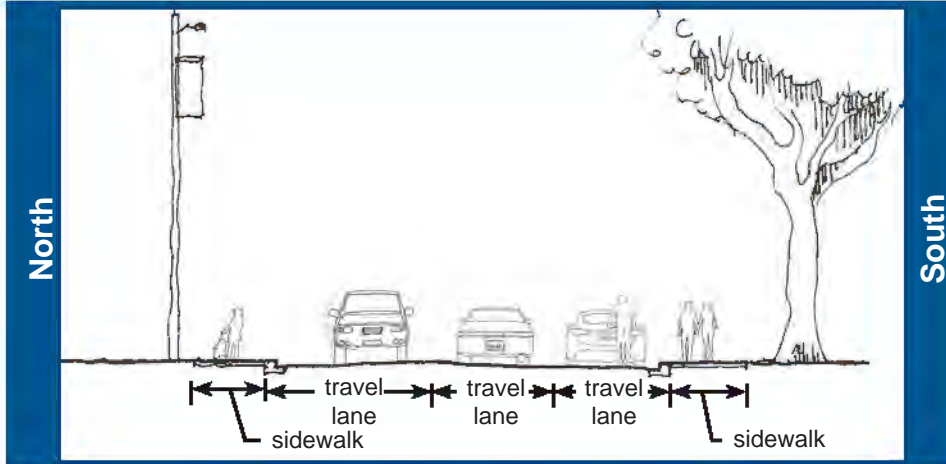
AADT:	1000-4000 <sup>1,2</sup>
Speed (km/h):	50
No. of Lanes:	2 changing to 3 at Upper Wellington Street
R.O.W. Width:	20.117-36.576m
Road Characterization:	Local to Minor Arterial
Project Location:	Open Space
Destination:	Vista 65 to 68, Sam Lawrence Park, Bruce Trail, Jolly Cut, Concession Street shopping area
Cultural Areas of Interest:	Sam Lawrence Park is identified as a cultural heritage landscape

20

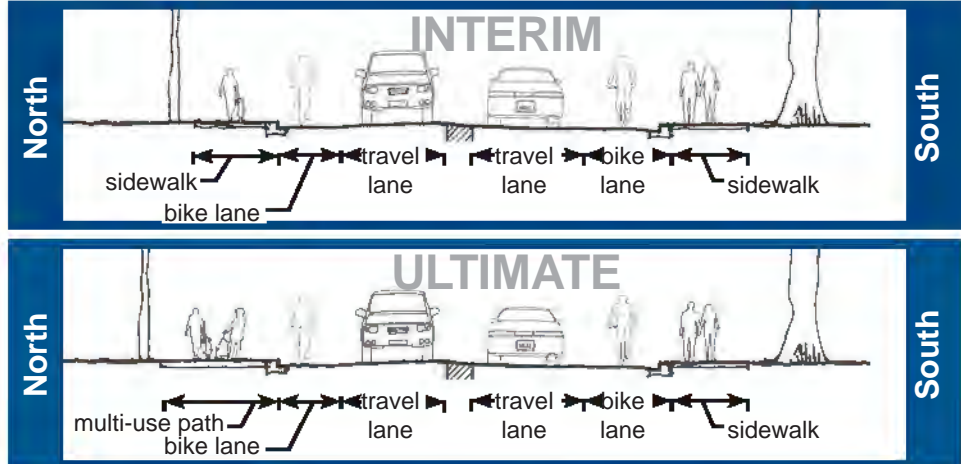
## CONCESSION STREET

Belvidere Avenue to East 13th Street

### EXISTING SECTION



### PROPOSED SECTION



### FACILITIES

Existing Facility:	<b>Sidewalk</b>	Status:	Proposed Future
Proposed Facility:	<b>Bike Lane and Sidewalk (interim) + Multi-Use Path (ultimate)</b>	Alternate Route:	No
Existing Facility Width:	1.5m (sidewalk)	Trail Impact Score:	80
Proposed Facility Width:	1.5m (sidewalk - no upgrades required); 1.8-2.0m buffered bike lane; 3.0m multi-use path	Signage:	Wayfinding, Branding
Segment Length:	690m	Lighting:	Existing street lighting may be adequate. Application of MBT branded fixtures may be desirable
Average Slope:	1.43%	Site Furnishings:	Consideration for accessible benches, bike racks and public art
Facility Location:	Both sides (bike lane and sidewalk); North (MUP)		



20

## CONCESSION STREET

Belvidere Avenue to East 13th Street

### IMPLEMENTATION

Project Horizon:	Medium-Term (bike lane & sidewalk); Ultimate (multi-use path)
Implementation Responsibility:	Alternative Transportation, Landscape Architectural Services
High Level Cost Estimate:	\$49,000.00 (bike lane & sidewalk)
Surface:	Concrete (sidewalk) (existing) and Asphalt (bike lane)
Land Ownership:	City of Hamilton
Stakeholders:	Concession Street Business Improvement Area
Permits and Studies:	Studies: Archaeological, Geotechnical
Archaeological Potential:	Yes
Maintenance:	Standard maintenance for asphalt surface
Public Engagement:	EA Process

### RATIONALE, COMMENTS AND FEASIBILITY CONSIDERATIONS

- Lane reconfiguration to accommodate on-road cycling facilities will be an interim measure; pursue implementation of multi-use path on north side as longer-term strategy; re-location of utility poles necessary for multi-use path implementation

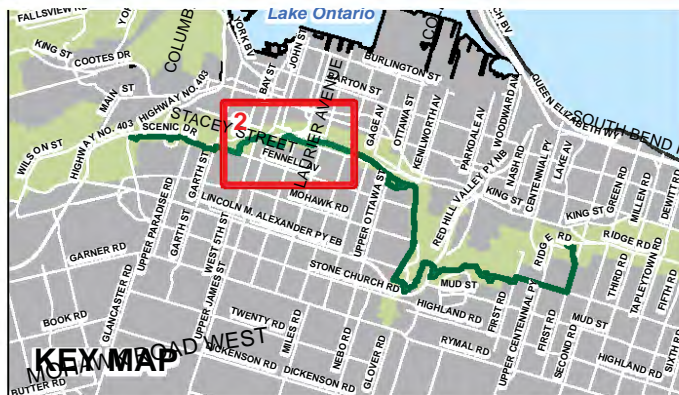
NOTES: (1) 2016 count - based on City count adjusted to AADT based on peak hour volume assuming 10% conversion

(2) Concession Street: Belvidere Ave to Upper Wellington Street (AADT 1000; Local Road); Upper Wellington St to E 13th St (AADT 4000; Minor Arterial)

# 21 CONCESSION STREET East 13th Street to Bellwood Avenue



## KEY MAP



## LEGEND

	Project Segment		Proposed Section On-Street Bicycle Lane and Sidewalk
	Project Group		Multi-Use Path
	Existing Section Signed-On-Street Bicycle Route (Shared Roadway) and Sidewalk		Paved Shoulder
	Multi-Use Path		Signed On-Street Bicycle Route (Shared Roadway) and Sidewalk
	Existing Section - Upgrades Needed Multi-Use Path		Sidewalk



21

**CONCESSION STREET**  
East 13th Street to Bellwood Avenue

WARD

7

PROJECT GROUP

J

RELATED PROJECTS

19

20

22

**EXISTING FACILITY: SIDEWALK****PROPOSED FACILITY: SIDEWALK AND  
SIGNED CYCLING  
ROUTE (INTERIM)****CONTEXT**

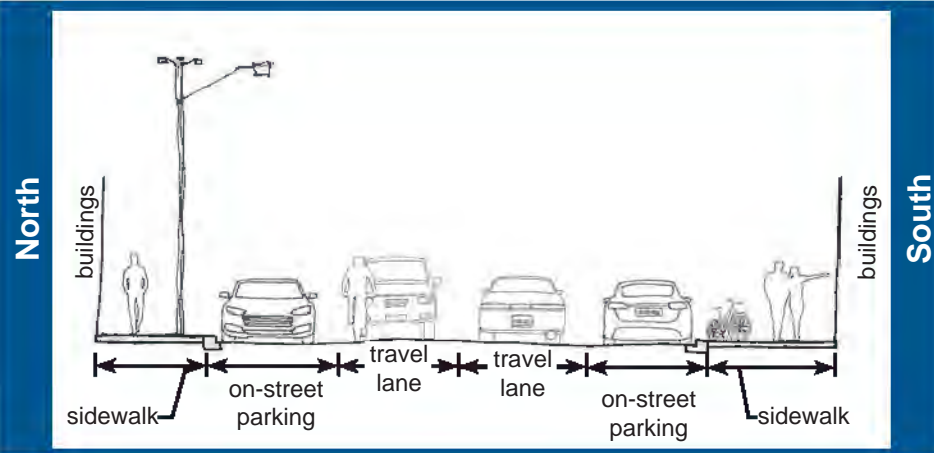
AADT:	4000 <sup>1</sup>
Speed (km/h):	50
No. of Lanes:	2
R.O.W. Width:	36.576m
Road Characterization:	Minor Arterial
Project Location:	Open Space
Destination:	Sam Lawrence Park, Bruce Trail, Jolly Cut, Concession Street shopping area
Cultural Areas of Interest:	

21

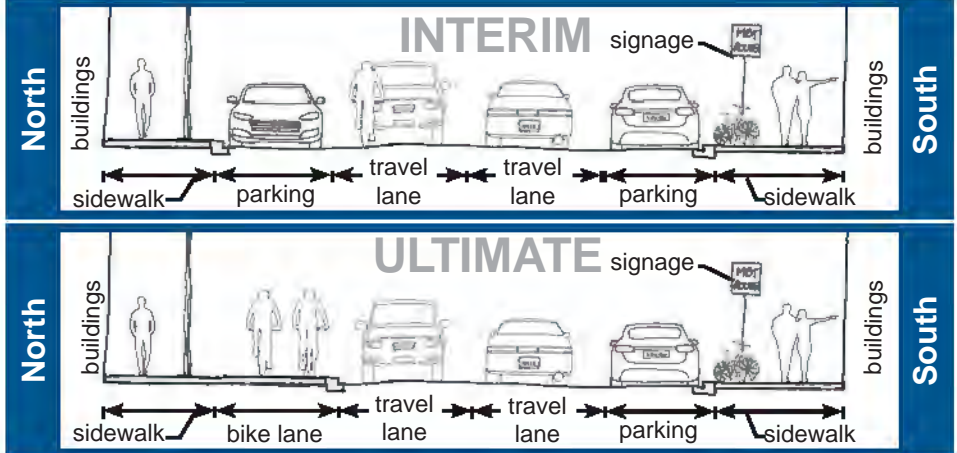
## CONCESSION STREET

East 13th Street to Bellwood Avenue

### EXISTING SECTION



### PROPOSED SECTION



### FACILITIES

Existing Facility:	<b>Sidewalk</b>	Status:	Proposed Future
Proposed Facility:	<b>Sidewalk and Signed Cycling Route (interim); Multi-Use Path (ultimate)</b>	Alternate Route:	No
Existing Facility Width:	1.8m (sidewalk only)	Trail Impact Score:	60
Proposed Facility Width:	1.8m (sidewalk - no upgrades required) + 3.0m multi-use path	Signage:	Wayfinding, Branding
Segment Length:	230m	Lighting:	Existing street lights
Average Slope:	1.43%	Site Furnishings:	No additional amenities required
Facility Location:	Both sides (sidewalk and signed route); North (MUP)		



21

**CONCESSION STREET**  
East 13th Street to Bellwood Avenue**IMPLEMENTATION**

Project Horizon:	Medium-Term (sidewalk & signed route); Ultimate (multi-use path)
Implementation Responsibility:	Alternative Transportation, Engineering Services
High Level Cost Estimate:	\$5,000.00
Surface:	Concrete (sidewalk) (existing) and Asphalt (signed route)
Land Ownership:	City of Hamilton
Stakeholders:	Concession Street Business Improvement Area
Permits and Studies:	Studies: Archaeological; Geotechnical
Archaeological Potential:	Yes
Maintenance:	Standard maintenance for concrete surface
Public Engagement:	EA Process

**RATIONALE, COMMENTS AND FEASIBILITY CONSIDERATIONS**

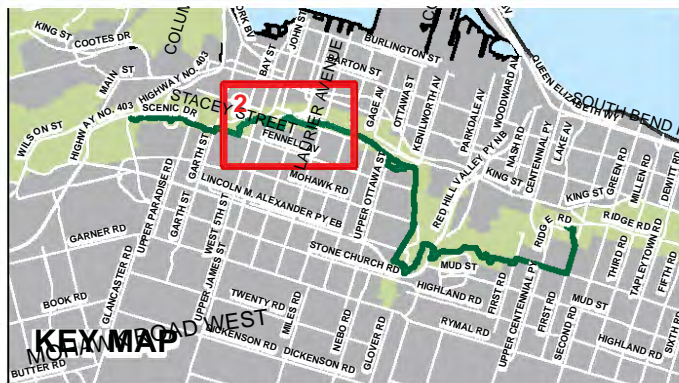
- Signed on-road cycling facilities and sidewalks will be an interim measure; pursue implementation of multi-use path on north side as longer-term strategy through removal of on-street parking on north side only
- Existing sidewalk to remain in interim and ultimate conditions, i.e. multi-use path adjacent to sidewalk on north side

NOTES: (1) 2016 - based on City count adjusted to AADT based on peak hour volume assuming 10% conversion

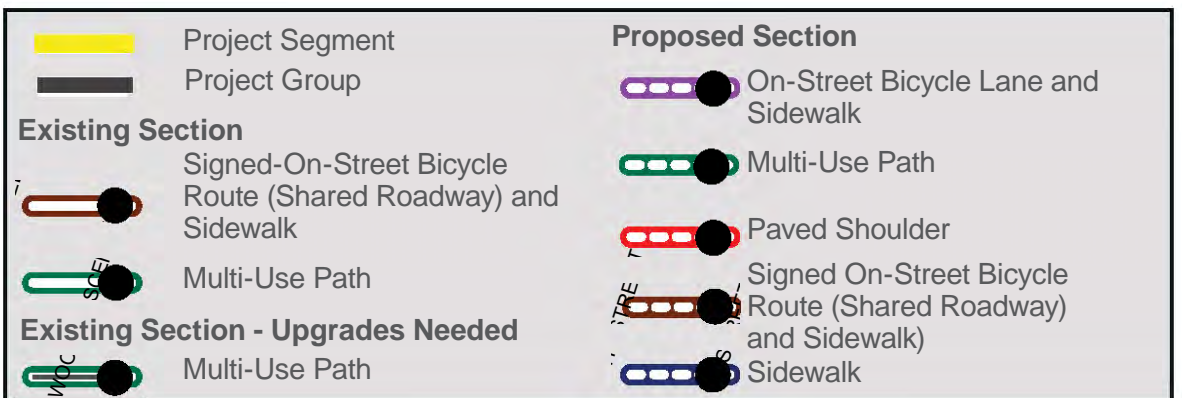
## 22 BELWOOD AVENUE/MOUNTAIN PARK AVENUE Concession Street to Upper Wentworth Street



### KEY MAP



### LEGEND





22

**BELWOOD AVENUE/MOUNTAIN PARK AVENUE**  
Concession Street to Upper Wentworth Street

WARD

7

PROJECT GROUP

J

RELATED PROJECTS

19

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21

**EXISTING FACILITY: SIDEWALK AND SIGNED CYCLING ROUTE****PROPOSED FACILITY: SIDEWALK AND SIGNED CYCLING ROUTE****CONTEXT**

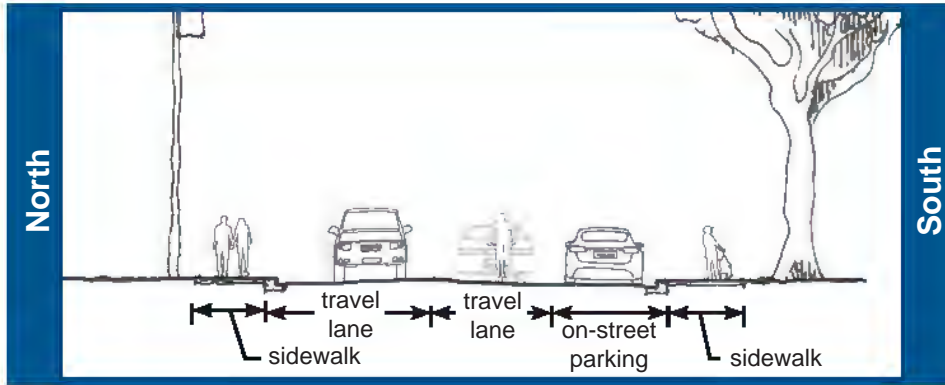
AADT:	<3000 <sup>1</sup>
Speed (km/h):	50
No. of Lanes:	2
R.O.W. Width:	20.117m
Road Characterization:	Local
Project Location:	City R.O.W.
Destination:	Concession Street shopping area, Mountain Brow Park West, Wentworth Stairs
Cultural Areas of Interest:	

22

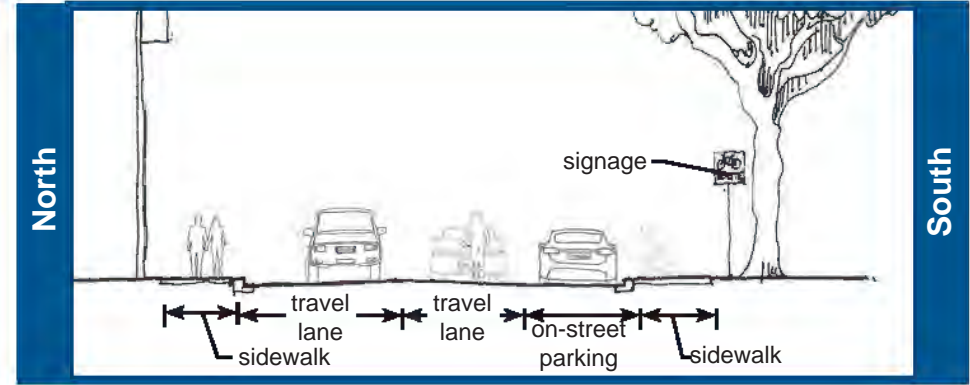
## BELWOOD AVENUE/MOUNTAIN PARK AVENUE

Concession Street to Upper Wenworth Street

### EXISTING SECTION



### PROPOSED SECTION



### FACILITIES

Existing Facility:	<b>Sidewalk and Signed Cycling Route</b>	Status:	Proposed Future
Proposed Facility:	<b>Sidewalk and Signed Cycling Route</b>	Alternate Route:	No
Existing Facility Width:	1.5m (sidewalk only)	Trail Impact Score:	40
Proposed Facility Width:	1.5m (sidewalk only)	Signage:	Wayfinding, Branding
Segment Length:	480m	Lighting:	Existing Street Lights
Average Slope:	1.43%	Site Furnishings:	None recommended
Facility Location:	Both Sides		



22

## BELWOOD AVENUE/MOUNTAIN PARK AVENUE

Concession Street to Upper Wentworth

### IMPLEMENTATION

Project Horizon:	Medium-Term
Implementation Responsibility:	Landscape Architectural Services
High Level Cost Estimate:	\$5,000.00
Surface:	Concrete (sidewalk)
Land Ownership:	City of Hamilton
Stakeholders:	N/A
Permits and Studies:	N/A
Archaeological Potential:	Yes
Maintenance:	Standard maintenance for concrete surface
Public Engagement:	N/A

### RATIONALE, COMMENTS AND FEASIBILITY CONSIDERATIONS

- Consider the addition of sidewalk on the east side of Belwood Avenue as a longer term project during future road reconstruction (cost has not been included)
- Public has expressed the desire for more timed parking to make it safe for recreational users
- Evaluate trail improvements at the Mountain Park Avenue & Upper Wentworth Street intersection to facilitate cyclist access on and off the trail

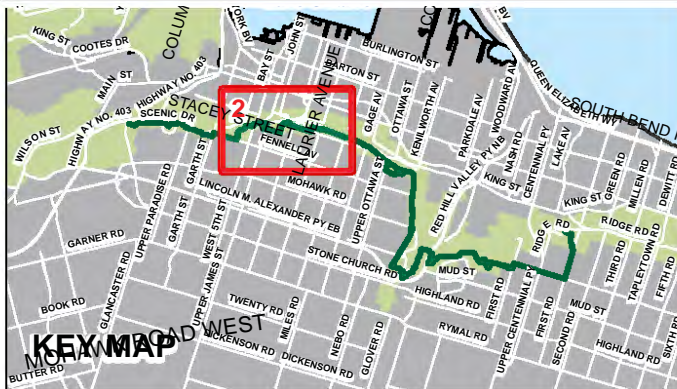
NOTES: (1) assumed based on land use context and road classification

## 23 MOUNTAIN BROW PARK WEST

Upper Wentworth Street to Poplar Avenue



### KEY MAP



### LEGEND





PROJECT GROUP

23

MOUNTAIN BROW PARK WEST

Upper Wentworth Street to Poplar Avenue

WARD

37

PROJECT GROUP

K

RELATED PROJECTS

252728



EXISTING FACILITY: MULTI-USE TRAIL

PROPOSED FACILITY: MULTI-USE TRAIL

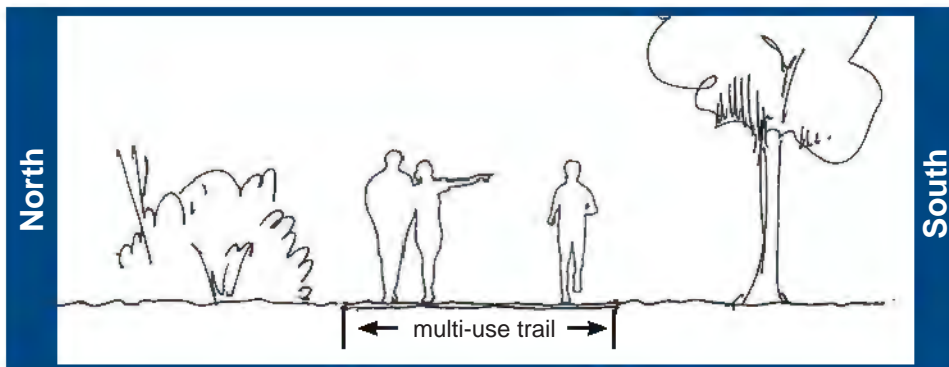
CONTEXT	
AADT:	N/A
Speed (km/h):	N/A
No. of Lanes:	N/A
R.O.W. Width:	N/A
Road Characterization:	Trail
Project Location:	Municipal Park
Destination:	Vistas 59 to 64, Mountain Brow Park West, Wentworth Stairs, Juravinski Hospital & Cancer Centre
Cultural Areas of Interest:	Historic Mountain Park Theatre, Historic East End Railway

23

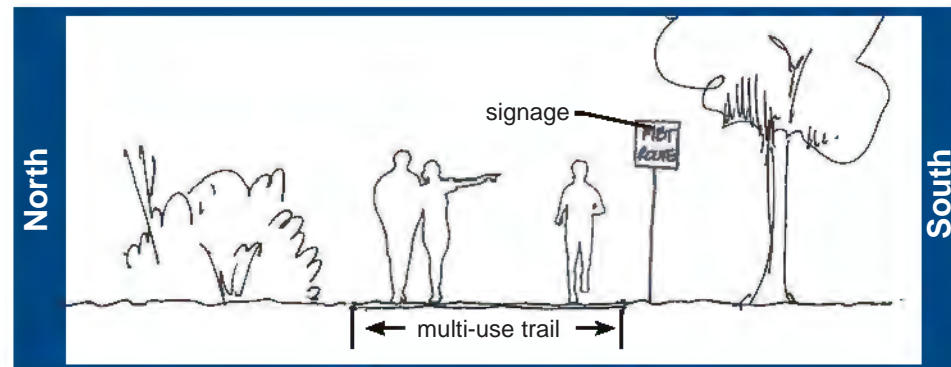
## MOUNTAIN BROW PARK WEST

Upper Wentworth Street to Poplar Avenue

### EXISTING SECTION



### PROPOSED SECTION



### FACILITIES

Existing Facility:	<b>Multi-Use Trail</b>	Status:	Upgrades Needed
Proposed Facility:	<b>Multi-Use Trail - Upgrades</b>	Alternate Route:	No
Existing Facility Width:	2.5-2.7m	Trail Impact Score:	70
Proposed Facility Width:	3.0-4.0m	Signage:	Trailhead, Wayfinding, Branding
Segment Length:	560m	Lighting:	Existing street lights. Application of MBT branded fixtures may be desirable, consultation with NEC required
Average Slope:	4.55%	Site Furnishings:	Application of MBT branded benches and fencing may be desirable. Consideration for bike racks and public art
Facility Location:	North		



23

## MOUNTAIN BROW PARK WEST

Upper Wentworth Street to Poplar Avenue

### IMPLEMENTATION

Project Horizon:	Short-Term
Implementation Responsibility:	Landscape Architectural Services
High Level Cost Estimate:	\$460,000.00
Surface:	Asphalt
Land Ownership:	City of Hamilton
Stakeholders:	Niagara Escarpment Commission
Permits and Studies:	Permits: N.E.C.; Studies: EIS, Archaeological, Geotechnical
Archaeological Potential:	Yes
Maintenance:	Standard maintenance for fence and asphalt surface
Public Engagement:	Per LAS standard practice

### RATIONALE, COMMENTS AND FEASIBILITY CONSIDERATIONS

- Historical fence replacements due to slope failure in this location to Mountain Drive Park. Design and installation must examine preventative and mitigation measures.
- Public expressed desire to upgrade fencing for consistency and safety; Widen Wentworth stairs for cyclist access; Consider washroom facilities at stairs (Wentworth Stairs)
- Evaluate trail improvements at the Mountain Park Avenue & Upper Wentworth Street intersection to facilitate cyclist access on and off the trail
- Parking facilities should be evaluated as part of this project.

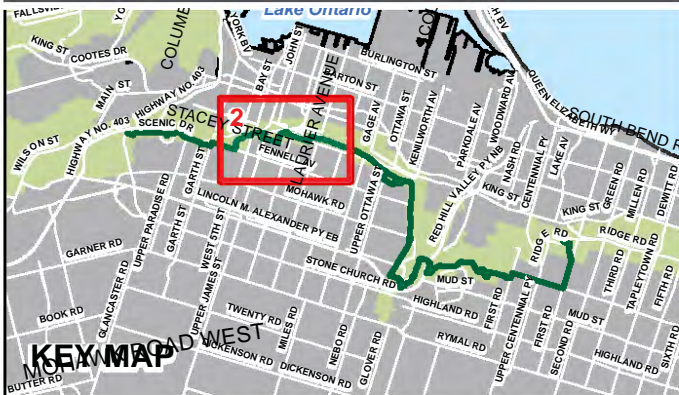


# 24 MOUNTAIN BROW PARK WEST

Poplar Avenue to Juravinski Hospital and Cancer Centre



## KEY MAP



## LEGEND

	Project Segment		Proposed Section
	Project Group		On-Street Bicycle Lane and Sidewalk
	Existing Section		Multi-Use Path
	Signed-On-Street Bicycle Route (Shared Roadway) and Sidewalk		Paved Shoulder
	Multi-Use Path		Signed On-Street Bicycle Route (Shared Roadway) and Sidewalk)
	Existing Section - Upgrades Needed		Sidewalk
	Multi-Use Path		



24

**MOUNTAIN BROW PARK WEST**

Poplar Avenue to Juravinski Hospital and Cancer Centre

WARD

3

7

PROJECT GROUP

L

RELATED PROJECTS

**EXISTING FACILITY: SIDEWALK AND SIGNED CYCLING ROUTE****PROPOSED FACILITY: MULTI-USE PATH****CONTEXT**AADT: <3000<sup>1</sup>

Speed (km/h): N/A

No. of Lanes: 2

R.O.W. Width: 36.576m

Road Characterization: Minor Arterial

Project Location: City R.O.W.

Destination: Vistas 57 to 58, Mountain Brow Park West, Wentworth Stairs, Juravinski Hospital &amp; Cancer Centre

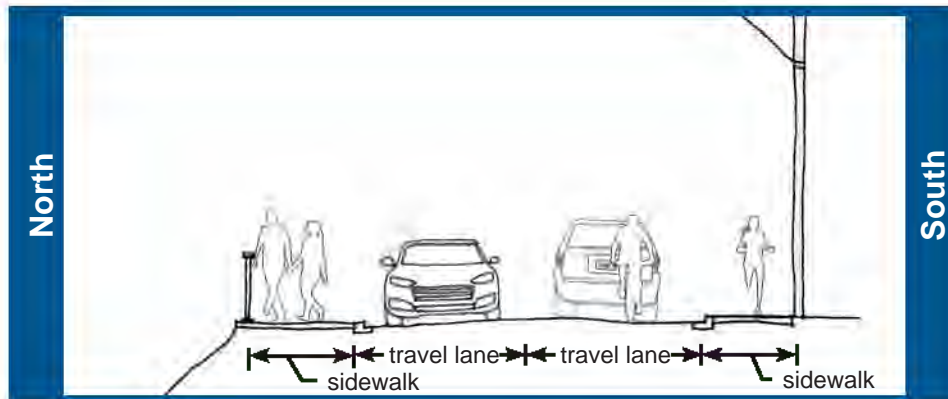
Cultural Areas of Interest:

24

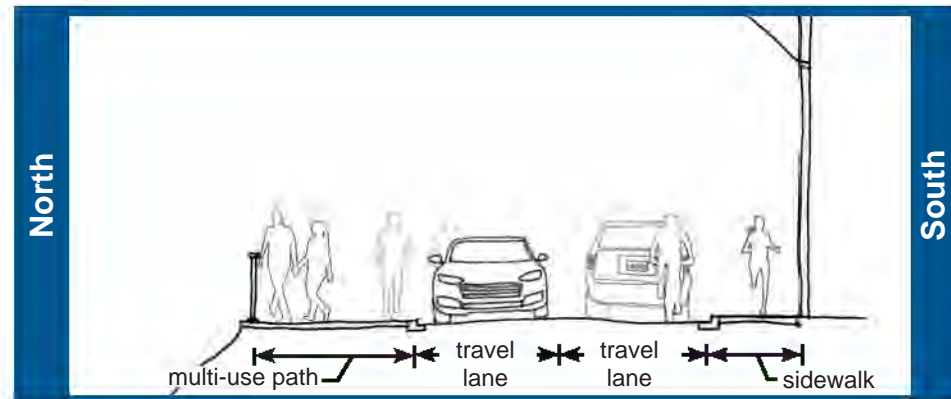
## MOUNTAIN BROW PARK WEST

Poplar Avenue to Juravinski Hospital and Cancer Centre

### EXISTING SECTION



### PROPOSED SECTION



### FACILITIES

Existing Facility: **Sidewalk and Signed Cycling Route**

Proposed Facility: **Multi-Use Path**

Existing Facility Width: 1.5m (sidewalk only)

Proposed Facility Width: 3.0m

Segment Length: 200m

Average Slope: 52.14%

Facility Location: North

Status: Proposed Future

Alternate Route: No

Trail Impact Score: 52

Signage: Wayfinding, Branding

Lighting: Existing Street Lights

Site Furnishings: None recommended



## 24

**MOUNTAIN BROW PARK WEST**  
Poplar Avenue to Juravinski Hospital and Cancer Centre**IMPLEMENTATION**

Project Horizon:	Long-Term
Implementation Responsibility:	Engineering Services
High Level Cost Estimate:	\$150,000.00 <sup>2</sup>
Surface:	Asphalt
Land Ownership:	City of Hamilton
Stakeholders:	Niagara Escarpment Commission, Juravinski Hospital and Cancer Center
Permits and Studies:	Permits: N.E.C.; Studies: Archaeological, Geotechnical
Archaeological Potential:	Yes
Maintenance:	Standard maintenance for fence and asphalt surface
Public Engagement:	EA Process

**RATIONALE, COMMENTS AND FEASIBILITY CONSIDERATIONS**

- While a multi-use path would be preferred for continuity, the existing facility works reasonably well
- Historical fence replacements due to slope failure in this location to Mountain Drive Park. Design and installation must examine preventative and mitigation measures.
- Asphalt surface repairs due to tree root heaving;

NOTES: (1) assumed based on land use context and road classification

(2) Some additional challenges and costs associated with bridges and constrained cross-sections not accounted for

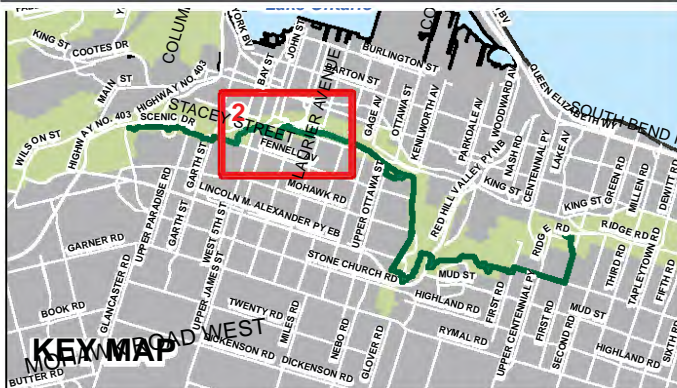
25

# MOUNTAIN BROW PARK WEST

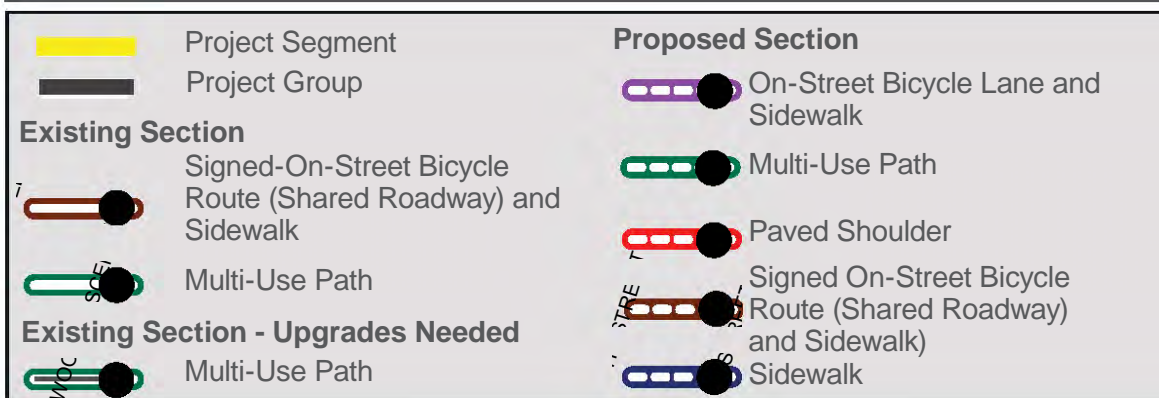
## Juravinski Hospital and Cancer Centre



### KEY MAP



### LEGEND





25

**MOUNTAIN BROW PARK WEST**

Juravinski Hospital and Cancer Centre

WARD

3

7

PROJECT GROUP

K

RELATED PROJECTS

23

27

28



EXISTING FACILITY: MULTI-USE PATH

PROPOSED FACILITY: MULTI-USE PATH

**CONTEXT**

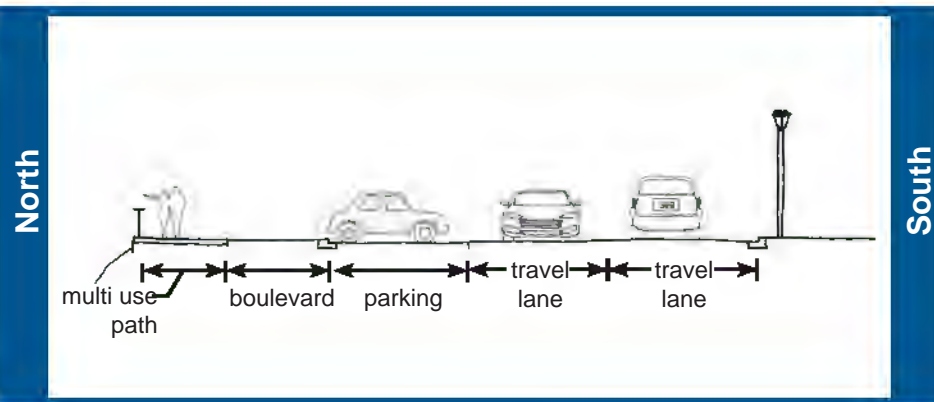
AADT:	<3000 <sup>1</sup>
Speed (km/h):	50
No. of Lanes:	2
R.O.W. Width:	36.576m
Road Characterization:	Minor Arterial
Project Location:	Municipal Park
Destination:	Vistas 55 to 56, Mountain Brow Park West, Wentworth Stairs, Juravinski Hospital & Cancer Centre
Cultural Areas of Interest:	

25

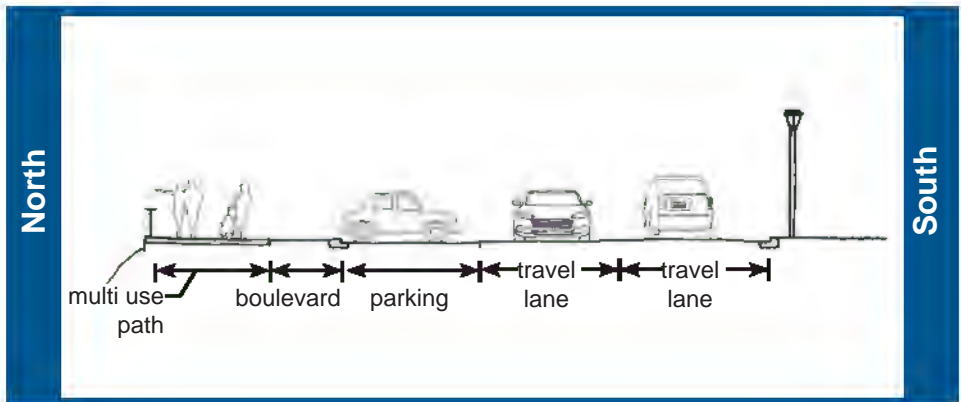
## MOUNTAIN BROW PARK WEST

Juravinski Hospital and Cancer Centre

### EXISTING SECTION



### PROPOSED SECTION



### FACILITIES

Existing Facility:	<b>Multi-Use Path</b>	Status:	Upgrades Needed
Proposed Facility:	<b>Multi-Use Path - Upgrades</b>	Alternate Route:	No
Existing Facility Width:	2.0m	Trail Impact Score:	40
Proposed Facility Width:	2.4 minimum; 3.0m preferred	Signage:	Wayfinding, Branding
Segment Length:	90m	Lighting:	Existing street lights
Average Slope:	8.06%	Site Furnishings:	Application of MBT branded furniture
Facility Location:	North		



25

## MOUNTAIN BROW PARK WEST

Juravinski Hospital and Cancer Centre

### IMPLEMENTATION

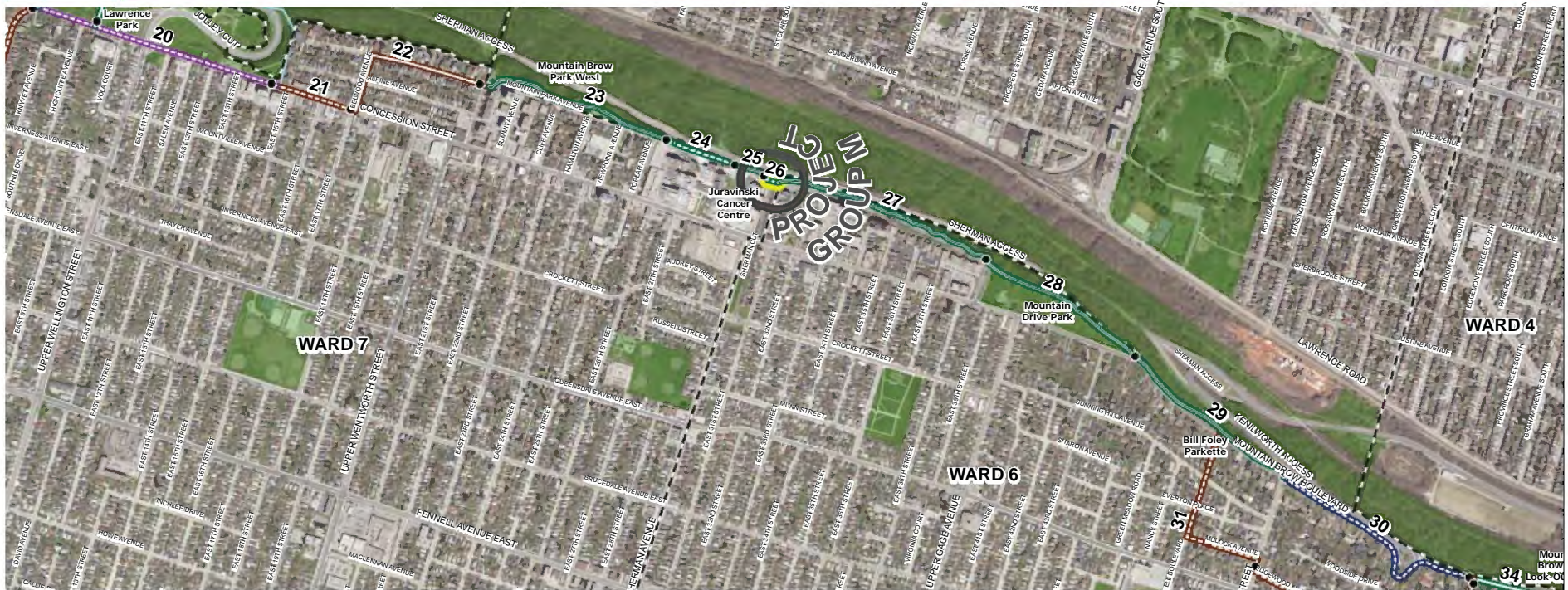
Project Horizon:	Short-Term
Implementation Responsibility:	Landscape Architectural Services
High Level Cost Estimate:	\$52,000.00
Surface:	Asphalt
Land Ownership:	City of Hamilton
Stakeholders:	Niagara Escarpment Commission, Juravinski Hospital and Cancer Centre
Permits and Studies:	Permits: N.E.C.; Studies: Archaeological; Geotechnical
Archaeological Potential:	Yes
Maintenance:	Standard maintenance for fence, and concrete and asphalt surfaces
Public Engagement:	Per LAS standard practice

### RATIONALE, COMMENTS AND FEASIBILITY CONSIDERATIONS

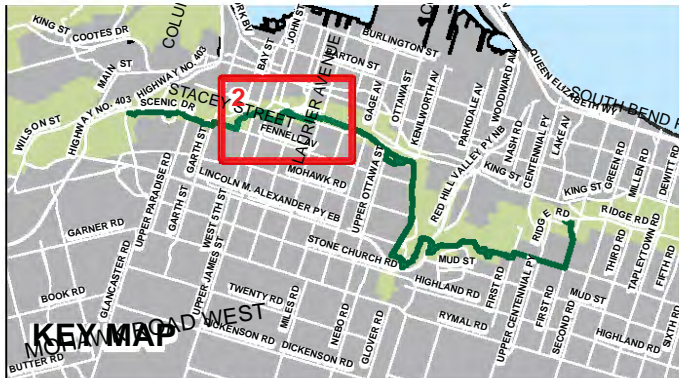
- Project segment 23 is very similar to segments 25, 27 & 28, but phased implementation would likely be required due to cost
- Historical fence replacements due to slope failure in this location to Mountain Drive Park. Design and installation must examine preventative and mitigation measures.
- Parking facilities should be evaluated as part of this project.

NOTES: (1) assumed based on land use context and road classification

## 26 MOUNTAIN BROW PARK AVE BRIDGE (Over Sherman Cut)



### KEY MAP



### LEGEND





26

**MOUNTAIN BROW PARK AVE BRIDGE**  
(Over Sherman Cut)

WARD

7

PROJECT GROUP

M

RELATED PROJECTS

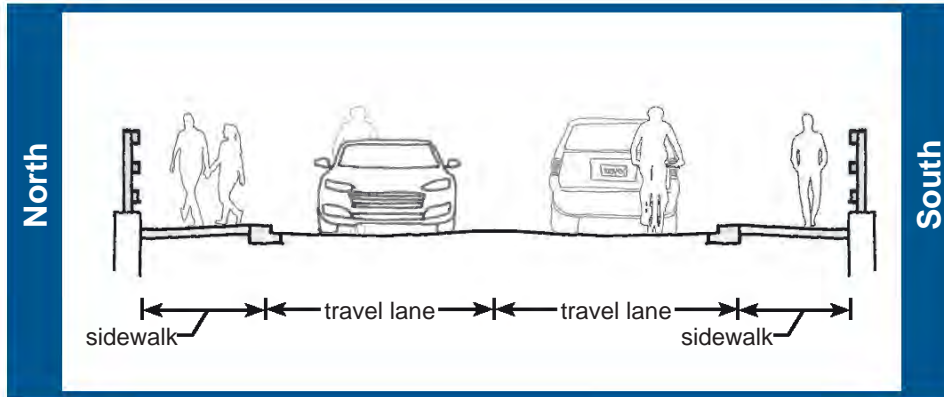
**EXISTING FACILITY: SIDEWALK AND SIGNED CYCLING ROUTE****PROPOSED FACILITY: MULTI-USE PATH****CONTEXT**

AADT:	<3000 <sup>1</sup>
Speed (km/h):	50
No. of Lanes:	2
R.O.W. Width:	36.576m
Road Characterization:	Minor Arterial
Project Location:	City R.O.W.
Destination:	Mountain Brow Park West, Wentworth Stairs, Juravinski Hospital & Cancer Centre, Mountain Drive Park
Cultural Areas of Interest:	

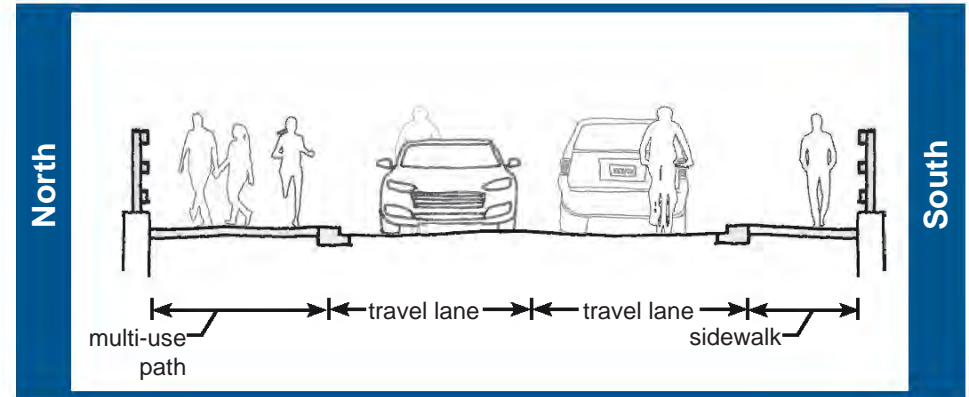
# 26

## MOUNTAIN BROW PARK AVE BRIDGE (Over Sherman Cut)

### EXISTING SECTION



### PROPOSED SECTION



### FACILITIES

Existing Facility:	<b>Sidewalk and Signed Cycling Route</b>	Status:	Proposed Future
Proposed Facility:	<b>Multi-Use Path</b>	Alternate Route:	No
Existing Facility Width:	2.0m (sidewalk only)	Trail Impact Score:	50
Proposed Facility Width:	3.0m	Signage:	Wayfinding, Branding
Segment Length:	30m	Lighting:	Existing street lights
Average Slope:	34.50%	Site Furnishings:	None recommended
Facility Location:	North		



## 26

**MOUNTAIN BROW PARK AVE BRIDGE**  
(Over Sherman Cut)**IMPLEMENTATION**

Project Horizon:	Ultimate
Implementation Responsibility:	Engineering Services
High Level Cost Estimate:	\$21,000.00 <sup>2</sup>
Surface:	N/A
Land Ownership:	City of Hamilton
Stakeholders:	Niagara Escarpment Commission
Permits and Studies:	Permits: N.E.C.; Studies: Archaeological, Geotechnical
Archaeological Potential:	Yes
Maintenance:	Standard maintenance for concrete surface and highway
Public Engagement:	EA Process

**RATIONALE, COMMENTS AND FEASIBILITY CONSIDERATIONS**

- Requires bridge deck reconstruction - may not be feasible within 20-year timeline
- While a multi-use path would be preferred for continuity, the existing facility works reasonably well

NOTES: (1) assumed based on land use context and road classification

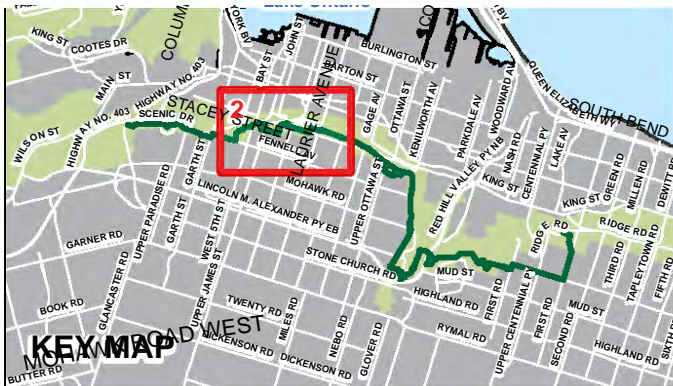
(2) Some additional challenges and costs associated with bridges not accounted for

# 27 MOUNTAIN BROW PARK WEST

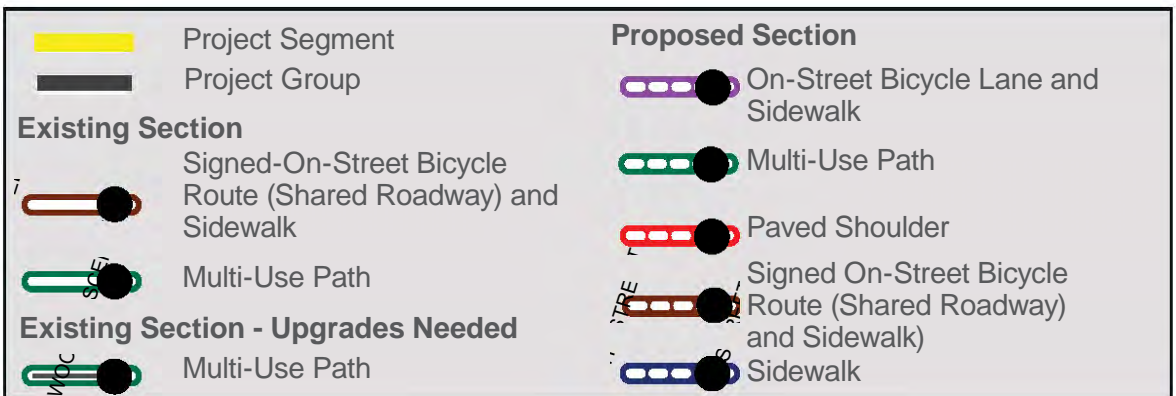
Upper Sherman to Mountain Drive Park



## KEY MAP



## LEGEND





27

# MOUNTAIN BROW PARK WEST

Upper Sherman to Mountain Drive Park

WARD

3

7

PROJECT GROUP

K

RELATED PROJECTS

23

25

28

EXISTING FACILITY: MULTI-USE TRAIL

PROPOSED FACILITY: MULTI-USE TRAIL



## CONTEXT

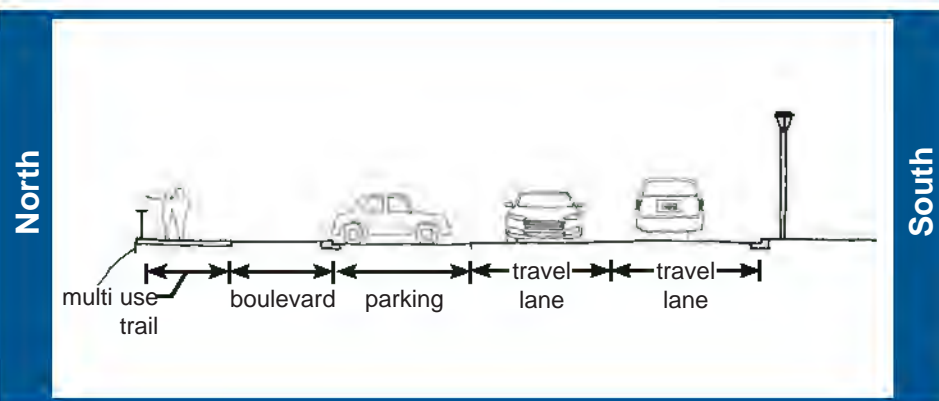
AADT:	N/A
Speed (km/h):	N/A
No. of Lanes:	N/A
R.O.W. Width:	N/A
Road Characterization:	Trail
Project Location:	Municipal Park
Destination:	Vistas 47 to 54, Mountain Brow Park West, Wentworth Stairs, Juravinski Hospital & Cancer Centre
Cultural Areas of Interest:	

27

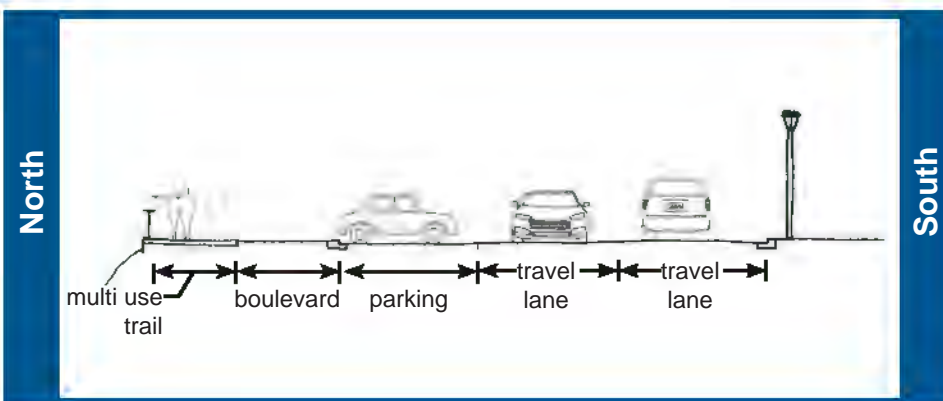
## MOUNTAIN BROW PARK WEST

Upper Sherman to Mountain Drive Park

### EXISTING SECTION



### PROPOSED SECTION



### FACILITIES

Existing Facility:	<b>Multi-Use Trail</b>	Status:	Upgrades Needed
Proposed Facility:	<b>Multi-Use Trail - Upgrades</b>	Alternate Route:	No
Existing Facility Width:	2.5m	Trail Impact Score:	40
Proposed Facility Width:	3.0m-4.0m	Signage:	Wayfinding, Branding
Segment Length:	640m	Lighting:	Application of MBT branded fixtures may be desirable, consultation with NEC required
Average Slope:	N/A	Site Furnishings:	Accessible benches recommended at vistas
Facility Location:	North		



## 27

**MOUNTAIN BROW PARK WEST**  
Upper Sherman to Mountain Drive Park**IMPLEMENTATION**

Project Horizon:	Short-Term
Implementation Responsibility:	Landscape Architectural Services
High Level Cost Estimate:	\$530,000.00
Surface:	Asphalt
Land Ownership:	City of Hamilton
Stakeholders:	Asset Management, Design Engineering, Niagara Escarpment Commission
Permits and Studies:	Permits: N.E.C.; Studies: EIS, Archaeological, Geotechnical
Archaeological Potential:	Yes
Maintenance:	Standard maintenance for fence, stone retaining wall and asphalt surface
Public Engagement:	Maintain the trail as close to the Escarpment edge for as long as possible

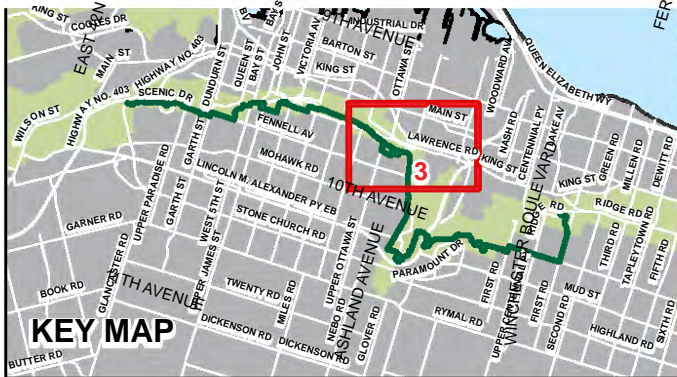
**RATIONALE, COMMENTS AND FEASIBILITY CONSIDERATIONS**

- Historical fence replacements due to slope failure in this location. Design and installation must examine preventative and mitigation measures.
- Consideration of MBT-branded fencing to replace stone wall for safety
- Consideration for the implementation of multi-use facilities on the south side should be considered as well

# 28 MOUNTAIN DRIVE PARK



## KEY MAP



## LEGEND





# 28 MOUNTAIN DRIVE PARK

WARD

6

PROJECT GROUP

K

RELATED PROJECTS

23

25

27



EXISTING FACILITY: MULTI-USE TRAIL

PROPOSED FACILITY: MULTI-USE TRAIL

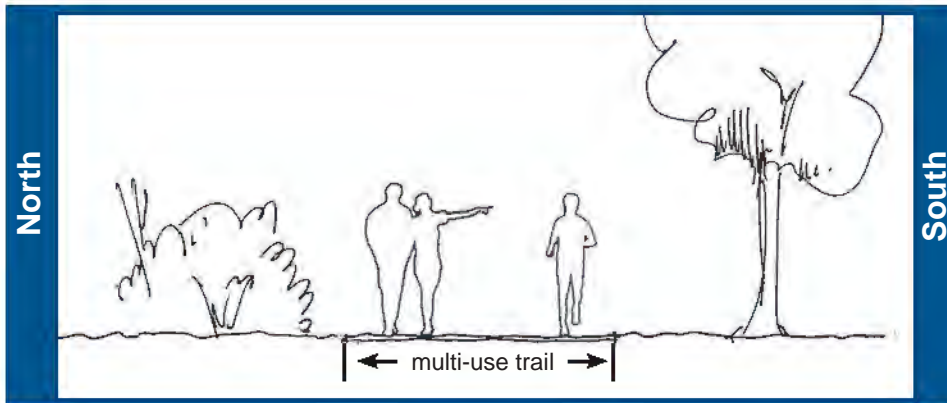


## CONTEXT

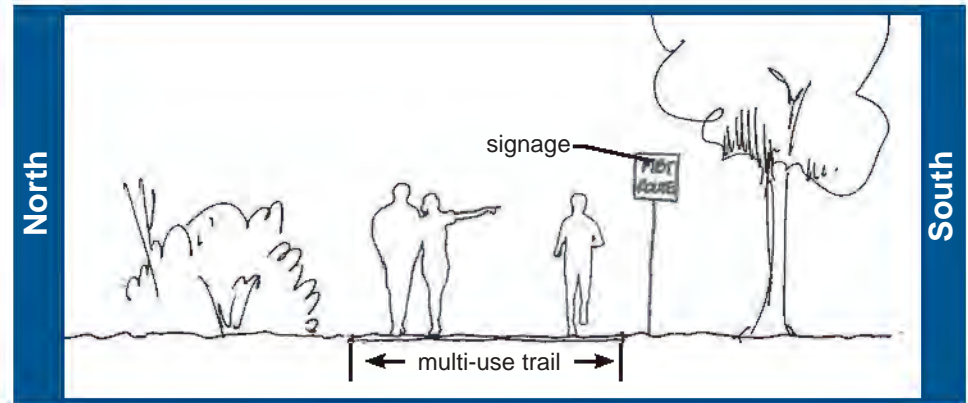
AADT:	N/A
Speed (km/h):	N/A
No. of Lanes:	N/A
R.O.W. Width:	N/A
Road Characterization:	Trail
Project Location:	Municipal Park
Destination:	Vistas 44 to 46, Mountain Brow Park West, Wentworth Stairs, Juravinski Hospital & Cancer Centre
Cultural Areas of Interest:	988 Concession Street is a Designated property across from Mountain Drive Park

## 28 MOUNTAIN DRIVE PARK

### EXISTING SECTION



### PROPOSED SECTION



### FACILITIES

Existing Facility:	<b>Multi-Use Trail</b>	Status:	Upgrades Needed
Proposed Facility:	<b>Multi-Use Trail - Upgrades</b>	Alternate Route:	No
Existing Facility Width:	3.0m	Trail Impact Score:	40
Proposed Facility Width:	3.0m	Signage:	Trailhead, Wayfinding, Branding
Segment Length:	500m	Lighting:	Currently no park lighting provided in accordance with standard practice. MBT branded fixtures may be desirable. Further study required
Average Slope:	2.16%	Site Furnishings:	Accessible benches and bike racks recommended at 30m intervals
Facility Location:	North		



## 28 MOUNTAIN DRIVE PARK

### IMPLEMENTATION

Project Horizon:	Short-Term
Implementation Responsibility:	Landscape Architectural Services
High Level Cost Estimate:	\$310,000.00
Surface:	Asphalt
Land Ownership:	City of Hamilton
Stakeholders:	Niagara Escarpment Commission
Permits and Studies:	Permits: N.E.C.; Studies: EIS, Archaeological, Geotechnical
Archaeological Potential:	Yes
Maintenance:	Standard maintenance for asphalt surface
Public Engagement:	

### RATIONALE, COMMENTS AND FEASIBILITY CONSIDERATIONS

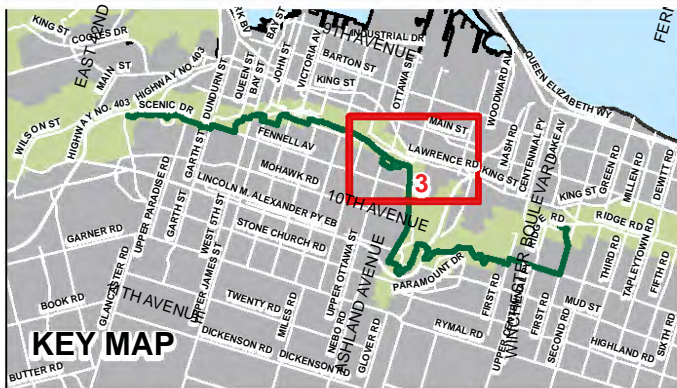
- Historical fence replacements due to slope failure in this location. Design and installation must examine preventative and mitigation measures.
- Public expressed the desire to enhance the washroom

# 29

## MOUNTAIN BROW BOULEVARD Mountain Drive Park to Upper Ottawa Street



### KEY MAP



### LEGEND





29

**MOUNTAIN BROW BOULEVARD**  
Mountain Drive Park to Upper Ottawa Street

WARD

3

6

PROJECT GROUP

N

RELATED PROJECTS



EXISTING FACILITY: MULTI-USE TRAIL

PROPOSED FACILITY: MULTI-USE TRAIL

**CONTEXT**

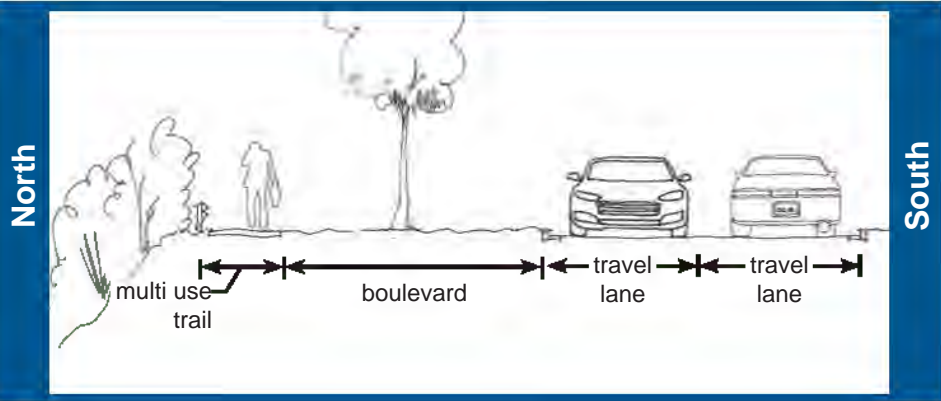
AADT:	N/A
Speed (km/h):	40
No. of Lanes:	2
R.O.W. Width:	36.576m
Road Characterization:	Trail
Project Location:	Open Space
Destination:	Vistas 41 to 43, Mountain Drive Park
Cultural Areas of Interest:	

29

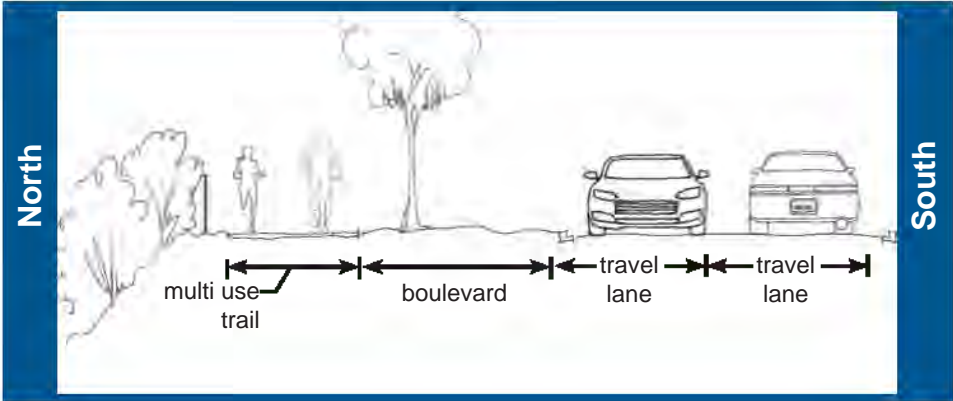
# MOUNTAIN BROW BOULEVARD

Mountain Drive Park to Upper Ottawa Street

## EXISTING SECTION



## PROPOSED SECTION



## FACILITIES

Existing Facility:	<b>Multi-Use Trail</b>	Status:	Upgrades Needed
Proposed Facility:	<b>Multi-Use Trail - Upgrades</b>	Alternate Route:	No
Existing Facility Width:	1.5m	Trail Impact Score:	37
Proposed Facility Width:	3.0-4.0m	Signage:	Wayfinding, Branding
Segment Length:	530m	Lighting:	Existing street lighting may be adequate. Application of MBT branded fixture may be desirable
Average Slope:	N/A	Site Furnishings:	Accessible benches recommended at vistas
Facility Location:	North		



29

**MOUNTAIN BROW BOULEVARD**

Mountain Drive Park to Upper Ottawa Street

**IMPLEMENTATION**

Project Horizon:	Short-Term
Implementation Responsibility:	Engineering Services
High Level Cost Estimate:	\$440,000.00
Surface:	Asphalt
Land Ownership:	City of Hamilton
Stakeholders:	Niagara Escarpment Commission
Permits and Studies:	Permits: N.E.C.; Studies: Archaeological, Geotechnical
Archaeological Potential:	Yes
Maintenance:	Standard maintenance for fence and asphalt surface
Public Engagement:	EA Process

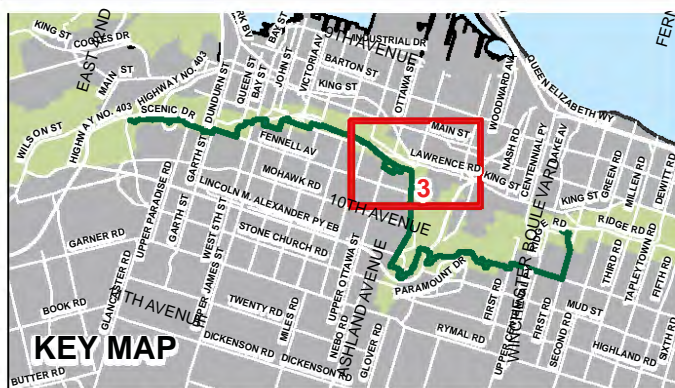
**RATIONALE, COMMENTS AND FEASIBILITY CONSIDERATIONS**

- Anticipated to be completed with a road reconstruction project
- Historical fence replacements due to slope failure in this location. Design and installation must examine preventative and mitigation measures.
- Guardrail will be replaced with MBT fencing

# 30 MOUNTAIN BROW BOULEVARD Upper Ottawa Street to Oakcrest Drive



## KEY MAP



## LEGEND





30

**MOUNTAIN BROW BOULEVARD**  
Upper Ottawa Street to Oakcrest Drive

WARD

6

PROJECT GROUP

O

RELATED PROJECTS



EXISTING FACILITY: NONE

PROPOSED FACILITY: SIDEWALK ONLY

**CONTEXT**

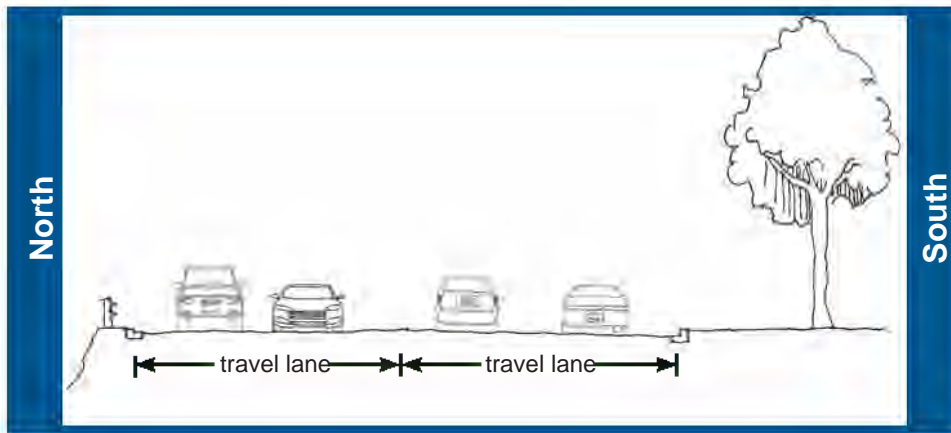
AADT:	4000-22000 <sup>1</sup>
Speed (km/h):	40
No. of Lanes:	4
R.O.W. Width:	36.576m
Road Characterization:	Minor Arterial
Project Location:	City R.O.W.
Destination:	Mountain Drive Park, Mountain Brow Trail (existing)
Cultural Areas of Interest:	

30

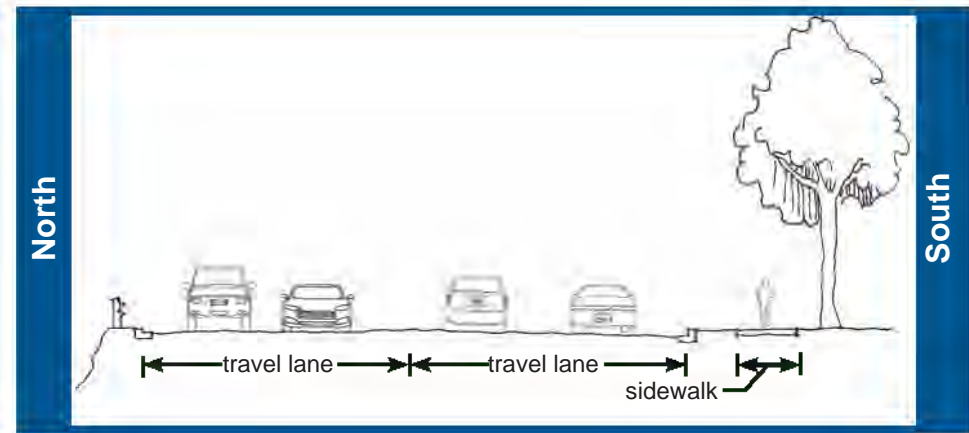
## MOUNTAIN BROW BOULEVARD

Upper Ottawa Street to Oakcrest Drive

### EXISTING SECTION



### PROPOSED SECTION



### FACILITIES

Existing Facility:	None	Status:	Proposed Future
Proposed Facility:	Sidewalk Only	Alternate Route:	No
Existing Facility Width:	N/A	Trail Impact Score:	40
Proposed Facility Width:	1.8m	Signage:	Wayfinding, Branding
Segment Length:	680m	Lighting:	Existing Street Lighting
Average Slope:	1.42%	Site Furnishings:	None Recommended
Facility Location:	South		



30

**MOUNTAIN BROW BOULEVARD**  
Upper Ottawa Street to Oakcrest Drive**IMPLEMENTATION**

Project Horizon:	Ultimate
Implementation Responsibility:	Engineering Services
High Level Cost Estimate:	\$130,000.00
Surface:	Concrete
Land Ownership:	City of Hamilton
Stakeholders:	Niagara Escarpment Commission
Permits and Studies:	Permits: N.E.C.; Studies: Archaeological, Geotechnical
Archaeological Potential:	Yes
Maintenance:	Standard maintenance for concrete surface
Public Engagement:	EA Process, Additional extensive stakeholder engagement recommended

**RATIONALE, COMMENTS AND FEASIBILITY CONSIDERATIONS**

- This project has been previously examined on two occasions and the decision was made not to install sidewalk based on public feedback. Further public consultation is required.

NOTES: (1) Mountain Brow Boulevard: Upper Ottawa St to Kenilworth Access (AADT 22000, 2015 count; Kenilworth Access to Oakcrest Drive (AADT 4000, 2013 count)

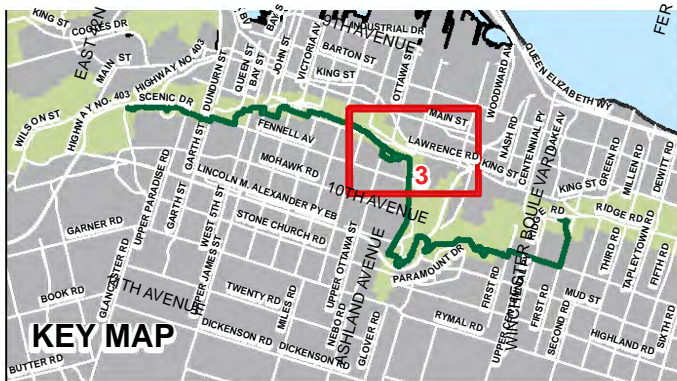
31

# RENDELL BOULEVARD/MULOCK AVENUE

Mountain Brow Boulevard to Upper Ottawa Street



## KEY MAP



## LEGEND





31

**RENDELL BOULEVARD/MULOCK AVENUE**  
Mountain Brow Boulevard to Upper Ottawa Street

WARD

6

PROJECT GROUP

P

RELATED PROJECTS

32

33

**EXISTING FACILITY: SIDEWALK AND SIGNED CYCLING ROUTE****PROPOSED FACILITY: SIDEWALK AND SIGNED CYCLING ROUTE****RENDELL  
BOULEVARD****MULOCK AVENUE****CONTEXT**AADT: <3000<sup>1</sup>

Speed (km/h): 50

No. of Lanes: 2

R.O.W. Width: 20.117m

Road Characterization: Local

Project Location: City R.O.W.

Destination: Highview Park, Mountain Drive Park, Mountain Brow Trail (existing)

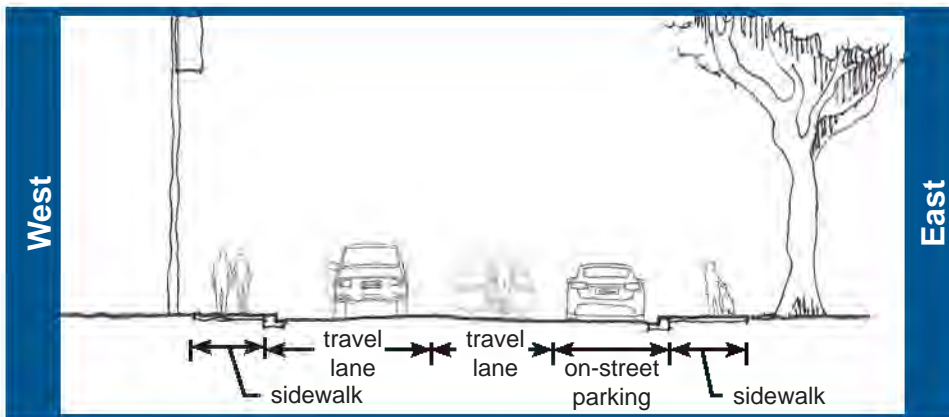
Cultural Areas of Interest:

31

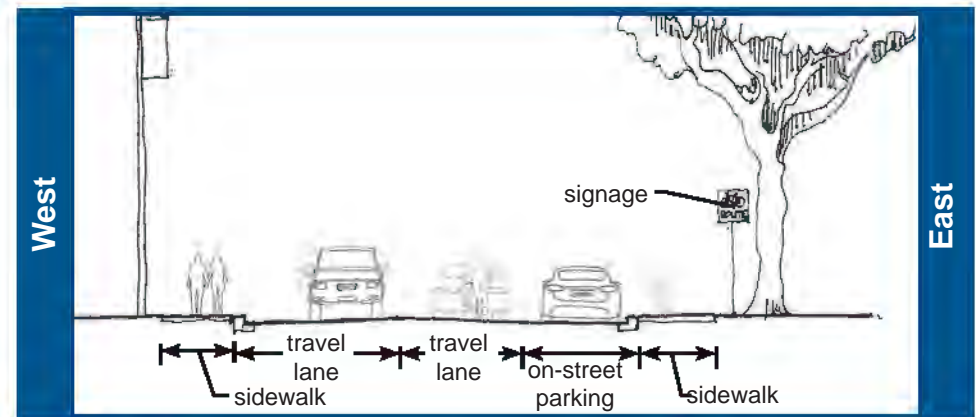
## RENDELL BOULEVARD/MULOCK AVENUE

Mountain Brow Boulevard to Upper Ottawa Street

### EXISTING SECTION



### PROPOSED SECTION



### FACILITIES

Existing Facility:	<b>Sidewalk and Signed Cycling Route (Rendell Boulevard)</b>	Status:	Existing (Rendell Boulevard) Proposed Future (Mulock Avenue)
Proposed Facility:	<b>Sidewalk and Signed Cycling Route</b>	Alternate Route:	No
Existing Facility Width:	1.2-1.5m (Rendell Boulevard)	Trail Impact Score:	30
Proposed Facility Width:	1.2-1.5m	Signage:	Wayfinding, Branding
Segment Length:	540m	Lighting:	Existing Street Lighting
Average Slope:	N/A	Site Furnishings:	None Recommended
Facility Location:	Both sides		



31

## RENDELL BOULEVARD/MULOCK AVENUE

Mountain Brow Boulevard to Upper Ottawa Street

### IMPLEMENTATION

Project Horizon:	Long-Term
Implementation Responsibility:	Alternative Transportation
High Level Cost Estimate:	\$6,000.00
Surface:	Concrete (sidewalk)
Land Ownership:	City of Hamilton
Stakeholders:	N/A
Permits and Studies:	N/A
Archaeological Potential:	No
Maintenance:	Standard maintenance for concrete surface
Public Engagement:	EA Process

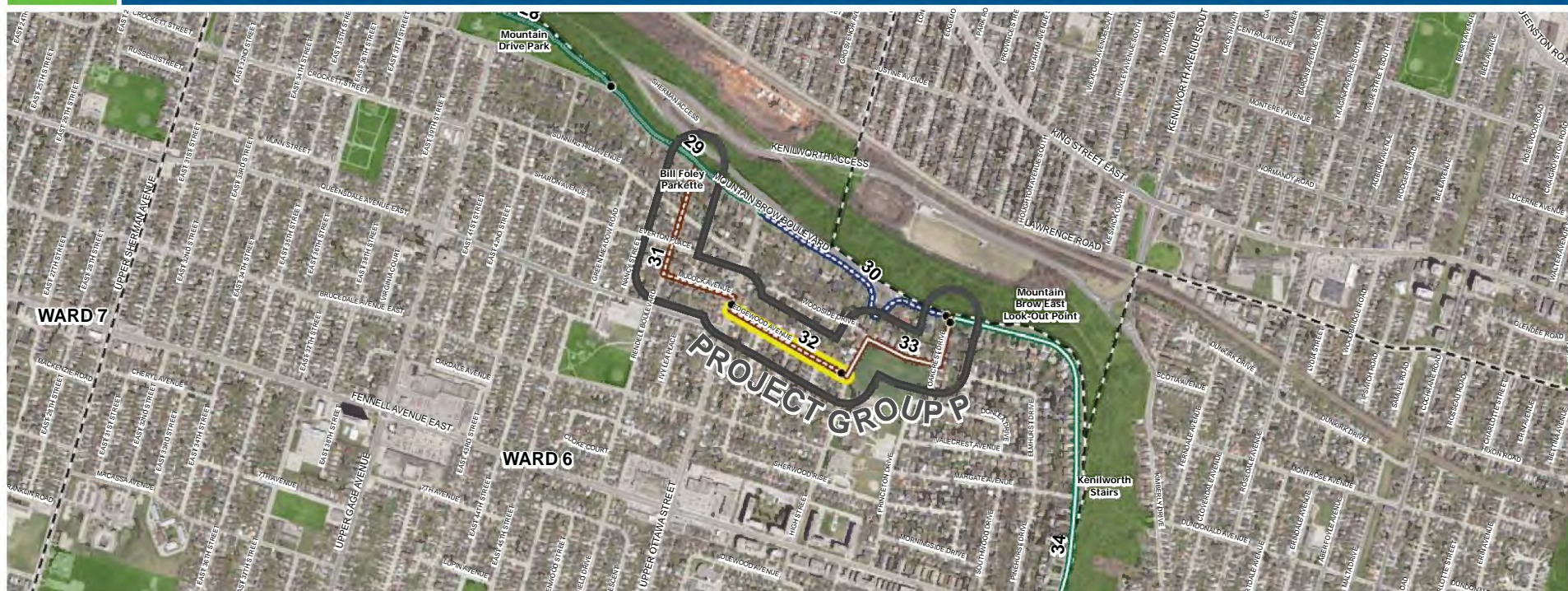
### RATIONALE, COMMENTS AND FEASIBILITY CONSIDERATIONS

- This route was chosen because the facilities could not be accommodated along Mountain Brow Boulevard without major infrastructural investment. The route along Rendell Boulevard is an existing cycling route
- As an alternative to this route, Upper Ottawa may be considered if a lane reconfiguration can be implemented to accommodate bike lanes. Upper Ottawa provides a more direct connection for cyclists from the end of the trail along Mountain Brow Boulevard and eliminates the route jog. This connection requires a road diet which is not recommended by Traffic Engineering at this time
- A raised median island, or similar treatment, is needed to facilitate transition between Mulock Avenue and Edgewood Avenue across Upper Ottawa Street (cost not included)
- Queensdale Avenue is identified in the Cycling Master Plan and may be considered as an alternate route to Mulock Avenue

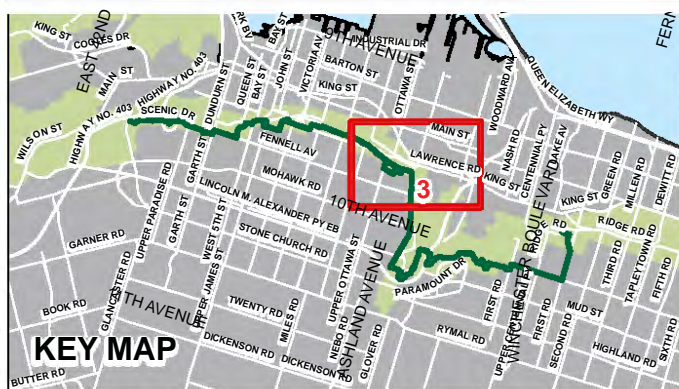
NOTES: (1) assumed based on land use context and road classification



# 32 EDGEWOOD AVENUE Upper Ottawa Street to High Street



## KEY MAP



## LEGEND

	Project Segment		Proposed Section On-Street Bicycle Lane and Sidewalk
	Project Group		Multi-Use Path
	Existing Section Signed-On-Street Bicycle Route (Shared Roadway) and Sidewalk		Paved Shoulder
	Multi-Use Path		Signed On-Street Bicycle Route (Shared Roadway) and Sidewalk
	Existing Section - Upgrades Needed Multi-Use Path		Sidewalk



32

**EDGEWOOD AVENUE**  
Upper Ottawa Street to High Street

WARD

6

PROJECT GROUP

P

RELATED PROJECTS

31

33



EXISTING FACILITY: SIDEWALK

PROPOSED FACILITY: SIDEWALK AND  
SIGNED CYCLING  
ROUTE**CONTEXT**

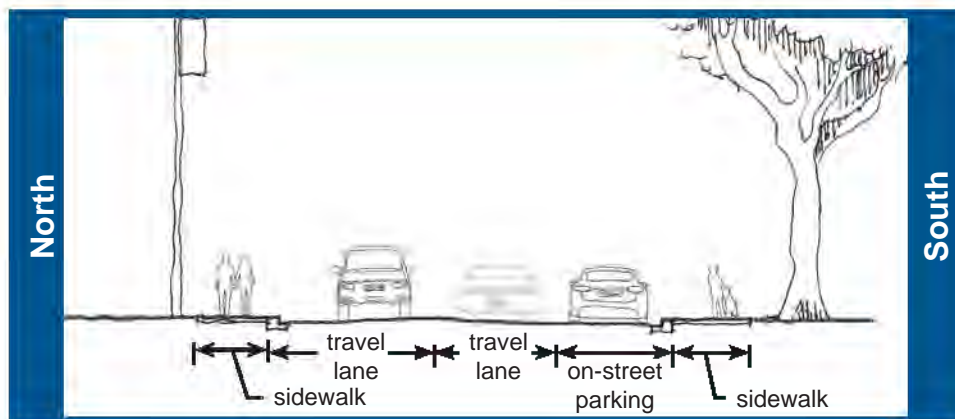
AADT:	<3000 <sup>1</sup>
Speed (km/h):	40
No. of Lanes:	2
R.O.W. Width:	20.117m
Road Characterization:	Local
Project Location:	City R.O.W.
Destination:	Sherwood Secondary School, Mountain Brow Trail (existing)
Cultural Areas of Interest:	

32

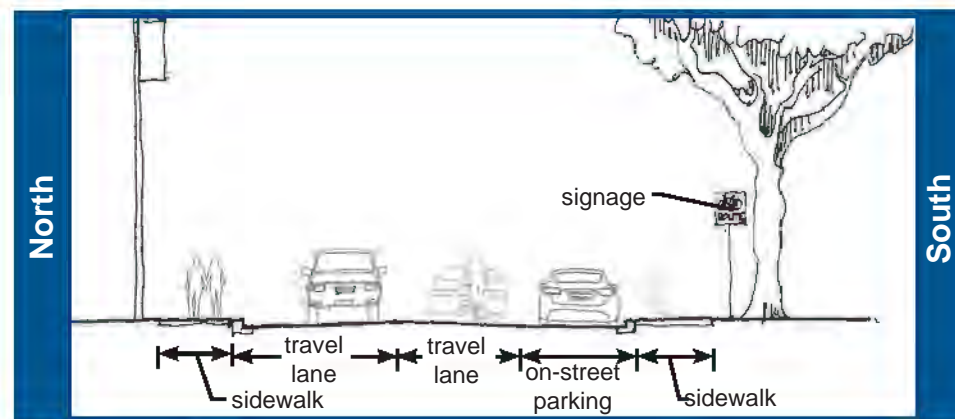
## EDGEWOOD AVENUE

Upper Ottawa Street to High Street

### EXISTING SECTION



### PROPOSED SECTION



### FACILITIES

Existing Facility:	<b>Sidewalk</b>	Status:	Proposed Future
Proposed Facility:	<b>Sidewalk and Signed Cycling Route</b>	Alternate Route:	No
Existing Facility Width:	1.5m	Trail Impact Score:	51
Proposed Facility Width:	1.5m (sidewalk - no upgrades)	Signage:	Wayfinding, Branding
Segment Length:	360m	Lighting:	Existing Street Lighting
Average Slope:	1.79%	Site Furnishings:	None Recommended
Facility Location:	Both sides		



32

**EDGEWOOD AVENUE**  
Upper Ottawa Street to High Street**IMPLEMENTATION**

Project Horizon:	Long-Term
Implementation Responsibility:	Alternative Transportation
High Level Cost Estimate:	\$320,000.00
Surface:	Concrete
Land Ownership:	City of Hamilton
Stakeholders:	N/A
Permits and Studies:	N/A
Archaeological Potential:	No
Maintenance:	Standard maintenance for concrete surface
Public Engagement:	Per Alternative Transportation standard practice

**RATIONALE, COMMENTS AND FEASIBILITY CONSIDERATIONS**

- This route was chosen because the facilities could not be accommodated along Mountain Brow Boulevard without major infrastructural investment.
- A raised median island, or similar treatment, is needed to facilitate transition between Mulock Avenue and Edgewood Avenue across Upper Ottawa Street

NOTES (1) = assumed based on land use context and road classification

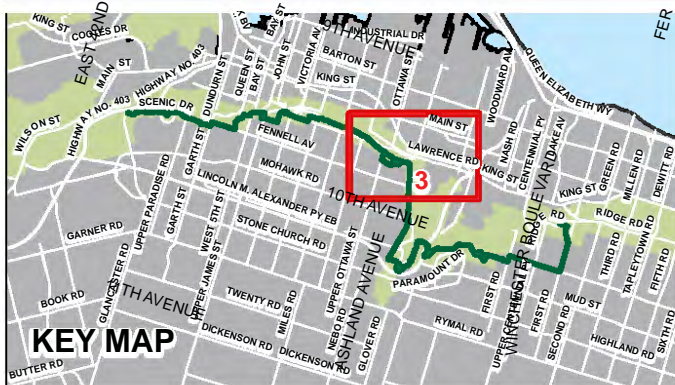
33

## HIGH STREET/WOODSIDE DRIVE/OAKCREST

Edgewood Avenue to Mountain Brow Boulevard



### KEY MAP



### LEGEND

	Project Segment		Proposed Section On-Street Bicycle Lane and Sidewalk
	Project Group		Multi-Use Path
	Existing Section Signed-On-Street Bicycle Route (Shared Roadway) and Sidewalk		Paved Shoulder
	Multi-Use Path		Signed On-Street Bicycle Route (Shared Roadway) and Sidewalk
	Existing Section - Upgrades Needed Multi-Use Path		Sidewalk



33

**HIGH STREET/WOODSIDE DRIVE/OAKCREST**  
Edgewood Avenue to Mountain Brow Boulevard

WARD

6

PROJECT GROUP

P

RELATED PROJECTS

31

32

**EXISTING FACILITY: SIDEWALK AND SIGNED CYCLING ROUTE****PROPOSED FACILITY: SIDEWALK AND SIGNED CYCLING ROUTE****CONTEXT**

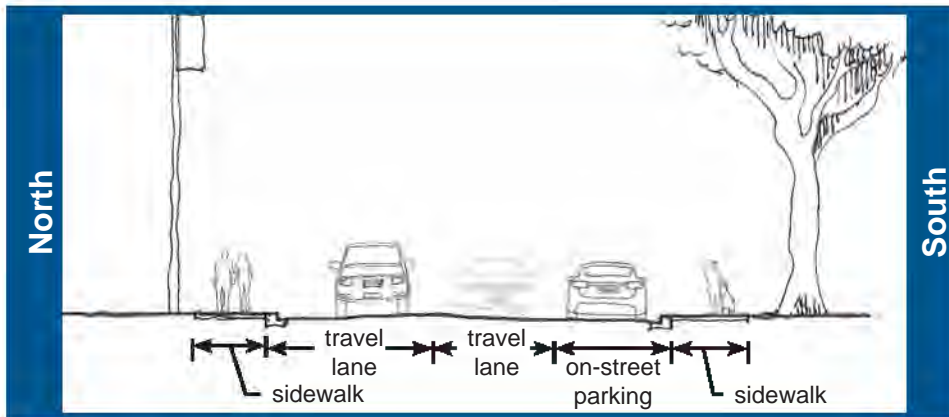
AADT:	<3000 <sup>1</sup>
Speed (km/h):	40
No. of Lanes:	2
R.O.W. Width:	20.117m
Road Characterization:	Local
Project Location:	City R.O.W.
Destination:	Sherwood Secondary School, Mountain Brow Trail (existing)
Cultural Areas of Interest:	

33

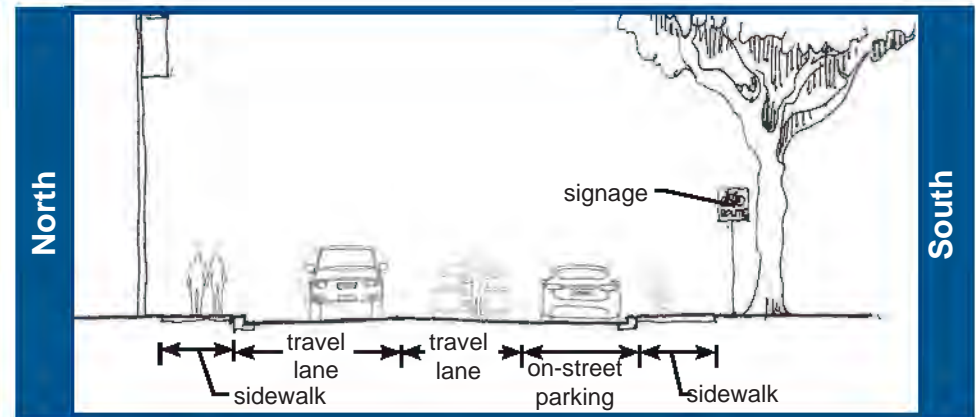
## HIGH STREET/WOODSIDE DRIVE/OAKCREST

Edgewood Avenue to Mountain Brow Boulevard

### EXISTING SECTION



### PROPOSED SECTION



### FACILITIES

Existing Facility:	<b>Sidewalk and Signed Cycling Route</b>
Proposed Facility:	<b>Sidewalk and Signed Cycling Route</b>
Existing Facility Width:	1.5m (sidewalk)
Proposed Facility Width:	1.5m (sidewalk - no upgrades)
Segment Length:	465m
Average Slope:	1.79%
Facility Location:	Both sides

Status:	Existing
Alternate Route:	No
Trail Impact Score:	31
Signage:	Wayfinding, Branding
Lighting:	Existing Street Lighting
Site Furnishings:	None Recommended



33

**HIGH STREET/WOODSIDE DRIVE/OAKCREST**

Edgewood Avenue to Mountain Brow Boulevard

**IMPLEMENTATION**

Project Horizon:	Long-Term
Implementation Responsibility:	Landscape Architectural Services
High Level Cost Estimate:	\$5,000.00
Surface:	Concrete
Land Ownership:	City of Hamilton
Stakeholders:	N/A
Permits and Studies:	N/A
Archaeological Potential:	No
Maintenance:	Standard maintenance for concrete surface and pavement marking
Public Engagement:	N/A

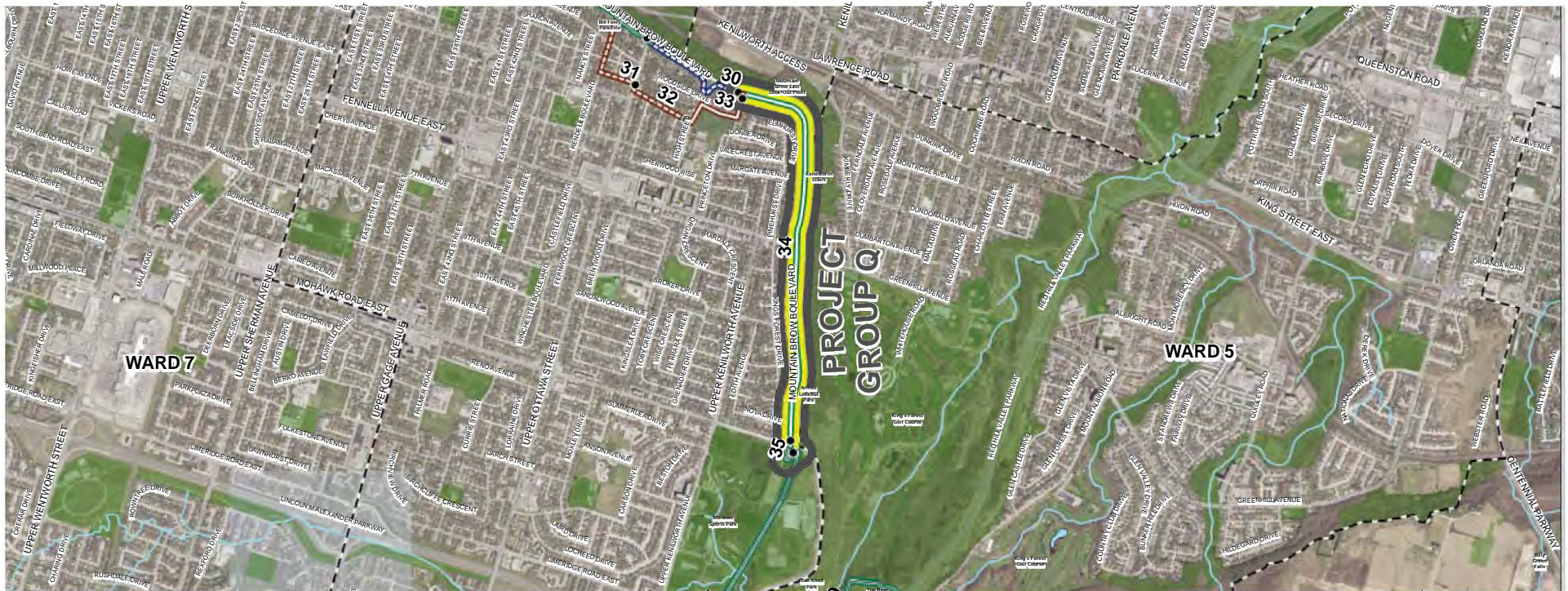
**RATIONALE, COMMENTS AND FEASIBILITY CONSIDERATIONS**

- This route was chosen because the facilities could not be accommodated along Mountain Brow Boulevard without major infrastructural investment.
- The route shown is per the existing Cycling Master Plan (2009)

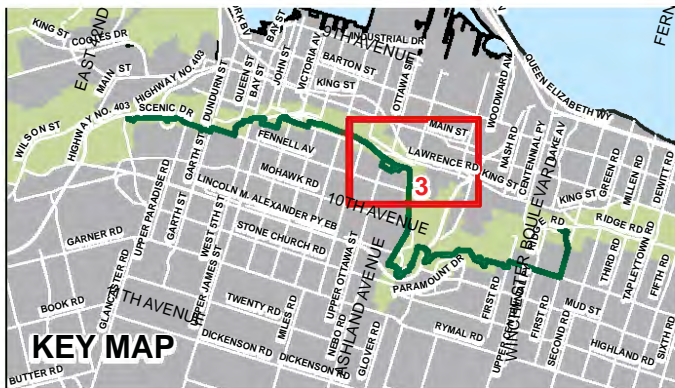
NOTES (1) = assumed based on land use context and road classification

# 34

## EXISTING MOUNTAIN BROW TRAIL Oakcrest Drive to Mohawk Road East



### KEY MAP



### LEGEND





34

## EXISTING MOUNTAIN BROW TRAIL

Oakcrest Drive to Mohawk Road East

WARD

6

PROJECT GROUP

Q

RELATED PROJECTS

35



EXISTING FACILITY: MULTI-USE TRAIL

PROPOSED FACILITY: MULTI-USE TRAIL



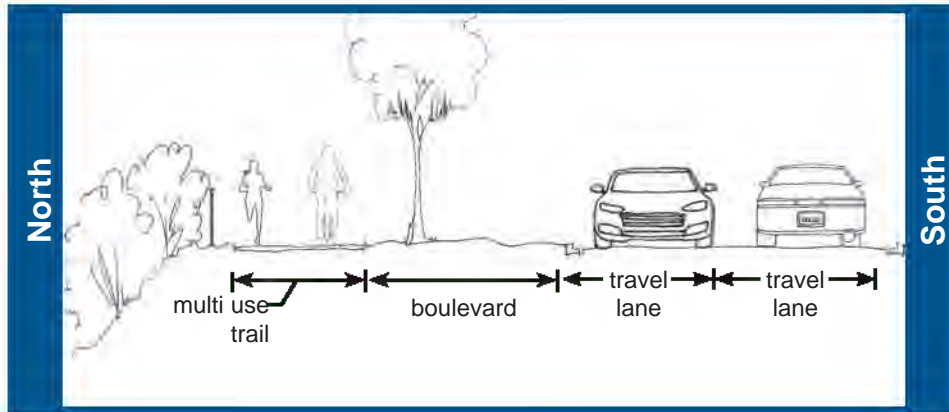
### CONTEXT

AADT:	N/A
Speed (km/h):	N/A
No. of Lanes:	N/A
R.O.W. Width:	N/A
Road Characterization:	Trail
Project Location:	Open Space
Destination:	Vistas 1 to 40, Mountain Brow East Lookout Point, Kenilworth Stairs, Escarpment Rail Trail, Arnes Lookout, Matt Broman Park, Mohawk Sports Park, Mohawk 4-Ice Centre
Cultural Areas of Interest:	

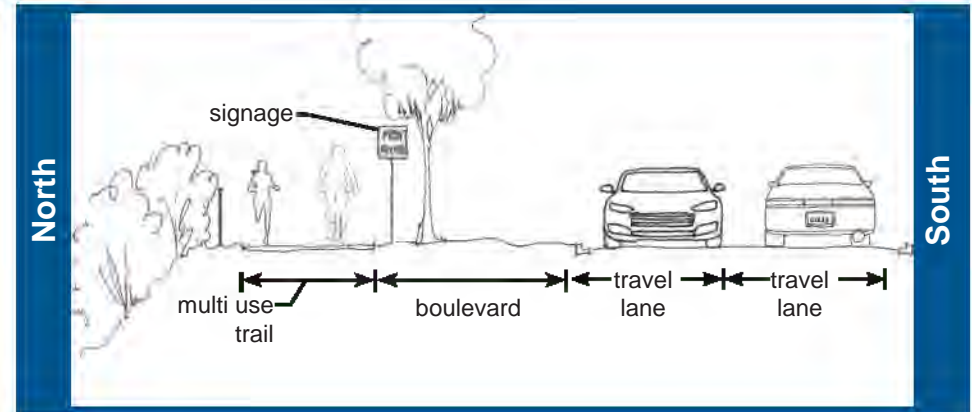
# 34

## EXISTING MOUNTAIN BROW TRAIL Oakcrest Drive to Mohawk Road East

### EXISTING SECTION



### PROPOSED SECTION



### FACILITIES

Existing Facility:	<b>Multi-Use Trail</b>	Status:	Existing
Proposed Facility:	<b>Multi-Use Trail</b>	Alternate Route:	No
Existing Facility Width:	3.0m	Trail Impact Score:	35
Proposed Facility Width:	3.0m	Signage:	Trailhead, Branding
Segment Length:	2160m	Lighting:	Existing Solar Lights
Average Slope:	1.92%	Site Furnishings:	No additional site furnishing
Facility Location:	North and East		



## 34

**EXISTING MOUNTAIN BROW TRAIL**

Oakcrest Drive to Mohawk Road East

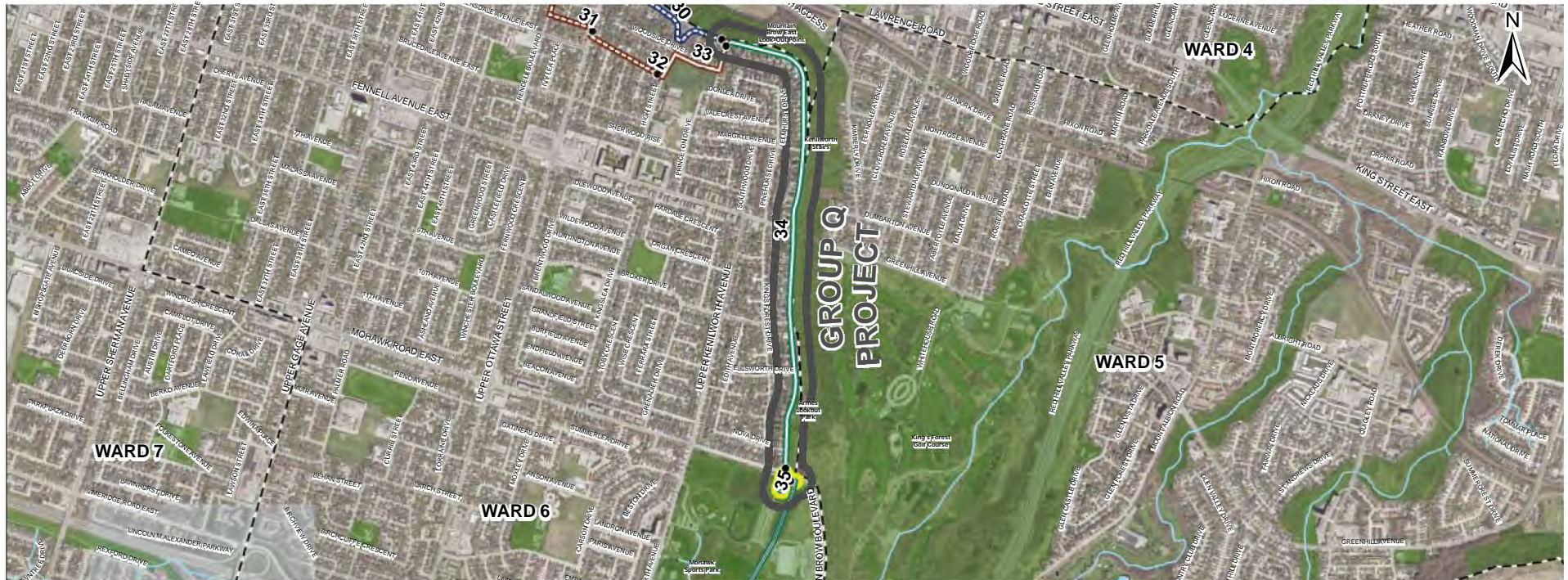
**IMPLEMENTATION**

Project Horizon:	Medium-Term
Implementation Responsibility:	Landscape Architectural Services
High Level Cost Estimate:	\$22,000.00
Surface:	Asphalt
Land Ownership:	City of Hamilton
Stakeholders:	Niagara Escarpment Commission
Permits and Studies:	Permits: N.E.C.
Archaeological Potential:	Yes
Maintenance:	Standard maintenance for fence and asphalt surface
Public Engagement:	N/A

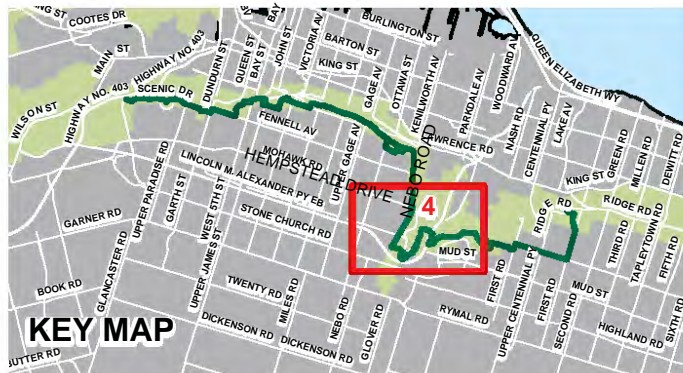
**RATIONALE, COMMENTS AND FEASIBILITY CONSIDERATIONS**

- Site furnishing and lighting fixtures in this location are considered the MBT Standard.
- Public expressed desire for washroom facilities at Kenilworth Stairs

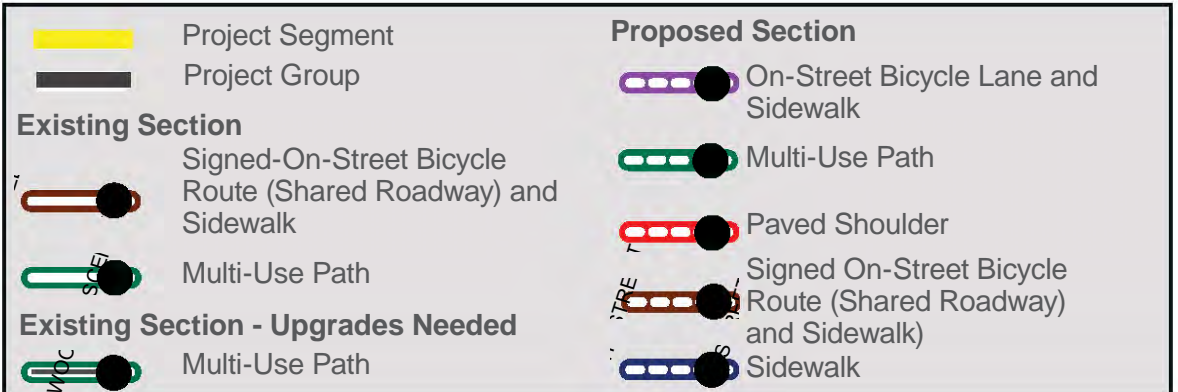
# 35 EXISTING ESCARPMENT RAIL TRAIL ACCESS



## KEY MAP



## LEGEND





35

## EXISTING ESCARPMENT RAIL TRAIL ACCESS

WARD

6

PROJECT GROUP

Q

RELATED PROJECTS

34



EXISTING FACILITY: MULTI-USE TRAIL

PROPOSED FACILITY: MULTI-USE TRAIL

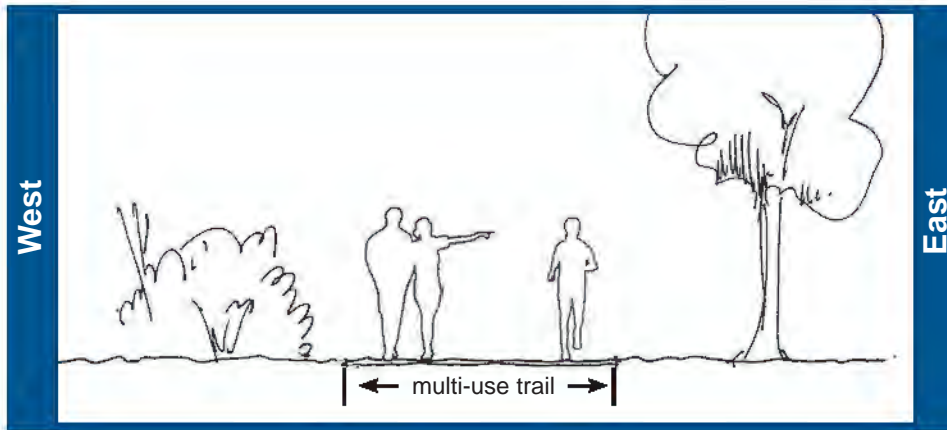


## CONTEXT

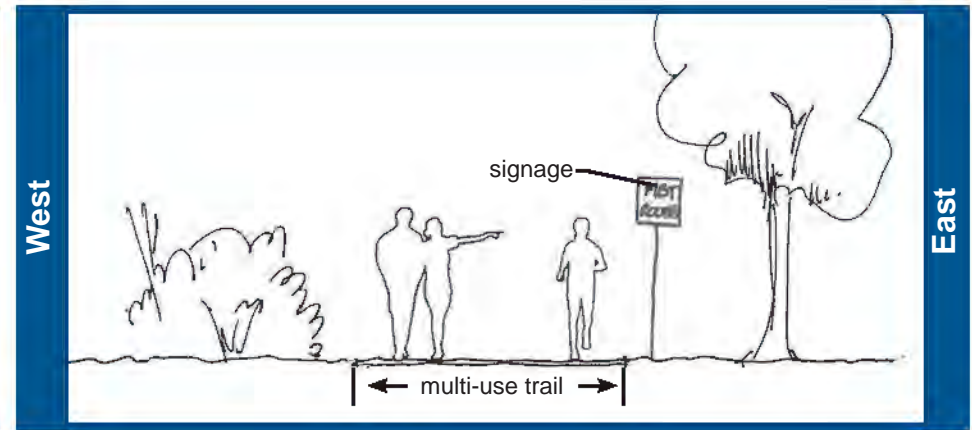
AADT:	N/A
Speed (km/h):	N/A
No. of Lanes:	N/A
R.O.W. Width:	N/A
Road Characterization:	Trail
Project Location:	City R.O.W.
Destination:	Matt Broman Park, Escarpment Rail Trail, Mohawk Sports Park, Mohawk 4-Ice Centre
Cultural Areas of Interest:	

## 35 EXISTING ESCARPMENT RAIL TRAIL ACCESS

### EXISTING SECTION



### PROPOSED SECTION



### FACILITIES

Existing Facility:	<b>Multi-Use Trail</b>	Status:	Existing
Proposed Facility:	<b>Multi-Use Trail</b>	Alternate Route:	No
Existing Facility Width:	4.0m	Trail Impact Score:	30
Proposed Facility Width:	4.0m	Signage:	Trailhead, Branding
Segment Length:	170m	Lighting:	No existing lighting. Natural area - lighting not desirable
Average Slope:	N/A	Site Furnishings:	None recommended
Facility Location:	N/A		



## 35 EXISTING ESCARPMENT RAIL TRAIL ACCESS

### IMPLEMENTATION

Project Horizon:	Medium-Term
Implementation Responsibility:	Landscape Architectural Services
High Level Cost Estimate:	\$2,000.00
Surface:	Asphalt
Land Ownership:	City of Hamilton
Stakeholders:	N.E.C.
Permits and Studies:	N/A
Archaeological Potential:	No
Maintenance:	Standard maintenance for asphalt surface
Public Engagement:	N/A

### RATIONALE, COMMENTS AND FEASIBILITY CONSIDERATIONS

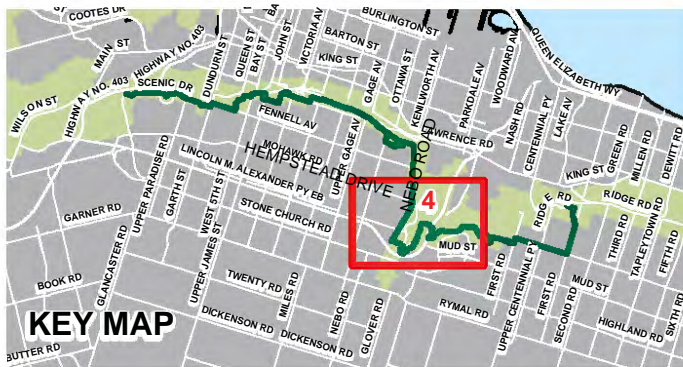
- This route was chosen because Mountain Brow Boulevard (Mohawk Road East to Arbour Road) presents challenges beyond the scope of typical trail development; should a future road construction project be initiated along Mountain Brow Boulevard, the Mountain Brow Trail should be considered as part of that construction

# 36

## EXISTING ESCARPMENT RAIL TRAIL Mohawk Road East to Arbour Road



### KEY MAP



### LEGEND





36

## EXISTING ESCARPMENT RAIL TRAIL

Mohawk Road East to Arbour Road

WARD

6

PROJECT GROUP

R

RELATED PROJECTS



EXISTING FACILITY: MULTI-USE TRAIL

PROPOSED FACILITY: MULTI-USE TRAIL



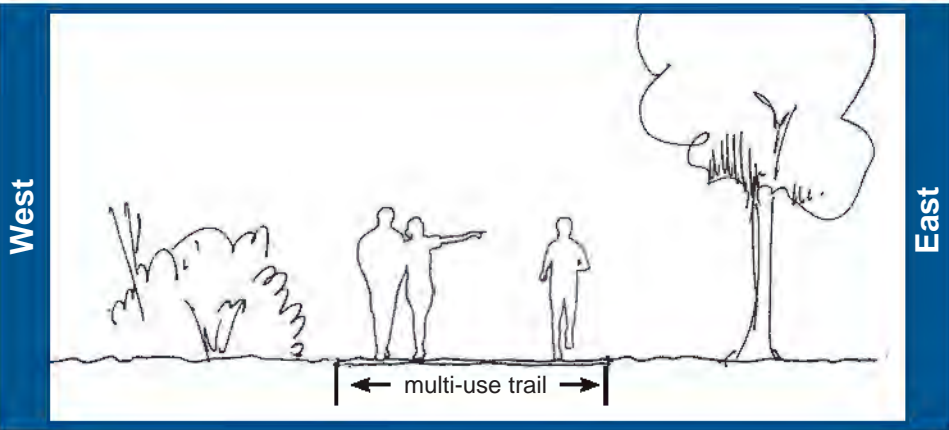
### CONTEXT

AADT:	N/A
Speed (km/h):	N/A
No. of Lanes:	N/A
R.O.W. Width:	N/A
Road Characterization:	Trail
Project Location:	Open Space
Destination:	Matt Broman Park, Escarpment Rail Trail, Mohawk Sports Park, Mohawk 4-Ice Centre, Albion Falls
Cultural Areas of Interest:	

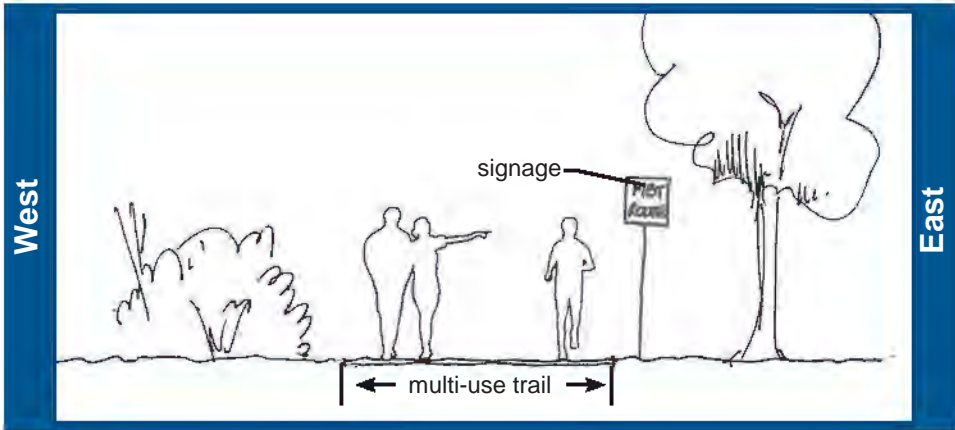
36

# EXISTING ESCARPMENT RAIL TRAIL Mohawk Road East to Arbour Road

## EXISTING SECTION



## PROPOSED SECTION



## FACILITIES

Existing Facility:	Multi-Use Trail	Status:	Upgrades Needed
Proposed Facility:	Multi-Use Trail - Upgrades	Alternate Route:	No
Existing Facility Width:	3.5m	Trail Impact Score:	45
Proposed Facility Width:	3.5m	Signage:	Wayfinding, Branding
Segment Length:	1930m	Lighting:	No existing lighting. Natural area - lighting not desirable
Average Slope:	8.44%	Site Furnishings:	None recommended
Facility Location:	N/A		



## 36

**EXISTING ESCARPMENT RAIL TRAIL**  
Mohawk Road East to Arbour Road**IMPLEMENTATION**

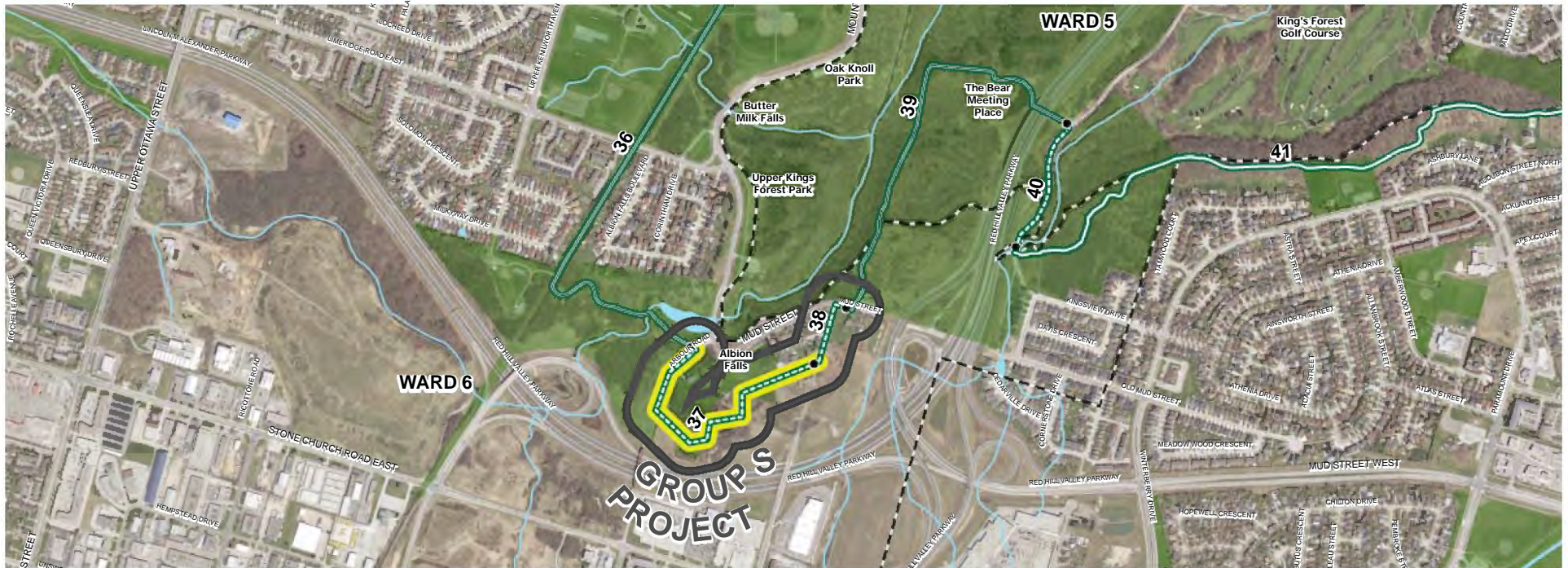
Project Horizon:	Medium-Term
Implementation Responsibility:	Landscape Architectural Services
High Level Cost Estimate:	\$410,000.00
Surface:	Granular/Partially Paved (existing); Asphalt (proposed)
Land Ownership:	City of Hamilton
Stakeholders:	Hamilton Conservation Authority, N.E.C.
Permits and Studies:	Permits: H.C.A.; Studies: Archaeological, Geotechnical
Archaeological Potential:	Yes
Maintenance:	Standard maintenance for asphalt and granular surfaces
Public Engagement:	Per LAS standard practice

**RATIONALE, COMMENTS AND FEASIBILITY CONSIDERATIONS**

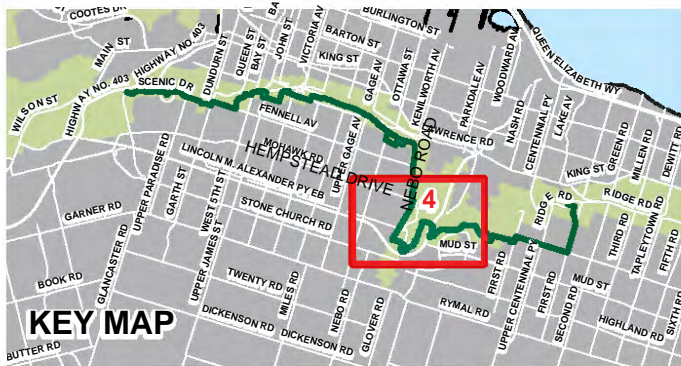
- This route was chosen because Mountain Brow Boulevard (Mohawk Road East to Arbour Road) presents challenges beyond the scope of typical trail development; should a future road construction project be initiated along Mountain Brow Boulevard, the Mountain Brow Trail should be considered as part of that construction

# 37

## FUTURE MOUNTAIN BROW TRAIL Arbour Road to Pritchard



### KEY MAP



### LEGEND

	Project Segment		Proposed Section On-Street Bicycle Lane and Sidewalk
	Project Group		Multi-Use Path
	Existing Section Signed-On-Street Bicycle Route (Shared Roadway) and Sidewalk		Paved Shoulder
	Multi-Use Path		Signed On-Street Bicycle Route (Shared Roadway) and Sidewalk
	Existing Section - Upgrades Needed Multi-Use Path		Sidewalk



37

# FUTURE MOUNTAIN BROW TRAIL

Arbour Road to Pritchard

WARD

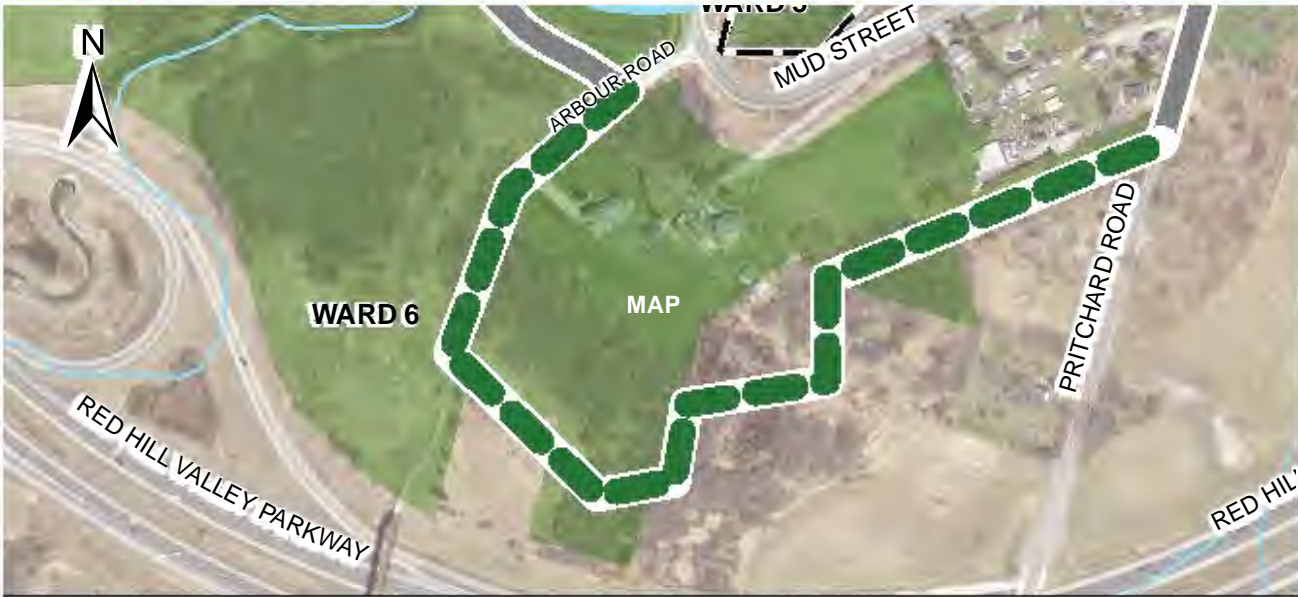
6

PROJECT GROUP

S

RELATED PROJECTS

38



EXISTING FACILITY: NONE

PROPOSED FACILITY: MULTI-USE TRAIL



## CONTEXT

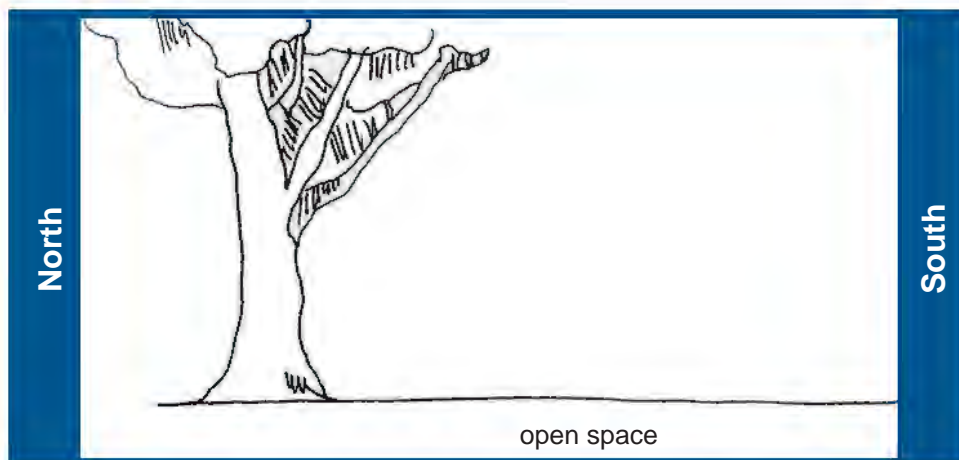
AADT:	N/A
Speed (km/h):	N/A
No. of Lanes:	N/A
R.O.W. Width:	N/A
Road Characterization:	Trail
Project Location:	Open Space
Destination:	Escarpment Rail Trail, Albion Falls, Red Hill Valley Trail, East Mountain Trail Loop
Cultural Areas of Interest:	

## 37

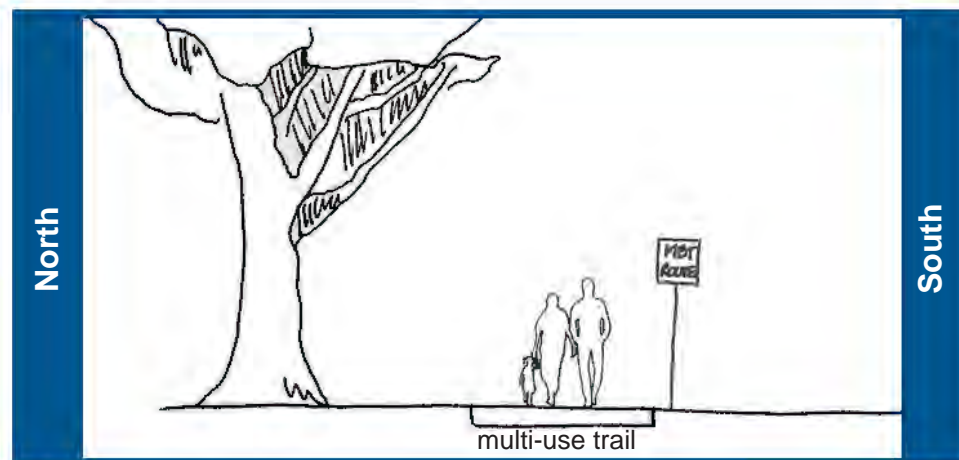
# FUTURE MOUNTAIN BROW TRAIL

## Arbour Road to Pritchard

### EXISTING SECTION



### PROPOSED SECTION



### FACILITIES

Existing Facility:	<b>None</b>	Status:	Planned Future
Proposed Facility:	<b>Multi-Use Trail</b>	Alternate Route:	No
Existing Facility Width:	N/A	Trail Impact Score:	34
Proposed Facility Width:	3.0m	Signage:	Wayfinding, Branding
Segment Length:	775m	Lighting:	No existing lighting. Natural area - lighting not desirable
Average Slope:	8.44%	Site Furnishings:	None recommended
Facility Location:	N/A		



## 37

**FUTURE MOUNTAIN BROW TRAIL**

Arbour Road to Pritchard

**IMPLEMENTATION**

Project Horizon:	Short-Term
Implementation Responsibility:	Landscape Architectural Services
High Level Cost Estimate:	\$570,000.00
Surface:	Asphalt
Land Ownership:	City of Hamilton
Stakeholders:	Niagara Escarpment Commission, Hamilton Conservation Authority
Permits and Studies:	Permits: N.E.C., H.C.A; Studies: Archaeological, Geotechnical
Archaeological Potential:	Yes
Maintenance:	Standard maintenance for asphalt surface
Public Engagement:	Per LAS standard practice

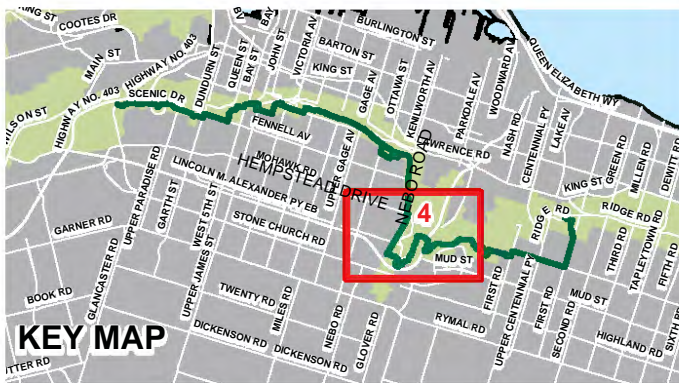
**RATIONALE, COMMENTS AND FEASIBILITY CONSIDERATIONS**

- Trail implementation anticipated in 2018; wayfinding and branding to be completed as separate phase of work

# 38 PRITCHARD ROAD



## KEY MAP



## LEGEND

	Project Segment		Proposed Section
	Project Group		On-Street Bicycle Lane and Sidewalk
	Existing Section		Multi-Use Path
	Signed-On-Street Bicycle Route (Shared Roadway) and Sidewalk		Paved Shoulder
	Multi-Use Path		Signed On-Street Bicycle Route (Shared Roadway) and Sidewalk
	Existing Section - Upgrades Needed		Sidewalk
	Multi-Use Path		



# 38 PRITCHARD ROAD

WARD

6

PROJECT GROUP

S

RELATED PROJECTS

37



EXISTING FACILITY: NONE

PROPOSED FACILITY: MULTI-USE TRAIL

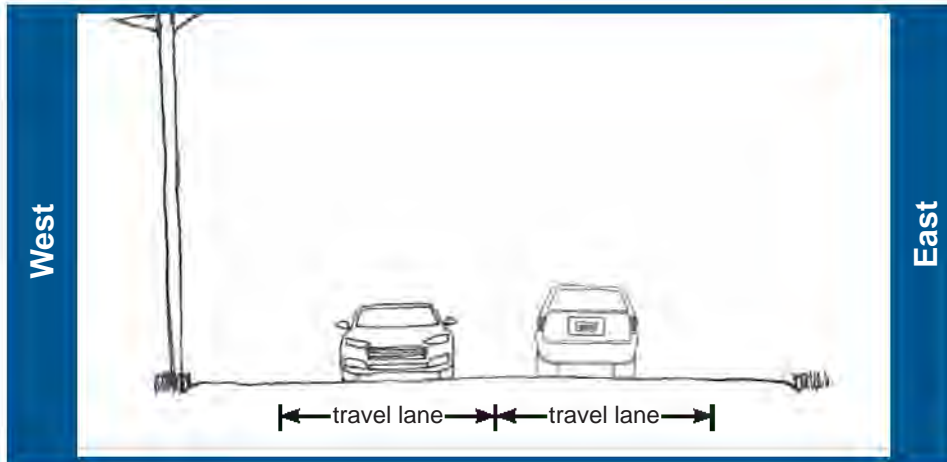


## CONTEXT

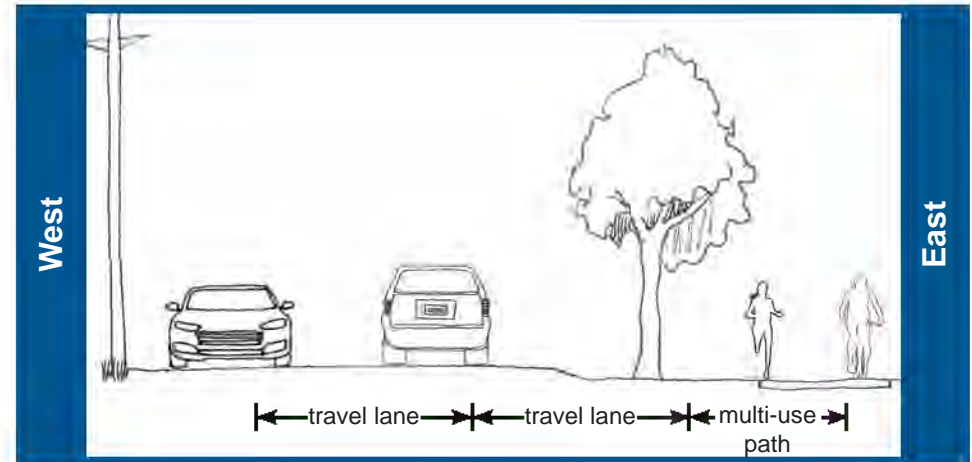
AADT:	N/A
Speed (km/h):	50
No. of Lanes:	2
R.O.W. Width:	36.576m
Road Characterization:	Minor Arterial
Project Location:	City R.O.W.
Destination:	Albion Falls, Red Hill Valley Trail, East Mountain Trail Loop
Cultural Areas of Interest:	

## 38 PRITCHARD ROAD

### EXISTING SECTION



### PROPOSED SECTION



### FACILITIES

Existing Facility:	None	Status:	Planned Future
Proposed Facility:	Multi-Use Trail	Alternate Route:	No
Existing Facility Width:	N/A	Trail Impact Score:	30
Proposed Facility Width:	3.0m	Signage:	Wayfinding, Branding
Segment Length:	200m	Lighting:	Existing street lighting may be adequate. Further study required. MBT branded fixtures may be desirable
Average Slope:	8.44%	Site Furnishings:	None recommended
Facility Location:	West		



## 38 PRITCHARD ROAD

### IMPLEMENTATION

Project Horizon:	Short-Term
Implementation Responsibility:	Landscape Architectural Services
High Level Cost Estimate:	\$150,000.00
Surface:	Asphalt
Land Ownership:	City of Hamilton
Stakeholders:	Niagara Escarpment Commission, Hamilton Conservation Authority
Permits and Studies:	Permits: N.E.C., H.C.A.; Studies: Archaeological, Geotechnical
Archaeological Potential:	Yes
Maintenance:	Standard maintenance for asphalt surface
Public Engagement:	N/A

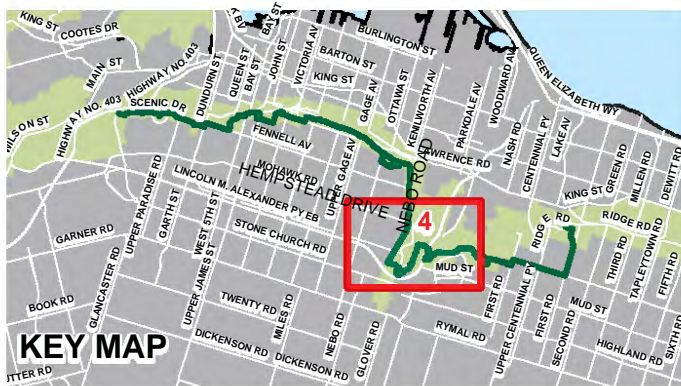
### RATIONALE, COMMENTS AND FEASIBILITY CONSIDERATIONS

- Trail implementation anticipated in 2018; wayfinding and branding to be completed as separate phase of work

## 39 RED HILL VALLEY TRAIL



### KEY MAP



### LEGEND





# 39 RED HILL VALLEY TRAIL

WARD

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T

PROJECT GROUP

RELATED PROJECTS

40



EXISTING FACILITY: MULTI-USE TRAIL

PROPOSED FACILITY: MULTI-USE TRAIL

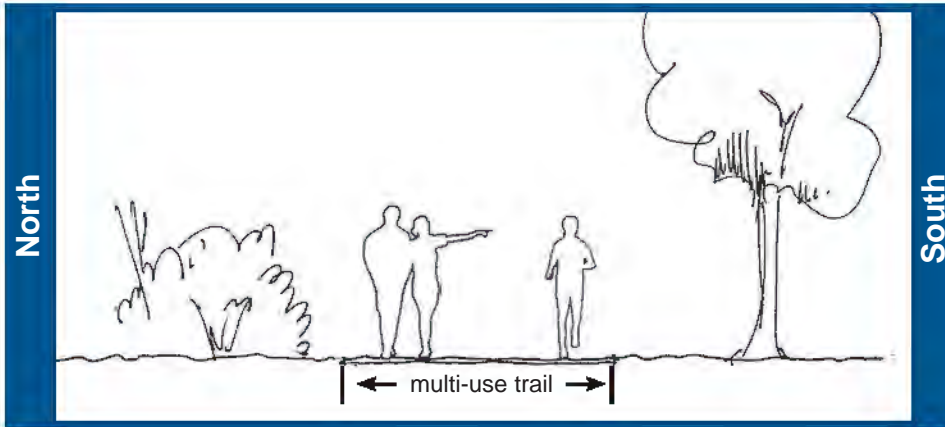


## CONTEXT

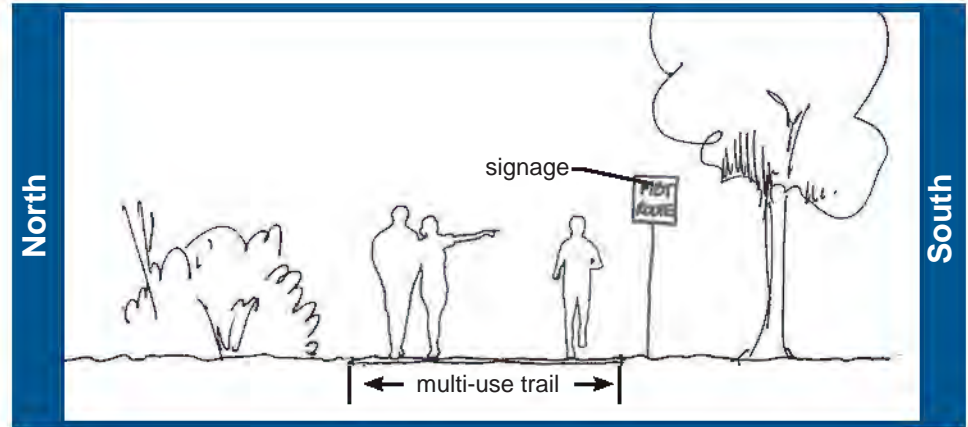
AADT:	N/A
Speed (km/h):	N/A
No. of Lanes:	N/A
R.O.W. Width:	N/A
Road Characterization:	Trail
Project Location:	Open Space
Destination:	Pritchard Falls, Albion Falls, Upper Kings Forest Park, Red Hill Valley Trail
Cultural Areas of Interest:	

## 39 RED HILL VALLEY TRAIL

### EXISTING SECTION



### PROPOSED SECTION



### FACILITIES

Existing Facility:	<b>Multi-Use Trail</b>	Status:	Upgrades Needed
Proposed Facility:	<b>Multi-Use Trail - Upgrades</b>	Alternate Route:	No
Existing Facility Width:	4.0m	Trail Impact Score:	45
Proposed Facility Width:	4.0m	Signage:	Wayfinding, Branding
Segment Length:	1130m	Lighting:	No existing lighting; natural area - lighting is not desirable
Average Slope:	12.11%	Site Furnishings:	None recommended
Facility Location:	N/A		



## 39 RED HILL VALLEY TRAIL

### IMPLEMENTATION

Project Horizon:	Long-Term
Implementation Responsibility:	Landscape Architectural Services
High Level Cost Estimate:	\$150,000.00
Surface:	Granular
Land Ownership:	City of Hamilton
Stakeholders:	Niagara Escarpment Commission, Hamilton Conservation Authority
Permits and Studies:	Permits: N.E.C., H.C.A.; Studies: EIS, Archaeological, Geotechnical
Archaeological Potential:	Yes
Maintenance:	Repairs to granular surface due to erosion, especially in steep slope locations
Public Engagement:	Per LAS standard practice

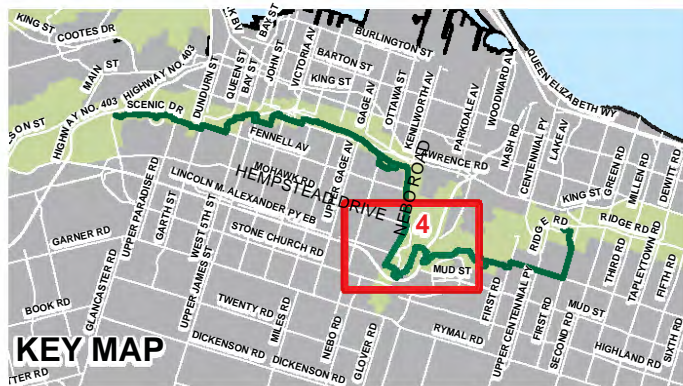
### RATIONALE, COMMENTS AND FEASIBILITY CONSIDERATIONS

- Existing conditions include woodlot and narrow access, making an asphalt trail challenging and perhaps undesirable; steep slopes prohibit formalized trail and require stabilization efforts; trail to remain granular with wayfinding and branding upgrades

# 40 FORMER MOUNT ALBION ROAD



## KEY MAP



## LEGEND





# 40 FORMER MOUNT ALBION ROAD

WARD

5

6

PROJECT GROUP

T

RELATED PROJECTS

39



EXISTING FACILITY: DECOMMISSIONED  
ROADWAY

PROPOSED FACILITY: MULTI-USE TRAIL

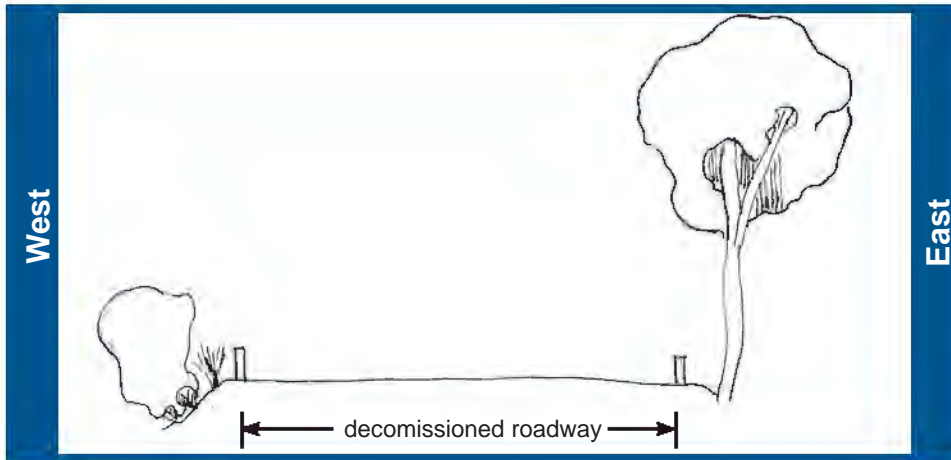


## CONTEXT

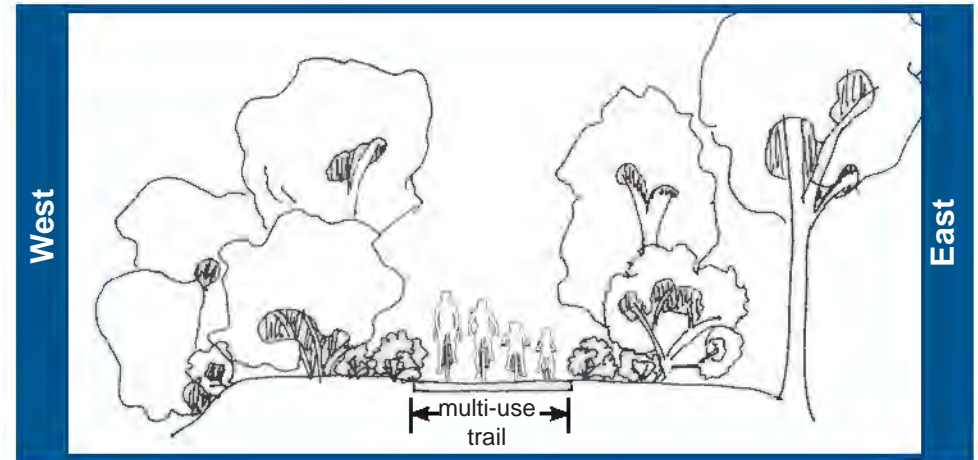
AADT:	N/A
Speed (km/h):	N/A
No. of Lanes:	N/A
R.O.W. Width:	N/A
Road Characterization:	Trail
Project Location:	Open Space
Destination:	Upper and Middle Glendale Falls, Albion Falls, East Mountain Trail Loop
Cultural Areas of Interest:	

# 40 FORMER MOUNT ALBION ROAD

## EXISTING SECTION



## PROPOSED SECTION



## FACILITIES

Existing Facility:	<b>Decommissioned Roadway</b>	Status:	Upgrades Needed
Proposed Facility:	<b>Multi-Use Trail - Upgrades</b>	Alternate Route:	No
Existing Facility Width:	9.0m (road width)	Trail Impact Score:	32
Proposed Facility Width:	4.0m	Signage:	Trailhead, Wayfinding, Branding
Segment Length:	370m	Lighting:	Natural area - no lighting recommended
Average Slope:	7.00%	Site Furnishings:	None recommended
Facility Location:	N/A		



## 40 FORMER MOUNT ALBION ROAD

### IMPLEMENTATION

Project Horizon:	Long-Term
Implementation Responsibility:	Landscape Architectural Services
High Level Cost Estimate:	\$190,000.00
Surface:	Asphalt
Land Ownership:	City of Hamilton
Stakeholders:	Niagara Escarpment Commission, Hamilton Conservation Authority
Permits and Studies:	Permits: N.E.C., H.C.A.; Studies: EIS, Archaeological, Geotechnical
Archaeological Potential:	Yes
Maintenance:	Standard maintenance for asphalt surface
Public Engagement:	Per LAS standard practice

### RATIONALE, COMMENTS AND FEASIBILITY CONSIDERATIONS

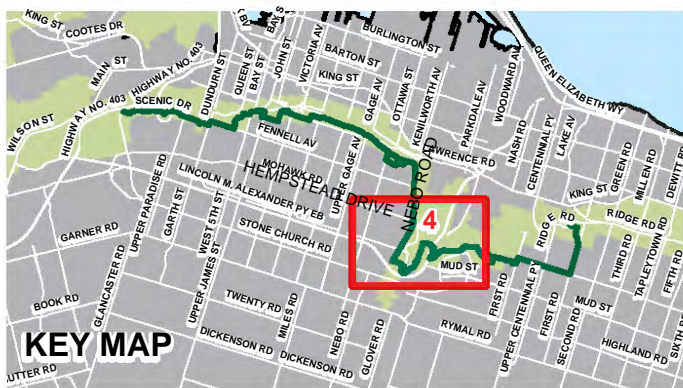
- Existing decommissioned road - potential for restoration efforts to provide trail and increase permeable surfaces.

# 41

## EXISTING EAST MOUNTAIN TRAIL LOOP Multi-Use Trail



### KEY MAP



### LEGEND





41

## EXISTING EAST MOUNTAIN TRAIL LOOP

Multi-Use Trail

WARD

5

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PROJECT GROUP

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RELATED PROJECTS

42



EXISTING FACILITY: MULTI-USE TRAIL

PROPOSED FACILITY: MULTI-USE TRAIL



### CONTEXT

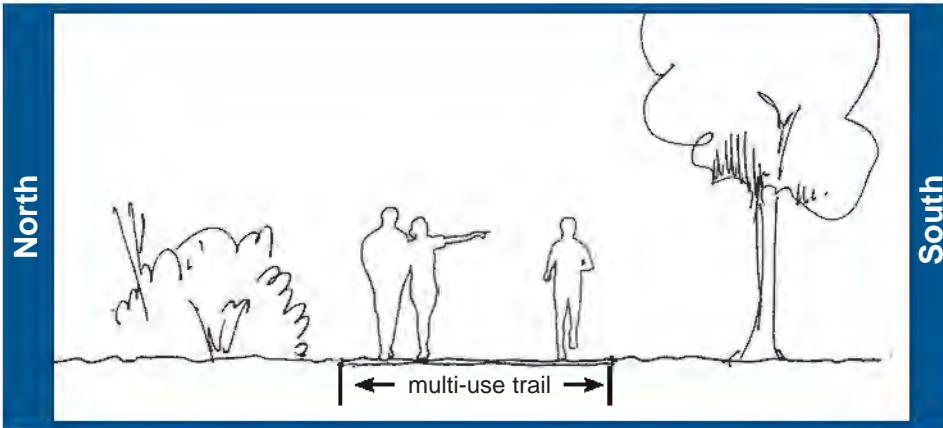
AADT:	N/A
Speed (km/h):	N/A
No. of Lanes:	N/A
R.O.W. Width:	N/A
Road Characterization:	Trail
Project Location:	Open Space
Destination:	Albion Falls, Red Hill Valley Trail, East Mountain Trail Loop, Paramount Park, Albion Estates Park, Felker's Falls Conservation Area
Cultural Areas of Interest:	

41

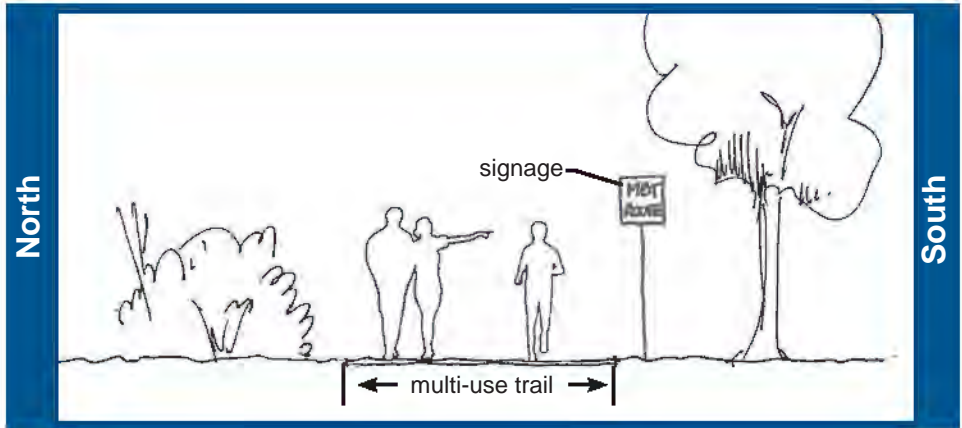
## EXISTING EAST MOUNTAIN TRAIL LOOP

### Multi-Use Trail

#### EXISTING SECTION



#### PROPOSED SECTION



#### FACILITIES

Existing Facility:	<b>Multi-Use Trail</b>	Status:	Existing
Proposed Facility:	<b>Multi-Use Trail</b>	Alternate Route:	No
Existing Facility Width:	4.0m	Trail Impact Score:	35
Proposed Facility Width:	4.0m	Signage:	Wayfinding, Branding
Segment Length:	1750m	Lighting:	No existing lighting - adjacent to residential area. Lighting may not be desirable
Average Slope:	3.20%	Site Furnishings:	None recommended
Facility Location:	N/A		



41

## EXISTING EAST MOUNTAIN TRAIL LOOP

Multi-Use Trail

### IMPLEMENTATION

Project Horizon:	Long-Term
Implementation Responsibility:	Landscape Architectural Services
High Level Cost Estimate:	\$18,000.00
Surface:	Asphalt
Land Ownership:	City of Hamilton, Hamilton Conservation Authority
Stakeholders:	Niagara Escarpment Commission, Hamilton Conservation Authority
Permits and Studies:	Permits: N.E.C., H.C.A.
Archaeological Potential:	No
Maintenance:	Standard maintenance for asphalt surface
Public Engagement:	N/A

### RATIONALE, COMMENTS AND FEASIBILITY CONSIDERATIONS

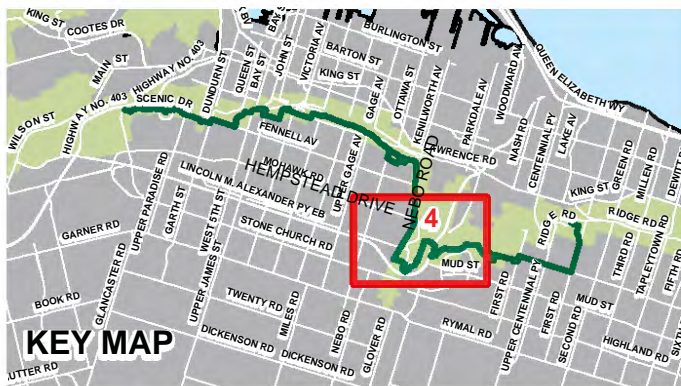
- Wayfinding and branding upgrades for this segment

# 42

## EXISTING MOUNTAIN BROW MULTI-USE TRAIL Felker's Falls



### KEY MAP



### LEGEND





42

## EXISTING MOUNTAIN BROW MULTI-USE TRAIL

Felker's Falls

WARD

9

PROJECT GROUP

U

RELATED PROJECTS

41



EXISTING FACILITY: MULTI-USE TRAIL

PROPOSED FACILITY: MULTI-USE TRAIL



### CONTEXT

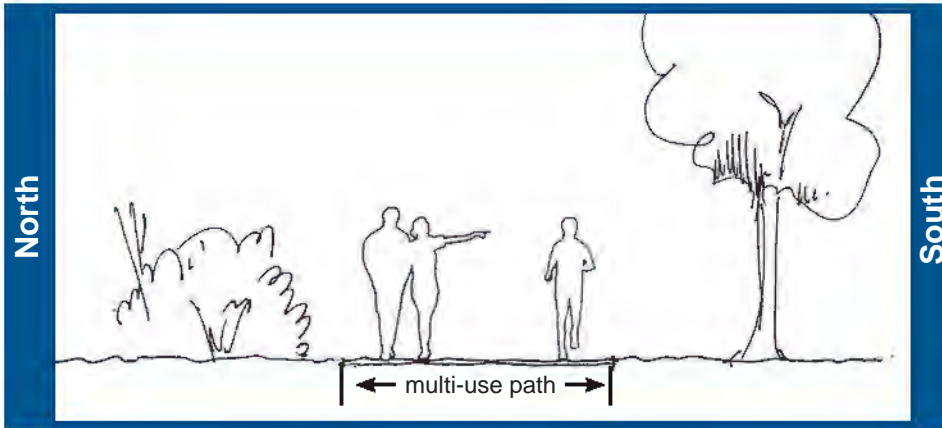
AADT:	N/A
Speed (km/h):	N/A
No. of Lanes:	N/A
R.O.W. Width:	N/A
Road Characterization:	Trail
Project Location:	Open Space
Destination:	East Mountain Trail Loop, Felker's Falls Conservation Area, Heritage Green Sports Park
Cultural Areas of Interest:	

42

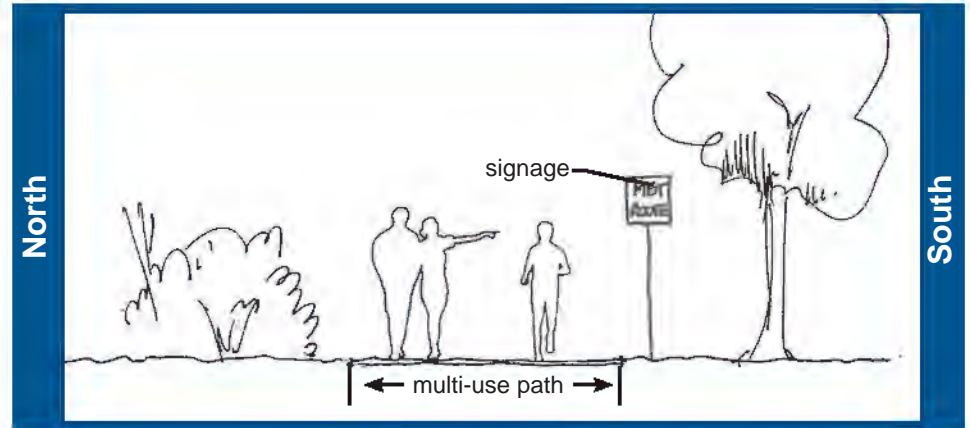
# EXISTING MOUNTAIN BROW MULTI-USE TRAIL

Felker's Falls

## EXISTING SECTION



## PROPOSED SECTION



## FACILITIES

Existing Facility:	<b>Multi-Use Trail</b>	Status:	Existing
Proposed Facility:	<b>Multi-Use Trail</b>	Alternate Route:	No
Existing Facility Width:	3.0m	Trail Impact Score:	35
Proposed Facility Width:	3.0m	Signage:	Wayfinding, Branding
Segment Length:	945m	Lighting:	No existing lighting - adjacent to residential area. Lighting is not desirable
Average Slope:	7.29%	Site Furnishings:	None recommended
Facility Location:	N/A		



42

## EXISTING MOUNTAIN BROW MULTI-USE TRAIL

### Felker's Falls

#### IMPLEMENTATION

Project Horizon:	Long-Term
Implementation Responsibility:	Landscape Architectural Services
High Level Cost Estimate:	\$10,000.00
Surface:	Asphalt
Land Ownership:	City of Hamilton, Hamilton Conservation Authority
Stakeholders:	Niagara Escarpment Commission, Hamilton Conservation Authority
Permits and Studies:	Permits: N.E.C., H.C.A.;
Archaeological Potential:	Yes
Maintenance:	Standard maintenance for asphalt surface
Public Engagement:	N/A

#### RATIONALE, COMMENTS AND FEASIBILITY CONSIDERATIONS

- Wayfinding and branding upgrades for this segment

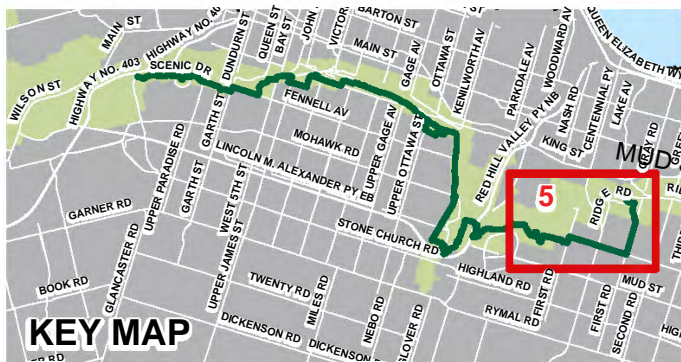
43

# HERITAGE GREEN SPORTS PARK

## Future Multi-Use Trail



### KEY MAP



### LEGEND

	Project Segment		Proposed Section On-Street Bicycle Lane and Sidewalk
	Project Group		Multi-Use Path
	Existing Section Signed-On-Street Bicycle Route (Shared Roadway) and Sidewalk		Paved Shoulder
	Multi-Use Path		Signed On-Street Bicycle Route (Shared Roadway) and Sidewalk
	Existing Section - Upgrades Needed Multi-Use Path		Sidewalk



43	HERITAGE GREEN SPORTS PARK Future Multi-Use Trail	WARD	PROJECT GROUP	RELATED PROJECTS
		9	V	44



EXISTING FACILITY: NONE

PROPOSED FACILITY: MULTI-USE TRAIL



CONTEXT

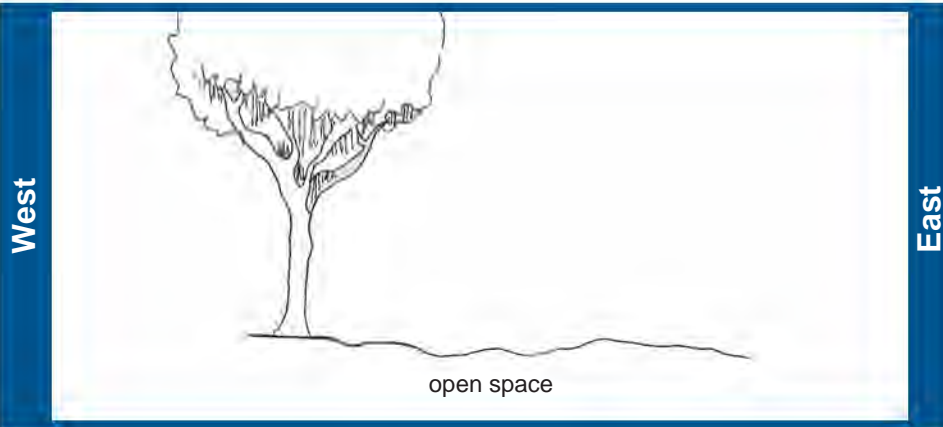
AADT:	N/A
Speed (km/h):	N/A
No. of Lanes:	N/A
R.O.W. Width:	N/A
Road Characterization:	Trail
Project Location:	Municipal Park
Destination:	East Mountain Trail Loop, Felker's Falls Conservation Area, Heritage Green Sports Park
Cultural Areas of Interest:	

43

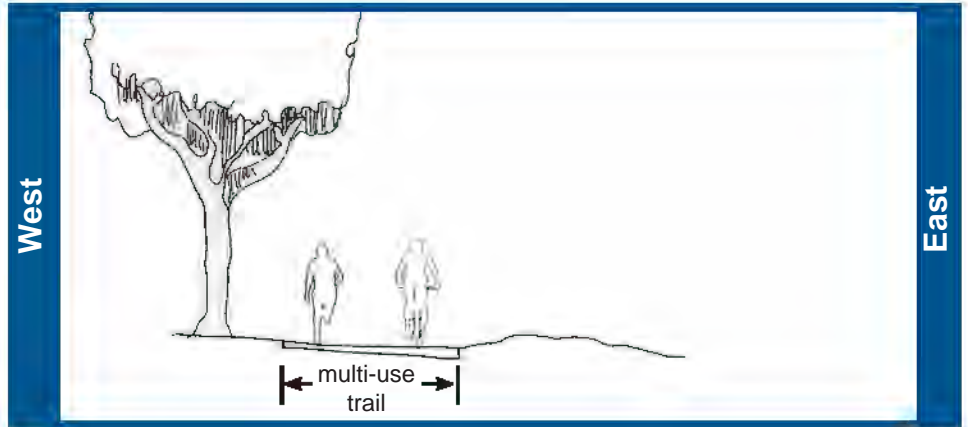
## HERITAGE GREEN SPORTS PARK

Future Multi-Use Trail

### EXISTING SECTION



### PROPOSED SECTION



### FACILITIES

Existing Facility:	<b>None</b>	Status:	Planned Future
Proposed Facility:	<b>Multi-Use Trail</b>	Alternate Route:	No
Existing Facility Width:	N/A	Trail Impact Score:	22
Proposed Facility Width:	3.0	Signage:	Trailhead, Wayfinding, Branding
Segment Length:	317.72	Lighting:	No lighting required
Average Slope:	9.01	Site Furnishings:	None recommended
Facility Location:	N/A		



43

**HERITAGE GREEN SPORTS PARK**

Future Multi-Use Trail

**IMPLEMENTATION**

Project Horizon:	Short-Term (trail), long-term (signage)
Implementation Responsibility:	Landscape Architectural Services
High Level Cost Estimate:	\$240,000.00
Surface:	Asphalt
Land Ownership:	City of Hamilton
Stakeholders:	Niagara Escarpment Commission, Hamilton Conservation Authority
Permits and Studies:	Permits: N.E.C., H.C.A.; Studies: Archaeological, Geotechnical
Archaeological Potential:	Yes
Maintenance:	Standard maintenance for asphalt surface
Public Engagement:	Per LAS standard practice

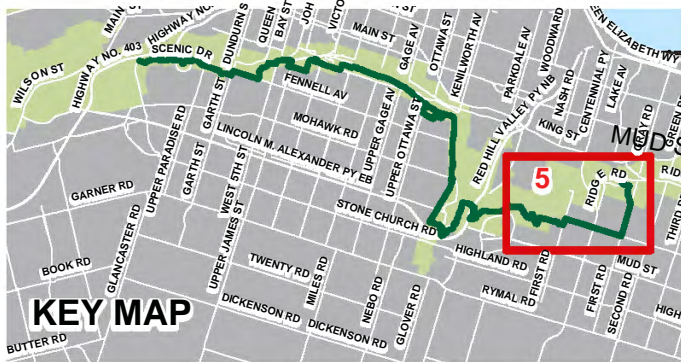
**RATIONALE, COMMENTS AND FEASIBILITY CONSIDERATIONS**

- Trail implementation anticipated in the short-term; wayfinding and branding to be completed as separate phase of work

# 44 HERITAGE GREEN SPORTS PARK Existing Multi-Use Trail



## KEY MAP



## LEGEND

	Project Segment		Proposed Section On-Street Bicycle Lane and Sidewalk
	Project Group		Multi-Use Path
	Existing Section Signed-On-Street Bicycle Route (Shared Roadway) and Sidewalk		Paved Shoulder
	Multi-Use Path		Signed On-Street Bicycle Route (Shared Roadway) and Sidewalk
	Existing Section - Upgrades Needed Multi-Use Path		Sidewalk



44

**EXISTING HERITAGE GREEN SPORTS PARK**

Existing Multi-Use Trail

WARD

9

PROJECT GROUP

V

RELATED PROJECTS

43



EXISTING FACILITY: MULTI-USE TRAIL

PROPOSED FACILITY: MULTI-USE TRAIL

**CONTEXT**

AADT: N/A

Speed (km/h): N/A

No. of Lanes: N/A

R.O.W. Width: N/A

Road Characterization: Trail

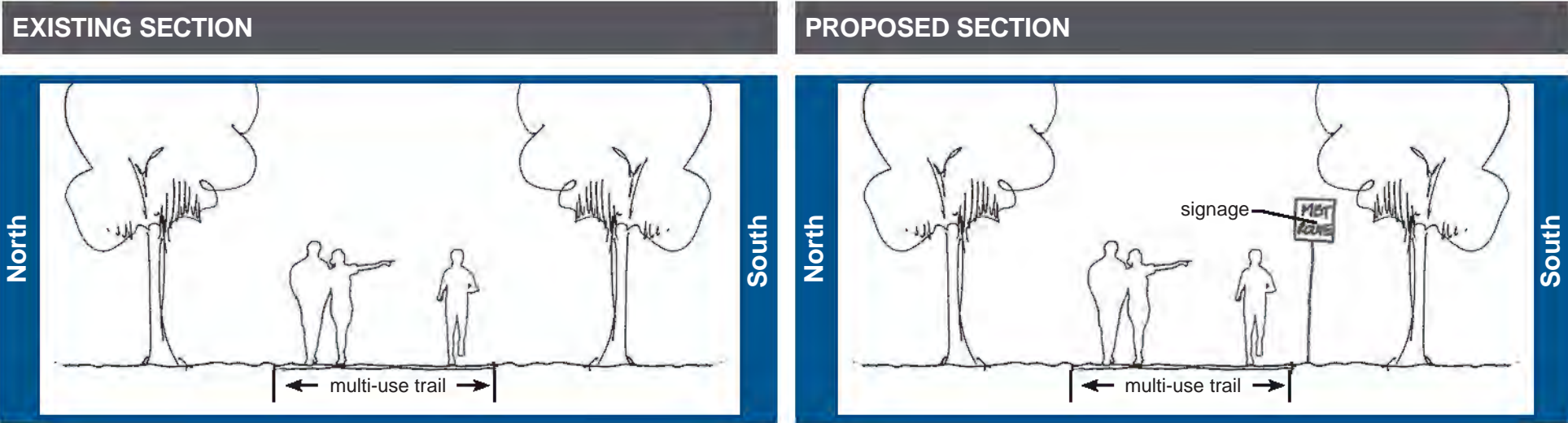
Project Location: Municipal Park

Destination: East Mountain Trail Loop, Felker's Falls Conservation Area, Heritage Green Sports Park

Cultural Areas of Interest:

44

HERITAGE GREEN SPORTS PARK  
Existing Multi-Use Trail



FACILITIES			
Existing Facility:	Multi-Use Trail	Status:	Existing
Proposed Facility:	Multi-Use Trail	Alternate Route:	No
Existing Facility Width:	3.0m	Trail Impact Score:	23
Proposed Facility Width:	3.0m	Signage:	Wayfinding, Branding
Segment Length:	500m	Lighting:	Existing Park Lights
Average Slope:	2.46%	Site Furnishings:	None recommended
Facility Location:	N/A		



## 44

**HERITAGE GREEN SPORTS PARK****Existing Multi-Use Trail****IMPLEMENTATION**

Project Horizon:	Long-Term
Implementation Responsibility:	Landscape Architectural Services
High Level Cost Estimate:	\$5,000.00
Surface:	Asphalt
Land Ownership:	City of Hamilton
Stakeholders:	Niagara Escarpment Commission
Permits and Studies:	Permits: N.E.C.;
Archaeological Potential:	Yes
Maintenance:	Standard maintenance for asphalt surface
Public Engagement:	N/A

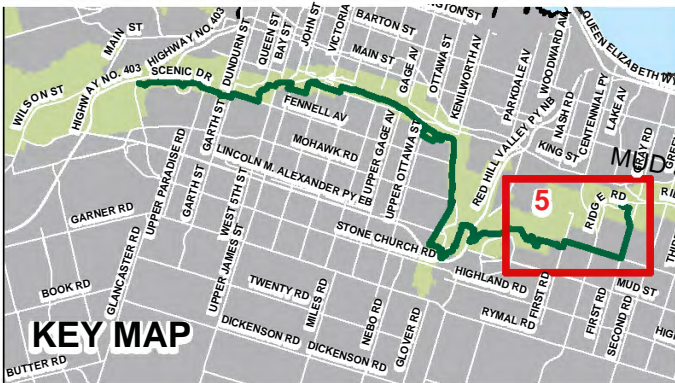
**RATIONALE, COMMENTS AND FEASIBILITY CONSIDERATIONS**

- Wayfinding and Branding upgrades for this segment

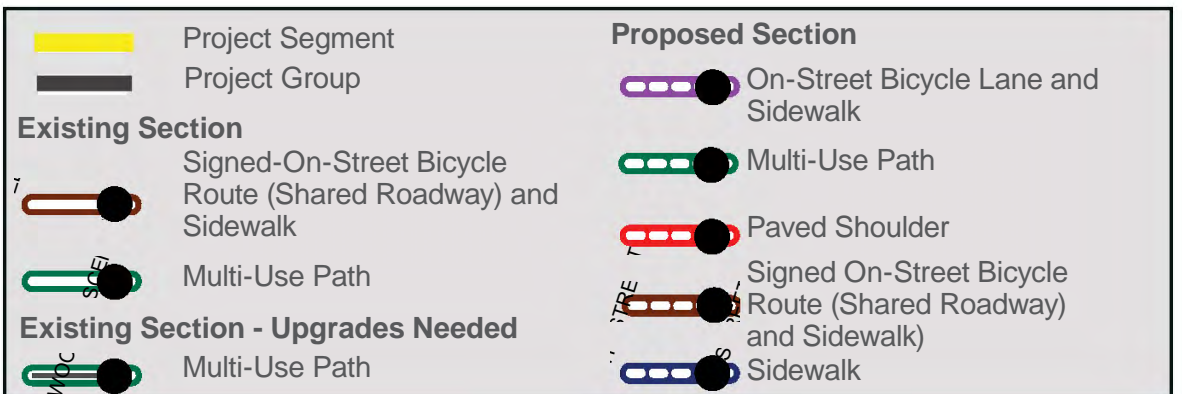
# 45 HERITAGE GREEN SPORTS PARK Future Multi-Use Trail Link



## KEY MAP



## LEGEND







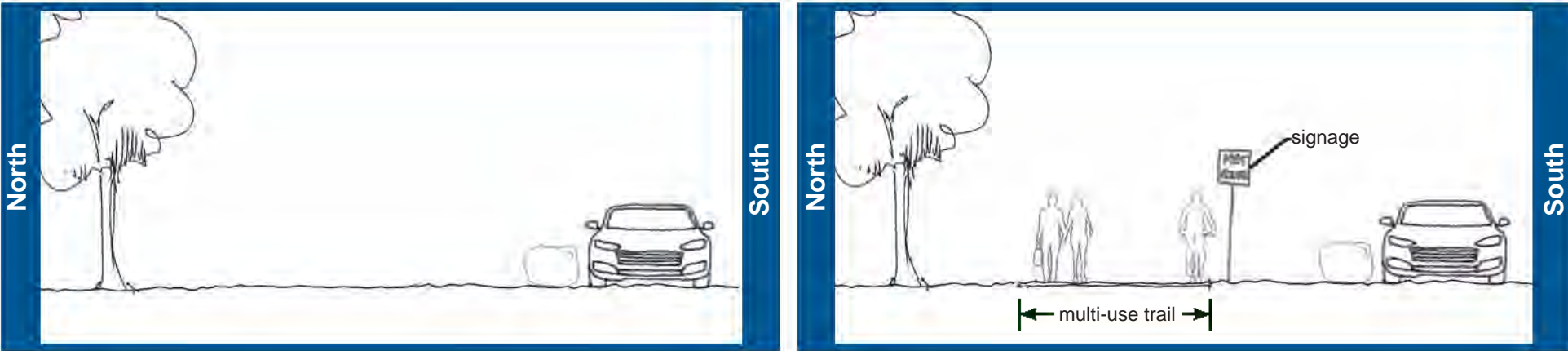
CONTEXT	
AADT:	N/A
Speed (km/h):	N/A
No. of Lanes:	N/A
R.O.W. Width:	N/A
Road Characterization:	Trail
Project Location:	Municipal Park
Destination:	East Mountain Trail Loop, Felker's Falls Conservation Area, Heritage Green Sports Park
Cultural Areas of Interest:	

45

HERITAGE GREEN SPORTS PARK  
Future Multi-Use Trail Link

EXISTING SECTION

PROPOSED SECTION



FACILITIES

Existing Facility:	None	Status:	Proposed Future
Proposed Facility:	Multi-Use Trail	Alternate Route:	No
Existing Facility Width:	N/A	Trail Impact Score:	20
Proposed Facility Width:	3.0m	Signage:	Wayfinding, Branding
Segment Length:	200m	Lighting:	No lighting required
Average Slope:	3.49%	Site Furnishings:	None recommended
Facility Location:	N/A		



45

**HERITAGE GREEN SPORTS PARK**

Future Multi-Use Trail Link

**IMPLEMENTATION**

Project Horizon:	Short-Term (trail), long-term (signage)
Implementation Responsibility:	Landscape Architectural Services
High Level Cost Estimate:	\$150,000.00
Surface:	Asphalt
Land Ownership:	City of Hamilton
Stakeholders:	N/A
Permits and Studies:	Studies: Archaeological, Geotechnical
Archaeological Potential:	Yes
Maintenance:	Standard maintenance for asphalt surface
Public Engagement:	Per LAS standard practice

**RATIONALE, COMMENTS AND FEASIBILITY CONSIDERATIONS**

- Trail implementation anticipated in the short-term; wayfinding and branding to be completed as separate phase of work

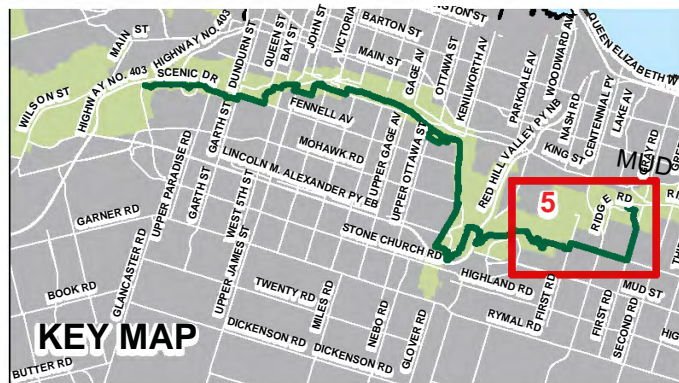
46

## FIRST ROAD WEST/GREEN MOUNTAIN ROAD WEST

Heritage Green Sports Park to 200m East of First Road West



### KEY MAP



### LEGEND





46

**FIRST ROAD WEST/GREEN MOUNTAIN ROAD WEST**

Heritage Green Sports Park to 200m East of First Road West

WARD

9

PROJECT GROUP

W

RELATED PROJECTS

45

47



EXISTING FACILITY: NONE

PROPOSED FACILITY: BIKE LANES  
AND SIDEWALK**CONTEXT**

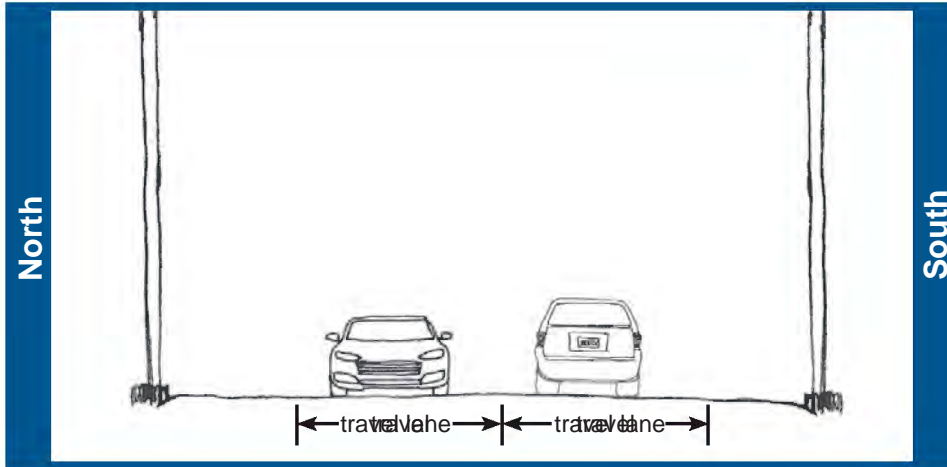
AADT:	N/A
Speed (km/h):	60
No. of Lanes:	2
R.O.W. Width:	26.213m
Road Characterization:	Collector
Project Location:	City R.O.W.
Destination:	East Mountain Trail Loop, Felker's Falls Conservation Area, Heritage Green Sports Park
Cultural Areas of Interest:	

46

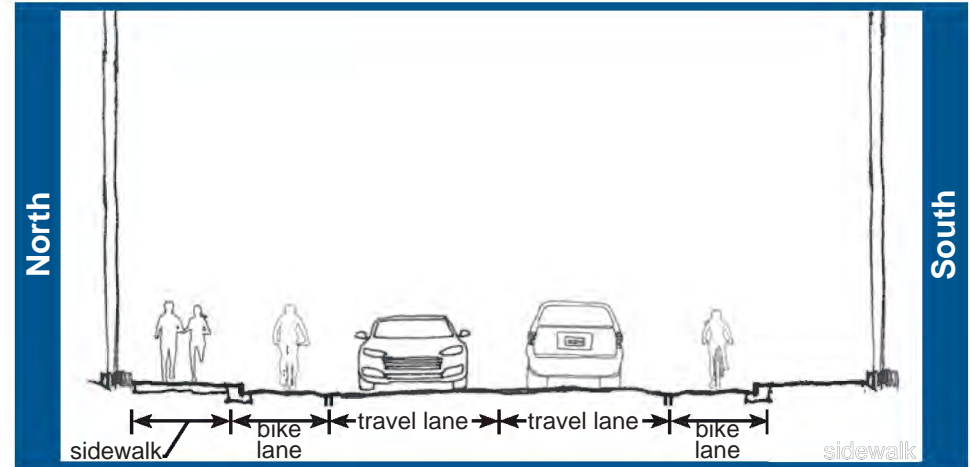
## FIRST ROAD WEST/GREEN MOUNTAIN ROAD WEST

Heritage Green Sports Park to 200m East of First Road West

### EXISTING SECTION



### PROPOSED SECTION



### FACILITIES

Existing Facility:	None	Status:	Planned Future
Proposed Facility:	Bike Lanes and Sidewalk	Alternate Route:	No
Existing Facility Width:	N/A	Trail Impact Score:	30
Proposed Facility Width:	1.8m sidewalk; 1.8-2.0m buffered bike lane	Signage:	Wayfinding, Branding
Segment Length:	390m	Lighting:	Future street lights
Average Slope:	4.03%	Site Furnishings:	None recommended
Facility Location:	Both sides		



46

**FIRST ROAD WEST/GREEN MOUNTAIN ROAD WEST**

Heritage Green Sports Park to 200m East of First Road West

**IMPLEMENTATION**

Project Horizon:	Short-Term (bike lanes & sidewalk), long-term (signage)
Implementation Responsibility:	Growth Management
High Level Cost Estimate:	\$130,000.00
Surface:	Concrete (sidewalk); Asphalt (bike lane)
Land Ownership:	City of Hamilton
Stakeholders:	N/A
Permits and Studies:	Studies: Archaeological, Geotechnical
Archaeological Potential:	Yes
Maintenance:	Standard maintenance for concrete and asphalt surface
Public Engagement:	Site Plan Process

**RATIONALE, COMMENTS AND FEASIBILITY CONSIDERATIONS**

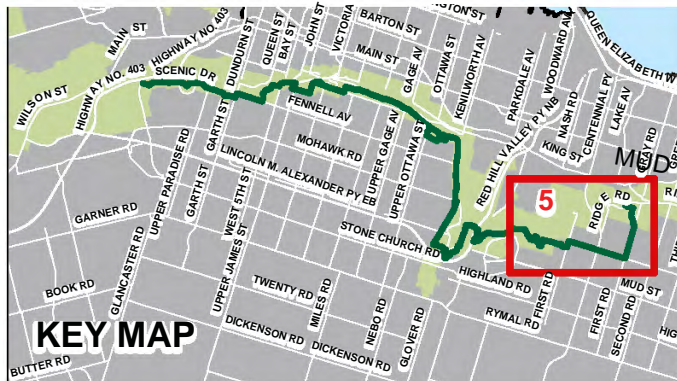
- Implementation will occur through the development process and will depend on coordination with utilities - installation requires road widening and relocation of utility poles.
- The route was selected based on challenges of land ownership and difficult terrain closer to the escarpment

47

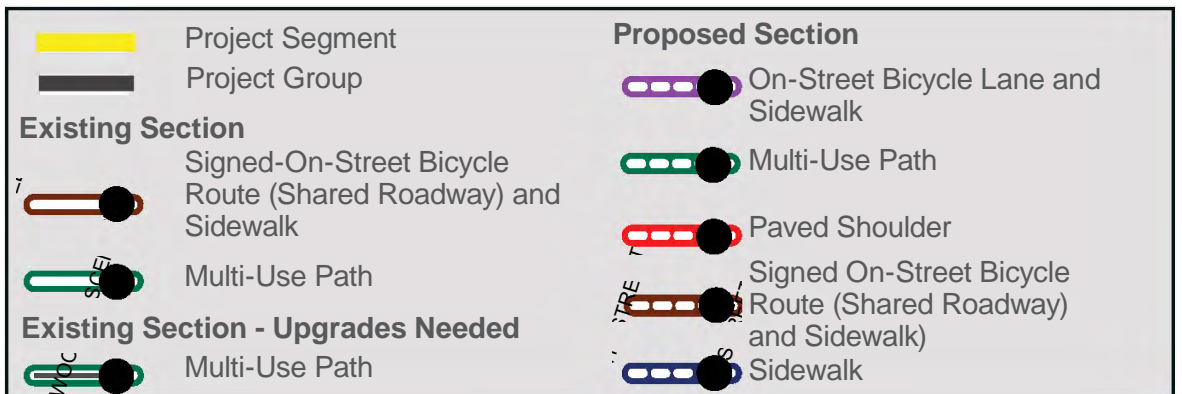
## GREEN MOUNTAIN ROAD WEST 200m East of First Road West to Morrissey Boulevard



### KEY MAP



### LEGEND





47

**GREEN MOUNTAIN ROAD WEST**  
200m East of First Road West to Morrissey Boulevard

WARD

9

PROJECT GROUP

W

RELATED PROJECTS

45

46



EXISTING FACILITY: NONE

PROPOSED FACILITY: BIKE LANES AND SIDEWALK

CONTEXT

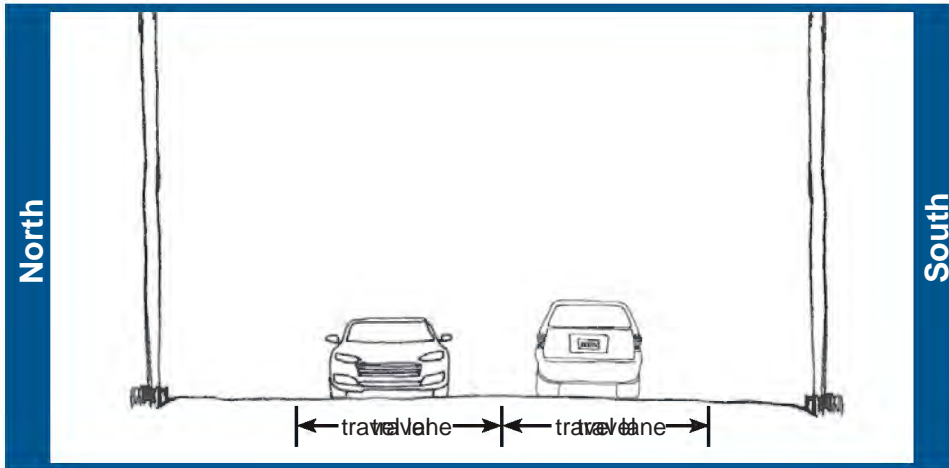
AADT:	600 <sup>1</sup>
Speed (km/h):	60
No. of Lanes:	2
R.O.W. Width:	26.213m
Road Characterization:	Collector
Project Location:	City R.O.W.
Destination:	East Mountain Trail Loop, Felker's Falls Conservation Area, Heritage Green Sports Park
Cultural Areas of Interest:	

47

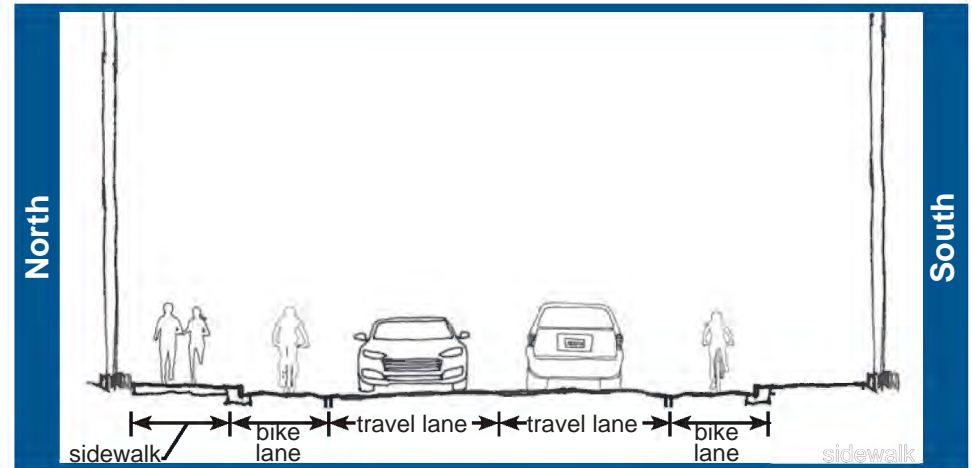
## GREEN MOUNTAIN ROAD WEST

200m East of First Road West to Morrissey Boulevard

### EXISTING SECTION



### PROPOSED SECTION



### FACILITIES

Existing Facility:	None	Status:	Planned Future
Proposed Facility:	Bike Lanes and Sidewalk	Alternate Route:	No
Existing Facility Width:	N/A	Trail Impact Score:	30
Proposed Facility Width:	1.8m sidewalk; 1.8-2.0m buffered bike lane	Signage:	Wayfinding, Branding
Segment Length:	455m	Lighting:	Existing street lights
Average Slope:	4.11%	Site Furnishings:	None recommended
Facility Location:	Both sides		



47

## GREEN MOUNTAIN ROAD WEST

200m East of First Road West to Morrissey Boulevard

### IMPLEMENTATION

Project Horizon:	Short-Term (bike lanes & sidewalk), long-term (signage)
Implementation Responsibility:	Growth Management
High Level Cost Estimate:	\$150,000.00
Surface:	Concrete (sidewalk); Asphalt (bike lane)
Land Ownership:	City of Hamilton
Stakeholders:	N/A
Permits and Studies:	Studies: Archaeological, Geotechnical
Archaeological Potential:	Yes
Maintenance:	Standard maintenance for concrete and asphalt surface
Public Engagement:	Site Plan Process

### RATIONALE, COMMENTS AND FEASIBILITY CONSIDERATIONS

- Implementation will occur through the development process and will depend on coordination with utilities - installation requires road widening and relocation of utility poles.
- The route was selected based on challenges of land ownership and difficult terrain closer to the escarpment

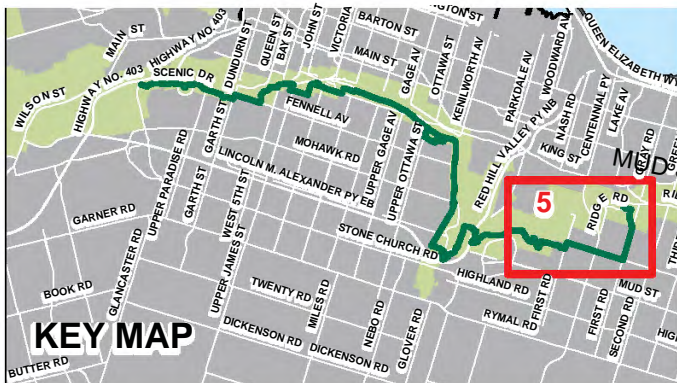
NOTES: (1) 2008 count - based on City count adjusted to AADT based on peak hour volume assuming 10% conversion

48

## GREEN MOUNTAIN ROAD WEST Morrisey Boulevard to Upper Centennial



### KEY MAP



### LEGEND





48	GREEN MOUNTAIN ROAD WEST Morrisey Boulevard to Upper Centennial	WARD	PROJECT GROUP	RELATED PROJECTS
		9	X	



EXISTING FACILITY: NONE

PROPOSED FACILITY: BIKE LANES  
AND SIDEWALK



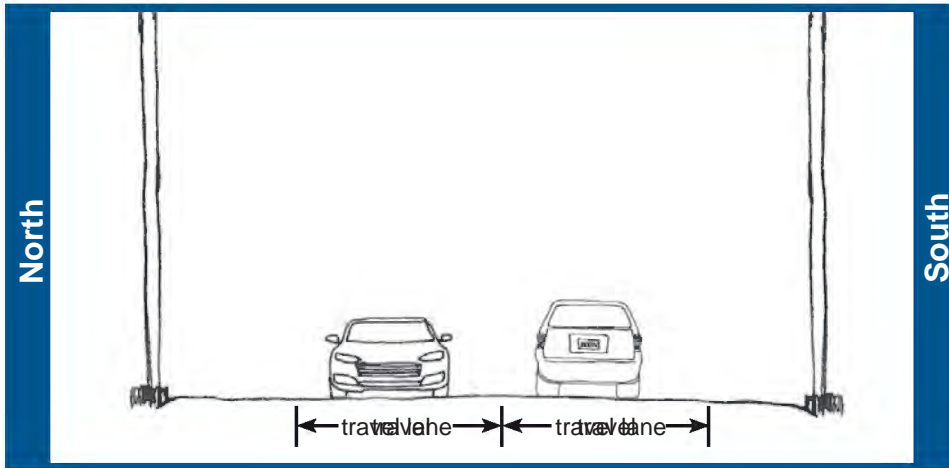
CONTEXT	
AADT:	600 <sup>1</sup>
Speed (km/h):	60
No. of Lanes:	2
R.O.W. Width:	26.213m
Road Characterization:	Collector
Project Location:	City R.O.W.
Destination:	East Mountain Trail Loop, Felker's Falls Conservation Area, Heritage Green Sports Park
Cultural Areas of Interest:	

48

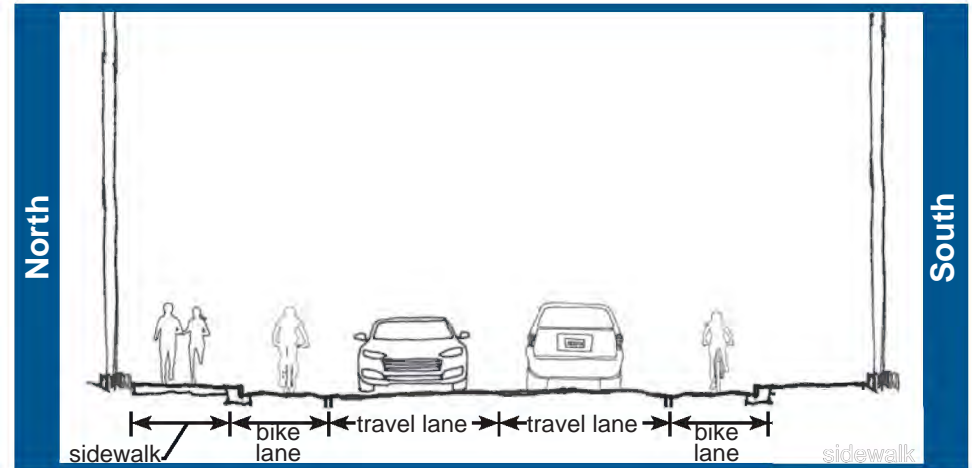
## GREEN MOUNTAIN ROAD WEST

Morrissey Boulevard to Upper Centennial

### EXISTING SECTION



### PROPOSED SECTION



### FACILITIES

Existing Facility:	None	Status:	Proposed Future
Proposed Facility:	Bike Lanes and Sidewalk	Alternate Route:	No
Existing Facility Width:	N/A	Trail Impact Score:	20
Proposed Facility Width:	1.8m sidewalk: 1.8-2.0m buffered bike lane	Signage:	Wayfinding, Branding
Segment Length:	230m	Lighting:	Future street lights
Average Slope:	4.11%	Site Furnishings:	None recommended
Facility Location:	Both sides		



48

## GREEN MOUNTAIN ROAD WEST

Morrissey Boulevard to Upper Centennial

### IMPLEMENTATION

Project Horizon:	Ultimate
Implementation Responsibility:	Growth Management
High Level Cost Estimate:	\$76,000.00
Surface:	Concrete (sidewalk); Asphalt (bike lane)
Land Ownership:	City of Hamilton
Stakeholders:	N/A
Permits and Studies:	Studies: Archaeological, Geotechnical
Archaeological Potential:	Yes
Maintenance:	Standard maintenance for concrete and asphalt surface
Public Engagement:	Site Plan Process

### RATIONALE, COMMENTS AND FEASIBILITY CONSIDERATIONS

- Public expressed desire to consider opportunities for a bridge overpass to cross Upper Centennial Parkway near the brow;
- The route was selected based on challenges of land ownership and difficult terrain closer to the escarpment

NOTES: (1) 2008 count based on City count adjusted to AADT based on peak hour volume assuming 10% conversion

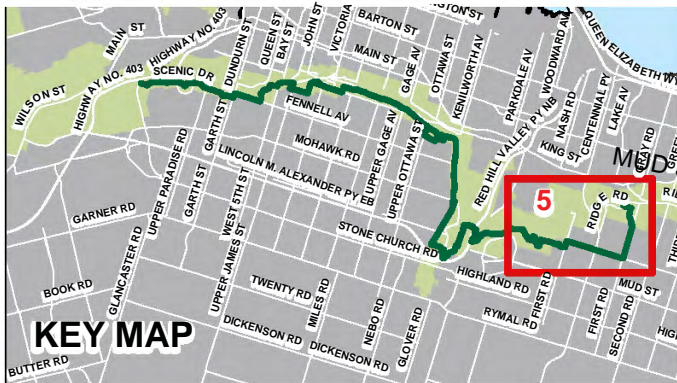
49

## GREEN MOUNTAIN ROAD EAST

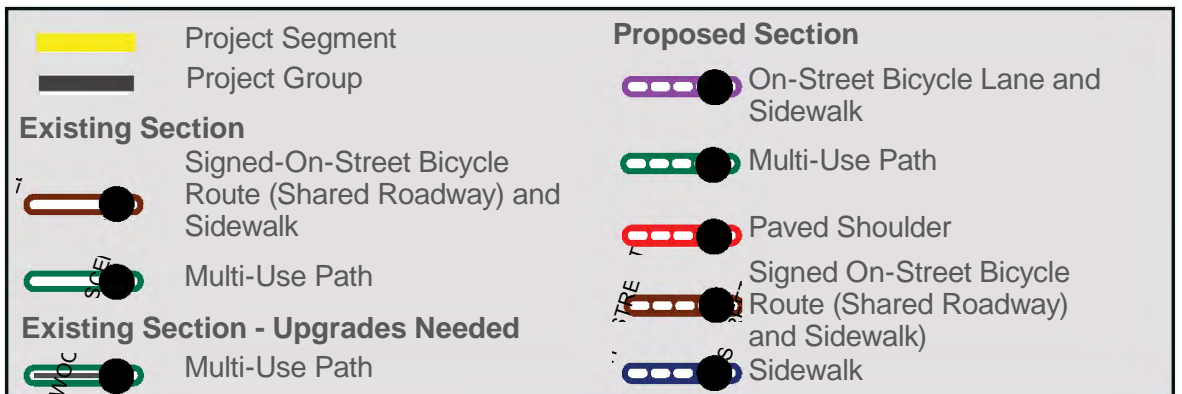
Upper Centennial Parkway to First Road East



### KEY MAP



### LEGEND





49

**GREEN MOUNTAIN ROAD EAST**  
Upper Centennial Parkway to First Road East

WARD

9

PROJECT GROUP

Y

RELATED PROJECTS

50



EXISTING FACILITY: NONE

PROPOSED FACILITY: PAVED  
SHOULDER**CONTEXT**

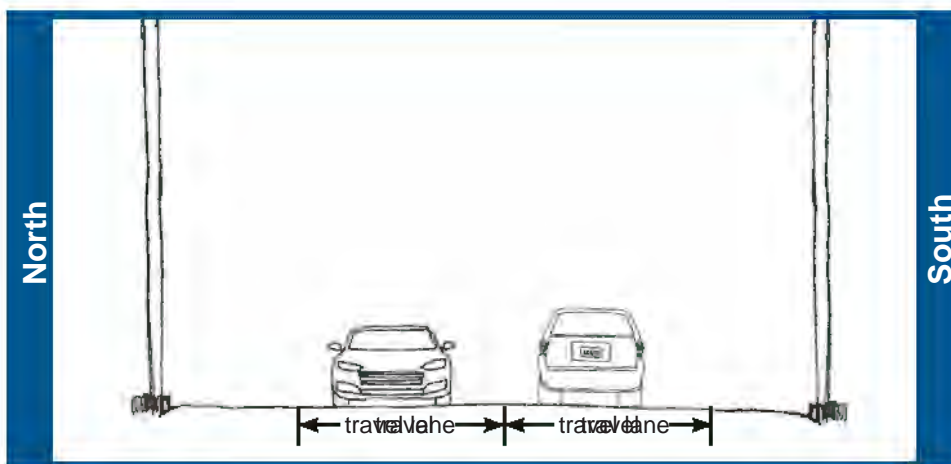
AADT:	1500 <sup>1</sup>
Speed (km/h):	60
No. of Lanes:	2
R.O.W. Width:	26.213m
Road Characterization:	Collector
Project Location:	City R.O.W.
Destination:	Heritage Green Sports Park, Dofasco Trail, Devil's Punch Bowl
Cultural Areas of Interest:	

49

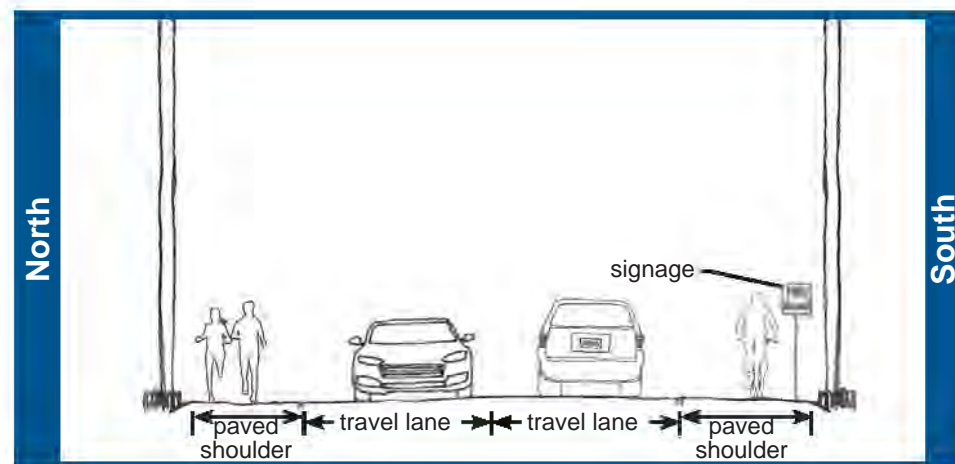
## GREEN MOUNTAIN ROAD EAST

Upper Centennial parkway to First Road East

### EXISTING SECTION



### PROPOSED SECTION



### FACILITIES

Existing Facility:	None	Status:	Planned Future
Proposed Facility:	Paved Shoulder	Alternate Route:	No
Existing Facility Width:	N/A	Trail Impact Score:	23
Proposed Facility Width:	2.0m minimum	Signage:	Wayfinding, Branding
Segment Length:	855m	Lighting:	Rural Road - no street lights
Average Slope:	4.11%	Site Furnishings:	None recommended
Facility Location:	Both sides		



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**GREEN MOUNTAIN ROAD EAST**  
Upper Centennial Parkway to First Road East**IMPLEMENTATION**

Project Horizon:	Ultimate
Implementation Responsibility:	Landscape Architectural Services (Growth Management if part of land development process)
High Level Cost Estimate:	\$130,00.00
Surface:	Asphalt
Land Ownership:	City of Hamilton
Stakeholders:	N/A
Permits and Studies:	Studies: Archaeological, Geotechnical
Archaeological Potential:	Yes
Maintenance:	Standard maintenance for asphalt surface and pavement marking
Public Engagement:	Per LAS standard practice

**RATIONALE, COMMENTS AND FEASIBILITY CONSIDERATIONS**

- The route was selected based on challenges of land ownership and difficult terrain closer to the escarpment
- Should roadway cross-section be urbanized consider a full 3.0-4.0m wide multi-use path

NOTES: (1) 2008 count - based on City count adjusted to AADT based on peak hour volume assuming 10% conversion

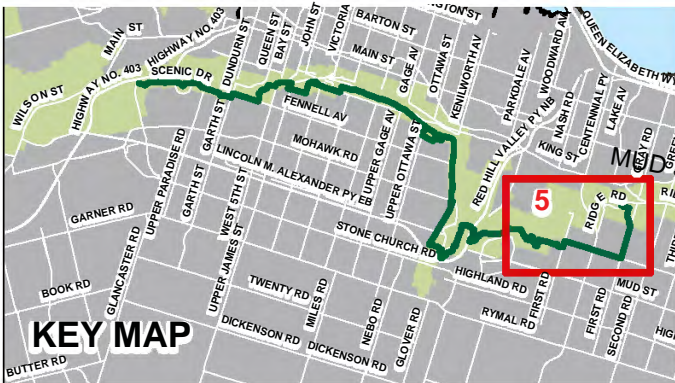
50

## FIRST ROAD EAST

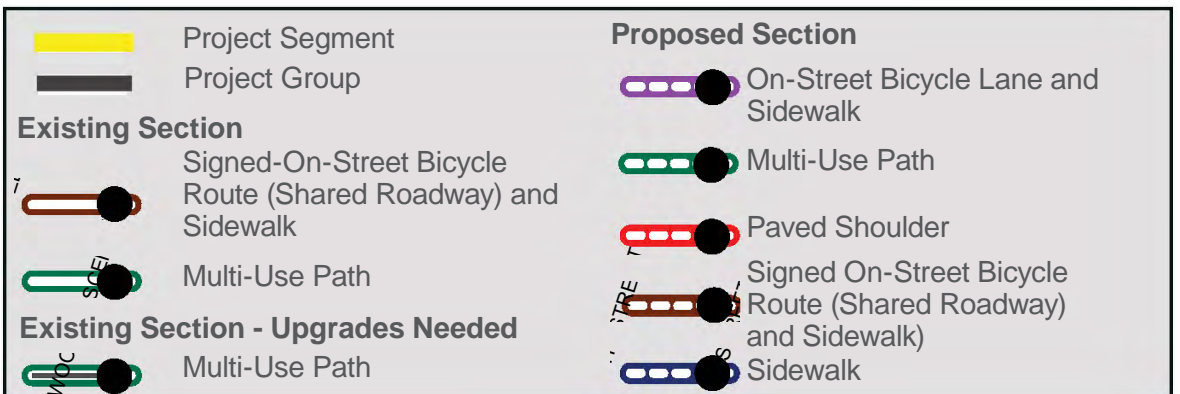
Green Mountain Road East to Dofasco Trail



### KEY MAP



### LEGEND





50

**FIRST ROAD EAST**

Green Mountain Road East to Dofasco Trail

WARD

9

11

PROJECT GROUP

Y

RELATED PROJECTS

49



EXISTING FACILITY: NONE

PROPOSED FACILITY: PAVED  
SHOULDER**CONTEXT**

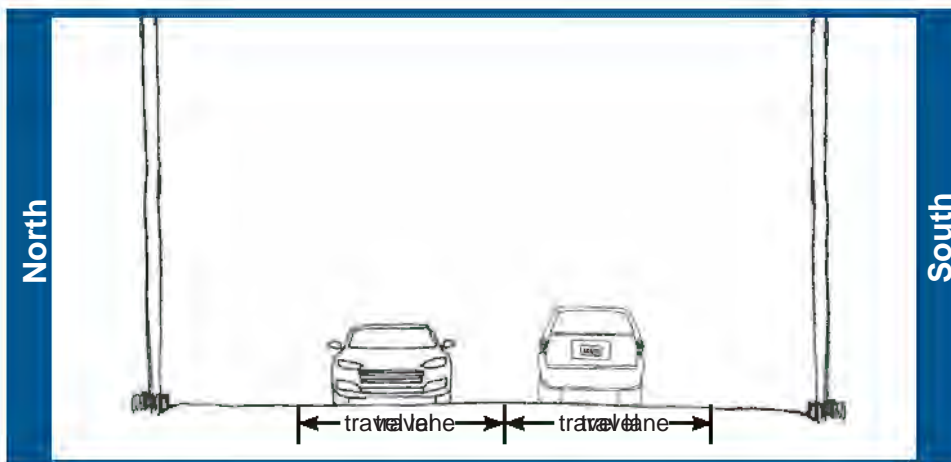
AADT:	N/A
Speed (km/h):	60
No. of Lanes:	2
R.O.W. Width:	26.213m
Road Characterization:	Collector
Project Location:	City R.O.W.
Destination:	Dofasco Trail, Devil's Punch Bowl
Cultural Areas of Interest:	

50

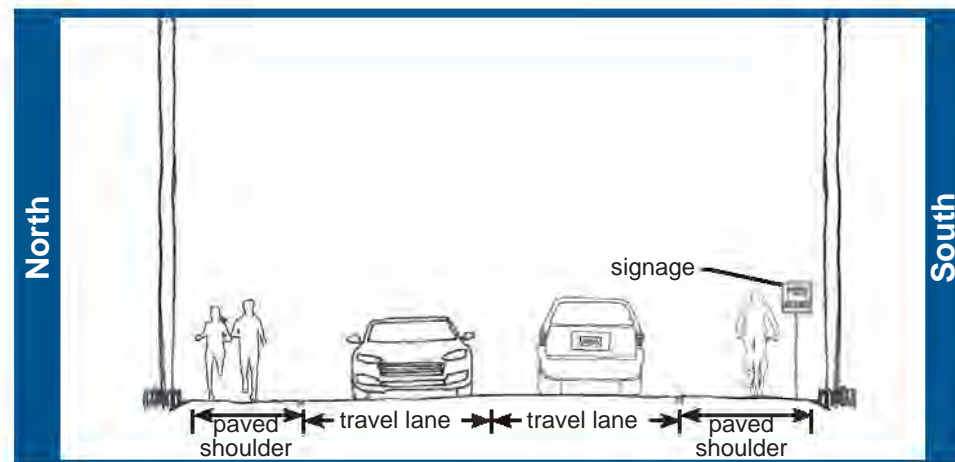
## FIRST ROAD EAST

Green Mountain Road East to Dofasco Trail

### EXISTING SECTION



### PROPOSED SECTION



### FACILITIES

Existing Facility:	None	Status:	Planned Future
Proposed Facility:	Paved Shoulder	Alternate Route:	No
Existing Facility Width:	N/A	Trail Impact Score:	30
Proposed Facility Width:	2.0m minimum	Signage:	Wayfinding, Branding
Segment Length:	1020m	Lighting:	Rural Road - no street lights
Average Slope:	4.11%	Site Furnishings:	None recommended
Facility Location:	Both sides		



50

**FIRST ROAD EAST**

Green Mountain Road East to Dofasco Trail

**IMPLEMENTATION**

Project Horizon:	Ultimate
Implementation Responsibility:	Landscape Architectural Services (Growth Management if part of land development process)
High Level Cost Estimate:	\$150,000.00
Surface:	Asphalt
Land Ownership:	City of Hamilton
Stakeholders:	Hamilton Conservation Authority
Permits and Studies:	Studies: Archaeological, Geotechnical
Archaeological Potential:	Yes
Maintenance:	Standard maintenance for asphalt surface and pavement marking
Public Engagement:	Per LAS standard practice

**RATIONALE, COMMENTS AND FEASIBILITY CONSIDERATIONS**

- This section has the potential to tie into HCA lands and into the planned Elfrida community; public also expressed desire to consider extending the trail through HCA Lands, if feasible
- The route was selected based on challenges of land ownership and difficult terrain closer to the escarpment
- Should roadway cross-section be urbanized consider a full 3.0-4.0m wide multi-use path

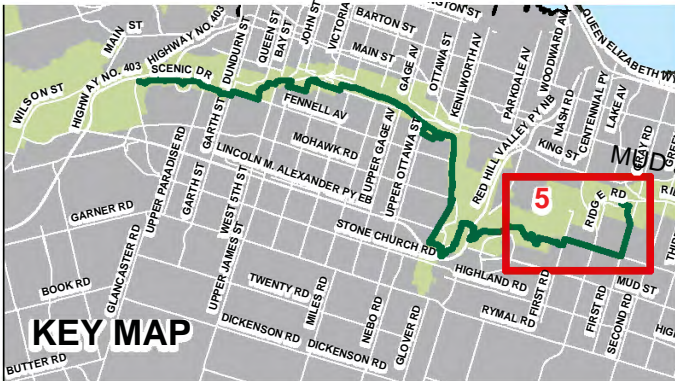
51

## DOFASCO TRAIL

### First Road East to Ridge Road



#### KEY MAP



#### LEGEND

	Project Segment		Proposed Section On-Street Bicycle Lane and Sidewalk
	Project Group		Multi-Use Path
	Existing Section Signed-On-Street Bicycle Route (Shared Roadway) and Sidewalk		Paved Shoulder
	Multi-Use Path		Signed On-Street Bicycle Route (Shared Roadway) and Sidewalk
	Existing Section - Upgrades Needed Multi-Use Path		Sidewalk



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**DOFASCO TRAIL**  
First Road East to Ridge Road

WARD

9

11

PROJECT GROUP

Z

RELATED PROJECTS



EXISTING FACILITY: MULTI-USE TRAIL

PROPOSED FACILITY: MULTI-USE TRAIL

**CONTEXT**

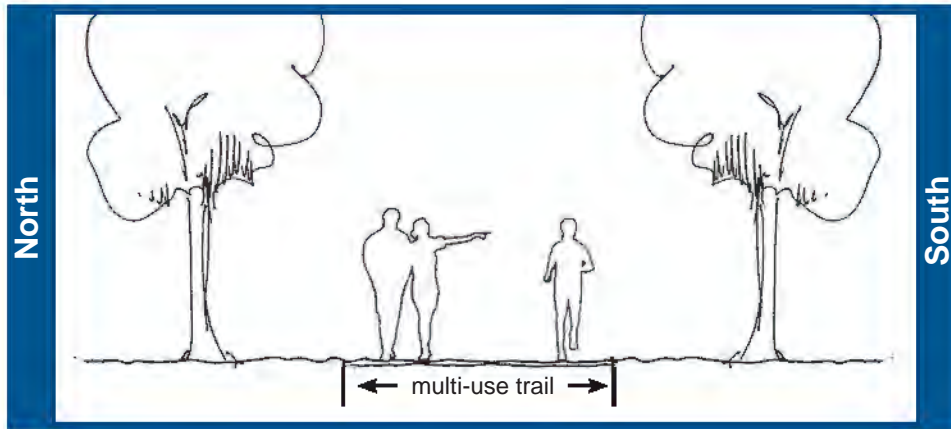
AADT:	N/A
Speed (km/h):	N/A
No. of Lanes:	N/A
R.O.W. Width:	N/A
Road Characterization:	Trail
Project Location:	Open Space
Destination:	Dofasco Trail, Devil's Punch Bowl, Bruce Trail
Cultural Areas of Interest:	

51

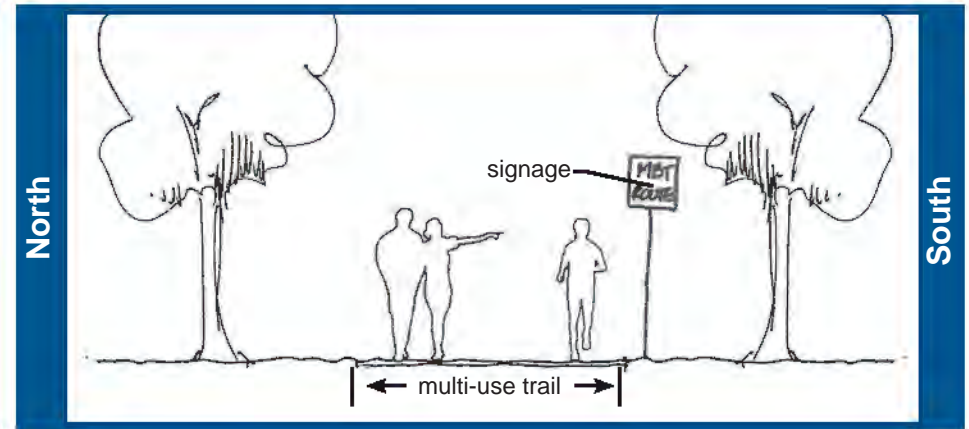
## DOFASCO TRAIL

First Road East to Ridge Road

### EXISTING SECTION



### PROPOSED SECTION



### FACILITIES

Existing Facility:	<b>Multi-Use Trail</b>	Status:	Upgrades Needed
Proposed Facility:	<b>Multi-Use Trail - Upgrades</b>	Alternate Route:	No
Existing Facility Width:	1.0-2.0m	Trail Impact Score:	9
Proposed Facility Width:	3.0m	Signage:	Trailhead
Segment Length:	830m	Lighting:	No existing lighting. Natural area - lighting is not desirable
Average Slope:	4.11%	Site Furnishings:	None recommended
Facility Location:	N/A		



51

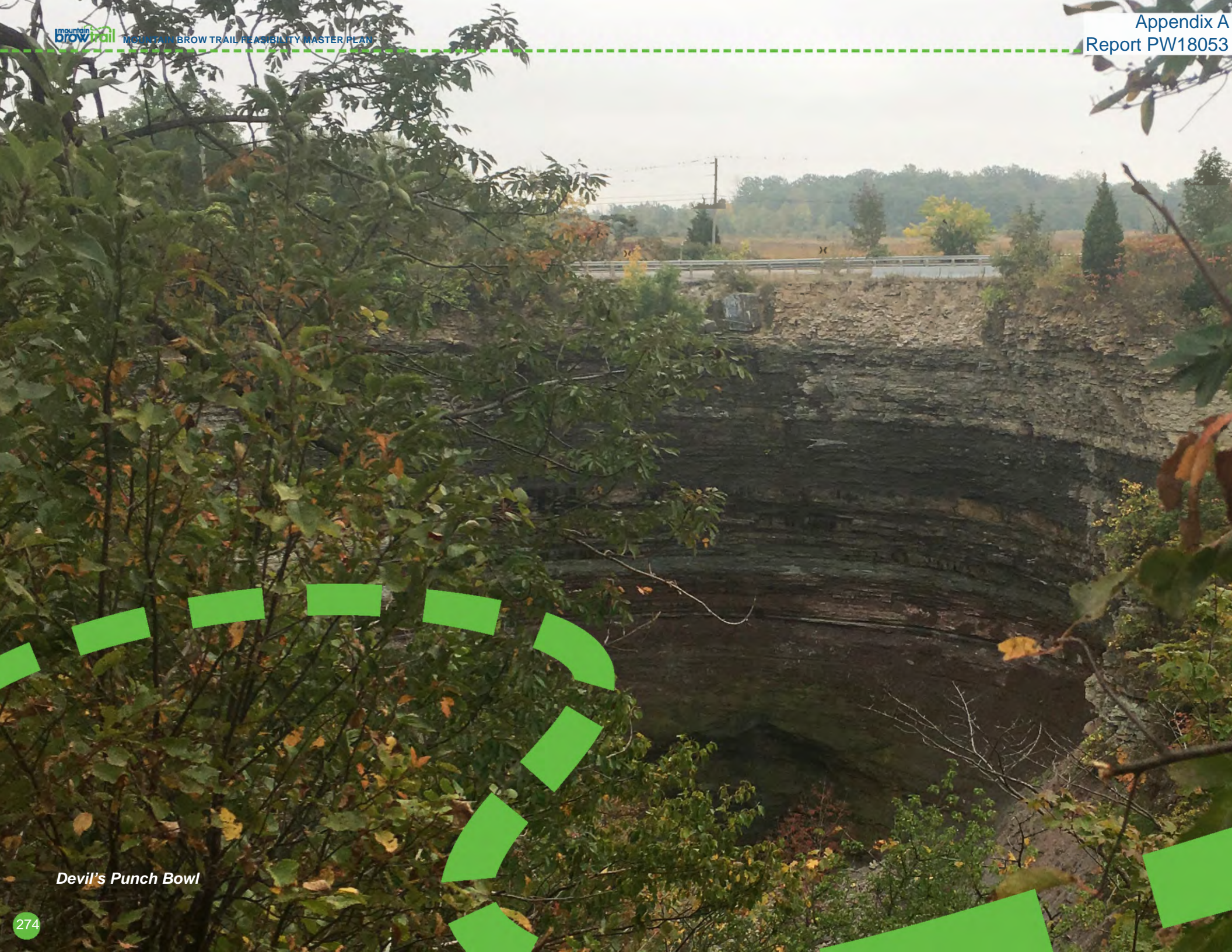
**DOFASCO TRAIL**  
First Road East to Ridge Road**IMPLEMENTATION**

Project Horizon:	Long-Term
Implementation Responsibility:	Landscape Architectural Services
High Level Cost Estimate:	\$110,000.00
Surface:	Granular
Land Ownership:	Hamilton Conservation Authority
Stakeholders:	Hamilton Conservation Authority, Niagara Escarpment Commission
Permits and Studies:	Permits: N.E.C., H.C.A.; Studies: Archaeological, Geotechnical
Archaeological Potential:	Yes
Maintenance:	Standard maintenance for granular surface and pavement marking
Public Engagement:	Per LAS standard practice

**RATIONALE, COMMENTS AND FEASIBILITY CONSIDERATIONS**

- A formal crossing at Ridge Road to the Devil's Punchbowl will be required
- The route was selected based on challenges of land ownership and difficult terrain closer to the escarpment
- Public expressed desire to establish public transit connections to Devil's Punch Bowl (Ridge Road)





*Devil's Punch Bowl*



## 7.0 DESIGN CONSIDERATIONS & BRANDING

The Recreational Trails Master Plan (RTMP) recommends a network design that considers, among other elements, trail lighting, trail signage, trailheads and trail amenities (seating and rest areas, and bicycle parking), and public art along trails (See Chapter 3.1.2 Contextual Integration). In order to create a destination trail, these elements have been examined to create a consistent theme, or brand for the length of the trail. This section presents the recommended amenity and branding concept for the Mountain Brow Trail.



Interpretive signage at Hamilton Waterfront Trail

## 7.1 Trail Branding & Wayfinding

One of the most important elements of the Mountain Brow Trail is ensuring that sections of the trail are built with a consistent brand and visual identity. This will help to create a cohesive, continuous and attractive facility.

As part of the feasibility master plan, an overall brand for the project has been developed. The colours and logo identified through the trail brand (Exhibit 31) can be translated to a variety of wayfinding signage & pavement marking applications.

The following wayfinding & branding signage elements should be considered for the Mountain Brow Trail, in accordance with the Recreational Trails Master Plan:

- **Orientation & Trailhead Signage** – Trailheads provide mapping of the trail, additional network information (trail

distances, key features), and rules and regulations for the overall network. They serve as a landmark for trail users.

- **Route Confirmation & Directional Signs** – These signs assist trail users in locating and following along a particular cycling facility, which may require turns. They also confirm to users that they are still on a specific cycling route, particularly on longer sections.
- **Interpretive Signage** – Interpretive signage is typically placed at locations along trails that signify a historical feature, environmental feature, or feature that is culturally significant to Canadian or local heritage.

These components are discussed in more detail in the following summaries.



Full Standard Logo



Modified Logo



Simplified "Brow" Depiction

Exhibit 31 - Mountain Brow Trail Branding



## Orientation & Trailhead Signage

Trailheads along the Mountain Brow Trail will be used to mark major trail access points and to provide a significant amount of information to users.

### Applications on the Mountain Brow Trail

Trailheads will typically be considered at the start/end of the Mountain Brow Trail, and at intersections with major roads or other major trails or cycling infrastructure. Locations for potential trailheads are included in the project sheets (refer to Chapter 6.0 - Implementation Strategy).

Sample locations include:

- Scenic Drive at the Chedoke Radial Trailhead – An additional trailhead can be added in this location to indicate the terminus of the Mountain Brow Trail on the opposite end of the trailhead parking lot.
- Southam Park – A trailhead could be added to the park to alert potential users of the intersection of the recommended Claremont access trail to the presence of the Mountain Brow Trail. Ideally this trailhead would be visible from the Claremont access trail.
- Sam Lawrence Park – A trailhead

can be added in close proximity to the existing parking lot to mark the Mountain Brow Trail through this area.

- Mountain Drive Park and/or Bill Foley Parkette - A trailhead can be added to one of these parks to reinforce the re-branding of these existing trail links as part of the Mountain Brow Trail.
- Mountain Brow Boulevard / Mohawk Road East / Escarpment Rail Trail and Red Hill Valley Trail – At these important trail intersections, a trailhead can provide clarity on the trail intersections and routing.
- Heritage Green Sports Park – A trailhead in the sports park can help to raise the awareness of the trail for visitors to the sports facilities.
- First Road East / Dofasco Trail Intersection – Depending on land ownership, there may be opportunity to create a trailhead at this location, including parking area.
- Devil's Punch Bowl

### Additional Considerations

Trailhead signage is customarily introduced at formal 'trailheads' which typically include some amenities such as parking (for motor

vehicles and/or bicycles), gateways, visitor kiosks, water fountains, trash / recycling receptacles etc. (refer to Chapter 7.3 – Amenities). Exhibit 32 shows an existing trailhead at the Red Hill Valley Trail.



Exhibit 32 - Existing trailhead at the Red Hill Valley Trail

## Route Confirmation & Directional Signs

Route confirmation signs will be used along the Mountain Brow to confirm that users are still on the Mountain Brow Trail route. Directional signs can also be applied as needed to provide guidance to access the trail from other cycling routes or intersecting trails. (Exhibits 33 and 34)

### Applications on the Mountain Brow Trail

Route confirmation can be placed along the Mountain Brow Trail with consistent spacing of:

- 400-800m (urban areas), or
- 2 km (rural areas)

Directional signs can be provided from other routes as needed.

Conceptual route confirmation and trail marker signs for a variety of applications (conventional, naturalized areas, within roadway boulevard) are shown in Exhibit 33.

Conceptual sign assemblies are shown in Exhibit 34. These examples depict (from left to right):

- Directional signage indicating access to the Mountain Brow Trail (from another trail or cycling facility)
- Signed cycling route that is part of the branded Mountain Brow Trail route
- Directional sign where users must make a right turn to stay on the Mountain Brow Trail



Exhibit 33 - Mountain Brow Signage (Dimensions in millimeters)



Exhibit 34 - Conceptual Mountain Brow Route Sign Assemblies



## Interpretive Signage

Interpretive signage along the Mountain Brow Trail can help to highlight some of the natural themes and features encountered along the trail through education panels, or other interactive signage types.

### Applications on the Mountain Brow Trail

The City of Hamilton can engage and work with trail stakeholders including the Bruce Trail Conservancy and the Hamilton Naturalists Club, among others, on the development and identification of locations and formats for interpretive signage along the Mountain Brow Trail.

Preliminary suggestions for themes for interpretive signage include:

- **Escarpment Geology & Ecology** – Present information on karst, caves, sinks and geology unique to the escarpment.
- **“Ribbon of Green”** – Explore the escarpment as a connector, extending all the way from New York through Southern Ontario, north to Manitoulin Island, and beyond into Wisconsin.

- **Head of the Lake** – Emphasize the ecological significance of Hamilton’s unique situation at the head of Lake Ontario.
- **Bird Migration** – Document the unique patterns of bird migration through the area.
- **Encouraging Stewardship** – Point out the variability and density of trees along the escarpment and across the City, as well as the importance of these trees

and other natural environments for human and ecological health.

- **“Greenbathing”** – Articulate the mental, physical and spiritual benefits of time spent outdoors and engaging in recreational activity.

A sample application of existing interpretive signage along the Hamilton Beach Trail is shown in Exhibit 35.



Exhibit 35 - Interpretive signage along Hamilton Beach Trail (Hamilton Waterfront Trust (HWT))

In addition to signage, the use of pavement markings to guide users and to help build the visual identity are encouraged. Sample applications are discussed below.

### Wayfinding Sharrows

A shared lane pavement marking or “sharrow” is a pavement marking that is composed of a bicycle symbol and two white chevrons. These are conventionally used to indicate an appropriate operating position for cyclists on shared routes; however, they can also be used for wayfinding applications with the use of modified arrows.

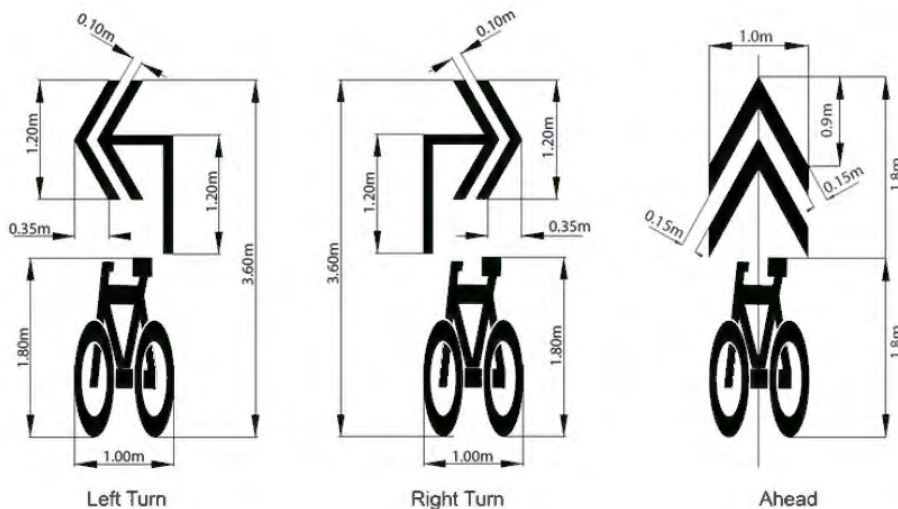


Exhibit 36 - Wayfinding sharrows (Source: City of Toronto Wayfinding Strategy)

### Applications on the Mountain Brow Trail

The use of wayfinding sharrows along the Mountain Brow Trail is recommended where the trail route is located along quiet streets to indicate connections between off-road trail sections, or where the cyclist routing differs from the pedestrian route.

Sample locations along the Mountain Brow Trail where wayfinding sharrows may be helpful include:

- Transition between Inverness & Belvidere – to guide cyclists from the bike lane on Inverness onto/from the

shared route along Belvidere

- Connection along Belwood & Mountain Park Avenue between Concession Street & the trail beginning at Mountain Brow West Park – to improve wayfinding along this quiet street connection
- Along Rendell Boulevard, Mulock Avenue, Edgewood Avenue, High Street, Woodside Drive, Oakcrest Drive – to improve wayfinding along this cycling connection

Details for the wayfinding sharrows are shown in Exhibit 36, with a sample application depicted in Exhibit 37.



Exhibit 37 - Wayfinding sharrows (Source: NACTO Urban Bikeway Design Guide)



## Branded Trail Pavement Markings

Various trail markings can be customized to highlight trail branding, for example:

- Trail dividing centre line
- Stop or Yield Trail Markings
- Decorative Pavement Markings

A sample application of branded trail pavement markings is shown in Exhibit 38.

### Applications on the Mountain Brow Trail

For multi-use trail facilities along the Mountain Brow Trail, a two-colour dividing line can be applied - made-up of 100mm solid or dashed lines in Mountain Brow Trail blue and green (refer to logo). Solid dividing lines should be considered where the trail is too narrow to permit passing and 15m in advance of an intersection. Dashed dividing lines may be applied as needed where path usage is anticipated to be heavy to help control passing.

In addition to a coloured centre line, asphalt trail sections can be stamped with the Mountain Brow Trail logo in circular stamp pattern. A sample MBT branded trail application is shown in Exhibit 39.

Specific decorative pavement markings may be considered along project segments in areas of high potential usage on a project-by-project basis.



*Exhibit 38- City of Toronto Waterfront Trail incorporating blue and green centreline, pavement marking decorations and blue and white stop bars (Source: Google Maps)*



*Exhibit 39 - Sample branded pavement marking applications*





Ministry of Infrastructure Lands, Fennell Avenue

## 7.2 Regulatory Signage

In addition to wayfinding signage, regulatory signage should be applied consistent with practices along other City trails and cycling infrastructure. This signage will vary substantially depending on the route context, but may include:

- Traffic Control Signage associated with trail crossings, which may include stop (OTM Ra-1) or yield signs (OTM Ra-2) -



Exhibit 40- Examples of regulatory signage (OTM Ra-1, OTM Ra-2)

refer to Exhibit 40

- Signage for on-road facilities, which may include designated bike lane signage (i.e. TAC RB-91), vehicles turn to yield turning cyclists (i.e. TAC RB-37) and bicycle route and share the road signage (OTM M511 & OTM Wc-19) - refer to Exhibit 41
- Signage alerting users to sensitive or protected areas (e.g. wetlands, woodlots),

and other items such as invasive plants (e.g. poison ivy, giant hogweed) and private lands.

Beyond regulatory signage, other signs such as trail etiquette signs and those pertaining to municipal bylaw 01-219 (prohibiting the use of motorized vehicles on the trail), should be considered on an as-needed basis.



Exhibit 41 - Examples of signage for on-road cycling facilities (TAC RB-19, TAC RB-37, OTM Wc-19)





Exhibit 42 - Regulatory (Rb-73) and Trail Etiquette Signage





*Rest Area at Mountain Brow Boulevard*

## 7.3 Trail Amenities

The level and quality of trail amenities should be in keeping with the trail context. In the project sheets, desirable amenities have been identified on a project by project basis. Where applicable, amenities may include:

- Urban open space lighting
- Signage
- Fencing
- Benches (City standard)
- Waste/Recycling Containers
- Drinking fountains
- Tree planting
- Connections to existing viewing platforms

The following sections outline recommendations for the type of amenities preferred for applications along the Mountain Brow Trail.

### 7.3.1 - Seating and Rest Areas

While recreational trails provide the opportunity for active uses (walking, jogging, cycling), they also provide an opportunity for passive recreation for users who prefer the facilities as an opportunity to get to a specific destination or to take a break during those active uses.

Rest areas are usually outfitted with benches at a minimum; however, for high-use or popular areas, viewing platforms, benches, drinking fountains, lighting and/or

waste and recycling receptacles may also be installed in response to user habits and to foster the inclination of trail users to sit or gather in these locations. Considering the development of specific Escarpment vistas and the need for ecological sensitivity, designated rest areas direct users to an established facility to alleviate the tendency to create informal vistas and gathering areas. These areas should be designed for accessibility, user comfort and safety.

To support the trail branding initiative (see Chapter 7.1 Trail Branding and Wayfinding), the consistent use of the same amenity products allows users to readily identify the trail.



*Mountain Brow West Park*

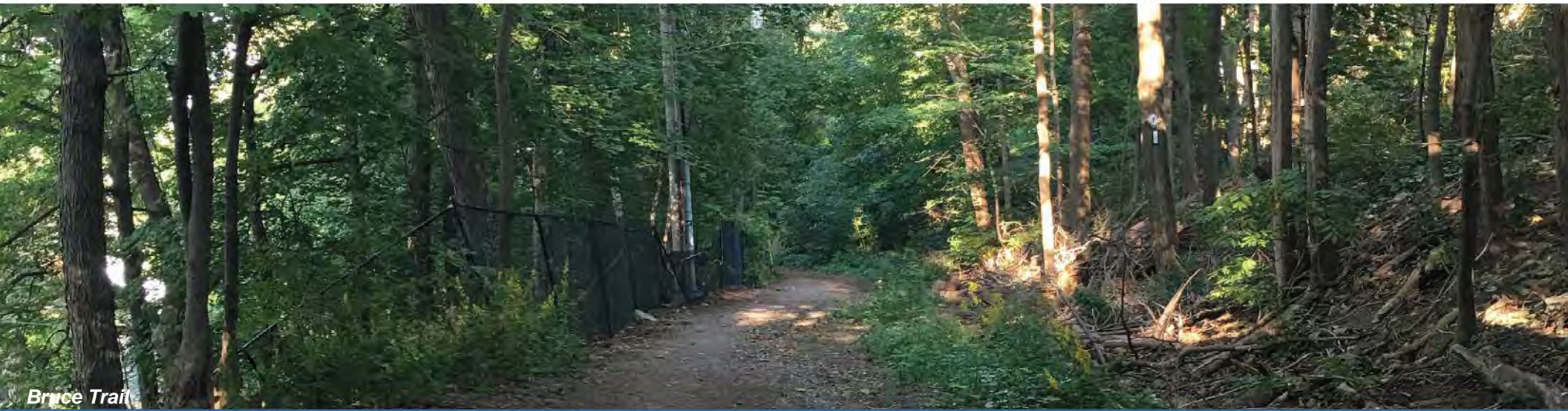
Exhibit 43 shows some of the amenities already installed on the precedent section of the Mountain Brow Trail (benches, drinking

fountains, waste receptacles, solar lights) that would be preferred for use along future sections of the trail that are constructed.



*Exhibit 43 - Amenities (from left to right): bench and waste receptacle, solar lights, fencing, and drinking fountain*





Bruce Trail

### 7.3.2 – Public Art:

Section 2.12 of the RTMP highlights considerations for public art involvement with trails throughout the City as directed by the City of Hamilton Public Art Master Plan (2016). As outlined by the Master Plan, public art is created by artists or in collaboration with artists through a public process and existing in publicly accessible City of Hamilton owned property.

The Public Art Master Plan identifies fourteen (14) priority project sites, for which installation will take place from 2017-2023, and eighty-five (85) secondary sites, which will be considered should resources (staff and funding) become available. The selection is based on the

plan's associated evaluation matrix (scoring out of 100). Sam Lawrence Park is the only location along the Mountain Brow Trail identified on the priority list, while the secondary list, in order of priority, includes the Niagara Escarpment Stairs at Wentworth (Wentworth stairs), the Niagara Escarpment Stairs at Margate and Mountain Brow (Kenilworth stairs), Cliffview Park, Mud Street and Red Hill Valley Trail Entrance.

### 7.3.3 – Bicycle Parking, SoBi Integration

With the increased connectivity and access to points of interest, bicycle parking and access to the SoBi Bike Share program will become an important element to allow users to get to various sites, and also

provides an option to enjoy the trail.



Exhibit 44 - SoBi Station (Source: "Hub 23 Rail Trail at Emerson" by Reaperexpress, licensed under CC BY-SA 4.0)





*View of the lower city from Jolley Cut*

The following list of locations identifies potential sites for amenities, and is based on comments that were included on the comment sheets returned from the public engagement process and analysis by the study team. The sites are recommended and do not include sites where further study into AODA recommendations may be required.

The following list highlights the potential sites (illustrated in Exhibit 45):

Scenic Drive at the Chedoke Radial Trailhead Parking Lot

Scenic Drive at Goulding Ave Lay-by

Sanatorium Road Parking

Bruce Trail at Scenic Drive

Cliffview Falls/Cliffview Park

Scenic Drive at Chedoke Falls

Claremont Access Spur

Southam Park

Sam Lawrence Park

Concession Street

Mountain Brow Park West

Mountain Drive Park

Mountain Brow Boulevard

Former Mount Albion Road

Existing Mountain Trail Loop

Existing Mountain Brow Multi-Use Trail (Felker's Falls)

Existing and Future Heritage Green Sports Park

Dofasco Trail



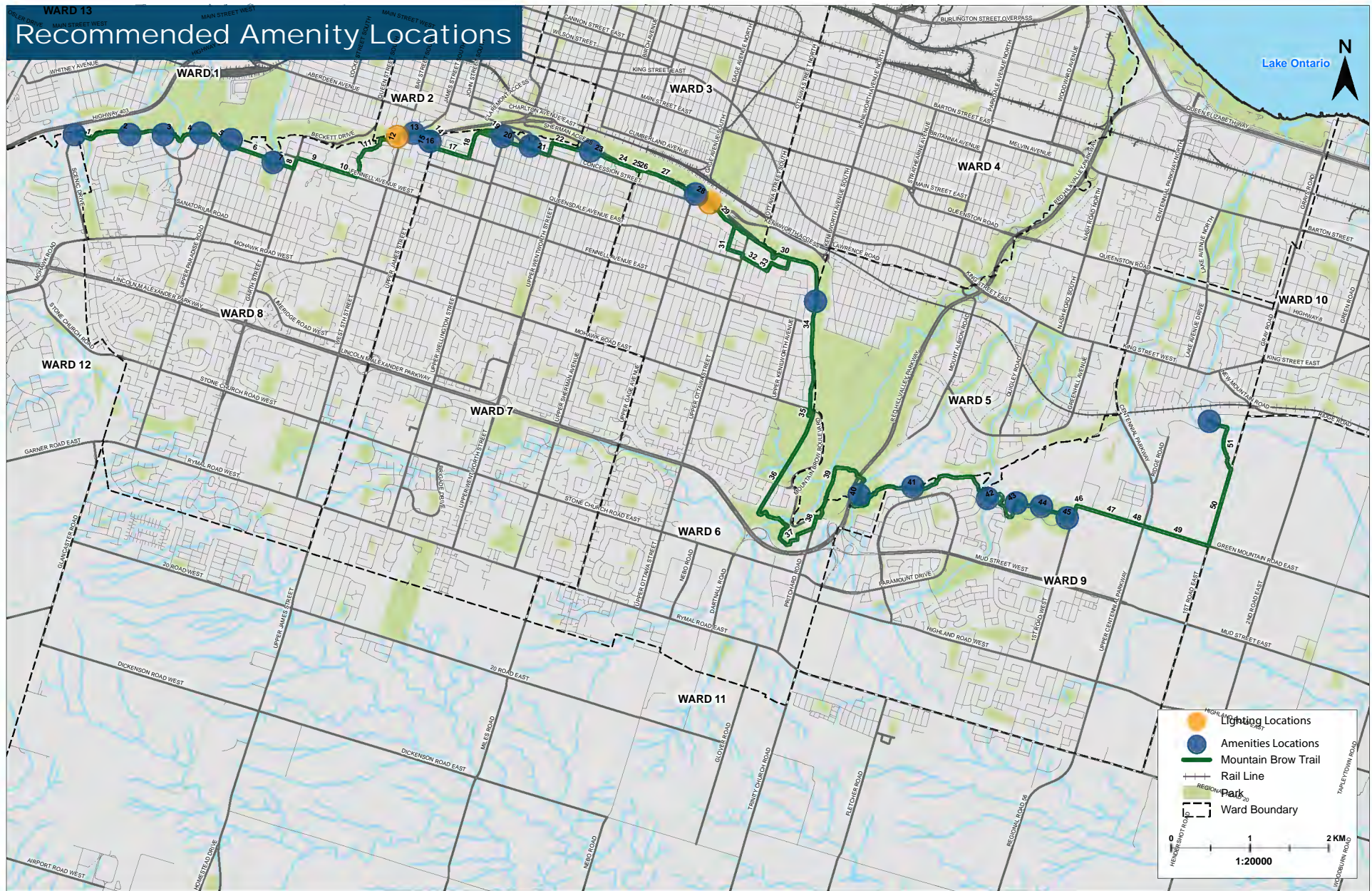


Exhibit 45 - Map showing recommended locations of amenities (bike racks, seating, drinking fountains and rest areas) and lighting





SoBi Bicycle (Source: "Social Bicycle in Hamilton by Reaperexpress, licensed under CC BY-SA 4.0")





Red Hill Valley Trail



## 8.0 HIGH LEVEL COSTING

The recommended Mountain Brow Trail route is over twenty-five (25) kilometres in length. The feasibility study was spearheaded by the Landscape Architectural Services Section and partnering with Engineering Services at the City of Hamilton in coordination with multiple stakeholders (see Chapter 3.2 Stakeholders and Partnerships). The implementation will be carried out by various City of Hamilton Sections and project budgets and timelines will be assigned through the capital budget process. High-level costing and funding opportunities are provided to guide the budgeting for detailed design and implementation of individual sections of the trail.





*View of the lower city from Cliffview Park*

## 8.1 Projected Costs

In order to scope the delivery of the Mountain Brow Trail, high level segment costs for each project link have been identified. High-level cost estimates are useful to present an overview of potential project costs, and to assist in supporting the allocation of funds to specific projects.

High level cost estimates were derived for each project segment by identifying the corresponding implementation strategy for the facility and supporting elements (i.e. fencing, lighting, wayfinding etc.), and applying these unit costs to the segment length. Exhibit 46 shows the unit costs used for developing these estimates. These unit cost estimates incorporate a 25% contingency and 25% for engineering

and construction administration, but do not account for inflation.

Exhibit 47 shows the high-level cost estimate for each segment of the trail, including identifying the elements that were costed for each segment and the estimated total cost of the trail implementation, as recommended. Note that these costs do not account for all site specific conditions and may not address major infrastructure upgrades such as bridges or overpasses, and should be considered as a reference only. As each project segment moves towards implementation, refined cost estimates based on the design should supersede these estimates. The total estimated cost

to construct the length of the Mountain Brow Trail is CAD \$9,111,000 (2018 dollars).

The implementation of the trail is feasible by engaging the following tools:

- Engaging multiple potential funding opportunities (see Chapter 8.2 Funding Opportunities)
- Sharing project design and implementation costs with other departments, and
- Phasing the trail over time to allow for year-over-year budgeting processes.



Pedestrian & Cycling Facility	Description	Per km cost
<b>Signed Routes &amp; Sidewalks</b>		
Signed Bike Route - with existing sidewalk	Provide signed and marked cycling route	\$20,000
Signed Bike Route - add sidewalk on one side	Add sidewalk to one side of the streets and provide a signed and marked cycling route	\$210,000
<b>Sidewalk &amp; Bike Lanes</b>		
Stripe bike lanes on existing road - with existing sidewalk	Sign and mark bike lanes to wide roadway (no changes to other pavement markings / travel lanes)	\$60,000
Stripe bike lanes on existing road - add new sidewalk on both sides	Sign and mark bike lanes to wide roadway (no changes to other pavement markings / travel lanes) and add sidewalks on both sides	\$330,000
Lane reconfiguration to add buffered bike lanes	Reconfigure existing travel / parking lanes to accommodate buffered bike lanes	\$70,000
<b>Multi-use Trails</b>		
Remove existing sidewalk and construct boulevard multi-use trail	Remove existing concrete sidewalk; construct new 3.0 m wide asphalt trail; assume 30% utility pole relocations	\$660,000
Construct paved multi-use trail with pedestrian lighting	Construct new 3.0 m wide asphalt trail; assume 30% utility pole relocations, includes lighting	\$740,000
Construct paved multi-use trail without lighting	Construct new 3.0 m wide asphalt trail; assume 30% utility pole relocations, does not include lighting	\$500,000
<b>Upgrades to existing facilities</b>		
Widen existing paved multi-use trail	Widen existing 2.0 - 2.5m multi-use trail to 3.0m-4.0m paved multi-use trail	\$210,000
Upgrade existing granular trail to paved multi-use trail	Upgrade existing granular trail to 3.0-4.0m paved multi-use trail	\$330,000
Upgrade and widen existing granular trail	Widen existing 2.0 - 2.5m granular trail to 3.0m-3.5m	\$130,000
Add lighting along existing multi-use trail	Add solar lighting along existing trail	\$240,000
Add amenities along existing or new multi-use trail	Add decorative fencing, drinking fountains, bollards, and benches along trail	\$375,000
<b>Wayfinding / Branding Only</b>		
Add sidewalk only	Add a sidewalk to an existing shared route	\$190,000
Retrofit paved shoulder to existing rural road	Provide grading, sub-base, base and asphalt to accommodate paved shoulder on existing rural road (in conjunction with mill & overlay project)	\$150,000
<b>Additional Costs - Complex Intersections</b>		Each
New signalized intersection or major upgrade to existing signal	Add new signalized intersection or retrofit/upgrade existing signalized intersection	\$315,000

Project Segment	Project Group	Project Horizon (yrs) <sup>1</sup>	Project Limits	Length (km)	Estimated Cost	Costs Included										Implementation Responsibility <sup>2</sup>
						New Trail	New Trail	New Bike lanes	New Signed Cycling Route	New Sidewalk	Paved Shoulders	Intersection Upgrade	Amenities	New Lighting	Wayfinding & Branding	
1	A	0-5	Scenic Drive	0.26	\$200,000.00	✓							✓	✓	✓	ES
2	A	0-5	Scenic Drive	0.76	\$600,000.00	✓							✓	✓	✓	ES
3	B	0-5	Sanatorium Road	0.37	\$290,000.00	✓							✓	✓	✓	D
4	C	0-5	Bruce Trail	0.35	\$180,000.00								✓		✓	LAS
5	D	5-10	Scenic Drive	0.43	\$250,000.00		✓						✓		✓	ES
6	D	5-10	Scenic Drive	0.60	\$340,000.00			✓		✓				✓	✓	ES
7	D	5-10	Scenic Drive/Denlow Avenue	0.28	\$93,000.00			✓		✓					✓	ES
8	E	5-10	Garth Street	0.14	\$410,000.00		✓					✓			✓	LAS
9	E	5-10	Fennell Avenue West	0.41	\$270,000.00		✓								✓	LAS
10	E	5-10	Fennell Avenue West	0.38	\$250,000.00		✓								✓	LAS
11	F	10-20	Juravinski Drive/St. Joseph's Hospital Lands	0.88	\$580,000.00	✓								✓	✓	LAS
12	G	0-5	Claremont Access Spur I	0.06	\$37,000.00	✓								✓	✓	AT
13	G	0-5	Claremont Access Spur II	0.43	\$340,000.00	✓							✓	✓	✓	AT
14	H	0-5	Southam Park	0.09	\$79,000.00	✓							✓		✓	LAS
15	H	0-5	Tanner Street	0.19	\$4,000.00				✓						✓	AT/ES

Exhibit 47 - Projected cost breakdown by Project Section



Project Segment	Project Group	Project Horizon (yrs) <sup>1</sup>	Project Limits	Length (km)	Estimated Cost	Costs Included										Implementation Responsibility <sup>2</sup>
						New Trail	New Trail	New Bike lanes	New Signed Cycling Route	New Sidewalk	Paved Shoulders	Intersection Upgrade	Amenities	New Lighting	Wayfinding & Branding	
16	I	5-10	Inverness Avenue West	0.10	\$2,000.00				✓			✓			✓	AT
17	I	5-10	Inverness Avenue East	0.47	\$29,000.00			✓							✓	AT
18	I	5-10	Belvidere Avenue	0.37	\$8,000.00				✓						✓	AT
19	J	5-10	Sam Lawrence Park - Multi-Use Path	0.26	\$3,000.00										✓	LAS
20	J	5-20 <sup>+</sup>	Concession Street	0.69	\$49,000.00			✓							✓	LAS, AT
21	J	5-20 <sup>+</sup>	Concession Street	0.23	\$5,000.00				✓						✓	ES
22	J	5-10	Bellwood Avenue/Mountain Park Avenue	0.48	\$5,000.00										✓	LAS
23	K	0-5	Mountain Brow Park West	0.56	\$460,000.00		✓						✓	✓	✓	LAS
24	L	10-20	Mountain Brow Park West	0.20	\$150,000.00	✓									✓	ES
25	K	0-5	Mountain Brow Park West	0.09	\$52,000.00		✓						✓		✓	LAS
26	M	20 <sup>+</sup>	Mountain Park Avenue Bridge over Sherman Cut	0.03	\$21,000.00	✓									✓	ES
27	K	0-5	Mountain Brow Park West	0.64	\$530,000.00		✓						✓	✓	✓	LAS
28	K	0-5	Mountain Drive Park	0.50	\$310,000.00								✓	✓	✓	LAS
29	N	0-5	Mountain Brow Boulevard	0.53	\$440,000.00		✓						✓	✓	✓	ES
30	O	20 <sup>+</sup>	Mountain Brow Boulevard	0.68	\$130,000.00					✓					✓	ES

Exhibit 47 - Projected cost breakdown by Project Section (continued)

Project Segment	Project Group	Project Horizon (yrs) <sup>1</sup>	Project Limits	Length (km)	Estimated Cost	Costs Included										Implementation Responsibility <sup>2</sup>
						New Trail	New Trail	New Bike lanes	New Signed Cycling Route	New Sidewalk	Paved Shoulders	Intersection Upgrade	Amenities	New Lighting	Wayfinding & Branding	
31	P	10-20	Rendell Boulevard/Mullock Avenue	0.55	\$6,000.00				✓						✓	AT
32	P	10-20	Edgewood Avenue	0.36	\$320,000.00				✓			✓			✓	AT
33	P	10-20	High Street/Woodside Drive/Oakcrest	0.46	\$5,000.00										✓	LAS
34	Q	5-10	Existing Mountain Brow Trail	2.16	\$22,000.00										✓	LAS
35	Q	5-10	Existing Escarpment Rail Trail Access	0.17	\$2,000.00										✓	LAS
36	R	5-10	Existing Escarpment Rail Trail	1.93	\$410,000.00		✓								✓	LAS
37	S	0-5	Future Mountain Brow Trail	0.77	\$570,000.00	✓									✓	LAS
38	S	0-5	Pritchard Road	0.20	\$150,000.00	✓									✓	LAS
39	T	10-20	Red Hill Valley Trail	1.13	\$150,000.00										✓	LAS
40	T	10-20	Former Mount Albion Road	0.37	\$190,000.00	✓									✓	LAS
41	U	10-20	Existing East Mountain Trail Loop	1.75	\$18,000.00										✓	LAS
42	U	10-20	Existing Mountain Brow Multi-Use Trail at Felker's Falls	0.95	\$10,000.00										✓	LAS

Exhibit 47 - Projected cost breakdown by Project Section (continued)



Project Segment	Project Group	Project Horizon (yrs) <sup>1</sup>	Project Limits	Length (km)	Estimated Cost	Costs Included										Implementation Responsibility <sup>2</sup>
						New Trail	New Trail	New Bike lanes	New Signed Cycling Route	New Sidewalk	Paved Shoulders	Intersection Upgrade	Amenities	New Lighting	Wayfinding & Branding	
43	V	0-20	Future Heritage Green Sports Park Multi-Use Trail	0.32	\$240,000.00	✓									✓	LAS
44	V	10-20	Existing Heritage Green Sports Park Multi-Use Trail	0.50	\$5,000.00										✓	LAS
45	W	0-20	Heritage Green Sports Park	0.20	\$150,000.00	✓									✓	LAS
46	W	0-20	First Road West/Green Mountain Road West	0.39	\$130,000.00			✓		✓					✓	GM
47	W	0-20	Green Mountain Road West	0.46	\$150,000.00			✓		✓					✓	GM
48	X	20+	Green Mountain Road West	0.23	\$76,000.00			✓		✓					✓	GM, ES
49	Y	20+	Green Mountain Road East	0.85	\$130,000.00						✓				✓	GM/LAS
50	Y	20+	1st Road East	1.02	\$150,000.00						✓				✓	GM/LAS
51	Z	10-20	Dofasco Trail	0.82	\$110,000.00										✓	LAS
<b>TOTAL (2018 Dollars)</b>				<b>27</b>	<b>\$9,111,000.00</b>											

**Notes:**

## 1. Project Horizons

Short-term (0-5yrs) - 2019-2023  
 Medium-term (5-10 yrs) - 2024-2028  
 Long-term (10-20 yrs) - 2029-2038  
 Ultimate (20+ years) - 2039+

## 2. Implementation Responsibility

AT - Alternative Transportation  
 D - Developer  
 ES - Engineering Services  
 GM - Growth Management  
 LAS - Landscape Architectural Services



*Bruce Trail*

## 8.2 Funding Opportunities

In addition to conventional funding, there are opportunities to pursue unique funding sources for the Mountain Brow Trail. A variety of potential funding sources are summarized in this section for reference.

### **Federation of Canadian Municipalities Green Municipal Fund**

The Federation of Canadian Municipalities (FCM) Green Municipal Fund program funds capital projects encouraging modal shift or fleet fossil fuel and greenhouse gas (GHG) emissions reduction. Modal shift is the change in travel patterns from one type of mode to a more sustainable one (e.g. a change in the number of people using public transit instead of cars). The Mountain Brow project is an eligible project as this active transportation project demonstrates the potential to reduce vehicle kilometres traveled in single occupancy vehicles by

encouraging alternative modes of travel through the provision of a critical east-west pedestrian and cycling corridor on the escarpment.

More information regarding the application, deadline, and the approval process for the Green Municipal Fund can be found here:

<https://fcm.ca/home/programs/green-municipal-fund/apply-for-funding/application-and-approval-processes-and-deadlines.htm>

### **Hamilton Future Fund**

The City of Hamilton manages the Hamilton Future Fund, which provides funding opportunities to eligible projects that provide permanent community benefit, improve the economic prosperity of Hamiltonians, and have specific, measurable results. Applications are not currently available on

the City's website, but City staff can connect with the Board of Governors of the Hamilton Future Fund to determine eligibility and when applications will be accepted.

More information regarding the application, and the Hamilton Future Fund can be found here:

<https://www.hamilton.ca/community-funding-grant-programs/hamilton-future-fund/hamilton-future-fund>

### **Heritage Green Community Trust**

The Heritage Green Community Trust distributes grants to qualifying recipients or organizations who provide services to residents within the former City of Stoney Creek town boundary, as well as those within 3km of the Terrapure Environmental Stoney Creek Regional Facility.

Grants are awarded annually to support





*View of the lower city from Cliffview Park*

community-based programs relating to health and social services, art and culture, education, conservation and recreation.

<https://www.heritage-green.org/trust-grants/>

### **Municipal GHG Challenge Fund**

The Province of Ontario's Municipal GHG Challenge Fund is a program funded by the proceeds from Ontario's carbon market that aims to support community-led action on climate change.

If the City of Hamilton has or demonstrates a commitment to creating a record of a community-wide greenhouse gas inventory, emission reduction targets, and a strategy/plan to reduce emissions within 18 months, the Mountain Brow project may be eligible for up to \$10 million.

Applications for the Municipal GHG Challenge Fund are currently closed, but

it is recommended that staff investigate if the City of Hamilton has created or is in the process of creating a GHG inventory, emission reduction targets, and a strategy/plan to reduce emissions. If the City is creating a plan or currently has one, it is recommended that staff connect with the Province of Ontario to learn when applications will be accepted.

More information regarding the Municipal GHG Challenge Fund can be found here:

<http://www.grants.gov.on.ca/GrantsPortal/en/OntarioGrants/GrantOpportunities/PRDR017538>

### **Commuter Cycling Program**

In December 2017, the Province of Ontario announced that 120 municipalities would be receiving \$93 million for new bike lanes and other cycling infrastructure as part of

the Commuter Cycling Program. Of the committed \$93 million, the City of Hamilton is receiving \$3.7 million.

City staff can connect with City of Hamilton Transportation Planning staff to determine if it is possible to utilize a portion of the \$3.7 million for the Mountain Brow project.

The City of Hamilton's Alternative Transportation section is also investigating the possibility of securing a sustainable funding source from the Province of Ontario where municipalities would receive an annual contribution towards bike lanes and other cycling infrastructure.

More information regarding the Commuter Cycling Program and Ontario Cycling Strategy can be found here:

<https://www.ontario.ca/page/cycling-ontario>





*View of the lower city*



## 9.0 SUMMARY OF RECOMMENDATIONS AND NEXT STEPS

The primary purpose of the Mountain Brow Trail Feasibility Study is to provide a framework for the reconstruction and renovation of the existing trail segments, the extension of the trail into undeveloped areas, and possible integration with existing and proposed pedestrian and cycling infrastructure along the route. The trail serves to fulfill the Hamilton Recreational Trails Master Plan mandate of creating planned, connected, diverse, inspiring, accessible, safe and sustainable recreational opportunities for all of the City's residents and visitors. Once complete, the trail will address the needs of users (including accessibility and safety), enhance the Niagara Escarpment while promoting conservation, and support the City's vision to be the best place for family living.





Jolley Cut Path

## 9.1 Project Summary

This report summarizes the work completed as part of the Mountain Brow Trail Feasibility Master Plan.

To develop this Feasibility Master Plan, various data gathering exercises were completed including field and site reviews, policy and plan reviews, public engagement sessions, stakeholder engagement and project mapping. An iterative study process was used to select and refine project segments based on resident and stakeholder input, feasibility considerations, environmental constraints and other City initiatives and projects. The resulting recommended trail route is intended to fulfill the vision for the Mountain Brow Trail identified during project initiation.

*The Mountain Brow Trail will be developed as a recreational trail that follows the escarpment edge as closely as possible to take advantage of views and provide connectivity between wards. The trail shall include a mixture of facility types with a preference towards accessible off-road, multi-use trails that are wide enough for pedestrians and cyclists.*

Through the development of the Master Plan, each project segment was reviewed to identify numerous attributes including the proposed facility type, width, amenities, lighting, permitting, stakeholders and roadway context etc. An implementation strategy was developed and discussed, including high-level cost estimates.

In addition, trail branding has been developed, including wayfinding and amenities in an effort to create a cohesive and connected trail system. Potential blue sky ideas associated with trail implementation have also been summarized in the appendix of this Master Plan to guide potential future major capital investments.

This report provides a framework for trail implementation, determined through a multi-stage design process. It provides the foundation for the ultimate development of a 25km connected trail link across the Mountain Brow. The recommended trail route is presented in Exhibit 48.



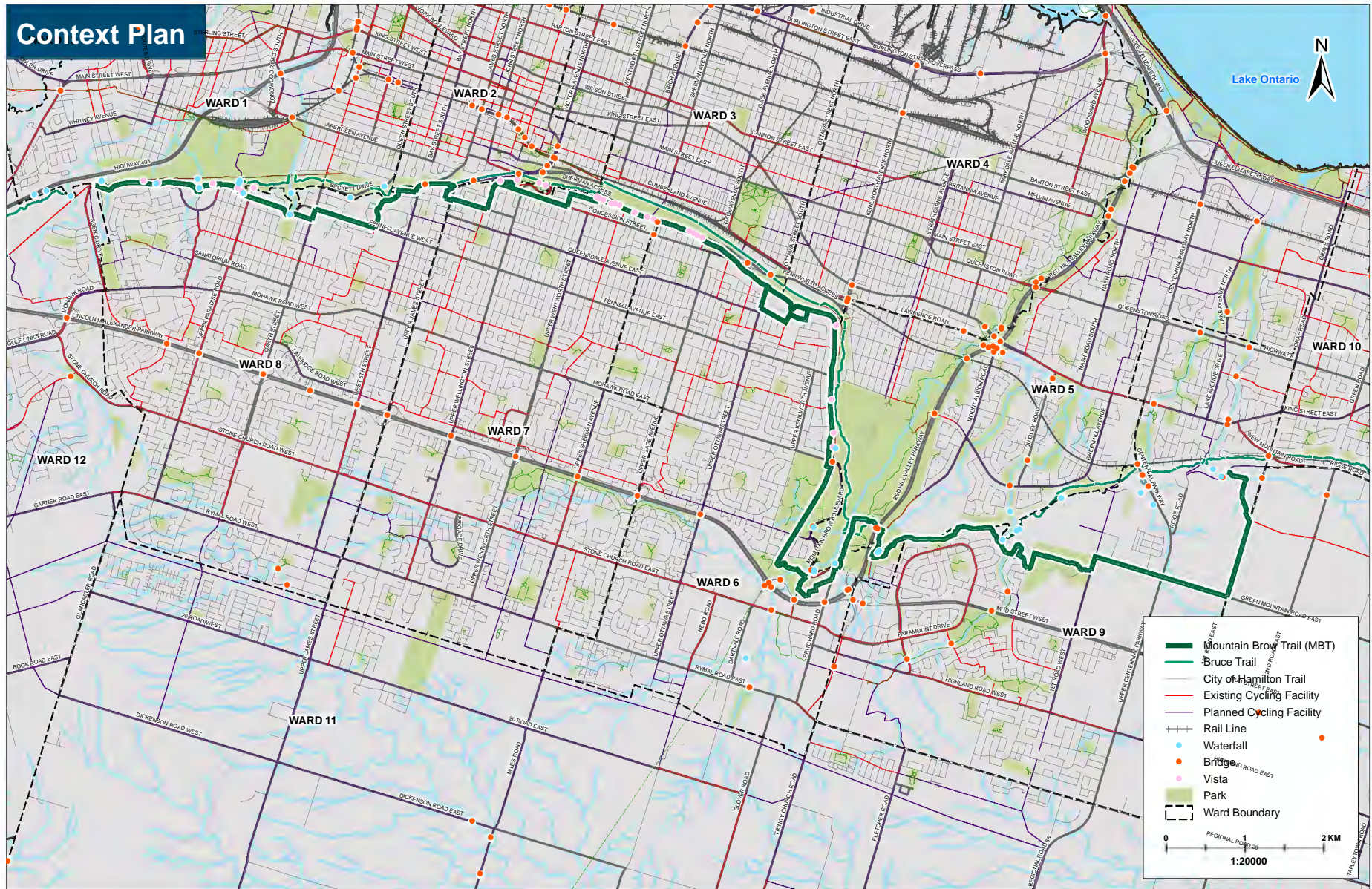


Exhibit 48 - Mountain Brow Trail Context Plan





Claremont Access Spur

## 9.2 Overall Budget & Implementation Timeline

Based on the cost estimates prepared for each section of the trail, the total anticipated cost of the Mountain Brow Trail is \$9,111,000.

As noted in Chapter 6.3, project segments have been grouped into four phases for implementation:

- Short-term (0-5 years) - 2019-2023
- Medium-Term (5-10 years) - 2024-2028
- Long-Term (10-20years) - 2029-2038
- Ultimate (Beyond 20 years) - 2039+

Although the project horizons extend beyond twenty years, opportunities to accelerate implementation to provide a connected trail by 2039 should be explored as opportunities arise.

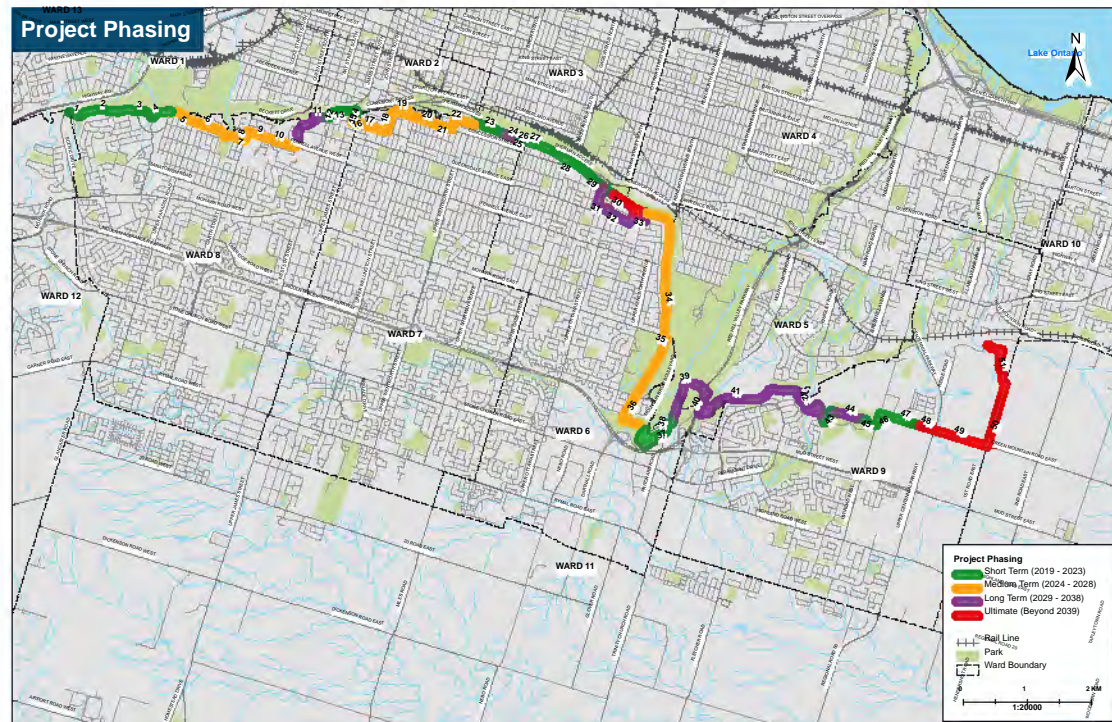


Exhibit 49 - Project Phasing Map - see also Exhibit 27, page 62





Sam Lawrence Park

## 9.3 Next Steps

The Mountain Brow Feasibility Study has provided the framework for the design and implementation of the trail using the principles of the Recreational Trails Master Plan. The study marks the first step in a multi-step process for route implementation, which will generally include pre-design steps such as consultation and permitting, preliminary design, followed by detailed design, and tendering and construction. Accordingly, this study provides the starting point for more detailed engagement, exploration and investigation into each trail segment or group.

In order to realize the implementation of the trail, the following steps will be required:

- Coordination with city agencies for planned and forecasted city initiatives, including planned road reconstruction projects;
- Year-over-year budgeting, planning and implementation for project segments;
- Identification of funding sources to finance the selected segment(s) or group(s) of the trail, and future trail segments;
- Coordination with stakeholders, including residents, during design development, to facilitate further refinement of the trail alignment;
- Further studies in locations where failing infrastructure (existing or potential) is a concern, where inaccessible slopes need to be mitigated, where the interaction between trail and roadway users is a concern, or where other studies and permits have been identified in the project sheets; and
- Periodic review of the Feasibility Master Plan (every 3-5 years) to evaluate segments of the trail implemented and to plan and coordinate future projects.





*Jolley Cut - Arkledun Avenue Stairs and Bike Trough*



## 10.0 REFERENCES

1. Recreational Trails Master Plan (2007, 2016). City of Hamilton & Seferian Design Group
2. Urban Hamilton Official Plan (2013). City of Hamilton
3. Rural Hamilton Official Plan (2012). City of Hamilton
4. Park and Open Space Development Guide (2015). City of Hamilton
5. Niagara Escarpment Plan (2017). Niagara Escarpment Commission
6. Mountain Brow Vista Study and Management Plan (2016). City of Hamilton & Dillon Consulting Limited
7. Ontario Trails Strategy (2005). Ontario Ministry of Health Promotion
8. Public Art Master Plan (2016). City of Hamilton
9. Hamilton's Cycling Master Plan: Shifting Gears 2009, Municipal Class Environmental Assessment (2009). City of Hamilton & Ecoplans Limited.
10. Illustrated Technical Guide to the Accessibility Standard for the Design of Public Spaces. Global Alliance on Accessible Technologies and Environments
11. Step Forward: Hamilton Pedestrian Mobility Plan (2012). City of Hamilton & G. O'Connor Consultants Inc.
12. The Power of Trails for Promoting Physical Activity in Communities. A Research Brief. Princeton, NJ: Active Living Research, a National Program of the Robert Wood Johnson Foundation (2011). Phil Troped
13. Making the Case for Active Transportation: Bulletin #8 Role for Municipal Decision Makers, Canadian Fitness and Lifestyle Research Institute, Ottawa, Ontario (2009). K. Bergeron & S. Cragg,





Southam Park



# 11.0 APPENDICES

- A. PIC #1 Notices
- B. PIC #1 Boards
- C. PIC #1 Surveys (PIC#1 & Online)
- D. PIC #1 Summary Report
- E. PIC #2 Boards
- F. High-Level Review of Cycling Facility Selection
- G. Trail Link Priority Analysis
- H. Trail Potential Demand
- I. Blue Sky Ideas







## FEASIBILITY MASTER PLAN

### APPENDIX A

# PIC #1 NOTICES







400 - 77 James Street North  
Hamilton ON Canada L8R 2K3  
www.hamilton.ca

Public Works Department  
Environmental Services Division  
Landscape Architectural Services Section  
905-546-2424 ext 1303 (Telephone)  
905-546-4435 (Facsimile)

October 27<sup>th</sup>, 2017

**NOTICE OF PUBLIC INFORMATION CENTRE  
FOR PROPOSED MOUNTAIN BROW MULTI-USE  
PATHWAY FEASIBILITY STUDY**

Dear Resident,

Please join City staff at a Public Information Centre (PIC) to discuss the Mountain Brow Multi-Use Pathway Feasibility Study. The proposed multi-use path will begin at the Iroquoia Heights Conservation Area and terminate at the Devil's Punch Bowl.

The City is seeking the input of residents in Wards 6, 7, 8 and 9 and will be hosting meetings to share information specific to each Ward. The purpose of the Public Consultation is to receive feedback regarding, but not limited to the following:

- the location of the proposed pathway and alternate routes;
- key destination points;
- desired amenities and connections;
- usage frequency and purpose; and
- timelines and priorities.

The meeting information for each ward is as follows:

<b>Ward 06</b>			
<i>Date:</i>	Monday, November 13 <sup>th</sup> , 2017	<i>Time:</i>	6:00pm to 8:30pm
<i>Location:</i>	Sherwood Library 467 Upper Ottawa St Hamilton, ON L8T 3T3	<i>Format:</i>	Open house Presentation from 7:00pm to 7:30pm
<b>Ward 07</b>			
<i>Date:</i>	Wednesday, November 15 <sup>th</sup> , 2017	<i>Time:</i>	6:00pm to 8:30pm
<i>Location:</i>	Sherwood Library 467 Upper Ottawa St Hamilton, ON L8T 3T3	<i>Format:</i>	Open house Presentation from 7:00pm to 7:30pm

**Ward 08**

<i>Date:</i>	Tuesday, November 21 <sup>st</sup> , 2017	<i>Time:</i>	7:00pm to 9:00pm
<i>Location:</i>	Chedoke Bocce (connected to Chedoke Twin Pad Arena) 91 Chedmac Drive Hamilton, ON L9C 7R5	<i>Format:</i>	Open house Presentation from 7:30pm to 8:00pm

**Ward 09**

<i>Date:</i>	Wednesday, November 22 <sup>nd</sup> , 2017	<i>Time:</i>	6:00pm to 8:30pm
<i>Location:</i>	Winter Heights Salvation Army Church, Fellowship Room 300 Winterberry rive Stoney Creek, ON L8J 3Y1	<i>Format:</i>	Open house Presentation from 7:00pm to 7:30pm

To find more information online regarding the project, you can visit the City of Hamilton's website at <https://www.hamilton.ca/parks-recreation/creating-new-parks/new-park-development> and navigate to the MountainBrow Multi-Use Path Feasibility Study.

***We want your feedback!***

If you are unable to attend the PIC please contact Louise Thomassin at the e-mail address or telephone number listed in the signature below to provide your comments. We encourage you to also complete the online survey that will be available on the MountainBrow Multi-Use Pathway project page.

**Please provide your feedback by Wednesday, December 11<sup>th</sup> 2017.**

Sincerely,

Louise Thomassin, Landscape Architect  
Landscape Architectural Services  
(905) 546-2424 ext. 1303  
louise.thomassin@hamilton.ca







## FEASIBILITY MASTER PLAN

### APPENDIX B

# PIC #1 BOARDS

1. DEMOGRAPHICS		2. MOUNTAIN BROW TRAIL USE & ACCESS				
Age Group			Daily	A few times a month	Less than once per month	Never
>15		Once the Mountain Brow trail is completed, how often do you expect to use the corridor?				
16-25		What are your current or expected top three (3) activities on the Mountain Brow trail?		What are your current, or expected, use the Mountain Brow trail?		
		Walk/Hike		Most Often	Sometimes	Never
26-35		Bicycle		Enjoyment of nature		
		Run/Jog		Fitness/Exercise		
36-45		Rollerblade/ Skateboard		Commute to work/school		
46-55		Pet Walking		Shopping/Errands		
		Photography		Special Destinations: Historics sites, waterfalls, parks, etc		
56-65		Nature viewing/ Sightseeing		Other		
>65		Other				



## 2. MOUNTAIN BROW TRAIL USE & ACCESS

When do you currently use, or when would you like to use, the Mountain Brow trail?						How do you currently get to the Mountain Brow trail?		Once you arrive, what distance do you usually travel along the Mountain Brow trail?	
		Spring	Summer	Fall	Winter				
Weekdays?	Morning					Walk/Run		<1km	
	Afternoon								
	Evening					Bike/ Rollerblade/ Skateboard		1-5km	
	Never								
Weekends?	Morning					Public Transit		6-10km	
	Afternoon								
	Evenings					Drive		>10km	
	Never								
						Other			

Are you comfortable using:			On average, how much time do you spend on the Mountain Brow trail?	
	Yes	No		
Signed On-Street Bicycle Routes?			<30mins	
On-Street Bicycle Lanes & Sidewalks?			30mins-1hr	
Multi-Use Paths?			1-2hrs	
Paved Shoulders?			>2hrs	

### 3. MOUNTAIN BROW TRAIL IMPROVEMENTS

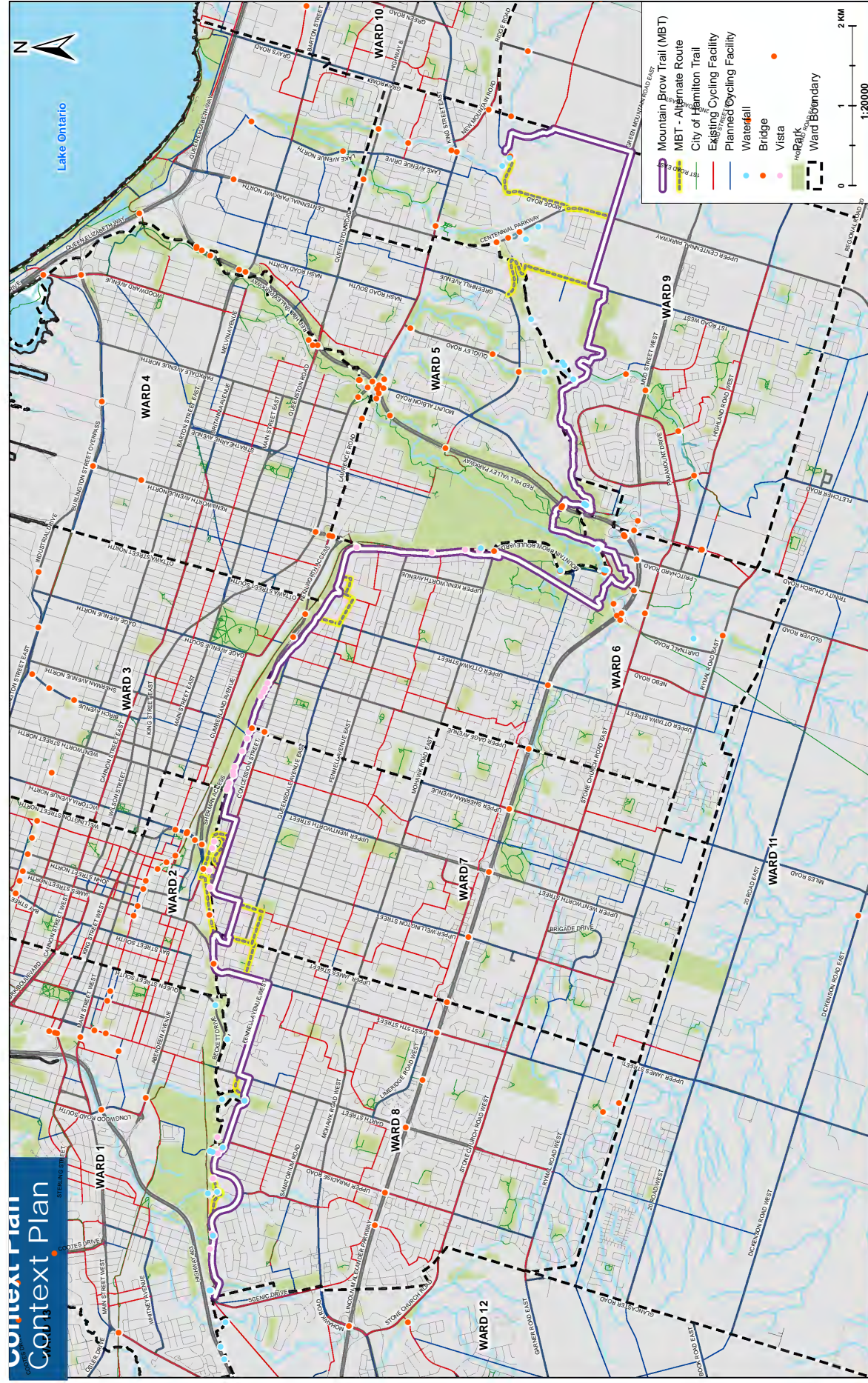
Identify your top THREE wish list improvements for the Mountain Brow trail:

Distance Markers		Other improvements (leave your sticky notes below):
Lighting		
Trees (for shade)		
Benches		
Scenic Views/ Lookout Points		
Wayfinding Signage		
Water Fountains		
Exercise Stations		
Interpretive/ Educational Panels		
Year-Round Maintenance		
Adjacent Destinations: coffee shops, plazas, etc		
Parking		
Trash Receptacles		
Bike Racks/ SoBi Stations		
Wider Trails		
Paved Trails		

#### Activity Checklist

- Mountain Brow Map Sections 1-5
- Dot Matrix Survey ← You are here
- Access Point Map (Table)
- Investment Survey





# Mountain Brow Trail Feasibility Masterplan

WHAT’S GOING ON HERE?

In May 2016 the City of Hamilton updated the Recreational Trails Master Plan, originally published in 2007, as the City responded to the growth and new infrastructure developing within the city and surrounding communities. The Recreational Trails Master Plan is based on an overall vision to implement a connected and continuous trails network. Goals to achieve the vision are outlined in the report along with supporting objectives. The objectives are:

PLANNED:	Trails will be considered an integral component of all community planning and development.
CONNECTED:	Trails will serve to connect the urban and rural communities of Hamilton, both internally and externally, and will link key destinations. Improved wayfinding will be incorporated into the trails network.
DIVERSE:	The trail system will be designed to appeal to a wide range of users, abilities and interests.
INSPIRING:	Trails will promote and encourage use and enjoyment of the City's natural, cultural and recreational features.
ACCESSIBLE:	Where possible, the trail system will provide opportunities for four-season use, and will include a core network of trails that are accessible to people of all ages and abilities.
SAFE:	Safety, security and user comfort will be considered in the design and management of the trail system.
SUSTAINABLE:	The trail system will be developed and managed in a manner that preserves the environment, is financially responsible, and encourages opportunities

WHAT’S ALL THIS FOR?

The City of Hamilton is developing a vision to create a Mountain Brow Trail that will run continuous along ‘The Brow’ from the Iroquoia Heights Conservation Area in Ward 08 to the Devil’s Punch Bowl in Ward 09 (that’s more than 10km!!). This discussion follows the Mountain Brow Vista Study and Management Plan, which focused on the establishment of new views and reinforcement of existing views along the Escarpment, while protecting and enhancing the natural environment. Now, we explore how the community uses the existing trail portions and how it might be used in the future.


We need your feedback to ensure that the development of the trail will meet user needs.

WHAT DO I NEED TO DO?

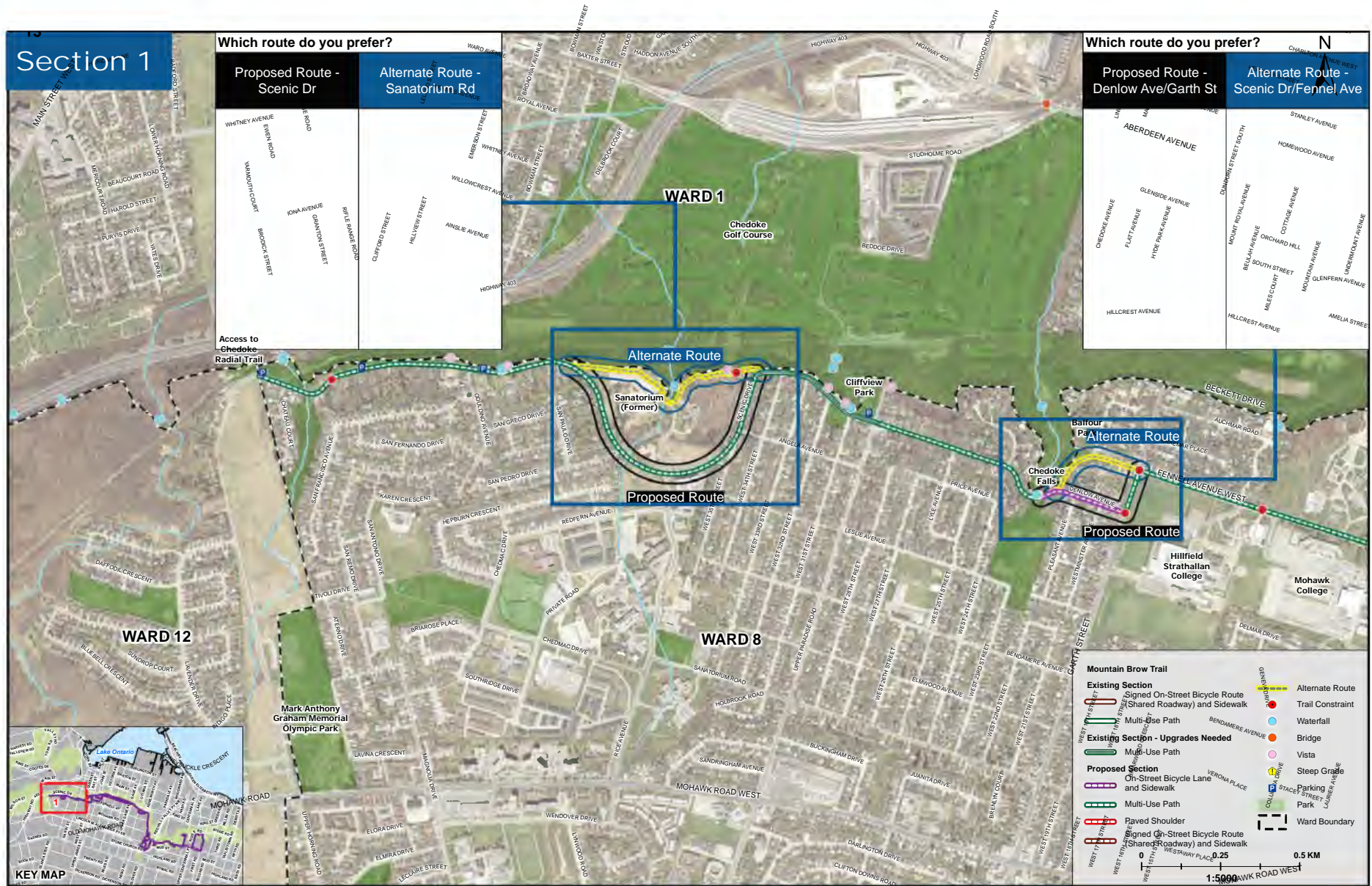
The following boards show the trail in five (5) sections, detailing where existing and proposed trails are located. Alternate routes to the proposed trail have also been proposed at various locations. Your input is needed to determine which of the proposed alternate routes are preferred. Use a sticky dot to indicate your preference in the table located on each map.

Do you need help finding one of the locations? One of us is nearby to assist you.  
Do you have additional comments? Feel free to attach a sticky note on the **Comments** board at the end.  
Thank you for your participation!

Activity Checklist

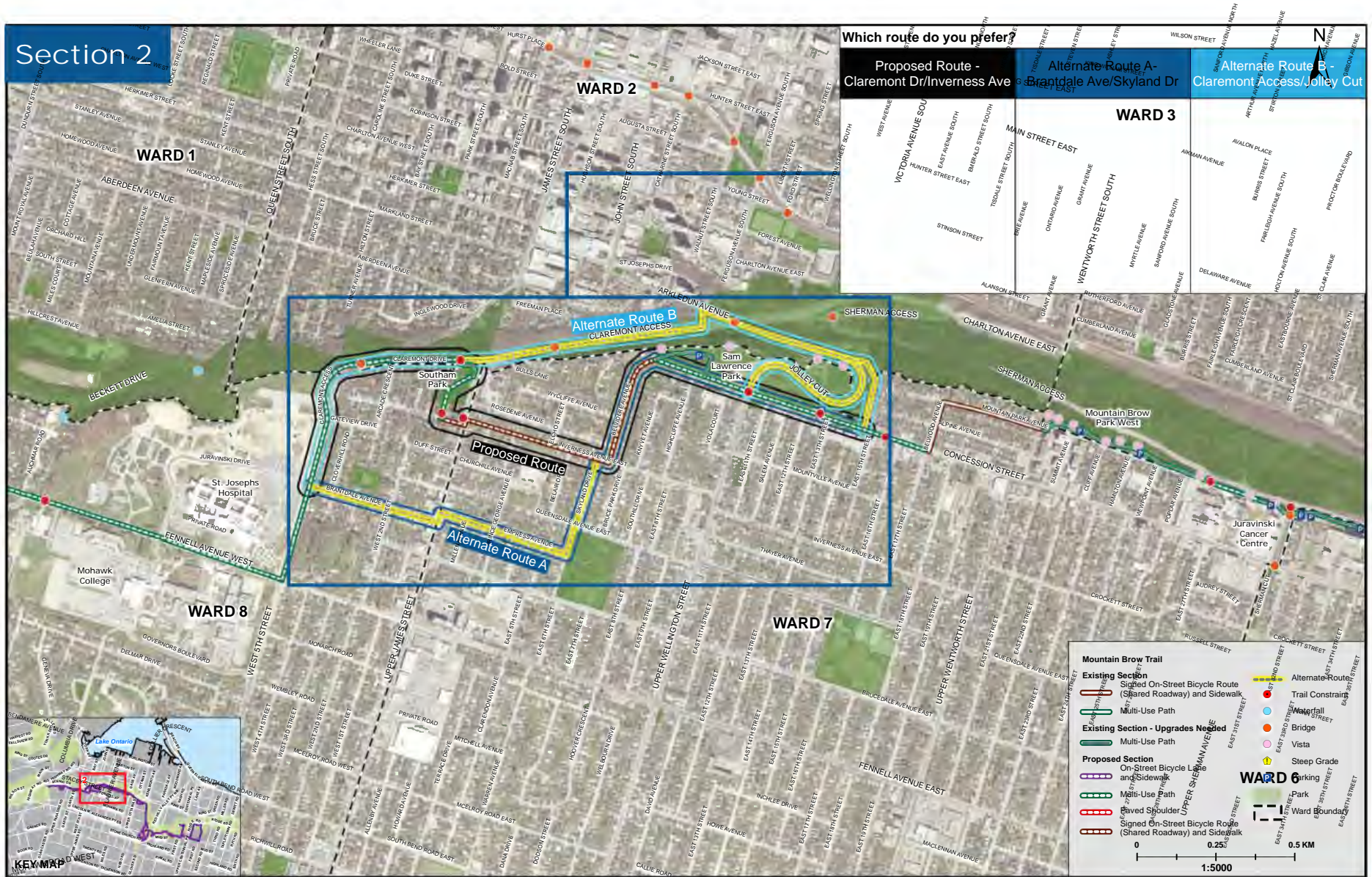
- Mountain Brow Map Sections 1-5  You are here
- Dot Matrix Survey
- Access Point Map (Table)
- Investment Survey





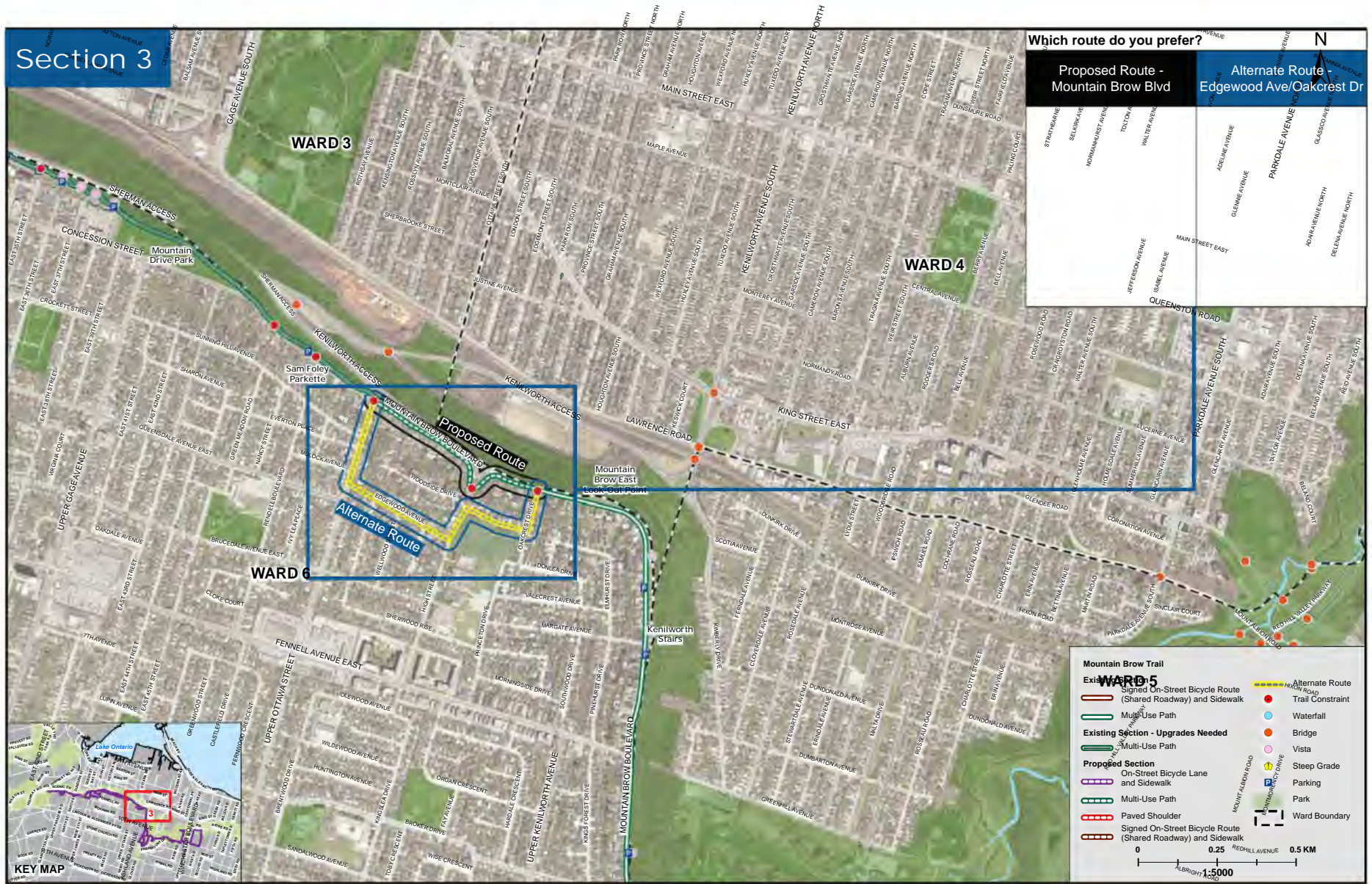
# Mountain Brow Trail Feasibility Masterplan





# Mountain Brow Trail Feasibility Masterplan





# Mountain Brow Trail Feasibility Masterplan

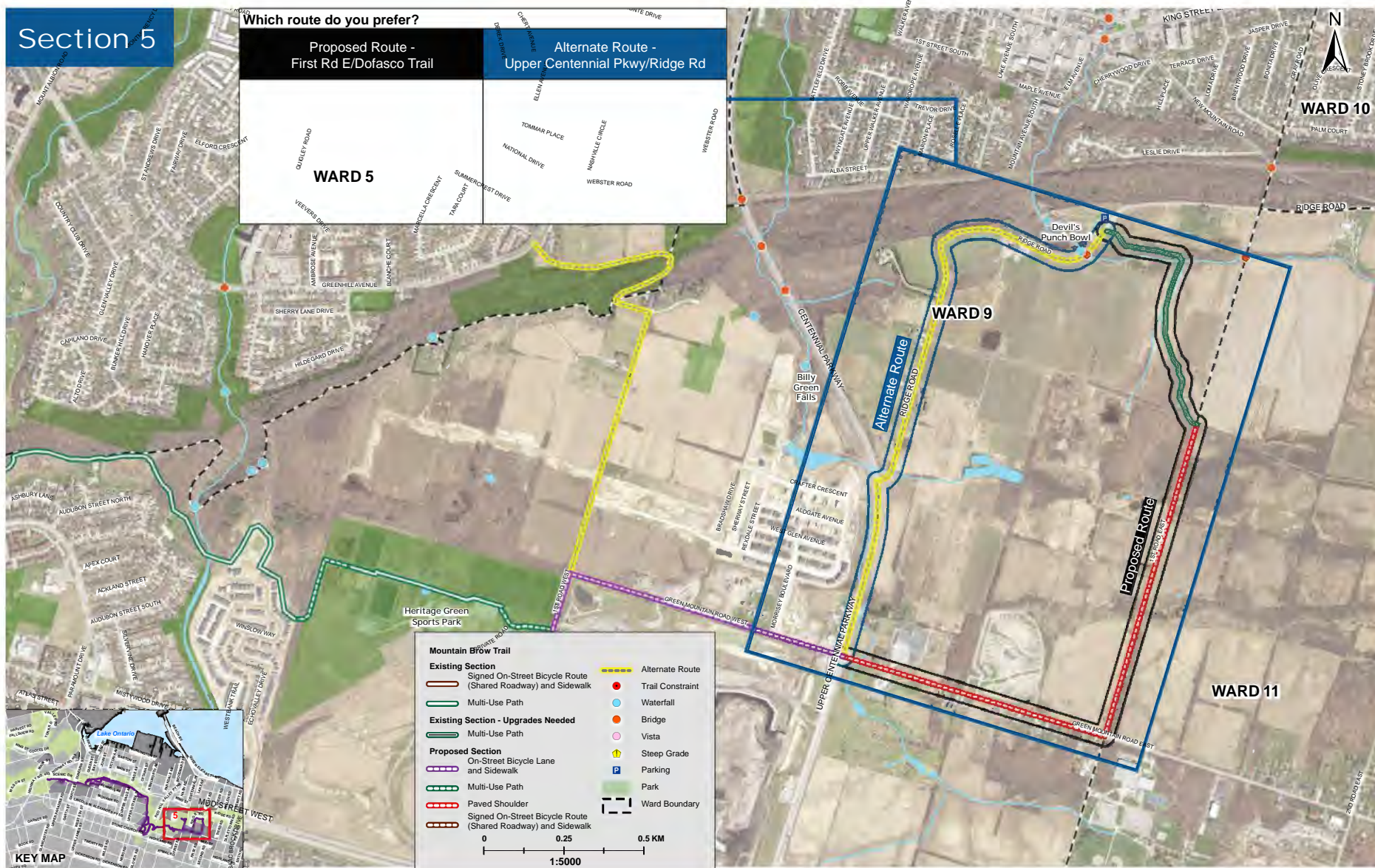


Section 4



Mountain Brow Trail Feasibility Masterplan





# Mountain Brow Trail Feasibility Masterplan

# Comments?

*Please feel free to let us know your thoughts. Take a sticky note and leave it here when you are through.*





## FEASIBILITY MASTER PLAN

### APPENDIX C

# PIC #1 SURVEYS (PIC & ONLINE)







## Mountain Brow Trail Survey

In May 2016 the City of Hamilton updated the Recreational Trails Master Plan, originally published in 2007, as the City responded to the growth and new infrastructure developing within the city and surrounding communities. The Recreational Trails Master Plan is based on an overall vision to implement a connected and continuous trails network. Goals to achieve the vision are outlined in the report along with supporting objectives. The objectives are:

**PLANNED:** Trails will be considered an integral component of all community planning and development.

**CONNECTED:** Trails will serve to connect the urban and rural communities of Hamilton, both internally and externally, and will link key destinations. Improved wayfinding will be incorporated into the trails network.

**DIVERSE:** The trail system will be designed to appeal to a wide range of users, abilities and interests.

**INSPIRING:** Trails will promote and encourage use and enjoyment of the City's natural, cultural and recreational features.

**ACCESSIBLE:** Where possible, the trail system will provide opportunities for four-season use, and will include a core network of trails that are accessible to people of all ages and abilities.

**SAFE:** Safety, security and user comfort will be considered in the design and management of the trail system.

**SUSTAINABLE:** The trail system will be developed and managed in a manner that preserves the environment, is financially responsible, and encourages opportunities

The City of Hamilton is developing a vision to create a Mountain Brow Trail that will run continuously along 'The Brow' from the Iroquoia Heights Conservation Area in Ward 08 to the Devil's Punch Bowl in Ward 09 (that's more than 10km!!). This discussion follows the Mountain Brow Vista Study and Management Plan, which focused on the establishment of new views and reinforcement of existing views along the Escarpment, while protecting and enhancing the natural environment. Now, we explore how the community uses the existing trail portions and how it is hoped to be used in the future.

We need your feedback to ensure that the development of the trail will meet user needs.



## Mountain Brow Trail Survey

Please answer all questions to the best of your ability.


1. What are the first three digits of your postal code?

2. Please identify your age group .

- ☐ <15
- ☐ 16 - 25
- ☐ 26 - 35
- ☐ 36 - 45
- ☐ 46 - 55
- ☐ 56 - 65
- ☐ 65+

3. Once the Mountain Brow Trail is completed, how often do you expect to use the corridor?

- ☐ Daily
- ☐ A few times per month
- ☐ Less than once per month
- ☐ Never



Mountain Brow Trail Survey

4. What are your top 3 activities on the Mountain Brow trails? (Please select up to three activities)

Please select up to three activities.

Walk/Hike	<input type="radio"/>
Bicycle	<input type="radio"/>
Run/jog	<input type="radio"/>
Rollerblade/skate	<input type="radio"/>
Pet Walking	<input type="radio"/>
Photography	<input type="radio"/>
Nature viewing/Sightseeing	<input type="radio"/>

Other (please specify)

5. Why do you use the Mountain Brow trails?

	Most often	Sometimes	Rarely	Never
Enjoyment of nature	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Fitness/Exercise	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Commute to work/school	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Shopping/errands	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Special destinations: historic sites, waterfalls, parks, etc.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

(please specify below)

6. When do you use the Mountain Brow trails from Monday to Friday?

	Spring	Summer	Fall	Winter
Morning	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Afternoon	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Evening	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Never	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

7. When do you use the Mountain Brow trail on the weekend?

	Spring	Summer	Fall	Winter
Morning	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Afternoon	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Evening	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Never	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

8. Once you arrive, what distance do you usually travel along the Mountain Brow trail?

☐ < 1 KM

☐ 1 - 5 KM

☐ 6 - 10 KM

☐ 10 + KM

9. On average, how much time do you spend on the Mountain Brow trail during each visit?

☐ < 30 mins

☐ 30 mins - 1 hour

☐ 1 - 2 hours

☐ 2 + hours

10. Are you comfortable using the following (please click on term to be directed to the definition):

	Yes	No
On-Street Signed Cycling Route (Shared Roadway) and Sidewalk	<input type="radio"/>	<input type="radio"/>
On-Street Bicycle Lane and Sidewalk	<input type="radio"/>	<input type="radio"/>
Paved Shoulder	<input type="radio"/>	<input type="radio"/>
Multi-Use Path	<input type="radio"/>	<input type="radio"/>



11. Please select up to three wish list improvements for the Mountain Brow Trail.


Please select up to three options.

- |  |                       |
|--|-----------------------|
| Distance markers                                 | <input type="radio"/> |
| Lighting   | <input type="radio"/> |
| Trees (for shade)                                | <input type="radio"/> |
| Benches  | <input type="radio"/> |
| Scenic views/lookout points                      | <input type="radio"/> |
| Wayfinding signage                               | <input type="radio"/> |
| Water fountains                                  | <input type="radio"/> |
| Exercise Stations                                | <input type="radio"/> |
| Interpretive/Educational Panels                  | <input type="radio"/> |
| Year-Round maintenance                           | <input type="radio"/> |
| Adjacent Destinations: coffee shops, plazas, etc | <input type="radio"/> |
| Parking  | <input type="radio"/> |
| Trash Receptacles                                | <input type="radio"/> |
| Bike Racks/SOBi stations                         | <input type="radio"/> |
| Wider Trails                                     | <input type="radio"/> |
| Paved Trails                                     | <input type="radio"/> |

Other (please specify)

12. Are you in favour of alternate routes at the following locations: (please click on each location to view the various options on the corresponding map). Please select options 1, 2 or 3 (where applicable).

	Option 1	Option 2	Option 3
Options: <u>1. Scenic Drive</u> or <u>2. Sanatorium Road</u>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Options: <u>1. Denlow Ave/Garth St</u> or <u>2. Scenic Dr/Fennell Ave</u>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Options: <u>1. Claremont Dr/Inverness Ave</u> or <u>2. Brantdale Ave/Skyland Dr</u> or <u>3. Claremont Access/Jolley Cut</u>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Options: <u>1. Mountain Brow Blvd</u> or <u>2. Upper Ottawa/Edgewood Ave/Oakcrest Dr</u>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Options: <u>1. First Rd E/Dofasco Trail</u> or <u>2. Upper Centennial Pkwy/Ridge Rd</u>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



Mountain Brow Trail Survey

13. How do you currently get to the Mountain Brow Trail?

☐ Walk/Run
 ☐ Bike/Rollerblade/Skateboard
 ☐ Public Transit
 ☐ Drive
 ☐ Other (please specify)

14. For this potential investment, what is your priority for the Mountain Brow Trail within a shorter timeframe?

☐ A fully connected trail installed within a shorter timeframe with amenities (i.e. drinking fountain, benches, look out points) added over a longer period of time.
 ☐ Segments of the trail installed with full amenities (i.e. drinking fountain, benches, look out points) installed over a shorter time frame, fully connecting segments of the trail over a longer period of time.

15. Which section(s) of the trail would you like to be prioritized for development first? [Click here to view the Context Map](#)

☐ Ward 6
 ☐ Ward 7
 ☐ Ward 8
 ☐ Ward 9
 ☐ All of the above – I would like a continuous/connected trail



Mountain Brow Trail Survey

16. You indicated that you drive to your access point(s), where do you usually park?

☐ Scenic Drive Parking Lot (Chedoke/Bruce Trail Intersection)
 ☐ Scenic Drive Laybys
 ☐ Sanatorium Rd
 ☐ Cliffview Park Parking Lot
 ☐ Sam Lawrence Park Parking Lot
 ☐ Concession Street Parking Lot
 ☐ Mountain Brow West Park Parking Lots
 ☐ Mountain Park Ave Laybys
 ☐ Bill Foley Parkette
 ☐ Kenilworth Stairs Layby
 ☐ Mountain Brow Blvd Laybys (Broker Dr)
 ☐ Arnes Lookout Park
 ☐ Mohawk Sports Park
 ☐ Escarpment Rail Trail Parking Lot
 ☐ Oak Knoll Park
 ☐ Albion Falls Parking Lot (Mtn Brow Blvd/Upper Kings Forest Park)
 ☐ Albion Falls Parking Lot (Arbour Rd)
 ☐ Red Hill Trail South Parking Lot (Mud St @ Pritchard Rd)
 ☐ Paramount Park
 ☐ Felker's Falls Parking Lot
 ☐ Heritage Green Sports Park
 ☐ Devil's Punch Bowl Parking Lot
 ☐ Other (please specify)





Hamilton

## Mountain Brow Trail Survey

17. If you have any other comments or feedback, please leave your comments below. (optional)







## FEASIBILITY MASTER PLAN

### APPENDIX D

# PIC #1 SUMMARY REPORT







**IBI GROUP**  
200 East Wing – 360 James Street North  
Hamilton ON L8L 1H5 Canada  
tel 905 546 1010 fax 905 546 1011  
ibigroup.com

## Memorandum

**To/Attention** City of Hamilton **Date** March 28, 2018  
**From** IBI Group  
**Subject** Mountain Brow Trail Feasibility Master Plan  
Public Consultation Summary

### Introduction

The City of Hamilton & IBI Group are developing a Feasibility Master Plan for the Mountain Brow Trail, a proposed recreational trail that will follow the escarpment edge as closely as possible from the east terminus of Iroquoia Heights Conservation Area in Ward 8 to the west terminus of Devil's Punch Bowl in Ward 9. Roughly 25 km in length and spanning 4 wards, the trail will take advantage of views and provide connectivity between wards.

A major component of the feasibility study is public involvement. As part of the engagement process, the City of Hamilton hosted four (4) Public Information Centres (PIC) and an online survey to present the preliminary layout of the trail and garner feedback on how the existing portions of the trail are being used, and how they may be used in the future.

This memo summarizes the consultation process and findings.

### Consultation Summary

Four PICs were held, one in each ward where the trail is proposed. The dates and times for the PICs were scheduled as summarized in Exhibit 1.

#### Exhibit 1- PIC Schedule

<b>Ward 6</b> Monday, November 13, 2017 6:00pm-8:30pm Open House with a presentation from 7:00pm-7:30pm Sherwood Library Meeting Room, 467 Upper Ottawa St. Hamilton L8T3T3	<b>Ward 7</b> Wednesday, November 15, 2017 6:00pm-8:30pm Open House with a presentation from 7:00pm-7:30pm Sherwood Library Meeting Room, 467 Upper Ottawa St. Hamilton L8T3T3
<b>Ward 8</b> Tuesday, November 21, 2017 7:00pm-9:00pm Open House with a presentation from 7:30pm-8:00pm Chedoke Multi-Use Bocce Club, 91 Chedmac Dr. Hamilton, ON L9C 7R5	<b>Ward 9</b> Wednesday, November 22, 2017 6:00pm to 8:30pm Open House with a presentation from 7:00pm-7:30pm Winterberry Heights Church, 300 Winterberry Dr, Stoney Creek, ON L8J 3Y1

IBI Group is a group of firms providing professional services and is affiliated with IBI Group Architects

#### IBI GROUP MEMORANDUM

2

Mountain Brow Trail Feasibility Master Plan Public Consultation Summary –

The PICs were advertised 1-2 weeks prior to the date of the PIC through the City of Hamilton's website, the City of Hamilton's Twitter Feed and through the local paper – Hamilton Mountain News (Wards, 6, 7 & 8) and Stoney Creek News (Ward 9). City of Hamilton's Manager of Landscape Architectural Services also did an interview with Cable 14 News on November 30, 2017. Residents of properties directly abutting the proposed trail alignment also received mailed notices about the PIC. The advertisement is included in **Appendix A** and the notice sent to participants is included in **Appendix B**.

For all of the PICs, City of Hamilton and IBI Group staff were on hand to review information and discuss the project with participants. The PICs were scheduled to begin with a presentation outlining the objectives of the sessions, the proposed trail route, and identified areas of interest (opportunities and constraints), explaining definitions of any terms and processes used throughout the development process, and informing participants about the steps that will follow<sup>1</sup>.

#### Formal presentations at PIC #1 & PIC #3



In addition to the formal presentation, participants were guided to one of four stations (any order) to participate in:

- Dotmocracy** - a dot matrix questionnaire which allowed users to describe how they currently use the existing trail, how they expect to use the completed trail and improvements they would like to see implemented as part of the Mountain Brow Trail project.
- Investment Jar** – users were asked to indicate their preference for either:
  - a fully connected trail route experience, with amenities instituted later on; or

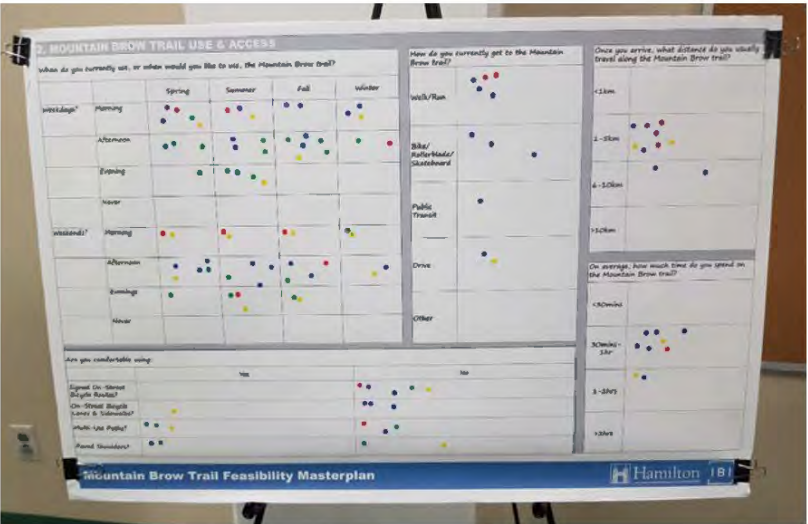
<sup>1</sup> For Ward 7, the presentation was withheld, since the small number of participants allowed for one-on-one discussions with facilitators. The presentation for Ward 9 was also withheld, since there were no participants.

Mountain Brow Trail Feasibility Master Plan Public Consultation Summary –

- ii. sections of trail installed with full amenities, leaving connections to be made later.
- 3. **Roll Out Plan** – users were asked to identify – using dots - where they lived, where they usually access the trail, where they park and where they would like additional parking. There were also asked to mark the route they take to their preferred access point(s) using markers.
- 4. **Alternate Routes** – consisted of a context plan, the trail broken into five (5) sections and a comments board. Users were asked to indicate their preference for the proposed alignment or an alternate route in five (5) locations

Users were also encouraged to use sticky notes to leave additional comments on the comments board or on the roll-out plan.

PIC Materials including the Dotmocracy, Investment Jars & Roll Plan



Mountain Brow Trail Feasibility Master Plan Public Consultation Summary –



Attendees were asked to sign in, but it was not mandatory. In total, 39 residents were recorded as having attended across the four (4) PICs, with PICs in Ward 6 and 8 being the most well-attended (20 and 14 respectively).

For users who were not able to attend any of the consultation events, an online survey was made available to allow participation from as many residents as possible. Similarly to the PICs, the online survey was advertised through the City of Hamilton's website, Twitter Feed and advertised in local papers. From this process, ninety-two (92) respondents completed, or took a portion of, the Mountain Brow Trail Survey. Some residents also directly emailed responses to Project Manager. Results are a composite of the three methods of resident feedback.

A copy of the online survey is included in **Appendix C**.

City of Hamilton tweet advertising the Mountain Brow Trail Survey





## Summary of Feedback

The results summarize below reflect the combined input from the PICs and the online surveys.

### Demographics

There was a fairly even spread across age groups, with the exception of those under 15 years old as shown in Exhibit 2

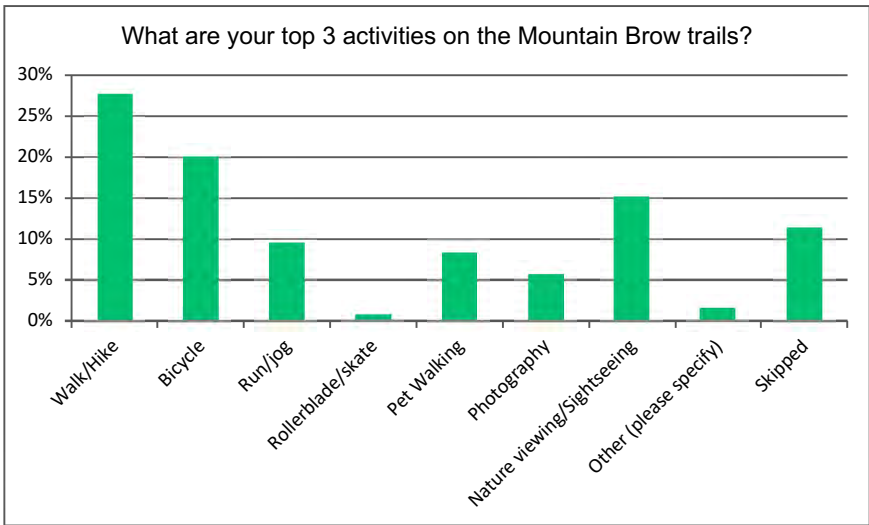
#### Exhibit 2 Demographics of respondents

	Online Survey	PIC Meetings	Total	Total Percentage
<15	0	1	1	1%
16 - 25	11	0	11	10%
26 - 35	23	1	24	21%
36 - 45	19	0	19	17%
46 - 55	19	4	23	20%
56 - 65	12	9	21	18%
65+	8	8	16	14%
<b>Total Responses</b>		<b>23</b>	<b>115</b>	

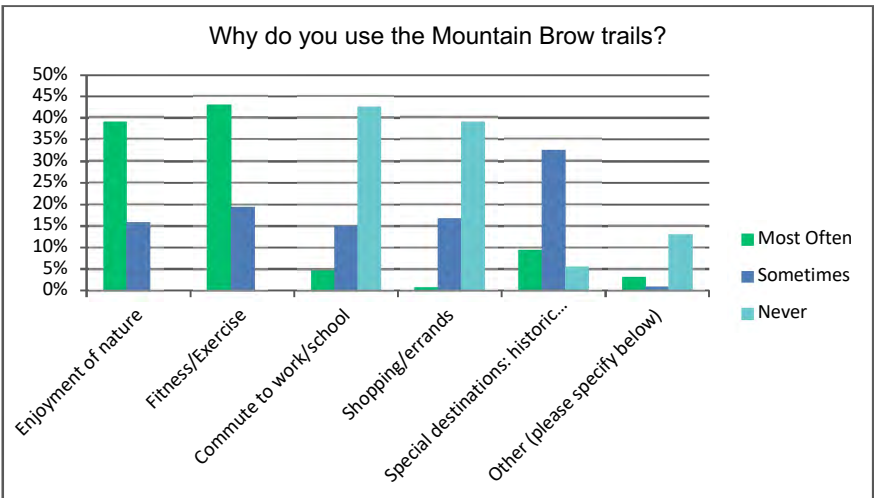
### Trail Use and Access

Most respondents expect to use the trail daily (25%) or a few times per month (52%), with the top three activities being walking/hiking (28%), Bicycling (20%) and nature viewing/sightseeing (15%) (refer to Exhibit 3). The majority of respondents use sections of existing trail along the brow for fitness/exercise (32%), enjoyment of nature (28%) and for access to special destinations: historic sites, waterfalls, parks, etc. (20%) (refer to Exhibit 4). Throughout the year, the majority of respondents use the trails in the evenings (39%) on weekdays and in the mornings (34%) or afternoons (31%) on weekends.

#### Exhibit 3 Respondents' top three (3) trail activities



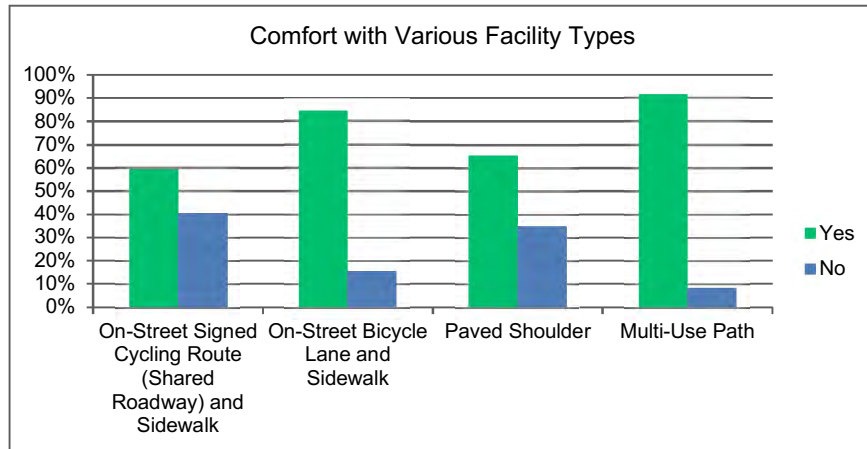
#### Exhibit 4 Respondents feedback on trail use



The majority of the respondents arrive at the existing trails walking/running (45%), driving (27%) or biking/rollerblading/skateboarding (18%), spend 30 minutes to 2 hours (62% 30 minutes – 1 hour; 32% 1-2 hours) and travel 1-10 kilometres (67% 1-5 kilometres; 24% 6-10 kilometres).

Overall, respondents were comfortable using the different types of facilities that are proposed to be used along the Mountain Brow Trail, as shown in Exhibit 5.

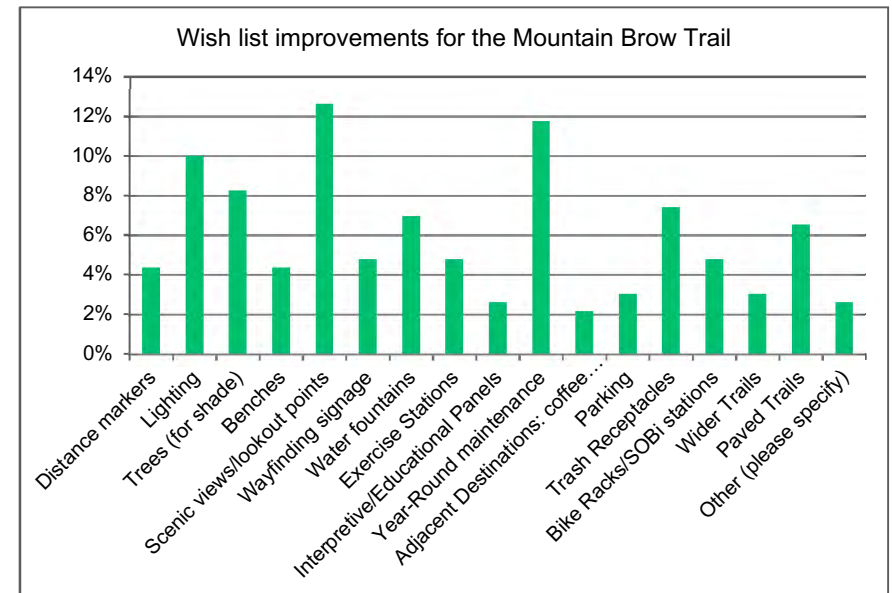
**Exhibit 5 - Feedback on the different facility types proposed for the Mountain Brow Trail**



#### Trail Improvements

Respondents were asked to indicate their top three (3) wish list improvements for the Mountain Brow Trail (refer to Exhibit 6). The top three responses were scenic views/lookout points (13%), year-round maintenance (12%) and lighting (10%). Other amenities mentioned, but not listed, included free 2-3 hour parking, washrooms, and pedestrian bridges at key locations, such as Kenilworth Access, Upper Centennial Parkway and the Jolleycut.

**Exhibit 6 - Respondents' "Wish List" of trail improvements**



Respondents are generally in favour of installing the length of the proposed trail when given the choice to install:

- a fully connected trail within a shorter timeframe, with amenities added over time (66%); or
- segments of trail installed within a shorter timeframe, with full amenities installed first, full connecting those segments over a longer period of time (34%).

Online respondents were also asked to identify the Ward which should be prioritized for development first or to select a continuous/connected trail that spans all the wards. 62% were in favour of a continuous/connected trail, 18% prioritized the segment in Ward 8, 10% prioritized the segment in Wards 6 & 7 and 2% prioritized the segment in Ward 9.

Exhibit 7-11 show respondent's choices for the proposed route or alternate routes in five (5) locations. Respondents were in favour of the proposed route in two (2) locations – Sanatorium Road (57%), and Mountain Brow Boulevard (75%). Respondents preferred the alternate route of Scenic Drive/Fennell Avenue (76%) to Denlow Avenue/Garth Street (24%). There was no preference for either First Road East/Dofasco Trail (50%) versus Upper Centennial Parkway/Ridge Road (50%), or Claremont Drive/Inverness Avenue (47%) versus Claremont Access/Jolley Cut (44%).



Mountain Brow Trail Feasibility Master Plan Public Consultation Summary –

Mountain Brow Trail Feasibility Master Plan Public Consultation Summary –

Exhibit 7 Feedback on Alternate Routes – Sanatorium Road vs Scenic Drive

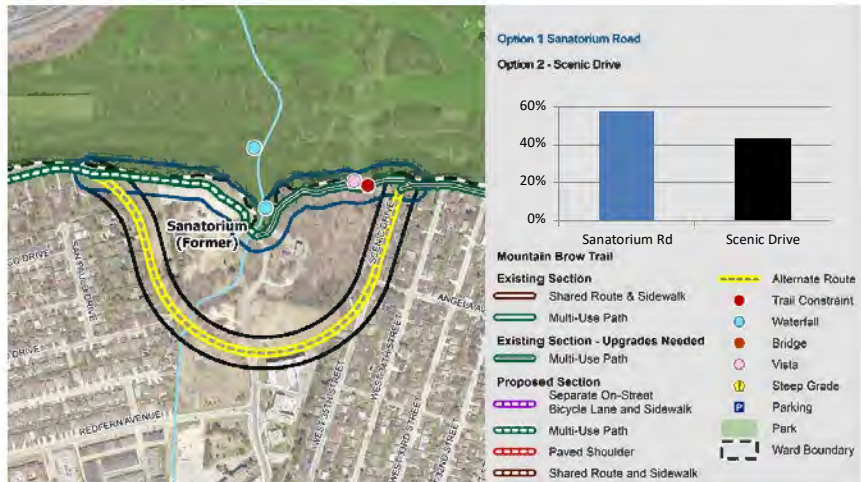


Exhibit 8 Feedback on Alternate Routes - Denlow Avenue vs Scenic Drive

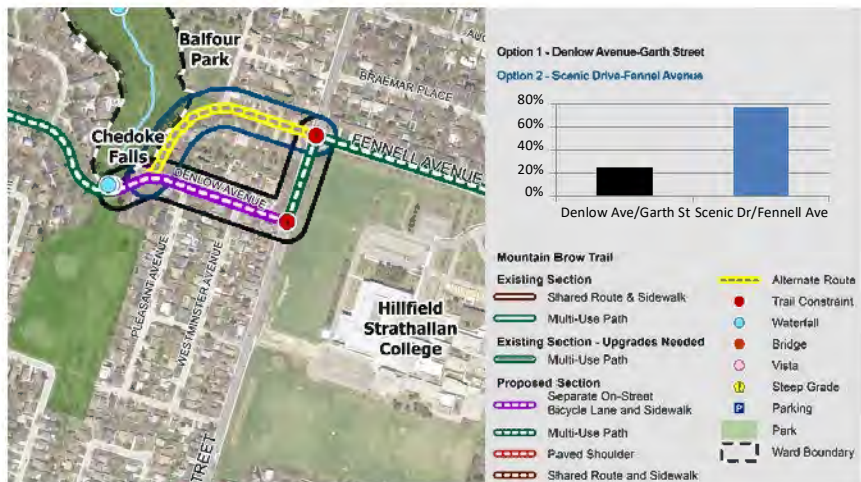


Exhibit 9 Feedback on Alternate Routes - Claremont Drive vs Brantdale Avenue vs Claremont Access

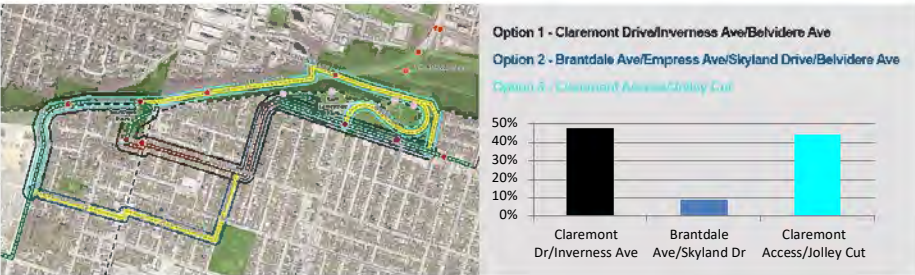
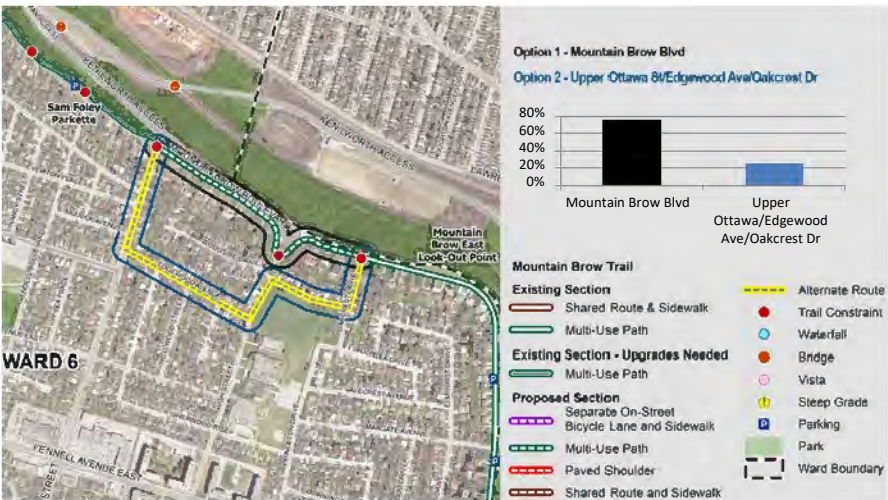
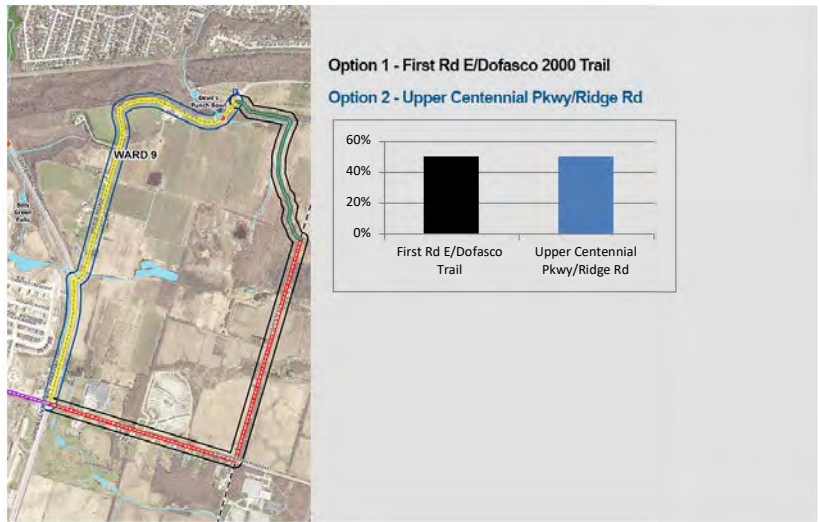


Exhibit 10 Feedback on Alternate Routes - Mountain Brow Boulevard vs Upper Ottawa Street



### Exhibit 11 Feedback on Alternate Routes - First Road vs Upper Centennial Parkway



### General Input

Outside of the formal survey, City of Hamilton & IBI Group staff at the PIC noted specific input from residents. General feedback received included:

- Support for a trail that emphasizes the brow's natural beauty and unique views; This was accompanied by a desire to emphasize trail alternatives that stayed as close to the brow as possible
- Desire for the trail to be respectful of the community context, particularly from a privacy and access perspective; On the other hand, many residents expressed the desire for a continuous multi-use trail (rather than varying facility types) in order to maintain a consistent, high quality 'trail' experience' along the full corridor
- Residents expressed a desire for the trail route to include high level transformational changes such as grand pedestrian bridges where key vista locations coincide with difficult road crossings, road closures to provide Hamilton's version of the High Line (New York) as well as proposed trail routes that remain close to the brow in areas that are currently in private ownership and/or are in sensitive natural areas. While these ideas have merit from a long term visioning perspective for Hamilton Mountain Brow as a destination, these ideas are not immediately feasible based on the prioritization criteria used in the study and have not been included in the primary or alternative routes at this time.
- Desire to use the trail project to improve safety for pedestrians and cyclists, for example where sidewalks are currently missing

- Desire for trail etiquette education to address safety concerns about multiple users on a single path

### Conclusion

In general, the community supports the development of the Mountain Brow Trail. They have expressed issues of feasibility, maintenance and safety, which will be investigated as the design of the trail progresses in future stages of work. Respondents have also made additional suggestions about the nature of the trail vision, the routing, and amenities, which will be investigated as part of the feasibility study.

Most respondents are eager to see the progression of the project, and to understand with more certainty issues around property ownership, preserving mature plant material, path and roadway safety as well as the trail's proximity to the Brow of Hamilton Mountain.





## FEASIBILITY MASTER PLAN

### APPENDIX E

# PIC #2 BOARDS







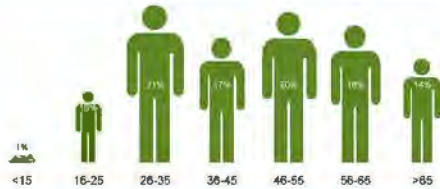
***The vision for the Mountain Brow Trail is to develop a recreational trail that follows the escarpment edge as closely as possible to take advantage of views and provide connectivity between wards. The path shall include a mixture of facility types with a preference towards accessible off-road multi-use paths/trails wide enough for pedestrians & cyclists.***

The City of Hamilton is developing a vision to create a Mountain Brow Trail that will run continuous along 'The Brow' from the Iroquoia Heights Conservation Area in Ward 08 to the Devil's Punch Bowl in Ward 09 (that's more than 2.5km!!). This discussion follows the Mountain Brow Vista Study and Management Plan, which focused on the establishment of new views and reinforcement of existing views along the Escarpment, while protecting and enhancing the natural environment.

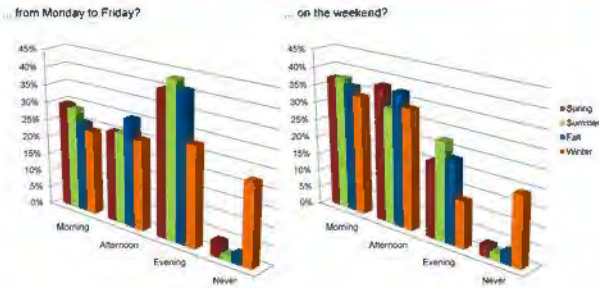
Four Public Information Centres (PICs) were facilitated for each of the four wards through which the Mountain Brow Trail is proposed to traverse (November 2017). An online survey was also made available to allow participation from as many residents as possible (November to December 2017). The following boards are the result of the combined input from the those surveys.

# Public Feedback - PIC #1 & Online Survey

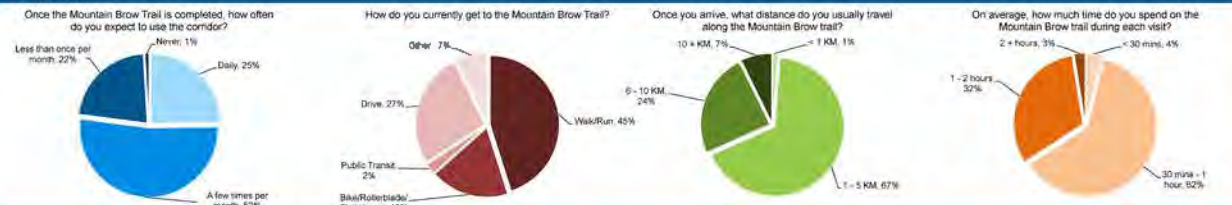
## Demographics



## When do you use the Mountain Brow trail ...



## Trail Use:



## What are your top 3 activities on the Mountain Brow Trails?



## What is your priority for the Mountain Brow Trail?



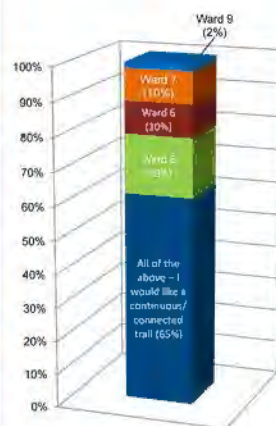
## Wish List Improvements for the Mountain Brow Trail:



## Are you comfortable using the following:



## Section(s) to be prioritized? (online survey)



## Why do you use the trails?



# Mountain Brow Trail Feasibility Masterplan

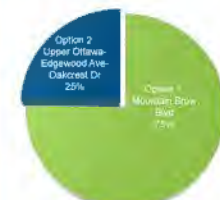
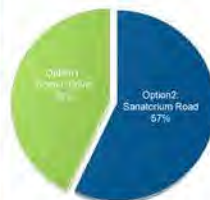


# Public Feedback

## Alternate Routes



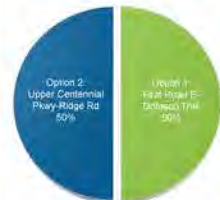
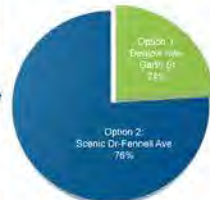
Scenic Drive vs Sanatorium Road



Mountain Brow Boulevard vs Upper Ottawa Street-Edgewood Avenue-Oakcrest Drive



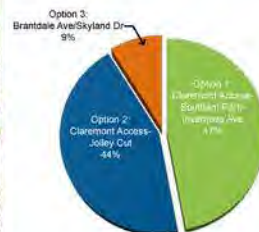
Denlow Avenue-Garth Street vs Scenic Drive-Fennell Avenue



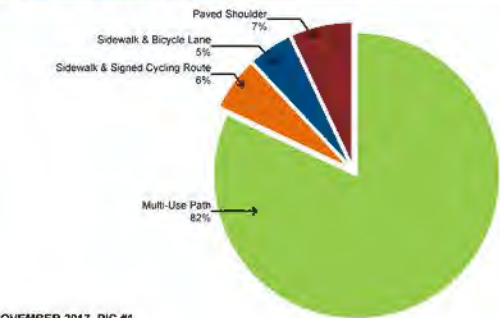
First Road East-Dofasco Trail vs Upper Centennial Parkway-Ridge Road



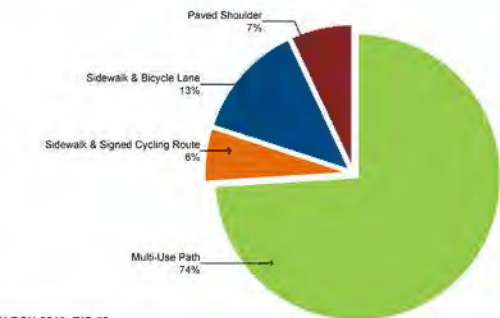
Claremont Access-Southam Park-Inverness Avenue vs Claremont Access-Jolley Cut vs Brantdale Ave-Skyland Drive



## Facility Types - Progression



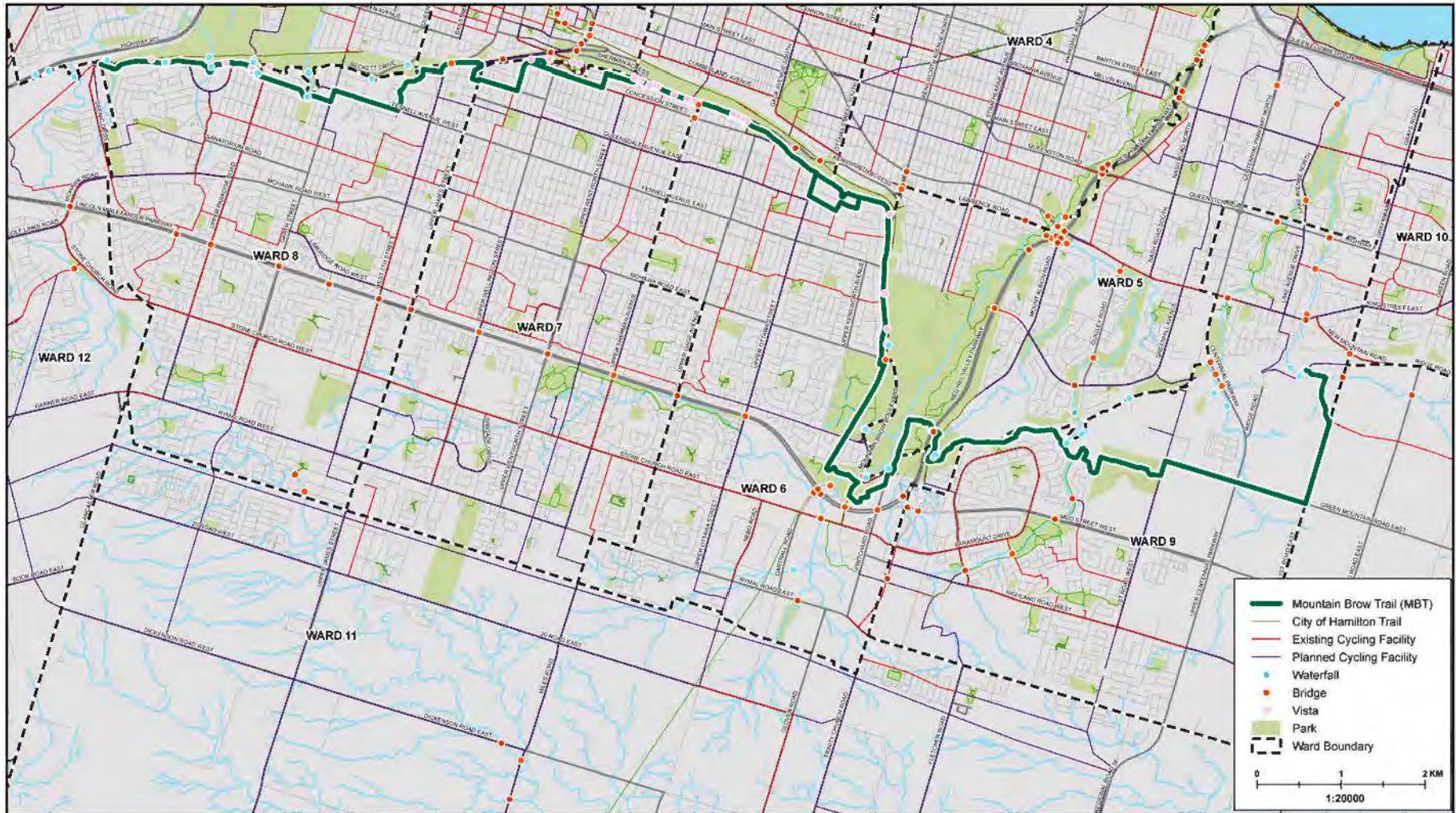
NOVEMBER 2017, PIC #1



MARCH 2018, PIC #2



# Context Plan



## Mountain Brow Trail Feasibility Masterplan



# Section 1



## Mountain Brow Trail Feasibility Masterplan



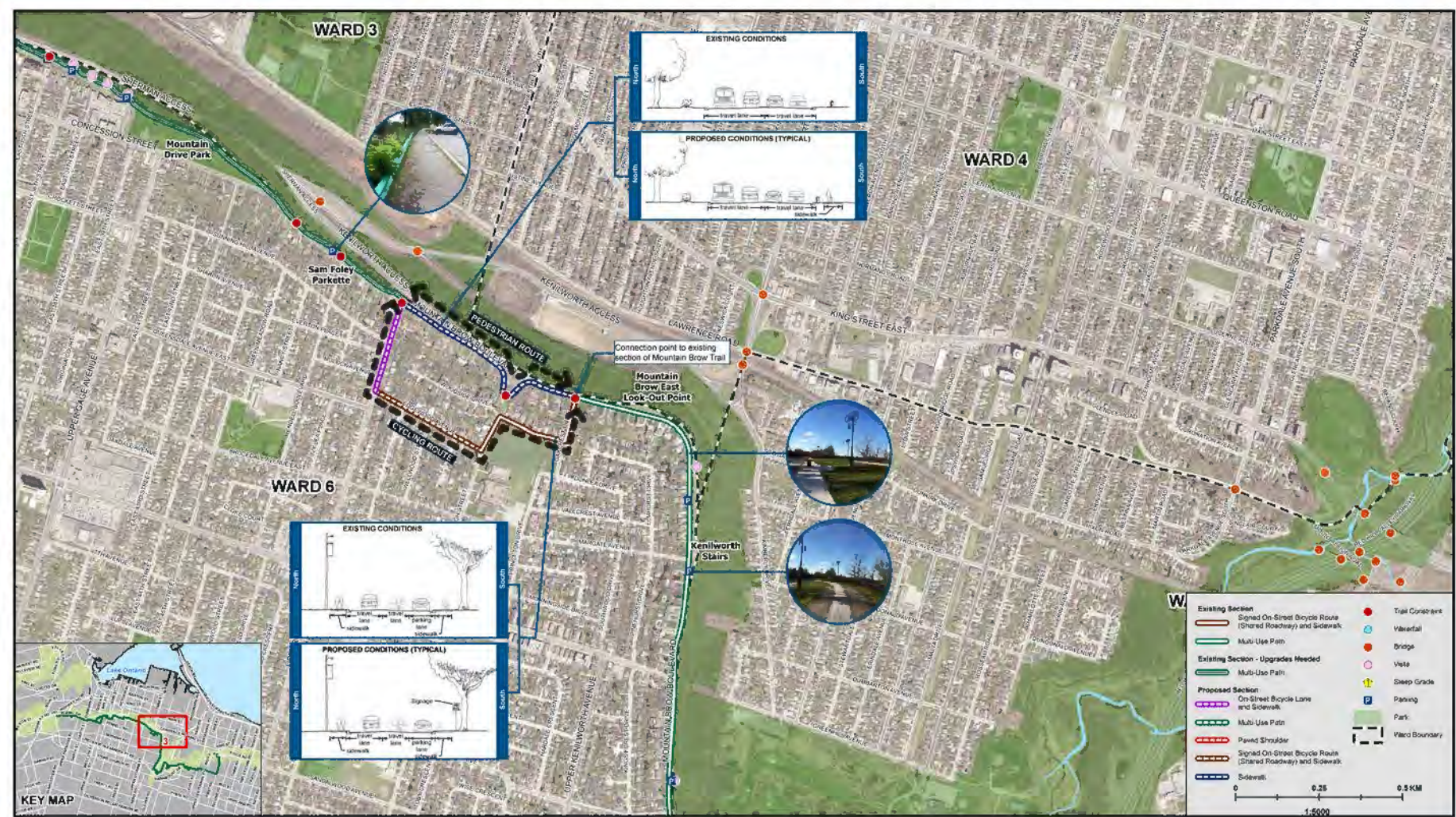
## Section 2



# Mountain Brow Trail Feasibility Masterplan



Section 3



Mountain Brow Trail Feasibility Masterplan



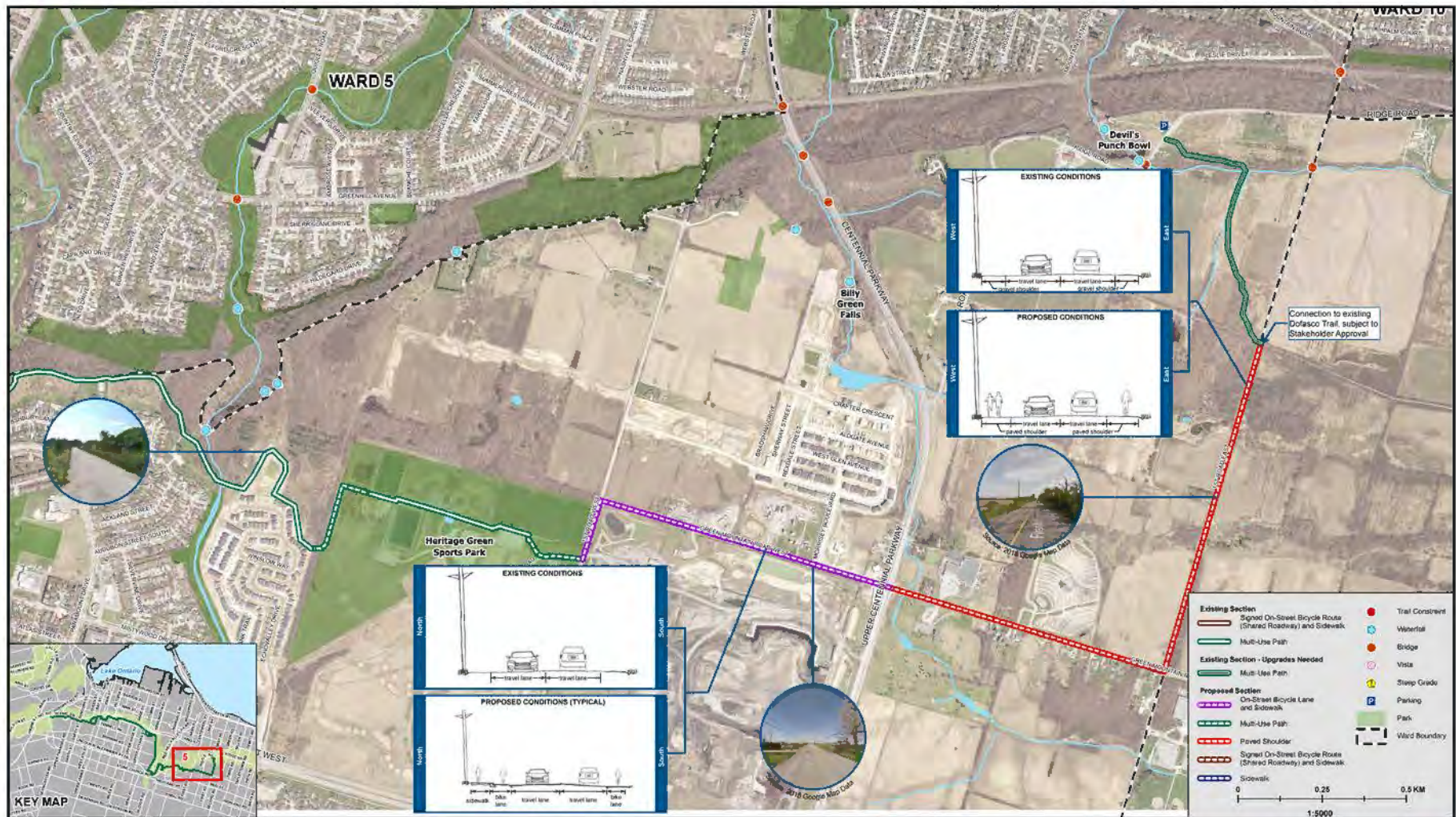
Section 4



Mountain Brow Trail Feasibility Masterplan



Section 5









## FEASIBILITY MASTER PLAN

### APPENDIX F

# HIGH LEVEL REVIEW OF CYCLING FACILITY SELECTION







**IBI GROUP**  
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ibigroup.com

IBI GROUP MEMORANDUM

# Memorandum

<b>To/Attention</b>	File	<b>Date</b>	February 20, 2018
<b>From</b>	Zibby Petch	<b>Project No</b>	112318
<b>cc</b>	Project Team		
<b>Subject</b>	High-level Review of Cycling Facility Selection		

The review focuses on proposed sections of the trail which are located on-road or within the boulevard of an existing roadway (excludes locations of existing facilities). The pre-selection is based on posted speed, rather than operating speed, since this data was not available at the time of review. Closer to implementation, a review of any locations of noted speeding or higher operating speeds should be completed to inform updates to the results below. The data source for traffic volumes is the City's internal traffic records and/or assumed AADTs, based on road context. Where possible/known, the year of the count is indicated.

Results of the review are summarized in Exhibit 2.

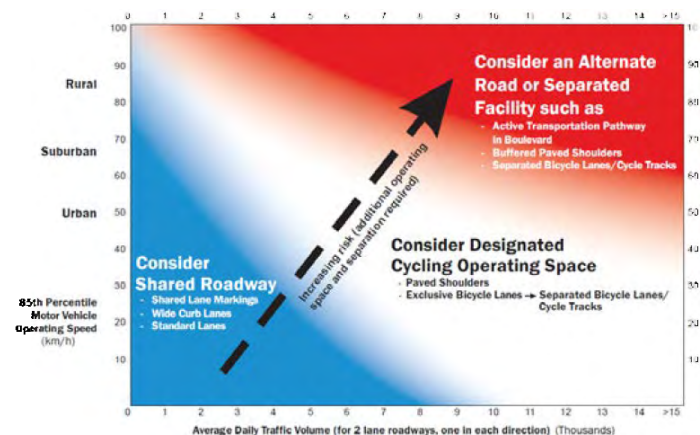
## Introduction & Background

In support of the Mountain Brow Trail Feasibility Study, various road corridors have been identified for the addition of cycling/pedestrian facilities. As part of the feasibility review, a high level review of the appropriateness of various cycling facilities in the context of roadway volumes & speeds has been completed. A more detailed review of each corridor will be necessary as each project moves forward to implementation.

## Results of the High-Level Review

The review draws on the Bicycle Facility Type Selection process outlined in OTM Book 18, and represents the first step in the facility type selection (pre-selection). The review was completed to identify whether the proposed facility type meets or exceeds the recommendations of the pre-selection nomograph (refer to Exhibit 1).

**Exhibit 1 – Desirable Cycling Facility Pre-Selection Nomograph**



Source: OTM Book 18, p. 30

Exhibit 2 – Summary of Results of Facility Selection Review

Road	From	To	Road Characterization	Posted Speed	Approx. Volume*	Lanes (Total)	Adjusted Volumes	Pre-Selection Facility Class	Proposed Facility Type	Meets or exceeds?	Notes
Scenic Drive	W of Chateau Court	W 35 <sup>th</sup> Street	Collector	50km/hr (assumed)	Not available - 9000 (a)	2	N/A	Designated	Multi-use Trail	✓	Volumes likely lower than assumed
Scenic Drive	W 35 <sup>th</sup> Street	Upper Paradise Road	Collector	50km/hr (assumed)	Not available - 9000 (a)	2	N/A	Designated	Multi-use Trail	✓	Volumes likely lower than assumed
Scenic Drive	Upper Paradise Road	Denlow Avenue	Minor Arterial	50km/hr (assumed)	9000 (a)	2	N/A	Designated	Bike Lane	✓	
Denlow Avenue	Scenic Drive	Garth Street	Local	30km/hr	6000 (c – 2016)	2	N/A	Shared or Designated	Bike Lane	✓	
Garth Street	Denlow Avenue	Fennell Avenue West	Minor Arterial	50km/hr (assumed)	23000 (c-2016)	4	11500	Designated or Separated (preferred)	Multi-use Trail	✓	
Fennell Avenue West	Garth Street	West 5 <sup>th</sup> Street	Minor Arterial	50km/hr (assumed)	15000 (c-2016)	4	7500	Designated or Separated (preferred)	Multi-use Trail	✓	
West 5 <sup>th</sup> Street	Fennell Avenue West	Claremont Access	Major Arterial	50km/hr (assumed)	18000 (c-2016)	Varies (3-5)	N/A – assume worst case	Separated	Multi-use Trail	✓	
Claremont Access	West 5 <sup>th</sup> Street	Southam Park	Major Arterial	70km/hr	Not available	2 (one-way)	N/A	Separated	Multi-use Trail	✓	Assumed AADT of 10,000 based on class of road (likely lower than assumed)
Inverness Avenue East	Upper James Street	Belvidere Avenue	Collector	40km/hr	3000 (c-2014)	2	N/A	Shared	Bike Lane	✓	Consistent with facility type identified per Cycling Master Plan (justification for higher order facility)
Belvidere Avenue	Inverness Avenue East	Concession Street	Local	50km/hr (assumed)	<3000 (a)	2	N/A	Shared	Signed Route	✓	
Concession Street	Belvidere Avenue	Upper Wellington Street	Local	40 km/hr	1000 (c-2016)	2 (4 approaching Jolley Cut)	N/A – assume worst case	Shared or Designated	Bike Lane with future Multi-use Trail	✓	
Concession Street	Upper Wellington Street	E 13 <sup>th</sup> Street	Minor Arterial	40 km/hr	4000 (c-2016)	3	4000 (c-2016)	Designated	Bike Lane with future Multi-use Trail	✓	
Concession Street	E 13 <sup>th</sup> Street	E 16 <sup>th</sup> Street	Minor Arterial	40 km/hr	4000 (c-2016)	2 (short section of 3 lanes from E 13 <sup>th</sup> Street to E 15 <sup>th</sup> Street)	N/A – assume worst case	Shared or Designated (preferred)	Bike Lane with future Multi-use Trail	✓	Consider extending 40 km/hr speed limit to Upper Wellington
Concession Street	E 16 <sup>th</sup> Street	Belwood Avenue	Minor Arterial	40 km/hr	4000 (c-2016)	2 – with Parking Lay-bys	N/A	Shared or Designated (preferred)	Signed route future Multi-use Trail	✓	
Belwood Avenue	Concession Street	Mountain Park Avenue	Local	50km/hr (assumed)	<3000 (a)	2	N/A	Shared	Signed Route	✓	
Mountain Park Avenue	Belwood Avenue	Upper Wentworth Street	Local	50km/hr (assumed)	<3000 (a)	2	N/A	Shared	Signed Route	✓	
Mountain Brow Boulevard	Upper Ottawa Street	Kenilworth Access	Minor Arterial	40km/hr	22000 (c-2015)	4	11,000	Designated or Separated (preferred)	None	X	Because desired facility type is challenging to provide, filter out this option as part of the preferred route.



Road	From	To	Road Characterization	Posted Speed	Approx. Volume*	Lanes (Total)	Adjusted Volumes	Pre-Selection Facility Class	Proposed Facility Type	Meets or exceeds?	Notes
Mountain Brow Boulevard	Kenilworth Access	Oakcrest Drive	Minor Arterial	40km/hr	4000 (c-2013)	2	N/A	Shared or Designated	None	X	<b>Because desired facility type is challenging to provide, filter out this option as part of the preferred route.</b>
Upper Ottawa Street	Edgewood Avenue	Mountain Brow Boulevard	Major Arterial	50 km/hr	14000 (c-2006)	4	6930 (c-2006)	Designated	Bike Lane	√	Kenilworth Access was recently removed from the City's Truck Routes so potential for reduced truck volumes on Upper Ottawa (more support for road diet)
Edgewood Avenue	Upper Ottawa Street	High Street	Local	40km/hr	<3000 (a)	2	N/A	Shared	Signed Route	√	
High Street	Edgewood Avenue	Woodside Drive	Local	40 km/hr	<3000 (a)	2	N/A	Shared	Signed Route	√	
Woodside Drive	High Street	Oakcrest Drive	Local	40 km/hr	<3000 (a)	2	N/A	Shared	Signed Route	√	
Oakcrest Drive	Woodside Drive	Mountain Brow Boulevard	Local	40 km/hr	<3000 (a)	2	N/A	Shared	Signed Route	√	
1 <sup>st</sup> Road West	Heritage Green Sports Park	Green Mountain Road West	Collector	60km/hr	Not available	2 -Rural	N/A	Designated	Bicycle Lane	√	Facility type is assumed based on an estimated volume of 5000 (typical rural collector) Volumes likely to grow in the future as a result of on-going development in the area; facility type should be considered in the context of future projected volumes
Green Mountain Road West	1 <sup>st</sup> Road West	Upper Centennial Parkway	Collector	60km/hr	600 (c-2008)	2 - Rural	N/A	Shared or Designated	Bicycle Lane	√	Volumes likely to grow in the future as a result of on-going development in the area; facility type should be considered in the context of future projected volumes
Upper Centennial Parkway	Green Mountain Road West	Ridge Road	Major Arterial	70km/hr	14000 (c – 2015)	4 - Rural	7000	Separated	Paved Shoulder	X	<b>Because desired facility type is challenging to provide, filter out this option as part of the preferred route.</b> Volumes likely to grow in the future as a result of on-going development in the area; facility type should be considered in the context of future projected volumes
Ridge Road	Upper Centennial Parkway	Devil's Punch Bowl	N/A – Rural Road	50km/hr	1000 (c-2015)	2 - Rural	N/A	Shared or Designated	Paved Shoulder	√	Volumes likely to grow in the future as a result of on-going development in the area; facility type should be considered in the context of future projected volumes
Green Mountain Road East	Upper Centennial Parkway	1 <sup>st</sup> Road East	N/A – Rural Road	60km/hr	1500 (c-2008)	2 - Rural	N/A	Shared or Designated	Paved Shoulder	√	Volumes likely to grow in the future as a result of on-going development in the area; facility type should be considered in the context of future projected volumes
1 <sup>st</sup> Road East	Green Mountain Road East	Dofasco 2000 Trail	N/A – Rural Road	60km/hr	Not available	2 - Rural	N/A	Designated	Paved Shoulder	√	Facility type is assumed based on an estimated volume of 5000 (typical rural collector) Volumes likely to grow in the future as a result of on-going development in the area; facility type should be considered in the context of future projected volumes

Source of Traffic Volumes:

(a) = assumed based on land use context & road classification

(c) = count – based on City count adjusted to AADT based on peak hour volume assuming 10% conversion







## FEASIBILITY MASTER PLAN

### APPENDIX G

# TRAIL LINK PRIORITY ANALYSIS





CRITERION	RATIONALE	EVALUATION OVERVIEW	CALCULATION	MAX SCORE (/100 TOTAL PTS)
Connectivity	One of the desired purposes of the trail is to help to connect to existing and planned pieces of cycling and trail infrastructure in order to create a fulsome network that encourages trail use for recreation and transportation purposes. This factor evaluates the number and type of network connections that are made by a particular link.	Trail segments were evaluated against existing/proposed cycling facilities as well as existing/proposed trail segments and assigned a points total. More points were assigned based on the type of connection, i.e. a connection to an existing facility scores more points than a connection to a proposed facility.	The following points were assigned based on connectivity point totals. Draft thresholds: <ul style="list-style-type: none"> <li>• Connection to an existing trail segment = 10 pts</li> <li>• Connection to an existing cycling network segment = 5 pts</li> <li>• Connection to a planned trail or cycling segment = 2 pts</li> </ul> Cumulative to a max score of 25 pts.	25 pts
Density	Population and employment density can support additional active transportation trips. Areas of higher population and employment density often have built form and land use patterns that support active transportation. In addition, the simple matter of proximity of people to the trail is likely related to higher usage.	Trail segments were evaluated against aggregated population and employment densities at the zonal level. Trail segments were buffered 250m and assigned a weighted density based on how much each buffered polygon fell within a certain zone.	The following points were assigned based on weighted population and employment densities. Draft thresholds: <ul style="list-style-type: none"> <li>• &gt;= 40 People &amp; Jobs/Hectare = 20 pts</li> <li>• &gt;= 30 People &amp; Jobs/Hectare = 15 pts</li> <li>• &gt;= 20 People &amp; Jobs/Hectare = 10 pts</li> <li>• &gt;= 10 People &amp; Jobs/Hectare = 5 pts</li> <li>• &lt; 10 People &amp; Jobs/Hectare = 0 pts</li> </ul>	20 pts
Potential Demand (Short Trips)	Most residents indicated that their use of the trail would be for trips between 1 and 5 km. As a result, this analysis will consider areas where there is currently a higher rate of non-commute walking and cycling trips.	Trail segments were evaluated against existing walking and cycling short trips from the Transportation Tomorrow Survey (TTS) zone level. Trail segments were buffered 250m and assigned a weighted trip total based on how much each buffered polygon fell within a certain area.	The following points were assigned based on weighted short trip totals for trips within or between the zones directly abutting the trail. Draft thresholds: <ul style="list-style-type: none"> <li>• &gt;= 300 Walking/Cycling Trips = 15 pts</li> <li>• &gt;= 200 Walking/Cycling Trips = 10 pts</li> <li>• &gt;= 100 Walking/Cycling Trips = 5 pts</li> <li>• &lt; 100 Walking/Cycling Trips = 0 pts</li> </ul>	15 pts
Key Destinations	At the most basic level, trail access is about providing recreational opportunities, including access to important destinations. In order to promote walking and cycling as a viable mode, major attractions must be served effectively. This analysis can evaluate the number of destinations served by a particular trail link.	Trail segments were evaluated against their proximity to key destinations within a 250m radius (e.g. bridges, waterfalls, vistas, BIAs) and assigned a point total. More points were assigned based on the destination type, e.g. trails in proximity to major parks will score more highly than in proximity to other types of destinations.	The following points were assigned based on key destination point totals. Draft thresholds: <ul style="list-style-type: none"> <li>• Major park = 10 pts</li> <li>• Secondary park = 5 pts</li> <li>• Schools, hospitals &amp; rec centres = 8 pts</li> <li>• Other destinations (existing vistas, waterfalls, BIAs, arenas, places of Amusement, golf courses, libraries, museum/galleries, public art) = 5 pts</li> </ul> Cumulative to a max score of 25 pts.	25 pts
Safety Considerations	Safety remains an important consideration in the development of a practical and user friendly recreational experience. This analysis evaluates whether the trail will fill an existing sidewalk gap, since the presence of sidewalks is an important safety indicator. Streets with no sidewalks have been associated with 2.6 times more pedestrian collisions. Streets with sidewalk on one side are still overrepresented (1.2 times as many collisions) <sup>1</sup>	Trail segments were evaluated against the sidewalk network to identify whether the proposed section of the mountain brow trail will address a sidewalk gap.	The following points were assigned based on safety consideration point totals: <ul style="list-style-type: none"> <li>• Proposed trail addresses a sidewalk gap = 10 pts</li> </ul>	15 pts

<sup>1</sup> Knoblauch, R.L., Tustin, B.H., Smith, S.A., and Pietrucha, M.T., Investigations of Exposure Based on Pedestrian Areas: Crosswalks, Sidewalks, Local Streets AND Major Arterials, Report No. FHWA/RD-88/038, Federal Highway Administration, September 1988.







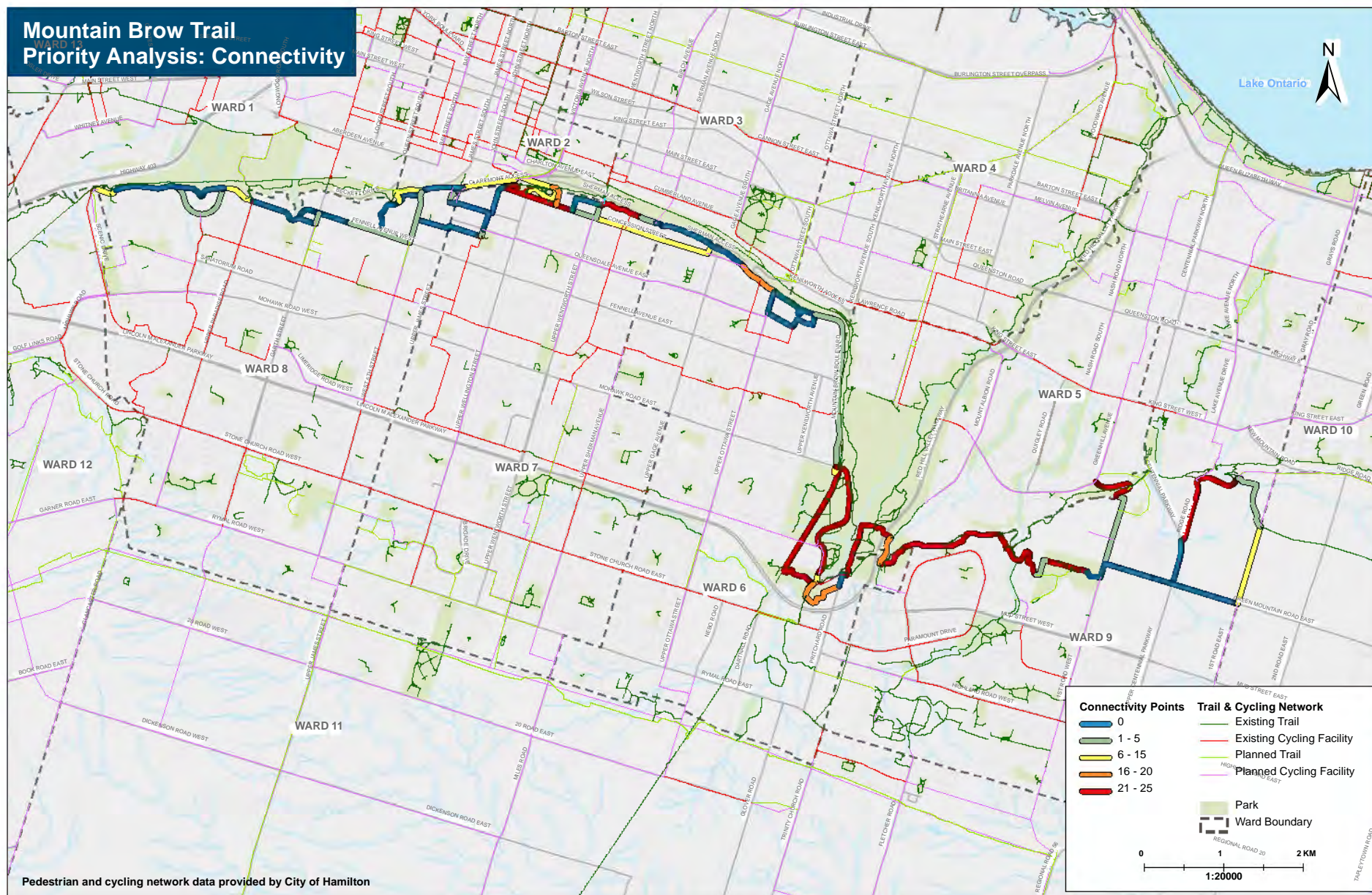
## FEASIBILITY MASTER PLAN

### APPENDIX H

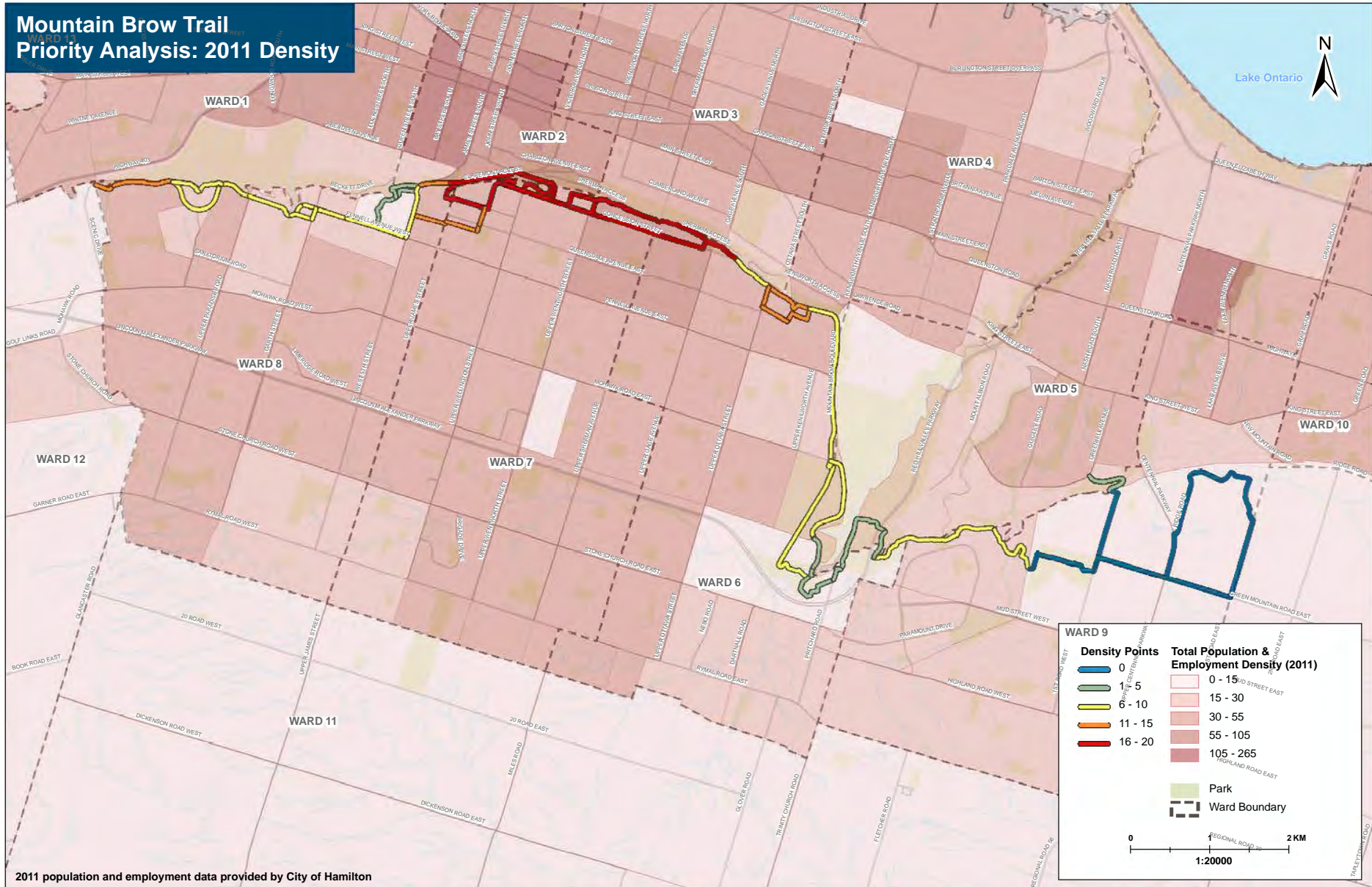
# TRAIL POTENTIAL DEMAND



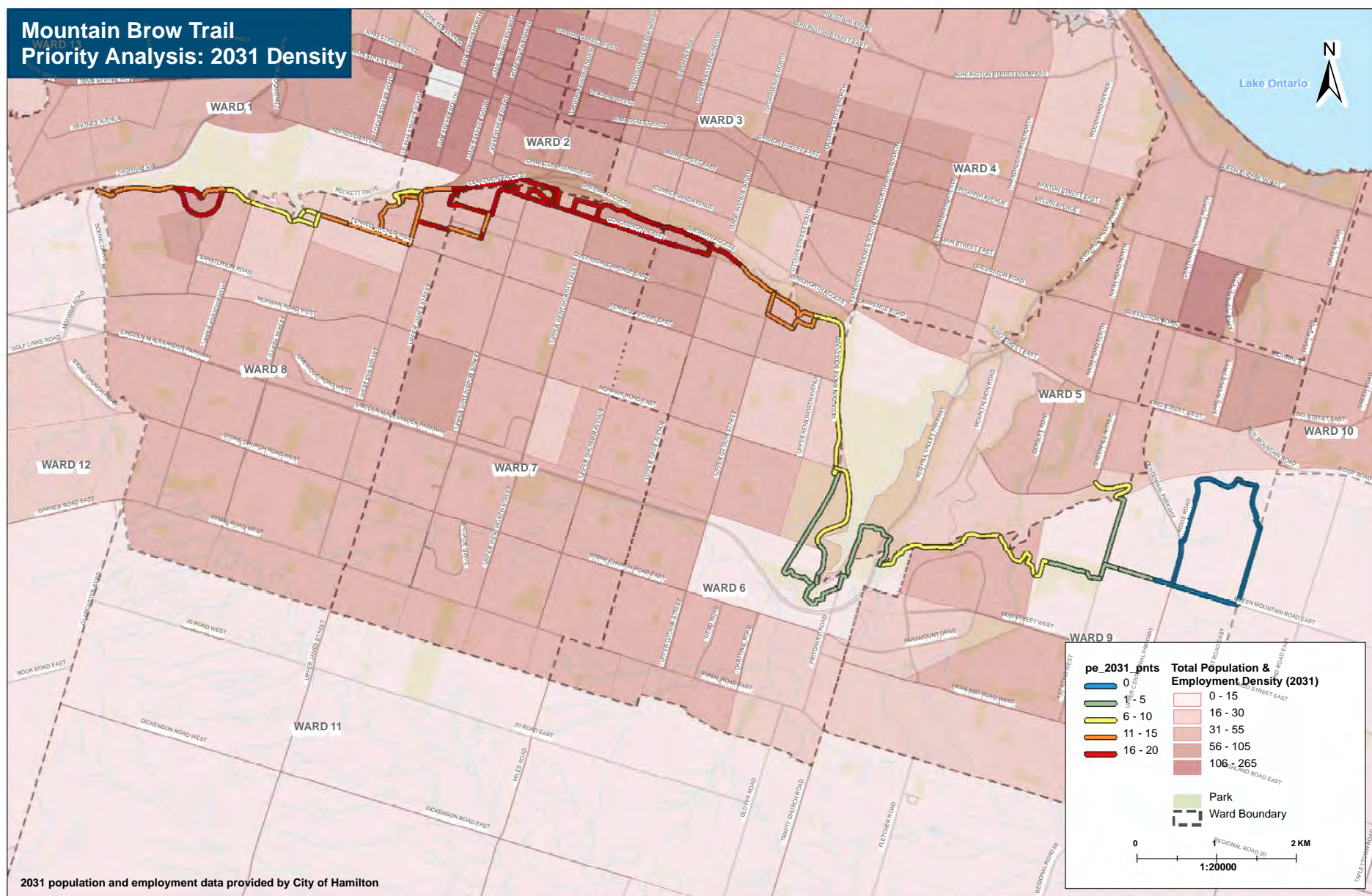




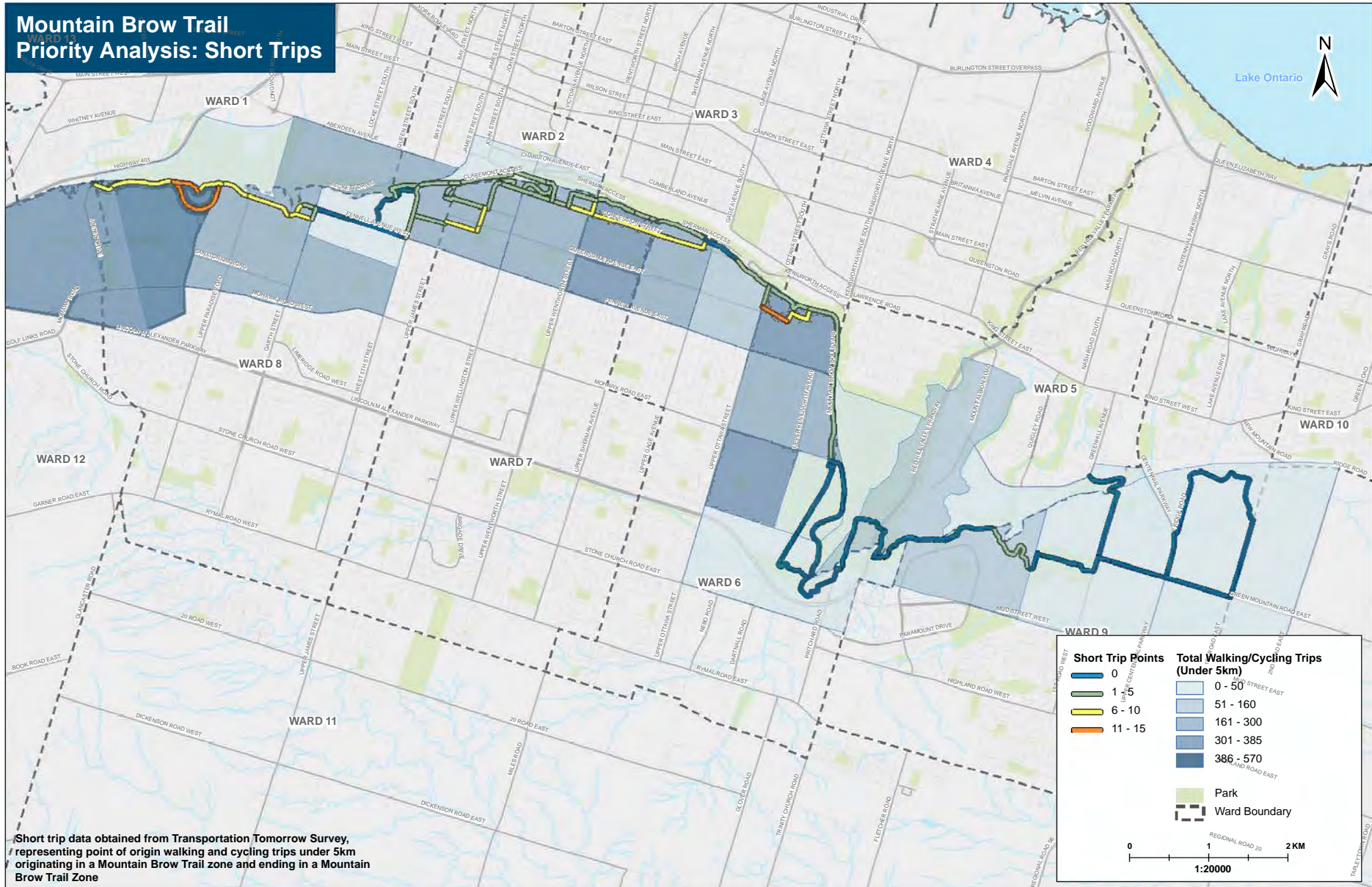




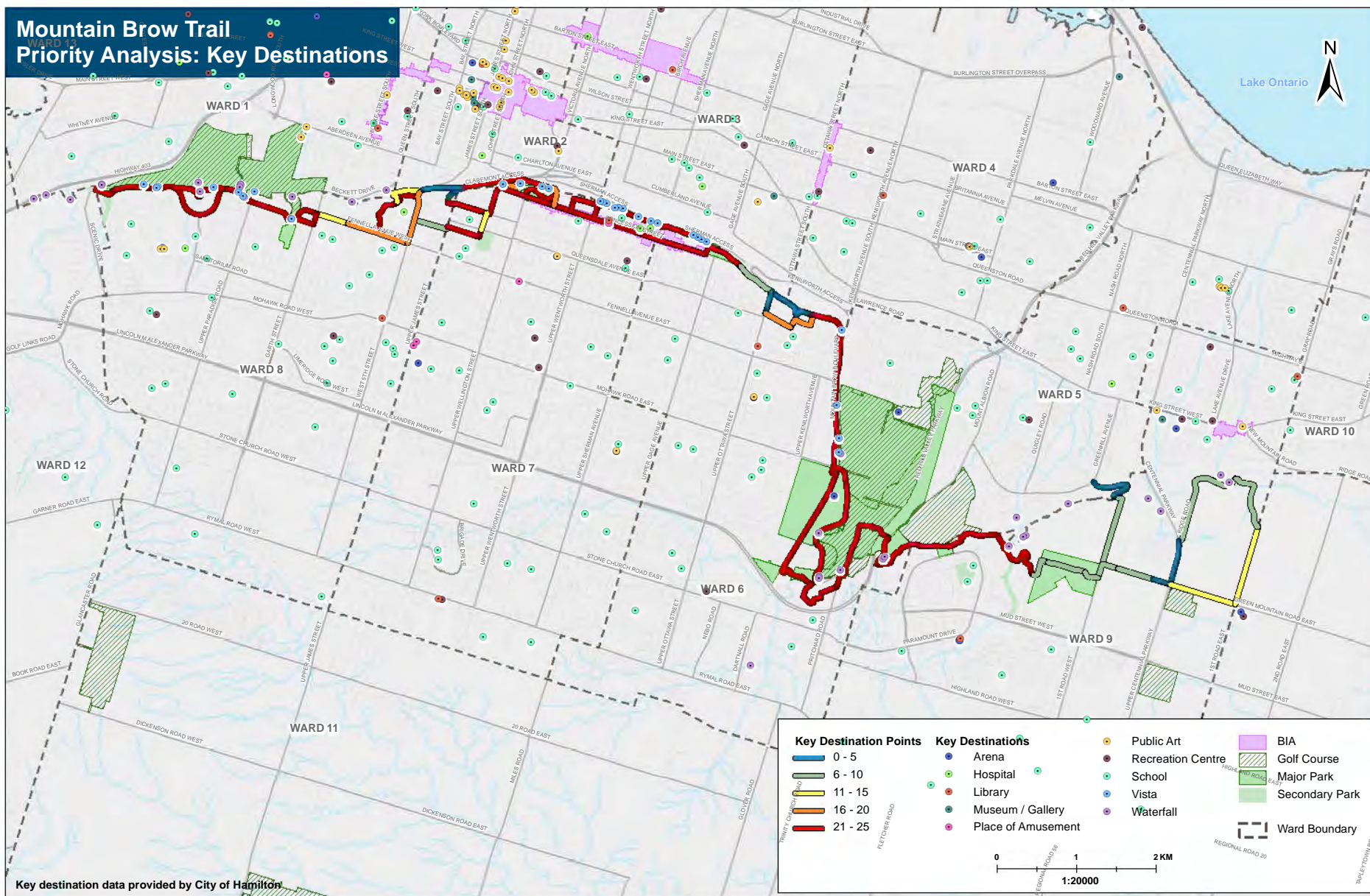






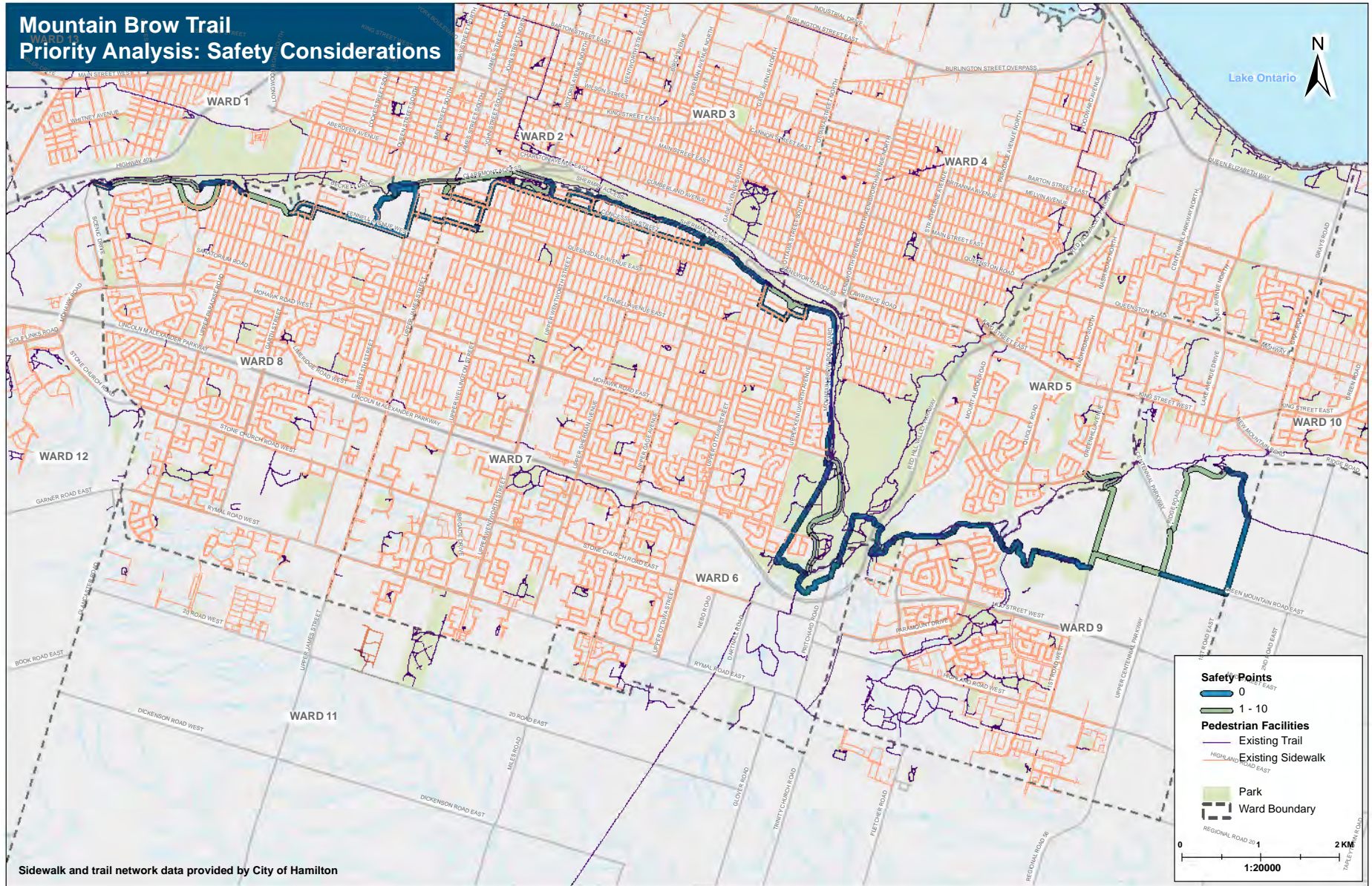




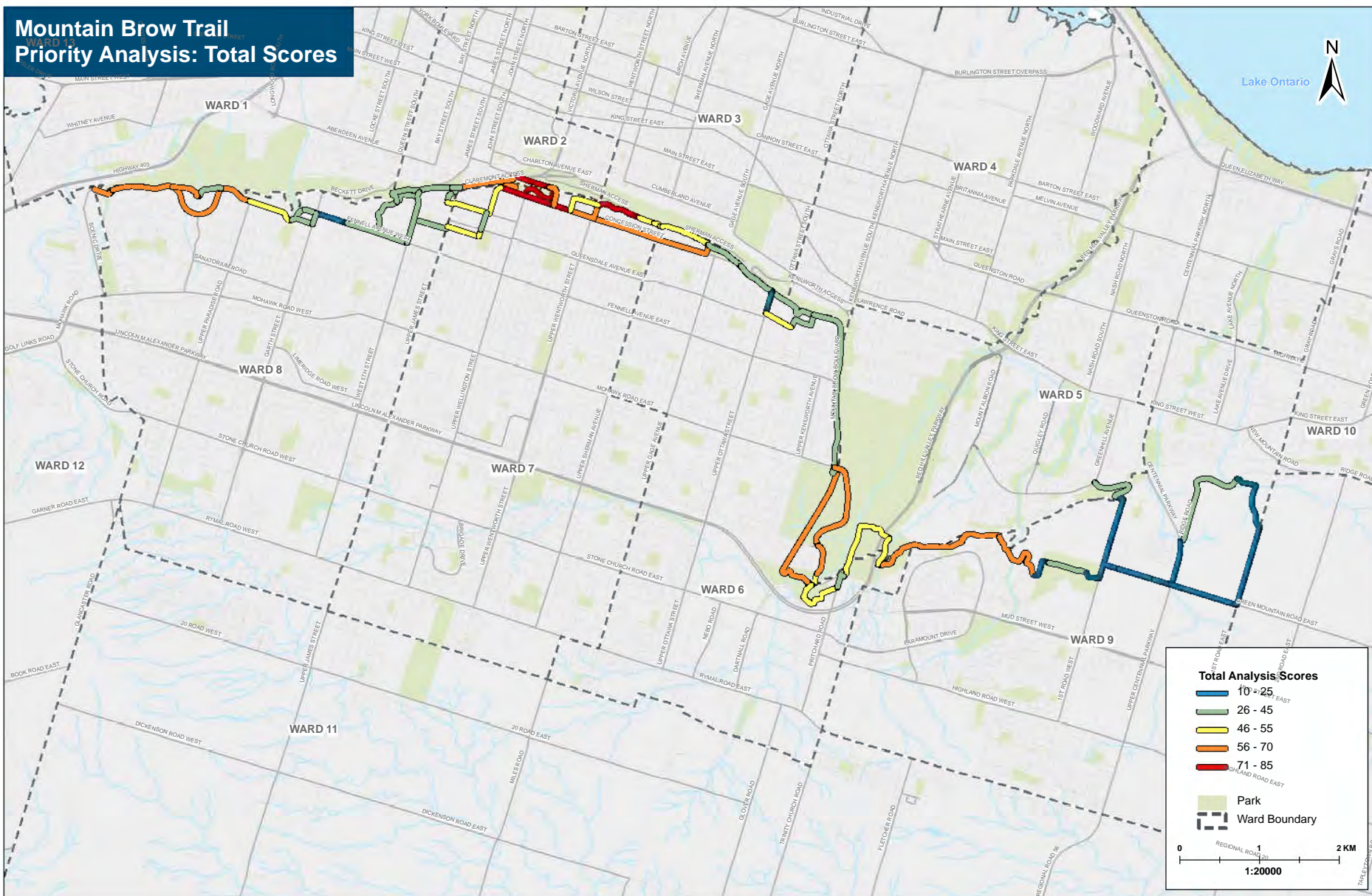




## Mountain Brow Trail Priority Analysis: Safety Considerations













## FEASIBILITY MASTER PLAN

### APPENDIX I

# BLUE SKY IDEAS





## BLUE SKY IDEAS

Throughout the public and stakeholder consultation, a number of ideas for blue sky ideas along the Mountain Brow Trail emerged. These ideas are highly desirable from the perspective of creating a unique and exciting trail concept; however, there are significant funding and feasibility challenges to be overcome in their delivery, and further cost-benefit analysis is needed. At this point, we are not pursuing any of these projects as they would require significant partnership. These are blue sky ideas only - that is, they are creative brainstorming ideas without any constraints. As a result, these concepts have not been included in the identified trail routing at this time, but should be considered for further study if funding opportunities arise and as further stages of work are carried out along the corresponding sections of the trail. The following projects emerged as blue sky ideas, applicable at various points along the Mountain Brow Trail Route:

- Claremont Greenway
- Kenilworth Access
- Albion Falls Crossing
- Signature Upper Centennial Bridge
- Elfrida Growth Area

# Claremont Greenway

*The Claremont Access Spur re-imagined*

## Trail Sections #12, #13

This concept involves closing the spur between West 5th Street and Claremont Access to motor vehicles to provide a public space that could be converted into a linear park and provide a unique experience and lookout over the lower city. Through the on-going design of the multi-use facility along the Claremont Access, it is already envisaged that this section of the access would be reduced to one lane of traffic. This idea takes the concept one-step further to create a memorable attraction along the Mountain Brow Trail.

This concept draws on inspiration from New York City's High-Line Project, which is an underutilized rail spur line transformed into a linear park and rail trail.

Concept images of the Greenway illustrate how the spur may be adapted to a more recreational use.



Existing Claremont Access & Project Location



Precedent: The High Line, Manhattan, New York  
(Source: "The High Line NYC" by La Citta Vita)





Concept Image: Claremont Greenway, looking east



Exhibit 37 - Concept Image: Claremont Greenway, looking east from the ramp



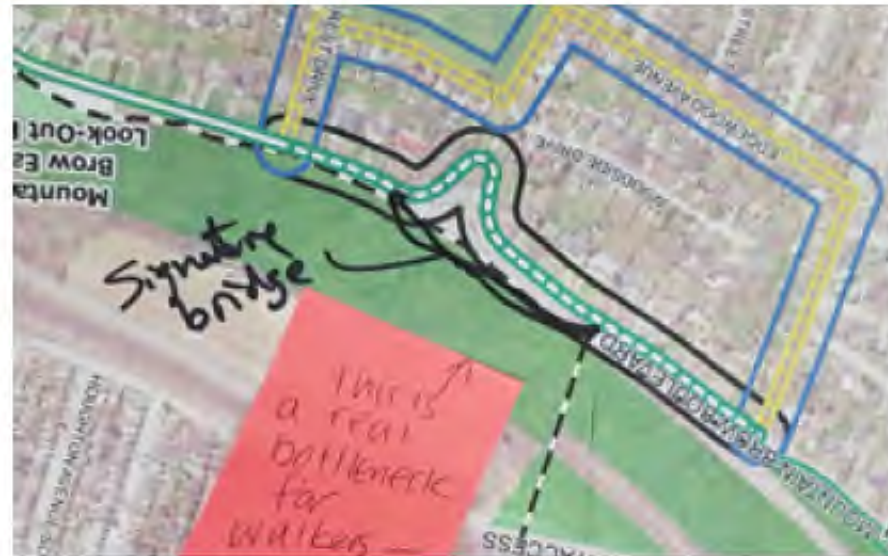
# Kenilworth Access

## Traffic Circle Flyover

### Trail Sections #30, #31, #32, #33

This concept involves the construction of a signature multi-use pedestrian and cycling bridge over the Kenilworth Access Traffic Circle to allow cyclists and pedestrians to bypass the many vehicular travel lanes in this area. This would be a significant bridge structure, as the span is likely to be almost 200m in an area of significant environmental constraints, and must achieve significant height in order to provide enough clearance for both trucks and buses to pass beneath the bridge.

While there are limited examples of similar bridges specifically over a traffic circle, there are comparable large-scale pedestrian and cycling overpasses, such as the “Hovenring” Floating Circular Bridge. This bridge, located in Eindhoven, Netherlands was estimated to have cost about 6.3 million euros.



Kenilworth Access (PIC #1 Feedback)



Precedent: “Hovenring” - Eindhoven, Netherlands  
(Source: Federation of European Cyclists)



# Albion Falls Crossing

## Cable Bridge

### Trail Section #36

Many residents identified the desire to maintain the trail routing along Mountain Brow Boulevard south and east of Mohawk Road in lieu of following the Escarpment Rail Trail. This route is recognized as desirable, but previous projects to explore a trail along this section have been met with challenges (specifically traffic challenges, lack of space, grade differences, and blind corners/ turns) that make this route not feasible within the context of this study. In the vicinity of Albion Falls, the public expressed a desire to see a unique crossing, such as a cable suspension bridge or zip-lining facility.

The cable suspension bridge over Montmorency Falls in Quebec is provided as a notable example.



Exhibit 40 - Precedent: Cable suspension bridge at Montmorency Falls, Quebec (Source: "Chute Montmorency Pain de sucre" by Pierre cb) ; Inset: PIC#1 Feedback about Albion Falls Crossing

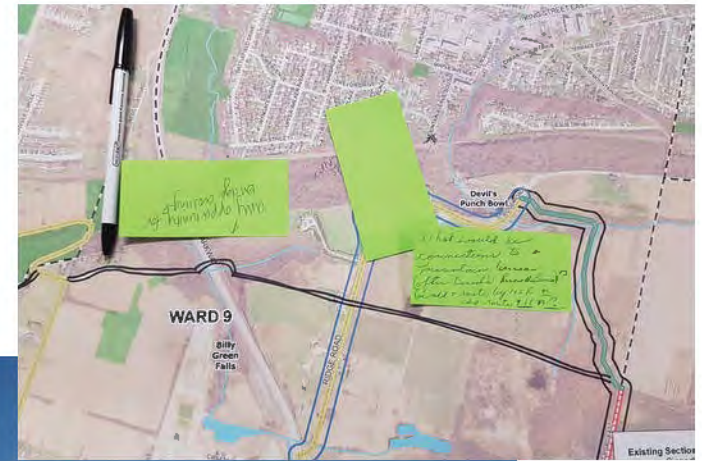
# Signature Upper Centennial Bridge

Major City Viewpoint

## Trail Sections #46 - #51 (alternative routing)

This concept involves the addition of a signature bridge across Centennial Parkway. With sweeping views of the lower city, this bridge would act both as a landmark marking the Mountain Brow Trail route across the parkway and a major attraction to the area. Should the bridge be pursued, the routing of the Mountain Brow Trail could be more direct, staying closer to the Brow on the west side of the Bridge, but land ownership may be a challenge on the east side of the bridge.

A local inspiration project comparable to this bridge would be the bridge across the QEW / Red Hill Valley Parkway bridge, which provides a high quality connection but also provides a signature bridge defining the corridor for those passing along the highway.



Precedent: QEW / Red Hill Valley Multi-use Bridge; Inset: Project Location & PIC Feedback



# Elfrida Growth Area

Trail extension to Elfrida

## Trail Section #N/A

With the expansion of the Elfrida Growth Area, the City of Hamilton recognizes the potential for a connection by extending the trail at the east terminus. Should opportunities arise to pursue this additional routing, it would likely connect to the recommended route via First Road East.

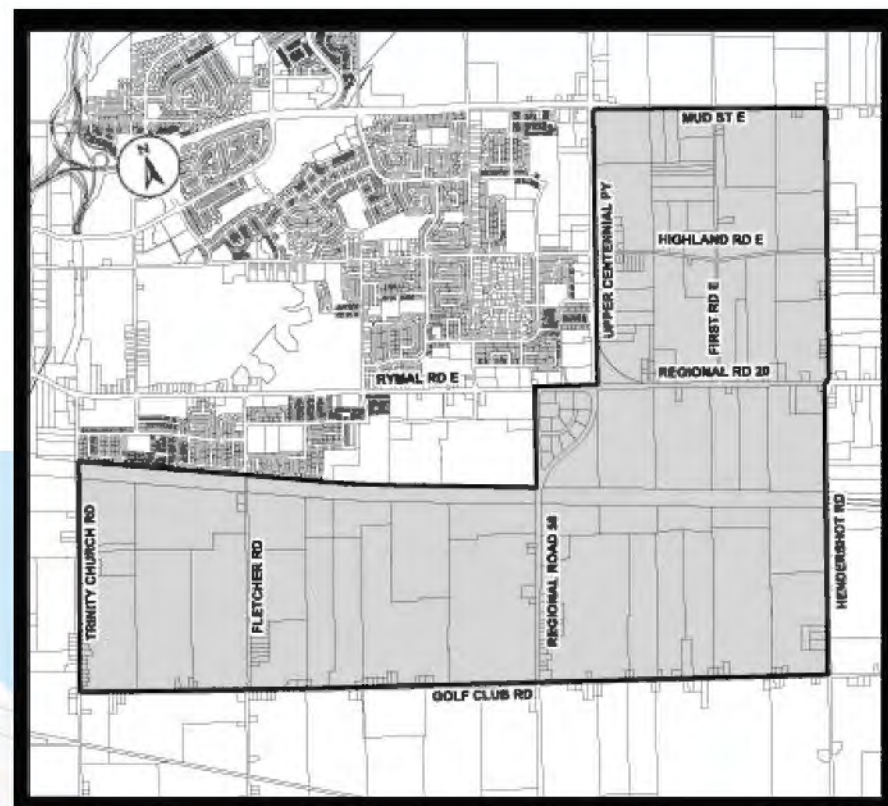
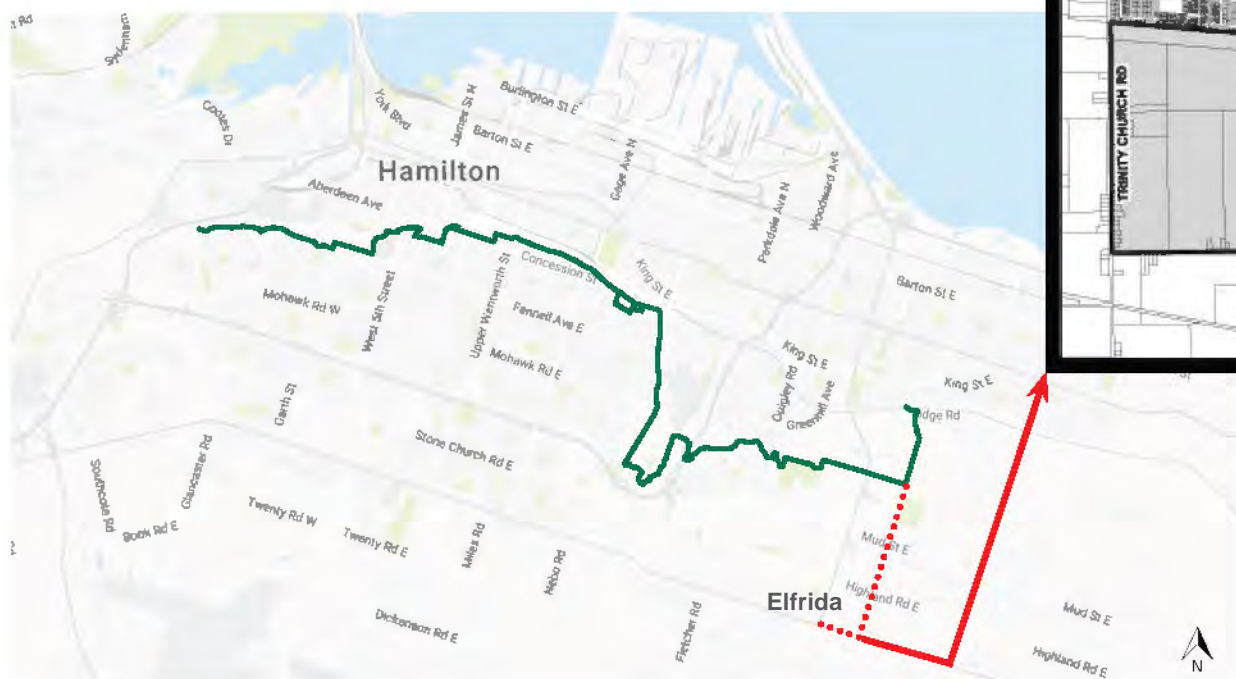


Exhibit 42 - Elfrida Growth Area connection (Base Map Source: Snazzy Maps, licensed by CC0 1.0)





*View of the lower city*