



# City of Richmond

## Report to Committee

**To:** Public Works and Transportation Committee      **Date:** October 20, 2016  
**From:** Tom Stewart, ASCT.      **File:**  
 Director, Public Works Operations  
**Re:** Update on 2016/2017 Snow and Ice Response Preparations

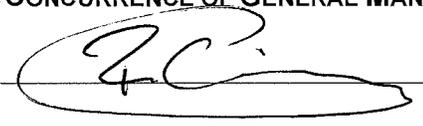
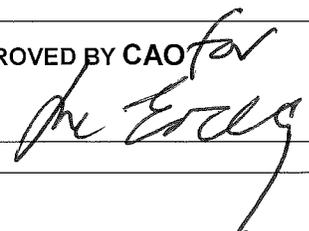
### Staff Recommendation

That the staff report titled "Update on 2016/2017 Snow and Ice Response Preparations", dated October 20, 2016, from the Director, Public Works Operations be received for information.



Tom Stewart  
 Director, Public Works Operations  
 (604-233-3301)

Att. 2

REPORT CONCURRENCE		
ROUTED TO:	CONCURRENCE	CONCURRENCE OF GENERAL MANAGER
Communications Parks Services	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	
REVIEWED BY STAFF REPORT / AGENDA REVIEW SUBCOMMITTEE	INITIALS: CJ	APPROVED BY CAO for 

## Staff Report

### Origin

This report provides information about the City's 2016/2017 snow and ice preparations.

### Analysis

Public Works has implemented numerous changes over the past several years to enhance the City's readiness and response efforts. These changes include: policy amendments, equipment review and upgrades, enhancement to public communications/public involvement, record keeping and overall response planning.

### Overview of Existing Initiatives

#### Policy Amendments

Traffic Bylaw 5870 was amended by Council on December 14, 2009, to require commercial, industrial and multi-family property owners or occupiers to clear snow and ice from sidewalks adjacent to their property. Staff remind the public of Bylaw 5870 through news releases, as well as social media, such as Facebook, YouTube and Twitter. The Bylaw was amended to encourage the use of public transit with improved convenience for pedestrians. Section 6.1 of the amended Bylaw reads:

*The owner or occupier of any parcel of real property which is developed for, or used in whole or in part for, commercial, industrial or multi-family dwelling use other than a two-family dwelling shall remove all snow and ice from any sidewalk adjacent to such parcel for a distance that coincides with the property line of his real property, not later than 10:00 a.m. of everyday, including Sunday.*

In response to public concerns about the lack of salting and ploughing on residential streets, Council approved an amendment to Bylaw 7013 (Roadways – Ice and Snow Removal) to identify and add third priority routes. These routes include the designated collector roads and roads of local significance in residential subdivisions. This initiative will help improve vehicle access from within subdivisions to the major collector roads. However, it should be noted that third priority routes will only be cleared if first and secondary routes have been fully attended to and resources permit.

#### Equipment

The City has six road temperature sensors. These sensors are monitored 24 hours a day by the City's Public Works Dispatcher and provide early indications of potential road frost or freezing conditions. Each sensor is strategically located under roadway asphalt throughout the City to provide real time information concerning road conditions. Sensor locations are illustrated in Attachment 1 and a complete list of equipment dedicated for snow response is provided in Attachment 2.

In July 2016, a pilot program for global positioning system (GPS) was installed on 64 vehicles and pieces of equipment, including the City's dump trucks that are used for sanding/salting and plowing activities. This will be of significant benefit in this year's snow and ice response as truck locations will be available in real time and can be monitored regularly. This will assist not only in operations management and planning, but also with providing valuable information in relation to any claims made against the City relative to the City's operational response.

### Public Outreach

Public involvement within the community is vital during the winter season. The City participates in the following programs, working jointly with the public and participating community associations:

- **Snow Angels Program:** This program was introduced in 2010 and connects local volunteer organizations with elderly citizens and residents with mobility/health challenges during a snowfall event. Assistance involves shovelling snow from sidewalks, driveways and/or walkways. A Snow Angels registry is accessible on the City's website and can also be obtained by calling the Community Services department, Public Works Dispatch, City Hall, or any of the community centres. The program is activated in the event of a significant snow fall (defined as an accumulation of 5+ centimetres of snow) and is dependent on the severity of the storm and volunteer resources. The City plays a role in coordinating and promoting the Snow Angels program, but the volunteers are recruited, screened and managed by each association participating in the registry.
- **Good Neighbour Program:** This program encourages everyone to clear the walkways around their property and help others who may face challenges. This neighbour-helping-neighbour campaign simply encourages residents to watch for people in their neighbourhood that could use help removing snow from their sidewalks and driveways and offer them a helping hand.

### Communications Strategy

A comprehensive communication strategy has proven to be valuable in delivering accurate, timely and relevant information to the public. By using a cross-functional approach, each division's important messages are delivered in a coordinated fashion over a variety of pre-determined mediums in both a proactive, planned manner as well as reactive when extreme weather occurs and circumstances require it. The communications strategy includes, but is not limited to, using the following mediums:

- Social media (the City's Twitter, Facebook, YouTube; tweeting, retweeting, sharing information from credible sources, i.e., weather warnings)
- Media relations (news releases, media interviews, local newspaper ads)
- City's website (dedicated web pages, news pages)
- City's intranet for employees

- **Social Media:** Social media is incorporated into the overall communication strategy to reach out to the community through Facebook, Twitter and YouTube. Social media provides timely updates during snow and ice events. This includes use of the @RichmondBCAlert Twitter account which is used only to provide emergency-related messages to residents (which include snow or other weather events). These updates include weather forecasts, what preparations are underway for current and upcoming events, current conditions and the status of any road closures due to debris, etc. This 2016/2017 season staff will again incorporate the use of photos and videos through its social media channels. During the 2013/2014 snow season staff created a number of short videos to visually inform residents of a variety of snow topics (tips on how they can prepare for snow and snow removal preparation done at the Works Yard for any predicted snow events). These videos were shared to the public through the City's Facebook, Twitter and YouTube pages in advance of and during snow and ice events.
- **News Releases:** News releases have been prepared to address common extreme weather/snow and ice topics and will be released to the media as events occur. Some examples include clearing leaves from storm drains, personal winter preparedness, and how the City is preparing for extreme weather events.
- **Website:** The City's website provides considerable information about snow response including news releases, snow response route map and frequently asked questions. This information can be found at the following location:  
<http://www.richmond.ca/services/rdws/weather/cityprepares.htm>.
- **Coordinated Response:** The City's various departments have established communications protocols and key messaging which will reinforce the snow response communications program. Participating departments include Public Works, Parks, Emergency Programs, Corporate Communications and Richmond Fire-Rescue.

### 2016/2017 Weather Forecast

Richmond's geography often results in specific and variable weather patterns that differ considerably from other Lower Mainland cities. Richmond-specific weather information and long range forecasts are received and monitored daily. According to NorthWest Weathernet the 2016/2017 winter forecast is as follows:

*There is uncertainty regarding the formation of an El Nino or a La Nina, however, forecasts are leaning towards a La Nina. This will mean that generally speaking, this winter will be cooler than last year, though probably not exceptionally cold. In addition, precipitation is expected to be higher than annual averages.*

### Operational Preparations

Operational preparations are underway which include equipment overhauls, meetings to coordinate efforts amongst departments, and training for staff. Training is crucial for preparation and is always an integral part of the groundwork for each winter season. This training is to ensure a sufficient number of personnel are available to respond to inclement weather events.

The City of Richmond’s salt supplies have been secured for the upcoming winter season. There are currently 960 metric tonnes available under contract and an additional 500 metric tonnes on reserve. In addition to the Public Works Yard, a second location (Sidaway site) will be stocked with salt for the reloading of trucks during snow events. This secondary location will reduce travel times and increase efficiencies for equipment working on the east side of Richmond.

Through a centralized control centre, staff closely monitor and record equipment locations, route start and completion times, and salt distribution. The addition of GPS monitoring to City vehicles involved in response operations will enable improved tracking and operations management. Overall, this will allow staff to respond accurately to enquiries and to better track expenditures that can be used to forecast costs for future events.

**Financials – Snow and Ice Non-MRN and MRN**

Year	Annual Budget	Actuals 3rd Quarter	Variance
2016	\$ 492,800	\$ 140,998	\$ 351,802
2015	\$ 480,700	\$ 188,714	\$ 291,986
2016 MRN	\$ 118,900	\$ 26,473	\$ 92,427
2015 MRN	\$ 117,900	\$ 22,834	\$ 95,066

2015/2016 Winter Season Summary

During the past winter season we experienced zero snow events and 28 ice/frost events of varying duration and severity. The City pre-treated and/or de-iced 13,232 lane kilometres of 1<sup>st</sup> and 2<sup>nd</sup> priority roads.

**Conclusion**

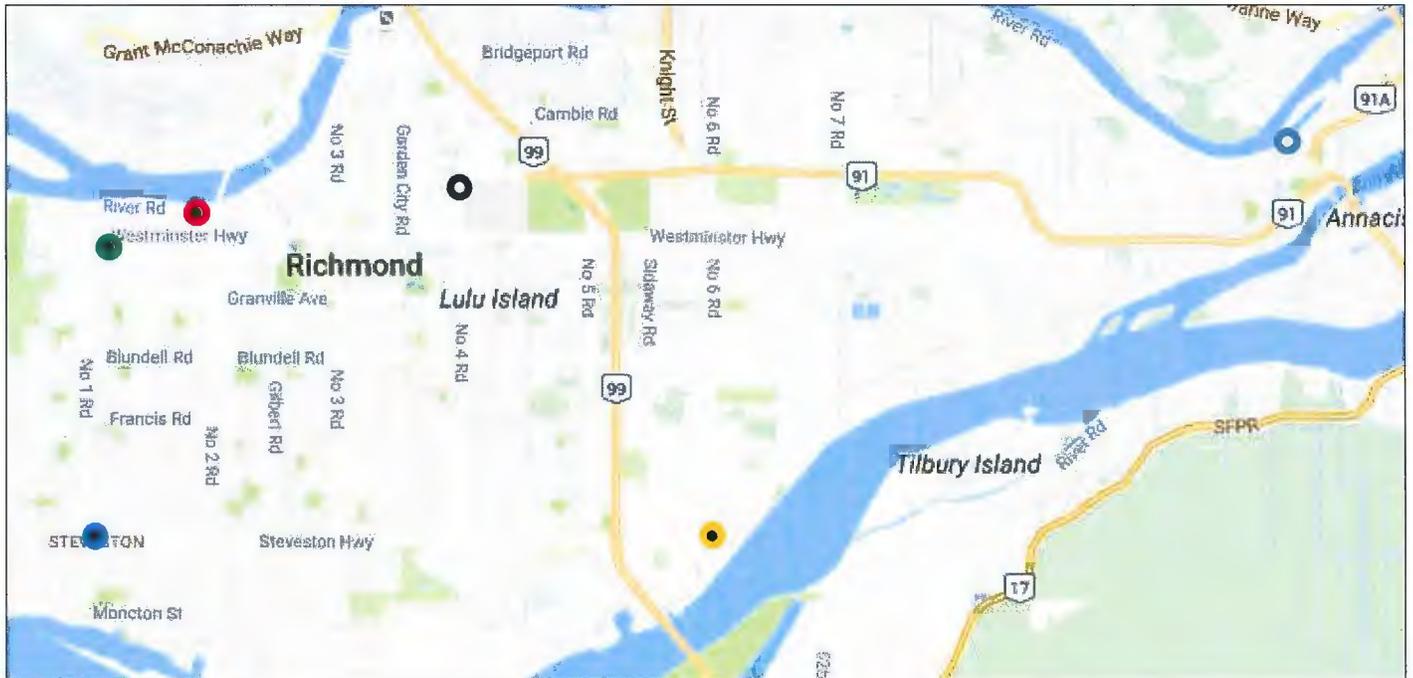
Preparations for the 2016/2017 snow and ice season by all required departments are well underway and will be completed in time for the upcoming winter.



Ben Dias  
 Manager, Roads & Construction Services  
 (604-244-1207)

- Att. 1: City of Richmond – Road Temperature Sensor Locations
- Att. 2: City of Richmond – Snow Response Equipment

City of Richmond - Road Temperature Sensor Locations



Road Temperature Sensors:

- Armoury
- No. 6 Road South
- Oval
- Queensborough
- Steveston
- Forsyth

## City of Richmond - Snow Response Equipment

Number of Units	Description
4	Single-axle dump trucks with flinks and belly plows
1	1-tonne flat deck truck with insert/brine tank
6	Tandem dump trucks with insert and plough attachments
1	Crane truck with insert
5	F550S with snow plows
1	Flusher truck (brine)
4	Mobile snow blowers
4	Backhoes
1	Front-end wheel loader
2	Bobcat skid steers
3	Hydro excavators
1	Brine production and handling system
2	Brine applicator inserts
960 tonnes	Salt