



## **Canada-United States-Ontario-Michigan Border Transportation Partnership**

# **Waste and Waste Management**

**The Recommended Plan Analysis**

**Technical Memorandum**

**December 2008**

## 1.

## Introduction

The purpose of this memorandum is to update the information contained in the *"Waste and Waste Management Analysis - Practical Alternative Working Paper (May 2008)"* that was released in May 2008. Since the release of the May Report, the Technically and Environmentally Preferred Alternative (TEPA) has been developed (i.e. The Windsor-Essex Parkway, Plaza B1 and Crossing X-10B). In addition, a number of design refinements have been made to the TEPA subsequent to its selection with the objective of mitigating its effects. The combination of the TEPA and associated refinements along with the proposed mitigation measures are referred to collectively as the Recommended Plan.

This memorandum summarizes the assessment of impacts associated with the Recommended Plan and summarizes the proposed mitigation measures that have been developed.

## 2.

## Assessment of Impacts Associated with Recommended Plan

For the evaluation of the Recommended Plan, an area of investigation was established for the Waste and Waste Management analysis that encompasses directly impacted properties. For the purposes of this discussion, "directly impacted" properties refers to those properties in which all or a portion is situated within the proposed land requirements of the crossing, inspection plaza or access road. Neighbouring and adjacent properties that are not situated within the proposed property requirements have not been visited; however, as part of the evaluation of specific sites, adjacent properties were evaluated. This evaluation focused on the potential for the presence of pre-existing contaminants and wastes.

The MTO's process for evaluating contaminated property is divided into the following six (6) steps:

1. Contamination Overview Study (COS) is a general overview of the study area to identify properties/areas with the potential for site contamination.
2. Preliminary Site Screening (PSS) is a quick and broad review of a single property to determine the potential for contamination.
3. Phase I Environmental Site Assessment (ESA) is a detailed review and non-intrusive investigation to identify actual, or potential contamination on, in, or adjacent to, a property. The Phase I ESA must be prepared to the Canadian Standards Association Z768-01 Phase I Environmental Site Assessment
4. Phase II Environmental Site Assessment (ESA) is an intrusive site investigation to confirm and delineate the extent of suspected environmental liabilities and property contamination issues that have been identified in previous steps. The Phase II ESA is typically conducted as part of the Detail Design.
5. Site Management is the management of contamination at the site and can include preparing the Remedial Work Plan / Site Management Plan, conducting remedial work and carrying out confirmatory sampling, and it may involve both facilities and property.
6. Risk Assessment is the management of the site based on the risk associated with the contamination on that specific site; this is unlike the above assessments that compare results to contaminant criteria.

The COS involved record reviews and study area reconnaissance. Collected data (i.e., base land use, select environmental databases, selected aerial photographs, available technical reports, historical topographic maps and fire insurance plans) was analyzed to identify Known contaminated sites. Data was further analyzed to evaluate the relative potential and severity for contamination. Ratings of Known, High, Moderate or Low potential for contamination were applied to properties impacted by the Recommended Plan. The assignment of ratings was based on the potential likelihood and severity of contamination based on land use and URS' estimate of relative risk. Properties that were rated Known, High or Medium were identified for further investigation using the PSS process.

The first step in the PSS process was to obtain permission to enter (PTE) in writing from the owner of the property. Additional historical information was also obtained regarding specific properties including a review of available City Directories, a request for fire insurance plans and inspection reports provided by Risk Management Services (RMS, formerly CGI) and a EcoLog ERIS database covering the TEPA (dated July 23, 2008). URS' review also compiled additional historical aerial photographs, at scales ranging from 1:4,000 to 1:10,000, obtained from the City of Windsor and the National Air Photo Library.

URS has conducted the PSS on approximately 30 individual properties. The properties visited to date have primarily been commercial/light industrial properties which were initially developed in the 1950s and 1960s. Based on site visits, interviews, and historical information, the Areas of Concern (AOC) identified to date are associated with:

- former gasoline service stations,
- former landfills,
- former vehicle repair facilities,
- former auto wreckers,
- facilities with on-site fuel storage,
- existing autobody shops,
- former coal and coal slag and coal ash storage facilities,
- industrial facilities with septic systems (which increase the likelihood of contaminants entering soil or groundwater), and
- potential for contaminated fill materials to have been imported to the sites during development.

No actual contamination has been noted on these properties; however, the potential for contamination has been identified, based on previous usage. The types of contaminants that may have impacted soil or groundwater can cover a broad range, including, but not limited to:

- volatile organic compounds,
- waste materials, including material legally and illegally deposited,
- chlorinated solvents,
- polyaromatic hydrocarbons (PAHs),
- petroleum hydrocarbons,
- polychlorinated biphenyls (PCBs), and

- heavy metals.

In addition, based on the date of construction of some of the structures on these sites, some may contain asbestos-containing materials (ACMs), lead-based paints (LBP), and polychlorinated biphenyls (PCBs) in electrical equipment.

A total of 82 properties were located within the original TEPA which required URS evaluation. With the introduction of the design refinements, 4 additional properties were classified as high potential and 1 additional property as moderate potential for contamination during the COS, and been added to the Recommended Plan.

Of the 87 properties associated with the Recommended Plan, 15 were assessed to meet the low risk classification. URS completed site visits on 31 properties. For the remaining 42 properties, which represent approximately 36 separate owners, PTE have not been received at the time of issuing this report. These properties will be assessed during future design stages.

### 3. Mitigation and Monitoring Measures

From the PSS, which recommended further investigation, a Phase II ESA is typically conducted to reduce the uncertainty of whether contamination is present. The Phase II ESA is an intrusive investigation, involving sampling and analysis of soil, water or other components. To assess the environmental quality of the soil and groundwater, the laboratory analytical results will be compared to applicable site restoration standards provided in *Soil, Groundwater and Sediment Standards for Use Under Part XV.1* of the Environmental Protection Act (EPA), dated March 9, 2004 (MOE SCS). These standards are referred to in Ontario Regulation 153 under the EPA called the Record of Site Condition Regulation (O.Reg.153/04). O. Reg. 153/04, which came into effect October 1, 2004, applies to properties that require the filing a Record of Site Condition (RSC) either due to a zoning bylaw change to a more sensitive use (e.g. industrial to residential) or for voluntary purposes. O.Reg.153/04 presents a methodology for the environmental assessment of properties in Ontario. Although O.Reg.153/04 does not apply to sites where an RSC is not filed, it is anticipated that the general requirements of the regulation will become the de facto guideline. It should be pointed out that the site restoration standards provided in Ontario Regulation 153/04 is currently under review and amendments are introduced which are expected to pass in the earlier part of 2009.

If contamination to soil and/or groundwater was identified, a Site Management Plan may be developed for further investigation, which may include a Phase III ESA. Phase III ESA generally defines the lateral and areal extent of impacted zones and examines options for managing the contamination or cleaning up the site. This may include remediation activities which could include excavation and off-site disposal, or on site treatment, in-situ or ex-situ remediation or monitoring of natural attenuation (MNA) of contaminants. Further evaluations could include risk assessments to determine whether the contamination represents a potential threat to human health or the environment, typically followed by MNA.

To evaluate the presence of ACMs, LBP and PCBs, in structures and equipment a Designated Substance Survey (DSS) may be required prior to demolition. A DSS will identify the type, location and concentration of any Designated Substances on-site so that applicable measures can be taken to ensure the safety of those working on the site and the general public during the removal.

4.

## Conclusion

These standard practices for assessing contamination will ensure the contamination risks associated with properties acquired by the ministry are identified and mitigated.