



GRAND RIVER TRANSIT

Stage 2 ION: Light Rail Transit (LRT) from Kitchener to Cambridge

Public Consultation Centre No. 4

Holiday Inn - Kitchener	May 8, 2018	4 to 8 p.m.
Preston Memorial Auditorium	May 9, 2018	4 to 8 p.m.
Hamilton Family Theatre	May 10, 2018	4 to 8 p.m.

Public Information Package





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Stage 2 ION: LRT from Kitchener to Cambridge

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Public Information Package

1.0 Light Rail Transit in Waterloo Region

In June 2011, Region of Waterloo Council approved a staged approach to Light Rail Transit (LRT) from Waterloo to Cambridge. In 2014, Regional Council awarded GrandLinq the contract to design, build, finance, operate, and maintain Stage 1 ION LRT. Stage 1 ION (currently in testing) includes LRT from Kitchener to Waterloo and ION bus service between Cambridge and Kitchener (launched September 2015). Stage 1 LRT is expected to launch in 2018.

Stage 2 ION will see the ION bus service replaced by LRT, creating a continuous LRT system across the Region's three urban centres.

For more information on the background and history of Rapid Transit in the Region please refer to The ION Story handout, available at this Public Consultation Centre and online www.regionofwaterloo.ca/rapidtransit.

2.0 Why are we here?

The Region of Waterloo is continuing the detailed planning, and consultation process for Stage 2 ION: LRT from Kitchener to Cambridge (Stage 2 ION). Public input is an essential and ongoing component of this process.

The purpose of Public Consultation Centre No. 4 is to:

- Hear your feedback
- Provide an overview of comments received at PCC No. 3 and how these have provided input to the route evaluation process
- Explain how the alternative routes were compared in the various segments
- Present the Project Team Preliminary Proposed Route (2018)

3.0 How will my input be used?

Your comments will be used to:

- Identify issues that need further consideration during the preliminary design stage
- Verify study area conditions and constraints, as input to reduce impacts

4.0 What have we heard at the last Public Consultation Centre (PCC No. 3)?

- Overall support for the project and benefits LRT will bring to the Region, some questions about need
- Concerns regarding property impacts and timing for when details will be shared
- More written support for an LRT station in Preston compared to PCC No. 2



- Concerns over property impacts on Beverley Street with S3a and S3b but support for S3c and S3d options to integrate and revitalize the Mill Creek area
- Concerns about disruption to traffic and businesses during construction
- Support for multi-modal transit hub for terminal location and investigation into T2 and T3 alternative locations and interest in how the bus service will integrate with LRT

5.0 How were the route options chosen?

5.1 Preliminary Potential Route (2017)

The project team started with the 2011 Council endorsed route. A number of alternative routes were added and presented to the public at PCC No. 1 in November 2015. Following a review of the comments received the routes were screened for feasibility based on physical constraints and engineering considerations. The project team compared the remaining routes using the evaluation criteria in Section 5.4 to identify the Preliminary Potential Route, which was presented to the public at PCC No. 2 in February and March of 2017.

5.2 Project Team Preliminary Proposed Route (2018)

At PCC No. 2, many comments were received about the Preliminary Potential Route (2017), including both support and concerns. In response, the project team added several route alternatives for further investigation. An additional round of public consultation, PCC No. 3, was held in November 2017 and January 2018 to review these and gather more route

ideas from the public and from stakeholders. Refined route alternatives were presented in three areas:

- In the Kitchener segment, between the approved River Road Extension and the Highway 8/King Street interchange.
- In the North Cambridge segment, between Highway 401 and Eagle Street near Hespeler Road. In this area, considerable input has been received from local residents and the public, and these were also gathered and added for consideration. A screening process was applied to focus on refinements and additional routes that;
 - minimized travel time by providing a direct connection between the Sportsworld and Pinebush stations
 - Traveled through Preston with a station in the vicinity of King and Eagle
 - Reduced property and environmental impacts compared to the 2017 Preliminary Potential Route.
- In the South Cambridge segment, between Dundas Street and Downtown Cambridge, including alternative locations for the terminal LRT station.

An additional alternative, called Alternative "J", was brought forward by a specific group of residents. This alternative extends from the River Road Extension to Eagle Street east of Preston. This alternative was modified by the project team to remove impact on the cemetery area west of Fountain Street and the Hydro transmission corridor parallel to Highway 8.

Following PCC No. 3, the project team screened the routes presented, along with additional



routes brought forward by the public, for engineering considerations and environmental constraints that pose obstacles to construction or implementation of the final system. Based on the screening process several route alternatives were eliminated from further consideration. A final group of route alternatives were compared using the evaluation criteria in Section 5.4. The route alternatives were evaluated in segments with the exception of Alternative “J”. As Alternative “J” crosses both the Kitchener and South Cambridge segments, it was evaluated against the alternative from each of these two segments that performed the best. Maps showing the alternatives evaluated in each segment are shown in Appendix A.

5.3 Evaluation Process

To assess each route alternative’s ability to meet project objectives while minimizing its impacts, a set of evaluation criteria, or measures, were identified early in the project. These evaluation criteria are based on the Regional Official Plan objectives and fall under four categories: Transportation, Social/cultural environment, Natural environment and Economic environment.

The project team, which includes specialized technical experts from a variety of fields, carried out an analysis of how well each route meets the evaluation criteria objectives.

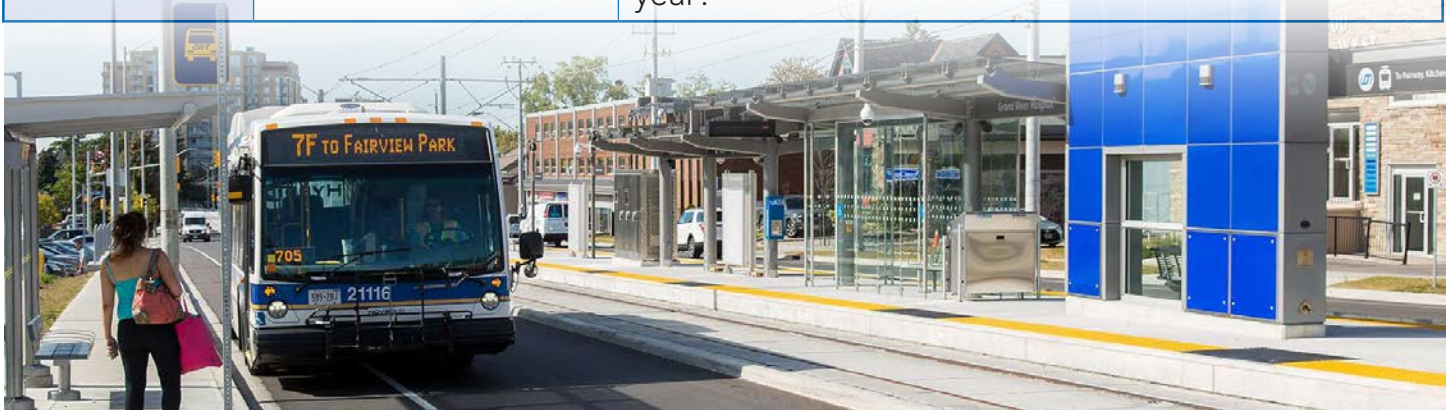
The criteria were used together with what we heard from the public, businesses and stakeholders, and technical analysis to develop an overall comparison of the routes and to identify a preferred alternative within each segment.

5.4 Evaluation criteria

Category	Criteria	Description
Transportation	Ability to serve multi-modal nodes	Are there good opportunities for connections between LRT, Grand River Transit (GRT), and GO services, as well as Park and Ride lots?
	Impact on traffic operations	How many new signalized intersections are required? How many existing intersections have capacity issues and would be further impacted by LRT?
	Engineering challenges	How many freight rail, MTO interchange or highway crossings are there? How compatible or constrained are they?
	Potential ridership	How many local transit riders use existing bus stations within 800 metres of proposed LRT stations? What is the estimated travel time for the segment based on length, geometry, crossings, stations, and traffic signals along the route?



Social/cultural environment	Destinations served	Are there major commercial, industrial, office, or leisure destinations within 800 metres of proposed LRT stations? How many hospitals, schools or other institutional uses are there within 800 metres of the stations?
	Properties impacted	How many residential, commercial, industrial or institutional properties are impacted and how many of those could potentially require full buyout?
	Transit and pedestrian supportive land use policy	Does the route fit with existing planning policy, such as the Provincial Growth Plan, Official Plan, Transportation Master Plan or Zoning By-Laws?
	Cultural heritage impacts	How many heritage properties and buildings are there along the route?
Natural environment	Impact on floodplains	What area of floodplain does the route cross?
	Impact to significant natural features	Does the route cross or impact any significant natural features such as wetlands, forests, watercourses or habitat for endangered/at risk species?
Economic environment	Ability to serve concentrations of employment	Will the stations provide access to existing employment areas? Is there potential for new or infill employment development within 800 metres of the proposed LRT station?
	Opportunity for intensification and revitalization	Will the stations serve areas that can benefit from revitalization? Is there potential for residential intensification close to the stations?
	Cost (capital and operating)	What is the estimated cost (based on 2016 dollars) to design and build, then operate and maintain every year?

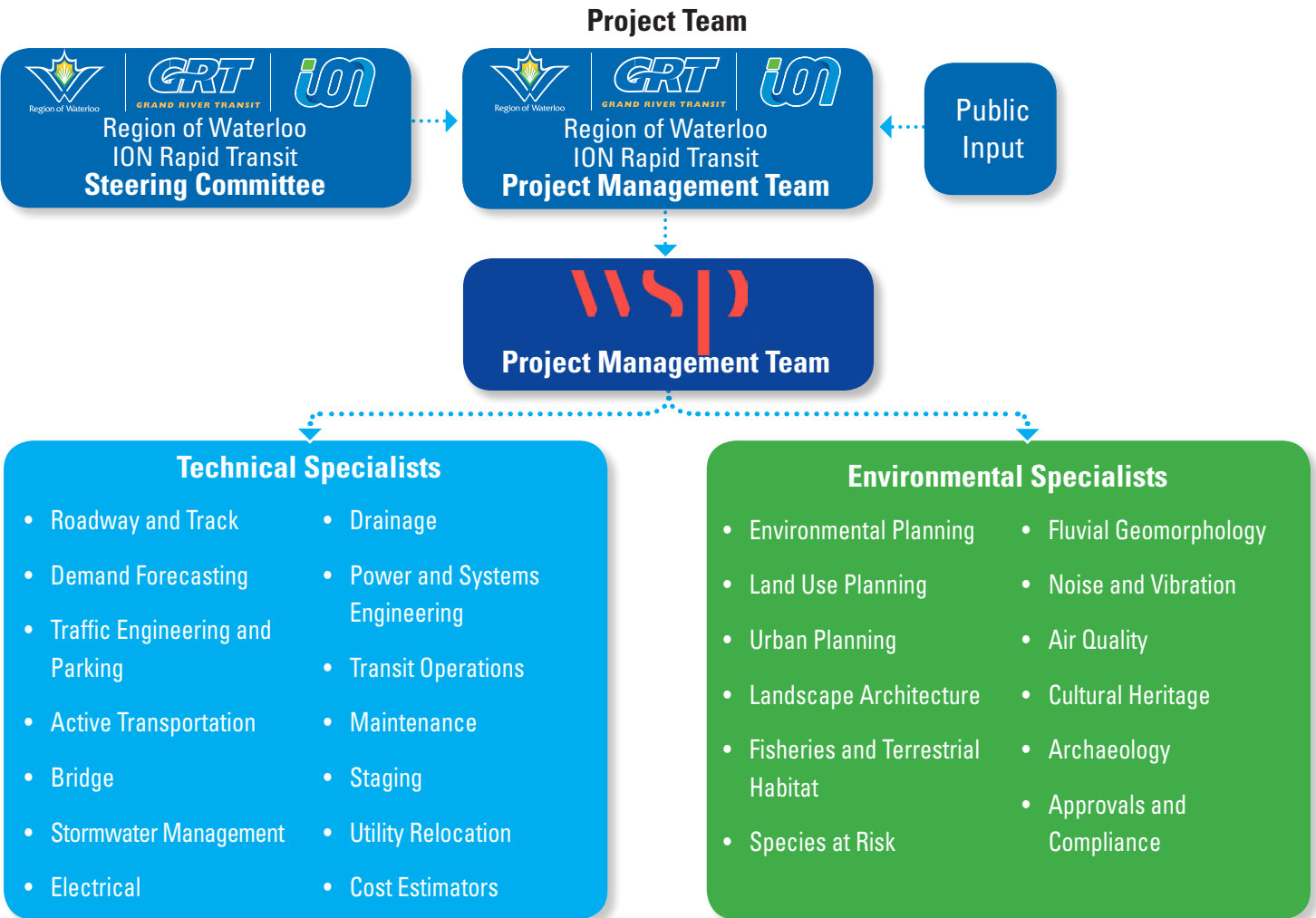




5.5 Project team

The project team is made up of specialists in many areas, supported by a Technical Advisory Committee. The Region has hired a consultant

to assist with the study bringing technical expertise from all over North America.



Technical Advisory Committee (TAC)

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

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

Grand River Transit

Ministry of Transportation

Grand River Conservation Authority



5.6 Evaluation results – Project Team Preliminary Proposed Route (2018)

The project team assessed each route according to how well it met the objectives of each criterion, evaluating them using a relative, graphical scale. Appendix B summarizes the evaluation results by segment.

Based on the evaluation results and the various input received, the project team identified a single route option considered to be preferred for each area that was re-examined, as follows:

- For the Kitchener segment: F2b-K3b
- For the North Cambridge segment: N-N3e-E2
- For the South Cambridge segment: S3d-T2

Alternative “J” was compared to the route option preferred for the Kitchener and North Cambridge segments combined. The route selected was F2b-K3b-N-N3e (Appendix A, Map 3). This includes route segment N (formerly route N3) along King Street from Sportsworld Drive to Shantz Hill Road.

Some of the high level conclusions from the detailed analysis include:

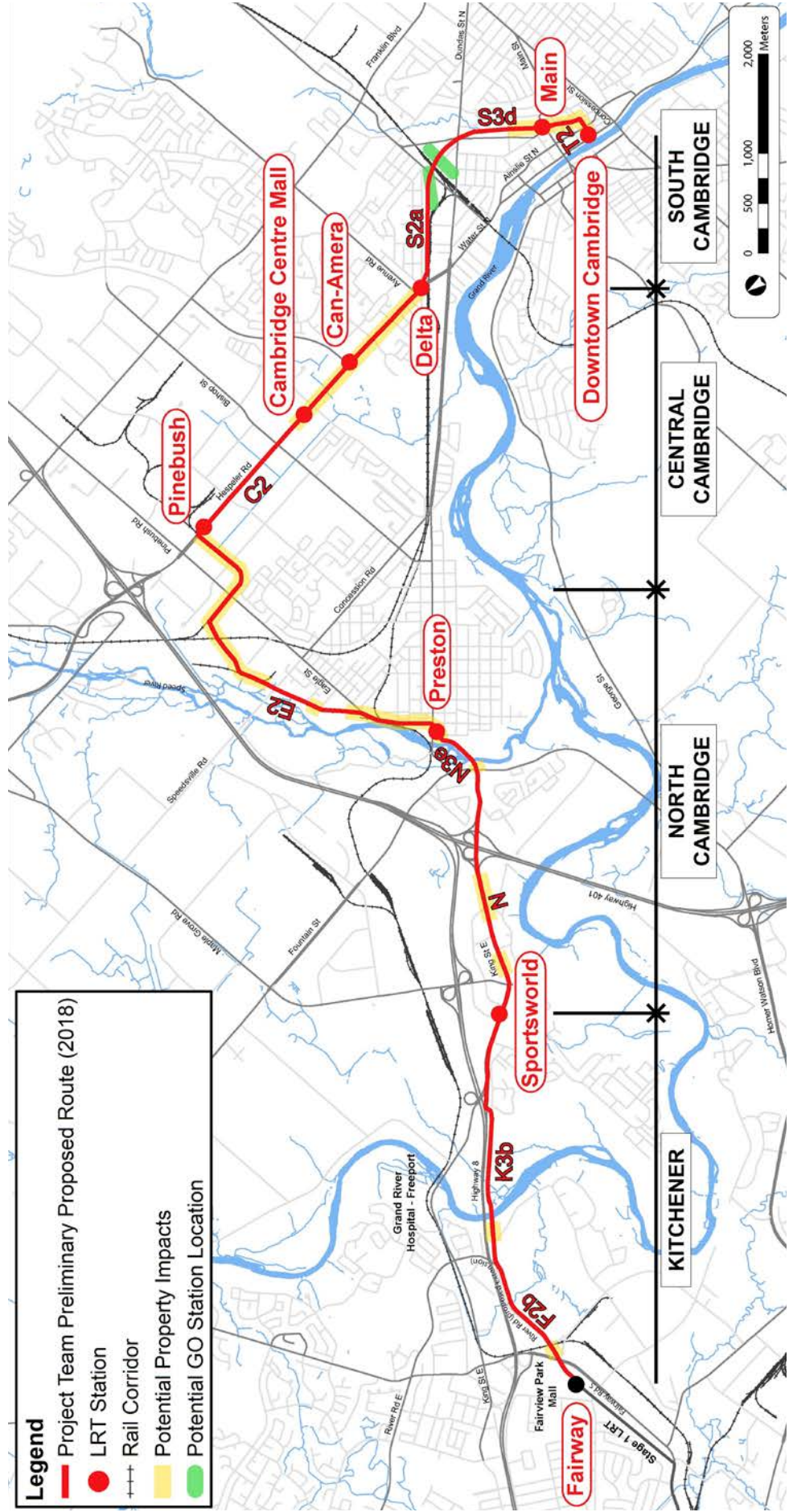
- The route following River Road Extension parallel to Highway 8 and King Street (F2b-K3b) is faster because it is shorter and more direct, it has more off-road track and avoids more intersections. It reduces traffic impacts on River Road and on King Street, and impacts fewer properties and fewer cultural heritage resources.
- The route down Shantz Hill across Speed River along the river valley through the King/Eagle/Queenston/Chopin block to Eagle Street (N3e) impacts the fewest total number of properties and has fewer full buyouts than the preliminary potential route (2017), although more commercial properties are impacted. N3e has the shortest travel time, but more natural environment impact. With

more elevated track through the Speed River Valley N3e costs more to build than the preliminary potential route (2017). N3e avoids the traffic impacts of running along King Street, but causes it to be more costly.

- The rail spur route (E2) impacts the fewest properties and has the fewest full buy-outs. Because the route uses a dedicated, off-street corridor E2 is faster, has the fewest design challenges, and costs the least to build. The natural environmental impacts are increased along the fringe of an environmentally sensitive area.
- The route (F2b-K3b-N-N3) best integrates land use based on the station location, which is more centrally located, is more accessible to pedestrians at street level, and has greater re-development and intensification potential around the station. It is less expensive to build because it doesn't require high-voltage hydro line burial/relocation, a new bridge over Maple Grove Road, or a new dedicated bridge over Highway 401.
- The route along Mill Creek along the walking trail on the east side of Mill Creek (S3d) impacts the fewest properties and cultural heritage sites by running beside Mill Creek along the backs of the properties. By avoiding the roadway corridor S3d is faster and costs less to build.
- The route following Wellington Street, Bruce Street with an additional station before Main Street (T2) has the best pedestrian connectivity to more areas in the Downtown core, including the west side of the Grand River. T2 allows flexibility for Grand River Transit buses to connect in the area. Although it is more expensive to build, the investment is in line with the City of Cambridge and Region's objectives for a vibrant, sustainable core area.

6.0 Map Project Team Preliminary Proposed Route (2018)

The Project Team Preliminary Proposed Route (2018), shown below is composed of the following segments: F2b-K3b-N-N3e-E2-C2-S2a-S3d-T2





7.0 How do the 2017 and 2018 routes differ?

A map showing the 2017 and 2018 routes is in Appendix A, Map 7. Compared to the 2017 Preliminary Potential Route (PCC No. 2), the Project Team Preliminary Proposed Route (2018):

- Three minutes faster
- 60 fewer property impacts
- 70 fewer full property buyouts
- 33 fewer Built Heritage and Cultural Landscape Resources affected
- Reduces traffic and property impacts on King Street from River Road to Highway 8 underpass
- Reduces traffic and property impacts on Eagle Street east of Preston to Hespeler Road
- Reduces impact on properties along Beverley Street

8.0 Cost estimate of project team preliminary proposed route (2018)

The Project Team Preliminary Proposed Route (2018) is estimated to cost about \$1.36 billion*. This includes cost to:

- design and build the system
- purchase property
- relocate utilities
- build storage and maintenance facility
- construct park and ride lots
- cover contingency

The cost estimate has been put into future dollars assuming construction from 2026 to 2028. Construction timing is subject to Provincial and Federal funding.

Key construction items include:

- Road widening and intersection reconstruction to fit LRT
- LRT guide way, signals, power and other related elements
- LRT stations, including passenger information, security and ticketing systems, and interface with local transit services
- Boulevards and streetscape, including cycle lanes, pedestrian sidewalks, multi-use trails
- New structures over watercourses and roadways
- Modifications to at grade and grade-separated crossings of rail corridors
- Maintenance facility and power sub stations
- Modifications to MTO interchanges, where required to accommodate the LRT corridor

9.0 What are the next steps?

What happens next?

- Project team to review all public feedback and incorporate any new information
- Planning and Works Committee (June 19) – Present the Project Team Preliminary Proposed Route (2018) for Committee consideration
- Pending Council endorsement of a preferred route, the preliminary design and the identification of the associated property requirements will be completed
- Prepare the business case for the project
- Finalize station locations/names

* This estimate is based on the best information we have right now (30 per cent precision, 5 per cent conceptual design). As we develop the design further we will update the costs accordingly.



Future steps

- Hold PCC No. 5 to present the preliminary design and property requirements in 2019
- Determine location of maintenance and storage facility
- Present recommended route (including the business case) to Regional Council for final authority to initiate the formal Transit Project Assessment Process (Late 2019)
- Address any comments submitted during public consultation or Minister of Environment and Climate Change's review periods
- File the Environmental Project Report (EPR) for public review and complete the Transit Project Assessment Process
- Submit Provincial and Federal funding applications

Consulting with the public is an integral part of each of these processes.

Following this PCC, the project team will review all feedback received. Comment sheets can be submitted until **May 24, 2018**. Any new information will be duly considered. Using input from the technical team, stakeholders, and the public, the project team will finalize the route evaluation and will confirm the route.

9.1 Preliminary design

Having confirmed the Project Team Preliminary Proposed Route (2018), the Region's consultant and agency partners will undertake the preliminary design. The preliminary design phase includes various tasks, some of which will be completed by partner agencies:

- Finalize station locations, including analyzing the need for additional stations
- Preliminary roadway, LRT and station design, including cycling and pedestrian facilities, bridges, traffic signals, lighting, and LRT power and systems
- Plan the re-alignment of GRT bus system to complement LRT stations (by GRT)
- Assess and design options for the southern terminus in the Ainslie Terminal Area
- Select a site for the storage and maintenance facility
- Assess design optimizations to minimize property requirements
- Develop drawings showing property requirements
- Consult agencies on permit/approval requirements and methods to minimize impacts
- Update cost estimates and develop preliminary implementation schedule

9.2 Business case

The business case refers to the project team's economic analysis of the preferred route. It looks at the project through a comparison of the overall costs to build, operate and maintain the project, and the economic benefits to the Region and its residents such as fare revenue, increased land values, travel time savings, new employment and health/environmental benefits. The Business Case is the primary document to support an application for funding from the Province and/or Federal governments.



9.3 Transit project assessment process

The Transit Project Assessment will incorporate all of the planning, engineering, and technical studies and analysis which have already been completed or are currently on-going. The Transit Projects regulation provides a framework for focused consultation and objection processes. The process starts with a selected transit project. The Transit Project Assessment is a streamlined process, approved by the Province under the Environmental Assessment Act, specifically for transit initiatives.

The Minister of Environment and Climate Change may give notice allowing a proponent to proceed with its transit project but can only take action if there is a potential for a negative impact on a matter of provincial importance that relates to the natural environment or has cultural heritage value of interest, or on a constitutionally protected Aboriginal or treaty right.

9.4 Public consultation

Feedback from the public is an important part of this project. The public consultation process will also provide an opportunity for the public to provide input regarding the study, and ask the Project Team questions about Stage 2 ION and about the environmental assessment process.

A fifth Public Consultation Centre is planned for 2019. Following completion of PCC No. 5 and receipt of comments, the project team will compile and summarize all of the methods of public consultation from the start of the Study. Once complete, the EPR will be filed and made available for public review and comment for a 30-day period, following which any comments received will be addressed.

10.0 How do I stay involved?

Sign-in tonight or sign-up at the website www.stage2ION.ca to be notified of future meetings. There will be additional PCCs held throughout the study. Feedback can also be provided through the following methods:

- Speaking with a Project Team member
- Participating in a short interactive exercise with the team, either here or online
- Submitting your thoughts via comment sheet or online

Public consultation is a critical and ongoing part of the Environmental Assessment process. The previous consultation material, endorsed maps, and other study information is available on the Region's website at www.rapidtransit.regionofwaterloo.ca

Stage 2 ION documents are available at www.stage2ION.ca. If you would like to have your name added to the project mailing list, please sign-up online at www.stage2ION.ca, or provide your name, postal address, e-mail address and any group affiliation to:

11.0 Contact information

Rapid Transit
Region of Waterloo
50 Queen Street North, Suite 830
Kitchener, Ontario N2H 6P4
Phone: 519-575-4400
Fax: 519-7454-4040
TTY: 519-575-4608
Email: ION@regionofwaterloo.ca

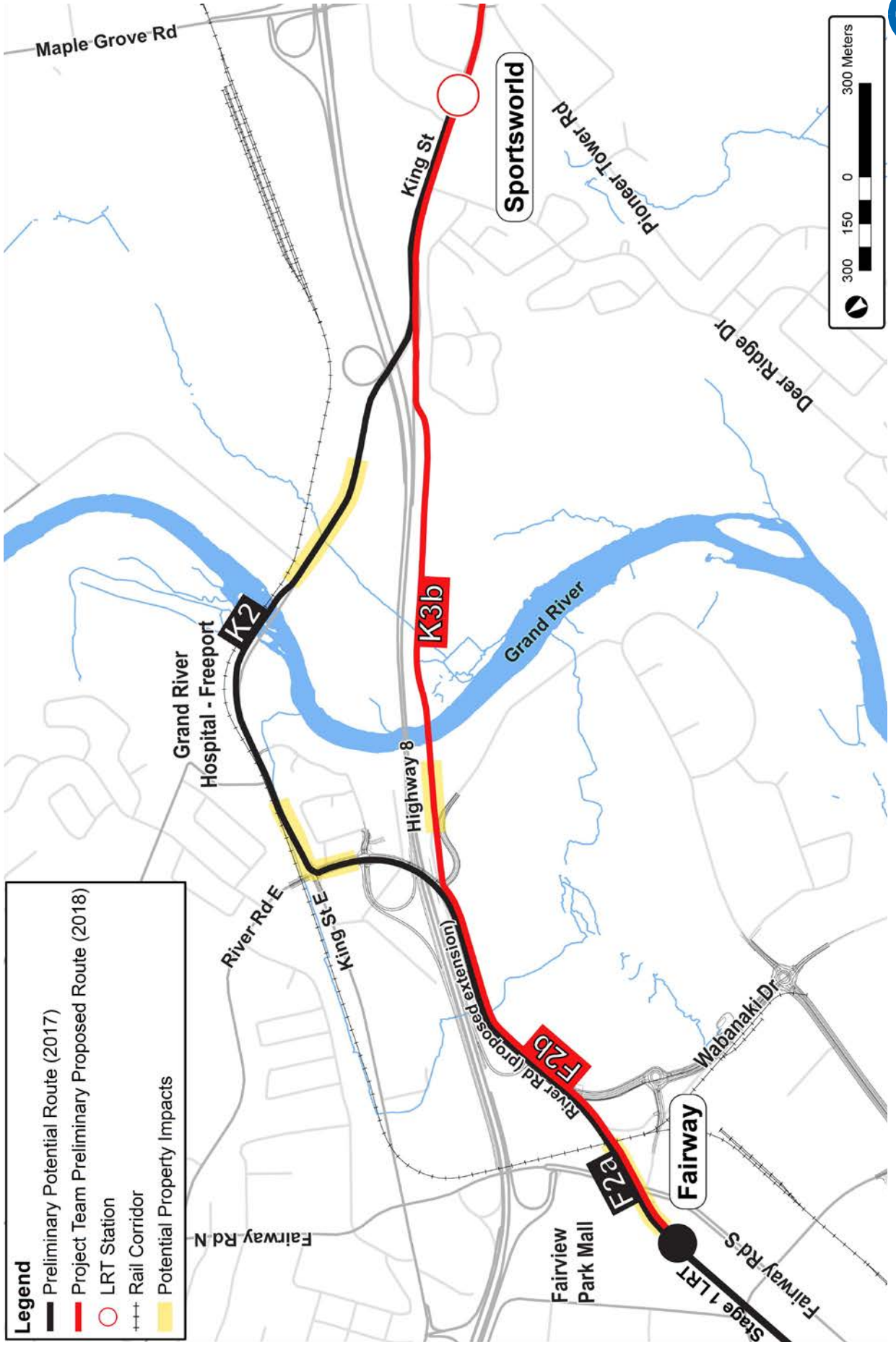


The map displays bus routes in Cambridge, Ontario, with segments labeled: NB, S1a, Pinebush, C, Cambridge Centre Mall, Gen. Amara, S2a, and Ainslie Street Terminal. A central blue box contains the text 'Appendix A Route map by segment'. Below the map, a horizontal line is divided into three sections: NORTH CAMBRIDGE, CENTRAL CAMBRIDGE, and SOUTH CAMBRIDGE, with vertical arrows pointing to the boundaries between them.

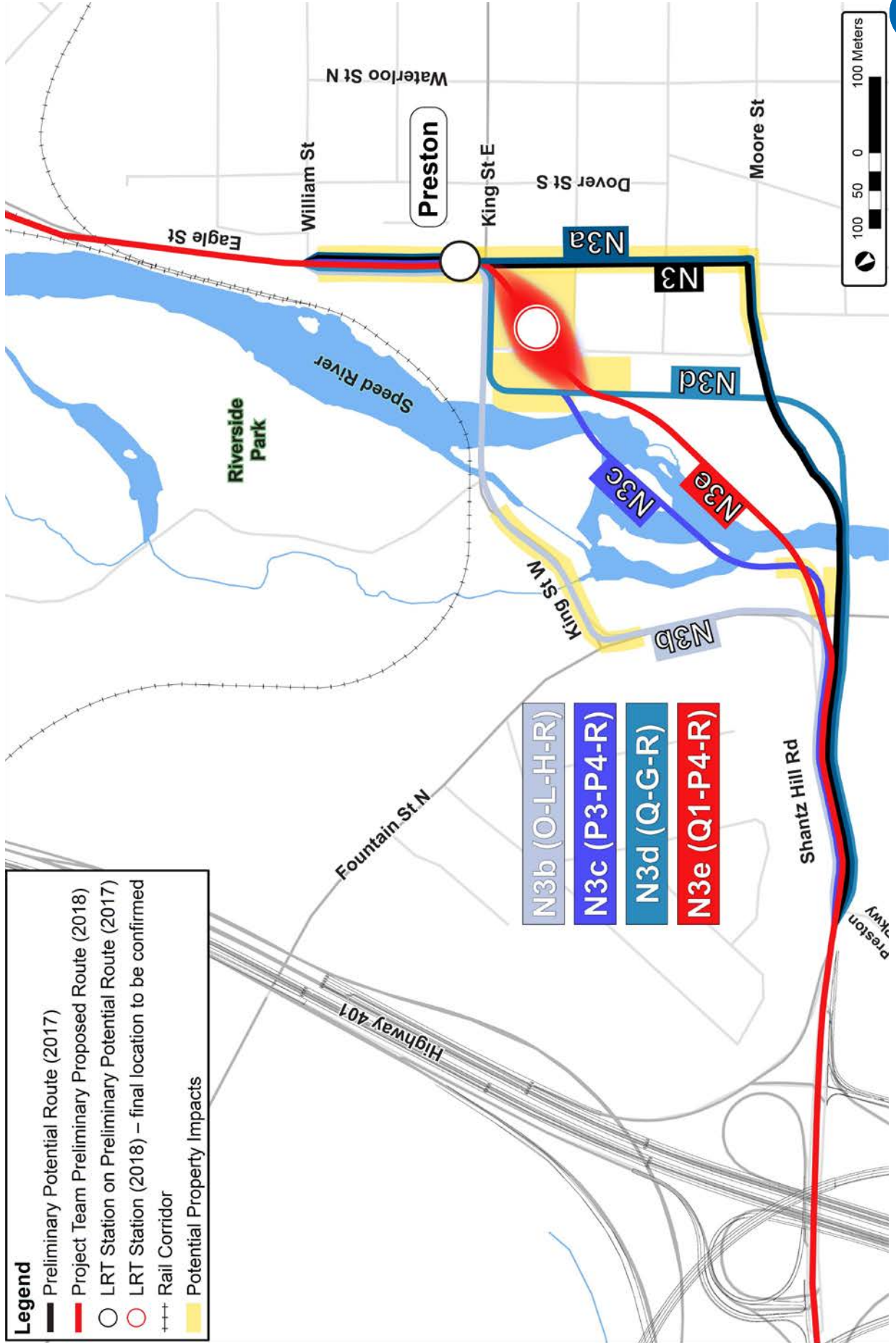
Appendix A

Route map by segment

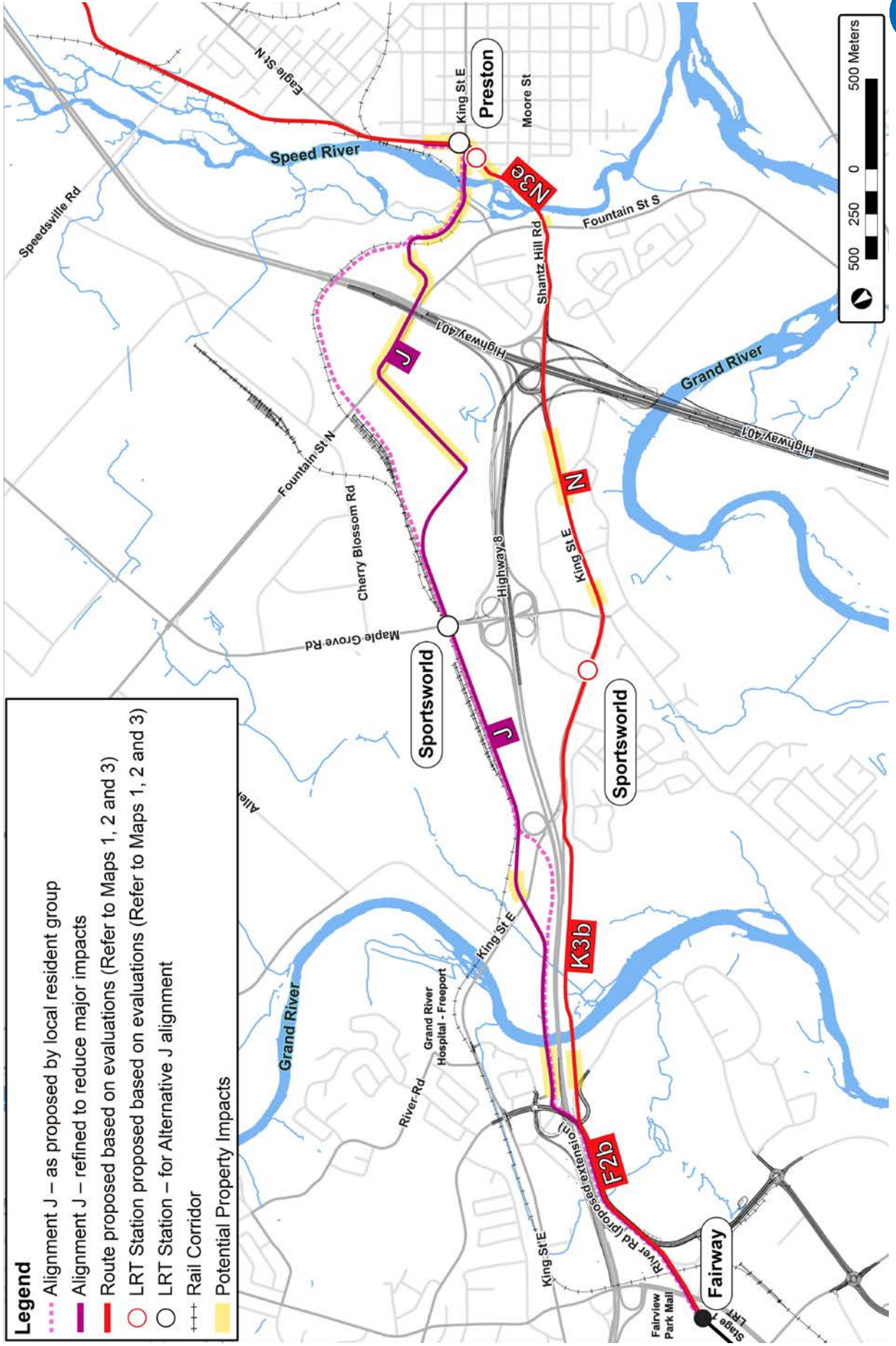
Map 1: Route Alternatives – Kitchener (F+K)



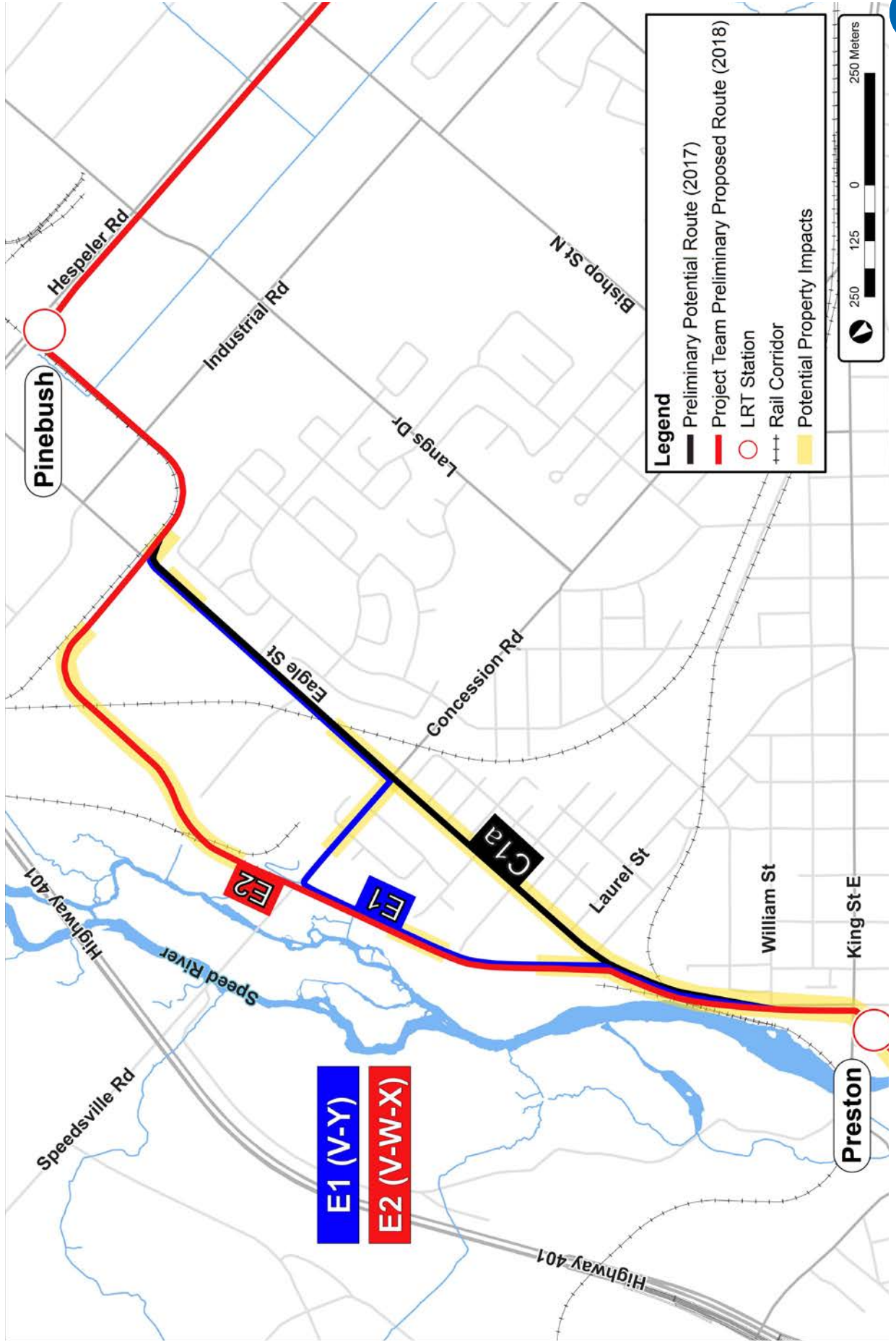
Map 2: Route Alternatives - North Cambridge (N3)



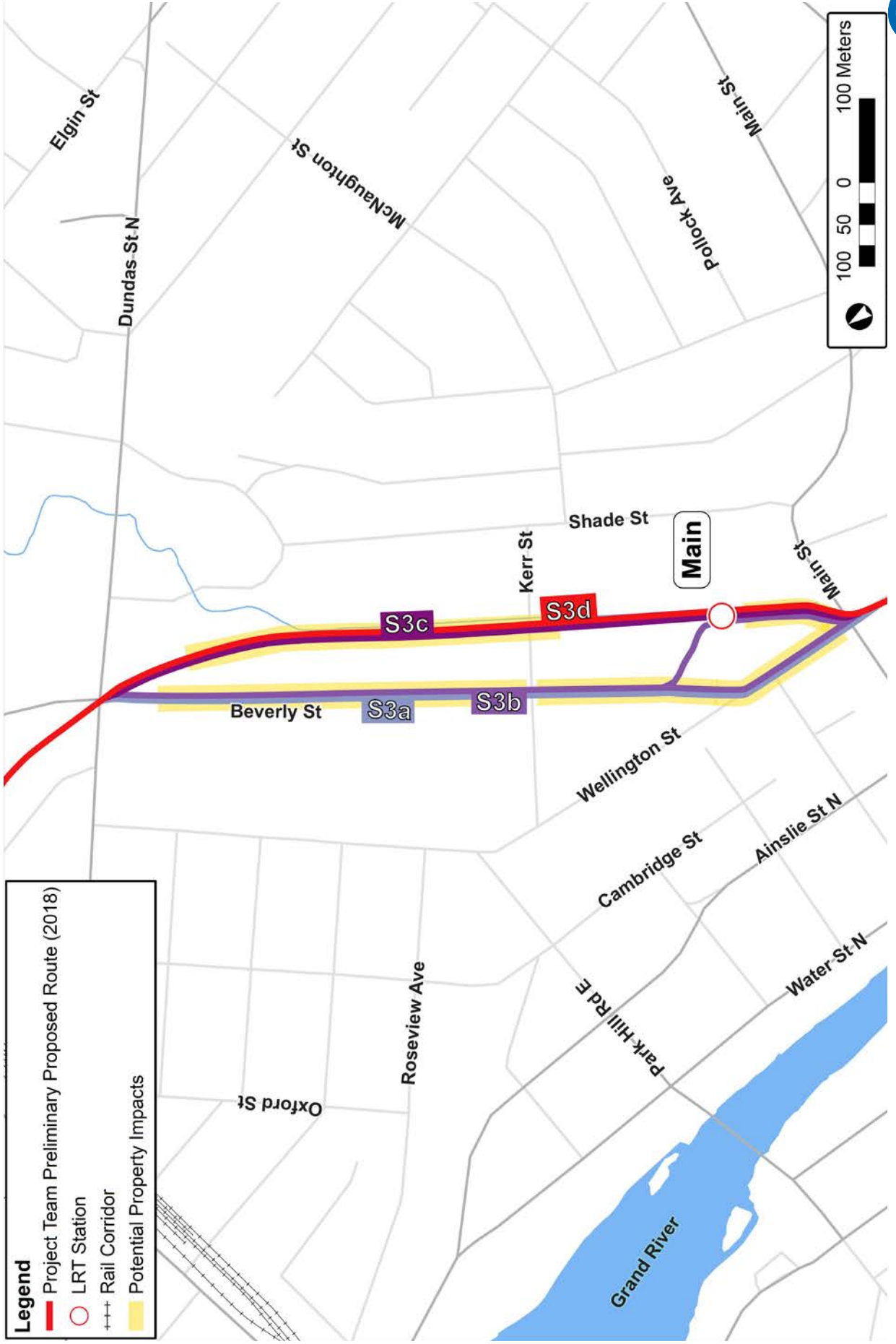
Map 3: Route Alternatives – Kitchener to Cambridge (J)



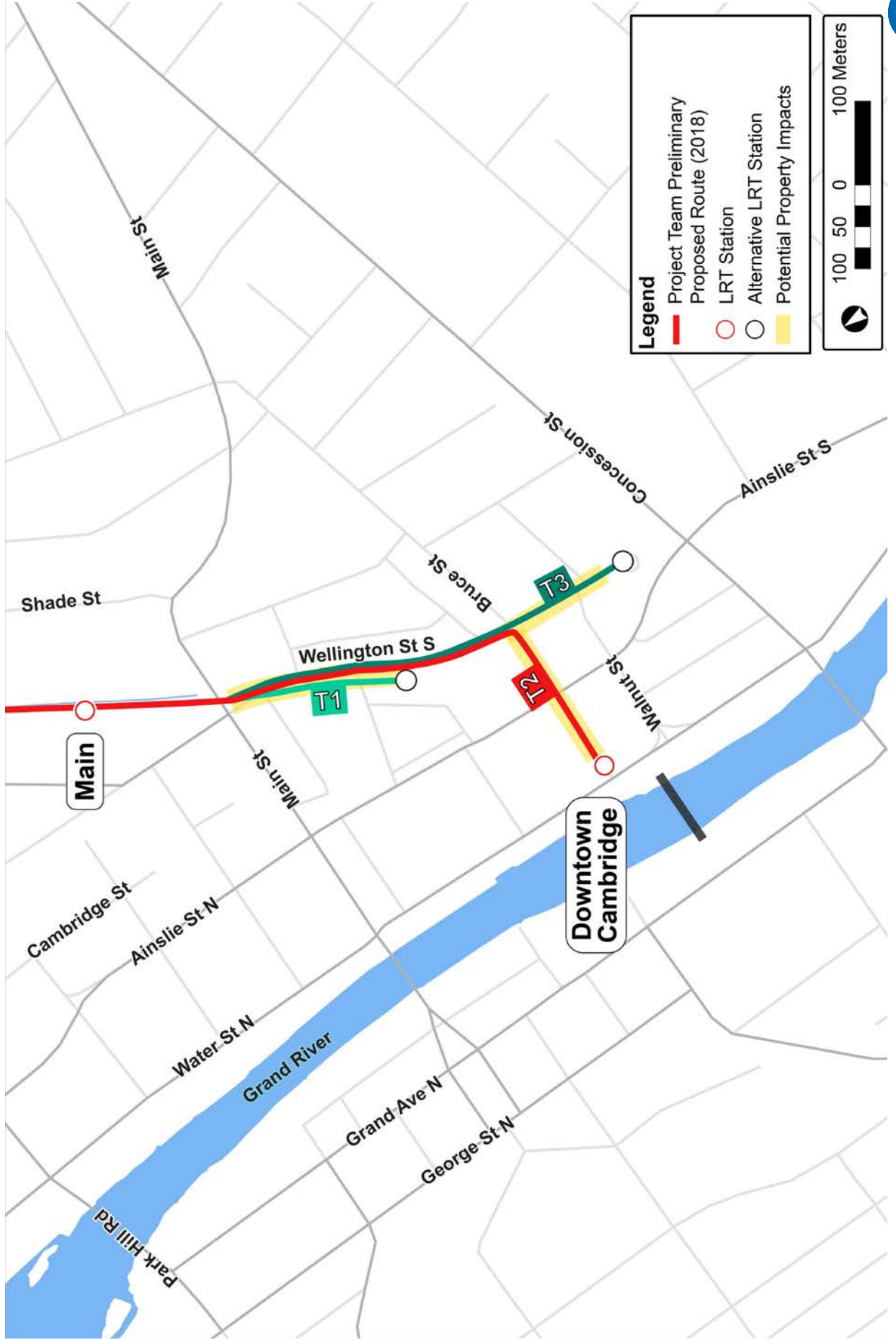
Map 4: Route Alternatives – North Cambridge (E)



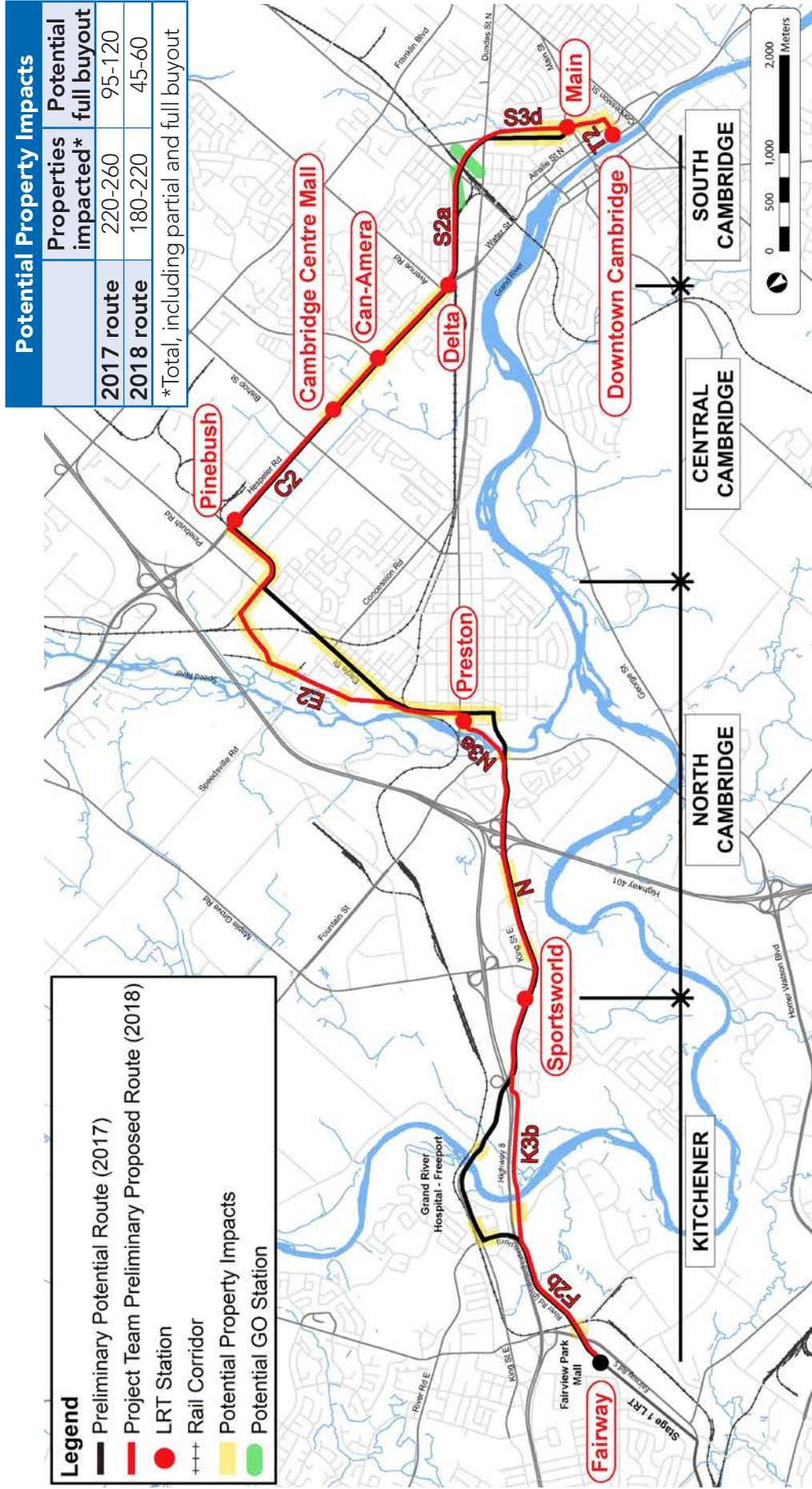
Map 5: Route Alternatives – South Cambridge (S)



Map 6: Route alternatives – South Cambridge (T)



Map 7: 2017 and 2018 Routes





Appendix B Evaluation results

NORTH
CAMBRIDGE

CENTRAL
CAMBRIDGE

SOUTH
CAMBRIDGE



Kitchener (F-K)
Evaluation results (*preliminary proposed)

F2a-K2

F2b-K3b*

Transportation and mobility

1.0	Ability to serve multimodal nodes	N/A	N/A
2.0	Impact on traffic operations	●	●
3.0	Engineering challenges	●	●
4.0	Ridership	●	●

Social/cultural environment

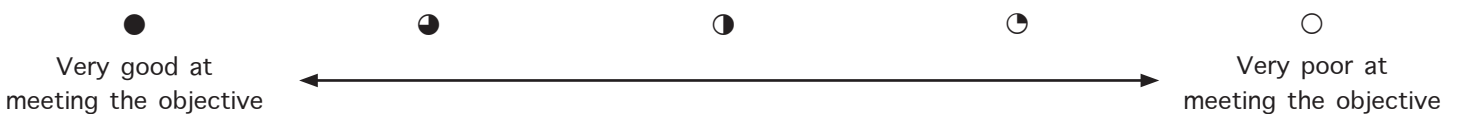
5.0	Destinations served	N/A	N/A
6.0	Property requirements	●	●
7.0	Transit and pedestrian supportive land use planning policy	●	●
8.0	Cultural heritage impacts	●	●

Natural environment

9.0	Impact on floodplains	●	●
10.0	Impact to significant natural features	●	●

Economic impact

11.0	Ability to serve concentrations of employment	N/A	N/A
12.0	Opportunities for revitalization/intensification	N/A	N/A
13.0	Cost	●	●





Kitchener (F-K) – from the Fairway station to King Street at Sportsworld Crossing Drive

F2a-K2: River Road Extension, King Street – NOT PREFERRED

- ✓ Less impact to natural features
- ✗ More properties impacted
- ✗ More traffic impacts on King Street
- ✗ Longer travel time
- ✗ More expensive to build, operate, and maintain

F2b-K3b: River Road Ext., parallel Highway 8, King Street – PREFERRED

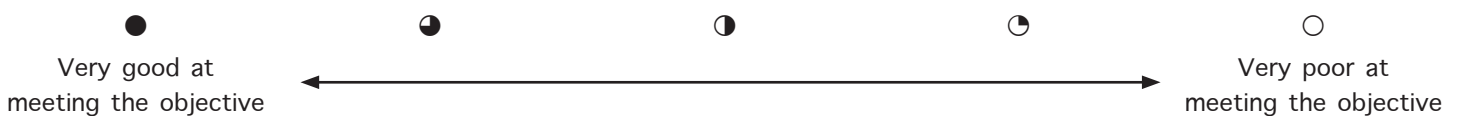
- ✓ Shorter travel time
- ✓ Lower traffic impacts on King Street
- ✓ Fewer properties impacted
- ✓ Fewer cultural heritage resources impacted
- ✓ Less expensive to build, operate, and maintain
- ✗ More impacts to natural features





North Cambridge (N) Evaluation results (*preliminary proposed)

		N3	N3a	N3b	N3c	N3d	N3e*
Transportation and mobility							
1.0	Ability to serve multimodal nodes	●	●	●	●	●	●
2.0	Impact on traffic operations	◐	◐	◑	●	◐	●
3.0	Engineering challenges	●	●	●	●	●	●
4.0	Ridership	◐	◑	◑	●	◐	●
Social/cultural environment							
5.0	Destinations served	●	●	●	●	●	●
6.0	Property requirements	◑	◑	◐	●	◐	●
7.0	Transit and pedestrian supportive land use planning policy	◐	◐	◑	●	●	●
8.0	Cultural heritage impacts	◑	◑	◐	●	◐	◑
Natural environment							
9.0	Impact on floodplains	●	●	○	◑	○	◑
10.0	Impact to significant natural features	◐	◐	●	◑	◑	◑
Economic impact							
11.0	Ability to serve concentrations of employment	●	●	●	●	●	●
12.0	Opportunities for revitalization/intensification	●	●	●	●	●	●
13.0	Cost	●	●	◐	◐	◐	◐





North Cambridge (N) – from King Street at Preston Parkway to Eagle Street at William Street.

N3: Shantz Hill, across Speed River, Moore Street, Eagle Street (2017 Preliminary Potential Route) – NOT PREFERRED

- ✓ Fewer commercial properties impacted
- ✓ Lower traffic impacts at King/Eagle than N3b and N3d
- ✓ Least impact to natural features due to shortest crossing of the Speed River and floodplain
- ✓ Less expensive to build
- ✗ Highest number of residential properties impacted and the most full buyouts
- ✗ Longer travel time

N3a: Same as N3, except running in mixed traffic on Eagle Street – NOT PREFERRED

- ✓ Fewer full buyouts than N3
- ✓ Least expensive to build
- ✓ Least impact to natural features due to shortest crossing of the Speed River and floodplain
- ✗ Highest number of residential properties impacted
- ✗ Longest travel time due to length and share lanes (LRT/vehicles) on Eagle Street

N3b: Shantz Hill, Fountain Street, King Street – NOT PREFERRED

- ✓ Fewest full buyouts, fewest residential properties impacted
- ✓ Less expensive to build than N3c, N3d and N3e
- ✓ Least impact to natural features due to use of existing roadways
- ✗ Highest number of properties impacted

- ✗ Highest traffic impacts on Fountain Street and King Street
- ✗ Longer travel time due to length and slower average speed

N3c: Shantz Hill, across Speed River islands, through King/Eagle/Queenston/Chopin block to Eagle Street – NOT PREFERRED

- ✓ Fewest properties impacted and fewer full buyouts than N3
- ✓ Least impact on traffic, particularly King/Eagle intersection
- ✓ Shorter travel time (similar to N3e)
- ✗ Most expensive to build
- ✗ Highest impacts to the Speed River

N3d: Shantz Hill, across Speed River, behind properties, King Street – NOT PREFERRED

- ✓ Fewer full buyouts than N3, similar to N3a and N3b
- ✓ Shorter travel time
- ✗ Highest number of properties impacted
- ✗ Highest impact to natural features
- ✗ More expensive to build than N3

N3e: Shantz Hill, across Speed River, along river valley, through King/Eagle/Queenston/Chopin block to Eagle Street – PREFERRED

- ✓ Fewest properties impacted, fewer full buyouts than N3
- ✓ Least traffic impacts
- ✓ Shortest travel time
- ✗ More impacts to natural features than N3
- ✗ More expensive to build than N3



Kitchener to Cambridge (J) Evaluation results (*preliminary proposed)

F2b-K3b-N-N3e*

J

Transportation and mobility

1.0	Ability to serve multimodal nodes	●	○
2.0	Impact on traffic operations	○	●
3.0	Engineering challenges	●	○
4.0	Ridership	●	●

Social/cultural environment

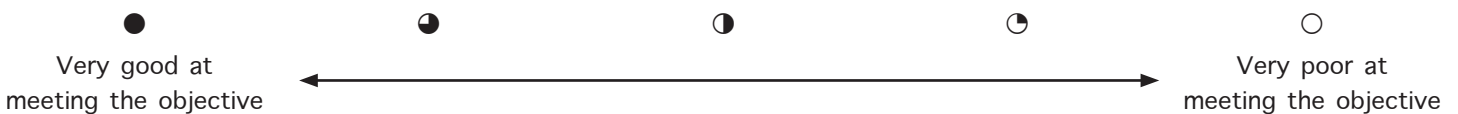
5.0	Destinations served	●	●
6.0	Property requirements	○	●
7.0	Transit and pedestrian supportive land use planning policy	●	○
8.0	Cultural heritage impacts	○	●

Natural environment

9.0	Impact on floodplains	●	○
10.0	Impact to significant natural features	●	●

Economic impact

11.0	Ability to serve concentrations of employment	●	○
12.0	Opportunities for revitalization/intensification	●	○
13.0	Cost	●	○





Kitchener to Cambridge (J) – from the Fairway station to Eagle Street at William Street

F2b-K3b-N-N3e: **PREFERRED**

- ✓ Higher ridership potential
- ✓ Sportsworld station is centrally located within commercial and employment zone
- ✓ Less expensive to build, operate, and maintain
- ✓ Best supports transit and pedestrian goals and policies
- ✗ More properties impacted and more full buyouts

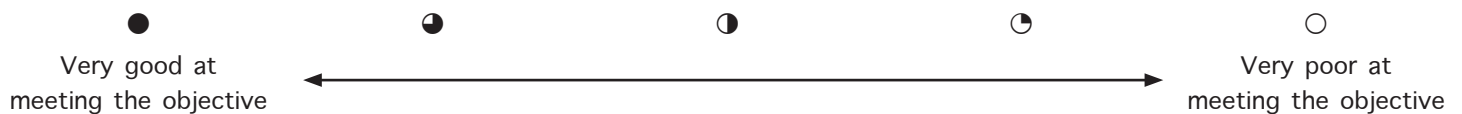
Alternative J: – **NOT PREFERRED**

- ✓ Lower traffic impacts
- ✗ Lower ridership potential
- ✗ Sportsworld station is further from residential and commercial developments
- ✗ Sportsworld station is less accessible to vehicles and pedestrians
- ✗ Least compatible with Region and City transit and pedestrian goals and policies
- ✗ More expensive to build, operate, and maintain



North Cambridge (E) Evaluation results (*preliminary proposed)

		N3-C1a	E1	E2*
Transportation and mobility				
1.0	Ability to serve multimodal nodes	◐	◐	●
2.0	Impact on traffic operations	◐	◐	●
3.0	Engineering challenges	●	●	●
4.0	Ridership	◑	◑	●
Social/cultural environment				
5.0	Destinations served	N/A	N/A	N/A
6.0	Property requirements	○	◑	●
7.0	Transit and pedestrian supportive land use planning policy	◐	●	●
8.0	Cultural heritage impacts	●	●	◑
Natural environment				
9.0	Impact on floodplains	●	◑	◑
10.0	Impact to significant natural features	●	◐	◑
Economic impact				
11.0	Ability to serve concentrations of employment	N/A	N/A	N/A
12.0	Opportunities for revitalization/intensification	N/A	N/A	N/A
13.0	Cost	●	●	●





North Cambridge (E) - from Eagle Street at William Street to Eagle Street 200 metres west of Industrial Road.

C1a: Eagle Street – NOT PREFERRED

- ✓ Least impact to natural features
- ✓ Least expensive to operate and maintain due to shorter route
- ✗ Highest traffic impacts
- ✗ Highest number of properties impacted and most full buyouts

E1: Rail spur, Speedville Road, Eagle Street – NOT PREFERRED

- ✓ Fewer properties impacted and full buyouts than C1a
- ✓ Less traffic impact than C1a
- ✗ More traffic impact than E2
- ✗ More properties impacted and full buyouts than E2
- ✗ Most expensive to build

E2: Rail spur – PREFERRED

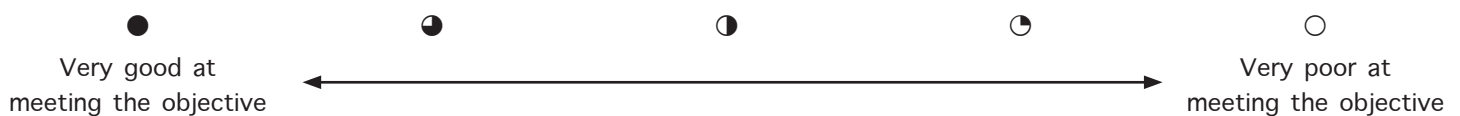
- ✓ Fewest properties impacted and full buyouts
- ✓ Shortest travel time
- ✓ Best location for LRT-over-CN Rail grade separation
- ✓ Least expensive to build
- ✗ Highest impacts to natural features east of Speedville Road
- ✗ More expensive to operate due to route length





South Cambridge (S) Evaluation results (*preliminary proposed)

		S3a	S3b	S3c	S3d*
Transportation and mobility					
1.0	Ability to serve multimodal nodes	N/A	N/A	N/A	N/A
2.0	Impact on traffic operations	●	◐	◑	◒
3.0	Engineering challenges	N/A	N/A	N/A	N/A
4.0	Ridership	◐	◑	●	●
Social/cultural environment					
5.0	Destinations served	N/A	N/A	N/A	N/A
6.0	Property requirements	○	◐	●	●
7.0	Transit and pedestrian supportive land use planning policy	●	●	◑	◒
8.0	Cultural heritage impacts	○	◐	●	●
Natural environment					
9.0	Impact on floodplains	●	●	◑	◒
10.0	Impact to significant natural features	●	●	◑	◒
Economic impact					
11.0	Ability to serve concentrations of employment	N/A	N/A	N/A	N/A
12.0	Opportunities for revitalization/intensification	N/A	N/A	N/A	N/A
13.0	Cost	◑	◐	●	●





South Cambridge (S3) – from Beverly Street at Dundas to Wellington Street at Main Street.

S3a: Beverly Street – NOT PREFERRED

- ✓ No significant impact on traffic operations, no new signalized intersections required
- ✓ No changes to Mill Creek Trail
- ✗ Highest number of properties impacted and full buyouts
- ✗ Highest number of cultural heritage resources impacted
- ✗ Longest travel time
- ✗ Most expensive to build

S3b: Beverly Street, side running with Beverly as one-way – NOT PREFERRED

- ✓ Fewest properties impacted
- ✓ Less expensive to build due to reduced property acquisition
- ✓ No changes to Mill Creek Trail
- ✗ More full buyouts than S3c and S3d
- ✗ Longest travel time
- ✗ Highest traffic impacts due to Beverly Street one-way street conversion
- ✗ More cultural heritage resources impacted than S3c and S3d

S3c: Along Mill Creek, walking trail on west side of Mill Creek – NOT PREFERRED

- ✓ Fewer properties impacted and fewer full buyouts
- ✓ Fewer cultural heritage resources impacted
- ✓ Shortest travel time
- ✓ Least expensive to build
- ✗ Located closer to Mill Creek and beside Mill Creek Trail

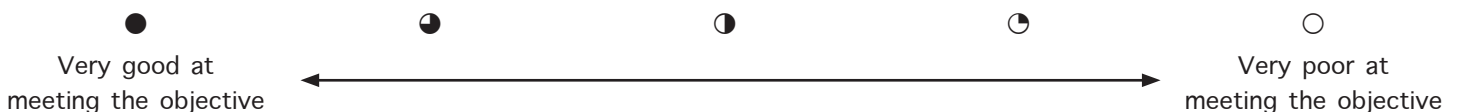
S3d: Along Mill Creek, walking trail on east side of Mill Creek – PREFERRED

- ✓ Fewest properties impacted and full buyouts
- ✓ Fewer cultural heritage resources impacted
- ✓ Shortest travel time
- ✓ Less expensive to build
- ✗ Located closest to Mill Creek and relocates Mill Creek Trail



South Cambridge (T) Evaluation results (*preliminary proposed)

		T1a	T1b	T2*	T3
Transportation and mobility					
1.0	Ability to serve multimodal nodes	●	●	◐	◑
2.0	Impact on traffic operations	●	◑	◐	◑
3.0	Engineering challenges	N/A	N/A	N/A	N/A
4.0	Ridership	N/A	N/A	N/A	N/A
Social/cultural environment					
5.0	Destinations served	◑	◑	●	●
6.0	Property requirements	●	●	◐	◑
7.0	Transit and pedestrian supportive land use planning policy	◐	◐	●	◑
8.0	Cultural heritage impacts	●	●	◑	●
Natural environment					
9.0	Impact on floodplains	●	●	◑	●
10.0	Impact to significant natural features	●	●	●	●
Economic impact					
11.0	Ability to serve concentrations of employment	◐	◐	●	◑
12.0	Opportunities for revitalization/intensification	◐	◐	●	◑
13.0	Cost	◑	●	◐	◐
Local transit integration (applies only to Terminal (T) Options)					
14.0	Integration with local transit service	●	●	◑	◑





South Cambridge (T) – from Wellington Street at Main Street to the south terminus, includes the terminal and additional station (T2 and T3 only).

T1: Wellington Street, Ainslie Street Terminal – NOT PREFERRED

- ✓ Centrally located and provides good access to the core
- ✓ Good connectivity for passengers transferring to/from LRT
- ✓ Least expensive to build and maintain, route is shorter and terminal site already in place
- ✗ Less efficient for bus operations with more travel through the city core
- ✗ Requires redevelopment of existing terminal site to properly integrate LRT

T2: Wellington Street, Bruce Street, new Terminal on Bruce Street at Water Street; additional station at Main Street – PREFERRED

- ✓ Best access to the core area due to central location and additional station
- ✓ Better access from west side of the Grand River via pedestrian bridge
- ✓ More pedestrian-friendly on-street LRT-bus connections
- ✓ Most supportive of Region and City pedestrian goals and policies
- ✓ Opportunity to streamline bus routes, improve efficiency and reduce travel time
- ✗ Most expensive to build, operate and maintain
- ✗ Highest number of properties impacted

T3: Wellington Street, new Terminal on Wellington Street at Concession Street, additional station at Main Street – NOT PREFERRED

- ✓ Better access to the core area due to additional station
- ✓ More pedestrian-friendly on-street LRT-bus connections
- ✓ Opportunity to streamline bus routes, improve efficiency and reduce travel time
- ✗ More properties impacted than T1
- ✗ More expensive than T1 to build, operate, and maintain





Appendix C
Property Impact
Identification Process
Information Sheet

NORTH
CAMBRIDGE

CENTRAL
CAMBRIDGE

SOUTH
CAMBRIDGE



Property Impact Identification Process information sheet

The following information is provided as a general overview of the process to identify property impacts during the Stage 2 ION study. The steps, timing and processes can vary depending on the level of design refinement and on the type of impact. Anticipated property impacts are based on the information available to date and on the project team's assessment and may change as the design progresses.

Types of property impacts

Property impacts can take many forms and include partial acquisition, full acquisition ("buyout"), or easement. Partial acquisitions occurs when a modest widening is required, but the building and the function/use of the property is retained. Full acquisitions are identified when a building is impacted, or the function of the property is substantially altered. Permanent easements are identified when the current owner can retain ownership and use of the property, but the Region, City, or utility company requires periodic access to the property in the future. For example, aerial easements are required when overhead power lines cross private property. Temporary easements are typically related to construction activities such as grading and restoration.

Route evaluation and selection

During the route alternatives evaluation and selection process a conceptual design is used to identify roadway corridors which, in general, do not have sufficient road allowance width to accommodate the proposed works (LRT tracks, poles, roadway, sidewalks, utilities etc.). The conceptual design is intended to provide a rough, conservative (high side) estimate of property impacts for the purpose of comparing routes to each other. Property impacts have been show as yellow shading along applicable route sections on the display board maps. Because the design has not been refined at this stage the project team cannot confirm whether specific, individual properties will be impacted, nor to what extent.

Preliminary design

During preliminary design the specific project requirements, treatments, and dimensions are refined throughout the study area. Additional project elements are considered, such as utilities, traction power substations, pedestrian facilities and landscaping. Property impacts are refined to confirm the individual properties that will be impacted, the type of impact (i.e. partial, full, easement etc.), and the approximate extent of impact. Property impacts are shown on roll plans at a moderate scale and show individual parcel outlines.



Property Acquisition Process information sheet

The following information is provided as a general overview of the property acquisition process and is not legal advice. Further, the steps, timing and processes can vary depending on the individual circumstances of each case.

After the Recommended Design Concept has been endorsed by Regional Council, the property acquisition process and the efforts of Regional real estate staff will focus on acquiring the required lands to implement the approved design. Regional staff cannot make fundamental amendments or changes to the approved design concept.

Property impact plans

After the project has been approved and as it approaches final design, the project planners will generate drawings and sketches indicating what lands and interests need to be acquired from each affected property to undertake the project. These drawings are referred to as Property Impact Plans (PIP).

Initial owner contact by Regional real estate staff

Once the PIPs are available, Regional real estate staff will contact the affected property owners by telephone and mail to introduce themselves and set-up initial meetings to discuss the project and proposed acquisitions.

Initial meetings

The initial meeting is attended by the project engineer and the assigned real estate staff person to brief the owner on the project, what part of their lands are to be acquired or will be affected, what work will be undertaken, when, with what equipment, etc. and to answer any questions. The primary purpose of the meeting is to listen to the owner and identify issues, concerns, effects of the proposed acquisition on remaining lands and businesses that can be feasibly mitigated and/or compensated, and how the remaining property may be restored. These discussions may require additional meetings. The goal of staff is to work with the owner to reach mutually agreeable solutions.

Goal – fair and equitable settlement for all parties

The goal is always to reach a fair and equitable agreement for both the property owner and the Region. Such an agreement will provide compensation for the fair market value of the lands and address the project impacts (such as repairing or replacing landscaping, fencing, paving) so that the property owner will receive the value of the lands acquired and the restoration of their remaining property to the condition it was in prior to the project.

The initial meetings will form the basis of an initial offer of settlement or agreement of purchase and sale for the required lands or interests



- ION project website: regionofwaterloo.ca/rapidtransit
- Phone: **519-575-4400 ext. 3461**
- TTY: **519-575-4608**
- Email: ION@regionofwaterloo.ca

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