

CROW WING COUNTY

Dec. 11, 2016 Snow Event #5 2016-12



Reported Event Conditions

Date: 12/11/2016
Event No: #5 2016-12
Begin Time: 12/10/16 10PM
End Time: 12/12/16 4PM
Weather: Snow
Precipitation: 2"
Temperature: 18\-\-9
Wind: 15-25 mph

Event Costs

| | |
|----------------|-----------|
| Salt | \$9,519 |
| Sand | \$5,841 |
| Brine | \$2,744 |
| Equipment/Fuel | \$31,383 |
| Personnel Reg. | \$11,564 |
| Personnel OT | \$3,249 |
| Total | \$64,300 |
| Cost Mile | \$115 |
| Season Total: | \$325,779 |

Priority By Route

Priority 1

% Target 1A Met: 100%
% Target 1B Met: 88%

Priority 2

% Target 2A Met: 100%
% Target 2B Met: 16%

Priority 3

% Target 3A Met: 100%

Legend

— MnDOT Highway

Route Priority

— 1 (ADT>5000)

===== 2 (500>ADT<5000)

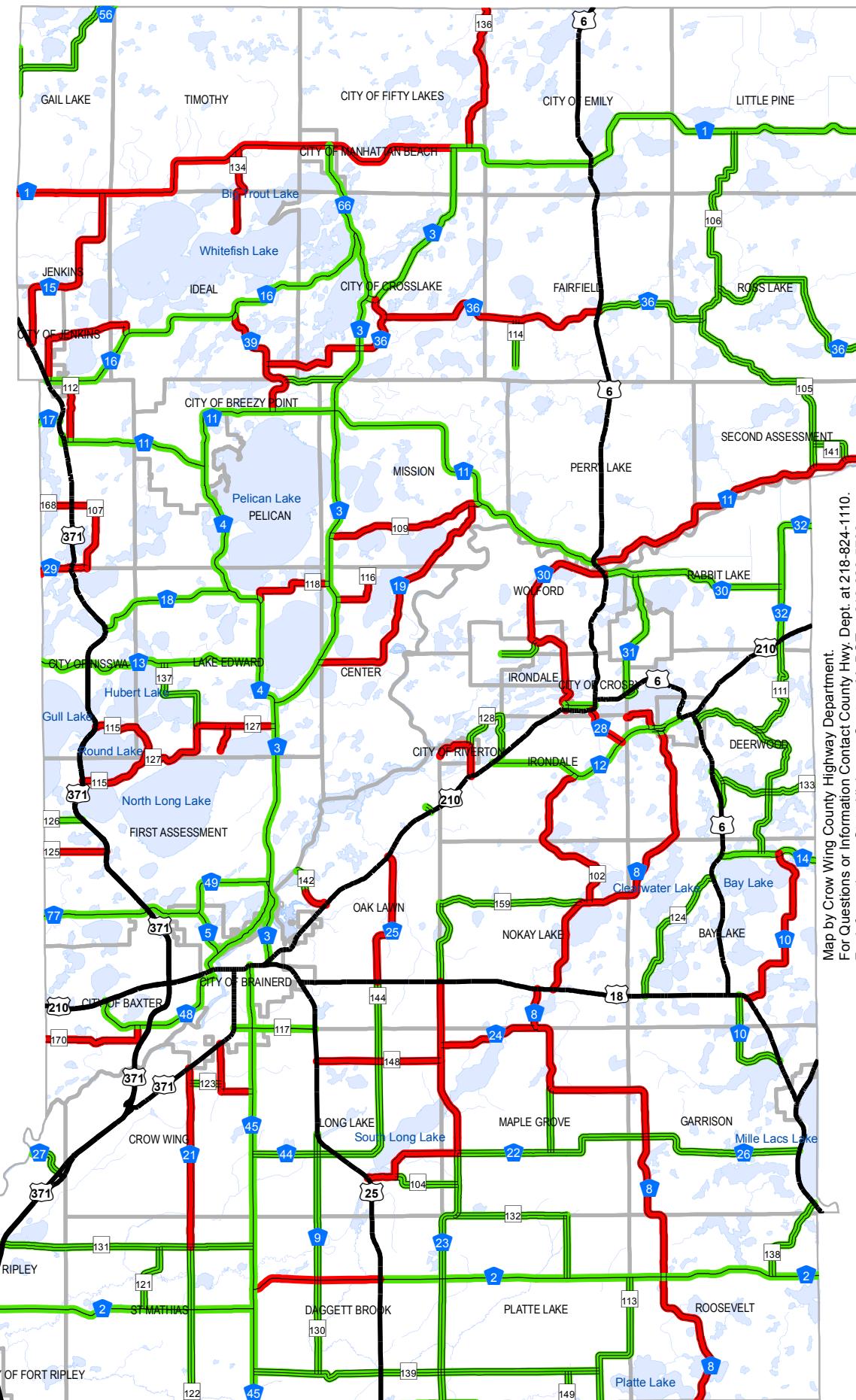
===== 3 (ADT<500)

Route Target

— Target Achieved

Target Not Achieved

Report Date: 12/15/2016



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 #5 2016-12 Caly

Date 12-11-16

| Salt Cyds | Salt \$ | Sand Cyds | Sand \$ | Brine gal | Brine \$ | Mat. Total | Equip \$ | Reg. Personnel | OT \$ |
|-----------|---------|-----------|---------|-----------|----------|------------|----------|----------------|---------|
| 108.25 | \$9,519 | 177 | \$5,841 | 4157.5 | \$2,744 | \$18,104 | \$31,383 | \$11,564.00 | \$3,249 |

Total \$64,300

Total \$64,300 29.25 hrs = \$2,198 per/hr
\$115 per/CL/Mile 411 man hours

Forecast

Snow forecasted at 10 P.M. 12/10 and continuing until 3 P.M. 12/12. Little to no wind. Temps in the teens and falling fast.

1/2"-3/4" of snow forecasted noon to 3 P.M. 12/12/16 and very cold.

Pre Plan

Have the trucks start plowing at 1 P.M. Apply 800 pounds of salt on criticals to see how it reacts to traffic and road temperatures. Plan to switch over to sand if it doesn't work well. Will apply sand Monday morning. Leave the gravel unless more than 3" had fallen on them.

5 A.M. start on 12/12 to address the centerline ribbon of snow and sand on criticals. Plows would continue if forecasted snow created issues on 12/12. If no issues, plows would start at 5 A.M. on 12/13/16.

Apply sand at only the critical areas to let the roads blow open and freeze dry. Sand at intersections to help with traction.

Comments

Road temps are expected to drop severely. We are trying salt at criticals to see how it reacts to road temp. We left the gravel on 12/11 because there was only an inch and the last time we plowed gravel was exposed. We wanted to let traffic try to run on it and pack it down.

Snow kept falling on 12/11 when we were plowing.

Scraped roads and sanded again on 12/14 to try and reduce the ice.

Plowed on 12/12 and when we were done it started to snow again about 1/2".

Conditions

Snow ended at 3 P.M. 12/12. Temps cold.

Continued flurries while we plowed on 12/11.

Cold with 1/2" snow on 12/12 12-3 P.M. Priority 1s blew open with traffic. Priority 2 and 3s covered on roads with lower traffic volumes.

Ice formed on most roads with low traffic counts and slower moving areas.

| Road | RDTemp | Date/Time | | Air Temp |
|-------|--------|-----------|-----------|----------|
| 15 | 18 | 12\11\16 | 6:30PM | 10 |
| 3 | 5 | 12\12\16 | 5 A.M. | 0 |
| 45 | 0 | 12\13\16 | 6 A.M. | -4 |
| Hwy 6 | 6 | 12\14\16 | 1:30 P.M. | 5 |
| | | | | |
| | | | | |
| | | | | |

| Date | High | Low |
|------------|------|-----|
| 12/9/2016 | 13 | 5 |
| 12/10/2016 | 9 | 0 |
| 12/11/2016 | 18 | 4 |
| 12/12/2016 | 7 | -5 |
| 12/13/2016 | 8 | -9 |
| 12/14/2016 | 6 | -8 |
| 12/15/2016 | 3 | -1 |

Summary

The salt melted and brined well where it was placed but the temperatures were cold enough that the salt did not melt out side of where it was laid.

Snow continued to fall until 7 P.M. on 12/11 and again till 4 P.M. on 12-12 as we were finishing plowing.

We held the plow drivers in case we needed them to turn around and plow again 12-12. We sent them home at 2 P.M. 12-12 because the roads were blowing open with traffic.

Priority 1 road drive lanes cleaned up on their own because of traffic. Priority 2 and 3s were spotty.

Plows plowed 12/11 at 1 P.M., 12/12 at 5 A.M., 12/13 5 A.M. & 12/14 7 A.M.

Sand was used 12/12, 12/13 & 12/14 for traction because the temps were too low for salt to be effective.

Decisions Made

Plow and scrape roads and apply 800 lbs of salt at criticals

5 A.M. start on 12/12 with sand at criticals.

Leave the dirt 12/11 to let traffic pack the little bit there down. Plow 12/12.

Did not make targets for plowing the dirt. We were an hour or two past the goal time because of when the event ended and when we were able to get back out there.

12/13 & 12/14 sand at criticals only.

Lessons Learned

Salt started to melt and then slowed after sundown.

Sand worked well at intersections and the roads freeze dried.

Everything we tried on 12/13 & 12/14 did not help with the ice because of the very cold temperatures.

Priority 2 roads did not clean off well due to cold temps and blowing snow.

Goals Met/Not Met

| Plowing | Bare wheel paths |
|----------------|--------------------|
| Priority 1 Met | Priority 1 Met |
| Priority 2 Met | Priority 2 Not Met |
| Priority 3 Met | |

Lower volume roads did not clean off well. Snow ribbons in the center and shoulders of all roads.

The centerline stripes on almost all roads are visible but a thin layer of ice is preventing us from achieving bare wheel paths on priority 2 roads. Cr 2 did not pass because of ice from blowing snow.