

NO: **R213**

COUNCIL DATE: **November 28, 2011**

REGULAR COUNCIL

TO: **Mayor & Council**

DATE: **November 23, 2011**

FROM: **General Manager, Engineering**

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 preparedness for public street snow and ice control for the 2011/2012 winter season.

BACKGROUND

Council is aware of the challenges that the City experienced related to the unusually high amounts of snowfall and long duration of the snow-related events of the 2008/2009 winter season. These challenges included, among other things, issues related to around-the-clock deployment of the City's snow clearing equipment on priority routes (arterial, collector and transit routes) and the high demand for sand and salt resources to keep the City's streets functioning as effectively as possible.

Weather predictions for the coming winter season indicate that it will be colder than normal but it is unclear as to the expected amount of snowfall associated to the cold temperature. Following the 2008/2009 winter season, Council approved several enhancements to the City's snow removal capabilities that were fully incorporated into the City's annual streets program over the last two years.

The City's current Snow and Ice Policy reflects a cost effective approach to equipment and staffing levels for most storm events that the City experiences.

DISCUSSION

General Communications:

The Engineering Department proactively communicates with the City's residents by way of advisories in the local newspapers 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.

Additional Equipment and Drivers/Operators

Additional equipment has been purchased to enhance the City's ability to address snow and ice conditions. Three (3) new brine units were added to the fleet which brings this component of the fleet to a total of 9 brine units, which will allow 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. Several sections of the City's street system have been shifted from Priority 2 routes to Priority 1 routes based on the additional capacity that the new equipment provides.

Brine applied to the road surface dries on the road with the residual salt taking effect immediately when snow begins to fall or when frost begins to form (i.e., the salt on the road is activated by the moisture). This approach effectively reduces the accumulation of snow and ice on treated pavement surfaces. By using this technology, City 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 very 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.

Six (6) new one-tonne sanders and plows have also been added to the City's snow clearing fleet since the 2008/09 winter season, which further increases the City's ability to respond quickly to snow events on the City's priority routes. Faster service on priority routes also allows enhanced capabilities to address other problem areas after the priority routes are cleared.

In summary the City now has a total of 44 pieces of snow clearing equipment available to respond to storm events during the 2011/12 winter season. In addition, the City has hired 3 contract graders to clear snow on steeply graded sections of road throughout the City.

Additional Drivers and Operators:

The additional equipment referenced in the previous section has brought with it a need for more trained drivers and operators. The Engineering Department has drivers, equipment operators and mechanics that will allow the operation of 29 pieces of large equipment on a 24-hour-a-day basis for several consecutive days to allow effective response to major snow events. The remainder of the equipment (primarily 1 ton trucks) will be operated by area maintenance staff or temporary and auxiliary drivers who are being hired as "call ins" when they are needed during longer or more intense snow events.

Level of Service

The City provides 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.

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	1500 lane kms
Priority 2:	Secondary roads in residential areas and access roads to long term care facilities	1200 lane kms
Priority 3:	All other local roads	1800 lane kms
	Total Road Network	4500 lane kms

Priority 1 roads are cleared ahead of Priority 2 roads. Priority 3 roads are generally not cleared except for emergency medical service. Based on the roads that are listed in the Priority 1 and 2 categories, the City currently clears snow from 59% of the total lane kms in the City.

Snow Clearing on Local Residential Streets

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.

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.

Funding Requirements

The budget for snow and ice control has increased over the last few years to reflect the amount of equipment that has been added to the fleet and the full implementation of the City's snow and ice control policy. For 2012, the Engineering Department will budget \$2.6 million for snow and ice control.

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 similar to the winter of 2010/11. With increases to snow and ice control equipment and other resources and manpower that have been added since the 2008/2009 winter season, the City is in sound condition to respond to storm events this coming winter. 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.

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