

## TECHNICAL MEMORANDUM

**Date:** August 13, 2012  
**To:** Transport Canada - Sarah O' Keefe, Laureen Chung, Ronald Hall  
**Cc:** Dan Stamper (CTC)  
**From:** Scott Korpi (ACP)  
**Subject:** Ambassador Bridge Enhancement Project EIS Clarification

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### INTRODUCTION

The Ambassador Bridge Enhancement Project (ABEP) involves the construction and operation of a new international bridge across the Detroit River parallel to the existing Ambassador Bridge and expansion of the Windsor Plaza to accommodate the 25 year Master Plan developed by the Canada Border Services Agency (CBSA). The Environmental Impact Statement (EIS) for the ABEP was revised in May 2012 based on comments from the Federal Review Team for this project. This Technical Memorandum is meant to clarify the updates made in the May 2012 EIS. Specifically, in an email from Transport Canada (TC), TC requested a memorandum be provided that described two changes made within the revised EIS.

1. An increase in the height of the bridge piers to accommodate design changes to the United States landing site; and
2. Construction of elements of the Plaza 25 year Master Plan earlier than noted in the Environmental Impact Statement.

Below is a summary of the changes made to the EIS with respect to the items above.

#### **Tower Height**

As part of the Environmental Assessment conducted in the United States, the Detroit International Bridge Company/Canadian Transit Company (DIBC/CTC), relocated the planned United States tower pier to the DIBC/CTC controlled property located south of Jefferson Street. As a result of the increased bridge span, the tower pier in both countries increased by approximately 9 metres to 177.6 metres in height. The EIS, as submitted in May 2012, reflects the proposed changes of the tower location in the United States. All relevant analysis in the EIS were updated to include this change.

The increase in tower height generally had no impact on the environment as the location of the tower did not change in Canada and the bridge deck remains at the same height previously proposed. Therefore, further updates to the air quality and traffic noise studies were not necessary. Nor was an

update necessary for many other environmental factors such as floodplains, surface waters, geology and soils, terrestrial environment, navigation and others. However, impacts related to bird collisions with the tower pier and visual and aesthetics impacts were studied further to determine if the increased tower height would have a greater impact than previously reported. Below are specific experts from the EIS that indicate the increased tower height was studied and that there are no changes to the conclusions previously reported.

Section 1.1, Project Description, Ninth paragraph, page 2: “The height of each tower will be approximately 177.6 metres (582 feet) above existing ground level.”

Section 5.10.3.2 Aesthetics operation, second paragraph, page 79. “The towers for the proposed Project will be land-based to avoid the loss of fish habitat and potential hydraulic effects. These towers will be approximately 177 metres (582 feet) above the elevation of the Detroit River in order to accommodate the wider span and cable-stayed type of construction. The proposed Project will connect between the two existing plazas in Windsor, Ontario and Detroit, Michigan.”

Section 7.4.6.4 Wildlife Communities, tenth paragraph, page 201: “In the Niagara River study, the mean altitude of birds observed by radar was 470 metres (1,540 feet) above ground level. Mean altitude in winter was the lowest being 233 metres (764 feet). The mean altitude of bird flocks observed by radar was 381 metres (1,250 feet) above ground level with the lowest being in winter at 233 metres (764 feet). The height of the proposed cable stayed bridge towers is lower than the mean flight altitudes measured in the Niagara River study, at 177 metres (582 feet). Additionally, the proposed bridge provides an obstruction at the 177 metre (582 foot) height only in the immediate vicinity of the support towers and the height is lower between the towers as the cables angle downward to the deck.”

Section 7.6.7, Visual and Aesthetics Section, third paragraph, page 237: “The towers for the proposed Project will be land-based to avoid the loss of fish habitat and potential hydraulic effects. These towers will be approximately 177 metres (582 feet) above the elevation of the Detroit River in order to accommodate the wider span and cable-stayed type of construction. ”

In addition, the construction plans found in Appendix A were updated to show the new proposed location of the tower pier in the United States. Regrettably, only a portion of the updated construction plans shown in the revised May 2012 EIS appear to have been included in the submittal. Attached to this Technical Memorandum is the complete set of updated construction plans with the correct tower locations and heights.

### **Windsor Plaza Expansion for 25 year CBSA Master Plan**

As stated in the Project Description of the EIS (page 1), “For purposes of evaluating the environmental impacts of the ABEP, a worst-case scenario was used that assumed both the plaza and bridge would be under construction and operation at the same time.” The CBSA cites five essential criteria required for the 25 year master plan for the plaza as follows;

1. A consolidated commercial secondary facility at the plaza;
2. The prevention of co-mingling of local and international traffic;

3. The prevention of port running;
4. A secure perimeter to the site; and
5. A logical return route to the US.

These criteria can be found on page 6 of the CBSA Ambassador Bridge Plaza Master Plan Study Master Plan Report dated July 2010 and included in Appendix B of the May 2012 EIS.

To accommodate the entire work required by the CBSA for the Windsor Plaza Expansion, a portion of Huron Church Road will be closed and traffic will be re-routed to Indian Road between Wyandotte Street and College Avenue to prevent the co-mingling of local and international traffic as required by the CBSA. Though this expanded plaza was studied in the previous version of the EIS, additional details were provided in the revised May 2012 EIS. Below are more details about specifically what was updated, including excerpts from the EIS.

The May 2012 EIS was also updated to include more detailed acreages of impact. From Section 3.2 Scope of Assessment, pages 13-14: "The study area boundaries for the replacement span and plaza improvements (Project) are defined as the project footprint which extends approximately 2,130 metres (7,000 feet) in length between the Cities of Windsor, Ontario and Detroit, Michigan. The project footprint includes the Windsor Plaza, Indian Road, the area between Indian Road and the plaza as well as one parcel south of Mill Street and one parcel south of College Avenue and north of Millen Street and follows the existing Ambassador Bridge over Wyandotte Street, Peter Street, University Avenue, Sandwich Street, crosses the Detroit River and connects directly to the Detroit Plaza. The total project footprint, including existing and expanded portions, is approximately 243,980 m<sup>2</sup> (2,626,179 ft<sup>2</sup>) in size. The footprint of the proposed bridge only is approximately 25,081 m<sup>2</sup> (269,970 ft<sup>2</sup>) in size. The footprint of the expanded portion for the plaza only (excluding footprint of the existing plaza) is approximately 77,293 m<sup>2</sup> (831,975 ft<sup>2</sup>) in size. The proposed green area along Indian Road is approximately 21,257 m<sup>2</sup> (228,808 ft<sup>2</sup>) in size. The entire Project will add approximately 48,173 m<sup>2</sup> of impervious area and 21,257 m<sup>2</sup> of green area. Figure 2 in Section 3.2 on Page 15 depicts the boundaries of the project footprint. Figure 3 in Section 3.2 on Page 16 depicts the study area boundaries."

### Indian Road Improvements

While the April 2011 EIS submission included information on the modifications to Indian Road, additional information was provided in the revised May 2012 EIS. Appendix Q: Traffic Analysis for CBSA Ambassador Bridge Plaza Master Plan was added to the revised May 2012 EIS. The purpose of this additional study was to determine if any improvements to Indian Street were recommended in order to re-route traffic from Huron Church Road to Indian Road. Based on this analysis, several improvements to Indian Road were recommended such as a signal at the intersection of Indian Road and Wyandotte Street, a signal at the intersection of Indian Road and College Avenue, and conversion of the eastbound shared right-through lane for the intersection of Huron Church Road at College Avenue to an exclusive right turn lane.

The improvements to Indian Street were further discussed in Section 5.10.1.1 Land Use: Construction, first paragraph, page 75: "When it is deemed appropriate due to the Windsor plaza expansion, a

portion of Huron Church Road will be closed and traffic will be re-routed to Indian Road between Wyandotte Street and College Avenue. Indian Road will be extended to College Avenue to facilitate traffic. The impact of these proposed changes, at some later date, have been assessed as part of this report.” Mitigation for these impacts was discussed in the same section on pages 76 and 77: “Additional improvements were identified that will be needed along Indian Road to ensure the continued operation of the study intersections at an acceptable level of service under the detour scenario. The additional needed improvements are listed below and discussed further in Appendix Q.

- Signalization of the intersection of Indian Road at Wyandotte Street.
- Signalization of the intersection of Indian Road Extended at College Avenue.
- Conversion of the eastbound shared right-through lane for the intersection of Huron Church Road at College Avenue to an exclusive right turn lane.

Based on the traffic analysis conducted with all the recommended improvements, the study intersections will operate at an acceptable level of service under the relocated roadway.”

Clarifications that the modifications to Indian Road were included in the studies within the EIS are also included in the following locations: 5.17.2 Noise, page 88; 6.2.4 Land Use: Cumulative Environmental Effects Analysis, page 109; 7.6.1 Environmental Assessment Boundaries: Spatial, page 209; 7.6.3 Existing Conditions: Residential land use, page 212; 7.6.5 Project VEC Interactions: Environmental Effects Assessment Matrix for Land Use (Construction): Residential Land Use, page 218; 7.6.5 Project VEC Interactions: Environmental Effects Assessment Matrix for Land Use (Operation): Residential Land Use, page 221-222; 7.6.5 Project VEC Interactions: Environmental Effects Assessment Matrix for Land Use (Cumulative Environmental Effects): Cumulative Environmental Effects Analysis: page 228.

### Traffic Noise and Vibration

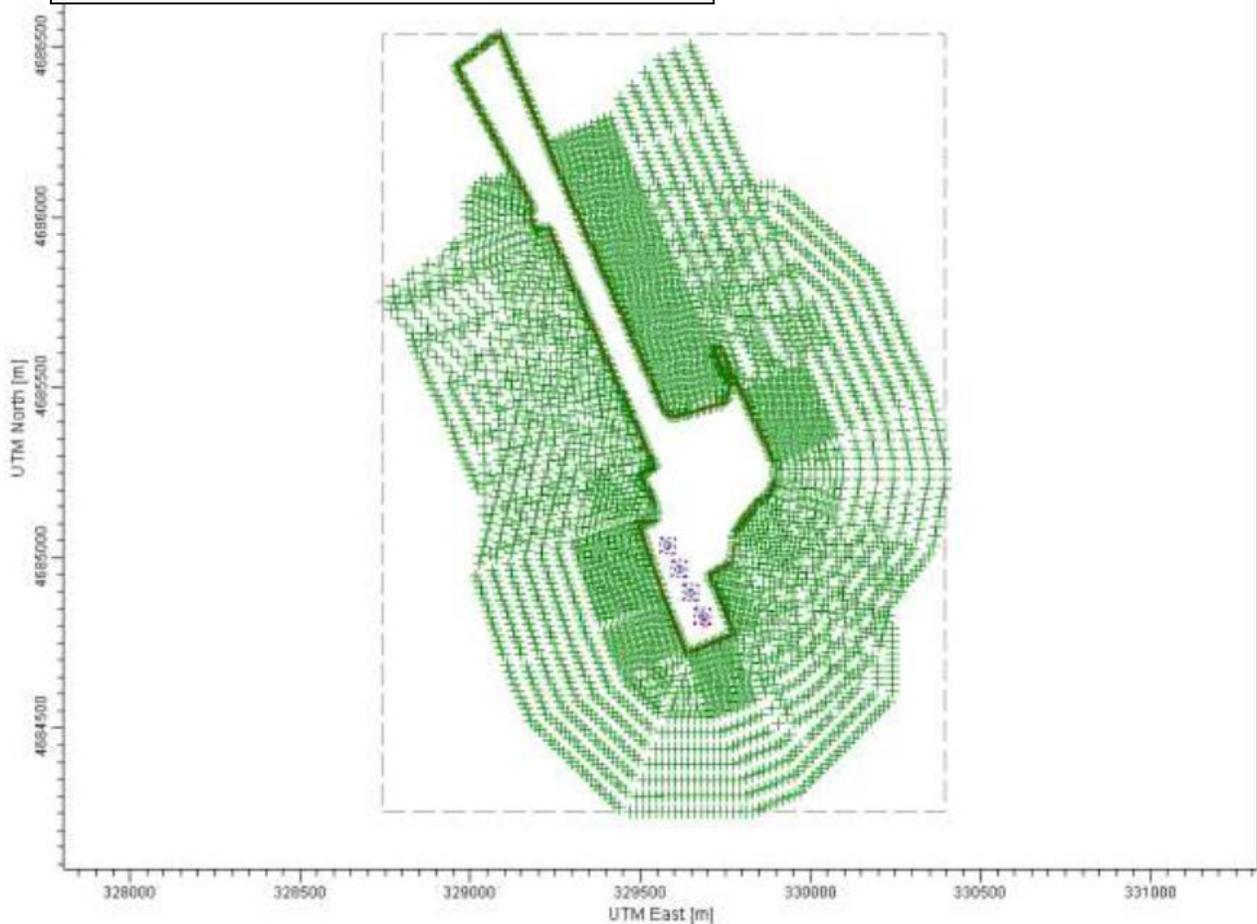
In order to assess the impact of traffic noise, the EIS includes an analysis of traffic noise for both the plaza and bridge together. While the traffic noise model does not analyze construction noise, the construction noise discussion and vibration analysis assumed both the plaza and bridge were under construction at the same time. However, it was noted in the EIS that most construction noise and vibration impacts will likely occur as a result of pile driving activities associated with the bridge. Therefore, the majority of these discussions and proposed mitigation were in reference to bridge construction and not plaza construction.

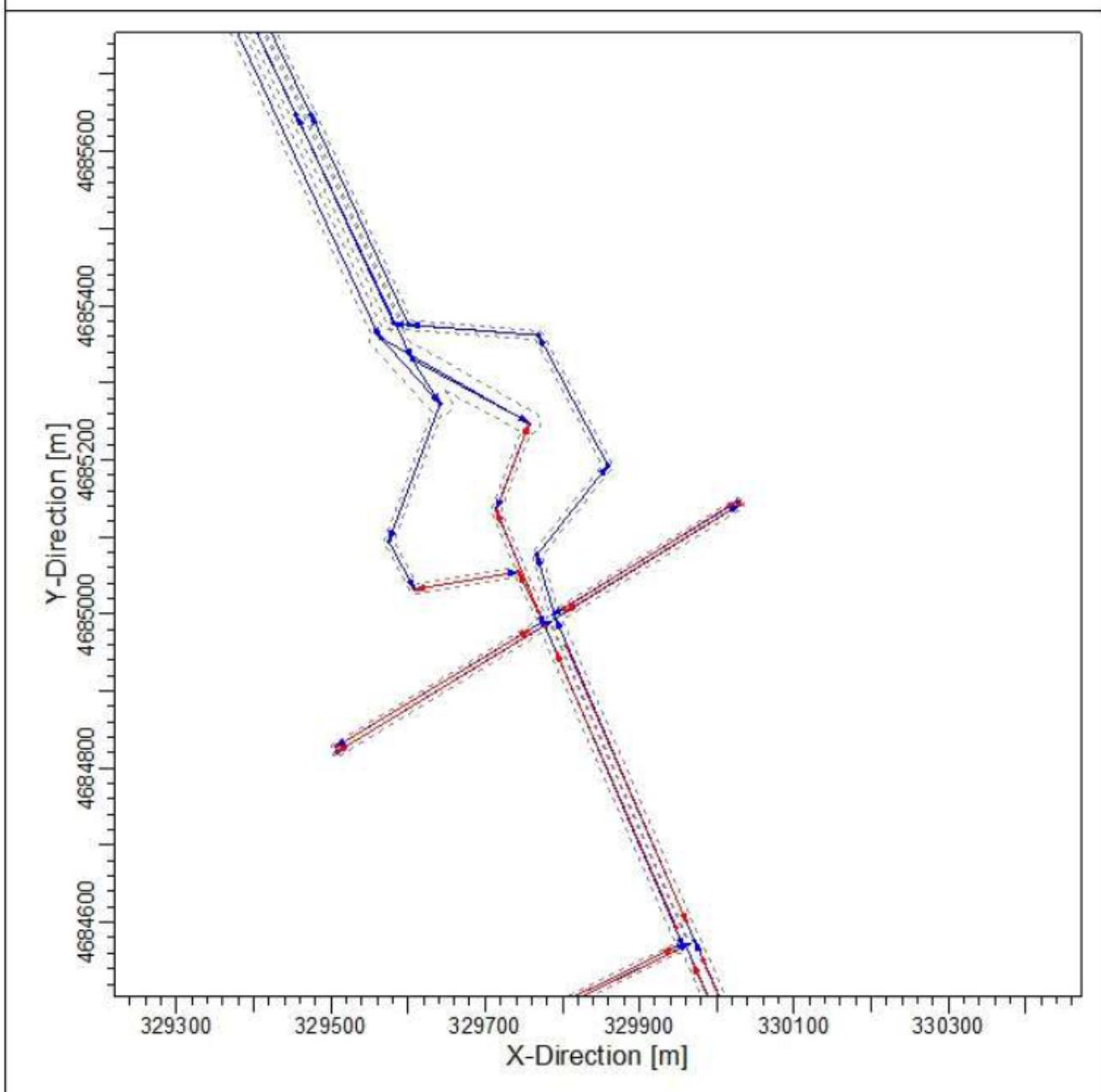
The analysis of traffic noise while in operation assumed both the plaza and bridge were in operation at the same time. Since the Master Plan for the Windsor Plaza Expansion is dependent upon approvals by the CBSA, and the proponent did not know when these approvals would be obtained, the EIS states that all mitigation for impacts associated with the plaza will be implemented, where feasible, prior to construction of either the bridge span or plaza, whichever comes first. This is described in the noise Sections 5.9.1.1 and 5.9.1.2 (pages 69-75): “Where possible, noise barriers as described below will be installed prior to construction to help mitigate against construction noise.” Section 7.5 Noise and Vibration, fourth paragraph, page 206, also states, “A noise barrier is also proposed along the north and west perimeter of the plaza expansion lands. Where possible, the noise barriers will be installed prior to other construction to help mitigate against construction noise as well.”

## Air Quality

The current ORTECH report entitled “Air Quality Assessment for the Ambassador Bridge Enhancement Project, April 20, 2012” included in Appendix D of the May 2012 EIS provided estimates of contaminant emission rates and resultant pollutant concentrations in and around the Ambassador Bridge area including scenarios which evaluated construction and operation of a modified plaza on the Canadian side of the project. Several scenarios were investigated to ensure the “worst case” emissions and dispersion modeling for the plaza expansion was used that met the requirements of the CBSA. That is, the operational scenarios took a conservative approach to the routing of trucks and autos through the expanded plaza to ensure the maximum extent of the impacts was modeled regardless of the final details of the plaza configuration. The figures below show the receptors modeled in the area surrounding the expanded plaza and combined bridge and plaza road links for the routing of vehicles through the combined facility.

**Figure 1 – Receptors near Expanded Plaza**



**Figure 2 – Bridge and Plaza Modeling Road Links**

Construction emissions and impacts for the demolition & clearing, bridge construction and plaza construction were modeled separately to allow maximum flexibility in various construction phasing scenarios. This separate modeling allowed us to effectively evaluate all feasible construction scenarios and determine which phasing and combined construction activities could result in the highest impacts. The review of this modeling indicates that separating out the demolition & clearing of the expanded plaza area and the area adjacent to the bridge will result in lower emissions during construction. For this, and other reasons, the demolition and clearing is recommended to occur first and prior to the beginning of construction of the bridge.

## **Construction Phasing**

The phasing of the construction activities will be based on the ultimate schedule of approvals for each activity. Following is a description of the phasing of the various major construction elements.

***Phase 1 – clearing and demolition of the area necessary to build the project.*** The CTC currently owns all of the property required for the construction of the expanded plaza in accordance with the 25 Year Ambassador Bridge Master Plan developed by the CBSA. Before any new building can take place within the plaza, the planned location for the on-site secondary commercial inspections in the southwest corner of the plaza will need to be cleared. The area along the western perimeter between the future relocated Huron Church Road and the plaza will also be cleared to prepare for the new roadway. The new roadway is necessary to remove the current co-mingling of local and international traffic, an essential criteria set out by the CBSA. The area adjacent to and west of the proposed second span will also be cleared to allow for the construction of the second span as well as the green space and buffer proposed in this area. The total duration for this phase is expected to take from 2 to 3 months to complete.

***Phase 2 – Relocation of Huron Church Road as shown in the CBSA 25 year Master Plan.*** The portion of Huron Church Road that currently passes directly through the center of the plaza will be closed and traffic rerouted to the west as shown in the CBSA 25 Year Master Plan. The current co-mingling of local and international traffic is highly undesirable to the security of the plaza and CBSA has determined that it is essential to eliminate this condition. As such, Huron Church Road will be rerouted around the western perimeter of the expanded plaza and then connect back into the existing road directly north and south of the plaza. The total duration for this phase is expected to take from 4 to 6 months to complete.

***Phase 3A – Construction of facilities to allow the relocation of the current off-site secondary commercial inspection operations to its planned location on site.*** Currently, commercial secondary inspections take place at an off-site location approximately 3 km southwest of the plaza. This off-site location represents a security concern and the CBSA has determined that it is essential for the security of the facility to relocate these operations to within the sterile plaza area of the facility. New inbound facilities required by the CBSA will be constructed in the southwest corner of the plaza to allow the CBSA to effectively carry out their mandated activities. The total duration for this phase is expected to take from 12 to 15 months to complete.

***Phase 3B – Construction of the Second Span.*** The total duration for this phase is expected to take from 24 to 36 months to complete.

***Phase 4 – Reconstruction of the outbound plaza operations in accordance with the CBSA approved configuration.*** These operations are located on the eastern side of the plaza and will be constructed in accordance with the final design developed jointly with the CBSA to allow effective outbound inspections as necessary and desired by CBSA. The total duration for this phase is expected to take from 10 to 12 months to complete.

Note: Phases 3A, 3B and 4 could occur simultaneously depending on schedule of approvals and permits by the appropriate authorities. While these activities are related, they are not contingent upon each other. As such, the timing of the construction of these phases is flexible and could be overlapped, switched around or undertaken concurrently. Therefore, the ultimate schedule for these activities is flexible and can be implemented as approvals are received.