



## Memorandum

**TO:** Mayor Laurel Lunt Prussing and Members of the City Council

**FROM:** William R. Gray, Public Works Director  
John Collins, Operations Manager

**DATE:** May 30, 2013

**RE:** 2012/2013 Winter Summary

The 2012-2013 winter season has proven to be statistically close to an average winter. The weather conditions throughout this season however exhibited all extremes. This season provided high temperatures in the 60s and low temperatures in the single digits. On December 3<sup>rd</sup> the high temperature was 70 degrees; we had thunderstorms on November 23<sup>rd</sup> and January 30<sup>th</sup>, and 12 inches of snow on March 25<sup>th</sup>. The Illinois State Water Survey recorded 23.3 inches of snow for this year's winter season. In comparison Urbana had 18.7 inches in 2008-2009, 27.1 inches in 2009-2010, 41 inches in 2010-2011, and 11.4 inches in 2011-2012. The Illinois State Water Survey also recorded 36 days of snow fall ranging from at least a trace of precipitation to 12 inches, and an additional 12 days of liquid precipitation with temperatures at or near freezing. Operations staff recorded 15 snow and ice events which required one or more employees to address. This year, the Operations Snow Fighters had to employ full plowing operations four times; all other events were simply handled with salt spreading equipment.

The City's Sidewalk Snow Removal Ordinance was enacted twice, February 22nd and March 26<sup>th</sup>. The overall response and coverage from the affected business areas was good.

The total cost for this year's winter season was **\$315,323.29**. This cost includes pre-season preparations, materials, labor, equipment hours and maintenance, contractual, and end of season preparations. Listed below is a breakdown of expenses for this year's winter season.

Salt*	\$55,302.73
Salt Brine	\$3,166.25
Calcium Chloride	0
Ice Melt**	\$1,128.00
Employee Hours/Cost	\$88,418.39
Employee O/T Hours/Cost	\$56,806.44
Equipment Cost	\$94,325.48
Contractual Cost	\$16,176.00
<b>Total Cost</b>	<b>\$315,323.29</b>

Salt\* this cost includes salt used by the Mass Transit District, the Urbana School District, and the Urbana Champaign Sanitary District.

Ice Melt\*\* this is treated salt for use at the Parking Deck and for the brick sidewalks at the City Building.

Miscellaneous notes from this past winter season.

**Materials consumed**

817 tons of salt (62 tons went to MTD, USD, UCSD)  
12,665 gallons of salt brine  
0 gallons of calcium chloride  
2820 lbs. of Ice Melt\*\*

**Employee and equipment hours**

2054 employee hours worked (280 hours on sidewalks)  
1605 employee overtime hours worked (69 hours on sidewalks)  
2715 equipment hours (217 hours on sidewalks)

**Materials carried over for next season**

1,188 tons of salt  
2,800 gallons of calcium chloride  
(We did not purchase calcium chloride for this past season)  
1,600 lbs. of Ice Melt\*\*

Public Works did benefit from the utilization of the salt brine spreading equipment. Snow fighting crew members are able to save fuel, time and salt with the utilization of this equipment because of its capabilities to treat multiple traffic lanes in a single pass and its broad spectrum of material application options. Considering the contrast between the past three winter seasons, however it is difficult to compare any cost savings with the use of the salt brine spreading equipment. However the use of salt brine has improved the City's pavement treating procedures and results.

The Operations Division has been working diligently to reduce the cost of the City's winter operations; however it has been and will continue to be accomplished in small steps. Taking this approach will ensure that gaps in coverage are minimized to protect the safety of Urbana's citizens.

Attached is a spreadsheet of the past winter material, equipment, contractual and labor costs for comparison.

For any question regarding this matter please feel free to contact this office.

John Collins

## 5 YEAR SNOW SEASON COMPARISON 2007-2012

	2007/2008	2008/2009	2009/2010	2010/2011	2011/2012	2012/2013
Snowfall in Inches	26.3	18.7	27.1	41	11.4	23.3
Number of Snow/Ice Events	17	30	22	16	13	15
Plowing Events	4	5	5	7	1	4
Salting Events	13	25	17	9	12	11
Salt Usage in Tons	1,500	1,508	2,868	2,286	772/850*	755/817*
Salt Usage Per Inch of Snow in Tons	57	81	106	56	68	32.4
Salt Cost per Inch of Snow	\$2,166	\$5,231	\$7,079	\$3,730	\$5,047	\$2,193
Total Salt Cost	\$56,962	\$97,822	\$191,841	\$152,911	\$57,537	\$51,106
Salt Brine In Gallons				25,515	15,444	12,665
Salt Brine Per Inch of Snow				622	1355	135.9
Salt Brine Cost per Inch of Snow				\$156	\$339	\$34
Total Salt Brine Cost				\$6,379	\$3,861	\$3,166
Calcium Chloride in Gallons	7530	6,315	3,864	5,850	1500	0
Calcium Chloride Usage Per Inch of Snow	286	338	143	143	132	0
Calcium Chloride Cost Per Inch of Snow	\$123	\$161	\$93	\$97	\$89	\$0
Total Calcium Chloride Cost	\$3,238	\$3,009	\$2,512	\$3,978	\$1,020	\$0
Ice Melt in Lbs.	6,500	7,000	3650	4,750	3220	2,820
Ice Melt Usage Lbs. Per Inch of Snow	247	374	135	116	282	121
Ice Melt Cost Per Inch of Snow	\$89	\$139	\$54	\$46	\$113	\$48
Total Ice Melt Cost	\$2,340	\$2,598	\$1,460	\$1,900	\$1,288	\$1,128
Employee Regular Labor Cost	\$128,236	\$91,482	\$81,031	\$123,733	\$31,286	\$88,418
Employee Overtime Cost	\$51,914	\$40,253	\$66,198	\$95,038	\$26,390	\$56,806
Employee Cost Per Inch of Snow	\$6,850	\$7,045	\$5,433	\$5,336	\$5,059	\$6,233
Total Employee Cost	\$180,150	\$131,735	\$147,229	\$218,771	\$57,676	\$145,225
Equipment Cost	\$90,440	\$77,380	\$133,482	\$158,864	\$42,363	\$94,326

Equipment Cost Per Inch of Snow	\$3,439	\$4,138	\$4,926	\$3,875	\$3,716	\$4,048
Contractual Cost	\$5,520	\$4,947	\$8,724	\$10,674	\$3,873	\$16,176
Total Cost for Winter Operations	\$338,650	\$317,491	\$485,248	\$551,577	\$167,618	\$315,323
Total Cost Per Inch of Snow	\$12,876	\$16,978	\$17,905	\$13,453	\$14,703	\$13,533

\* This includes salt used by the C-U Mass Transit District, Urbana School District and the Urbana Champaign Sanitary District  
Salt Brine was not used prior to the 2010/2011 Winter Season