



# City of Richmond

## Report to Committee

**To:** Public Works and Transportation Committee

**Date:** January 23, 2015

**From:** Victor Wei, P. Eng.  
Director, Transportation

**File:** 01-0150-20-  
THIG1/2015-Vol 01

**Re:** Regional Transportation Management Centre – Traffic Data Sharing with  
Richmond

### Staff Recommendation

That the staff report regarding the exchange of image, video and traffic data with the Ministry of Transportation & Infrastructure in support of a regional transportation management system to effectively manage traffic operations on key roadways in Richmond as part of the Metro Vancouver area, dated January 23, 2015, from the Director, Transportation, be received for information.

Victor Wei, P. Eng.  
Director, Transportation  
(604-276-4131)

REPORT CONCURRENCE		
<b>ROUTED TO:</b>	<b>CONCURRENCE</b>	<b>CONCURRENCE OF GENERAL MANAGER</b>
Information Technology	<input checked="checked" type="checkbox"/>	
<b>REVIEWED BY STAFF REPORT / AGENDA REVIEW SUBCOMMITTEE</b>	<b>INITIALS:</b> 	<b>APPROVED BY CAO</b> 

## Staff Report

### Origin

To maximize the value of capital investments on roadway improvements, existing infrastructure should be utilized in the most efficient manner before any further investment in new infrastructure is pursued. The use of Intelligent Transportation Systems (ITS) via continued advancement in technology to improve traffic flow, allow real-time monitoring and provide on-line and wireless up-to-date travel information for Richmond road users is one cost-effective approach to help optimize the performance of the transportation system.

With one-third of all daily trips in Richmond made to destinations outside the city<sup>1</sup>, the provision of timely reports on local and regional traffic conditions can help travellers make smart choices. The sharing of traffic data between the City's traffic management system and the Ministry of Transportation & Infrastructure (MoTI)'s Regional Transportation Management Centre (RTMC) will benefit Richmond road users by allowing for more effective monitoring and management of traffic incidents as well as the provision of real-time information to the public.

This report summarizes the work to date, the expected benefits and future steps to be taken by both agencies to complete the data integration of the two traffic management centres.

### Analysis

#### MoTI Regional Transportation Management Centre

The RTMC, which opened in Fall 2013, is a state-of-the-art facility that centralizes and coordinates traffic operations, incident management, special events, and post disaster response/recovery in Metro Vancouver (see Figure 1) while also providing travellers and shippers with up-to-date information on the region's major highways and transportation networks via DriveBC, which is the Ministry's on-line resource (<http://www.drivebc.com/>). The multi-modal, multi-agency facility acts as a data hub to help integrate transportation systems in the region and provides a key monitoring and response service for the rest of the provincial transportation network.



Figure 1: Inside the RTMC

#### Information Sharing Partnership

As a first step in the data integration process, through a technical memorandum of understanding, staff entered into a partnership with MoTI in 2014 to facilitate the exchange of traffic data as part of the implementation of MoTI's Advanced Traffic Management System (ATMS). The ATMS will integrate the Ministry's public user interface (i.e., DriveBC), webcams, advanced traveller information system (e.g., dynamic signs displaying real-time border wait times), seismic warning

<sup>1</sup> 2011 Metro Vancouver Regional Trip Diary Survey - Analysis Report, TransLink, February 2013.

devices, and lane control systems into one system. Once this new system is in operation, authorized personnel from both agencies will be able to view the following data streams to support the effective management and monitoring of traffic on key roads in Metro Vancouver:

- Videos and CCTV images of vehicle traffic.
- Data containing counts and volume of vehicle traffic.
- Traffic incident descriptions and locations.
- Traffic signal status and configuration information.

Each agency will also be able to update the ATMS with any new information such as planned roadway construction activities, special events, and reported road incidents in a timely manner for the benefit of the public.

#### Interface with MoTI Network

Integration with the RTMC will require the physical connection of the City's copper and fibre trunk cables and communications conduit networks with those of MoTI. Much of this work is planned as part of the relocation of the City's Traffic Management Centre from its current location behind Fire Hall No. 1 to the City Hall Annex in February 2015, as that move will involve considerable modification of cable networks and pulling additional MoTI cables through the same conduit shortly thereafter. Following the physical connection of the cables, the technical interface will be established via hardware and software reconfigurations. All of this work is anticipated to be completed by the end of March 2015.

#### Current Travel Information Provided by the City

The City currently has a network of cameras at 30 intersections that use video imaging technology to detect vehicles or bicycles for traffic signal operation. Still images from the cameras that show current traffic conditions at the intersections are available on the City's website to help the travelling public by showing where heavy traffic may be occurring, allowing motorists to avoid or minimize driving delays (see Figure 2). The images are overwritten every 60 seconds and are not recorded or stored.

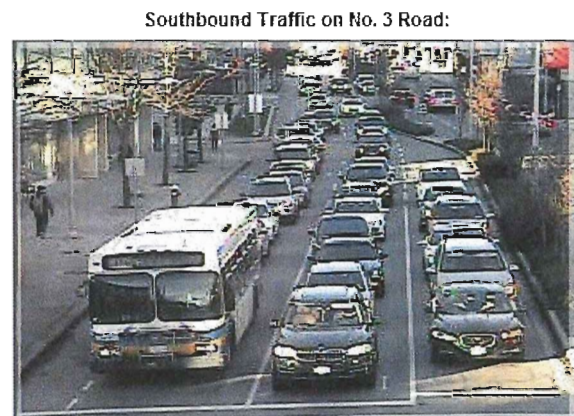


Figure 2: Sample Image of Traffic Conditions on City Website

#### Anticipated Benefits of Integration with RTMC

Data, video and image sharing with the RTMC would enhance the ability of the City to manage local vehicle traffic operations that may be impacted by incidents outside the City's jurisdiction as well as expand the breadth of information on current travel conditions available to residents, employees and visitors of Richmond. Richmond will be the first municipality in the Metro Vancouver region to be linked in to the ATMS and will play a leadership role in encouraging other municipalities to follow suit. More importantly, the integration will also help realize one of the City's objectives of the Official Community Plan regarding the optimization of the capacity of the transportation system (i.e., Section 8.5, Objective 3).



For the City, staff will have the ability to input planned events (e.g., construction activities) and unscheduled incidents (e.g., traffic incidents) occurring on Richmond's major arterial roadways into the ATMS managed by MoTI. The shared information will help both agencies to better manage any traffic impacts that may impact on roadways under the jurisdiction of both agencies. For example, should there be an incident on a provincial highway that will cause motorists to detour onto local roads, staff will be able to respond faster and better manage the disruption via, for example, adjusting the timing of traffic signals at the affected intersections to help smooth traffic congestion.

This shared information will also benefit emergency service providers. In addition, the RTMC exchanges incident data and video images with E-Comm 911 to enhance and optimize how emergency services respond to and manage roadway incidents. Should the City choose, the RTMC can also share Richmond's video with E-Comm 911 as well.

Staff will also have access to the RTMC's "open chat with media" in real-time, which carries the benefit of being able to notify and/or update media about incidents. Staff will also have future access to the ATMS data set that will allow analysis of traffic incidents in Richmond and thus the ability to identify "hot spots" or other traffic safety concerns and potential remedial measures.

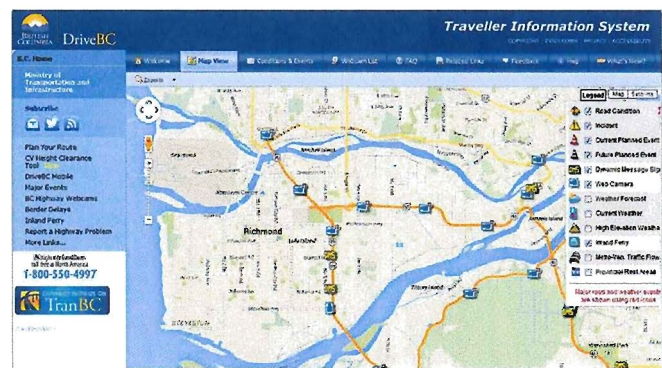


Figure 3: Current Richmond Map on DriveBC

For the public, the current DriveBC map shows traffic conditions only on provincial highways in Richmond (see Figure 3).

Following the integration and a future new release of the website (anticipated within the next two years), the map would include traffic conditions on all major arterial roads in Richmond as well.

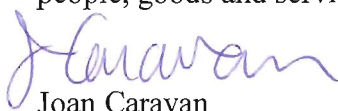
## Financial Impact

None.

MoTI is funding the costs associated with the physical cable and fibre network connections as well as the hardware and software connections. Staff time to implement the integration and to manage the expanded system as described is expected to be absorbed within regular resources.

## Conclusion

The integration of the City's Traffic Management Centre with MoTI's Regional Transportation Management Centre will enable both agencies to more effectively manage traffic operations and improve the safety and reliability of transportation routes that, in turn, will enhance the flow of people, goods and services within and beyond Richmond.

  
 Joan Caravan  
 Transportation Planner  
 (604-276-4035)