Region of Waterloo

GRAND RIVER TRANSIT

STAGE 2 ION: LIGHT RAIL TRANSIT FROM KITCHENER TO CAMBRIDGE

December 2020

Purpose of this Online Engagement Presentation

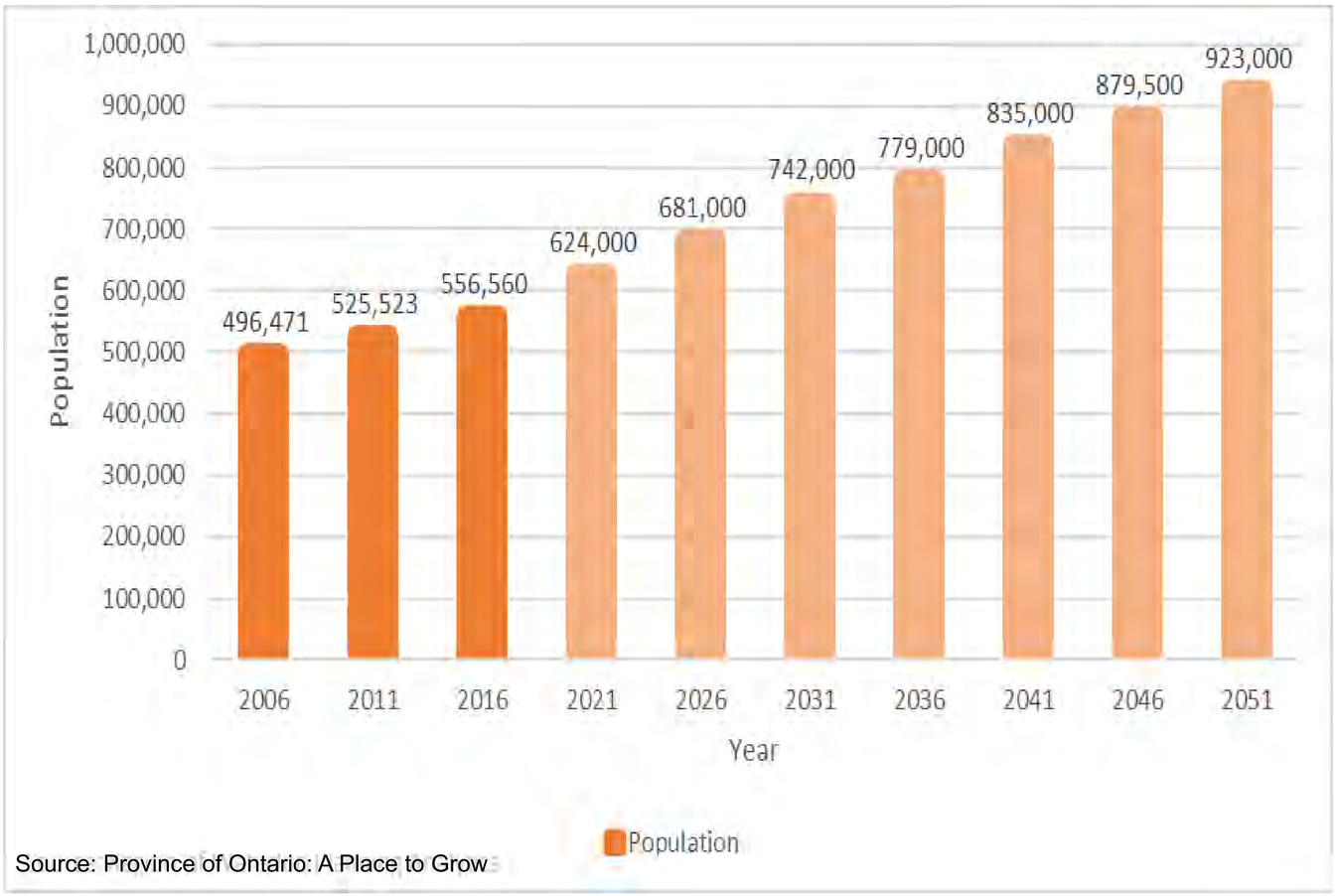
- Overview of the Stage 2 ION Light Rail Transit (LRT)
- Environmental Assessment process through the Transportation Project Assessment (TPA) Process
- Proposed Transit Project and Preferred Route
- Overview of the Environmental Project Report (EPR)
- Next Steps
- How you can stay informed and involved

The following is now available on the project website regionofwaterloo.ca/Stage2ION:

1. This video
2. Downloadable PDF of the presentation slides
3. PDF Map of the Stage 2 ION LRT study area

Online Engagement Survey - engagewr.ca/Stage2ION

Project Overview and Purpose



Source: Province of Ontario: A Place to Grow

- Over the past 15 years, the region's population has grown an average of 1.58 per cent, per year.
- Statistics Canada recently indicated that the region was the fastest growing metropolitan area in the country.
- On average, 50 per cent of new development and intensification has occurred in the built up areas, and in 2019 this rose to 73 per cent.

Why LRT?

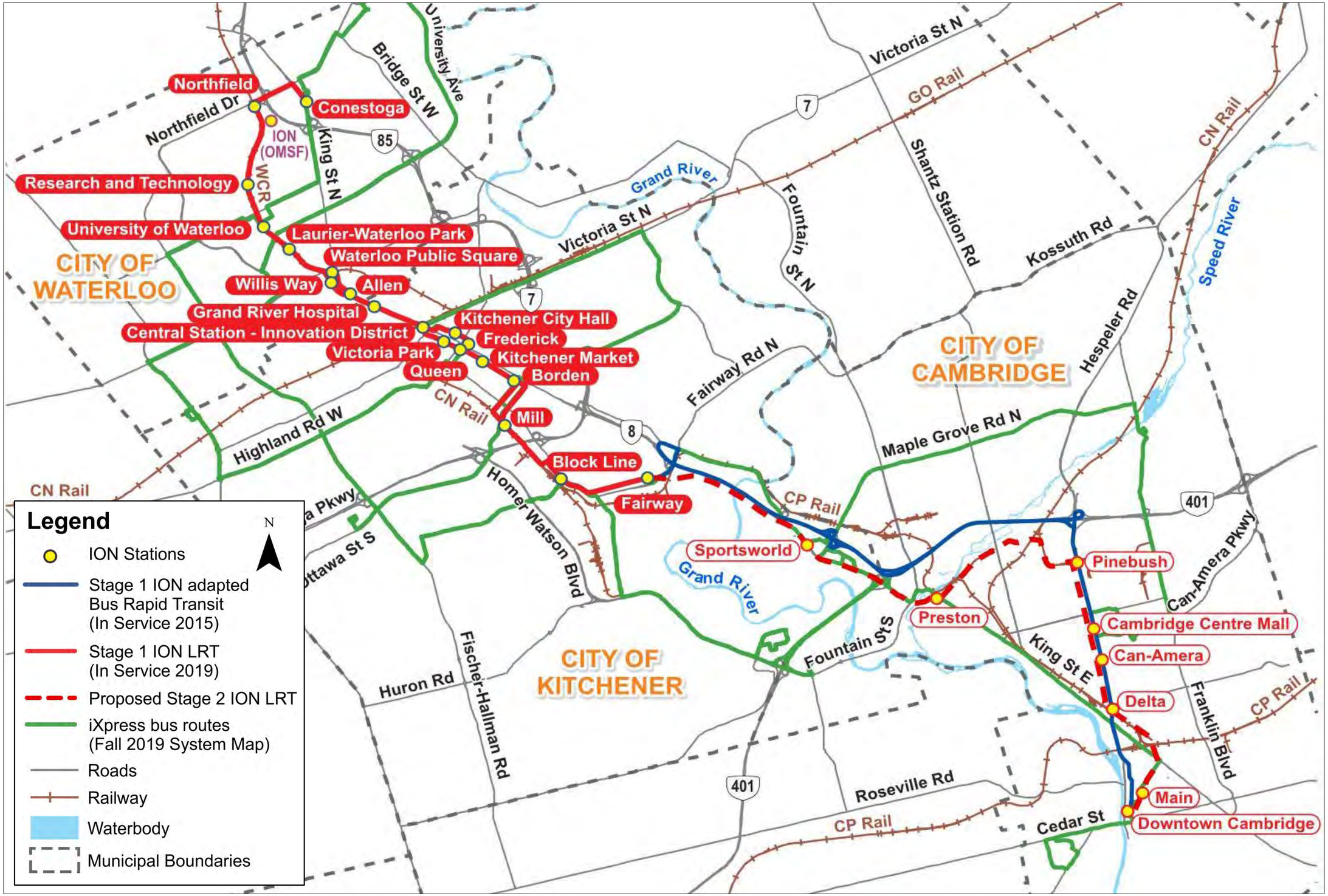
ION is the foundation for the Regional Official Plan objectives:

Environmental Protection

- Protect environmentally-sensitive areas
- Improve air quality by reducing auto use and greenhouse gas emissions
- Preserve farmland and the rural lifestyle

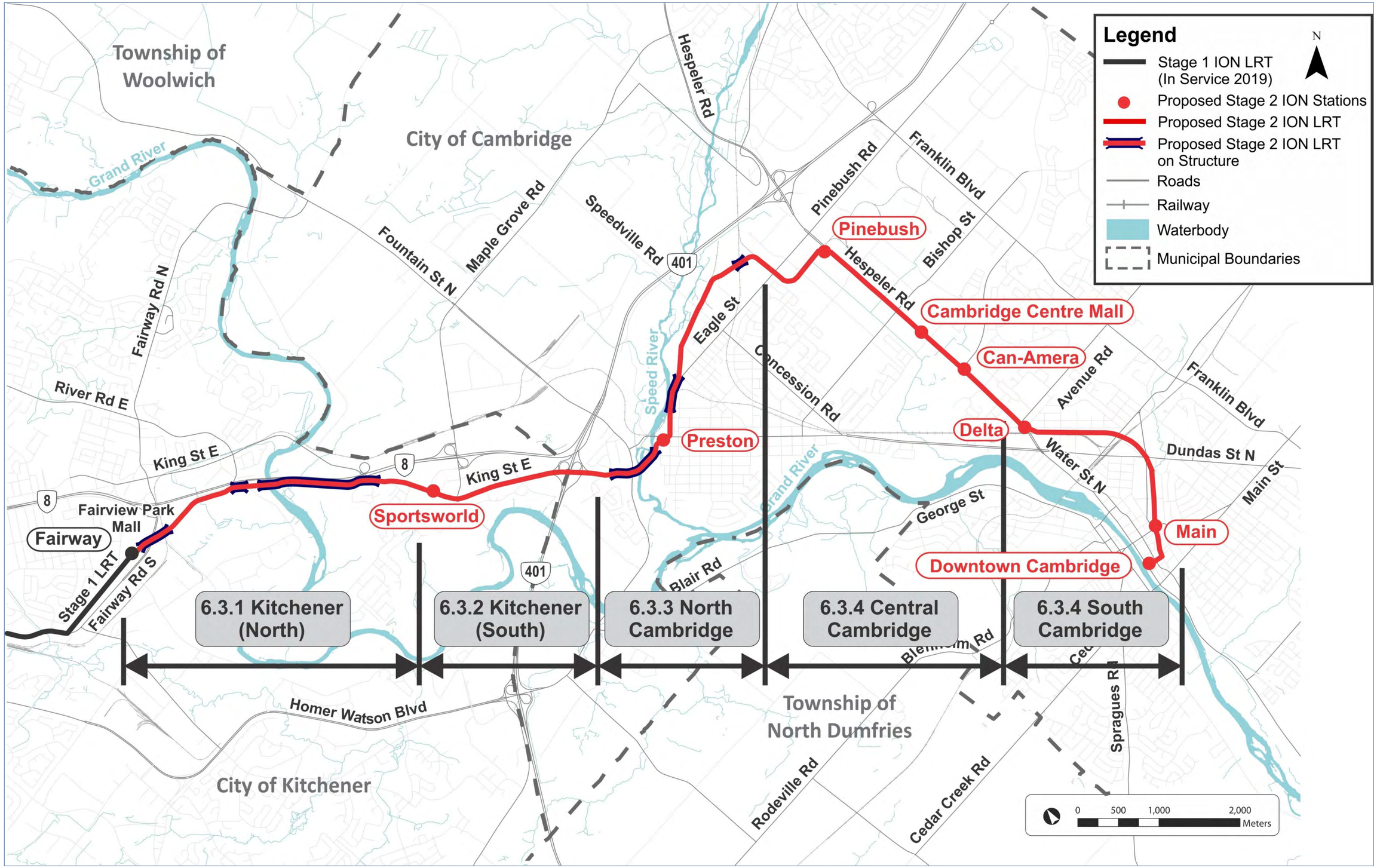
Social and Economic Development

- Help manage growth
- Move people and create transportation choice
- Promote more mixed-use, transit-supportive development



Stage 2 ION: Light Rail Transit (LRT)
From Kitchener to Cambridge
Online Engagement Presentation

Stage 2 ION Study Area

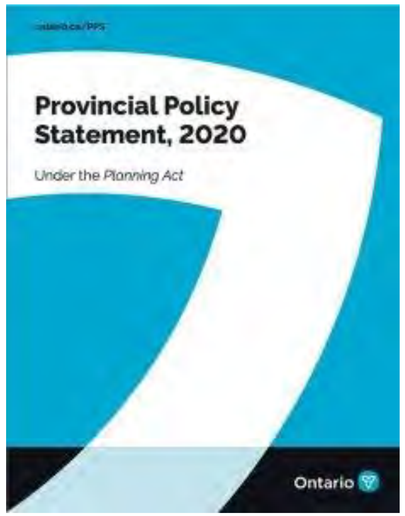


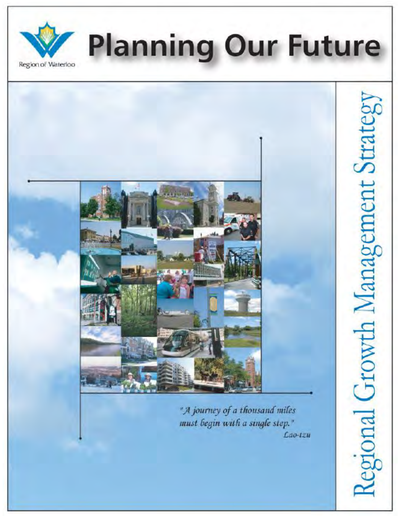
Stage 2 ION: Light Rail Transit (LRT)
From Kitchener to Cambridge
Online Engagement Presentation

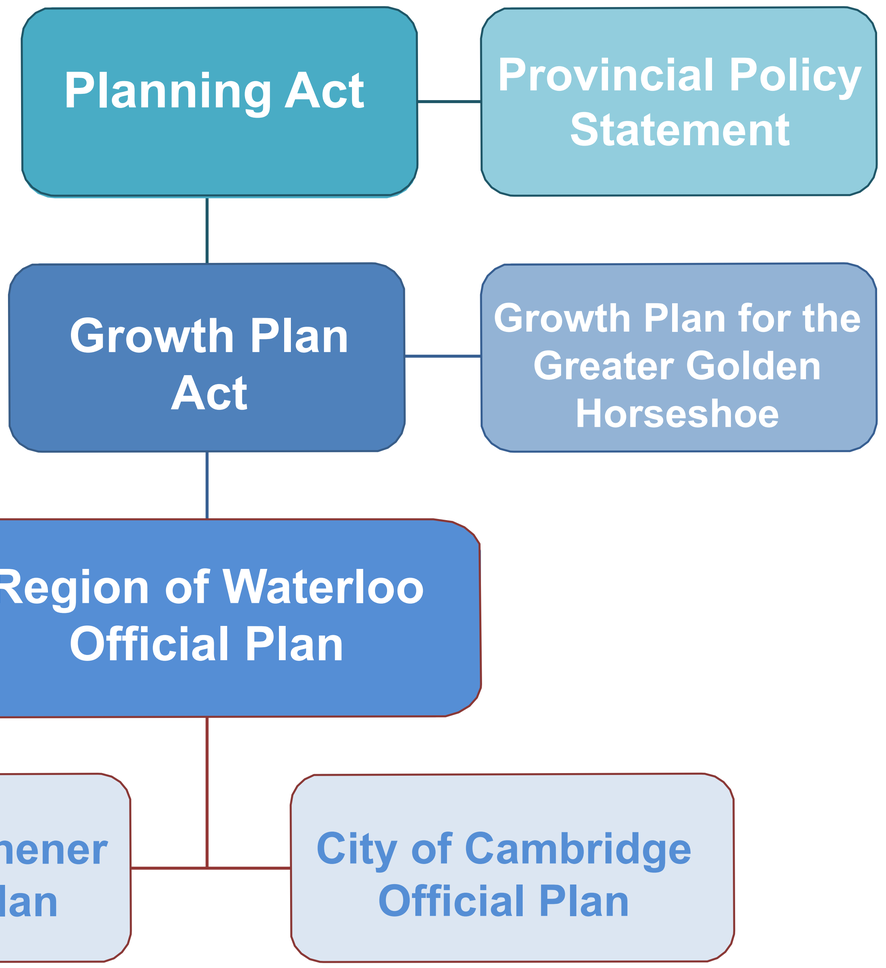
Stage 2 ION Route and Stations

Policies and Legislation

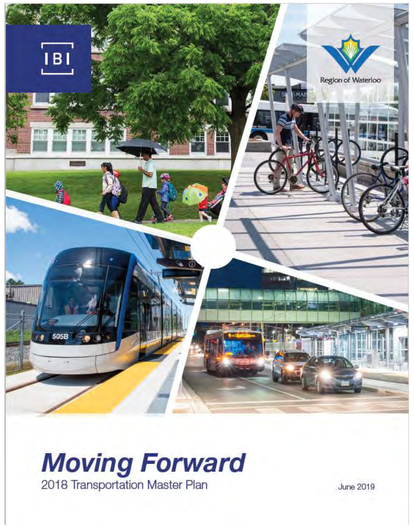
Stage 2 ION was planned in accordance with the following Provincial and Regional planning policies and legislation that provide the framework to plan for established targets for more sustainable development and alternative modes of transportation.







regional official plan 2041



Project Timeline

We are here

Completed Activities

November 2015

Develop alternative design concepts and establish evaluation criteria

PCC No. 1

November 2017

Identify additional and refined route options based on PCC No. 2 feedback

PCC No. 3

June 2018

Regional Council endorsed "Project Team Preliminary Proposed Route (2018)"

Regional Council

June 2019

Regional Council endorsed the "Preferred Route for Stage 2 ION"

Regional Council

April 2020

Regional Council endorsed the "Preliminary Design of the Preferred Route for Stage 2 ION"

Regional Council

December 2020

Present draft Environmental Project Report (EPR) for review

Notice of Study Commencement and Online Engagement Presentation

Feb-Mar 2017

Evaluate alternatives and identify Preliminary Potential Route (2017)

PCC No. 2

May 2018

Complete evaluation and present updated Project Team Preliminary Proposed Route (2018)

PCC No. 4

March 2019

Present Project Team Preferred Route refinements between Shantz Hill and William St

PCC No. 4b

November 2019

Present preliminary design of the Preferred Route and preliminary property requirements

PCC No. 5

March 2021

File the EPR for formal review

Notice of Study Completion

Environmental Assessment Process

Pre-Planning Phase (Complete)

- Compile and review previous planning studies
- Assess study area conditions
- Develop and analyze alternative routes and stations
- Prepare preliminary design and draft reports
- Consult with stakeholders, regulatory agencies, indigenous communities and at Public Consultation Centres

Publish Notice of Commencement

No prescribed limits, commenced in 2015

Environmental Project Report (EPR) (Underway)

- Complete impact analysis and identify proposed mitigation
- Prepare the EPR
- Public engagement to provide an overview of the EPR

Publish Notice of Completion of EPR

Maximum 120 days

Environmental Project Report (EPR) - Review

- Place copies of the EPR on the project website and at locations near the Stage 2 ION route
- Receive and address comments from stakeholders and the public
- Objections are submitted to the Ministry of the Environment, Conservation and Parks (MECP)

30 days

Minister's Review

- MECP gives notice as to whether the project can proceed (with or without conditions) or if additional work is required
- If no notice is provided by the Minister, the project can proceed

35 days

Publish Statement of Completion

Pre-Planning Phase vs. TPA Process

Pre-Planning Phase

- Assessing Regional policies, strategies and previous Rapid Transit studies to establish the objectives of the study.
- Collecting and assessing updated information about existing environmental conditions.
- Developing and evaluating route alternatives and selecting the preferred route and station locations – the Transit Project.
- Conducting impact assessment and developing mitigation measures, monitoring activities, and commitments to future work.
- Carrying out consultation with Indigenous communities, government and public stakeholders and potentially impacted property owners.

TPA Process

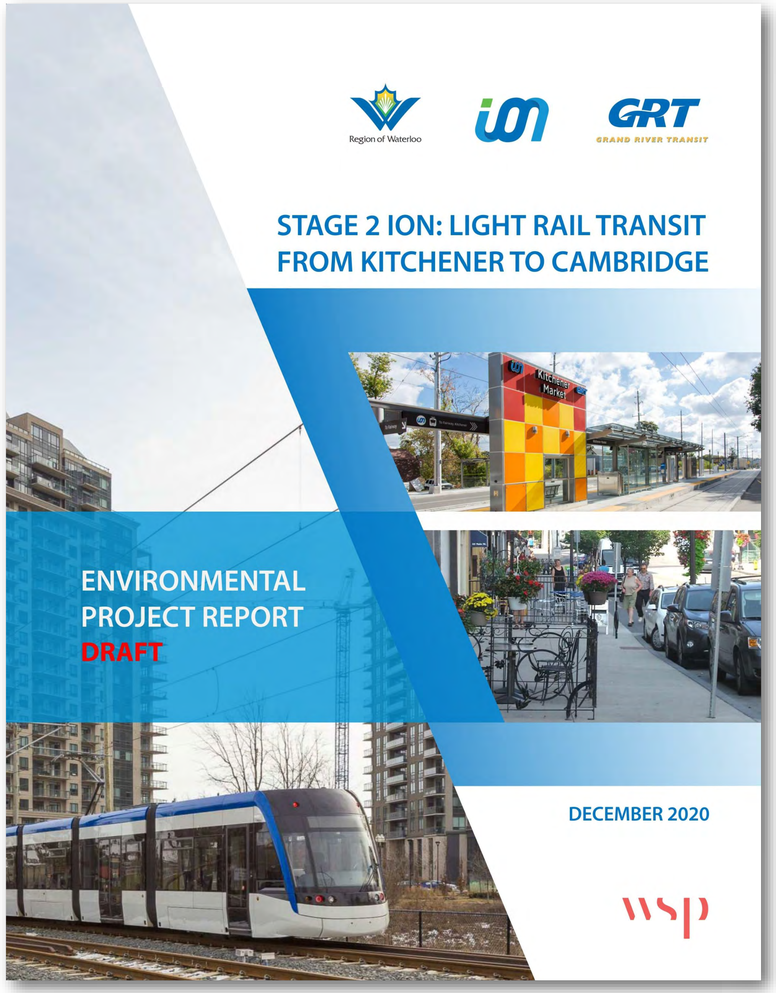
- The culmination of years of technical analysis, evaluation and consultation
- A streamlined impact assessment process focused on matters of provincial importance.
- The Transit Projects Regulation exempts the project from Part II of the Environmental Assessment Act (EAA).
- Requires the proponent to start with a selected Transit Project.
- A maximum of 120 days to consult on and finalize the Environmental Project Report, 30 days for the public and agency review period and 35 days for the Minister's review period.

Environmental Project Report (EPR)

An Environmental Project Report (EPR) is the required documentation in the TPA Process.

The following is presented in the EPR:

- Consultation Process
- Existing Environmental Conditions
- Description of the Transit Project
- Potential Environmental Impacts
- Recommended Mitigation and Monitoring Measures
- Future Commitments



The <u>draft</u> EPR is being released for comment and review by Indigenous Communities, agencies, members of the public and potentially impacted property owners.

How to Stay Informed

Please provide feedback by February 12, 2021

E-mail: Stage2ION@regionofwaterloo.ca

Website: regionofwaterloo.ca/Stage2ION

Engage Survey: engagewr.ca/Stage2ION

Environmental Project Report (EPR)

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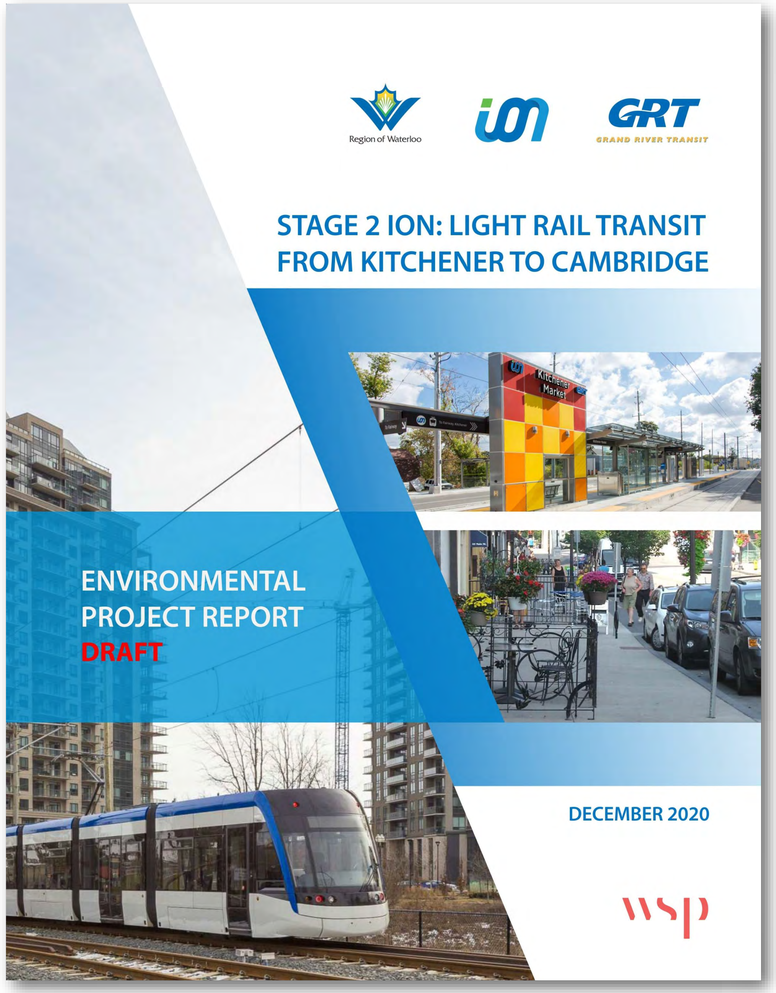


EPR Sections 1 and 2: Introduction and EA Process

June 2011

Region of Waterloo Council approved a staged approach to implement Light Rail Transit (LRT) from Waterloo to Cambridge.

Stage 1 ION includes:

September 2015

- Start of ION Bus service from Kitchener to Cambridge; and,

June 2019

- Start of ION LRT service from Waterloo to Kitchener.

Stage 2 ION will replace ION Bus between Kitchener and Downtown Cambridge, creating a continuous LRT system across the Region's three urban centres.

June 2019

Regional Council endorsed this route as the "Preferred Route for Stage 2 ION".

December 2020

Draft EPR is being released for comment and review by Indigenous communities, government and public stakeholders and potentially impacted property owners.

EPR Section 3: Pre-Planning Activities

Population and Ridership Forecasts

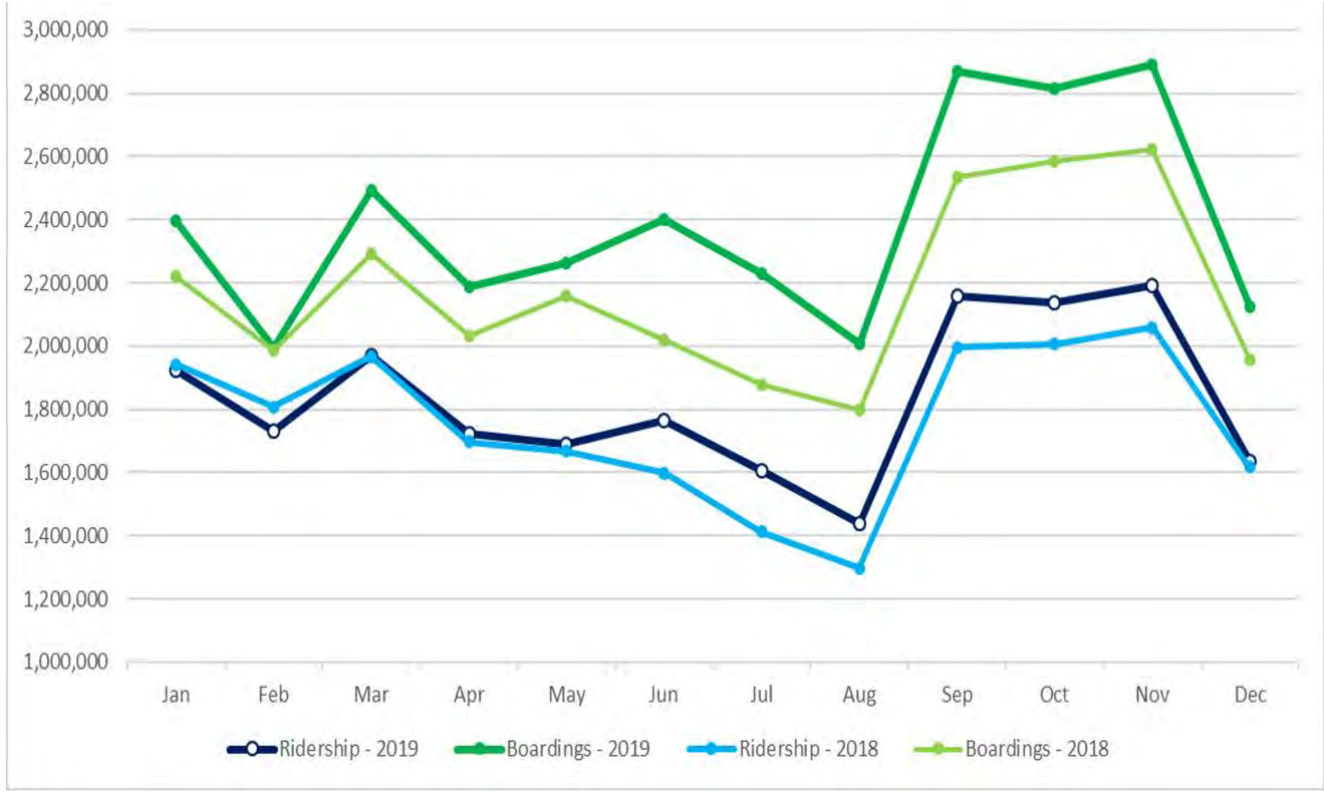
- The Region's population is projected to reach 923,000 people by 2051.
- More people took transit in 2019 compared to 2018.

Route Selection Process

- A long list of potential route and station alternatives was created.
- Route and station alternatives were screened for feasibility.
- A short list was established to enable more detailed analysis and evaluation.

Environmental Impact Assessment

These environmental components were assessed:



- **Natural Environment**
- **Fluvial Geomorphology**
- **Cultural and Built Heritage**
- **Archaeology**
- **Groundwater and Contaminated Soils**
- **Noise and Vibration**
- **Drainage and Stormwater Management**
- **Air Quality**
- **Traffic**

EPR Section 4: Consultation and Engagement

Public Consultation

- Five rounds of Public Consultation Centres (PCCs) were held during the Pre-Planning Phase at key Project milestones
- A Project website was maintained (www.stage2ION.ca) throughout the pre-planning phase, while a separate project website is being used during the TPA Process phase (www.regionofwaterloo.ca/Stage2ION).
- Social media posts were also shared through the Project's Twitter account @Stage2ION and Facebook account 'ION Rapid Transit Service'.

Indigenous Engagement

Three Indigenous communities were engaged during both the Pre-Planning and TPA Process phases of the study:

- Six Nations of the Grand River
- Mississaugas of the Credit First Nation
- The Haudenosaunee Confederacy Chiefs Council.

During the Pre-Planning phase of the study, a total of six meetings were held separately with representatives from each of the respective Indigenous communities.

EPR Section 4: Consultation and Engagement

Agency Consultation

Roles and responsibilities of the agencies were to:

- Represent the interests of their department or agency;
- Help identify planning and design issues early in the study;
- Disseminate project information and obtain feedback from within their respective departments and agencies;
- Provide comments and feedback on information provided by the Study Team; and
- Work towards consensus to achieve project milestones.

During the Pre-Planning phase, 12 meetings took place with the Technical Advisory Committee (TAC) to provide project updates, discuss challenges and opportunities and gain feedback and insights into the proposed project and draft EPR.

Technical Advisory Committee (TAC)

Staff from the **Region of Waterloo**, **City of Kitchener** and **City of Cambridge** in:

- Grand River Transit
- Design and Construction
- Traffic Operations
- Planning
- Finance
- Communications
- Corporate Administration
- Economic Development

Ministry of Transportation

Grand River Conservation Authority

Terrestrial Vegetation

The majority of the vegetation within the study area has been disturbed by existing land uses including agricultural, residential, and infrastructure. There are 3 provincially significant wetlands, 2 Environmentally Sensitive Policy Areas and 1 Conservation Area within the study area.

Wildlife and Wildlife Habitat

A total of 93 species of wildlife (reptiles, amphibians, birds, and mammals) were recorded within, or immediately adjacent to, the study area during field surveys. Many of these species are widespread and abundant in southern Ontario and the Region of Waterloo.

Fish and Fish Habitat

The study area lies within the Grand River watershed and, specifically, within the Middle Grand River Reach, Speed River Sub-basin Sub-watershed and the Mill Creek Sub-watershed. Fish SAR, Silver Shiner and Black Redhorse, both regulated as "Threatened" under the Ontario Endangered Species Act (2007) are known to occur within the study area within both the Grand River and Speed River.

Fluvial Geomorphology

The Stage 2 ION route crosses the Grand River, Speed River, and Freeport Creek, a tributary to the Grand River. Stage 2 ION fully crosses these watercourses with no structural elements within the channel.

Drainage and Stormwater

The existing drainage infrastructure along the proposed Stage 2 ION on-street alignment consists of a curb and gutter system and network of storm sewers along the existing roadways to collect and convey the minor and major system flows. Storm runoff collected from the roadway surfaces is discharged either to the storm sewer outlets or adjacent watercourses along the road.

Legend

- Stage 1 ION LRT (In Service 2019)
- Proposed Stage 2 ION Stations
- Proposed Stage 2 ION LRT
- Roads
- Railway
- Waterbody
- Municipal Boundaries

N

0 500 1,000 2,000 Meters

Cultural and Built Heritage

Many of the cultural heritage resources within the study area are linked to the history of the initial settlement and growth of Euro-Canadian communities in the Cities of Kitchener and Cambridge. As such, this local context and settlement history spans the early Euro-Canadian settlement history through to present.

Archaeology

There are historic structures, historic villages, several historic transportation routes, numerous designated and listed heritage properties, commemorative plaques, previously registered archaeological sites, three historic pioneer cemeteries, and primary water sources within the study area.

Air Quality

The Kitchener ambient monitoring station indicated that 26 industrial and commercial facilities within 5 km of the study area have the potential to contribute to existing air quality conditions. These facilities have been identified based on National Pollutant Release Inventory (NPRI) data from 2016.

Groundwater and Contamination

Much of the water supply in the Waterloo Region is derived from the Waterloo Moraine aquifers, a glacial aquifer system composed of fine to medium sand. No evidence of spills was observed on any roadways in the study area, however historical spills and land uses adjacent to the corridor may have impacted soil and groundwater quality.

Noise

The study area used for the noise and vibration assessment is 100 m on either side of the corridor. In identifying sensitive receptors along the route, residences are most prominent.

Land Use

Land uses in the study corridor include Mixed Use, Commercial, High Rise Residential, Open Space, Low Rise Residential, Commercial Campus, National Open Space System, Employment Corridor, Industrial, Hespeler Road Mixed-Use Corridor, Blair Core Area, Low/Medium Density and Galt City Centre.

Legend

- Stage 1 ION LRT (In Service 2019)
- Proposed Stage 2 ION Stations
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- Roads
- Railway
- Waterbody
- Municipal Boundaries

N

0 500 1,000 2,000 Meters

EPR Section 6: Project Description

Design Criteria Guiding Principles

Hierarchy of Modes/Users

1. Walking
2. Cycling
3. Public transit
4. Carpooling/smart commute strategies
5. Single occupant vehicles

Infrastructure Requirements

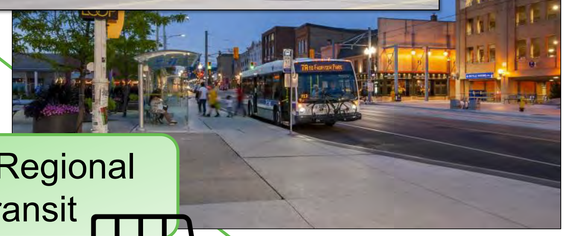
Private & Public Utilities, Landscaping, Street Furniture & Public Art, Bus Stops, Snow Storage, Signage & Billboards, …etc.

Design Parameters

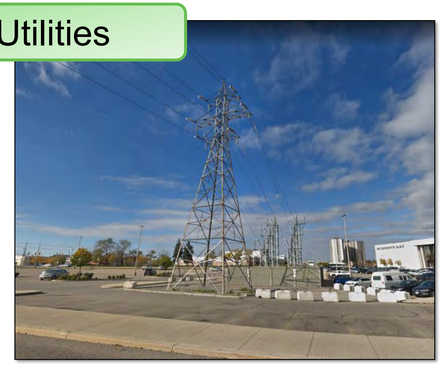
Design Elements

- Active Transportation

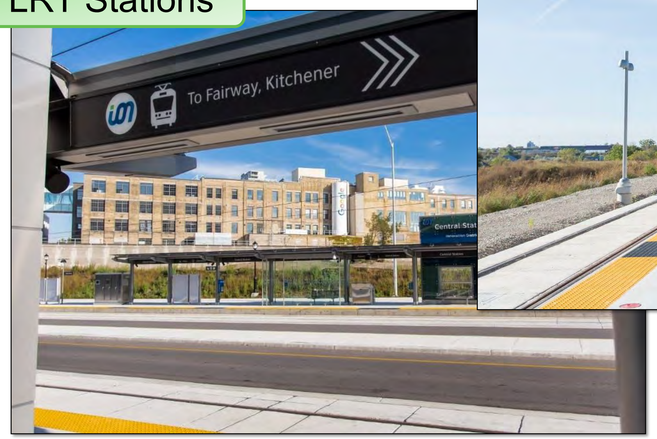
- Structures
- Traffic Signals
- Illumination
- General Traffic Lanes
- Local Transit



- Driveways & Access
- Utilities

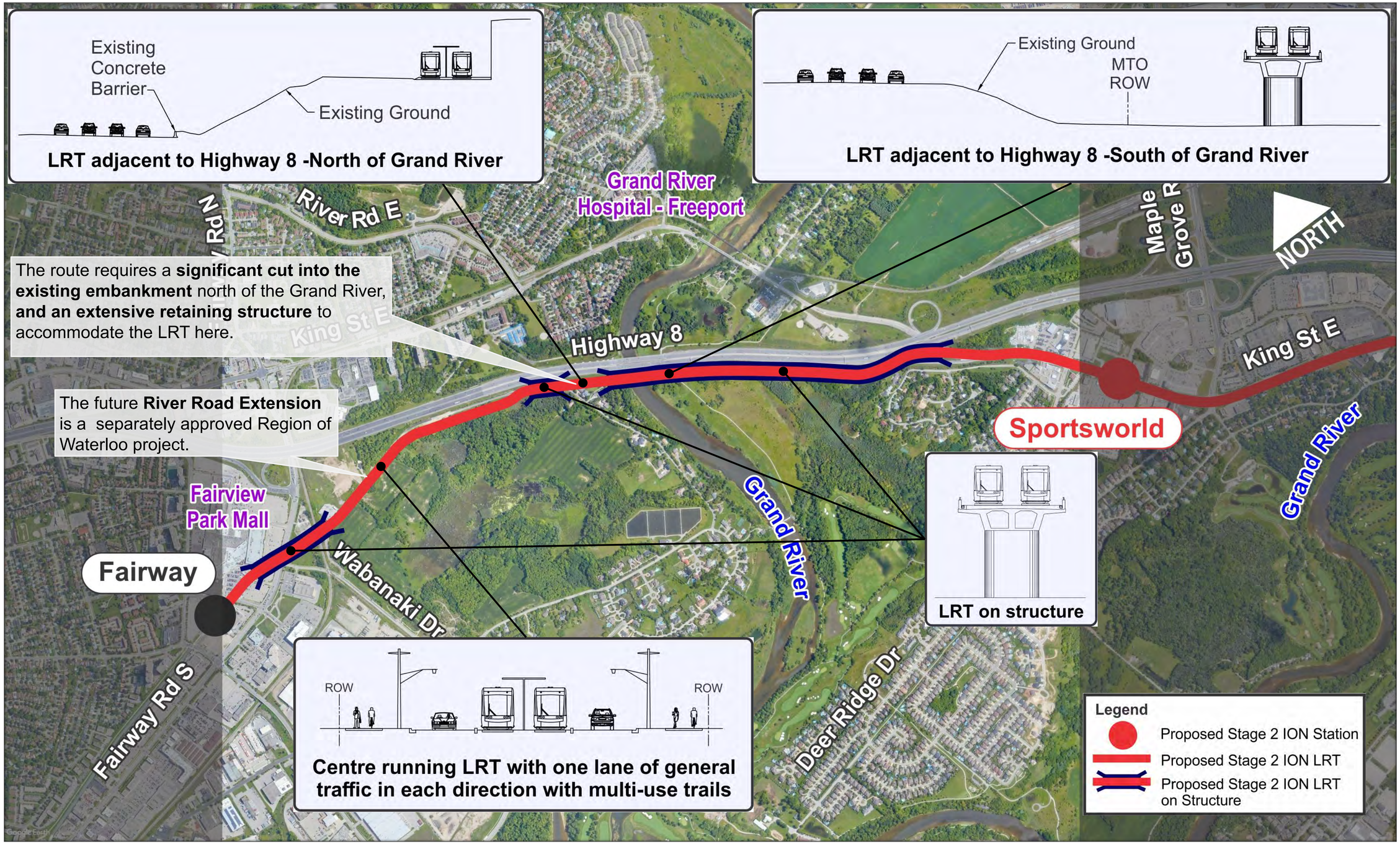


- LRT Design Elements
- LRT Stations



- Inter-Regional Transit
- Special Trackwork
- Railway Crossings
- Traction Power Substations

EPR Section 6: Project Description



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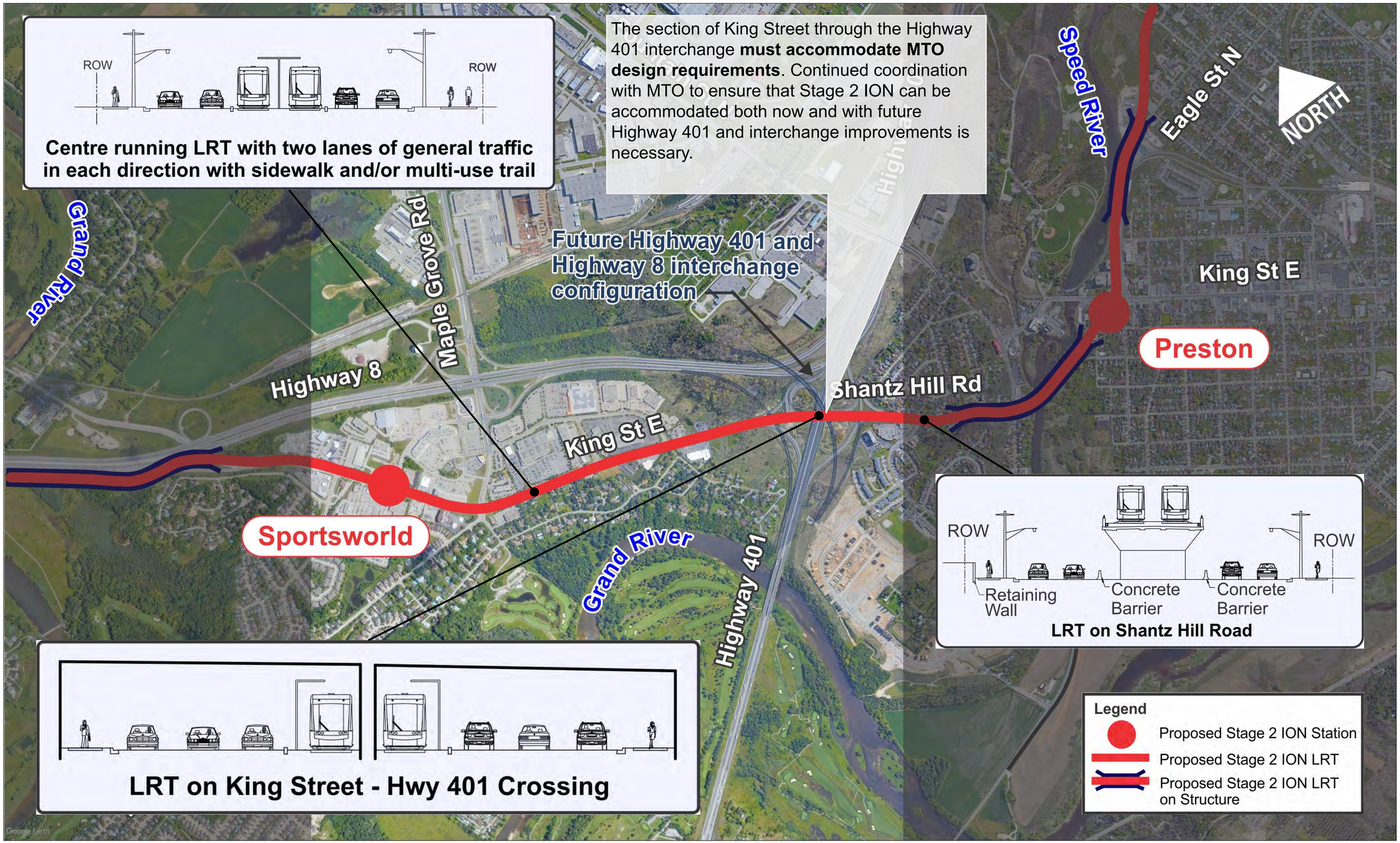

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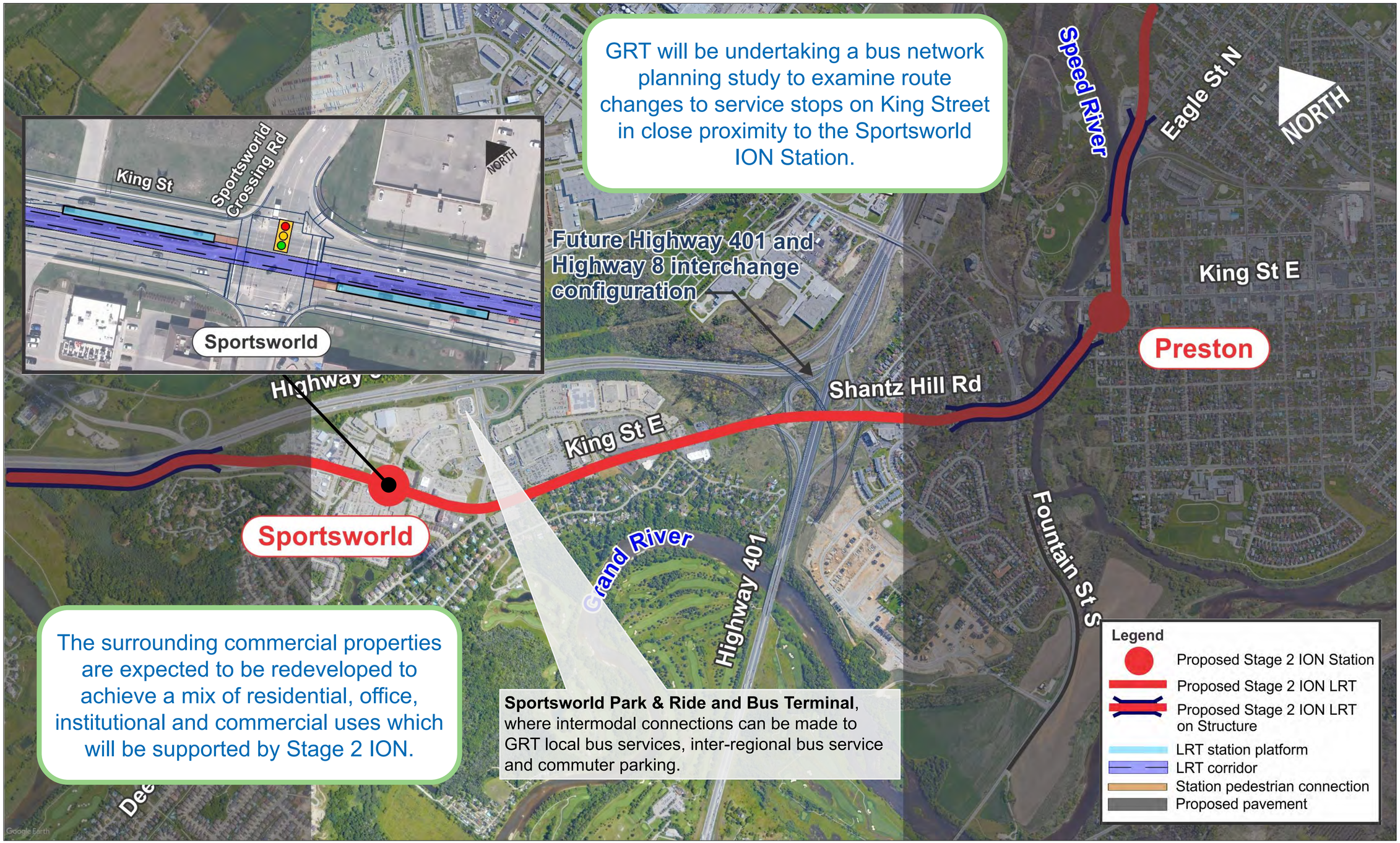
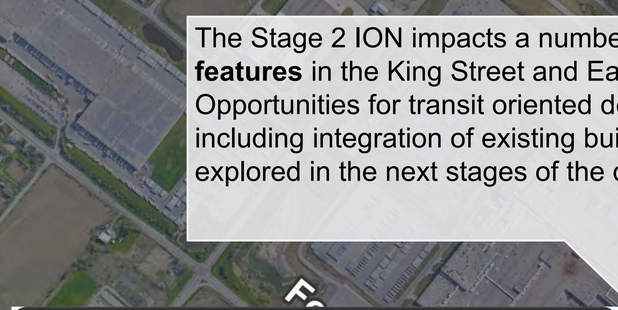


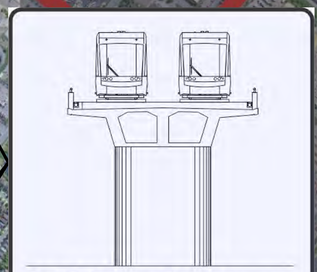
EPR Section 6: Project Description

The Stage 2 ION impacts a number of **heritage features** in the King Street and Eagle Street area. Opportunities for transit oriented development including integration of existing buildings will be explored in the next stages of the design.



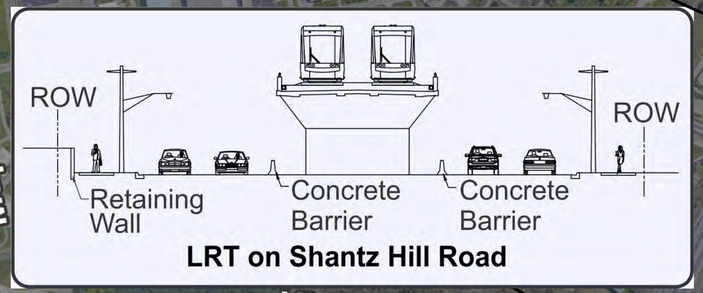
Side running LRT with one lane of general traffic in each direction

Off-street LRT



LRT on structure

Rendering of Stage 2 ION at Shantz Hill Road and Fountain Street



LRT on Shantz Hill Road

The structure over **Speed River** will minimize impacts to the river, floodplain and the Bob McMullen Linear Trail.

Legend

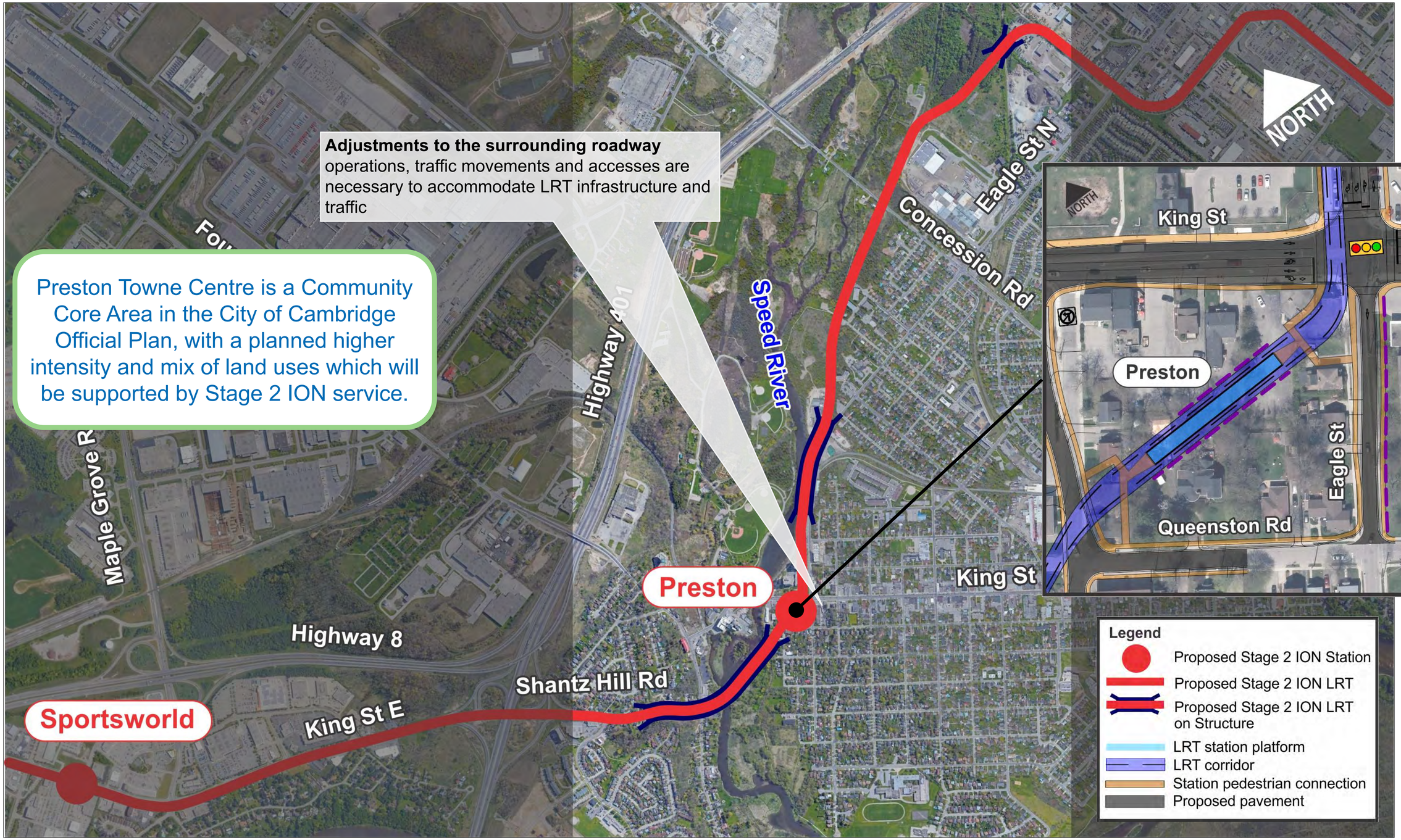
- Proposed Stage 2 ION Station
- Proposed Stage 2 ION LRT
- Proposed Stage 2 ION LRT on Structure

Maple Grove Rd
Highway 8
Sportsworld
King St E
Shantz Hill Rd
Preston
Speed River
Highway 401
Concession Rd
Eagle St N
King St E
NORTH

EPR Section 6: Project Description

Adjustments to the surrounding roadway operations, traffic movements and accesses are necessary to accommodate LRT infrastructure and traffic

Preston Towne Centre is a Community Core Area in the City of Cambridge Official Plan, with a planned higher intensity and mix of land uses which will be supported by Stage 2 ION service.

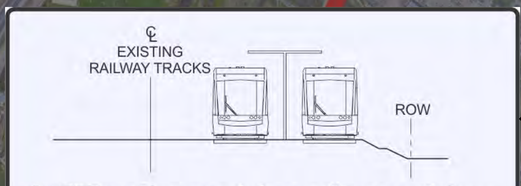


EPR Section 6: Project Description

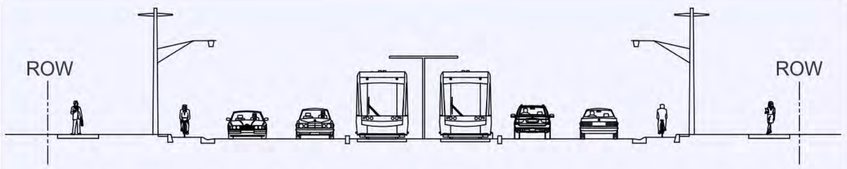
Stage 2 ION and it's stations will support the **City of Cambridge's Growth and Intensification Study** which includes the preparation of the **Hespeler Road Corridor Secondary Plan.**

Constraints along the corridor will require reduced boulevard widths in selected locations to spare existing buildings.

Stage 2 ION will not require widening into the **Dumfries Conservation Area.**



LRT adjacent to rail corridor

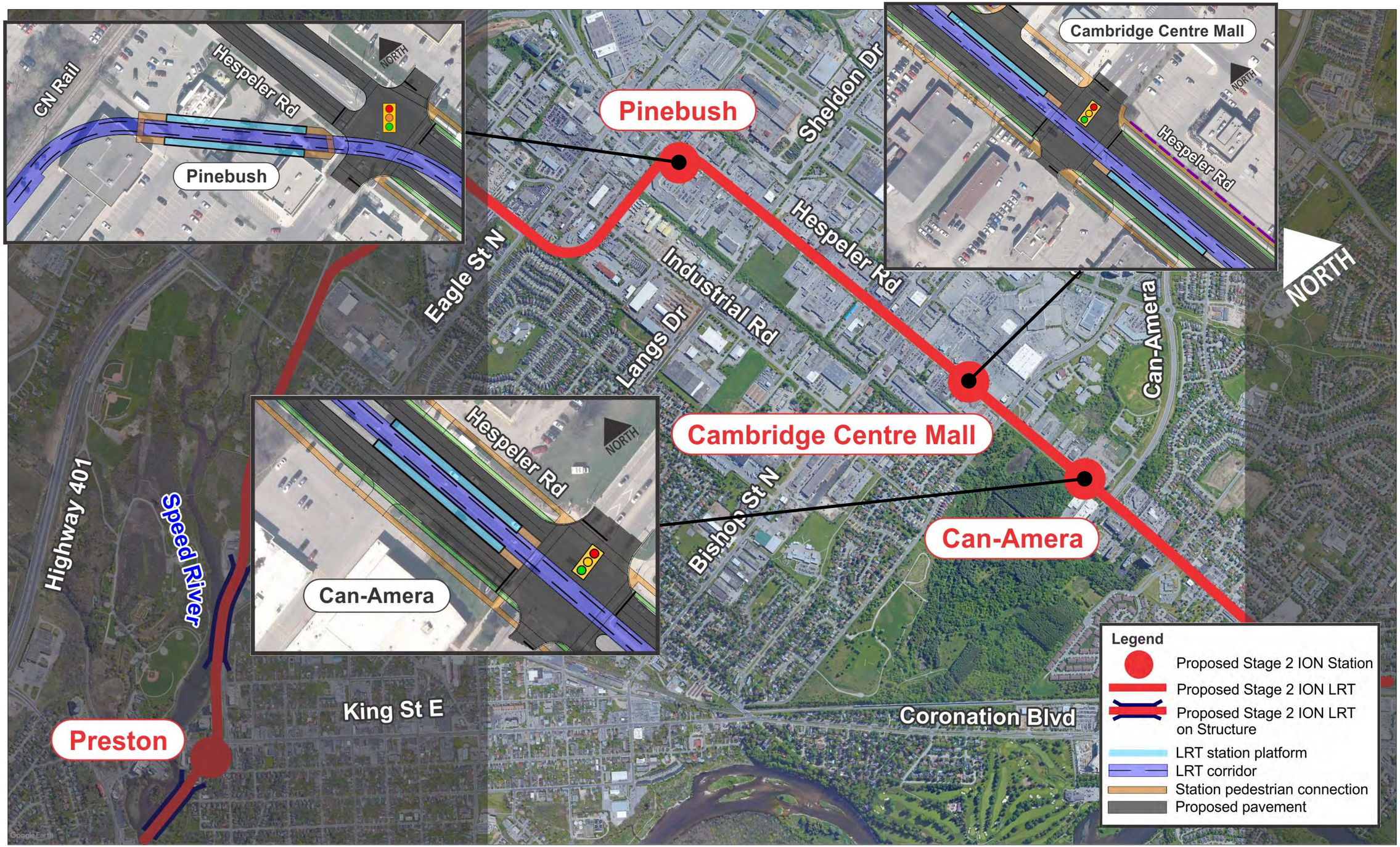


Centre running LRT with two lanes of general traffic in each direction with cycling facilities and sidewalks

Pinebush
Cambridge Centre Mall
Can-Amera
Delta
Speedville Rd
Highway 401
Eagle St N
Sheldon Dr
Hespeler Rd
Industrial Rd
Langs Dr
Conestoga Blvd
Bishop St N
Can-Amera Pkwy
Concession Rd
Speed River
Coronation Blvd
NORTH

Legend
- Proposed Stage 2 ION Station
- Proposed Stage 2 ION LRT
- Proposed Stage 2 ION LRT on Structure

EPR Section 6: Project Description



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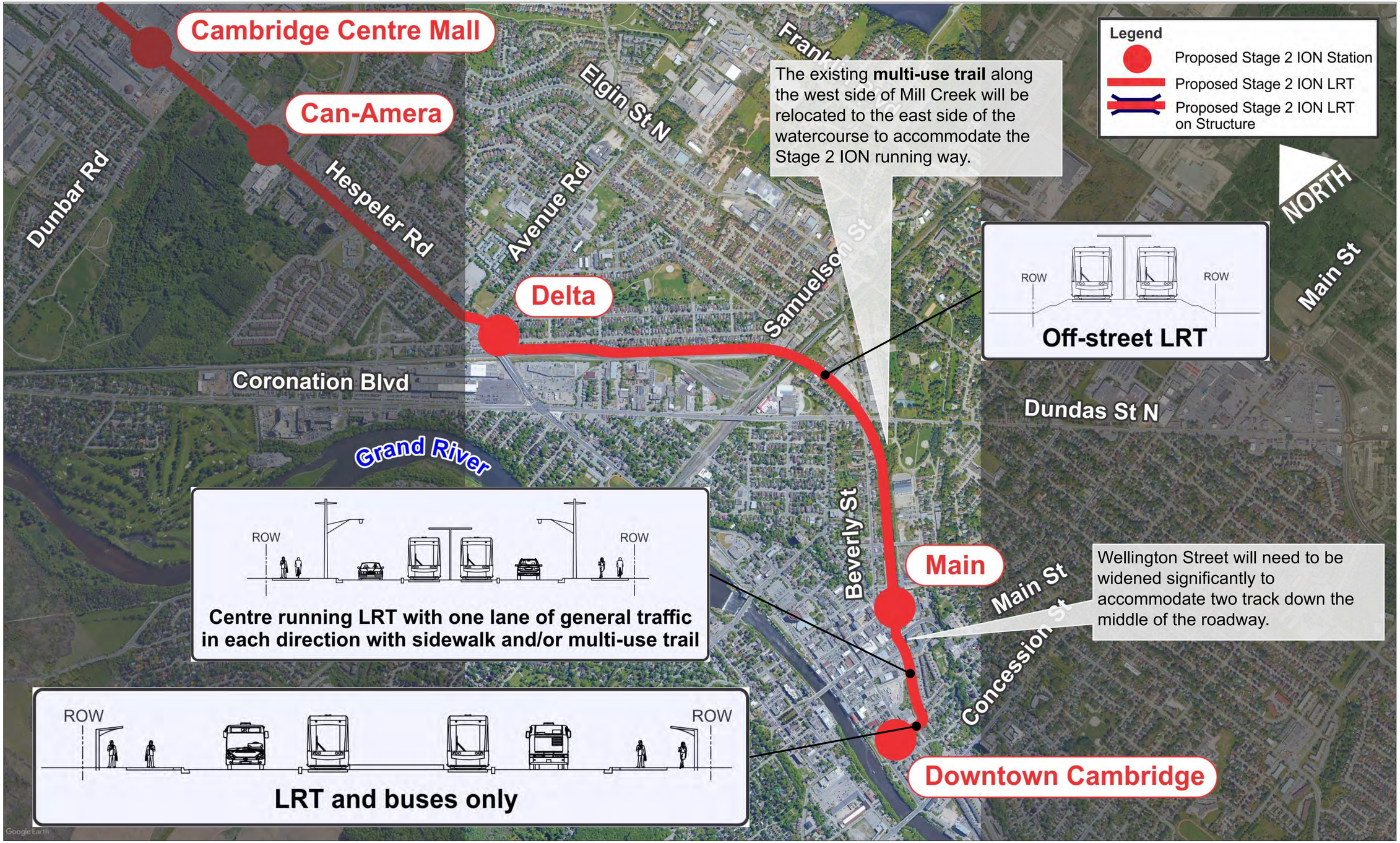

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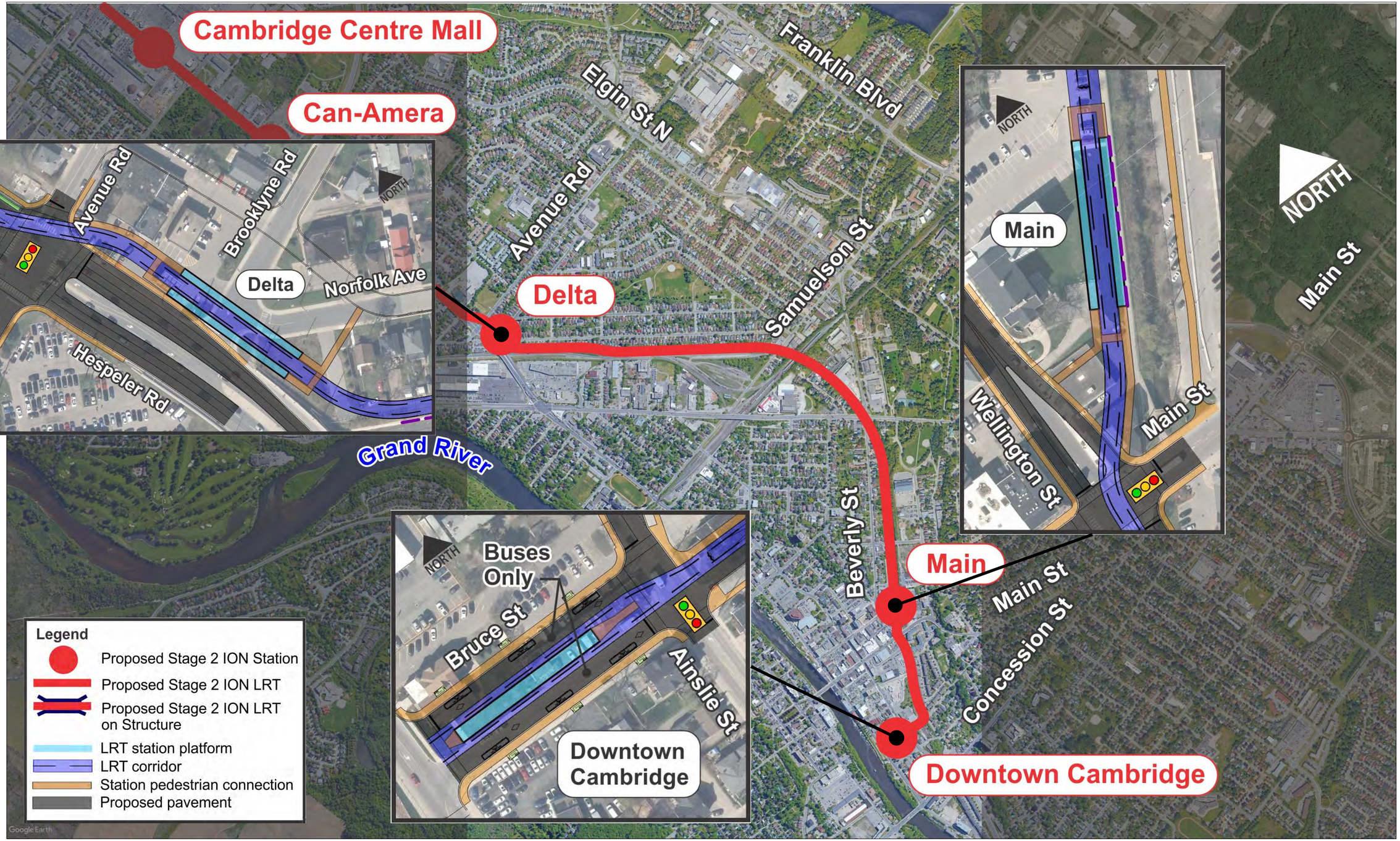

EPR Section 7: Impact Assessment, Mitigation and Monitoring

Fish and Fish Habitat

- New crossings of watercourses or the extension or replacements of existing culverts will be required.
- No in-water work (or work on watercourse banks) will be permitted from March 15 to June 30 to protect fisheries.
- Refer to the EPR for a complete list of potential impacts and mitigation measures associated with Stage 2 ION.

Terrestrial Vegetation and Vegetation Communities

- Impacts to forest communities will primarily result in the new creation of forest edges.
- Planting of appropriate native trees, shrubs and ground flora will be undertaken as soon as possible following vegetation removals.
- Refer to the EPR for a complete list of potential impacts and mitigations measures associated with Stage 2 ION.

Wildlife and Wildlife Habitat

- No significant impacts to wildlife habitat are anticipated as construction works are primarily located either on street, or in existing industrial or residential areas.
- Grand and Speed River crossings will be elevated and wildlife corridors in these valley lands will be maintained.
- Wildlife and habitat nearby will be protected during construction.

Cultural and Built Heritage

- Twelve properties have been identified as being directly impacted potential cultural heritage properties. Cultural Heritage Evaluation Reports (CHERs) have been completed.
- Where properties are identified as having Cultural Heritage Value or Interest (CHVI), Heritage Impact Assessments (HIA) will be completed at a future design phase to identify appropriate mitigation measures.

Archaeology

- The Stage 1 Archaeological Assessment (AA) recommended a Stage 2 AA be completed for parts of the study corridor that retain archaeological potential.
- No construction activities shall take place within the study corridor prior to the MHSTCI confirming that all archaeological licensing and technical review requirements have been satisfied.

Properties Impacted

- Property takings will be required where the design of the LRT extends beyond the existing right-of-way (ROW).
- The Region will continue to identify property acquisition requirements and liaise with property owners to acquire necessary property along the Stage 2 ION corridor.

EPR Section 7: Impact Assessment, Mitigation and Monitoring

Air Quality

- Stage 2 ION is expected to result in a decrease in criteria air contaminants and GHG emissions as compared to future conditions without Stage 2 ION.
- From a climate change perspective this project will assist the Region of Waterloo to achieve their GHG reduction targets.
- Dust suppression measures will be included during construction.

Noise and Vibration

- Stage 2 ION will not generate a notable increase in sound levels along busy roadways, the exception is where Stage 2 ION operates in the unused CP rail spur north of Eagle Street.
- Noise and vibration from Stage 2 ION can be isolated or reduced to acceptable levels.

Land Uses and Economic Characteristics

- During construction, some adjacent residents and businesses will experience limited accessibility.
- Infrastructure and facilities construction may result in temporary and intermittent traffic delays.
- Construction will be staged to minimize adverse effects on businesses and residents along the corridor.
- Traffic detouring will be implemented during construction to minimize community effects.

Drainage and Stormwater Management

- Potential impacts at certain locations may include increased water levels, additional impervious areas, increased peak flow rates, volumes and velocities, as well as changes to water quality.
- Appropriate water quality control measures as well as erosion and sediment control (ESC) measures will be required.

Fluvial Geomorphology

- The crossings of the Grand River, Freeport Creek and Speed River will require new structures that run parallel to existing crossings.
- The Grand and the Speed rivers require consideration for bankfull widths and erosion hazard allowances while the crossing of Freeport Creek should consider a three times bankfull width approach to allow channel future channel migration and minimize maintenance.

Traffic, Transit and Transportation

- Traffic management plans will be developed for temporary road closures and detours at a future design phase.
- Signal coordination between vehicular and transit operation could be assessed in a future design phase by designing signal timings to improve the overall intersection performance for all modes.

EPR Section 8: Approvals, Monitoring and Commitments to Future Work

Permits and Approvals

- Municipal, Provincial, and Federal permits and approvals are required for the implementation of this type of transit project.
- The detailed list of permits and approvals that may potentially be required can be found in the EPR.

Impact Monitoring

- Impact monitoring is a necessary continuation of the construction and operational application of the proposed works.
- Preceding the start of construction, a Compliance Monitoring Plan will be created and during construction Operational Compliance will be followed.

Project Implementation Plan

To move the project forward, Region staff will:

- Pursue property acquisitions;
- Encourage transit-supportive development;
- Seek Federal and Provincial funding;
- Coordinate with overlapping capital works projects; and,
- Undertake geotechnical investigations, utility inventories, and other technical and environmental studies

Future Commitments

- Commitments to future work during a future design stage are to be completed prior to construction.
- The Region will continue to identify property acquisition requirements and liaise with property owners to acquire necessary property along the Stage 2 LRT corridor. Utility companies will continue to stay notified.

Project Costs

- The project is estimated to cost about $1.36 billion*. This estimate is based on the best information available (30 per cent precision, 5 per cent conceptual design).
- As the design develops further, the costs will be updated accordingly.

*Currently under review

What happens next?

- Your comments are important and will be used to identify issues that need further consideration when finalizing the Environmental Project Report

- There will be another opportunity to review the Environmental Project Report and provide feedback when the final EPR is issued with the Notice of Completion

How to Stay Informed

Please provide feedback by February 12, 2021

E-mail: Stage2ION@regionofwaterloo.ca

Website: regionofwaterloo.ca/Stage2ION

Engage Survey: engagewr.ca/Stage2ION