



Department of Public Works
February 4, 2005

Jeffrey J. Mantes
Commissioner of Public Works
James P. Purko
Director of Operations

Alderman Robert J. Bauman
Chair, Public Improvements Committee
City Hall, Room 205

Dear Alderman Bauman:

This communication is in response to your request for information on the City's most recent snow plowing operation.

The Department of Public Works initiated a general ice control (GIC) on Friday, January 21st. A compliment of 90 salt trucks began salting main streets at 6:30 p.m. Blades were mounted and salt trucks began plowing main streets at 8:30 p.m. Because operators had been working since 7:00 a.m. on January 21st, they were replaced at midnight and focused on arterial driving lanes.

Both weather services forecast from eight to twelve inches of snow in a 24-hour period. Snow began falling at a rate of an inch per hour from about 9:00 p.m. to approximately 6:00 a.m. before ending at 2:00 p.m. Snow depth ranged from 9 inches on the northwest side to 13 inches near the lake.

Based on the above, a general plowing operation began at 6:00 a.m. on Saturday, January 22nd with 226 pieces of City equipment and 102 pieces of private equipment. Trucks plowed primarily arterial streets and serviced residential areas as conditions permitted. Arterial streets were completed by 2:00 p.m. Saturday, and side streets were plowed curb to curb by midnight and salted afterward. At this time the garbage trucks and private plows were sent home as they had worked for 18 hours.

Salt truck operators were replaced at midnight and plowed and salted all streets as needed until complete at noon on Sunday. A cleanup operation began at 5:00 a.m. on Monday with 42 pieces of sidewalk equipment and 30 salt trucks to address crosswalks and areas where plowing efforts were hampered by weekend parking. The cleanup effort continued with 17 salt trucks on Tuesday and 9 on Wednesday. 2000+ bus stops were opened on Monday and Tuesday evenings.

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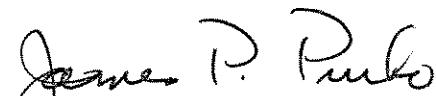
Preliminary payroll records show approximately 15,500 labor hours expended on snow & ice activities from January 21st-25th. The majority of hours are overtime on Saturday and Sunday. Overtime for snow plowing is defined by union agreement and City Ordinance as all Saturday, Sunday, and Holiday hours and any time on normal work day after 4:00 p.m. or before 7:00 a.m.

The lag time in processing invoices and obtaining up-to-date information through the City's financial system makes actual costs unavailable at this time. We estimate the cost of this operation to be approximately \$1,100,000.

The 2005 budget of \$4,798,940 funds an average 2-3 plowing and 24 salting operations. During the period of January 1-31, 2005 we have had 2 plowing and 19 ice control operations. January produced 29.1 inches of snowfall. The average January snowfall is 15.2 inches. Given the number of operations to date, we estimate that 65-70% of the snow & ice funding has been expended.

Attached is a spread sheet that was used to develop the 2005 snow budget. We will be in attendance at the February 9th Public Improvements Committee to answer any additional questions you may have.

Very truly yours,


James P. Purko
Director of Operations


Jeffrey J. Mantes
Commissioner of Public Works

JJM:JPP:mra
Attachments
c: PI Committee Members
Mayor's Office
DOA-Budget

Snow and Ice Budget and Expenditures, 1997- 2005

Year	Funding		# Operations		Tons of Salt		Inches of Snow
	Budget	Actual	Budget	Actual	Budget	Actual	
1997	6,004,424	6,233,087	4	4	26	38	32,700 56,859 51.9
1998	6,011,324	4,149,443	4	2	26	28	42,000 33,092 43.3
1999	6,562,888	8,681,087	4	4	26	26	42,000 63,807 59.3
2000	6,423,219	10,727,038	4	11	26	49	42,000 102,098 89.9
2001	7,267,392	4,688,380	4	1	26	30	50,000 26,458 11.3
2002	7,731,934	3,682,140	4	3	26	19	50,000 32,420 39.8
2003	7,388,234	3,258,650	4	2	26	23	50,000 42,917 32.6
2004*	6,030,481	4,400,000	3	2	26	28	43,000 53,484 36.7
2005	4,798,940		2	2	24	19	43,000 33,170 29.1

*2004 not finalized

3 year average	3,876,390	2	24	33,932
5 year average	6,207,459	4	29	53,540
5 year avg without 2000	4,891,940	2	25	42,962

Snow & Ice reductions recent history

2005	\$ (1,200,000)
2004	\$ (1,300,000)
2003	\$ (518,000)
	\$ (3,018,000)

Levels of snow and ice operations

1. Incidental salt trucks are dispatched as needed for water main breaks, fire response, water runoff and refreeze and isolated problem areas.
2. Bridge Run - 18 salt trucks spread through the city to address bridge decks and other known areas of potential frost or early icing. Salting all bridges, overpasses and some crown blacktop roads takes 2 to 3 hours and costs less than \$5,000.
3. General Ice Control (GIC) - 90 salt trucks citywide. This amount of equipment can salt main streets within 2 hours and all streets within 6 hours. About half of this fleet is currently equipped with underbody plows and can salt and plow at the same time. This allows for keeping the main streets open throughout a salting operation. Crews work in continuous rotating 12-hour shifts as needed.

Approximate cost of a GIC is \$100,000-200,000.

4. Limited plowing - Using the above mentioned trucks and 6 additional city and up to 12 private salt trucks to plow the entire city. This is done with a moderate amount of snowfall (4 to 6 inches) and generally takes 24 to 36 hours after snow stops falling to complete.
5. Full Scale Plowing – Nearly 350 pieces of snow equipment are utilized to remove snow from all city streets in what is usually a 12- to 24-hour operation. This includes the salt trucks, garbage trucks, recycling trucks, and 70 contracted pieces including specialized equipment for cul-de-sacs, boulevards and sidewalks. It is the intent of this force to keep the city open under all conditions and to fully reopen streets within 18 hours after snow stops falling.

The approximate cost of a full plowing is between \$850,000 to \$1 million.

A snow emergency may be declared by the Commissioner of Public Works to assist in snow removal. This is usually done when in excess of 10 inches of snow falls or when wind combines with snowfall to produce blizzard conditions. A snow emergency limits parking and leads to towing on snow routes.

Of course, every snow and ice operation is a unique event. Factors of temperature, intensity of snowfall, wind speed and direction and even relative humidity can modify the response to a given situation.

The Dee Snowstorm Scale

Category	Description	Average Snowfall Rates	Average Snowfall Accumulation	Minimum Visibility	Winds
1	A weak storm , with light snowfall rates and minimal accumulation. Travel is only impaired slightly.	Less than 1" in 4 hours	Less than 2"	.1.5-2 miles	0-20 mph
2	A marginal storm , but a burst of heavier snow sometimes occurs, reducing visibility's temporarily. Final accumulation is greater than with a Cat. 1. Travel is impaired more significantly, especially during the heavier snow bursts, but still not difficult.	Less than 1" in 2 hours, with a brief period of 1"/hour snowfall.	2-4"	.75-1 mile	5-25 mph
3	A significant storm , with moderate snowfall rates occurring through about half the storms duration. Travel at the onset of the storm is impacted and becomes difficult by the end of the storm.	1" per hour	3-8"	.30-.50 mile	10-30 mph
4	A significant storm , with moderate snowfall rates occurring through over half of the storm and a period of heavy snow also likely. Travel is difficult only hours after the storm and very difficult by storms edge. Blowing and drifting of snow is also significant.	1-1.5" per hour	4-10"	.25-.50 mile	20-45 mph
5	A major storm , with moderate snowfall rates through most of the storm and several periods of heavy snowfall occurring. Significant blowing and drifting of snow occurs. Blizzard parameters are usually met by the storm. Travel is very difficult soon after the onset of the storm and nearly impossible towards the end of the storm.	1-2" per hour	8-15"	.125-50 mile	25-50 mph
6	A major storm , with moderate to heavy snowfall rates through most of the storm and periods of near whiteout conditions. Severe blowing and drifting of snow, blizzard conditions occur through much of the storm. Travel is basically impossible by the end of the storm.	1-4" per hour	1-2 feet +	0-.125 mile	30-60 mph+