



November 12, 2020

Via Email

Mr. Matthew O'Neil  
Senior Engineer, Rapid Transit  
Transportation and Environmental Services  
Region of Waterloo  
20 Weber Street East  
Kitchener, ON N2H 1C3

Dear Mr. O'Neil:

**Re: Region of Waterloo-Stage 2 ION Light Rail Transit  
Review of Draft Environmental Project Report  
Transit Project Assessment Process  
City of Cambridge and City of Kitchener  
GRCA File: W.86.375**

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Further to our comments of February 21, 2020, August 17, 2020 and our meeting on November 10, 2020, it is our understanding that the draft Environmental Project Report (EPR) provides a summary of the conclusions, recommendations, and mitigation measures of the drainage and stormwater management, natural heritage, and fluvial geomorphic reports. As such, the Grand River Conservation Authority (GRCA) has concentrated our review on the following documentation:

- Draft Preliminary Drainage and Stormwater Management Report, Stage 2 ION LRT, Transit Project Assessment (prepared by WSP and dated October 19, 2020);
- Final Natural Heritage Report, Stage 2 ION LRT from Kitchener to Cambridge (prepared by LGL Ltd. and dated July 2020); and,
- Final Fluvial Geomorphic Assessment of the Preferred Route, Stage 2 ION LRT, (prepared by Matrix Solutions Inc. and dated July 2020).

Please be advised that the final natural heritage report, fluvial geomorphological report, and stormwater management (SWM) report have addressed our previous comments. The overall conclusions and recommendations of all 3 reports seem to be reasonable and are supported by the GRCA. We note that these reports will be useful when we look at the proposed crossing

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designs of the various watercourses during detailed design and at the time of GRCA permit submissions.

For your further consideration, we offer the following additional comments regarding the GRCA's regulations and permitting process are offered for your consideration.

1. We note that the SWM report identified the need for further hydraulic and hydrologic capacity assessment at existing culverts at the detailed design stage. A more detailed site-specific assessment of hydrologic impacts on regulated watercourse and wetland features will also be required at the permitting stage.
2. Section 3.5.9, page 61 of the Natural Heritage Report (NHR) – The report states that “Valleylands and wetlands associated with the Grand River and its tributaries are regulated areas under Ontario Regulation 150/06, Regulation of Development, Interference with Wetlands and Alterations to Shorelines and Watercourses.” This statement could potentially be misinterpreted by some reviewers. All wetlands, including wetlands that are not associated with the Grand River and its tributaries, are regulated in accordance with the GRCA's consolidated policies for the administration of Ontario Regulation 150/06.
3. We would ask that wetland boundaries within 30 m of work zones be delineated during the growing season. Following verification of all wetland boundaries by the GRCA, wetland boundaries should be surveyed, and plotted on relevant plans.
4. The following additional plans will be required to support future permits from the GRCA;
  - Construction sequencing plan,
  - Dewatering plan,
  - Erosion and sediment control plan,
  - Landscaping plans for all disturbed areas, and
  - Construction monitoring plan.
5. Section 5.2.2, page 69 of the NHR – With respect to culvert design considerations, the 5<sup>th</sup> bullet point is unclear. Will new or retrofitted culverts have a slope that is greater than 0% and less than or equal to 0.5%? Culvert design specifications should be confirmed on final plans during detailed design.
6. Please be advised that the Toronto and Region Conservation Authority (TRCA) has developed new erosion and sediment control guidelines, which may be applicable to this project. We would recommend that you review these TRCA guidelines as part of the future detailed design.
7. As part of our comments in February 2020, we advised that two GRCA owned properties may be impacted depending on the widening and infrastructure requirements needed for the preferred route. We would strongly encourage early discussions with Ms. Beth Brown, GRCA Property Manager at ext. 2307 for further clarification on GRCA property approvals and requirements.

Thank you for providing this opportunity to review these reports and to allow the GRCA to continue to participate in this study. We further trust that the above is of assistance on this matter. If you require any further information or clarification, please do not hesitate to contact the undersigned at ext. 2233 or [jbrum@grandriver.ca](mailto:jbrum@grandriver.ca).

Yours truly,

A handwritten signature in black ink, appearing to read 'John Brum', with a long horizontal flourish extending to the right.

John Brum  
Resource Planner  
Grand River Conservation Authority

JB/

cc: Jane Gurney, Region of Waterloo (via email)  
Denise Morneau, WSP (via email)  
Kathy Padgett, City of Cambridge (via email)  
Aaron McCrimmon-Jones, City of Kitchener (via email)  
Beth Brown & Melissa Larion, GRCA (via email)

**From:** Shannon Noonan <[NoonanS@cambridge.ca](mailto:NoonanS@cambridge.ca)>

**Date:** November 18, 2020 at 5:15:42 PM EST

**To:** Matthew O'Neil <[MONeil@regionofwaterloo.ca](mailto:MONeil@regionofwaterloo.ca)>

**Subject:** Stage ION EPR - City of Cambridge Comments

**Attachments:** June-Nov 2020 Edits to Cambridge 2ION CHERs - Updated Nov. 24.xlsx

Hi Matthew,

First of all, City staff would like to commend the Region and consultants on doing a great job with this report!

Attached is the comment log for the City of Cambridge. There are 2 tabs one with general comments and one with comments related to the CHERs. Some specific areas of interest are:

- Cultural Heritage Map is missing from document and needs to be incorporated. Cambridge staff would like to see the map before it is released to the public.
- CHER for Ainslie Street S. property, some specific comments have been highlighted. I think more discussion with John Calhoun may be required. I can coordinate a short meeting if necessary. Let me know.
- Reference to potential GO station at Pinebush is not mentioned in the report, but has been mentioned previously. Is there a reason this is not included in the report?

On another note, during the public commenting period we would like to provide our Municipal Heritage Advisory Committee and Cambridge Environmental Advisory Committee and opportunity to review and comment on the report at one of their regular meetings. In order to accommodate this for MHAC we would have to provide the document to them on December 10<sup>th</sup>, is this something we can do? If so, we would also have to release it to all of Cambridge Council at the same time as we have Council members on MHAC. Please let me know.

Thanks  
Shannon

This message, including any attachments, may contain information which is confidential and/or exempt from disclosure under applicable law, and is intended only for the use of the designated recipient(s) listed above. Any unauthorized use or disclosure is strictly prohibited. If you are not the intended recipient, or have otherwise received this message by mistake, please notify the sender by replying via email, and destroy all copies of this message, including any attachments, without making a copy. Thank you for your cooperation.



## STAGE 2 ION - TRANSIT PROJECT ASSESSMENT TECHNICAL ADVISORY COMMITTEE REVIEW OF DRAFT EPR

Reviewer Name:

Reviewer Organization/Office:


Item No.	Chapter/Section	Comment
1	5.1.2(2) / C1	Hofstetter has one too many 'f' in the title, but is spelled correctly in the body of that paragraph.
2	5.1.2 / C1	Spelling is different in this section for Wavy-Rayed/Wavy Rayed, choose consistent spelling.
3	5 - Figure 5-19	Galt City Centre is noted in the legend and the map label refers to Downtown Cambridge. Map label should be renamed Downtown Cambridge/Galt City Centre to align with the legend.
4	5, page 44	2nd bullet refers to Dundas/Beverly Roundabout being unsignalized. There is reference elsewhere that it will be a signalized crossing
5	6, section 6.2	Word "ERROR" included
6	6, section 6.3.4 pg 39	Pinebush station - during previous public consultation information was shared that a potential GO station was being considered for this area. This is not mentioned in the report and should be.
7	8, section 8.1	add tree permit for proposed tree removals to the list of permits and approvals
8	Appendix C5 - Cultural Heritage Report, Figures 30 to 36	Short forms on legend should be spelled out for ease of understanding:  <div style="display: flex; justify-content: center; gap: 10px; font-size: small;"> <span style="color: red;">■</span> Heritage Documentation Report  <span style="color: blue;">■</span> Post-TPAP CHER  <span style="color: cyan;">■</span> Post-TPAP CHER/HIA  <span style="color: purple;">■</span> Post-TPAP HIA  <span style="color: yellow;">■</span> TPAP CHER         </div>
9	Appendix C5 - Cultural Heritage Report	need figure 37 to include lands down to the Bruce Street terminal. This figure is not included in the Appendix.
10	5.1.7 - Drainage Section	pinebush station - during previous public consultation information was shared that a potential GO station was being considered for this area. This is not mentioned in the report and should be.

Stage 2 ION CHERs – Revised group 2 – City received 2020-09-30  
First submissions included for reference

69 Ainslie Street South (first submission, responding 2020-06-02) –

- Executive Summary, page ii, second paragraph is entirely false, perhaps lifted from the report of a property on Beverly Street: “The property at 69 Ainslie Street South is a one-storey, rectangular plan dwelling with a side gable roof built in 1858. The front façade is symmetrically arranged with a central doorway flanked by window openings. A garage structure at the rear of the property is the only structure that will be impacted by the proposed LRT infrastructure.”
- Executive Summary, page ii, next-to-last paragraph includes “The integrity of the site has been compromised due to this derelict condition ...” Add something like “the removal of most of the main building”.
- Table of Contents, 3.2.2. “Dumfries” has no capital F.
- Page 1, next-to-last paragraph: “The LRT is scheduled to open in Spring of 2019.”
- Page 7, Consultation record: Shannon Noonan submitted information, contrary to the statement of no response.
- Page 10, paragraph beginning “The Middle Woodland period”: Correct Lake St. “Claire” to “Clair”.
- Page 10, last line, change “lead” to “led”.
- Page 11, second paragraph, line 3: “Hau(n)denosaunee” correct the spelling.
- Page 12, 3.2.2 third paragraph: “Dagleish” is typically spelled “Dalgleish” (extra L).
- Page 15, next-to-last paragraph: “Paterson” (one t) is the spelling for the New Jersey city. “Canal” as the last word.
- Page 16, second paragraph: Date of “19466” should be 1966. Last two lines state a transaction sequence of 1930 then 1926(?).
- Page 19, both images are from Bruce Street west of Ainslie Street South; Image 1 is looking east along Bruce Street and includes the front of the subject property; Image 2 is looking northeast to the bowling alley on the property. Neither is related to Beverly Street. Neither shows Ainslie Street clearly, as mentioned in the second paragraph. The images show nothing of the location of Mill Creek. Third paragraph, “The property backs onto Wellington Street South.” It should be stated that Wellington South (no “street” in the name) is on the location of the former rail line.
- Page 20, both images show Ainslie Street South well, but there is no Mill Creek or walking path. The labels are the same but for building address to the Wellington report.
- Page 20, 4.2.1, “This component of the mill complex fronts onto Bruce Street.” Not so; it fronts onto Ainslie Street South.
- Page 20, last paragraph belongs with the Bruce Street elevation description.
- Page 21, images 7 and 8 are of the remains of the six-storey mill building from Bruce Street, not at all what the captions say.

- Page 22, images captions say “from the public walking path”. No such path here; the photos are from the street. And it isn’t really a rear wall; it is a remnant wall of the six-storey mill building.
- Page 23, all the images are on the south elevation, looking north or northeast.
- Page 24, the images are of the north elevation, looking south and southeast.
- Page 31, integrity discussion mentions “derelict” without saying that the major building is gone except for parts of its basement and first-floor walls.
- Page 32, Conclusion: Is there a role for industrial archaeology here? Except for the remnant stone walls there is ordinary construction of a small office and warehouse of the late 19th century.

69 Ainslie Street South (second submission, responding 2020-11-16) –

- Executive Summary, page iv, first paragraph line 2 refers to 99 Beverly Street, not the property of the report.
- is entirely false, perhaps lifted from the report of a property on Beverly Street: “The property at 69 Ainslie Street South is a one-storey, rectangular plan dwelling with a side gable roof built in 1858. The front façade is symmetrically arranged with a central doorway flanked by window openings. A garage structure at the rear of the property is the only structure that will be impacted by the proposed LRT infrastructure.”
- Page 10, top three paragraphs: Change “Haudenosaunee” to “Haudenosaunee” (no “n” as the 4th letter) to align with the spelling preferred by the current nation.
- Page 15, top paragraph: Last line refers to Figure 5; it should be Figure 4.
- Page 16, second paragraph: Last two lines state a transaction sequence of October 1930, and then August 1926. Are both dates correct? What was the order of transactions?
- Page 18, second paragraph: “The study area consists of the property’s legal boundaries.” The legal boundaries include the former bowling alley, so a different statement is in order.
- Page 19: Images 5 and 6 are east and northeast views of the east end of the mill building remains, where they form a wall below the grade of Wellington South. They are not a central entranceway or window opening. Last line of the page should say Images 7-10, not 9-12.
- Page 20, first paragraph under 4.2.3: Images are 11 through 14, not 13 and 14. Next paragraph the cornice returns are on Image 13, not 15.
- Page 21, second line should be Image 14, not 16. North elevation photos are Images 15 and 16, not 17 and 18.
- Page 24, last line: The location address is 91 Old Mill Road. Its foundation is from 1846 but the upper levels are c.1932, replaced after a fire.

- Page 29, integrity discussion now mentions that the major building is gone except for some of its lower level walls. The “derelict” statement is irrelevant; the remaining buildings still show high integrity of a typical small office and warehouse. Overall the property has minimal integrity though, since the rare stone mill building has largely been removed.
- Page 31, Recommendations: Cambridge’s guidelines for a Heritage Impact Analysis include measured drawings and photographic documentation. The earlier suggestion of industrial archaeology may be utilized to discover useful information about the past of this site.

Grantham Rail Bridge (first submission, responding 2020-06-02) – Overall the report is a good approach to the history of a resource that is challenging to find information about.

- Executive Summary, page ii, second paragraph: The former railroad under the bridge is identified; it would be helpful if the railroad that built and uses the bridge (now CP) were named as well.
- Table of Contents, 3.2.2. “Dumfries” has no capital F.
- Page 1, next-to-last paragraph: “The LRT is scheduled to open in Spring of 2019.”
- Page 7, Consultation record: Shannon Noonan submitted information, contrary to the statement of no response.
- Pages 7 and 8, 2.3.1 and 2.3.2 are the same, repeated.
- Page 10, paragraph beginning “The Middle Woodland period”: Correct Lake St. “Claire” to “Clair”.
- Page 12, 3.2.2 first paragraph: “Dagleish” is typically spelled “Dalglish” (extra L). Is it different in the referenced source?
- Page 14, 3.3.1, most of the second paragraph is repeated in the last paragraph. The later location is better in the sequence.
- Page 20, 4.1.1, some “unknown” dimensions could be estimated using a tape measure on the ground, not to be exact but to understand the order of magnitude
- Page 22, first photo is the only one of a street bridge over the railway, and seems unrelated to the other examples. A modern bridge nearby that is more comparable to the others is the CP rail bridge over Franklin Boulevard.
- Page 22, second photo, location is over Water Street North and parallel to Samuelson Street.
- Page 23, first photo, this “plate girder bridge” is just two segments at the end of a much longer truss bridge extending east (left in the photo) across the Grand River.
- Page 23, third photo, location is Beverly Street, not Blair Road.

- Page 27, next-to-last paragraph: “Access to the interior of the building was not available, and observations have been made from the public right-of-way.” The first clause is irrelevant and the second untrue.
- Figure 3, the 1881 map, shows the east-west rail on a different alignment further south. Perhaps the ashlar stone abutments date from a few years later than 1879, when the current alignment was constructed (before 1916, Figure 4).

Grantham Rail Bridge (second submission, responding 2020-11-16) –

- Page 24, next-to-last criterion: Should be “Y” based upon last sentence of commentary. [other matters addressed]

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**From:** Matthew O'Neil <MONEil@regionofwaterloo.ca>  
**Sent:** November-19-20 12:14 PM  
**To:** Morneau, Denise  
**Cc:** Malloy, Patrick; Khaled, Sami; Shukla, Shveta; Fisher, Jennifer; Nairn, Sandy  
**Subject:** FW: Stage 2 ION - TAC Meeting #12 > Draft EPR Review/Comments

FYI – see below.

Matthew

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**From:** Lenore Ross <Lenore.Ross@kitchener.ca>  
**Sent:** November 19, 2020 9:01 AM  
**To:** Matthew O'Neil <MONEil@regionofwaterloo.ca>  
**Subject:** RE: Stage 2 ION - TAC Meeting #12 > Draft EPR Review/Comments

Hi Matthew,

I had given CofK staff a deadline of November 6 to provide me with comments for consolidation back to the RMOW and I have still not received anything, so I think it is safe to say no significant issues/changes from CofK.

Lenore

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**From:** Matthew O'Neil <[MONEil@regionofwaterloo.ca](mailto:MONEil@regionofwaterloo.ca)>  
**Sent:** Wednesday, November 4, 2020 2:46 PM  
**To:** Carmen De Leon <[Carmen.deleonmorillo@ontario.ca](mailto:Carmen.deleonmorillo@ontario.ca)>; Elaine Brunn Shaw <[BrunnShawE@cambridge.ca](mailto:BrunnShawE@cambridge.ca)>; 'Jennifer Benedict' <[Jennifer.Benedict@cpr.ca](mailto:Jennifer.Benedict@cpr.ca)>; John Brum <[jbrum@grandriver.ca](mailto:jbrum@grandriver.ca)>; Lenore Ross <[Lenore.Ross@kitchener.ca](mailto:Lenore.Ross@kitchener.ca)>; John Calhoun <[calhounj@cambridge.ca](mailto:calhounj@cambridge.ca)>; Martin Haalstra <[Martin.Haalstra@ontario.ca](mailto:Martin.Haalstra@ontario.ca)>; Michael Vallins - CN (<[michael.vallins@cn.ca](mailto:michael.vallins@cn.ca)> <[michael.vallins@cn.ca](mailto:michael.vallins@cn.ca)>); 'Scott Howard' <[Scott.Howard@ontario.ca](mailto:Scott.Howard@ontario.ca)>; Scott Reid <[Scott.Reid@ontario.ca](mailto:Scott.Reid@ontario.ca)>; 'Shannon Noonan' <[NoonanS@cambridge.ca](mailto:NoonanS@cambridge.ca)>  
**Cc:** 'Morneau, Denise' <[Denise.Morneau@wsp.com](mailto:Denise.Morneau@wsp.com)>; Fisher, Jennifer <[Jennifer.Fisher@wsp.com](mailto:Jennifer.Fisher@wsp.com)>; Malloy, Patrick <[Patrick.Malloy@wsp.com](mailto:Patrick.Malloy@wsp.com)>; Khaled, Sami <[Sami.Khaled@wsp.com](mailto:Sami.Khaled@wsp.com)>; Nairn, Sandy <[Sandy.Nairn@wsp.com](mailto:Sandy.Nairn@wsp.com)>; Peissel, Eric <[Eric.Peissel@wsp.com](mailto:Eric.Peissel@wsp.com)>; Shukla, Shveta <[Shveta.Shukla@wsp.com](mailto:Shveta.Shukla@wsp.com)>  
**Subject:** [EXTERNAL] RE: Stage 2 ION - TAC Meeting #12 > Draft EPR Review/Comments

Hi Everyone,

This is just a gentle reminder that comments on the Draft EPR are due next week. Let me know if you have any issues accessing the files. This is an important review for your respective areas of interest/responsibility. Please forward to other staff if/as required.

Thanks in advance for your assistance with this major milestone for the Stage 2 ION project!

Regards,  
Matthew

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**From:** Morneau, Denise <[Denise.Morneau@wsp.com](mailto:Denise.Morneau@wsp.com)>

**Sent:** October 20, 2020 3:25 PM

**To:** Matthew O'Neil <[MONeil@regionofwaterloo.ca](mailto:MONeil@regionofwaterloo.ca)>; Amanda Kutler <[AKutler@regionofwaterloo.ca](mailto:AKutler@regionofwaterloo.ca)>; Carmen De Leon <[Carmen.deleonmorillo@ontario.ca](mailto:Carmen.deleonmorillo@ontario.ca)>; Elaine Brunn Shaw <[BrunnShawE@cambridge.ca](mailto:BrunnShawE@cambridge.ca)>; 'Jennifer Benedict' <[Jennifer.Benedict@cpr.ca](mailto:Jennifer.Benedict@cpr.ca)>; Fisher, Jennifer <[Jennifer.Fisher@wsp.com](mailto:Jennifer.Fisher@wsp.com)>; John Brum <[jbrum@grandriver.ca](mailto:jbrum@grandriver.ca)>; Kornel Mucsi <[KMucsi@regionofwaterloo.ca](mailto:KMucsi@regionofwaterloo.ca)>; Lenore Ross <[Lenore.Ross@kitchener.ca](mailto:Lenore.Ross@kitchener.ca)>; Marcos Kroker <[MKroker@regionofwaterloo.ca](mailto:MKroker@regionofwaterloo.ca)>; Martin Haalstra <[Martin.Haalstra@ontario.ca](mailto:Martin.Haalstra@ontario.ca)>; Michael Vallins - CN ([michael.vallins@cn.ca](mailto:michael.vallins@cn.ca)) <[michael.vallins@cn.ca](mailto:michael.vallins@cn.ca)>; Malloy, Patrick <[Patrick.Malloy@wsp.com](mailto:Patrick.Malloy@wsp.com)>; Reid Fulton <[RFulton@regionofwaterloo.ca](mailto:RFulton@regionofwaterloo.ca)>; Khaled, Sami <[Sami.Khaled@wsp.com](mailto:Sami.Khaled@wsp.com)>; Nairn, Sandy <[Sandy.Nairn@wsp.com](mailto:Sandy.Nairn@wsp.com)>; 'Scott Howard' <[Scott.Howard@ontario.ca](mailto:Scott.Howard@ontario.ca)>; Scott Reid <[Scott.Reid@ontario.ca](mailto:Scott.Reid@ontario.ca)>; 'Shannon Noonan' <[NoonanS@cambridge.ca](mailto:NoonanS@cambridge.ca)>; Shukla, Shveta <[Shveta.Shukla@wsp.com](mailto:Shveta.Shukla@wsp.com)>; Steve van De Keere <[SvanDeKeere@regionofwaterloo.ca](mailto:SvanDeKeere@regionofwaterloo.ca)>; Jane Gurney <[JGurney@regionofwaterloo.ca](mailto:JGurney@regionofwaterloo.ca)>; Bridget Coady <[BCoady@regionofwaterloo.ca](mailto:BCoady@regionofwaterloo.ca)>; Alana MacKinnon <[AMacKinnon@regionofwaterloo.ca](mailto:AMacKinnon@regionofwaterloo.ca)>; Darryl Spencer <[DSpencer@regionofwaterloo.ca](mailto:DSpencer@regionofwaterloo.ca)>; Peissel, Eric <[Eric.Peissel@wsp.com](mailto:Eric.Peissel@wsp.com)>

**Subject:** RE: Stage 2 ION - TAC Meeting #12 > Draft EPR Review/Comments

Hello everyone: We are uploading the draft Environmental Project Report (EPR) for Stage 2 ION to the Region's FTP site – we have a few more files to go, but most are now there (we expect to have them all up by the end of the day) . The login credentials are in the attached email. **Scott**, I know that MTO has had difficulty in the past accessing this FTP – I will send you a link to the files in a separate WSP shared drive that I know MTO can access. Similarly, if anyone else has issues accessing the FTP site, let me know and I can send a link to the shared drive.

Our meeting on November 10 is to receive your comments on this draft report. We are not planning a presentation – my current plan is to move through the document chapter by chapter and encourage our TAC members to raise any issues or questions. In order to make this a bit easier, I have attached a comment form for you to document your feedback (I have also placed a copy in the FTP folder). Alternatively, you can add your comments directly into the PDF using sticky notes. We would appreciate receiving your written comments by the end of the day on Thursday, November 12. This way, we can focus on the larger issues at the meeting on November 10, and address your other written comments in our revision process.

The draft EPR is complete and includes all supporting reports and figures (except one table, which I will explain below). We have been circulating the technical reports to the TAC members with an interest in the different specialties as they have been completed, so many of you will have already seen and commented on these. In many cases, we have circulated revised versions reflecting your comments. To that end, we see these supporting reports as substantially complete and ready to be released for public review. The EPR main report provides a summary of these technical studies.

As Matthew mentioned in the meeting request, we are seeking your feedback on this draft EPR prior to issuing it with the Notice of Commencement of the Transit Project Assessment Process (we will lay out the anticipated schedule at our meeting). It's a big report, so we are hoping that you will focus primarily on the content and less on editing for style. Notwithstanding that, if you do come across anything that is stated inaccurately, or is unclear or grammatically incorrect, please do point that out. Note that there are still a few things that we are working on:

- The document has not yet been formatted for AODA compliance.
- Table 7-3 (Summary of Potential Impacts, Mitigation, and Commitments to Future Work and Monitoring) is not included in this draft (the table structure is there, but without content). This table is a summary of the key points from the narrative sections of Section 7, so it is not really “new” content. We wanted to hold off on this until we addressed comments from your review.
- We are still sourcing a few remaining sets of meeting notes for Appendix B.
- We need to do one more pass through the document to check for:
  - Consistent heading, bullet and table styles throughout the document
  - Tables and figures are all numbered, and numbered consecutively

- Cross-references in the text to tables, figures, appendices and other sections are correct
- Certain terminology is consistent throughout the document (e.g. Stage 2 ION, phase vs stage, etc.)
- References to direction are consistent, particularly in Preston (e.g. how we reference north/south vs east/west)
- We acknowledge that the file sizes are still quite large and we will need to consider how best to reduce these to be manageable yet not impact the quality of the figures.

Thank you all in advance for your effort in reviewing this draft report. I'm looking forward to (virtually) seeing you all on November 10 – it's been a long time since our last TAC meeting! If you have any questions in advance, please feel free to reach out to Matthew, me, or any of our WSP project team members copied above.

Denise

**Denise Morneau**, PMP, P.Eng.  
Senior Project Manager – Transportation Planning  
C+1 416-953-2893



-----Original Appointment-----

**From:** Matthew O'Neil <[MONeil@regionofwaterloo.ca](mailto:MONeil@regionofwaterloo.ca)>

**Sent:** October-09-20 3:17 PM

**To:** Matthew O'Neil; Amanda Kutler; Carmen De Leon; Morneau, Denise; Elaine Brunn Shaw; 'Jennifer Benedict'; Fisher, Jennifer; John Brum; Kornel Mucsi; Lenore Ross; Marcos Kroker; Martin Haalstra; Michael Vallins - CN ([michael.vallins@cn.ca](mailto:michael.vallins@cn.ca)); Malloy, Patrick; Reid Fulton; Khaled, Sami; Nairn, Sandy; 'Scott Howard'; Scott Reid; 'Shannon Noonan'; Shukla, Shveta; Steve van De Keere; Jane Gurney; Bridget Coady; Alana MacKinnon; Darryl Spencer

**Subject:** Stage 2 ION - TAC Meeting #12 > Draft EPR Review/Comments

**When:** November-10-20 10:00 AM-11:30 AM (UTC-05:00) Eastern Time (US & Canada).

**Where:** <https://zoom.us/j/96059174567?pwd=TCtzTFIzQ2xQSFV2MzBwVm9TeW9hdz09>

Please set aside this time for a project update and review your comments on the Stage 2 ION Draft EPR. The Draft EPR will be distributed later this month, leaving about 3 weeks to review. We will be looking for big issues only during this round of review, including factually incorrect statements, glaring omissions, that sort of thing. More details to come with the Draft EPR.



Hi there,

Matthew O'Neil is inviting you to a scheduled Zoom meeting.

## Join Zoom Meeting

Phone Canada: [+16475580588](tel:+16475580588), [96059174567](tel:+196059174567)#,.....0#, [800960](tel:+1800960)# or  
one-tap: [+17789072071](tel:+17789072071), [96059174567](tel:+196059174567)#,.....0#, [800960](tel:+1800960)#

Meeting <https://zoom.us/j/96059174567?pwd=TCtzTFIzQ2xQSFV2MzBwVm9TeW9hdz09>

URL:

Meeting 960 5917 4567

ID:

Passcode:800960

### **Join by Telephone**

For higher quality, dial a number based on your current location.

Dial:

Canada: +1 647 558 0588 or +1 778 907 2071 or +1 438 809 7799 or +1 587 328  
1099 or +1 647 374 4685

Meeting 960 5917 4567

ID:

Passcode:800960

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-LAEmlHhHzdJzBITWfa4Hgs7pbKl

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**From:** Hatcher, Laura (MHSTCI) [<mailto:Laura.E.Hatcher@ontario.ca>]

**Sent:** November-23-20 3:17 PM

**To:** Nairn, Sandy <[Sandy.Nairn@wsp.com](mailto:Sandy.Nairn@wsp.com)>

**Cc:** Matthew O'Neil <[MONeil@regionofwaterloo.ca](mailto:MONeil@regionofwaterloo.ca)>; Morneau, Denise <[Denise.Morneau@wsp.com](mailto:Denise.Morneau@wsp.com)>; Malloy, Patrick <[Patrick.Malloy@wsp.com](mailto:Patrick.Malloy@wsp.com)>; Fisher, Jennifer <[Jennifer.Fisher@wsp.com](mailto:Jennifer.Fisher@wsp.com)>; Khaled, Sami <[Sami.Khaled@wsp.com](mailto:Sami.Khaled@wsp.com)>; Shukla, Shveta <[Shveta.Shukla@wsp.com](mailto:Shveta.Shukla@wsp.com)>; Hamilton, James (MHSTCI) <[James.Hamilton@ontario.ca](mailto:James.Hamilton@ontario.ca)>; Barboza, Karla (MHSTCI) <[Karla.Barboza@ontario.ca](mailto:Karla.Barboza@ontario.ca)>; Batista, Cindy (MECP) <[Cindy.Batista@ontario.ca](mailto:Cindy.Batista@ontario.ca)>

**Subject:** RE: Stage 2 ION - Draft Environmental Project Report Review/Comments

**Attachments:** 2020-11-23 CambridgeStage2ION\_DraftEPRComments.pdf; 2020-11-23 CambridgeStage2iONComment table.pdf

Good afternoon Sandy,

Thank you for sharing the draft Environmental Project Report with the Ministry of Heritage, Sport, Tourism and Culture Industries for review and feedback. Please find comments from the Ministry attached. If you have any questions, please do not hesitate to contact me.

Regards,

Laura

**Laura Hatcher, MCIP, RPP**

Heritage Planner

Heritage Planning Unit | Programs and Services Branch | Heritage, Tourism and Culture Division

Ministry of Heritage, Sport, Tourism and Culture Industries

401 Bay Street Suite 1700 Toronto ON M7A 0A7

Tel. 437-239-3404 **New** | email: [laura.e.hatcher@ontario.ca](mailto:laura.e.hatcher@ontario.ca)

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**From:** Nairn, Sandy <[Sandy.Nairn@wsp.com](mailto:Sandy.Nairn@wsp.com)>

**Sent:** October-22-20 4:04 PM

**To:** Hatcher, Laura (MHSTCI) <[Laura.E.Hatcher@ontario.ca](mailto:Laura.E.Hatcher@ontario.ca)>; Barboza, Karla (MHSTCI) <[Karla.Barboza@ontario.ca](mailto:Karla.Barboza@ontario.ca)>

**Cc:** Matthew O'Neil <[MONeil@regionofwaterloo.ca](mailto:MONeil@regionofwaterloo.ca)>; Morneau, Denise <[Denise.Morneau@wsp.com](mailto:Denise.Morneau@wsp.com)>; Malloy, Patrick <[Patrick.Malloy@wsp.com](mailto:Patrick.Malloy@wsp.com)>; Fisher, Jennifer <[Jennifer.Fisher@wsp.com](mailto:Jennifer.Fisher@wsp.com)>; Khaled, Sami <[Sami.Khaled@wsp.com](mailto:Sami.Khaled@wsp.com)>; Shukla, Shveta <[Shveta.Shukla@wsp.com](mailto:Shveta.Shukla@wsp.com)>

**Subject:** Stage 2 ION - Draft Environmental Project Report Review/Comments

**CAUTION -- EXTERNAL E-MAIL - Do not click links or open attachments unless you recognize the sender.**

Hello Laura and Karla,

As part of the Transit Project Assessment [TPA] Process for the Stage 2 ION LRT from Kitchener to Cambridge, a draft Environmental Project Report (EPR) has been prepared (along with supporting environmental and engineering studies, and public meeting materials).

We would like to invite you to review and provide feedback on the draft EPR document prior to issuing the Notice of Commencement of the Transit Project Assessment Process for public review. It's a big report, so we are hoping that you will focus primarily on the content and less on editing for style. Notwithstanding that, if you do come across anything that is stated inaccurately, or is unclear or grammatically incorrect, please do point that out. Note that there are still a few things that we are working on:

- The document has not yet been formatted for AODA compliance.
- Table 7-3 (Summary of Potential Impacts, Mitigation, and Commitments to Future Work and Monitoring) is not included in this draft (the table structure is there, but without content). This table is a summary of the key points from the narrative sections of Section 7, so it is not really "new" content. We wanted to hold off on this until we addressed comments from your review.
- We are still sourcing a few remaining sets of meeting notes for Appendix B.
- We need to do one more pass through the document to check for:
  - Consistent heading, bullet and table styles throughout the document
  - Tables and figures are all numbered, and numbered consecutively
  - Cross-references in the text to tables, figures, appendices and other sections are correct
  - Certain terminology is consistent throughout the document (e.g. Stage 2 ION, phase vs stage, etc.)
  - References to direction are consistent, particularly in Preston (e.g. how we reference north/south vs east/west)
- We acknowledge that the file sizes are still quite large and we will need to consider how best to reduce these to be manageable yet not impact the quality of the figures.

If you are interested in reviewing the document or any of the appendices which include the Cultural Heritage Report and 12 Cultural Heritage Evaluation Reports (Appendix C5), please use the link below to request access.

[https://wsponline-my.sharepoint.com/:f:/r/personal/denise\\_morneau\\_wsp\\_com/Documents/Stage%20%20ION%20EPR%20-%20Draft%20October%202020?csf=1&web=1&e=2WwXgi](https://wsponline-my.sharepoint.com/:f:/r/personal/denise_morneau_wsp_com/Documents/Stage%20%20ION%20EPR%20-%20Draft%20October%202020?csf=1&web=1&e=2WwXgi)

Please let us know if you planning to provide review comments at this time. Your participation is an important part of this process and we welcome your input. We would appreciate receiving any written comments by the end of the day on Thursday, November 12.

If you wish to obtain further information or have any questions, please feel free to reach out to me or any of our project team members copied above.

Best Regards,

Sandy

**J.A. (Sandy) Nairn, RPP**  
National Manager, Environmental Planning  
Environment



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Pronouns: he, him, his

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du Sport, du Tourisme et de la Culture

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November 23, 2020

Email Only

J.A. (Sandy) Nairn, RPP  
National Manager, Environmental Planning  
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L6J 4A5 Canada  
[Sandy.Nairn@wsp.com](mailto:Sandy.Nairn@wsp.com)

**MHSTCI File :** 0003876  
**Proponent :** Region of Waterloo  
**Subject :** Draft Environmental Project Report – Transit Project Assessment Process  
**Project :** Stage 2 ION Light Rail Transit – Kitchener to Cambridge  
**Location :** Cities of Kitchener and Cambridge, Region of Waterloo

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Dear Sandy Nairn:

Thank you for providing the Ministry of Heritage, Sport, Tourism and Culture Industries (MHSTCI) with the Draft Environmental Project Report for the Stage 2 ION: Light Rail Transit from Kitchener to Cambridge (dated October 2020, prepared by WSP) for review. MHSTCI's interest in this project relates to its mandate of conserving Ontario's cultural heritage.

We understand that this project is following the Transit Project Assessment Process (TPAP) as defined in Ontario Regulation 231/08 under the *Environmental Assessment Act*. Under the TPAP, the proponent is required to consider whether its proposed transit project could have potential negative impact on a matter of provincial importance as defined under Ontario Regulation 231/08 or on a constitutionally protected Aboriginal or treaty right. Cultural heritage is identified as a matter of provincial importance under the TPAP.

### Project Summary

Region of Waterloo has undertaken a staged approach to light rail transit (LRT) from Waterloo to Cambridge. Stage 1 ION includes LRT from Kitchener to Waterloo and ION bus service between Cambridge and Kitchener. Stage 2 ION will see ION bus service replaced by LRT, creating a continuous LRT system across the region's three urban centres.

### Scope of Comments

Our comments cover our review of the Draft Environmental Study Report (ESR) as well as twelve Cultural Heritage Evaluation Reports (CHER) which were prepared to inform the TPAP EPR. The CHERs evaluate the following properties:

- 63 Water St S, Cambridge
- 69 Ainslie St S, Cambridge
- 1 Wellington St, Cambridge
- 99 Beverly St, Cambridge
- 127 Beverly St, Cambridge

- 320 Shantz Hill Rd, Cambridge
- 41 Kerr St, Cambridge
- Grantham Rail Bridge, Cambridge
- 105 Hespeler Rd, Cambridge
- Highway 401 Bridge over King Street East, Kitchener
- 4336 King St E, Kitchener
- 333 Hidden Valley Road, Kitchener

The following documents were referenced as part of the review:

- Cultural Heritage Report: Existing Conditions and Preliminary Impact Assessment (prepared by WSP) which was reviewed by MHSTCI in March 2020 and we had no further concerns.
- Stage 1 Archaeological Assessment (prepared by Archaeoworks), which was accepted onto the Ontario Public Register of Archaeological Reports on March 5, 2020.

### **Comments – Cultural Heritage Evaluation Reports**

We have no comments on the twelve CHERs prepared as part of this study.

### **Comments – Draft ESR**

Detailed comments are provided in the attached comment table provided by the project team.

Thank you for the opportunity to review the above-mentioned drafts. Should you have any questions, please contact the undersigned. Please also continue to keep us updated as the project proceeds.

Regards,

Laura Hatcher  
Heritage Planner  
Heritage Planning Unit  
Laura.e.hatcher@ontario.ca

c: Matthew O'Neil, Senior Engineer, Region of Waterloo  
Cindy Batista, Special Project Officer, MECP  
Denise Morneau, WSP  
Patrick Malloy, WSP  
Jennifer Fisher, WSP  
Sami Khaled, WSP  
Shveta Shulka, WSP  
James Hamilton, MHSTCI  
Karla Barboza, MHSTCI

It is the sole responsibility of proponents to ensure that any information and documentation submitted as part of their EA report or file is accurate. MHSTCI makes no representation or warranty as to the completeness, accuracy or quality of the any checklists, reports or supporting documentation submitted as part of the EA process, and in no way shall MHSTCI be liable for any harm, damages, costs, expenses, losses, claims or actions that may result if any checklists, reports or supporting documents are discovered to be inaccurate, incomplete, misleading or fraudulent.

Please notify MHSTCI if archaeological resources are impacted by EA project work. All activities impacting archaeological resources must cease immediately, and a licensed archaeologist is required to carry out an archaeological assessment in accordance with the *Ontario Heritage Act* and the *Standards and Guidelines for Consultant Archaeologists*.

If human remains are encountered, all activities must cease immediately and the local police as well as the Registrar, Burials of the Ministry of Government and Consumer Services (416-326-8800) must be contacted. In situations where human remains are associated with archaeological resources, MHSTCI should also be notified to ensure that the site is not subject to unlicensed alterations which would be a contravention of the *Ontario Heritage Act*.



## STAGE 2 ION - TRANSIT PROJECT ASSESSMENT TECHNICAL ADVISORY COMMITTEE REVIEW OF DRAFT EPR

Reviewer Name:

Laura Hatcher, Heritage Planner

Reviewer Organization/Office:

Ministry of Heritage, Sport, Tourism and Culture Industries

Item No.	Chapter/Section	Comment
1	General, throughout report	<p>The terms “Cultural and Built Heritage” are used throughout the report in section headings, tables, and within the text. For consistency with provincial legislative framework we recommend using the terms “built heritage resources and cultural heritage landscapes” when referring to these resources.</p> <p>Similarly, it appears that the term “cultural heritage resources” is being used in places where it may be more appropriate or precise to say “built heritage resources and cultural heritage landscapes”. “Cultural heritage resources” is a more general term and can be used to refer to archaeological resources as well.</p>
2	Chapter 5 Existing Conditions,  5.2.1 Cultural and Built Heritage	<p>In the first sentence in the second paragraph, it is unclear what is meant by the highlighted text:</p> <p>The existing cultural heritage conditions <b>were identified through a physical description of the study area</b>'s local context, physiography, Indigenous and Euro-Canadian history.</p> <p>We recommend the following changes:</p> <p>The existing cultural heritage conditions were identified through <b>research into a physical description</b> of the study area's local context, physiography, Indigenous and Euro-Canadian history.</p>
3	Chapter 5 Existing Conditions,	<p>The second last paragraph in this section describes the findings of the Cultural Heritage Report – Existing Conditions and Preliminary Impacts Assessment (dated May 2020, prepared by WSP) and states that there are 192 properties with known or potential</p>

	5.2.1 Cultural and Built Heritage	cultural heritage value or interest (CHVI) located within or adjacent to the preferred route. The Cultural Heritage Report states that there are 225 cultural heritage landscapes and built heritage resources within or adjacent to the rail corridor. Please explain the difference in these figures.
4	Chapter 5 Existing Conditions,  5.2.2 Archaeology	<p>Please include the Project Information Form number (PIF #) for the Archaeological Assessment report and a statement that it was accepted into the Ontario Public Register of Archaeological Reports on March 5, 2020.</p> <p>We recommend the following introductory text is included in this section:</p> <p><i>A Stage 1 archeological assessment (PIF number) was undertaken on [date] by [consultant archaeologist] for [property or study area]. A Stage 1 AA consists of a review of geographic, land use and historical information for the property and the relevant surrounding area, a property visit to inspect its current condition and contacting MHSTCI to find out whether, or not, there are any known archaeological sites on or near the property. Its purpose is to identify areas of archaeological potential and further archaeological assessment (e.g. Stage 2-4) as necessary. The Stage 1 AA is included in Appendix X and has been accepted into the Ontario Public Register of Archaeological Reports.</i></p>
5	Chapter 5 Existing Conditions,  5.2.2 Archaeology	The last sentence of this section can be removed and discussed in Chapter 7 as a commitment for further work. The EPR should include maps showing where stage 2 AA work will take place.
6	Chapter 7 Impact Assessment, Mitigation and Monitoring,  7.2.1 Cultural and Built Heritage	This section should provide an overview of the potential project impacts on built heritage resources and cultural heritage landscapes. Section 7.2 “Draft Environment Project Report Language” of the Cultural Heritage Report provides a summary paragraph that it recommends is included in the EPR. Section 7.2 of the Cultural Heritage Report also recommends including a table summarizing these impacts and mitigation measures. We recommend that this paragraph is included here.

		The table summarizing the impacted properties should also be included in this section, or as an appendix. The table should be based on the format and content in Table 3 in Appendix A of the Cultural Heritage Report but edited to include only the properties that will be potentially impacted by the project.
7	Chapter 7 Impact Assessment, Mitigation and Monitoring,  7.2.1 Cultural and Built Heritage,  Subsection (1) General Mitigation Considerations	This section describes potential negative impacts, not mitigation considerations. It is suggested that the title of this section is changed to “General Impact Considerations”.
8	Chapter 7 Impact Assessment, Mitigation and Monitoring,  7.2.1 Cultural and Built Heritage,  Subsections (2) to (13)	This section goes on to provide brief descriptions of the 12 potential built heritage resources that will potentially be directly and adversely impacted by the project and which went on to be evaluated with a CHER. After evaluation, seven of those properties were found to have CHVI. The property descriptions for the five properties determined not to have CHVI can be removed from the body of the report, since they are no longer considered built heritage resources and no further impact assessment is required.  In order to present a more balanced and complete picture of potential project impacts, we recommend that these 12 properties are not the focus of the report text. Instead, the outcome of the CHERs that have been completed so far can be summarized in the table mentioned in comment #6 above (i.e. updating the information that was provided in the Cultural Heritage Report).

9	Chapter 7 Impact Assessment, Mitigation and Monitoring,  7.2.1 Cultural and Built Heritage	The Cultural Heritage Report recommends that a Heritage Impact Assessment is prepared during the TPAP process for 155 Chopin Dr (CHR 195). That HIA was not included in the EPR package provided to MHSTCI and it is not mentioned in the EPR text. Please include that information in the report, or explain why it is no longer included.
10	Chapter 7 Impact Assessment, Mitigation and Monitoring,  7.2.2 Archaeological Resources,  Subsection (2) Mitigation Measures	<p>In addition to the general mitigation measures provided in this section, please include the following specific mitigation measures from the Stage 1 AA recommendations:</p> <ul style="list-style-type: none"> <li>• Parts of the study corridor that were identified as no longer retaining archaeological potential are exempt from Stage 2 AA; extents of these areas to be confirmed during the Stage 2 AA.</li> <li>• Parts of the study corridor that were identified as having no or low archaeological potential are exempt from requiring Stage 2 AA; extents of these areas to be confirmed during the Stage 2 AA.</li> <li>• All parts of the study corridor which retain archaeological potential must be subjected to a Stage 2 AA. These areas must be subjected to test pit survey at five metre intervals in accordance with <i>Section 2.1.2</i> of the <i>2011 S&amp;G</i>.</li> <li>• Should construction activities extend beyond the assessed limits of the study corridor, further archaeological investigation will be required to assess the archaeological potential of these lands.</li> </ul> <p>Include a map showing areas where Stage 2 AA is required.</p> <p>This section should also include the following: <i>Stage 2 AA, and any subsequent studies recommended by the Stage 2 AA, will be completed as early as possible during detailed design and prior to any ground disturbing activities.</i></p>

11	<p>Chapter 7 Impact Assessment, Mitigation and Monitoring</p> <p>Table 7-3: Summary of Potential Impacts, Mitigation and Commitments to Future Work and Monitoring, “Culture and Built Heritage” row</p>	<p>See general comments regarding terminology. Change the name of this row to “Built Heritage and Cultural Heritage Landscapes”.</p> <p><b>Impact column:</b></p> <p>Summarize number of heritage properties that will be impacted or potentially impacted. Direct reader to the summary table which outlines the impacts.</p> <p><b>Mitigation column:</b></p> <p>Summarize the mitigation strategies outlined in section 6.1 of the Cultural Heritage Report, and direct reader to the summary table which outlines mitigation measures for the 105 properties.</p> <p><b>Commitments to future work/monitoring column:</b></p> <p>Any recommendations for future studies, monitoring and other commitments from the Cultural Heritage Report should be included here as commitments. Specifically, recommendations 2, 3, 5, 6, 8, 9, 10, 11 should be included.</p> <p>Add the following commitment:</p> <p><i>» Project team will provide MHSTCI with a summary update once all CHERs and HIAs are complete, stating which properties were confirmed to have CHVI and explaining how built heritage resources and cultural heritage landscapes will be conserved.</i></p>
12	<p>Chapter 7 Impact Assessment, Mitigation and Monitoring</p> <p>Table 7-3: Summary of Potential Impacts,</p>	<p>This row has been left blank. We recommend that it summarizes the recommendations of the Stage 1 Archaeological Assessment and commits to completing the Stage 2 (and any stage 3 or 4, as required) archaeological assessment as early as possible during detailed design and prior to any ground disturbing activities.</p>

	Mitigation and Commitments to Future Work and Monitoring, "Archaeology" row	
13	Chapter 8 Approvals, Monitoring and Commitments to Future Work,  8.1 Permits and Approvals - Provincial Approvals	<p>The title of this section should be changed to Permits, Approvals <b><u>and other Requirements</u></b> and Provincial Approvals <b><u>and other Requirements</u></b>. This will reflect that MHSTCI does not have a permitting or approval role.</p> <p>We recommend the second last bullet is updated, and broken up into as follows:</p> <p>» <i>Stage 2 archaeological assessment (and stage 3 and 4 archaeological assessment, if required) be accepted into the Ontario Public Register of Archaeological Reports maintained by MHSTCI.</i></p> <p>» <i>Project team will provide MHSTCI with a summary update once all CHERs and HIAs are complete, stating which properties were confirmed to have CHVI and explaining how built heritage resources and cultural heritage landscapes will be conserved.</i></p>

# Agency Meeting Minutes

## MINUTES OF MEETING – TAC Meeting No. 1

<b>PROJECT</b>	Region of Waterloo – Stage 2 LRT TPAP
<b>OBJECTIVE</b>	To provide an overview of the project, identify alternative alignment challenges and opportunities, and gather additional input and data from TAC members.
<b>DATE / TIME</b>	February 25, 2016 @ 9:30am
<b>LOCATION</b>	100 Maple Grove, Boardroom
<b>PROJECT No.</b>	151-07859-00
<b>FILE</b>	

<b>Attendees</b>	<b>Organization</b>	<b>Phone Number</b>
Aaron McCrimmon-Jones	City of Kitchener	Aaronmccrimmon-jones@kitchener.ca
Matthew O’Neil	Region of Waterloo	MO’Neil@regionofwaterloo.ca
Shannon Noonan	City of Cambridge	noonans@cambridge.ca
Paula Sawicki	Region of Waterloo	psawicki@regionofwaterloo.ca
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Denise Morneau	WSP	morneaud@mmm.ca
Eric Peissel	WSP	Eric.peissel@wspgroup.com
Irene Hauzar	WSP	ihauzar@pbworld.com

<b>Item No.</b>	<b>Discussion</b>	<b>Action By</b>
	These notes summarize the key discussion items and questions that were raised during the presentation. The presentation slides are appended for reference.	
<b>1.0</b>	<b>Slides 8-10 (Public Consultation Centre No. 1)</b>	
	<ul style="list-style-type: none"> <li>The TAC inquired how the comments about avoiding the Eagle/Hespler intersection were addressed. WSP advised that alternatives for this area will be discussed later in the presentation.</li> </ul>	
<b>2.0</b>	<b>Slides 11-18 (Design Criteria)</b>	
	<ul style="list-style-type: none"> <li>The TAC requested that the design team verify the sidewalk widths with and without boulevard for the Community Connector, as they may be reversed in the table.</li> <li>The TAC indicated that buffer and landscape zones should be included where possible.</li> </ul>	<p>WSP</p> <p>WSP</p>



Item No.	Discussion	Action By
	<p>with MOECC. WSP and RMW advised that the River Road EA is advancing as is, and strategies for addressing Alternative F2 will need to be assessed.</p> <ul style="list-style-type: none"> <li>• The TAC suggested a refinement to Alternative F2 to follow the south side of Highway 8, joining Alternative K2. WSP noted that given the environmental sensitivities of the lands, an alignment in this area does not appear to be feasible, however this will be confirmed.</li> <li>• The TAC advised of the potential through the East Side Lands project to close Riverbank Dr at King Street. WSP noted that this could address some of the technical challenges of the crossing of the Grand River, and will examine this in more detail. However, the Riverbank Drive closing occurs only after another means of access to the other end of Riverbank Drive is secured through the Creekside lands.</li> </ul>	WSP
<b>4.0</b>	<b>Slide 22 (North Cambridge Alternatives)</b>	
	<ul style="list-style-type: none"> <li>• Regarding Alternative N2, the TAC advised that Fountain Street at Maple Grove Road, and other intersections along Maple Grove Road and Speedsville Road, may be considered for roundabouts. WSP noted that LRT through movements can be accommodated through a roundabout with the use of barriers, however turning the alignment at Maple Grove and Speedsville would be challenging through a roundabout configuration. WSP also noted that having a consistent method of traffic operations along a roadway is important, rather than alternating between roundabouts and traffic signals.</li> <li>• WSP noted that an LRT station will be required along Alternative N2, which is currently shown at the Speedsville and Maple Grove intersection. The TAC indicated that this area contains Prime Farmland, environmentally protected lands which will not be subject to development. WSP will explore other more suitable options for a station to better integrate with current and future development.</li> <li>• The TAC advised that the Briardean Rd and Equestrian Lane area has a draft plan of subdivision that has recently been approved, and Briardean and Speedsville Rd may be turned into a roundabout. The TAC inquired whether Alternative N2 could follow Cherry Blossom Drive, and WSP noted that this was considered and initially screened out in the Stage 2 TPA process, and will provide additional information on this at the next TAC meeting.</li> </ul>	WSP  WSP
<b>5.0</b>	<b>Slide 24 (Central Cambridge Alternatives)</b>	
	<ul style="list-style-type: none"> <li>• The TAC advised that the railway spur located south of Eagle and Hespeler Rd is part of a growth intensification study and Secondary Plan area. The existing Groff Creek in this area is undergoing a reassessment to change the classification of the existing floodplain, with a public meeting to be held on March 1. WSP will obtain information from GRCA.</li> <li>• WSP will incorporate the Cambridge Centre Terminal into the drawings.</li> <li>• As noted previously, WSP will examine access management options in order to consolidate the number of driveways along Hespeler Rd during the preliminary design phase.</li> </ul>	WSP WSP WSP

Item No.	Discussion	Action By
6.0	<b>Slide 26 (South Cambridge Alternatives)</b>	
	<ul style="list-style-type: none"> <li>The TAC inquired whether there were any additional creative ways to address the Delta intersection. WSP will examine the benefits and impacts of reducing Dundas Street to 1 lane in each direction for Alternative S2b, and opportunities to reconfigure the Hespeler/Dundas intersection to better accommodate the LRT operation.</li> </ul>	WSP
7.0	<b>Slide 28 (Evaluation Criteria)</b>	
	<ul style="list-style-type: none"> <li>TAC members were asked to review the draft evaluation criteria matrix to verify that the criteria are appropriate and provide feedback to WSP by email.</li> </ul>	TAC
8.0	<b>Next Meeting</b>	
	<ul style="list-style-type: none"> <li>TAC #2 was tentatively scheduled for April 6, 2016. P. Sawicki will send out a formal meeting request.</li> </ul>	PS

# RMW STAGE 2 ION LRT TPA PROCESS

## TECHNICAL ADVISORY COMMITTEE NO. 1

*FEBRUARY 25, 2016*

# MEETING AGENDA

- **Introductions**
- **Meeting Objective**
- **Project Overview (schedule + major deliverables)**
- **Public Consultation No. 1 Results**
- **Design Criteria**
- **Alternative Routes (challenges and opportunities)**
  - **Kitchener**
  - **Northern Cambridge**
  - **Central Cambridge**
  - **Southern Cambridge**
- **Evaluation Criteria**
- **Next Meeting**

# TODAY'S MEETING OBJECTIVES

- Provide an overview of the project
- Identify alternative alignment challenges and opportunities
- Gather additional input and data from TAC members

# PROJECT OVERVIEW

## Previous Work (2015)

- Project commenced mid-2015
- Developed Scope of Work and Project Schedule
- Conducted stakeholder meetings with CP Rail, GRCA, City of Cambridge, City of Kitchener, and Region of Waterloo
- Determined Primary and Secondary Study areas
- Conducted Public Consultation Centre No. 1
- Collection of existing conditions information
- Development of high level alternatives

# PROJECT OVERVIEW

## Ongoing Work to PCC No. 2

- Update inventory of the general baseline conditions for the following:
  - Transit/Traffic/Railway operations and planning
  - Pedestrian/cycling operations/safety
  - Natural Heritage Features
  - Socio-Economic Features
  - Built Heritage/Cultural Landscape
  - Archaeology
  - Noise and Vibration and Air Quality
  - Alignments/Layouts/Cross Sections
- Development of design criteria and LRT corridor cross-sections
- Development and assessment of alternatives
- Evaluation
- Identification of the preliminary preferred option
- Stakeholder consultation

# PROJECT OVERVIEW

## Upcoming Work following PCC No. 2

- Confirmation of the Preferred Alternative
- Preliminary Design of the Preferred Alternative
- Stakeholder Consultation
- Notice of Commencement
- Preferred Alternative Analysis
- Implementation Plan (Costs and Schedule)
- Business Case
- PCC No. 3-Presentation of the Preferred Alternative
- Environmental Project Report (EPR)
- Notice of Completion

# PUBLIC CONSULTATION CENTRE NO. 1

Date/Venue	Total Attendance	Written Comments Received
November 18, 2015 Cambridge City Hall (Bowman Room), Cambridge	85	30
November 19, 2015 Kingsdale Community Centre, Kitchener	41	6
Total Comments received via email	N/A	28
<b>Total</b>	<b>126</b>	<b>64</b>



# PCC NO. 1 SUMMARY-HIGHLIGHTS OF COMMENTS

1. **What are your comments and opinions re: the LRT route alternatives and stop locations?**
  - Include a stop at Preston
  - Avoid the Sportsworld Stop and instead focus on the Preston Stop
  - Integrate Sportsworld with GO/Greyhound/MTO carpool lot
  - Avoid Eagle/Pinebush/Hespeler intersection
  - Include a route to the Freeport Hospital

## PCC NO. 1 SUMMARY-HIGHLIGHTS OF COMMENTS

### **2. Are there any other environmental, land use, transportation, or technical factors that the Project Team should consider when evaluating the route alternatives?**

- Respect the heritage of downtown Galt core area
- Have tracks at the median, not curb on Hespeler Rd
- Concerns about existing development on Water St
- Minimize conflicts with CP and expensive grade separations
- Minimize interference with wetlands and rivers
- Serve employment lands and the airport
- Integrate with future GO stations
- Integrate Sportsworld into a transportation hub for Greyhound, GO and GRT

## PCC NO. 1 SUMMARY-HIGHLIGHTS OF COMMENTS

### 3. Do you have any other comments or suggestions?

- South Cambridge Option 1 is good because it avoids the Delta, Water and Ainslie Streets
- Consider adding stops at the following locations to supplement those already shown:
  - Stop between Fairview and Maple Grove
  - Stop between Fountain Street and Toyota Plant
  - Stop at Eagle St between King St and Hespeler Rd
  - Stop on Hespeler Rd/Sheldon Drive
  - Stop on Water St/Parkhill Rd
- Important to keep the Preston stop

# DESIGN CRITERIA

Addressed design requirements in three typical contexts:

- Community Connector
- Neighbourhood-Avenue
- Neighbourhood-Main Street

# DESIGN CRITERIA

Criteria		Community Connector		Neighbourhood - Avenue		Neighbourhood - Main Street	
		Minimum (m)	Preferred (m)	Minimum (m)	Preferred (m)	Minimum (m)	Preferred (m)
1. Lanes	Curb lane width without bike lane <small>(note 1)</small>	3.35	3.65	3.35	3.65	3.05	3.65
	Curb lane width with bike lane <small>(note 1)</small>	3.35	3.35	3.35	3.35	3.35	3.35
	Carriageway between two non-mountable obstacles	4.8	5.5	4.8	5.5	4.8	5.5
	Other travel lane width	3.25	3.35	3.25	3.35	3.25	3.25
	Auxiliary turn lane width	3.0 <small>(note 2)</small>	3.25	3.0 <small>(note 2)</small>	3.25	3.0 <small>(note 2)</small>	3.25
	Dual left turn lane width	3.5	3.5	3.5	3.5	3.5	3.5
	Curb width	0.21	0.5	0.21	0.5	0.21	0.5
	Transit lane width	3.35	3.65	3.35	3.65	3.35	3.65

# DESIGN CRITERIA

Criteria		Community Connector		Neighbourhood - Avenue		Neighbourhood - Main Street	
		Minimum (m)	Preferred (m)	Minimum (m)	Preferred (m)	Minimum (m)	Preferred (m)
2. Medians	Median for safety and separation	1.75	3.0	1.75	3.0	1.75	4.75
	Median for access control	3.0	3.0	3.0	3.0	3.0	4.75
	Median for infrastructure	1.0	1.6	1.0	1.6	1.0	1.5
3. Pedestrian facilities <small>(note 3)</small>	Sidewalk width with blvd	1.5	1.8	1.5	2.1	1.5	2.5
	Sidewalk width without blvd (curb-face)	1.8	2.1	1.8	2.1	1.8	2.1
	Crosswalk width	3.0	4.0	3.0	4.0	3.0	4.0
	Median for refuge	1.75	3.0	1.75	3.0	1.8	3.0
	Buffer zone	0.5	0.8	0.5	0.5	0.5	0.5
	Landscape zone	1.0	3.0	1.0	4.0	1.0	3.0
	Multiuse Trail	3.0	3.0	3.0	3.0	n.a.	n.a.

# DESIGN CRITERIA

Criteria		Community Connector		Neighbourhood - Avenue		Neighbourhood - Main Street	
		Minimum (m)	Preferred (m)	Minimum (m)	Preferred (m)	Minimum (m)	Preferred (m)
<b>4. Cycling facilities</b>	Bike lane width	1.25	1.5	1.25	1.5	1.25	1.25
	Buffered bike lane width	1.5+0.5 buffer	1.5+0.7 buffer	1.5+0.5 buffer	1.5+0.7 buffer	n.a.	n.a.
	Sharrow lane width	4.0	4.2	4.0	4.2	4.0	4.2
	Raised bike lane width	1.8+0.4 curb	1.8+0.4 curb	1.8+0.4 curb	1.8+0.4 curb	1.8+0.4 curb	1.8+0.4 curb
<b>5. Parallel Parking</b>	Parking lane width (not adjacent to cycle lane)	2.4 (note 4)	2.8 (note 4)	2.4 (note 4)	2.8 (note 4)	2.4 (note 4)	2.8 (note 4)
	Parking lane width (adjacent to cycle lane)	2.5	2.8	2.5	2.8	2.5	2.8
<b>6. Platforms</b>	Platform width (single direction)	2.5	3.5	2.5	3.5	2.5	3.5
	Platform width (bidirectional)	4.5	6.0	4.5	6.0	4.5	6.0
	Platform length	65.0	65.0	65.0	65.0	65.0	65.0

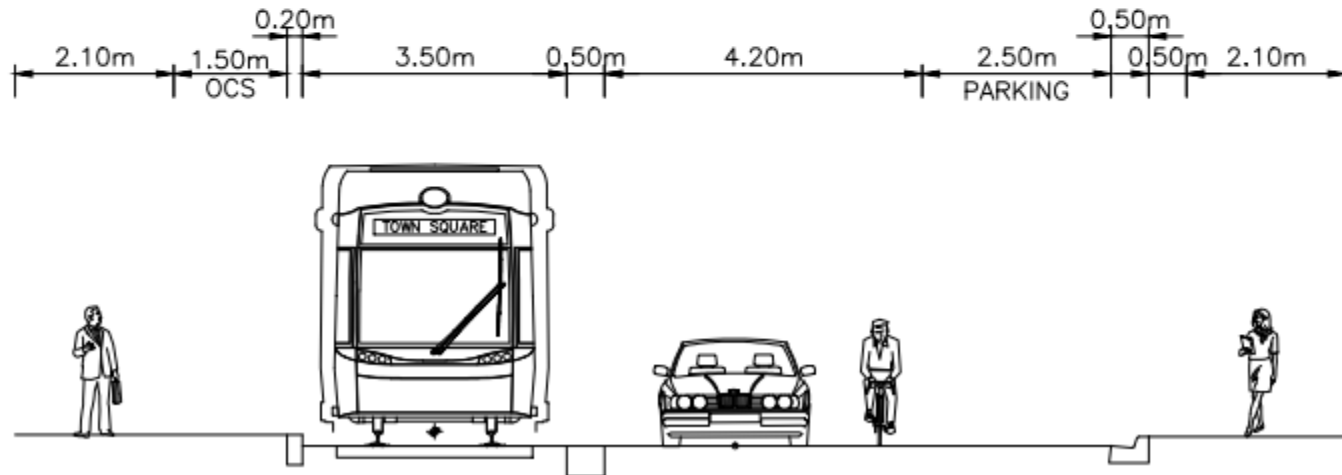
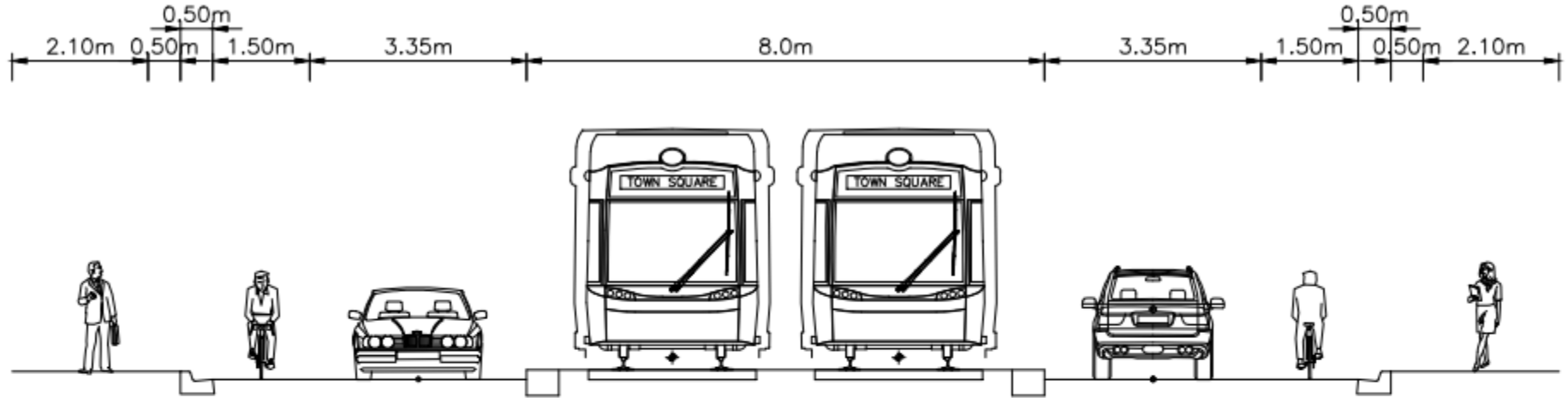
# DESIGN CRITERIA

Criteria		Community Connector		Neighbourhood - Avenue		Neighbourhood - Main Street	
		Minimum (m)	Preferred (m)	Minimum (m)	Preferred (m)	Minimum (m)	Preferred (m)
<b>7. Driveways</b> (note 5)	Commercial two-way driveway width	7.6	9.0	7.6	9.0	7.6	9.0
	Commercial one-way driveway width	4.6	4.6	4.6	4.6	4.6	4.6
	High volume commercial driveway width	9.0	15.0	9.0	15.0	9.0	15.0
	Non-commercial driveway width	3.7	6.0	3.7	6.0	3.7	6.0
<b>8. Radii</b>	Curb radius	7.5 (note 6)	9.0 (note 6)	context (note 6)	9.0 (note 6)	context (note 6)	9.0 (note 6)
	LRT Turn Radius	25.0	n.a.	25.0	n.a.	25.0	n.a.
<b>9. Design Speeds</b>	Design speed RT	Posted	Posted	Posted	Posted	Posted	Posted
	Design speed general traffic	Posted (note 7)	Posted (note 7)	Posted (note 7)	Posted (note 7)	Posted (note 7)	Posted (note 7)

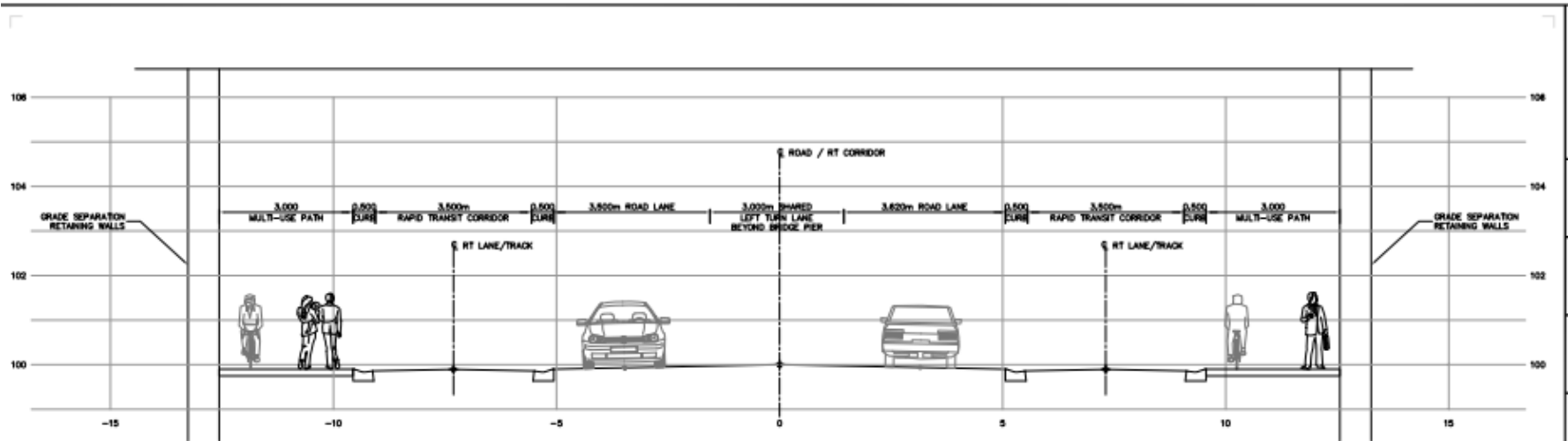
# DESIGN CRITERIA

Criteria		Community Connector		Neighbourhood - Avenue		Neighbourhood - Main Street	
		Minimum (m)	Preferred (m)	Minimum (m)	Preferred (m)	Minimum (m)	Preferred (m)
10. Design Vehicles	LRT Design Vehicle	2.65m wide / 30m long LRV car / 2-car trains					
	Left-turn Design Vehicle	WB-17	WB-20	WB-17	WB-20	SU	WB-19
	Right-turn Design Vehicle	WB-17	WB-20	WB-17	WB-20	SU	WB-19
11. Grades	Max. Grade (%)	6.0	6.0	6.0	6.0	6.0	6.0
	Min. Grade (%)	0.5	0.5	0.5	0.5	0.5	0.5
12. Vertical Clearances	Road-over-rail	7.01	7.01	7.01	7.01	7.01	7.01
	Road-over-road	5.0	5.4	5.0	5.4	5.0	5.4
	Road-over-LRT	5.0	5.4	5.0	5.4	5.0	5.4
	Signal Structures	5.0	5.0	5.0	5.0	5.0	5.0
13. Other	Sight triangle for region-city intersection	7.62	7.62	7.62	7.62	7.62	7.62
	Sight triangle for region-region intersection	15.24	15.24	15.24	15.24	15.24	15.24
	Super-elevation Rate (%)	6.0 max		4.0 max		4.0 max	
	Pavement Cross Slope (%)	1.5	2.0	1.5	2.0	1.5	2.0

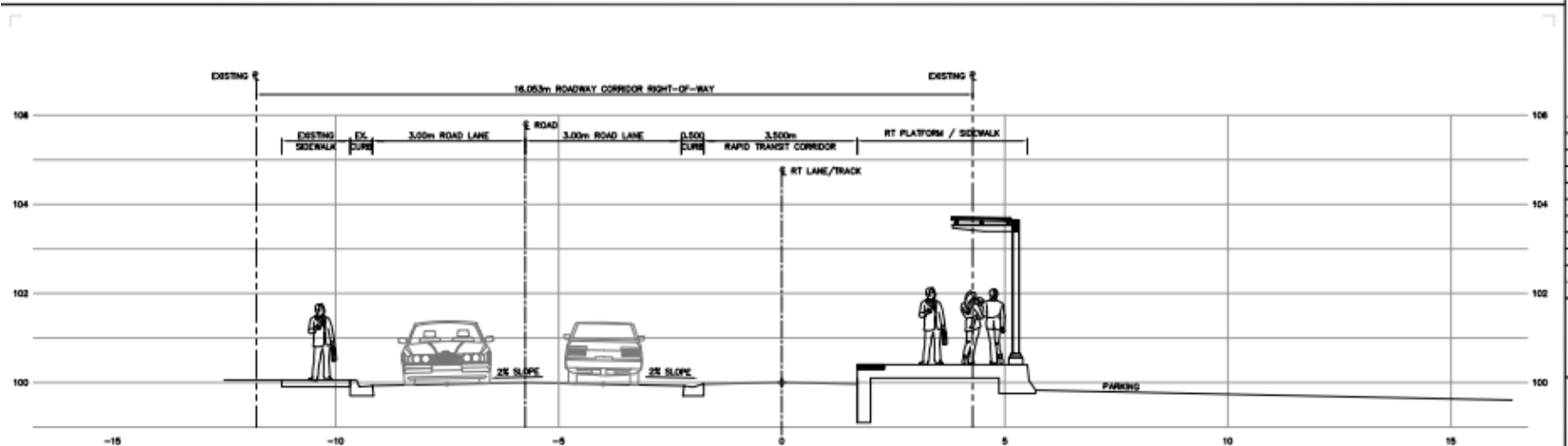
# TYPICAL CROSS SECTION



# TYPICAL CROSS SECTION FROM STAGE 1 TPAP



**SECTION 'G'-'G'**  
 KING STREET AT THE CN GUELPH SUBDIVISION  
 264336-SK-2011, SHEETS 14,15  
 1:50

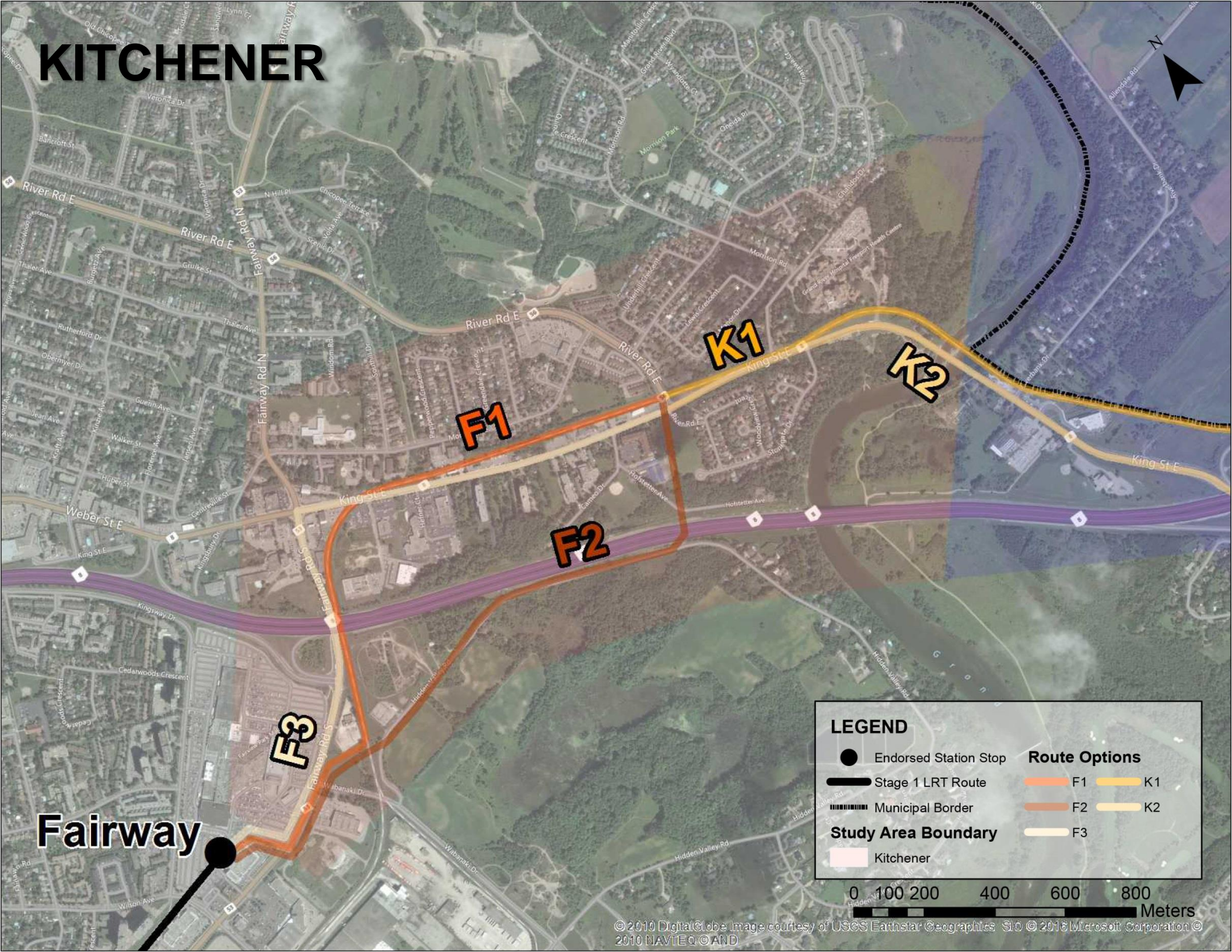


**SECTION 'H'-'H'**  
 DOWNTOWN KITCHENER LOOP - DUKE STREET  
 264336-SK-2011, SHEET 16  
 1:50

## ALTERNATIVE ALIGNMENT OVERVIEW

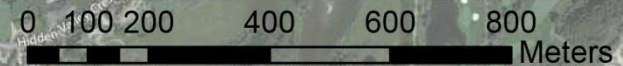
- a. Kitchener
- b. Northern Cambridge
- c. Central Cambridge
- d. Southern Cambridge

# KITCHENER



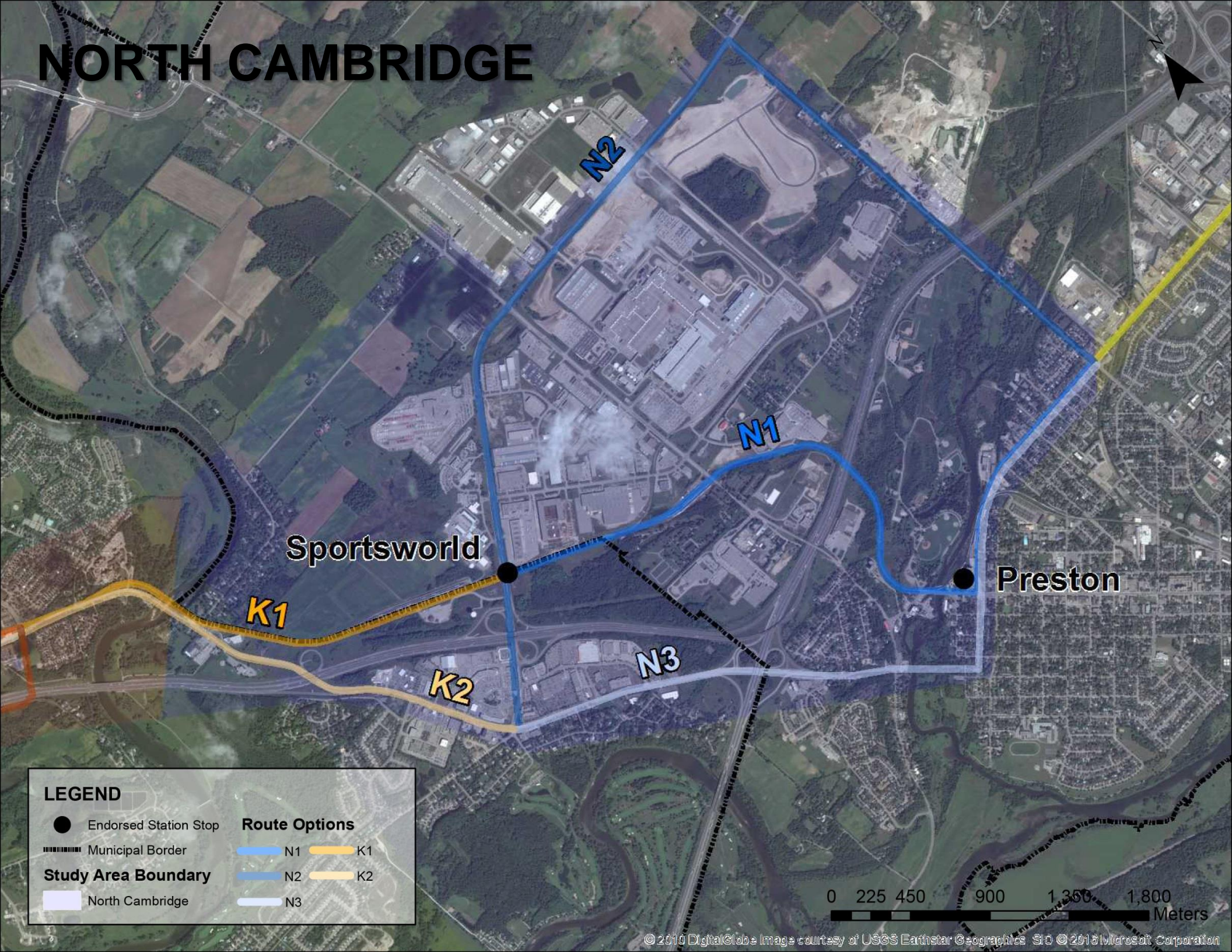
**LEGEND**

●	Endorsed Station Stop	<b>Route Options</b>
—	Stage 1 LRT Route	F1
- - -	Municipal Border	F2
□	Study Area Boundary	F3
□	Kitchener	K1
		K2



# DISPLAY PDF DRAWINGS FOR KITCHENER SEGMENT

# NORTH CAMBRIDGE



## LEGEND

● Endorsed Station Stop

--- Municipal Border

Study Area Boundary

□ North Cambridge

## Route Options

— N1 — K1

— N2 — K2

— N3

0 225 450 900 1,350 1,800 Meters

# DISPLAY PDF DRAWINGS OF NORTH CAMBRIDGE

# CENTRAL CAMBRIDGE

Pinebush

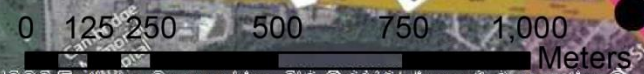
C1

Cambridge Centre Mall

Can-Amara

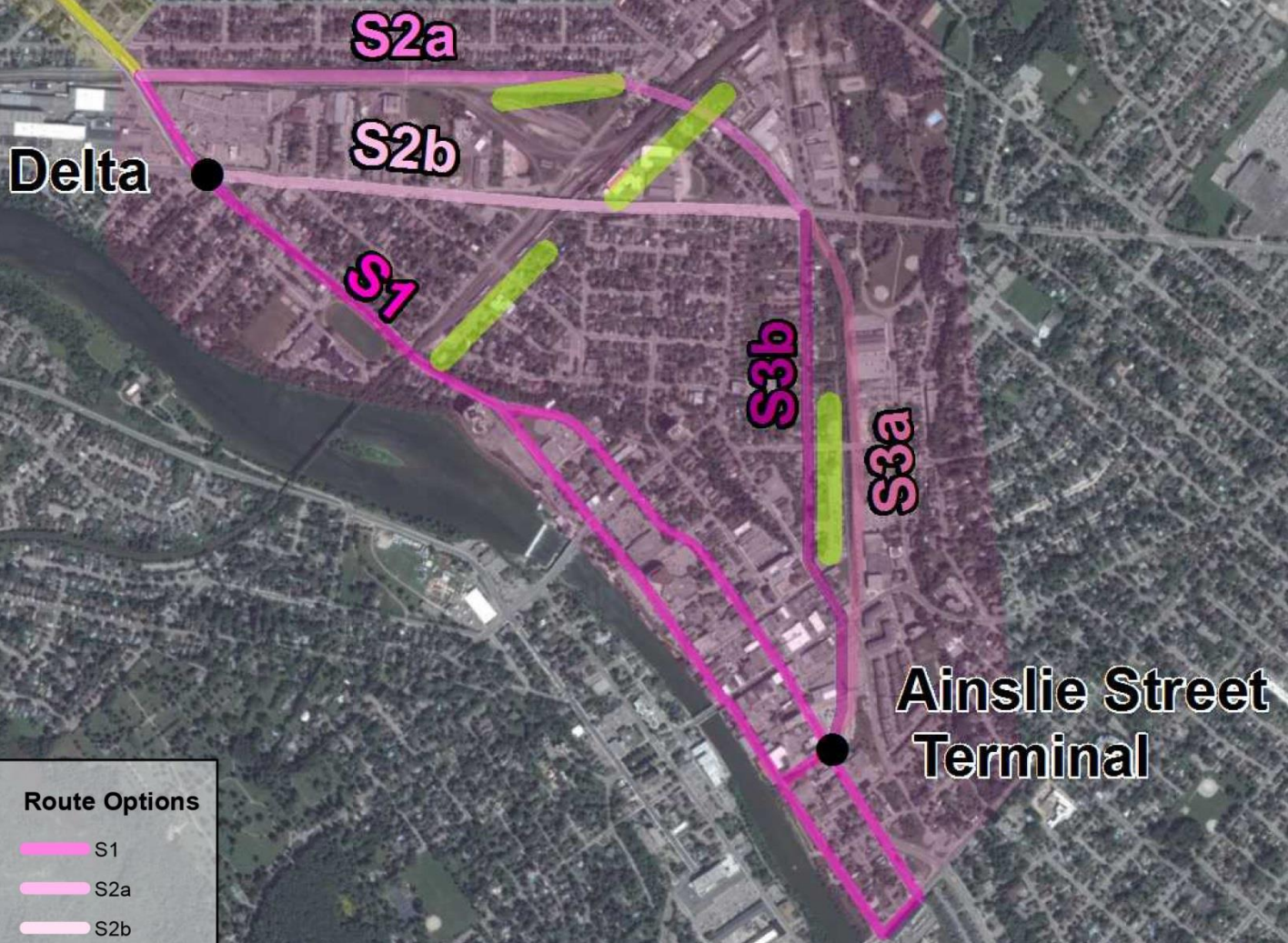
**LEGEND**

- Endorsed Station Stop
- Study Area Boundary**
- Central Cambridge
- Route Options**
- C1



# DISPLAY PDF DRAWINGS OF CENTRAL CAMBRIDGE

# SOUTH CAMBRIDGE



LEGEND	
●	Endorsed Station Stop
■	Potential GO Station
■	Study Area Boundary
■	South Cambridge
Route Options	
■	S1
■	S2a
■	S2b
■	S3a
■	S3b



# DISPLAY PDF DRAWINGS OF SOUTHERN CAMBRIDGE

# EVALUATION CRITERIA

Objective	Evaluation Criteria		Alignment #	Alignment # etc
	Criteria	Indicator		
<b>Transportation and Mobility</b>				
	Ability to Serve Major Trip Generators	Document where high quality interface between modes can occur		
	Impact on traffic operations	Document impact on existing traffic operations		
	Engineering Challenges	Document # of CP rail crossings, slope concerns, MTO highway ramps, weir impacts		
		Slope concerns		
		MTO highway ramps		
		Weir impacts		
	Physical Constraints	RoW widths, building fabric, turning radius		
	Intersection Considerations	Identify how intersections operations could be impacted by the LRT		
<b>Social/Cultural Environment</b>				
	Residential Intensification Locations	Determine where residential intensification locations are located within the study area		
	Employment centres	Determine where major employment centres are located		
	Minimize Property Requirements	Determine preliminary property impacts		
	Transit and Pedestrian Supportive Land Use Planning Policy	Determine if LRT adheres to existing planning policy		
	Minimize Cultural Heritage impacts	Determine if impacts to cultural heritage buildings/structures could occur		
<b>Natural Environment</b>				
	Floodplains	Determine floodplain constraints		
<b>Economic Impact</b>				
	Ability to serve concentrations of employment	Will the alignment be located to areas that will serve workers		
	Opportunity for intensification and revitalizations	Will the alignment serve areas that can benefit from intensification or revitalization		
	Cost	Are any alignments cost prohibited		

\* Indicators will be further broken down where appropriate

- Over the next few weeks, we will be contacting you for additional background information, related to existing conditions, that could include the following:
  - Hydraulic model files
  - Geotechnical erosion studies
  - Future road improvements
  - Etc.

## DRAFT PROJECT SCHEDULE

- Complete data collection and analysis: Winter/Spring 2016
- Refinement and detailed analysis of corridor alternatives: Spring 2016
- TAC Meeting #2 to present evaluation results and preliminary preferred alternative: June 2016
- PCC #2: September 2016
- Development and assessment of preliminary design alternatives: Summer/Fall 2016
- TAC Meeting #3 to present preliminary design of the Preferred Alternative: Fall 2016
- PCC #3: Late Fall 2016
- Notice of Commencement of TPAP: Late 2016
- Notice of Completion/Submission of EPR: Spring 2017

## NEXT MEETING

- Present the evaluation of the alternative alignments
- Preliminary Preferred Alternative
- Meeting date to be confirmed later this spring

THANK YOU

## MINUTES OF MEETING – TAC Meeting No. 2

<b>PROJECT</b>	Region of Waterloo – Stage 2 LRT TPA Process
<b>OBJECTIVE</b>	To revisit alternative alignment challenges and opportunities, discuss alignment changes, and gather additional input on evaluation framework from TAC members.
<b>DATE / TIME</b>	April 06, 2016, 9:30am
<b>LOCATION</b>	City of Cambridge, City Hall, Second Floor Boardroom
<b>PROJECT No.</b>	151-07859-00

Attendees	Organization	e-mail	Phone #
Aaron McCrimmon-Jones	City of Kitchener	Aaron.mccrimmon-jones@kitchener.ca	519-741-2200 x7110
Matthew O'Neil	Region of Waterloo	MO'Neil@regionofwaterloo.ca	519-575-4757 x3462
Shannon Noonan	City of Cambridge	noonans@cambridge.ca	519-740-4682 x4607
Paula Sawicki	Region of Waterloo	psawicki@regionofwaterloo.ca	519-575-4035
Geoffrey Keyworth	Region of Waterloo	gkeyworth@regionofwaterloo.ca	519-575-4089
Marcos Kroker	Region of Waterloo	mkroker@regionofwaterloo.ca	519-575-4750
Reid Fulton	Region of Waterloo	rfulton@regionofwaterloo.ca	519-585-7597 x7383
John Hill	Region of Waterloo	jhill@regionofwaterloo.ca	519-575-4757 x3640
Paul Smithson	City of Cambridge	smithsonp@cambridge.ca	519-621-0740 x4575
Scott Howard	MTO	Scott.howard@ontario.ca	519-873-4568
Brooke Lambert	Region of Waterloo	lambertb@regionofwaterloo.ca	-
John Brum	GRCA	jbrum@grandriver.ca	519-621-2763 x2233
Steve Van De Keere	Region of Waterloo	svandekeere@regionofwaterloo.ca	519-575-4792
Denise Morneau	WSP	morneaud@mmm.ca	905-823-8500 x1263
Eric Peissel	WSP	Eric.peissel@wspgroup.com	905-475-7270 x18513
Irene Hauzar	WSP	ihauzar@pbworld.com	416-646-9032
Mina Dezyanian	WSP	mdezyanian@pbworld.com	416-644-0625

Item No.	Discussion	Action By
	These notes summarize the key discussion items and questions that were raised during the presentation. The presentation slides are appended for reference.	
<b>1.0</b>	<b>Slides 5-7 (Alternative Alignments - Kitchener)</b>	
	<ul style="list-style-type: none"> <li>The TAC noted that for option F4, the alignment is not fully within the hydro corridor. WSP indicated that it was developed to avoid impacts to the substations.</li> <li>The TAC asked about emergency access to the track when it is elevated, such as for F4. WSP suggested a catwalk will be located between the tracks and there may need to be an emergency stairway, and this will be assessed further in preliminary design.</li> <li>The TAC inquired why F3 is grade separated at the CP line. WSP replied that having the LRT cross CP at the existing skewed angle does not meet Transport Canada standards, therefore the LRT must be grade separated. WSP further clarified that at-</li> </ul>	



Item No.	Discussion	Action By
	is a PSW located in this vicinity that has purposely been avoided in the planning for the East Side lands.	
<b>2.0</b>	<b>Slides 8-10 (Alternative Alignments – North Cambridge)</b>	
	<ul style="list-style-type: none"> <li>• The TAC noted that a new fire station is planned on Boxwood Drive (N2 alternative), to be included as part of the North Cambridge Business Park development. WSP suggested that a signal may be required for the Maple Grove/Boxwood intersection, rather than a roundabout, in order to give priority to fire trucks during emergency situations.</li> <li>• WSP presented a sketch showing how LRT would be accommodated through a roundabout. Gates will be required to prevent vehicle and pedestrian access to the roundabout when the LRT is moving through the intersection. In response to a question from the TAC, WSP advised against right turn bypass lanes at roundabouts.</li> <li>• WSP confirmed that a four-lane alternative for Maple Grove and Speedsville has been developed to assess impacts if these roads were to be widened; the evaluation of the alternatives and the cost estimates do not include the four lane widening, and if this is to be provided as part of the construction of the LRT project, it would need to be funded separately.</li> <li>• The TAC noted a trail along the Speed River on the N2 alternative that will need to be accommodated; a short section of the trail could be realigned to cross under the bridge.</li> <li>• MTO inquired if the LRT designs incorporated the reconfigured interchanges at King Street for the N2 alternative and at Highway 401 for the N3 alternative. WSP confirmed that this has been assessed and presented concept drawings showing how the LRT corridor would be accommodated. MTO noted that the bridge at Highway 401/King Street will be replaced when the interchange is reconstructed, but that this work is not scheduled and has not been designed as yet.</li> <li>• The TAC inquired whether a heritage building at Shantz Hill (N3), currently a travel agency located on Fountain Street, will be impacted and whether a heritage inventory is being done for the evaluation. WSP said the building at Shantz Hill would have to be relocated if N3 is selected, and that a sub-consultant has provided a heritage inventory for all of the alternatives.</li> <li>• The TAC stated that a new building has been constructed at the corner of Eagle St and William St (N1, N3), which may introduce a constraint to widening.</li> <li>• The TAC noted that Eagle St is planned to have 4 lanes in the future, between Industrial Road and Concession Road.</li> <li>• The refinements to the previously endorsed alignment were presented and it was noted that a number of adjustments were made to address elements not considered feasible (for example, N1 was adjusted in the area of King and Eagle to</li> </ul>	

Item No.	Discussion	Action By
	<p>eliminate in-water construction). It was noted that these refinements were made to provide a more fair and realistic comparison, while maintaining the endorsed route as closely as possible. The TAC advised that this be fully documented.</p> <ul style="list-style-type: none"> <li>• The TAC inquired whether Alternative N2 could follow Cherry Blossom Drive, and WSP noted that this was considered and initially screened out in previous EA. It was noted that Cherry Blossom Drive is adjacent to a Provincially Significant Wetland (PSW).</li> </ul>	WSP
<b>3.0</b>	<b>Slide 11-13 (Alternative Alignments – Central Cambridge)</b>	
	<ul style="list-style-type: none"> <li>• As a follow up to an inquiry at TAC Meeting No. 1, WSP presented a drawing showing that all access points to the terminal at Cambridge Mall can be fully integrated with the LRT, including interface with the BRT stop.</li> </ul>	
<b>4.0</b>	<b>Slide 14-16 (Alternative Alignments – South Cambridge)</b>	
	<ul style="list-style-type: none"> <li>• The TAC asked for further clarification regarding the potential GO station locations shown on the concept drawings. WSP noted that: <ul style="list-style-type: none"> <li>○ these are only suggested locations and have not been analyzed in detail</li> <li>○ GO Transit is not currently considering extension of the service to this location</li> <li>○ an LRT stop in the vicinity of the GO station would be considered an infill stop</li> <li>○ a vertical connection would be required due to the grade separation between the LRT runningway and the railway line</li> </ul> </li> <li>• The possibility of running LRT on Beverly in mixed traffic on alternative S3b was discussed, similar to a streetcar operation. The option of relocating the Ainslie Bus Terminal to the location where the municipal parking lot is currently situated on Beverly was discussed, as a means to provide better connectivity and accessibility to riders. WSP noted that both of these possibilities will be explored if S3b is the preferred alternative, but that it is not precluded at this point.</li> </ul>	
<b>5.0</b>	<b>Slide 17-20 (Evaluation Criteria)</b>	
	<ul style="list-style-type: none"> <li>• The TAC inquired what information the team has obtained from regulatory agencies to undertake the analysis and evaluation, particularly related to floodplain impacts and natural and cultural heritage features. WSP noted that available data and mapping have been obtained by the discipline specialists working with the project team through consultation with the relevant authorities, and incorporated into constraints mapping for the study area. WSP further explained that the development of the alternatives has sought to avoid or minimize impacts on these features, for example by bridging over floodplain areas), and that further mitigation measures on the preferred alternative will be developed as</li> </ul>	

Item No.	Discussion	Action By
	<p>part of preliminary design.</p> <ul style="list-style-type: none"> <li>• The TAC suggested changing the criteria “Employment Centers” to “Destinations” to reflect the intention to capture major trip generators beyond just employment. WSP noted that this change will be incorporated.</li> <li>• In response to a question from the TAC, WSP indicated that the criteria are not weighted.</li> <li>• The TAC stated there appears to be double counting within the evaluation criteria between “Engineering Challenges” and “Cost”. WSP agreed that this needs to be clarified, and suggested that the “Engineering Challenges” would focus on constraints.</li> <li>• The TAC asked whether fare revenues are being considered. WSP replied that revenue will be assessed as part of the Business Case for the preferred alternative, utilizing the Region’s demand forecasting model which is currently being refined.</li> <li>• MTO noted that their review will involve a more detailed examination of cross-section elements within the MTO corridors to assess technical feasibility, particularly with regard to meeting MTO design standards. WSP noted that surveys are presently underway to assess horizontal and vertical clearances at several structures, and acknowledged MTO’s approval process once preliminary design details are available.</li> <li>• The Region and MTO both noted that their existing capital programs (in progress or imminent projects) are proceeding as planned. WSP noted that, to the extent possible, the available designs for these projects have been considered in the development of the alternatives, however the costs of these improvements are not part of the LRT project cost.</li> <li>• The TAC was requested to provide any final input on the alternatives or evaluation criteria by April 15, and WSP offered to meet individually with any TAC members who desired a more focused discussion. The TAC requested that the PDFs showing the alternatives be compressed to a smaller file size if possible; the Region advised that the PDF files were reduced in size as much as possible before they were distributed.</li> <li>• WSP will provide the evaluation matrix to the TAC members by May 12, ahead of the proposed TAC meeting date of May 19. WSP will review whether the material can be provided further in advance, and will advise the TAC (through Paula Sawicki) within one week. <i>(Post meeting note – the evaluation matrices were distributed to the TAC on May 3, 2016)</i></li> </ul>	<p>WSP</p> <p>WSP</p> <p>TAC</p> <p>WSP</p>
<b>6.0</b>	<b>Next Meeting</b>	
	<ul style="list-style-type: none"> <li>• TAC #3 was tentatively scheduled for May 19, 2016. P. Sawicki will send out a formal meeting request.</li> </ul>	PS

# RMW STAGE 2 ION LRT TPA PROCESS

## TECHNICAL ADVISORY COMMITTEE MEETING NO. 2

*APRIL 6, 2016*

# MEETING AGENDA

- **Introductions**
  
- **Review of final draft alignments that incorporate TAC comments:**
  - **Kitchener**
  - **North Cambridge**
  - **Central Cambridge**
  - **South Cambridge**
  
- **Evaluation Matrix**
  
- **Updated Schedule**
  
- **Next Meeting**

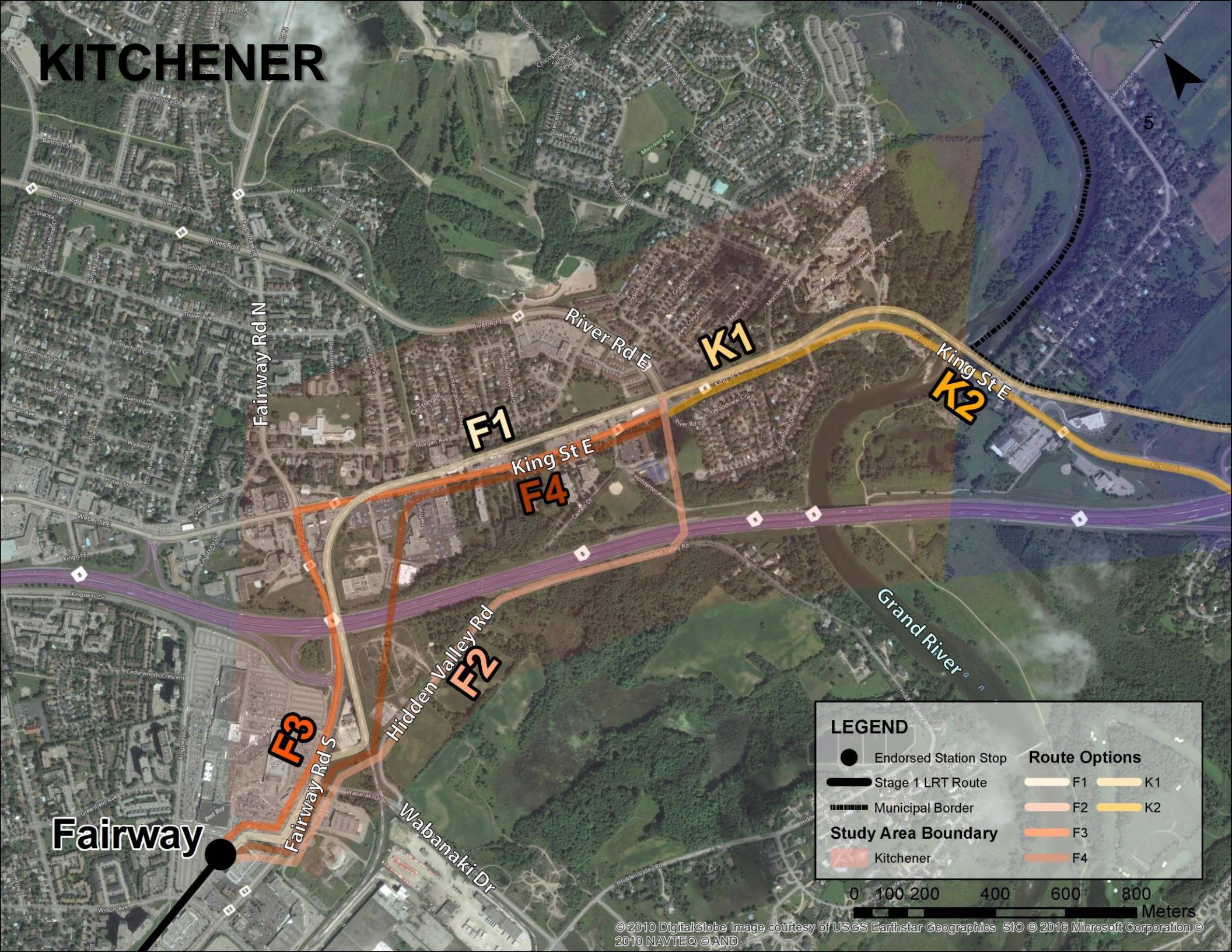
# TODAY'S MEETING OBJECTIVES

- Review final suite of alternatives
- Provide an overview of the alignments that have been modified based on the TAC's input
- Evaluation Matrix
- Project Schedule

# ALTERNATIVE ALIGNMENT OVERVIEW

- a. Kitchener
- b. North Cambridge
- c. Central Cambridge
- d. South Cambridge

# KITCHENER

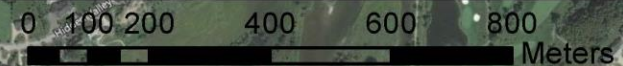


**LEGEND**

- Endorsed Station Stop
- Stage 1 LRT Route
- - - Municipal Border
- Study Area Boundary
- Kitchener

**Route Options**

- F1
- F2
- F3
- F4
- K1
- K2



**Fairway**

Fairway Rd N

River Rd E

King St E

F1

K1

King St E  
F4

Hidden Valley Rd  
F2

F3

Fairway Rd S

Wabamaki Dr

Grand River

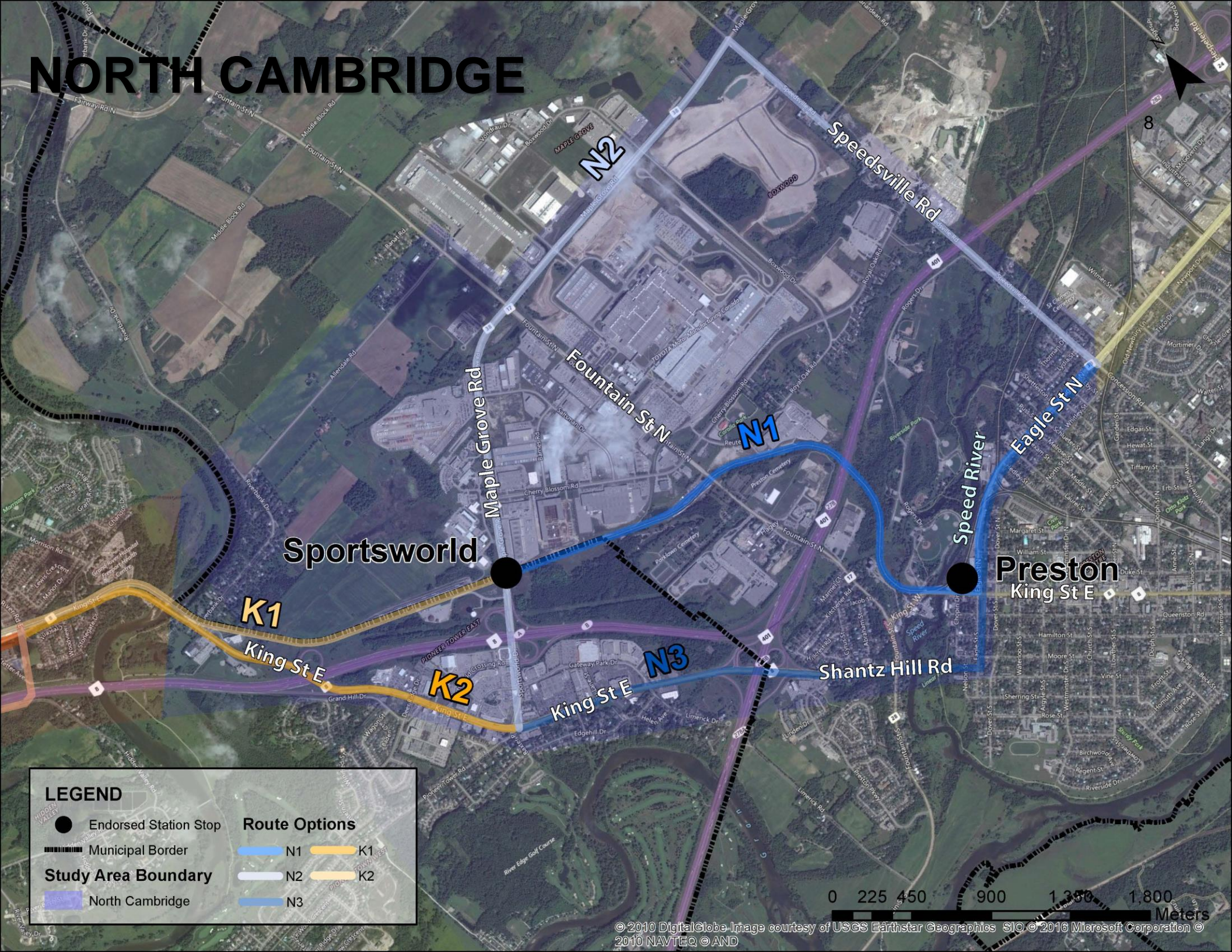
## WHAT WE HEARD FROM THE TAC:

### a. Kitchener

- Verify that Alternative F2 on River Road will remain within the current identified right-of-way
- Potential to cul-de-sac Riverbank Drive at King Street
- New Grand River crossing for road and LRT
- Consider alignment along hydro corridor

# DISPLAY PDF DRAWINGS FOR KITCHENER SEGMENT

# NORTH CAMBRIDGE

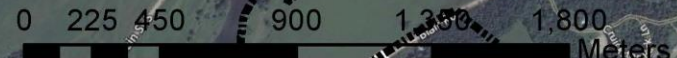


**LEGEND**

- Endorsed Station Stop
- Municipal Border
- Study Area Boundary
- North Cambridge

**Route Options**

- N1
- K1
- N2
- K2
- N3



## WHAT WE HEARD FROM THE TAC:

### b. North Cambridge

- Consider/incorporate roundabouts on Maple Grove and on Speedsville
- Consider alternative alignments along Shantz Hill
- Geometrics at Sportsworld at Highway 8 and below CPR
- Grade separation of CPR mainline in Preston

# DISPLAY PDF DRAWINGS OF NORTH CAMBRIDGE

# CENTRAL CAMBRIDGE

Pinebush

C1

Eagle St N

C2

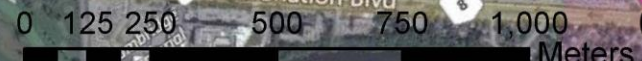
Hespeler Rd

Cambridge Centre Mall

Can-Amara

**LEGEND**

- Endorsed Station Stop
- Study Area Boundary
- Central Cambridge
- Route Options
  - C1
  - C2



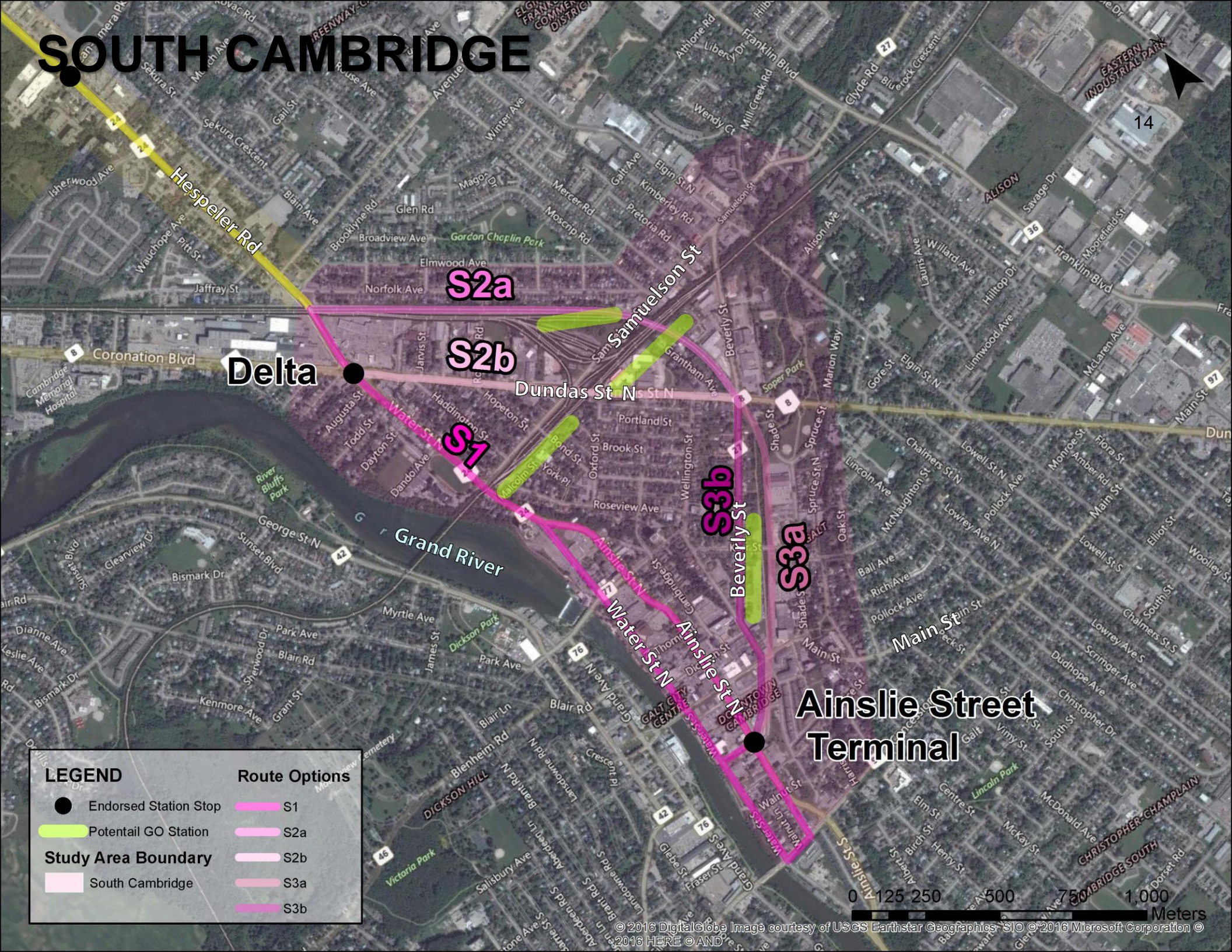
## WHAT WE HEARD FROM THE TAC:

### c. Central Cambridge

- Incorporate Cambridge Centre Terminal drawings into the C2 design.

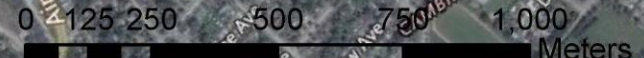
# DISPLAY PDF DRAWINGS OF CENTRAL CAMBRIDGE

# SOUTH CAMBRIDGE



## LEGEND

- |                         |               |
|-------------------------|---------------|
| ● Endorsed Station Stop | Route Options |
| ■ Potentail GO Station  | S1            |
| ■ Study Area Boundary   | S2a           |
| ■ South Cambridge       | S2b           |
|                         | S3a           |
|                         | S3b           |



## WHAT WE HEARD FROM THE TAC:

### d. South Cambridge

- Reduce Dundas Street to one lane in each direction for Alternative S2b
- Reconfigure the Hespeler/Dundas intersection to accommodate the alignment

# DISPLAY PDF DRAWINGS OF SOUTH CAMBRIDGE

# EVALUATION CRITERIA

Objective	Criteria	Indicator	Measurement
<b>Transportation and Mobility</b>			
	Ability to Serve Multimodal Nodes	Document where high quality interface between modes can occur (bus and future rail)	# of multimodal nodes along alignment in proximity to stops
		Document potential for park-and-rides	# of locations that can provide P+R in proximity to stops
	Impact on traffic operations	Document impact on existing traffic corridor operations	# of additional new signalized intersections
		Document impact on existing traffic corridor operations	# of key intersections with LOS (D or worse)
	Engineering Challenges	Document # of CP rail crossings	# of grade separated CP rail crossings required
		Document existing slope percentages	# of route segments with slope challenges
		MTO ramps/bridge clearances	# of MTO ramp changes/bridge clearance challenges
	Physical Constraints	Requirement for additional RoW	Area of additional RoW required

# EVALUATION CRITERIA

Objective	Criteria	Indicator	Measurement
<b>Social/Cultural Environment</b>			
	Residential Intensification Locations	Determine the number of residential intensification/infill locations within proximity of stops (400m)	# of future residential developments
	Employment centres	Determine the number of major employment centres in proximity to stops (400m)	# of employment centres
		Document major institutional generators in proximity to stops (400m)	# of hospitals, secondary schools, higher education, clinics, etc.
		Determine the number of new/infill employment parcels within proximity of stops (400m)	# of future employment developments
	Minimize Number of Properties Impacted	Determine preliminary residential (R), institutional (I) industrial (ID) and commercial (C) property impacts	# properties impacted by type
	Transit and Pedestrian Supportive Land Use Planning Policy	Determine if LRT alignment and stop location adheres to existing planning policy	Qualitative evaluation using 1-5 scale (1 being low, and 5 being high)
	Minimize Cultural Heritage impacts	Amount of cultural heritage features along alignment segment	# of cultural heritage features impacted

# EVALUATION CRITERIA

Objective	Criteria	Indicator	Measurement
<b>Natural Environment</b>			
	Minimize Impact on Floodplains	Determine floodplain constraints	Determine footprint area within floodplain
	Minimize Impact to Significant Natural Features	Determine number of significant natural features impacted (wetlands, forests, etc.)	# of natural features

# EVALUATION CRITERIA

Objective	Criteria	Indicator	Measurement
<b>Economic Impact</b>			
	Ability to serve concentrations of employment	Will the alignment be located to areas that will serve workers	Qualitative evaluation using 1-5 scale (1 being low, and 5 being high)
	Opportunity for intensification and revitalizations	Will the alignment serve areas that can benefit from intensification or revitalization	Qualitative evaluation using 1-5 scale (1 being low and 5 being high)
	Cost	High Level Capital Cost Estimate	Capital Cost
		High Level Operating Cost Estimate	Annual Operating Cost

# PROJECT SCHEDULE

- Refinement and confirmation of alternatives: Currently being completed
- Finalization of Evaluation Framework and Criteria: Currently being completed
- Detailed analysis and evaluation of alternatives: Now through May 2016
- Identification of Preliminary Preferred Alternative: May 2016
- PCC No. 2: September 2016
- Preliminary Design of the Preferred Alternative: July to December 2016
- PCC No. 3: November-December 2016
- Draft EPR of Pre-Submission Review: January-February 2017
- Notice of Commencement of TPA Process: March 2017
- Notice of Completion/Submission of EPR: April-May 2017

TAC Meetings are presented on next slide

# ANTICIPATED TAC MEETING SCHEDULE

- TAC #3-mid May 2016
  - Analysis and evaluation findings
  - Preliminary Preferred Alternative
- TAC #4-August 2016
  - Preliminary design progress
  - Material for PCC No. 2
- TAC #5-September 2016
  - Feedback from PCC No. 2
  - Preliminary design progress and recommended mitigation measures
- TAC #6-December 2016
  - Progress on Draft EPR
  - Material for PCC No. 3
- TAC #7: February 2017
  - Feedback on draft EPR (Pre-Submission Review version)

## NEXT MEETING

- Evaluation of the route options
- Preliminary preferred alternative
- Proposed meeting date-week of May 16

# QUESTIONS OR OTHER INPUT