

# CROW WING COUNTY

## December 16, 2021 Snow Event #12 - 2021 - #5



### Reported Event Conditions

Date: 12/16/2021  
Event No: #12-2021-#5  
Begin Time: 12-15 12PM  
End Time: 12-16 10AM  
Weather: Snow/Rain  
Precipitation: .75" R/1" S  
Temperature: 44\1  
Wind: 10-40 MPH

## Event Costs

Salt	\$87,542
Sand	\$111
Brine	\$4,974
Equipment/Fuel	\$51,255
Personnel Reg.	\$11,240
Personnel OT	<u>\$11,061</u>
Total	\$166,183
Cost Mile	\$297
Season Total:	\$322,976

## Priority By Route

## Priority 1

% Target 1A Met: 100%  
% Target 1B Met: 0%

## Priority 2

% Target 2A Met: 100%  
% Target 2B Met: 0%

### Priority 3

### % Target 3A Met.

## Legend

— MnDOT Highway

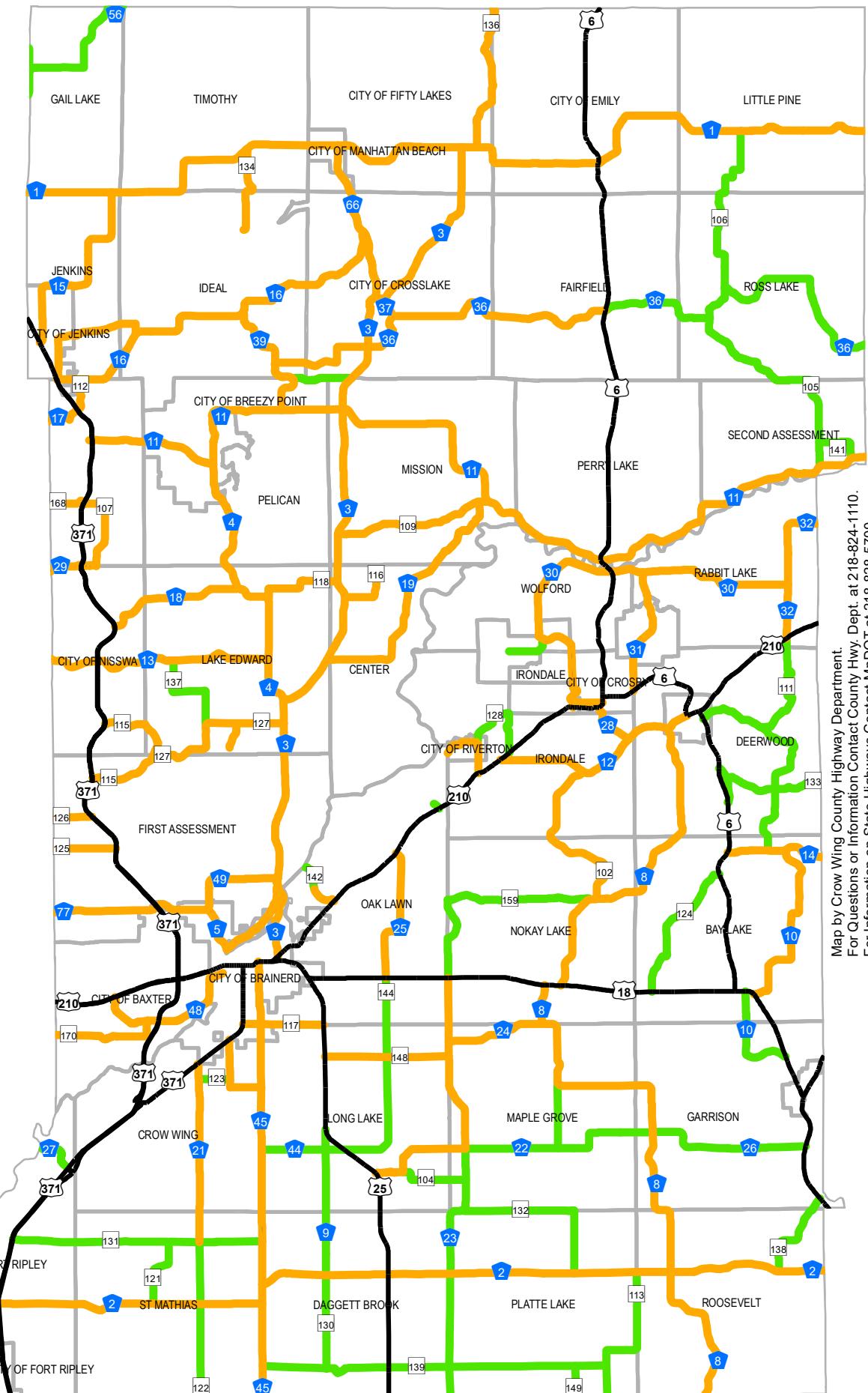
## Route Priority

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

## Route Target

- Target Achieved
- Target Partly Achieved
- Target Not Achieved

Report Date: 12/21/2021



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.

## 2020/2021 Summary For Snow Event #12 - 2021 - 5 Date 12-16-21

Salt Tons	Salt \$	Sand Tons	Sand \$	Brine gal	Brine \$	Mat. Total	Equip \$	Reg. Personnel	OT \$
962	\$87,542	3.25	\$111	7537	\$4,974	\$92,627	\$51,255	\$11,240.00	\$11,061

<b>Total</b>	\$166,183	39 Plow hrs.	\$4,261	per/hr.
		587.00 Man hrs.	\$297	per/CL/mile
			\$6.27	per/household for entire County

## Forecast

3/4" of rain forecasted to begin around 6:00 pm 12-15, and transition to snow around 2:00 am 12-16, with 15-40 mph winds. 1.25" of snow forecasted to end around 9:00 am 12-16. Temps dropping from the 40's to single digits.

## Pre Plan

Begin plowing @ 4:00 am 12-16, and apply 400 lbs. of treated salt to centerline. Turnaround, replow and reapply treated salt if the ice or snow remains or new snow is present. Rescrape and apply salt on 12-17, if needed.

## Actual Event

**Event start:** 12PM 12-15-21      **Event ended:** 10AM 12-16-21

## Comments

Salt began to work but was slowed with the falling temps. Snow continued falling until 10:00 am 12-16, covering up the salt first applied. After rescraping roads, starting around 10:00 am 12-16 we started to see wheel paths on priority 1 roads but lost them with the continued snow and falling temps. Strong winds blew snow across roads and it caught and stuck to the roads as ice formed. There was a light dusting of snow early the morning of 12-18. This helped pull some moisture out of the roads and ice but cold temperatures did not allow us to achieve our goals. Warmer temps (high teens/low 20s) on 12-19 allowed the salt to work more effectively, by allowing the snow and ice to melt and loosen up. Trucks were able to scrape drive lanes and achieve targets by 3 p.m. on most priority 1 and 2 roads 12-19.

## Conditions

Falling temps (43 - 6) and strong winds 15 - 40 mph on 12-16. Single digit temps through 12-19.

Road	Road Temp	Date	Time	Air Temp
Hwy 6	24	12\16\21	5:30AM	24
Hwy 25	25	12\16\21	5:30AM	30
Hwy 6	7	12\17\21	7:00AM	0
Hwy 25	11	12\17\21	7:00AM	3
Hwy 6	19	12\19\21	11:00AM	14
Hwy 25	21	12\19\21	11:00AM	14

Date	High	Low
12/14/2021	40	34
12/15/2021	44	16
12/16/2021	18	1
12/17/2021	15	8
12/18/2021	14	5
12/19/2021	25	16

Source: weather.com. Monthly Weather. 56401

## Summary

With all of the ice, compacted snow, and low temps, the salt was slow to melt to pavement. The continued falling snow into the morning on 12-16 slowed the cleanup efforts. Trucks plowed all roads (except gravel) twice on 12-16. Black ice formed overnight on 12-16. On 12-17 trucks went out to rescrape and apply 600 lbs. of salt to get the remaining and newly formed black ice melting. No roads met the bare wheel path target goal as of 12-17 A.M. Five straight days of plowing and salting to achieve our bare wheel path goals on all roads. The warmer temps on 12-19 allowed for the most progress. Thick ice would melt on top and then refreeze. Vehicle wheel tracks froze to the pavement and could still be seen on 12-21.

### **Decisions Made**

Begin plowing at 4:00 am 12-16 and apply 400 lbs. of treated salt. Rescrape all roads and reapply salt. Rescrape and reapply salt on 12-17. Replow and apply 500 lbs. on C/L 12-18. Replow and apply 500 - 600 lbs. on C/L 12-19. Replow areas and shoulders with ice and snow compaction 12-20.

### **Lessons Learned**

Rain in December is not good! Using higher salt rates the second time plowing on 12-16 may have helped melt more ice but probably would not have eliminated black ice issues after observing MNDOT roads that also were experiencing black ice. Cold temps hindered the salt from working effectively. Temps on 12-19 in the upper teens and low 20's allowed the salt to work better and loosen a lot of the ice and snow up.

### **Goals Met/Not Met**

	Plowing	Goals
Priority 1	Met	6 hr.
Priority 2	Met	8 hr.
Priority 3	Met	10 hr.

	Bare wheel paths	Goals
Priority 1	Not Met	18 Hr. All until 12-19
Priority 2	Not Met	48 hr. All until 12-20