

Appendix **K**

Response to Metropia Design Concepts



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Project name:
 New Highway 401 Road Crossing from
 Notion Road to Squires Beach Road
 Municipal Class Environmental
 Assessment

Project ref:
 60584644

From:
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 (AECOM)

Date:
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Memorandum

This memorandum responds to the design package provided by Metrovia and their consultant WSP on December 10, 2018, which proposes alternative designs to the preferred design concept identified by the Project Team through the Municipal Class Environmental Assessment (MCEA) process. The table below lists key considerations and issues related to WSP's proposed designs.

Summary of Issue	Description of Issues and Key Considerations Related to the Proposed Designs
Insufficient clearance assumed for overpass	<ul style="list-style-type: none"> • WSP assumed that the existing Highway 401 and rail line are similar in elevation. While they are close to AECOM's, they are not exact. <ul style="list-style-type: none"> ○ Assumed a 7.3 m vertical clearance for rail, which is insufficient since Metrolinx is electrifying this line and requires 7.6 m clearance. ○ Assumed a shallower depth of structure (2.0 m) as opposed to our assumed 2.5 m structure depth. While a 2.0 m depth structure is potentially reasonable, this should not be assumed without a completed Structural Planning Report and General Arrangement plan for the structure. Further to this, a longer span length (noted below) may require deeper structural depth. Thus, it is preferable during early planning to assume a 2.5 m structural depth to allow <i>forgiveness</i> in the design as it is refined in subsequent design stages.
No consideration for future Highway 401 expansion	<ul style="list-style-type: none"> • The future expansion of Highway 401 is not depicted on the plan. The plan considers a bridge structure that appears to be only 70 m in length; however, the Project requires 107 m in length to accommodate the future Highway 401 expansion, and also for horizontal clearance of 10.5 m (this is the minimum assuming that the outside travel lane is considered a speed change lane. An offset of 14 m is required if the lane is considered a through lane.
Undesirable road curvature	<ul style="list-style-type: none"> • The proposed realignment of Pickering Parkway has back-to-back horizontal curves (s-bend). While this is technically permissible by TAC it is not a desirable geometric configuration as it introduces an s-bend in the alignment to an intersection.

Summary of Issue	Description of Issues and Key Considerations Related to the Proposed Designs
No consideration for relocation of major utilities	<ul style="list-style-type: none"> • The Elexicon (Veridian) hydro tower is being relocated underground in the same location as the WSP alignment. This is a significant issue as that hydro line would then have to move to the west and would have to be located on Metropia's property, suggesting that any advantage that would have been gained with steeper grades and shifting it closer to existing alignment, would be negated by Elexicon's relocation. • Utilities cannot be under bridges due to piling and construction requirements.
Uncertainty with slopes used in design	<ul style="list-style-type: none"> • It is unclear what slopes are being used in the proposed plan. AECOM has assumed 2:1 slopes as part of their design concept which are the tightest reasonable embankment slopes; however, the WSP design does not show fill slopes, benching for high fill requirements, nor ditches for drainage of embankment slopes.
Impacts to existing residences	<ul style="list-style-type: none"> • The WSP alternatives displace up to approx. 10 existing residential properties on the plans and also neither account for grading nor cul-de-sacs at the end of the truncated streets, which would increase the number of impacted/displaced residences. • Consideration needs to be given to impacts to existing residences versus proposed / planned development that has not been approved by the City.
Cemetery (impacts to grave sites and access) and to Strada Aggregates	<ul style="list-style-type: none"> • If the north approach is constructed via fill (not as a structure), the proposed plan includes a grading footprint that is within the St. Francis De Sales Catholic Cemetery 10 m buffer zone and may even potentially impact grave sites. • Access to Strada Aggregates and the cemetery is not provided or depicted in the plan. As noted during the meeting, access was assumed by WSP to be via a new system/easement to be negotiated or agreed to with the aggregates operation located in the Town of Ajax.
Insufficient width allowance for new Notion Road	<ul style="list-style-type: none"> • Notion Road appears to be shown at its existing configuration of a two-lane road. The proposed plan is for a four-lane road with cycling facilities and boulevards between Pickering Parkway and Kellino Street, and a three-lane road north of Pickering Parkway and south of Kellino Street. This would require a wider platform than depicted in the WSP plans. There is insufficient space on the existing alignment to accommodate the ultimately required cross-section and grading.
Stormwater / drainage issues	<ul style="list-style-type: none"> • The storm outlet is located at the rear of the St. Francis De Sales Catholic Cemetery around the Coco Paving property which is known to already be causing issues according to Sabourin Kimble and Associates. • As noted, Coco Paving would need to move their stock piles to accommodate an access and provide easement agreements etc. This assumes there are no archeological issues with providing access around the cemetery.
Impacts to CPC II Management Inc. lands	<ul style="list-style-type: none"> • WSP plan implies considerable impacts to the development potential of CPC II Management Inc. lands (located on the northwest corner of Pickering Parkway and Notion Road).
Neglecting to account for the 'H' Holding provision for the crossing	<ul style="list-style-type: none"> • Metropia lands include a Holding by the City of Pickering for the proposed structure associated with the crossing and for environmental matters. AECOM's design has considered this Holding provision as part of their design to limit significant impacts to adjacent properties, in particular residences, Strada Aggregates, Coco Paving and the St. Francis De Sales Catholic Cemetery. WSP's plan does not reflect the Holding on the Metropia property that allows for the structure.