

## MEETING NOTES – Technical Advisory Committee (TAC)

### Meeting No. 3

<b>PROJECT</b>	Region of Waterloo – Stage 2 LRT TPA Process
<b>OBJECTIVE</b>	To revisit alternative alignment challenges and opportunities and gather additional input on evaluation framework from TAC members.
<b>DATE / TIME</b>	May 19, 2016 @ 9:30am
<b>LOCATION</b>	150 Frederick Street, Room 110
<b>PROJECT No.</b>	161-07859-00

Attendees	Organization	e-mail	Phone #
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Item:	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 3-5 (Overview of the Evaluation Process)</b>	
	<p>1.1 WSP noted that some refinements have been incorporated into the evaluation summary tables since they were distributed to the TAC, including the traffic operations, cost and travel time criteria. WSP noted that the evaluation tables are “living” documents that will continue to be updated, including with feedback received from the TAC.</p> <p>1.2 The TAC asked whether a category/criterion for the “Engineering Challenges” (Criterion 3.1) of MTO interchange interfaces is needed, as this is just a reflection of a lack of information and design certainty at this time. It was suggested that it may equate to a cost, and may be better expressed as a risk, to avoid double counting. WSP agreed that this is intended to reflect the challenges and potential risks associated</p>	

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	<p>with approvals, independent of cost, and that this could be rephrased for clarity. MTO stated that MTO standards will need to be met at crossings of MTO corridors, so the evaluation should reflect that in the cost of the work.</p> <p>1.3 WSP confirmed that the cost of the additional ROW is included in the capital cost estimate (Criterion 14.1); the TAC questioned whether this would then reflect double counting in the evaluation, as ROW requirements and property requirements are also included in other criteria (Criterion 4 “Physical Constraints” and Criterion 7 “Minimize Number of Properties Impacted”). WSP noted that criteria 4 and 7 are intended to address the number of properties impacted, the social impacts on the community, and the timing and logistics of property acquisition separate from the purely financial cost; it was agreed that there may be double counting between the Transportation, Social/Cultural, and Economic criteria related to ROW/property impacts and this will be reviewed.</p> <p>1.4 The TAC asked how the travel speed was determined for the travel time analysis. WSP described the internally developed model used for this analysis that considers average delay at intersections, acceleration, deceleration, curves, increased speed on exclusive RoW sections, etc. specific to each segment in establishing travel time. On roadways it is assumed that the operating speed equals the posted speed limit.</p> <p>1.5 The TAC inquired about the Economic Environment criterion “Ability to serve concentrations of employment” (12.0) and how it differs from the Social/Cultural Environment criterion “Destinations served” (6.0). WSP replied that “Destinations served” is a quantitative assessment of the number of different land uses in proximity to stops, whereas “Ability to serve concentrations of employment” is a qualitative assessment of the transit supportive nature of the existing development and areas that are positioned for redevelopment. WSP noted that feedback from the TAC continues to provide the needed “reality check” on these elements and further refinements and clarifications will likely be incorporated.</p> <p>1.6 WSP noted that following discussion with Regional Planning, it was identified that some greenfield lands had been included in the evaluation of “Opportunity for intensification and revitalization” (Criterion 13.0). The greenfield land area will be removed from the analysis and the evaluation updated.</p> <p>1.7 WSP clarified that the capital cost estimates are in 2016 dollars and that both the capital and operating cost estimates have been benchmarked against Stage 1 ION award costs.</p>	<p>WSP</p> <p>WSP</p> <p>WSP</p>
<b>2.0</b>	<b>Slides 9-13 (Kitchener and North Cambridge Alignments - K+N)</b>	
	<p>2.1 The TAC asked for a refresher on the main challenges with K1. Co-locating with CP is the main issue, with both track and siding relocations needed, and CP’s concerns with impacts to their operations (mostly “just in time” delivery). WSP also noted difficulties connecting K1 to either N2 or N3, and that N1 has essentially been set aside due to the extent of railway and environmental impacts. As such the only remaining Kitchener alternative is K2.</p> <p>2.2 The TAC inquired whether the lack of an alternative on the southwest side of Highway 8 is due to the need for an infill station at King and</p>	

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	<p>River. The Region noted that the 'LRT along Highway 8' alignment was set aside early on, as MTO will not accommodate LRT within the controlled access highway corridor, and would require that LRT along Highway 8 have it's own dedicated right-of-way and a 14 metre buffer to the MTO corridor. The environmentally sensitive lands, significant floodplain, and costs associated with a new crossing of the Grand River at this location were also key reasons this alternative was not advanced. The TAC requested that this additional alternative ("K3") be reviewed at a high level, consisting of LRT along the southwest side of Highway 8 from River Road to Deer Ridge Drive.</p> <p>2.3 The TAC asked for clarification of the project objectives. The Region replied that the Stage 2 objectives are land use first, moving people second. The objectives remain largely unchanged since the prior work on the Central Transit Corridor and original Individual Environmental Assessment, to focus, intensify, and transform land use, preserve our countryside, to move people. The capacity of roads crossing Highway 401 is limited (Fountain, Franklin, Hespeler, Townline and Speedsville) and LRT serves the need for a high capacity transit system to grow and connect Kitchener and Cambridge sustainably.</p> <p>2.4 There was discussion about the merits of N2 and N3 in relation to current and potential future land use. Planning staff from the Region and the City of Cambridge explained their views. City believes that the evaluation is limited as to what could happen along Maple Grove and Speedsville. Region noted that N2 would create a situation where the PISR lands will compete with Hespeler Road for development. Cambridge staff do not share the concern that N2 would draw office development out of other areas. Region planning staff noted that there are already plans of subdivision, and that the densities won't meet provincial targets.</p> <p>2.5 The TAC asked for discussion about whether, based on the goal of integrating land use with transportation, N3 is the better transit solution. The teams noted that N3 crosses a stable residential neighbourhood that will be significantly impacted due to the property requirements for the project, which also needs to be considered. The option of staging implementation from BRT to LRT to enable property to be acquired over a longer period was discussed, as a means to minimize impacts on the community.</p> <p>2.6 The City of Cambridge noted that land use policies have been developed based on the historically identified LRT alignment (i.e. N1, 2011 Endorsed alignment), and that the consideration of other alignments through this study should open up discussion about the potential of other corridors (e.g. N2) to provide the transformational land use that is needed to support LRT. The TAC discussed this framework in detail, in the context of the limitations on development along N2 as a result of existing plans of subdivision and Provincial policy, existing large-lot parcels with major employers (Loblaws, Toyota), and environmentally protected lands, and the effect of greater travel time and operating cost. WSP noted that N2 will not be able to rely on walk-on ridership and thus will require intermodal connections, whereas N3 has a larger potential ridership within the community,</p>	<p>WSP</p>

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	<p>albeit with significantly constrained ROW resulting in significant property and business impacts.</p> <p>2.7 The TAC inquired whether an option was considered along Bishop instead of Eagle. WSP noted that this routing misses a significant length of Hespeler Road, where redevelopment and intensification is planned. As such routes along Bishop were previously screened out.</p> <p>2.8 The Region advised that Traffic Engineering staff prefer K1+N1 as it impacts fewer intersections; they also prefer K2+N3 over K2+N2 because N3 makes fewer turns and impacts fewer intersections than N2.</p> <p>2.9 The opportunity to integrate a GRT terminal at Sportsworld with N2 and N3 was discussed. WSP will add the terminal relocation property requirements to the N1 and N3 evaluation, and confirm the ability to interface with the existing terminal on N2. New development is underway at King and Sportsworld, which may limit options for an intermodal terminal. It was agreed that the Sportsworld stop platform location will be assessed, with TAC's input, after selection of a preferred route.</p> <p>2.10 MTO provided the following input:</p> <ul style="list-style-type: none"> <li>○ The match lines for the K2 segment at the Highway 8/King Street interchange result in a portion of the interchange not shown. WSP will provide a drawing focused on this location to MTO.</li> <li>○ It appears that K2 will not fit through the Highway 8 structure while maintaining MTO design standards (e.g. shoulder widths), so it should be assumed that the bridge will need to be replaced, including staging of Highway 8.</li> <li>○ For N3, the Highway 401/Highway 8/King Street interchange area will be undergoing changes as per the Highway 8 and 401 Interchange Improvements Class EA, which will see it reconstructed as a full freeway-to-freeway interchange. The preferred alternative will need to fit within the current, interim (to accommodate staging for the Grand River bridge replacement) and ultimate configurations. Drawings for the interim configuration are not available. They will be developed as part of the MTO's interchange design assignment, which is currently being procured.</li> <li>○ For N2, it appears that there is sufficient room through the Sportsworld bridge under Highway 8 to accommodate the widening, however the ramp capacity may be affected. The Speedsville bridge over Highway 401 has been designed to accommodate future widening, but not in the way shown on WSP's drawings. If N2 advances, additional design would be required to confirm foundation and structure requirements.</li> <li>○ MTO generally prefers K2+N2 over K2+N3 as this avoids the Highway 401/Highway 8 interchange.</li> <li>○ Once the preferred alternative is selected, more detailed design plans and traffic analysis will be required to support MTO's review process.</li> </ul> <p>2.11 The Region asked whether the King Street S-N on-ramp to Highway 8 could be deleted, considering that there is an interchange on Sportsworld Drive. It was agreed that it does serve drivers coming from</p>	<p>WSP</p> <p>WSP</p>

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	<p>Deer Ridge Drive, for example.</p> <p>2.12 The TAC asked whether, if there was agreement from CP, the K1+N1 alternative would be ranked higher in the evaluation. WSP noted that K1+N1 does have significant advantages with regard to several criteria (travel time, impacts to existing traffic operations, property requirements, capital cost, operating costs), however it appears unlikely that there will be any change in the position of CP.</p> <p>2.13 WSP stated that when undertaking the evaluation, N2 had been identified as preferred. However, further discussion with Region and City Planning has highlighted nuances with regard to land use which will necessitate re-assessment. The Region generally agreed that N3 is the better technical solution for transit, including travel time, operational cost and existing ridership, but has a significant social impact. The City of Cambridge stated that at the staff level the City prefers N2 due in part to the economic development opportunities it provides; there appears to be some missing information in Preston that may affect the analysis, which the City will provide for further consideration.</p> <p>2.14 The TAC inquired how major watermain and sewer installations have been included in the analysis. WSP explained how utility relocation costs were estimated, with different approaches for rural (less constrained), semi-urban and urban (more constrained) sections.</p> <p>2.15 The Region encouraged the TAC to provide any additional feedback, and noted that all feedback received prior to and following the meeting will be duly considered.</p>	<p>City of Cambridge</p> <p>TAC</p>
<b>3.0</b>	<b>Slide 19-23 (Kitchener Alternatives – F)</b>	
	<p>3.1 The TAC inquired whether an additional stop at Fairway and King had been considered for the F3 alternative. WSP clarified that for operational reasons at least 800m is needed between LRT stops, and this is not provided between that location and the Fairway stop. The TAC felt that the Fairway/King area lacked connectivity to the Fairway stop, and there is strong potential for ridership northwest of the intersection that may not otherwise be captured.</p> <p>3.2 The TAC felt that regarding the evaluation of Criterion 1.0 (Ability to serve Multimodal Nodes, slide 20), F2a provides a higher quality interface with fewer delays to buses. F3 would have more impacts, and this should be reflected in the analysis. WSP agreed to review this further.</p> <p>3.3 The City of Kitchener noted that they don't have a specific preference among the F alternatives, but expressed concern that the location of an in-fill station at River/King will have a significant impact on its ridership potential.</p> <p>3.4 WSP noted that there is flexibility through the Highway 8 structure over Fairway Road to accommodate the LRT corridor on the F1 and F3 alternatives, but that further discussion will be required to assess operational impacts at ramp terminal intersections.</p> <p>3.5 MTO noted that the design of the new River Road bridge over Highway 8 has been challenging due to curvature, superelevation, and sight lines. Additional impacts will likely be identified with a wider bridge to accommodate LRT. WSP noted that further examination is underway to assess whether LRT will be on a separate structure (possibly elevated</p>	<p>WSP</p> <p>WSP</p>

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	<p>over the roadway), or whether River Road can be reduced from four to two lanes. WSP and the Region advised that west of Highway 8 the footprint of the RoW cannot be increased due to the presence of environmentally sensitive land. MTO stated a preference for F4, which does not impact Highway 8 or interchange ramps.</p> <p>3.6 For F2/F2a, intersection operations will require review. Region staff noted that the operations of the ramp terminals on River Road were shown to be poor during the EA due to the close spacing with the River and King signalized intersection.</p> <p>3.7 The Region advised that the Region’s Traffic Engineering staff have reviewed the options and found F2 to have the highest impact on traffic operations. Detailed written comments have been developed and will be forwarded. The benefit of grade separating over Fairway (F2a) will be assessed during preliminary design.</p> <p>3.8 The TAC stated that the team needs to be aware of the sanitary forcemain on River Road while designing for F2a. The City of Kitchener will provide drawings.</p>	<p>RMW</p> <p>City of Kitchener</p>
<b>4.0</b>	<b>Slide 14-18 (South Cambridge Alternatives – S)</b>	
	<p>4.1 WSP will compare an Ainslie Street terminus to a ‘multiple on-street stops’ configuration, which enables transfers in Downtown Galt, during the next stage of this study.</p> <p>4.2 One theme from PCC No. 1 comments was to avoid the Delta, don’t make it worse. This led to the S2a alternative which is the only alternative that avoids the Delta entirely.</p> <p>4.3 The operation of the intersection at Avenue Road under the S2a alternative was described, to enable LRT to transition from Hespeler Road to the railway corridor.</p> <p>4.4 The TAC asked what noise mitigation measures may be required for homes backing onto the corridor on the S2a alternative. WSP noted that the LRT line will be adjacent to an operating railway freight line, so the incremental noise impacts should not be significant, and that a noise impact study will be carried out in preliminary design.</p> <p>4.5 The TAC agreed that the S2 alternatives provide more redevelopment opportunities on under-utilized lands than the S1 alternative, which is in a more stable area.</p>	
<b>5.0</b>	<b>Slide 24-28 (Central Cambridge Alternatives – C)</b>	
	<p>5.1 WSP reiterated the challenges of siting a stop at the Hespeler/Eagle/Pinebush intersection on the C1 alternative, and the opportunity for an off-street local bus connection adjacent to the C1a option at Hespeler Road.</p> <p>5.2 The Region noted the possibility of a small operation and maintenance facility at a property adjacent to the C1a alternative, which will be examined further during preliminary design.</p> <p>5.3 The TAC inquired about the distance from the Pinebush stop on C1a and the Cambridge Centre stop, and whether an in-fill stop would be considered between these locations. WSP agreed, and this will be examined in the next stage.</p>	
<b>6.0</b>	<b>Next Steps</b>	
	<p>6.1 The TAC will provide any further written comments as soon as possible.</p> <p>6.2 The feedback received from the TAC, particularly on the differences</p>	<p>TAC</p>

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	<p>between N2 and N3, will be presented to Rapid Transit Senior Management for comment on May 26, 2016.</p> <p>6.3 RT staff are presenting a Stage 2 project update to the Rapid Transit Steering Committee on June 14, 2016.</p> <p>6.4 P. Sawicki will reach out to TAC members if anything arises from the Senior Management or Steering Committee that warrants further discussion.</p> <p>6.5 The next TAC meeting will be in August, to review the material to be taken to the public and discuss any early preliminary design activities.</p>	PS

## MEETING NOTES – Technical Advisory Committee (TAC) Meeting No. 4

<b>PROJECT</b>	Region of Waterloo – Stage 2 LRT TPA Process
<b>OBJECTIVE</b>	To present changes made to the Evaluation Framework and Review PCC#2 input to gain feedback from TAC members.
<b>DATE / TIME</b>	Aug 24, 2016 @ 9:30am
<b>LOCATION</b>	150 Frederick Street, Room 110
<b>PROJECT No.</b>	161-07859-00

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Item:	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. Questions from TAC members were primarily directed towards PCC#2 materials as presented below.	
<b>1.0</b>	<b>PCC#2 Boards: General Comments</b>	
	<ul style="list-style-type: none"> <li>The cultural heritage criterion was quantified using a count of cultural heritage features along the route and did not weight any of the features for significance or sensitivity. Cultural Heritage is concerned about the messaging to the public (for PCC#2) about this criterion and offered their assistance.</li> <li>Consider creating two full sets of boards so as to distribute attendees and avoid crowding.</li> <li>Add the GRT logo as part of the header for the boards alongside the ION logo.</li> </ul>	<p>RT</p> <p>WSP</p>

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	<ul style="list-style-type: none"> <li>• GRCA expressed concern that the route evaluation process was based on a 5% design, although they recognized the difficulty in selecting a route based on high level information. RT staff noted that all of the routes cross the Grand River and the Speed River, that the evaluation was completed with the best information available at the time, and that we cannot complete a preliminary design for each route alternative. GRCA to confirm that there is sufficient information in the Natural Environment Existing Condition Report (July 2016).</li> <li>• <b>Maintenance and Storage Facility (MSF)</b> - Does the Stage 1 OMSF (Operation + MSF) have the capacity to serve Stage 2 LRVs? Opinions vary among those consulted. There are tradeoffs to only using one MSF versus having a new MSF located along the Stage 2 corridor, especially for deadhead movements due to the distance between the Stage 1 OMSF and the Ainslie terminal. <ul style="list-style-type: none"> <li>○ Potential MSF sites have not yet been identified since the preferred route must be selected before a MSF site assessment process can start.</li> <li>○ The overall cost estimate includes all traction power and substations, as well as a MSF.</li> </ul> </li> </ul>	GRCA
<b>2.0</b>	<b>PCC#2 Boards: Pg.4 – How Will My Input Be Used?</b>	
	<ul style="list-style-type: none"> <li>• Change ‘short interactive’ to ‘structured feedback’</li> </ul>	WSP
<b>3.0</b>	<b>PCC#2 Boards: Pg.5 to 6 – Project Overview</b>	
	<ul style="list-style-type: none"> <li>• Board is very text heavy. Condense the language as it is too technical. The first three points are captured later graphically. The board titles should match the titles in the Information Package. Detailed information is more suited to Information Package. <i>Post-Meeting Note: Project Overview boards have been deleted.</i></li> </ul>	WSP
<b>4.0</b>	<b>PCC#2 Boards: Pg.7 – Study Timeline</b>	
	<ul style="list-style-type: none"> <li>• “Positive and negative impacts” should be avoided. Consider using “challenges and opportunities” instead throughout the PCC#2 materials.</li> <li>• Add “ways to minimize environmental and heritage impacts”.</li> </ul>	WSP
<b>5.0</b>	<b>PCC#2 Boards: Pg.8 – Project Team</b>	
	<ul style="list-style-type: none"> <li>• Add a box for “Public Input” beside the Technical Advisory Committee (TAC) box connected with an arrow.</li> <li>• Add “economic development” to the TAC box.</li> </ul>	WSP
<b>6.0</b>	<b>PCC#2 Boards: Pg.9 – Route Alternatives &amp; Feedback From PCC #1</b>	
	<ul style="list-style-type: none"> <li>• ⑧ is in the wrong location on the map.</li> <li>• There is too much text on this board. Split into two boards.</li> <li>• Define “Endorsed*”, not noted on this plan.</li> <li>• N3 not labelled on the map, but referenced in ⑦ text.</li> <li>• The “S” routes are referenced on this board but are not shown on the map.</li> <li>• Consider changing the title to “PCC No.1 Route Alternatives and Feedback”.</li> <li>• Could this board have text call-outs with arrows on the map instead of numbered locations? This was previously attempted and the text covered the majority of the map.</li> </ul>	WSP

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<b>7.0</b>	<b>PCC#2 Boards: Pg.10 – Route Alternatives Carried Forward</b>	
	<ul style="list-style-type: none"> <li>• Keep the formatting the same for PCC #1 map and Updated Route Alternatives to make changes more obvious. PCC #1 map can't change since it is what the public saw at PCC #1, and the "Updated" map segments and colour scheme are consistent throughout the remaining boards.</li> <li>• Any changed or altered routes from PCC#1 should be shown on this map.</li> <li>• The yellow and green colours on the map were similar to each other and hard to differentiate.</li> <li>• The study area boundary (purple dashed line) should be removed.</li> <li>• The title should be changed to "Route Alternatives". Post-Meeting Note: Title now "Updated Route Alternatives"</li> <li>• Avoid "Engineering Challenges" (#3), use "Design Feasibility and Costs".</li> <li>• Add text describing which routes were altered, renamed or removed and how they were altered from those shown at PCC No. 1. <i>Post-meeting note: a selection of route updates have been noted, with a more complete description added to the information package.</i></li> </ul>	<p>WSP</p> <p>WSP</p> <p>WSP</p> <p>WSP</p> <p>WSP</p> <p>WSP</p>
<b>8.0</b>	<b>PCC#2 Boards: Pg.11 – Evaluation Process</b>	
	<ul style="list-style-type: none"> <li>• Note the public's role on this slide (i.e. how public feedback would be used).</li> <li>• "Obtain Public Feedback" is better suited in a coloured box on the right side of the board. <i>Post-meeting note: It was later decided that the "Obtain Public Feedback" point remain as part of the flowchart for this slide.</i></li> </ul>	<p>WSP</p> <p>WSP</p>
<b>9.0</b>	<b>PCC#2 Boards: Pg.12 – What Was Used To Compare Routes?</b>	
	<ul style="list-style-type: none"> <li>• Remove the graphic scale, include it only in the Information Package.</li> <li>• Mention property impacts as follows: "Property impacts can include: partial or full acquisition or access impacts".</li> </ul>	<p>WSP</p> <p>WSP</p>
<b>10.0</b>	<b>PCC#2 Boards: Pg. 13, 15, 17, 19 – Evaluation Results (Maps)</b>	
	<ul style="list-style-type: none"> <li>• General comments <ul style="list-style-type: none"> <li>○ Use white arrows instead of black arrows for better contrast.</li> <li>○ Summarize property impacts in a single table.</li> <li>○ The number of properties impacted does not include those required for traction power sub-stations (TPSS) nor a Maintenance and Storage Facility (MSF). The TPSS locations and the MSF site will confirmed during preliminary design.</li> </ul> </li> <li>• Kitchener (pg. 13) <ul style="list-style-type: none"> <li>○ The property impacts shading colour (yellow) is similar to the colour of the "F" routes. Differentiate somehow.</li> <li>○ Be more specific as to the CP challenges noted on the boards. <i>Post-meeting note: "technical CP challenges" left as is. Specific challenges are noted on the evaluation summary/advantages and disadvantages board.</i></li> <li>○ The River Road linework should be more obvious/visible.</li> </ul> </li> <li>• North Cambridge (Pg.15) &gt; Use "property takings" not "property acquisitions".</li> </ul>	<p>WSP</p> <p>WSP</p> <p>WSP</p> <p>WSP</p> <p>WSP</p>

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	<ul style="list-style-type: none"> <li>South Cambridge (pg. 19) &gt; Change callout box from “Stop located adjacent to existing bus terminal” to “final stop location to be determined”. <i>Post-meeting note: Text left as is because it states the assumption used during the evaluation process only.</i></li> </ul>	
<b>11.0</b>	<b>PCC#2 Boards: Pg.14, 16, 18, 20 – Preliminary Preferred Segment (Table/Text)</b>	
	<ul style="list-style-type: none"> <li>TAC agreed that the evaluation boards do not need to have cost estimate for each alternative by segment.</li> <li>What is the difference between “design challenge” and “engineering challenge”? Remove these from the ✓/✗ table. Both are meaningless to the public, they are interested in the cost and time required to address these challenges.</li> <li>The tables are challenging to understand. Either split these boards into two boards, or remove the summary table featuring the Harvey Balls from the boards and place them only in the Information Package. <i>Post-meeting note: the Harvey Ball table has been removed from these boards, the text related to each Segment remains on one board.</i></li> <li>There are too many points listed on the K2+N3 board (slide 16). These points have already been distilled as much as possible. <i>Post-meeting note: upon review these points have been left as is.</i></li> <li>The number of “✓” and “✗” did not correlate with the Harvey Balls, nor was it suggestive of a preferred alternative. RT will review the number of “✓” and “✗”. <i>Post-meeting note: points reviewed and are left as is.</i></li> <li>Some TAC members expressed concern that the public might count up the Harvey Balls and be confused as to the selection of a preferred route. <ul style="list-style-type: none"> <li>Criteria were not weighted, so they cannot simply be summed to obtain a total for each route. Also, the evaluation was relative within each segment. Results for a particular criterion in one segment cannot be directly compared to the results for that same criterion in another segment.</li> <li>The rationale for determining the Preliminary Preferred Alternative is presented in two ways: as a reasoned argument in the Information Package, and as pros and cons of each segment on the boards.</li> <li>Having two different ways of showing the same information is confusing.</li> </ul> </li> <li>What is the purpose of the “Preliminary Preferred Segment” boards? Maybe show the pros and cons only for the preliminary preferred route. There was no consensus on this issue. The intent of the board is to show which route is preferred within each segment, communicate the evaluation results, and list the opportunities and challenges of each as objectively as possible.</li> </ul>	<p>WSP</p> <p>WSP</p> <p>RT</p>
<b>12.0</b>	<b>PCC#2 Boards: Pg.21 – Preliminary Preferred Route</b>	
	<ul style="list-style-type: none"> <li>This map, without the aerial photography, is preferred.</li> </ul>	
<b>13.0</b>	<b>PCC#2 Boards: Pg.22 to 24 – Interactive Exercise</b>	
	<ul style="list-style-type: none"> <li>The POWER tool (Positives, Objections, What else, Enhancements, and Remedies) is an interactive exercise used to gather feedback from groups. Change “Interactive Exercise” to “Structured Feedback Exercise.”</li> </ul>	

Item:	Discussion:	Action by:
	<ul style="list-style-type: none"> <li>Engage Waterloo Region will be used for PCC No. 2. It was recommended that the four maps found in the information package be used.</li> </ul>	
<b>14.0</b>	<b>PCC#2 Boards: Pg.25 – What Happens Next</b>	
	<ul style="list-style-type: none"> <li>The first bullet point should state how the public’s input will be used.</li> <li>The second and third bullets are confusing. Change “Preliminary Preferred Route” to “Preferred route”. Consider using “Recommended Route”.</li> <li>Consider stating who the route is preferred by.</li> <li>PCC No. 3 will be in the Winter 2016/2017.</li> </ul>	
<b>15.0</b>	<b>PCC#2 Boards: Pg.26 – Upcoming Activities?</b>	
	<ul style="list-style-type: none"> <li>There is a lot of terminology in this slide that has not been defined.</li> <li>Only the very next steps need to be shown.</li> <li>Why is “address any comments...” the last bullet?</li> <li>Consolidate and simplify several points: “start process for all other approvals”.</li> <li>Add: “continue working with GRT to fill in gaps in transportation network”</li> <li>ION is being presented on its own rather than as a component of GRT. ION is only one route within the greater GRT system.</li> </ul>	
<b>16.0</b>	<b>PCC#2 Notification</b>	
	<ul style="list-style-type: none"> <li>Notification of PCC#2 will be sent via mail and email, to both property owners and tenants. <i>Post-meeting note: for various reasons it was subsequently decided to only send notifications to property owners, via mail.</i></li> <li>A recent study yielded higher response rates when letters were addressed to “Resident” rather than “Occupant” or even the person’s name.</li> <li>PCC#2 will be advertised in several newspapers, as was done for PCC#1. These ads will not have a map; they are pointer ads. The TAC recommended that newspaper ads be used to provide notice to the public for PCC#2. Online ads are more cost-effective. Consider using Facebook and twitter ads.</li> </ul>	WSP
<b>17.0</b>	<b>Additional Discussion</b>	
	<ul style="list-style-type: none"> <li>The Information Package “Cost Estimate” section does not mention contingency. The current cost estimate is based on a 5% design, has a ±30% accuracy and includes a 40% contingency. What is our past experience with the difference between a 5% cost estimate and an actual building cost?</li> <li>The Project Team will be meeting with MTO in early fall. The Region’s Stage 2 ION consultant (WSP) is also the design consultant for the River Road Extension and the Highway 401/Highway 8 Interchange assignments.</li> <li>TAC members to provide formal input for PCC #2 material as soon as possible. The updated boards will be sent following these revisions.</li> <li>Cultural Heritage &gt; consider adding a cultural heritage section to the information package. How will we handle feedback on this topic? A Cultural Heritage Impact Assessment will be completed. To date only an inventory has been completed.</li> </ul>	

## MEETING NOTES – Technical Advisory Committee (TAC) Meeting No. 5

<b>PROJECT</b>	Region of Waterloo – Stage 2 LRT TPA Process
<b>OBJECTIVE</b>	To provide summary of PCC#2 and update the TAC regarding the current status of project
<b>DATE / TIME</b>	March 27, 2017, 9:30 am
<b>LOCATION</b>	Region of Waterloo – 100 Maple Grove Rd, Kitchener Classroom/Ops
<b>PROJECT No.</b>	161-07859-00

<b>Attendees</b>	<b>Organization</b>	<b>e-mail</b>
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Sonya Terek	WSP	sonya.terek@wsp.com

<b>Item:</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. It should be noted that the slide numbering is not continuous as the slides were reorganized in advance of the meeting. The discussion presented below follows the order of the presentation.	
<b>1.0</b>	<b>Slides 20-22: Potential Infill Stations</b>	
	<p>1.1 The TAC asked about the criteria to be used to assess potential infill stations. WSP stated that the intention is to use criteria consistent with those used previously related to stations, for example destinations within walking distance, future redevelopment potential, and connectivity with GRT.</p> <p>1.2 WSP advised that an assessment of a potential in-fill station in the vicinity of King Street/River Road River and Grand River Hospital Freeport Campus has already commenced in consultation with GRT, and that initial findings are that additional service to this area could be provided through local transit improvements and a connection to the LRT service at Fairview Park Mall, as</p>	

Item:	Discussion:	Action by:
	<p>providing an LRT station in this area would be challenging given topography, building orientation, proximity to the hydro corridor and Highway 8 right-of-way and relatively low density, stable residential development.</p> <p>1.3 WSP noted that further examination of the other potential infill station locations at Eagle Street, Hespeler Road and vicinity of a potential future GO Station in Cambridge will be carried out and presented to the TAC for comment at a future meeting.</p>	WSP
<b>2.0</b>	<b>Slides 12-19: Refinements Under Review – Beverly Street and Stage 2 Terminal Station Location</b>	
	<p>2.1 The TAC inquired whether WSP has developed an alternative with one direction of travel along the rail right-of-way and the other along Beverly Street, or an alternative with bi-directional side running along Beverly Street. On the first suggestion, WSP noted that this was considered, however the configuration of the road network in Downtown Cambridge introduces complications for the LRT accessing the downtown area. The Region indicated that bi-directional side running is less desirable for operations given the interaction with turning vehicles at driveways.</p> <p>2.2 WSP clarified that Beverly Street and the Stage 2 Terminal Station Location are being treated as separate study areas for development and analysis of alternatives, however all of the options work together in combination.</p> <p>2.3 The City of Cambridge requested the concept plans for the alternatives for more detailed review. These will be uploaded to the project FTP.</p> <p>2.4 The TAC inquired about the property impacts of the various options. WSP advised that either full buy outs would be required or the road right-of-way would significantly encroach within property boundaries if the Beverly Street options were selected; the TAC was advised that the Mill Creek option would likely result in partial buy-outs.</p> <p>2.5 The TAC noted potential urban design impacts with an alternative along the Mill Creek Trail, and the desire to avoid chain link fencing between the LRT corridor and Mill Creek if possible, as this impedes placemaking. WSP noted that this would be reviewed further as the alternatives are assessed.</p> <p>2.6 Regarding Alternative G for the Stage 2 Terminal Station Location, the TAC asked if there would be property impacts on the new townhomes along Wellington Street or the historic church at Dickson Street. WSP responded that the concept design does not impact either of these developments.</p> <p>2.7 Regarding Alternative H for the Stage 2 Terminal Station Location, the City of Cambridge advised that the new pedestrian bridge crossing the Grand River in the vicinity of Bruce Street is expected to be constructed in 2017.</p> <p>2.8 The need to assess local transit connections in more detail was noted. WSP advised that the project team will need to collaborate with GRT to assess how connectivity to local bus services will be provided, and “Ease of Connection to GRT Services” is a proposed evaluation criterion.</p> <p>2.9 WSP noted that transitioning to on-street bus stops in Downtown Cambridge may necessitate consideration of new arrangements for driver facilities, which are currently provided at the Ainslie Street bus terminal, and this will need to be reviewed with GRT as part of the study and addressed in the cost estimate.</p>	<p>RMW</p> <p>WSP</p> <p>WSP/RMW/ GRT</p> <p>GRT</p>
<b>3.0</b>	<b>Slides 10-11: Refinements Under Review – Preston Area</b>	
	<p>4.3 The TAC inquired whether the project team will be completely revisiting the K1-N1 alternative. WSP responded that it is intended that only the section of the K1-N1 alternative between Maple Grove Road and Eagle Street will be revisited, and discussions with CP Rail have commenced to assess the range of feasible options, and any improvements to CP infrastructure that might be necessary to enable LRT along the corridor (e.g. grade separations, localized</p>	

Item:	Discussion:	Action by:
	<p>track realignment). The potential to use a section of currently unused CP spur east of the Eagle Street at-grade crossing downtown Preston will also be examined.</p> <p>4.4 The TAC inquired into the status of the Speed River Dam EA. The City of Cambridge advised that the EA is currently examining other options for further review before returning to the public with a recommendation.</p>	WSP
<b>4.0</b>	<b>Slide 9: Refinements Under Review – Grand River Area</b>	
	<p>4.1 WSP advised that a refinement of the K3 alternative along the west side of Highway 8 is being re-examined in consultation with MTO. MTO commented that:</p> <ul style="list-style-type: none"> <li>• MTO's preference is that the LRT corridor be located adjacent to the MTO right-of-way rather than within the right-of-way, but are open to an option discussing further discussion of and allowing the LRT corridor to be positioned within the right-of-way.</li> <li>• The topography is different on the north and south sides of the river, such that the positioning of the LRT corridor within or adjacent to the MTO right-of-way may vary depending on location. For example, on the north side where the topography is more constraining, it may be necessary to encroach further into the MTO right-of-way whereas south of the river, MTO's has a larger property footprint beyond the Highway 8 right-of-way and there is additional flexibility to locate the LRT corridor outside of the freeway ROW.</li> <li>• MTO owned property can be obtained from the construction drawings provided by MTO following the February 28, 2017 coordination meeting.</li> </ul> <p>4.2 WSP advised that further development of the alternative will be undertaken with consideration of the clarifications noted above, for discussion with MTO, and subsequent presentation to the TAC.</p>	WSP
<b>5.0</b>	<b>Slides 23-25: Potential Maintenance and Storage Facility Sites</b>	
	<p>5.1 WSP advised that once the route sub-options are examined further, if any additional MSF sites are identified, these will be added to the list for review.</p> <p>5.2 WSP noted that the proposed evaluation criteria are those used for the selection of the MSF for the Stage 1 study area, and these will be reviewed for applicability and updated to reflect current regulatory requirements.</p> <p>5.3 In response to a question, WSP confirmed that maintenance activities will take place inside the MSF buildings, and that the size of the facility will likely be smaller than the Stage 1 facility, depending on the number of trains and the operating strategy for the corridor. RMW noted that major maintenance will take place at the Waterloo facility, and the Stage 2 facility will likely handle light maintenance and cleaning of a portion of the fleet, and driver facilities.</p> <p>5.4 The TAC asked whether 777 Industrial Road was located in the floodplain, and it was noted that the floodplain limits have been modified through the Groff Mill Creek floodplain study. WSP advised that the floodplain limits will be verified prior to the evaluation.</p> <p>5.5 The TAC inquired about the rationale for another maintenance and storage facility for the LRT facility. WSP advised that although there is additional capacity available at the northern site, the travel distance for vehicles starting or ending their service day in Downtown Cambridge is so significant that the operational costs become prohibitive.</p> <p>5.6 The TAC asked whether the Province's D6 guidelines for industrial site compatibility have been reviewed. WSP advised that this will be reviewed.</p>	<p>WSP</p> <p>WSP</p> <p>WSP</p> <p>WSP</p>
<b>6.0</b>	<b>Slides 5-7: Summary of PCC #2 Comments</b>	
	<p>6.1 The TAC asked whether the public expressed concerns over the natural environment around the River Road extension. WSP confirmed that a few concerns were noted at the PCC, but that it was discussed that the LRT</p>	

Item:	Discussion:	Action by:
	improvements would be contained within the identified right-of-way. WSP noted that concerns were also heard at the PCC about traffic on the River Road extension and potential impacts to levels of services.	
<b>7.0</b>	<b>Slide 26: Other Capital Projects</b>	
	<p>7.1 RMW noted that the Region has GIS layers showing their capital program, which can be provided. The City of Kitchener and City of Cambridge will investigate whether this information is also available in GIS format, or what format it can be provided in.</p> <p>7.2 The TAC suggested that a process should be developed to ensure circulation of municipal consent applications to the Project Team for information and input.</p>	<p>RMW/ Kitchener/ Cambridge</p> <p>RMW/WSP</p>
<b>8.0</b>	<b>Slide 28: Upcoming TAC Meetings</b>	
	<p>8.1 GRT inquired when the collaboration for determining supporting local transit services would begin. WSP indicated that this will likely occur mid to end of summer, once refinements to route have been completed.</p> <p>8.2 WSP agreed to share the proposed methodology for the business case analysis, to provide TAC members with sufficient time to assemble data and other input required to support the analysis.</p> <p>8.3 The TAC asked whether WSP would reach out to property owners impacted by refinements, considering that this assessment is occurring after PCC #2. RMW and WSP agreed that a strategy for reaching out to potentially impacted owners ahead of preliminary design should be developed, and will follow up with more information.</p> <p>8.4 The TAC asked for a timeline for providing comments on elements of the Preliminary Preferred Route, for example the precise location of stops. WSP requested that this input be provided within two weeks.</p> <p>8.5 The City of Cambridge advised RMW and WSP that members of the public are seeking to appear before Council to share their concerns about the Preliminary Preferred Route.</p>	<p>WSP</p> <p>RMW/WSP</p> <p>TAC</p>

## MEETING NOTES – Technical Advisory Committee (TAC) Meeting No. 6

<b>PROJECT</b>	Region of Waterloo – Stage 2 LRT TPA Process
<b>OBJECTIVE</b>	To update the TAC regarding the current status of project and gain input on the planned approach and content for PCC #3
<b>DATE / TIME</b>	September 21, 2017, 1:30 pm
<b>LOCATION</b>	City of Kitchener – 200 King St W, Kitchener
<b>PROJECT No.</b>	161-07859-00

Attendees	Organization	e-mail
Matthew O'Neil (MO)	Region of Waterloo	moneil@regionofwaterloo.ca
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Martin Haalstra (Items 1.0 to 5.0)	MTO	martin.haalstra@ontario.ca
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Sandy Nairn	WSP	sandy.nairn@wsp.com
Jennifer Fisher	WSP	jennifer.fisher@wsp.com

Item:	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. The discussion presented below follows the order of the presentation.	
<b>1.0</b>	<b>Slides 1-6: Introduction and Study Status</b>	
	<p>1.1 WSP advised the TAC of a minor revision to the presentation previously distributed for review; animated slide inserted between slides 12 &amp; 13 to illustrate the screening process used to narrow down route options through North Cambridge.</p> <p>1.2 The TAC inquired as to whether or not the project's updated travel demand model and ridership forecast tie in with the ongoing GRT study/model. WSP advised that the model developed for this study is now being used by the Region for the TMP and therefore should represent the longer term rapid transit plan. WSP will send a copy of the memo to GRT for review.</p> <p>1.3 WSP provided an overview of preparations for PCC No. 3; scheduled for November 2017 with the purpose of demonstrating to the public that based on PCC No. 2 feedback, the team is examining additional alternatives in the Preston area, as well as to present the proposed new alternative for the Kitchener segment (along Highway 8) and refined options for the South Cambridge area and southern terminal. PCC No. 3 will present the work</p>	WSP



Item:	Discussion:	Action by:
	<p>provide other variations on this distance; the project team should be prepared to respond to why this distance was selected should the issue arise.</p> <p>3.5 The TAC suggested that WSP consider developing a smart graphic or chart to visually map out the evolution of the screening process including how the criteria was developed, in order to clearly explain why the other alternatives are not being evaluated. The message to be conveyed is that the purpose of this review is to assess improvements to the preliminary preferred route, not re-examine the routes that were previously evaluated and found not to be superior to the preliminary preferred route.</p> <p>3.6 The TAC inquired if any of the alternatives remaining after screening impact floodplain. WSP advised that the routes have not yet been engineered to a point where such impacts can be determined; following PCC No. 3, WSP will complete the engineering of the remaining route options and proceed with additional screening and evaluation.</p> <p>3.7 WSP noted that the new route options that use the abandoned CP spur line would introduce challenges with an infill stop at Eagle and Speedsville, but the option has the potential to reduce travel time due to the off-street alignment.</p> <p>3.8 The TAC inquired if the fact that Preston lies within the floodplain will limit the intensification potential of the area. WSP responded that the need for improved transit through Preston is not based on plans for intensification – the area has minimal infill potential – it is based on the current density and demographics of the area.</p>	WSP
<b>4.0</b>	<b>Slide 14–16: Refinements Under Review – South Cambridge (S3)</b>	
	<p>4.1 The TAC inquired if there will be any noise impacts to the backyards of the houses along Beverly. WSP advised that noise impacts to the homes in the area is a possibility, and the need for noise mitigation will be assessed in preliminary design.</p> <p>4.2 WSP noted that local transit routing is being developed at a conceptual level for each of the terminal options to demonstrate how bus service connections would be made, with the intention of including these in the PCC No. 3 material.</p> <p>4.3 The TAC advised that for the T2 (Bruce) and T3 (Concession) alternatives it would be helpful to have a visual showing the walkshed, and the type of development found within those areas. WSP will add this to the key plan.</p> <p>4.4 The TAC noted that the public may be expecting to see additional details about property impacts, and this will not be available at this PCC. WSP noted that the concept designs are not yet at a stage where individual land takings can be determined, and that the expectations need to be made clear in the PCC materials.</p>	WSP
<b>5.0</b>	<b>Slides 17-21: PCC No. 3 Outline, Next Steps &amp; Question/Discussion</b>	
	<p>5.1 The TAC noted that PCC No. 2 committed to bringing back more details regarding property impacts, however this will not be presented at PCC No. 3. It was agreed that the change in the process and introduction of two extra rounds of public consultation needs to be highlighted so that expectations can be managed, and that even though it might be confusing that we have returned to a previous step, it can be presented as a positive outcome of public feedback.</p> <p>5.2 MO discussed that the purpose of PCC No. 3 is to update the public on what has been done since PCC No. 2 and to kick-off the evaluation process for the additional route alternatives. The Region plans to take the findings of the evaluation back to the public and Regional Council in Spring 2018 in a Public Information Meeting (PIM) forum. The TAC inquired if there will be an</p>	

Item:	Discussion:	Action by:
	<p>opportunity to brief the City Councils prior to the PIM. The Region will discuss this further internally and advise.</p> <p>5.3 The TAC advised that the project team needs to aim to highlight key messages in the PCC display material: clear, and simple boards.</p> <p>5.4 The TAC requested confirmation that the Maple Grove route is not being considered as part of being re-evaluated will no longer be considered as there is a pending EA for the corridor. The Region confirmed that based on Council direction, the N2 route is not under further consideration.</p> <p>5.5 WSP advised that PCC No. 3 has been confirmed for November 21 and 28, 2017. The Region will schedule another TAC meeting to review the PCC material. <i>(Post-meeting note: this has been scheduled for October 16, 2017)</i></p> <p>5.6 The TAC suggested that the project team start implementing “Lessons Learned” (from Stage 1) as soon as possible as this could aid in backing up route requirements and in the evaluation process. For example: protection of established areas (similar to Kitchener) vs. intensification/development.</p>	WSP

## MEETING NOTES – Technical Advisory Committee (TAC) Meeting No. 7

<b>PROJECT</b>	Region of Waterloo – Stage 2 LRT TPA Process
<b>OBJECTIVE</b>	To receive input and suggestions from the TAC on the draft display boards for PCC #3
<b>DATE / TIME</b>	October 16, 2017, 1:30 pm
<b>LOCATION</b>	Region of Waterloo, 150 Frederick St., Kitchener ON Room 110
<b>PROJECT No.</b>	161-07859-00

Attendees	Organization	e-mail
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Jennifer Fisher	WSP	jennifer.fisher@wsp.com

Item:	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. The discussion presented below follows the order of the presentation.	
<b>1.0</b>	<b>Slides 1-6: Introduction, Study Status &amp; PCC No. 3 Objectives</b>	
1.1	WSP advised that comments received from the TAC since the distribution of the meeting materials have not yet been incorporated into the boards. Matthew O'Neil (MO) added that the package will be revised and distributed to the Rapid Transit Senior Management group following this meeting and that the final date to incorporate revisions is October 24, 2017. WSP explained that planning and preparation for PCC No. 3 has been expedited compared to previous rounds, and therefore the material distributed is considered a working draft.	
1.2	WSP reviewed some of the revisions that have already been identified as being needed, which are presently being addressed.	
1.3	The TAC advised that the typical EA process graphic is not usually easily comprehended by the public. WSP advised that the project team is currently working on a version that reads more like a "decision making train" or flow chart.	WSP
1.4	The TAC noted that the project team should be prepared for questions regarding when service will commence for Stage 2, which should provide an opportunity to discuss the steps in the planning process. It was suggested that a graphic with the key steps to implementation (EA, preliminary design, property acquisition, design, construction) and high	WSP

Item:	Discussion:	Action by:
	<p>level timeline should be considered, to better explain why the planning phase is important, particularly in establishing property requirements and securing funding.</p> <p>1.5 The TAC suggested that since previous PCC material stated a construction start date of 2025, the project team should make sure to stay consistent with that date.</p> <p>1.6 The TAC advised that the date for commencement of operations on Stage 1 should be noted as Spring 2018.</p> <p>1.7 The TAC suggested that if the project team is going to have the public provide input interactively by sketching out routes on a provided map base, there should be team members there to help guide this process, recognizing that the intent is not to encourage participation rather than discourage or debate any new options.</p> <p>1.8 The TAC commented that the boards overall could be simplified, with greater use of infographics to present key information.</p> <p>1.9 The TAC inquired as to when the “plain language” review will be conducted. MO responded that the boards have been reviewed by the Region’s Communication Team and edits have been incorporated but were not in the version distributed to the TAC, and that the package will be reviewed again once all comments have been incorporated.</p>	<p></p> <p>WSP</p> <p>WSP</p> <p>WSP</p>
<b>2.0</b>	<b>PCC No. 3 Display Boards 1 to 6</b>	
	<p>2.1 MO inquired whether another board should be added referencing “The ION Story” handout. The TAC agreed that condensing the information on the current “ION to Date” slide and guiding the public to “The ION Story” (to be made available at the PCCs) would be useful.</p> <p>2.2 The TAC recommended that the closing date for PCC No. 3 comments be changed to end of December.</p> <p>2.3 The TAC recommended that the Study Timeline show that property impacts will be presented at PCC No. 5, as the last round of PCCs indicated that this would be available at PCC No. 3. It also needs to be stated more clearly why property impacts are not available at this time. It was agreed that a note should be added to the “What is the Purpose of Today” slide to clearly state that the study has not yet advanced to the stage where property requirements can be determined, and that this detail will be provided at a future PCC.</p> <p>2.4 The TAC suggested that overall the Study Timeline could be simplified to more clearly show what information has been/will be seen at each of the PCCs.</p> <p>2.5 The TAC noted that there are no dates or durations on the Study Timeline. MO responded that these were removed as they will be contingent on the feedback received at PCC No. 3 and subsequent decisions. The TAC suggested adding a high level schedule back into the timeline (e.g. season/year), and consider how to communicate that the project has deviated from the original timeline to accommodate the review of additional alternatives.</p> <p>2.6 The TAC inquired if there would be any merit in an additional slide to summarize PCC No. 2 comments in a more “pros and cons” style rather than selected quotes; more reflective of the information in the handout. The TAC also suggested noting the number of attendees from the previous PCCs and the number of comments received. It was agreed that a simpler presentation than that used at PCC No. 2, grouping the comments into themes, will likely be better received.</p> <p>2.7 The City of Cambridge requested that the potential GO Station locations be shown on the Preliminary Preferred Route and South Cambridge</p>	<p>WSP</p> <p>WSP</p> <p>WSP</p> <p>WSP</p> <p>WSP</p> <p>WSP</p>

Item:	Discussion:	Action by:
	<p>maps, as the City believes that this is important to the public and therefore should be acknowledged. MO explained that the intent is to keep the Preliminary Preferred Route board as simple as possible, but this can be shown on the mapping for the South Cambridge alternatives.</p> <p>2.8 WSP noted that the version of the draft display boards circulated to the TAC is missing introductory slides for each of the three study areas to explain why the project team is looking at new or refined alternatives.</p>	<p>WSP</p> <p>WSP</p>
<b>3.0</b>	<b>PCC No. 3 Draft Display Board 7 – Kitchener Alternative</b>	
	<p>3.1 The TAC noted that it is not clear in the Kitchener map that both of the F2 alternatives (F2a and F2b) are contained within the approved River Road right-of-way; the current side-by-side lines make it appear that the road will be widened to accommodate LRT. WSP will investigate a different way to display this, such as overlapping dashed lines or thinner side-by-side lines.</p> <p>3.2 The TAC suggested clarifying that LRT will be on a separate or independent structure over the Grand River, as the current note (“designated structure”) is unclear.</p> <p>3.3 It was agreed that an introductory board is required to explain why another alternative is being considered, in terms of where there appear to be opportunities for improvement in certain evaluation criteria (e.g. tradeoffs in environmental/floodplain impacts at the Grand River, travel time improvements, traffic impacts, property).</p>	<p>WSP</p> <p>WSP</p> <p>WSP</p>
<b>4.0</b>	<b>PCC No. 3 Draft Display Boards 8-9 – North Cambridge Alternatives</b>	
	<p>4.1 WSP noted that the display currently identified as “North Cambridge Screening” is being repackaged into multiple boards in order to clarify and simplify the messaging. WSP also indicated that this will not be referred to as “screening” but instead reflect whether the options fall within the scope of the review.</p> <p>4.2 The suggestion to add “Preston” in brackets after “North Cambridge” was discussed. MO noted a desire to remain consistent with naming used in prior PCCs, but agreed that additional references to the “Preston area” or “Preston community” in the text boxes and narratives could be considered.</p> <p>4.3 In response to a question, MO and WSP advised that N2 would not be highlighted on the displays, as this route has already been evaluated and was not selected as preferred. It was agreed that the handout would include a section on why previously evaluated route options were not being revisited as part of this review. The City of Cambridge asked whether, if an acceptable route could not be identified in Preston, the Region would reconsider N2 given City Council’s resolution, and MO advised that based on current direction from Regional Council, this would likely not be considered. MO and WSP indicated that the project team will be prepared to discuss why a route on Maple Grove is not preferred over a route through Preston if this is raised by PCC attendees.</p> <p>4.4 The TAC suggested labelling Riverside Park on the North Cambridge map displays. It was noted that the City of Cambridge will likely not support any route that travels through Riverside Park.</p> <p>4.5 WSP will investigate whether the North Cambridge map display should be reoriented more north-south and divided into two separate boards.</p> <p>4.6 An introductory board will be added and will note that the options include those suggested through public feedback following PCC No. 2 and additional options identified by the project team.</p> <p>4.7 In response to a question, it was noted that having a stop in Preston is a requirement of the project, but the specific stop location will depend on the alignment selected and the geometric constraints. It was also noted that</p>	<p>WSP</p> <p>WSP</p> <p>RMW</p> <p>WSP</p> <p>WSP</p>

Item:	Discussion:	Action by:
	opportunities for in-fill stations will be different depending on the alignment, and this will be examined after the evaluation is completed.	WSP
<b>5.0</b>	<b>PCC No. 3 Draft Display Board 10 – South Cambridge Alternatives</b>	
	5.1 WSP noted that typical cross sections will be added to the map displays in all three segments.	WSP
	5.2 WSP advised that an exhibit is under development to show how the local bus network could be modified to serve the LRT terminal station in downtown Cambridge.	WSP
	5.3 The TAC advised that the new pedestrian bridge crossing the Grand River near Bruce Street should be shown and labelled on the maps for South Cambridge, as it will be an important factor for the T2 option.	WSP
	5.4 The TAC inquired whether the inclusion of the cross-sections is premature given that the planning process is ongoing. WSP responded that there were many questions at PCC No. 2 about how LRT is positioned within the road right-of-way and it is believed that including these cross sections will elicit more constructive feedback with regard to the alternatives. The TAC was generally in agreement and members suggested potentially using concept displays and/or photos from Stage 1 for this purpose also.	RMW
	5.5 The TAC advised that the radii of the circles showing walk distances should be consistent across the displays, and in line with policy documents.	WSP
<b>6.0</b>	<b>PCC No. 3 Draft Display Boards 11 to 14</b>	
	6.1 WSP noted that consideration will be given to more specificity around the additional evaluation criteria regarding connectivity and operational benefits to GRT local bus service.	WSP
	6.2 The TAC suggested that reference to cost estimates being at a Class D level of detail is too jargoned and recommended removing this. WSP noted that this display is identical to the version presented at PCC No. 2.	
	6.3 The TAC advised that the “Next Steps” board needs to be condensed and revised to include only information that is relevant to the public.	WSP
<b>7.0</b>	<b>Slide 8: Next Steps</b>	
	7.1 The TAC commented that the anticipated timing of the EPR in Fall 2018 may overlap with the municipal election period. MO responded that this has been noted and could result in modifications to the timeline.	
	7.2 MO noted that as many of the revisions discussed at this meeting as possible will be incorporated as time permits, and the revised Information Package will be distributed for TAC review.	RMW

Distribution: All TAC members

*These meeting notes are considered to be accurate summary of the items discussed. Please advise Denise Morneau (denise.morneau@wsp.com) of any discrepancies, errors or omissions, otherwise these meeting notes will be accepted as written.*

## MEETING NOTES – Technical Advisory Committee (TAC) Meeting No. 8

<b>PROJECT</b>	Region of Waterloo – Stage 2 LRT TPA Process
<b>OBJECTIVE</b>	Working session to review the evaluation of the Kitchener (K3b), South Cambridge (S3) and Terminal Station (T) alternatives, and to review the proposed alignment alternatives being carried forward for evaluation for the North Cambridge (Preston) segment.
<b>DATE / TIME</b>	March 2, 2018, 9:00 to 11:30 am
<b>LOCATION</b>	Region of Waterloo Operations Centre 100 Maple Grove Road – Boardroom
<b>PROJECT No.</b>	161-07859-00

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Blair Underhill	WSP	blair.underhill@wsp.com

Item:	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>Study Status (Slides 1-6)</b>	
1.1	The Region confirmed that PCC No. 4 will be held on May 8, 9 and 10, 2018 in Kitchener, Preston and Downtown Cambridge respectively. The summary report from PCC No. 3 will be uploaded to the project website in advance, and will include full details of comments submitted.	
1.2	WSP advised that a photographic rendering of the LRT alignment on Shantz Hill Road and crossing Fountain Street will be developed for PCC No. 4, to help local residents visualize this section.	
1.3	The City of Kitchener requested the opportunity to review the natural and cultural heritage assessments when available, and noted that some of the information on the map exhibits does not appear consistent with the City's natural heritage information. The City will provide their available	City of Kitchener

Item:	Discussion:	Action by:
	information, and this will be reviewed by WSP's environmental specialists. Study reports will be provided to the City for review when completed.	WSP
<b>2.0</b>	<b>Evaluation of Highway 8 (K3b) Alternative (Slides 7-17)</b>	
2.1	WSP noted that a review of the Grand River Hospital - Freeport campus was undertaken by GRT in light of public input about the need for an LRT stop at that location, and that this indicated that the area is better served by local bus service, with connections to LRT at the Fairway stop.	
2.2	WSP confirmed that K3b alignment is grade separated across the Highway 8 exit ramp at King Street and does not impact the geometry or operation of the ramp.	
2.3	The Region inquired whether the existing lane configuration and merging operations through the King Street interchange area would be addressed; WSP noted that the K2 alignment from the 2017 Preliminary Preferred Route (PPR) recognized this and sought to optimize the cross-section as part of accommodating LRT, however the K3b alignment does not affect King Street in this area. WSP indicated that as part of preliminary design, if there are other capital projects with similar timelines as the LRT project, these can be assessed to see if there are advantages to integrating the work.	WSP
2.4	In response to a question from the TAC, WSP explained that a full property buyout would be based on judgement as to the severity of the impact, including whether the primary building was directly impacted, or if access or parking could no longer be maintained. WSP noted that the assessment in the evaluation is relatively conservative based on concept level design; since there will be opportunities to reduce property impacts during preliminary design, particularly for grading tie-in, the number of properties impacted, including full buyouts, could be refined.	
2.5	The TAC asked whether the design features of the Grand River bridge could help further reduce impacts on significant environmental features. WSP advised that the river is a bit narrower at the K3b location, and thus clear spanning the watercourse is feasible, whereas at the K2 location, it was anticipated that an intermediate pier would be required due to the crossing length. WSP noted that the bridge design is currently at a concept design level, and will be further refined as part of preliminary design, including agency consultation.	
2.6	The TAC inquired whether operating costs should be considered on a life cycle basis, rather than as an annual cost. WSP agreed that a life cycle approach would provide a more accurate assessment of real costs, but that the relative differences between the alternative would remain consistent with the methodology undertaken, and thus would not impact the overall evaluation results. WSP noted that the life cycle operating costs will be examined in more detail as part of the business case analysis.	
2.7	The TAC concurred with the Project Team's recommendation of the F2b-K3b alternative for this segment.	

Item:	Discussion:	Action by:
<b>3.0</b>	<b>Evaluation of South Cambridge (S3) and Terminal Station (T) Alternatives (Slides 18-39)</b>	
	3.1 The City of Cambridge advised that the new pedestrian bridge crossing the Grand River in downtown Cambridge is nearing completion and due to open for public use in May 2018.	
	3.2 The TAC noted that a stop on the west side of the Grand River at Main Street could provide better opportunity for future extension of LRT. WSP explained that a number of alternatives were initially developed and short listed to the three currently under study, including two options extending to the west side of the river, however in discussions with the City and the Region it was concluded that the Main Street area west of the river is not preferred for a major transit facility. It was agreed that future extension of LRT to the west side of the river is not precluded with any of the alternatives.	
	3.3 With regard to the terminal stop (T) alternatives:	
	a) WSP confirmed that for all evaluation factors, the T1 option includes redesign of the Ainslie Street bus terminal to better integrate bus and LRT, including platform reconfiguration, pedestrian accessibility, streetscape, etc.	
	b) In response to a question from the TAC, WSP and GRT confirmed that end of line bus services, including GO Transit, would be accommodated on-street if T2 or T3 is constructed. It was discussed that if GO Transit extends rail service into Cambridge, relocating the main interchange to that location to support transfers between bus, LRT and rail would likely be explored, however without a defined location and timeline for GO rail extension, planning for this within the LRT project is not feasible.	
	c) WSP confirmed that an actual 800m walkshed based on the street and pedestrian trail network has been assessed, as well as the 800m radius from the centrepoint of each station, and that the evaluation findings are consistent for the indicators using this measurement.	
	d) WSP explained that ridership was not assessed for the T options, as the concentration of transfers currently provided at the Ainslie Street terminal (T1) would be provided at the T2 or T3 and as such the ridership volumes are not substantially different. WSP also noted that GRT will be investigating modifications to the bus network in Downtown Cambridge to support integration of LRT, and this can be accommodated regardless of the terminal location.	
	e) The TAC suggested that the property impact on the existing Ainslie Street terminal with Alternatives T2 and T3, which is shown as a Commercial property impact, be removed, as the existing terminal would no longer be functioning at that location, and the modified property boundaries would be reflected in any redevelopment proposal. WSP agreed that this impact should be removed, noting that the overall comparative assessment will not change.	WSP
	f) WSP agreed that the cost estimates should include an allowance for bus facilities at T2 and T3, including additional driver facilities	

Item:	Discussion:	Action by:
	elsewhere on the bus network to replace those at Ainslie. An estimate for these facilities will be provided by the Region.	RMW
	g) The TAC questioned whether the relative differences in the Harvey Ball assessment for the full buyout on T2 compared to T1 and T3 should be reconsidered, given that there is not an active business operating at this location. WSP agreed this would be reviewed.	WSP
	h) The TAC questioned whether site remediation costs should be included, given the known conditions in Downtown Cambridge. WSP advised that this will be discussed further in terms of whether an allowance should be added in addition to the contingencies.	WSP
	3.4 With regard to the S3 alternatives, WSP confirmed that the Harvey balls for S3c and S3d for Indicator 8.1 (Slide 37) have been inadvertently reversed and will be corrected in the evaluation matrix.	WSP
	3.5 The TAC concurred with the Project Team's recommendation of the T2 and S3d alternatives for this segment.	
<b>4.0</b>	<b>Proposed Routes for Evaluation in North Cambridge (Slides 40-53)</b>	
	4.1 The TAC advised that the O-L-H-R route along Fountain Street and King Street would require significant utility relocations, which should be reflected in the cost estimate. The Region will provide available as-builts and utility information from the recent Shantz Hill Road/Fountain Street/King Street construction project.	RMW
	4.2 The Region noted that a further refinement of the P4 alignment which would cross King Street at Eagle Street is under discussion within the Project Team, which would reduce impact on traffic operations on King Street and at the intersection.	
	4.3 The TAC noted that mixed traffic operation on Eagle Street (N3a) could potentially affect schedule adherence due to interaction with general traffic.	
	4.4 WSP confirmed that widening of King Street for the G alternative would extend across the Speed River bridge, which would likely require full replacement of the bridge.	
	4.5 It was agreed that alternative Q1-P4-R should replace Q1-G-R.	WSP
	4.6 WSP confirmed that an infill station on the north side of the Speed River or at Preston Parkway would likely not be technically feasible due to the grade of the LRT line on Shantz Hill Road, but that other potential locations for infill stations will be considered during preliminary design.	
	4.7 The Region advised that the cost estimates include an allowance for the purchase of the former railway corridor from CP Rail.	
	4.8 The TAC noted that a feasibility study of potential GO Rail service on the Fergus subdivision will be commencing shortly, which is in the vicinity of the W-X alternative.	
	4.9 WSP advised that all mapping being prepared for public consultation will be checked to ensure the realigned Shantz Hill Road alignment and intersection layout is reflected.	WSP

Item:	Discussion:	Action by:
<b>5.0</b>	<b>Potential New Route – Kitchener and North Cambridge (Slides 54-55)</b>	
	5.1 The Region advised that this alignment was brought forward by a group of local residents, and will be taken through the evaluation process as Alternative J and compared to the F2b-K3b route. Some refinements will be incorporated to reduce impacts on major constraints (e.g. Hydro transmission line adjacent to Highway 8 ROW, cemeteries on Fountain Street).	
	5.2 The TAC highlighted the potential impacts on the approved River Road interchange, and the anticipated cost differential between Alternative J and the F2b-K3b alternative.	
<b>6.0</b>	<b>Next Steps (Slide 56) and Other Comments</b>	
	6.1 The Region confirmed that the displays and information package for PCC No. 4 will be similar in scope and format to the PCC No. 2 material, focusing on the evaluation of the additional route alternatives and the rationale for the preliminary preferred route.	
	6.2 The Region advised that information on the Region’s property acquisition process will be provided at PCC No. 4, likely in a handout.	
	6.3 WSP will circulate the background information hyperlinked in the presentation, to enable the TAC to review the analysis in more detail.	WSP
	6.4 The TAC inquired whether a presentation would be provided at PCC No. 4. The Region advised that following discussion with senior management, it was determined that one-on-one and smaller group discussions were most productive in conveying information and eliciting feedback. The option of creating a short recorded presentation to be played on a loop at the PCCs and posted to the project website will be explored further.	RMW

Attachment: TAC Meeting No. 8 – presentation material  
 Distribution: All TAC members (see attached list) and any other attendees

*These meeting notes are considered to be accurate summary of the items discussed. Please advise Denise Morneau (denise.morneau@wsp.com) of any discrepancies, errors or omissions, otherwise these meeting notes will be accepted as written.*

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## MEETING NOTES – Technical Advisory Committee (TAC) Meeting No. 9

<b>PROJECT</b>	Region of Waterloo – Stage 2 LRT TPA Process
<b>OBJECTIVE</b>	Working session to review the evaluation of the Kitchener (K3b), South Cambridge (S3) and Terminal Station (T) alternatives, and to review the proposed alignment alternatives being carried forward for evaluation for the North Cambridge (Preston) segment.
<b>DATE / TIME</b>	March 19, 2018, 1;30 to 4:00 pm
<b>LOCATION</b>	Region of Waterloo Operations Centre 100 Maple Grove Road – Classroom
<b>PROJECT No.</b>	161-07859-01

<b>Attendees</b>	<b>Organization</b>	<b>e-mail</b>
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Blair Underhill	WSP	blair.underhill@wsp.com

<b>Item:</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>Evaluation of North Cambridge (N) Alternatives – Slides 5 to 23</b>	
1.1	The TAC inquired if segments P4 and G (Slide 5) could be used with any of N3c, N3d and N3e (Slide 7); WSP noted that these interconnections are technically feasible, and could be assessed as sub-options if both PG and G are both determined to be preferable.	
1.2	The Project Team advised that concerns have been raised by Region senior management about the potential impact on traffic operations for N3c, N3d and N3e because they travel on King Street and turn at the King/Eagle intersection; this will be addressed in the evaluation process under Indicator 2.2.	
1.3	The Project Team explained how the Harvey Balls were established for full and partial property impacts. It was agreed that the same approach used in the previous evaluations should be followed to maintain consistency. The key maps showing the property impacts for each alternative were	

Item:	Discussion:	Action by:
	<p>reviewed and discussed in detail, including how property costs were established. It was agreed that the unit costs for property acquisition should be reviewed by the Region’s property group to confirm that they are representative, particularly to confirm that unit costs associated with partial takings at commercial and industrial properties are reflective of operational impacts.</p>	<p>WSP/RMW</p>
<p>1.4</p>	<p>A variation of N3c/d/e was discussed, which would cross the King/Eagle/Queenston/Chopin block with an off-street station, and travel through the King/Eagle intersection on Eagle Street. It was agreed that this option could potentially reduce residential property impacts further, reduce impacts on intersection operations at King/Eagle, and focus potential intensification at this corner and should be evaluated. The following was discussed:</p>	
	<p>a) The Project Team noted that potential for revitalization/intensification is addressed in the evaluation criteria in a qualitative way, however the potential financial benefit associated with the sale of surplus lands for redevelopment or ridership increases due to redevelopment could not reasonably be estimated as this point, and have not been considered in the assessment of other route/station alternatives.</p>	
	<p>b) WSP will confirm traffic impacts at the King/Eagle intersection with the modified alignment through the block.</p>	<p>WSP</p>
	<p>c) WSP noted that an initial assessment of cultural heritage resources in this block has been completed, and is currently being reviewed.</p>	<p>WSP</p>
	<p>d) The option of evaluating a relatively wide alignment and representative station location in this area was discussed, with further assessment of alignment refinements and station orientation during preliminary design. The Project Team will develop the evaluation matrix for this option incorporating the TAC’s feedback, and determine how this could be effectively presented at PCC No. 4.</p>	<p>WSP</p>
	<p>e) Subject to confirming property and traffic impacts, it was agreed that, based on the evaluation, N3e with the alignment modification through the block appears to be the preferred option overall.</p>	
<p><b>2.0</b></p>	<p><b>Evaluation of North Cambridge (E) Alternatives – Slides 24 to 33</b></p>	
	<p>2.1 The Region advised that a feasibility study is being initiated to explore bringing GO Train service to Cambridge via the CN Fergus line that crosses the E2 alignment near Industrial Road. It was agreed that since the feasibility study has not yet commenced, this should not be considered under Indicator 1.1 in the evaluation (see Slide 25).</p>	
	<p>2.2 The TAC concurred with the Project Team’s recommendation of the E2 alternative for this segment.</p>	
<p><b>3.0</b></p>	<p><b>“CP Adjacent” Alternative (Alt J) – Slides 34 to 37</b></p>	
	<p>3.1 The Project Team reviewed the refinements to the alignment proposed by the residents group to address constraints and explained the proposed evaluation process, noting that the evaluation results will be reviewed with the TAC prior to PCC No. 4. The TAC concurred with this approach.</p>	<p>WSP</p>
<p><b>4.0</b></p>	<p><b>Refinements to Evaluation of South Cambridge (T) Alternatives – Slide 38</b></p>	

Item:	Discussion:	Action by:
	4.1 The Project Team reviewed the updated capital cost estimates, incorporating feedback from TAC Meeting No. 8. The TAC concurred with the revisions. WSP confirmed that these changes will be incorporated into the evaluation documentation and the display material for PCC No. 4.	WSP
<b>5.0</b>	<b>PCC No. 4 Outline – Slides 39 to 41</b>	
	5.1 The Project Team noted that although different formats have been tested to try to simplify the material, it has been decided to maintain consistency in the style and format of the PCC displays as was used at previous PCCs, particularly how the evaluation results are presented. The Project Team confirmed that refinements to font and colour to improve readability (including AODA) are being incorporated, but due to the compressed timeline, the overall look of the displays will not substantially change.	WSP
	5.2 For the “PCC No. 3 Feedback” board, the TAC suggested using the term “Concerns”, instead of “Challenges”. It was also suggested that comments that are more general, rather than associated with a specific segment, be included either on the board or in the Information Package.	WSP
	5.3 Different methods to present property impacts were discussed, however it was determined that the approach used on the evaluation displays from PCC No. 2 should be continued. The TAC suggested that it be prominently stated on the boards that information about impacts to specific properties are not yet available, and indicate when property owners can expect to see this. The Project Team agreed, and noted that additional boards are also being prepared to describe the property acquisition process.	WSP
	5.4 The order of presentation of the evaluation processes. The TAC agreed with the Project Team’s recommendation of F+K, N, Alternative J compared with the preferred N alternative, E, S3, and T.	
	5.5 It was agreed that in order to distinguish it from the Preliminary Potential Route presented at PCC No. 2, the recommendation at PCC No. 4 should be denoted as “Preliminary Preferred Route (2018)”. This will be reviewed with Region senior management to confirm.	RMW
	5.6 It was agreed that the PCC No. 4 material will provide an indicative schedule for PCC No. 5 and other study milestones, indicating that this is pending Council endorsement of the preferred route in June 2018.	WSP
<b>6.0</b>	<b>Next Steps – Slide 42</b>	
	6.1 The Project Team indicated that comments received from the TAC at this meeting, plus any additional comments provided by March 23, could be incorporated into the evaluation and PCC No. 4 displays.	TAC
	6.2 The Project Team advised that drafts of the display material and Information Package for PCC No. 4 would be distributed to the TAC for final review by April 6, 2018.	WSP

Attachment: TAC Meeting No. 9 – presentation material

Distribution: All TAC members (see attached list) and any other attendees

*These meeting notes are considered to be an accurate summary of the items discussed. Please advise Denise Morneau (denise.morneau@wsp.com) of any discrepancies, errors or omissions, otherwise these meeting notes will be accepted as written.*

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## MEETING NOTES – Technical Advisory Committee (TAC) Meeting No. 10

<b>PROJECT</b>	Region of Waterloo – Stage 2 LRT TPA Process
<b>OBJECTIVE</b>	Review study status and schedule, additional alternatives in North Cambridge (Preston), typical cross sections, progress on site selection for the MSF and other ongoing activities
<b>DATE / TIME</b>	September 14, 2018, 9:30 am to 12:00 pm
<b>LOCATION</b>	Region of Waterloo, 150 Frederick Street Room 217 (Young)
<b>PROJECT No.</b>	161-07859-01

<b>Attendees</b>	<b>Organization</b>	<b>e-mail</b>
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<b>Item:</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>Study Status &amp; Updates – Slides 3 to 8</b>	
1.1	WSP provided an overview of the feedback received at PCC No. 4 in May 2018, and the Regional Council resolution from June 27, 2018. The Region noted that the minutes from the Regional Council meeting confirmed that the route is fixed at Shantz Hill and at the Eagle/William intersection in Preston, and additional routes are to be investigated to connect these points.	
1.2	WSP clarified that additional field work and updates to the Existing Conditions reports are primarily to address the sections of the 2018 preferred route that have changed since the initial existing conditions work was undertaken in 2016 and 2017.	
1.3	There was a discussion about the activities during the 120 day period between the TPAP Notice of Commencement and Notice of Completion, including the requirement for public consultation. WSP indicated that the consultation approach during this period is at the discretion of the proponent, with one option under discussion being an online presentation	



Item:	Discussion:	Action by:
	provide a level of service comparable to or better than the existing intersection based on preliminary modeling. WSP will provide the Synchro analysis to the Region for more detailed review.	WSP
2.4	<p>The following was discussed regarding Phase 3:</p> <ul style="list-style-type: none"> <li>• There are several engineering challenges that may be more appreciable to the technical team than the community. Further detailing of the potential impacts including proximity of the alignment to the apartment complex at 100-200 Eagle Street and the loss of parking, the significant cost premium, and the less desirable location of the station (further away from King/Eagle, less accessible, in the floodplain, etc.) will be developed.</li> <li>• The cost estimate will be updated to include modifications to the parking garage and surface parking at 100-200 Eagle.</li> </ul>	WSP WSP
2.5	With consideration of the feedback provided and items to be further investigated, the TAC was generally in agreement with the recommendation of A3+B2c as the preferred alternative for this area. It was agreed that further investigation of restricting or closing Chopin, converting Eagle Street to one-way southbound and the operation of the relocated access at 100-200 Eagle is required, including turning and receiving lanes, potential changes in traffic patterns on the surrounding road network, pedestrian access and local bus routing.	WSP
2.6	The approach to sharing the results of the evaluation with the community was discussed. The Region will review this internally with Senior Management and advise the TAC about next steps.	RMW
<b>3.0</b>	<b>Typical Cross-Sections – Slides 26 to 34</b>	
3.1	WSP advised that in the interest of time, the cross-sections would not be reviewed in their entirety at the meeting, but will be distributed after the meeting for the TAC’s review.	TAC
3.2	WSP noted that the cross-sections are typical, and site-specific adjustments will be required for grading, drainage, roadway interface, berms/noise walls, etc.	
3.3	The potential addition of a multi-use path along the E2 corridor was discussed (Slide 28) to provide connectivity with an existing trail. The Region noted that they have advised the City of Cambridge that the Project Team will work with them to assess the feasibility of incorporating the trail into the project, so that the City can include this in budget planning.	
3.4	A separate meeting will be held to discuss the cross-section requirements and associated right-of-way on Hespeler Road in more detail.	
<b>4.0</b>	<b>Maintenance and Storage Facility – Slides 35 to 45</b>	
4.1	WSP noted that the Dutton Drive facility has a footprint of approximately 5.5 ha, which was adopted as the size for the preliminary identification of potential sites for a Stage 2 MSF. It was agreed that the Stage 2 site will not provide the full maintenance services or a control facility as is provided at Dutton Drive, and thus the actual land requirements will be reduced. WSP advised that a functional layout will be done once the elements have been confirmed.	
4.2	At the TAC’s suggestion, WSP will add operator access to the line as an item to be considered under the functional elements for site selection.	WSP

Item:	Discussion:	Action by:
	4.3 WSP advised that the train storage capacity will be estimated based on the travel time and headways anticipated for the line.	
<b>6.0</b>	<b>Update on Cambridge to Union GO Train Feasibility Study</b>	
	6.1 The Region provided an overview of this study to re-examine the feasibility of providing GO Train service between Toronto and Cambridge via Guelph using the Fergus subdivision, which was initially studied in 2009. The project has recently been awarded and Phase 1 is anticipated to be completed by Spring 2019. The Region noted that the two project teams may collaborate during the study regarding potential station interfaces.	
<b>7.0</b>	<b>Potential Routing Along King and Bishop</b>	
	7.1 The Region advised that the possibility of routing ION Stage 2 along King and Bishop has been raised, noting that this was considered very early in the network planning process but set aside in favour of supporting development opportunities along Hespeler Road. Some of the reasons noted for ongoing interest in this corridor include the ability to service a larger proportion of the existing developed area of Preston, the need to review any new development opportunities in both corridors, and balancing connectivity between urban centres with future intensification.	
	7.2 The Project Team discussed the principles that were set at the commencement of the Stage 2 ION TPAP, including that Hespeler Road was a key corridor for redevelopment in the City’s growth and intensification study that was supported by Hespeler Road being on the Central Transit Corridor. Other discussion points: <ul style="list-style-type: none"> <li>• One of the objectives of ION is to encourage transformation; how does the transformational opportunity along Hespeler compare to the opportunity along King</li> <li>• Has the planning vision for Hespeler changed since the study commenced, particularly between Highway 401 and Sheldon Lane; is there development opportunity along King and Bishop given existing residential, commercial and industrial development</li> <li>• Does the King/Bishop area provide for a potential GO station, subject to the outcome of the Cambridge to Union GO Train Feasibility Study</li> </ul>	
	7.3 The option of carrying out a desktop exercise to investigate engineering and environmental constraints (natural, floodplain, heritage), densities, redevelopment potential, travel time, major cost items, etc. was discussed. It was agreed that a clear, convincing rationale for a different planning and land use vision for area would ultimately be required to justify opening up discussion of an alternative to the preferred route already identified for this area. The Region advised that this would be discussed with Senior Management for direction.	
	7.4 It was agreed that the Region will compile and distribute background studies from the earlier review of the King/Bishop route option.	RMW

Attachment: TAC Meeting No. 10 – presentation material  
 Distribution: All TAC members (see attached list) and any other attendees

*These meeting notes are considered to be an accurate summary of the items discussed. Please advise Jennifer Fisher (jennifer.fisher@wsp.com) of any discrepancies, errors or omissions, otherwise these meeting notes will be accepted as written.*

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## MEETING NOTES – Technical Advisory Committee (TAC) Meeting No. 11

<b>PROJECT</b>	Region of Waterloo – Stage 2 LRT TPA Process
<b>OBJECTIVE</b>	Review of work in progress plans, profiles and cross-sections to receive TAC input
<b>DATE / TIME</b>	December 6, 2018, 9:30 am to 11:30 am
<b>LOCATION</b>	Region of Waterloo, 150 Frederick Street Room 224
<b>PROJECT No.</b>	161-07859-01

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<b>Item:</b>	<b>Discussion:</b>	<b>Action by:</b>
	WSP provided a detailed walk-through of the current work in progress, including roll plans and sketches, highlighting the design features and localized issues that are under study. These notes summarize the key questions that were raised by the TAC during the walk-through and further actions to be undertaken; it is not intended to reflect the entire discussion.	
<b>1.0</b>	<b>Study Status and Updates</b>	
1.1	The Region advised that the refined alternatives for the North Cambridge (Preston) area would be presented to the Rapid Transit Steering Committee in early 2019, to seek direction to undertake additional public consultation thereafter. This consultation (PCC No. 4b) would consist of a single session geared to Preston residents in response to the June 2018 Council endorsement requiring the Project Team to reexamine the segment from Shantz Hill to William/Eagle.	
1.2	The Region noted that the Province's Bill 57, which is currently being debated, will change Metrolinx's planning area to include the Region of Waterloo. The timing of implementation of Bill 57 and how Metrolinx will engage with projects like the Stage 2 ION TPAP is currently unknown.	

Item:	Discussion:	Action by:
<b>2.0</b>	<b>Roll Plan Review</b>	
2.1	The City of Kitchener will provide the site plan for Fairview Park Mall (PDF and CAD, if available) to the Project Team for incorporation into the Stage 2 ION plans for this area.	Kitchener
2.2	In a recent meeting, Cadillac Fairview expressed a preference for Stage 2 ION to remain at grade, travelling through the main signalized intersection at Fairway Road. Concept plans provided by CF's consultant have been reviewed, and the Project Team feels that the impacts to traffic operations at the intersection and to the commercial property south of Fairway Road do not support further consideration of this option.	
2.3	The Region advised that the current timeline for start of construction on the section of River Road that is shared with the Stage 2 ION alignment is 2023, with the section to the south planned for commencement in 2020.	
2.4	WSP will confirm the limits of wetlands adjacent to Highway 8; GRCA noted that the area around Sta. 2+ 600 - 2+700 (approx.) may be the remnant of a former tree farm.	WSP
2.5	WSP will consider reducing the length of the LRT maintenance road for the segment along Highway 8 south of the Grand River to minimize the risk of unauthorized use to access the riverfront.	WSP
2.6	WSP confirmed that the need for noise mitigation between the Stage 2 ION alignment and the Deer Ridge community will be examined as part of the noise assessment.	
2.7	GRCA noted that there are erosion issues on the north bank of the Grand River in the vicinity of the proposed Stage 2 ION crossing.	
2.8	WSP will review signalized intersections for removal of the channelized right turn and concrete island ("pork chop"), for example King Street at Sportsworld Crossing Drive.	WSP
2.9	The Region advised that the current plan for the King Street reconstruction through Sportsworld includes a multi-use path, noting that the limits of this facility require confirmation. WSP advised that the King Street section will be updated based on the design being completed as part of the reconstruction project when received.	RMW
2.10	WSP has assisted the Region to prepare a memo outlining the benefits of MTO's construction of the west-oriented ramps at the Highway 401/ Highway 8 interchange prior to Stage 2 ION construction, including advantages to local traffic, transit and active transportation. This issue will be discussed with MTO at a future coordination meeting.	
2.11	WSP will confirm whether the N-E ramp at the Highway 401/King Street interchange will be realigned as part of MTO's future reconstruction of the Highway 401/Highway 8 interchange, as it does not line up with the W-N ramp on the opposing leg of the intersection on the current drawing.	WSP
2.12	GRCA expressed interest in further reviewing the Preston LRT station configuration, which is currently outside of, but in close proximity to, the floodway zone. WSP advised that a meeting with GRCA is being arranged in January 2019 to review the hydraulic modelling and floodplain impacts of the current preliminary design.	WSP
2.13	GRT advised that northbound bus access to King Street in the vicinity of the Preston LRT station needs to be provided; WSP will prepare design options for circulation of GRT buses at all Stage 2 ION stations for further discussion with GRT.	WSP

Item:	Discussion:	Action by:
	2.14 GRCA advised that the proposed relocation of the access to the River's Edge Apartment complex on Eagle Street at King Street falls in the Speed River floodway. It was agreed that the existing entrance at Eagle Street should be maintained for emergency use only in a flood event, and securely gated otherwise.	WSP
	2.15 The Region noted that the intersection of Dundas Street and Beverly Street is planned to be reconstructed as a roundabout. The Region will provide the design plans to WSP to review conformance with LRT requirements.	RMW
	2.16 GRCA noted that the Main Street LRT station appears to overlap the Mill Creek floodway. WSP advised that the hydraulic impacts and potential mitigation measures are being assessed further as part of the preliminary design study, and will be reviewed in more detail at the meeting with GRCA being planned for early 2019.	WSP
	2.17 The City of Cambridge suggested that the intersection of Lutz Street and Wellington Street be closed, and Lutz converted to a cul-de-sac with access maintained from Main Street. It was agreed that if the existing Ainslie Street bus terminal site is redeveloped, this would provide more flexibility for future roadway access from Wellington.	WSP
	2.18 WSP reviewed the options for widening Bruce Street between Water Street and Wellington Street to accommodate the LRT station. WSP will send the concepts to the City of Cambridge for more detailed review.	WSP
	2.19 The Region requested that cyclist access and bike storage be provided at the Bruce Street LRT station.	WSP
	2.20 The Region requested that a pedestrian crossing of Water Street be shown at Bruce Street, with a notation that the warrant for a signalized crossing will be assessed in detail design.	WSP
	2.21 WSP confirmed that TPSS locations will identified once the preliminary design plans and profiles are further refined, to identify property requirements.	
	2.22 The Region expressed an interest in arranging an internal workshop with additional technical staff to review the plans and cross-sections in more detail including integration with other capital projects and initiatives. WSP will work with Region staff to identify potential dates with the objective of conducting this work early in 2019.	WSP

Distribution: All TAC members (see attached list) and any other attendees

*These meeting notes are considered to be an accurate summary of the items discussed. Please advise Jennifer Fisher (jennifer.fisher@wsp.com) of any discrepancies, errors or omissions, otherwise these meeting notes will be accepted as written.*

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## MEETING NOTES

### Technical Advisory Committee (TAC) Meeting No. 12

<b>PROJECT</b>	Region of Waterloo – Stage 2 ION LRT Transit Project Assessment
<b>OBJECTIVE</b>	Project update and receipt of TAC comments on the draft Environmental Project Report (EPR)
<b>DATE / TIME</b>	November 10, 2020, 10:00 am
<b>LOCATION</b>	Zoom virtual meeting
<b>PROJECT No.</b>	161-07859-01

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Item:	Discussion:	Action by:
	WSP provided a brief update on the status of the project, and noted that the purpose of the meeting is to discuss any significant comments or questions on the draft EPR. These notes summarize the key questions or comments that were raised during the meeting and further actions to be undertaken; it is not intended to reflect the entire discussion. The slides are appended for reference.	
<b>1.</b>	<b>Introductory Slides</b>	
1.1	WSP provided an overview of the Transit Project Assessment (TPA) Process and the key milestones and timelines.	
1.2	WSP noted that the Minister of the Environment, Conservation and Parks (MECP) has the authority to act on a proposed transit project on the basis that a project may have a	

Item:	Discussion:	Action by:
	potential negative impact on a matter of provincial importance. Matters of provincial importance relate to the natural environment, cultural heritage value or interest, or constitutionally protected Aboriginal or treaty rights.	
1.3	WSP briefly discussed the proposed TPA Process milestones. The project is nearing the end of the pre-planning phase, with the Notice of Commencement anticipated to be published in early December 2020. The draft EPR will be available for public, agency and Indigenous community review, and will be accompanied by a narrated online presentation to provide an overview of the project and the EPR. Comments will be collected using the Region’s Engage survey tool. The Notice of Completion must be issued within 120 days, including the final EPR, and will be subject to a further 30-day review period.	
1.4	WSP noted that in order to meet the planned Notice of Commencement date in early December, comments from the TAC can be provided at this meeting, or in writing by November 12, 2020.	
<b>2.</b>	<b>Environmental Project Report – Chapters 1 and 2</b>	
2.1	City of Kitchener, City of Cambridge, Region of Waterloo, MTO and GRT noted no comments on Chapters 1 and 2 at this time.	
2.2	GRCA noted no comments specifically on Chapters 1 and 2 at this time, and mentioned that their focus is primarily on the technical reports on which they will provide points and clarifications in written comments by November 12.	GRCA
<b>3.</b>	<b>Environmental Project Report – Chapters 3 and 4</b>	
3.1	GRCA, Region of Waterloo and City of Kitchener had no comments on Chapters 3 and 4 at this time.	
3.2	GRT noted that ridership has been affected this year compared to previous years (2018 and 2019) due to the COVID-19 pandemic. WSP agreed that it has been an unusual year, however trends from the previous years, forecasts of future growth and development, and the Region’s decision to implement LRT as its rapid transit solution provide justification for the need of the project.	
3.3	MTO had no comments at this time, however indicated that written comments may be provided by November 12, noted nothing significant on these chapters.	MTO
3.4	City of Cambridge had no comments at this time, however will provide written comments by the end of the week.	Cambridge
<b>4.</b>	<b>Environmental Project Report – Chapters 5 and 6</b>	
4.1	City of Kitchener and GRCA had no comments on Chapters 5 and 6 at this time.	
4.2	Region of Waterloo Transportation noted significant feedback following commencement of service on Stage 1 ION regarding the need for better integration of Active Transportation and network connectivity. M. O’Neil responded that the functional design for Stage 2 ION captures the AT network along the LRT corridor and ensures access to the stations, but broader network connectivity and “missing links” beyond the study area will need to be reviewed as part of a separate process. Any further AT initiatives can be considered further in later stages of the design.	
4.3	City of Cambridge noted similar questions regarding AT and pedestrian facilities and connections. M. O’Neil clarified the approach to addressing AT comments received to date and noted that all AT facilities in the Region’s TMP along/across the Stage 2 ION corridor have been addressed, except at two locations (Shantz Hill Road and Eagle Street) where notes have been used on the functional design plates to ensure further review in a future design phase. He explained that AT facilities incorporated into the Stage 2 ION functional design were to reinstate existing facilities or reflect those identified as part of a Master Plan.	

Item:	Discussion:	Action by:
4.4	MTO discussed their previous comments about the integration of LRT on King Street through the Highway 401 interchange, and acknowledged the mutual commitment to review this in more detail in a future design phase. WSP noted that a detailed discussion of this location has been included in the EPR along with cross-sections showing how LRT is accommodated for each phase of MTO's planned improvements to the interchange (which will be integrated with the Highway 401/Highway 8 interchange expansion), which is consistent with the technical memo previously submitted to MTO on this topic.	
4.5	GRT mentioned that written comments on Chapter 5 will be provided regarding the intermodal stations and specifically the station and park & ride lot at Sportsworld. GRT also noted that detailed written comments will be provided on Chapter 6 regarding transit stops. GRT suggested a more detailed discussion with the Region and WSP about opportunities for integrating the Sportsworld facility; M. O'Neil noted that this is beyond the scope of the current TPA but will arrange a meeting for further discussion. The City of Kitchener mentioned that planning around rapid transit station areas will be initiated soon for the Sportsworld area and offered to connect GRT with the City's project manager (Dana Edwards) for further information.	RoW
5.	<b>Environmental Project Report – Chapters 7 and 8</b>	
5.1	GRCA noted that their comments are focused on the technical reports, and that written comments will be provided. WSP advised that comments received from any TAC members on the technical reports will be reviewed prior to finalizing the EPR, and incorporated where appropriate.	WSP
5.2	GRT noted that comments and suggestions will be provided based on lessons learned from Stage 1, specifically related to impacts to bus service during the construction phase. This will be included with the written comments.	GRT
5.3	MTO noted no specific comments on Chapters 7 and 8 beyond the feedback provided earlier about King Street through the Highway 401 interchange, which has been documented in the EPR for discussion during a future design phase.	
5.4	Region of Waterloo Transportation inquired whether the traffic impact assessment had been reviewed by Region staff. WSP confirmed that a meeting was held with Region staff following review of the draft report and the comments were incorporated. M. O'Neil will follow up with Transportation internally to ensure all comments have been fully addressed.	RoW
5.5	City of Cambridge and City of Kitchener had no comments on Chapters 7 and 8 at this time but will provide comments in writing before the end of the week.	Cambridge Kitchener
6.	<b>Additional Discussion</b>	
6.1	WSP provided a brief summary of the key comments received at this meeting, and confirmed the timeline for written comments on November 12.	
6.2	M. O'Neil advised that comments provided by the TAC will be taken into consideration and implemented in the EPR as best as possible, for issues that are within the scope of the Stage 2 ION project. He also noted that the TAC will have the opportunity to review the final draft EPR when it is released for public review with the Notice of Study Commencement.	
6.3	WSP noted that a comment log will be created to document all comments received from the TAC and how these were addressed.	WSP
6.4	WSP thanked the TAC for their feedback on the draft EPR, and for the guidance provided throughout the Stage 2 ION planning study.	

*These meeting notes are considered to be an accurate summary of the items discussed. Please advise Jennifer Fisher (jennifer.fisher@wsp.com) of any discrepancies, errors or omissions, otherwise these meeting notes will be accepted as written.*

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

## Transit Project Assessment Process

## Technical Advisory Committee Meeting No. 12

November 10, 2020



**Stage 2 ION**

Light Rail Transit from Kitchener to Cambridge



# MEETING AGENDA

1. Introductions
2. Stage 2 ION TPA Process
3. Proposed TPA Process Schedule
4. Environmental Project Report (EPR) – Chapter Overview

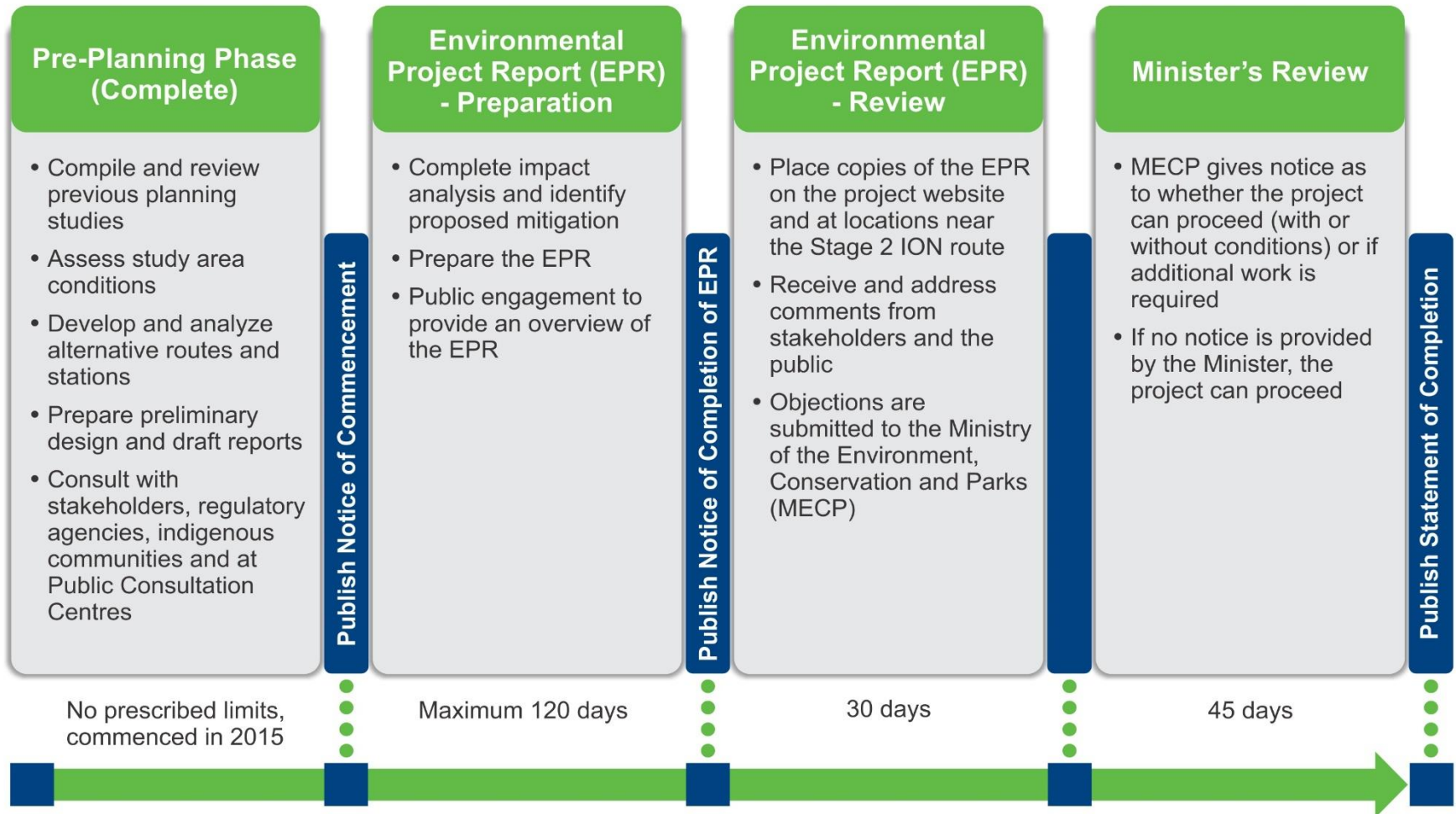


## Stage 2 ION

Light Rail Transit from Kitchener to Cambridge



# STAGE 2 ION TPA PROCESS



## Stage 2 ION

Light Rail Transit from Kitchener to Cambridge



# TPA PROCESS AND CONSIDERING MATTERS OF PROVINCIAL IMPORTANCE AND CONSTITUTIONALLY PROTECTED ABORIGINAL OR TREATY RIGHTS

**Given the Minister's authority to act, concerns or objections should be on the basis that a proposed transit project may have a potential negative impact on a matter of provincial importance that relates to the natural environment or has a cultural heritage value or interest or on a constitutionally protected Aboriginal or treaty right.**

Dealing with potential negative impacts on matters of provincial importance or on constitutionally protected Aboriginal or treaty rights during the TPA Process are relevant in the following situations:

- When considering whether to take a “time out” during the 120-day time frame.
- When an interested person, including regulatory agencies, Aboriginal communities, property owners and other members of the public, is considering submitting an objection to a proposed transit project to the Minister.
- If the Minister exercises his/her discretion to act on a proposed transit project.



**Stage 2 ION**

Light Rail Transit from Kitchener to Cambridge



# PROPOSED TPA PROCESS TIMELINE

Activity	Timeline	Milestone
TAC/Key Agency review of Draft EPR	Ongoing to November 12	TAC Meeting – November 10
Project Team finalization of Draft EPR	November 12 to December 7	
<b>NOTICE OF COMMENCEMENT</b>		<b>December 9/10/11 (tbc)</b>
Public engagement period » Draft EPR » Narrated presentation » Engage survey	December 11 to February 12 » Comment deadline requested (~ 2months) to ensure sufficient time for revisions	February 12 (tbc)
Project Team revisions based on Agency and Public feedback, and finalization of EPR	February 13 to March 12	
<b>NOTICE OF COMPLETION</b>		<b>March 16/17/18 (tbc)</b> » ~100 days from Notice of Commencement

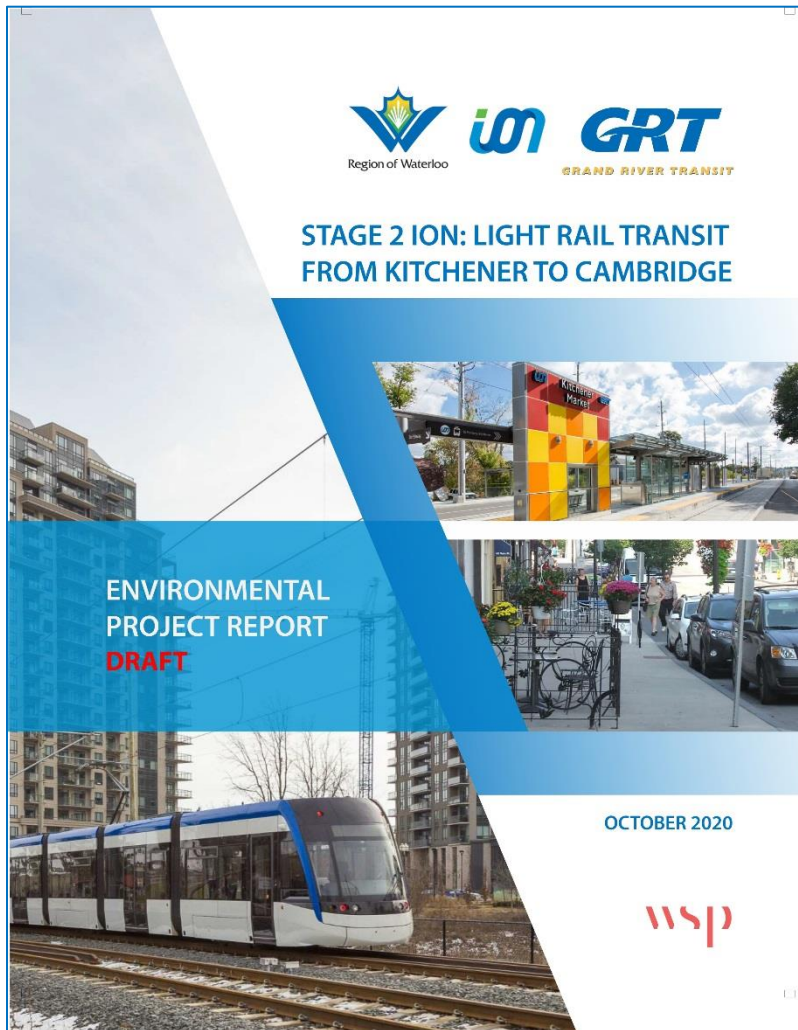


## Stage 2 ION

Light Rail Transit from Kitchener to Cambridge



# ENVIRONMENTAL PROJECT REPORT



1. Introduction and Study Overview
2. Environmental Assessment Process
3. Pre-Planning Activities
4. Consultation and Engagement
5. Existing Conditions
6. Project Description
7. Impact Assessment, Mitigation and Monitoring
8. Approvals, Monitoring and Commitments to Future Work
9. References

## Appendices:

- » Functional Design Plates
- » Consultation Record
- » Specialist Reports



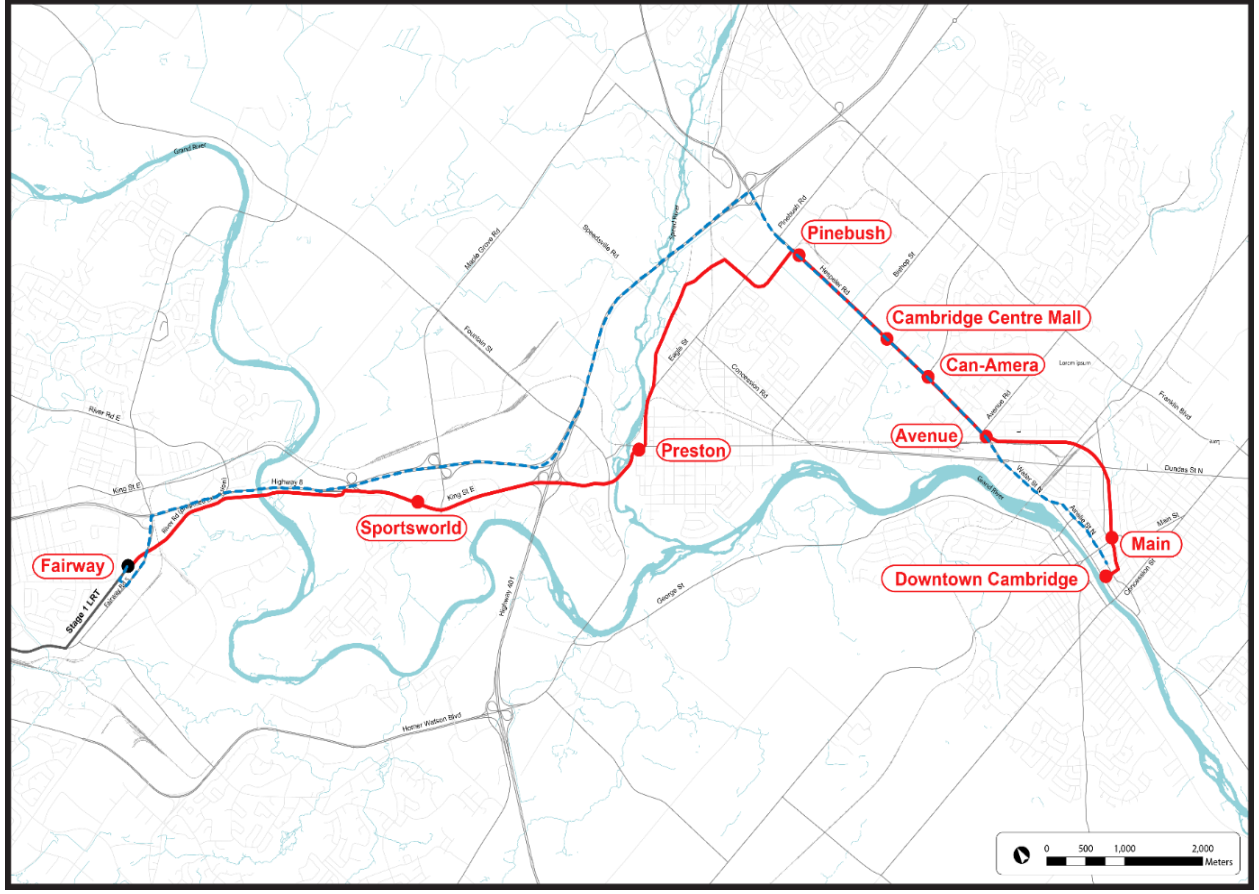
## Stage 2 ION

Light Rail Transit from Kitchener to Cambridge



# CHAPTER 1 INTRODUCTION

- 1.1 STUDY OVERVIEW AND PURPOSE
- 1.2 PROJECT TEAM
- 1.3 CONTEXT
- 1.4 PROJECT GOALS AND OBJECTIVES
- 1.5 STUDY BACKGROUND
- 1.6 STUDY AREA



**Stage 2 ION**  
Light Rail Transit from Kitchener to Cambridge



# CHAPTER 2 ENVIRONMENTAL ASSESSMENT PROCESS

- 2.1 OVERVIEW
- 2.2 PROJECT PROPONENT
- 2.3 ENVIRONMENTAL PROJECT REPORT
- 2.4 OBJECTION PROCESS, MINISTER'S REVIEW STATEMENT OF COMPLETION
- 2.5 ADDENDUM PROCESS
- 2.6 IMPACT ASSESSMENT ACT



Region of Waterloo



**Stage 2 ION**

Light Rail Transit from Kitchener to Cambridge



# CHAPTER 3 PRE-PLANNING ACTIVITIES

- 3.1 POPULATION AND RIDERSHIP FORECASTS
- 3.2 ROUTE SELECTION PROCESS
- 3.3 ENVIRONMENTAL IMPACT ASSESSMENT
- 3.4 PUBLIC, STAKEHOLDER AND INDIGENOUS COMMUNITY ENGAGEMENT

## Criteria for the Review of Route and Station Alternatives

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 stops within 800 m of proposed LRT stops? What is the estimated LRT travel time for the segment based on length, geometry, crossings, stops, and traffic signals?
Social/Cultural Environment	Destinations Served	Are there major commercial, industrial, office, or leisure destinations within 800 m of proposed LRT stops? How many hospitals, schools or other institutional uses are there within 800 m of the stops?
	Properties Impacted	How many residential, commercial, industrial or institutional properties are impacted and how many of those could potentially require full buy-out?
	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 stops provide access to existing employment areas? Is there potential for new or infill employment development within 800 m of the proposed LRT stop?
	Opportunity for Intensification and Revitalization	Will the stops serve areas that can benefit from revitalization? Is there potential for residential intensification close to the stops?
	Cost (Capital and Operating)	What is the estimated cost (in \$2016) to design and build, then operate and maintain every year?



# CHAPTER 4 CONSULTATION AND ENGAGEMENT

- 4.1 CONSULTATION AND ENGAGEMENT APPROACH
- 4.2 PROJECT WEBSITE AND SOCIAL MEDIA
- 4.3 NOTIFICATION
- 4.4 PUBLIC CONSULTATION
- 4.5 AGENCY CONSULTATION
- 4.6 INDIGENOUS ENGAGEMENT
- 4.7 FUTURE CONSULTATION AND ENGAGEMENT COMMITMENTS



## Stage 2 ION

Light Rail Transit from Kitchener to Cambridge



# CHAPTER 5 EXISTING CONDITIONS

- 5.1 NATURAL HERITAGE
- 5.2 CULTURAL ENVIRONMENT
- 5.3 SOCIO-ECONOMIC ENVIRONMENT
- 5.4 TRANSPORTATION AND UTILITIES



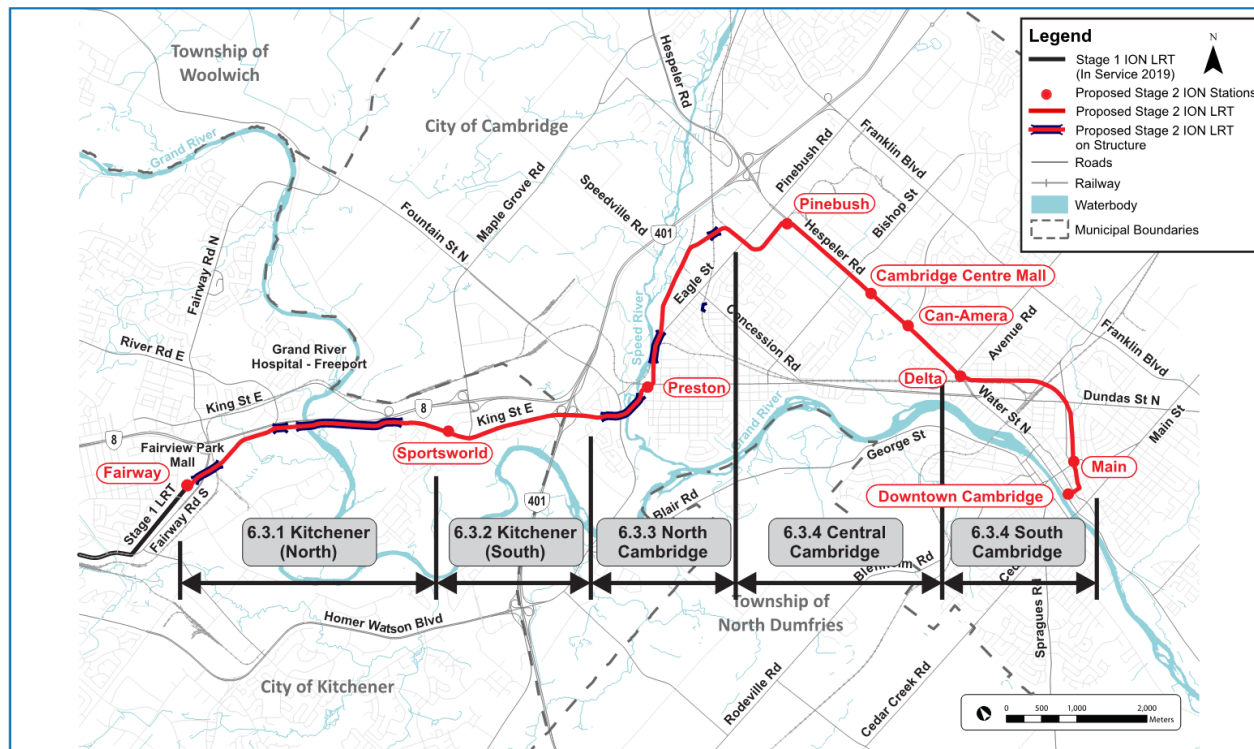
**Stage 2 ION**

Light Rail Transit from Kitchener to Cambridge



# CHAPTER 6 PROJECT DESCRIPTION

- 6.1 INTRODUCTION
- 6.2 DESIGN CRITERIA
- 6.3 PROPOSED STAGE 2 ION ROUTE



## Stage 2 ION

Light Rail Transit from Kitchener to Cambridge



# CHAPTER 7 IMPACT ASSESSMENT, MITIGATION AND MONITORING

- 7.1 NATURAL HERITAGE
- 7.2 CULTURAL ENVIRONMENT
- 7.3 SOCIO-ECONOMIC ENVIRONMENT
- 7.4 TRANSPORTATION AND UTILITIES
- 7.5 SUMMARY OF IMPACTS, MITIGATION AND FUTURE COMMITMENTS



**Stage 2 ION**

Light Rail Transit from Kitchener to Cambridge



# CHAPTER 8 APPROVALS, MONITORING AND COMMITMENTS TO FUTURE WORK

- 8.1 PERMITS AND APPROVALS
- 8.2 IMPACT MONITORING
- 8.3 FUTURE COMMITMENTS
- 8.4 PROJECT IMPLEMENTATION PLAN
- 8.5 PROJECT COSTS

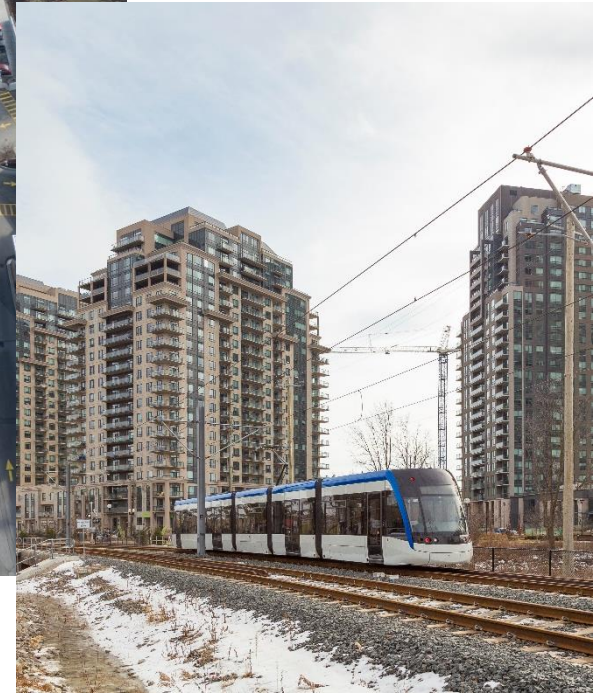


## Stage 2 ION

Light Rail Transit from Kitchener to Cambridge



# DISCUSSION



**Stage 2 ION**  
Light Rail Transit from Kitchener to Cambridge



# MINUTES OF MEETING – CPR Meeting No. 1

<b>PROJECT</b>	Region of Waterloo – Stage 2 LRT TPAP
<b>OBJECTIVE</b>	To re-introduce the project to CPR, to identify preliminary potential issues, to initiate data collection activities, and to establish future engagement protocols.
<b>DATE / TIME</b>	June 18, 2015 @ 10:00am
<b>LOCATION</b>	Operations Centre Boardroom, 100 Maple Grove Road, Cambridge
<b>PROJECT No.</b>	
<b>FILE</b>	

Attendees		E-mail	Phone Number
Christopher Jones	CP	<a href="mailto:christopher_jones@cpr.ca">christopher_jones@cpr.ca</a>	416-297-7139
Jennifer Benedict	CP	<a href="mailto:jennifer_benedict@cpr.ca">jennifer_benedict@cpr.ca</a>	416-995-0031
Neil Johnson	CP	<a href="mailto:neil_johnson@cpr.ca">neil_johnson@cpr.ca</a>	519-719-2185
Paula Sawicki	RMW	<a href="mailto:psawicki@regionofwaterloo.ca">psawicki@regionofwaterloo.ca</a>	519-575-4035
Darshpreet Bhatti	RMW	<a href="mailto:dbhatti@regionofwaterloo.ca">dbhatti@regionofwaterloo.ca</a>	519-575-4757 x3691
Brendon Simon	RMW	<a href="mailto:bsimon@regionofwaterloo.ca">bsimon@regionofwaterloo.ca</a>	519-575-4757 x3519
Eric Peissel	WSP	<a href="mailto:eric.peissel@wspgroup.com">eric.peissel@wspgroup.com</a>	905-868-4221
Harold Sich	WSP	<a href="mailto:hsich@pbworld.com">hsich@pbworld.com</a>	416-640-5456
Irene Hauzar	WSP	<a href="mailto:ihauzar@pbworld.com">ihauzar@pbworld.com</a>	416-646-9032
Mina Dezyanian	WSP	<a href="mailto:mdezyanian@pbworld.com">mdezyanian@pbworld.com</a>	416-644-0625

Item No.	Discussion	Action By
<b>1.0</b>	<b>Introductions</b>	
1.1	Attendees introduced themselves, including roles and responsibilities.	
<b>2.0</b>	<b>Purpose of Meeting</b>	
2.1	WSP outlined the purpose of the meeting as to: <ul style="list-style-type: none"> <li>• re-introduce the project to CP</li> <li>• review 2008 alignment and identify and preliminary potential issues</li> <li>• identify data collection items from CP, both physical and operational items</li> <li>• establish future engagement protocols</li> </ul>	
2.2	It was acknowledged that CP is a major stakeholder for this project, and the project team is appreciative for making their time available and anticipates continuing consultation efforts over the next few months.	
<b>3.0</b>	<b>Stage 2 LRT Environmental Assessment (EA)</b> <i>(Note: the name of the project is Stage 2 LRT – Kitchener to Cambridge)</i>	
<b>3.1</b>	<b>Previous Work (2007 – 2009)</b> WSP highlighted what previous work had been done in the past: <ul style="list-style-type: none"> <li>• Individual EA process was initiated in 2008 for an LRT line from Waterloo to Cambridge, including public consultation events in 2008</li> <li>• CP correspondence from May / June 2008 was reviewed</li> <li>• In conjunction with adopting the new provincial EA process (i.e. Transit Projects Assessment Process), the RMW proceeded with focusing on Stage 1, Waterloo</li> </ul>	

Item No.	Discussion	Action By
	<p>to Cambridge for LRT, including bus rapid transit from Kitchener to Cambridge</p> <ul style="list-style-type: none"><li>• Stage 2 LRT (i.e. in Cambridge) essentially came to a close in 2009 with RMW Council approval of the alignment</li><li>• Stage 1 LRT EA approval was obtained in 2012 following the TPAP process</li></ul>	
<b>3.2</b>	<b>Scope and Schedule Overview (2015 – 2016)</b> <p>WSP outlined the preliminary schedule for the Stage 2 LRT EA following the TPAP process:</p> <ul style="list-style-type: none"><li>• data collection and initial consultation during the summer of 2015, with the development of alternative design concepts and evaluation criteria by the fall of 2015 – anticipate frequent meetings and discussions with major stakeholders including CP</li><li>• first round of consultation, including the public and stakeholders, is planned for November 2015, with the intent of presenting developed design concepts and corresponding evaluation criteria to be used for the detailed assessment</li><li>• incorporating comments from the first round of public consultation, the detailed assessment and preliminary selection of the preferred design concept will be undertaken in early 2016</li><li>• second round of consultation is anticipated in late spring of 2016, with the intent of receiving MOECC approval of the TPAP by the end of 2016</li></ul>	
<b>4.0</b>	<b>2008 Stage 2 LRT EA Alignment Overview Highlighting Potential CP Issues</b>	
4.1	<p>Using the 2008 alignment as the basis to initiate discussion, the alignment was reviewed with a focus on three major issues:</p> <ul style="list-style-type: none"><li>• proposed CP track relocations</li><li>• proposed at-grade CPR/LRT crossings</li><li>• potential CPR operational impacts</li></ul> <p>Marked-up proposed 2008 LRT alignment plates were provided as a reference.</p>	
4.2	<p>Upon review of the alignment, various comments were provided for future consideration by the project team - major comments regarding alignment are as follows:</p> <ul style="list-style-type: none"><li>• referring to Drawing No. 70, RMW/WSP indicated that since 2008 significant re-design has occurred at the Fairview Park Mall terminus, which will affect the proposed LRT alignment and the impact, but the intent was to share CP's Waterloo Subdivision corridor – property arrangements and track relocation was envisioned at that time</li><li>• referring to Drawing No. 71, WSP indicated a potential joint CPR and LRT crossing issue at King Street, and the need for an integrated solution with the existing signalized intersection, as a minimum; CP concurs and added that Transport Canada is not in favor of non-gated and skewed crossings as presently proposed; CP also mentioned that current standards must be met to avoid queuing issues at intersections</li><li>• proposed adjacent CPR / LRT road crossings and in close proximity to existing</li></ul>	

Item No.	Discussion	Action By
	<p>intersections, as were proposed at River Road, Riverbank Drive, and Fountain Street for example, were identified as an overall CP concern</p> <ul style="list-style-type: none"><li>referring to Drawing Nos. 72/73, WSP noted the proposed diamond crossing with the CPR and the related issues (discussed further under Item 5.0) – as noted we will need to cross the CPR at least once and likely a number of times</li><li>WSP asked a general question if there was a historical reason for the significant track relocation between the Grand River and Highway 401 - such as to remain within the CPR corridor width?, to avoid impact on MTO properties?, to minimize impact on natural features?, etc.; no definitive reasoning was noted (lands to the east are generally privately owned, and some of the lands to the west are protected under agriculture designation), but likely a combination of all the above; WSP to re-visit these alignments, but inquired about available CP information regarding track schematics, property data, utilities / fiber optics, CP maintenance access requirements, operational parameters, etc. (summarized under Item 6.0)</li><li>if an access / service road is deemed required by RMW for maintenance or emergency purposes for the LRT corridor, CP commented that it should be a grade separated access (Note: following the meeting and after reviewing the City of Cambridge’s Official Plan, a planned multi-use trail was identified for this corridor which present opportunities)</li><li>referring to Drawing No. 81, CP indicated a high frequency (i.e. several times per day) of freight movement from the Toyota Yard northerly to the Grand River bridge; WSP outlined this is the type of operational info needed to develop and assess alternative design concepts, and will provide a summary matrix for CP to complete (see Item 6.0)</li><li>based on the above points, WSP indicated that the previous alignment relocated the Toyota Yard lead, which would be quite disruptive (especially as the CP explained that the only shutdown that is planned to occur for yard operations is generally 4 days in July)</li><li>CP informed that the bridge at Maple Grove Road has additional tracks on both sides, allowing for possible future LRT capacity (MOU likely required)</li><li>referring to Drawing No. 83, and similarly like the Toyota Yard, any impact on the CP Hagey Yard should be avoided as well due to potential economic business impacts</li><li>WSP inquired if CP experienced any wildlife issues along the Waterloo Subdivision corridor, and in particular in the vicinity of the CP Hagey Yard given the natural features to the east – CP acknowledged frequent deer siting and wildlife crossings should be considered</li><li>referring to Drawing No. 83, the Fountain Street crossing presents potential major issues as CP already has existing significant and lengthy freight movements – in combination with the LRT operations, CP specified that the efficiency of their capacity and operations must be maintained (as noted above, WSP will request CP to complete a matrix – attached – to ascertain the significance / sensitivity of their operations (considering existing and future customer demand))</li></ul>	

Item No.	Discussion	Action By
	<ul style="list-style-type: none"> <li>• CP noted that GXR has upwards of 40 movements/day at Fountain Street that already impact traffic local operations (i.e. 2200 vehicles from the Toyota plant)</li> <li>• Highway 401 crossing (Drawing No. 84) – WSP understood from the 2008 CP correspondence that utilizing the same bridge would not be possible ultimately, but did inquire whether in the short term as a staged condition, that a shared bridge concept could be entertained (i.e. the EA approval will be for a separate Highway 401 crossing, but in order to mitigate significant capital costs initially, perhaps the staged condition could suffice for 10-30 year period – CP to comment); structural clearances to be ascertained to confirm feasibility</li> <li>• B 401 bridge ownership; CP replied that MTO paid for the construction of the bridge but CP pays for the maintenance</li> <li>• referring to Drawing No. 85, (Speed River crossing, trestle bridge); CP indicated that they own and maintain the bridge (WSP to formally request structural drawings - see Item No. 6); CP noted that there is an existing speed restriction on the bridge)</li> <li>• significant discussion about the issues at the CPR crossing at Eagle Street (north end of Preston) <ul style="list-style-type: none"> <li>○ the crossing is CP’s mainline (other lines are potentially abandoned spur lines along the banks of the Speed River – to be confirmed)</li> <li>○ indication was that this was a major crossing, with movements of 2-4 times a day, with significant lengths</li> <li>○ CP’s early indication is that an LRT at-grade crossing is unlikely; WSP to investigate LRT operational impacts (i.e. potential time restrictions) once the CP operational parameters have been assembled at this and other locations; CP indicated that the CP trains do not run on specific times of day and vary daily</li> </ul> </li> <li>• referring to Drawing No. 86, ownership and operational details of rail crossings along Eagle Street, east of Speedsville Road and west of Industrial Road, to be determined</li> <li>• referring to Drawing No. 100, the bridge built on Hespeler Road over the CP Waterloo Subdivision was designed with rail clearances and LRT in consideration</li> <li>• referring to Drawing No. 101, existing rail bridge east of Samuelson Street appears to have minimal clearances, and is owned by CP; CP Galt Station to the north of the bridge is still operational</li> </ul>	

**5.0 CPR / LRT Crossings – Potential Solutions**

5.1 Potential solutions to the various CPR / LRT crossings to be investigated in order to provide the CP standard vertical clearance of 23 feet:

- at-grade temporal separation (with MOU) plus LRT adjustable pantograph
- at-grade temporal separation (with MOU) plus a hydraulic liftable overhead contact system
- at-grade waiver application / exemption with MOU
- grade separation

Item No.	Discussion	Action By
5.2	<p>In order to minimize significant construction costs associated with grade separation, at-grade crossings will be minimized but will be assessed as possible solutions, including as potential staged interim conditions.</p> <p>To that end, gathering operational parameters in the summary matrix – attached – to ascertain the significance / sensitivity of CP operations (considering existing and future customer demand) is required.</p>	
<b>6.0</b>	<b>Initial Inputs / Data Collection</b>	
6.1	The following summarizes initial requested data:	
	<ul style="list-style-type: none"> <li>• Applicable Design Standards               <ul style="list-style-type: none"> <li>○ CP confirmed that AREMA, Canadian Railway Operating Rules (CROR), and CP engineering standards to be adhered to (CP to provide their engineering standards)</li> </ul> </li> </ul>	CP
	<ul style="list-style-type: none"> <li>• Physical / Property (i.e. track schematics, fiber optics / utilities, property)               <ul style="list-style-type: none"> <li>○ CP indicated that track schematics, utilities and old property title records may be available - CP noted that waivers for usage by RMW is likely required (CP to forward forms to be executed)</li> </ul> </li> </ul>	CP
	<ul style="list-style-type: none"> <li>• Operational Characteristics per Mainline Segment and Spur (i.e. volumes, lengths, freight equipment, frequencies and time of day, speed)               <ul style="list-style-type: none"> <li>○ as previously mentioned, WSP requested CP to complete a summary matrix (attached) to assist in the assessment of various solutions</li> </ul> </li> </ul>	CP
	<ul style="list-style-type: none"> <li>• Operational Requirements / Considerations – any seasonal / timing restrictions and business impact considerations to be noted</li> </ul>	CP
	<ul style="list-style-type: none"> <li>• Maintenance Requirements / Considerations – any seasonal / timing restrictions and other considerations to be noted</li> </ul>	CP
6.2	<p>CP emphasized that the following items must be considered throughout the design:</p> <ul style="list-style-type: none"> <li>• traffic counts/volumes</li> <li>• trains/day</li> <li>• roadway operating speeds</li> <li>• safety assessments (including at-grade crossing regulations)</li> <li>• sight lines</li> </ul>	
<b>7.0</b>	<b>Potential Permits and Approvals</b>	
7.1	CP noted that they will discuss internally, including with their Track and Structures group, to advise what permits and/or approvals are needed.	CP
<b>8.0</b>	<b>Identification of Long Lead Items</b>	
8.1	CP will meet with their Legal department to identify what information can be provided.	CP

Item No.	Discussion	Action By
<b>9.0</b>	<b>Timelines for CPR Reviews</b>	
9.1	Given the extent of CP's involvement, a retainer agreement is likely required to support this project. RMW acknowledges the requirement. CP to forward forms to be executed.	CP
<b>10.0</b>	<b>Other Items</b>	
10.1	None noted.	
<b>11.0</b>	<b>Next Meeting</b>	
11.1	WSP indicated that given the extent of CP's involvement, frequent (i.e. monthly) meetings with CP would be desirable. Given some of the above items, CP conferring with their legal department and initiating a retainer agreement for project support, no firm meeting timelines were established, but likely September.	
11.2	CP indicated that beyond the attendees, who came from a wide geographical area, other departments will need to be involved occasionally.	
	WSP noted teleconference / webinar meetings and meetings at CP facilities focusing on subject-specific items are options to be considered.	

# MINUTES OF MEETING – City of Cambridge Meeting No. 1

<b>PROJECT</b>	Region of Waterloo – Stage 2 LRT TPAP
<b>OBJECTIVE</b>	To re-introduce the project, to identify preliminary potential markets / opportunities, to initiate data collection activities, and to establish future engagement protocols.
<b>DATE / TIME</b>	July 17, 2015 @ 9:00am
<b>LOCATION</b>	Cambridge City Hall, Bergey Room A – 4 <sup>th</sup> Floor
<b>PROJECT No.</b>	151-07859-00
<b>FILE</b>	

Attendees		E-mail	Phone Number
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George Elliott	City	<a href="mailto:elliottg@cambridge.ca">elliottg@cambridge.ca</a>	
Brooke Lambert	City	<a href="mailto:lambertb@cambridge.ca">lambertb@cambridge.ca</a>	519-740-4560 x4711
Paula Sawicki	RMW	<a href="mailto:psawicki@regionofwaterloo.ca">psawicki@regionofwaterloo.ca</a>	519-575-4035
Brendon Simon	RMW	<a href="mailto:bsimon@regionofwaterloo.ca">bsimon@regionofwaterloo.ca</a>	519-575-4757 x3519
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Harold Sich	WSP	<a href="mailto:hsich@pbworld.com">hsich@pbworld.com</a>	416-640-5456
Irene Hauzar	WSP	<a href="mailto:ihauzar@pbworld.com">ihauzar@pbworld.com</a>	416-646-9032
Mina Dezyanian	WSP	<a href="mailto:mdezyanian@pbworld.com">mdezyanian@pbworld.com</a>	416-644-0625

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**1.0 Purpose of Meeting**

- re-introduce the project to the City
- discuss potential markets/opportunities within possible alignment corridors
- identify data collection items from the City
- establish future engagement protocols

**3.0 Stage 2 LRT Environmental Assessment (EA)**

The EA is following Ontario’s Transit Project Assessment Process (TPAP), which provides for specific timelines for;

- submission reviews by MOECC,
- outlines minimum consultation activities, and
- lessens the proponent’s responsibility with respect to planning solutions (i.e. transit technology, corridors).

City indicated that answers to potential transit technology questions should be anticipated. WSP indicated that the study’s work plan has allowed for the confirmation / documentation of the previously identified planning solution, including transit technology and corridors.

**3.1 Previous Work – LRT (2007 – 2009) and aBRT**

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The previously identified Stage 2 LRT alignment was discussed, acknowledging the significant work completed along this corridor, addressing the Cambridge study area in three major sections:

- North - Highway 401 / Speed River Crossing
- Central - Hespeler Corridor
- South Terminus

### 3.2 Present Scope and Schedule Overview (2015 – 2016)

Preliminary schedule for the Stage 2 LRT EA following the TPAP process:

- data collection and initial consultation (summer 2015), with the development of alternative design concepts and evaluation criteria by the fall of 2015
- first round of public consultation, including advance council and stakeholder meetings, is planned for November 2015. Intent is to present developed design concepts and corresponding evaluation criteria to be used for the detailed assessment
- incorporating comments from the first round of public consultation, the detailed assessment and preliminary selection of the preferred design concept will be undertaken in early 2016
- second round of consultation is anticipated in late spring of 2016 and the final draft TPAP documentation submission before the summer of 2016, with the intent of receiving MOECC approval of the TPAP by the end of 2016

Initial CP meeting highlighted that the previously identified Stage 2 LRT alignment presented issues and opportunities (i.e. additional grade separations may be required). Together with updated City of Cambridge and Kitchener objectives and planning, additional corridors will be investigated.

### 3.3 Next Major Steps

- completion of the overall Existing/Future Conditions Report
- documenting the review/confirmation of the preferred planning solution, including corridors and associated station/stop locations.
- Continued City input and review/consultation

### 4.0 2008 Stage 2 LRT EA Alignment Overview – Key Discussion Points

As mentioned in Item 3.1, key discussion points (focusing on potential markets, new developments, station/stop locations, intensification corridors / nodes, etc.) are summarized below, structured into three major sections:

- North - Highway 401 / Speed River Crossing
- Central - Hespeler Corridor
- South Terminus

### 4.1 North - Hwy 401 / Speed River Crossing

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	<ul style="list-style-type: none"> <li>• clarified that the Kitchener portion of the alignment has yet to be reviewed, but a proposed new station at King/Freeport is likely to be included</li> <li>• The King Street corridor southerly to the Sportsworld area will be considered.</li> <li>• Alternatives to Eagle Street (due to a potential impact associated with the CPR and LRT crossing – CP noted frequent interruptions with 7000ft train lengths from Toyota Plant to the CP mainline) will be investigated</li> <li>• Background for Eagle Street is;               <ul style="list-style-type: none"> <li>○ one major owner, or fragmented ownership? – generally fragmented</li> <li>○ any recent re-development plans in the pipeline? – nothing major</li> <li>○ type of development/density/massing envisioned, any studies? - no development plans yet</li> </ul> </li> <li>• The planned 300ha of industrial lands north of Maple Grove has higher employment potential, particularly when considering a 100 year horizon instead of the PTG stated 2031 (updated to 2041) targets</li> <li>• The Boxwood development (prestige industrial) at Speedsville is an approved subdivision plan (and under construction)</li> <li>• Boxwood was considered in a completed <i>Sanitary Sewer Master Plan</i>, which will include detailed planning assumptions</li> <li>• Alternative routings were discussed to address potential CP issues and the above-noted future development opportunities – i.e. leaving the CP corridor and travel easterly along Martin Grove and then southerly along Speedsville to Eagle (over Hwy 401 and Speed River), or further easterly to Hespeler and then southerly to Eagle (MTO interchange issues, missing Eagle industrial lands redevelopment potential) – the latter providing no distinct advantage over the Speedsville route except potentially serving some Hespeler redevelopment opportunities</li> <li>• City identified an alternative alignment, diverting from the King Street corridor and crossing the Grand River further east of the existing structures to connect to the Allendale Road corridor and eventually Maple Grove</li> <li>• RMW outlined that this route would not connect to the Sportsworld area; City explained due to the high potential for employment development, this alternative alignment may be preferable to the limited potential in the vicinity of Sportsworld; WSP added that the existing/proposed carpool lots and bus station would also not be connected to, but acknowledged that there are technical alignment issues from the CP corridor to Maple Grove</li> <li>• WSP inquired about the long term economic stability of the Toyota plant - City confirmed very stable, and will continue to provide direct and indirect employment that is highly beneficial to the City</li> <li>• WSP inquired about the redevelopment potential within Preston, i.e. along the CO corridor as per 2008 Hemson report or along King Street; RMW indicated redevelopment interest within Preston from previous work, but local bus connections to Preston from identified LRT stations were envisaged; WSP concurs that a feeder bus network from a “spine” corridor along Hespeler may be the best overall service; WSP noted that assessing the feeder bus network in conjunction with the identified LRT corridors will a key consideration in order to</li> </ul>	

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optimize ridership

- City noted that there are significant heritage properties along King Street, and given the limited growth/redevelopment potential (i.e. narrow mixed use corridor adjacent to established residential areas would limit densities/massing, in addition to existing parks, golf courses, and hospital), and therefore prefer the Hespeler corridor, which has significantly more development potential

**4.2 Central - Hespeler Corridor**

- City emphasized that Hespeler is their primary intensification corridor between Eagle and Can-Amara
- appreciating potential issues along Hespeler, the City suggested an alternative route to the west of Hespeler that could be investigated – although avoiding traffic operational issues along Hespeler, an existing two-zone flood plain (presently under study) and lack of direct connectivity may be issues to be reviewed
- WSP mentioned Hespeler envisioned as a “complete streets” design, as noted in other studies (such as the *Commercial Implementation Study, Growth Intensification Study*, and first draft of the zoning by-law reviewing the entire city (available online); City noted there are no specific design guidelines (design would follow Regional Design Guidelines).

**4.3 South Terminus**

- City noted that a key destination for the southern terminus will be at a planned multi-modal hub with GO Rail – some of the options discussed:
  - near the Delta intersection (noting that Babcock Wilcox has 13 acres available, likely contaminated, but suitable for parking or as a maintenance facility)
  - City suggested perhaps terminating the LRT alignment at a multi-modal hub / GO station, rather than continuing to the Ainslie Bus Terminal through downtown Galt; Galt is a very historic area to be preserved
  - WSP noted that alternative concepts, such as a streetcar operation (mixed-traffic, less frequent), and with double or looped single trackage could be assessed – i.e. providing a less frequent local service yet connecting to the downtown and the bus terminal
  - WSP noted that the Cambridge report on a potential GO Transit connection identified the Dundas / Samuelson area - City envisioned a northerly rail spur from the CP mainline; City further suggested having double tracks to the station and single trackage into downtown Galt
  - WSP inquired how certain are they of the GO connection, and what timeline? - City replied according to the Council it will happen, it’s just a matter of time
  - in the short term, the City noted that the old CP Galt Station could be utilized
  - similarly to the above-noted northerly spur line off the CP mainline, a southerly spur could be implemented, using the abandoned rail corridor,

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	<p>potentially providing a more direct connection to downtown Galt and the Ainslie Bus Terminal</p> <ul style="list-style-type: none"> <li>WSP noted identified redevelopment opportunity on the west of the Grand River (based on the 2008 Hemson report) and given existing destinations (i.e. UW School of Architecture, theatre), how important is east-west connectivity over the Grand River; City indicated desirable but not as a LRT route due to lack of roadway capacity; WSP clarified that the question was more in terms of siting a potential station near existing crossings, or any future planned structures</li> <li>WSP asked if there are any available studies done in the area, such as redevelopment / intensification, parking geo-environmental, servicing and geotechnical, etc.; WSP to include in request for data, but City did note that the floodplain is a major consideration (i.e. no underground parking can be built in the vicinity)</li> </ul>	
<b>5.0</b>	<b>Initial Inputs / Data Collection</b>	
5.1	<p>City inquired about overall engagement process, before specifically addressing data collection requirement details (refer to Item 6.0). WSP will proceed completing a Master Data Collection List, incorporating some of the available data mentioned during the meeting (i.e. planning studies, utilities asset management data).</p> <p>City will discuss information release requirements internally and get back to RMW/WSP.</p>	<p>WSP</p> <p>City</p>
<b>6.0</b>	<b>Engagement Protocols</b>	
6.1	<p>City emphasized the necessity of their Council’s involvement in the project process prior to the public meeting in November. A meeting / workshop, similar to today’s meeting, was recommended and preferably for the first or second week of September.</p> <p>City stated that the following two questions will likely be asked by the Council:</p> <ul style="list-style-type: none"> <li>Why are we paying to build an LRT now if no one will be using until well into the future?</li> <li>Why are we building a LRT?</li> </ul> <p>WSP indicated that those questions will be addressed in the review / confirmation of the recommended planning solution documentation.</p>	
6.2	<p>RMW indicated that internal discussion with senior management will be required to address the City’s requested level of involvement, although a proactive technical working relationship is supported.</p> <p>WSP indicated that frequent City involvement (i.e. by-weekly meetings and workshops) with the City would be desirable.</p>	RMW

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<b>7.0 Other Items</b>		
7.1	None noted.	
<b>8.0 Next Meeting</b>		
8.1	To be determined.	

# MINUTES OF MEETING – RMW Planning Meeting No. 1

<b>PROJECT</b>	Region of Waterloo – Stage 2 LRT TPAP
<b>OBJECTIVE</b>	To re-introduce the project, to identify preliminary potential markets / opportunities, and to establish future engagement protocols.
<b>DATE / TIME</b>	July 17, 2015 @ 9:00am
<b>LOCATION</b>	50 Queen Street, 6 <sup>th</sup> Floor, Boardroom
<b>PROJECT No.</b>	151-07859-00
<b>FILE</b>	

Attendees		E-mail	Phone Number
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Mina Dezyanian	WSP	<a href="mailto:mdezyanian@pbworld.com">mdezyanian@pbworld.com</a>	416-644-0625

Item No.	Discussion	Action By
<b>1.0</b>	<b>Introductions</b> Attendees introduced themselves, including roles and responsibilities.	
<b>2.0</b>	<b>Purpose of Meeting</b> WSP outlined the purpose of the meeting as to: <ul style="list-style-type: none"> <li>re-introduce the project to Regional Planning</li> <li>discuss potential markets/opportunities and potentials alignment / stations</li> <li>identify data collection items from the Regional Planning</li> <li>establish future engagement protocols</li> </ul>	
<b>3.0</b>	<b>Stage 2 LRT Environmental Assessment (EA)</b> WSP outlined that this environmental assessment study is following Ontario’s Transit Project Assessment Process (TPAP).	
<b>3.1</b>	<b>Previous Work – LRT (2007 – 2011) and BRT</b> WSP provided a brief overview of previous work: originating as an individual environmental assessment process for the entire Waterloo to Cambridge alignment; transitioning to the Province’s Transit Project Assessment Process (TPAP) in 2009 for Stage 1; and, a Regional Council endorsed alignment for the entire Waterloo to Cambridge alignment in 2011 (i.e. Stage 1 and Stage 2).	

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	<p>However, only Stage 1 proceeded with the completion of an EA. The Region is progressing with the Stage 2 LRT EA to ensure property protection and readiness for potential funding.</p>	
<b>3.2</b>	<p><b>Endorsed Alignment (2011)</b></p> <p>Although significant work has been previously completed, through the initial review of the Stage 2 LRT endorsed alignment and the introductory meetings held with key stakeholders, it has become evident that a number of issues / opportunities are presented.</p> <p>As a result, the study team will be investigating a larger study area and additional corridors. The study area has been divided into 4 segments to facilitate discussion and assessments:</p> <ul style="list-style-type: none"><li>• Southern Cambridge - Galt downtown core with GO station options;</li><li>• Central Cambridge - Hespeler Road corridor;</li><li>• Northern Cambridge – Grand River to south of Hwy 401; and</li><li>• City of Kitchener.</li></ul>	
<b>3.3</b>	<p><b>Present Scope and Schedule Overview (2015 – 2016)</b></p> <p>WSP stated the timeline for the first Public Consultation Centre is mid- to end of November 2015, and the second PCC is scheduled for late 2016 Spring.</p>	
<b>3.4</b>	<p><b>Next Major Steps</b></p> <p>WSP indicated that near-term deliverables include preparation of the overall Existing/Future Conditions Report, documenting the review/confirmation of the preferred planning solution, including corridors and associated station/stop locations. Frequent Region input and review/consultation is envisioned and appreciated.</p>	
<b>4.0</b>	<p><b>Stage 2 LRT Preliminary Alignment Overview – Key Discussion Points</b></p>	
<b>4.1</b>	<p><b>Kitchener</b></p> <p>Discussed in conjunction with the northern Cambridge preliminary alignment alternatives to ensure continuity.</p>	
<b>4.2</b>	<p><b>Northern Cambridge</b></p> <p>RMW favoured the alternative alignment route along King Street rather than the CP/Maple Grove or the Fountain/Maple Grove alternatives due to potential ridership markets and associated development intensification potential. Although Maple Grove goes through the East Side Development lands, they are being planned for industrial uses rather than commercial or residential use, and as such may not be compatible for transit-oriented development. WSP agreed with the King Street assessment, but also indicated that potentially that higher order transit along Maple Grove could transform and shape the type of future development for the East Side lands.</p>	

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RMW highlighted the market opportunity that the King / Sportsworld area presents, as there is potential all-day ridership, as opposed to the East Side Lands which will likely be focused on AM/PM peak ridership.

RMW noted that Preston is an essential location to be served and is currently missed by the endorsed alignment. Significant discussion ensued:

- endorsed alignment did have a stop located at the north end of the town
- WSP noted that several issues are presented with the endorsed alignment – CP crossing will likely need grade separation, floodplain impacts, property acquisition along Eagle – and as such, alternative alignments will be considered including connecting to Eagle Street via Speedsville Road
- RMW expressed concern over this potential route as it would directly miss Preston, existing and future ridership market
- WSP noted that a King Street alignment through Preston was considered but not supported by the City of Cambridge (see Section 4.3); further WSP noted that Preston may be better served by a bus feeder network connecting to the LRT (bus stops will be spaced closer than a singular LRT stop providing enhanced accessibility for the Preston market)
- WSP stressed no decision has been made but assessments will be documented for RMW review

#### 4.3 Central Cambridge

For the Central Cambridge section, the Hespeler corridor will be adopted as the central “spine” of the overall LRT and associated feeder bus network – consistent with 2011 endorsed alignment, and supported by the City of Cambridge, including completed and on-going intensification planning studies. WSP to document the screening out of the King and Franklin corridors. RMW in agreement.

#### 4.4 Southern Cambridge

WSP outlined the objectives of a LRT alignment in the southern Cambridge area; provide a high quality multi-modal interface with a future GO rail service; access the identified Urban Growth Centre (UGC); and, provide a high quality connection to the Ainslie Bus Terminal. WSP noted that CPR presents major opportunities (GO rail service) and issues (i.e. potential costly grade separations and right-of-way requirements).

Given that a high quality interface with a future GO rail service should be planned for, but recognizing that planning for the GO service (technology, station location, service frequency, etc.) may be a number of years away, WSP outlined a number of preliminary assumptions (with corresponding sketches) in order to proceed:

- as per standard GO practice, assume that future GO rail service will be a 12-car GO diesel train operation (worst case scenario with largest footprint)
- 3 identified potential GO station sites to be assumed for assessment purposes
- LRT service could terminate at the GO station or continue southerly with the GO station as an online station

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	<ul style="list-style-type: none"><li>a LRT southerly extension could be in a semi-exclusive right-of-way (like Stage 1) in either a double track or single track-looping configuration, or in mixed traffic (as a streetcar service)</li></ul> <p>Preliminary sketches were presented for various alternatives to initiate discussion, including some larger scale indicative sketches to illustrate the potential footprint for a multi-modal GO/LRT station. Major comments include:</p> <ul style="list-style-type: none"><li>RMW inquired about providing service to the west side of Grand River; WSP indicated that providing a LRT to the west side will be problematic, however providing an additional station/stop near an adjacent Grand River crossing will be considered to enhance connectivity via active transportation and the bus network</li><li>RMW stated Galt Collegiate is perhaps closing and could be available as a station site - WSP to consider although trackage along the CP mainline may be an issue</li><li>WSP outlined the potential of moving the Ainslie Terminal, but RMW generally not in favour</li></ul>	
<b>5.0</b>	<b>Data Collection</b> RMW indicated that available information includes a baseline reports on safety, investment, and ridership along the endorsed LRT corridor, and regional walkability index mapping.	<b>RMW</b>
<b>6.0</b>	<b>Other Items</b> Not applicable.	
<b>7.0</b>	<b>Next Meeting</b> To be determined.	

# MINUTES OF MEETING – City of Kitchener Meeting No. 1

<b>PROJECT</b>	Region of Waterloo – Stage 2 LRT TPAP
<b>OBJECTIVE</b>	To re-introduce the project, to identify preliminary potential markets / opportunities, to initiate data collection activities, and to establish future engagement protocols.
<b>DATE / TIME</b>	July 29, 2015 @ 9:00am
<b>LOCATION</b>	50 Queen Street, Boardroom
<b>PROJECT No.</b>	151-07859-00
<b>FILE</b>	

Attendees		E-mail	Phone Number
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Hans Gross	City	<a href="mailto:hans.gross@kitchener.ca">hans.gross@kitchener.ca</a>	519-741-2200 x7410
Justin Recdman	City	<a href="mailto:justin.recdman@kitchener.ca">justin.recdman@kitchener.ca</a>	519-741-2200 x7038
Paula Sawicki	RMW	<a href="mailto:psawicki@regionofwaterloo.ca">psawicki@regionofwaterloo.ca</a>	519-575-4035
Harold Sich	WSP	<a href="mailto:hsich@pbworld.com">hsich@pbworld.com</a>	416-640-5456
Irene Hauzar	WSP	<a href="mailto:ihauzar@pbworld.com">ihauzar@pbworld.com</a>	416-646-9032
Mina Dezyanian	WSP	<a href="mailto:mdezyanian@pbworld.com">mdezyanian@pbworld.com</a>	416-644-0625

Item No.	Discussion	Action By
<b>1.0</b>	<b>Introductions</b>	
1.1	Attendees introduced themselves, including roles and responsibilities.	
<b>2.0</b>	<b>Purpose of Meeting</b>	
2.1	WSP outlined the purpose of the meeting as to: <ul style="list-style-type: none"> <li>re-introduce the project to the City</li> <li>discuss potential markets/opportunities and potentials alignment / stations</li> <li>identify data collection items from the City</li> <li>establish future engagement protocols</li> </ul>	
<b>3.0</b>	<b>Stage 2 LRT Environmental Assessment (EA)</b>	
<b>3.1</b>	<b>Previous Work – Stage 1 LRT (2007 – 2011) and aBRT</b>	
	WSP provided a brief overview of previous work: originating as an individual environmental assessment process for the entire Waterloo to Cambridge alignment; transitioning to the Province’s Transit Project Assessment Process (TPAP) in 2009 for Stage 1; and, a Regional Council endorsed alignment for the entire Waterloo to Cambridge alignment in 2011 (i.e. Stage 1 and Stage 2). However, only Stage 1 proceeded with the completion of an EA. The Region is progressing with the Stage 2 LRT EA to ensure property protection and readiness for potential funding.	

Although significant work has been previously completed, through the initial review of the Stage 2 LRT endorsed alignment and the introductory meetings held with key

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stakeholders, it has become evident that a number of issues / opportunities are presented.

As a result, the study team will be investigating a larger study area and additional corridors. The study area has been divided into 4 segments to facilitate discussion and assessments: Southern Cambridge - Galt downtown core with GO station options; Central Cambridge - Hespeler Road corridor; Northern Cambridge – Grand River to south of Hwy 401; and City of Kitchener.

This meeting focused on the latter 2 segments.

**3.2 Present Scope and Schedule Overview (2015 – 2016)**

The envisioned timeline is to hold a Public Consultation Centre (PCC) in late November 2015, with the intent of re-introducing the project, highlighting key existing and future conditions, and screening results of alignment options. Detailed assessment and recommendation of the preferred alignment will follow with a second PCC scheduled for late Spring 2016. Filing of environmental documentation for approval to follow in early summer 2016.

**3.3 Next Major Steps**

WSP indicated that near-term deliverables include preparation of the overall Existing/Future Conditions Report, documenting the review/confirmation of the preferred planning solution, and screening of alignment options – leading to PCC No. 1.

Frequent City of Kitchener input and review/consultation is envisioned, with a likely meeting in mid-October to discuss preliminary findings and pre-PCC materials.

**4.0 2008 Stage 2 LRT EA Alignment Overview**

Key discussion points are summarized below:

- North - Highway 401 / Speed River Crossing
- CPR
- Development / Intensification Potential

**4.1 North - Hwy 401 / Speed River Crossing**

Several items in Kitchener/Cambridge between Eagle / Hespeler intersection and Fairway Station were discussed:

- Hwy 401 / Hwy 8 / King Street Interchange reconfiguration
  - interchange reconfiguration will likely reduce traffic along King Street, potentially presenting excess roadway capacity within the corridor
- Stop along King Street in the vicinity of Freeport Hospital or further to the north near the community centre is recommended
- Sportsworld Drive
  - Not having a stop in the vicinity of Sportsworld is a missed opportunity for potential ridership
  - City suggested that potential transit connection to Conestoga College from a

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	Sportsworld stop could be envisioned	
<b>4.2 CPR</b>	Recognizing the potential CPR crossing issues with the endorsed alignment, an alignment along River Road / Hwy 8 / King Street (labelled as K-3) was identified. Intensification potential along King Street south of Hwy 8 to Sportsworld Drive was identified.	
<b>4.3 Development / Intensification Potential</b>	Key points of discussion included:	
	<ul style="list-style-type: none"> <li>• Sanitary Sewer Pumping Station along King Street               <ul style="list-style-type: none"> <li>○ After the pumping station and forcemain upgrade along King Street near Freeport Hospital, there will be additional capacity for new development</li> <li>○ City to provide EA Study on Sanitary Sewer Pumping Station upgrade</li> </ul> </li> <li>• River Road Extension               <ul style="list-style-type: none"> <li>○ Completion of construction is scheduled for 2018</li> <li>○ It will result in land value increase around the area, however, the protection of endangered species (i.e. Jefferson Salamanders) may limit development</li> <li>○ Development will be more commercial than residential due to industrial area within the vicinity</li> </ul> </li> <li>• Fairview Park Mall has no current plans for redevelopment - some properties, such Walmart, are leased</li> </ul>	City
<b>5.0 Initial Inputs / Data Collection</b>	WSP will proceed completing a Master Data Collection List, incorporating some of the available data mentioned during the meeting (i.e. planning studies, utilities asset management data, aerial GIS data).	WSP
	City will discuss information release requirements internally and get back to RMW / WSP.	City
	City will provide utility GIS information.	City
	Available information includes: growth management plan details; site specific zoning information; and development proposals.	
<b>6.0 Engagement Protocols</b>	Not discussed.	
<b>7.0 Other Items</b>	None noted.	
<b>8.0 Next Meeting</b>	Next meeting with the City to be held before the November PCC No. 1, likely in mid-October, to provide an overall update and details on the feasibility screening.	RMW

# MINUTES OF MEETING – GRCA Meeting No. 1

<b>PROJECT</b>	Region of Waterloo – Stage 2 LRT TPAP
<b>OBJECTIVE</b>	To re-introduce the project, to identify opportunity / issues based on GRCA jurisdictions, and to establish future engagement protocols.
<b>DATE / TIME</b>	August 27, 2015 @ 10:00am
<b>LOCATION</b>	GRCA Office, 400 Clyde Road
<b>PROJECT No.</b>	151-07859-00
<b>FILE</b>	

Attendees		E-mail	Phone Number
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Harold Sich	WSP	<a href="mailto:hsich@pbworld.com">hsich@pbworld.com</a>	416-640-5456
Mina Dezyanian	WSP	<a href="mailto:mdezyanian@pbworld.com">mdezyanian@pbworld.com</a>	416-644-0625

Item No.	Discussion	Action By
<b>1.0</b>	<b>Introductions</b> Attendees introduced themselves, including roles and responsibilities.	
<b>2.0</b>	<b>Purpose of Meeting</b> WSP outlined the purpose of the meeting as to: <ul style="list-style-type: none"> <li>• re-introduce the project to GRCA</li> <li>• review project history and outline findings from other introductory meetings with key stakeholders (CP, City of Cambridge, City of Kitchener)</li> <li>• discuss potential opportunities / issues within possible alignment corridors</li> <li>• establish future engagement protocols</li> </ul>	
<b>3.0</b>	<b>Stage 2 LRT Environmental Assessment (EA)</b> WSP outlined that Stage 1 LRT is currently under construction. Stage 2 LRT, from Fairview Mall to Galt urban centre, is the subject of this environmental assessment study, following Ontario’s Transit Project Assessment Process (TPAP).	
<b>3.1</b>	<b>Endorsed Alignment (2011)</b> WSP outlined that Regional Council has previously endorsed an alignment in 2011 for the entire LRT route Between Waterloo and Cambridge (i.e. Stage 1 and Stage 2). However, only Stage 1 proceeded with the completion of an EA.  The Region is progressing with the Stage 2 LRT EA to ensure property protection and readiness for potential funding.	

Item No.	Discussion	Action By
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Through the initial review of the Stage 2 LRT endorsed alignment and the introductory meetings held with key stakeholders, it has become evident that a number of issues / opportunities are presented. As a result, the study team will be investigating a larger study area and additional corridors.

**3.2 Present Scope and Schedule Overview (2015 – 2016)**

The envisioned timeline is to hold a Public Consultation Centre (PCC) in late November 2015, with the intent of re-introducing the project, highlighting key existing and future conditions, and screening results of alignment options. Detailed assessment and recommendation of the preferred alignment will follow with a second PCC scheduled for late Spring 2016. Filing of environmental documentation for approval to follow in early summer 2016.

GRCA noted the multi-season field investigation requirements, and WSP indicated that the field work has progressed for the endorsed alignment to meet the above schedule. It is recognized that the schedule may be revised, depending on the outcome of the alignment assessments and the need for additional field work.

**3.3 Next Major Steps**

WSP indicated that near-term deliverables include preparation of the overall Existing/Future Conditions Report, documenting the review/confirmation of the preferred planning solution, and screening of alignment options – all leading to PCC No. 1.

Frequent GRCA input and review/consultation is envisioned, with a likely meeting in mid-October to discuss preliminary findings and pre-PCC materials.

**4.0 Potential GRCA Issues / Opportunities within Study Area (SK01-SK05)**

The endorsed and preliminary alternative alignments were reviewed and major GRCA comments summarized below per section.

**4.1 Referring to SK01 – Grand River – Northern Cambridge**

- GRCA clarified endangered species screening not in their scope of study – confirm with relevant agencies (i.e. MNR, DFO) directly
- clarification of multi-season field investigation wrt MNR protocols – 3 vs. 4 seasons – although GRCA would be fine with 3 seasons
- GRCA is a property owner of some land west and east of the Grand River
- new bridge crossing will introduce floodplain implications – GRCA will provide model files; Regional Flood is Hurricane Hazel and up to 0.1m floodplain increase will be considered
- both rail and road bridge crossings may be potential heritage bridges, in addition Grand River identified as a heritage river – new crossings may need to consider bridge aesthetics
- other Grand River implications to consider slope stability/erodibility, ice floes, recently constructed downstream weir, First Nations, zebra mussels,

**WSP**

Item No.	Discussion	Action By
	<p>neighbourhood trails, CEAA implications, and navigable waters designation</p> <ul style="list-style-type: none"> <li>• GRCA recommended early consultation/screening with DFO</li> <li>• associated with the planned East Side development lands were a new regional sanitary sewer crossing of the Grand River, a pumping station east of the Grand River, a new collector road (Creekside Road)</li> <li>• Freeport Creek crossing - GRCA will provide model files – existing culverts under both CPR and King Street and merging of Grand River and Freeport Creek floodplains present design issues</li> </ul>	
<b>4.2</b>	<p><b>Referring to SK02 – Northern Cambridge</b></p> <ul style="list-style-type: none"> <li>• as part of the planned East Side development lands, a new collector road (Creekside Road) with regional sanitary servicing (temporary) is being proposed between the 2 identified Provincially Sensitive Wetlands (PSWs) and through regional lands to connect to Maple Grove Road (GRCA noted that they requested a potential linkage between the PSWs)</li> <li>• GRCA noted to refer to Cambridge OPA Phase 1 East Side North Lands and a draft development plan at southwest corner of Allendale/Fountain</li> <li>• along the endorsed / CPR alignment, across from the Toyota properties, GRCA identified PSWs, mature woodlands, and wildlife for consideration</li> </ul>	
<b>4.3</b>	<p><b>Referring to SK03 – Speed River – Northern Cambridge</b></p> <ul style="list-style-type: none"> <li>• Speed River weir/dam – GRCA indicated that City of Cambridge owns the structure (has been debated, but the City has undertaken the recent rehabilitation works in 2008); it does not perform a flood control dam role, but retains water to support a wider river / ponding effect within City’s Riverside Park; may have local Preston community support; City initiated an EA several years ago to address dam deterioration; GRCA would support removal of the infrastructure (i.e. water quality improvement)</li> <li>• endorsed alignment is along the banks of the Speed River presenting significant issues (i.e. floodplain, in-water works – erosion, fisheries habitat)</li> <li>• south of Hwy 401 along the endorsed/CPR alignment, natural springs will be encountered</li> <li>• King Street north of the Speed River is being reconstructed by the Region, presently in detail design</li> <li>• existing raceway from an old mill site west of King Street to the Speed River may need to be addressed</li> <li>• the alternative Speedville Road corridor also presents issues to be addressed: north of Hwy 401 are a PSW and West Creek; south of Hwy 401 will require crossing of the Speed River, PSWs (with turtles) on both sides, steep embankments, and heavily used trail that also crosses under Hwy 401</li> <li>• GRCA also owns property in the vicinity</li> </ul>	
<b>4.4</b>	<p><b>Referring to SK04 – Hespeler Corridor</b></p> <ul style="list-style-type: none"> <li>• potential alignment along the Groff Mill Creek corridor was discussed - GRCA noted that this constructed channel is subject to an on-going EA process and a</li> </ul>	

<b>Item No.</b>	<b>Discussion</b>	<b>Action By</b>
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2-zone analysis to facilitate additional redevelopment is being proposed;  
GRCA not in favour of this alignment

- Dumfries Conservation Area and associated floodplain, wetlands and mature trees was noted

**4.5 Referring to SK05 – Grand River – Southern Cambridge**

- WSP outlined 3 potential GO station locations in the southern Cambridge area that are being considered
- as for GO station (GO-1) and LRT alignment along Water Street into the Galt urban core:
  - construction within the floodplain would be at the Region’s risk as an increase in the floodplain is not envisioned (as long as the berm along the Grand River is not affected)
  - GRCA noted that Galt urban centre lies within a Special Policy Area, which will affect some facilities, particularly any substation requirements
- as for GO station along Samuelson Road (GO-2), no specific comments provided
- as for GO station along the abandoned rail corridor (GO-3), the alignment would coincide with the Mill Creek floodplain, which is channelized with steep slopes in the southern reach but being naturalized in the northern reach (and brook trout being identified)
  - GRCA would not favour an alignment that would further channelize Mill Creek
  - GRCA noted an on-going SPA for townhouses east of the proposed LRT alignment and south of Kerr Street

**5.0 Governing Criteria Policies / Permits & Approvals**

GRCA indicated that there was no standalone design basis document. WSP will prepare a draft design basis / criteria document and circulate to GRCA for their review and comment.

**WSP**

A list of permits and approval requirements will be discussed at the next meeting as the alignment development continues.

**6.0 Data Collection**

The following items were identified as available from GRCA:

- hydraulic model files for (WSP to confirm reach limits):
  - Grand River (at Kitchener/Cambridge boundary)
  - Grand River (within Galt urban core)
  - Freeport Creek
  - Speed River
  - West Creek
  - Groff Creek
  - Mill Creek

**WSP**

Item No.	Discussion	Action By
	<ul style="list-style-type: none"><li data-bbox="285 281 1068 310">• list of GRCA properties that fall within the project's study area</li></ul> <p data-bbox="285 352 1263 457">WSP would appreciate any other relevant studies (i.e. vegetation, aquatic habitat, wildlife, geotechnical/erosion susceptibility, water quality, hydraulics) that may be available within the enlarged study area that GRCA have initiated.</p> <p data-bbox="285 499 1263 562">GRCA noted recent topographic mapping is available (i.e. LIDAR) from the Cities, and which have proven fairly accurate.</p>	
<b>7.0</b>	<b>Other Items</b> Not applicable.	
<b>8.0</b>	<b>Next Meeting</b> Next meeting with GRCA to be held before the November PCC No. 1, likely in mid-October, to provide an overall update and details on the feasibility screening.	

## MINUTES OF MEETING – City of Cambridge Meeting No. 2

<b>PROJECT</b>	Region of Waterloo – Stage 2 LRT TPAP
<b>OBJECTIVE</b>	To review potential and preliminary alignments for the south and north Cambridge areas.
<b>DATE / TIME</b>	September 2, 2015 @ 1:00pm
<b>LOCATION</b>	Cambridge City Hall, Young Room, Second Floor
<b>PROJECT No.</b>	151-07859-00
<b>FILE</b>	

Attendees		E-mail	Phone Number
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Harold Sich	WSP	<a href="mailto:hsich@pbworld.com">hsich@pbworld.com</a>	416-640-5456
Mina Dezyanian	WSP	<a href="mailto:mdezyanian@pbworld.com">mdezyanian@pbworld.com</a>	416-644-0625

Item No.	Discussion	Action By
<b>1.0</b>	<b>Introductions</b> Attendees introduced themselves, including roles and responsibilities.	
<b>2.0</b>	<b>Purpose of Meeting</b> WSP outlined the purpose of the meeting as to: <ul style="list-style-type: none"> <li>• review broadened study area since previous meeting</li> <li>• focus on the southern terminus</li> <li>• discuss north Cambridge area alignments</li> </ul> <p>WSP is undergoing alternative corridor screening process in September, with the intent of going to the public in mid-November and detailed assessments in early 2016. City noted coordinating schedules with on-going City intensification planning studies may be an issue.</p>	
<b>3.0</b>	<b>Update on Stakeholders</b> WSP provided a brief overview of key findings from the other stakeholder introductory meetings and associated follow-up – with major issue being the inability for CP to collaborate on this study.  The CP situation led to a requested update, if any, from the City with respect to GO service into the City – City indicated it’s certain it will happen with on-going discussions.	

Item No.	Discussion	Action By
	<p>WSP indicated, recognizing that a high quality LRT/GO interface is a must, the coordination of the two initiatives present timing and responsibility issues, requiring appropriate assumptions for potential GO station locations and corresponding appreciation of impacts – a main objective of this and future meetings.</p>	
<b>4.0</b>	<b>Southern Cambridge</b> WSP outlined the approach to identifying and screening alternative alignments in the Galt core, including: terminus location; and, double track vs. looping single track vs. mixed traffic operations.	
<b>4.1</b>	<b>GO Service Operation Assumptions</b> City envisions initial operation of future GO trains into downtown Galt as FRA compliant DMUs, with different station and maintenance facility requirements, compared to the typical GO Rail service roll-out.  WSP has for the purpose to initiate discussions, assumed the typical GO Rail 12-car diesel service and associated footprint, which would be considered the largest footprint (worst-case scenario for property). Ensuing discussion recognized that indicative GO station locations will be used to address the various issues.	
<b>4.2</b>	<b>GO1 – Referring to GO1 Sketches</b> <ul style="list-style-type: none"><li>• a double track LRT along narrow corridors of Water or Ainslie present issues: on-street parking loss, likely introduction of one-way roadway operations, intersection modifications considering LRT in addition to truck and bus turning radii, etc.</li><li>• A single track LRT along Water and Ainslie will similarly impact parking and the road network, while introducing offset station locations requiring enhanced wayfinding</li><li>• mixed operations (i.e. streetcars) for fully accessible service along Water or Ainslie will also have on-street parking losses and intersection operational issues, but to a lesser extent thereby potentially maintaining the Galt core heritage environment</li><li>• GO Station facility requirements, based on WSP assumptions (refer to 4.1), was discussed (i.e. kiss n’ ride and taxi areas) with City expressing concerns with the extent of impacts</li><li>• as discussed in 4.1, given the number of uncertainties, moving forward indicative GO Station locations will be shown identifying that exact location is subject to a future study</li></ul>	
<b>4.3</b>	<b>GO2 – Referring to GO2 Sketches</b> <ul style="list-style-type: none"><li>• number of modifications and comments were discussed in addition to those alternatives presented, including:<ul style="list-style-type: none"><li>○ the City identified the properties east of Roxboro and north of Dundas potentially being available for a GO Station site</li></ul></li></ul>	

Item No.	Discussion	Action By
	<ul style="list-style-type: none"><li>○ the Dundas route was preferred over the CP corridor route</li><li>○ City is in favour of continuing the LRT into downtown Galt along abandoned rail corridor, including enclosing Mill Creek if required</li><li>○ moving Ainslie Terminal is considered as an option</li><li>● overall it was considered that the GO2 location provides more flexibility of siting a potential GO station as there is more property available compared to GO1</li></ul>	
<b>4.4</b>	<b>GO3 – Referring to GO3 Sketches</b> <ul style="list-style-type: none"><li>● number of modifications and comments were discussed in addition to the alternative presented, including:<ul style="list-style-type: none"><li>○ City is in favour of continuing the LRT into downtown and if the GO was coming into the Galt core, it was envisioned to come down the east side of Beverly and then along abandoned rail corridor</li><li>○ with the LRT and GO lines to be separated, and ideally Mill Creek impact be minimized, the City noted that acquiring property along the east side of Beverly as an option – thereby leaving multi-use trail, creek and east side for redevelopment</li></ul></li></ul>	
<b>5.0</b>	<b>Northern Cambridge</b>	
<b>5.1</b>	<b>Sportworld / King Alignment</b> <ul style="list-style-type: none"><li>● City questioned the potential screening out of alignment N-3 (due to Grand River floodplain crossing at its widest point, missed redevelopment and markets at Sportworld and King Street), and missing East Side Lands potential</li><li>● WSP noted that assessment has not started and the City will be involved</li></ul>	
<b>5.1</b>	<b>Preston</b> <p>Comments from the Speed River dam discussion:</p> <ul style="list-style-type: none"><li>● City indicated that they are not the owner</li><li>● Cambridge Council is in favor of preserving the dam, although the community may be split (opinion, not substantiated through consultation)</li><li>● acknowledge previous dam repair by City, and re-initiating EA with PIC in early 2016 (see July 7 report to Council)</li><li>● not confirmed if a heritage structure, but treated as one in the EA (Speed River is identified as a heritage river)</li><li>● raceway to Mill (not abandoned), which is a heritage building / property / business, is not functional (City to look to fill it in) – raceway itself is not heritage designated</li></ul> <p>Comments regarding potential alignments:</p> <ul style="list-style-type: none"><li>● WSP noted that RMW Planning had expressed concerns that the N-2 alignment does not go near Preston’s residential areas (and removing the endorsed Preston station)</li><li>● City appeared to be less concerned noting that the N-2 alignment can serve</li></ul>	

Item No.	Discussion	Action By
	<p>Preston through a feeder bus network while going through the City's East Side Lands which is the Region's industrial future; it also provides a stronger access connection to Hespeler; additional discussion to be undertaken with Council before PCC No. 1</p> <ul style="list-style-type: none"><li>WSP added both endorsed and N-2 alignment will be carried forward to the public</li></ul>	
<b>5.0</b>	<b>Governing Criteria Policies / Permits &amp; Approvals</b> Not discussed	
<b>6.0</b>	<b>Data Collection</b> Not discussed	
<b>7.0</b>	<b>Other Items</b> RMW indicated a desire to move forward with a stakeholder technical advisory committee to facilitate multiple and divergent inputs into the study.  City re-iterated desire for a Council workshop – a closed meeting for potentially the week of September 21 <sup>st</sup> to be arranged.	<b>RMW / City</b>
<b>8.0</b>	<b>Next Meeting</b> Next meeting with City to be held before the November PCC No. 1 – week of September 30 suggested - with initial screening results to be presented.	

# MINUTES OF MEETING – MTO Meeting No. 1

<b>PROJECT</b>	Region of Waterloo – Stage 2 LRT TPAP
<b>OBJECTIVE</b>	To re-introduce the project, to identify preliminary potential issues, to initiate data collection activities, and to establish future engagement protocols.
<b>DATE / TIME</b>	September 9, 2015 @ 10:00am
<b>LOCATION</b>	4th Floor Executive Boardroom, 659 Exeter Road, London
<b>PROJECT No.</b>	151-07859-00
<b>FILE</b>	

Attendees		E-mail	Phone Number
Scott Howard	MTO	<a href="mailto:scott.howard@ontario.ca">scott.howard@ontario.ca</a>	519-873-4568
Ryan Vanderputten	MTO	<a href="mailto:ryan.vanderputten@ontario.ca">ryan.vanderputten@ontario.ca</a>	519-873-4549
Tanya Cross	MTO	<a href="mailto:tanya.cross@ontario.ca">tanya.cross@ontario.ca</a>	519-873-4578
Martin Haalstra	MTO	<a href="mailto:martin.haalstra@ontario.ca">martin.haalstra@ontario.ca</a>	519-873-4348
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Harold Sich	WSP	<a href="mailto:hsich@pbworld.com">hsich@pbworld.com</a>	416-640-5456
Mina Dezyanian	WSP	<a href="mailto:mdezyanian@pbworld.com">mdezyanian@pbworld.com</a>	416-644-0625

Item No.	Discussion	Action By
<b>1.0</b>	<b>Introductions</b> Attendees introduced themselves, including roles and responsibilities.	
<b>2.0</b>	<b>Purpose of Meeting</b> WSP outlined the purpose of the meeting as to: <ul style="list-style-type: none"> <li>• re-introduce the project to MTO</li> <li>• review project history and outline findings from other introductory meetings with key stakeholders (CP, City of Cambridge, City of Kitchener, GRCA)</li> <li>• discuss potential issues within possible alignment corridors</li> <li>• establish future engagement protocols</li> </ul> <p>WSP is undergoing alternative corridor screening process in September, with the intent of going to the public in mid-November and detailed assessments in early 2016.</p>	
<b>3.0</b>	<b>Stage 2 LRT Environmental Assessment (EA)</b> WSP outlined that Stage 1 LRT is currently under construction. Stage 2 LRT, from Fairview Park Mall to Galt urban centre, is the subject of this environmental assessment study, following Ontario’s Transit Project Assessment Process (TPAP).	
<b>3.1</b>	<b>Previous Work (2007-2011)</b> WSP outlined that Regional Council has previously endorsed an alignment in 2011 for the entire LRT route Between Waterloo and Cambridge (i.e. Stage 1 and Stage 2). However, only Stage 1 proceeded with the completion of an EA.	

Item No.	Discussion	Action By
	The Region is progressing with the Stage 2 LRT EA to ensure property protection and readiness for potential funding.	
<b>3.2</b>	<b>Present Scope and Schedule Overview (2015 – 2016)</b> The envisioned timeline is to hold a Public Consultation Centre (PCC) in late November 2015, with the intent of re-introducing the project, highlighting key existing and future conditions, and present screening results of alignment options. Detailed assessment and recommendation of the preferred alignment will follow with a second PCC scheduled for 2016.	
<b>3.3</b>	<b>Next Major Steps</b> WSP indicated that near-term deliverables include preparation of the overall Existing/Future Conditions Report, documenting the review/confirmation of the preferred planning solution, and screening of alignment options – all leading to PCC No. 1.  Frequent MTO input and review/consultation is envisioned, with a likely meeting in mid-October to discuss preliminary findings and pre-PCC materials.	
<b>4.0</b>	<b>2011 Phase 2 LRT EA Alignment Overview</b> Through the initial review of the Stage 2 LRT endorsed alignment and the introductory meetings held with key stakeholders, it has become evident that a number of issues / opportunities are presented. As a result, the study team will step back, revisit the endorsed alignment, consider lessons learnt from Stage 1, and investigate a larger study area and additional corridors.  The study area has been divided into 4 sections: <ul style="list-style-type: none"><li>• Southern Cambridge – key driver is the integration of a future GO service and LRT to ensure a high quality multi-modal interface in downtown Galt.<ul style="list-style-type: none"><li>○ No direct MTO concern in this area.</li></ul></li><li>• Central Cambridge – Hespeler Road corridor is fixed as a spine to the overall bus network.<ul style="list-style-type: none"><li>○ No direct MTO concern in this area.</li></ul></li><li>• Kitchener and Northern Cambridge – numerous alignments to be investigated to minimize CPR and natural environment impacts and to maximize potential for transit-oriented development.<ul style="list-style-type: none"><li>○ Numerous potential direct and indirect concerns with MTO (i.e. (structures, crossings, property, signal timing, and ramp terminal operational implications) from Fairway station to Pinebush Station (intersection of Hespeler and Eagle).</li></ul></li></ul>	
<b>5.0</b>	<b>Potential MTO Issues / Opportunities within Study Area</b> Identified MTO areas of interest were reviewed, confirming issues and considerations for the project team to incorporate in the development and assessment of alternatives.	

Item No.	Discussion	Action By
5.a	<p><b>Fairway Rd / Hwy 8 Corridor</b></p> <ul style="list-style-type: none"> <li>recent Highway 8 bridge crossing at Fairway was designed / constructed to permit both CP/LRT trackage in the south span; WSP to review design to confirm clearances; due to CP issues, a LRT corridor within the Fairway roadway was discussed with several issues identified</li> <li>crossing of Fairway Road is required from the Fairview Park Mall station; MTO stated that they have jurisdictional control (i.e. new or modified signals) within 800m of an intersection, and all proposed options will need to ensure safe movement of goods and vehicles (including along Hwy 8)</li> </ul>	WSP
5.b	<p><b>Hwy 8 / River Road / Grand River Corridor</b></p> <ul style="list-style-type: none"> <li>Alignment K-2 (i.e. along River Road) was discussed as a potential route to minimize CPR impacts; while minimizing impact at the Hwy 8 / Fairway interchange, it will affect the proposed structure / ramp configurations – to be assessed</li> <li>for Alignment K-3 (i.e. along Hwy 8 to King Street) MTO indicated that their right-of-way would need to be maintained to protect for any future widening; WSP concurred and will design for worst case scenario outside of MTO ROW; MTO noted that the Grand River crossing will likely present issues with First Nations, steep slopes, zebra mussels, wide floodplain, etc.</li> </ul>	
5.c	<p><b>Hwy 8 / King Street Interchange</b></p> <ul style="list-style-type: none"> <li>MTO inquired about K-3 Alignment location; WSP indicated that the alignment would be located on the south side of King Street with a new underpass structure crossing Hwy 8</li> </ul>	
5.d	<p><b>Sportsworld Drive / Hwy 8 Corridor</b></p> <ul style="list-style-type: none"> <li>MTO indicated that the right-of-way in the vicinity of the Hwy 8 / Sportsworld interchange is protected for future ramps (study can be found online)</li> </ul>	
5.e	<p><b>Hwy 401 / Hwy 8 / King Interchange Reconfiguration</b></p> <ul style="list-style-type: none"> <li>RMW stated that when the ultimate Hwy 401 / Hwy 8 reconfiguration is completed and ramps removed to/from King Street, it is forecasted that 60% of traffic volumes to be removed along King Street – presenting opportunities for LRT implementation</li> <li>WSP inquired about the timeline for the ramp construction; MTO replied beyond 5 years. The planning document can be found online.</li> </ul>	
5.f	<p><b>Hwy 401 / CPR Crossing</b></p> <ul style="list-style-type: none"> <li>endorsed alignment includes a proposed LRT corridor adjacent to the existing CP corridor, under Hwy 401; complex and multi-staged construction will be required necessitating extensive MTO involvement; MTO concurs</li> </ul>	

Item No.	Discussion	Action By
5.g	<b>Hwy 401 / Speedsville Road Crossing</b> <ul style="list-style-type: none"><li>Alignment N-2 along Speedsville Road will be over Hwy 401; given that there are no ramps (i.e. like Hespeler) and will be over the highway, MTO indicated that this route may be preferable</li></ul>	
6.0	<b>Permits &amp; Approvals</b> <p>MTO indicated the following potential permits and approvals:</p> <ul style="list-style-type: none"><li>ROW Encroachment Permit with associated legal agreement</li><li>Building and land use approval within 800m of MTO interchange ramp terminus</li><li>Access Permit, if applicable.</li></ul>	
7.0	<b>Data Collection</b> <p>RMW to forward drawings/documents of structures and interchanges received from MTO to WSP.</p>	RMW
8.0	<b>Other Items</b> <p>RMW indicated a desire to move forward with a stakeholder technical advisory committee to facilitate multiple and divergent inputs into the study. MTO indicated that they would participate.</p>	
9.0	<b>Next Meeting</b> <p>Next meeting with MTO to be held before the November PCC No. 1 – mid-October envisioned – with initial screening results to be presented.</p>	

## MINUTES OF MEETING – RMW Planning Meeting No. 2

<b>PROJECT</b>	Region of Waterloo – Stage 2 LRT TPAP
<b>OBJECTIVE</b>	To update project status, and to review preliminary corridors under consideration.
<b>DATE / TIME</b>	September 24, 2015 @ 10:30am
<b>LOCATION</b>	50 Queen Street, 6 <sup>th</sup> Floor, Boardroom
<b>PROJECT No.</b>	151-07859-00
<b>FILE</b>	3.4 / RMW

Attendees		E-mail	Phone Number
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<b>1.0</b>	<b>Introductions</b> Brief introduction of attendees, including roles and responsibilities.	
<b>2.0</b>	<b>Purpose of Meeting</b> WSP outlined the purpose of the meeting as to: <ul style="list-style-type: none"> <li>• update status of the project</li> <li>• review preliminary corridors under consideration</li> <li>• receive feedback from RMW based on previous meeting</li> </ul>	
<b>3.0</b>	<b>Stage 2 LRT Environmental Assessment (EA)</b>	
<b>3.1</b>	<b>Previous Work – LRT (2007 – 2011) and BRT</b> WSP confirmed that the Stage 2 LRT EA is investigating not only the endorsed alignment, but other corridors that may be cost-effective, maximize future ridership (i.e. GO station), and/or minimizes problematic properties / stakeholders.	
<b>3.2</b>	<b>Scope and Schedule Update</b> Further meetings have taken place with stakeholders (GRCA and MTO), highlighting a number of issues / opportunities associated with the endorsed alignment.	

As a result, WSP has been investigating a larger study area and additional corridors. The intent is to complete a screening exercise of alternative corridors

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	<p>on how well they address documented goals and objectives and identified regulatory requirements. Depending on the number of remaining unscreened out corridors, the detailed assessment process and in preliminary detail.</p> <p>WSP stated the timeline for the first Public Consultation Centre is November 18-19.</p> <p>Frequent Region input and review/consultation is envisioned and appreciated.</p>	
<b>3.4</b>	<p><b>Next Major Steps</b></p> <p>Existing/Future Conditions Report, documenting the review/confirmation of the preferred planning solution, including corridors and associated station/stop locations.</p>	
<b>4.0</b>	<p><b>Stage 2 LRT Preliminary Corridors</b></p>	
<b>4.1</b>	<p><b>Kitchener / Northern Cambridge</b></p> <p>RMW stressed that the East Side lands are being planned for industrial uses rather than commercial or residential use, and as such may not be compatible for transit-oriented urban development.</p> <p>WSP noted and said they will take a closer look at the Preston area for analysis of other alignment options, perhaps along Shantz Hill; WSP also indicated that potentially that higher order transit along Maple Grove could transform and shape the type of future development for the East Side lands. WSP emphasized on the grade separation requirement with CP rail in the Preston area.</p>	<b>WSP</b>
<b>4.2</b>	<p><b>Southern Cambridge</b></p> <p>GO/LRT Mobility Hub Options:</p> <ul style="list-style-type: none"> <li>• RMW favoured the GO2 mobility hub location rather than GO1 as there is more flexibility and options for the station location.</li> <li>• WSP noted and said “GO flexibility” will be added as a criteria for the screening process of alternative alignment routes.</li> </ul> <p>Ainslie Bus Terminal:</p> <ul style="list-style-type: none"> <li>• RMW suggested decentralizing Ainslie Bus Terminal by relocating the station and instead, having three stations at each of the bridge entrances along Water St. to distribute the ridership. RMW stated this will require a rationalized bus network, decentralize the bus routes, and decrease the bus volume on the existing route.</li> <li>• WSP indicated the importance of a high quality interface and stated the operating process of buses must be considered to determine station locations and increase reliability of the service.</li> </ul> <p>Alternative Corridors:</p> <ul style="list-style-type: none"> <li>• WSP referred to the preliminary typical sections and plans to demonstrate the trade-offs of single and double tracks along Ainslie and Water; WSP said the effects of LRT are not only along the LRT route, but also along adjacent and parallel streets. WSP indicated loss of parking in downtown Galt as an issue followed by blockage of entrance/access routes to the main street.</li> </ul>	<b>WSP</b>

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	<ul style="list-style-type: none"><li>• RMW suggested relocating ridership at Ainslie Bus Terminal to a station at Main St and Concession Rd along Water on double tracks with a strong bus feeder network.</li><li>• RMW added having a “light maintenance facility” for light cleaning or storage for the LRT; WSP noted.</li></ul>	
<b>5.0</b>	<b>Data Collection</b>	<b>RMW</b>
	RMW will circulate Cambridge Centre Mall drawings to WSP.	
<b>6.0</b>	<b>Other Items</b>	
	RMW will circulate 5 bullet points regarding the East Side Land development amongst themselves.	
	RMW will continue the creation of a technical committee including stakeholders.	
<b>7.0</b>	<b>Next Meeting</b>	
	Next meeting with the Region to be held in 3 weeks to further review preliminary corridors.	