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CORPORATE REPORT

NO: **R159** COUNCIL DATE: **SEPTEMBER 29, 2014**

REGULAR COUNCIL

TO: **Mayor & Council** DATE: **September 23, 2014**

FROM: **Deputy City Engineer** FILE: **5400-45**

SUBJECT: **Winter Street Maintenance Preparedness**

RECOMMENDATION

The Engineering Department recommends that Council receive this report as information.

INTENT

The purpose of this report is to provide Council with information with respect to the City's annual preparedness for public street snow and ice control for the upcoming 2014/2015 winter season.

BACKGROUND

The City has experienced relatively mild winters over the past several years and the coming (2014/2015) winter season is predicted to be the same with expected above normal temperatures and below normal precipitation. The coldest periods are predicted to occur from late December 2014 to mid-January 2015 with a possibility of a short bout of cold weather occurring again in late February 2015. Notwithstanding this winter's mild weather prediction, the City's will take all of the necessary precautions with preparation of all its fleet and resources along with ongoing monitoring and immediate deployment of snow and ice control in the event of a snow event.

DISCUSSION

General Communications:

The Engineering Department's past practice with respect to communicating snow and ice advisories to City's residents has been by way of advisories in the local newspapers, bus shelters, digital signs and on the City's website. These advisories are posted on the website and in the local newspapers on a regular recurring basis over the course of the winter season starting in late October. These advisories include:

- The City's policies with respect to snow and ice control;
- The residents' responsibilities in relation to snow and ice control (e.g., clearing of sidewalks, etc.);
- Steps that residents can take to minimize the impacts that snow and ice cause in relation to daily routines, including a list of resources that residents should keep on hand to deal with winter conditions (i.e. snow shovels, salt and de-icers, etc.);

- A reminder to residents to install snow tires in advance of the winter conditions setting in;
- Information about the City's telephone system having been expanded to better handle peak period demands; and
- Information about other resources (contractors) that can be retained by residents on a direct pay-for-service basis for clearing snow from private driveways, sidewalks, parking areas, etc. This information is available on the City's web site by way of a "bulletin board" list.

In addition to the above and new for this winter season, Engineering staff are enhancing communication efforts to improve public awareness of snow and ice related issues/conditions. This will include:

- Key messaging geared towards motorists, i.e. snow tire reminders, that will be advertised via the City's bus shelters;
- More frequent and up-to-date messaging delivered via the City's digital signs;
- Real time messaging of snow/ice conditions via the City's social media outlets, i.e. Twitter and Facebook; and
- Promotion of the "My Surrey App" to encourage public reporting of trouble spots throughout the City.

Winter Maintenance Equipment

The City operates a total of forty-nine (49) pieces of snow clearing equipment available to respond to storm events during the 2014/15 winter season. The forty-nine (49) pieces of equipment includes three (3) contracted graders hired to clear snow on steep sections of road throughout the City. A full list of equipment is attached as Appendix I.

Level of Service

The City's snow removal policy provides services once snow and ice conditions exist and results in a relatively high level of municipal snow and ice removal service in comparison to other lower mainland municipalities with respect to the types of roads that are included as priority roads during snow clearing operations.

In advance of a forecasted snow and ice event, City crews apply a brine solution to the road service. Brine applied to the road surface dries on the road with the residual salt taking effect immediately when snow beings to fall or when frost beings to form (i.e., the sale on the road is activated by the moisture). This approach effectively reduces the accumulation of snow and ice on treated pavement surfaces. By using brine, crews have an increased window of time to effectively mobilize regular snow and ice services and provide enhanced coverage when heavier snow events occur. This process has proven to be very effective; however, brine application is dependent on dry weather conditions preceding a snow/cold weather event. Brine is also a more efficient way to apply salt, requiring only about 25% of the volume that would need to be applied if it was being applied by traditional salt spreaders.

Once the weather event commences, City crews switch to snow and ice control operations. The following is a breakdown of the current Surrey road network categorized by snow and ice control priority:

Priority 1:	Arterial roads, major collectors, bus routes, roads with steep grades and school access roads:	1,675 lane kms
Priority 2:	Secondary roads in residential areas and access roads to long term care facilities:	1,475 lane kms
Priority 3:	All other local roads:	2,050 lane kms
	Total Road Network:	5,200 lane kms

Priority 1 roads are cleared on a 24 hour basis during major snow events. Once Priority 1 roads are cleared and the snow event subsides, crews then focus on clearing Priority 2 roads. Priority 3 roads are generally not cleared except for emergency medical service.

It should be noted that issues related to on-street parking, storage of plowed snow, public safety, effectiveness of snow plows at low speeds and cost were determining factors in relation to the development of the City's current snow and ice control policy and procedures. Furthermore, as a typical snow storm evolves, resources are reallocated to priority 1 routes to ensure major road service. If the intensity of the storm continues, major equipment remains in the arterial road network.

Salt Supply and Storage

A road salt storage building was completed in 2010 that stores 14,000 tonnes of salt. This amount of salt is already on hand for the coming winter season and is sufficient for a typical winter season for the City. Further salt supply has been secured if need be should the current winter weather forecast change.

Funding Requirements

For 2014, the Engineering Department budgeted $3.4 million for snow and ice control. In addition, an Emergency Reserve Fund is in place and is drawn upon to supplement the regular snow clearing budget in years when above average snowfall occurs. In years during which the annual snow clearing budget is not fully expended, the residual funds are deposited in the Emergency Reserve Fund.

CONCLUSION

Predictions for the upcoming winter season indicate that it will be relatively mild with above normal temperatures. The City is well positioned to respond to storm events this coming winter based on current forecasts. As in previous years, staff are ensuring that the public is notified through regular media releases and website information about the City's policies and procedures related to snow and ice control, resident responsibilities related to snow removal and ice control and how residents can prepare for winter so as to minimize its impacts on their lives.

Gerry McKinnon
Deputy City Engineer

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Appendix I - 2014/2015 List of Winter Maintenance Equipment

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APPENDIX I

2014/2015 LIST OF WINTER MAINTENANCE EQUIPMENT

FLEET	NO.	PLOW	SANDER	BRINE
Dedicated Sanders/Plows	5	Yes	Yes	
Tandem Dump Trucks	17	Yes	Yes	9*
Flat Deck Truck	1	Yes	Yes	
Grader – City	2	Yes	No	
Grader – Hired	3**	Yes	No	
AREA CREWS				
One Ton Trucks (small)	18	Yes	Yes	
Single Axle Trucks	3	Yes	Yes	
TOTAL	49	49	44	9

* The brine system is mounted on existing trucks which reduces the number of sanders available at the beginning of a snow storm.

The City operates a total of nine (9) brine units, which allows the application of brine solution to the surfaces of all of the major arterial roads in advance of forecasted snow/ice conditions subject to dry pavement conditions in advance of storm events.

** The number of hired graders depends on the availability of hired equipment at the time of the snow event. Each year we request commitments from owner/operators and contractors to commit to callout and compensate them with a retainer fee. In some years we are assured our three hired graders and some we are not.