

## Executive Summary

In 2007, the Ontario Ministry of Transportation created their High Occupancy Vehicle (HOV) Lane Network Plan for the 400-Series Highways in the Greater Golden Horseshoe. As part of that plan, an HOV lane will be constructed on the 401, in Peel and Halton Regions, west of Toronto. This report sets out determine whether a high occupancy toll (HOT) facility would be more appropriate for the Greater Toronto Area (GTA).

## Methodology

The case study comes from California, where the SR-91 Express Lanes HOT facility has been in operation since 1995, and was the first of its kind in North America. All phases of the project will be explored, from the context before implementation, to the present functioning of the facility. In order to determine its operational performance, a set of performance criteria was established. They are summarized in the following table:

<b>Performance Criteria</b>	<b>Unit of Measurement</b>
Effect on Transit Ridership	Average daily riders on transit
Vanpooling/Carpooling	Daily traffic volume for pay vs. free and total riders in vanpools
Travel Time Savings & Speed	Minutes saved; Kilometres per hour
Average Vehicle Occupancy	Persons per vehicle
Public Sentiment & Equity	Approval percentage; HOT user demographics

By examining the case study, six factors have been identified, all of which were instrumental in the successful implementation and continuing viability of the HOT facility. Taking these factors, they have been assessed for the context of the GTA, in order to determine if a similarly operating facility can be implemented on the 401.

The six factors are:

1. Employment, demographics and income levels;
2. Very high congestion levels before implementation;
3. Political will and support;
4. Space to build 4 new lanes;
5. Use of advanced electronic system for collection and detection;
6. Removal of non-compete clause

#### *Findings and Conclusions*

The following are the conclusions that have been drawn, based on the assessment of the six factors:

1. Demographic and income distribution across the GTA appear to offer favorable circumstances for a large number of toll paying customers. However, those living closer to the 407ETR probably will not be persuaded to use a potential HOT facility on the 401, as it would not provide additional time savings.
2. Like the SR-91 before the Express Lanes, the 401 is severely congested, which is a prerequisite to HOT facility implementation.

3. There is political and public support for addressing the GTA's congestion issues, but Torontonians are looking more toward mass transit as a solution, and there is minimal support for an HOT facility.
4. The 401 does not have the necessary space to build an additional four lanes in the median of the highway, as seen in the case of the SR-91. Any lanes that are built must be constructed on the outer edges of the highway, most likely increasing costs. Another option is to convert existing lanes to HOT.
5. With the implementation of its electronic systems on the 407ETR, the GTA has shown that it is a leader in welcoming new technologies in their transportation models.
6. It is reasonable to expect that MTO can avoid a non-compete clause in a potential public private partnership agreement, as there is currently no such clause for the 407ETR.

### *Recommendations*

Since there are many similarities between the cases of the SR-91 and the GTA, there is good evidence that a similarly operating facility may be implemented on the 401 in the GTA. Therefore, it is recommended that MTO explore the possibility of implementing an HOT facility instead of the HOV lanes that are currently planned. It should be noted that not all of the success factors are present, and therefore, the option of an HOT facility should be explored carefully.

Thus, MTO should initiate several studies in order to explore the possibility and viability of an HOT facility. They are:

1. Traffic projections;
2. Public opinion survey;
3. Financial viability study;
4. Best practices study;
5. Update to Edward Sullivan's study of the SR-91 Express Lanes