



## STAFF REPORT ACTION REQUIRED

### Permitting Motorcycles and Scooters Access to High Occupancy Vehicle (HOV) Lanes

<b>Date:</b>	November 9, 2007
<b>To:</b>	Public Works and Infrastructure Committee
<b>From:</b>	General Manager, Transportation Services
<b>Wards:</b>	All Wards
<b>Reference Number:</b>	p:\2007\ClusterB\tra\tim\pw07042tim

#### SUMMARY

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The City's extensive network of High Occupancy Vehicle (HOV) lanes and the associated restrictions are intended, generally, to encourage travel by public transit and by carpooling (three or more occupants) by providing a less congested, and therefore, faster route for users of these facilities. This is a report, as requested by the Public Works and Infrastructure Committee, on the advisability of also permitting motorcycles and scooters with one rider to use the City's HOV lanes. It concludes that despite being more fuel efficient than a typical car, motorcycles produce more harmful emissions per kilometre than automobiles and light trucks. Therefore, from an environmental perspective, there is no rationale to introduce an amendment to the existing regulations with respect to the use of HOV lanes to permit motorcycles and scooters with one rider.

#### RECOMMENDATIONS

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The Transportation Services Division recommends that:

1. the current restrictions on the use of the City's High Occupancy Vehicle (HOV) lanes not be amended at this time to permit the use of these facilities by motorcycles and scooters with one rider; and
2. the Greater Toronto Transportation Authority (GTTA), in their review of HOV facilities throughout the Greater Toronto Area (GTA) as requested by City Council in considering the report titled "Sustainable Transportation Initiatives:

Short-Term Proposals”, consider the use of HOV lanes by motorcycles and scooters with one rider on a region-wide basis to ensure consistency and continuity.

## **Financial Impact**

There are no financial impacts arising from the adoption of this report. If, however, this report is amended to permit the use of the City’s HOV lanes by motorcycles and scooters with one rider, then approximately \$425,000.00 would be required to change the signs to give effect to the foregoing and for notifying and educating the public of these changes. There are no funds in the Transportation Services Division’s 2008 Capital Budget submission allocated for this purpose.

## **ISSUE BACKGROUND**

The Public Works and Infrastructure Committee, at its meeting of May 30, 2007, in considering a communication from Councillor Ootes (PW6.15), requested the General Manager, Transportation Services, to report back to the Public Works and Infrastructure Committee on “...the advisability of allowing motorcycles and scooters with one rider to use HOV (High Occupancy Vehicle) lanes, and the earliest date by which this could be implemented.” The Committee also requested that the Transportation Services Division report on “... how the City can efficiently and economically make the public aware of new HOV permitted uses, thereby encouraging motorcycle and scooter use.”

Councillor Ootes’ letter also contained the following summary statement:

*“Currently, motorcycles and scooters with one rider are not permitted to use HOV (High Occupancy Vehicle) lanes. Ontario is the only jurisdiction in North America that does not allow motorcycles in HOV lanes, unless they are carrying a passenger. Motorcycles and scooters are environmentally friendly, in terms of fuel efficiency and reduced emissions, and their use should be encouraged. The City of Toronto should allow motorcycles and scooters that have one rider to use HOV lanes.”*

## **COMMENTS**

### **Toronto’s HOV Network**

The City of Toronto currently operates over 62 lane-kilometres of HOV lanes as summarized in Table 1, below. These lanes are specially designated reserved traffic lanes on arterial streets with use restricted to public transit vehicles and any other vehicle carrying three or more occupants. Some of these HOV lanes also permit taxis and cyclists. The purpose of these HOV lanes is to encourage the use of public transit and carpooling by minimizing travel time for these modes in less congested conditions.

There is no special exemption for motorcycles or scooters from meeting the three-plus occupancy requirement.

**Table No. 1: City of Toronto’s HOV Network**

<b>Corridor</b>	<b>Between</b>	<b>Length (lane-km)</b>
Allen Rd. / Dufferin St.	Transit Rd. and Finch Ave. W.	4.0
Don Mills Rd. / Overlea Blvd. / Pape Ave.	Finch Ave. E. and Danforth Ave.	27.2
Dundas St. W.	Etobicoke Creek and Aukland Rd.	5.0
Eglinton Ave. E.	Leslie St. and Cedar Dr.	22.6
Yonge St.	Steeles Ave. and Bishop Ave. / Hendon Ave.	3.6
<b>Total</b>		<b>62.4</b>

These HOV lanes operate in the curb lane adjacent to the general purpose traffic lane(s). The lanes are typically reserved for HOV use during the weekday morning and afternoon rush periods (e.g., 7-10 a.m. and 3-7 p.m., respectively, although precise time periods vary from facility to facility). Since HOV lanes are situated next to the curb, non-HOV traffic is permitted to operate within the HOV lane within 45 metres of an intersection or driveway for the purpose of accessing or egressing the roadway.

There are other corridors with specially designated reserved traffic lanes, including portions of Spadina Avenue and Queens Quay West (reserved exclusively for TTC streetcars), portions of Bay Street (reserved for public transit vehicles, taxis and bicycles), and portions of Eglinton Avenue and King Street (reserved for public transit vehicles and taxis). However, none of these reserved lanes permits the use of these facilities by HOV vehicles.

Following the success of the introduction of HOV lanes to the City in 1992, (the first HOV lanes in Canada), a plan to implement HOV lanes on a wider scale was developed to achieve the following five objectives:

1. To increase the person movement capability of road links;
2. To improve the operation of surface transit routes;
3. To increase the overall vehicle occupancy rate;
4. To contribute to a net improvement in air quality; and
5. To contribute to a net reduction in energy use.

Although the former Metropolitan City Council approved, in principle, the plan to introduce an arterial road HOV network for the Metropolitan Toronto area comprising over 600 lane-kilometres, this network was not implemented due to reductions in the funding made available for these initiatives, at that time.

### **HOV Lanes in Other Jurisdictions**

Throughout North America there are thousands of kilometres of HOV lanes facilitating travel to and from, and within, many major urban centres with most of these operating as 2+ facilities (i.e., for vehicles with two or more passengers). In the United States, federal law dictates that motorcycles be permitted to use HOV lanes regardless of the number of passengers, because it was considered safer to allow motorcycles in HOV lanes than having them operate, generally, in stop-and-go freeway traffic conditions. Although the federal law has an over-ride provision allowing individual states to prohibit motorcycles in the lanes if it is felt there is a safety risk in allowing their continued access, few states have exercised this option.

In Canada, HOV lanes are confined to the urban areas of Vancouver, Ottawa/Gatineau, Calgary, Montreal and Toronto. The HOV lanes in Toronto and the relatively new HOV lanes on Ontario's Highway 403 (between Highways 401 and 407), and Highway 404 (between Highways 401 and 407), comprise most of Canada's HOV network. Furthermore, the Province of Ontario's Ministry of Transportation (MTO) has drafted a plan to add over 450 HOV lane-kilometres on its 400 series highways in the Greater Golden Horseshoe over the next 25 years. The MTO operates 2+ HOV facilities and, like Toronto and most HOV corridors across Canada, does not permit single occupant motorcyclists to ride in its HOV lanes. They would, however, be permitted to use these facilities if carrying a passenger. In Canada, two facilities in the Vancouver area allow motorcycles in HOV lanes regardless of the number of riders.

In Toronto, there is no evidence to suggest that it is unsafe for motorcycles or scooters to operate in general purpose traffic lanes where HOV lanes exist. Similarly, there is no evidence to suggest that motorcyclists and scooter operators would be safer operating in HOV lanes if the option to use the lanes was provided to them.

### **Environmental Impacts of Motorcycles and Scooters**

In requesting this report on the advisability of allowing motorcycles and scooters in HOV lanes, the communication includes a statement that these vehicles are "environmentally friendly in terms of fuel efficiency and reduced emissions." Although it is generally accepted that motorcycles and scooters are more fuel efficient, this does not translate into reduced emissions when compared to automobiles or light trucks, despite the literature published by at least one motorcycle lobby group. In fact, motorcycles produce more harmful emissions per kilometre than the largest SUV's on the road. This is primarily due to the efficiency of the automobile/light truck engine in processing fuel combined with its treatment of the resulting emissions when compared to the engine and emission control systems utilized by motorcycles and scooters.

For this reason, the United States Environmental Protection Agency adopted national standards for motorcycle exhaust emission legislation in 2003. In addition, the California Air Resources Board has enacted a two-tier emission standard that was to be met by motorcycle manufacturers in 2004 and 2008. Although expected to provide a significant improvement in emissions outputs, the motorcycle engines are still expected to be heavier polluters than automobile engines.

Though the intent of this request appears, in part, to promote motorcycle and scooter use in HOV lanes and generally across the City for environmental reasons, there is no data to support this initiative on this basis.

### **Cost Implications of Permitting Motorcycle and Scooter Use of HOV lanes**

In the event that motorcycles and scooters are permitted to use HOV lanes in the City, there would be a number of cost implications. The cost of altering all currently posted overhead and pole-mounted HOV signs by providing larger signs that would allow for the inclusion of a motorcycle/scooter as a permitted vehicle is estimated to cost approximately \$375,000.00. This does not include signage costs associated with extending access for motorcycles and scooters as a permitted use in other 'reserved' lanes across the City.

In addition, there are additional costs associated with notifying the motoring public of the change via site-specific temporary signage along the HOV corridors. As well, it would be prudent to target motorcyclists and scooter users at specialty shops with information notices and pamphlets and via a targeted advertising campaign in selected specialty magazines, other publications and the City's website, over a six month introductory period. Costs for the above measures are estimated at \$50,000.00.

The current restrictions on the use of HOV lanes in the City is a transportation demand strategy that is intended to provide an effective low cost means of improving the mobility of a targeted group of commuters in congested corridors and meet the principal purpose of promoting transit use, cycling, and carpooling, thereby minimizing environmental impact. For reasons described earlier, and in light of the associated \$425,000.00 cost of implementing the measure, it is recommended that motorcycles and scooters with one rider not be granted access to the City's HOV lanes, at this time.

Furthermore, an exemption for motorcycles and scooters could trigger further requests for exemptions by other potential users (e.g., hybrid vehicles with single occupants, vehicles displaying a permit for disabled drivers, etc.). With these exemptions, the Toronto Police Service would have difficulty enforcing the proper use of these facilities. As well, any benefit to the use of these HOV lanes for the vehicles and users which these facilities are intended to serve, would be reduced with each exemption granted.

It should be noted, notwithstanding all of the above, that City Council, in considering the "Sustainable Transportation Initiatives: Short-term Proposals" report, adopted a recommendation directing the General Manager, Transportation Services to undertake a review of the existing operations and regulations of the HOV lanes in the City and report

on effective changes, and that the Greater Toronto Transportation Authority take the lead in a review of HOV facilities throughout the GTA to ensure consistency and continuity on a region-wide basis.” If, as a result of these reviews, the restrictions on the use of the City’s HOV lanes are amended to permit use by vehicles with two or more occupants (instead of the current three) – in order to be consistent with the current regulations on the Province’s HOV network – then motorcycles and scooters with two riders would be permitted to use these facilities without the need to impose specific exemptions. Alternatively, the GTTA could recommend the use of HOV lanes throughout the GTA by motorcycles and scooters, regardless of the number of riders.

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## **SIGNATURE**

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