

## **Human Health Risk Assessment**

A Human Health Risk Assessment was completed for the Detroit River International Crossing study, using the results from the detailed Air Quality modeling, to determine the potential for adverse health effects for people living in the immediate area of the Recommended Plan.

### **What is a Human Health Risk Assessment?**

It is a study that is undertaken to help determine the potential for an overall adverse effect on human health for residents in the immediate area of the technically and environmentally preferred alternative.

### **What were the results of the study?**

The assessment found that there are no additional short or long term human health risks for sulphur dioxide for either the Recommended Plan or the "no-build" alternative. It also determined that the short and long term human health risks for nitrous oxides for the Recommended Plan and the "no-build" alternative are similar to the background risks, but lower for the Recommended Plan.

The assessment concluded that the future risk to the health of people who live adjacent to The Windsor-Essex Parkway is lower for the Recommended Plan than for the "no-build" alternative, even with background concentrations of fine particulate matter, which are relatively high in the area studied.

The assessment also determined that the Recommended Plan does not increase incremental cancer risk in comparison to the background risk, although based on background exposure alone, the risk of cancer from long-term exposure to cancer-causing VOCs is above the regulatory risk level of one in a million. In addition, it was also determined that the Recommended Plan would not increase the incremental adverse health risk of non-cancer-causing VOCs when compared to the background risk.

### **How was the study done?**

In a human health risk assessment, researchers study whether current or future exposure to chemicals will pose future health risks to a broad population. For this assessment, the years 2015, 2025 and 2035 were studied. The chemicals studied were: gaseous air pollutants (nitrogen oxides and sulphur dioxide), fine particulate matter (PM<sub>2.5</sub>) and volatile organic compounds (VOCs).

The assessment considered potential exposure that could occur by breathing or ingesting chemicals emitted from vehicle emissions. For ingestion, the assessment included the potential for chemicals to be deposited on vegetation, or taken up into vegetation from the soil.

In this assessment, the potential exposures that could occur to the chemicals under study were set at levels higher than what is likely to occur. This was done to make sure the assessment used a cautious approach in assessing the human health risk.

The potential human health risks for short term exposures (one hour, eight hours or 24 hours) and for long term exposures (e.g., annual exposure) were assessed, based on maximum concentrations of the chemicals that could occur at different areas along the roadway. The methods used for this assessment are the accepted methods of regulatory agencies.

More information on the Human Health Risk Assessment can be found by viewing the Draft Environmental Assessment report at [www.partnershipborderstudy.com](http://www.partnershipborderstudy.com)