

MEMORANDUM

TO: Transportation Services Committee Members

FROM: Kathleen Llewellyn-Thomas, Commissioner of Transportation Services

DATE: September 8, 2010

RE: **Emergency Medical Services, Traffic Signal Pre-Emption Pilot Project**

The purpose of this memorandum is to provide information to Transportation Services Committee Members on the results of a Traffic Signal Pre-emption Pilot Project that was conducted jointly by Transportation Services and Community and Health Services.

A report documenting the results of the pilot project and recommending the implementation of traffic signal pre-emption on all Emergency Medical Services first response vehicles is on the Agenda of the September 15th, 2010 meeting of the Community and Health Services Committee.

The Traffic Signal Pre-emption Pilot Project indicated that the installation of pre-emption equipment on EMS vehicles would reduce response times, reduce patient transport times and improve safety with minimal impact to other road users.

Traffic signal pre-emption reduces stops and delays for emergency vehicles.

Traffic signal pre-emption technology enhances time-critical travel by allowing vehicles equipped with the technology to request and receive green indications as they travel along the roadway, thereby improving their on-time arrival and route efficiency. To achieve this, Regulation 34/06 of the *Highway Traffic Act* allows emergency vehicles, public transit agencies and traffic signal maintenance vehicles to use pre-emption devices. In York Region, fire trucks and VIVA buses are equipped with a licensed frequency emitter which requests pre-emption of the traffic control signal equipment.

The implementation of traffic signal pre-emption improves intersection safety for all road users by allowing emergency vehicles to proceed through the intersection on a green signal indication.

Traffic signal pre-emption for EMS results in minimal impacts for other road users

Providing traffic signal pre-emption for EMS vehicles may increase traffic delay for other road users while the intersection is being pre-empted by an approaching EMS vehicle. During the pilot project there was no measurable increase in traffic delay as a result of increased pre-emption activity.

Viva Rapid Transit buses also use the same technology to provide signal priority to approaching buses. Signal pre-emption for EMS and Fire vehicles receive a higher level of signal priority than buses and as a result transit may experience an increase in delay due to increased pre-emption activity for EMS. During the pilot project there was no measurable increase in delay to Viva buses.

Fire Services are equipped with the same technology to provide priority to fire trucks at signalized intersection. EMS and Fire Services have the same level of priority at an intersection and pre-emption is provided for the first vehicle that is detected. In the event that two emergency vehicles (one fire and one EMS) approach the same intersection from conflicting directions at the same time, the first vehicle detected would receive pre-emption and the second vehicle would receive a red indication. The increase in pre-emption activity for EMS vehicles may result in Fire Services receiving red indications when an ambulance arrives at the intersection first from a conflicting direction. During the pilot project this scenario was never observed and there was no measureable impact to Fire Services operations.

The pilot study found that traffic signal pre-emption reduced EMS response times

The pilot project showed an average reduction in response time from 8 minutes and 9 seconds to 7 minutes and 11 seconds representing a 58 second or 12% reduction in travel time.

The results of studies from other jurisdictions indicate that the implementation of pre-emption can reduce intersection delay by approximately 25 seconds per intersection. The travel time savings measured from other jurisdictions exceeded the travel time savings measured during the York Region pilot project.

The travel time analysis indicates that EMS vehicles can expect a reduction in travel time and travel time variability with the implementation of traffic signal pre-emption on EMS vehicles. It is anticipated that traffic signal pre-emption will improve intersection operation for both EMS and other roadway users.

If you have any questions regarding the pilot project or would like additional information please contact Mr. Steven Kemp, Director – Traffic Management and Intelligent Transportation Systems at 905-830-4444 ext. 5226.

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Commissioner of Transportation Services

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