

CITY OF BURNABY

ENVIRONMENT AND WASTE MANAGEMENT COMMITTEE

HIS WORSHIP, THE MAYOR
AND COUNCILLORS

RE: ROAD SALT AND WINTER ROADWAY DE-ICING

RECOMMENDATION:

1. **THAT** Council receive this report for information.

R E P O R T

The Environment and Waste Management Committee, at its Open meeting held on 2002 June 11, received and adopted the *attached* report providing an overview of the current City practice in snow/ice fighting and alternate agents that are available for winter road maintenance.

Respectfully submitted,

Councillor D. Johnston
Chair

Councillor C. Redman
Vice Chair

Councillor B. Der
Member

COPY: - CITY MANAGER - DIR. ENGINEERING
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TO: CHAIRPERSON & MEMBERS
ENVIRONMENT & WASTE
MANAGEMENT COMMITTEE

DATE: 2002 06 03

FROM: DIRECTOR ENGINEERING

FILE: 50-01-12

SUBJECT: ROAD SALT AND WINTER ROADWAY DE-ICING

PURPOSE: To respond to Council's enquiry regarding alternate roadway de-icing agents.

RECOMMENDATION:

1. **THAT** the Committee forward this report to Council for information.

R E P O R T

1.0 INTRODUCTION

In May, 2002, Council received a staff report on bulk purchase of road salt. Arising from the discussion of the report, Council inquired if alternate de-icing agents have been considered other than road salt for snow/ice fighting purposes and referred the matter to the Committee for a report.

This report provides an overview of the current City practice in snow/ice fighting and alternate agents that are available for winter road maintenance.

2.0 BURNABY SNOW/ICE FIGHTING PRACTICE

The City currently uses road salt (sodium chloride) for roadway de-icing purposes. The road salt is spread at a pre-set rate using truck mounted spinners. The benefits of de-icing roadways have been studied and documented in many traffic safety and accident rate studies. The studies generally concluded that de-iced roadways have reduced accident rates and reduced traffic delays when comparing with snow/ice covered roadways.

Road salt as well as sands are commonly used for roadway de-icing program in Lower Mainland municipalities. While sands provide better road surface traction, salts are more effective in melting the snow and ice. To obtain optimum application of road salt during the winter road maintenance period, Burnaby is undertaking a pilot project on road salt pre-wetting process. The process involves spraying the de-icing salt with a liquid solution before spreading the salt on the roadway. The pre-wetting process increases the effectiveness of salt by providing better bonding to the road surface and hence improving the salt application rate

and the snow/ice melting process. The pilot project is a joint partnership between ICBC and the City in which the City received 50% cost sharing on the pre-wetting equipment. The City is monitoring the program and if the operation and maintenance results are found to be favourable at the end of the pilot program, the pre-wetting process would be expanded City wide.

3.0 ALTERNATE DE-ICING PRODUCTS

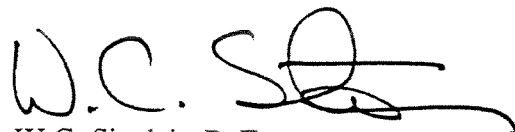
Significant research programs have been undertaken in North America on alternate de-icing chemicals. Many studies of application of new de-icing products have been produced but the cost implication of these products is significant.

Alternate de-icing products currently available include calcium magnesium acetate, calcium chloride, magnesium chloride and other chemical products that contain a mixture of sodium/calcium/magnesium/potassium chloride. These chemicals offer differing operating temperature range, application rate and effectiveness, and their costs are significantly higher (more than \$300/tonne) than road salt.

4.0 CONCLUSION

The latest development in snow/ice fighting strategy in North America involves the use of sophisticated weather forecasting and pavement temperature sensing devices. However, the use of de-icing agent remains the most important component in the overall snow/ice fighting activity.

In the Lower Mainland where winter temperature is more moderate than other central and eastern cities, the use of road salt for winter roadway de-icing has been found to be most efficient and cost effective. In the last 5 years, the City used approximately 2,330 tonnes/year or \$128,000/year of road salt. Progress is being made to optimize road salt application for snow/ice fighting during winter months while maintaining a balance between cost and road safety. With the encouraging preliminary results of the pilot project on road salt pre-wetting, staff will continue to refine the use of road salt and look for opportunity for use of alternate de-icing agent where practical.



W.C. Sinclair, P. Eng.
DIRECTOR ENGINEERING

LSC:dh

cc: City Manager

