Air Quality – Opinion/Editorial

The Detroit River International Crossing (DRIC) study team has retained my firm to identify the air quality impacts for the crossing, plaza, and access road options as part of the current Environmental Assessment study.

Windsor area residents are understandably concerned with local air quality conditions. There is a lot of air quality information circulating in the community, some of which is accurate and based on verifiable, scientific fact, and some of which is based on conjecture and hearsay.

I hope to be able to help separate fact from fiction, and reassure the public that air quality, which is one of seven evaluations factors, is being thoroughly studied and investigated as part of the DRIC Study analysis.

SENES Consultants Limited is an internationally-renown, recognized expert organization in environmental testing and studies. I personally have more than 30 years experience in carrying out and directing air quality studies on a wide variety of projects throughout Canada, the United States and overseas. I serve on a number of international scientific committees.

I have supervised and in many cases carried out the development and application of special purpose air dispersion models, tailored to suit the data required for each specific project, and the investigation of the effect of a wide variety of industrial and transportation sources on local and regional air quality.

From an air quality perspective, this area of Southern Ontario does have higher concentrations of air contaminants than most of the province, but concentrations are similar to those experienced in Hamilton and Toronto. More than half of this pollution comes from sources across the US border.

Despite views to the contrary, the Huron Church Road corridor has limited impact on the overall local air quality, contributing less than 2% of total nitrogen oxide emissions to the Windsor airshed.

When studying particulate concentrations in the Windsor-Essex County area, again the air quality is more strongly influenced by other sources within and outside the region. Area sources, such as agriculture, construction sites and unpaved roads contribute to almost half of particulate concentrations. Industry contributes just over a third, from sources such as factory smoke stacks. If we combine all cars and trucks on all paved roads in the region, that amounts to less than twenty percent, of which only two percent of particulate concentrations comes directly from vehicle exhaust or tailpipes.

Some people believe that an end-to-end tunnel will significantly improve particulate matter and nitrogen oxide emissions in the access road corridor. This is not supported by technical information.

The air quality analysis we conducted, illustrated the differences between doing nothing at all, in other words, with Highway 3/Huron Church Road as it exists today carrying future traffic volumes, and each of the alternatives (at-grade, below-grade and end-to-end tunnel). The results of our analysis show that overall, any of the future alternatives,

including the at-grade alternatives, improve air quality over doing nothing at all. This is because a new access road would provide a widened right-of-way, and improvements in traffic flow by eliminating stop-and-go conditions caused by traffic lights.

The improvements provided by an end-to-end tunnel, when compared to a below-grade roadway with no tunneled sections is not large, and beyond 100 metres from the roadway, there is effectively no difference among any of the alternatives.

The perception that adding scrubbers to an end-to-end tunnel will be a benefit is not necessarily true. The primary functions of mechanical ventilation in tunnels is to move the air through the tunnel and bring in fresh air to improve visibility for the driver and to vent exhaust fumes to prevent carbon monoxide build-up and protect drivers.

Less than 0.01 % of existing tunnels in the world are equipped with air cleaning systems. Most of these were installed to improve the air quality (for particulates) inside the tunnel. Recent literature reviews have concluded that there is no available technology for reliably removing gaseous pollutants such as nitrogen dioxide (NO_2) from tunnel exhaust. Also, where these systems have been installed, there is no publicly available air monitoring data to show their effectiveness in improving air quality.

In fact, with the end-to-end tunnel alternative, adding scrubbers will have essentially no effect on the air quality for people living between 50 and 100 metres from the right-of-way, and would not have a measurable effect on improving or worsening local air quality.

In addition when studying the effects of the access road corridor on air quality beyond 100 metres from the roadway, there is effectively no difference between the below-grade alternatives and the end-to-end tunnel alternative.

The use of scrubbers would require a high amount of energy and water which has to be cleaned, both of which result in negative impacts on the environment.

We will continue to work with the DRIC study team to evaluate air quality in relation to the new below-grade Parkway option introduced at the recent Public Information Open Houses, and are committed to report back our findings as they develop.

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