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DUFFERIN STREET HIGH OCCUPANCY VEHICLE AND BICYCLE LANE EVALUATION CITY OF VAUGHAN

The Transportation Services Committee recommends the adoption of the recommendations contained in the following report dated March 11, 2010, from the Commissioner of Transportation Services.

1. RECOMMENDATIONS

It is recommended that:

1. Regional Council amend Schedule "A", Column 4 of By-Law 2009-23 to designate the outside lanes adjacent to the bicycle lanes on Dufferin Street, between the north limit of Steeles Avenue and the south limit of Langstaff Road, as High Occupancy Vehicle (HOV) lanes only from 7:00 am to 10:00 am and 3:00 pm to 7:00 pm, Monday to Friday.
2. The Regional Clerk circulate this report to the Clerk of the City of Vaughan.

2. PURPOSE

This report is to provide justification for changing the current 24 hours, 7 days a week operation of the High Occupancy Vehicle (HOV) lanes on Dufferin Street to time-of-day, and day-of-week operations.

3. BACKGROUND

In November 2009, York Region opened HOV lanes and bicycle lanes on Dufferin Street, between Steeles Avenue and Langstaff Road in the City of Vaughan (*see Attachment 1*).

The new lanes are the first in a number of similar road improvement projects planned for six-lane roads over the next several years, as identified by York Region's Transportation Master Plan and Pedestrian and Cycling Master Plan.

Prior to the opening of the HOV and bicycle lanes, Regional Council approved that the HOV lanes should operate 24 hours a day, everyday of the week, and should be reserved for motorized vehicles with two or more passengers, taxicabs and buses.

At the Transportation Services Committee meeting of February 3, 2010, questions were raised regarding the appropriateness of operating the HOV lanes on a 24 hour, 7 days a week basis.

4. ANALYSIS AND OPTIONS

Current Operational Parameters

At its meeting of April 23, 2009, Regional Council passed a By-law (No. 2009-23) setting the following key operational parameters for the HOV lanes on Dufferin Street:

Types of vehicles permitted: Motor vehicles with two or more occupants (2+), taxicabs, buses, emergency vehicles, police vehicles, road construction and maintenance vehicles.

Hours of operation: 24 hours, 7 days a week, all year around (24/7/365)

These parameters are different from the HOV lanes on Yonge Street north of Steeles Avenue in York Region and those in the City of Toronto which require motor vehicles to have three (3) or more occupants, permit motorcyclists and operate only for certain days of the week (Monday to Friday) and for certain times of the day.

The rationale for the two-plus designation is that it will promote better use of the HOV lane while still providing travel time savings for transit and ensure that during the early stages of implementation the HOV lane is not under-utilized to avoid potential public backlash and increased misuse of the lanes.

Motorcycles are not permitted because, as single occupant vehicles, they do not promote less vehicle usage, nor do they help to reduce emissions.

The rationale for the 24/7/365 operation was that it simplifies the decision making for motorists, makes it easier to enforce the lanes, and eliminates court challenges related to hours of operation. In addition, it was considered that the traffic capacity created by the additional general purpose lane during off-peak periods was not required.

HOV Lane Utilization

On December 2, 2009, approximately two weeks after the opening of the HOV lanes, a vehicle occupancy study was conducted on Dufferin Street, south of Centre Street. The study consisted of recording the number of vehicles (passenger vehicles, taxis and commercial vehicles) with 1, 2, 3 and 4 or more occupants. The number of transit buses (YRT, TTC and school buses) and their passenger loads were also recorded. The study was conducted between 5:30 am and 7:00 pm.

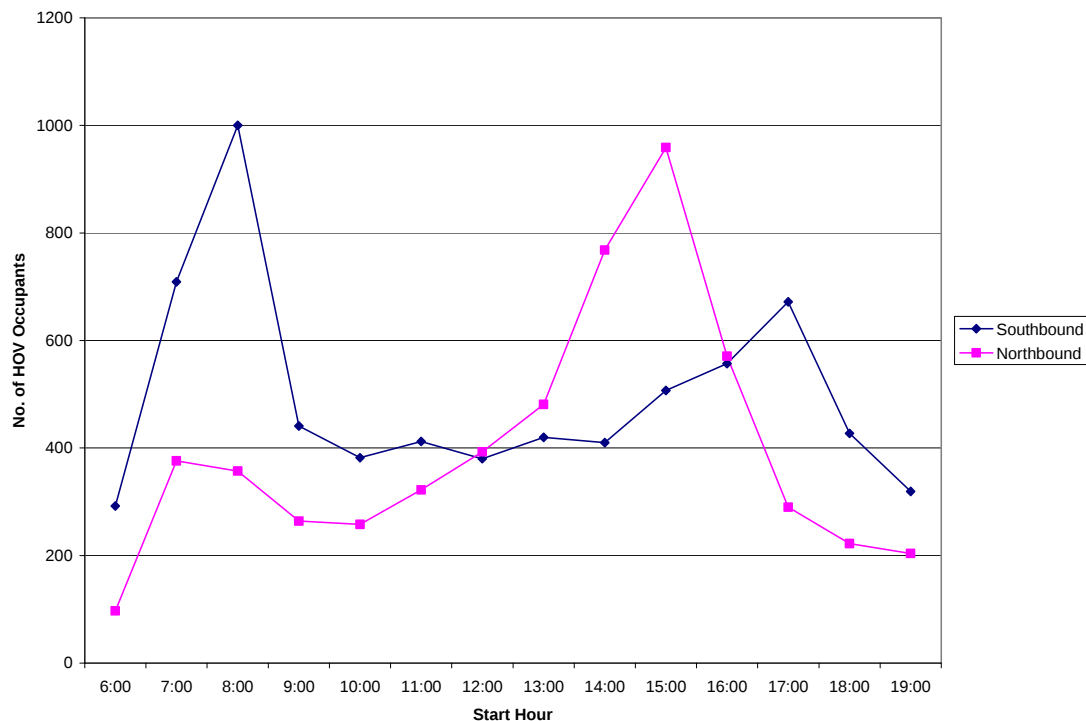
Figure 1 shows the total number of persons that travelled in multi-occupant (+2) vehicles by direction and by time of the day. These are the road users that could benefit from travelling in the HOV lanes.

It is apparent that there are strong directional peaks in the potential HOV lane person demand – during the afternoon (PM) peak in the northbound direction, and during the morning (AM) peak in the southbound direction. York Region’s warrant for HOV lanes of 900 persons per hour, per lane, is met during both these peak periods. We suspect that the early 3:00 pm peak in HOV activity in the northbound direction is attributed to after school recreational trips.

Introducing time-of-day based HOV lane operations on Dufferin Street could have the following key benefits:

- Reduce overall delay to all road users at times when the HOV lanes provide only limited benefits to the occupants of multi-occupant vehicles, thereby enhancing the overall cost effectiveness of the road widening project.
- Meeting public expectations, and increasing public acceptance, by achieving greater consistency with other arterial HOV lane facilities in York Region and in the City of Toronto, all of which have time-of-day operations.

Figure 1: HOV Lane Person Demand by Direction and Time-of-Day



It should be noted that there are a variety of reasons as to why not all multi-occupant vehicles will travel in the HOV lanes e.g. preparing to turn left at an intersection ahead. The values in Figure 1 are therefore theoretical maximums based on the assumption that all multi-occupant vehicles are travelling in the HOV lanes. More detailed studies are planned to determine the actual utilization of the HOV lanes. Even though the actual flows are likely to be less than those in Figure 1 the time-of-day patterns are expected to be similar.

5. FINANCIAL IMPLICATIONS

The cost of modifying the HOV lane road signs will be funded from the current Transportation Services Budget.

6. LOCAL MUNICIPAL IMPACT

The by-law designating the outside lanes of Dufferin Street as HOV lanes is a Regional by-law and applies to a Regional road. The recommended change to the hours prohibiting the use of the HOV lanes applies to the typical peak traffic periods on week-days encouraging more people to carpool and use transit for peak period trips. At all other times, the outside lanes of Dufferin Street will not be restricted which will improve traffic operation for all motorists, including residents of the City of Vaughan.

7. CONCLUSION

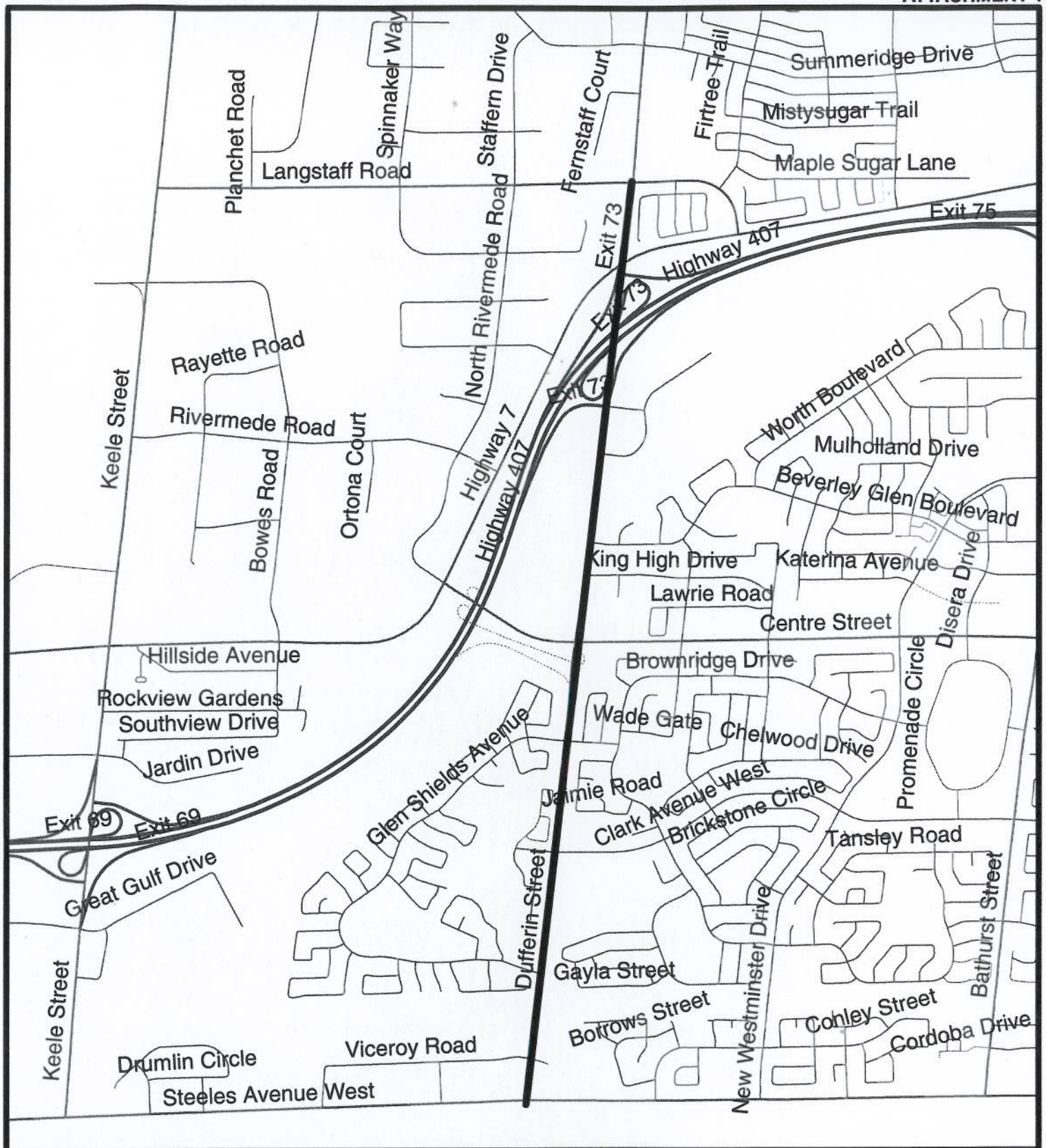
At its meeting of April 23, 2009, Regional Council approved that the HOV lanes on Dufferin Street operate on a continuous 24 hours a day, 7 days a week basis. However, studies and observations have determined that during off-peak periods, the HOV lanes are underutilized and that the HOV lane warrant criteria are not met during these periods. Permitting all vehicles to use the HOV lanes during off-peak times of the day, as is the case with all other HOV lane facilities in York Region and in the City of Toronto, will result in significantly improved traffic operations along Dufferin Street.

It is recommended that the HOV lanes only operate from 7:00 am to 10:00 am and 3:00 pm to 7:00 pm, Monday to Friday.

For more information on this report, please contact Steven Kemp, Director, Traffic Management and Intelligent Transportation Systems at extension 5226.

The Senior Management Group has reviewed this report.

(The attachment referred to in this clause was included in the agenda for the April 7, 2010 Committee meeting.)



LOCATION PLAN

Dufferin Street
HOV and Bicycle Lanes
City of Vaughan

— HOV Lane and Bicycle Lane Corridor



TRANSPORTATION SERVICES

