

CITY OF MADISON  
**INTER-DEPARTMENTAL**  
CORRESPONDENCE

DATE: August 4, 2008

TO: Mayor Dave Cieslewicz;  
Members of the Madison Common Council

FROM: Al Schumacher, Street Superintendent

SUBJECT: **Report of the Salt Use Subcommittee to the City's Commission on the Environment  
Legistar 05291**

As per the Mayor's request, I am providing the following information regarding the Report of the Salt Use Subcommittee to the City's Commission on the Environment.

This report identifies 14 recommendations that the Commission wants the City to adopt to assist in decreasing the levels of chloride in drinking wells and surface water. I would like to share some comments on the first 6 recommendations from the report.

Recommendation #1. I don't believe recommendation #1 is necessary. We currently are able to utilize the State of Wisconsin road pavement sensors located throughout the State. This is a website and therefore no cost is being incurred. We can see when snow is falling and what the temperatures of the pavement are. The closest pavement sensor is located on the Beltline at Monona Dr. and we get pavement temperatures and moisture levels from 3 locations there.

Recommendation #2. This would need Council and Mayoral buy in. We currently are making our own salt brine pre-wetting system at our Badger Rd. site, so we have the equipment on hand. If we were to study this in the Odana Golf Course watershed, we would need specific locations and routes where salt was not to be applied and proper notification that this study was taking place to not only the neighborhood but the entire City as well. Otherwise I would be concerned over what the City's liability would be. There would also be costs for testing the effectiveness. I am assuming that Dane County Health has baseline data. There would most definitely be costs associated with additional testing during and after the trial period.

Recommendation #3. I don't believe it is necessary to outsource the driver snow plowing and spreading training. Annually we train our new drivers and give a refresher course to some of our returning drivers who are in need of additional training. Spending \$500 per person to train is not a necessary expense.

Recommendation #4. We are currently trying to decrease the amount of salt placed in our sand to around 10%. The problem we have is that our mixing capabilities are not very scientific. We spread some salt on a load of sand and mix it into the sand by using an endloader. This is a crude way of mixing and often times, tests have shown that some of our sand has much higher salt content than 20% and some of it has much lower salt percentages. It all depends on where the samples are taken from in the sand pile.

I am okay with the concept of lowering the salt content in our sand pile but getting the proper mixture is the problem.

Recommendation #5. This would also require Council and Mayoral approval. It would most definitely change our salt use provided we don't have expectations of the same pavement conditions that we currently see. It would take much longer to have snow and ice melt if using less material. If expectations

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don't change, it will actually cost more money to go to a lower salt applications rate. If we are applying less salt per application and the expectations are still for bare pavement, we will be making more applications creating additional trips using additional fuel and additional staff time on regular time and overtime.

The second issue regarding this is that of other municipalities and government agencies as well as private businesses and their use of salt. Why should Madison take additional steps at further salt reductions if other entities are not willing to do any salt reduction much less decrease the use of salt down to 100 lbs. per lane mile.

Recommendation #6. Temperature sensors are a good tool in the fighting of snow and ice. As we all know, salt works very well at temperatures around 30 F. and its effectiveness declines as the temperatures drops to 15 F. or below. However, the effectiveness is related to the temperature of the pavement as much as it is the temperature of the air. For example, it could be 10 F. but a sunny day and the pavement temperature would rise to above 30 F. Conversely, it could be 10 F. on a cold and windy night and the pavement temperature could be 0 F. Obviously salt would work during the sun light and not be effective during the night.

We have tried hand held pavement sensors and their effectiveness is minimal. Their calibration is not good and therefore not very reliable. We have not tried vehicle mounted sensors but don't feel they are needed as we are able to get the pavement temperatures from the Wisconsin DOT website from Monona Dr. and the Beltline.