

NS&T RAIL TRAIL

Feasibility Master Plan

NIAGARA FALLS, ONTARIO

Public Engagement

Spring/Summer, 2021

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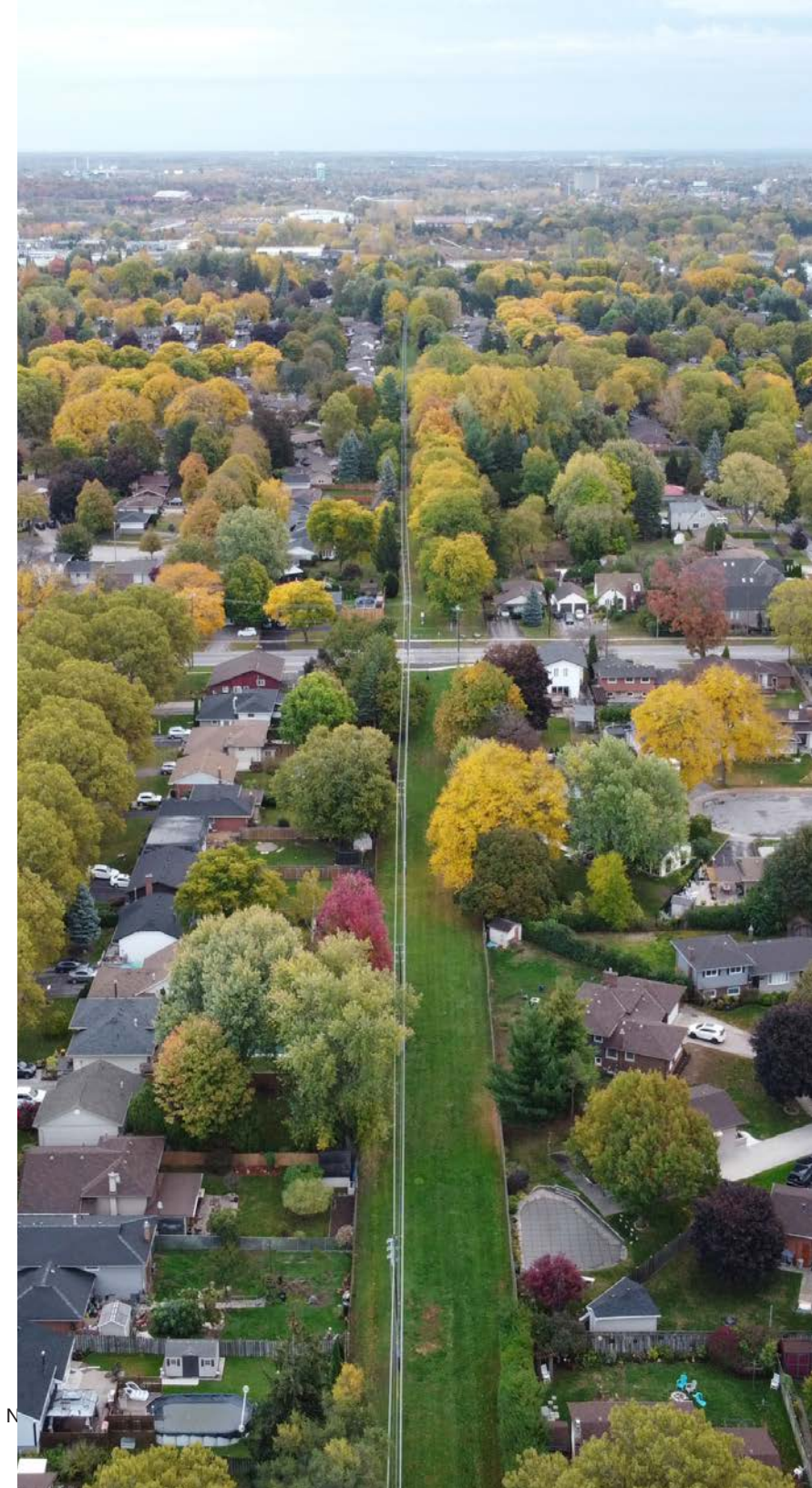
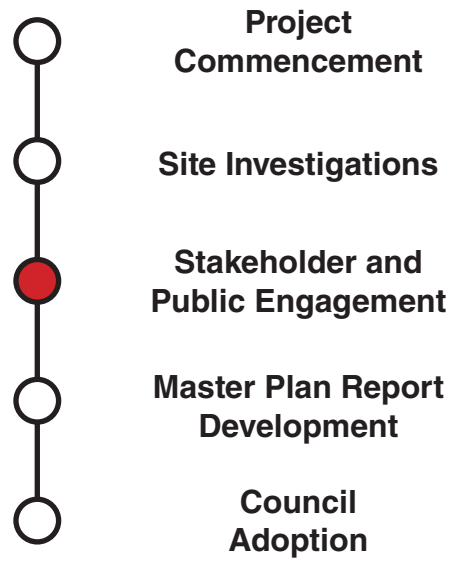
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Project Overview

The purpose of this project is to develop a Feasibility Master Plan for a future City-wide trail that will link downtown Niagara Falls with nearby communities, connect parks and open spaces, and enhance recreation, tourism and active transportation opportunities across the City.

With help from public and stakeholder input, the Niagara, St. Catharines & Toronto Rail Trail (NS&T) will provide an all ages and abilities connection across the City, having consideration for user comfort and safety, minimizing impacts on existing infrastructure, enhancing connectivity, and paying homage to the historic NS&T Railway.





Context

Historic Context

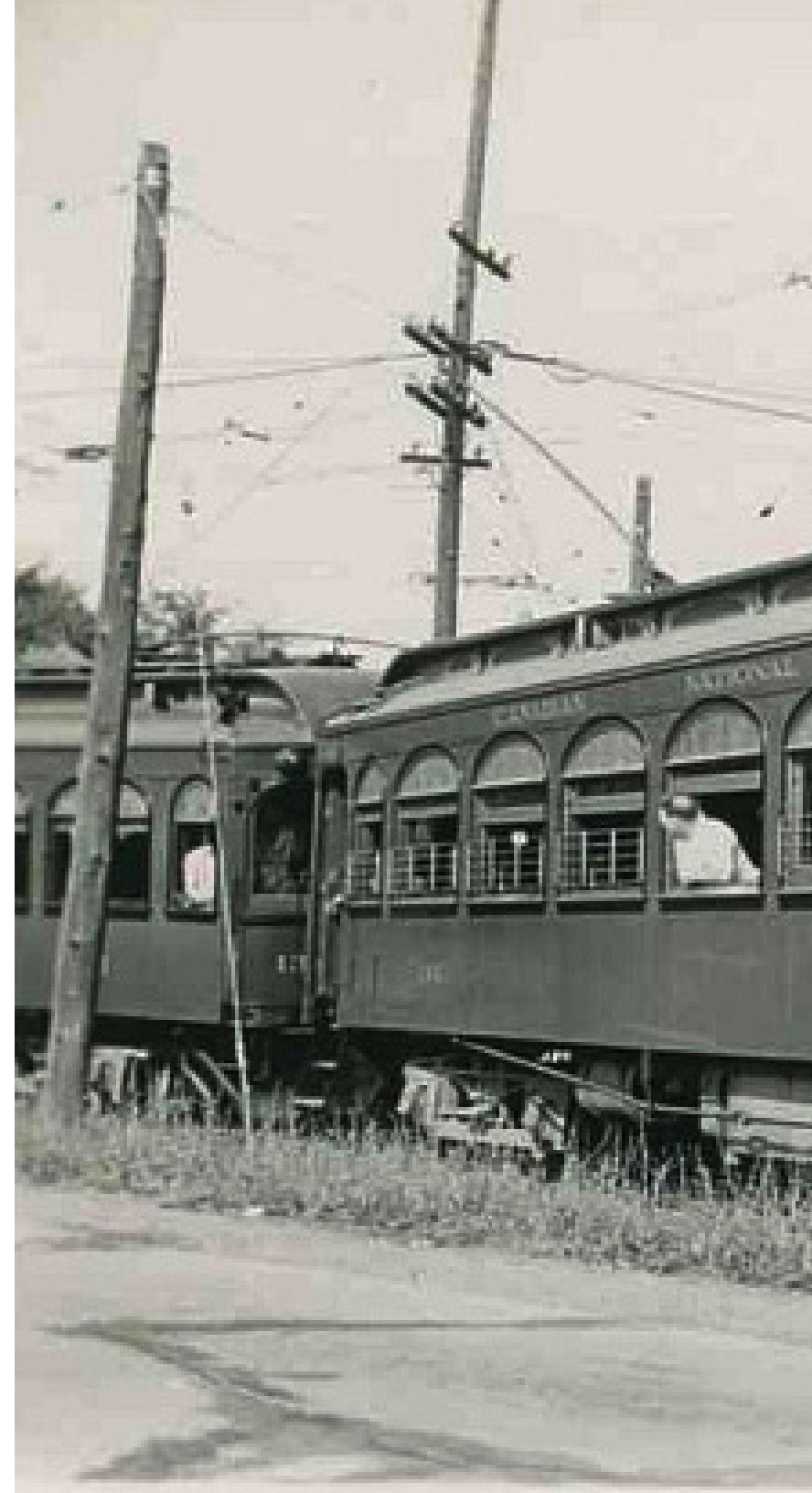
The NS&T started as an “interurban” electric line, which refers to streetcar-like ‘light’ electric rail cars running primarily within (but also to-and-from) neighbouring cities and towns. Prior to electrification, the railway had its beginnings in the 1870s with horse-drawn streetcars.

Changing ownership throughout the nineteenth and twentieth century, the main lines of the NS&T provided service to St. Catharines, Niagara Falls, Niagara-on-the-Lake, Port Dalhousie, Thorold, Welland and Port Colborne and was pieced together from several smaller lines. These included the St. Catharines Street Railway, the Victoria Lawn Line and the St. Catharines & Niagara Central Railway. It wasn't until 1899 that the NS&T was incorporated.

At its peak, the NS&T comprised roughly 120 kilometers of track and numerous yards, carrying passengers, mail, express baggage and freight. The railway's popularity rose during World War II when bus service was reduced to ration fuel, however by the 1950's, improved roadways and a new reliance on the automobile had critically reduced demand for the rail service. The railway slowly began to wind down and lines were gradually replaced with buses. In 1960, the NS&T fully merged into CN.

Many of the remnant lines and their vestiges remain visible throughout the City and provide the unique opportunity for a new and modern transportation network.

<https://www.canada-rail.com/ontario/railways/NSCT.html>



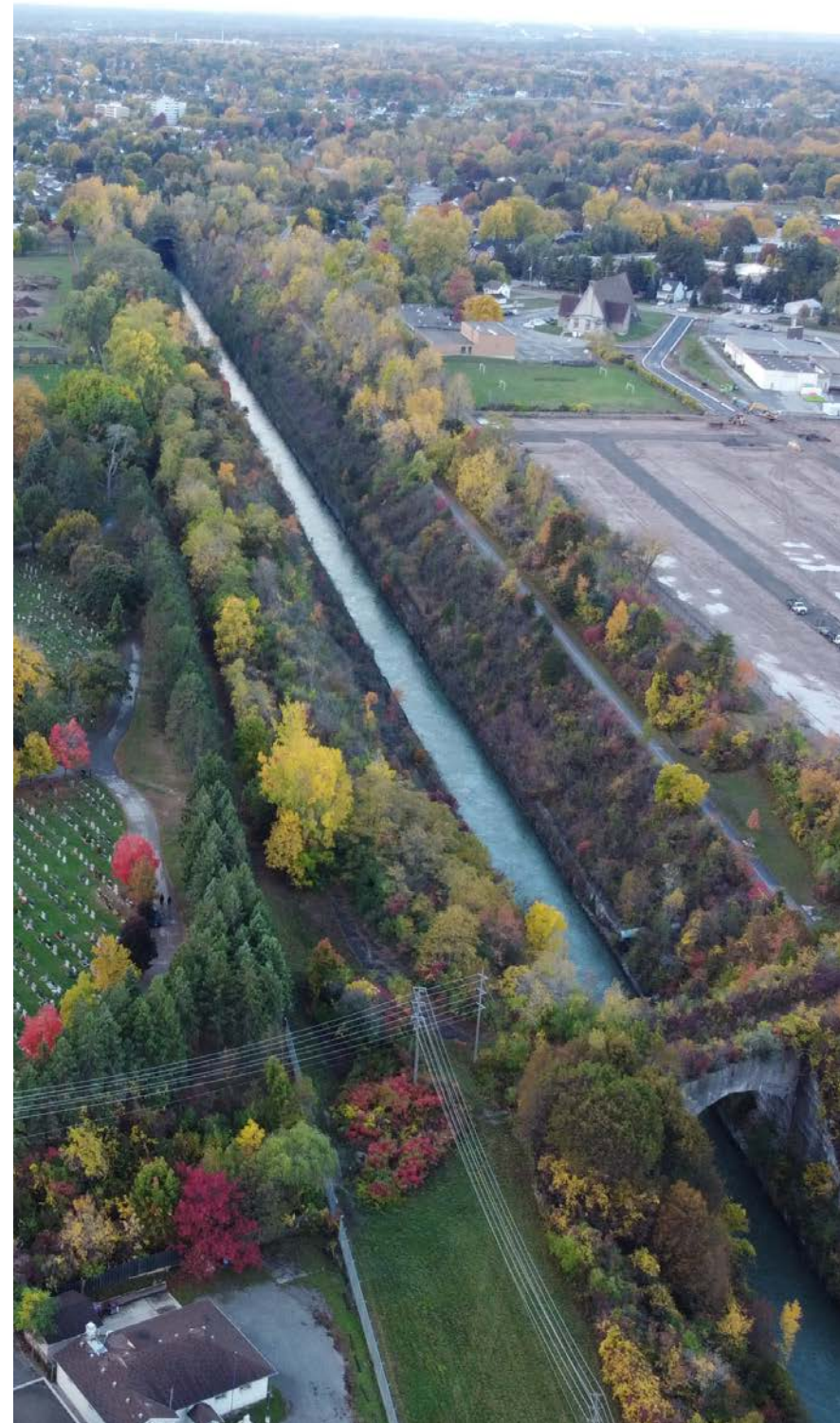
Spatial Context

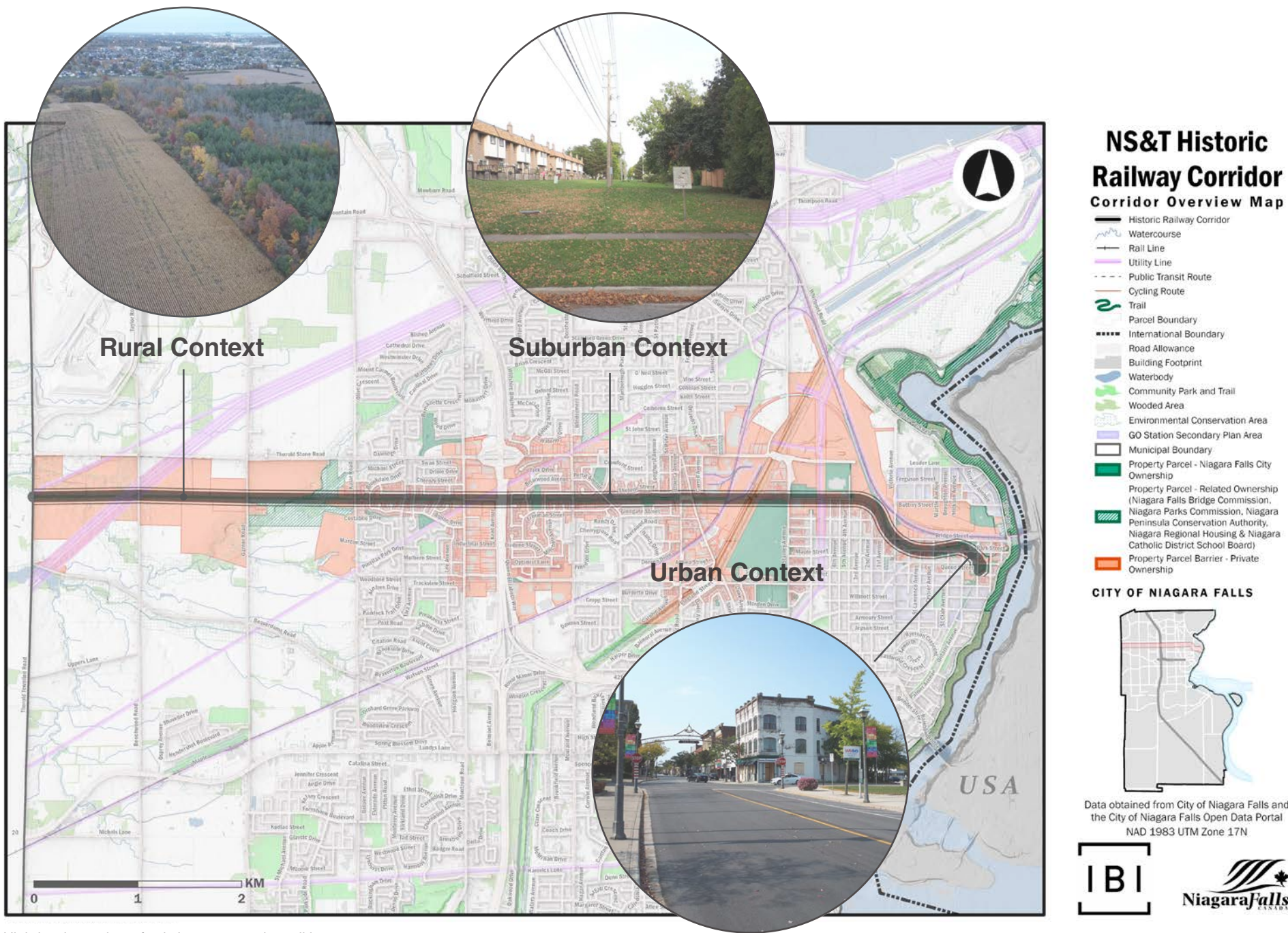
The project area comprises of a 9.3km section of the historic NS&T Railway corridor footprint which extends east-to-west across the City of Niagara Falls.

The railway corridor is ideal for a City-wide trail as it intersects with a variety of neighbourhood communities, existing park and trail networks, and key transportation routes. Throughout this project the existing corridor will be referred to as the 'ultimate' condition, with the original footprint of the railway being the ideal. Alternative routes will describe potential interim conditions or permanent deviations.

Immersed within the City's urban fabric, the corridor's existing connections support what could be a quality, regional commuter trail. In many locations, the presence of natural vegetation within and along the corridor provides a natural buffer to adjacent residential developments and main throughways.

Overall, the corridor is well-situated for the creation of a high-profile, cross-City trail that will have widespread benefits for the surrounding communities.





High-level overview of existing contextual conditions



Opportunities

Enhanced Mobility

Further supporting existing and planned transportation initiatives in the City and greater Region, the proposed City-Wide Rail Trail has the potential to support enhanced mobility by supplementing existing successes and new and enhanced recreational mobility options.

A Destination

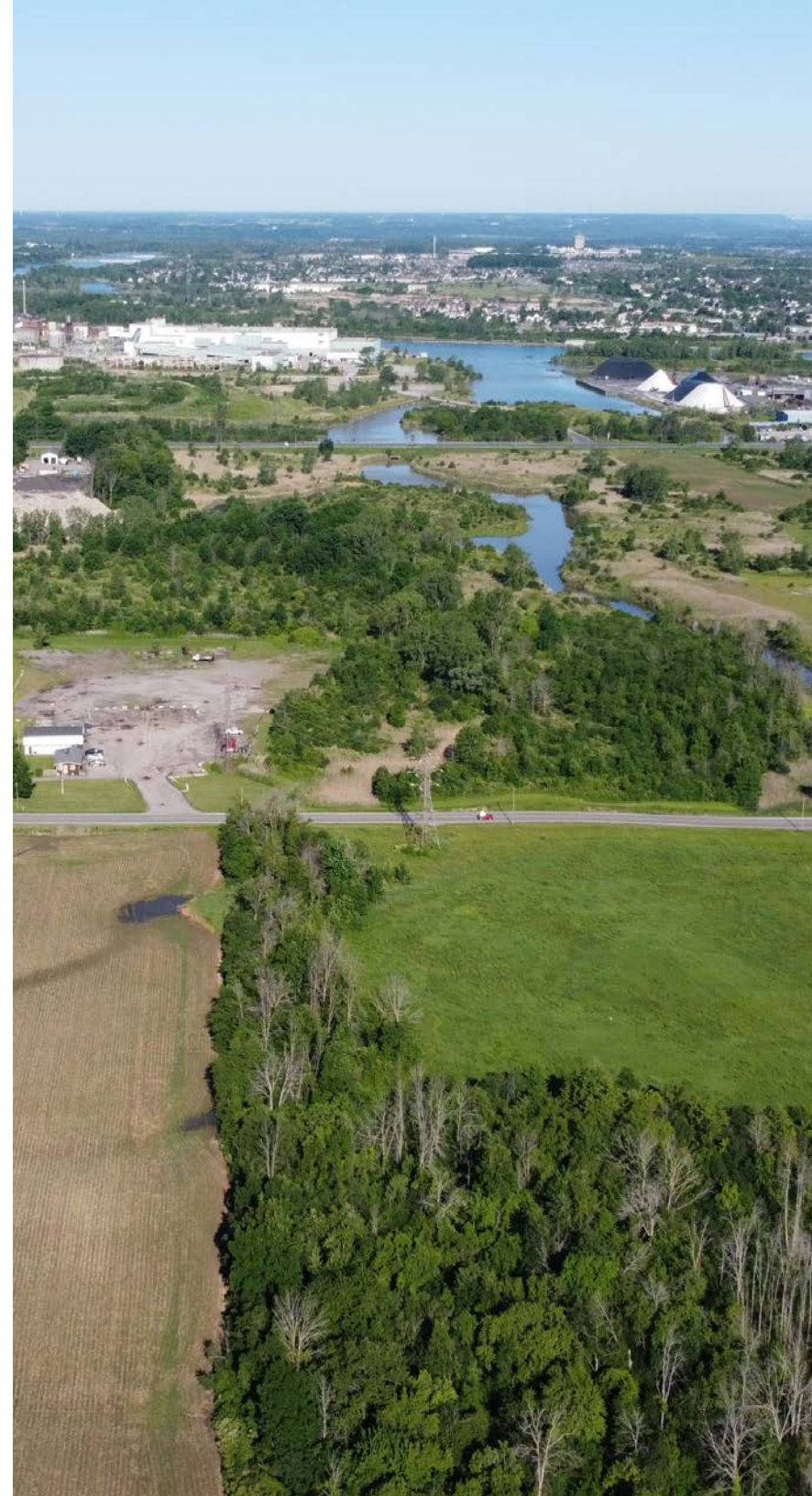
The historic significance and geographical convenience of this section of the existing NS&T rail line presents the opportunity for the trail to become an iconic facility and a destination feature for the City of Niagara Falls.

Regional Connections

The historic NS&T rail line extended throughout the Niagara region and well beyond the limits of the City. In similar fashion, the rail trail has potential to facilitate a wider contextual network of trails. In particular, there is opportunity at the west terminus which could see connections to Thorold, Pelham, St. Catharines, Welland and beyond.

Other

The proposed project presents the opportunity for added benefit beyond the function of the trail facility, such as opportunities for expanded environmental monitoring within the region, and the creation and support of wildlife habitat.



Constraints

Major Physical Barriers

Major physical barriers are those that pose a significant obstacle for the ultimate trail route and may require consideration for potential interim solutions. Such major physical barriers include the QEW Highway and Hydro Canal crossings.

Minor Physical Barriers

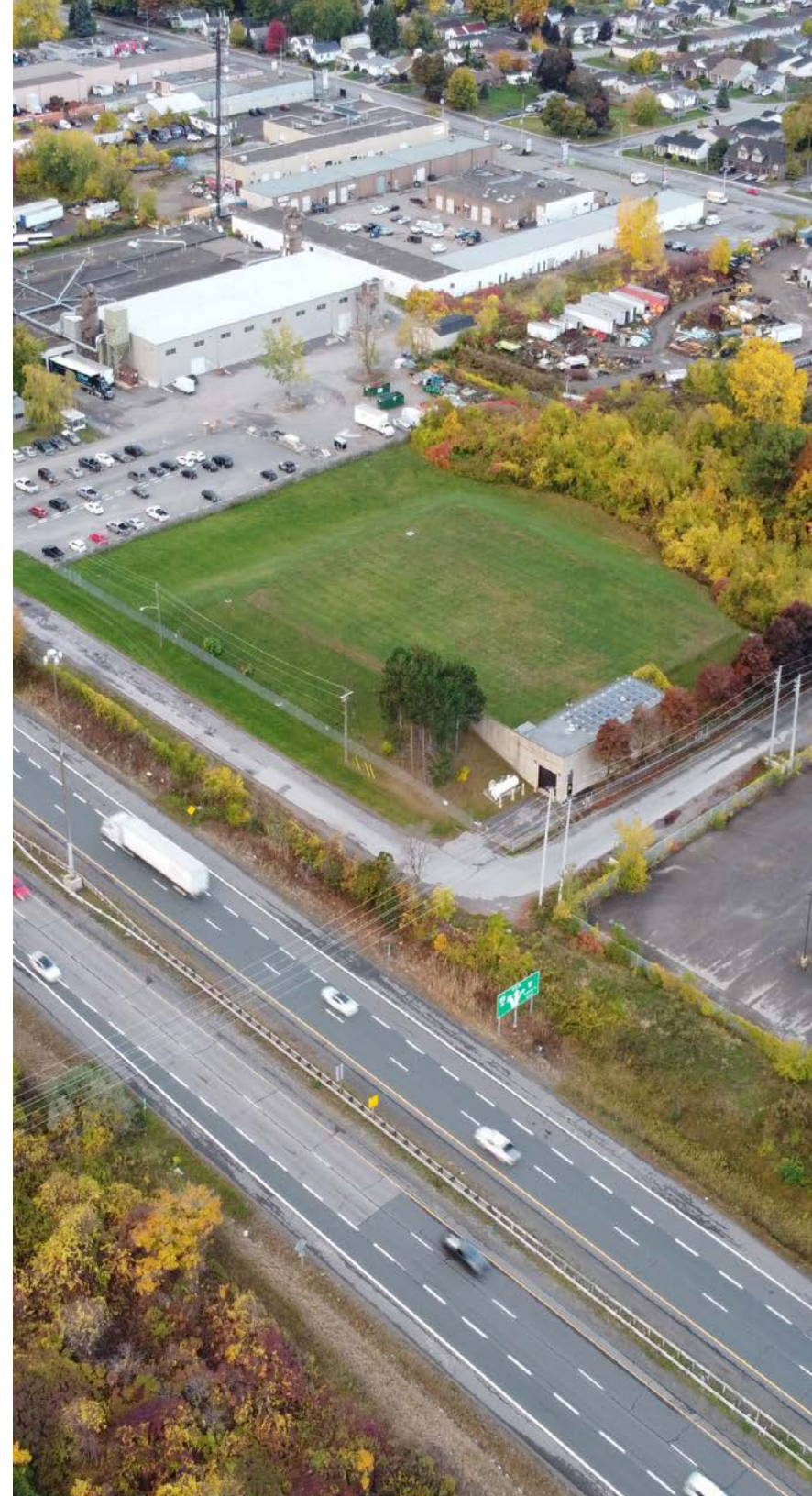
Minor physical barriers may be less obvious, and require less drastic alternatives, yet still pose obstacles to the ultimate route. Examples include the direct conflict with the existing pump station at Kalar Road and the complex intersection of Drummond Road, Gallinger Street, and Portage Road.

Land Ownership

Part in parcel with a cross-City trail, land ownership will provide challenges on a site-by-site basis.

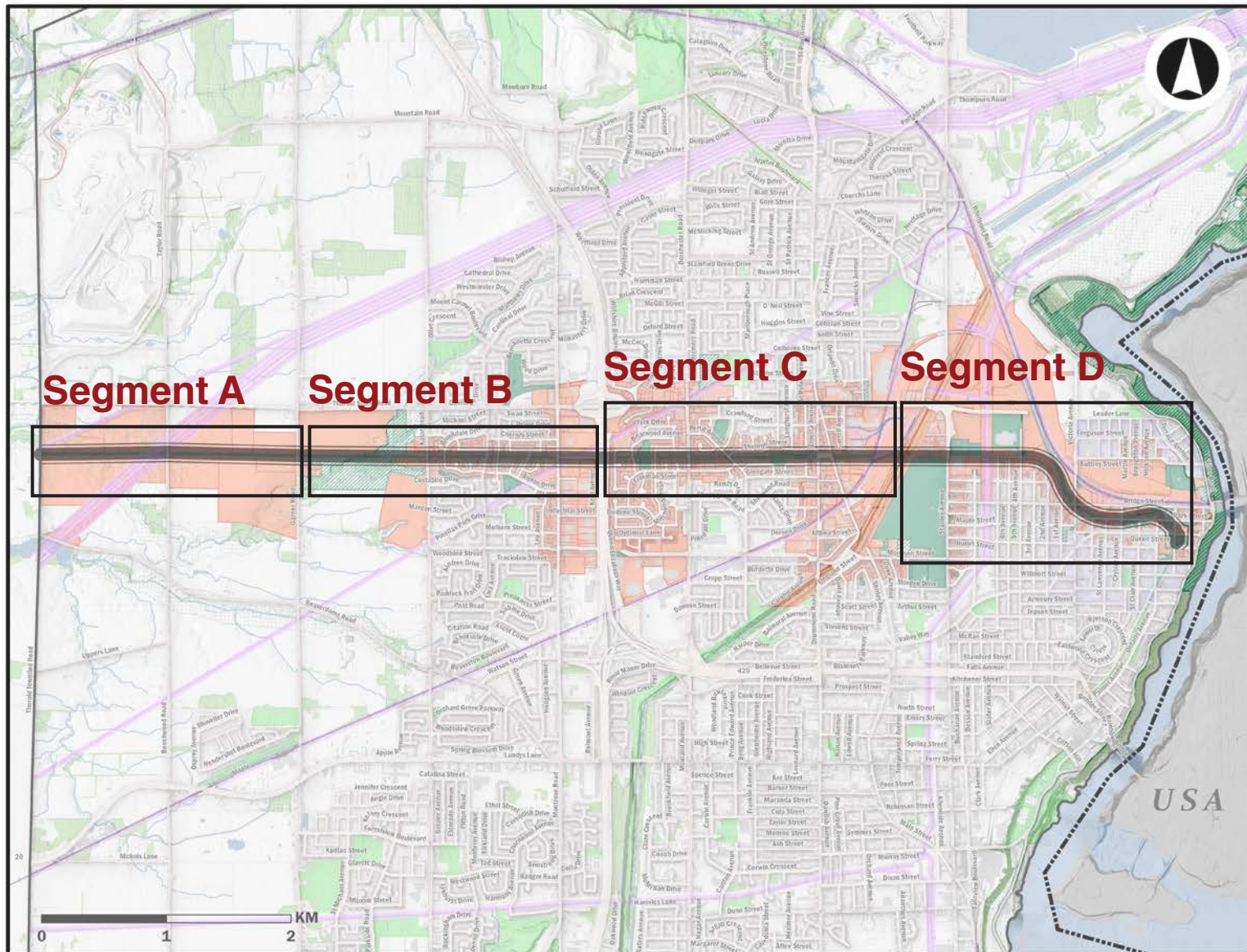
Other

Potential overarching constraints posed to the ultimate trail route include such things as current or planned development applications (e.g. the GO Station Secondary Plan area, etc.), environmentally sensitive areas, and challenging physical geography, particularly in the lands west of Beechwood Road.



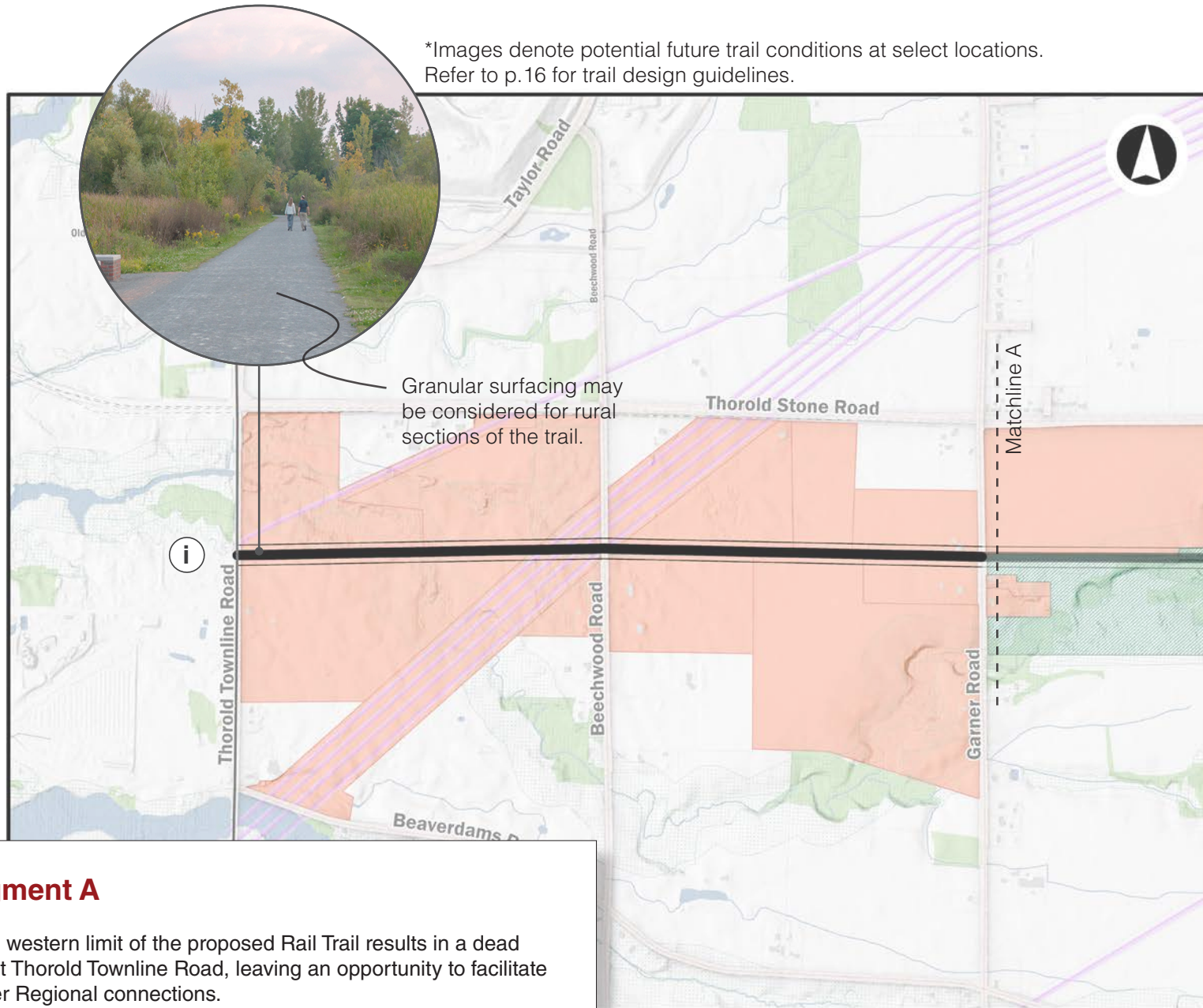


Priority Segments & Alternative Routes



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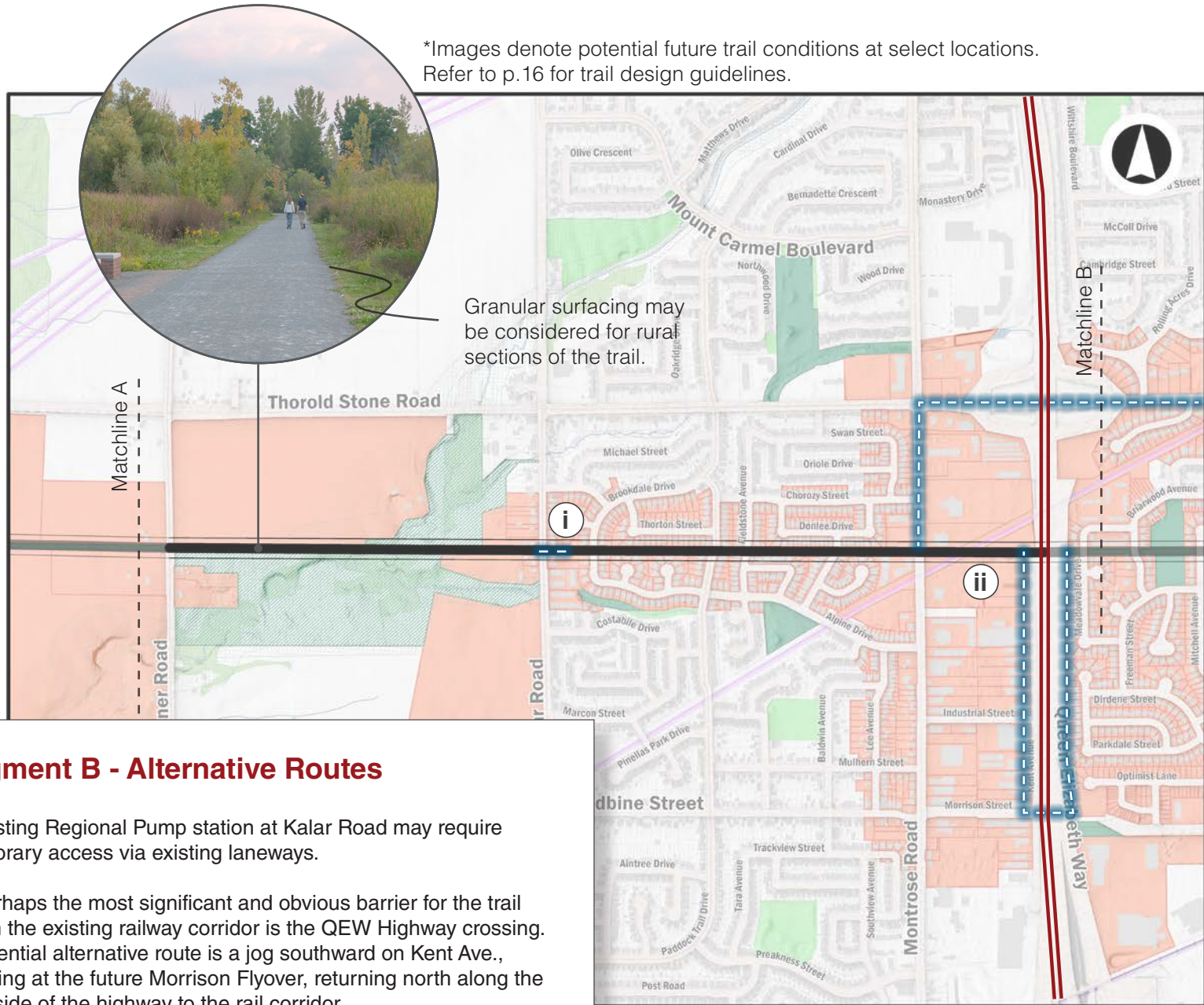
*Images denote potential future trail conditions at select locations.
Refer to p.16 for trail design guidelines.



Segment A

i) The western limit of the proposed Rail Trail results in a dead end at Thorold Townline Road, leaving an opportunity to facilitate further Regional connections.

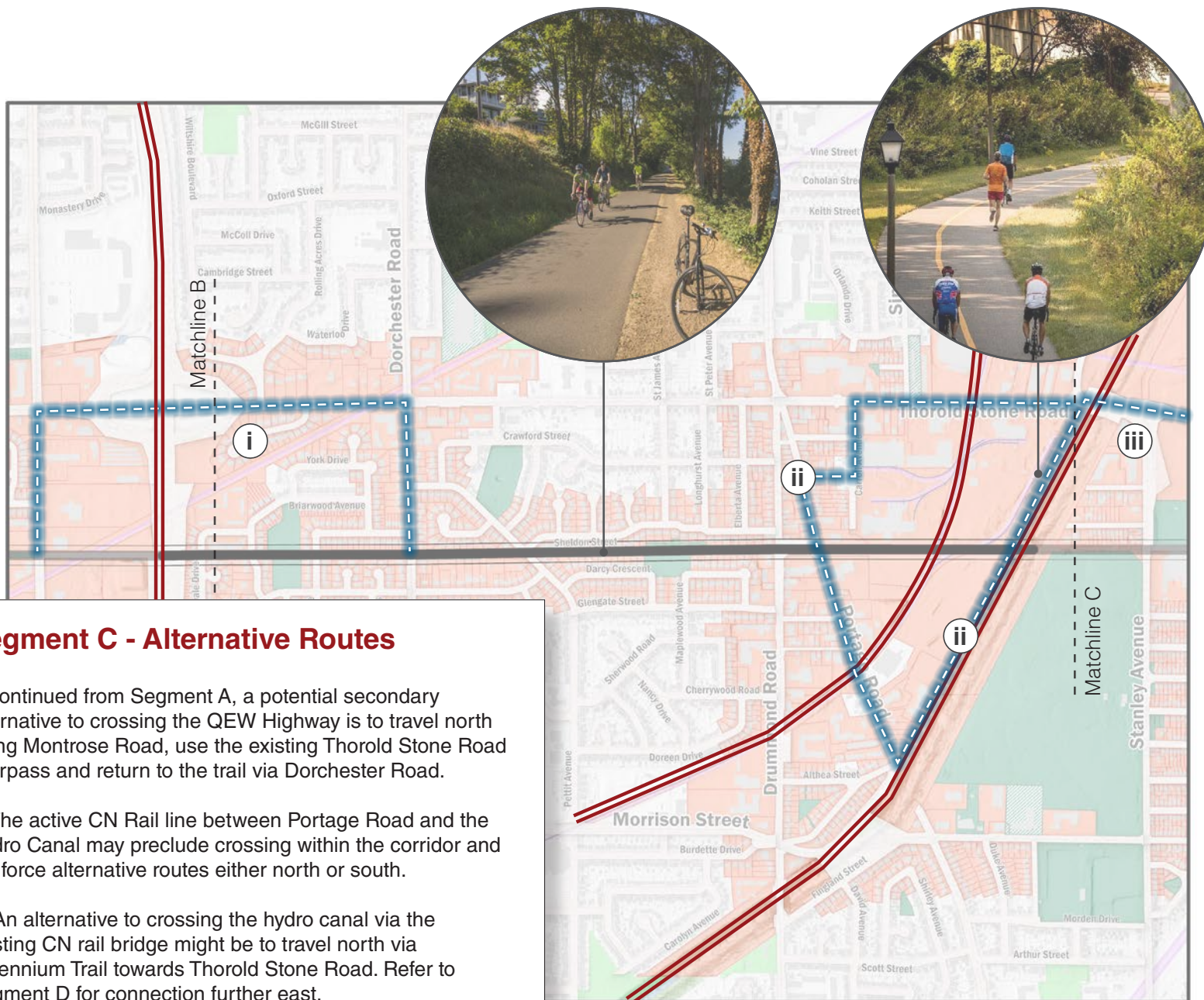
*Images denote potential future trail conditions at select locations. Refer to p.16 for trail design guidelines.



Segment B - Alternative Routes

- i) Existing Regional Pump station at Kalar Road may require temporary access via existing laneways.
- ii) Perhaps the most significant and obvious barrier for the trail within the existing railway corridor is the QEW Highway crossing. A potential alternative route is a jog southward on Kent Ave., crossing at the future Morrison Flyover, returning north along the east side of the highway to the rail corridor.

----- Proposed Alternative Route
 ===== Major Constraint



Segment C - Alternative Routes

- i) Continued from Segment A, a potential secondary alternative to crossing the QEW Highway is to travel north along Montrose Road, use the existing Thorold Stone Road overpass and return to the trail via Dorchester Road.
- ii) The active CN Rail line between Portage Road and the Hydro Canal may preclude crossing within the corridor and will force alternative routes either north or south.
- iii) An alternative to crossing the hydro canal via the existing CN rail bridge might be to travel north via Millennium Trail towards Thorold Stone Road. Refer to Segment D for connection further east.

----- Proposed Alternative Route
 === Major Constraint



Segment D - Alternative Routes

i) The Thorold Stone Road extension alternative would see the trail continue around the Gale Center Arena and south via a future Regional Road connection to the intersection of Victoria Ave and Bridge Street. A future roundabout is planned at this intersection.

ii) Should it be preferred to avoid the future roundabout, a potential alternative is to direct the trail beneath the Victoria Avenue overpass, connecting to the north side of Bridge Street. This alternative may require land acquisition.

iii) Pending the GO Station Secondary Plan area plans, from the future roundabout towards Erie Ave, the trail could perhaps utilize Bridge Street rather than following the serpentine corridor.

----- Proposed Alternative Route



Trail Design Principles

Considering the vision for the proposed NS&T Rail Trail, it is important the trail is planned, designed and delivered to reflect the following core design principles:



Placemaking

Utilize strategic design to provide the Trail with its own identity and make it a destination within the City.



Accessibility

Provide access for residents of all ages and abilities, including meeting, and where possible, exceeding the AODA requirements for recreational trails.



Compatibility

Through contextual sensitivity in design practice, the trail reflects and enhances the neighbourhoods, open spaces and corridors it passes through.



Environment

Encourage design that supports a sustainable urban environment using design that contributes to such things as canopy cover and stormwater management.



Connectivity

Introduce new and enhance existing connections throughout the corridor, including major surrounding corridors, nodes and neighbourhoods.



Safety & Comfort

Coordinate design elements to provide visual interest, support Crime Prevention Through Environmental Design (CPTED) principles, and pedestrian amenity. Improve the desirability of walking and cycling.



History

Through thoughtful references and design considerations, the trail emphasizes the unique history of the corridor and local heritage.



Trail Design Guidelines

Mid Block Categories

Typical Mid Block

The default proposed operating condition for the NS&T Rail Trail.

Alternate Mid Block - Constrained

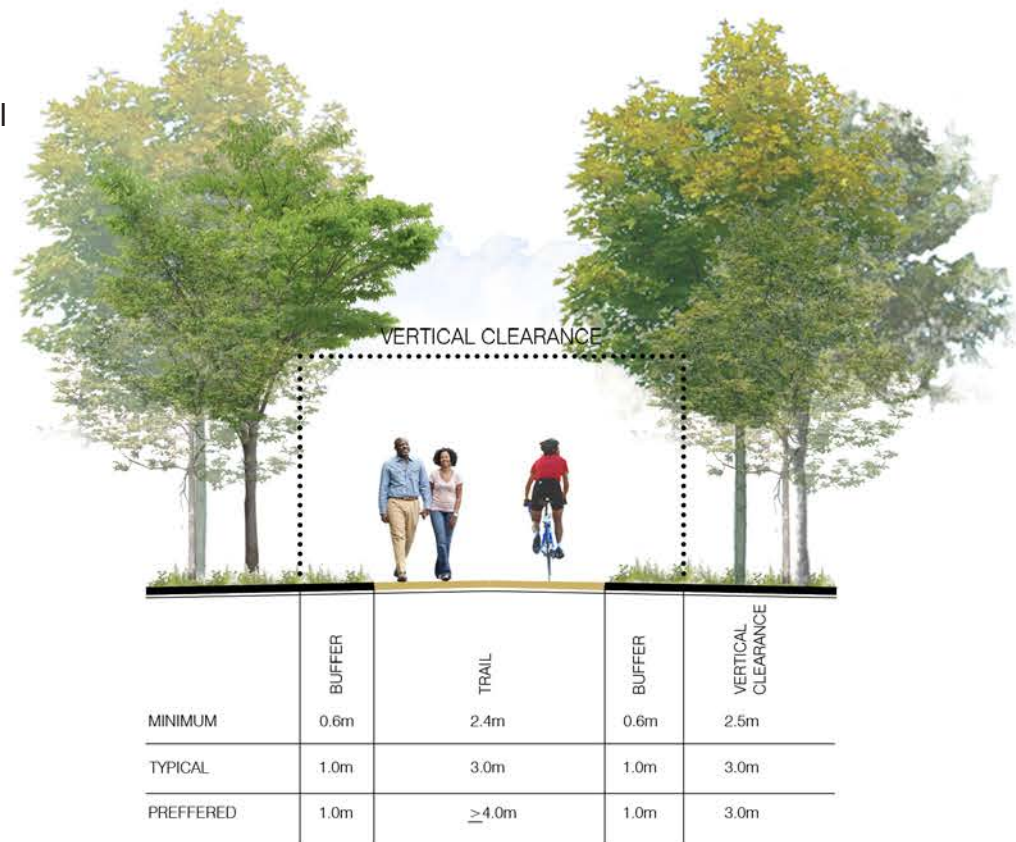
In environmentally sensitive areas, or areas requiring additional screening of adjacent land uses, an alternate cross-section may be considered which incorporates a narrower trail footprint with less overall impact.

Alternate Mid Block – High Demand

In some cases, particularly as the trail approaches downtown Niagara Falls, there may be opportunities to develop separate paths for pedestrians and other faster trail users such as cyclists, roller-bladers and/or scooters. Where feasible, a high-capacity trail configuration may be considered.

Mid Block – Along Roadway

In some instances, alternate routes are required. Therefore the trail will continue along roadways where appropriate edge zones and buffer areas are necessary.



TYPICAL MID BLOCK

**Note: Setback conditions from adjacent private properties vary and should be addressed on a case by case basis.*



	BUFFER	TRAIL	BUFFER	VERTICAL CLEARANCE
MINIMUM	0.6m	2.4m	0.6m	2.5m
TYPICAL	1.0m	3.0m	1.0m	3.0m
PREFERRED	1.0m	≥ 4.0m	1.0m	3.0m

TYPICAL MID BLOCK



	SIDEWALK	BUFFER	TRAIL	BUFFER	VERTICAL CLEARANCE
MINIMUM	1.5m	0.3m	2.7m	0.6m	2.5m
TYPICAL	1.8m	0.6m	3.0m	1.0m	3.0m
PREFERRED	2.1m	0.6m	≥ 4.0m	1.0m	3.0m

ALTERNATIVE MID BLOCK -
HIGH DEMAND



	BUFFER	TRAIL	BUFFER	VERTICAL CLEARANCE
MINIMUM	0.6m	2.4m	0.6m	2.1m
TYPICAL	1.0m	2.7m	1.0m	2.5m
PREFERRED	n/a	≥ 3.0m	n/a	2.5m

ALTERNATIVE MID BLOCK -
CONSTRAINED



	BUFFER	TRAIL	BUFFER	EDGE ZONE	VERTICAL CLEARANCE
MINIMUM	0.6m	2.4m	0.5m	0.5m	2.5m
TYPICAL	1.0m	3.0m	1.5m	1.0m	3.0m
PREFERRED	1.0m	≥ 4.0m	1.5m	1.0m	3.0m

MID BLOCK ALONG ROADWAY



Trail Crossings

Wherever trails cross roads or other facilities such as pedestrian crossings or other trails, there are several principles of good intersection design that apply:

Ensuring Visibility

The most critical element of promoting safe crossings is ensuring that trail users and crossing drivers or other road users can detect and perceive each other.

Communicating Priority

It must be clear to both trail users and conflicting traffic who has the right of way. This can be established through a combination of traffic control devices (such as stop, yield, and traffic signals) as well as through subtler physical changes in the operating environment such as textured pavements, and/or raised crossings / crosswalks.

Parking

As a destination trail, it can be expected that some users will arrive via personal vehicle and so provisions for parking must be considered, especially at key trail head locations.

Potential Parking Strategies

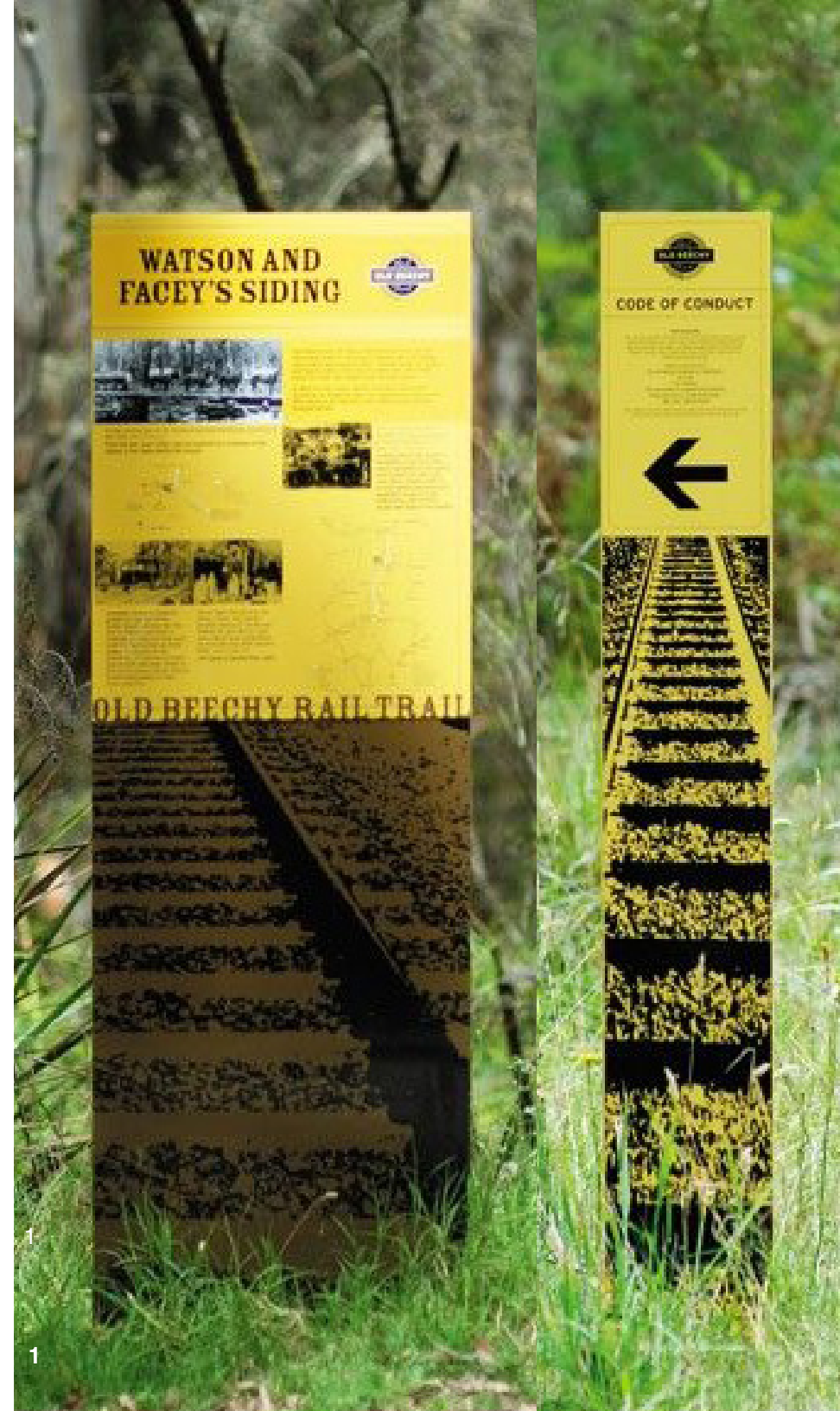
1. Public Parks/Current Existing Trail Accesses
2. Municipal/Regional Parking Lots and Facilities
3. On-Street Parking

Wayfinding and Branding

Information and Wayfinding Signs

Interpretive signs, directional signs, distance markers, trail heads and other miscellaneous signs should be made clear and legible to be read at higher speeds, as necessary.

Wayfinding can extend beyond signage and take the form of iconography, where branding can be incorporated into such things as site amenities and paving.



Materiality & Amenities

Amenities

Benches, Bicycle Racks, Site Lighting, Garbage/Recycling Enclosures, Fencing, Trail Heads/Markers

A coordinated selection of site furnishings that complement each other and provide continuity, iconography and branding. Note: Trail lighting for after dark use is not a City practice and is not currently proposed.

Paving Materials

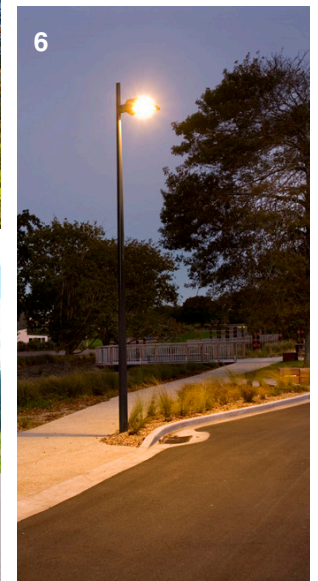
Asphalt, Granular, Concrete

Material application for the Trail is intended to balance accessibility, maintenance, and environmental sensitivity.

Planted Buffers

Red Maple, Burr Oak, Shagbark Hickory, Hardy Shrubs, Grasses

Preference should be given to native trees that are tolerant of urban conditions. Plantings of varying heights that provide seasonal colour and interest and are regionally appropriate are desirable.



Planning and Policy Influences

There are a number of active and planned influences which will impact the project and which the master plan must have regard for, including but not limited to:

Niagara Region Complete Streets Design Manual

An initiative addressing the design/re-design of all Regional Roads prioritizing active transportation as an essential component. There may be opportunities to partner with this initiative where applicable, namely for alternative route options.

Thorold Stone Road Extension Environmental Assessment/Roundabout

The extension will provide a key connection to the QEW, enhanced linkage to the City of Niagara Falls' downtown area and Niagara River Parkway. There is an opportunity to take this into consideration for potential alternative trail routes.

Bridge Street Environmental Assessment

This study considers intersection enhancements and the inclusion of active transportation infrastructure, as well as streetscape and urban design improvements. There is potential to coordinate design concepts with the Rail Trail Master Plan.

Niagara Falls GO Station Secondary Plan

This Secondary Plan provides a vision and planning framework to advise transit-supportive development around the future GO station, located on Bridge Street at the existing VIA Rail station. The planning framework will be a key influence on the trail at the east terminus in the downtown area.



Images

Note: All images by IBI Group unless noted below.

P.21

1. nuttshell.com.au

P.22

1. <https://www.bikearlington.com/>
2. <https://explorethebruce.com/>
3. <https://www.maglin.com/>
4. https://www.tripadvisor.es/LocationPhotoDirectLink-g60874-d8064983-i226325445-Noonday_Creek_Trail-Kennesaw_Georgia.htm
5. <https://parkways.seattle.gov/>
6. <http://www.aucklanddesignmanual.co.nz/>
7. <https://sheridannurseries.com/>
8. <https://westmichigantrails.com/thomas-township-trail.php>

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1. Niagara Go Station Secondary Plan (Niagara Region)

