Cootes Paradise Greenway Loop

Connect ✹ Conserve ✹ Celebrate

CityLAB Hamilton

Hamilton Trails Burlington

Hamilton

Prepared by: CityLAB Student Partners

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Acknowledgements

The CityLAB Hamilton recognizes and acknowledges that it is located on the traditional territories of the Mississauga and Haudenosaunee nations, and within the lands protected by the "Dish With One Spoon" wampum agreement.

Thank you to all of the CityLAB SIR instructors and Patrick Bryne at CityLAB for providing the project group with this opportunity and support along the way.

Thank you as well to our project partners from the City of Hamilton, Daryl Bender and Jessica Brommer, as well as McMaster University staff and Hamilton Burlington Trails Council member, Wayne Terryberry, for their support and encouragement throughout the project.

It should be noted that different terms and vocabulary reference identical ideas.

- "Cootes Paradise Greenway Loop," "Cootes Greenway Loop," "Cootes Paradise Loop," "Cootes Loop," "Greenway Loop," and "Loop" appear throughout this document and are used interchangeably.
- City of Hamilton is referred to as "the City" within this document

It is important to distinguish between:

- The "greenway network," which refers to the Regional Greenway Network (Hamilton-Burlington) and the "greenway loop," (Cootes Paradise)

1.0 Cootes Greenway Loop Executive Summary

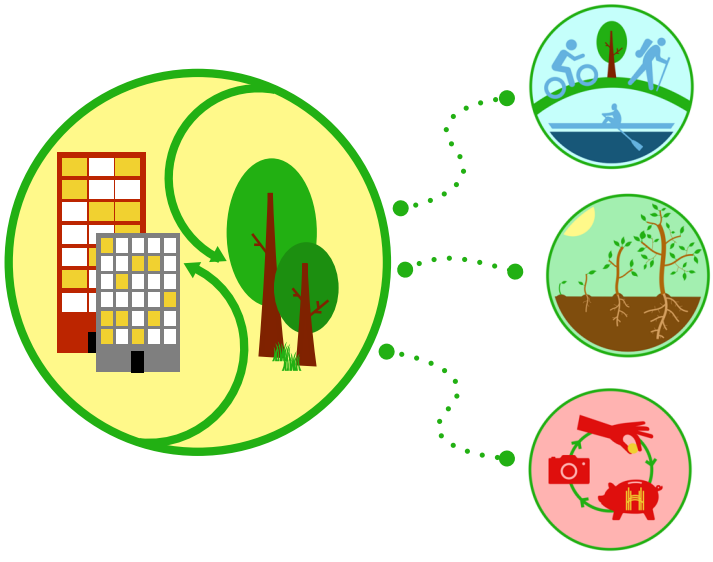
Created By: Elizabeth Marr, Nicholas Leslie, Albert Mac, Saadiya Pathan, and Eleni McGowans

1.1 Introduction

CityLAB Semester in Residence (SIR) is an interdisciplinary program for McMaster University, Redeemer University College, and Mohawk College students. The program is designed to give students an opportunity to work with City of Hamilton staff, community partners, and community members to work on innovative and sustainable projects in Hamilton. From October to December of 2019, a team of five CityLAB SIR students have worked in partnership with representatives from the City of Hamilton and the Hamilton Burlington Trails Council (HBTC) on the early stages of the Cootes Paradise Greenway Loop project. This project aims to apply the concept of a greenway - an outdoor active transportation network consisting of multi-use paths, pedestrian walkways, and on-street cycling facilities for both commuter and recreational use - to the Cootes Paradise region in Hamilton.

1.2 Project Focus

The vision of the Cootes Greenway Loop is to provide an accessible and sustainable trail network which connects residents and visitors to the natural, cultural, and heritage areas of the Cootes to Escarpment (C2E) EcoPark System. The project plans to promote these three principles:



Connect Hamilton residents and visitors with the exceptional natural environment around Cootes Paradise while simultaneously promoting a recreational lifestyle;

Conserve the natural environment by promoting active transportation and educating users on the importance of sustaining the biodiversity of Cootes Paradise;

Celebrate the beautiful natural area of Cootes Paradise by promoting tourism in the area and strengthening the local economy

To achieve these principles, background research was conducted on other greenways which have been implemented across North America; on municipal master plans; and on City of Hamilton priorities. This research informed the CityLAB SIR group's scope and deliverables.

1.3 Design and Dialogue

Two of the main components of the CityLAB SIR learning experience were design and dialogue.

Design

The design component included in-class lessons and out-of-class applications in the form of field design. The principles of design were applied to three deliverables:

1. **Public Information Centre (PIC) Panels**
2. **PowerPoint Presentation**
3. **King Street East Route Design Proposal**

Dialogue

Central to our dialogue lessons were the principles of community engagement, and how these principles are relevant to work outside of the classroom. McMaster lists six principles: respectful relationships, reciprocity, equity, continuity, openness to learning, and commitment to act. These principles were crucial to the working group's development of two dialogue-related deliverables:

1. **Cootes Greenway Loop Project Charter**
2. **Cootes Greenway Loop Workshop**

1.4 Relevance to City Strategic Priorities

Hamilton City Council has highlighted six strategic priorities for 2016-2025. It was identified by City partners that the Cootes Greenway Loop would align primarily with the Clean and Green & Built Environment and Infrastructure goals, as represented below:

Built Environment and Infrastructure

Creates a well-connected transportation network that allows people to get around conveniently without a car, and not just for recreational purposes

Clean and Green

Improves active transportation options which will help to reduce our impact on the environment

1.5 Costing Estimate and Avoided Costs

The CityLAB SIR project group has a budget of $400. Workshop materials and printing of final deliverables was budgeted for, with an estimated total cost of $250. However, all workshop materials were provided by CityLAB SIR at no cost, and all deliverables were provided electronically to project partners – printing of the PIC panels and project charter was not deemed necessary. The

remaining budget is $400. For the purpose of this report, the cost of the Cootes Greenway Loop is not included, however, that information can be found in Appendix H: Project Charter, Section 6.2.

1.6 Suburban and Rural Extensions

One of the main principles of the Cootes Greenway Loop is to connect Hamiltonians to natural lands and to each other. The Cootes Greenway will unite urban, suburban, and rural dwellings surrounding Cootes Paradise, and thus is an extension to suburban and rural scenarios in itself.

1.7 Key Recommendations

The success of the Cootes Greenway project is dependent on meeting the following short-term, mid-term, and long-term goals.

Short-Term (3 months)

1. HBTC and C2E staff meet to discuss project charter and proposed route options
2. Gather endorsements from stakeholders for the project
3. Acquire funding for a feasibility study

Mid-Term Goals (1-3 years)

1. Complete a feasibility study for the Cootes Greenway Loop
2. Gain community support through community engagement initiatives
3. Obtain funding to implement phases of trail infrastructure for the Cootes Greenway Loop
4. Phased implementation

Long-Term Goals (3+ years)

1. Promote the Cootes Greenway Loop
2. Ongoing trail maintenance
3. Evaluate the implemented Cootes Greenway Loop for developing future phases

1.8 Key Conclusions

1. The PIC panels and PowerPoint presentation will support future community engagement;
2. The Cootes Greenway Project Charter will provide context of the project and its purpose to stakeholders;
3. The preliminary route design for King Street East will be used to inform future design plans by the W. Booth School of Engineering;
4. The Cootes Greenway project aligns with several goals from the City's strategic plans and vision to be the best place to raise a child and age successfully

2.0 Introduction

A Greenway is an outdoor active transportation network consisting of multi-use paths, pedestrian walkways, and on-street cycling facilities for both commuter and recreational use. Recreational greenways can be networks of trails linking water-based recreational sites and areas. These trails and routes often have a scenic quality as they pass through diverse and visually significant landscapes. The recreation focus may be on urban or rural areas and the scale may be local, regional, national or international. On a broad scale, this greenway concept has been proposed to serve and connect residents and visitors of Hamilton and Burlington. It has been determined that the first step to achieve the broader Hamilton-Burlington Regional Greenway is to surround the Cootes EcoPark system with a greenway of its own. This project primarily fulfills the City of Hamilton's strategic priorities of "Clean and Green" and "Built Environment and Infrastructure". This report outlines a strategy to implement a greenway around Cootes Paradise and is a comprehensive review of the work that was completed by the Cootes Greenway project group with recommendations for the project's next steps.

2.1 What is CityLAB?

CityLAB Semester in Residence is an interdisciplinary program for McMaster University, Redeemer University College, and Mohawk College students. The program is designed to give students an opportunity to work with City of Hamilton staff, community partners, and community members to work on innovative and sustainable projects in Hamilton. Since October 2019 CityLAB SIR students have worked with city staff on a number of challenges; the Cootes Paradise Greenway Loop being one of them. The CityLAB SIR project group assigned to the Cootes Paradise Greenway Loop project has invested over 450 hours over the course of three months (October to December).

2.2 Region Context

Cootes Paradise is a 600-hectare wetland and wildlife sanctuary at the western end of Lake Ontario. The region boasts one of the highest biodiversity of plants per hectare in Canada, is home to thirty-five identified endangered species, and is an important migratory bird habitat and stopover (Hamilton, 2016). Due to its importance as a nature reserve, Cootes Paradise has been listed as an Environmentally Sensitive Area (ESA) in the Hamilton Region (Hamilton, 2016).

There are multiple groups and organizations who incorporate the conservation and celebration of Cootes Paradise into their mission statements. The 320-hectare marsh central to Cootes Paradise is owned and managed by the Royal Botanical Gardens (RBG); however, the Cootes to Escarpment (C2E) EcoPark System initiative and the Hamilton Burlington Trails Council (HBTC) have become interested in how best to celebrate this area (Hamilton, 2016).

Cootes to Escarpment (C2E). C2E is a collaborative initiative of ten stakeholders consisting of local government and non-profit organizations in the Burlington-Hamilton area. Royal Botanical Gardens (RBG) is the largest botanical garden in Canada and the head agency of the C2E ("About Us—Royal Botanical Gardens," n.d.). Together, these partner organizations own or manage almost 1,900 hectares (4,700 acres) of natural lands in this area, and are working together to protect, connect and restore the natural lands, as well as to deliver sustainable recreation and education opportunities ("Naturally Connected | Cootes to Escarpment," n.d.).

Hamilton Burlington Trails Council (HBTC). The HBTC was established in 2013 as a result of growing discussions amongst trail user groups and trail property owners about the need for regional collaboration on trails development, management, and promotion. These discussions and the initiative to establish the HBTC emerged from the goals and objectives of the C2E project: to 'provide opportunities for appropriate

passive recreation' in the C2E lands. The HBTC identified its scope and geographical area of focus beyond the boundary of C2E lands to incorporate the entire Hamilton and Burlington municipal regions in order to advocate for a regional trails vision and facilitate connectivity to other trail networks within southern Ontario.

For the purposes of the Cootes Greenway Loop project, the Cootes Paradise region was divided into eight subregions, each with their own opportunities and challenges. These subregions were identified by the HBTC. A map of the area and the regions highlighted can be seen in Figure i below.

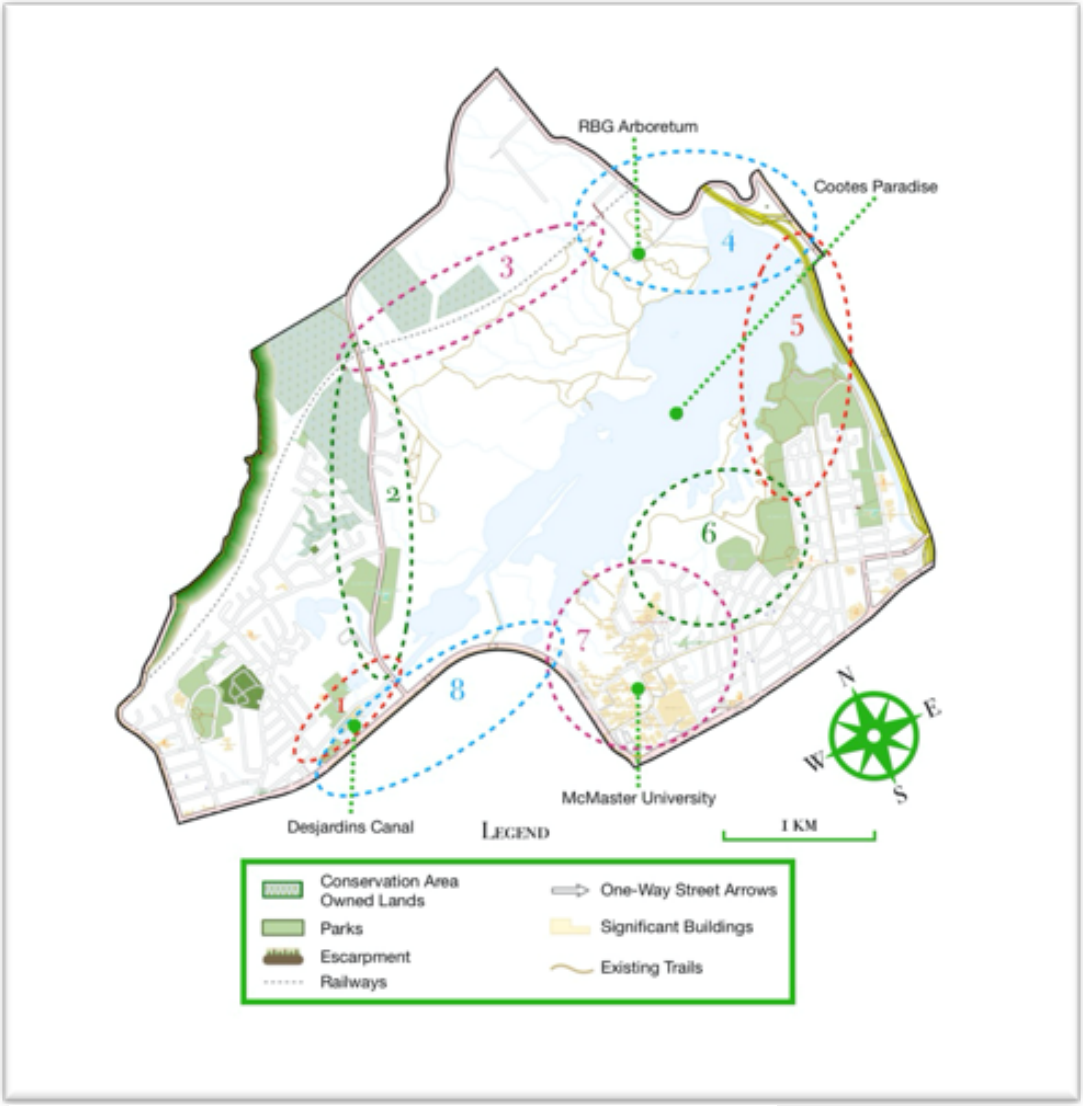


Figure i: Map of the area around Cootes Paradise and its 8 subregions

2.3 Project Objectives

There are segments of existing multi-use trails in the vicinity of Cootes Paradise. The purpose of the Cootes Greenway Loop project is to connect these various segments into one multi-use route around one of Hamilton's jewels – Cootes Paradise. Project objectives were defined between the CityLAB SIR group and City partners as a specific result that a person or system aims to achieve within a time frame and with available resources.

The objectives for the project are the following:

1. To advocate for and facilitate the creation of an ecologically sustainable recreational trail network around Cootes Paradise;
2. To connect people safely and conveniently to the natural, cultural, and heritage areas of the Cootes to Escarpment EcoPark System;
3. To create a trail network that is accessible to people of all ages and abilities;
4. To improve the quality of life through the promotion of active living and the pursuit of personal health and well-being;
5. To promote conservation of the natural environment and sensitive natural areas; and
6. To increase and promote tourism revenue in the region and provide a quality visitor experience through trails.

2.4 Project Scope

At the primary stage of the project, it was critical to meet with community and city staff partners and engage in discussion to understand the partners' priorities. Subsequent to this meeting, it was determined that the focus of this project was to develop a proposal for the implementation of the Cootes Greenway and provide design visuals.

The scope of this stage of the Cootes Greenway Loop project was limited to the preliminary aspects of gathering information and looking at possible route options. The following were in scope for the CityLAB SIR project group:

1. Mapping out the lands at stake and gathering a list of stakeholders involved: the city staff partners provided the Cootes Greenway project group with a map outlining land ownership in the area as well as an email list of stakeholders.
2. Gathering data on existing and proposed active transport infrastructure: the Cootes Greenway project group was responsible for conducting research on previous master-plans such as the recreational trails master-plan, regional transportation plan, cycling master-plan, and the transport master-plan of Hamilton. This research helped solidify the understanding of how a Greenway would fit into the City of Hamilton's principles.
3. Developing route evaluation criteria: the Cootes Greenway project group deliberated with city staff partners to discern route evaluation criteria including safety, accessibility, connectivity, environmental preservation, land ownership constraints, physical limitations, and nodes/recreational use.
4. Developing possible route designs: route options for King Street East were designed and a preferred route was identified using the criteria described above.
5. Complete project charter: notes on the project charter for the region was provided to the Cootes Greenway project group by HBTC member, Wayne Terryberry. This charter was updated and completed to be used when consulting with stakeholders.

2.4.1 Out of Scope

Out of scope will refer to work that is beyond the current scope of the CityLAB project group but is integral to the success of the overall Cootes Greenway initiative. This includes work involving both concurrent partners - that is those who have been contributing parallel to the work completed this semester, as well as future partners, who have committed to other roles relevant to the project's goals.

Concurrent partners. Concurrent partners include staff from both the City and McMaster University, as well as a student project group from McMaster University.

The roles of City staff, Jessica Brommer and Daryl Bender, is to provide information regarding the land ownership in Section 1: King Street East of the proposed Cootes Greenway Loop, and to advise on the requirements of the deliverables. This was fulfilled by providing documents via a shared drive and weekly meetings where feedback could be received.

Wayne Terryberry is a staff member of McMaster University and a member of the Hamilton Burlington Trails Council. Wayne Terryberry initiated the project and provided work that had been done previously for the Cootes Greenway project; including a draft Project Charter, and research on other existing greenways.

Another concurrent partner is a three-student working group derived from a fourth-year, sustainability class at McMaster University[1]. They will be continuing with the project into the winter term, until April[2]. Their main objective is to conduct stakeholder interviews as a form of community engagement. Prior to interviews, they had to first compile a top priority list of stakeholders. Possible stakeholders can be

[1] These students are referred to as the "SUSTAIN group" to differentiate between the CityLAB SIR working group and in mention to their affiliated course code SUSTAIN 4S06

[2] The following information was synthesized from a series of notes taken at meetings with the group. (See Appendix A)

found in Appendix I. They identified stakeholders based on their proximity to Section 1 of the proposed Cootes Greenway Loop, their experience developing sustainable infrastructure including trails, and/or those who had shown interest in the Cootes to Escarpment EcoPark System. From this, they invited stakeholders for an in person or phone interview. The goal was to understand the stakeholder's ideal design of what the Cootes Greenway is supposed to look like, and the perceived benefits and concerns of the project. The list of questions asked can be found in Appendix B. Once the interviews are completed and transcribed, the group will then do a qualitative analysis and identify themes that will inform the design. In essence, the information about the method used by the SUSTAIN group is included in this document because of the important role they play in community engagement.

At the beginning of the project, it was assumed that there would be a third student group in Transportation Studies at Mohawk College that would complete a traffic study around the Cootes Drive and King Street East area. However, due to the lack of time and resources, this student group withdrew their involvement in the project. For this reason, a traffic analysis is listed as out of scope and at this time there is no group assigned to complete it. The CityLAB student group adapted for this change design by offering a route option that did not involve King Street East in their design (see Appendix D: Panel 5 for details).

Future partners. While the concurrent partners listed above will continue on the project, a future partner is the W. Booth School of Engineering Practice and Technology at McMaster University. This group of post-graduate students will complete a secondary design of the proposed route starting in January 2020.

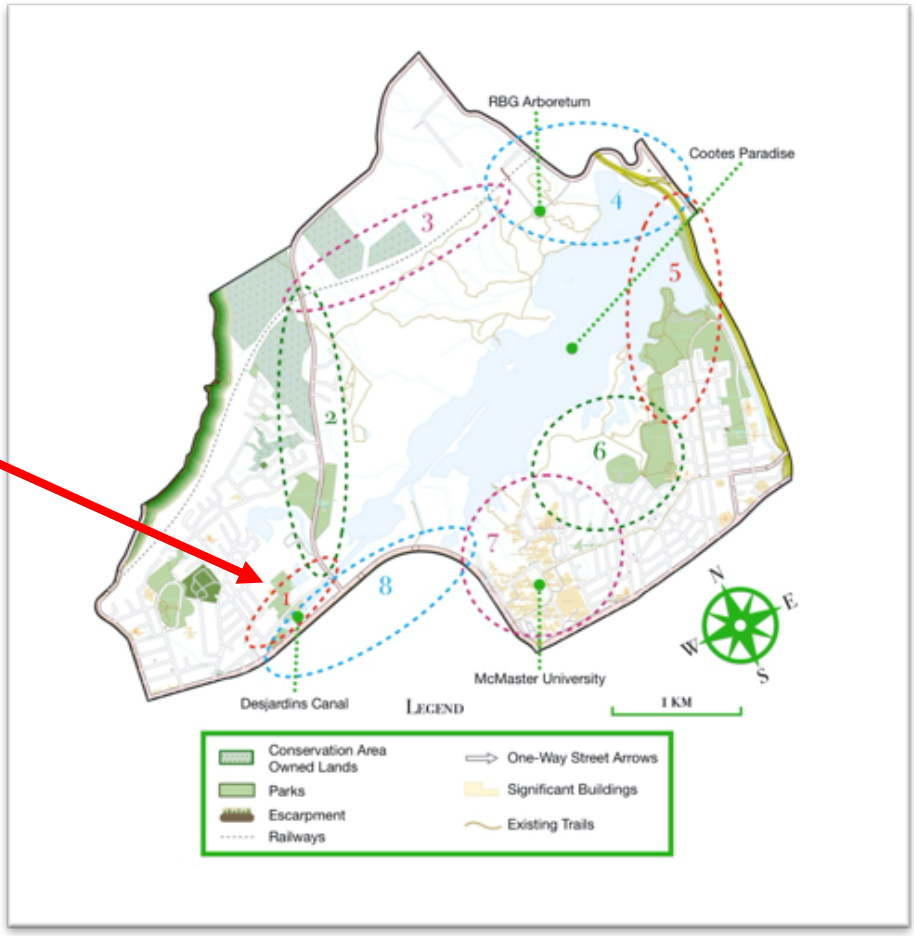


Figure ii: Section 1: King Street East was identified as the first section of the Cootes Greenway Loop

2.5 Route Area Context

Section One: King Street East, as shown in Figure ii, has been identified as the first section for the development of the Cootes Greenway Loop to focus on. The section of King Street East between East Street North and Olympic Drive in Dundas is a significant historical location, running orthogonal to the old Desjardins Canal turning basin. The Desjardins Canal was used as a transportation route from Lake Ontario into Dundas in the early 1800s, and it was a notable contributor to the development of the area until railways were completed and became favoured in 1853 ("The Desjardins Canal Historical Plaque," n.d.).

Figure iii: Close up of Section 1: King Street East

Two parks exist along King Street East:

1. **Centennial Park** is located on the west end of King Street East and contains a few small trails which enter off of East Street North. On the eastern side of Centennial Park and the westerly banks of Desjardins Canal lies the Urquhart Butterfly Garden. As this garden attracts many vulnerable butterfly species in the summer months, all route proposals for Centennial Park avoided passing directly through it. Instead, proposing the trail to give a wide berth around the garden ensures that the Greenway is consistent with its priorities of respecting, conserving, and enhancing the natural environment.

Figure iv: Centennial Park Entrance on East Street N.

2. **Canal Park** is located south of King Street East, between the road and Desjardins Canal. There are trails that lead from King Street East and the Urquhart Butterfly Garden to a viewing platform which overlooks the canal. The platform, erected in early 2019, completed the transformation of the former Veldhuis Greenhouses property into a "gateway into Dundas" now known as Canal Park (Leitner, 2018). Canal Park holds great potential as an activity node along the Cootes Greenway Loop. Placing the trail through Canal Park would maximize this potential.

Figure v: Canal Park look-out

3.0 Literature Review

The City of Hamilton has increased in population by 3.1% over the past 5 years (World Population, 2019). While the population is currently 762 808, it is projected to be close to 850 000 by 2035 (World Population, 2019). With the increase of population in the Hamilton metropolitan area, the need for connectivity is going to be in higher demand. The city's trail systems are already well used and play an integral part in connecting communities, parks, schools, and residential areas; however, there is room for improvement. The overall trail network is not consistently connected or accessible. To solve this problem, the City of Hamilton and other organizations have created multi-year plans as an effort to improve recreational trail infrastructure. Recognizing this effort, the Hamilton Burlington Trails Council has proposed a greenway which will develop and connect trails around the Cootes Paradise area. An analysis of the current literature will show that the Cootes Greenway project would fit into the region's existing

plans and goals. All reports and documents that have been considered are those that focus on the Cootes Paradise region, rather than the greater Hamilton-Burlington area.

3.1 City of Hamilton Future Plans

Recreational Trails Master Plan. The City of Hamilton has developed several master plans with goals that align with the Cootes Greenway project. This includes the Recreational Trails Master Plan (RTMP) which was originally approved by Hamilton City Council in 2007, and since established, has been a framework for the City to use when developing trails (Todd, Bender, Graham, & Johnston, 2016). In 2016, the RTMP was updated. Its objectives are still based on the original vision that is to "*implement a connected and continuous trail network*" (Todd et al., 2016). Despite an effort to be connected and continuous, the trail network only proposes connections within Wards in the master plan. While organizing into Wards may be an effort to provide context to its audience; it is counterintuitive. To build a trail network with an overall goal to be connected and continuous, it is important to emphasize development between Wards as well as within them. Instead of dividing development by community, the Cootes Greenway proposes development using unique opportunities and activity nodes in an area. By doing so, the Cootes Greenway highlights areas that bring residents together, rather than emphasizing boundaries.

Cycling Master Plan. The Cycling Master Plan (CMP) is another long-term plan developed by the City of Hamilton and approved by Council in 2009 (City of Hamilton, 2018). It has since been reviewed and updated in 2018 (City of Hamilton, 2018). Similar to the Recreational Trails Master Plan, the CMP proposes a cycling network. This network supports the City's Transportation vision and goals, which is to "provide reasonable connectivity for people of various skill levels rather than cycling infrastructure on all streets". The CMP identified safety as a major priority. To improve

safety, a "Vision Zero concept" was recommended in the 2018 CMP review and has since been approved by council (City of Hamilton, 2019). As stated in its proposal; "*Vision Zero is a data-based approach to road safety with the ultimate goal of reducing traffic-related serious injuries and fatalities towards the goal of zero*" (City of Hamilton, 2019). One way for cycling infrastructure to attain this is to provide off-road options that remove vehicles from the experience. Seeing that the Cootes Greenway proposes a multi-use, non-motorized trail system that could be designed off-road, this would fulfill that goal.

Pedestrian Mobility Plan. The Pedestrian Mobility Plan (PMP) was endorsed by Hamilton City Council in 2013 with the vision of "rebalancing pedestrian and vehicular mobility on Hamilton's streets by providing for pedestrians needs, while accommodating vehicular traffic within the streetscape" (City of Hamilton, 2013). The Cootes Greenway is an example of infrastructure that could be designed to meet many of the goals of the PMP. For example, some of the goals listed in its report are to reduce road danger, increase inclusive mobility, have well designed and managed spaces and places for people, and an overall improved integration of networks (City of Hamilton, 2013). The Cootes Greenway can be designed to meet these needs. Road danger can be reduced by offering off-route route options for pedestrians, and increase mobility by recommending trails to be paved and widened for multiple users. It is suggested that there are also activity nodes integrated into the Cootes Greenway to offer places for people along the trail. Recognizing there are already existing and well-maintained multi-use trails around the Cootes Region, the Cootes Greenway would integrate these into its framework. Overall, understanding the importance behind visions of plans such as the PMP early on in the Cootes Greenway project allows time to design and construct it to meet the needs that have been identified by the city and its residents.

Transportation Master Plan. The Transportation Master Plan (TMP) was originally endorsed in 2007, and has since been reviewed in 2018 (City of Hamilton, 2018b). Ultimately, the report demonstrates the City of Hamilton's effort in working towards improving transportation-related studies that align to the City's strategic plan, specifically within regards to Built Environment and Infrastructure, Healthy and Safe Communities, Clean and Green, and Economic Prosperity and Growth priorities (City of Hamilton, 2018b). The report identifies transportation related projects, including those already discussed (i.e. Cycling Master Plan, and Pedestrian Mobility Plan) and prioritizes them in regards to the City's strategic goals (City of Hamilton, 2018b). The TMP's policies and related actions lists five areas of focus; one of these is "connectivity and improving access between different areas of the City". Seeing as a Greenway's purpose is to connect community members and visitors to natural elements that surround cities, this project would help achieve this. Also, as described in detail in Section 8, the Cootes Greenway aligns with the city's strategic plan and vision to be the best place to raise a child and age successfully.

Overall, while there is no mention of a greenway concept in the City of Hamilton's master plans, there is room to integrate a greenway. Doing so would help achieve the city's visions and goals. Within the RTMP, the Cootes Greenway would help improve connectivity and continuity as its purpose is to attract members and visitors from all communities. Within the CMP, the Cootes Greenway works within the approach of Vision Zero to offer off-road options for cyclists to reduce car and bicycle collisions, enhancing safety. In respect to the PMP, the Cootes Greenway offers a unique opportunity to restore the balance between vehicular and pedestrian traffic. Lastly, the TMP and the Cootes Greenway project also share similar visions in regards to Hamilton's future plans, and a greenway would be a means to help achieve these goals.

3.2 Benefits of Trails

Both the City of Hamilton and local organizations have identified the benefits from investing in trails. As referenced in Hamilton's RTMP, ACTIVE2010 was a report made to address the rise of inadequate levels of physical activity and its resulting negative impact on health and quality of life. Out of this report, it was identified that trails are a cost-effective way to improve health and activity levels, as well as a number of other potential benefits including social, environmental, and economic benefits.

> "Research suggests that community trails are a cost-effective means for promoting physical activity and potentially reducing medical expenses. Using data from the National Medical Expenditure Survey, a study in the USA found that for every $1 spent on trails, there was almost $3 in savings in direct medical costs (Troped, 2011). With physical inactivity and obesity costing the Greater Toronto and Hamilton Area $4 billion each year including $1.4 billion in direct medical costs, (Medical Officers of Health in the GTHA, 2014) investing in trails has the potential for significant savings." (Hamilton Recreational Trails Master Plan, 2016).

Overall, the Cootes Greenway would be an initial investment, but is associated with downstream savings.

3.2.1 Examples of Greenways

The idea of a greenway is not a new concept. Other greenway projects have been identified in other cities, such as Indianapolis, Atlanta, Portland, Cincinnati, and Calgary.

Portland, Oregon, has a forty-mile partially completed greenway that surrounds the city, accordingly named the "40-Mile Loop". With bicycling rates in transportation increasing 10% each year, Portland has seen frequent use of this greenway (Rails to

Trails Conservancy, n.d.). As a result, there have been both economic benefits and health benefits. Portland has seen large savings in fuel and health care costs since the implementation of the 40-Mile Loop. By 2008, the city of Portland saved $12-million on fuel and $10-million on health care costs (Rails to Trails Conservancy, n.d.). This suggests that reducing the use of motorized vehicles and increasing physical activity has an improvement on overall health.

After a decade of planning, fundraising, and constructing, the Rotary Mattamy Greenway in Calgary was completed in 2017. It is home to a variety of urban parks and specialty amenities, connecting over fifty Calgary communities and providing residents and visitors of all ages, cultural backgrounds, and physical abilities with an outdoor recreation experience. This one-of-a-kind pathway allows all Calgarians to enjoy the physical and mental health benefits of year-round walking.

The Atlanta BeltLine project emerged out of the growing effort to end disparities that residents in Atlanta's urban core have faced as a result of historical oppression. Railroads segregate the city by class and race. This was designed intentionally by the city planners to ensure dissociation between black and white neighbourhoods. The project proposed to convert underused rail corridors around the city core into a continuous system of transit and greenways surrounded by parks and pedestrian-friendly mixed-use centers of development. While the project is still ongoing, positive economic and social benefits have come out of the development thus far (Infosurve Research, 2018).

The Indianapolis Cultural Trail was completed in 2013 to "enrich lives and connect people and places through dynamic and beautiful experiences and use the Indianapolis Cultural Trail and Pacers Bikeshare program as a catalyst for economic growth" ("Vision, Mission and Objectives | Cootes to Escarpment," n.d.). In total, eight miles of trail was built to connect every significant art, cultural, heritage, sports, and

entertainment venue in Indianapolis (Burow & Majors, 2015). As obesity is a concern in Indianapolis, one of the main goals of this greenway was to promote activity, as exercise and recreation were the primary uses of the trail. The City has also seen great economic growth with the implementation of the trail. Businesses along the trail are thriving and are creating new employment opportunities as customer demand increases. The Indianapolis Cultural Trail has brought in tourism to the area; the tourists contribute to local businesses such as hotels and restaurants. The incoming tourist revenue has also contributed to the additions of twenty-five new businesses located in close proximity to the trails over a five-year span, all directly tied to trails usage (Simmons, 2014).

These greenways have provided helpful insight as to the expected challenges and successes associated with such a project. With this knowledge in mind, the question to consider is; *why not in Hamilton?* The Cootes Greenway is a project that has the potential to improve health, the economy, social well-being, and provide an opportunity to celebrate the region's heritage. The Cootes Greenway would also work into pre-existing community organizations such as the Cootes to Escarpment EcoPark System and compliment the goal of developing the EcoPark System.

3.3 Local Initiatives

Cootes to Escarpment (C2E) EcoPark System. Trails are also a way to enjoy the cultural heritage and characteristics of an area. The Cootes to Escarpment organization had identified cultural heritage protection, as well as environmental monitoring, education and interpretation to be a priority between 2013-2015 (Cootes to Escarpment, 2019). Since then, the organization's efforts between 2015-2021 are to focus on:

> "...engaging community members and stakeholders; foster land securement and stewardship; preparing joint management plans for core areas of the EcoPark System; pursuing provincial and federal government support, including possible special purpose legislation; and securing new funds" (Cootes to Escarpment, 2019)

By focusing on fostering land securement and stewardship and pursuing provincial and federal government support, it can be inferred that the EcoPark System is in a growing phase. This means that the organization may be able to incorporate the Cootes Greenway into its plans. Seeing that Cootes to Escarpment is an original project partner and has endorsed the development of greenways in the past, the C2E system should be considered in the planning process (Cootes to Escarpment, 2007).

Figure vi: C2E EcoPark System Vision Map (Cootes to Escarpment, 2016)

The Greater Golden Horseshoe. The Golden Horseshoe refers to a secondary region of Southern Ontario, centered around the Greater Toronto Area (Government of Ontario, 2019). The Greater Golden Horseshoe refers to this region as one of the most "dynamic and fast-growing regions in North America" (Government of Ontario, 2019).

By 2041, the area is forecasted to grow from eight million to thirteen and a half-million people (Government of Ontario, 2019). With Indigenous communities and treaties, quality agricultural lands, and freshwater lakes, ensuring the land is conserved properly while population growth occurs is crucial. Supporting conservation efforts such as the C2E EcoPark System and more specifically, the Cootes Greenway, needs to occur before intense population sprawl has the opportunity to destroy sensitive ecosystems and lands.

Furthermore, Hamilton has been identified by the Ontario government as a "designated greenfield area" (Government of Ontario, 2019). This means that new development taking place will be;

> "planned, designated, zoned and designed in a manner:
>
> a) supports the achievement of complete communities;
>
> b) supports *active transportation*; and
>
> c) encourages the integration and sustained viability of transit services." (Government of Ontario, 2019).

The Cootes Greenway would meet all of these requirements. First, complete communities refer to "areas within cities and towns that offer and support opportunities for people of all ages and abilities to conveniently access most of the necessities for daily living" (Government of Ontario, 2019). This, as well as the third requirement that encourages the integration of transit services, can be satisfied by designing the greenway accordingly. For example, to ensure the trail can be used by all ages and abilities, the trail can be designed to be non-motorized, paved, and placed in areas with less topography and close to transit stops. Lastly, active transportation (human-powered travel) is integral to the nature of a multi-use trail. In the end, as future projections estimate for a dramatic increase in Hamilton's population, developing sustainable infrastructure such as the Cootes Greenway should be a city priority.

4.0 Limitations and Challenges

The following section in the report addresses limitations and challenges of the project. Limitations has been defined as any constraints that influenced the CityLAB SIR project group to adapt. Challenges has been defined as any context in which the CityLAB SIR project group had their abilities tested, but was able to overcome.

4.1 Lack of Project Clarity

A lack of communication between the City staff partners, Jessica Brommer and Daryl Bender, and the McMaster/HBTC partner, Wayne Terryberry, created several challenges. Initially, the CityLAB SIR project group met with the City partners and determined that the project scope was to design a detailed route from King Street East to York Road. The concept of a greenway around Cootes remained explained. However, after meeting with Wayne Terryberry, the concept of a greenway was provided, and that the actual project goal was to implement this idea in Hamilton. It was clarified that the project scope was to develop a proposal for the implementation of the Cootes Greenway and provide design visuals.

To reduce the disconnect between the city staff partners and the McMaster/HBTC partner, the CityLAB SIR project group made the decision to hold meetings with both the City staff partners and the McMaster/HBTC partner together. This allowed for the partners to understand each other's priorities and come to a consensus on the project deliverables. It was also identified that the CityLAB SIR group is responsible for keeping all the project partners updated on all progress.

4.2 Lack of Communication with Project Partners

Communication with the McMaster University SUSTAIN 4S06 partners working on the Cootes Greenway project was a challenge, as both groups had different time

commitments and geographical locations. The SUSTAIN 4S06 partners only have a single course commitment at McMaster Campus, while CityLAB SIR group has a full semester commitment at CityLAB Hamilton.

However, these issues were resolved with email coordination and arranging meetings to discuss any progress made. Further communication was maintained through a liaison in the CityLAB SIR group and a liaison from the SUSTAIN 4S06 group.

4.3 Loss of Project Partners

During the start of the Cootes Greenway project it was understood that a group from Mohawk College was to conduct a traffic study for King Street East. It was later found that a traffic study would not be conducted, and this data would not be available. Ultimately, a conceptual design for King Street East was produced without consideration of traffic in the area. This limited the group to recommend routes within off-road areas.

4.4 Challenge in Project Scope

Community Engagement is not in-scope for the CityLAB SIR group, and the SUSTAIN 4S06 group was responsible for stakeholder engagement. This created several issues when the CityLAB SIR group was tasked with the deliverable of designing a conceptual trail route along King Street East. There are many different stakeholders in the design area. Unfortunately, stakeholder feedback from the SUSTAIN 4S06 group would only be available after the CityLAB SIR group's involvement with the project ended.

Understanding this limitation, the CityLAB SIR project group had adapted by producing a route option along King Street East which only uses land that is publicly owned. This ensured that the provided route options would be possible even without

acquiring additional lands. The CityLAB SIR project group also recommended that existing stakeholders beyond King Street East be consulted before routes are drafted.

5.0 Deliverables

The primary focus of the deliverables was to generate marketing and presentation materials for the community and city partners. The final deliverables consist of: (1) a workshop, (2) a conceptual design for King Street East, (3) public information centre (PIC) panels, (4) a powerpoint presentation, and (5) a project charter.

5.1 Cootes Greenway Loop Workshop

Objective: The purpose of the workshop was to use a mock stakeholder debate activity that would produce feedback on what value a Greenway in Hamilton would have.

Procedure:

1. A presentation was used to educate participants on the greenway concept. It included an ice breaker to prepare participants for the workshop activity.
2. A debate was then held in which each participant was given a stakeholder profile to adopt. Participants were asked to discuss the possible implementation of the Cootes Greenway Loop from their given profile's perspective.
3. Throughout the debate, mock "stakeholder updates" were provided. These updates were used to move the debate forward and replicated possible real-life conflicts that may occur in actual stakeholder consultation.
4. Following the debate, participants were asked to reflect on the value of a Greenway in Hamilton. Raw data of these answers were transcribed and can be found in Appendix J.

5. An analysis of the raw data occurred to identify the overall themes of responses.

Outcome: From the workshop, it was determined that a greenway would be beneficial in Hamilton largely for more sustainable transportation options, health benefits, and increased opportunities for recreational use. These values were passed onto the SUSTAIN group who would be conducting the community engagement and emphasized in the Project Charter proposal.

Refer to Appendix C for the workshop agenda and materials.

5.2 King Street East Route Proposal

Objective: The purpose of the King Street East route proposal was to generate route options to connect Section Two to Section Eight, as seen in Figure vii. The priority of the design was to bring the Greenway Trail from Centennial Park to Olympic Drive.

Procedure:

1. Design criteria were developed from the following:
    a. the workshop held;
    b. discussions amongst the CityLAB SIR project group;
    c. City staff partners who provided examples of criteria from previous projects;
    d. McMaster University and community partner Wayne Terryberry; and
    e. CityLAB SIR instructor and civil engineering professor, Brian Baetz.
2. The area was then dissected into three segments, each with a unique design challenge to overcome.
3. The design criteria, seen in Section 10.3, was used to generate three possible routes
4. Through consultation with city staff, one route was marked as “preferred”:

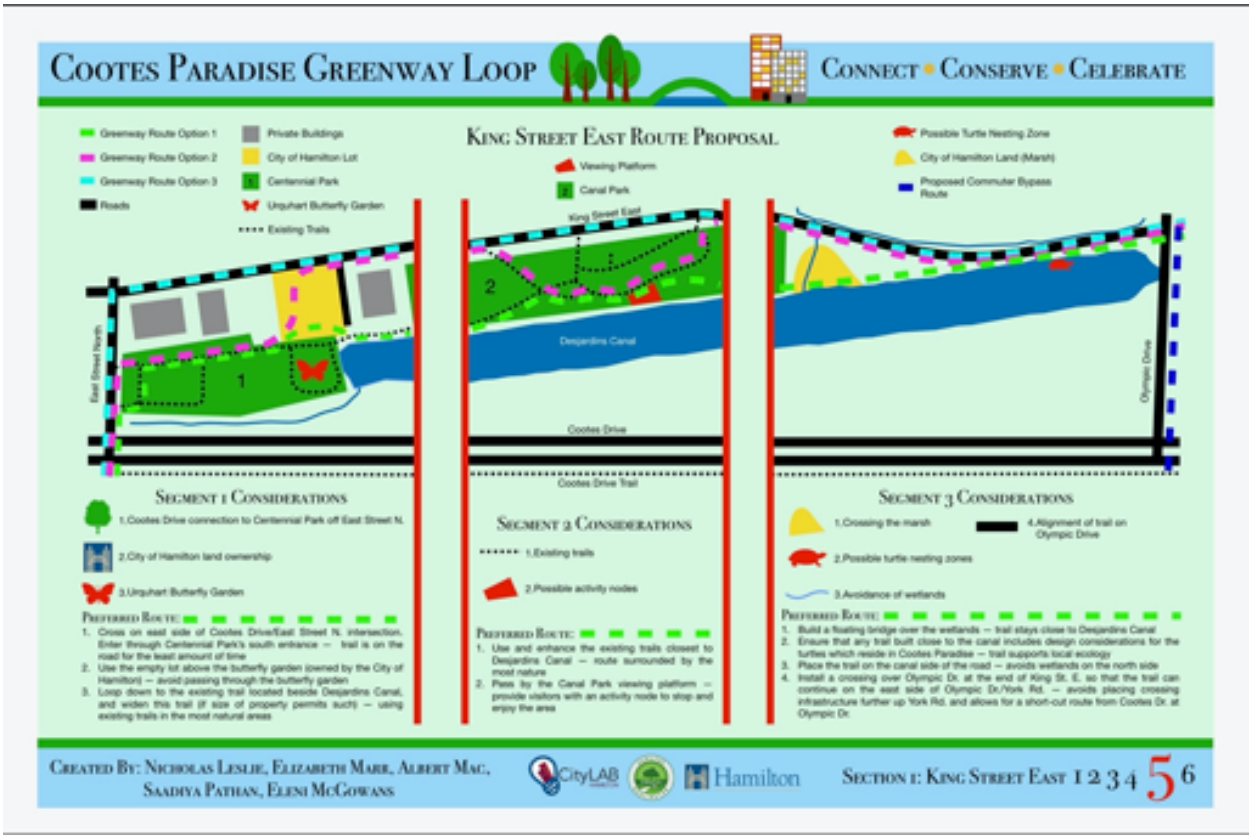


Figure ii. The Primary Conceptual Level Design

Outcome: A conceptual route design of a Greenway along King Street East was completed which will allow stakeholders to visualize where the multi-use trail may exist. The design provided a visual for the SUSTAIN 4S06 project partners to use during stakeholder interviews. The W. Booth Engineering School will also produce a secondary design, including design features such as the proper medium for a trail and safety features, based on this conceptual design.

Refer to Section 6.0 for more details on the design process.

5.3 Public Information Centre (PIC) Panels

Objective: The PIC panels were developed to help during stakeholder interviews conducted by the SUSTAIN group. They are also intended to help any other project

partners with any promotion and future community engagement regarding the Cootes Greenway Loop project.

Procedure:

1. Through discussion amongst the CityLAB SIR group with the City staff and McMaster/HBTC project partners, panel themes and number of panels were determined.
2. After identifying the themes, content and visuals were generated for each panel.
3. Integrated content and visuals into completed panel design.

Outcome: There were six panels constructed to outline the context, objectives, scope, and vision of the Cootes Greenway Loop. The panels summarize the overall project through visuals, encouraging stakeholders to sign onto the Cootes Greenway Loop project charter.

Refer to Appendix D for the all six panels.

5.4 PowerPoint Presentation

Goal: This PowerPoint presentation was designed to complement the presentation of PIC panel content in a different communication medium.

Procedure: Converted content from PIC panels into a powerpoint presentation. Key features of the PowerPoint presentation included: animated transitions, large graphics, and minimal text.

Outcome: The PowerPoint presentation produced consisted of easy-to-ead content and graphics to capture the attention of the audience. The presentation will be passed on to the City staff partners and the McMaster/HBTC partner who will use it to aid stakeholder engagement.

Refer to Appendix E for the presentation slides.

5.5 Project Charter

Objective: The role of the Project Charter is to serve as a liaison between the landowners in the Cootes Paradise region who are planning, funding, building, and maintaining trails, to ensure that the vision and coordination of a continuous trail network throughout the region can be realized.

Procedure: The pre-existing Regional Greenway Network charter that was converted into the Cootes Greenway Loop charter. To do this, a comprehensive review of background research, shown in the Literature Review in Section 7.0, was completed as it was necessary to provide context to the Cootes Greenway Loop project. The City staff partners were consulted and the CityLAB SIR project group received feedback in regards to the timeline of the implementation of the Cootes Greenway Loop.

Outcome: The expected outcome is that the project charter is reviewed by stakeholders and the city council and signed on as a confirmation of the implementation of the Cootes Greenway.

Refer to Appendix H for the Project Charter.

6.0 Design Details

Integral to the CityLAB Semester in Residence is a component on design. Design principles are taught in class and practiced in the streets of Hamilton by students. The knowledge gained from this component of the course was translated into work on the Cootes Greenway Loop project. The CityLAB SIR produced three deliverables with significant design considerations and components:

1. Public Information Centre Panels
2. PowerPoint Presentation
3. King Street East Route Design Proposal

These three design components are described in detail below.

6.1 Public Information Centre (PIC) Panels

Description: Public Information Centre (PIC) standard sized panels (2'x3') which outline the context, objectives, scope, and vision of the Cootes Greenway Loop were created. The outline of the six individual panel themes, in order, is the following:

1. The greenway concept and the proposal of the Cootes Greenway Loop in Hamilton
2. Examples of other Greenways in North America, and the lessons learned from them
3. How the Cootes Greenway Loop fits into Hamilton's strategic priorities
4. The Cootes Greenway Loop route overview, and the opportunities and challenges of each of the eight sections identified
5. The preliminary route design proposal for Section One: King Street East
6. The next steps required for the continuation of the Cootes Greenway Loop project

These panels were designed to guide any promotion and future community engagement regarding the Cootes Greenway Loop project. For this reason, the panels needed to clearly summarize the overall project to educate and encourage stakeholders to sign onto its charter. Consequently, it was decided that minimizing the amount of text and maximizing the amount of graphics would generate visually appealing panels which are easily understood. The panels have colourful yet simple backgrounds and infographics and visual elements which provide a visual representation for complex concepts. Any map used had an organic shape to make them stand out, and important ideas and concepts were given more space than any lower-order information.

See Appendix D for all six panels.

6.2 Design of PowerPoint Presentation

A powerpoint presentation of twenty-two slides was created as a way to display the information on the PIC panels in a different medium. The powerpoint presentation has the same objective as the panels - to guide any promotion and future community engagement regarding the Cootes Greenway Loop project.

On average, each panel is represented over 3-4 slides, allowing the presenter to touch on the same information without visual overload. Creative components such as animated transitions, large graphics, minimal text, were used during the creation of the powerpoint to maximize its effectiveness in engaging with the audience. Animated transitions captured the attention of the audience and helped guide their focus to critical pieces of information.

See Appendix E for the entire PowerPoint Presentation

6.3 Preliminary route design for Section 1 of the Greenway Loop (King Street East by Desjardins Canal)

Figure viii. CityLAB SIR project group doing field design

The objective of the preliminary route design was to connect the multi-use Cootes Drive trail (located on the south side of Cootes Drive) to Olympic Drive through King Street East. The CityLAB SIR group visited and explored the area prior to any route design. These types of in-person visits are vital to the success of any design project, as it is difficult to get a holistic understanding of all of the design considerations of an area without experiencing it first-hand. In order to identify the best route for the Cootes Greenway, King Street East was split into three segments:

1. East Street North to the western shore of the Desjardins Canal
2. The western shore of the Desjardins Canal to the eastern border of Canal Park
3. The eastern border of Canal Park to the end of King Street East at Olympic Drive

The three segments were identified by a unique design challenge or consideration in each area, as listed below:

1. Segment one contains the challenge of providing a sufficient buffer from the Urquhart Butterfly Garden;
2. Segment two contains the consideration of how integrate the Canal Park lookout platform as a node;

3. Segment three includes the challenge of passing over or around the marsh directly east of Canal Park

Three unique routes were proposed for each of these segments. To aid in deciding on a preferred route, various evaluation criteria were used as a way to compare each different route. The criteria are as follows:

Table 1: Greenway Route Evaluation Criteria

Criteria	**Description**
Safety	Considers any traffic or environment related safety concerns, and mitigates these threats for all users of the trail **Examples in Section One: King Street East:** • Crossing Cootes Drive at East Street North to connect Cootes Drive Trail with Centennial Park. • Viability of having the trail follow the road (East Street North and King Street East)
Accessibility	Considers terrain, trail width, and different mobility factors which might inhibit users from using the trail **Example in Section One: King Street East:** • Determining whether to have the trail follow the road (East Street North to King Street East) or follow off-road trails
Connectivity	Considers how well the routes resolve gaps in trail infrastructure **Example in Section One: King Street East:** • Connections from Cootes Drive to King Street East, and King Street East to Olympic Drive
Environmental Preservation	Considers how well trail placement minimize any negative impacts on natural areas and the vulnerable ecosystems **Example in Section One: King Street East:** • Determining where to place the trail in order to ensure that the Urquhart Butterfly Garden is preserved and protected
Land Ownership Constraints	Considers viability of placing the trail on lands owned by different stakeholders (private ownership, public ownership, conservation authority ownership, etc.)

	Example in Section One: King Street East: • Private ownership of the parking lot north of Centennial Park
Physical Limitations	Considers constraints to the trail placement by the natural environment (vegetation, topography, etc.) or the built environment (buildings, parking lots, etc.) **Example in Section One: King Street East** • Crossing the marsh east of Canal Park
Nodes/Recreational Use	Considers trail proximity to possible activity nodes, and ultimately the recreational value of the trail placement **Example in Section One: King Street East:** • Trail proximity to Urquhart Butterfly Garden and the Desjardins Canal lookout platform

The criteria were referenced during the preferred route decision for Section One: King Street East (which can be seen in Appendix D, panel 5). However, this decision may change as future research and community engagement with stakeholders and community members is completed. It is recommended that these criteria, at a minimum, be considered in the development and implementation of all sections of Cootes Greenway Loop, and not just for Section One: King Street East.

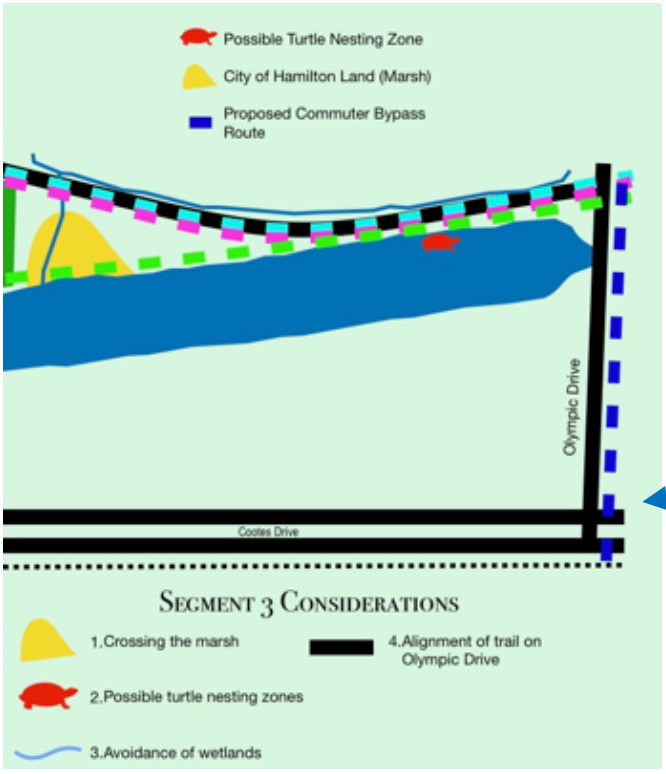


Figure ix. Commuter bypass route

Each of the routes proposed solve the objective of the preliminary route design: to connect the multi-use Cootes Drive trail (located on the south side of Cootes Drive) to Olympic Drive through King Street East. However, it must also be noted that a commuter bypass route was discussed. This route would connect the Cootes Drive Trail to Olympic Drive and would provide a direct transportation route versus those interested in more recreational use. There is an existing stoplight and crosswalk located at this intersection, making the implementation of this route relatively simple. It is important to stress that this commuter bypass is being proposed as complementary to the route chosen for King Street East, not as an alternative. See figure ix above for a visual of the commuter bypass route.

See Appendix D: Panel 5 for full panel.

7.0 Dialogue/Community Engagement Principles

Integral to the CityLAB Semester In Residence is a component on dialogue.

Central to dialogue are the principles of community engagement, and how these principles can be applied in project work. The McMaster Office of Community Engagement developed six principles for community engagement that are to be used as a foundation to ensure that community engagement is approached in a holistic and effective manner (McMaster University, n.d.). The knowledge gained from this component of the course was translated into work on the Cootes Greenway Loop project. The CityLAB SIR group produced two deliverables with significant dialogue considerations and components:

1. Mock Stakeholder Debate Workshop
2. Cootes Greenway Loop Project Charter

These two design components are described in detail below.

See Appendix G for the six principles of community engagement.

7.1 Cootes Greenway Workshop

Although stakeholder community engagement was out of scope for the CityLAB SIR group, a workshop was conducted to better understand the potential outcomes that stakeholders would like to see in the completed Cootes Greenway Loop. The design of the workshop was guided by the community engagement principles. The following table touches the efforts that the CityLAB Cootes Greenway group made to ensure the Community Engagement principles were met:

Table 2: McMaster Principles of Community Engagement

McMaster's Principles of Community Engagement	*Examples of Project Efforts that Met McMaster's Principles of Community Engagement*
Respectful Relationships	Stakeholder profiles (ensuring accurate and respectful portrayal)
Reciprocity	Inviting project partners to be involved in project planning and participate in workshop
Equity	Stakeholder profiles (ensuring diversity and representation, ensuring all voices are heard) Stakeholder debate (facilitators ensuring opportunity to participate)
Continuity	Informing participants about partner roles
Openness to Learning	Workshop Reflection and Feedback
Commitment to Act	Communicated next steps, how workshop results be used

In line with the Community Engagement principle of reciprocity, the mock stakeholder debate was developed with the SUSTAIN 4S06 project partners, who had a role in the execution of the workshop itself. The community and city partners were invited as participants to ensure their knowledge and expertise would be reflected in the workshop results.

Figure x: Stakeholder debate held at workshop

The workshop began with a presentation about the purpose of the workshop, greenway concept, and the project scope. The goal of this first step was to start priming

participants to be able to engage in high level discussion about the topic. It is important to create an atmosphere in which all participants feel welcome and comfortable in order to encourage full participation and engagement in the workshop content. The CityLAB SIR group continued to create this atmosphere with an ice breaker activity, where participants were asked to group up with similar minded individuals and debate simple preferences.

Participants were then asked to list their top three wants and/or concerns regarding a Greenway in Hamilton on sticky notes and place them on a designated whiteboard. These were later collected to identify themes, which was communicated to the participants. See **Appendix J** for the raw data collected from this activity.

Leading into the mock stakeholder debate, participants were provided with a stakeholder role representing current stakeholders in the Cootes Greenway project. Examples include: a local business owner, a cyclist, a ward councilor, and a wildlife activist. (See **Appendix C** for stakeholder debate roles). The entire basis of the workshop depended on generating conflict in values to drive idea generation and discussion within our mock community. In line with the Community Engagement principle of Respectful Relationships, it was important to balance accurate and respectful portrayal of stakeholders and ability to achieve workshop purpose and goals.

In the generation of the stakeholder profiles, the community engagement principle of equity was applied. Stakeholder profiles represented different socioeconomic factors, mobility factors, and backgrounds. It ensured all voices were heard and represented in the workshop outcomes.

The next activity was a mock stakeholder debate. The goal of this mock stakeholder debate was to explore different stances which may arise in future community engagement with stakeholders.

The debate was structured into two parts: moderated debate and unmoderated debate. The moderated debate was formally structured where stakeholders could only speak when called on by the facilitator at each table. During periods of moderated debate, “stakeholder updates” were introduced. These stakeholder updates were bits of information regarding stakeholders that would either change or confirm their stances on a greenway. Following a stakeholder update, unmoderated debate would begin. Unmoderated debate was an unstructured time period where stakeholders would be able to deliberate with each other without facilitation. Periods of unmoderated and moderated debate would continue until a final decision-making period was introduced.

To incorporate the principles of Continuity and Commitment to Act, it was critical that the workshop conclusion give clear mention of next steps for the project, which project partners will be responsible for the identified next steps, and how the information gathered from the workshop will be used and impact the project.

After the conclusion of the workshop, a critical reflection of the workshop successes and failures was completed. An important future change would be to use stakeholder profiles with less pop culture references, to encourage more serious discussion and better achieve workshop purpose and goals. It was identified that the workshop’s ability to achieve the Community Engagement principle of Respectful Relationships fell short, which was reflected in the debate going off-topic during some parts of the workshop.

7.2 Cootes Greenway Loop Project Charter

The role of the Project Charter is to serve as a liaison between the landowners in the Cootes Paradise region who are planning, funding, building, and maintaining trails, and to ensure that the vision and coordination of a continuous trail network

throughout the region can be realized. It was emphasized in the document that the Hamilton Burlington Trails Council welcomes support from other relevant stakeholders as this project advances.

As per the the Project Charter, the document outlines its involvement in Community Engagement:

Community Engagement & Participation: The Cootes Greenway project partners will go through community and stakeholder engagement in the planning process to ensure citizens and community members feel empowered and involved in the development. There are also various community initiative support groups already existing, such as the Hamilton Burlington Trails Council, Turtles of Cootes, and the Cootes to Escarpment (C2E) project ("Turtles Of Cootes," 2017).

See Appendix H for the project charter.

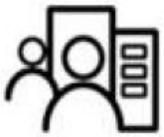
8.0 Relevance to City's Strategic Priorities

The vision and mission of the ten-year City Council Strategic plan is for Hamilton *"to be the best place to raise a child and age successfully, and to provide high quality cost conscious public services that contribute to a healthy, safe and prosperous community, in a sustainable manner"* (Hamilton, 2015).

The Cootes Paradise Greenway Loop supports the vision of the City Council Strategic plan and aligns with the mission of the six priorities by providing a sustainable trail system that draws in tourism, is economically beneficial, and promotes active and healthy living. A greenway provides a space that urges individuals to participate in physically engaging activities, encourages community engagement, and encourages locals to experience nature while surrounded by an urban environment. The following shows how the Cootes Paradise Greenway Loop aligns with each of the City of Hamilton's Strategic Priorities:

The City Council 2016-2025 Strategic Priorities are comprised of six priorities as detailed below:

Table 3: City of Hamilton Strategic Priorities

Priorities	***Vision***
Clean and Green 	Prioritizes projects that contribute to the social, economic and environmental well-being of Hamilton to help achieve an enhanced quality of life
Community Engagement and Participation 	Consults residents about local projects and are encouraged to make a positive impact in their surrounding community
Culture and Diversity 	Celebrates and accepts individuals of all ages, backgrounds and abilities
Built Environment and Infrastructure 	Continually ensures that the transportation system in Hamilton is easy to navigate both internally and externally
Healthy and Safe Communities 	Everyone has access to the services and supports needed to be healthy and active
Economic Prosperity and Growth 	Aims to provide prosperous and diverse economical benefits for all residents

<u>Clean and Green:</u>

Strategies listed for Clean and Green will prioritize projects that contribute to the social, economic and environmental well-being of Hamilton to help achieve an enhanced quality of life (Biggs, 2014). A sign of success for this strategy is that "we use cars less

and make more trips using active and public transportation" (Ariyo, Mutch, & Jones, 2017). The Cootes Paradise Greenway would work towards this goal by improving active transportation options, ultimately reducing our negative impact on the environment. This notion of reducing impact on the environment fits into the Hamilton Climate Change Action Charter created from Clean Air Hamilton and Climate Change Champions which states that "we need to take responsibility and act to reduce greenhouse gas emissions and prepare for climate change impacts in ways that promote economic prosperity, health and environmental benefits for all." (Hamilton Climate Change Action Charter, 2011)

Culture and Diversity:

Part of the Cootes Greenway vision is to celebrate the heritage and diversity of the area through mediums such as public art and interpretive panels. To achieve this goal, the trail will be accessible to all ages and abilities, creating a welcoming activity space for youth through seniors. Incorporation of Indigenous art and programming is recommended in effort to honour and acknowledge the traditional territories of the Erie, Neutral, Huron-Wendat, Haudenosaunee, and Mississaugas that the City of Hamilton is situated upon (Hamilton, 2017).

Community Engagement & Participation:

The Cootes Greenway project partners will go through community and stakeholder engagement in the planning process to ensure citizens and community members feel empowered and involved in the development. Various community initiative support groups already exist such as the Hamilton Burlington Trails Council, Turtles of Cootes, and the Cootes to Escarpment (C2E) project ("Turtles Of Cootes," 2017).

Built Environment and Infrastructure:

The proposal for the Cootes Greenway will create a well-connected transportation network that allows people to get around conveniently without a motorized vehicle. This project can also complement the Metrolinx 2041 Regional Transportation Plan, which is to "optimize the transportation system".

Healthy and Safe Communities:

The Cootes Greenway will bring another outdoor recreation space that Hamilton residents and visitors can enjoy. As stated earlier, the health benefits from trails are tremendous. The Cootes Greenway vision is to make this positive impact felt at the individual and community level. Regardless of the reason for using the trail, feeling safe and secure while on it is vital. When asked, 95% of Indianapolis Cultural Trail users felt that the trail is safe and secure (Burow & Majors, 2015).

Economic Prosperity and Growth:

Based on the findings of previous greenways, it can be expected that the number of people visiting and touring the Cootes area will increase, bringing the potential for economic gain. Predictions for Hamilton's future Light Rail Transit (LRT) suggest that property values near LRT stops will increase. Also expected are increases in residential and commercial occupancies, increased tourism revenue, and intensified land use ("Economic Case for LRT - Hamilton Light Rail Initiative," n.d.). It can be argued that the same will be true for the Cootes Greenway. This prediction is also supported by research from the Indianapolis Cultural Trail which stated that from 2008 to 2014, the total assessed value of the 1,747 parcels near the trail increased 148% (Burow & Majors, 2015).

The Cootes Paradise Greenway Loop is one that will effectively help Hamilton and the City Council to achieve their overall vision and goal. This project provides a simple but meaningful way to improve the city by connecting people while still preserving the environment. The Cootes Paradise Greenway Loop is a project inclusive of the entire community for all abilities, backgrounds, and ages. This project has the potential to improve the lives of those living in Hamilton while providing a way for visitors to experience and enjoy Hamilton.

8.1 Policy Implications

Given the Cootes Greenway being a new initiative, this section discusses how policy should be reformed or designed in order to effectively reach the project's desired outcomes. The following policy recommendations were produced by considering the City's strategic plan as well as the policies made in other cities for existing greenways:

- Encourage private developers to consider the Cootes Greenway Loop in their own developments for connectivity
- Support future connections between Cootes Greenway Loop and other trails in the area
- Develop a trails maintenance strategy to ensure long-term management of the trail network
- Preserve public ownership of areas with the Cootes Greenway Loop
- Collaborate with capable public and private entities that could be responsible for, or assist with trail planning, design, implementation, and maintenance
- Establish objective criteria for determining trail funding priorities

- Achieving cost savings and efficiencies by incorporating the recommended pedestrian and bicycle infrastructure (ie. Pedestrian Master Plan and Cycling Master Plan) into future plans for economic development, housing, parks and recreation, and major road projects

8.2 Extension to Suburban and Rural Scenarios

The Cootes Greenway Loop is the first phase in the ultimate vision of a Regional Greenway Network in Burlington and Hamilton. Nevertheless, the Cootes Greenway Loop would include suburban and rural communities around the Cootes Paradise region in its first phase. A regional example of this is the connection it would provide between Dundas and the rest of Hamilton. While there is an existing multi-use trail to access Dundas along Cootes Drive, an extension of the Cootes Greenway project would expand the infrastructure further into Dundas, offering more opportunities for safe and active transportation to occur in the area. Ultimately, rather than being an extension to suburban and rural scenarios, the Cootes Greenway project would be inclusive of these areas in the principle of its design.

Incorporating rural scenarios into the project is important as urban and rural recreational trails address different needs and opportunities. For example, while the downtown Hamilton core may offer several options for transit, suburban and rural Hamilton transit is lower order. The Cootes Greenway Loop has the potential to become a primary transportation network for both suburban and rural users in its region.

As mentioned in the RTMP, trails support both urban and rural recreational lifestyles and "can support broader environmental and ecological objectives through the protection of greenspace corridors"(Todd et al., 2016). By rationalizing and re-routing intrusive and informal paths, designed trails can serve to keep users away from

sensitive areas. Doing so will conserve the natural elements that are integral to rural areas.

In summary, the Cootes Greenway project includes the installation of infrastructure through a mixture of urban, suburban, and rural locations that will provide access to natural spaces, recreation, workplaces, educational institutions, transit, shopping, and cultural experiences. The long-term greenway vision is that the Cootes Greenway Loop is the first phase of a regional greenway network that would pass through and connect every Ward in both Hamilton and Burlington. With this expansion, it can be expected that the idea of including rural and suburban areas within the Cootes Greenway Loop would be included in the Regional Greenway Network as well.

9.0 Recommendations

The success of the Cootes Greenway project is dependent on meeting the following short-term, mid-term, and long-term goals.

9.1 Short-Term Goals (3 months)

1. **HBTC and C2E staff meet to discuss project charter and proposed route options:** The HBTC and C2E organizations are key stakeholders who have done similar developments, and they are both major proponents of the Cootes Greenway Loop. It is important for them to collaborate on this project by sharing resources and knowledge. The successful collaboration across all project partners maximizes efficiency and works towards ensuring the success of fulfilling the short-term, mid-term, and long-term goals of the Cootes Greenway Loop.

2. **Gather endorsements from stakeholders for the project (see Appendix I for the list of stakeholders):** The Cootes Greenway Loop Project Charter that was created by the CityLAB SIR group is meant to inform stakeholders about the project. It is also meant to be used to gain endorsement from stakeholders for the implementation of the project. The PIC panels and the complimentary powerpoint presentation were also created as a means to practice community engagement. It is important that they be used to inform, consult, and involve the general Hamilton community about the Cootes Greenway Loop.
3. **Acquire funding for a feasibility study:** A feasibility study is necessary to determine the factors that will be crucial in the successful implementation of the Cootes Greenway Loop.

9.2 Mid-term Goals (1-3 years)

1. **Complete a feasibility study for the Cootes Greenway Loop:** Assess the practicality of implementing the Cootes Greenway. This process would include assessing the environment chosen, ecological effects, traffic in the area, and other factors involving the greenway.
2. **Educate community through community engagement initiatives:** Engage residents and community members in public information sessions and consultation, interviews held by the SUSTAIN 4S06 project partners, and other initiatives to promote the Cootes Greenway Loop.
3. **Obtain funding to implement phases of trail infrastructure for the Cootes Greenway Loop:** Apply for grants and funding to begin the implementation of the Cootes Greenway Loop. Outside funding opportunities exist on the federal, provincial, corporate, and private level. Funds are available through the Ministry

of Transportation, Ministry of Environment, trails foundations, and other organizations. There are also municipal sources of funds to consider, including capital budgets; maintenance and operations budgets; economic development and marketing funds; and road improvements programs. For more information, see Project Charter in Appendix I .

4. **Phased implementation:** The overall project is separated into phases which allows for efficiency in implementation. See figure i for the eight separate sections of the greenway.

9.3 Long-Term Goals (3+ years)

1. **Promote the Cootes Greenway Loop:** Promotion is necessary once the Greenway is implemented to bring pedestrians, cyclists, commuters, and others to the multi-use trail. This can be done through advertising the known Hamilton trails the Cootes Greenway is connected to. Social media and website promotions will also be useful in reaching a wider audience.
2. **Ongoing trail maintenance:** Ongoing maintenance will be required to ensure safety and cleanliness of the Cootes Greenway for users. The City of Hamilton monitors key trails under their Trail Maintenance Program (City of Hamilton, 2004). The maintenance program includes trail garbage cleanups, maintenance of trail surfaces or crossings, replacement of culverts, trail signage, tree planting, clearing fallen trees, and trail Investigations (City of Hamilton, 2004). This program along with volunteers in Hamilton will assist with maintaining the Cootes Greenway.
3. **Grow the Cootes Greenway Loop into a Regional Greenway Network:** Lastly, an evaluation of the Cootes Greenway Loop will need to be conducted in order to develop future phases and improvements to the Greenway. The

evaluation will include identifying successes and failures of the Cootes Greenway. The insights gained from any evaluation will be considered in the extensions or implementations of the Regional Greenway concept, which hopes to connect multiple greenways in Hamilton and Burlington.

10.0 Conclusion

The CityLAB SIR project group has laid significant groundwork for the project to move forwards, as all in-scope deliverables are completed and have been provided to partners who are continuing the project. The workshop provided insights and a preliminary visual to the SUSTAIN 4S06 project members for stakeholder interviews. Using the design criteria, a proposed design route for King Street East was prepared for the W. Booth School of Engineering Practice and Technology project members to build upon in a secondary design. The completed PIC panels and PowerPoint Presentation are now available for community and City partners for use in community engagement and to present to City Council. The Cootes Greenway Project Charter is now completed and awaiting endorsement by City Council.

The expectation is that Wayne Terryberry (McMaster/Community Partner) and Daryl Bender (City of Hamilton Partner) will be the main project contacts moving forward. The SUSTAIN 4S06 project members will continue their stakeholder interviews, and the W. Booth School will join the project in January 2020.

Key Terms

Active transportation: Any human powered transportation method. Transport of persons by using human muscle-power, such as walking, cycling, rollerblading, or skateboarding.

CityLAB Semester in Residence Hamilton (SIR): CityLAB Semester in Residence is an interdisciplinary program for McMaster University, Redeemer University College, and Mohawk College students. The program is designed to give students an opportunity to work with City of Hamilton staff, community partners, and community members to work on innovative and sustainable projects in Hamilton.

Community Engagement: Community Engagement is the process by which citizens are engaged to work and learn together on behalf of their communities to create and realize bold visions for the future. Community Engagement can involve informing citizens about your initiative, inviting their input, collaborating with them to generate solutions, and partnering with the community from the beginning to tackle community issues. (Institute, n.d.)

Complete Communities: Complete communities support quality of life and human health. Whether they are urban, suburban or rural, complete communities: are compact, foster vibrant public interaction and give residents and workers a sense of place, encourage active transportation, make efficient use of infrastructure. support transit, provide a mix of housing types and offer a range of affordability, offer a range of employment opportunities, offer access to healthy local food, and are designed to reduce greenhouse gas emissions and address climate change (*Building Complete Communities: Supporting Quality of Life*, n.d.).

Cootes to Escarpment (C2E): C2E is a collaborative initiative of ten stakeholders consisting of local government and non-profit organizations in the Burlington-Hamilton area. Together, these partner organizations own or manage almost 1,900 hectares (4,700 acres) of natural lands in this area, and are working together to protect, connect and restore the natural lands, as well as to deliver sustainable recreation and education opportunities.

Cootes Greenway Loop: Greenway loop proposed to surround the Cootes Paradise region in Hamilton.

Greenway: An outdoor active transportation network consisting of multi-use paths, pedestrian walkways, and on-street cycling facilities for both commuter and recreational use.

Hamilton Burlington Trails Council (HBTC). The HBTC was established in 2013 as a result of growing discussions amongst trail user groups and trail property owners about the need for regional collaboration on trails development, management, and promotion. These discussions and the initiative to establish the HBTC emerged from the goals and objectives of the C2E project: to 'provide opportunities for appropriate passive recreation' in the C2E lands.

Public Information Centres: Public meetings, consultations, and engagements conducted by City of Hamilton Staff regarding developments and city plans.

Project Charter: A project charter is a document that states the scope, objectives and people who are participating in a project. It serves as a liaison between stakeholders and project managers and is used as a reference throughout project implementation.

Regional Greenway Network: An idea to connect the greenways of multiple municipalities (Hamilton-Burlington) in future greenway development phases.

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Appendices

Appendix A: SUSTAIN Group Meeting Minutes

Meeting Minutes: SUSTAIN October 3rd

Date: October 3
Present: CityLAB students (Nick, Eleni, Liz, Saadiya, Albert), SUSTAIN 4S06 students (Ciaran, Elizabeth, Usra)
Location: CityLAB Meeting Room

1. Design considerations/variables
    - Aesthetics goes with comfort and experience
    - More about order of considerations, not importance of each
2. Clarifying our goals
    - Boundaries of trails: detailed route maybe just from butterfly conservatory to olympic drive (detailed conceptual design)
        - Swoop on scholars geoportal -- 30cm resolution air photos (2015 is last available)
        - Ask dave for 2017 imagery (they think sarah sent it to him)
    - Generalize the rest of the route (functional design)
    - Deliverables
        - Final report to be brought to the Hamilton-Burlington trails council hopefully
            - Construction drawings is the likely next step after the report
            - Studies sometimes posted online on the city's website
            - Assume it will be something posted publicly
3. Roles with stakeholders
    - CityLAB has no direct role with the stakeholders, a somewhat secondary role
    - Talk to them about how we fit together (and how we work together)
4. Workshop
    - General draft of the presentation panels (for the different routes)
    - Workshop may be a way to edit the panels and highlight which items on them are of utmost importance
5. GIS Map
    - Mainly used to produce visuals for panels
    - Value of maps to our exercise, no maps needed to be produced for project deliverables
    - Shape files to maybe look at: scholars geo something (portal?)
6. Prep for tomorrow's walkabout
    - Note things about street, traffic control, sidewalks, etc. (review with google maps):
        - User experiences of various trail placements

Meeting Minutes: SUSTAIN November 4

Present: CityLAB group (Saadiya, Albert, Nick, Liz) and SUSTAIN (Usra, Ciaran, Elizabeth)
Location: Mill's Library

- Anything we have they will take (current research and field notes)
- Ciaran has something to print panels before the final copy cause they wanna edit them at some point
- Wayne starting to help with recruitment for interviews
    - Identifying stakeholders by proximity to King St E
    - Interviews begin earliest November 11 to end of month (could be earlier because they don't need preliminary designs anymore)
    - Interviews are to inform designs
- What SUSTAIN wants to be able to hand to stakeholders
    - Include images of greenways which we summarized on document
    - Include map we created
- Note-taking template for workshop
    - Positive attitudes and negative attitudes
- Helpful things for future public information session
    - What is a greenway, who is it for, why should there be a greenway?

Meeting Minutes: December 4th

Date: December 4th
Location: PGCLL
Present: CityLAB project (Liz, Nick, Albert), SUSTAIN working group (Usra, Ciaran)

What has been your role (SUSTAIN) in ? community engagement

Goal of interviewing: ideal design of what the greenway trail is suppose to look like, also talk about the benefits and concerns of the greenway

- Design is to inform W. Booth School

Method:

1. Created top priority list
    - Process: Considered proximity to help with choosing priority as well as experience in sustainable infrastructure/trail development
    - Similar to those who have shown interest in the Cootes 2 Escarpment Ecopark System
- Volunteered/Invited formal interview
- Phone interviews or in-person
- Transcribe and identify themes that will inform design
- Questions in appendix

How we helped:

- Used map/8 sections that we have identified
- Panels to be shown in future interviews to provide context of idea

Deliverables: first form of engagement, recommend to the city and similar projects, and have final report

Appendix B: Questions on Cootes Greenway

Questions-Cootes Greenway

In this interview, we will be talking a lot about the Cootes Greenway multi-use trail. If you can just Tell me how you have been involved with or experienced any work or discussions involving the Cootes Greenway [or Hamilton Burlington Greenway] in the past?

From your perspective, what are the benefits and challenges of creating this multi use trail?

Can you tell me a bit about your position and to what extent does your group's mission/goals interact with the Cootes Greenway mission?

As a consideration to have, this may take up some space in your area by being adjacent or near your property, what impact would this have on your organization? Do you see any benefits and downfalls, please elaborate as this would help with the design and planning.

If money wasn't an issue, what would be the ideal situation for your organization? What do you think the major barrier to this is? How would you see an ideal design?

What do you believe are the thoughts and concerns of other organizations that may be involved in this project?

Is there any way you see this project as helping or hindering your mandate/mission?

Appendix C: Workshop Agenda and Stakeholder Roles

Workshop Agenda

Cootes Greenway | CityLAB | November 6, 2019
WORKSHOP AGENDA

1:00 PM	**Orientation**
1:10 PM	**Presentation**
1:25 PM	**Ice Breaker**
1:30 PM	**Stakeholder Debate Introduction**
1:40 PM	**Breakout** ❖ Top Three Concerns/Wants
1:45 PM	**Stakeholder Debate** ❖ Have fun!
2:30 PM	**Debate Wrap up** ❖ Workshop Reflections
2:50 PM	**Conclusion** ❖ Next Steps and Project Goals
3:00 PM	**End**

Stakeholder Roles for Workshop

Role name: Zucks

Area: Upper-state Dundas

Description: You are a local café owner. While the café business is nice, your real profits come from digging through customers' trash and selling their data to third-party Russian intelligence agencies. You only care about the bottom line.

Role name: Ned from Hamilton Tourism

Area: Represent all of Cootes Paradise region and resident in Dundas.

Description: Part of Hamilton's Visitor Services team to help plan trips. You help people get around via bus, taxis and SoBi bikes. Having your entire family pass away in the last year, the only place you can escape from ghosts is in the Cootes Paradise Region. You advocate that there are biking opportunities for every skill level.

Role name: Voldemort

Area: York Blvd.

Description: You want nothing to do with Muggles and their quest of building a Greenway. A Greenway wouldn't benefit you because you can't ride a bike. You would believe that taxes should not go towards building a Greenway, that is, if you actually would pay your taxes.

Role name: Kandy Ray

Area: Dundas

Description: You've never owned a car in your life and you're "smooth with that". You coined the term "two feet and a heartbeat" and use it avidly. You're an advocate for the Greenway because you believe it will make sustainable transportation more safe and accessible, which will only help your Close Cootes Drive Facebook group following. Your favourite past times are Twitter and Instagram, all whilst on your walking commute to work of course.

Role name: Myrtle the Turtle

Area: The wetlands on either side of Cootes Drive.

Description: You enjoy long walks across Cootes Drive and are an advocate for the ban of single use plastics. The phrase that you most relate to is "the marsh is always wetter on the other side of the road".

Role Name: Councilor Sonia

Area: Ward 13 (Dundas)

Description: You made the TIME 100: The Most Influential People of 2012 list and have been riding that high ever since. When public speaking, you talk with a lower voice because you read in Readers' Digest that people are more likely to take you seriously. Your campaign points ran on supporting the Cootes to Escarpment EcoPark, the City's Cycling Master Plan, and current developments of pedestrian trails in and around the Dundas region.

Role Name: Eron Munk

Area: York Road Region

Description: You live with your wife and 5 kids. Your kids drive you insane and your only escape is your job in Burlington. Every day, you hop in your Electric Car ™ before your kids can wake up and rush off to your regular route to Burlington from York Road. Many people ask you why you don't use the highway. Your reason: you're not a sheep. You'd never follow the masses onto the highways and get stuck in traffic.

Role Name: Bert from Hamilton Burlington Trails Council

Area: Near Princess Point in Cootes

Description: You love trails. I mean you really love trails. You walk or bike everywhere you need to go. Being on the Hamilton Burlington Trails Council, you are a huge advocate for any trails that promote sustainable travelling and that connect multiple populated areas. Whenever you meet someone new, you tell them: "It's not where you take the trail, it's where the trail takes you."

Role Name: Gladys

Area: Retirement home near King St E (Dundas)

Description: You're the life of the party at the retirement home. You are a proud Dutch and often love to represent it in your clothing choices. One of your dreams is to lead a viking celebration, in honour of your heritage, along a beautiful trail in Hamilton. However, the nurses say you'd have to remain close by in case of an emergency. You hope your wish becomes a reality soon.

Role Name: Molly

Area: McMaster University

Description: You are a wildlife activist in University. You look young which apparently gives people a reason not to take you seriously. But you are strong and persistent. You are part of the World Wildlife Fund at McMaster. You help to raise funds to protect wildlife and raise awareness of environmental issues within Hamilton.

Role Name: Doctor Stefan Strange

Area: Private practitioner out of your home near Princess Point.

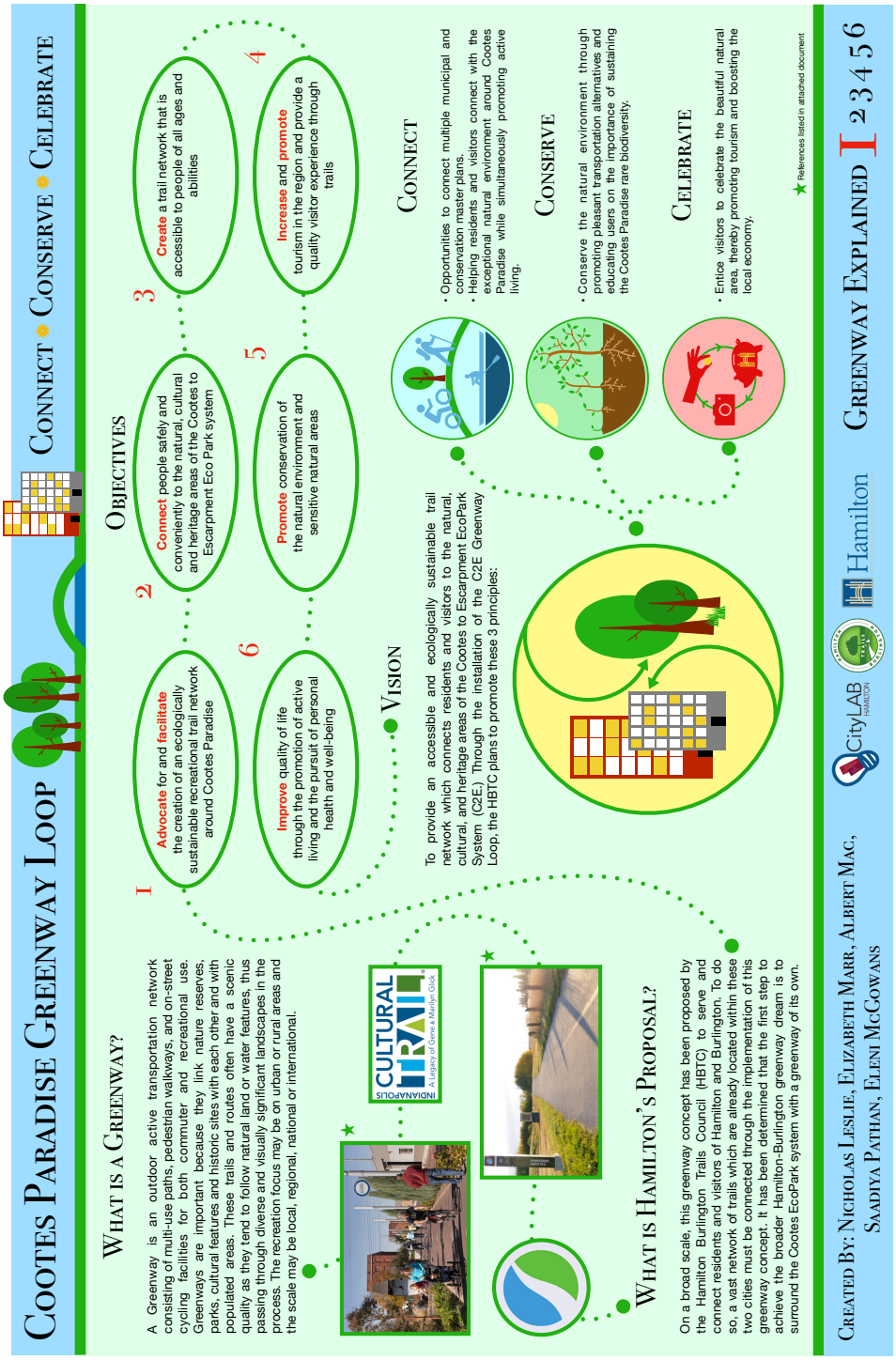
Description: You live with your wife, 8 kids, and a dog in a comfortable home near Princess Point. Although the house is often full of hustle and bustle, you have managed to practice medicine in your garage for 12 years. Most patients seeking attention steer clear of your practice due to its somewhat shady location; however, you maintain a 5-star rating on Yelp. The most referenced reasons by Yelp reviewers for attaining a perfect rating are: your wife's blueberry cheesecake, your advice on active living leading to a healthier lifestyle, and your dog assistant Gromit.

Role Name: Ash Buckthorn from Environment Hamilton

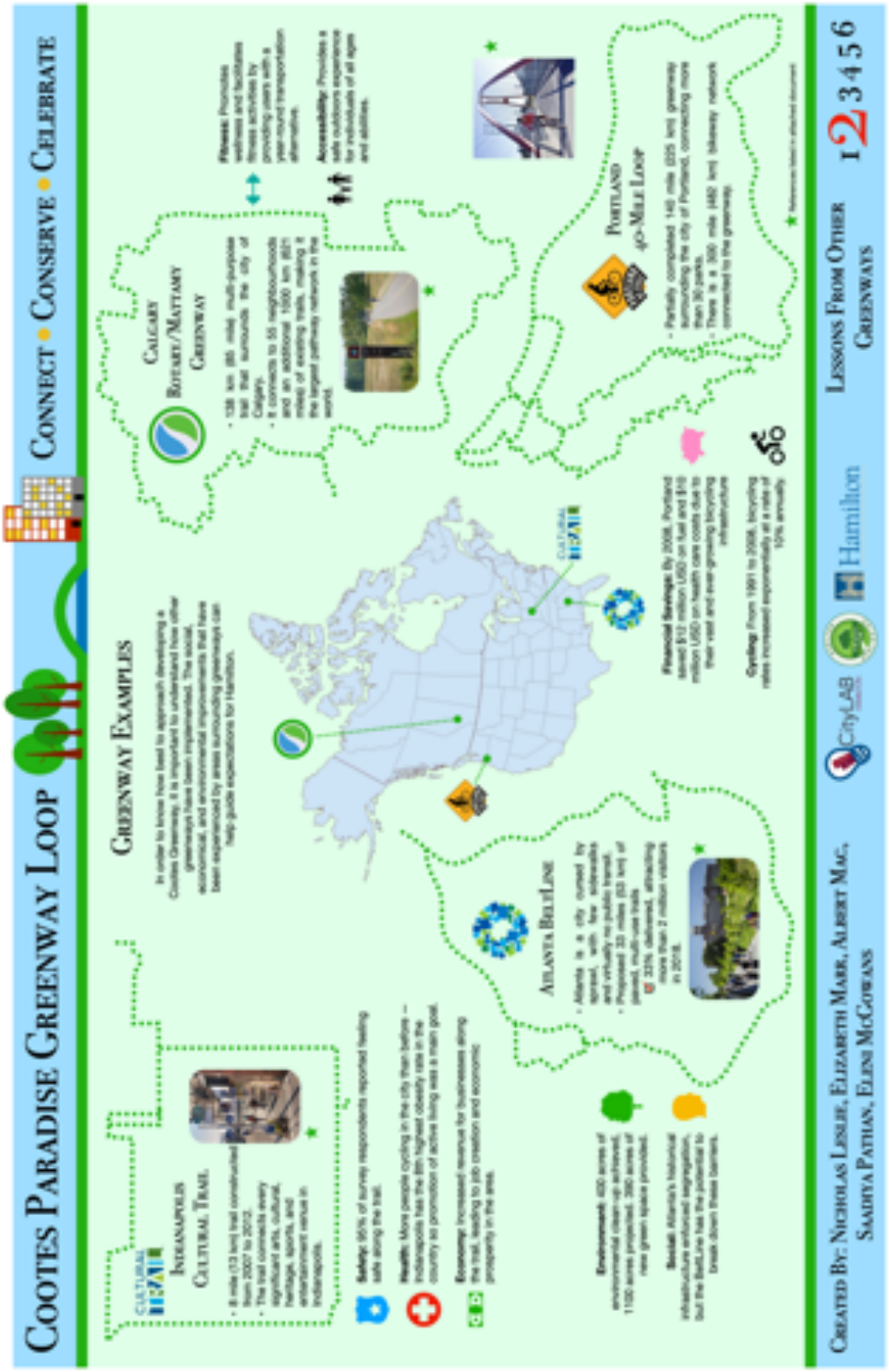
Area: Westdale

Description: You're pretty much known as the tree guy, and not only because of your name. You have the leaves of 432 species of trees in a safe in an undisclosed location -- your mom, Mable, and dad, Cedar, are the only ones who know of this collection. You carry an air-quality monitor with you anytime you leave the house and are continually disappointed when an area with a poor reading has no trees in sight.

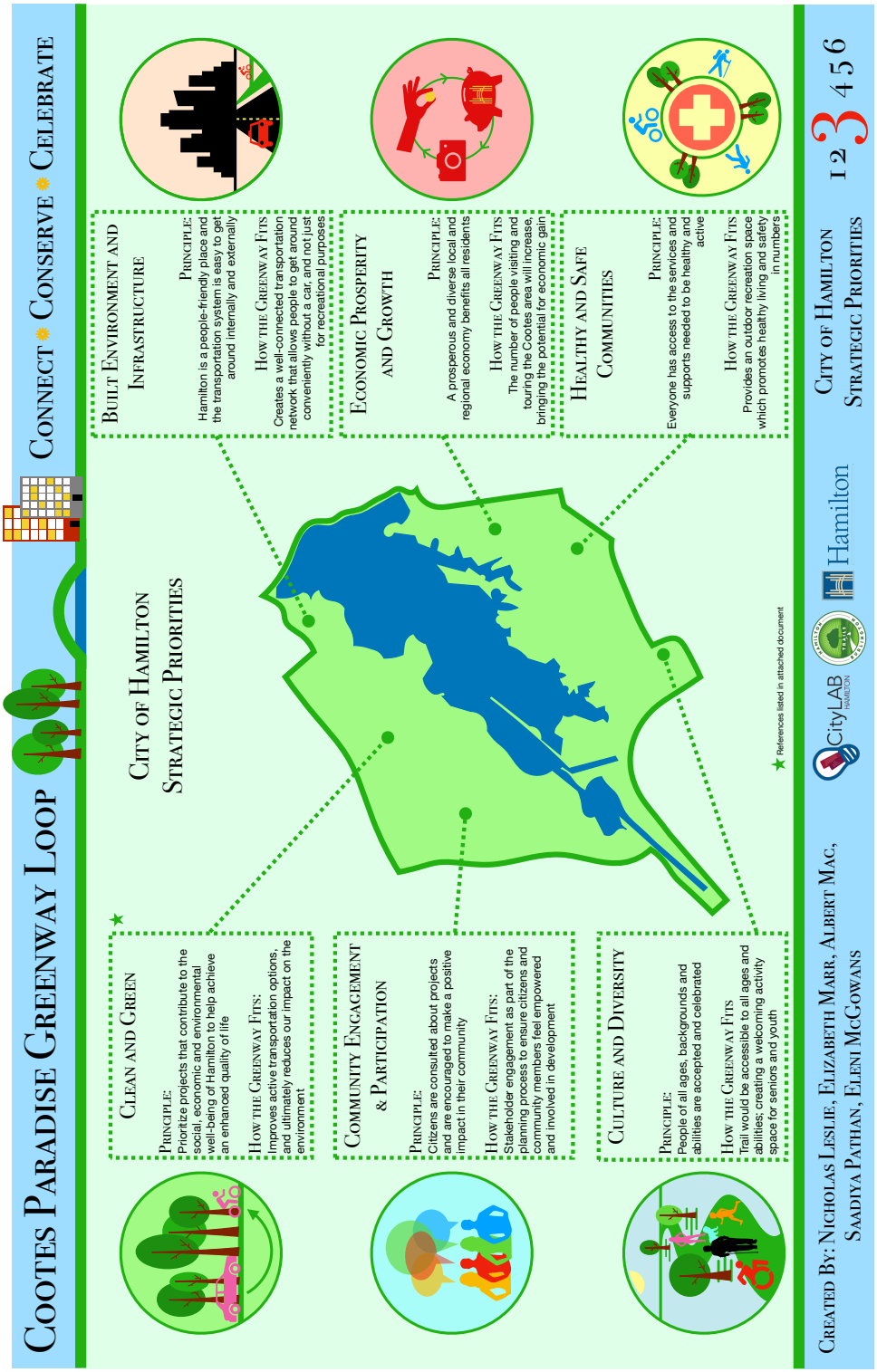
Appendix D: PIC Panels



Panel 1


Cootes Paradise Greenway Loop
Connect • Conserve • Celebrate
Greenway Examples
Indianapolis Cultural Trail
Calgary Rotary/Mattamy Greenway
Atlanta BeltLine
Portland 40-Mile Loop
Lessons From Other Greenways
1 2 3 4 5 6
Created By: Nicholas Leslie, Elizabeth Marr, Albert Mac, Saadiya Pathan, Eleni McGoogan
CityLAB
Hamilton

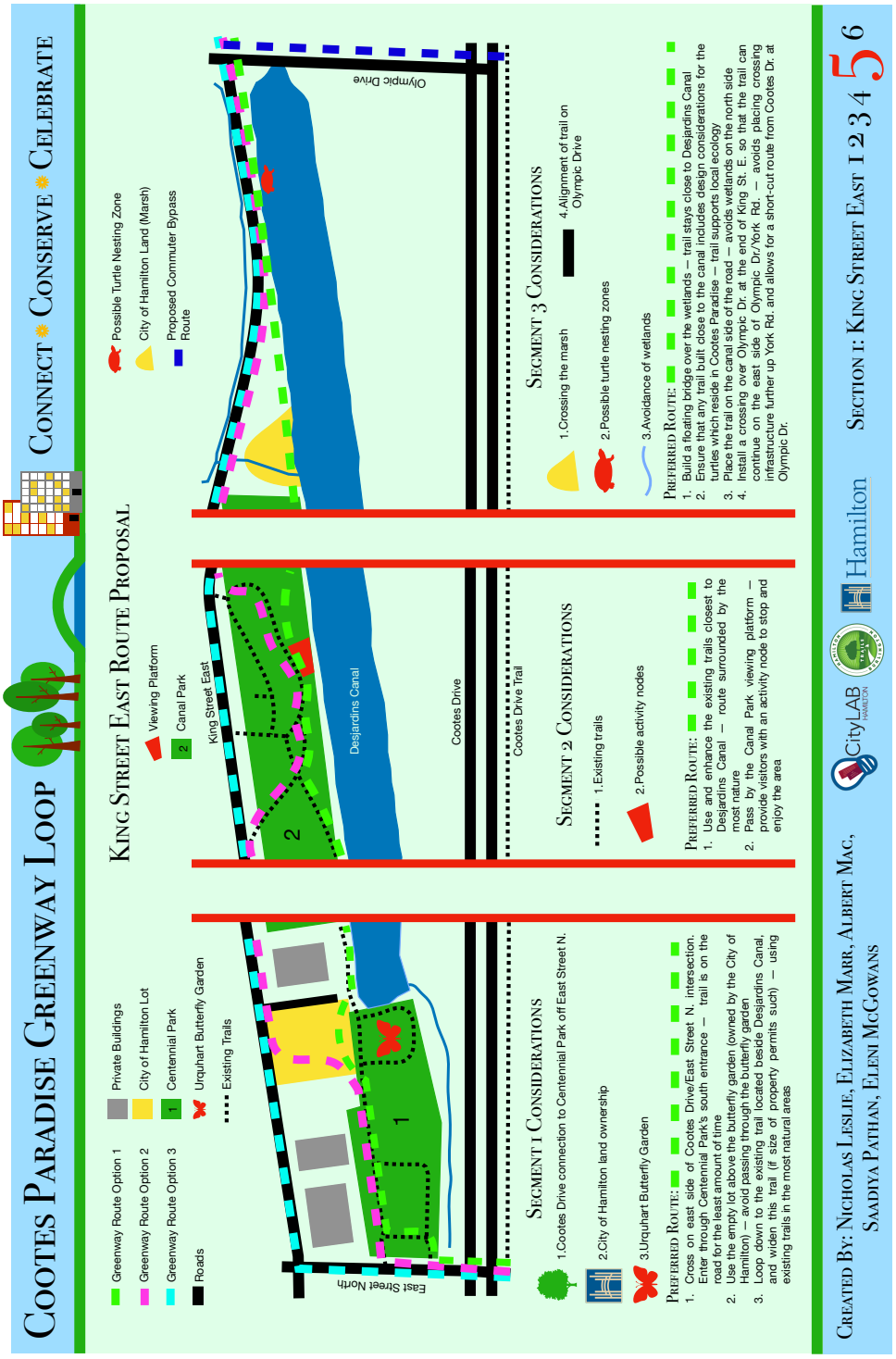
Panel 2


Cootes Paradise Greenway Loop
Connect * Conserve * Celebrate
City of Hamilton Strategic Priorities
Clean and Green
Principle:
Prioritize projects that contribute to the social, economic and environmental well-being of Hamilton to help achieve an enhanced quality of life
How the Greenway Fits:
Improves active transportation options, and ultimately reduces our impact on the environment
Community Engagement & Participation
Principle:
Citizens are consulted about projects and are encouraged to make a positive impact in their community
How the Greenway Fits:
Stakeholder engagement as part of the planning process to ensure citizens and community members feel empowered and involved in development
Culture and Diversity
Principle:
People of all ages, backgrounds and abilities are accepted and celebrated
How the Greenway Fits
Trail would be accessible to all ages and abilities; creating a welcoming activity space for seniors and youth
Built Environment and Infrastructure
Principle
Hamilton is a people-friendly place and the transportation system is easy to get around internally and externally
How the Greenway Fits
Creates a well-connected transportation network that allows people to get around conveniently without a car, and not just for recreational purposes
Economic Prosperity and Growth
Principle:
A prosperous and diverse local and regional economy benefits all residents
How the Greenway Fits
The number of people visiting and touring the Cootes area will increase, bringing the potential for economic gain
Healthy and Safe Communities
Principle:
Everyone has access to the services and supports needed to be healthy and active
How the Greenway Fits
Provides an outdoor recreation space which promotes healthy living and safety in numbers
References listed in attached document
Created By: Nicholas Leslie, Elizabeth Marr, Albert Mac, Saadiya Pathan, Eleni McGowans
CityLAB Hamilton
City of Hamilton Strategic Priorities
1 2 3 4 5 6

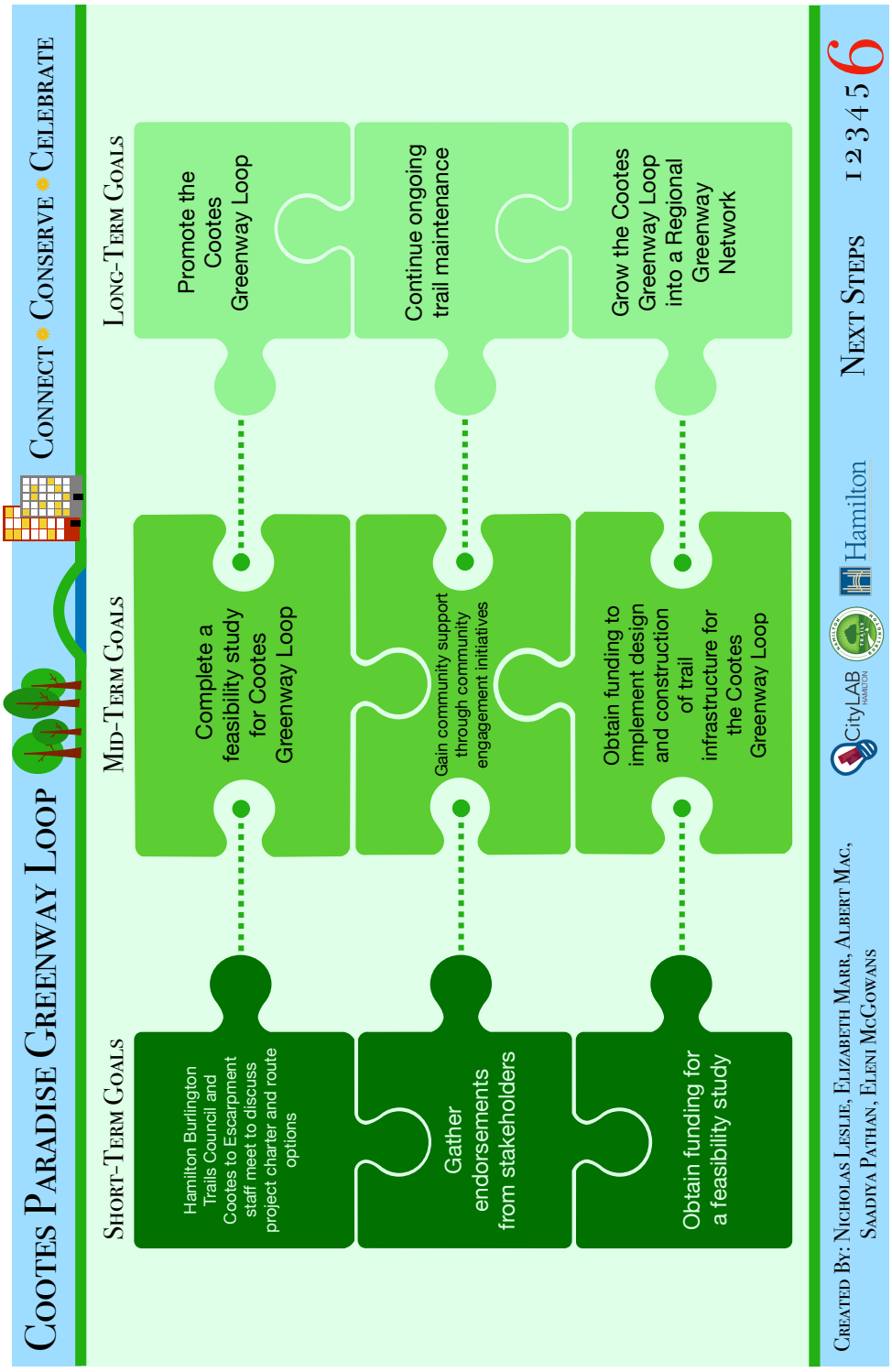
Panel 3


Cootes Paradise Greenway Loop
Connect • Conserve • Celebrate
1 – King St. E.
Opportunities
1. Pedestrian trails connecting to potential routes
2. City of Hamilton land ownership
Challenges
1. Avoiding the Urquhart Butterfly Conservatory
2. Safety concerns crossing Cootes Drive
Canal Park ★
2 – York Rd.
Opportunities
1. Proposed paved shoulder along York Rd.
2. Lake Jojo and other natural areas
Challenges
1. Private land ownership along potential route
2. Disconnected existing active transport infrastructure
Lake Jojo ★
3 – North Shore
Opportunities
1. Planned multi-use trail along York Road (Recreational Trails Master Plan)
2. Publicly owned land beside railway
Challenges
1. Short segment of privately owned land north of railroad
2. Safety and noise concerns regarding proximity to railway
Pier Limeex Side Trail ★
4 – Arboretum
Opportunities
1. RBG Arboretum as a route
2. Planned paved shoulder on Old Guelph Road
Challenges
1. Payment required to use trail system inside Arboretum
2. Railway crossing
3. Minimal shoreline to connect to the east end of the Desjardins Canal
RBG Arboretum ★
Cootes Paradise Greenway Route Overview
Each of the 8 subregions highlighted have opportunities which need to be realized and challenges which need to be overcome in order for the greenway vision to come to fruition.
RBG Arboretum
Cootes Paradise
McMaster University
Desjardins Canal
1 KM
Legend
Conservation Area Owned Lands
Parks
Escarpment
Railways
One Way Street Arrows
Significant Buildings
Existing Trails
5 – Cootes
Opportunities
1. Hamilton Harbour Waterfront Trail
2. Scenic lookouts
Challenges
1. High volume traffic
2. At-risk ecosystems
3. Crossing the east end of the Desjardins Canal
Hamilton Harbour Waterfront Trail ★
6 – Westdale
Opportunities
1. Churchill Park trail
2. Potential for economic growth in Westdale BIA
Challenges
1. Traffic related safety concerns on King Street
2. Existing lower order active transport infrastructure
Sassafras Point Lookout ★
7 – McMaster
Opportunities
1. McMaster Campus Master Plan emphasis on pedestrian and cycling access
2. Connecting corridor for trails on either side of campus
Challenges
1. On-campus cycling conflicts with pedestrians and transit stops
2. McMaster University's land ownership
Origami Trail ★
8 – Cootes Drive
Opportunities
1. Cootes Drive Trail
2. Close proximity to Spencer Creek Trail
3. Two official connections between McMaster and Cootes Drive Trail (pedestrian traffic light at Sanders Blvd. and Haddaway Rd. bridge
Challenges
1. Turtle nesting zone
Turtle on Cootes Drive ★
★ Reference listed in attached document
Created By: Nicholas Leslie, Elizabeth Mabb, Albert Mac, Saadiya Pathan, Elisi McGowans
CityLAB
Hamilton
Route Overview 1 2 3 4 5 6

Panel 4


Cootes Paradise Greenway Loop
Connect • Conserve • Celebrate
Greenway Route Option 1
Greenway Route Option 2
Greenway Route Option 3
Roads
Private Buildings
City of Hamilton Lot
Centennial Park
Urquhart Butterfly Garden
Existing Trails
King Street East Route Proposal
Viewing Platform
Canal Park
Possible Turtle Nesting Zone
City of Hamilton Land (Marsh)
Proposed Commuter Bypass Route
East Street North
King Street East
Desjardins Canal
Cootes Drive
Cootes Drive Trail
Olympic Drive
Segment 1 Considerations
1.Cootes Drive connection to Centennial Park off East Street N.
2.City of Hamilton land ownership
3.Urquhart Butterfly Garden
Preferred Route:
1. Cross on east side of Cootes Drive/East Street N. intersection. Enter through Centennial Park's south entrance — trail is on the road for the least amount of time
2. Use the empty lot above the butterfly garden (owned by the City of Hamilton) — avoid passing through the butterfly garden
3. Loop down to the existing trail located beside Desjardins Canal, and widen this trail (if size of property permits such) — using existing trails in the most natural areas
Segment 2 Considerations
1.Existing trails
2.Possible activity nodes
Preferred Route:
1. Use and enhance the existing trails closest to Desjardins Canal — route surrounded by the most nature
2. Pass by the Canal Park viewing platform — provide visitors with an activity node to stop and enjoy the area
Segment 3 Considerations
1.Crossing the marsh
2.Possible turtle nesting zones
3.Avoidance of wetlands
4.Alignment of trail on Olympic Drive
Preferred Route:
1. Build a floating bridge over the wetlands — trail stays close to Desjardins Canal
2. Ensure that any trail built close to the canal includes design considerations for the turtles which reside in Cootes Paradise — trail supports local ecology
3. Place the trail on the canal side of the road — avoids wetlands on the north side
4. Install a crossing over Olympic Dr. at the end of King St. E. so that the trail can continue on the east side of Olympic Dr./York Rd. — avoids placing crossing infrastructure further up York Rd. and allows for a short-cut route from Cootes Dr. at Olympic Dr.
Created By: Nicholas Leslie, Elizabeth Marr, Albert Mac, Saadiya Pathan, Eleni McGowans
CityLAB Hamilton
Section 1: King Street East 1 2 3 4 5 6

Panel 5


Cootes Paradise Greenway Loop
Connect * Conserve * Celebrate
Short-Term Goals
Hamilton Burlington Trails Council and Cootes to Escarpment staff meet to discuss project charter and route options
Gather endorsements from stakeholders
Obtain funding for a feasibility study
Mid-Term Goals
Complete a feasibility study for Cootes Greenway Loop
Gain community support through community engagement initiatives
Obtain funding to implement design and construction of trail infrastructure for the Cootes Greenway Loop
Long-Term Goals
Promote the Cootes Greenway Loop
Continue ongoing trail maintenance
Grow the Cootes Greenway Loop into a Regional Greenway Network
Created By: Nicholas Leslie, Elizabeth Marr, Albert Mac, Saadiya Pathan, Eleni McGowans
CityLAB Hamilton
Next Steps 1 2 3 4 5 6

Panel 6

Cootes Paradise Greenway Loop Panel References

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Appendix E: Presentation Slides

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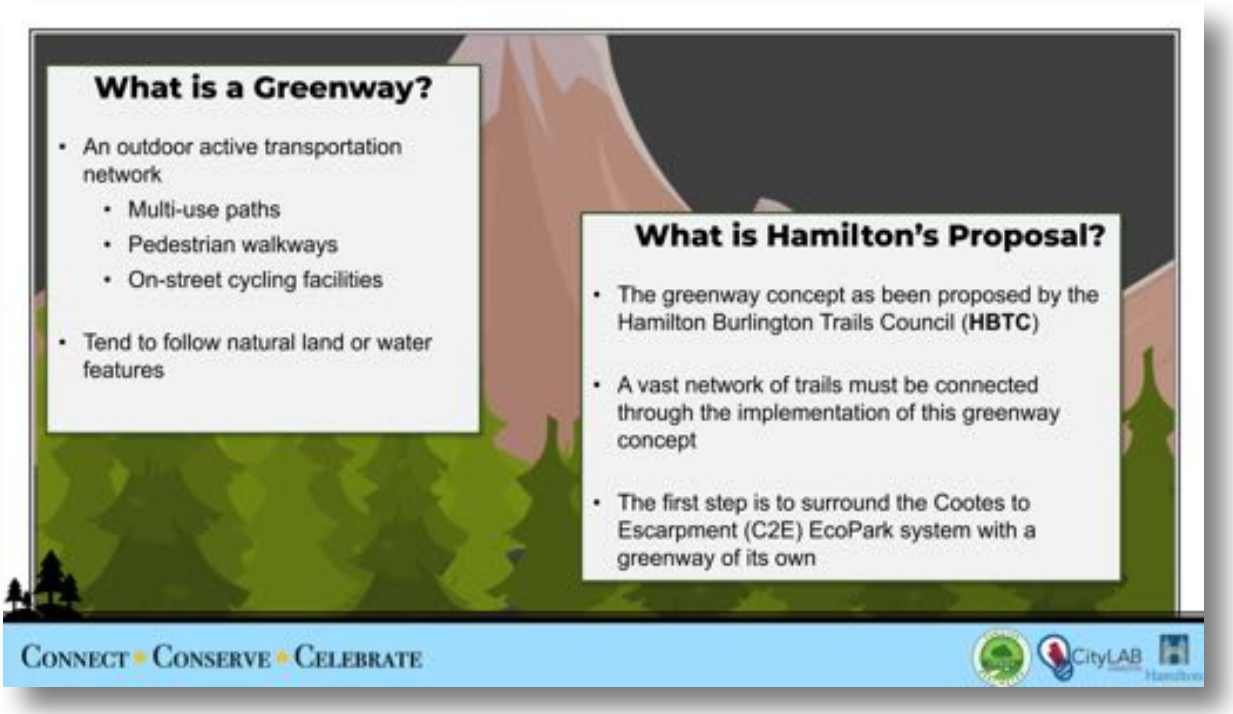

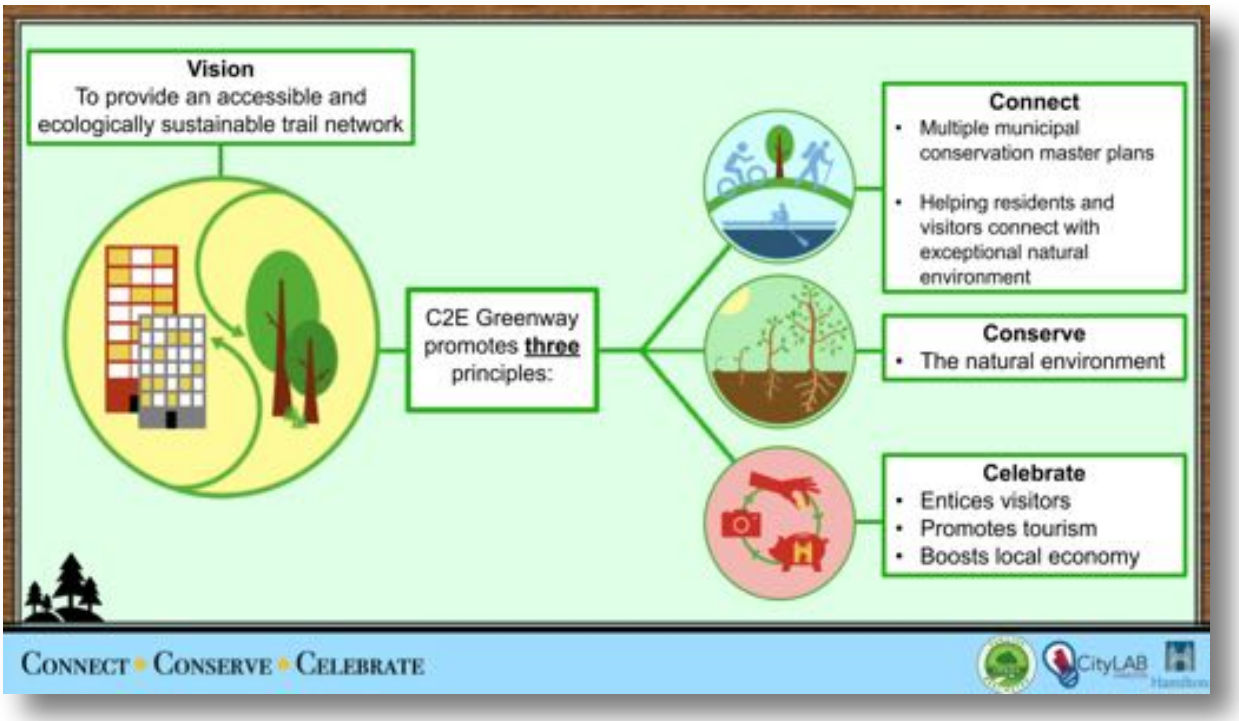

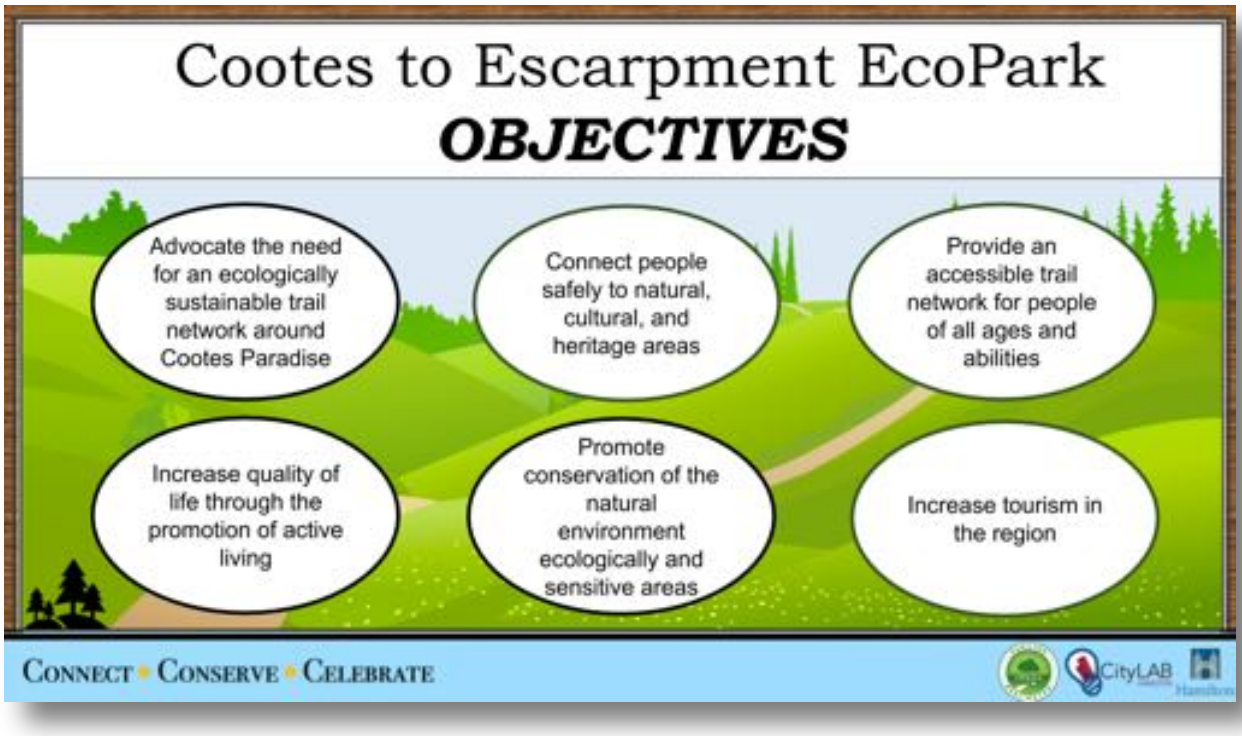

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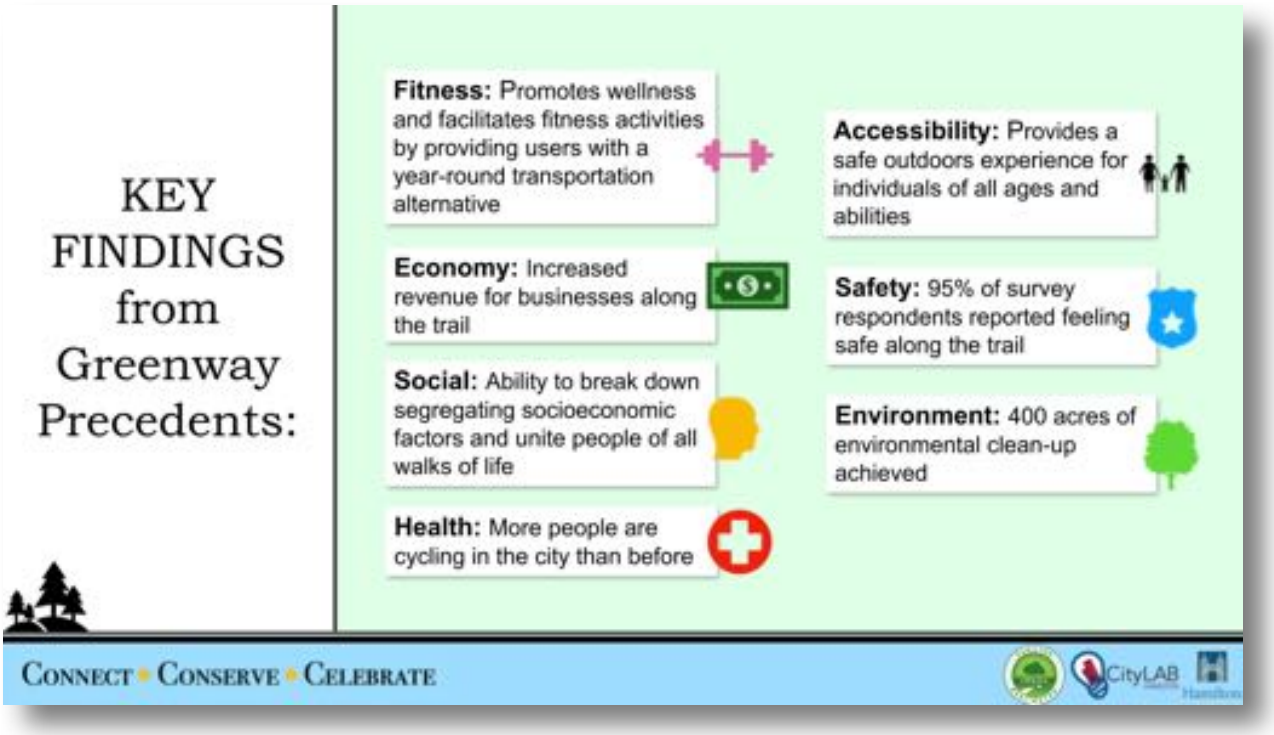

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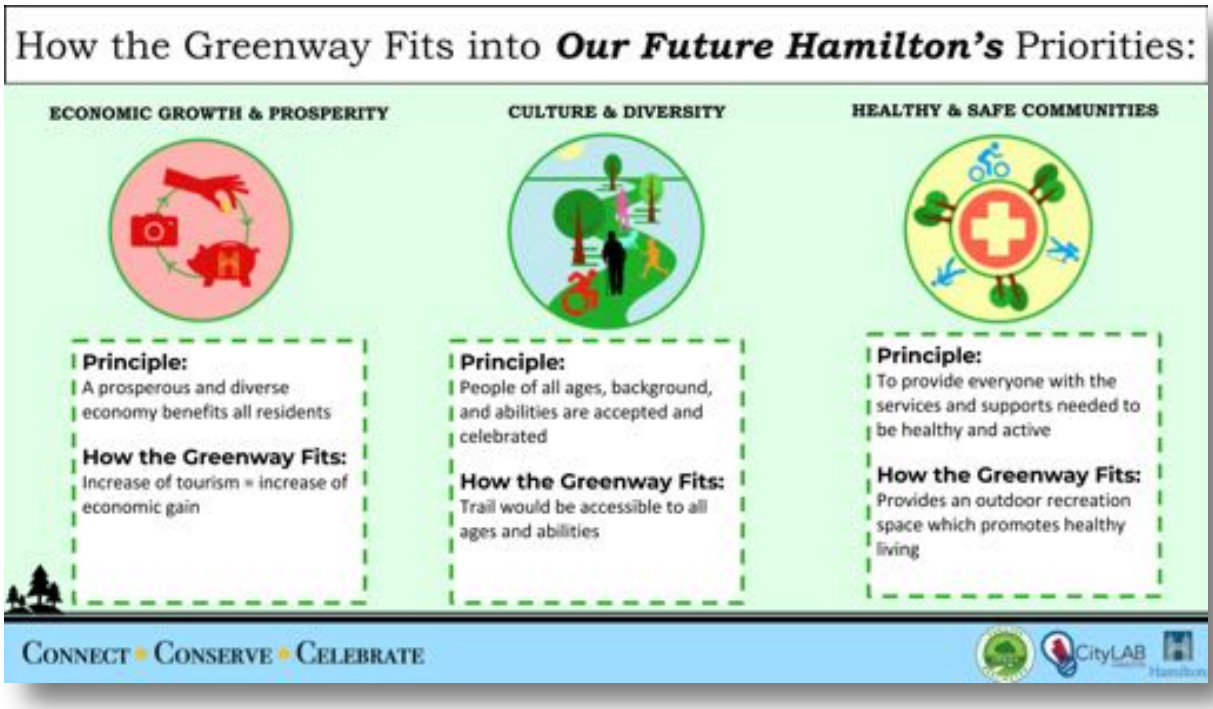

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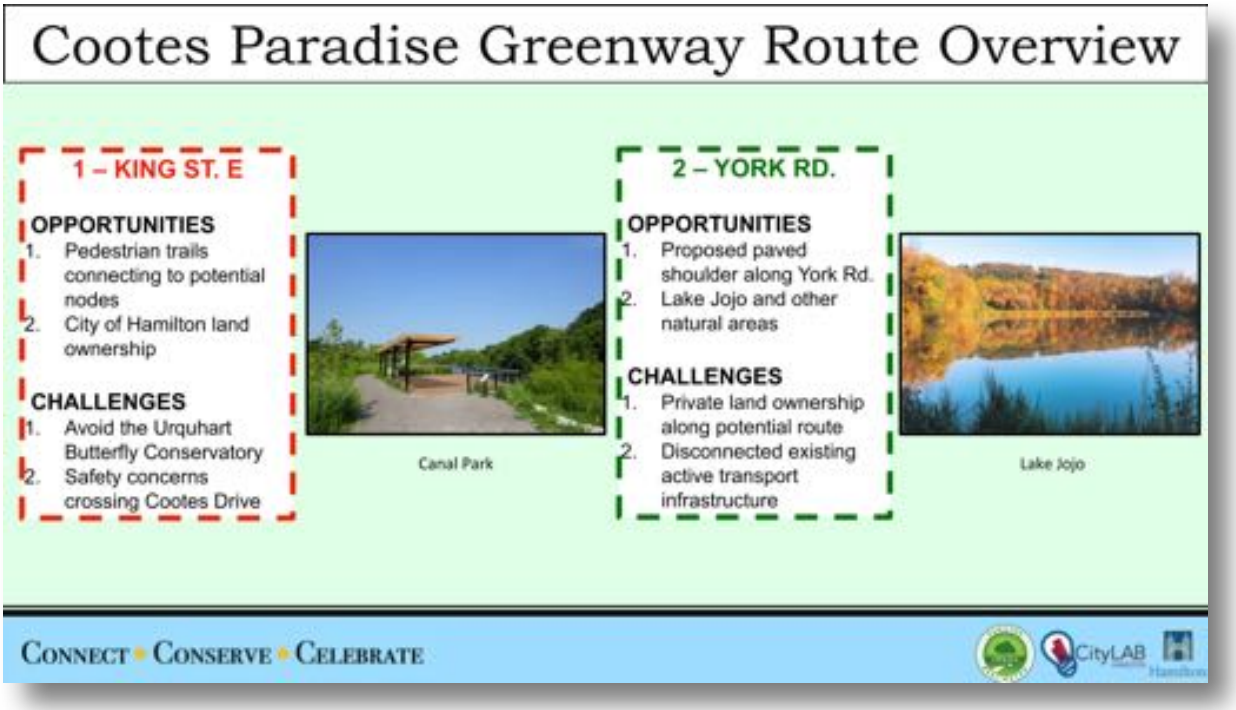


Cootes Paradise Greenway Route Overview

3 – NORTH SHORE

OPPORTUNITIES

1. Planned multi-use trail along York Road
2. Publicly owned land beside railway

CHALLENGES

1. Short segment of privately owned land north of railrowad
2. Safety and noise concerns regarding proximity to railway

West Virginia Rails to Trails

4 – ARBORETUM

OPPORTUNITIES

1. RBG Arboretum as a node
2. Planned paved shoulder on Old Guelph Road

CHALLENGES

1. Payment required to use trail system inside Arboretum
2. Railway crossing
3. Minimal shoreline to connect to east end of the Desjardins Canal

RBG Arboretum

CONNECT • CONSERVE • CELEBRATE

Cootes Paradise Greenway Route Overview

5 – COOTES

OPPORTUNITIES

1. Hamilton Harbour Waterfront trail
2. Scenic lookouts

CHALLENGES

1. High volume traffic
2. At-risk ecosystems
3. Crossing the east end of the Desjardins Canal

Hamilton Harbour Waterfront Trail

6 – WESTDALE

OPPORTUNITIES

1. Churchill Park trail
2. Potential for economic growth in Westdale BIA

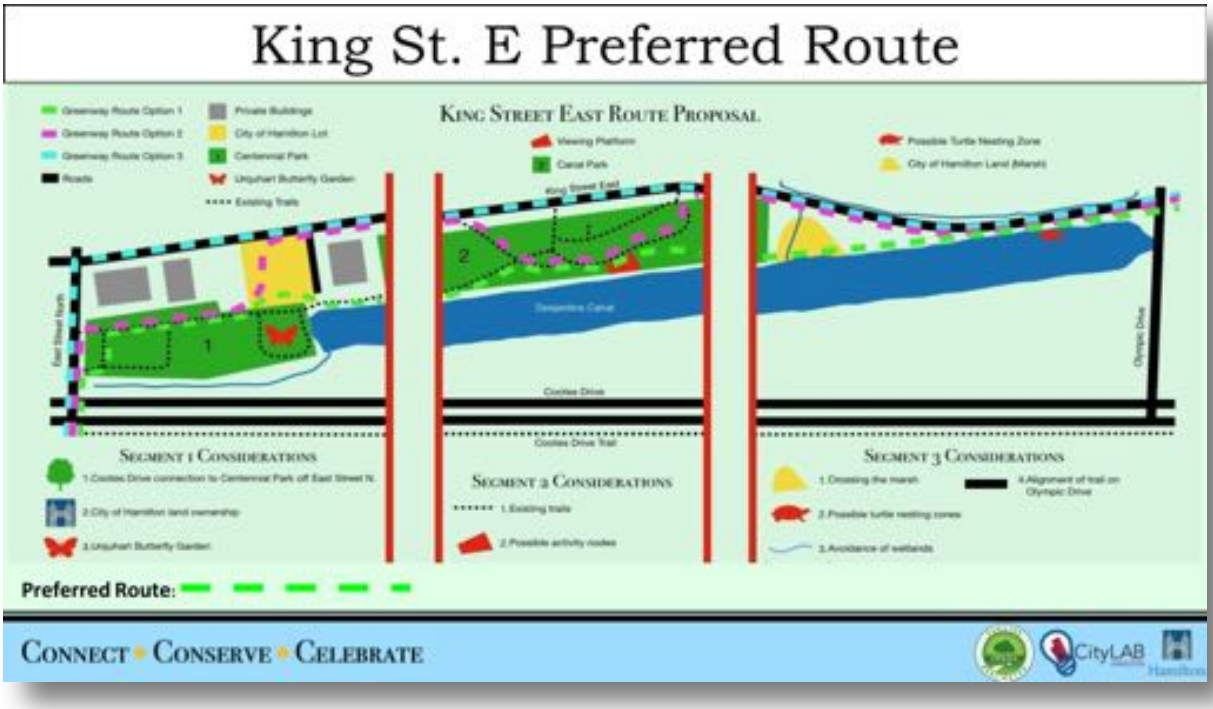
CHALLENGES

1. Traffic related safety concerns
2. Existing lower order active transport infrastructure

Sassafras Point Lookout

CONNECT • CONSERVE • CELEBRATE

PANEL 5 SLIDES:



SEGMENT 1

1. Cross on east side of Cootes Drive/East Street N. intersection. Enter through Centennial Park's south entrance ***(Trail is on the road for the least amount of time)***

2. Use the empty lot above the butterfly garden (owned by the City of Hamilton) ***(Avoid passing through the butterfly garden)***

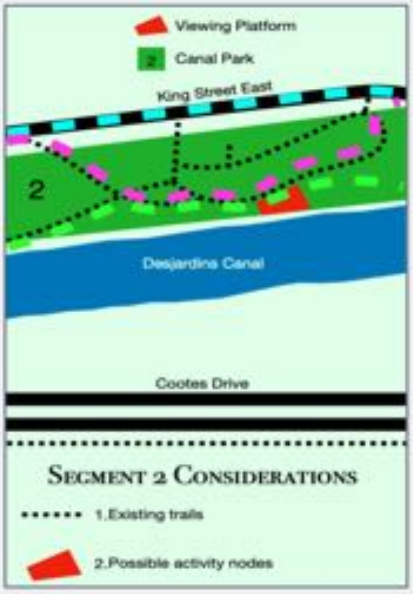
3. Loop down to the existing trail located beside Desjardins Canal and widen this trail (if size of property permits such) ***(Using existing trails in the most natural areas)***

Connect • Conserve • Celebrate

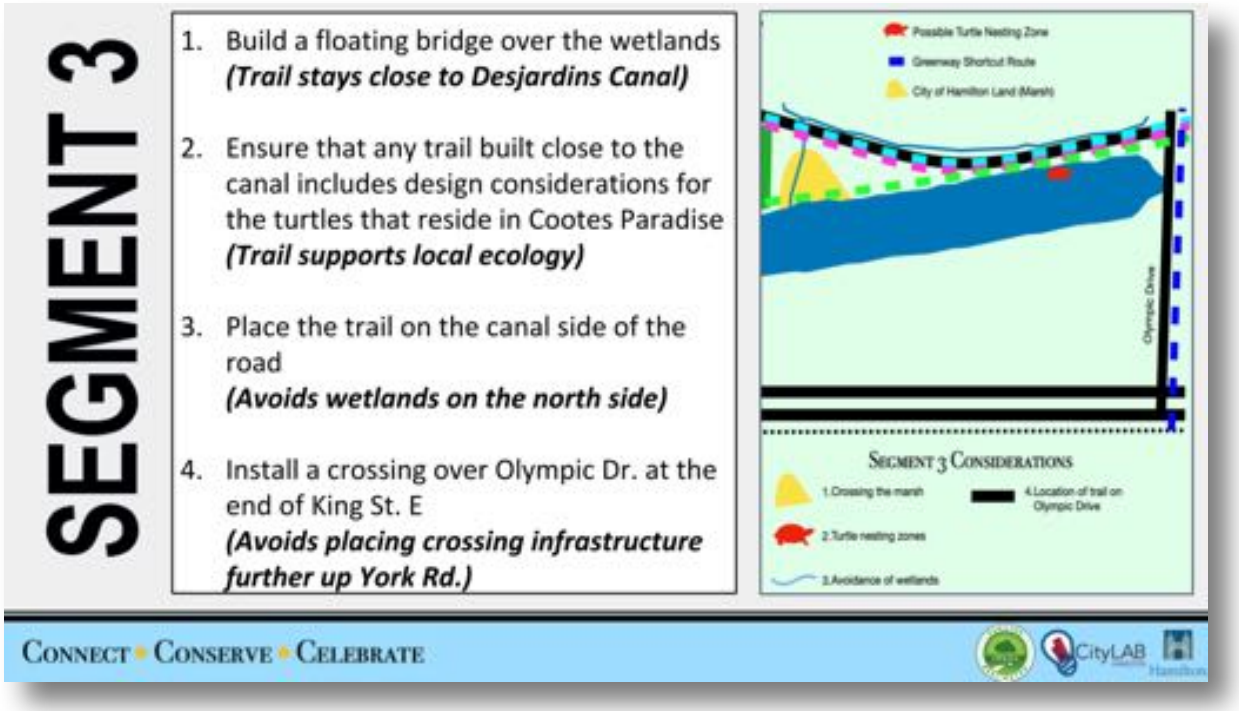
SEGMENT 2

1. Use and enhance the existing trails closest to the Desjardins Canal ***(Route surrounded by the most nature)***

2. Pass by the Canal Park viewing platform ***(Provide visitors with an activity node to stop and enjoy the area)***



Connect • Conserve • Celebrate



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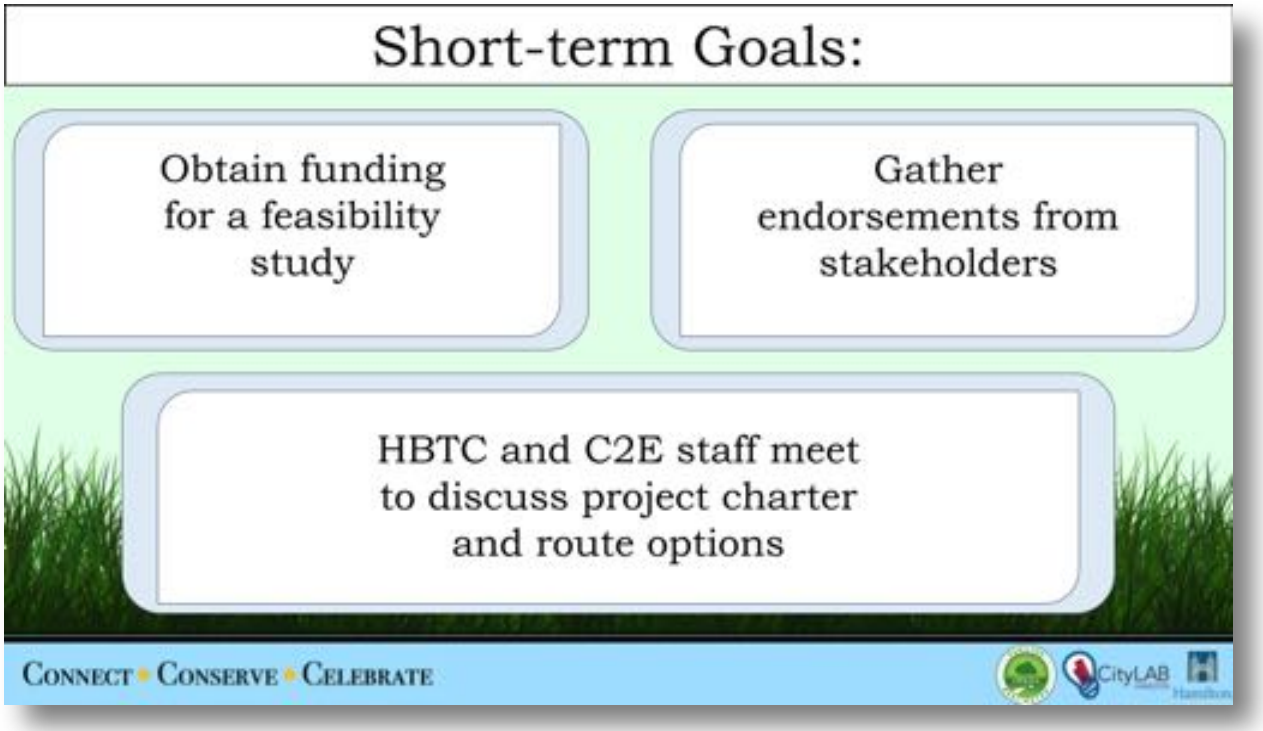

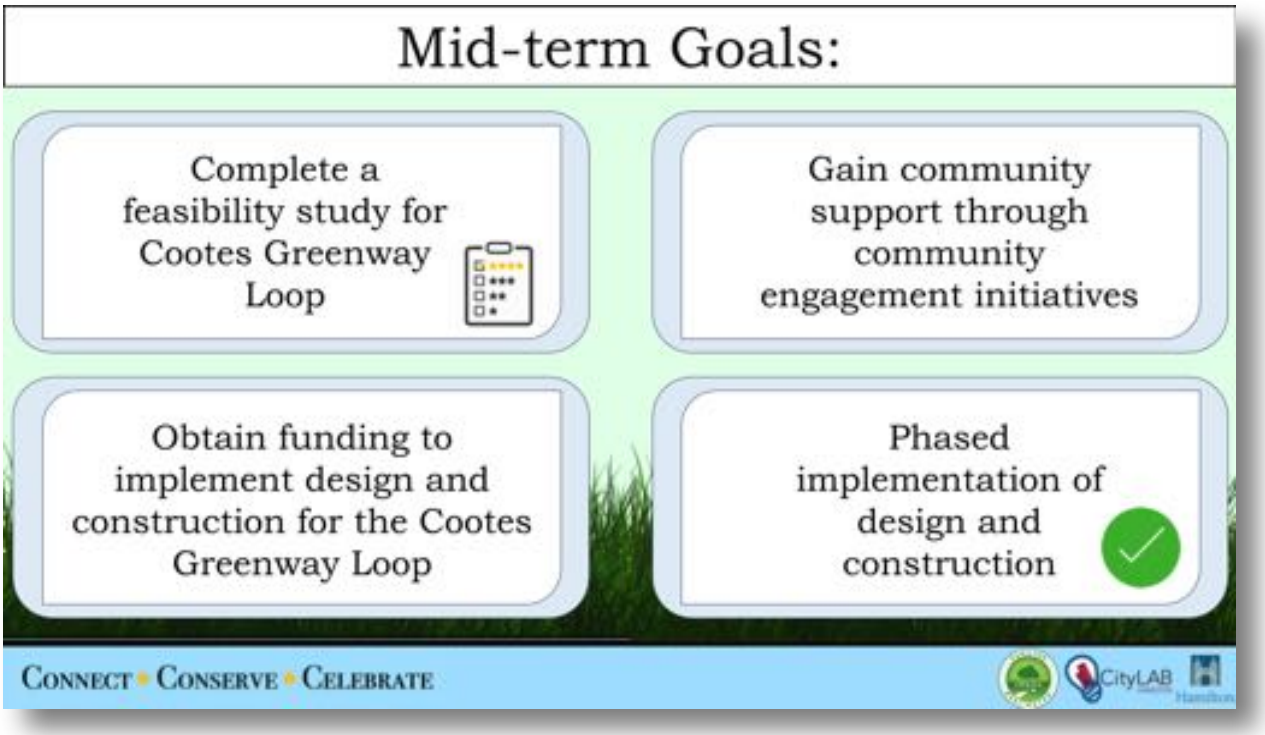
Mid-term Goals:
Complete a feasibility study for Cootes Greenway Loop
Gain community support through community engagement initiatives
Obtain funding to implement design and construction for the Cootes Greenway Loop
Phased implementation of design and construction
CONNECT • CONSERVE • CELEBRATE
CityLAB


Long-term Goals:
Promote the Greenway
Continue ongoing maintenance to the Greenway
Grow the Cootes Greenway Loop into a Regional Greenway Network
CONNECT • CONSERVE • CELEBRATE
CityLAB

Appendix G: McMaster's Principles of Community Engagement

Respectful Relationships	We can't have community without relationships - these are the connections that build community. Any successful partnership must be built on trusting and respectful relationship guide by integrity
Reciprocity	From design, to participation, to the outcomes of a project, we strive to work together for mutual benefit. Striving for reciprocity within your partnerships entails respecting that all partners bringing valuable knowledge, skills, experience, and resources to any partnership
Equity	We are all conscious of the historical and structural inequities that exist in society and strive to provide access and opportunities to all residents and members of our communities. Equity entails striving to reduce barriers of participation as much as possible
Continuity	Acknowledging that different communities work on different timelines and schedules, we strive to consider both the short and long-term implications of our work
Openness to Learning	Change takes time. We are committed to continually learn from and evaluate our work, reflecting on and sharing both our successes and failures to grow as individuals, partners, and communities
Commitment to Act	We aspire to make a positive difference in our community by sharing and acting on our knowledge to contribute to the greater social good

Transcribed from brochure McMaster's Principles of Community Engagement 2019 brochure.

Appendix H: Project Charter

Cootes Greenway
Project Charter

1.0 Table of Contents

Cootes Greenway Project Charter

A potential ***Cootes Greenway Trail Loop*** is an important initiative due to its:

- location within the Cootes to Escarpment EcoPark System (C2E) and its ability to fulfill its need for more recreational infrastructure;
- proximity to natural and urban spaces;
- opportunities to connect stakeholder and recreational trail master plans;
- ability to help residents and visitors connect with the exceptional natural environment around Cootes Paradise.

2.0 Introduction

2.1 Cootes to Escarpment EcoPark System

The Cootes to Escarpment EcoPark System (C2E) is a collaborative initiative of ten local government and non-profit organizations in the Burlington-Hamilton area. Together, these partner organizations own or manage almost 1,900 hectares (4,700 acres) of natural lands in this area, and are working together to protect, connect and restore the natural lands, as well as to deliver sustainable recreation and education opportunities.

One of the **goals of the Cootes to Escarpment** is an inter-regional recreational trail to link the ecopark system's heritage lands. It is envisaged that this will be a primarily off-road, non-motorized, multi-use system that will follow existing trails where possible and complete a loop around Cootes Paradise. Completion of the inter-regional trail will require agreement of property owners for the location, design, and construction of the proposed inter-regional trail and detailed management planning ("Naturally Connected | Cootes to Escarpment," n.d.).

The C2E's mandate is embedded in their mission, vision, and objective statements. As stated in the Phase II Report,

> *Our vision for the Cootes to Escarpment Park System is that it will be known internationally as a protected, permanent and connected natural lands sanctuary from the Harbour to the Escarpment that promotes ecosystem and human health within Ontario's Greenbelt. (Wong, 2009)*

To achieve this vision, the C2E works collaboratively to continue preserving and enhancing the natural lands while using a sustainable approach that balances natural ecosystem health with responsible human appreciation and activities.

2.2 Hamilton Burlington Trails Council

The Hamilton Burlington Trails Council (HBTC) was established in 2013 as the result of growing discussions amongst trail user groups and trail property owners about the need for regional collaboration on trail development, management, and promotion. These discussions and the initiative to establish the HBTC emerged from the goals and objectives of the Cootes to Escarpment Eco Park System (C2E) project: to *'provide opportunities for appropriate passive recreation'* in the C2E lands. The HBTC decided to expand its scope and geographical area of focus beyond the boundary of C2E lands to incorporate the entire Hamilton and Burlington municipal regions in order to advocate for a regional trails vision and facilitate connectivity to other trail networks within southern Ontario.

The **HBTC consists of** representatives from: the City of Hamilton, the City of Burlington, Conservation Halton, Hamilton Conservation Authority, Royal Botanical Gardens, Halton Region, McMaster University, and several local user groups, including the Iroquoia Bruce Trail Club. The vision for HBTC is to develop a well-connected trail system in the Hamilton-Burlington region, while promoting the health benefits of recreational trail use to residents and visitors while conserving our valuable natural ecosystems.

2.3 Project Purpose

The concept of a **Regional Greenway Network** was proposed by the Hamilton Burlington Trails Council to serve and connect residents and visitors of Hamilton and Burlington. To do so, a vast network of trails which already exist within the two cities can be connected through the implementation of the greenway concept. It has been determined that the **first step** to achieve the broader Hamilton-Burlington Regional Greenway vision is to surround the Cootes Ecopark System with a greenway loop – **The Cootes Greenway**. The objectives for the project are the following:

1. To advocate for and facilitate the creation of an ecologically sustainable recreational trail network around Cootes Paradise;

2. To connect people safely and conveniently to the natural, cultural, and heritage areas of the Cootes to Escarpment EcoPark System;
3. To create a trail network that is accessible to people of all ages and abilities;
4. To improve the quality of life through the promotion of active living and the pursuit of personal health and well-being;
5. To promote conservation of the natural environment and sensitive natural areas;
6. To increase and promote tourism revenue in the region and provide a quality visitor experience through trails.

Overall, this project will work to **connect, conserve**, and **celebrate** the area.

2.4 Statement on CityLAB

CityLAB Hamilton is an innovation hub that brings together student, academic, and civic leaders to co-create a better Hamilton for all. CityLAB aims to open the door for collaboration through academics with city leaders and students while engaging in complex challenges within Hamilton. CityLAB students are a mix of McMaster University, Mohawk College and Redeemer University College students who want to learn, explore, and help the City of Hamilton. These students take on projects that are based on challenges relating to one of the following themes: Healthy Neighbourhoods, Climate Change, and Municipal Excellence. The vision of CityLAB is "to provoke students and city leadership to inspire, energize, and build a healthy, sustainable, and vibrant Hamilton." ("Our Story," n.d.).

The CityLAB Student in Residence (SIR) project group had completed gathering background research on current policies in Hamilton, Greenways in other cities, the benefits of trails and also looked at possible route options. The following were in scope for the CityLAB SIR project group:

1. Mapping out the lands at stake and gathering a list of stakeholders involved: the city staff partners provided the Cootes Greenway project group with a map outlining land ownership in the area as well as an email list of stakeholders.

2. Gather data on existing and proposed active transport infrastructure: the Cootes Greenway project group was responsible for conducting research on previous master-plans such as the recreational trails master-plan, regional transportation plan, cycling master-plan, and the transport master-plan of

Hamilton. This research helped solidify the understanding of how a Greenway would fit into the City of Hamilton's principles.

3. Developing design criteria: the Cootes Greenway project group deliberated with city staff partners to discern design criteria including safety, accessibility, connectivity, environmental preservation, land ownership constraints, physical limitations, and nodes/recreational use.

4. Developing possible route designs: route options for King Street East were designed and a preferred route was identified using the criteria described above.

5. Complete project charter: the project charter for the regional was provided to the Cootes Greenway project group. This charter was updated and completed to be used when consulting with stakeholders.

The role of this Project Charter is to serve as a liaison between the landowners in Hamilton and Burlington who are planning, funding, building, and maintaining trails, to ensure that the vision and coordination of a continuous trail network throughout the region can be realized. The Hamilton Burlington Trails Council welcomes support from other relevant stakeholders as this project advances.

3.0 Background

3.1 Greenway Trail Defined

For the purpose of this project, **a Greenway** is an outdoor active transportation network consisting of multi-use paths, pedestrian walkways, and on-street cycling facilities for both commuter and recreational use. Recreational greenways can be networks of trails that link land and water-based recreational sites and areas. These trails and routes often have a scenic quality as they pass through diverse and visually significant landscapes. The recreation focus may be on urban or rural areas, and the scale may be local, regional, national, or international.

3.2 Greenway Examples

The **Indianapolis Cultural Trail** was completed in 2013 to "enrich lives and connect people and places through dynamic and beautiful experiences and use the

Indianapolis Cultural Trail and Pacers Bikeshare program as a catalyst for economic growth" ("Vision, Mission and Objectives | Cootes to Escarpment," n.d.). The project took 12 years to plan and 6 years to construct. In total, 8 miles of trail was built to connect every significant art, cultural, heritage, sports, and entertainment venue in Indianapolis (Burow & Majors, 2015). This $63 million project was funded through a combination of private donations and federal grants.

After a decade of planning, fundraising, and constructing, the **Rotary Mattamy Greenway** in **Calgary** was completed in 2017. It is home to a variety of urban parks and specialty amenities, connecting over 50 Calgary communities and providing residents and visitors of all ages, cultural backgrounds, and physical abilities with an outdoor recreation experience. This one-of-a-kind pathway allows all Calgarians to enjoy the physical and mental health benefits of year-round walking.

The **Atlanta BeltLine** project emerged out of the growing effort to end disparities that residents in Atlanta's urban core have faced as a result of historical oppression. The project proposed to convert underused rail corridors around the city core into a continuous system of transit and greenways surrounded by parks and pedestrian-friendly mixed-use centers of development. While the project is still ongoing, **positive economic and social benefits** have come out of the development thus far (Infosurve Research, 2018).

There are also positive findings and ongoing greenway developments in Portland and Cincinnati. The **Portland 40-Mile Loop** is a partially completed greenway surrounding the city of Portland. Cycling infrastructure improvements have steadily occurred over the last few decades in Portland, improvements which have led to an exponential increase in bicycling rates (Gotschi, 2011). **Cincinnati Connects** is a "bold vision for a healthy, vibrant, and revitalized city with a robust alternative transportation the offers enhanced mobility and connectivity for all of its citizens" (Corathers, 2015). The city of Cincinnati plans to tackle this project by encouraging private developers to consider Cincinnati Connects into their own developments; support future connections between Cincinnati Connects and other trails in the area; develop a trails maintenance to ensure long-term management of the trail network; and preserve public ownership of areas within Cincinnati Connects (Corathers, 2015).

3.3 Greenway Benefits

Trails impact individuals and their communities in positive ways. At the individual level, the use of **trails improves mental health, physical fitness, and**

social participation. Trails also allow people to take part in their daily activities. This project hopes to encourage active transportation, which is defined as any human-powered form of transportation including cycling, walking, skateboarding, in-line skating, as well as the use of wheelchairs, scooters, and other walking aids or mobility devices (Transport Canada, 2011). Increasing the time that someone walks or bikes may increase their overall level of physical activity, thus leading to a number of associated health benefits (National Institute for Health and Clinical Excellence [NICE], 2012). New protected bike lanes can increase ridership / cycling trips by an average of 75% in the first year alone (Monsere *et al.*, 2014). Regular physical activity plays a role in the prevention of several chronic diseases such as cardiovascular disease, diabetes, cancer, hypertension, obesity, depression, and osteoporosis (Warburton, Nicol &, Bredin, 2006). In Canada, only 15% of adults and 7% of children and youth participate in adequate amounts of physical activity required for optimal health and development (Colley et al, 2011). This statistic is exacerbated by the fact that the numbers of Canadians who are classified as overweight or obese have increased over the last 30 years (Colley et al, 2011). In fact, the risk of obesity increases 6% for every hour spent in a car daily, while the risk of obesity decreases by almost 5% for every kilometre walked daily (Transport Canada, 2011).

Increased use of **trails leads to reduced vehicle use**. A decline in vehicle use can lead to reductions in air pollution, noise pollution, traffic congestion, and road danger (Transport Canada, 2011). In 2012, 34% of Ontario's greenhouse gas emissions were generated by the transportation sector (Ministry of Environment and Climate Change, 2015). An estimated 90% of the emissions in a typical 11-kilometre trip are generated in the first 1.6 kilometers, before the engine warms up (Transport Canada, 2011).

Key findings from the **Indianapolis trail** include the following:

1. Exercise and recreation are the primary reasons for use, with more people cycling in the city than ever before. Indianapolis has the 8th highest obesity rate in the country, so promotion of active living was a main goal (Corathers, 2015)
2. The city has seen **great economic growth** since the trail's opening. Businesses on the trail have hired additional employees, related to the fact that over half of local business owners have reported an increase in customers and revenue (Burow & Majors, 2015)
3. There has been an influx of tourists into the area. Tourist spending has contributed to hotels and restaurants having the most growth in business. The incoming tourist revenue has also contributed to the additions of twenty-five

new businesses located in close proximity to the trails over a five-year span, all directly tied to trails usage (Simmons, 2014).

Other Greenways have had similar successes. Since 1991, **Portland, Oregon**, has seen a steady increase in bicycling rates every year. So far, Portland's 300-mile bicycle network has cost over $100 million, with even more being invested. Although the project has been costly, Portland's Rails-to-Trails Conservancy calculates that by 2040 Portland's net benefits from bicycling in the form of **fuel savings and reduced health care costs alone will amount to $1.2 billion**, or a return on investment ratio of 8.3 to 1. This first of its kind cost-benefit analysis for bicycle infrastructure shows that investment in bicycling is a highly cost-effective use of transportation funds (Gotschi, 2011). Overall, **upstream savings** in respect to transportation and health care are important factors to consider.

3.4 Hamilton Initiatives

Hamilton and Burlington, located in Southern Ontario's Golden Horseshoe, are unique and diverse cities with growing populations. Hamilton's population is projected to increase around 15% - 40% from 2015-2041 (Ontario Ministry of Finance, 2016). Burlington (and other areas of the Region of Halton) is projected to be the fastest-growing community in Ontario from 2015-2041, with an expected growth of 63.6% (Ontario Ministry of Finance, 2016). Research indicates that trail use appears to be greater in neighborhoods with higher levels of population density and commercial activity (Robert Wood Johnson Foundation, 2011). With the projected increase in population within this region, the need for connectivity through trails is warranted and beneficial. Creating connectivity by means of **Greenway** trails will allow us to better adapt to the growing, aging populations in Hamilton and Burlington.

The Cootes Greenway project fits into its existing initiatives that have been previously identified by communities and their partners, including the **City of Hamilton Strategic Priorities** (Hamilton, 2015):

1. Community Engagement & Participation: The Cootes Greenway project partners will go through community and stakeholder engagement in the planning process to ensure citizens and community members feel empowered and involved in the development. There are also various community initiative support groups already existing, such as the Hamilton Burlington Trails

Council, Turtles of Cootes, and the Cootes to Escarpment (C2E) project ("Turtles Of Cootes," 2017).

2. Economic Prosperity and Growth: Based on the findings of previous greenways, it can be expected that the number of people visiting and touring the Cootes area will increase, bringing the **potential for economic gain**. Predictions for Hamilton's future Light Rail Transit (LRT) suggest that property values near LRT stops will increase. Also expected are increases in residential and commercial occupancies, increased tourism revenue, and intensified land use ("Economic Case for LRT - Hamilton Light Rail Initiative," n.d.). It can be argued that the same will be true for the Cootes Greenway. This prediction is also supported by research from the Indianapolis Cultural Trail which stated that from 2008 to 2014, the total assessed value of the 1,747 parcels near the trail increased 148% (Burow & Majors, 2015).
3. Healthy and Safe Communities: The Cootes Greenway will bring another outdoor recreation space that Hamilton residents and visitors can enjoy. As stated earlier, the health benefits from trails are tremendous. The Cootes Greenway vision is to make this positive impact felt at the individual and community level. Regardless of the reason for using the trail, **feeling safe and secure while on it is vital**. When asked, 95% of Indianapolis Cultural Trail users felt that the trail is safe and secure (Burow & Majors, 2015).
4. Clean and Green: Strategies listed for Clean and Green will prioritize projects that contribute to the social, economic and environmental well-being of Hamilton to help achieve an enhanced quality of life (Biggs, 2014). A sign of success for this strategy is that "we use cars less and make more trips using active and public transportation" (Ariyo, Mutch, & Jones, 2017). The Cootes Greenway would work towards this goal by **improving active transportation options**, ultimately reducing our impact on the environment. This notion of reducing impact on the environment fits into the Hamilton Climate Change Action Charter created from Clean Air Hamilton and Climate Change Champions which states that "we need to take responsibility and act to reduce greenhouse gas emissions and prepare for climate change impacts in ways that promote economic prosperity, health and environmental benefits for all." (*Hamilton Climate Change Action Charter,* 2011*)*.
5. Built Environment and Infrastructure: The proposal for the Cootes Greenway will create a **well-connected transportation network** that allows people to get around conveniently without a motorized vehicle. This project can also complement the Metrolinx 2041 Regional Transportation Plan which is to "optimize the transportation system".

6. Culture and Diversity: Part of the Cootes Greenway vision is to **celebrate the heritage, such as public art and interpretive panels, and diversity of the area**. To achieve this goal, the trail will be accessible to all ages and abilities, creating a welcoming activity space for seniors and youth.

The City of Hamilton, City of Burlington, Royal Botanical Gardens, Conservation Halton and the Hamilton Conservation Authority are all major stakeholders in this project. These stakeholders have over 490 km of existing trail networks that have been designed, funded, built, and maintained. These land owners continue to expand and improve their trail networks based upon trail studies and recreational trail master plans, which the **Cootes Greenway** project intends to support and enhance. Trail networks can help protect and increase appreciation for these spaces. Existing trails in Hamilton and Burlington include multi-use paths, cycling infrastructure, escarpment stairs and rural hiking trails.

4.0 Project Assumptions

4.1 Critical Success Factors

Success of the project will be dependent on meeting the following short-term, mid-term, and long-term goals.

Short-Term Goals:

1. HBTC and C2E staff meet to discuss project charter and route options
2. Gather endorsements from stakeholders (stakeholders listed in Section 6.0)
3. Obtain funding for a feasibility study

Mid-term Goals:

1. Complete a feasibility study for Cootes Greenway Loop
2. Gain community support through community engagement initiatives
3. Obtain funding to implement design and construction of trail infrastructure for the Cootes Greenway Loop

Long-Term Goals

1. Promote the Cootes Greenway Loop
2. Continue ongoing maintenance
3. Grow the Cootes Greenway Loop into a Regional Greenway Network

4.2 Identified Project Constraints

The following are the identified project constraints:

1. Funding
2. Infrastructure and construction costs
3. Ongoing maintenance and repair of trail network
4. Land development constraints:
    a. Land assembly
    b. Land purchasing
    c. Site-specific constraints (physical geography, ecological, etc.)
    d. Easement access
    e. Legal agreements
    f. Risk management
    g. Requirement for technical studies:
        - Environmental assessments (EA)/ Transportation studies
        - Environmental Site Assessments (ESA)
        - Environmental Impact Studies (EIS)
        - Archaeological Assessments

5.0 Scope

The following tasks are within the scope of the Cootes Greenway Loop project:

1. Coordination of trail projects across land users, including project committee meetings in order to advance the Regional Greenway Network
2. Identification of priority trail projects i.e. the critical missing linkages within the proposed trail network.
3. Assessment of trail use in Hamilton and Burlington region by utilizing various research tools such as surveys, trail user counts, and community events.
4. Development of a set of criteria and design standards for the trail network.
5. Evaluation of a proposed Phase I loop through a feasibility study.
6. Marketing and branding of the trail network.
7. Fundraising:
    - Funding for a consultant to complete a feasibility study of the proposed Phase I loop.
    - Funding for a project coordinator to apply for grants, source project resources and sponsorship, facilitate stakeholder as well as community meetings/ communications, marketing and complete the project plan.
    - Funding for implementing detailed design and construction of the Cootes Greenway Loop or Phase 1 of the **Regional Greenway Network** Plan.
8. Co-ordinate design and maintenance standards for trail maintenance and signage between landowners.

9. Implement phased design and construction, beginning with high priority projects

The Cootes Greenway project proposes developments in **eight regions**:

1. King St E. (Dundas)
2. York Road
3. North Shore
4. Arboretum
5. Cootes
6. Westdale
7. McMaster University
8. Cootes Drive

It is recommended that development occurs in order of the list, starting with King Street East in Dundas. This starting point is crucial as it aligns with the Cootes to Escarpment project, which has goals closely aligned to that of the Cootes Greenway. While trail developments outside of these regions are welcomed, it would be out of scope for this project.

6.0 Project Resources

The HBTC is able to offer coordination and communication throughout the project. Coordination would be facilitated through an advisory committee of HBTC members and communication assisted through HBTC's current member websites, social media, and marketing staff. The following are other project resources that should be considered throughout the project planning:

6.1 Associated Projects

Transportation Studies:

- City of Burlington: Community Trails Strategy (2015)
- City of Hamilton: Recreational Trails Master Plan (2016)
- City of Hamilton's Mountain Brow Trail Study (2017- 2018)
- City of Hamilton: Transportation Master Plan (2018 - currently)
- City of Hamilton: Cycling Master Plan (2017- in progress)
- City of Hamilton: Pedestrian Mobility Plan -Step Forward (2013)

Trail Projects:

- Bruce Trail (Bruce Trail Conservancy)
- Waterfront Trail (Waterfront Regeneration Trust)
- Trans-Canada Trail (Trans Canada Trail Foundation)
- The Greenbelt Route (Greenbelt Foundation)
- Hambur (Hamilton-Burlington) Loop

6.2 Finances

The Cootes Greenway project will be an investment. Initial costs include the following expenses:

1. Planning
   - Consulting fees for feasibility study and engineer plan
2. Marketing and Project Costs
   - Design and hosting of website and print materials
3. Community Engagement
   - Community outreach materials
   - Community engagement events
4. Travel disbursements and Consultation fees
5. Design and construction of priority trail projects (Dependent on Feasibility Study, scope of project, and capital budget of land owners).

Initial funding can come from the following programs:

- Hamilton City Enrichment Fund: City of Hamilton fund that invests in six areas of community programs. The Cootes Greenway project would fit into at least two of the six; namely the Communities, Culture, & Heritage program, as well as the Environment program.
- Hamilton Burlington Trails Council and Cootes to Escarpment funding campaign
  - Hike-a-Thon (2017): HBTC organized the Hike-a-Thon in 2017. People sign up and pledge to hike an amount of a trail as part of a fundraiser (" Hike-A-Thon!," 2017). A similar event could be arranged for the Cootes Greenway effort.
- TransCanada Funding
- Municipalities
  - The Greenway Loop can likely fund some of this work through the City of Hamilton's Capital Budget for construction and design. The Operation budget for the ongoing annual maintenance of the facility should also be considered.

7.0 Project Team Members

Project Leads: Hamilton Burlington Trails Council and Cootes to Escarpment EcoPark System

Stakeholders List:

Stakeholders	Organization List
Current Stakeholders	• City of Burlington • City of Hamilton • Hamilton Conservation Authority • Royal Botanical Gardens • Conservation Halton • Hydro One
Community Stakeholders	• Bike for Mike • McMaster University • Bruce Trail Conservancy and Iroquoia Club • Cycle Hamilton • Evergreen Foundation • Greenbelt Foundation • Hamilton Cycling Club • Hamilton Burlington Mountain Biking Association • Hamilton Naturalists Club • McMaster University • Tourism Hamilton • Hydro One
Regional and Provincial Bodies	• Niagara Escarpment Commission (NEC) • Ontario Trails Council • Ministry of Tourism, Culture and Sport • Regional Tourism Office / Hamilton, Halton Brant Regional Tourism Organization • Waterfront Regeneration Trust • Trans Canada Trail

6.1 Opportunities and Challenges

Listed below are opportunities and challenges associated with the regions identified for each area of the proposed Cootes Loop:

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#	AREA NAME	OPPORTUNITIES	CHALLENGES
1	King St E. (Dundas)	• Pedestrian trails connecting to nodes • Land owned by City of Hamilton • Celebrate the heritage and history of Desjardins canal	• King St E. traffic • Safety concerns (high volume, high speed traffic) • Turtle nesting area
2	York Road	• Lake Jojo and other recreation node possibilities • Provides connection to Burlington on the west side of Cootes Paradise	• Private land ownership along route (ie. Hopkins Court) • No existing active transportation infrastructure
3	North Shore	• Planned multi-use trail along York Road • Potential to have the trail run parallel beside the railway • Publicly owned lands	• Short segment of privately owned land, north of railroad • Safety and noise concerns regarding proximity to railway
4	Arboretum	• Major trail node along potential Greenway Route (Royal Botanical Gardens) • Planned paved shoulder on Old Guelph Road	• Payment required to use trail system inside Arboretum • Restricted cycling due to environmental conservancy efforts • Railroad crossing • Minimal shoreline to connect to the East end of the Desjardins Canal
5	Cootes	• Close proximity to scenic looking points • Existing Waterfront Trail infrastructure	• At-risk ecosystems along Cootes Paradise • High volume traffic, air pollution, and noise pollution

6	Westdale	• Target market of young students who often have limited budgets is currently a problem for businesses. The Greenway can help bring in economic growth to the area • Newly added trail through Churchill Park	• Safety concerns with street traffic on King Street East • Existing lower order active transport infrastructure
7	McMaster University	• Support of Okanagan Charter • Future design principles are to consider making the campus a more "pedestrian and cyclist friendly campus" (*McMaster Campus Master Plan*, 2017)	• On campus cycling conflicts with pedestrians and transit stops • McMaster Campus Master Plan does not emphasize need for attracting greater-Hamilton residents
8	Cootes Drive	• Paved multi-use trail along Cootes Drive • Land ownership by the Hamilton Conservation Authority • Close proximity to Spencer Creek Trail	• Fragile ecosystems and animal populations on either side of Cootes Drive

6.2 Timeline

The proposed timeline and milestones for the Cootes Greenway Loop project include several considerations. Analyzing the data provided from existing greenways showed that it took an average of 3 years for every kilometer of trail to be completed. This data, taken from the Indianapolis Cultural Trail and Atlanta Beltline, could be used as an approximation for the Cootes Greenway. The Portland and Cincinnati Greenways were not considered as they are not yet complete. In a different sense, the Calgary Rotary/Mattamy Greenway was not a factor as it was completed as a fast-track project in seven years. It has also been considered that the broader Regional Greenway Project will take longer, but the Cootes Greenway Loop is the first step and top priority.

Dates	**Milestones**

Late 2020	▪ **Cootes Greenway Network** Concept Plan Complete. ▪ Completion of **Cootes Greenway Network** presentation and marketing materials including: PowerPoint presentation/ concept video, website with concept video, design of social media/ marketing campaign
	▪ Consultant for feasibility study hired
	● Carry out marketing campaign ● Implement community engagement program ● Carry out fundraising campaign
	● 20 local business/ organization endorsements secured
	● Draft Feasibility study of Cootes Loop complete.
Late 2021	● 2 community engagement events complete
	● Final **Cootes Greenway Network** Plan complete ● Final Feasibility Study complete (based upon community engagement results)
Early 2022	● Design start early 2022
2022 - 2032	● Private, and Public funding secured to begin implementing sections of the **Cootes Greenway Network** Plan. ● Implementation of priority projects noted in Feasibility study.

8.0 Long-Term Greenway Network Vision

The **Cootes Greenway Loop** could become the first phase of a regional greenway network that would pass through and connect every ward in both cities. This project includes the installation of infrastructure throughout a mixture of urban, suburban, and rural locations that will provide access to natural spaces, recreation, work places, educational institutions, transit, shopping, and cultural experiences.

The purpose of the **Regional Greenway Network** is to collaborate with the City of Hamilton, City of Burlington, Hamilton Conservation Authority, Royal Botanical Gardens and other land owners to create a regional trail network that is well-connected. The project goal is to help advance approved and proposed trail plans identified in stakeholder trails master plans. Both the **Cootes Greenway Loop** and the **Regional Greenway Network** will strive to protect the natural environment, create economic growth, promote active transportation, improve public health, create opportunities for social interaction, and enhance communities and neighbourhood connectivity.

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Appendix I: Stakeholder List

Stakeholders	Organization List
Current Stakeholders	• City of Burlington • City of Hamilton • Hamilton Conservation Authority • Royal Botanical Gardens • Conservation Halton • Hydro One
Community Stakeholders	• Bike for Mike • McMaster University • Bruce Trail Conservancy and Iroquoia Club • Cycle Hamilton • Evergreen Foundation • Greenbelt Foundation • Hamilton Cycling Club • Hamilton Burlington Mountain Biking Association • Hamilton Naturalists Club • McMaster University • Tourism Hamilton • Hydro One
Regional and Provincial Bodies	• Niagara Escarpment Commission (NEC) • Ontario Trails Council • Ministry of Tourism, Culture and Sport • Regional Tourism Office / Hamilton, Halton Brant Regional Tourism Organization • Waterfront Regeneration Trust • Trans Canada Trail

Appendix J: Raw Data from Workshop

Wants:

- Maintenance is important
- Increase of property values
- More trees
- If it brings more customers and money to local businesses, then sure
- Free WiFi
- More awareness of the risks that vulnerable species face
- A fast and efficient way to get to work with little to no detours
- A safer way for wildlife to cross the greenway
- Good winter and fall maintenance of the trail
- Space for Dart vans/ HSR to increase accessibility to the trail
- Make sure dense areas are within walking distance to trails
- Accessible and wide pathways for wheelchairs
- Proper signage
- Protection of native species
- Exercise activities
- Cycling only bike lane on the greenway
- Rest stops
- It'll be good incentive to practice active living for a healthy lifestyle
- It will boost tourism and promote sustainability
- Maximize walkability
- Construct information session on the health benefits of going outside
- Safe crossings for trail users
- Plant more trees
- Connect trails to downtown
- Preserve wetlands

Concerns:

- I don't want my taxes going toward this
- Development might disturb ecosystems
- Cyclists won't be safe during rush hours
- Needs proper funding
- Too much time to implement
- Waste of $
- Future development along the greenway
- Residents taxes will go up to fund this
- Will the greenway bring invasive species?
- Too much traffic

- Increased pedestrian volume = increased noise levels in neighbourhoods
- There are no accessible trails near to retirement homes
- Disrupts current tree covers
- Allow access to Dundas by undesirables
- Increased taxes may lead to cuts from other areas
- How will we connect urban to rural trails easily
- Construction may lead to loss of habitat
- How can we deal with stormwater drainage if the trail is paved

Major Points:

- Community engagement / public consultation is important
- The trail must address / incorporate
    - Accessibility
    - Conservation
    - Healthy lifestyle
- Planning must address costs as well as understand Economic Development opportunities
- Share objectives before meetings / debating because it gives the opportunity for individuals to reflect
- Accessibility
- Bike Highway
- Profitability for businesses
- Public transit
- Environment access vs. impact
- Funding
- Local economy
- Sustainability
- Health benefits
- Benefits to tourism
- A range of perspectives in needed
- What is the impact on the natural environment

Conflicts:

- Conflicts
- NIMBY attitude
- Construction/noise disruption for nearby residents
- Overdevelopment of greenspace
- overuse / abuse of natural space
- Conflicts over the use of space
- Personal interests

- Habitat loss may be a result of trails
- Even though it is sustainable, the land is still being developed
    - ...which can attract even more development (domino effect)
- Accessibility calls for pavement and this can damage the environment – and is bad for stormwater drainage

Agreements:

- There are health benefits
- Concerned about turtles / other animals
- It would be beneficial to the economy
- Protecting trees is important
- Community outreach is very important
    - People need to be informed and consulted
- The trail must be accessible for everyone
- The trail should exist to some degree
    - However, no agreement on what it should look like