



# City of Richmond

## Report to Committee

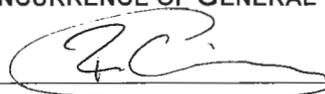
**To:** Public Works and Transportation Committee      **Date:** October 10, 2018  
**From:** Tom Stewart, ASCT.  
 Director, Public Works Operations      **File:** 10-6360-13/2018-Vol 01  
**Re:** **Update on 2018/2019 Snow and Ice Response Preparations**

### Staff Recommendation

That the staff report titled "Update on 2018/2019 Snow and Ice Response Preparations", dated October 10, 2018, from the Director, Public Works Operations, be received for information.

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

Att. 2

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

## Staff Report

### Origin

The weather across Lulu and Sea Islands can vary significantly and change quickly. Our coastal environment makes Richmond more susceptible to fog and frost. This requires staff to continually monitor conditions of the entire area to ensure a speedy and appropriate response, and provides safe roadways to the travelling public. This report provides information about the City's 2018/2019 snow and ice preparations.

This report supports Council's 2014-2018 Term Goal #6 Quality Infrastructure Networks:

*Continue diligence towards the development of infrastructure networks that are safe, sustainable, and address the challenges associated with aging systems, population growth, and environmental impact.*

#### 6.1. Safe and sustainable infrastructure

### 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.

### Policy Amendments

Traffic Control and Regulation Bylaw 5870 was amended by Council on April 10, 2017, to require commercial, industrial, multi-family or single family property owners or occupiers to clear snow and ice from sidewalks adjacent to their property. Through an annual coordinated communications campaign (e.g. social media, news release, website content), staff will educate the public of Bylaw 5870. The Bylaw was amended to improve safety and 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, multi-family or single family dwelling use 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 the 2017/2018 winter, Community Bylaws issued 373 warnings to non-compliant properties through complaints or proactive actions by officers. We have been advised this coming winter, tickets will be issued to non-compliant properties instead of warnings.

In response to public concerns about the lack of salting and plowing 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. This year, two pieces of equipment have been added and

will be dedicated for salting these 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 that 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. Public viewing of these road temperature sensors is available through the City's website at [www.richmond.ca/services/rdws/weather/roadtemps.htm](http://www.richmond.ca/services/rdws/weather/roadtemps.htm). Sensor locations are illustrated in Attachment 1.

The global positioning system (GPS) was installed on the City's dump trucks in 2016 as part a pilot program and became an important tool last year for snow and ice response as well as for operations management and planning. Truck locations were available in real time which allowed sanding/salting and plowing activities to be reallocated to the closest vehicle in response to areas of concern brought forward. The system also recorded the truck's locations and activities which provided valuable information in relation to claims made against the City relative to the City's operational response.

Two small insert salters have been purchased for one tonne dump trucks which will allow salting of the designated collector roads and roads of local significance in residential subdivisions (third priority routes) and will allow the tandem salters and plows to attend to first and second priority routes. A complete list of equipment dedicated for snow response is provided in Attachment 2.

### 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 and/or walkways. A Snow Angels registry is accessible on the City's website and can also be obtained by calling Parks Programs, 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. In the 2017/2018 winter, the Snow Angels program was activated twice.
- **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. The City's various departments with the guidance of Corporate Communications have established communications protocols and key messaging which will reinforce the snow response communications program. Participating departments include Public Works, Parks, Corporate Communications and Marketing, Customer Service, Community Bylaws, Emergency Programs and Richmond Fire-Rescue.

By using a cross-functional approach, each division's important messages are delivered in a coordinated fashion over a variety of pre-determined mediums. The messaging is delivered 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 and Facebook accounts: tweeting, retweeting, sharing information from credible sources, i.e., weather warnings and safety tips)
  - Media relations (news releases, media interviews)
  - City's website (dedicated web pages, news pages)
  - City's intranet for employees
- **Social Media:** Social media is a large part of the overall communication strategy. Staff utilize the City's primary Facebook (@CityofRichmondBC) and Twitter (@Richmond\_BC) accounts to provide ongoing tips and timely updates leading up to and during snow and ice 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. Staff will continue to incorporate the use of photos and videos through its social media channels. Staff also post to the City's @RichmondBCAlert Twitter account which is only used to provide emergency-related messages to residents (including emergency updates during snow or other weather events).
  - **News Releases:** News releases have been prepared to address common extreme weather/snow and ice topics and will issued to the media (and posted on the City's website) 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 [www.richmond.ca/services/rdws/weather/cityprepares.htm](http://www.richmond.ca/services/rdws/weather/cityprepares.htm).

### 2018/2019 Weather Forecast

Richmond's geography often results in specific and variable weather patterns that differ considerably from other Metro Vancouver cities. Richmond-specific weather information and long range forecasts are received and monitored daily. According to NorthWest Weather.net, the 2018/2019 winter forecast is as follows:

*October 5, 2018* - All signs are pointing towards a weak-to-moderate El Nino developing early this winter. This means winter will not be as cold or snowy as the previous two winters as El Nino winters tend to be fairly dry and warm. Extensive periods of warm and dry weather may occur with

brief cold and wet weather periods and brief downturns or severe storms. One to two arctic outbreaks can be expected with the first one possible in November. Typically the effects of El Nino commence by January, so there is a chance we may not see any arctic outbreaks after that.

### Operational Preparations

Operational preparations for the upcoming winter began in late September including equipment overhauls, equipment training for staff and meetings to coordinate efforts amongst departments. Training is crucial for preparation and is always an integral part of the groundwork for each winter season 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 1,050 metric tonnes available under contract and an additional 2,200 metric tonnes on reserve. In addition to the salt storage at 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 enabled improved tracking and operations management. Overall, this allows staff to respond accurately to enquiries and to better track expenditures that can be used to forecast costs for future events.

### 2017/2018 Winter Season Summary

During the past winter season, Richmond experienced five snow events and twenty-seven ice/frost events of varying duration and severity that accumulated 47 cm of snow at YVR. The City pre-treated and/or de-iced 23,261 lane kilometres and plowed and salted 4,905 lane kilometers of first, second and third priority roads.

### **Financial Impact**

Year	Annual Budget	Actuals 3rd Quarter	Variance
2017	\$ 1,043,170	\$ 1,163,126	-\$ 119,956
2018	\$ 1,282,900	\$ 665,790	\$ 617,110
2017 Major Road Network	\$ 172,400	\$ 246,320	-\$ 73,920
2018 Major Road Network	\$ 120,800	\$ 181,667	-\$ 60,867

The 2018 budget currently has \$617,110 remaining at this time. Any surplus funds will be placed in the Snow and Ice Reserve to address any future over runs due to unforeseen snow events. Should there be a severe winter and additional funds required, staff with report back to Council.

### **Conclusion**

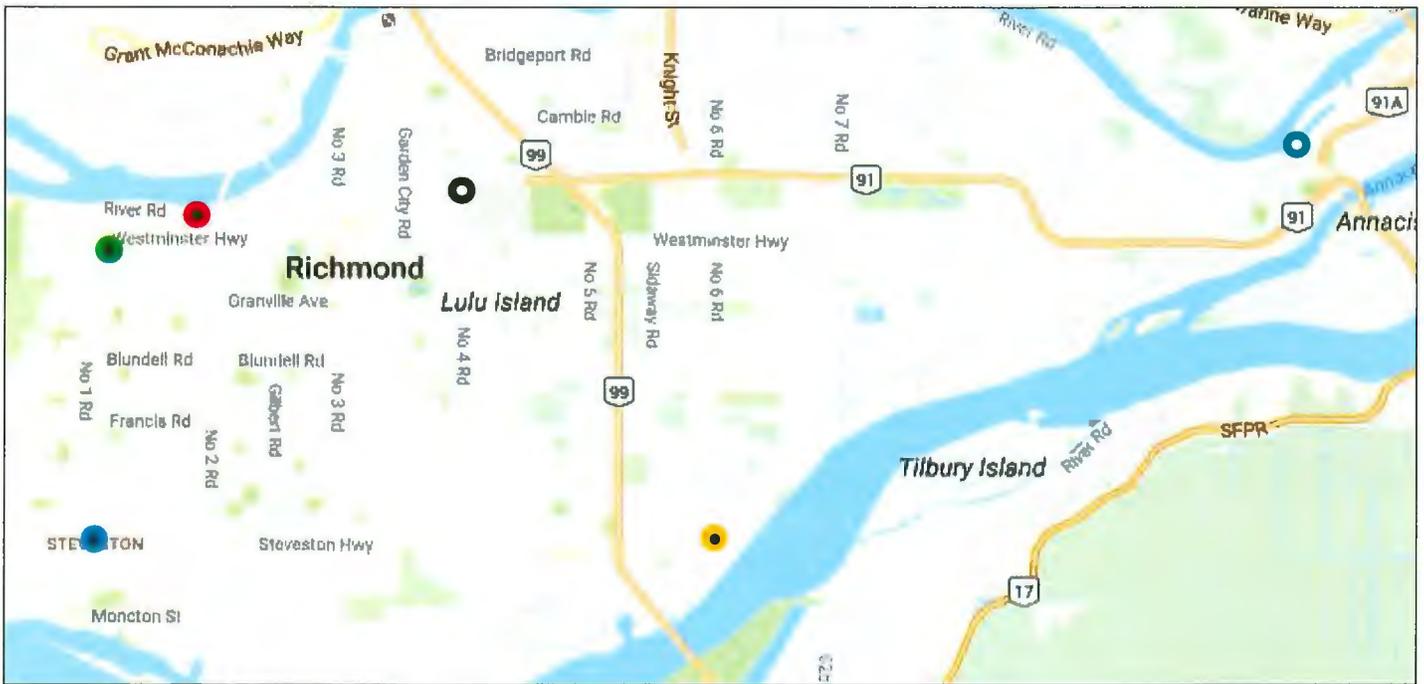
Preparations for the 2018/2019 snow and ice season by all required departments are well underway and will be completed in time for the upcoming winter.



Larry Ford  
Manager, Roads & Construction Services  
(604-244-1209)

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	One-tonne flat deck truck with insert/brine tank
7	Tandem dump trucks with insert and plough attachments
2	One-tonne dump trucks with insert
1	Crane truck with insert
6	F550S with snow plows
1	Flusher truck (brine)
4	Mobile snow blowers
4	Backhoes
2	Front-end wheel loader
2	Bobcat skid steers
3	Hydro excavators
2	John Deere Ride-ons with plows
1	Grader
1	Kabota with plow
1	Brine production and handling system
2	Brine applicator inserts
1050 tonnes	Salt