



SACKVILLE GREENWAY

MULTI-YEAR DEVELOPMENT PLAN



FINAL REPORT

November 2011

Prepared by:

EDM · Environmental Design and Management Ltd.
Gordon Ratcliffe Landscape Architects

Prepared for:

Sackville Rivers Association



EXECUTIVE SUMMARY

For more than 20 years, the Sackville Rivers Association (SRA) has been developing a vision for a Conservation Corridor running the length of the Sackville River. SRA's plans for the Conservation Corridor are ambitious: a system of trails more than 40 km in length that will eventually connect the communities of Bedford, Pockwock, Lucasville, Beaverbank, Sackville, Hammonds Plains and Mount Uniacke.

The *Sackville Greenway Multi-year Development Plan* offers a vision and development strategy for the Sackville Greenway - a multi-use trail stretching the length of the Little Sackville River. When completed, the Sackville Greenway will run from Fultz House to Feely Lake (and incorporate the headwaters at Little Lake) and connect the many neighbourhoods and community destination points along the way.

The Little Sackville River is an extraordinary feature for an area so heavily urbanized. Although largely vacant from view throughout most of the area, the Sackville Greenway can bring a renewed awareness to the river and foster a shared sense of responsibility to ensure rehabilitation and long-term protection. Greenways fulfill recreation needs, create active transportation opportunities, and foster environmental awareness. They create opportunities for residents to maintain a healthy lifestyle by providing alternatives to car travel and supports the local economy by making it easier for people to access shopping and entertainment destinations.

The development plan for the Sackville Greenway attempts to exploit the areas assets - from the Little Sackville River to Feely Lake - and aims to (re) connect the many diverse neighbourhoods and commercial and recreational areas that Sackville has to offer. It also utilizes a sewer access road easement maintained by Halifax Water where available and appropriate. The implementation of the plan will involve significant cooperation with the municipal water utility. During the preparation of the Plan, Mr. Jamie Hannam and Ms. April Tucker were the primary contacts with Halifax Water and provided information and assistance for issues regarding the access road easement.

Since 1988, SRA has lead numerous restoration and conservation projects and has successfully established a multi-use active transportation

trail in the watershed. The mandate of the SRA is focused around the restoration of the Sackville River, preservation of the river's natural habitat, and establishment of the Conservation Corridor along the length of the Sackville River.

Using SRA's mandate as guidance, the Plan outlined in this report aims to strike a balance between their objectives in relation to the River and the desires of residents for a sense of safety and security in the community and opportunities for recreation, mobility, education and community engagement. Presenting a clear and comprehensive vision for the development of the Sackville Greenway will enable SRA to further engage the community through consultation workshops, acquire financial support, and begin the detailed design work necessary to expand the trail network through the heart of Sackville.

The Plan for the Sackville Greenway is comprised of 5 sections. The total construction cost for the Sackville Greenway is approximately \$6,924,000, with the cost of individual sections ranging from \$764,500 to \$2,177,250 (2011). Dividing the Greenway into sections that stand on their own as functioning trails allows for a flexible and long-term development strategy where construction can be prioritized based on community support and availability of funding.

The Sackville Greenway Multi-year Development Plan is not a detailed design and construction plan; it is intended to help to focus the conversation and to better allow alternatives to emerge where desired by the community at this early stage in the development process. With proper planning and community consultation, the Sackville Greenway can help to reintegrate the river into the community, create more walkable neighbourhoods, and improve residents' overall quality of life in Sackville and in HRM.

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2011

Prepared by:
EDM • Environmental Design and Management Limited

In associated with:
Gordon Ratcliffe Landscape Architects

Prepared for:
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With funding provided by:
Halifax Regional Municipality

Cover image (top-right only) source: Trails and Greenways Guide
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INTRODUCTION



Fig. 1.1: Development in Sackville has continually encroached upon the Little Sackville River. For more than 20 years, the Sackville Rivers Association has worked to improve the health of the river and positioning it as the natural feature that ties the communities of the area together. The Sackville Greenway is part of a larger conservation corridor and trail system envisioned for the Sackville River. (Image Source: Wikipedia 2006)

For more than 20 years, the Sackville Rivers Association (SRA) has been developing a vision for a Conservation Corridor running the length of the Sackville River. SRA's plans for the Conservation Corridor are ambitious: a system of trails more than 40 km in length that will eventually connect the communities of Bedford, Pockwock, Lucasville, Beavertown, Sackville, Hammonds Plains and Mount Uniacke. One of the main trails within the Corridor will be the Sackville Greenway – a multi-use trail running from Fultz House to Feely Lake (near the headwaters of the Little Sackville River) and connecting the many neighbourhoods and communities along the way.

This report aims to develop a Multiyear Development Plan for the Sackville Greenway. The Plan will outline the addition of approximately 12 km of trail stretching along the Little Sackville River (fig. 1.1). Presenting a clear and comprehensive vision for this section of the Sackville Greenway will allow SRA to engage the community through consultation workshops, acquire financial support, and begin the detailed design work necessary to expand the trail network through the heart of Sackville and reconnect the residents to the River.

Since 1988, SRA – a not-for-profit volunteer-based community group – has taken on restoration and conservation projects and has successfully established a number of multi-use active transportation trails in the watershed. The mandate of the SRA is focused around the restoration of the Sackville River, preservation of the river's natural habitat, and establishment of a conservation corridor along the length of the Sackville River (fig. 1.2). This also means raising awareness about the environment of the Sackville River watershed and adjacent watersheds, and provide training to local community groups (SRA 2011). Using SRA's mandate as guidance, the Plan outlined in this report aims to strike a balance between their objectives in relation to the River and the desires of residents for a sense of safety and security in the community and opportunities for recreation, mobility, education and community engagement.

DEFINITIONS

Terminology for urban, suburban and rural trail networks can vary greatly between reports and policies, as well as between community planners and the public. For example, the City of Vancouver defines a greenway as “a street connected in a network throughout the City which is enhanced to provide a pleasant environment for pedestrians and cycling” (City of Vancouver 2010); in contrast, the Kawartha Lakes Green Trails Alliance defines greenways as “linear open spaces that are managed for conservation, recreation, and/or alternative transportation uses” (KLGTA 2011). To improve clarity of the report, this section defines some common terms and establishes a consistent language that will be used throughout this report. The term *greenway* is of particular concern and is comprised of a series of other terms outlined below:

HRM DEFINITIONS	
Conservation Lands	Acquired or designated to have the primary function of conserving natural environment habitat while being able to sustain a relatively small recreation or engineering development footprint (HRM 2009).
Corridor	Land able to sustain continuous linear systems of publicly owned (or public interest in) land with the primary function of linking origins and destinations while conserving natural or cultural features to help create municipal character... Examples include greenway corridors that usually centre around a natural watercourse and provide a conservation land use function while able to sustain specific recreation land use needs (HRM 2009).

COMMON DEFINITIONS	
Active Transportation	Human-powered travel such as walking, bicycling or skating (CEU 2010). For HRM , AT is defined by 4 categories: active commuting; active workplace travel; active destination oriented trip; active recreation (KLGTA 2011).
Multi-modal / Multi-use Trail	Path used for non-motorized transportation and recreation, including walking, running, cycling and skating to and from destination points (Stearley and Vasquez. 2009).
Conservation Corridor	Any explicit spatial area designed, protected or managed to maintain connectivity for focal species or critical ecological processes (Hector et al. 2007).

From these terms, a clear definition of *greenway* applicable to this project emerges:

Greenway	Linear, open-space conservation areas that contain non-motorized multi-modal paths for transportation and recreation purposes ; offer health, economic, education, environmental, and overall quality of life benefits to users and the broader community; and form logical and continuous linkages between parts of a community.
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In contrast to conservation corridors, which place the emphasis on ecology, “the essence of greenways is connections – not simply connecting recreational areas through trails, but connecting wildlife habitats to each other, human communities to other human communities, city to country, people to nature” (Royal Commission 1992). Greenways are meant for movement of people and are generally found in urban and suburban contexts, such as Sackville. With these definitions in mind, the following terms will be used to denote specific concepts throughout this report and Plan:

Sackville River Conservation Corridor	The overall concept for a 40 km trail network and preservation area for the entire length of the Sackville River, including the LSR.
Sackville Greenway	Suburban conservation area, multi-use trail, active transportation and open space network that is structured by and around the Little Sackville River. The Sackville Greenway is to be comprised on a number of multi-use trails that extends from Fultz House to Feely Lake.

This Plan is focused on the 12 km section from Fultz House to Feely Lake. For this reason, unless otherwise noted, the term Greenway will refer only to the Little Sackville extension as shown in Figure 1.2.

PROJECT GOALS

The objective of the project is to produce a Sackville Greenway Multi-year Development Plan for the section of the Greenway contained within the Little Sackville River Watershed. The Plan aims to establish a multi-use trail system, making use of a sewer access road and easement controlled by the municipal water, wastewater and stormwater utility, Halifax

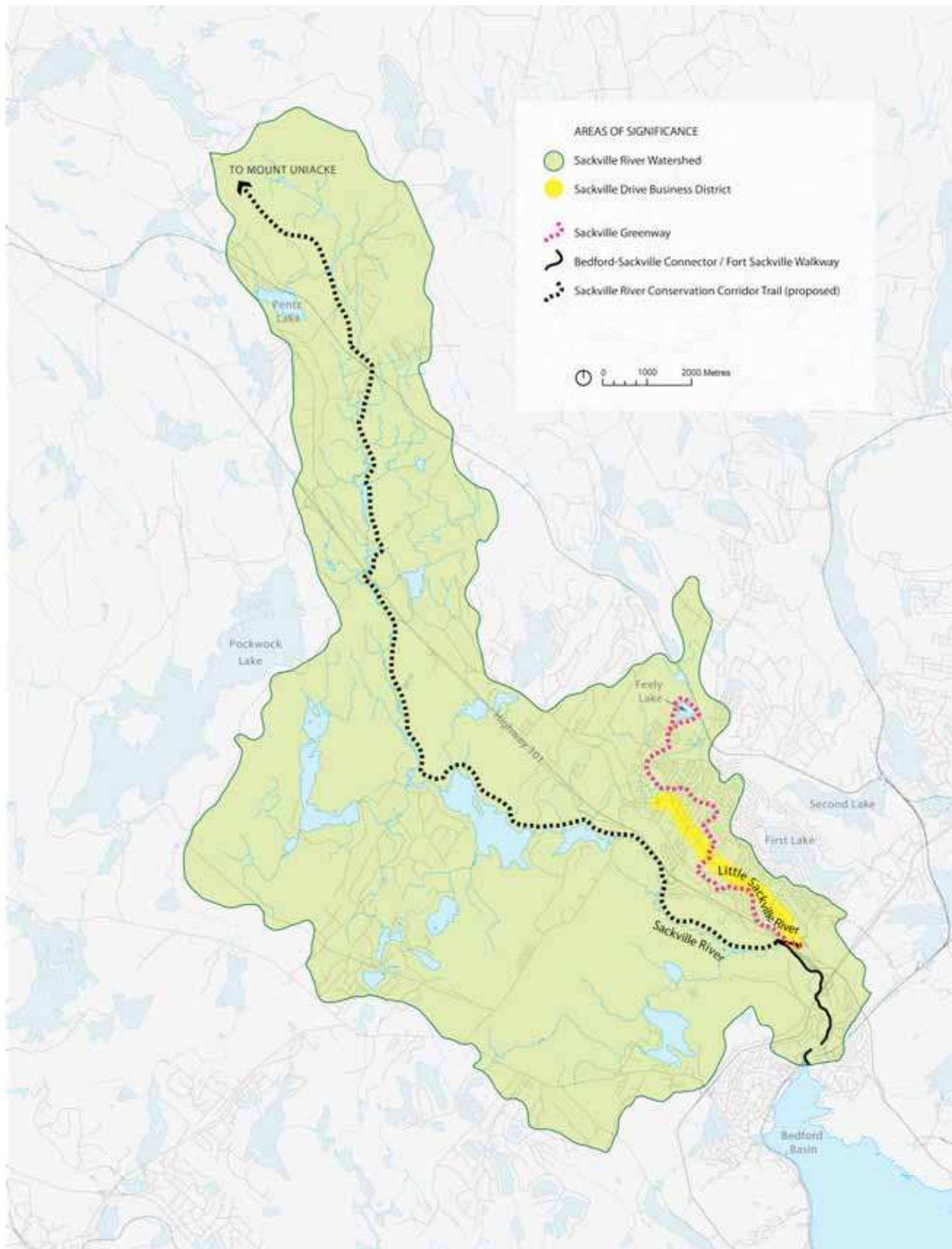


Fig. 1.2: Location and context of Sackville River Conservation Corridor and Sackville Greenway. (Data Source: Sackville, Nova Scotia Green Map (www.greenmap.org))

Water, wherever possible. Trails are to be located within a conservation corridor that encompasses the Little Sackville River. The proposed Greenway is intended to improve active transportation, recreation and educational opportunities for residents, while a defined conservation corridor will help to preserve, protect and enhance the river. When completed, this Greenway will act as a central connective green spine that provides links between the diverse neighbourhoods of Sackville, and reintroduces the community as a whole to the Little Sackville River.

The Report aims to present background information, analysis and a development plan, and includes the following:

- Review of past and current plans and policies that relate to the Little Sackville River;
- Analysis of historical and current development patterns in Sackville;
- Identification of constraints and opportunities for the Greenway as a result of the River itself or development pressures;
- Recommendations for integration of the Greenway into the broader regional context (i.e. Sackville Greenway, First Lake and Second Lake trail networks);
- Guidelines for signage;
- Suggested phasing;
- Estimates of construction, management and maintenance costs;
- Recommended land acquisitions;
- Outline of next steps.

It is anticipated that SRA will use this Development Plan in future public consultation where neighborhood concerns can be addressed and detailed design of sections can be discussed. By presenting a clear and legible Plan for the Little Sackville River conservation corridor, this Plan is meant to enable SRA to engage the community by focusing discussion on ideas and issues that are most important to residents.

OUR APPROACH

Primarily a high-level strategy, this Plan is focused on the 'big-picture' and aims to clearly define the position of the Greenway within the Sackville community. Both 'from above' technological and 'on-the-ground' fieldwork approaches were used in the development of the Plan. The entire length of the Greenway extension, as defined in the Request for Proposal (RFP), was examined to better understand its surrounding context and to identify possible physical constraints, and major pressure points and areas of opportunity.

Initial mapping and preliminary site analysis was possible with Geographic Information Systems (GIS) analysis using data provided by HRM. This data included LiDAR (Light Detection and Ranging), an often cost effective method for collecting topographic data over large areas. The technology functions by mounting a LiDAR scanner in an aircraft and flying over a target area (fig. 1.3). The technique is similar to that used for collecting aerial photographs - the LiDAR scanner is GPS controlled, and collects data by emitting a laser beam from the belly of an aircraft. The resulting data comprises a highly detailed and accurate three dimensional surface. While it is most effective over open terrain, the LiDAR has the capability to penetrate tree and vegetation canopy, thus providing a 'bare earth' model. Deliverables can also include information on canopy and building heights, or what is known as

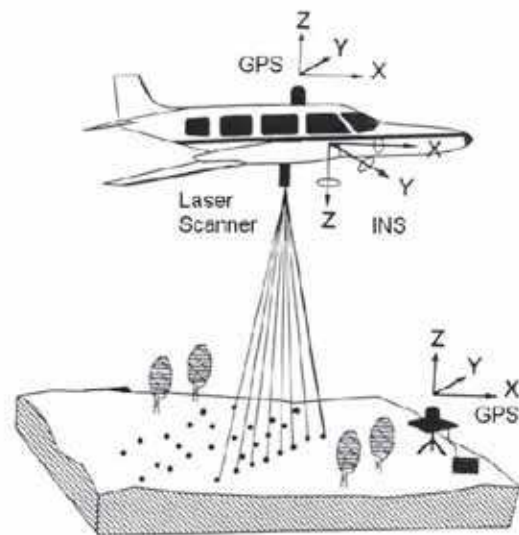


Fig 1.3: A LiDAR scanner is GPS controlled, and collects data by emitting a laser beam from the belly of an aircraft. (Image Source: http://slvg.soe.ucsc.edu/images/lidar/lidar_acq.jpg)



Fig. 1.4: As the Little Sackville River meanders through Sackville it is often channeled through culverts and 'squeezed' by adjacent properties. This area, where the River flows under Sackville Cross Road, poses challenges for routing a multi-use path, but it also offers an opportunity to formalize a popular informal path and provide an alternative for those who currently trespass through private property.

'First Returns'. LiDAR data used for this project was flown as part of an HRM initiative to model and predict the effects of sea level rise on Halifax Harbour and its associated watersheds (HRM 2010). A bare earth DEM, constructed by HRM and their project partners, was used in the Greenway project to construct highly detailed topographic contours, as well as identification of steep slopes in the study area.

SRA provided valuable guidance for the fieldwork component of the project. Current SRA President, Walter N. Regan, accompanied EDM staff on several field outings, sharing SRA's vast knowledge and experience in working in and around the River, as well as establishing the Bedford-Sackville Connector. Fieldwork allowed us to observe the existing conditions of the River, informal river crossings and trails, and build a large inventory of reference photos to assist in the development of the Plan and to include in this report.

Through initial consultation with SRA and HRM, it was clear that the emphasis of the Greenway was the River itself. By building on the existing natural, yet damaged, infrastructure, the Little Sackville River can be enhanced somewhat paradoxically by

bringing more people in contact with it. Sections of the River, in their current state, seem to act as a physical barrier for residents and a number of informal and potentially dangerous river crossing points are well established (fig. 1.4). Other more secluded areas are real and perceived places of criminal activity, including illegal drug use and illegal dumping of garbage and other debris.

The Greenway is intended to connect neighborhoods, parks and green spaces, schools, entertainment, dining, and retail. The development of the Greenway will improve existing trails and build new linkages that increase connectivity, improve overall accessibility and encourage the use of the more active forms of transportation and leisure in the community. To ensure that the Greenway develops as a recreation and transportation option that residents will feel safe using, the Plan focused on themes of sustainability, connectivity, community, activity and livability. The following sections outline the planning framework that makes the development of the Sackville Greenway possible and presents a Plan for further develop, design and implementation.

BACKGROUND



Fig. 2.1: The HRM Regional Plan designates all areas immediately adjacent to the Little Sackville River as "Urban Settlement". (Image Source: HRM Regional Plan 2006, Generalized Future Land Use, amended May 2010).

The Sackville River watershed is home to more than 60,000 residents. Urban and suburban growth in the region has generally been 'despite the river' rather than 'with the river'. As a result, much of the Little Sackville River (LSR) is hidden from view, lacking public access, or severely encroached upon and effectively canalized. As the population in the area continues to increase due to new real estate development, the pressure on the LSR continues to increase, as well as the demand for recreational opportunities (fig. 2.1).

Once used for log running (until the mid 1930s), the LSR was surrounded mostly by farms until the mid 20th century. Development in the area didn't really begin until the early 1960s, as a result of a major land assembly and municipal services project (including a new trunk sewer built along the Little Sackville River) by the Nova Scotia Housing Commission. Within 10 years, the population of this rural farming community had grown to more than 3000. In subsequent reports and plans, including the 1975 Halifax-Dartmouth Regional Development Plan, future residential growth in Sackville was supported and encouraged. By 1992, as a result of planning policy and availability of affordable

housing, the population has risen to more than 30,000. This rapid growth quickly encroached upon the Little Sackville River, with little attention given to the River's floodplain, riparian zone, habitat or concern over pollution due to water runoff. Detailed floodplain mapping of the Little Sackville River was completed by Environmental Canada as part of the Canada-Nova Scotia Flood Damage Reduction Program. Beginning in 1978, the 100-year flood was used to delineate and designate flood plains in 9 communities, where future development is prohibited in the floodway, defined by the 20-year flood, but is permitted in the flood fringe if adequate flood proofing is carried out. While integrated into the land-use bylaws in Sackville, the Flood Damage Reduction Program came too late to prevent the severe level of encroachment on the Little Sackville River that is still evident today. As much of the trail will be located within the LSR floodplain, the addition of a trail can be used to reclaim property along the river and protect the river and riparian zone for further encroachment.

Recent activity by Halifax Water to obtain an easement and construct access roads over and along the trunk sewer in Sackville provides an opportunity

to not only revisit previous plans, but also to update and produce a new plan that better reflects current conditions and exploits the development potential that exists today.

NSCAD STUDY

Conducted between September 1977 and May 1978 at NSCAD, Environmental Planning Department, this study aimed to analyze the recreation potential of the Sackville/Little Sackville River System (Fig. 2.2). At the time, the Bedford/Sackville areas were the most rapidly urbanizing communities within Halifax County, developing as 'bedroom' or commuter communities for the City of Halifax and residents had expressed concern over access to open space.

An objective put forth in the study was to develop a Sackville River Greenway that consists of a series of small neighbourhood parks linked by a walkway which will run the entire length of the river." and that the walkway would generally follow the existing trunk sewer easement.

The idea for the development of a Sackville River / Little Sackville River greenway and conservation corridor is not new. First presented in a 1978 report, trails along the rivers have since factored prominently in reports, plans and legislation related to the growth and development of the Sackville region.

Conducted between September 1977 and May 1978 at NSCAD, Environmental Planning Department, this study aimed to analyze the recreation potential of the Sackville/Little Sackville River System. At the time, the Bedford and Sackville areas were the most rapidly urbanizing communities within Halifax County, developing as 'bedroom' or commuter communities for the City of Halifax and residents had expressed concern over access to open space.

A resulting objective put forth in the study was to develop a Sackville River Greenway that consists of "a series of small neighbourhood parks linked by a walkway which will run the entire length of the river" and "generally follow the existing trunk sewer easement" (Reddy and Thordarson 1978, 5.D.3 – 5.D.4.). The study suggests that although the river was, at one time, an attractive feature in the community, it was perceived as unimportant or dangerous to some residents in its current state.

At the time of the study, the sewer easement was already being used as a walkway, bicycle path and children's play area. These uses persist today, despite the lack of any formal path or recreation designation. The study identified a number of areas for pocket parks along the Greenway; while some areas have since been developed, others including Acadia Hall, the linear strip along Old Beaver Bank Road (Sackville Lions Club area) (fig. 2.3) and the wetlands in Millwood still hold potential as major destinations along the Greenway.



Fig. 2.2: The original plan for the Conservation Corridor surrounding the Little Sackville River was presented in the 1978 Sackville River / Little Sackville River Shoreland Plan. The plan recommended the acquisition of lands along the river to ensure that proper access, protection and maintenance was possible. (Image source: Reddy and Thordarson 1978)

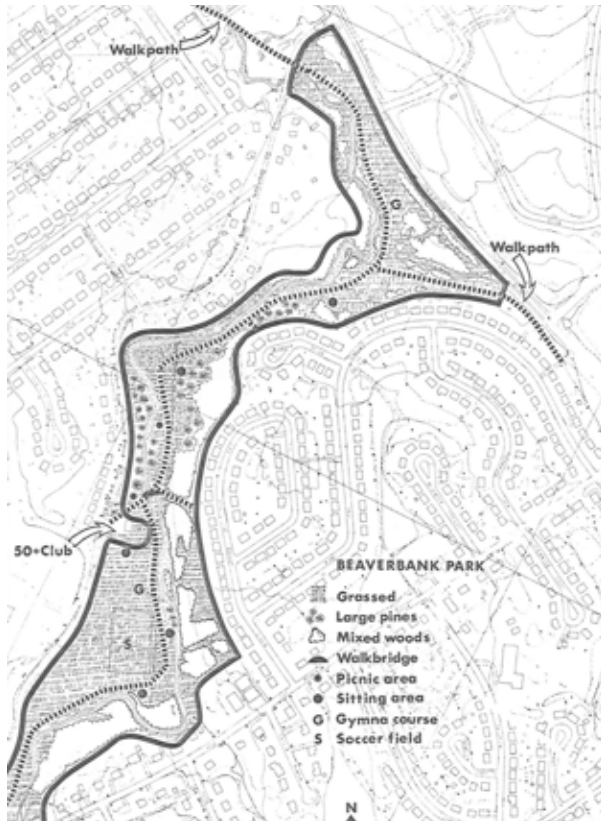


Fig 2.3: Site plan from the 1978 NSCAD study for a linear park along Old Beaver Bank Road. Despite ongoing development in the area, this area holds much potential as a centrally located, accessible park and recreation area.

REGIONAL TRAILS PROJECT

In 1997, HRM commissioned Gordon Ratcliffe Landscape Architects to complete a Regional Trails Concept Plan. The plan considered hundreds of kilometres of existing and potential trail routes throughout the HRM and a list of 23 projects were identified for further consideration. Based on factors such as land ownership, tourism and recreation potential and costs, eleven projects, including the Sackville River / Little Sackville River Trail (fig. 2.4), were selected for detailed study. The study was a result of previous efforts by the Halifax Regional Development Agency (HRDA) - made up of four Local Development Associations (LDA) - to commence coordination of stakeholders in the development of an integrated County-wide trail system and eco-tour products" (GRLA 1997, 5).

The study included a field study component to measure the presence and quality of existing footpaths or trails in the area, as well as to identify opportunities and constraints for the completion of a trail system along the river. The study notes the presence of well-used footpaths and makes use of the sewer easement, power corridor and existing river crossings in its trail alignment.

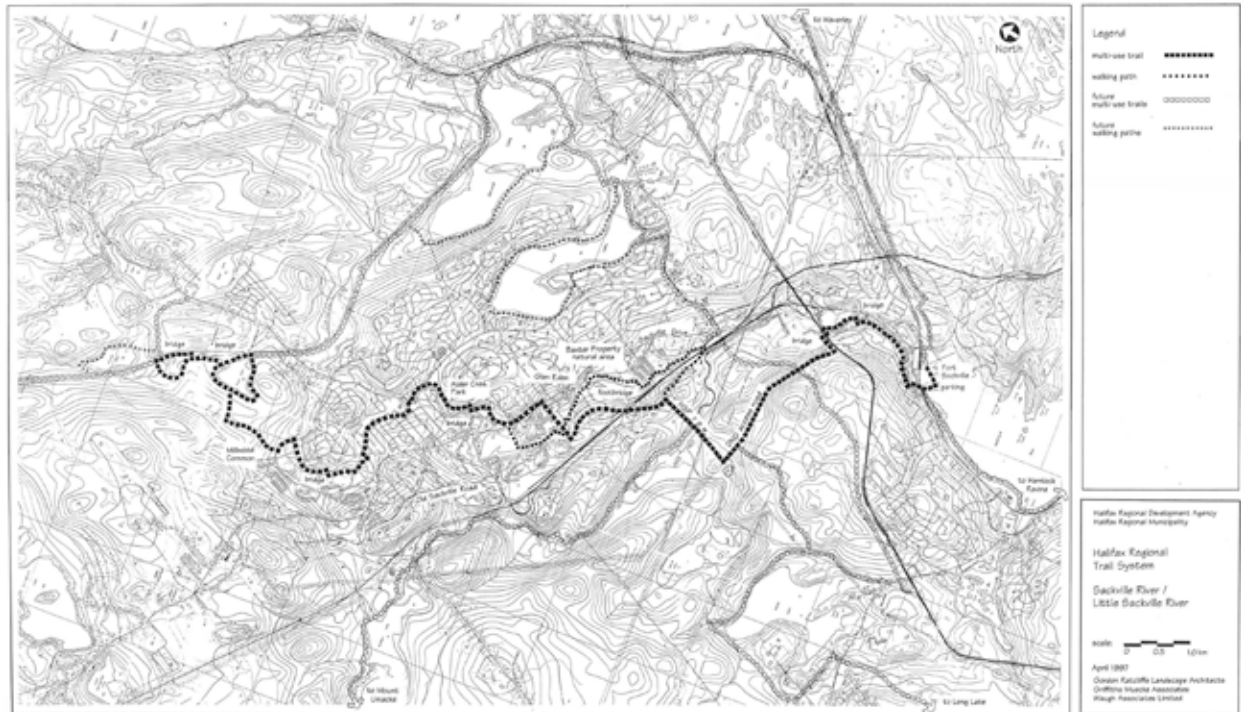


Fig. 2.4: The Sackville River / Little Sackville River Trail was one of 11 trails contained in the Regional Trails Project. (Image Source: GRLA 1997).

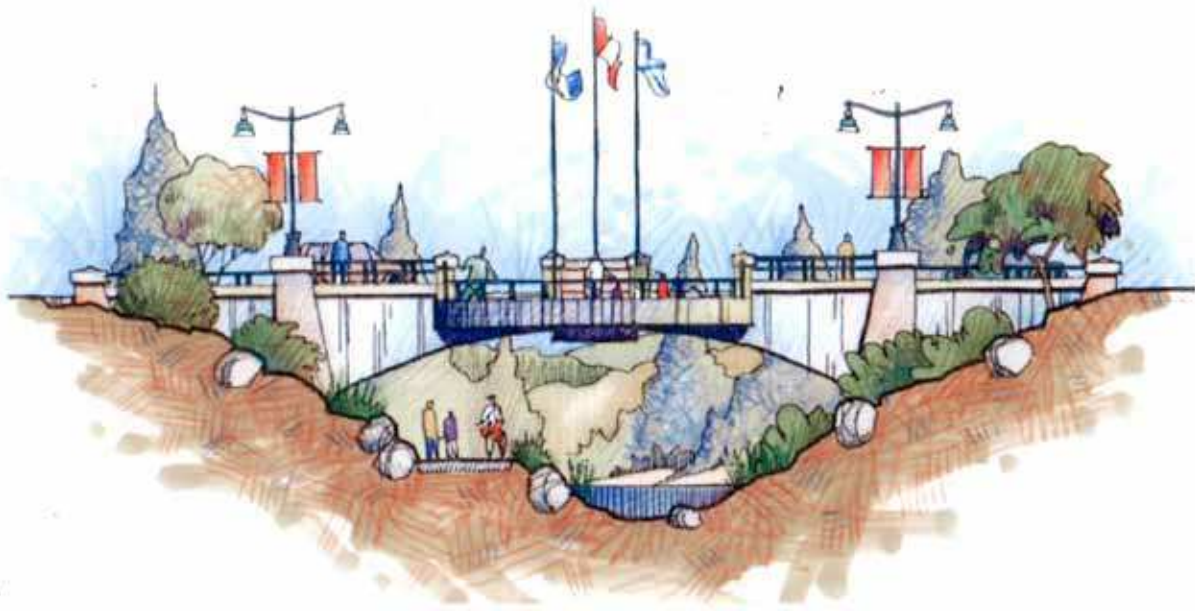


Fig. 2.5: One of the prominent features of the 2001 Sackville Drive Streetscape Study was the proposed Sackville Drive bridge. This new structure would allow both the river and trail pass freely beneath it. Since the study, a more modest bridge upgrade was proposed and is now being implemented (see image below). (Image source: Ekistics 2001)

As mentioned in the report, as the only river in NS that has legislated designated flood plain for its entire length, there is tremendous potential for storm-water management; restoration of urban river; and the creation of a recreational green belt through a high-density area. It can provide pedestrian links with schools, shopping and recreation facilities and access to significant natural areas at Feely and Little Lake. In addition to the construction of 9 new bridge crossings, the report recommends the upgrading of 3 existing crossing, as well as the reuse of the concrete dam at the south end of Feely Lake as a bridge crossing.

SACKVILLE DRIVE STREETSCAPE STUDY

The 2001 Sackville Drive Streetscape Design Study, completed by Ekistics Planning and Design, was incorporated into Sackville Secondary Planning Strategy in 2002. The objective of the study was to provide a visual identity study that clearly articulates a unique theme and identity for Sackville Drive; a design manual that addresses the recommendations of the visual identity study and identify specific streetscape improvements to create a “main street” atmosphere and a visually appealing streetscape, and; a detailed implementation plan to achieve the principles of the streetscape design manual (HRM 2002).

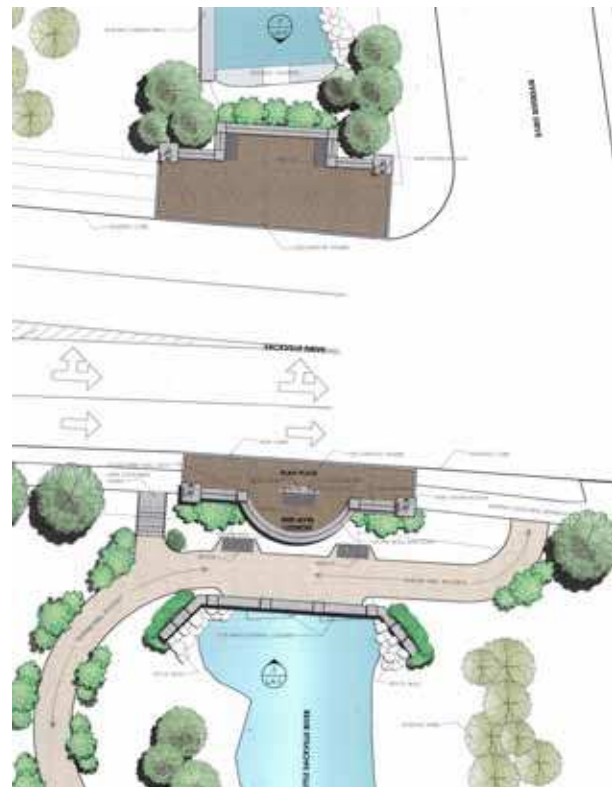


Fig 2.6: Plans to upgrade the culverts under Sackville Drive include a path way, seating area, and landscape features. This project is scheduled for completion in 2012. (Image Source: HRM)

While the report is focused on the revitalization of the street itself, it recognizes the lost opportunity that the Little Sackville River is in its current state, as well as the difficulty in establishing a trail connection across Sackville Drive. In an effort to reintegrate a river that is currently “not acknowledged from the street” (9), section 2.2.4 identifies the (Little) Sackville River as an “important asset with great potential for the development of trails”.

A trail system along the river is recommended as a solution for biking, as Sackville Drive, in its current state, is a hostile environment for cyclists. Numerous spurs can link the trail system to the many communities that line the river, but where linkages between them do not exist. Using the trail to create better links to existing green spaces may help to build an image and identity for Sackville Drive and restore the street as a “centre for retail activity and as a core of a vibrant community” (18). To deal with the issue of crossing Sackville Drive with a trail, a new bridge is proposed that allows for the passage of the trail under the street (fig. 2.5 and fig. 2.6).



Fig. 2.7: The Fenerty Square Develop as proposed in the 2001 Sackville Drive Streetscape Study aimed to reintegrate the Little Sackville River into the community by including it in an ambitious redevelopment plan for the lands surrounding Acadia Hall and the Public Library. This village centre has not materialized. (Image source: HRM 2002)



Fig. 2.8: This plan for the lands behind Acadia Hall and the Public Library has replaced the Village Centre plan (shown above). Construction on the garden portion of the park started in Spring 2011. (Image source: Acadia Hall website, <http://treasured-trinkets.com/>)

One of the “big ideas” expressed in the Study is the plan for the lands surrounding the Sackville Public Library and Acadia Hall (fig. 2.7 and fig. 2.8). This ambitious plan – an attempt to create a community centre – aims to reintegrate the Little Sackville River into the community and build on the drawing power of the Downsview Mall complex (fig. 2.9 and 2.10).

OTHER PLANS AND POLICIES

In 2002, the Sackville Secondary Planning Strategy states that “the Little Sackville River has been, and will continue to be, an important influence in shaping Sackville Drive. Specifically, the river’s social, physical, cultural and economic opportunities will undoubtedly have a profound influence on the future of Sackville Drive” (57). This is backed up by the following policies:

- Policy LSR-8: In recognition of the importance of a contiguous trail system along the river between residential uses and Sackville Drive, HRM shall support the Sackville River Association toward the achievement of the Sackville River and Little Sackville River Trail systems. (60);
- Policy LSR-9: Where possible, new public awareness and education opportunities for the Little Sackville River, such as a new bridge, observation platforms, and a river centre, shall be encouraged as generally described in the Action Plan (61).

In 2006, Halifax Regional Municipality adopted a new Regional Plan. Section 2.1.2 of this plan enables the creation of new regional parks throughout the municipality and includes mention of one surrounding Feely Lake in Sackville, near the headwaters of the Little Sackville River.

The Sackville Municipal Planning Strategy, as amended in May 2010, brings forward policy recommendations of previous plans by recognizing areas along the Sackville and Little Sackville Rivers as land within the community that presents a unique recreational and environmental conservation opportunity. It states that there is a growing desire by residents and

community groups (including the Sackville Rivers Association) to establish conservation corridors along the rivers. This MPS commits the Municipality to encourage and support local groups and initiatives in their efforts to establish conservation corridors and walkways along the rivers.

In April 2011, a report titled “Big Ideas for AT in HRM” was released by HRM’s Active Transportation Committee. The report outlines 5 priority active transportation projects that are aimed at connecting communities within the HRM and to provide “the foundation of a solid active transportation network”. “Big Idea 3” contained in the report is the “Bedford Sackville Spine” - a plan for the construction of a trail along the Little Sackville Greenway.



Fig. 2.9: The centre of Sackville is arguably the Downsview Mall. Prior to the development of the mall, the area was home to a horse racing track and drive-in theatre. Rapid development of the area occurred with little concern for the health of the Little Sackville, visible here in the top right corner.



Fig. 2.10: While past plans recognize the important place the Little Sackville River holds in the community, much focus remains on the revitalization of Sackville Drive in the vicinity of the Downsview Mall complex.

ANALYSIS



Fig 3.1: Despite its trail-like appearance, public access to a recently constructed sewer access road is prohibited. The construction of the access road provides an exceptional opportunity for the development of a Sackville Greenway.

To identify opportunities and constraints to constructing a greenway through a predominantly urbanized area, EDM Staff augmented the knowledge gained from expert interviews and meetings and document and historical research with a number of visits to the site. By foot and by car, the entire length of the Little Sackville River was covered, photographs collected and observations made. With this analysis completed and information gathered and synthesized, initial sketches were made to help develop an understanding of the complexity of this extensive study site. A number of general considerations guided the analysis and design process. For example, trail alignment within the Greenway can greatly affect the quality of the trail experience for the user. In general, the experience of the user should be influenced by the natural landscape and should “not be sacrificed to the expediency of simply getting from A to B” (GRLA 1997, 11), but as the Sackville Greenway is intended to function as both a recreation and active transportation trail system, there is a need to find a balance between quality trail design and efficiency of route. Within the Greenway, diversity of trail opportunities will be considered depended on anticipated use (recreation, commuter, etc.), and

associated functions (park, playground, shopping) and reflected in differences in trail width, surface material and site furnishings.

The Little Sackville River presents an opportunity that doesn’t always exist in older suburban communities. The River allows for the construction – after the fact – of a connective greenway through established, yet insular suburban neighbourhoods. While challenges exist along some sections of the River, generally, the LSR offers a generous urban/suburban conservation corridor (with the majority of land owned by the Municipality) that cuts through the heart of Sackville. In addition to Municipal land holdings along the river, Halifax Water – the municipal water, wastewater and stormwater utility – holds an easement over the trunk sewer line that runs almost the entire length of the River (see Figure 3.2). Within the easement road access is maintained for servicing purposes. Together with municipal land holdings, the use of the sewer access road and easement for the trail alignment where appropriate will allow for maximum connectivity for the greenway as it meanders through and between residential neighbourhoods and the Sackville Drive commercial strip.

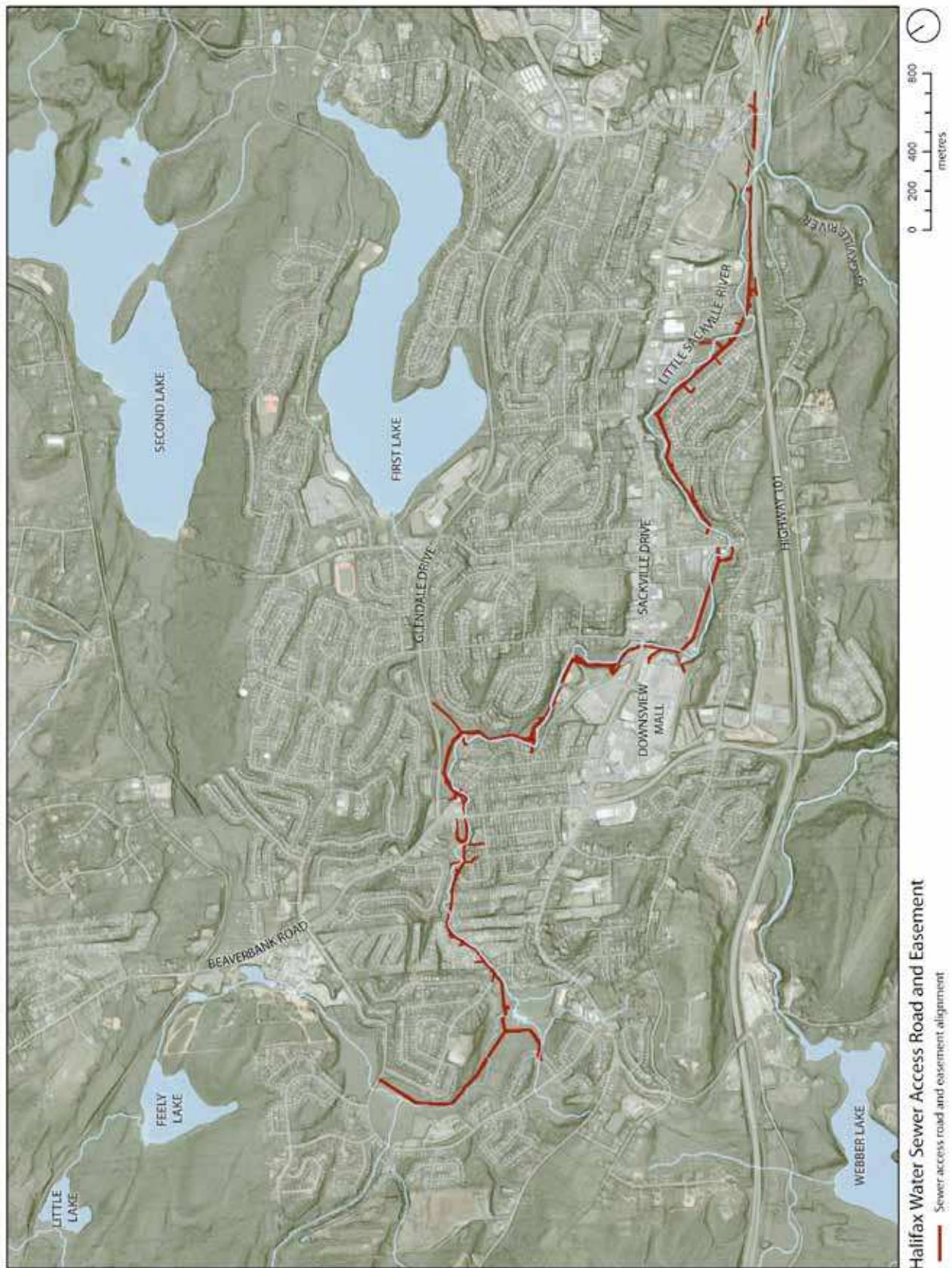


Fig. 3.2: The access road and easement follows the river closely from Fultz House to Millwood Drive. The access road and easement, along with municipal land holdings adjacent to the Little Sackville River, allows for the the construction of a greenway and trail system through a predominantly urbanized community. (Data Source: Halifax Water)

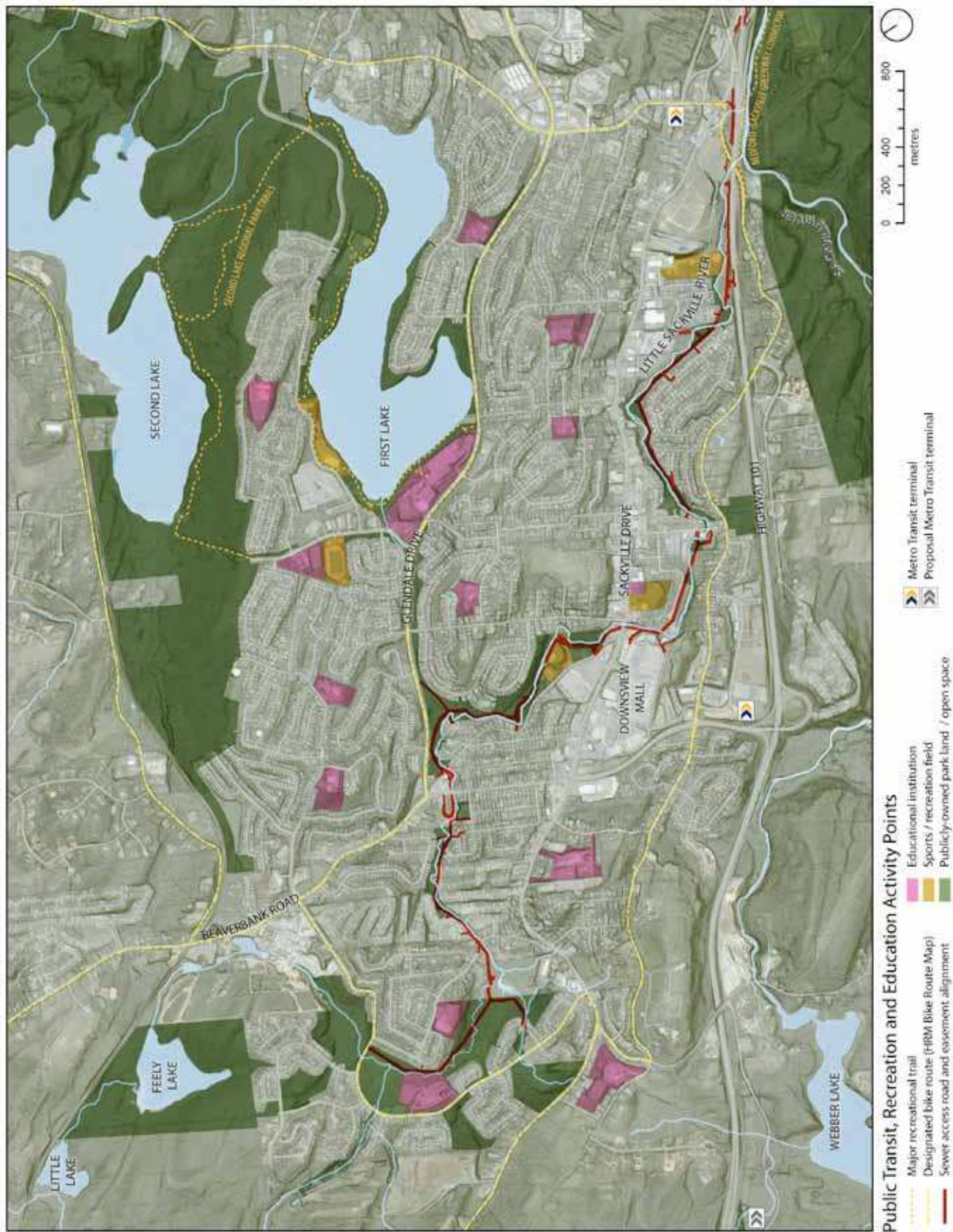


Fig 3.3: Opportunities are present in the close proximity of school, recreation areas and existing trails in relation to both the river and sewer access road. Much of the land along the river is owned by the Halifax Regional Municipality, although large gaps exist including Gate of Heaven Cemetery, a section between Sackville Cross Road and Downsview Mall, and Sackville Estates mobile home park. Designated bike routes are in close proximity to the river and can be incorporated into the Greenway trail alignment. (Data Source: HRM)

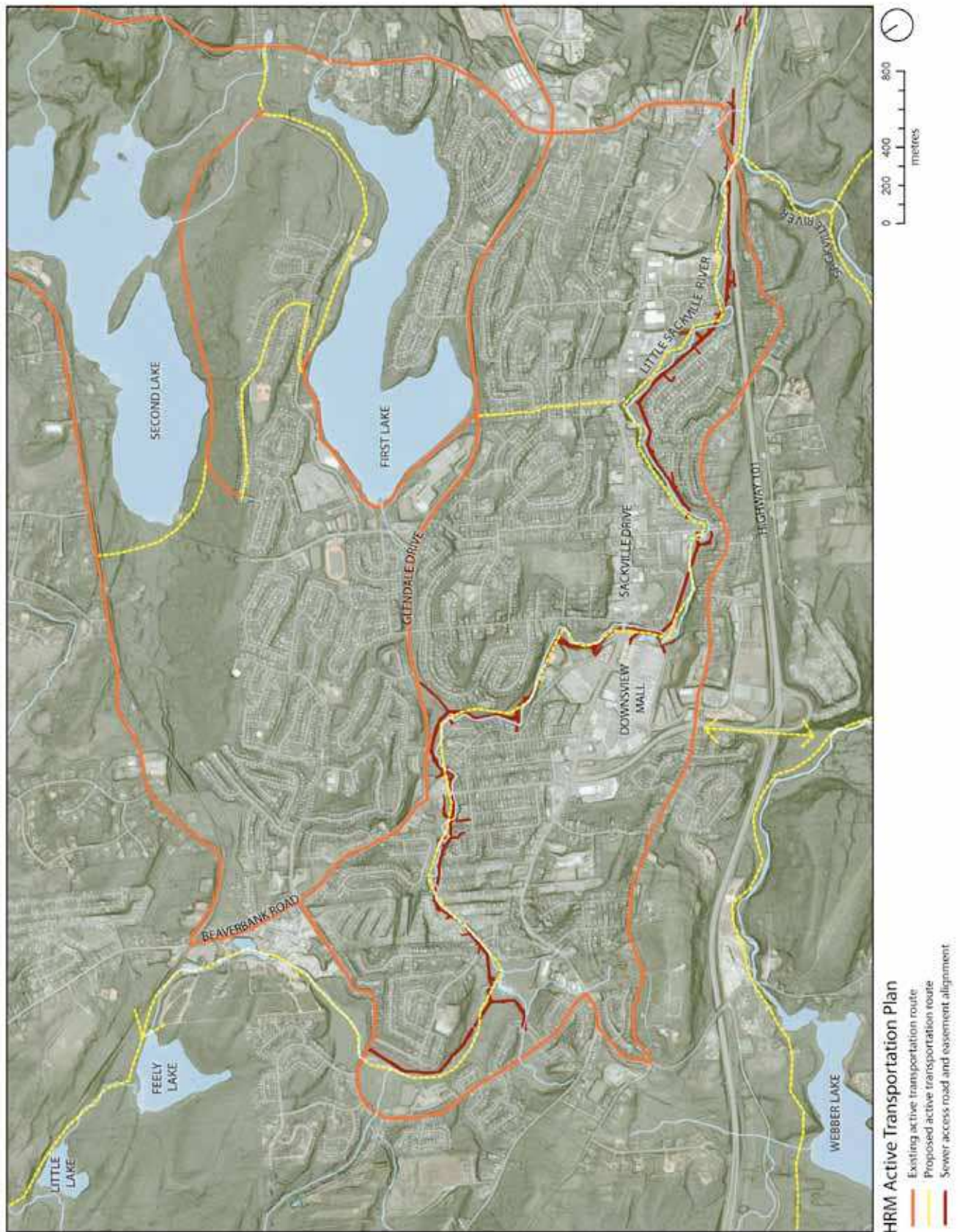


Fig. 3.4: The Active Transportation Plan was approved in principle on November 14th, 2006 by Halifax Regional Council. The plan follows many of the recommendations contained with the 1997 Regional Trails Project. The Greenway will help to realize a significant part of the AT plan, including an important cross-community connector, linking Glendale Drive, Sackville Drive and Old Sackville Drive. A connection point across Highway 101 to link to the future Sackville River phase of the Sackville Greenway must be considered. (Data Source: HRM)

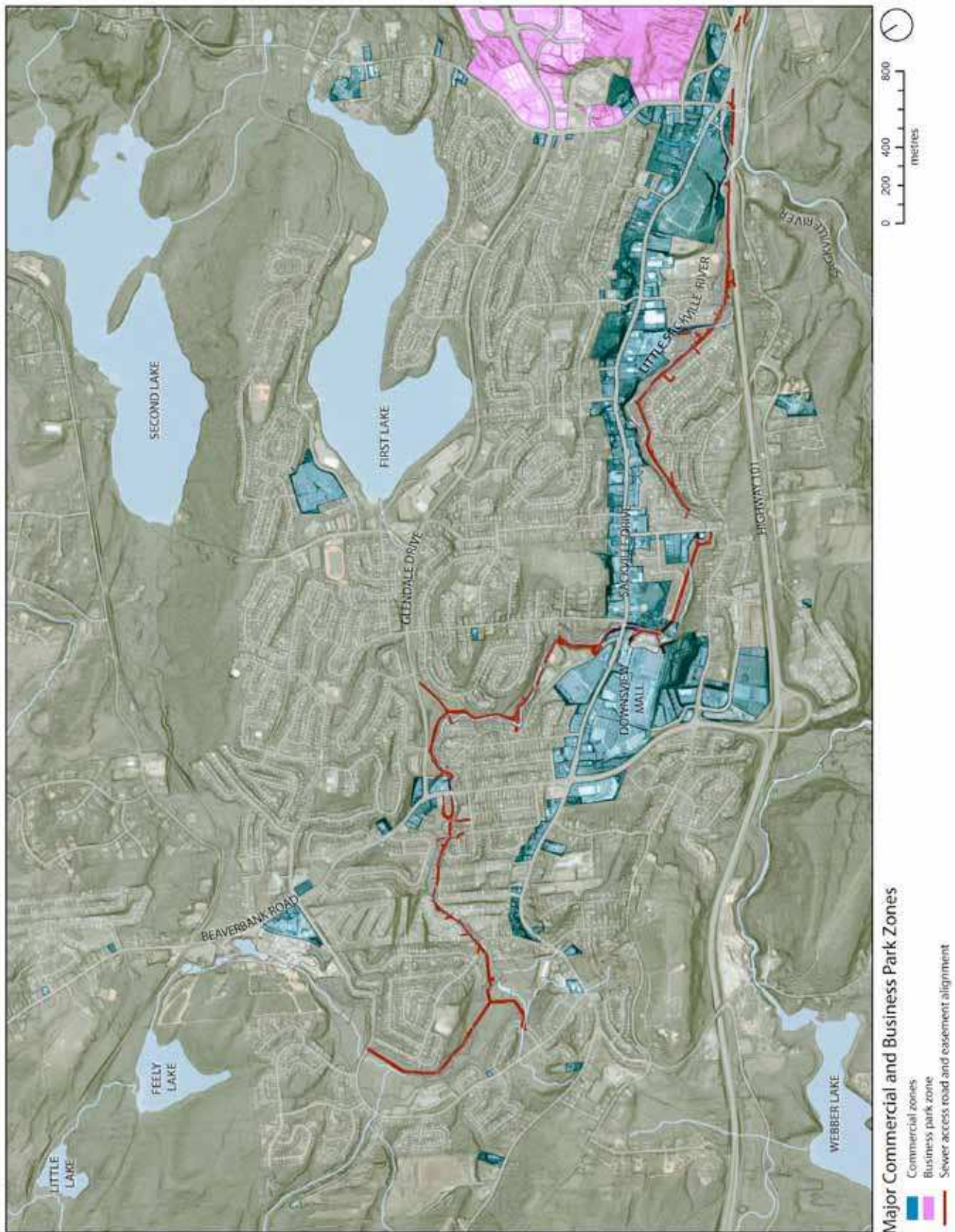


Fig. 3.5: Commercial areas in Sackville are heavily concentrated along Sackville Drive. Currently a car-dependent community, an active transportation path located along the river would offer an alternative route for residents wishing to walk or bike to commercial destinations and provide a safe route for those having to rely on non-motorized travel. To help increase mobility and accessibility for residents of Sackville needing to efficiently and safely reach commercial and community services, the most centrally located section of the proposed Greenway should have priority for asphalt surfacing and winter maintenance. (Data Source: HRM)

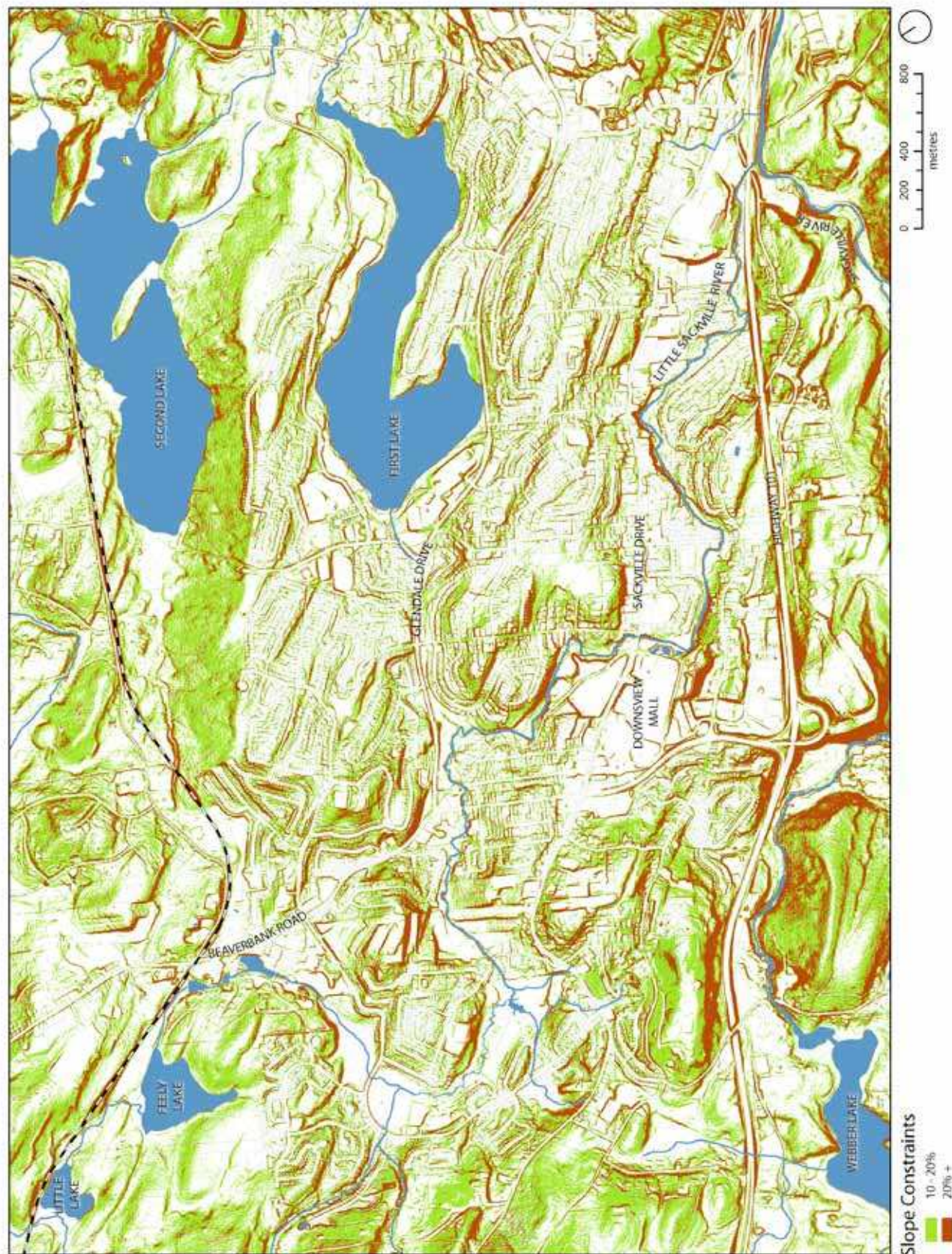
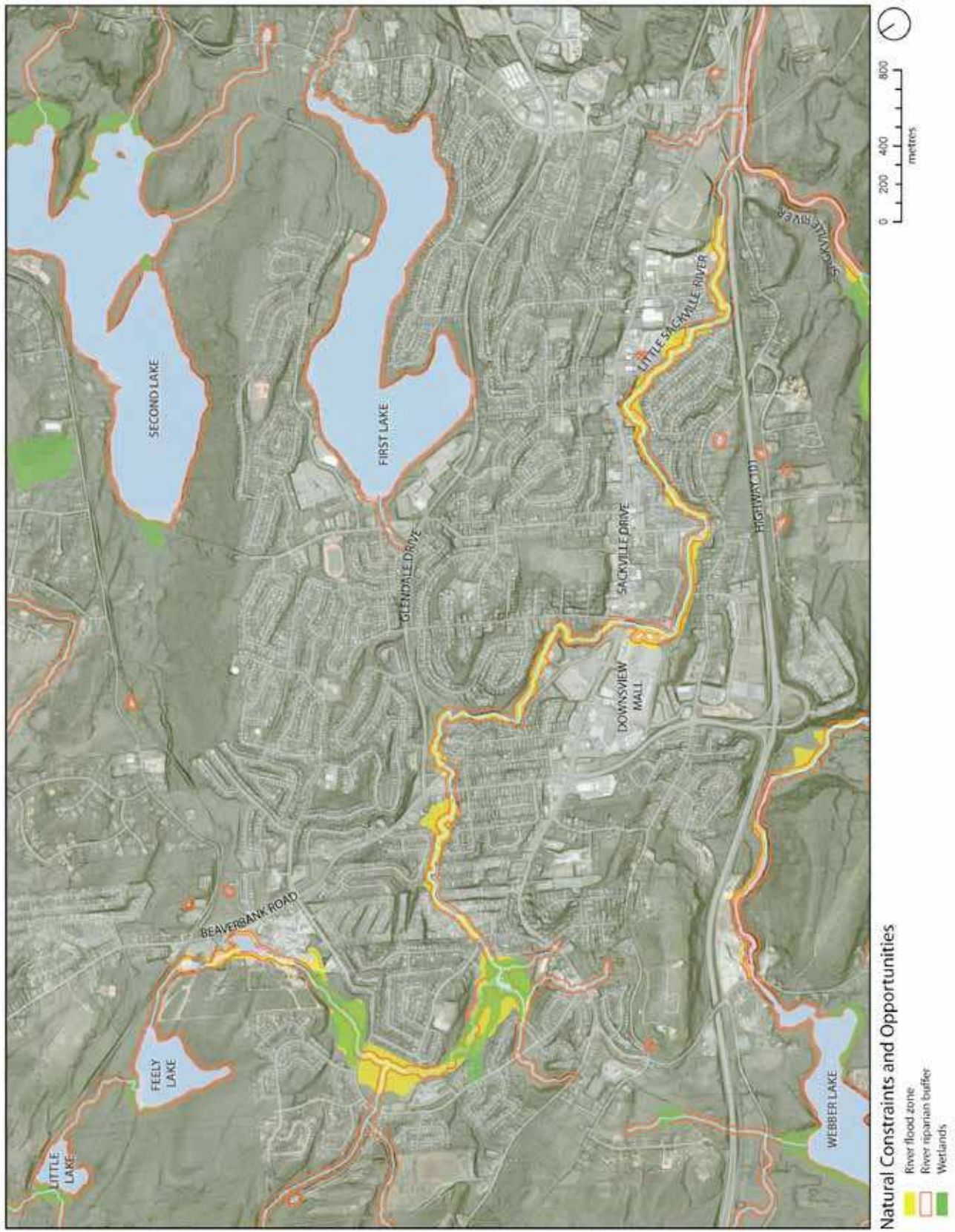


Fig. 3.6: Due in part to the high level of encroachment into the Little Sackville River floodplain, few areas along the river are hindered by steep slopes. In areas where they exist, alternate paths that avoid these problematic areas are possible. (Data Source: HRM)



3.7: Natural development constraints such as wetlands, riparian buffers and flood zones can provide opportunities in trail design. With development restricted in these areas, the Conservation Corridor and Greenway can encompass them to give the user a increased feeling of being within nature. Where possible, the affected areas should be included to increase both the effectiveness of the Conservation Corridor and extent of the Greenway. (Data Source: HRM)

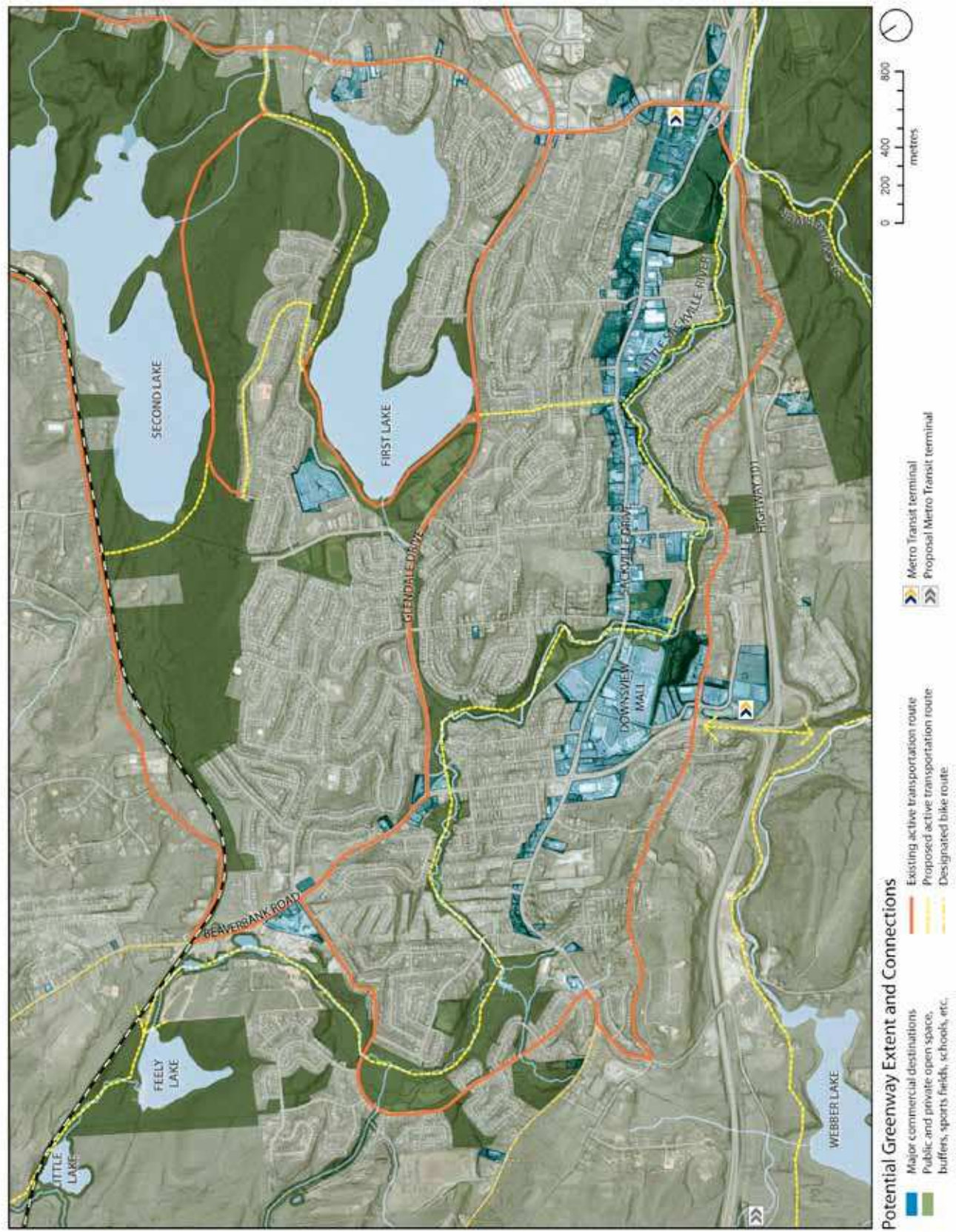


Fig. 3.8: Taking into consideration riparian buffers, floodplains, existing parkland and open space and recreation areas, the potential extent of the greenway is impressive given the high level of urbanization and encroachment surrounding the Little Sackville River. An under-used rail corridor, proposed Sackville River Trail and Second Lake Regional Park suggest more opportunities to extend the greenway in the future. (Data Source: HRM)

SACKVILLE GREENWAY

The Sackville Greenway is envisioned as an integrated open space, park, trail and active transportation system for the community of Sackville. Multi-modal trails – for cycling, skating, running, walking, etc – form a central spine section that is aligned with the Little Sackville River where possible and are contained within a larger trail system. These trails connect neighbourhoods and activity centres to one another with a continuous, safe, and direct route that encourages physical activity and provides active transportation opportunities for residents traveling to work, to school, to shop, and for leisure and entertainment.

The objective of establishing the Little Sackville River Greenway is to:

- Create awareness of the Little Sackville River and provide opportunities for education about local ecology and history;
- Protect the Little Sackville River from further encroachment while simultaneously making it more accessible to the public;
- Provide residents with safe, accessible active and passive recreation opportunities;
- Connect neighbourhood to neighbourhood, and to the larger Sackville community, creating a walkable community, and;
- Provide active transportation links to existing parks, open-spaces, trails and other community amenities and shopping destinations.

According to the 2002 Sackville Drive Secondary Planning Strategy, approximately 80% of land immediately adjacent to the LSR is “within the confines of a municipal service easement” (60). The proposed trail alignment within the Greenway is designed to maximize use of publicly-owned land and the existing sewer easement wherever possible, in an effort to maintain connectivity, as well as to avoid the often long process of gaining access through private land holdings. Where necessary, access can be achieved by land purchase, acquisition of right-of-ways, and negotiation of easements, but to avoid costs of land purchase, there is precedent for the municipality to grant a tax concession for the use of private land.” (GRLA 1997, 52).

SACKVILLE GREENWAY	
Extent	Fultz House Museum to Feely Lake/ Little Lake
Length of Greenway	±13 km (5 sections; main trail only)
Metro Transit Servicing Routes	Cobequid Terminal Station; Sackville Terminal Station; Routes #66, 80, 82, 84, 85, 87, 88, 89, 185
Other Adjacent Trails	Bedford Sackville Connector Greenway; First Lake Trail; Second Lake Trail
Designated Uses	Walking; hiking; biking; cross country; nordic walking; bird-watching; nature appreciation; snowshoes; inline skating /skateboarding
Total Cost (all sections; construction only)	\$6,924,000

Greenway planning requires a long term development strategy that allows individual sections or associated projects to be developed concurrently or one at a time. This allows projects to be prioritized based on available funding, community benefits and opportunities. The Greenway is divided into 5 sections (fig. 4.1):

- Section A – Riverside Walk
- Section B – Downsview Park Link
- Section C – Beaver Bank Connector
- Section D – Millwood Common Loop
- Section E – Feely Lake Loop

Just as the overall plan for the Sackville River Conservation Corridor envisions multiple trails and conservation areas, the true potential of the Sackville Greenway is the sum of its parts. Specific obstacles and opportunities are identified by greenway section, including possible bridge crossing, parking and major interpretive signage locations.

Capital costs associated with each phase are preliminary estimates only and are subject to final trail alignment and other detailed design findings. Cost estimates are for trail construction only and do not include additional expenses such as property acquisition, signage or trail furnishings such as waste receptacles or benches. Per metre trail costs are based on preferred trail type. Costs may be less in areas where an existing sewer access road can be utilized.

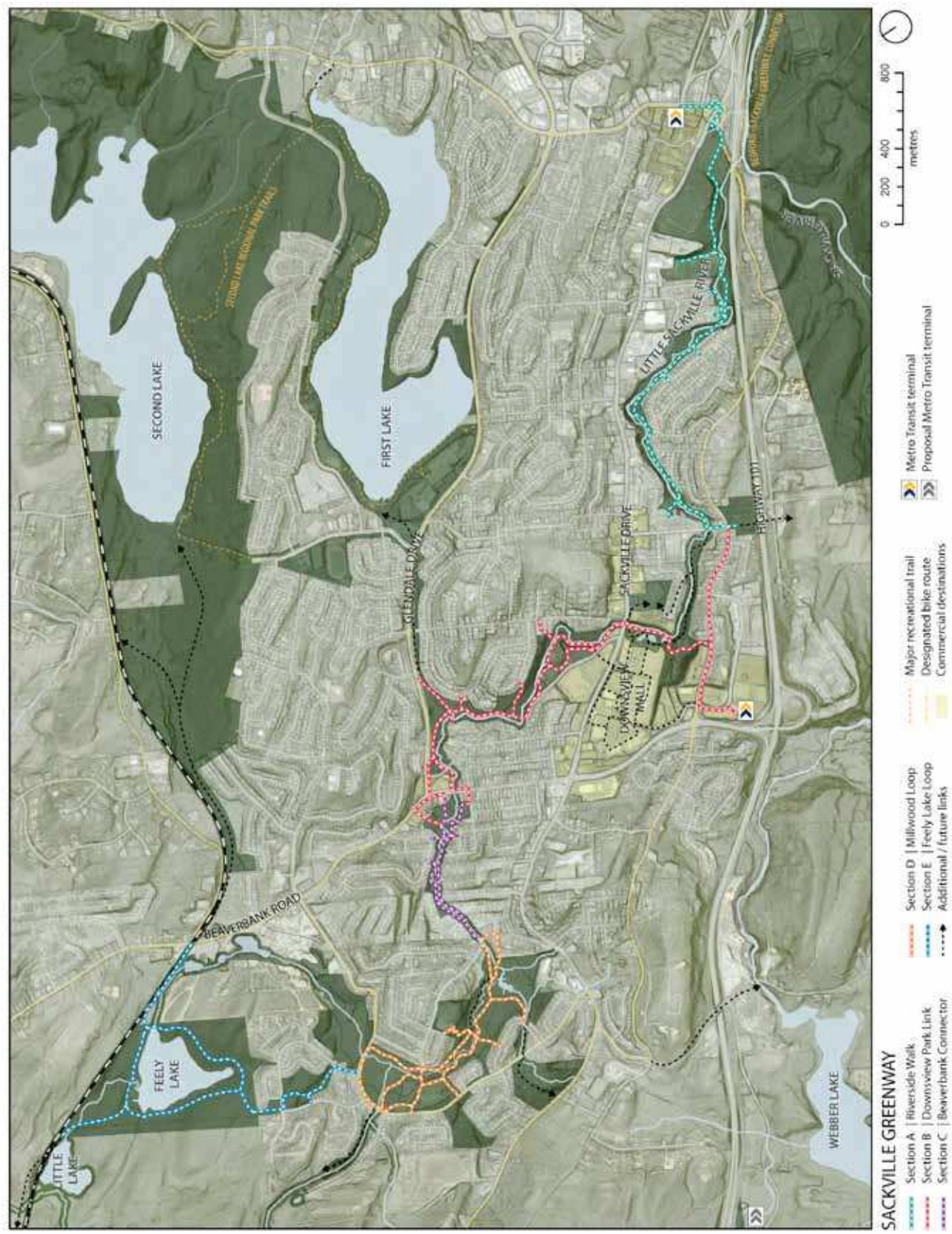


Fig. 4.1

SECTION A | RIVERSIDE WALK

Trail heads	Fultz House; Harry Little Park (proposed)
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Main trail length by type	Length (m)	Cost
Shared-use/crushed stone (refer to fig 5.4)	2950	\$501,500
Length of trail spurs	750	\$127,500
Number of bridges	5	\$1,250,000
Total Cost (subject to trail alignment)		\$1,879,000

Section A spans from Fultz House to Sackville Cross Road, remaining close to the Little Sackville River for its entire length. This section connects to the Bedford-Sackville Greenway Connector (fig. 4.2) on Old Sackville Road in the east and ends on a site known as the Harry Little property in the west. It is proposed that the Harry Little property be used for the trail-head where convenient parking and signage can be located. The property, owned by HRM, could include other park features such as a small loop walking track. Acquisition of land adjacent to the Harry Little property and Highway 101 may be worth further consideration, additional land would increase its overall recreational potential. Additional assets in this section include the Leaside Park and playground and the Les Mayo (Pazant) recreation area that contains tennis courts and baseball fields.

Between the Old Sackville Road-Highway 101 overpass and Metro Transit's Cobequid Terminal, The Sackville Greenway and the Bedford-Sackville Greenway Connector overlap. This section requires trail users to navigate through a busy intersection at Cobequid Road and Sackville Drive and should be upgraded in the future to a shared-sidewalk standard. While some directional signage is present, proper wayfinding signage should be added to improve connectivity and legibility is an area that can be confusing for trail users.

The preferred routing for the Greenway path is through the Gate of Heaven cemetery, as the Little Sackville River runs immediately adjacent to the Highway. The existing cemetery road could be upgraded with minimal changes in order to properly accommodate the Greenway and to address any possible conflicts with cemetery visitors. The Gate of Heaven Cemetery expressed interest in this idea during preliminary discussions

and are willing to work with SRA and HRM to see what is possible. While there are a number of issues to address, there are examples where cemeteries have been successfully integrated into greenways in other jurisdictions in Canada and abroad, including Queen's Park Cemetery in Calgary and Riverview Cemetery in Portland, Oregon. It is recommended that the Gate of Heaven Cemetery be consulted early in subsequent planning phases in order to identify potential conflicts between users, as well as opportunities to include educational or interpretive signage about the cemetery's history.

The proposed trail alignment is also affected by the neighbouring Rock Church property. Despite some difficult terrain, preliminary fieldwork suggests that the trail could pass along the back edge of the Rock Church property, a treed area that is currently not in use. As trail connectivity is potentially affected by the use of this property, representatives of Rock Church must be engaged early in the Section A design process.

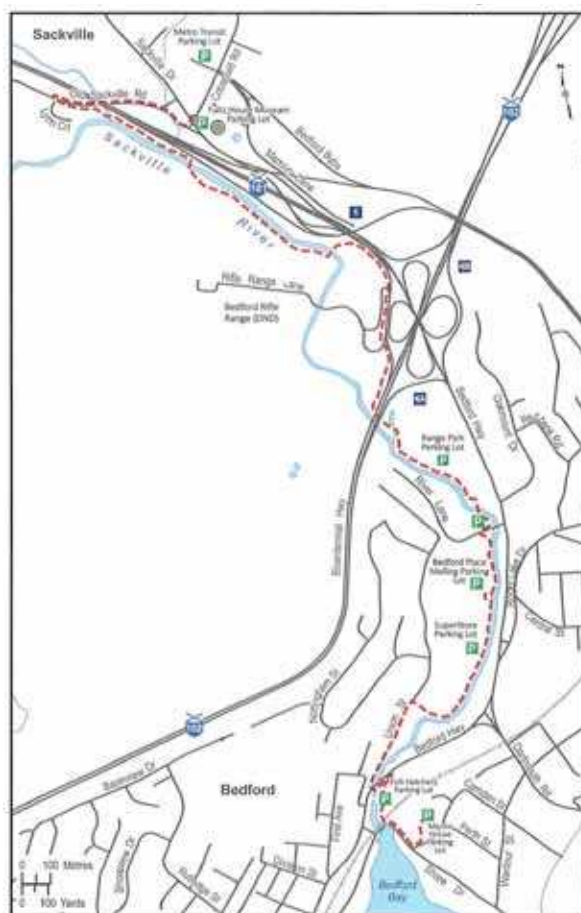


Fig 4.2: The Bedford Sackville Greenway is the only pedestrian link between Sackville and Bedford. The Fort Sackville Walkway extends the trail to the mouth of the Sackville River.

Les Mayo (Pazant) recreation area provides a tremendous opportunity for both trail and park users. Operated by the Riverview Community Centre, the recreation area lacks safe access as the only entrance requires users to pass through a parking area that services a hardware and building supply store. Running the Greenway along the edge of the southern most baseball field will create a safe pedestrian link for users from surrounding neighborhoods, while offering a safe parking area for greenway users. An existing fence adjacent to the river will have to be moved to accommodate the trail, but initial inspection suggests that this may actually increase the safety for baseball players by creating a barrier between the outfield and existing light poles. As it is anticipated that this new trail connection will increase use of the recreation area, consultation with the operators – as it is not managed by HRM – is important.

Immediately following Les Mayo recreation area, an area of “s-turns” in the Little Sackville River provides a opportune spot for a rest area immediately adjacent to a new bridge. A second bridge, parallel to existing utility lines, will tie together this new rest area, Les Mayo recreation area and the Riverside Estates neighbourhood and the neighbourhood off of Armoyan Drive.

The largest segment within Section A runs along the Riverside neighbourhood and is within HRM-owned land. As this section of the sewer access road has been completed, construction of the Greenway will allow for significant aesthetic improvements to the benefit of area residents. Fencing and vegetative screening can mitigate privacy concerns from residents living immediately adjacent to the trail (fig. 4.4). Existing interpretive signage in the area should be upgraded to reflect the identify of the Greenway.

A bridge at Leaside Park will help to formalize and make safer, an already popular river crossing spot. From here, the Greenway continues toward Sackville Cross Road, but is significantly constrained due to encroachment and where trespassing through

private property has been an ongoing issue. The Greenway may be able to pass on a small strip of HRM-owned land on the north side of the River, but an easement may also be required (fig. 4.3). Extra care and consideration must be given to this choke point during the subsequent public consultation and design phase.



Fig 4.3: HRM-owned land (shown in green) includes a small strip of land along the Little Sackville River and allows for a connection to Sackville Cross Road. Detailed fieldwork will be required to assess its capacity to contain the trail and to determine if acquisition of an easement or property is necessary.



Fig 4.4: The sewer access road constructed between the Little Sackville River and Hallmark Avenue provides a good base for the Sackville Greenway trail, but it has also resulted in privacy issues for adjacent residents. Mitigating measures, including fencing, planting and trail realignment, may be necessary to properly address this issue.

Fig. 4.5

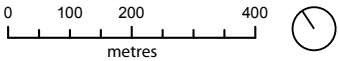


SECTION A | RIVERSIDE WALK

- Section A | Riverside Walk
- Section B | Downsview Park Link
- Future links

- Major recreational trail
- Designated bike route

0 Photo tour (refer to photo page)





- 1 This section of the Greenway will provide an extension of the existing Bedford Sackville Greenway Connector (pictured above).



- 2 The River has been stabilized at the end of Contessa Court, providing a suitable location for a bridge crossing, as well as rest area.



- 3 The existing sewer access road running parallel to Hallmark Drive acts as an informal trail, despite posted signage that restricts access. Formalizing the trail in this area will offer residents bylaw protection and fencing or vegetative screening will recreate a level of privacy that has been lost by some property owners.



- 4 The Leaside Park playground offers excellent trail access (existing sewer access road pictured above) and a bridge crossing will formalize a well-used river crossing point.



- 5 Existing issues of encroachment and trespassing at Sackville Crossing Road can be address by formalizing the trail. This will require the aquisition of an easement or possibly purchase of property.



- 6 The Harry Little property would make a good trail-head, providing space for parking, signage and a small pocket park for residents and trail users.

SECTION B | DOWNSVIEW PARK LINK

Trail heads	Harry Little Park (proposed); Beaverbank Road
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Main trail length by type	Length (m)	Cost
Shared-use/paved (fig. 5.5)	3000	\$690,000
Shared-use sidewalk (fig. 5.6)	1225	\$257,250
Length of trail spurs	1000	\$230,000
Number of bridges	4	\$1,000,000
Total Cost (subject to trail alignment)		\$2,177,250

Section B begins at the proposed Harry Little Park at Sackville Cross Road and Old Sackville Road and continues to Beaverbank and Glendale intersection. This section provides tremendous opportunity as both an all-season active transportation link and linear park located in the centre of Sackville. It also presents a number of challenges to trail connectivity such as the crossing of Sackville Drive and the alignment of the trail along Old Sackville Road.

Severely limited due to the steepness of the river bank and the absence of HRM-owned property, the Sackville Greenway is aligned with Old Sackville Road between Harry Little Park and the back of the Downsview Mall complex. Construction of the trail along Old Sackville Road requires the upgrading of the existing sidewalk to allow for a proper shared-use sidewalk (refer to fig. 5.6). While the main trail descends the bank toward the existing storm water ponds and Downsview Mall, a trail spur extended along Old Sackville Road provides a proper link to the Metro Transit Terminal.

Future upgrading of the storm water ponds should be used as an opportunity to construct a small park that is integrated with the trail. This would also provide an ideal location for trail signage as high visibility and natural surveillance would reduce opportunities for vandalism (see section on Crime Prevention through Environmental Design). Redevelopment of the former Walmart location should also take into account the Sackville Greenway and maximize the relationship between the Greenway, storm water ponds, and the new uses of the site.

In recent years, the Downsview Mall has seen upgrades to pedestrian-oriented infrastructure in an effort to improve safety and walkability. It is

recommended that future improvements consider the Sackville Greenway as both a new way for shoppers to access the mall, as well as a way for employees working in the area to travel to work. Upgrading of the stormwater ponds adjacent to the former Walmart location could also provide a enjoyable spot for employees to relax during lunch breaks in warmer months.

In addition to the possible upgrading of the stormwater ponds, the existing culvert area running under Sackville Drive will be upgraded, providing a proper path along a well-used shortcut from Sackville Drive to Downsview Mall, as well as a seating area (refer to fig. 2.6). The Sackville Greenway alignment should take advantage of these upgrades by aligning with the new walkway.

Currently, the crosswalk spanning Sackville Drive at Riverside Drive is located only on the southeast side of the intersection. As a result, trail users will have to cross at two points to continue on the trail. To improve connectivity and reduce pedestrian-car conflicts along the King of Donair driveway, it is recommended that an additional marked and signaled crossing be added to the northwest side of the intersection (fig. 4.7). If the existing culverts are replaced in the future with a bridge similar to what was proposed in the Streetscape Plan (see fig. 2.5), the trail should pass under the new bridge, immediately adjacent to the river, to further improve connectivity.

Plans to build a park and garden behind the Acadia Hall suggests that it will be an even larger role in the community in the future. Located on Sackville Drive and adjacent to both the public library and municipal offices, this cluster of public and community uses acts as a destination in itself. For this reason, as well as the difficulty in accessing the site from the river side, a direct connection with the Sackville Greenway is not practical. Instead, it is recommended that the sidewalk along Sackville Drive be upgraded to create a clear link between the Sackville Greenway and Acadia Hall and public library.

North of Sackville Drive, the Sackville Greenway meanders between the river and Old Beaverbank Road, around a recreational area, seniors housing facility and Lion's Club. Sitting between two of the largest residential clusters in Sackville, this section can play a vital role in making Sackville a more walkable and livable community. With a number of public access points and potential parking areas the

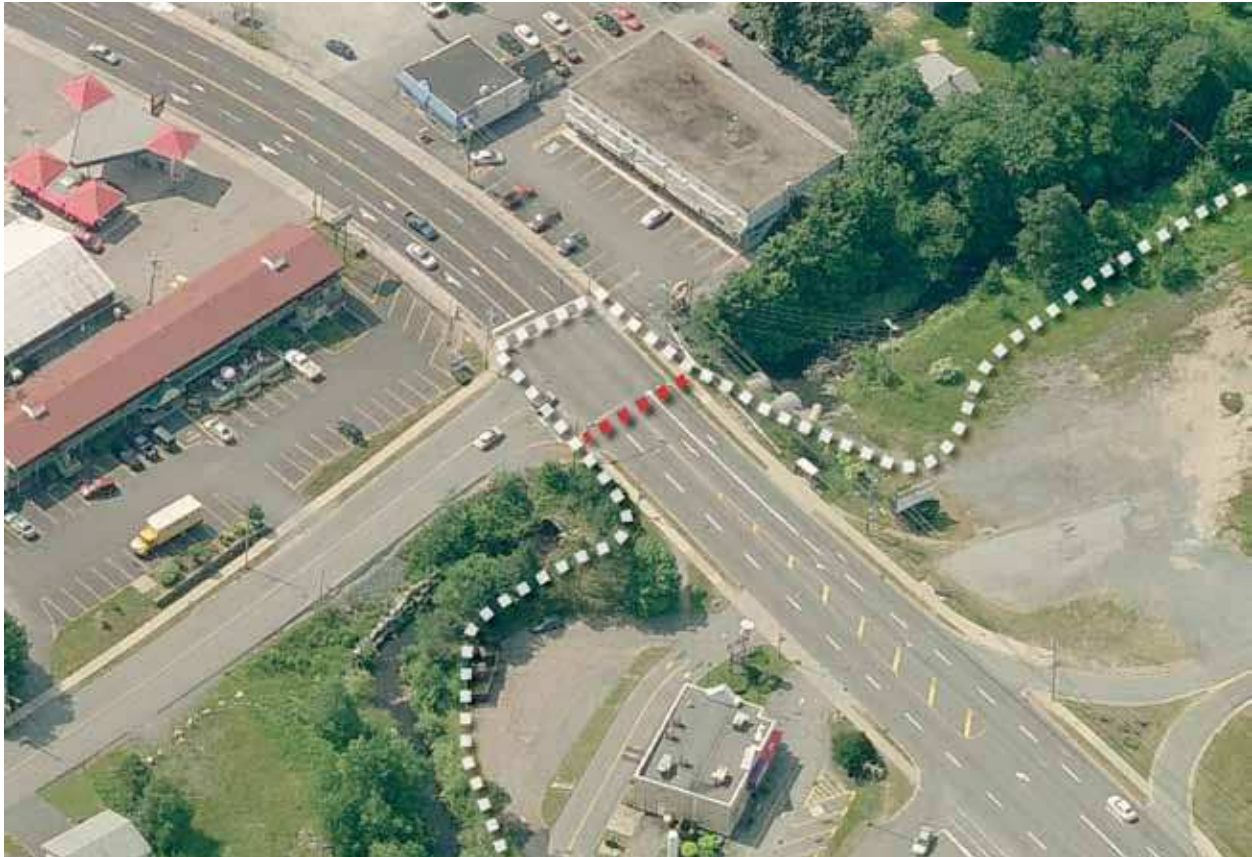


Fig. 4.7: Using the existing Sackville Drive crosswalk, trail users would be required to make two crossings to continue on the trail (path shown in white). The addition of a crosswalk on the opposite side would significantly improve trail connectivity and reduce opportunities for car-pedestrian conflicts. (Image source: Bing Maps).

Greenway will take users from their homes to the heart of Sackville for recreation, work and shopping needs.

As Section B has the greatest potential as an active transportation and commuter corridor, as well as recreational asset, it is recommended that the entire section be paved and cleared in winter months. Not only will this increase opportunities for residents wanting to travel within the community without a car, it will significantly increase mobility for those without access to a car and provide safe and accessible options for those with mobility challenges wanting to access essential services and recreation and commercial destinations.

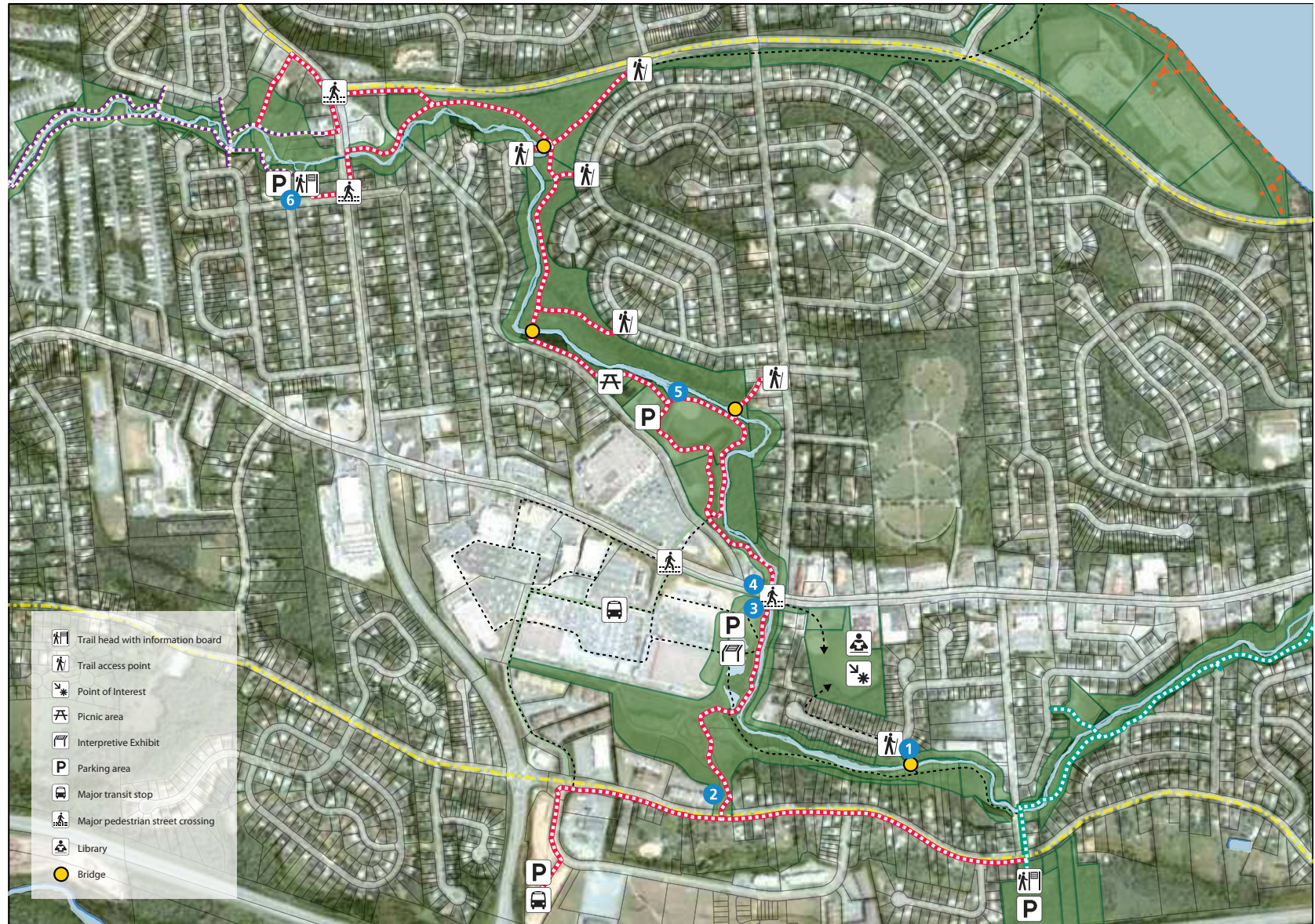
Where the Sackville Greenway reaches Glendale Avenue, a connection can link to the First Lake trail network, as well as the Second Lake Regional Park via Metropolitan Avenue. This can also function as a safe and direct route for students in the area.

At the Glendale and Beaverbank Road intersection, the Sackville Greenway faces another challenge,

as the current configuration may be dangerous for both pedestrians and cyclists due to the presence of right yield lanes. If this option is preferred, the existing intersection may have to be upgraded to improve safety for trail users. Another option is to align the trail along the river, and cross at the intersection of Beaverbank Road and Gloria Avenue. This would require the installation of a marked cross walk, but it would also benefit residents in the area as well as trail users.

A trail head is proposed at the Sackville Masonic Lodge on Gloria Avenue. This site provides a parking area and playground area and is an appropriate location for trail signage. Future development on corner of Glendale and Beaverbank Road, adjacent to Tim Horton's, may provide alternative trail alignment options in the future. It is recommended that SRA enter into preliminary discussion with the current property owners to see if integration of the Sackville Greenway into any future development of the site is possible.

Fig. 4.8



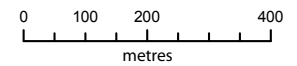
SECTION B | DOWNSVIEW PARK LINK

- Section A | Riverside Walk
- Section B | Downsview Park Link
- Section C | Beaverbank Connector

---> Additional / future links

- Major recreational trail
- Designated bike route

0 Photo tour (refer to photo page)





- 1 The Fallingbrook pocket park on Bruce Drive provides easy access to the Little Sackville River for the public. A bridge crossing in this location would allow for a future trail link to the Acadia Hall park and the Sackville Public Library.



- 2 The Greenway can provide two options for users between Sackville Crossing Road and the Downsview Mall - a shared-use sidewalk along Old Sackville Road and a foot path along the river. The image above shows the view from the shared sidewalk as the path descends down to meet the footpath and river in the busy area of Sackville Drive.



- 3 The culverts under Sackville Drive will soon be upgraded and a formal seating area and walkway will be added to provide safer access to Sackville Drive.



- 4 This intersection is one of the most challenging crossings situated along the Greenway. It is recommended that a crosswalk be added to the northwest side of the intersection (pictured above) to maximize connectivity.



- 5 The segment north of Sackville Drive to Glendate drive is largely public land. Paving this section of trail will increase wheelchair accessibility, and usability for inline skating, commuter cycling and skateboarding, improving its capacity to function as a major active transportation route.



- 6 Sackville Masonic Lodge located on Gloria Avenue would provide a suitable trail-head and signage location. It offers parking, picnic area, and a playground and good visibility.

Fig. 4.9

SECTION C | BEAVERBANK CONNECTOR

Trail heads	Beaverbank Road; Beaverbank Cross Road
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Main trail length by type	Length (m)	Cost
Shared-use/paved (fig. 5.5)	950	\$218,500
Length of trail spurs	200	\$46,000
Number of bridges	2	\$500,000
Total Cost (subject to trail alignment)		\$764,500

Section C is almost wholly contained within the Sackville Estates mobile home park, a dense residential community that stretches from Sackville Drive to Millwood Drive (including Century Park). The configuration of the road network internal to Sackville Estates has resulted in limited connections to surrounding neighbourhoods and main streets. A trail along the Little Sackville River will provide a much needed cross connection for residents - from Beaverbank Road to Old Beaverbank Road - and formalize a number of well-used river crossing points.

The first bridge crossing is located near the end of Judy Avenue. This location is important due to its proximity to Tim Horton's and popular informal pathways that currently exist. This bridge location will also provide pedestrian access for those traveling between Sunnyvale Crescent and Gloria Avenue which is only accessible currently via Beaverbank Road.

The second bridge is located near the property line of Sackville Estates mobile home park. This bridge is only necessary if the trail is located on the north side of the river. The preferred route is on the south side, along Alan Street, but space constraints may make this alignment difficult to complete (fig. 4.10 and fig. 4.11). The most appropriate route cannot be known without discussions with the property owner and proper field study. Halifax Water's access road easement runs along the north side of the river.

Assuming the preferred route along Alan Street is possible, and existing road bridge can be upgraded to allow for the addition of the trail. Low traffic volume and speed make this a safe crossing point. An existing trail from the bridge to Old Beaverbank Road can be upgraded to the trail standards of the Sackville Greenway.

The Little Sackville River has been severely encroached upon where it passes through Sackville Estates. Not only will the addition of the Sackville Greenway provide a safe active transportation route through the area, it may also allow for possible rehabilitation of the river. General cleanup, as well as strategies to mitigate damage in the future should be explored during the detailed design phase for Section C. As much of this section is contained within private property, it is important to involve the property owner in the very early stages of design.

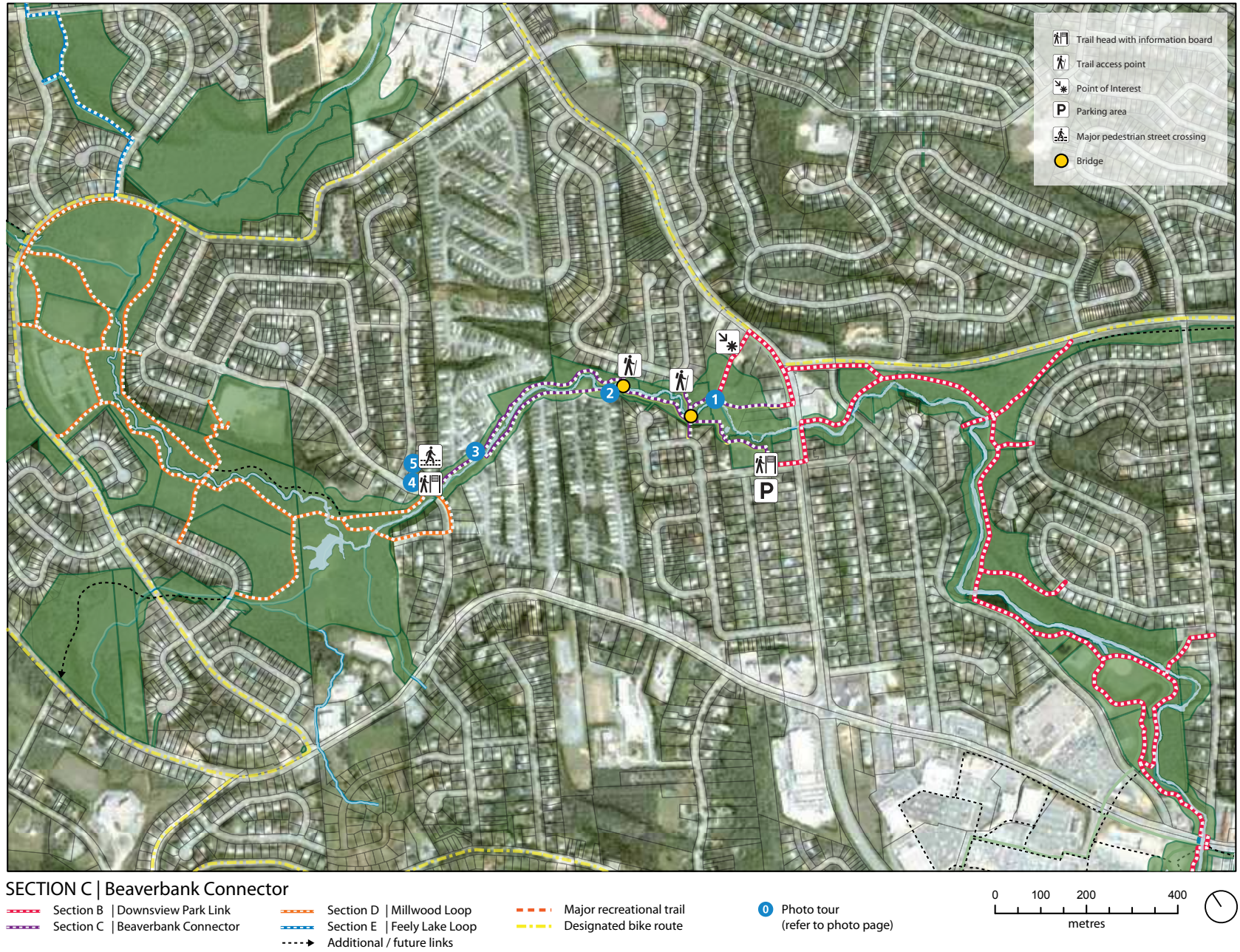


Fig. 4.10: Section C, the shortest section of the Sackville Greenway, is constrained by existing development. A shared-used sidewalk along Alan Street (running parallel to the Little Sackville River) will allow the trail to continue through the Sackville Estates mobile home park, providing trail continuity, as well as an improved route for pedestrians and children who walk to nearby schools. (Image source: Bing Maps)



Fig. 4.11: Alan Street runs parallel to the Little Sackville River. The Sackville Greenway would provide an upgraded road shoulder and a safe pedestrian route for trail users and local residents.

Fig. 4.12





- 1 The wetland area near the trail-head at Sackville Masonic Lodge is currently used as an informal route between surrounding neighbourhoods and a small commercial area at the Beaverbank and Glendale intersection. It is recommended that the Greenway trail alignment formalize these well-used routes.



- 2 A shared-use trail along Alan Street can improve pedestrian safety for residents of Sackville Estates mobile home park. An existing road bridge can be upgraded to provide a proper river crossing.



- 3 An existing trail connecting Sackville Estates to Beaverbank Crossing Road can be upgraded to accommodate a proper Greenway trail.



- 4 Beaverbank Cross Road provides access to a number of area schools. The Greenway will provide an additional safe route for students that walk or bike to school.



- 5 The trail may be able to be routed under this bridge at Beaverbank Cross Road, ensuring a safer experience for trail users.

Fig. 4.13

SECTION D | MILLWOOD COMMON LOOP

Trail heads	Beaverbank Cross Road; Millwood Drive (at Rossing Drive)
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Main trail length by type	Length (m)	Cost
Shared-use/paved (fig. 5.5)	2200	\$506,000
Shared-use sidewalk (fig. 5.6)	300	\$63,000
Boardwalk (fig. 5.7)	300	\$90,000
Length of trail spurs	350	\$80,500
Number of bridges	2	\$500,000
Total Cost (subject to trail alignment)		\$1,239,500

Section D sees the Sackville Greenway traverses what is known as the Millwood Common. The Millwood Common is a large undeveloped area, much of it wetland, that is surrounded by the Millwood community. Millwood High School and Millwood Elementary are located on the edge of the Common and are accessible through trail connections and bridges across the Little Sackville River.

As much of the area is wetland, the trail alignment stays close to the alignment of the sewer access road. This will provide a solid base for which to build the trail. This section may connect to Section C via Krista Drive or using Halifax Water's access road. The decision on trail alignment may be best determined by the safest crossing point as the Little Sackville flows under Old Beaverbank Road at a point where visibility from both direction is reduced. In 2003, culverts under Beaverbank Cross Road were replaced and HRM Staff recommended, at the request of SRA, that the upgrade allow for a future trail crossing under the road. The possibility for routing the trail under Beaverbank should be first explored as it will create the safest crossing for trail users.

Once in the Millwood Common area, the trail links two existing spurs that connect Highrigger Crescent to Millwood Elementary via a bridge over the Little Sackville River. A smaller footpath and/or boardwalk on the north side of the river will offer users a unique experience and will create a small looping trail within the network. It is recommended that a composite deck (fig. 4.15) be used for

the boardwalk rather than wood, as it will greatly increase its lifespan and reduce maintenance costs.

The bridge connecting Millwood High School to Sawyer Crescent also presents an opportunity to creating smaller looping trails within the Sackville Greenway. These trails can be ideal spots for early morning or evening strolls and act as exercise tracks for those not wanting or unable to complete a longer section of trail.

The Millwood High School property and adjacent HRM property offers sports fields and a playground. The integration of these existing recreational assets can increase usership of the trail and help to make this the recreational destination that the Millwood Community is currently lacking. With new real estate development occurring in and around the Millwood area, the role of the Millwood Common (fig. 4.16) as a green, recreational heart of the Millwood area will only become more important in the future as demand increases.

The Millwood Common area presents a tremendous opportunity for the SRA to bring awareness of the River back to residents. This trail section is ideally suited for interpretive signage and the proximity to school means that the Sackville Greenway could act as an interactive learning experience for students. To protect against vandalism, signage should be located in areas with high levels of natural surveillance. Trail entrances on Millwood Drive near Jackladder, Larrigan or Rossing Drive may provide the best location for both visibility for users and for reducing opportunities for vandalism of interpretive and information signage.



Fig. 4.14: The Millwood Common provides tremendous opportunity for SRA to bring awareness of the Little Sackville River to residents of Sackville. Two routing options at Beaverbank Cross Road are shown above. (Image source: HRM)

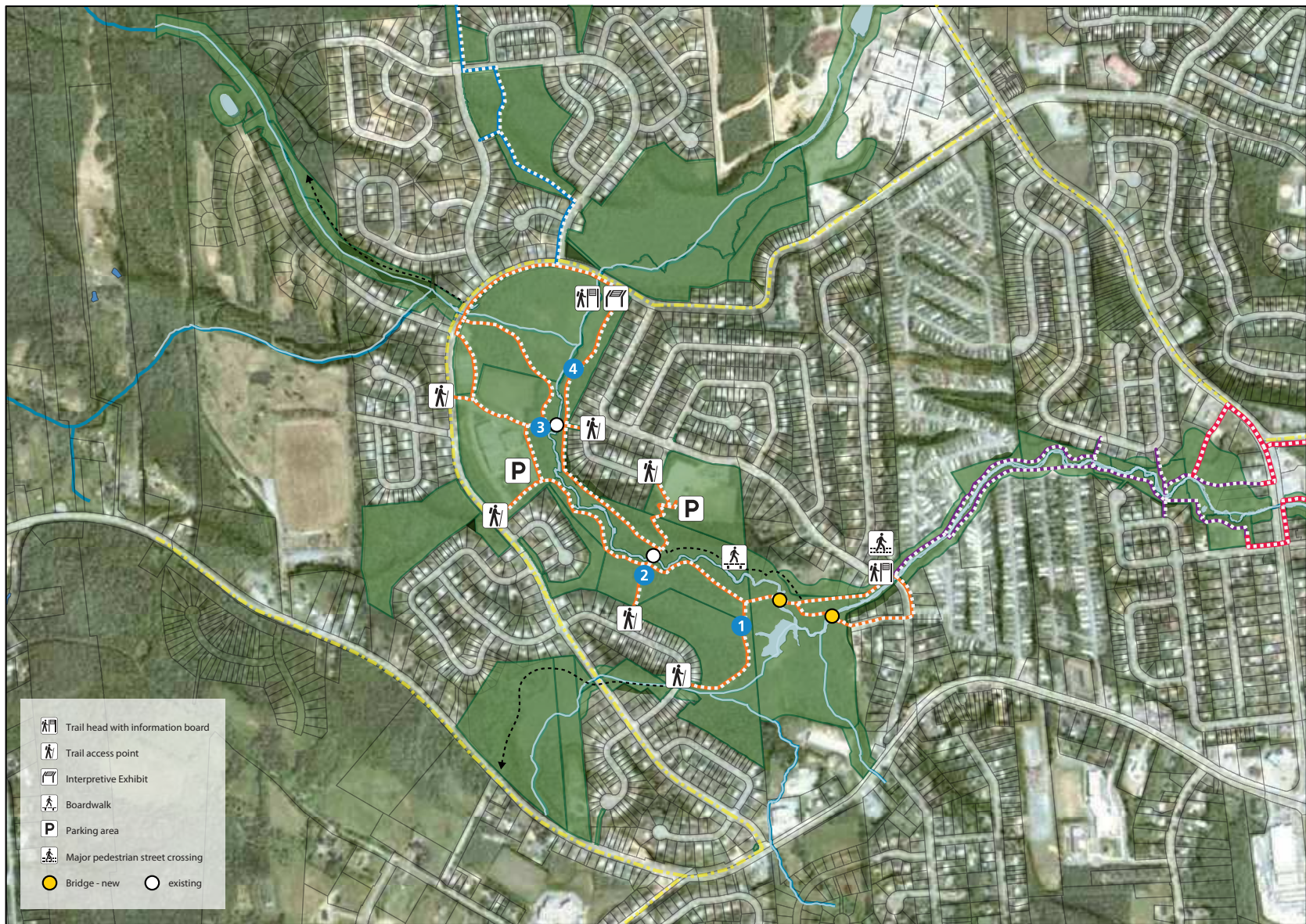


Fig. 4.15: A secondary boardwalk trail is ideally suited for this segment. A boardwalk trail along the north side of the river will create another looping trail between the trail-head and the bridge crossing located near Millwood Elementary School. The boardwalk above, located in West Hanover, Pennsylvania, uses a fiber reinforced polymer (FRP) composite deck to increase lifespan and overall maintenance costs. (Image source: E.T.Techtonics)



Fig. 4.16: The Millwood Common provides tremendous opportunity for SRA to bring awareness of the Little Sackville River to residents of Sackville. (Image source: Bing Maps)

Fig. 4.17



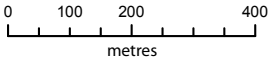
SECTION D | Millwood Loop

- Section B | Downsview Park Link
- Section C | Beaverbank Connector

- Section D | Millwood Loop
- Section E | Feely Lake Loop
- Additional / future links

- Major recreational trail
- Designated bike route

0 Photo tour (refer to photo page)





- 1 The access road constructed off of Highrigger Crescent provides a good base for a Greenway trail. This spur provides access to the Millwood Common area and adjacent schools. A future link west of Millwood Drive would extend this link all the way to Sackville Drive.



- 2 The existing trail and bridge connecting Highrigger Crescent to Millwood Elementary school is a well-used link for residents. The Greenway will build on the existing trails a create formal connection between the Millwood High School and Elementary school trails.



- 3 The existing bridge near Millwood High School will tie into the Greenway, creating a looping trail system between the two river crossings.



- 4 The Millwood Common area is comprised of wetland areas. This is an ideal location for Interpretive and educational signage that will be of interest to local residents, Greenway users, and as educational opportunities for school class outings.

SECTION E | FEELY LAKE LOOP

Trail heads	Millwood Drive (at Rossing Drive); Beaverbank Road
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Main trail length by type	Length (m)	Cost
Shared-use/crushed stone (fig. 5.2)	2500	\$425,000
Share-use sidewalk (fig. 5.6)	150	\$31,500
Length of trail spurs	925	\$157,250
Number of bridges	1 (dam upgrade)	\$250,000
Total Cost (subject to trail alignment)		\$863,750

Section E is of a very different nature than the other four sections. Section E extends from Millwood Drive to the Windsor rail line (Windsor and Hantsport Railway) and is centred around the Feely Lake and the headwaters of the Little Sackville River, Little Lake. This section of trail will not require negotiation for easement rights with Halifax Water as their access road does not extend beyond Millwood Drive.

Extending from Millwood Drive, Section E will make use of a shared use sidewalk on Rossing Drive and a large pocket of undeveloped, provincially-owned property to reach the Rossing Drive and Larrigan intersection. This alignment will also create a small looping trail via the sidewalk on Larrigan Drive and a cross connection through the neighbourhood.

The trail enters the Feely Lake area via the north end of Larrigan Drive. There is opportunity to have a small parking area and signage at this location. This small section and parking area can be completed without the Feely Lake and Little Lake portion of Section E as it is independent of the creation of the Feely Lake Park.

North of the proposed parking area at the terminus of Larrigan Drive, trail alignment is heavily dependant upon plans for both Feely Lake as a regional park, as stated in the 2006 HRM Regional Plan, and the plans

for the Margeson Drive extension and proposed Maroon Drive (fig. 4.19 and fig. 4.20). The current alignment takes the road immediately south of Feely Lake and will affect alignment and design for Section E. Trail continuity and the incorporation of safe and direct crossing point that leads to a trail-head and parking area, must be a top priority in the design of the road.

Just over 75 acres and currently owned by Nova Scotia Housing and Municipal Affairs, the plan for Feely Lake as a Regional Park is unclear. With the nearly 694 acre Second Lake Regional Park - formed in 1999 and currently managed as provincial park reserve - less than 2 km away, the ability of Feely Lake to function as a region park seems diminished. In addition, the eventual extension of Margeson Drive and construction of Maroon Drive will further reduce the size and potential of the area as a regional park.

For these reasons, it is recommended that plans for Feely Lake be revisited with the Sackville Greenway, Second Lake Regional Park, Maroon Drive in mind. SRA has indicated that their priority in the area is the protection of the Little Sackville River headwaters at Little Lake. A smaller community park with trails circling both Feely Lake and Little Lake, similar to what has been accomplished with First Lake, may



Fig. 4.19: Designated as a future regional park in the 2006 Regional Plan (shown in green), Feely Lake will be affected by the eventual construction of Maroon Drive, currently zoned Transportation Reserve (shown in yellow). given the establishment of Second Lake Regional Park and construction of Maroon Drive, the role of Feely Lake in the community must be revisited. (Image source: HRM)

be a preferred alternative for both SRA and local residents. Public consultation will help to address these issues and develop a vision for the area that is acceptable for the community and SRA.

Additional land acquisition around Little Lake is necessary to properly protect the headwaters of the Little Sackville River.

While the Sackville Greenway terminates at Feely Lake (or Little Lake if land is acquired), an under-used rail line north of Feely Lake can provide additional links to other trails and Second Lake Regional Park, significantly extending its reach. The Windsor and Hantsport Railway (WHRC) runs from Windsor Junction (east of Second Lake) to New Minas, but a 2011 report from HRM Staff on commuter rail states that the “WHRC line is infrequently used between Windsor Junction and Windsor and would likely require significant upgrades to accommodate passenger service”. A trail within the rail right-of-way could potentially link the Sackville Greenway to Mount Uniacke, as well as to Second Lake Regional Park and Windsor Junction / Fall River.

Another consideration for the future of Feely Lake is the potential for public access to Second Lake Regional Park at the intersection of Beaverbank Road and Windgate Drive. This may allow Feely Lake to function as a community park, while still having a strong link to a large Regional Park.

Detailed design for Section E must be done within the context of the changes occurring around it. With tremendous opportunity due to under-used rail corridors and proximity to a large regional park, the future of the Feely Lake and Little Lake area requires additional design and will greatly benefit from community engagement and cooperation between public and private stakeholders.

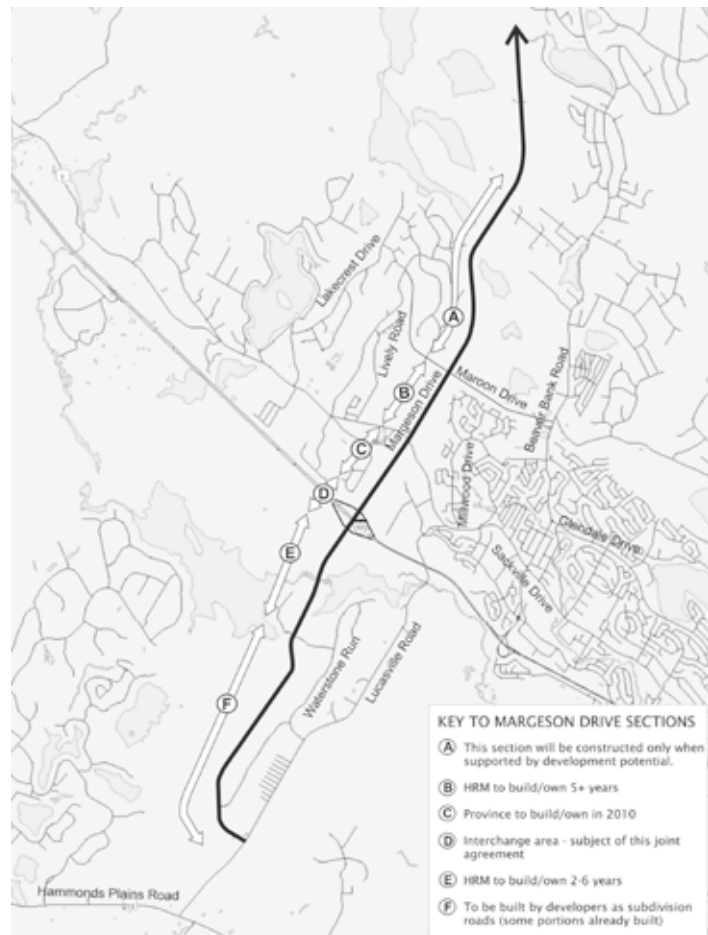


Fig. 4.20: Margeson Drive will extend to Beaverbank and a connector road, Maroon Drive, will provide a link to Beaverbank Road near Windgate Drive. The current alignment takes the road immediately south of Feely Lake and will affect alignment and design for Section E. Trail continuity and the incorporation of safe and direct crossing point must be a top priority in the design of the road. (Image source: HRM).

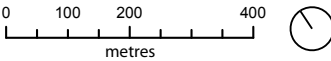
Fig. 4.21



SECTION D | Millwood Loop

- Section D | Millwood Loop
- Section E | Feely Lake Loop
- Additional / future links
- Major recreational trail
- Designated bike route
- Commercial destinations

0 Photo tour
(refer to photo page)





- 1 The entrance to the Feely Lake area from Rossing Drive is a convenient hangout and dumping spot. Development of the area should include a proper parking area and trail signage.



- 2 When new trails are developed in the Feely Lake area, it is recommended that existing informal footpaths be maintained to provide the variety of trail experience that such an area allows.



- 3 Feely Lake - along with Little Lake - is the headwaters for the Little Sackville River. Slated to be a regional park in the future, the Feely Lake area offers numerous recreational opportunities. Future trail design in this area should be focused both on the protection of the lake and river system, as well as its recreational potential.



- 4 The dam at Feely Lake can be upgraded to provide a proper river crossing and viewing platform.



- 5 This underused rail line holds much potential for future extension of the trail network - to Second Lake Regional Park, as well as Mount Uniacke.

Fig. 4.22

IMPLEMENTATION



Fig. 5.1: The Little Sackville River meanders through the urbanized area of Sackville, but often remains hidden or inaccessible. The development of the Greenway is above all an opportunity to reconnect the natural and human-made qualities that have developed together in Sackville, but remain very much apart.

Implementation involves the establishment of management agreements, addressing issues of liability, detailed planning and design, and environmental approvals. It is important to note that although the Greenway alignment exploits a sewer road access easement held by Halifax Water, the easement does not currently allow for the construction of trails. In this regard, it is recommended that HRM immediately begin negotiation with Halifax Water to secure a concurrent easement for the trail. Acquiring this easement now, will prevent long delays at a later stage and improve clarity during the public consultation stage.

As the Greenway trails frequently cross roadways, there is the potential to not only complete the Greenway by section as outlined in the report, but also to complete partial sections as funding is made available. For this reason the report does not recommend explicit phases, but completion of certain sections should take priority over others.

Section A and Section B should be the top priority. Section A provides the connection to the Sackville-

Bedford Greenway Connector and its construction effectively builds on and extends the reach of existing trail infrastructure. Section B, on the other hand, will impact the largest number of people, as it will do the most to tie the neighbourhoods of Sackville together, and help to move people to entertainment, shopping and other primary destinations. Section B, as a paved section, can also greatly improve active transportation opportunities in Sackville and improve accessibility to essential and non-essential services for residents with mobility challenges.

Section C, although relatively short, faces a number of challenges including access to private property and a severely confined corridor. The realization of this section will require significant negotiation with the land owner and residents, but it will benefit trail users by creating the most efficient route, as well as residents of Sackville Estates by providing a safe area for pedestrians as there are currently no sidewalks. It's construction can also be used as an opportunity to improve the condition of the LSR and protect it from further degradation.

Section D covers an area that contains existing trails and bridges that link to the area high school and elementary school. As significant infrastructure is already in place, Section D is more about creating “missing links” in the Millwood area. The priority of this section will largely depend on the will and desires of the community and level of engagement with the two schools.

The completion and scope of Section E is heavily dependent upon the construction of Maroon Drive and HRM plans for Second Lake and Feely Lake Regional Parks. Design of Section E should be done in concert with such projects.

CONSTRUCTION COSTS

Cost estimates (2011) for trail construction are based on 6 types of trails:

Detail	Description	Cost (per linear metre)
1 (fig. 5.2)	Crushed Stone Footpath - on Level Ground (2m)	\$110
2 (fig. 5.3)	Crushed Stone Footpath - on Slope (2m)	\$220
3 (fig. 5.4)	Shared Use Trail - Crushed Stone (3m)	\$170
4 (fig. 5.5)	Shared Use Trail - Paved (3m)	\$230
5 (fig. 5.6)	Shared Use Sidewalk (3m)	\$210
6 (fig. 5.7)	Boardwalk (2m)	\$300

At this overall concept stage only preliminary cost estimates can be made. Accurate cost estimates can only be achieved during detailed design and when trail alignment and bridge location decisions are made. Cost estimates are provided per linear metre to allow for quick cost estimates during discussions about phasing and to help with decisions on construction of complete or partial sections. Costs are based on general trail construction. Costs may be less for sections where Halifax Water access road are used as trail base.

Although recommendations on paving certain sections have been made, decision to pave more or less than what is discussed in the report can alter construction and maintenance costs. When considering costs, maintenance costs as well as capital costs must be considered as annual maintenance costs can be between 8-10% of the initial capital costs (GRLA 1997).

MANAGEMENT & MAINTENANCE COSTS

The regular maintenance of trails is critical to ensure that they are used and accepted by the community. Maintenance costs vary depending on the type of trail and intensity of use. As some of Sackville Greenway trail will be located in a floodplain, maintenance costs of crushed stone trails may be higher than in other locations. Sections of the trail most prone to flooding should be paved. In shorter segments a boardwalk may be preferable, although cost prohibitive for longer sections.

In developing the Sackville Greenway, careful consideration of ongoing maintenance costs and responsibility must not be overlooked. In general, multi-use urban trails require more maintenance resources than other types of trails and developing trails beyond what can be properly maintained by the Municipality or community organizations such as SRA should be avoided.

Regular trail inspections will ensure that anything that may be of danger to trail users is immediately addressed, while other trail damage can be recorded and maintenance jobs prioritized. As a multi-use urban trail, the Sackville Greenway will require routine maintenance and inspections.

In addition to a regular maintenance program, community organizations can play a big part in its maintenance and overall levels of community engagement. Annual or seasonal cleanups or “trail sweeps” can be organized and promoted by community organizations, such as SRA, where volunteers meet to give trails a general “tune-up”. The Sackville Greenway can benefit particularly from high-levels of community engagement. SRA may want to organize an “adopt-a-trail” program for each section of the Sackville Greenway. While the entire Sackville Greenway acts as a regional trail system, individual sections also function on a more local level. This report has attempted to reflect this notion of neighbourhood ownership and responsibility by naming sections based on the neighbourhoods and streets that they tie together. As a vital and well-respected community organization and the lead in the rehabilitation of the Sackville and Little Sackville River and establishment of the Sackville Greenway, SRA is well-suited to work with potential community groups to ensure that the success of the Sackville Greenway is in the interest of the entire community.

Fig. 5.2

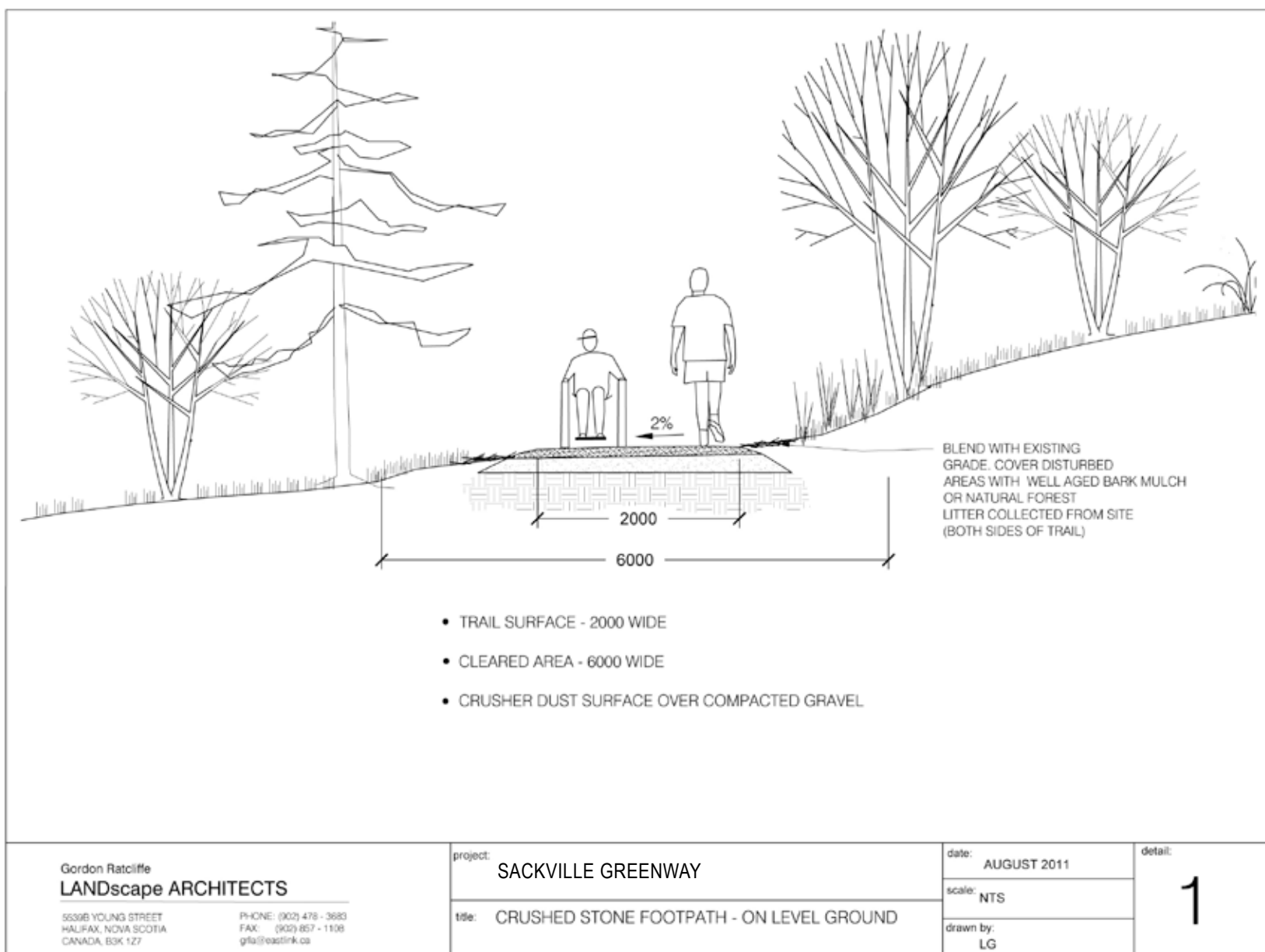


Fig. 5.3

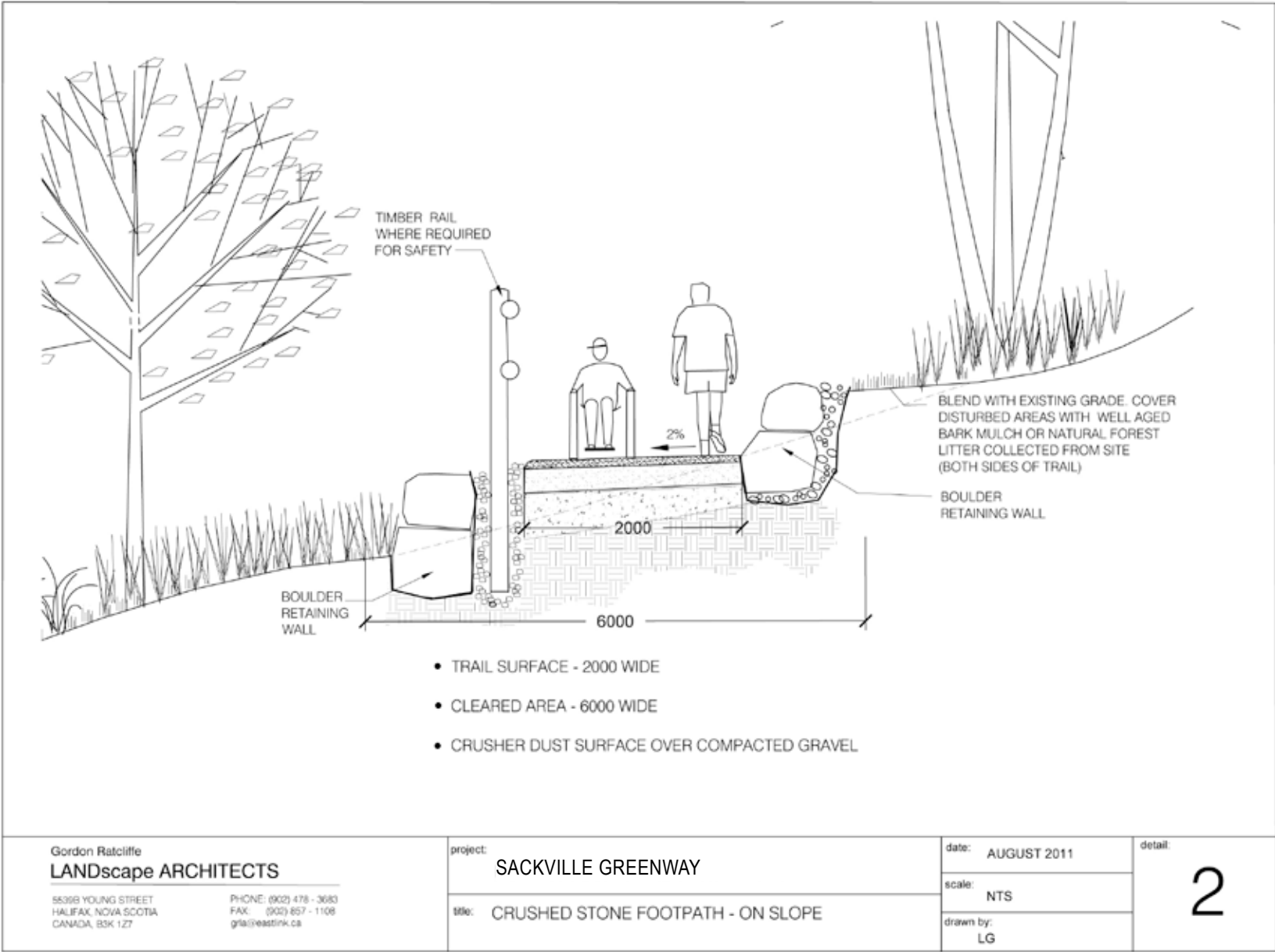


Fig. 5.4

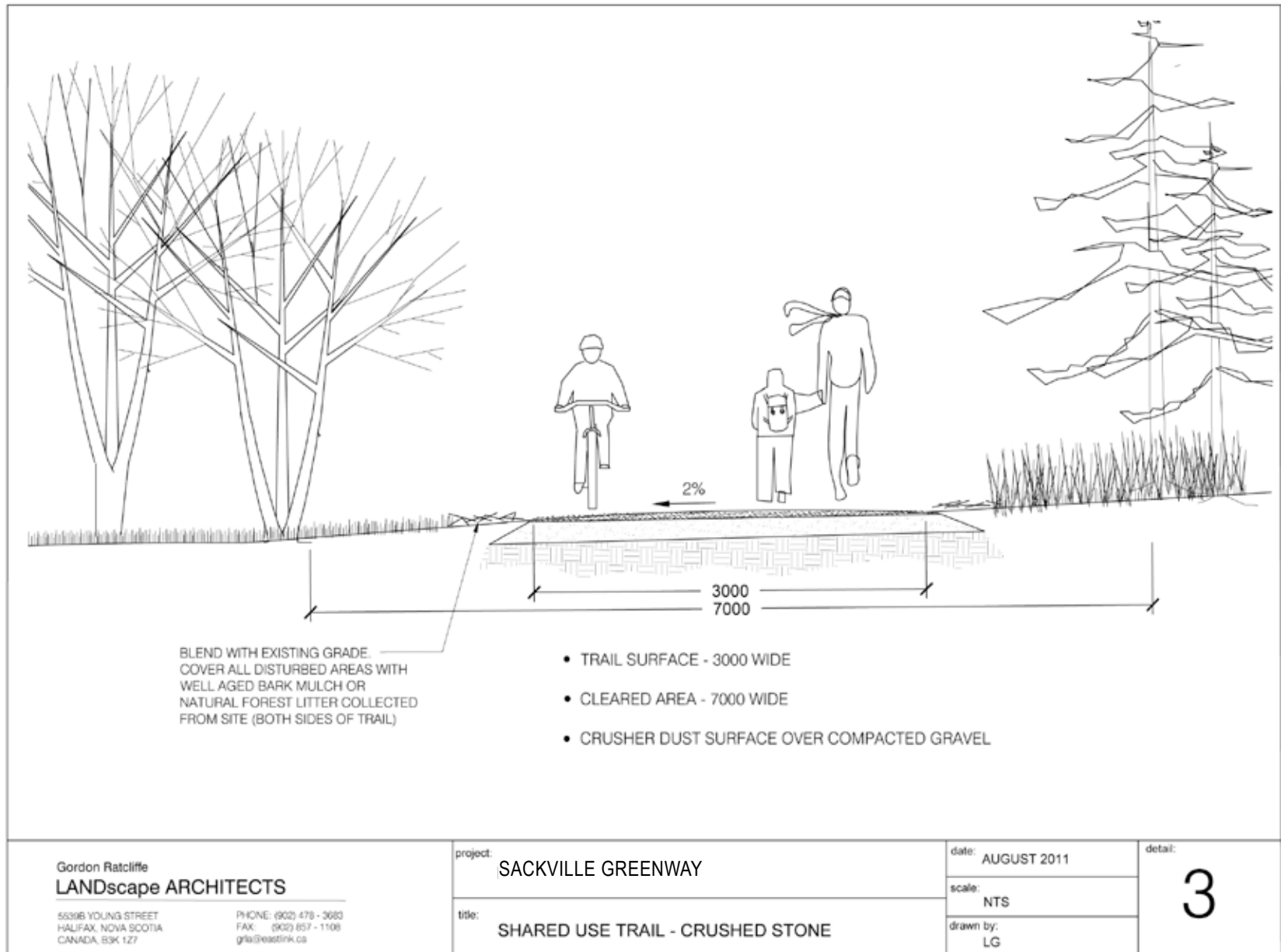


Fig. 5.5

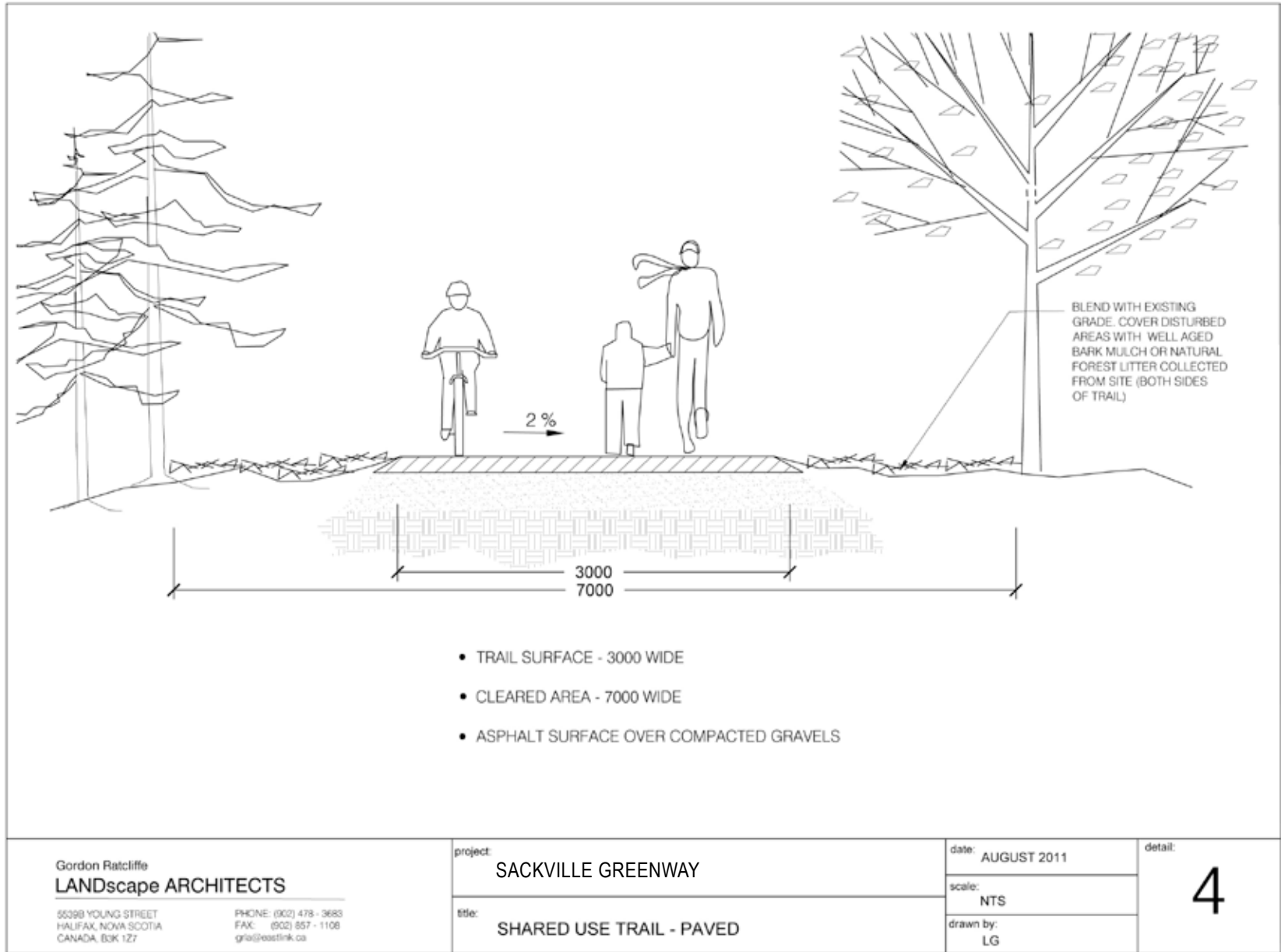


Fig. 5.6

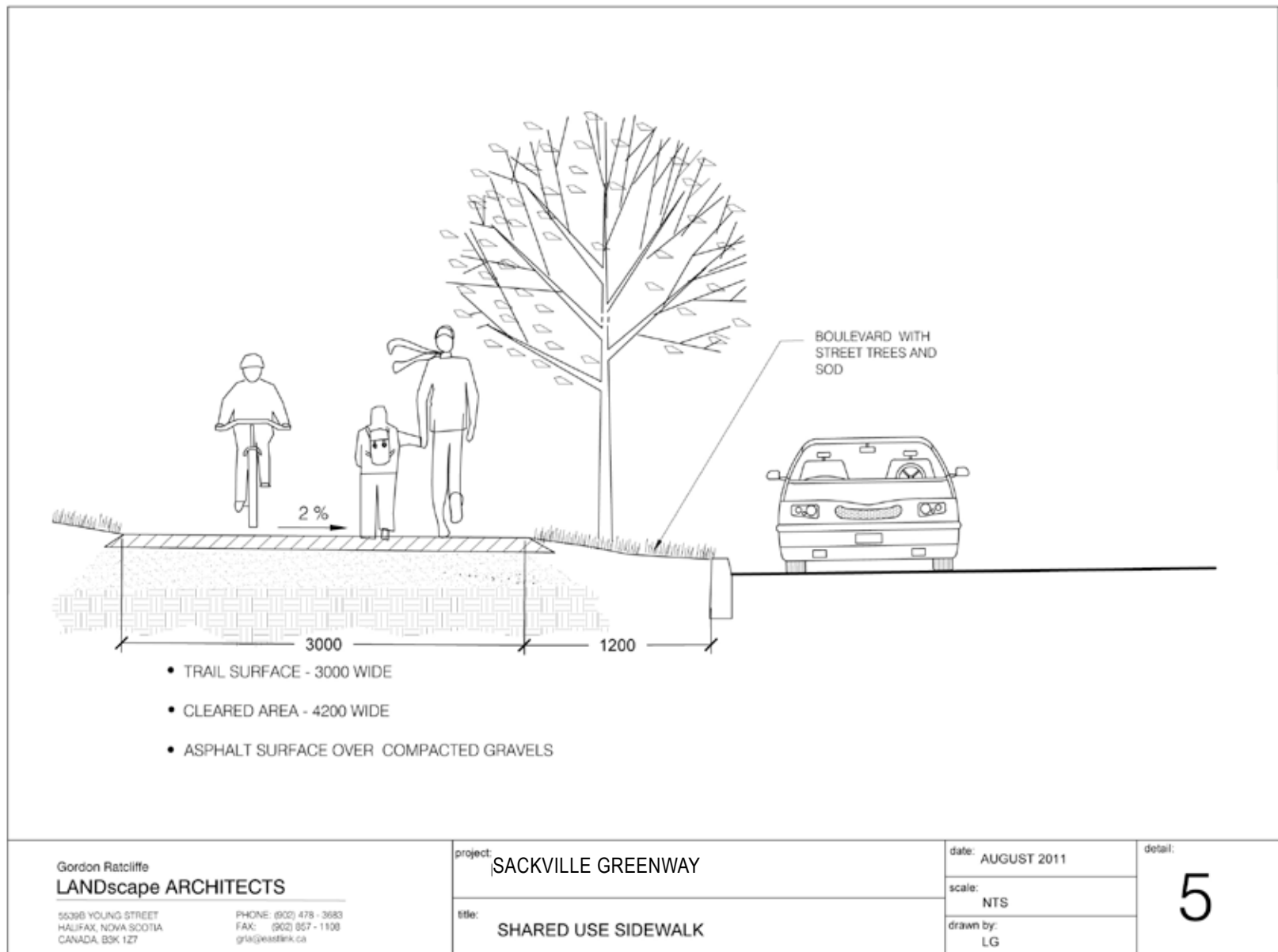
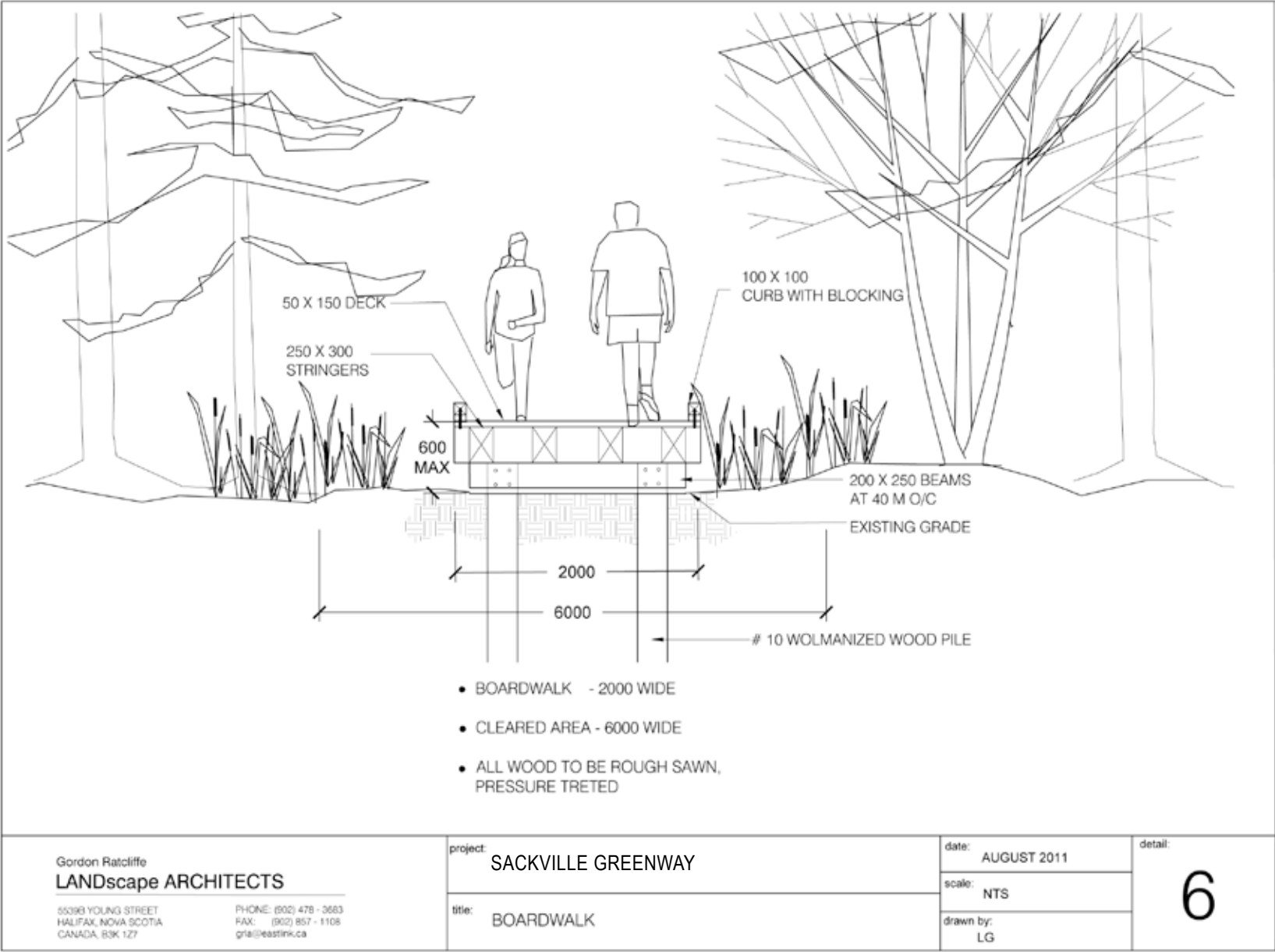


Fig. 5.7



OTHER DESIGN CONSIDERATIONS



Fig. 6.1: The Bedford-Sackville Greenway Connector contains both wooden and steel bridges. It is anticipated that the Sackville Greenway will utilize similar types of bridges depending on the span length and weight requirements.

Design of multi-use paths must take into account their surrounding context and ensure compatibility. Whether passing through forest or city, trail type, bridge type (fig. 6.1), landscaping, signage, seating, lighting and fencing should be chosen to compliment the character of the area in addition to fulfilling their intended function. This level of design is appropriate for subsequent detailed design phases. For issues of trail construction, the Nova Scotia Trails Federation's Trail Construction Manual is an exceptional resource for trail development and construction practices.

SIGNAGE AND INTERPRETATION

The legibility and visibility of signage can significantly impact user experience, affecting both enjoyability and sense of security. Signage is necessary to convey information to users and potential users, such as directions, regulations and interpretation. As the Bedford-Sackville Greenway Connector has already been constructed, it is anticipated that signage will build on its theme and identity (fig. 6.2).

Greenway signage consists of 4 main types: directional or wayfinding; regulatory; information, and; interpretive.

Directional or wayfinding signage orients the user by indicating direction of routes, trail heads, entrance/exit points, and identifies destinations along the way. Route markers can also be used to inform users of the distance remaining to the end of the trail or proximity to destination (fig. 6.4).

Regulatory signage informs users of rules and regulations for using the trail. This includes HRM bylaws that apply to all trails in HRM, as well as other trail specific rules that may apply (e.g. discouraging short-cutting and respecting property of adjacent property owners).

Information signage identify the trail and its features. Whereas directional signage is specific to trail sections, information signage would include trail-head signage showing overall route maps, sponsors, etc. that apply to the entire Sackville Greenway.

Interpretive signage provides information from a cultural, historical or natural perspective. Interpretive signage for the Sackville Greenway can focus on aspects of the Little Sackville River and how it has shaped and been shaped by the community and the role it plays today. Currently SRA interpretive signage should eventually be upgraded to match the identity of the Sackville Greenway and of the Bedford Sackville Greenway Connector (fig. 6.3). New interpretive signage is well suited for the Millwood Common and Feely Lake areas, although the entire length of the Little Sackville River is suitable for general information signage to help increase awareness of the river.

For the segment of Section A that passes through the cemetery, Special consideration should be given to information and signage for the segment of Section A that passes through the Heaven Gate cemetery. Signage should be displayed for those entering the cemetery and clearly display any additional rules as requested by the property owner, especially concerning cyclists, joggers, and users with dogs (fig. 6.5). This may include requiring users to cycle slowly, remain on designated routes, and yield to funeral processions and visitors.

SAFETY AND SECURITY

While greenways can offer tremendous social benefits to residents, they can be perceived as unsafe and avoided by those most vulnerable to crime, ultimately undermining their true potential (Luymes and Tamminga 1995). Within HRM, there are cases where trails have been perceived as more of a liability than asset to those living in immediate proximity to them (Lightstone 2011). With concerns including increased property damage, loss of property value, loss of privacy, increase in perceived threat of personal attack, loitering, drug use, and general vandalism, it is fundamental that concerns of community members are addressed through open dialogue and involvement during initial stages of the project. Early involvement can also help to increase a sense of ownership over trails and enhance levels of self-policing and environmental stewardship among residents.

Many general perceived threats to safety and privacy can be resolved through clear communication between stakeholders, while other more challenging issues can be specifically addressed during detailed design using proper trail design practices. And while public concern surrounding



Fig. 6.2: This graphic mark is used on existing signage along the Bedford-Sackville Greenway Connector and should be carried forward for information signage on the Sackville Greenway.



Fig. 6.3: Current SRA interpretive signage (top) should eventually be upgraded to reflect the new identity of the trail network and relocated to reduce opportunities for vandalism. Signage for the Bedford Sackville Greenway Connector (bottom) has created a clear identity for Sackville trail network. Sackville Greenway signage should reflect what has already been established and is recognizable to users and residents.

the establishment of new trails often focuses on fear of increasing in criminal activity, surveys taken after trails are opened don't support these fears (Lanarc 1995).

Other popular crime incident reducing measures such as Crime Prevention Through Environmental Design (CPTED) are more difficult to directly apply to trail design. CPTED aims to create "built-in" crime deterring elements in urban and suburban environments. As the core principles of CPTED include natural surveillance, CPTED measures are often in conflict with trail systems that are, by their very nature, removed from the public eye (SGE Acres Limited 2006). While the application of CPTED principles is a feature in both the HRM Regional Plan and Active Transportation Functional Plan, audits are not regularly applied to trails.

Despite the difficulty in apply CPTED to trails, users and nearby residents must feel safe and secure while using trails. Factors that can influence feelings of safety include visibility to those in nearby residences or on adjacent roadways, proper sight-lines to spot potential threats, proper maintenance and prompt removal of graffiti, especially that which may be considered offensive to some users. Signage, as outlined in the previous section, is also key to establishing expectations for users and thereby increasing feelings of safety and security. Clear trail maps, route markers, and trail policy information (times of operation, bylaws, enforcement, etc.) signage will create a better awareness where one is in relation to one's surroundings and allow the user to make informed decisions, enhancing feelings of personal control (Luymes and Tamminga 1995).



Fig. 6.4 (top): Directional signage must be clear and legible and free of unnecessary or confusing information. Frequent route markers can give users piece of mind in longer or more remote sections of trail.

Fig. 6.5 (bottom): Extra care should be given to signage placed at the entrance of Heaven Gate cemetery in order to reduce potential conflicts among trail users and cemetery staff and visitors. (Image source: Bicycle Transportation Alliance)

NEXT STEPS



Fig. 7.1: The Little Sackville River is an extraordinary feature for an area that is heavily urbanized. Although largely vacant from view throughout most of the area, the Sackville Greenway can bring a renewed awareness to the river and foster a shared sense of responsibility to ensure rehabilitation and long-term health.

The next stage is to present the overall plan to the community and other stakeholders. This plan is intended to help to focus the conversation and to better allow alternatives to emerge where desired by the community. As the preparation of the Plan did not include community consultation or detailed design, the public can share intimate knowledge about potential conflicts or challenges related to the proposed trail alignment. Gathering input will also allow for the selection of initial projects and community priorities.

Greenways can fulfill recreation needs, create active transportation opportunities, and foster environmental awareness. They can help to improve the health of residents by providing alternatives to car travel and give a boost to the local economy by making it easier for people to access shopping and entertainment destinations.

The development plan for the Sackville Greenway attempts to exploit the areas assets - from the Little Sackville River to Feely Lake - and aims to (re)connect

the many diverse neighbourhoods and commercial and recreational areas that Sackville has to offer. In addition to public consultation, other initial steps can be taken to ensure that the development and construction of the Sackville Greenway continues to move forward. Negotiations with Halifax Water to ensure the use of their easement must occur and initial consultation with key stakeholders and large land holders can begin.

With proper planning and community consultation, the Sackville Greenway can help to reintegrate the river into the community (fig. 7.1), create more walkable neighbourhoods, and improve residents' overall quality of life.

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