



Canada-United States-Ontario-Michigan Border Transportation Partnership

Human Health Risk Assessment

The Recommended Plan Analysis

Technical Memorandum

December 2008

1.

Introduction

The purpose of this memorandum is to update the information contained in the *“Human Health Risk Assessment - Technically and Environmentally Preferred Alternative (December 2008)”* TEPA report. The purpose of that report was to summarize the assessment of impacts and proposed mitigation for the TEPA (i.e. The Windsor-Essex Parkway, Plaza B1 and Crossing X-10B).

Subsequent to the preparation of the above noted report several refinements were developed based on further technical analysis and stakeholder consultation with the objectives of further enhancing the benefits or mitigating the effects of the TEPA. These refinements together with a description of how the refinement improves the TEPA is discussed in the next section of this memorandum.

The combination of the TEPA and associated refinements along with the proposed mitigation measures are referred to collectively as the Recommended Plan.

In general, benefits to human health from the Recommended Plan refinements result from improvements to traffic related air quality. Additional details of the improvements from these refinements to air quality are included in the *“Air Quality Impact Assessment – The Recommended Plan Analysis – Technical Memorandum (December 2008)”*.

2.

TEPA Refinements

Core-Collector

The Windsor-Essex Parkway alignment has been shifted to integrate The Windsor-Essex Parkway into the E.C. Row Expressway corridor, further away from the Spring Garden area.

Key benefits of this refinement include the following:

- Distance between the new freeway and Spring Garden Road is increased by up to 60 m.
- Reduces impact to predominantly forested natural areas by 25 acres (10 hectares).
- Elimination of ramp west of Malden Road reduces visual impact.
- Provides larger buffer area for Spring Garden residents.
- Preserves areas of significant wildlife habitat.

This refinement provides a benefit relative to the original TEPA from the perspective of human health, on the basis that traffic related air quality will improve by moving the freeway further from the residential areas (see *“Air Quality Impact Assessment – The Recommended Plan Analysis – Technical Memorandum December 2008”*).

Howard Avenue Diversion

The southern portion of Howard Avenue has been diverted to The Windsor-Essex Parkway interchange.

Key benefits of this refinement include the following:

- Regional traffic is diverted away from Howard Avenue.

- Regional mobility improvements with direct connection of Howard Avenue to the Windsor-Essex Parkway / Highway 3 interchange.

This refinement is a benefit to residents along Howard Avenue from the perspective of air quality related to traffic due to reduced traffic volumes along Howard Avenue. From a human health perspective the air quality benefit from the reduced traffic volumes also benefits human health.

Highway 3 Roundabout

A roundabout is included in The Windsor-Essex Parkway/Howard Avenue Diversion/Highway 3 interchange.

Key benefits of this refinement include the following:

- Optimum traffic operations at this junction.
- Reduce number and severity of collisions.
- Reduced engine idling.
- Reduced traffic queuing.
- Potential location for gateway features.

This refinement provides a benefit from the perspective of air quality related to traffic. The design of the roundabout will improve traffic operations at this junction, which will reduce engine idling and traffic queuing and thereby improve local air quality relative to the intersection previously proposed for the TEPA. From a human health perspective the benefit from the traffic related air quality, also benefits human health.

Cousineau and Hearthwood Tunnels

The location and length of tunnels at Cousineau Road and Hearthwood Place has been revised.

Key benefits of this refinement include the following:

- Enhanced community connection across Cousineau tunnel.
- Eliminated constructability concerns associated with "L-shaped" tunnel.
- Maintains overall length of tunnelling in this area.

This refinement does not result in any change from a human health risk assessment perspective as compared to the original TEPA. Tunnels do not change air emissions, rather they only shift local air emissions to other locations. The closest permanent sensitive receptors are located approximately 100 m away from the proposed refinements, and differences between the Recommended Plan and original TEPA are marginal.

Huron Church Line Intersection Relocation

A cul-de-sac design for local residential access and relocation of the proposed Huron Church Line intersection has been incorporated. Expanded buffer zones have been provided.

Key benefits of this refinement include the following:

- Increased buffer for residences near the intersection of Huron Church Line and the new service road.
- Safer and more convenient access for residences in close proximity to the intersection.

This refinement does not result in any change from a human health risk assessment perspective as compared to the original TEPA.

Expanded Windsor-Essex Parkway Buffer Zones

Expanded buffer zones have been provided at various locations along the Windsor-Essex Parkway corridor.

Key benefits of this refinement include the following:

- Additional separation between residents and the new freeway and service road.
- Increased green space creation.

As discussed in the "*Air Quality Impact Assessment – The Recommended Plan Analysis – Technical Memorandum (December 2008)*", permanent sensitive receptors that would have been located within the buffer zones have been removed and therefore are no longer impacted, which is an improvement from a human health risk assessment perspective. Sensitive receptors located beyond the buffer zones are impacted to the same extent as with the original TEPA.

3. Conclusion

As discussed in the "*Air Quality Impact Assessment – The Recommended Plan Analysis – Technical Memorandum (December 2008)*", air quality in the Windsor area is dominated by transboundary pollution. The contribution to the Windsor airshed for traffic related air quality is small and limited to areas close to the roadway. Idling and congestion can have an impact on air quality nearest the roads. Both the original TEPA and the Recommended Plan reduce idling and congestion, and traffic related air quality is expected to be improved relative to the future "No-Build" condition. Most sensitive permanent receptors are currently exposed to traffic with the future "No-Build" condition, and the increased traffic from the Recommended Plan is offset by the decrease in idling from the future "No-Build". Thus from a human health risk assessment perspective, the Recommended Plan provides some benefits over the original TEPA and there is no increased health risk over the future "No-Build" condition for the communities along The Windsor-Essex Parkway.