

City of Binghamton - Greg Precopio, Deputy Commissioner
(Inter-Department Correspondence)

I have tracked our Salt Usage for the past 5 winters in order to compare the effectiveness and tonnage figures of "straight salt" versus pre-mixed with "Magic Solution". The time frame for comparison of each winter is November through March 6th, which would allow me to use this year's figures. Please refer to the attached figures, which will serve to explain some of the conclusions that I have drawn from this information.

In order to accurately compare figures from Winter Season to Winter Season, I needed to isolate the number of "Snow/Ice Events" which required a salting operation. I used two criteria in determining what constitutes a "Snow/Ice Event". The first criterion used was the incidence of any snow overtime within a standard 24-hour period. Any snow overtime regarding snow and/or ice would certainly require salting. The second came from reviewing daily and monthly climate data, which indicated daily snow, fall totals. Comparing this with the work logs indicated salting operations, which took place during regular working hours. Based on this information, lets first take a look at the breakdown of tonnage used per snow/ice event.

During the winter of 1996-1997, there were 23 snow/ice events requiring salting. Taking into account we went through 5,500 tons of salt that season, a total of **239** tons were used for each snow/ice event. In 1997-1998, we used **226** tons for each snow/ice event, and in 1998-1999, we used **248** tons for each event. During these three seasons, we used nothing but straight salt and it averaged out to **238 tons used for each snow/ice event.**

During the Winter of 1999-2000, we used a total of 6,800 tons of salt. This was the first time we used Magic Solution, however, only 1000 tons were treated. A total of 33 snow/ice events occurred which translates into **206 tons of salt being used for each event.** Compare this figure to the **238 tons for each snow/ice event with straight salt.**

Having success with the Magic Treated Salt and pleased with its effectiveness, we decided to use it exclusively this winter. However, due to some delivery problems, 4000 tons of the 6000 total usage was treated with Magic while the other 2000 ton was straight salt. The 37 snow/ice events in 2000-2001 required **162 tons of salt per event.** Compare that with the average of **238 tons per event** for the straight salt.

There is no question that the Magic Treated Salt is more effective than straight salt when it comes to melting snow and ice and preventing that dangerous build up on road surfaces. However, is it more cost efficient when considering that it is \$13.48 more per ton?

The total cost of the salt purchased for Winter 2000-20001 (November thru March 6th) was **\$236,740.00.** (4000 tons times \$43.95/ton, plus 2,000 ton times \$30.47/ton). This worked out to **162 tons of salt per event** as I previously mentioned. When we used straight salt for the three earlier

winters employed in this analysis, a total of **238 tons per snow/Ice event** were used. If we apply the 238 ton figure to our 37 snow/ice events in 2000-2001, then we would have used 8,800 tons of straight salt this winter. At a price of \$30.47 per ton, our total bill to date would be \$268,136.00 instead of \$236,740.00. By using Magic Treated Salt, we not only employed a more effective product at fighting snow and ice, we also saved over \$31,000.00 in the process.

Additionally we spent 200 less overtime hours while fighting 4 more storms and spreading 800 less tons of salt.

Winter 1996-1997

- * 5,500 Tons of Salt
- * 23 Snow/Ice Events
- * 239 Tons/Event

Winter 1997-1998

- * 5,200 Tons of Salt
- * 23 Snow/Ice Events
- * 226 Tons/Event

Winter 1998-1999

- * 6,700 Tons of Salt
- * 27 Ice/Snow Events
- * 248 Tons/Event

Winter 1999-2000

- * 6,800 Tons of Salt (1,000 tons treated with Magic)
- * 33 Snow/Ice Events
- * 206 Tons/Event

Winter 2000-2001

- * 6,000 Tons of Salt (4,000 tons treated with Magic)
- * 37 Snow/Ice Events
- * 162 Tons/Event