

CROW WING COUNTY

Dec. 26, 2016 Snow Event #7 2016-14



Reported Event Conditions

Date:	12/25-12/26/16
Event No:	#7 2016-14
Begin Time:	12/25/16 2AM
End Time:	12/26/16 4PM
Weather:	Rain/Snow
Precipitation:	2" rn 2" sw
Temperature:	36\9
Wind:	15-45 mph

Event Costs

Salt	\$78,302
Sand	\$13,035
Brine	\$10,395
Equipment/Fuel	\$58,768
Personnel Reg.	\$19,468
Personnel OT	\$10,980
Total	\$190,948
Cost Mile	\$341
Season Total:	\$580,205

Priority By Route

Priority 1	
% Target 1A Met:	100%
% Target 1B Met:	0%
Priority 2	
% Target 2A Met:	100%
% Target 2B Met:	15%
Priority 3	
% Target 3A Met:	100%

Legend

MnDOT Highway

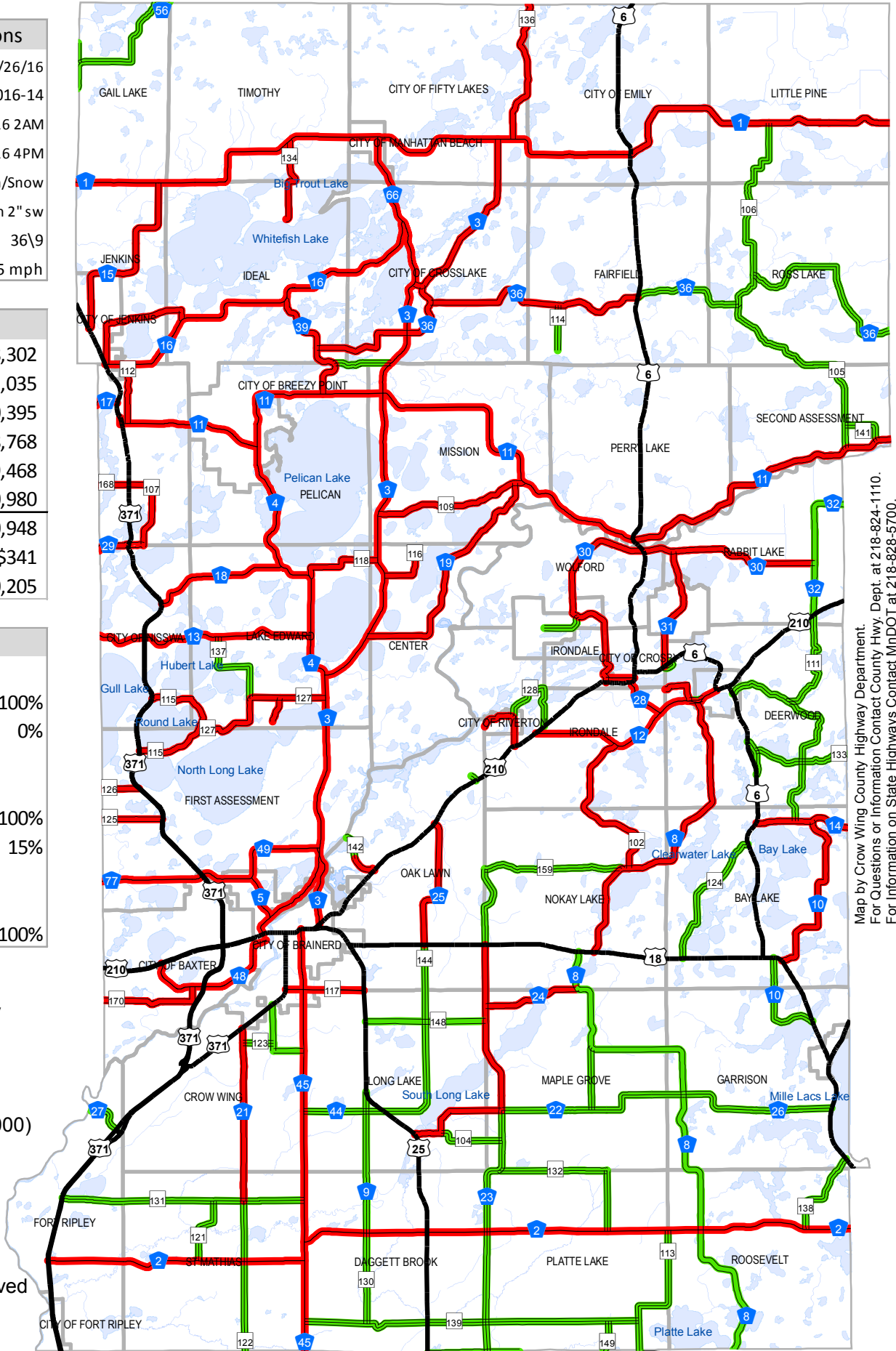
Route Priority

- 1 (ADT>5000)
- 2 (500>ADT<5000)
- 3 (ADT<500)

Route Target

- Target Achieved
- Target Not Achieved

Report Date: 1/2/2017



Map by Crow Wing County Highway Department. For Questions or Information Contact County Hwy. Dept. at 218-824-1110. For Information on State Highways Contact MnDOT at 218-828-5700.

2016/2017 Summary For Snow Event #7 2016-14 Europa Date 12/25-12/26

Salt Cyds	Salt \$	Sand Cyds	Sand \$	Brine gal	Brine \$	Mat. Total	Equip \$	Reg. Personnel	OT \$
879.5	\$78,302	458	\$13,035	15751	\$10,395	\$101,732	\$58,768	\$19,468.00	\$10,980

Total \$190,948

Total \$190,948 57.6 hrs = \$3,315 per/hr 806.5 man hours
\$341 per/CL/Mile

Forecast

Significant rain and snow late 12/25 into 12/26. Winter storm watch issued 12/22/16. Ice storm warning issued 12/24/16. Light snow changing over to rain 12/25-12/26 then changing back to snow. Strong winds of 30-45 mph causing blowing and drifting. Ice accumulations of 1/4"+ expected.

Pre Plan

Go out with 50/50 salt/sand mix the afternoon of 12/25 and return early the morning of 12/26. If conditions are favorable apply 600 lbs of salt on centerline 12/26. Start plowing at 6 A.M. on 12/26.

Comments

Dispatched called at 6 A.M. to report icy road conditions. Emergency callout went out to snowplow operators who responded immediately. Off and on flurries continued daily into the morning of 12/29. This made it difficult to gain on the ice because as the snow fell it covered up the salt and created more ice in areas. Temps dropped quickly up north. 1" of ice froze to the roads at 4 A.M. 12/26.

Conditions

Black ice/ice coving all county roads on at 6 A.M. 12/25. Winds starting to gust. Rain changed over to snow in the north half of the county late 12/25. Continued snowing until 4 P.M. 12/26 Ice on all roads again but much more up north. Some roads had 1.5" of ice compacted on them. The wind and cooler temps created a challenging situation for ice removal. Snowplows applied copious amounts of salt to soften and melt the ice. Winds and blowing snow slowed this and caused refreezing on roads that started to melt. We used mag. chloride, salt, sand, serrated edges, Sharp edges on the blades and brine and struggled to cut the ice. We had flurries everyday hindering the salt's melting power. Lots of refreezing at dusk.

Road	RDTemp	Date/Time	Air Temp
Hwy 6	28	12\24\16 10:45 A.M	
Hwy 6	26	12\25\16 9 A.M.	
CR 45	28	12\25\16 11:45 A.M.	
Hwy 6	26	12\26\16 10:45 A.M.	
Hwy 6	13	12\27\16 7 A.M.	
Hwy 25	15	12\27\16 7 A.M.	

Date	High	Low
12/24/2016	30	23
12/25/2016	33	24
12/26/2016	36	11
12/27/2016	17	9
12/28/2016	32	17
12/29/2016	27	10

Summary

The roads should have cleaned up much better and faster than they did with the pavement temps and all of the resources we used. The thick ice, wind and humidity levels slowed the melting process. Continued flurries and blowing snow made melting difficult. Blades could not cut through the ice very well and with the shorter days and low sun we had a lot of refreezing. Sand did not stay on the roads. It blew off the polished ice and did not help rough it up.

Decisions Made

The 50/50 salt sand mix worked well on 12/25 except there was not enough moisture to help it melt across the road. It melted but salt crystals were still visible on centerline and ice on the shoulders.

Salt on 12/26 was used because the pavement temps were favorable. The ice was very thick and did not melt well. We tried sand for traction but it did not stay on the road. We continued to scrape and cut ice all week. Sharp edges on the blades took some ice off the roads after multiple passes with the blades.

Lessons Learned

The ice was too thick for the ice to melt throughly even with favorable pavement temps.

Strong winds created issues with blowing snow catching and refreezing to roads.

There was a malfunction with one of the trucks and it put down about 2600 lbs of salt per lane mile. The ice melted but refroze. Even using an exorbitant amount of salt did not work.

Blades started cutting ice at 5 A.M. on 12/27 but did not have a lot of success until mid morning.

Goals Met/Not Met

Plowing

Priority 1 Met

Priority 2 Met

Priority 3 Met

Bare wheel paths

Priority 1 not met

Priority 2 not met