

CROW WING COUNTY

Dec. 17, 2016 Snow Event #6 2016-13



Reported Event Conditions

Date:	12/17/2016
Event No:	#6 2016-13
Begin Time:	12/16/16 5AM
End Time:	12/17/16 8AM
Weather:	Snow
Precipitation:	2"
Temperature:	10\ -18
Wind:	15-25 mph

Event Costs

Salt	\$14,326
Sand	\$3,960
Brine	\$3,848
Equipment/Fuel	\$28,110
Personnel Reg.	\$9,958
Personnel OT	\$4,585
Total	\$63,478
Cost Mile	\$113
Season Total:	\$389,257

Priority By Route

Priority 1

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

Priority 2

% Target 2A Met:	100%
% Target 2B Met:	91%

Priority 3

% Target 3A Met:	100%
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Legend

MnDOT Highway

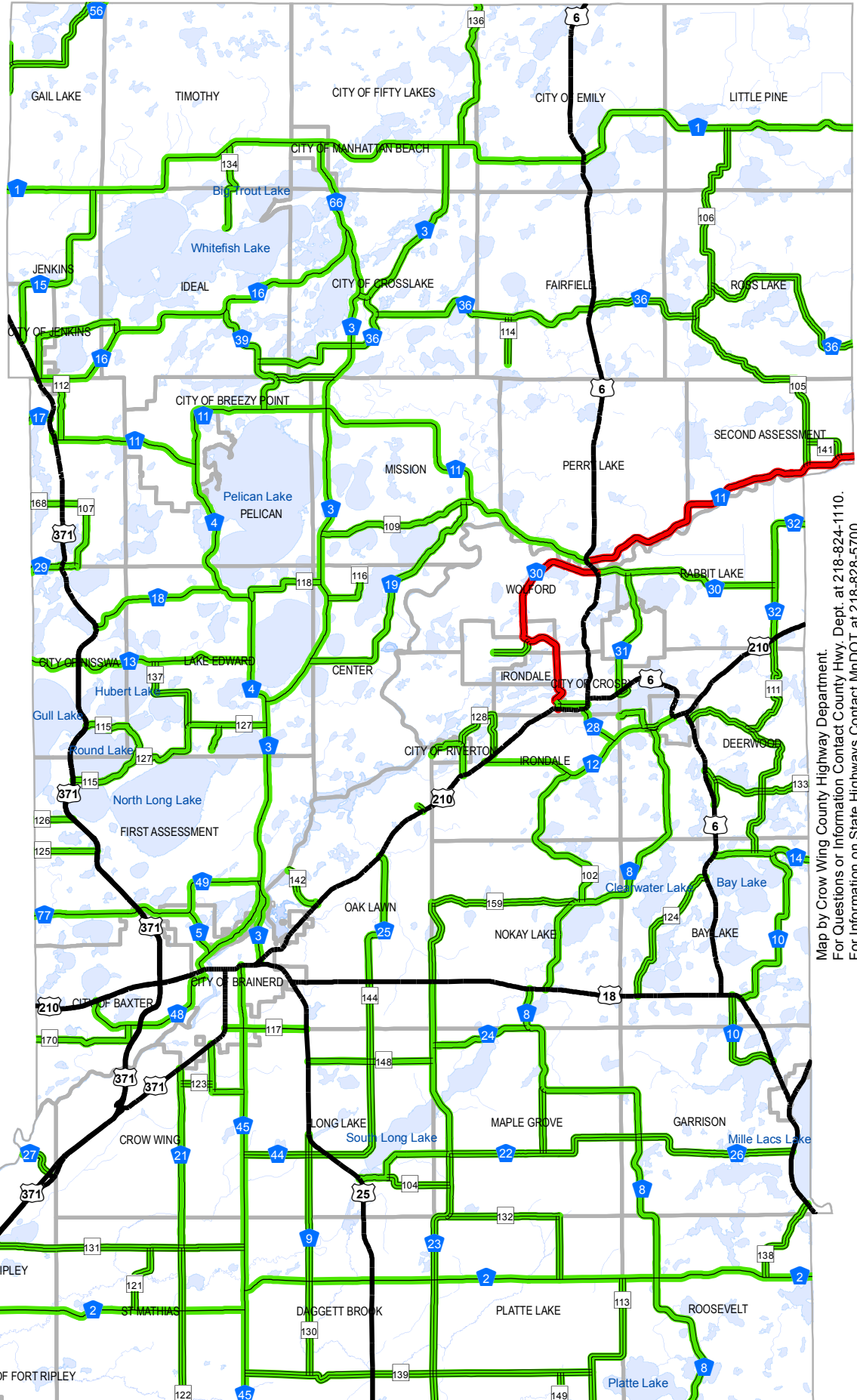
Route Priority

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

Route Target

- Target Achieved
- Target Not Achieved

Report Date: 12/22/2016



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 #6 2016-13

Date 12-16-16

Salt Cyds	Salt \$	Sand Cyds	Sand \$	Brine gal	Brine \$	Mat. Total	Equip \$	Reg. Personnel	OT \$
162	\$14,326	120	\$3,960	3848	\$2,540	\$20,825	\$28,110	\$9,958.00	\$4,585

Total \$63,478

Total \$63,478 24 hrs = \$2,645 per/hr 384.75 man hours
\$113 per/CL/Mile

Forecast

Snow starting 12/16/16 at midnight and continuing until morning, slight break and more snow in the afternoon continuing until 5A.M. on 12-17-16. Winds increasing 10-25 MPH.

Pre Plan

Have the plows start at 7 A.M. on 12-16. Continue plowing until 7 P.M. on 12-16. Come back at 3 A.M. on 12-17 and plow until all routes are covered. Use sand at intersections for traction.

On 12-17 apply sand at 800 lbs on criticals where the wind was not blowing.

Comments

Snow started at 5 A.M. 12-16.

Snow subsided early in the morning on 12/16 so trucks ended at 3:30 P.M. 12/16. Snow started again at 6 P.M. 12/16. Snow ended down south at 5 A.M. 12/17 and continued until 6:30 A.M. on 12/17.

Roads had various icy spots due to shade and cold temperatures.

Conditions

Cold and windy conditions on 12/16 & 12/17.

Very cold and windy.

Road	RDTemp	Date/Time		Air Temp
Hwy 25	6	12\16\16	6AM	4
45	13	12\17\16	5 A.M.	0
Hwy 6	5	12\17\16	4 P.M.	-4
Hwy 6	4	12\18\16	8 A.M.	-2

Date	High	Low
12/15/2016	1	-15
12/16/2016	10	0
12/17/2016	5	-18
12/18/2016	-4	-26
12/19/2016	25	-9
12/20/2016	34	17

Summery

Cold temps and wind hindered us from achieving bare wheel paths on all of our roads. Traffic blew priority 1 wheel paths open. There was wide spread snow ribbons on the center line and shoulders.

Decisions Made

We decided to apply sand at intersections and some curves only because of the blowing snow creating ice. On 12-19-16 we applied salt because we had warmer temperatures and were confident we could melt any ice.

Lessons Learned

The wind cleaned off the roads and removed ice in the open areas. Slow moving traffic areas such as intersections packed snow down.

We were not able to get bare wheel paths on CR 30 north of Ironton and CR 11 east of Highway 6 due to the pavement condition and blowing snow.

Goals Met/Not MetPlowing

Priority 1 Met
Priority 2 Met
Priority 3 Met

Bare wheel paths

Priority 1 Met
Priority 2 Not met on CR 30, 11E due to pavement condition

Forecast at 3 P.M. 12-15-16

Time (CST)	MN-25 SB Driving Temp (° F)	MN-25 SB Driving Cond	MN-25 SB Driving Frost Prob (%)	Air Temp (° F)	Dew Point (° F)	Rel Humidity (%)	Wind	Wind Speed (miles/ hour)	Wind Gust (miles/ hour)	Wind Chill (° F)	Precip Type	Precip Prob (%)	Precip Rate (in/ hr)	Precip Accum (in)	Snow Rate (in/ hr)	Snow Accum (in)	Sky
Thu 15:00	13	Dry	0	1	-9	61	SSW	8		-13		0	0.00	0.00	0.0	0.0	MCir
Thu 16:00	8	Dry	0	1	-9	61	SSW	6		-11		0	0.00	0.00	0.0	0.0	MCir
Thu 17:00	5	Dry	0	-2	-10	67	SSW	5		-13		0	0.00	0.00	0.0	0.0	PCldy
Thu 18:00	4	Dry	0	-3	-10	71	SSW	5		-13		0	0.00	0.00	0.0	0.0	PClr
Thu 19:00	3	Dry	0	-3	-9	74	SSW	5		-13		0	0.00	0.00	0.0	0.0	PClr
Thu 20:00	3	Dry	0	-2	-8	74	SSW	5		-13		0	0.00	0.00	0.0	0.0	MCldy
Thu 21:00	3	Dry	0	-1	-8	71	SSW	5		-11		0	0.00	0.00	0.0	0.0	OvCst
Thu 22:00	4	Dry	0	-0	-7	71	SSW	5		-10		0	0.00	0.00	0.0	0.0	OvCst
Thu 23:00	4	Dry	0	-0	-6	75	S	4		-10	SN	20	trace	0.00	trace	0.0	OvCst
Fri 00:00	4	Dry	5	1	-5	75	OVRB	2		1	SN	40	trace	trace	trace	trace	OvCst
Fri 01:00	4	Dry	5	2	-4	75	OVRB	3		1	SN	60	trace	trace	trace	trace	OvCst
Fri 02:00	4	Dry	10	2	-3	78	OVRB	3		1	SN	70	0.01	trace	0.2	0.1	OvCst
Fri 03:00	5	Snow	10	3	-1	82	OVRB	3		3	SN	80	0.01	0.01	0.2	0.3	OvCst
Fri 04:00	5	Snow	10	4	-1	79	OVRB	3		5	SN	80	trace	0.02	trace	0.5	OvCst
Fri 05:00	5	Snow	15	4	-1	79	SSE	4		-4	SN	80	trace	0.03	0.1	0.6	OvCst
Fri 06:00	6	Snow	15	4	0	82	OVRB	3		5	SN	70	trace	0.03	0.1	0.6	OvCst
Fri 07:00	6	Snow	15	4	0	82	OVRB	3		5	SN	50	trace	0.03	0.1	0.7	OvCst
Fri 08:00	6	Snow	15	5	1	83	OVRB	1		5	SN	50	trace	0.03	0.1	0.7	OvCst
Fri 09:00	7	Snow	10	6	1	79	OVRB	1		7	SN	40	trace	0.03	0.1	0.8	OvCst
Fri 10:00	9	Snow	10	7	2	79	OVRB	2		7	SN	40	trace	0.04	0.1	0.9	OvCst
Fri 11:00	10	Snow	5	7	2	79	OVRB	2		7	SN	30	trace	0.04	trace	0.9	OvCst
Fri 12:00	11	Snow	5	9	2	72	OVRB	1		8	SN	40	trace	0.04	trace	1.0	OvCst
Fri 13:00	11	Snow	5	9	3	76	OVRB	2		8	SN	60	0.01	0.04	0.2	1.0	OvCst
Fri 14:00	11	Snow	5	10	3	72	OVRB	2		10	SN	60	0.01	0.05	0.2	1.2	OvCst
Fri 15:00	11	Snow	10	10	3	72	NE	4		3	SN	70	0.01	0.06	0.2	1.5	OvCst
Fri 16:00	10	Snow	10	10	3	72	NE	4		3	SN	70	0.02	0.07	0.5	1.7	OvCst
Fri 17:00	10	Snow	10	10	3	72	NE	5		1	SN	70	0.02	0.09	0.5	2.1	OvCst
Fri 18:00	11	Snow	10	10	4	76	NNE	6		-1	SN	70	0.02	0.11	0.5	2.6	OvCst
Fri 19:00	11	Snow	15	10	5	79	NNE	7	14	-1	SN	70	0.02	0.13	0.5	3.1	OvCst
Fri 20:00	12	Snow	10	10	5	79	NNE	8	16	-2	SN	70	0.02	0.15	0.4	3.6	OvCst
Fri 21:00	12	Snow	10	9	5	83	NNE	9	17	-4	SN	70	0.02	0.17	0.4	4.0	OvCst
Fri 22:00	12	Snow	5	8	3	79	NNE	10	19	-6	SN	70	0.02	0.19	0.4	4.4	OvCst
Fri 23:00	12	Snow	5	6	2	83	N	11	19	-10	SN	70	0.01	0.21	0.2	4.8	OvCst
Sat 00:00	12	Snow	0	5	-0	79	NNE	10	19	-10	SN	70	0.01	0.22	0.2	5.0	OvCst
Sat 01:00	13	Snow	0	3	-1	82	N	12	21	-13	SN	70	0.01	0.23	0.2	5.2	OvCst
Sat 02:00	13	Snow	0	3	-3	75	N	13	21	-15	SN	70	0.01	0.24	0.2	5.4	OvCst
Sat 03:00	13	Snow	0	1	-3	82	N	13	22	-17	SN	70	trace	0.25	trace	5.6	OvCst
Sat 04:00	13	Snow	0	1	-5	75	N	13	21	-17	SN	70	trace	0.25	trace	5.6	OvCst
Sat 05:00	13	Snow	0	-1	-6	78	N	14	22	-20	SN	70	trace	0.26	trace	5.7	OvCst
Sat 06:00	14	Snow	0	-2	-7	78	N	13	21	-20	SN	50	trace	0.26	trace	5.7	OvCst
Sat 07:00	14	Snow	0	-4	-9	78	N	12	20	-22	SN	50	trace	0.26	trace	5.7	OvCst
Sat 08:00	14	Snow	0	-6	-10	81	N	11	19	-24	SN	40	trace	0.26	trace	5.7	OvCst
Sat 09:00	15	Snow	0	-6	-11	78	N	11	19	-24	SN	30	trace	0.26	trace	5.8	OvCst
Sat 10:00	16	Snow	0	-5	-11	74	NNW	12	19	-24	SN	20	trace	0.27	trace	5.8	OvCst
Sat 11:00	17	Snow	0	-6	-13	70	NNW	12	19	-26	SN	20	trace	0.27	trace	5.8	OvCst
Sat 12:00	13	Snow	0	-5	-13	67	NNW	13		-24		0	0.00	0.27	0.0	5.8	MCldy
Sat 13:00	10	Snow	0	-6	-14	67	NNW	12	18	-26	SN	10	trace	0.27	trace	5.8	MCldy
Sat 14:00	8	Snow	0	-7	-15	67	NNW	11	18	-26		0	0.00	0.27	0.0	5.8	MCldy
Sat 15:00				-7	-14	70	NNW	13	20	-28	SN	10	trace	0.27	trace	5.8	PClr
Time (CST)	MN-25 SB Driving Temp	MN-25 SB Driving Cond	MN-25 SB Driving Frost	Air Temp (° F)	Dew Point (° F)	Rel Humidity (%)	Wind	Wind Speed (miles/ hour)	Wind Gust (miles/ hour)	Wind Chill (° F)	Precip Type	Precip Prob (%)	Precip Rate (in/ hr)	Precip Accum (in)	Snow Rate (in/ hr)	Snow Accum (in)	Sky