



# City of Kingston Highway 15 Class EA **Design Guidelines**

August 2017

**HR + dtah**

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These design guidelines are a supplement to the Highway 15 Municipal Class Environmental Assessment. For more information about the Environmental Assessment and these design guidelines, visit the project website (<https://www.cityofkingston.ca/nb/city-hall/projects-construction/highway-15>) or contact:

Tyler Lasko  
Supervising Engineer, Infrastructure & Development  
City of Kingston  
tlasko@cityofkingston.ca  
Phone: 613-546-4291, ext. 2307

Joseph Arcaro  
Lead Project Consultant, HDR Corp.  
joseph.arcaro@hdrinc.com  
Phone: 1-888-860-1116

Brent Raymond  
Landscape Architecture Consultant, DTAH  
brent@dtah.com  
Phone: 1.416.968.9479

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# 1.0 INTRODUCTION

Highway 15 is a vital corridor in Kingston, Ontario. It acts as the eastern gateway into the City and is the major north-south arterial in Kingston East.

The City of Kingston is currently undertaking a Municipal Class Environmental Assessment (Class EA) to review the current and future transportation needs for Highway 15 from south of Highway 401 to Highway 2.

The purpose of the overall Class EA is to:

- Consider improvements to Highway 15 to accommodate projected vehicular travel demand
- Consider active transportation and transit facilities to accommodate future development
- Consider aesthetic improvements and illumination throughout the corridor
- Evaluate modifications to existing intersections and consider a potential roundabout at Highway 2 and Highway 15.

As part of the Class EA process, a placemaking component was added to ensure that the development of the corridor was context-sensitive and respected the cultural heritage of the area. The scope of the placemaking component included 1) a Visioning Workshop, 2) a Best Practice Review, and 3) design guidelines to inform future design work on Highway 15.

The Visioning workshop was held on May 2, 2016 to engage key stakeholders and City staff. The workshop explored the existing character of Highway 15, identified qualities to reinforce and improve, established a possible shared vision for the corridor and suggested a landscape character to inform future work (See Appendix-A).

The Best Practice Review selected guidelines to identify characteristics that are common to similar guides and help inform the Highway 15 design guidelines. From the analysis, most of the guides place greater emphasis on the roadway components between the curbs with less attention to how streets should respond to adjacent land

use, built form and landscape character. It concluded that by adopting a strategic approach that involved the edge conditions in as much detail as the right-of-way conditions, the corridor design will ensure that future and anticipated local character is reflected in the full development of Highway 15.

The guidelines within this document build upon the visioning workshop, public input received through the Class EA process, the review of best practices, and our own professional judgment.

## What We Heard

Through a series of public meetings and the visioning workshop held with key stakeholders on May 2, of 2016, the team gathered key messages from the stakeholders and the community about what they wanted the corridor to become. The vision established for the corridor is: to develop a safe and functional multi-modal corridor that is reflective of the cultural and natural context surrounding it.

## Focus

The four key messages that establish the vision for the corridor, based on public input, are:

- Build upon the historical and natural aspects of the area, such as the area's heritage buildings, farms and quarry history, CFB Kingston and the Great Cataraqui River and its watershed ecology. Design character, materials, furnishings, signs and public art to ensure future development respects these historical, cultural and natural heritage components with a distinct and visually appealing identity.
- Design safe and functional pedestrian and cycling infrastructure that builds upon existing and future trails and features in the area to form a cohesive system that highlight views and vistas to the natural landscape. Provide these facilities to offer residents and visitors recreational opportunities within the area, and an active mode of transportation for both local and longer distance trips.

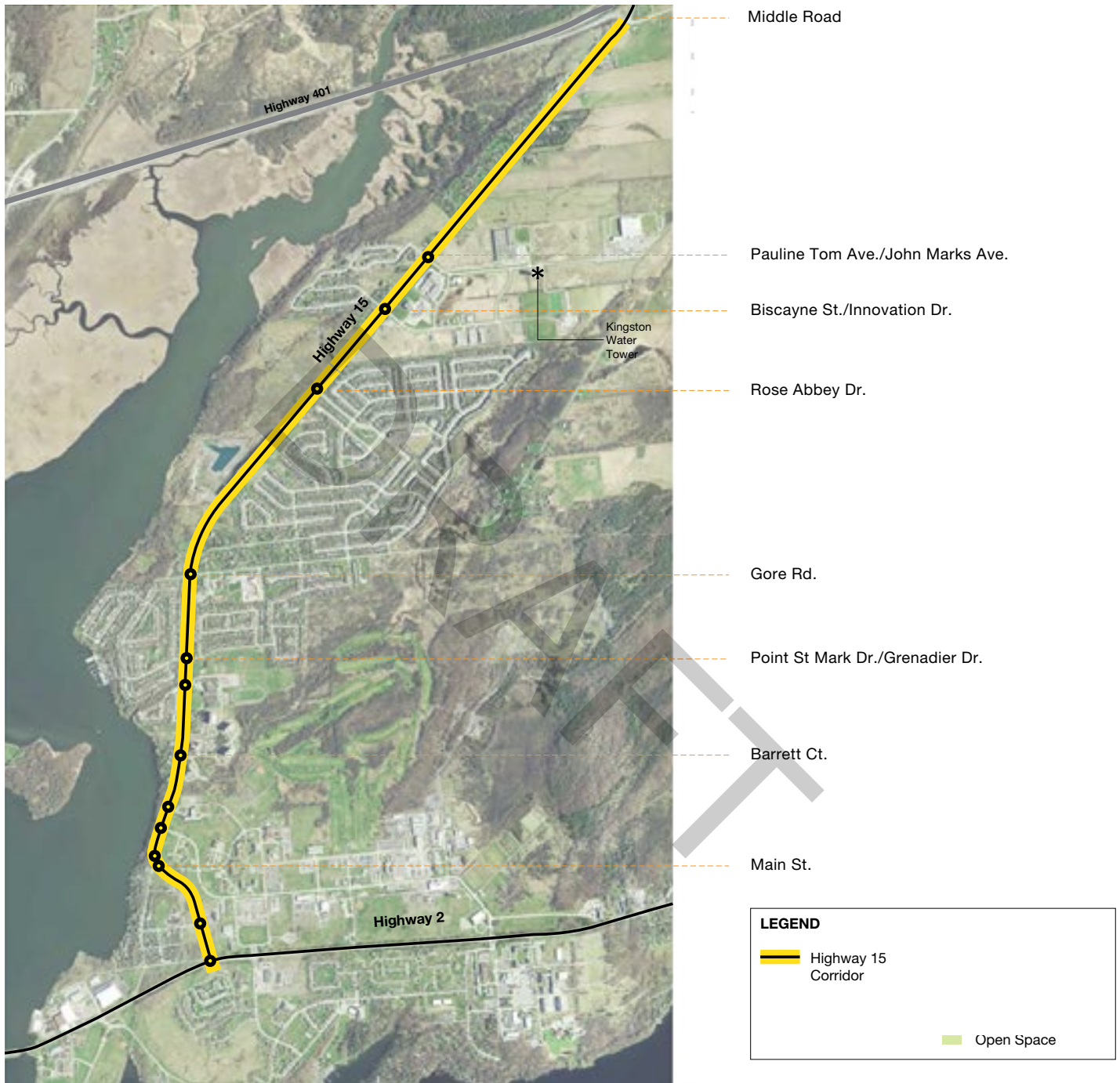


Figure 1: Highway 15 EA Study Corridor

- Include gateways or landmarks to provide a sense of arrival at the major nodes or key areas throughout the corridor.
- Future buildings should be arranged on their site to address the corridor in a positive and form-giving manner and support placemaking.

### **Purpose**

This document is intended to guide the aesthetic and functional development of Highway 15 through this Class EA process. The document establishes guidelines to help Highway 15 grow into a multi-modal and context-sensitive corridor. The guidelines evolved from an assessment of best practices in the industry as well as public input.

### **Who Can Use This Document?**

This document will guide the future design of the Highway 15 corridor within the right-of-way. The direction within this document also applies to the development edge and is intended to guide developers and the communities along the corridor in their future development. Through the use of the guidelines within, the vision for the character of Highway 15 can be realized.

## 1.1 Context

The Highway 15 corridor south of Highway 401 is rich with cultural heritage that combines historical buildings and areas, a variety of land uses and an abundance of natural areas with inspiring views and vistas.

### Cultural Background and History

The corridor provides access to heritage properties such as the Barriefield Heritage Conservation District and several heritage buildings throughout the corridor. It is also within the vicinity of the Rideau Canal World Heritage Site and the Rideau Heritage Route and thus, part of a region rich in cultural heritage. The area also has a cultural history of farming and mining, represented in the former limestone quarry site on the west edge of the corridor along the Great Cataraqui River.

### Land Uses

Highway 15 has a variety of land uses including active farmland, residential, industrial, commercial, community uses, parks and open spaces. This variety of land uses adds to the dynamic character of the corridor.

### Ecology

The corridor is adjacent to important marshes along the Great Cataraqui River and significant woodlots. Refer to the Natural Heritage report from Phase 1 of this Class EA process for further detail regarding these significant areas.

### Policy Background

Several existing official policy documents will inform the character and design of Highway 15:

- City of Kingston Official Plan. Policies from the 2010 Official Plan that apply to the study area and inform the vision for the corridor include enhancing accessibility and circulation for all residents, visitors and users for the area, and targeting a sustainable approach to the multi-modal infrastructure. It includes reference to high quality design treatments on all lands designated business park industrial and located on Highway 15 (OP section 3.6.14.s); landscaping and view protection for Barriefield (OP section 7.3.C.7.f); and development along Highway 15, as a principal entrance to the City, to be characterized by a high standard of design
- consistent with the natural “gateway to the City”, with associated site design guidelines (OP Section 8.9.1). Furthermore, the Official Plan references the Third Crossing project of the Cataraqui River and its connection to Highway 15 at Gore Road and the consideration for a road allowance width (property ownership) of 36.5 metres for Highway 15, which includes both the road surface and adjacent off-road elements such as medians, and adjacent pathways (on and off-road), planting strips, sidewalk, etc. A linear parkway, required by the OP along the east edge of the corridor north of Gore Road, creates a buffer between rear-lotting residential uses and Highway 15. The OP highlights the variety of land uses along that strip and the need to maintain and enhance that character.
- City of Kingston Site Plan Control By-Law No. 2010-217 (Passed on November 2, 2010). As The City of Kingston is designated as a Site Plan Control Area, all procedures for the processing of Site Plan Applications for developments along the corridor must adhere to the by-law.
- Rideau Community Secondary Plan (RCSP). The RCSP sets out specific goals and policies relevant to Highway 15 that establish the basis for the guidelines provided in this document. They highlight that: Highway 15 is identified as a scenic route that is to be maintained as such through landscaping and edge development; pedestrian movement will consider access to destinations through a network of parks and open space, and direct driveway access to the highway will be limited.
- Kingston Waterfront Master Plan. The Kingston Waterfront Master Plan was adopted by Council on March 22, 2016. One of the key elements in this effort is to protect for water's edge access. Many of the properties between Highway 15 and the river are anticipated to contribute to the delivery of the broader waterfront trail system, which is also identified in the most recent draft of the Official Plan. Connecting to the off road trails and paths is important to broaden the overall pedestrian and cycling networks through this part of the city.

- Heritage Policies and Plans. While not directly within the right-of-way of the corridor, various heritage policies and plans will influence the planning of the corridor's visual character due to adjacency. This includes but is not limited to: The Barriefield Heritage

Conservation District Plan, the Rideau Canal World Heritage Plan and various archaeological requirements for sensitive areas within the Highway 15 Corridor.



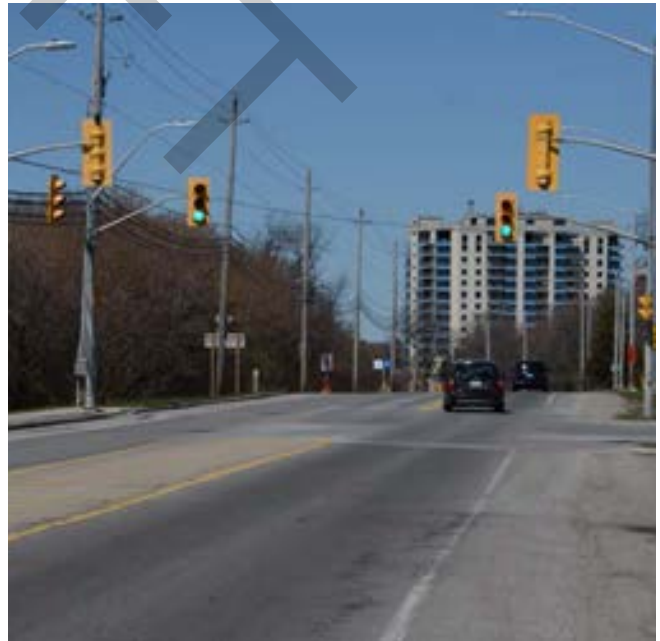
Converted stone farm house at 80 Gore Road, now a library



CFB Kingston fencing along Highway 15



Waterfront edge access north of Barriefield Community



Prominent tall buildings form a landmark along Highway 15

## 1.2 Area Description

### Corridor Description

Highway 15 south of the 401 Highway transitions from a rural highway into an urban road. The corridor reflects a rural condition between Highway 401 and Pauline Tom Avenue /John Marks Avenue, where farms still exist. Moving south along the corridor, large lots in the St. Lawrence Business Park transition to smaller urban parcels. Residential communities are under construction to the west of the St. Lawrence Business Park.

On the east side of Highway 15 and south of John Marks Avenue is a series of linear park blocks and pathways that extends to Gore Rd.

Gore Road is the central intersection along Highway 15 and is the proposed potential location for the Third Crossing Bridge over the Great Cataraqui River. It will become an increasingly important node and include one of two existing commercial plazas along the corridor.

Commercial plazas near Gore Road and Barrett Court are key community destinations. An additional commercial plaza is proposed at Rose Abbey Drive and will serve as a community node.

Moving south towards Barrett Court along Highway 15, built form changes from single detached dwellings to taller buildings. This node is visible from either end of the corridor and serves as a landmark.

The Canadian Forces Base (CFB) Kingston entrance is situated opposite to where the river is closest to Highway 15, and the base itself extends to Highway 2 on the east edge of the corridor.

Future potential waterfront viewing area north of the Barriefield Heritage Conservation District and St Mark's Church, along with the road fork at the intersection of Highway 15 and Main Street act as a node.

Designated properties along this segment of the highway have visual access to Highway 15 and contribute to the cultural heritage of the corridor. In addition to heritage properties, older homes are scattered along this segment of the corridor and have direct driveway access onto Highway 15.

The corridor culminates at the intersection of Highway 15 and Highway 2. The east-west road has distinct rock walls that mark the intersection and act as informal gateways along Highway 2.

### Community Identified Segments

Through the Visioning Workshop, held on May 2nd 2016, a series of distinct character segments were identified by the community along the corridor. The segments were (from north to south):

- Rural Area north of Pauline Tom/John Marks Avenue.
- Employment Block with the Tim Hortons at St. Lawrence Business Park;
- Rose Abbey Drive as a third node with the proposed new residential subdivision and future commercial development;
- North of Gore Road has a separate east and west character with the east side having more positive aspects because of the paths along the side;
- Gore Road and Highway 15 as a second 'node' with the library and the commercial plaza access;
- Grenadier Drive to Gore Road as a 'through' place because of backyard fences along the Gatehouse Community;
- The community node between Barrett Court and Grenadier Drive with high-rise residential buildings, the school, retirement community and the small shopping plaza to the west;
- The water's edge access where Highway 15 is closest to the water on the west edge;
- The Barriefield Heritage Community to the west;
- CFB Kingston to the east;
- Highway 2 and Highway 15 node;

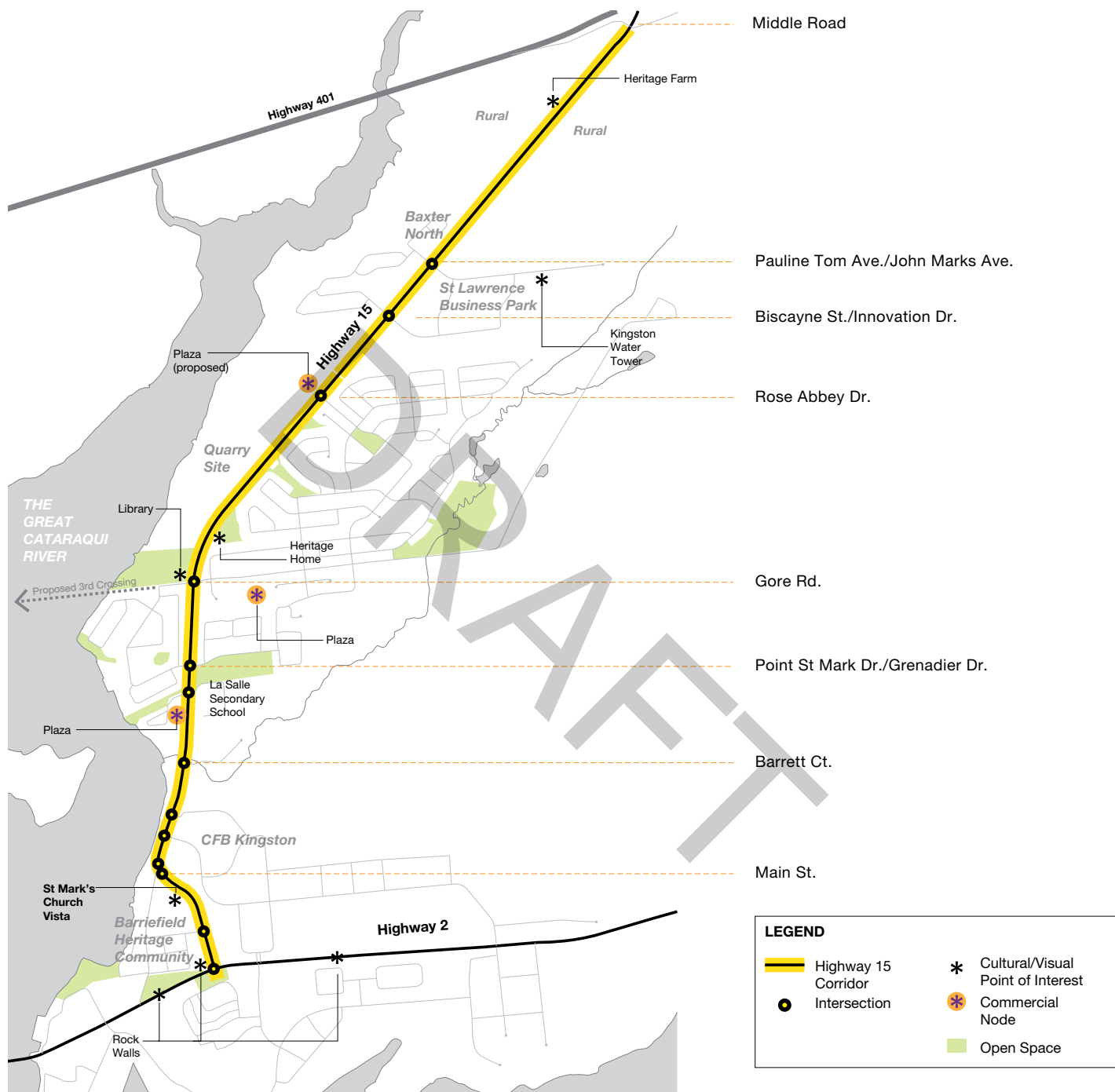


Figure 2. Highway 15 Corridor & Context based on the Visioning Workshop

# 2.0 GUIDELINES

Based on the key themes established through the Best Practices Review and the Visioning Workshop, a series of guidelines are recommended below to ensure the vision for the corridor is achieved.

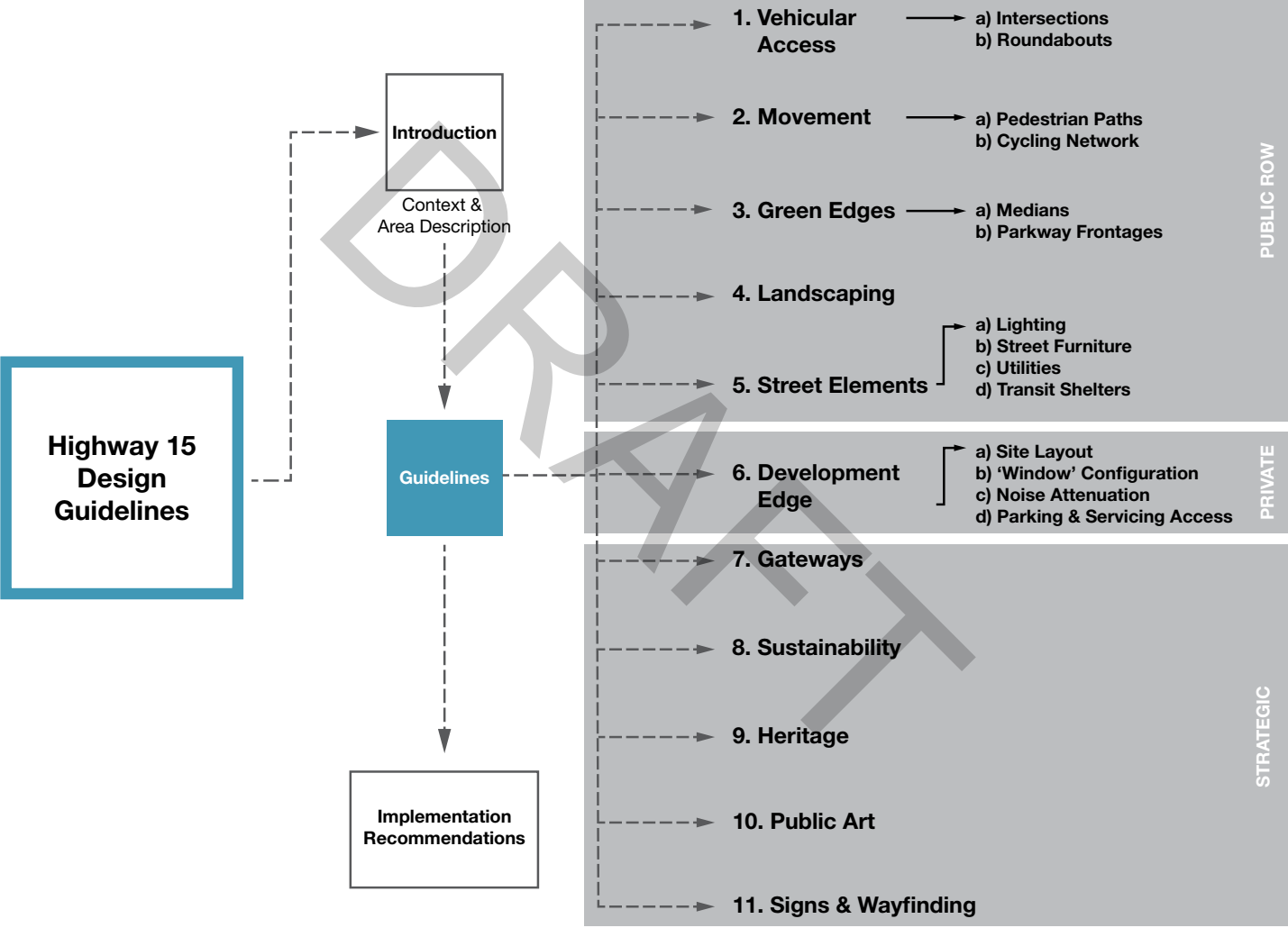


Figure 3: Document Organization

## How to Use this Document

This document is intended to act as a reference in the development of Highway 15. The corridor improvements within the right-of-way are the main focus of this document, but addressing some edge conditions in private and public ownership are recommended to cohesively bring together the overall vision for the corridor. Improvements within the right-of-way, on private lands and as part of strategic projects are to include the use of sustainable materials, planting, and Low Impact Development (LID) approaches.

An over-arching goal for all landscape projects is to consider the environmental performance of the improvements and deliver Low Impact Development, moving beyond the aesthetic benefit of additional plantings. This approach has several benefits, including creating a productive landscape that can sustainably manage stormwater run-off and improve the water quality of the adjacent water bodies and channels. It also responds to the Ministry of Environment and Climate Change's updated requirements for Low-Impact-Development and Green Infrastructure (GI) stormwater management systems coming into effect in 2017 (refer to: <http://www.sustainabletechnologies.ca/wp/wp-content/uploads/2015/02/MOECC-Interpretation-Bulletin-Stormwater-Management.pdf>).

The Design Guidelines are broken down into themes with key components for each section. The themes initiate with content directly within the right-of way and then progress to the private development edge requirements. This is then followed by general strategic themes for the corridor that over-arch all the elements.

The overall structure of the document is illustrated in "Figure 3 - Document Organization" on page 8.

## Classification and Terms

*AODA Standards* refers to the Accessibility for Ontarians with Disabilities Act Standards.

*CFB Kingston* refers to the Canadian Forces Base in Kingston.

*CRCA* refers to the Cataraqui Region Conservation Authority.

*Culturally Significant Area* refers to the designated cultural, historical or natural areas.

*Desire lines* refers to how pedestrians or cyclists move or want to move in an environment.

*Gateway* refers to a land-mark point or area that marks a transition between two areas.

*Median* refers to dedicated space in between travel lanes of opposing direction. The median may accommodate materials and features related to placemaking such as planting material (shrubs, perennials, grasses or trees), public art, and lighting.

*Rural Cross-section* refers to the typical cross-section that is north of John Marks/Pauline Tom Avenue to south of Highway 401 and includes ditches along either side or a road shoulder.

*Parkway Edge* refers to the park blocks adjacent to the transportation right of way.

*Public Right-of-Way (ROW)* refers to designated area between private property lines that contains publicly owned and maintained elements and accommodates for future expansion.

*Rear-lotting* refers to conditions where houses have their back-yards addressing the Highway 15 corridor.

*Sight Triangle* refers to the area directly adjacent to an intersection that is kept clear of obstructions for driver's line of sight.

*Urban Cross-section* refers to the typical cross-section that is south of John Marks/Pauline Tom Avenue to Highway 2 and includes curbs and medians.

*Window-Street* refers to a street parallel to the arterial road that allows visual access into a neighbourhood without placing direct driveway access for front or rear-lot homes that are adjacent to the arterial road.

# 2.1 Vehicular Access

## a) Intersections

**Principle: Design intersections to provide safe and seamless integration of all the modes of travel, support existing adjacent uses, and contribute to network and community connectivity.**

### Background

Intersections are the most complex aspect of street design. Some of the factors that contribute to this complexity include pedestrian and cycling connections, adjacent land uses, vehicle capacity, transit stops, and level of access to destinations near intersections.

The most important intersection design principle is always safety. Consider safety from the perspective of all users, starting with those who are most vulnerable: pedestrians of all ages and abilities (people with physical disabilities, those using mobility assistance devices, caregivers, seniors and children), and cyclists. Further, all street design shall comply with AODA standards.

The importance of other design principles such as placemaking, support for multi-modal transportation, and efficient movement for all users will depend on the specific context and type of intersection. The main vehicular intersections that incorporate non-local traffic into the corridor within the Class EA limits are at Gore Road and Highway 2. Other important intersections for local traffic, including pedestrian and cyclists, occur at

Pauline Tom Avenue, Biscayne St and Innovation Drive, Rose Abbey Drive, Point St Mark Drive, Medley Court, Barrett Court, Main Street and finally Wellington Street. Intersections will vary in configuration depending on their location context.

### Intersection Guidelines

- G1.** Consider intersections within their context, with their design informed by the land uses, built form intensity, proposed users, and broader transportation networks.
- G2.** Minimize the impact of road widening on heritage properties and structures near intersections.
- G3.** Minimize pedestrian crossing distances where possible. If a median is present, provide a pedestrian refuge to ensure safe waiting space, and an extended median nose to provide further protection from turning vehicles.
- G4.** Apply the principles of universal design to improve accessibility for all users. Use colour, contrast and signs to indicate crossing locations, and illuminate intersections.
- G5.** Locate transit stops close to intersections to provide connections with the local street network.

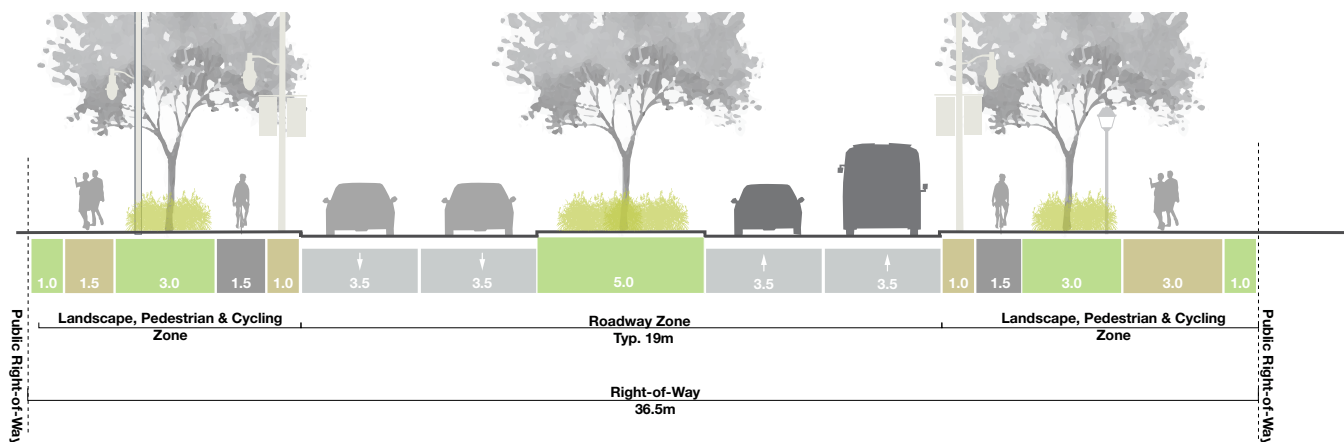


Figure 4 - Typical Urban Cross Section (Configuration of Vehicular, pedestrian and cycling routes to be accommodated at intersections)

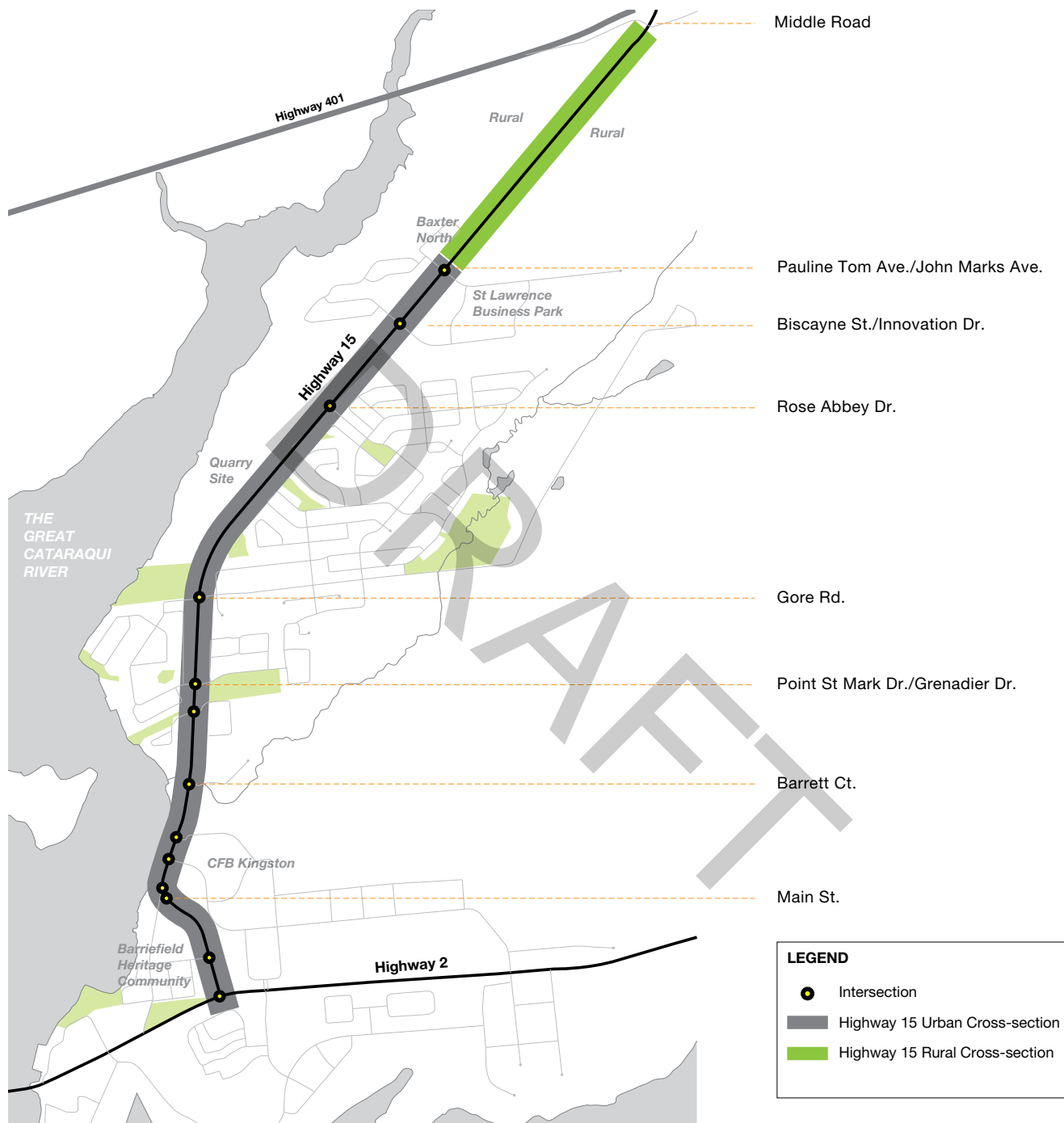


Figure 5 - Locations of Urban and Rural Intersections

## b) Roundabouts

**Principle: Consider roundabouts as an alternative to signalized intersections in important locations for both their functional and placemaking opportunities.**

### **Background**

Roundabouts have certain advantages over signalized intersections in specific conditions. Roundabouts can efficiently manage vehicle movements in some types of junctions, reduce collisions, and calm traffic. They can also contribute to placemaking by providing a visual focal point and are suitable spaces for planting, signs, and public art. A roundabout is being considered for the intersection of Highway 15 and Highway 2. In this setting, the roundabout can serve as a gateway to Highway 15 corridor, Downtown Kingston, and CFB Kingston. Any roundabout design shall thoughtfully consider how to safely and conveniently accommodate pedestrian and cyclist movements.

### **Roundabout Guidelines**

- G6.** Ensure sufficient available space to accommodate the roundabout as well as all other users.
- G7.** Provide safe and separated cycling and pedestrian facilities at roundabouts. Consider pedestrian and cycling desire lines when locating crossings.
- G8.** Consider generous planting, public art, and signs for identity and wayfinding as part of the roundabout design.



Example of a roundabout that functions as a landscape gateway feature near a bridge access



A roundabout with public art and planting in a rural area



A well planted roundabout that contributes to placemaking along side its functional role (Gravernhurst)

## 2.2 Movement

### a) Pedestrian Facilities

**Principle: Design pedestrian facilities to provide safe and accessible routes along both sides of the corridor and connect with the existing and planned pedestrian network in the area.**

#### **Background**

Safe and accessible pedestrian routes are needed along the Highway 15 corridor to encourage healthy and active lifestyles and provide connections between communities and local destinations. Connect to local trail systems in that area as well as the key destination points such as La Salle Secondary School and the Medley Court amenity node to integrate with the existing pedestrian network such as Greenwood Park trail. Provide continuous accessible pedestrian facilities designed for comfort and efficient maintenance and incorporate stormwater management features, where applicable, for sustainability.

#### **Pedestrian Facilities Guidelines**

**G9.** Ensure all paths are accessible as per the AODA standards.

**G10.** Use colour or texture variations to indicate a change in grade or function.

**G11.** Provide signs to indicate crosswalks for traffic calming purposes.

**G12.** Locate catch-basins away from crosswalks to ensure pedestrian safety in inclement weather.

**G13.** Ensure crossing time is sufficient at signalized intersections for slower pedestrian speeds (ie. seniors, children, etc.), specifically at the intersections of Barrett Court and Medley Court.

**G14.** Provide multi-use trails where required at a minimum of 3.0 metres wide. A 4.0 metre wide multi-use trail can be considered in locations where sufficient space can be allocated to the other cross-section elements.

**G15.** In cases where separated paths for pedestrian and cycling networks are preferred, the minimum width for pedestrian sidewalks is 1.5 metres of unobstructed pathway. A width of 2.1 metres can be considered in locations where sufficient space can be allocated to the other road cross-section elements.

**G16.** Thoughtful location of pedestrian crossings should support the walking network and walking patterns and desire lines.

**G17.** Assess the existing context and identify key destinations and routes and ensure way-finding signs are provided.



Example of an multi-use path with stormwater bioswales



Example of a well considered crosswalk



Example of a crossroad intersection detail for pedestrians and cyclists



Pedestrian path with a naturalized landscape buffer contributes to the character of the corridor

## b) Cycling Network

**Principle: Provide context sensitive cycling facilities that support active living, improve community health, encourage alternatives to vehicle use, and connect to the broader cycling network.**

### **Background**

Cycling is an ever increasing mode of choice for those traveling locally and further afield in Kingston. The City has worked towards developing a larger and more connected on-street and off-street cycling network, and has introduced cycling facilities into long range planning efforts and improvement projects such as the Highway 15 undertaking.

The preferred cycling facility design in the Highway 15 corridor should respond to the functional role of the street, consider the local context and different segments along its length, and expand and connect to the broader cycling network (both existing and proposed).

Along the majority of the corridor, ensure vulnerable users (both pedestrians and cyclists) are physically separated from vehicular traffic. This can be achieved by potentially combining cycling infrastructure with the existing multi-use trail on the east side of Highway 15 and the planned trail network in the 2016 Council-approved Kingston Waterfront Master Plan. Additionally, expand the off-street trail along the rest of the corridor as well as connecting the eastern trails to the western trails. Carefully consider how to separate pedestrians from faster cycling traffic, while also providing family oriented and more leisurely traveling cyclists a safe and connected route.

### **Cycling Network Guidelines**

**G18.** Where required, provide off-street single direction cycle tracks with no less than a 1.5 metre width.

**G19.** Where required, provide off-street, bidirectional multi-use paths with no less than a 3.0 metre width. In cases where sufficient space is available and a higher traffic volume is anticipated, a width of 4.0 metres can be considered.

**G20.** Provide clear definition between cycle tracks and pedestrian clearways, with a minimum dimension of 0.3 metres, and a target of 0.6 metres. Separation can include a difference in colour, texture, or material.

**G21.** Planting should not impede the travel of users. Ensure clearance of 0.3 metres on both sides of any facility.

**G22.** Include directional signs for wayfinding to key destinations, and to assist with travel distances.



Eglinton West Path separated multi-use path and sidewalk, Toronto, ON



Example of a multi-use shared path



A single cycle track along a road visualization-Credit: MASS DOT

## 2.3 Green Edges

### a) Medians

**Principle: Medians will contribute to the functional and placemaking aspects of the Highway 15 streetscape.**

#### **Background**

A median can serve as a visual and functional element that provides respite for pedestrians at crosswalks, increase opportunities for placemaking and create gateway features at intersections. Medians are also used for infrastructure, including stormwater management and light standards which can positively contribute to the character of the corridor. Medians can also improve vehicular safety by preventing head-on collisions and slowing down traffic.



Median example that combines use of materials

#### **Median Guidelines**

**G23.** Use medians only when there is sufficient space in the public right-of-way for sidewalks and other critical road elements.

**G24.** Where included, provide medians at a minimum of 1.8 metres wide and a minimum length of 15.0 metres.

**G25.** Use medians to enhance local character and support context sensitive placemaking by including public art or character landscape elements.

**G26.** In medians with planting, ensure a minimum width of 3.0 metres. Use raised roadway curbs to a maximum of 0.15 metres to protect planting from salt spray.

**G27.** In medians designed to accept roadway stormwater, ensure proper planting design to flush soils of salt and other contaminants.

**G28.** Where trees are desired, a minimum 5.0 metre wide and long planting area in the median is necessary. Salt strips of 0.5 metres are required on either side for medians without hard surfaces.

**G29.** Ensure median planting does not obstruct visibility at intersections.

**G30.** Provide a variable planting palette for median design that complements the adjacent landscape on either side of the road.

**G31.** Provide a minimum 1.5 metres pedestrian refuge/ extended median nose at intersections.



Arterial median in Gatineau, QC



King Edward Avenue in Ottawa uses medians that combine public art and planting



Example of a median that combines stormwater management

## b) Parkway Frontage

**Principle: Enhance the existing Highway 15 eastern parkway design between the St Lawrence Business Park and Grenadier Drive, and expand towards Highway 2 so that the generous landscape character and multi-use path system can extend further south.**

### **Background**

The existing eastern parkway is a generous landscape amenity and character defining element for a significant segment of Highway 15. The parkway provides a pleasant and safe separated pedestrian and cycling facility and creates an attractive green edge to the corridor. It is understood that planning permissions are in place to extend the parkway southwards. Implementing the parkway extension is a critical part to achieve the vision for Highway 15 as a green and multi-modal corridor.



Existing parkway frontage edge along Highway 15

## **Parkway Frontage Guidelines**

**G32.** Extend the eastern parkway blocks further south towards Highway 2. For those properties with existing permissions, extend in conjunction with the construction of Highway 15 improvements. For those properties without permissions, the City shall work towards securing the necessary land through acquisition or easements to extend the parkway as far as possible without interruption.

**G33.** Introduce suitable plantings to ensure a green and identifiable landscape character in the parkway blocks, and to provide comfort to pedestrians and cyclists.



Parkway example along Burns Road, Palm Beach, FL.

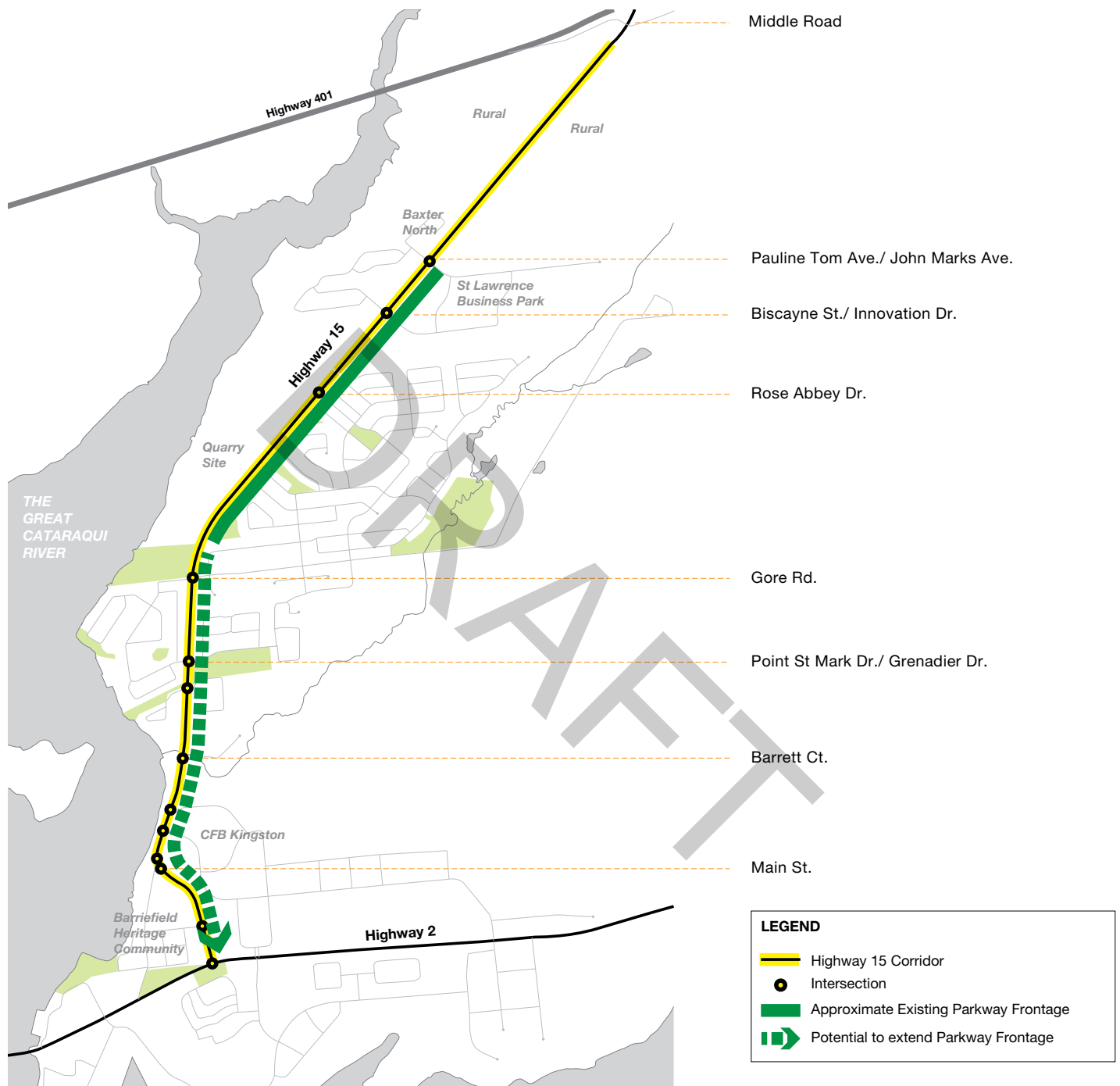


Figure 6 - Parkway frontage along Highway 15

## 2.4 Landscaping

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**Principle: Introduce context sensitive plantings along the Highway 15 corridor to create a green and pleasant environment, reinforce a sense of place, emphasize important features, and support broader community goals of sustainability.**

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### **Background**

A well considered landscape planting plan can provide multiple benefits to the redesign of Highway 15. Perhaps of greatest benefit is an improved visual character that helps to define the corridor as a green and comfortable place. Further benefits extend to micro-climatic comfort and ecological health. Planting shrubs and trees can also help to frame views, screen unsightly features, and demarcate important locations, as well as calm traffic by creating visual friction along the corridor. The planting palette should reinforce community character and include species and arrangements that are representative of the rural agricultural and small town heritage of the corridor.

### **Landscaping Guidelines**

**G34.** Introduce plantings of shrubs, trees, ground covers, and other plants throughout the corridor to improve visual character. Special emphasis should be considered at important civic landmarks, heritage structures, parkway, major bus stops and intersections.

**G35.** Use native plant species whenever possible, particularly within CRCA regulation area. Consider the context when selecting plant species to ensure it reflective of the surrounding character such as heritage, urban or rural areas.

**G36.** Use plant material to create visual friction to calm traffic and to minimize snow-drifting along pedestrian paths and cycling routes.

**G37.** Select a varied plant palette in the right-of-way and the adjacent edges, with species that are disease and pest resistant, salt tolerant, drought tolerant, low maintenance and low water demand. Mass planting of shrubs and ground cover is recommended using one to two species in each planting bed to decrease maintenance and crowds out weeds. Species that commonly drop branches or large seeds shall be avoided.

**G38.** Locate trees a minimum of 2 metres on-centre from the face of the curb and spaced between 7 to 10 metres on centre.

**G39.** Locate plants a minimum of 0.5 metres from edge of curb to protect from salt spray.

**G40.** Refer to City of Kingston Urban Forest Management Plan and the Design Guidelines for Communities for plant selection guidance.

**G41.** Tree roots should have sufficient non-compacted and well drained, high quality soil to allow trees to grow to a large, healthy and useful size. Target a minimum soil volume of 20 cubic metres per tree.

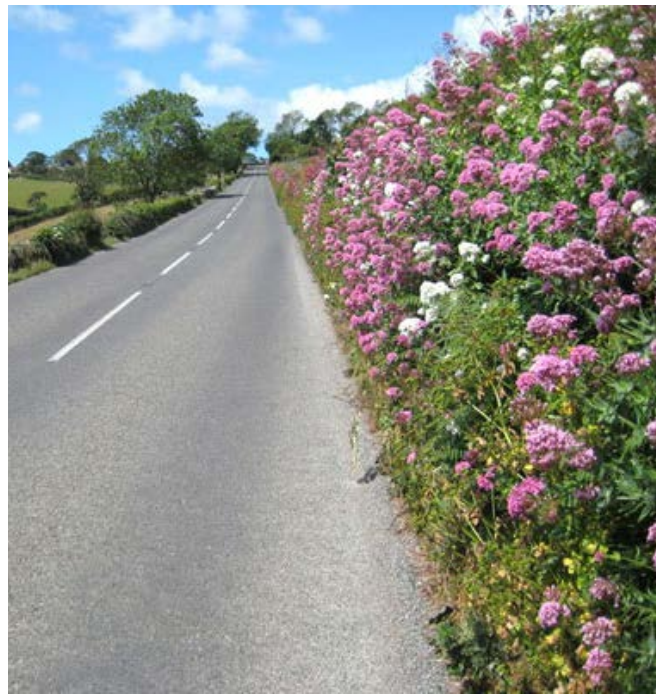
**G42.** Consider the location of overhead and underground utilities, service corridors, light levels and visual access when selecting trees and their placement. Recommend 1 metre from light standards to minimize light interference. Consider using bioshields to deflect tree roots from underground utilities where road edge space is constrained.

**G43.** In instances where vegetative screening is required along unsightly fences, allocate a minimum 1 metre green edge buffer to allow for the planting of screening vegetation.

**G44.** Select hardy and appropriate size plants based on potential mature size for areas where vertical and horizontal growth space is a concern.



Landscaping along paths improves pedestrian experience and encourages people to walk



Example of roadside planting reflective of the rural character



Diagram demonstrating CPTED principles for boulevard design

## 2.5 Street Elements

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**Principle: Consider street elements that contribute to the visual character of the corridor, support placemaking and advance the design quality of Highway 15.**

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### **Background**

The various street elements that together compose Highway 15 —such as lighting and furnishings—can contribute to an identifiable character that reflects the cultural and natural heritage of the area, and support other placemaking initiatives. The selection of elements should consider sustainability, durability, life-cycle cost alongside their aesthetic value.

### **Street Element Guidelines**

#### *a) Lighting*

**G45.** Ensure lighting design is appropriate in scale and sensitive to both active transportation and vehicular uses along the corridor.

**G46.** Integrate lighting that contributes to the character and placemaking objectives for Highway 15.

**G47.** Avoid light pollution or trespass in all lighting design.

**G48.** Coordinate the placement of lighting with trees and utilities to avoid conflicts and ensure adequate lighting levels for all users.

#### *b) Street Furniture*

**G49.** Coordinate street furniture within the overall corridor design so that it contributes to placemaking and reflects local character.

**G50.** Consider the potential to integrate public art and street furniture.

**G51.** Locate street furniture consistently within the cross section to avoid interference with pedestrian and cycling facilities.

**G52.** Consider aesthetic quality and life-cycle costs when selecting street furniture.

#### *c) Utilities*

**G53.** Coordinate above and below grade utilities and placement of furniture and trees to minimize potential conflicts.

**G54.** Consider the visual impact of utility poles and structures and consider their use for any potential public art contribution.

**G55.** Provide sufficient maintenance access when siting utilities and consolidate utility easements where possible to minimize impact during maintenance.

**G56.** Use root barriers to prevent root infiltration into utility trenches.

**G57.** Avoid locating catch basins or utility covers in on road or off-road bicycle lanes. Consider side-inlet catch basins for drainage within on-road cycling routes. If catch basins are in lane, ensure openings are not parallel with direction of travel to avoid creating a serious hazard for cyclists.

**G58.** Ensure the vertical alignment of catch basin grates is flush with the roadway surface to provide a smooth riding surface for cyclists and motor vehicles.

#### *d) Transit Shelters*

**G59.** Locate stops and shelters so that transit customers have safe access to well marked crosswalks and broader pedestrian networks.

**G60.** Design shelters that are physically and visually accessible and provide weather protection.

**G61.** Place shelters a minimum distance of 1.0 metre from the face of curb.

**G62.** Consider opportunities to include elements and integrate design into shelters and stop locations that contribute to placemaking.

**G63.** Ensure transit shelters adhere to any City of Kingston standards.



Elements such as lighting can contribute to a corridor character and placemaking



Context-sensitive transit shelter example.



Benches and receptacles from the same family of products result in a cohesive image for the corridor



Example of the renaissance style roadway luminaire by Lumec

## 2.6 Development Edge

### a) Site Organization

**Principle: The parts of each development, whether modest or grand, must be laid out to function well, respect heritage values and the overall corridor vision, and conform to the Official Plan, Secondary Plan, and other plans approved by the City.**

#### **Background**

Building orientation and height positively contribute to the spatial definition of the corridor when oriented to avoid rear-lotting situations. Positive building orientation improves the aesthetic appeal of the corridor and encourages a more pedestrian and cycling friendly environment.

The visual character and style of buildings should be consistent along segments and consider the effects pedestrian comfort on the corridor. This includes ensuring a safe, comfortable access along the corridor, where there are 'eyes on the street', façade lighting and consistent setbacks.

#### **Site Organization Guidelines**

**G64.** Establish a consistent setback and build-to line along the corridor and require new buildings to locate their frontage along this line.

**G65.** Design buildings to have attractive frontages along Highway 15.

**G66.** Address side yards, side walls and step-backs in an effort to prevent blank walls or garbage collecting side yards that are unattractive and unsafe.

**G67.** Use plantings to minimize the impact of blank walls (where not avoidable) or fencing.

**G68.** Provide a minimum 3.0 metre landscape setback between the Highway 15 public right-of-way and any new building site.

**G69.** Provide pedestrian paths within private development to connect with the Highway 15 pathway system.

**G70.** Avoid light trespass from adjacent development. This is particularly important in areas adjacent to open spaces or natural areas.

**G71.** Provide a minimum 1.5 metre access walkway between sidewalks and buildings.

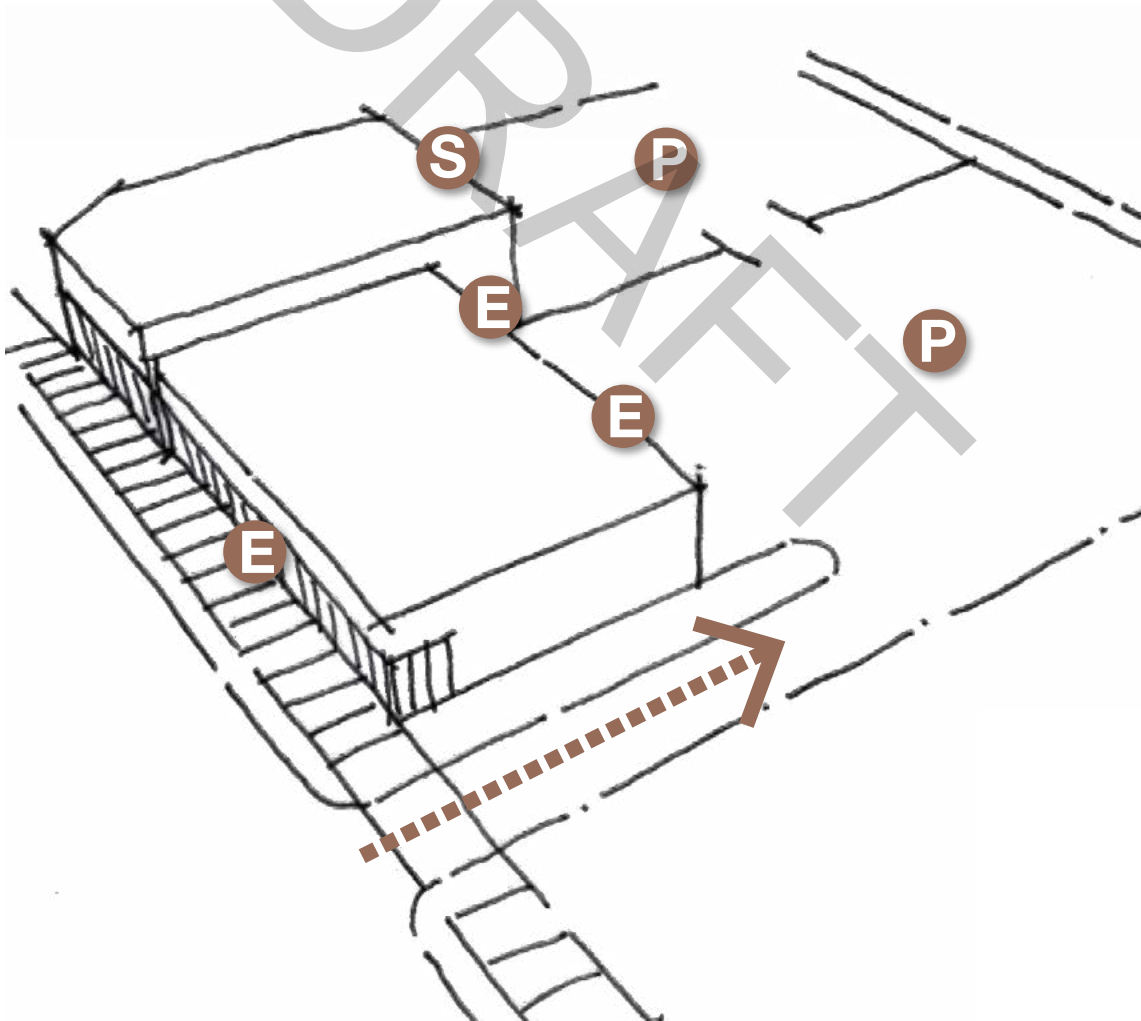
**G72.** Land assembly strategies can be used to reorient lots to provide better frontage for existing uses.



Example of a landscaped commercial edge development that improves the pedestrian realm



Well landscaped development edge



Retail buildings frame the street edge on a typical mid-block site  
(E: Entrance, S: Servicing and Loading; P: Parking)

## b) 'Window' Configurations

**Principle: Use 'window' street configurations as an alternative to rear lots facing the arterial corridor. These configurations minimize the need for fencing and contribute to a more visually pleasing streetscape and safer public realm.**

### **Background**

Along arterials, the options for siting residential buildings are limited. Of the possible options to consider, side or front lotting are the most visually appealing. Avoid rear lotting wherever possible.

Common to most higher speed arterials like Highway 15 is the desire to minimize the total number of access points to improve traffic operations. If the front yard of residential properties front onto the arterial, their site access should take place from the side or rear of the property and not from Highway 15. If residential properties have their side lots flanking the arterial, the arrangement of their primary address street could take one of three configurations that provide a "window" to the residential neighbourhood: frontage street, or gateways (entrance streets).

Window street configurations provide opportunities to introduce landscape screening and buffers, improve neighbourhood connectivity, safety and security and minimize the need for fencing and engineered noise attenuation structures on private properties. These improvements can contribute to a more attractive corridor that also supports a more successful public realm and attractive active transportation facilities.

## **'Window' Configurations Guidelines**

**G73.** Use various street configurations (frontage streets and gateway streets) to provide 'windows' into the neighbourhood for visual and physical access from Highway 15.

**G74.** Provide a minimum 3.0 metre landscape setback between the Highway 15 public right-of-way and any internal local street.

**G75.** Introduce planting and grading within the right of way and associated with any fencing of side lot configurations to assist with noise mitigation.

**G76.** Design streets so that they open up towards Highway 15 for better visual and physical connections.

**G77.** Design side lot configurations to avoid blank walls. If not possible to avoid, screen blank walls with generous planting.

**G78.** Introduce less sensitive uses, such as commercial, institutional, or open spaces, between residential development and Highway 15 to reduce the need for noise attenuation solutions.



Examples from the City of Ottawa standards of the three potential road conditions for residential subdivisions along an arterial road



Example of a window street condition along Bank Street between White Alder Avenue and Findlay Creek Drive in Kingston

### c) Noise Attenuation & Fencing

**Principle: Where required, design noise attenuation or fencing to positively contribute to the visual character of the corridor.**

#### **Background**

Where noise attenuation fencing is required to meet provincial noise impact guidelines along corridors, the design of these elements should complement the existing condition and contribute to a more positive visual character for Highway 15. Designs could include the use of stone landscape walls along with planting (as demonstrated near the Gore Road intersection), well designed wooden fences and landscaped berms.

#### **Noise Attenuation and Fencing Guidelines**

**G79.** Organize development sites so that buildings are adjacent to the road edge to achieve passive noise reduction.

**G80.** Design all aspects of Highway 15 within the public right-of-way to reduce the need for engineered noise attenuation solutions.

**G81.** Where a noise fence or wall is unavoidable, the design should positively contribute to the corridor character and aspiration and avoid creating a monotonous edge condition.

**G82.** Use landscape buffers and berms along open and recreational spaces, as opposed to fences or walls.

**G83.** Provide a minimum 3.0 metre landscape buffer as an alternative to fences for noise attenuation edges.

**G84.** In existing conditions or where a landscape buffer is not possible, provide a 0.30 metre setback from the property line for fencing placement along the Parkway edge or open spaces.

**G85.** Introduce vines, lilacs and other similar dense or screening plantings where there are existing sound attenuation fences to provide an improved visual condition.

**G86.** Encourage the use of stone and wood fences that make use of context sensitive details and materials.

**G87.** Fencing design should emphasize a horizontal character that better relate to the Highway 15 landscape setting.

**G88.** Landscaped berms should have articulated edges at least every 3.0 metres, not exceed 1.5 metres in height, and not exceed a 3:1 side slope.



Existing residential landscaping conditions with stone fencing



An example of a green noise attenuation fence



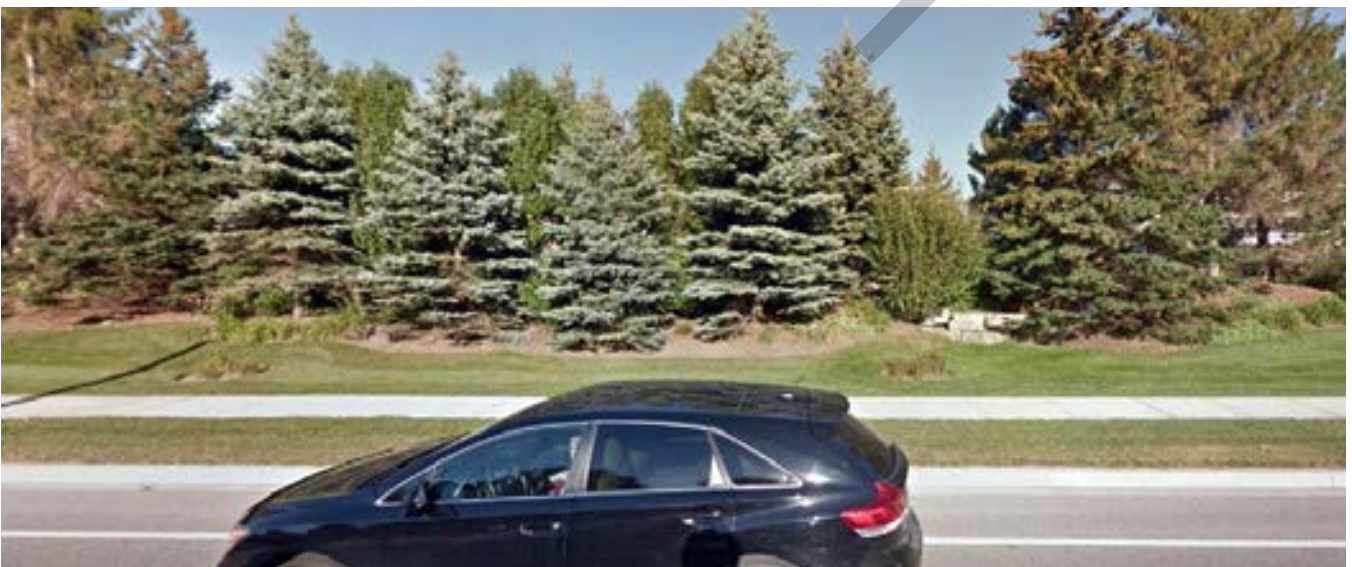
Existing wood fences along rural edges



Example of a combined wood and stone fence



Example of an attractive stone fence



Example of a landscape buffer edge along Gordon Street in Guelph, ON

## d) Parking & Servicing

**Principle: Establish a visually appealing frontage character for Highway 15 by locating parking and service areas to the back or side of buildings. If not possible, screen parking and service areas with attractive fencing and generous plantings.**

### **Background**

Carefully considered parking and servicing areas can help improve the visual aesthetic, placemaking and economic vitality of the corridor. In cases where frontage parking lots are unavoidable, reduce their visual impact by adding generous and well designed plantings and attractive fencing to help maintain a comfortable pedestrian environment along the corridor.

### **Parking & Servicing Guidelines**

**G89.** Locate parking and servicing areas to the rear and side of properties, not between the primary address of buildings and Highway 15.

**G90.** Avoid direct vehicular access onto Highway 15 from driveways and service areas.

**G91.** Minimize interruptions of pedestrian and cycling routes by service and parking access. Consolidate points of access where possible.

**G92.** Align driveways and access points with corresponding access on the opposite side of the street where present.

**G93.** Where parking or service areas are visible from the corridor, screen areas from view with well-designed fencing and generous planting.

**G94.** Shade trees are recommended within parking areas to provide protection from the sun. Trees with a minimum 1.5 metres branching height at maturity are recommended.

**G95.** Avoid light trespass from parking areas on to the corridor.

**G96.** Provide bicycle parking near entrances of buildings and ensure it does not obstruct pedestrian access.



Innovative service access fence & plant screening in tight spaces



Parking screening example on Gordon Street in Guelph, ON

## 2.7 Gateways

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**Principle: Develop gateways at key areas along Highway 15 that help to orient residents and visitors and contribute to placemaking.**

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### **Background**

Gateways are important components in the placemaking along corridors. They can serve to mark significant entry points, intersections, or special areas. A gateway can take the form of an object (such as public art or a feature like a stone wall), but it can also include a number of elements that work together to indicate a transition or movement from one place to another.

The intersection of Highways 2 and 15 and the northern segment near the St Lawrence Business Park at Innovation Drive are likely locations for gateway treatments. Other locations could include Gore Road as the potential location for the intersection of the proposed Third Crossing.

### **Gateway Guidelines**

**G97.** Consider the location and design of gateways in the context of the entire corridor.

**G98.** The design character of gateways should contribute to the local identity of the corridor and be of appropriate scale for their setting.

**G99.** Design gateways and component elements so that those traveling by vehicle are not distracted and are provided with adequate time for decision making.

**G100.** Ensure lighting for gateways avoids light pollution into adjacent residential and natural areas.

**G101.** Gateway features are to contribute to the heritage character of the context in which they are placed.



An example of a gateway feature that incorporates public art

## 2.8 Sustainability

**Principle: Redevelopment of Highway 15 should contribute to a more active, healthy and sustainable environment that encourages active transportation, manages stormwater, reduces energy consumption and protects significant natural areas.**

### Background

A well designed corridor with sustainability in mind can encourage active transportation and the use of transit to reduce greenhouse gas emissions. It should also consider both capital and life cycle costs when deciding on the design and materials. Stormwater management techniques that retain and clean water and replenish groundwater sources contribute to overall sustainability, and can also provide habitat and educational opportunities. Implementation of all the landscape components will consider the environmental performance and employ Low Impact Development (LID) best practices where possible.

The *Natural Heritage Report* by LGL Limited in March of 2016 submitted as part of the EA process documents the existing natural heritage of the corridor and in need of protection or enhancement.



An attractive stormwater feature well suited for Highway 15

### Sustainability Guidelines

**G102.** Encourage the use of non-auto transportation modes such as transit, active transportation, and high occupancy vehicles and discourage the use of single occupant vehicles. Benefits include reduced greenhouse gas emissions and congestion relief.

**G103.** Limit the area of impervious materials, and maximize the use of landscape features and water retention and treatment strategies.

**G104.** Use native planting material where possible.

**G105.** Refer to the City of Kingston Official Plan for requirements related to contributory woodlands.

**G106.** Refer to the CRCA Environmental Planning Policies for recommended planting material list in **Appendix-C**.

**G107.** Introduce green infrastructure, such as bioswales or soil cells, to alleviate stress on local stormwater infrastructure along urban and rural cross-sections.

**G108.** Use salt-tolerant plant material to filter stormwater in drainage swales and bioswales.

**G109.** Consider the use of liners in bioswales to prevent harm to underground water sources.

**G110.** Monitor water quality at key water collection areas.

**G111.** Consider the application of edible planting as per the Community Orchard and Edible Forest Policy (<https://www.cityofkingston.ca/residents/recreation/facilities/community/community-orchard>).

## 2.9 Heritage

**Principle: Protect, enhance and celebrate natural and cultural heritage assets within the corridor.**

### **Background**

The corridor design should consider how to enhance and support the social and cultural richness of Highway 15. The existing natural conditions along Highway 15 are highly valued. Residents of the communities have a great sense of pride in the natural heritage and historical background of the area. Aside from the ample natural areas along the corridor, this corridor houses a previous limestone quarry along the west edge of the corridor at the former Quarry access road and is adjacent to the Rideau Canal World Heritage Site. There are also significant historical buildings and communities, such as the Barriefield Heritage Conservation District, that contribute to the cultural and architectural heritage of the corridor. A consideration for the protection of and referral to these historical, natural and cultural assets lends the area a unique character and allows its residents to develop a stronger sense of pride in their communities.



St Mark's Church on Highway 15 is a significant landmark

### **Heritage Guidelines**

- G112.** Minimize impact on natural and cultural heritage areas in the potential expansion of Highway 15 and integrate street and boulevard design with adjacent landscapes.
- G113.** Provide consistent aesthetic and environmental standards along the road edge, particularly along scenic roads and special character streets.
- G114.** Create specific setback requirements and road width adjustments to maintain the cultural character of the street.
- G115.** Reflect and reinforce the characteristics of the district where it runs through a Heritage Conservation District (through paving, planting and street lighting and furniture design).
- G116.** Emphasize and highlight landscape character and features.
- G117.** Preserve and enhance scenic views and vistas, such as views of the water, skyline, St. Mark's Church, and other natural and cultural resources.
- G118.** Support pedestrian and bicycle activity for both recreation and mobility through heritage or natural areas by linking to trails in nearby open spaces.
- G119.** Enhance environmental quality by protecting and augmenting existing tree canopy and incorporating naturalized storm water control measures.
- G120.** Within 30 metres of the water's edge, refer to the Rideau Canal World Heritage Site requirements. A 30 metre natural buffer from Highway 15 is required near the Barriefield Heritage District to preserve significant historic views of St. Mark's Church.
- G121.** Ensure all heritage plans and policies are considered and adhered to in the design of the Highway 15 corridor, including any archaeological requirements.

## 2.10 Public Art

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**Principle: Public art should seek inspiration from the heritage and character of the area and contribute to cultural vitality, placemaking and wayfinding.**

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### **Background**

Public art provides a great deal to the cultural landscape of a community and contributes to identity, placemaking and wayfinding. Possible themes to consider for public art include historical or natural significant areas or events. Key locations along the corridor—such as gateways from the north and south and the intersection of Gore Road and Highway 15 with the proposed Third Crossing—are well suited for the placement of either permanent or temporary works.

### **Public Art Guidelines**

**G122.** Build upon the direction from the recent Kingston Public Art Master Plan, and prepare a corridor strategy that establishes suitable themes for public art and sites for placement of both permanent and temporary installations.

**G123.** Consider the placement and integration of public art with gateways and site elements such as walls, lighting and furnishings. Introduce public art where people gather, such as commercial development, institutions, open spaces, and transit stops.

**G124.** Consider the cultural heritage of the corridor when designing or selecting public art or gateway features along Highway 15.



Example of large scale public art installation



Public art as a focal point along a corridor

## 2.11 Signs & Wayfinding

**Principle: Provide signs for information, orientation to key area destinations, and placemaking that contribute to the visual character and identity of the corridor.**

### **Background**

Signs are an important part of the visual landscape. Those for advertising should not detract from the character of the adjacent neighbourhoods. Signs for information and wayfinding should provide comfort to residents and visitors and contribute to economic vitality. Further, they should clearly direct residents and visitors to local attractions and businesses as well as regulate movement corridors where they overlap, to ensure the safety of all users.

### **Signs and Wayfinding Guidelines**

**G125.** All signs shall positively contribute to the visual character of the corridor, with special regard to areas of heritage character.

**G126.** Develop a coordinated system of signs to serve the different users of the multi-modal facilities within the corridor, and direct residents and visitors to key destinations in the local area and broader city.

**G127.** Where possible, consolidate signs with existing infrastructure, such as light poles or traffic lights.

**G128.** Require encroachment agreements for any private signs that encroach on a public right-of-way.

**G129.** Prohibit signs on all private fencing within the corridor.

**G130.** Consider sight triangles at all junctions when locating signs and other elements.



Existing sign along Highway 2



Example of well designed signs for habitat education

## 3.0 IMPLEMENTATION

The achievement of the desired outcomes as expressed in these design guidelines depends on the execution of an implementation program which recognizes opportunities for “quick wins” in addition to those which may occur over the long term through both public and private sector initiatives. This section considers the implementation of these guidelines through “immediate”, “short term”, and “long term” projects (see Figure 7 – Implementation Phases).

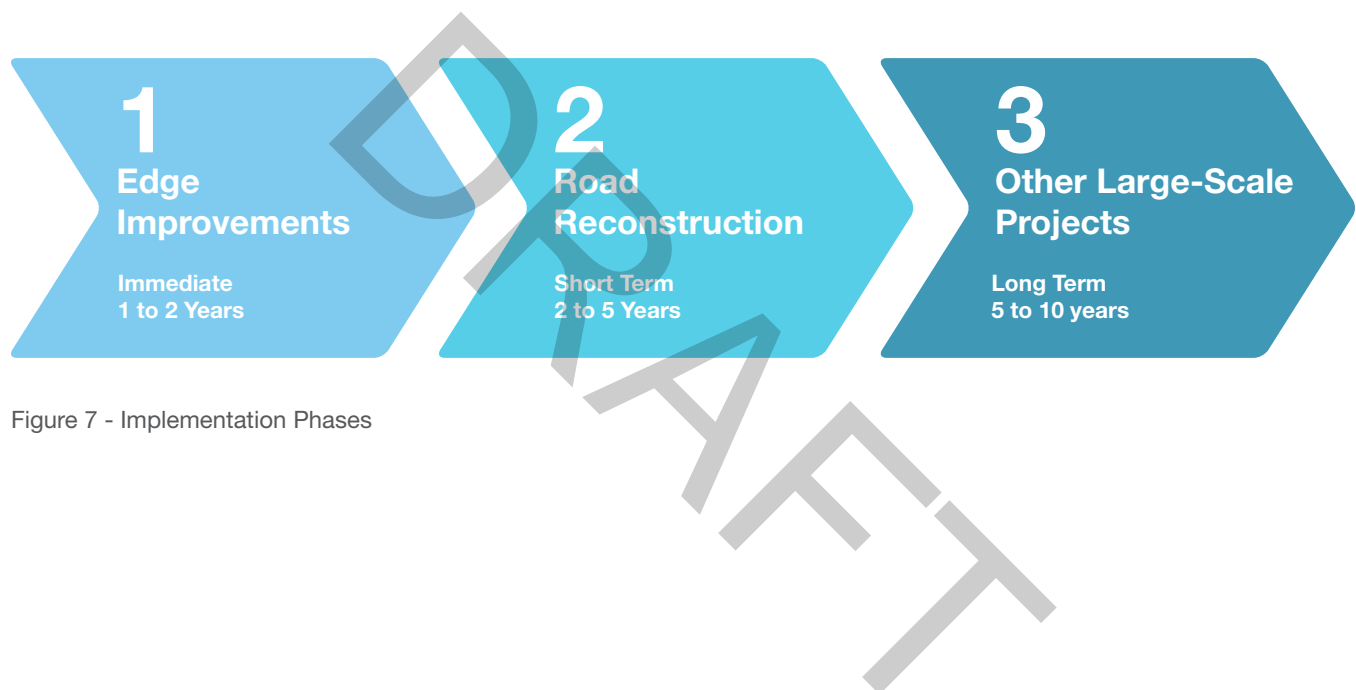


Figure 7 - Implementation Phases

### 3.1 Implementation Approach

It is anticipated that the majority of landscaping improvements along the Highway 15 corridor will occur as a result of capital projects led by the municipality. Private sector development of the lands abutting the corridor should also be expected to incorporate design outcomes which achieve the objectives of these guidelines. The implementation of these guidelines is expected to occur in three phases which are detailed in the following sections.

#### Edge Improvements (Immediate - 1 – 2 years)

The enhancement of targeted edge areas along Highway 15 has the potential to yield immediate improvements to the visual quality of the corridor (refer to “Figure 8 - Immediate Edge Improvements”). These initial interventions will introduce the aspirational landscape character and can be achieved as part of the first phase of roadway and active transportation improvements. Edge improvements include screening and enhancement of existing fences and the introduction of other localized solutions to mitigate visually unappealing conditions. Such solutions may include, but are not limited to, the planting of landscape buffers that introduce screening plantings such as vines and lilacs where there are existing sound attenuation fences to provide an improved visual condition.

All edge improvements should apply the proposed conditions as described in the design guidelines and as illustrated in the final 30% Schematic Design drawings (refer to Highway 15 Environmental Study Report). Phasing these improvements to accompany the roadway and active transportation improvements may allow for cost savings (e.g., economies of scale) but in some instances, interventions may be identified for immediate action and could be introduced as a City-led pilot project to create ‘quick wins’ and demonstrate desired outcomes. The initiation of a pilot project is dependent on capital funding which could be used to implement specific priority projects as a means of setting local design expectations along the corridor.

Projects at this stage of implementation may include the screening of existing development along Highway 15 extending from the quarry site to the urban boundary and screening along the CFB Kingston fence line. The existing Green Parkway north of Gore Road is a wonderful demonstration of the landscape vision expected along the corridor. Immediate planting arrangements and fence screenings can set a good example for the edge improvements expected of public and private sector interests.

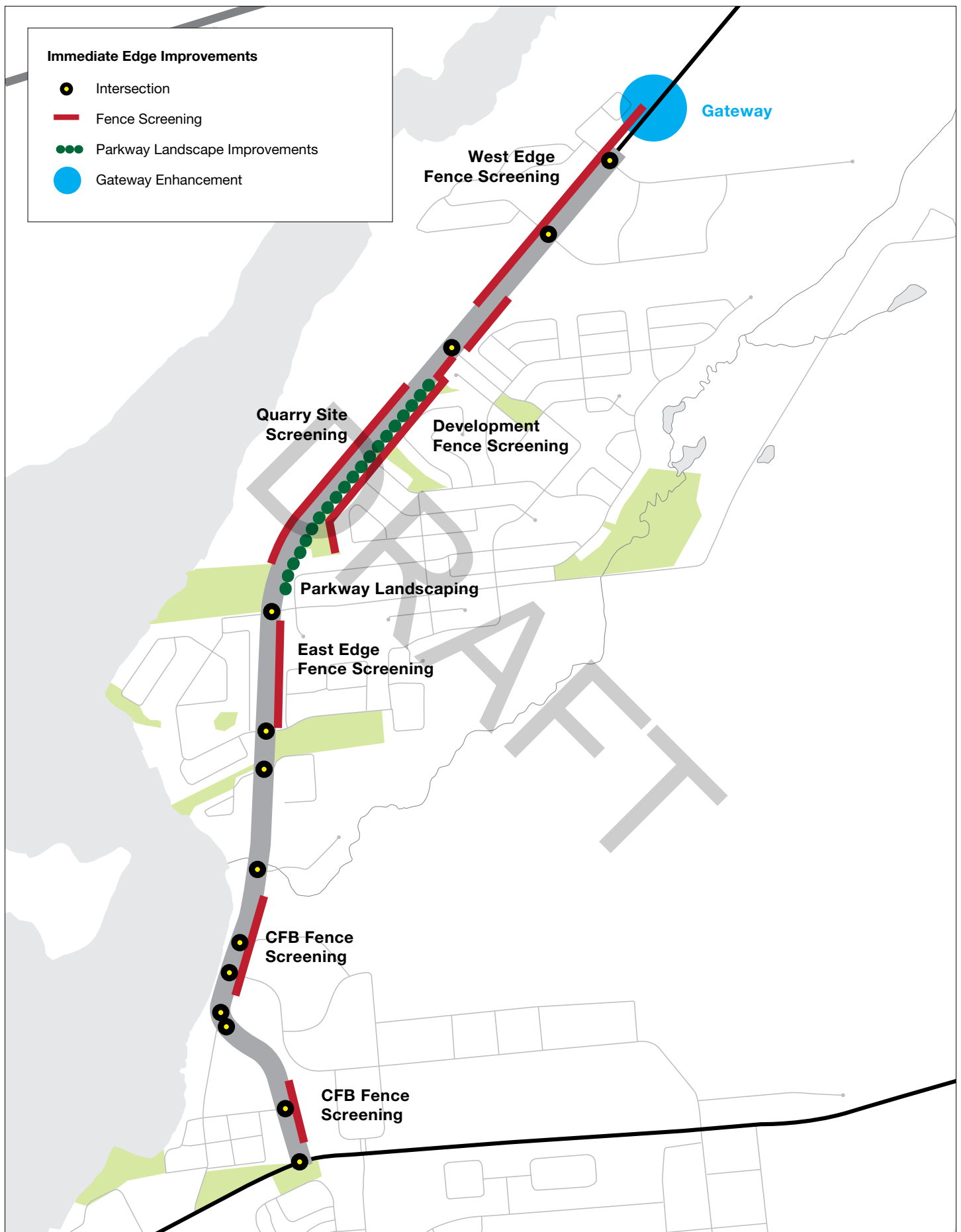


Figure 8 - Immediate Edge Improvements

### **Right-of-Way Construction (Short Term – 2 – 5 years)**

Landscape and placemaking improvements along the Highway 15 corridor shall mainly be undertaken in tandem with infrastructure upgrades, particularly at key intersections and at active transportation facilities. (e.g. transit stops, multi-use path access points, etc.).

The highest priority landscaped areas slated for reconstruction are coordinated improvements at several key intersections with Highway 15: St Lawrence Business Park, Rose Abbey Drive, Gore Road, Point St Mark Drive/ Grenadier Drive, Barriefield Main Street and Highway 2 Roundabout. Addressing these intersections first will help to resolve pedestrian connectivity issues and provide opportunities for public art, cultural heritage interpretation and gateway opportunities (refer to “Figure 9- Right of Way Construction”). If phasing is a consideration for the construction of

Highway 15, these key intersections can define phasing boundaries and can be considered the primary phase of construction. Further, within the identified intersections, phasing priority may be used to identify where there are concentrations of activity, shortfalls of existing conditions, or are otherwise noted as benefiting from more immediate intervention.

Although the City should make every effort to implement landscape and placemaking components during the construction of roadway and active transportation facilities, improvements between the key intersections can follow in a second phase when funding becomes more available. The second phase of improvements could include elements such as additional planting beds, median plantings, site furnishings, signs and wayfinding, and public art within the road right-of-way.

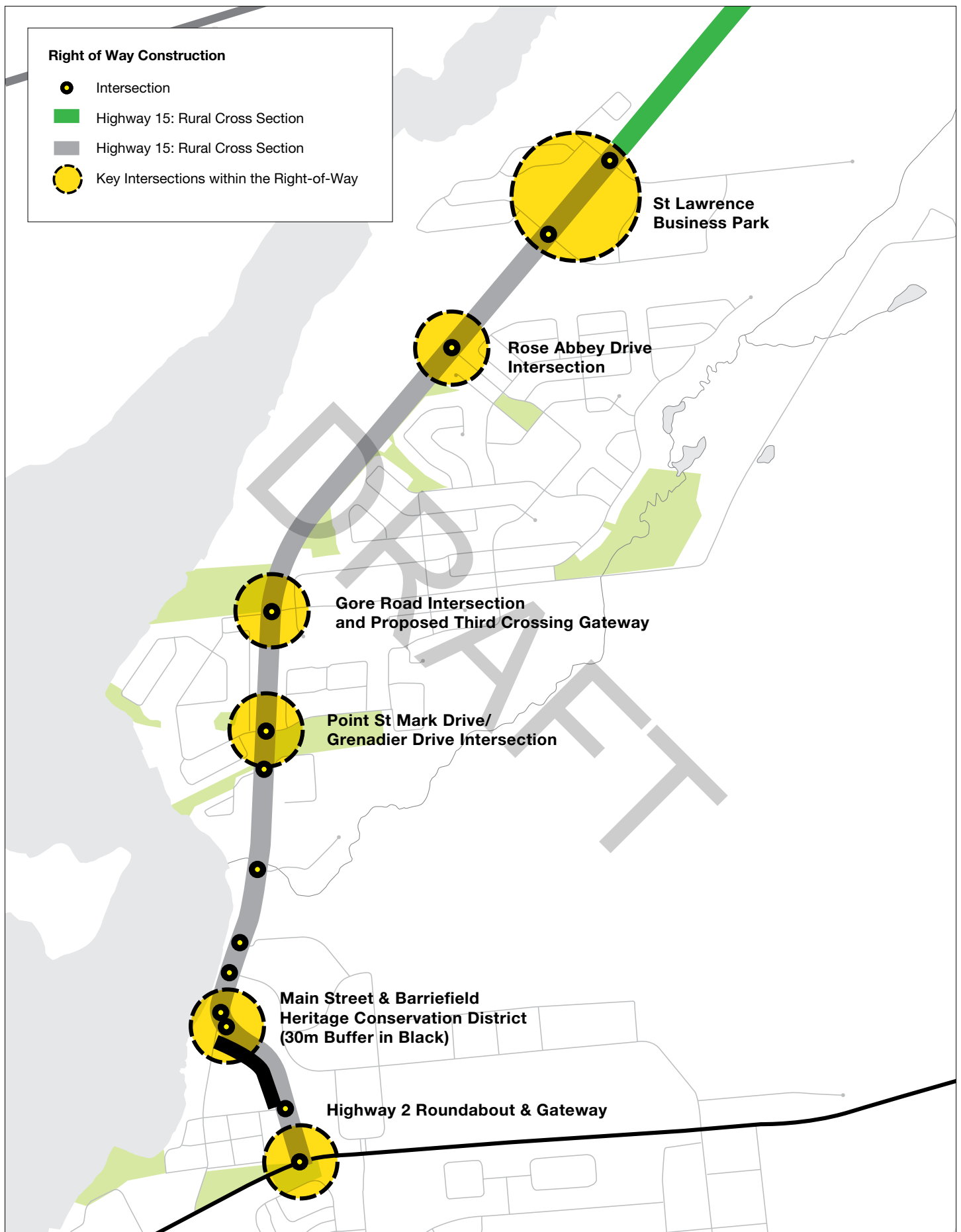


Figure 9 - Right of Way Construction

### **Other Key Projects & Private Developments (Long Term – 5 – 10 years)**

Over the long term, the Highway 15 corridor will be subject to the advancement of larger scale public and private sector undertakings that have the potential to affect multiple properties and act as a catalyst for change in the area. The most prominent of these larger scaled projects is the construction of the Third Crossing at Gore Road. This project has the potential to define a major gateway east and west of the Rideau Canal, and north/south along the Highway 15 corridor. Other major redevelopment lands include the former quarry property and the vacant lands south of the quarry. The guidelines presented herein should be used in the review of development proposals associated with these lands and other private developments occurring or proposed along the corridor (refer to “Figure 10 - Key Projects and Developments and Ongoing Initiatives”). Further, the City should proactively engage the development community to ensure the guidelines are understood and accordingly recognized in the submission of private sector development proposals.

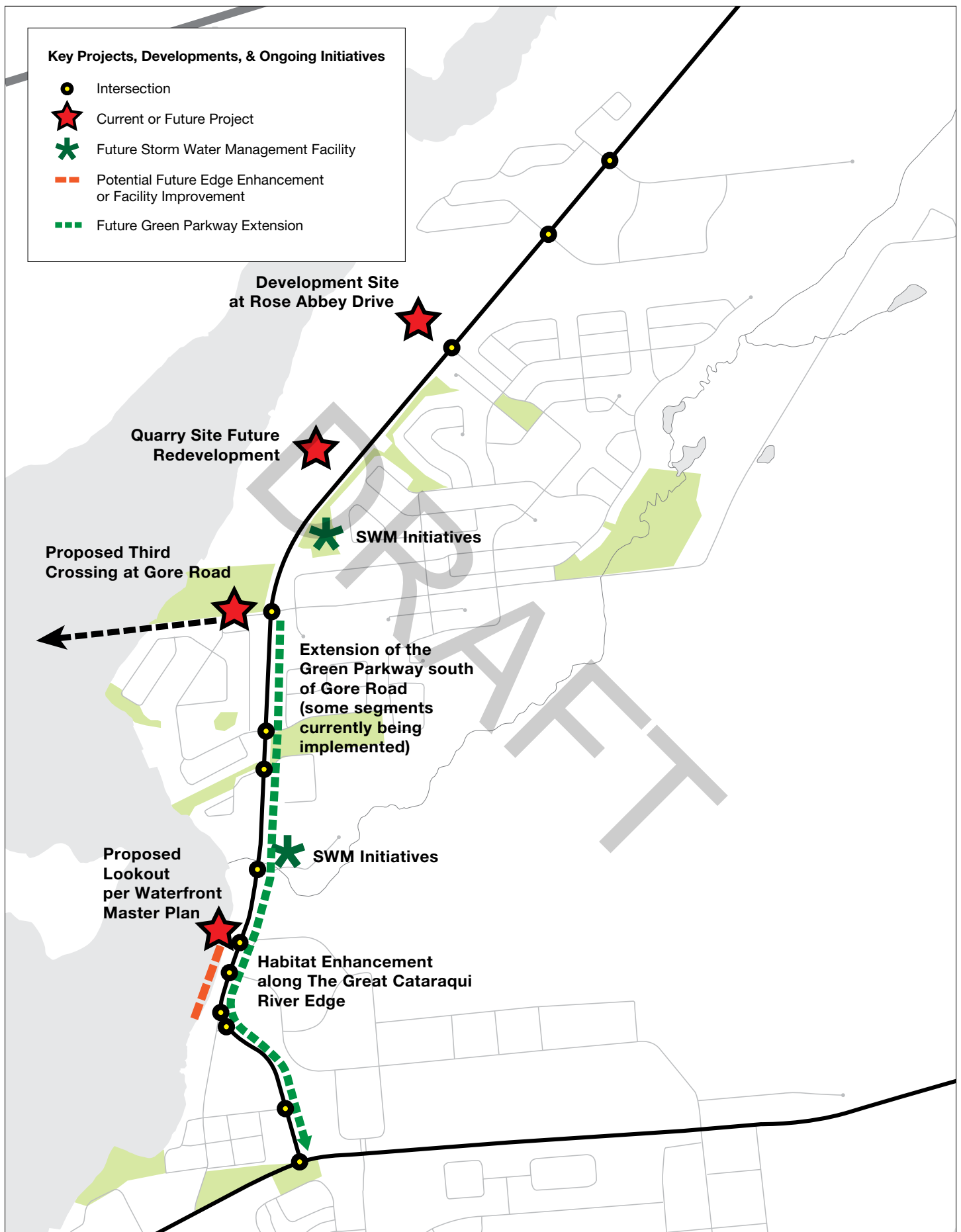


Figure 10 - Key Projects and Developments and On-Going Initiatives

## 3.2 Next Steps

### Prioritization of Design Interventions

In order to proceed with immediate areas of landscape intervention, capital funding opportunities will need to be evaluated and prioritized for implementation. Furthermore, the costs of interventions will need to be defined so that the City is able to allocate funding for the associated works. To this end, staff should evaluate the design interventions presented in these guidelines and identify candidate locations for the implementation of specific interventions. The resultant inventory of interventions should then be evaluated on the basis of costs coupled with the anticipated benefits to the public. Where possible, interventions should be considered in the context of other capital projects (e.g., Third Crossing, Highway 15 road improvements, intersection improvements, etc.) which would allow for cost efficiencies and ease of implementation.

In addition to the recommendations above, a selection of potential funding sources are identified in Appendix A - Funding Options Summary that may assist in the delivery of the overall project. The summary includes creative approaches to funding that capitalize on collaborative opportunities, and make use of potentially available funding from all levels of government and private organizations.

### Administrative Changes

The effective use of these guidelines requires that they be recognized in other City of Kingston documents and administrative processes. The following are offered as opportunities to realize the outcomes sought by the Guidelines:

- Amend the Official Plan (OP) to give reference to the Highway 15 Design Guidelines and associated mapping. This will strengthen staff's ability to request design interventions in specific locations along the corridor. Policies stemming from the Guidelines should also be incorporated into the OP to recognize design objectives and recommendations. These policies would allow the City to give greater emphasis to the Guidelines when seeking design outcomes through a Planning Act (development) process; and
- Consider options for the inclusion of active transportation infrastructure in the design of Highway 15 as part of the Active Transportation Master Plan (ATMP) in tandem with the design interventions presented in these guidelines.

# APPENDICES

**Appendix-A Funding Options Summary**

**Appendix-B Visioning Workshop Summary**

**Appendix-C CRCA Environmental Planning Policies - Planting List**

DRAFT

# Appendix A: Funding Options Summary

It is important to design and construct the public realm to last. Landscapes can take a long time to fully develop, but if carefully executed, they will last for generations and are wise investments. Any funds for landscape and placemaking improvements should first target the key areas. It is highly important to assign sufficient budgets that are predictable and secure. Too often, public realm budgets are tied to other budgets (such as structures and roads), where they are vulnerable to last minute over-runs and cutbacks. Any project should ensure sufficient funds are available for public realm improvements prior to the commencement of any work to avoid delays.

Initial funding for the construction of Highway 15 will largely rely on municipal sources. However, there are several other possibilities that could supplement what the City of Kingston will commit to the project. All funding is subject to the approval of City Council. Following is a brief discussion of the different funding possibilities that the City should explore further:

## a. Municipal Funding

The construction cost, as part of the Class EA process, will include standard quality elements such as: the roadway, medians, boulevard, sidewalk, cycle track, multi-use trail, standard lighting and street furniture and basic landscaping within the right-of-way to include trees and minimal shrub planting.

Development charges are often possible sources of funding, but given there are few future development areas along this Highway 15 segment, this source would not likely provide sufficient funding or have the ability to greatly contribute to an improved visual aesthetic.

Stormwater rates are another source that some municipalities are using in Ontario to deliver Green Infrastructure projects relating to stormwater.

**Sample Case Study:** For example, the City of Mississauga implemented a Stormwater Charge for developers that is based on impervious surface areas. This charge provides a dedicated source of funding for managing Stormwater within the City. This was subsequent to a Stormwater Financing Study that identified the requirements for an objective driven Stormwater Management System within the City and the capital requirements to set up. [http://www7.mississauga.ca/Documents/TW/Environment/RPT\\_MississaugaStormwaterFinancingStudy\\_Apr2013\\_Final.pdf](http://www7.mississauga.ca/Documents/TW/Environment/RPT_MississaugaStormwaterFinancingStudy_Apr2013_Final.pdf)

## b. Provincial Funding

- **Green Infrastructure Ontario Coalition.** This group is an alliance of organizations that focus at a provincial level to provide support for Green Infrastructure in Ontario. They are a useful resource for information on implementation and funding throughout the province. <http://www.greeninfrastructureontario.org/>

## c. Federal Funding

Several possible Federal funding sources are available to the City of Kingston to assist with many of the elements such as active transportation facilities, character lighting and street furniture, wayfinding signs, special landscape areas, non-traditional stormwater management infrastructure and public art:

- **Canada Strategic Infrastructure Fund (CSIF).** This fund supports five investment categories: highways and railways, local transportation, tourism or urban development, water or sewage, and broadband (telecommunications connectivity) for large-scale projects of major federal and regional significance in areas. CSIF partners with a combination of municipal, provincial, territorial governments, as well as the private sector through specifically tailored programs. [http://www.feddevontario.gc.ca/eic/site/723.nsf/eng/h\\_00105.html](http://www.feddevontario.gc.ca/eic/site/723.nsf/eng/h_00105.html)
- **Federal Gas Tax Fund.** This permanent source of funding for municipal infrastructure assists in the funding of large province-wide infrastructure, where there is a deficit. <http://www.infrastructure.gc.ca/plan/gtf-fte-eng.html>

## d. Green Infrastructure Funding

**Upgraded elements that emphasize active transportation or sustainability can consider the following funding options:**

- **CRCA Environmental Partnership.** Potential partnership opportunities between the CRCA and the City can protect the natural resources along the corridor and minimize the roadway's impact on adjacent habitats, and introduce innovative stormwater management infrastructure into the roadway design. A joint exploration could take place to identify opportunities for habitat improvements and protection along the corridor, especially related to the CRCA regulation zones along Highway 15. While the CRCA is not typically a source of funding, partnerships on

infrastructure projects with the CRCA could lead to different funding opportunities for natural heritage and water body protection. Partnering with CRCA can improve landscape performance to contribute to Kingston's green infrastructure, assist in meeting new MOECC targets, and can possibly increase eligibility for infrastructure funding. <http://crca.ca/watershed-management/conservation-programs/>

- **Ontario Municipal Cycling Infrastructure Program.** This Ministry of Transportation Program allocates funds to help municipalities improve existing cycling infrastructure or build new cycling facilities. The two year program ends in July of 2017 and can potentially fund up to 50% of the total eligible costs of a cycling infrastructure to a maximum of \$325,000. This could contribute to the upgrade of the proposed on-street cycling facility and provision of green planted buffers. <http://www.mto.gov.on.ca/english/safety/ontario-municipal-cycling-infrastructure-program.shtml>
- **50 Million Tree Program.** This ambitious provincial program committed to planting 50 million trees in Ontario by 2025 could apply to the parkway improvements along Highway 15. Eligibility requires having at least one hectare (2.5 acres) of suitable open land that is not defined as a woodland. It also requires a 15-year management and maintenance agreement, which is an achievable prerequisite given that the parkway is public property maintained by the City. This program is administered by the individual conservation regions, which would be the CRCA for Highway 15. <http://www.forestsontario.ca/planting/programs/50-million-tree-program/>
- **Maple Leaves Forever (MLF).** While MLF is not a fund, it does provide knowledge support as well as a 25% rebate for the use of maple trees along rural roadsides. Their goal is to ensure the continuation of the maple species as a quintessentially Canadian Tree. This can specifically apply to the rural edge north of Highway 15. Conditions for rebate qualifications can be found on their website. <http://www.mapleleavesforever.com/trees-for-rural-roads/>
- **Green Municipal Fund.** This fund by the Federation of Canadian Municipalities applies to plans, studies and capital projects in the energy, transportation, waste and water sectors. The process involves undergoing an initial review to assess eligibility and submitting applications for funding prior to two deadlines a year in February and September. This can apply to stormwater Best Practices implemented along the corridor that

focus on stormwater quality, stormwater management and water conservation. <http://www.fcm.ca/home/programs/green-municipal-fund/what-we-fund.htm>

#### e. Other Funding

**These funding options would be reviewed for applicability and requirements, alongside the approval process for the construction of the highway.**

- **Area Improvement Fee.** Since there are very few new development opportunities along the corridor, an alternative funding option may include an improvement fee for existing parcels along the highway. This is an alternative funding method to having a BIA and would include all parcels that are directly adjacent to the corridor.
- **Public Art Fund.** There is potential for tapping into the Public Art Program of Kingston, as described in the Public Art Master Plan. This could apply to the gateways and the special character areas along the corridor.
- **Heritage Funding.** A variety of heritage targeted funds exist federally and provincially. The programs vary every few years and include loans and incentives to improve heritage related buildings or areas.
- **Private Funding.** Interested groups and private donors can contribute to various elements of the corridor design. This can include initiatives or partnerships with local community associations or groups. When incorporated, incentive programs can provide tangible benefits to community associations or groups when implementing such programs.
- **Pilot Projects.** Funding for pilot projects is an alternative source of funding for innovation in Green Infrastructure. The Ontario Ministry of Transportation Highway Infrastructure Innovation Funding Program for Ontario Universities and Colleges provides funding possibly arranged in partnership with Universities and Colleges in or around Kingston for Green Infrastructure Innovation. <http://www.uoguelph.ca/research/sites/default/files/public/HIIFP%202016%20Guidelines.pdf>
- **Funding vs. Financing.** If funding is an issue, Financing through Infrastructure Ontario Alternative Financing and Procurement (AFP) model could be an option for a large infrastructure project such as Highway 15. Through partnering with private entities, options for financing for large municipal infrastructure projects that may be of risk to the public sector are available. <http://www.infrastructureontario.ca/templates/FAQ.aspx?langtype=1033>

**Sample Case Study:** The TRCA recognizes the benefits of partnering with municipalities on major infrastructure projects. They present the value of such partnerships and projects through its 'STEP' website. The website offers case studies of cost analysis and benefits of SWM LID projects set up through--or in conjunction with--the TRCA. <http://www.sustainabletechnologies.ca/wp/projects/>

# Appendix B: Visioning Workshop Summary

May 2, 2016

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## A. Executive Summary

The Highway 15 corridor between Highway 2 and Highway 401 is being assessed to accommodate Kingston's growth. At the community's request, the City of Kingston has expanded the EA scope of work to include a place making component, so that context sensitive design is considered alongside the functional aspects of the corridor project.

A visioning workshop was held on May 02, 2016. The purpose of the workshop was to engage key stakeholders and City staff and to establish a possible shared vision for the corridor. The workshop explored the existing character of Highway 15, identified qualities to reinforce and improve, and suggested a landscape character to inform future work. In summary, four key messages resulted from the workshop:

1. Build upon the historical and natural aspects of the area, such as the area's heritage buildings, farms and quarry history, and CFB Kingston and the Great Cataraqui River and its watershed ecology. Design character, materials, furnishings, signs and public art are all means to ensure **future development commemorates and respects these historical, cultural and natural heritage components with a distinct and visually appealing identity.**
2. **Safe and functional pedestrian access and cycling infrastructure** is critical and should build upon existing trails and features in the area to form a cohesive system that highlights views and vistas to the natural areas. Incorporate these facilities to provide residents and visitors recreational opportunities within the area, and offer an alternative mode of transportation for both local and longer distance trips.
3. **Include gateways or landmarks** to provide a sense of arrival at the major nodes or key areas throughout the corridor.
4. **Future development** building orientation will address the corridor in a positive and form-giving manner to establish a **sense of place.**

These key messages should guide future development and infrastructure projects and ensure that their intent is translated through a series of guidelines that reflect the principles' intent, and are used for the evaluation of the public realm of development projects, both private and public. Further details regarding the potential guidelines for public realm development are found in this summary.

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## B. Introduction

The City of Kingston is currently undertaking a Municipal Class Environmental Assessment to assess the potential widening of Highway 15 between Highway 401 and Highway 2.

The purpose of the overall EA project is to:

- Consider improvements to Highway 15 to accommodate projected travel demand
- Consider pedestrian, cycling and transit facilities to accommodate future development
- Consider aesthetic improvements and illumination throughout the corridor
- Evaluate modifications to existing intersections or consider a potential roundabout at Highway 2 and Highway 15

During the development of Alternative Planning Solutions (Phase 2 of the EA process, **Figure 1: EA Process Diagram**), the community identified the need to concurrently develop a vision for the corridor that would inform context sensitive improvements alongside the improved functional aspects of Highway 15. Specifically, the community identified the following issues to consider as part of the Class EA:

1. Inclusion of a multimodal approach to roadway improvements: on-road cycle track for adults and off-road multi-purpose pathway for recreational users and children and what that would look like;
2. Need for safer crossings and improved pedestrian connectivity and where they need to occur;
3. Desire to make Highway 15 beautiful including the use of natural vegetation and enhancing the adjacent green spaces and visual character of the area, including what existing conditions can be replicated and which can be avoided in future development;
4. Consider improvements to the Highway 15 and Highway 2 intersection, including a roundabout junction.

### Purpose

The purpose of the visioning workshop was:

- To engage key community stakeholders and City staff in a focused discussion and to share local knowledge about Highway 15;
- To explore and discuss context sensitive streetscape solutions that will inform the development of guidelines specific to Highway 15;
- To create awareness of the project within the adjacent neighbourhoods and encourage participation in future meetings through inclusion of key public stakeholders and community members.

## Participants

The City invited a selection of key City departments and community members and organization representatives of which were:

- Members of the public residing in the communities of Point St Mark and Greenwood Park.
- Pittsburgh District Residents Association
- Kingston Home Builders Association
- Barriefield Community Association
- Cataraqui Region Conservation Authority (CRCA)
- Councillor representing Pittsburgh district
- City of Kingston Departments including Planning, Engineering, Public Works and Parks

## Process of the Workshop

The Workshop took place over three hours and was divided into 3 main sections. It initiated with a brief introduction of the EA process and where this workshop fits in the greater scheme of things and what characteristics define a place or street. The participants were divided into three groups of 5 to 6 to discuss the characteristics of the corridor that were positive in their opinion and should be preserved and what was missing, concerning or dangerous. After an individual group discussion, each team then presented their key points to the entire workshop team, as the consultant team took notes.

Next, another presentation was given by the consultants to present examples of good character streets, which was followed by another working session for the individual groups to discuss and record what they would like to see in their corridor and how that can look. This was shared with the entire workshop afterwards and helped establish some of the key messages the community would like to see established in the redevelopment of the corridor, but also the private properties adjacent to it.

The Agenda was as follows:

1. Introduction: Purpose + Process to Date
  - a. Role of Engagement
  - b. What We've Heard So Far
2. Street Context Presentation
3. *Workshop*
4. Landscape Character Presentation
5. *Workshop*
6. Summary & Next Steps

A copy of the presentation can be referenced in **Appendix-1**.

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## C. Highway 15 Context And Area Description

The Class EA study area includes Highway 15 (between Highway 401 and Highway 2) and Highway 2 (from the La Salle Causeway to Princess Mary Avenue/Craftsman Boulevard). Highway 15 is an important north-south arterial road in Kingston. It one of a primary routes into downtown Kingston from Highway 401 and is considered the eastern gateway into the City of Kingston. A segment of Highway 2 is part of this Class EA since any changes in either corridor would affect each other. There are a number of relevant planning studies in place which should be considered when contemplating corridor improvements, as highlighted by City staff at the visioning workshop (**Figure 2. Aerial Map**).

**City of Kingston Official Plan, 2010.** Policies from the 2010 Official Plan that apply to the study area and inform the vision for the corridor include enhancing accessibility and circulation for all residents, visitors and users for the area, and targeting a sustainable approach to the multi-modal infrastructure. It includes reference to high quality design treatments on all lands designated business park industrial and located on Highway 15 (OP section 3.6.14.s); landscaping and view protection for Barriefield (OP section 7.3.C.7.f); and development along Highway 15, as a principal entrance to the City, to be characterized by a high standard of design consistent with the natural “gateway to the City”, with associated site design guidelines (OP Section 8.9.1). Furthermore, the Official Plan references the Third Crossing project of the Cataraqui River and its connection to Highway 15 at Gore Road and the consideration for a road allowance width (property ownership) of 36.5 metres for Highway 15, which includes both the road surface and adjacent off-road elements such as medians, and adjacent pathways (on and off-road), planting strips, sidewalk, etc. It also highlights the variety of land uses along that strip.

**Rideau Community Secondary Plan.** The Rideau Community Secondary Plan sets out specific goals and policies relevant to Highway 15, including the following:

- Ensure that commercial development does not negatively impact the Highway 15 corridor through buffering and landscaping measures.
- Provide a functional road network that meets the needs of current and future developments and protects the function and scenic attributes of Highway 15.
- Provide a fully linked pathway, park and open space system for pedestrians and cyclists that is integrated with the road network and allows for safe and convenient access to public facilities and the District Commercial areas.
- Prohibit direct private access to Highway 15. All lots will have reverse frontage or have frontage onto a service road, except for that portion of Highway 15, south of Gore Road, where direct access may be permitted, subject to the approval of the City.

- Where reverse frontage is used, all lots abutting Highway 15 must be designed to have deep rear yard setbacks and lot depths will be correspondingly larger.
- Where collector road systems do not exist, access to Highway 15 is permitted subject to City approval, and must be designed to be removed upon completion of the collector road system.
- Special landscaping of parking areas adjacent to streets will be required to present an attractive environment and streetscape, particularly along Highway 15.
- No new neighbourhood commercial uses shall be permitted which take primary access directly from Highway 15. New neighbourhood commercial uses may flank onto Highway 15 provided the uses are oriented to and take access from an adjacent collector or local road and such uses are designed to contribute to the scenic quality of Highway 15.
- Although no formal application is yet submitted to the City, the westerly extension of Rose Abbey Drive is anticipated to serve as the primary frontage of the northerly District Commercial area as illustrated on Schedule RC-1 of this Plan. Highway 15 shall function as the secondary frontage in order to maintain the scenic route function of Highway 15.
- Public access corridors must be established by the City along the Great Cataraqui River, Butternut Creek, and Highway 15, the southern boundary of the Business Park Industrial area, through the District Commercial areas and in other areas deemed necessary to complete the linked pathway network.
- Prioritize the establishment of a Riverfront Park north of Gore Road east of Cataraqui River, on the west side of Highway 15.\*

*\*As derived from the EA Report for Phase 1.*

**Kingston Waterfront Master Plan.** The Kingston Waterfront Master Plan was adopted by Council on March 22, 2016. One of the key elements in this effort is to protect for water's edge access. Many of the properties between the highway and river are anticipated to contribute to the delivery of the broader waterfront trail system, which is also identified in the most recent draft of the Official Plan. Connecting to the off road trails and paths is important to broaden the overall pedestrian and cycling networks through this part of the city.

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## D. Part 1 Summary: Existing Character Segments Of Highway 15

The first part of the visioning workshop introduced the concept of character areas--identifying which different segments of the corridor had unique shared visual and physical qualities, what distinguished them from each other, and what the groups thought of as their positive and negative attributes. Between the three groups, several segments of the corridor were noted as having different or similar character characteristics (**Figure 3. Session 1 – Character Area Summary Diagram**).

The segments identified were:

- a) Highway 2 and 15 node;
- b) CFB Kingston to the east;
- c) The Barriefield Heritage Community to the west;
- d) The water edge access where the highway is closest to the water on the west edge;
- e) The community node near Barrett Court with high-rise residential buildings, the school, retirement community and the small shopping plaza to the west;
- f) Barrett Court to Grenadier and its amenity potential;
- g) Grenadier to Gore as a 'through' place because of backyard fences along the Gatehouse Community;
- h) Gore and Highway 15 as a second 'node' with the library and the commercial plaza access;
- i) Gore north has a separate east and west character with the east side having more positive aspects because of the paths along the side;
- j) Rose Abbey as a third node with the new residential subdivision under construction and future commercial development (Commercial node);
- k) Employment Block with Tim Hortons and St. Lawrence Business Park;
- l) Rural Area north of John Marks Avenue.

In summary, the groups agreed on a number of key points:

- East-west connections, both pedestrian and cycling, across the highway are lacking and not thought out well with respect to points of interest on either side of the corridor and connecting to existing paths.
- Paths are not continuous on either edge, as paths end abruptly.
- Signs are not visible or are visually unappealing and do not respect the heritage or ecological history of the place. All points of interest along the corridor can use better signage as it is a challenge to find destinations and trails.
- Vistas to the Barriefield Heritage Community are viewed as a positive aspect and should be maintained and preserved. The Church view/vista near Barriefield acts as a landmark and should be preserved.
- Key elements such as lighting, fencing and signs should better reflect heritage and history and be more visually appealing.
- Continue and maintain the segments with the attractive landscaping elements such as the existing lilacs, coniferous planting and mature trees along the corridor.

The following are some additional key points the individual groups identified:

### **Group A**

- The node at Highway 2 and Highway 15 is a distinct entity from the rest of the corridor
- The well planted and bermed edge of the Tim Hortons and Business Park is a good example of a landscape setback to maintain and reinforce with any future development
- Baxter North Community Fencing edge is unappealing and constructed with poor quality materials.

### **Group B**

- Maintain the rural character near the northern segment of the corridor.
- The stacked limestone walls in the Gatehouse community along Highway 15 and Gore Road is a valuable asset and wonderful precedent for future development.
- Planting of flowering woody plants with a rural, country character such as lilacs along the highway add an attractive seasonal quality.
- A&W signage to the north of the corridor does not reflect local character.
- Bus stops have no pedestrian access across the highway. This is dangerous for pedestrians but community members feel the need to maintain only a reasonable amount of access points.
- Corridor has a variety of mixed character areas which is a positive aspect.
- Paths along the highway do not connect with existing trails behind development through the natural areas and ravines.

### **Group C**

- Walking paths along the south edge of the corridor are not appealing and currently do not provide a sense of place, unlike the north landscaped edge along the east side of the corridor (between John Marks Avenue and Gore Road).
- Need for a decent cycling route within the corridor.
- Rear lot fencing currently being constructed is not visually appealing and of low-quality and is not supported by the stakeholder participants.
- Access near the new plaza under construction at Rose Abbey Drive is potentially dangerous for pedestrians and cyclists.

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## E. Part 2 Summary: Highway 15 Future Landscape Character

In the second part of the workshop, the groups were asked to identify what they thought would contribute to a greater visual quality and improve the sense of place for each of the character areas defined in the first exercise. The collective vision informed by the input from each group is summarized in **Figure 4. Session 2 – Potential Landscape Character Summary Diagram**.

Some of the common themes were:

- a) The area between the Rural and Industrial/Employment area would be an ideal location for a gateway at the north edge of the corridor.
- b) Flagstone edge as a secondary fence, such as that at the neighbourhood at the intersection of Gore Road and Highway 15 was highly valued by the community. City Staff investigated this matter and determined that *“The flagstone wall was part of the Woods Landing Subdivision. The flagstone wall was a feature worked out/negotiated between the Township and developer to take advantage of stone that was being removed for grading and road construction on the site. The Township had an active policy promoting high standards, design innovation and variety in its streetscapes; the Highway 15 corridor was considered paramount.”*. The general consensus was that the flagstone wall could be maintained and continued along the corridor, especially in conditions where rear-lotting homes are located.
- c) Where possible, physically separated bike facilities are preferred. Directional signs for cyclists were also mentioned.
- d) Where possible, maintain and enhance the eastern green edge along the Highway from the business park towards the south.
- e) Ensure that the new Rose Abbey community and plaza frontage provide a positive character and contribute to the overall vision for the corridor.

Additional comments from individual groups include the following:

### Group A

- Screen existing fencing with vegetation and require new fencing design for upcoming development. Avoid rear-lotting conditions to the extent possible.
- Explore the potential to improve the hydro poles, suggested that perhaps public art or banners could be added.
- Views to the west are spectacular and a tremendous community asset. Consider a lookout area with public art.
- Stormwater management areas are attractive and lend a green open character to the corridor. Consider adding seating.
- Maintain the flagstone wall detail in the Gatehouse Community and continue along corridor.
- ‘History as innovation’: Consider the quarry, the farms, built heritage and CFB Kingston as historical features of the corridor.

- Signage focus – provide design options for signage that are visually appealing and are sensitive to the context of the area.
- Add signs for features and trails as needed to ensure successful way-finding.

## **Group B**

- Enhance and continue landscaped green eastern edge between John Marks Avenue and Gore Road along Highway 15.
- No gateway is required at Highway 2.
- Medians are nice but prefer to allocate space to bike lanes and pedestrian access as, in some cases, the medians make drivers go faster.
- Decrease lane widths to make drivers go slower at important community nodes that require access across the corridor.

## **Group C**

- Maintain existing landscape green edge on East side with meandering trails and trees.
- Crossing at La Salle Secondary School and retirement community needs mitigation as lots of jay-walking occurs and it is not safe.
- Sunset look out at edge closest to the water is a key feature.
- Potential screening of CFB Kingston chain link fence – a berm was mentioned as an option.
- Highway 2 as a gateway – Roundabout was not opposed provided that any additions consider the visual appeal of the corridor.
- Provide seating areas along the corridor for resting for pedestrians and cyclists.
- Adding a median may be nice along 4 lane areas, but not strongly emphasized.

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## **F. Summary And Key Points**

Overall, the workshop participants agreed that the Highway 15 project provides a wonderful opportunity to reinforce and enhance the positive character of the corridor and extend safe pedestrian and cycling routes that build upon the existing off-street facilities. Further, it was considered possible to express the corridor's heritage in the details, signs and wayfinding strategies and direct community members and visitors to the adjacent community assets and points of interest adjacent to the corridor.

Specifically, the community was very supportive of a multimodal approach to street design that included a separate off-road multi-purpose pathway for recreational users and children, and includes on-road facilities when separated facilities are not feasible.

Workshop participants support the addition of improved pedestrian and cycling crossings at key intersections (such as Medley Court and Point St, Mark). Further, participants supported a more rational location of transit stops to improve pedestrian

access and safety. Participants stressed how important it was to make Highway 15 beautiful through the use of natural vegetation and materials from the area and green space and maintain its historical and ecological visual character. The intersection of Highway 15 and Highway 2 as a roundabout can be considered, provided that this establishes a visually appealing gateway.

There was concern about the current appearance of the Quarry site and how that could be improved. Participants stated that while development is going through the application process, the City should encourage an interim solution that can support the vision of the corridor while long-term projects are being developed. This will focus on the edge conditions along this site including fencing and vegetation.

The derived key messages from the workshop process were:

1. Build upon the historical and natural aspects of the area, such as the area's heritage buildings, farms and quarry history, CFB Kingston and the Great Cataraqui River and its watershed ecology. Design character, materials, furnishings, signs and public art are all means to ensure **future development commemorates and respects these historical and cultural heritage components with a distinct and visually appealing identity.**
2. **Safe and functional pedestrian access and cycling infrastructure** is critical and should build upon existing trails and features in the area to form a cohesive system that highlights views and vistas to the natural areas. Incorporate these facilities to provide residents and visitors recreational opportunities within the area, and offer an alternative mode of transportation for both local and longer distance trips.
3. **Include gateways or landmarks** to provide a sense of arrival at the major nodes or key areas throughout the Highway 15 corridor.
4. **Future development** building orientation will address the corridor in a positive and form-giving manner to establish a **sense of place.**

From these key messages we have developed a series of principles to inform the next stage of work—Draft Design Standards:

1. **Cultural Heritage and Materials:**
  - a. Consider prohibiting future rear-lotting development where development has not yet occurred. Orient all development in a way that creates a positive response to the corridor, whether through side-lotting or window-streets.
  - b. Maintain and replicate where possible the stacked limestone walls, fencing and vegetation (as demonstrated at the south west corner of the intersection of Gore and Highway 15).
  - c. Plant vegetation that reinforces rural character, provides seasonal interest, and helps to screen existing fencing (provided it is acceptable by the City).

- d. Signs in the area should reflect local character. Develop a wayfinding strategy to ensure that visitors and residents can find destinations easily.
- e. Consider interim landscape solutions and ensure that long-term improvements are not precluded.
- f. Use public art to reinforce wayfinding or to screen infrastructure that is not visually appealing.

## **2. Cycling & Pedestrian Routes:**

- a. Where possible, establish separated multi-use trails to ensure pedestrian and cycling safety and mobility.
- b. Where off-street pedestrian and cycling facilities are not feasible, consider a physical separation between vehicular and cycling infrastructure.
- c. Provide connections to the broader pedestrian and cycling network.
- d. Provide clear signs for trails and routes that reflect local cultural heritage (historical or ecological).
- e. Provide seating areas along routes and interesting ecological areas, such as the stormwater ponds, to allow for recreational use.

## **3. Gateways and Landmarks:**

- a. A northern gateway should occur at the transition between the urban and rural edge to the north of the corridor near John Marks Avenue.
- b. Consider the Barriefield Heritage Community and Church as the southern gateway to the corridor.
- c. If a roundabout is considered at Highway 2 and 15, it should serve as a gateway to the corridor with adequate planting and other elements befitting of its important role.
- d. Consider the Abbey Rose development as a community area with a highway fronting community plaza. This area should include a look out area to the water and connect with adjacent trails along the water.

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## **G. Next Steps**

Informed by the input received and key messages from the Visioning Workshop, we will prepare draft design standards to guide the future streetscape character of adjacent development outside the right-of-way. The design standards will pay particular attention to an understanding of the corridor character, and enhancing the existing landscape and built form qualities along the corridor. The draft design standards will inform the Alternative Design Concepts and be subject to further consultations with project stakeholders and the public as the project moves forward.

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## **H. Appendix-1**

- May 2, 2016 Workshop Presentation

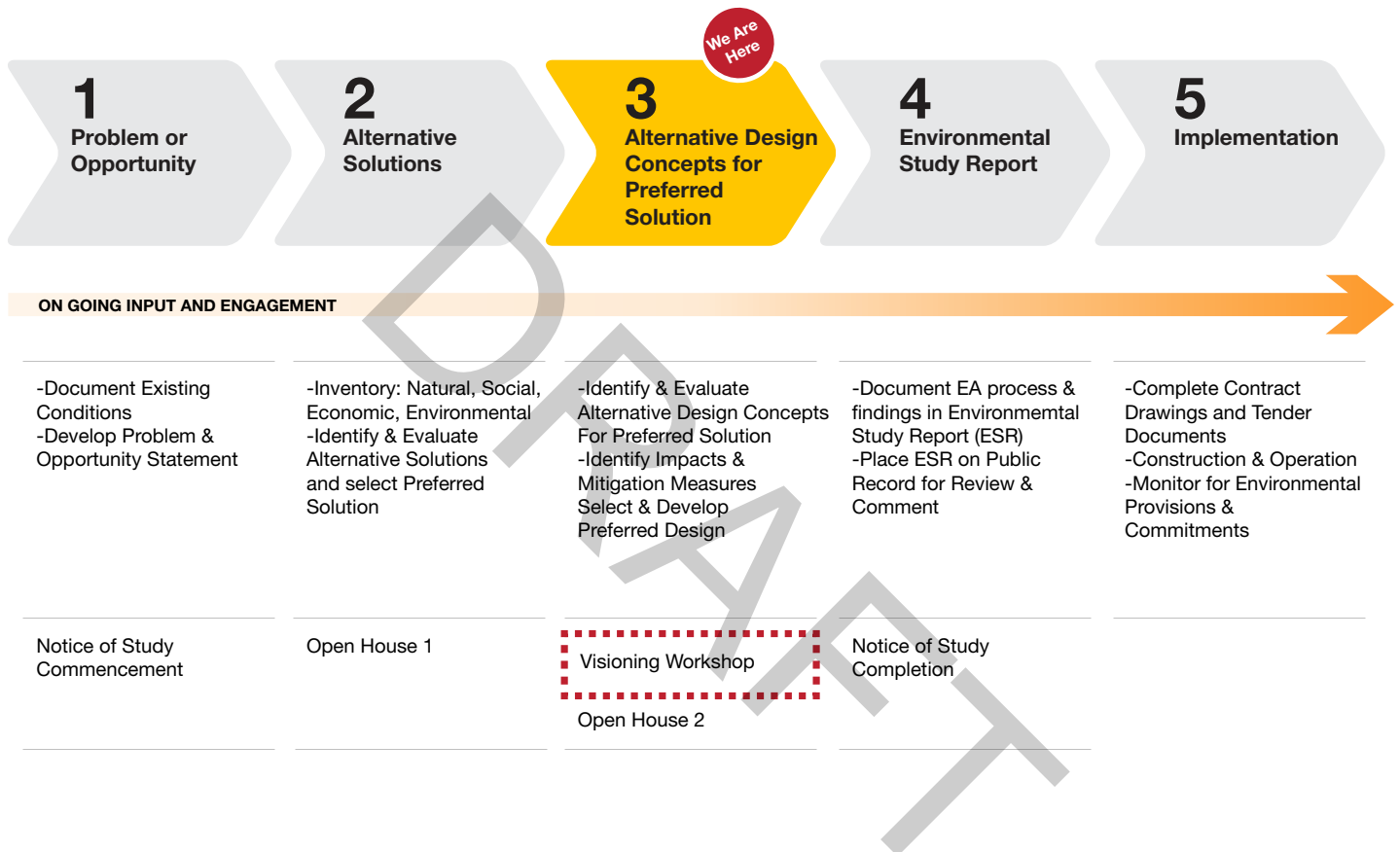


Figure 1. EA Process Diagram



Figure 2. Aerial Map

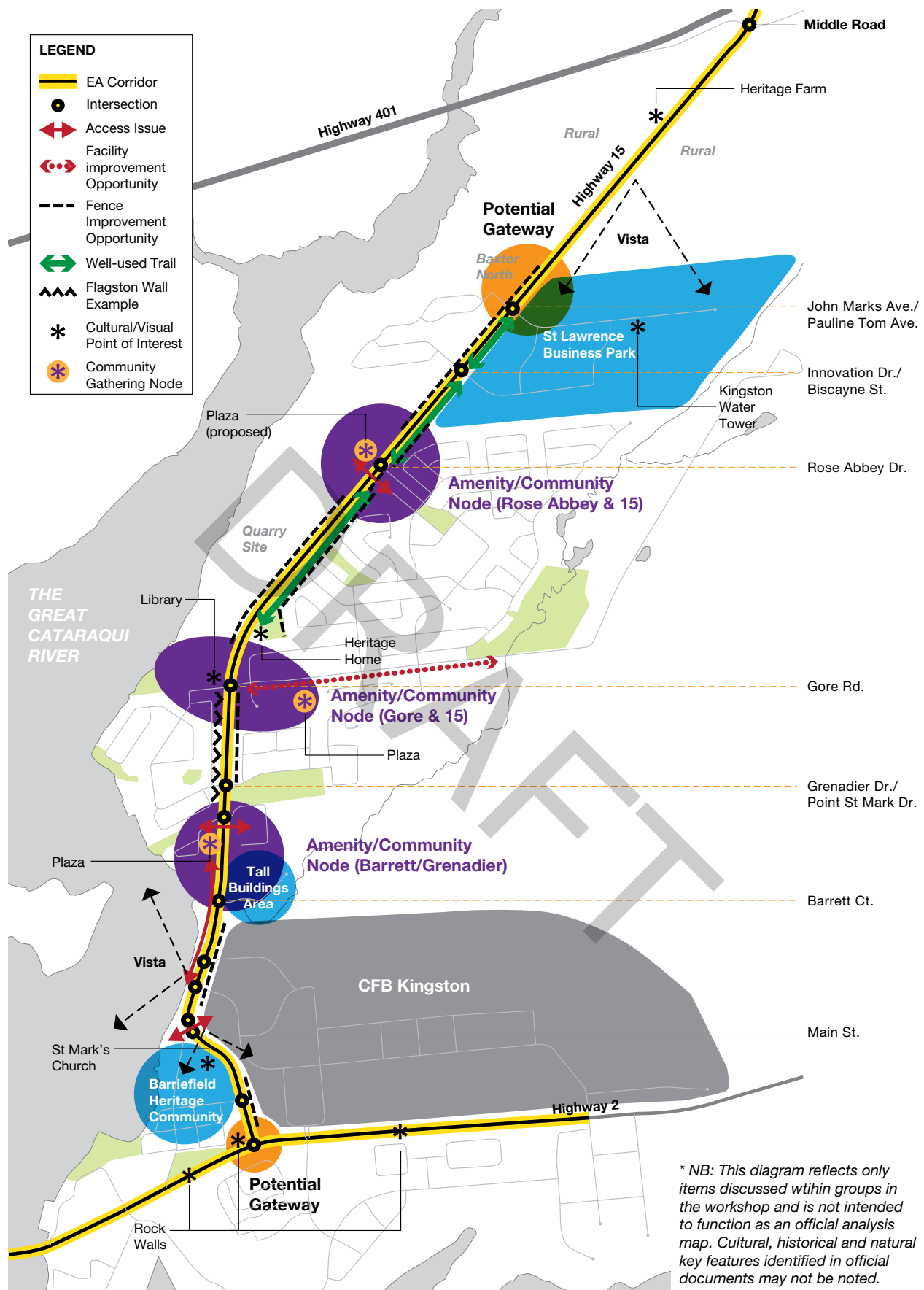


Figure 3. Session 1 - Character Area Summary Diagram

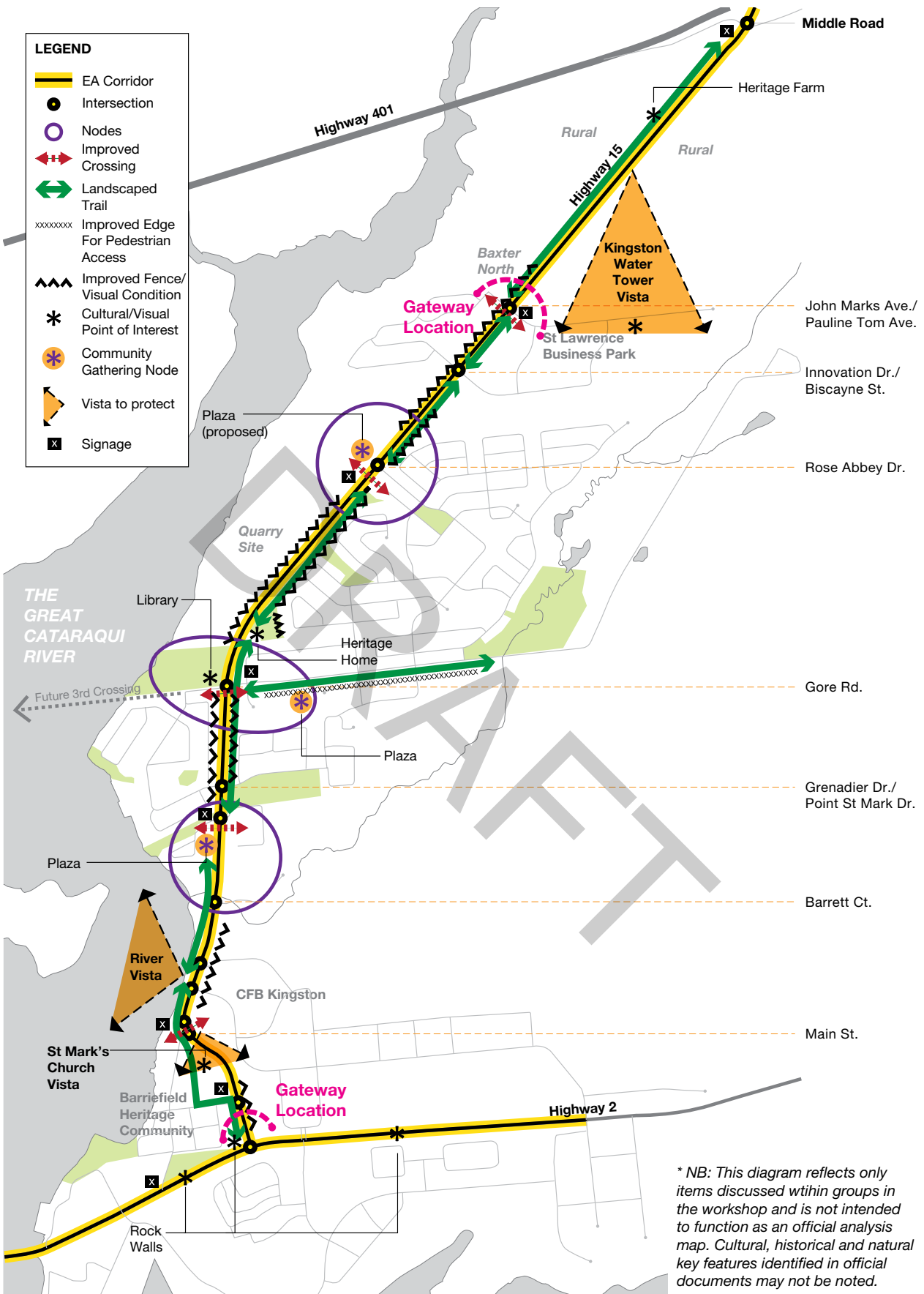


Figure 4. Session 2 - Potential Landscape Character Summary Diagram

# Appendix-1

## Highway 15 Class EA Visioning Workshop

Highway 15  
May 2, 2016, 2017



### Workshop Outline

1. Introduction: Purpose + Process to Date
2. Role of Engagement
3. What We've Heard So Far
4. Street Context
5. Landscape Character
6. Next Steps

### Highway 15 Class EA Project Purpose

- Consider Improvements to Highway 15 to accommodate projected travel demand
- Evaluate modifications to existing intersection or consider potential roundabout
- Consider additional pedestrian, cycling, and transit facilities to accommodate future development
- Consider illumination throughout the corridor and aesthetic improvements

### Process to Date



### Role of Visioning Workshop

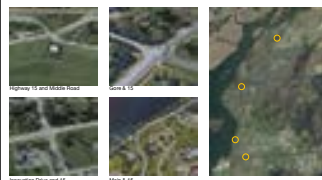
- To participate in a focused discussion and to share local knowledge about Highway 15
- To explore and discuss context sensitive streetscape solutions that will inform the development of guidelines specific to Highway 15
- To spread the word about the project to neighbours and others in the community so they can participate and attend future meetings



### What We've Heard So Far...



### Highway 15 Context



### Highway 15 Context

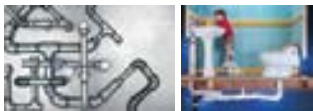


A0 - May 2, 2016 Workshop Presentation

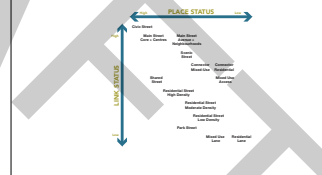


A1 - May 2, 2016 Workshop Presentation

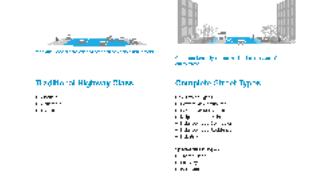
### Street Design Is Not Plumbing



### Link+Place



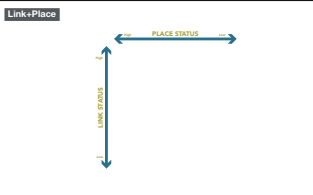
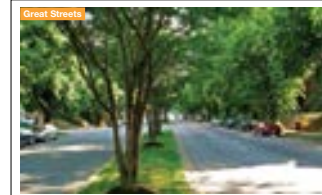
### Highway Classification vs. Street Context



### Working Session

- Think about the different character segments along the corridor.
- How many different places do you think there are? How many are the same?
- What are the attributes of each?

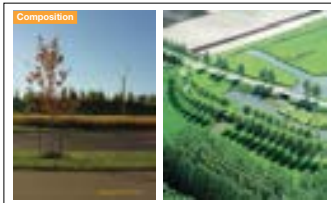
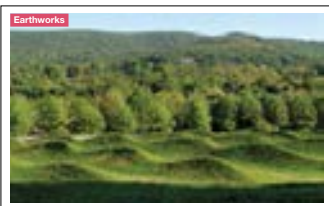
### Great Streets



A2 - May 2, 2016 Workshop Presentation



A3 - May 2, 2016 Workshop Presentation



**Working Session**

• For each of the character areas from the previous exercise, think about the following:

- › frontage character
- › landscape character
- › placemaking opportunities
- › special features



# Appendix C: CRCA Planting Guidelines for the Cataraqui Region

## 1.0 PURPOSE

The purpose of this document is to assist people in the Cataraqui Region of southeastern Ontario with the planting and maintenance of healthy and vigorous trees, shrubs, vines and groundcovers that will serve various purposes. These guidelines outline considerations for plantings, and some appropriate species are recommended. The intended outcome is successful plantings that do not cause harm to native species in the surrounding natural environment.

Persons undertaking planting projects may wish to retain the expertise of an Ontario Landscape Architect, a Registered Professional Forester, and/or an ecologist consultant who can provide further guidance.

This document is Appendix A to the CRCA Environmental Planning Policies (2015). These guidelines will be updated from time to time.

Terms that are *italicized* throughout this document are either defined in the glossary or are the botanical (Latin) names of plant species.

## 2.0 BACKGROUND – OUR ROLE AND REGION

The Cataraqui Region Conservation Authority (CRCA) frequently reviews landscape plans that are prepared for urban and rural developments. Plans are most commonly prepared in support of site plan control and subdivision applications under the Planning Act. The CRCA normally reviews such plans for their general suitability and for anticipated effects on nearby natural areas. The Conservation Authority has a particular interest to prevent the introduction of *invasive species* (e.g. garlic mustard, phragmites reed) into forests, meadows and wetlands. Other aspects such as aesthetics, compatibility with underground infrastructure and crime prevention through environmental design fall outside of the Conservation Authority's mandate but are also important to consider.

A primary consideration for planting is our location in North America. The Cataraqui Region is located at the boundary between two *ecozones* – the Boreal forest of the Canadian Shield and the Mixedwood Plains of the Great Lakes – St. Lawrence River lowlands (OMNR, 2013a). The former is further classified by the Province of Ontario as Ecoregion 5E (Georgian Bay), while the latter is considered part of Ecoregion 6E (Lake Simcoe-Rideau) (see OMNR 2009 for a detailed

description). This location means that we have a high degree of biodiversity – many different species of flora and fauna call this region home.

The species appropriate for planting projects vary between the ecozones. It is important to recognize that the climate varies within the Cataraqui Region – from the relative warmth of Adolphustown along the Bay of Quinte to the cool highlands of Frontenac Park north of Sydenham. Southern portions of the Region fall into Plant Hardiness Zone 6a, while inland areas are located in Zones 5b and 5a (Natural Resources Canada, 2000).

### **3.0 SPECIFIC CONSIDERATIONS FOR PLANTINGS**

The following considerations reflect the interests of the CRCA to promote healthy and appropriate plantings.

#### **3.1 Existing Settings and Vegetation**

Persons undertaking planting projects are encouraged to maintain as much of the existing setting and vegetation as possible – matching existing grades and carefully protecting trees, shrubs and their root systems during construction. This is best accomplished by fencing off areas at least 1.5 metres outside the dripline (canopy) of existing vegetation.

It should be noted that grading and filling activities associated with planting projects may be subject to restrictions and permissions. For example, work near water and wetlands may be subject to CRCA approvals per Ontario Regulation 148/06 under the Conservation Authorities Act, and municipal site alteration and/or tree-cutting by-laws enacted under the Municipal Act may also apply.

#### **3.2 Erosion Protection and Shoreline Stabilization**

Existing natural vegetation and soil mantles along shorelines should be retained for shoreline stabilization, and allowed to go “natural”. Woody trees, shrubs, and vines, with deep fibrous roots should be planted along the water’s edge (e.g., dogwoods, willows) to provide erosion protection and shoreline stabilization. Additional information can be found in Appendix F: Guidelines for Ecological Buffer Areas, and in Solutions for Shoreline Erosion: A Basic Guide to Bioengineering (RVCA, 2011).

#### **3.3 Native, Non-cultivar Species**

For many years the CRCA has encouraged the use of native, non-cultivar species of eastern Ontario stock. Native species are those known to have prospered in southeastern Ontario before the area was cleared for agriculture and settlement in the 1800s. With the exception of Boreal species that may not be suited to a changing climate, most native species will be the most appropriate for our disease, moisture, pollen, soil and temperature conditions. Non-cultivar species are the natural, non-hybridized, not genetically modified varieties of a given plant.

Eastern Ontario stock means seedlings and plants that have been grown using seeds from local plants. The plants that grow from this stock are also more likely to prosper in our setting. Maps published by the Ontario Ministry of Natural Resources show that the Cataraqui Region falls into Seed Zone 36 (OMNR, 2011).

### 3.4 Invasive Species

A primary concern of the Cataraqui Region Conservation Authority with respect to plantings is to avoid the introduction of *invasive species* into natural areas such as alvars, meadows, wetlands and woodlands. *Invasive species* are known to have negative ecological, economic and human health impacts (OMNR, 2012). Unfortunately they can be difficult or impossible to eradicate once introduced to an area.

*Invasive species* often escape from developments and ornamental gardens onto adjacent lands. The ability to spread is dependent on the competitive nature of the plant and the means through which it is able to spread (propagate). Plants that produce large quantities of seed, spread by rhizomes, and grow rapidly are difficult to control once they become established.

Some examples of problematic *invasive species* (which were planted originally as garden plants) include:

Common reed	<i>Phragmites australis</i>
Dog-strangling vine	<i>Vincetoxicum rossicum</i>
Garlic mustard	<i>Alliaria petiolata</i>
Giant hogweed	<i>Heracleum mantegazzianum</i>
Norway maple	<i>Acer platanoides</i>
Purple loosestrife	<i>Lythrum salicaria</i>
Wild parsnip	<i>Pastinaca sativa</i>
European buckthorn	<i>Rhamnus cathartica</i>
Tartarian honeysuckle	<i>Lonicera tatarica</i>

The Ontario Invasive Species Awareness Program has established an Invading Species Hotline (1-800-563-7711).

### 3.5 Biodiversity

Ecosystems tend to thrive when they include many different types of flora and fauna. They prosper through their richness in genes and through complex relationships, for example, between trees and the fungi that grown on their roots and facilitate the transfer of water and nutrients. As noted above, the Cataraqui Region enjoys a high degree of biodiversity because of our location between southern and northern *ecozones*. People can protect and foster this biodiversity by protecting natural areas as part of landscaping, and by planting a variety of appropriate species.

### 3.6 Plant Association

Some circumstances require further investigation of existing plants within an existing site, before prescribing plants that you would like to introduce into the same site. For example, some fungus such as rust species, require two (2) hosts to complete its lifecycle. White pine blister rust (*Cronartium ribicola*) can be fatal to white pine trees and requires *Ribes spp.* (Currants or Gooseberries) as its alternate host to complete its lifecycle. Therefore, if Currants or Gooseberries exist within the proposed planting site, White pine should not be introduced.

Cedar-apple rust (*Gymnosporangium juniperi-virginianae*) also requires two (2) hosts to complete its lifecycle. Eastern red cedar and apple or crab apple trees. The rust can affect the health of apple trees and ruin the fruit crop.

### 3.7 Climate Change

The climate of southeastern Ontario is changing, and this has implications for plantings. Average temperatures are expected to rise by three to eight degrees Celsius over the next century (OMNR, 2013b).

Historically we have been located at the transition between Carolinian and Boreal zones. It is possible that the Boreal species such as white spruce (*Picea glauca*) will cease to grow in the Cataraqui Region over the longer-term (OFRI 1998, s.9). The climate may change more quickly than the species can adapt to that change. We encourage the use of native plants that are shown to be adaptable to climate change.

### 3.8 Food for Wildlife

Plantings can be designed to encourage and support wildlife – from songbirds to butterflies and bees. An example of a native shrub that serves this purpose is Nannyberry (*Viburnum lentago*). Native wildlife may not consume non-native (introduced) plant species, which can increase the plant species' opportunity to spread uncontrolled.

### 3.9 Drought Resistance

Low water conditions are experienced in the Cataraqui Region from time to time, and may become longer and more prevalent as our climate changes in the future. An approach called *xeriscaping* is used to minimize the water needs of plantings by avoiding lawn cover and instead using drought resistant species such as groundcovers and wildflowers (see Utilities Kingston, 2014 and City of Toronto, 2013).

### 3.10 Salt Tolerance

The salt applied every winter season to our roads, parking areas and walkways can harm plantings. It can also cause hard surfaces such as concrete to degrade more rapidly. Some species are more susceptible to die-back than others. For example, while the Red-osier Dogwood (*Cornus stolonifera*) has a low salt tolerance, the Pussy Willow (*Salix discolor*) has a

high salt tolerance (City of Ottawa, 2013). Also, while White Pine (*Pinus strobus*) has a low salt tolerance, Eastern Larch (*Larix laricina*) has a high salt tolerance.

### 3.11 Persuasive Planting

Shrubs can be used to discourage pedestrian traffic through a technique called *persuasive planting*. This is a common practice around stormwater management facilities (ponds and swales) that look inviting but may have hazards such as steep slopes and variable water levels. Wild rose (*Rosa acicularis*) and Hawthorn (*Crataegus chrysocarpa*) are two species commonly used in persuasive plantings.

## 4.0 RECOMMENDED SPECIES

The following species are native, non-cultivars that are likely to thrive throughout the Cataraqui Region and for which eastern Ontario stock (Seed Zone 36) may be available from nurseries and suppliers.

Planters may also wish to refer to other resources, such as the following:

- City of Ottawa Forests and Greenspace Advisory Committee website (City of Ottawa, 2013); it has an on-line database of native tree and shrub species that lists their moisture and light requirements, salt tolerance and height at maturity.  
Visit <http://www.ofnc.ca/ofgac/displaytreelisten.php?orderby=NameEn>
- Grow Me Instead: A Guide For Southern Ontario: Beautiful Non-Invasive Plants for Your Garden (Ontario Invasive Plant Council, 2011); it has a list of invasive species to avoid and alternatives to consider, with a focus on groundcovers and shrubs.  
Visit <http://www.ontarioinvasiveplants.ca/files/GMI2012web.pdf>

### 4.1 Trees

Eastern white pine	<i>Pinus strobus</i>
Eastern white cedar	<i>Thuja occidentalis</i>
Red oak	<i>Quercus rubra</i>
Red pine	<i>Pinus resinosa</i>
Sugar maple	<i>Acer saccharum</i>

### 4.2 Shrubs

Eastern white cedar	<i>Thuja occidentalis</i>
Gray dogwood	<i>Cornus racemosa</i>
Nannyberry	<i>Viburnum lentago</i>
Red cedar	<i>Juniperus virginiana</i>
Serviceberry	<i>Amelanchier</i>

### 4.3 Vines

Virginia creeper	<i>Parthenocissus vitacea</i>
Climbing hydrangea	<i>Hydrangea anomala</i>
American wisteria	<i>Wisteria frutesceus</i>

### 4.4 Grasses and Groundcovers

Big bluestem	<i>Andropogan gerardii</i>
Indian grass	<i>Sorghastrum nutans</i>
Wild geranium	<i>Geranium maculatum</i>

## DEFINITIONS

*Ecozone* means a large area of land and water that is characterized by bedrock and climate that differs from the areas next to it (after OMNR, 2013a).

*Invasive species* means harmful alien species whose introduction or spread threatens the environment, the economy, or society, including human health. Once established, invasive species are extremely difficult and costly to control and eradicate, and their ecological effects are often irreversible (OMNR, 2012).

*Persuasive plantings* means groups of shrubs or similar vegetation that due to their density or physical characteristics tend to encourage pedestrians to move to other areas.

*Xeriscaping* means designing landscapes that match local conditions with xeric (or waterwise) plants, trees and shrubs that will thrive (City of Toronto, 2013).

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## FOR MORE INFORMATION

Please contact the CRCA at 613-546-4228 or [info@crca.ca](mailto:info@crca.ca), or visit our website at [www.crc.ca](http://www.crc.ca).