

SNOW REMOVAL AND ICE CONTROL OPERATIONS POLICY

MARSHALL COUNTY HIGHWAY DEPARTMENT

2004-2005

*Adopted by the Marshall County Board of Commissioners on
December 2, 2004*

GENERAL COMMENTS

Marshall County is predominantly rural and has a population of approximately 10,400 with a decreasing trend. Of this total population, 4,800 exists within city limits. There are approximately 4,100 households in the county with 2,100 of them existing within city limits. The County is approximately 72 miles east to west and 26 miles north to south. The terrain is generally flat with land use primarily agricultural. Large areas of wooded land are more prevalent in the central and eastern portions of the county, with open, flat land areas in the west.

The Marshall County Highway Department is responsible for winter maintenance on approximately 390 miles of paved surfaced, 437 miles of CSAH/County gravel surfaced, and 594 miles of Township gravel surfaced roadways. To accomplish this, the County utilizes 5 tandem trucks/operators with plow/wing attachments, and 9 motorgraders/operators with plow/wing attachments. A few tandem trucks are equipped with salt/sand spreader attachments. Each unit (14 in all) is assigned a snow removal/ice control maintenance route. These routes include various roadway segments and intersections, and they are to be maintained at the service levels as stated in this policy.

Tandem truck routes typically maintain approximately 70 miles of paved surface roadways each, and motorgrader routes typically maintain approximately 130 miles of gravel surfaced roadways each. The motorgrader operator is also responsible for maintaining approximately 13 paved intersections, curves or other locations sensitive to ice and snow pack buildup.

Snow and ice removal will generally be accomplished with the use of snowplow/wing attachments on tandem trucks and motorgraders, loaders with bucket and snowblower attachments, motorgrader moldboards with various types of cutting edges, tractors with snowblowers, placement of various concentration salt/sand mixtures, and placement of Class 1 aggregate, having a high crush count. Use of this equipment and materials will be consistent with these policy guidelines.

Snow fences and ridging operations placed in strategic locations outside of the county highway right of way may be implemented on an as needed basis. The ability to trap blowing snow outside of the highway R/W may reduce the buildup of snow on the roadway. The placement of the snow

fences and/or ridging operations shall be approved by the Engineer or Maintenance Superintendent. Based on historical snow drifting problems, many of these strategic sites have been established and are shown on the Snow and Ice Control Map. Written authorization from the landowner is required prior to the placement of snow fences and/or ridging operations on private property.

Marshall County does not assure a bare pavement policy. Continuous sections of pavement will not be regularly sanded/salted. Users of the county road system need to exercise caution and drive with care as directed by MN Statute.

The purpose of this snow removal and ice control policy is to promote consistency and uniformity of winter maintenance operations in Marshall County. Achieving a consistent and uniform level of service throughout the county should provide drivers with a more accurate idea of roadway surface conditions during and after snow and ice events. The more accurate the driver's expectations are, the safer winter driving habits the driver should exhibit. Accurate driver expectations of road conditions should result in less accidents related to winter roadway conditions.

Due to the variable nature of snow removal and ice control work, Marshall County's Snow and Ice Control Policy is not all inclusive. The operator's experience and judgment will ultimately dictate decisions made regarding snow removal and ice control on a case by case basis. Marshall County's Snow and Ice Control Policy is solely intended to provide guidance to the operator during the decision making process.

This policy is effective as of December 2, 2004 by action of the Marshall County Board of Commissioners at the regular Board Meeting on December 2, 2004.

WINTER HIGHWAY MAINTENANCE GOAL

The efficient removal of snow and ice from the roadways of Marshall County is one of the most important functions of the County Highway Department.

The efficient removal of snow and ice to allow reasonable serviceability of the county roadways is the priority during winter maintenance work.

Safety of the motorist, safety of the highway department employee, and financial constraints must and will be the priority considerations when determining timing of winter roadway maintenance operations.

SNOW REMOVAL POLICY

Marshall County's Snow Removal Policy should generally attempt to provide the following level of service:

1. Snow removal operations should generally begin when snow accumulation reaches a point where it inhibits traffic flow from maintaining a reasonable speed, or snow is starting to compact on the roadway surface. Each individual snowplow operator shall assess the winter weather and roadway conditions in accordance with this policy to determine the ideal time to begin snow removal operations. The Maintenance Superintendent may be contacted if a question arises as to whether to begin snow removal operations.
2. Plow and wing assemblies shall be installed on at least one Tandem Truck in the Warren shop, Holt shop, and Pembina Trail shop no later than October 24, of each year. Other equipment shall have plow and wing assemblies installed at a time deemed appropriate for that year.
3. Local weather forecasts should be used when considering timing of snow removal operations.
4. Coverage time for all routes varies depending on the current weather conditions, snow loads, and road surface conditions. Generally, truck route total coverage time on paved surface roadways is approximately 6 hours, and motor grader routes including township gravel approximately 20 hours.
5. Paved surface roads will generally be maintained at a higher level of service than gravel surfaced roads. There is no road system hierarchy (i.e. CSAH, County, Township) when determining plowing route priority. The plowing route shall be determined by the individual operator, unless changed by the Superintendent or Engineer. ADT, general public use value, school bus use, mail route use, etc., are all factors which will determine the road segment prioritization of each route.
6. Snow removal operations should occur primarily during the typical workday (7:00 am to 3:30 pm). Predicted overnight snow accumulation of 4" or more may initiate snow removal operations to begin at 4:00 am or earlier the following morning. If the predicted workday snow accumulation is expected to dissipate in the early evening, workday snow removal operations may continue through that workday evening (after 3:30 pm), with touchup work continuing the following workday. The Maintenance Superintendent may verify these exceptions, at the request of the operator.
7. If snow removal operations begin prior to 7:00 am, the employee will end the workday after 8 hours of being on duty, unless necessary snow removal work is incomplete. The Maintenance Superintendent must approve any workday hours beyond 8 hours if the work is not directly related to snow removal operations.

8. Paved surface roadways should be maintained on weekends and holidays to similar levels of service as provided during the normal workweek. Gravel surfaced roadways will generally exhibit a reduced level of service on weekends and holidays. Unless the gravel surfaced roadway is impassable, snow removal operations will generally be delayed until the next normal working day. If the operator determines that a specific segment of gravel surfaced roadway requires a higher level of service, the operator has the authority to perform the snow removal work as deemed necessary. Heavy snowfall events which may create snow pack conditions and ultimately icy surfaces, may also initiate snow removal operations during weekends and holidays. This decision should be made at the discretion of the Operator in consultation with the Maintenance Superintendent.
9. Snowplow operators are expected to work 8 hour shifts minimum, and longer if extended snow removal operations are required. In severe snow emergencies, operators may have to work up to 18 hours maximum. Because of budget constraints and safety concerns, no operator should work over 18 hours in a 24 hour period. Operators should take a 5 minute break every 2 hours of plowing for safety purposes.
10. Snowplow operating speeds shall be fast enough to throw snow beyond the shoulder point, but slow enough to minimize any damage to private property adjacent to the roadsides. Snow removal speeds shall also be that which is recommended by the manufacturer of the snow plow and wing assemblies being used. These recommended operating speeds shall be followed to insure snow removal equipment warranties will not be void, safety of the snowplow operator and traveling public are insured, and private property adjacent to the roadways are not damaged by heavy snow being thrown by the snow removal equipment. This speed should not typically be greater than 35 to 40 mph nor less than 20 mph.
11. Shop personnel will assume snowplow operator duties, as replacement or additional operators, when no pressing mechanical repairs are needed and snowplow workload is extensive. Each plow operator will be responsible to have a replacement operator available and prepared for snow removal work if they plan on being absent.
12. Shop personnel shall clear the courthouse parking lot after snowfall events and in coordination with the courthouse building maintenance supervisor.
13. Typically snow removal operations will be initiated when the snow event concludes or wind speeds subside, but snow removal operations may be initiated during snowfall events during the workday when traffic speeds are prevented from safely traveling 40 mph or if snow is beginning to pack on the road surfaces.

14. Snow removal operations will continue until roadways are clear for reasonably safe motor vehicle operation. Areas susceptible to snowdrift blockage, or areas where wind cannot naturally clear snow from roadways shall be inspected by the route operator regularly to assure the roadway surface is functioning efficiently.
15. The effects of wind speeds, snow fall intensity, and cold temperatures typically dictates the start and stop times of plowing operations as determined by the individual operator in consultation with the Maintenance Superintendent. Safety concerns regarding the interaction between snowplow operators and the traveling public, and snow removal efficiency as a result of these weather conditions will be primary considerations in determining plowing operation times. The effects of wind may cause drifting, low visibility, life threatening wind chills, and low efficiency snow plowing operations. If the combination of wind speed and snow reduce visibility to 1/8 mile or less, snow plowing operations may be suspended. Snowplowing operations may be delayed after daylight hours when temperatures drop below -25 deg. F. If snow removal operations are discontinued or delayed due to unsafe or inefficient plowing conditions and roads remain generally impassable, the following radio stations should be notified:
 - 1) KTRF/KKAQ/KKDQ radio station Thief River Falls, MN – 681-4900
 - 2) KTRF AM radio station Thief River Falls, MN – 681-1230

Marshall County will be considered as Countywide, Eastern Marshall, or Western Marshall when describing the status of snow removal operations on a location basis. As a reference, the division line will generally be considered as the Pembina Trail.

16. The Highway Department will be available to assist in an emergency on public or private roads as directed by the County Sheriff's Department. Snow removal on private roads is prohibited unless requested by the Sheriff's Dept. in an emergency situation.
17. Damages to mailboxes and/or stands which are claimed to be as a result of County Forces snow removal operations will be considered for reimbursement or repair on a case by case basis. To be considered, the box must be mounted on an approved standard mailbox support, which are available at the County Highway Department Shop. Any damages caused to mailboxes on non standard supports, or damages to non standard supports themselves will not be considered for reimbursement or repair by the County.
18. Private property on public right of way damaged by snowplowing operations will not be considered for reimbursement unless special permission was granted for that private property to be placed on public right of way.
19. Snowplowing, by nature, may cause inconveniences to private property owners, primarily due to blocked private driveways. Driveway blockage cannot be

reasonably avoided, and will be explained as resulting from usual and customary snow removal practices when such a complaint is received.

20. Private vehicles stranded or stuck in an area causing an unsafe obstruction to the motoring public shall be assisted and relocated to an adjacent area where it will not present a danger to others. Private vehicles stuck in an area which does not impact other traffic should not be pulled out with County equipment during snow removal operations. The stuck or stranded individual shall be assisted by reporting the incident to the office, so the proper authorities may be notified. Outside of normal work hours, the sheriff's department should be notified to direct the proper assistance. Accidental damages to the private vehicle or injuries to the private citizen while removing the stuck vehicle could result in costly liabilities to the County. Operator discretion must be used on a case by case basis.

ICE CONTROL POLICY

Marshall County's ice control policy should generally provide the following level of service:

1. As mentioned, Marshall County does not practice a bare pavement policy. Ice control will focus on high risk areas such as curves, intersections and railroad crossings. The intent is to provide improved traction for stopping and turning driving maneuvers. High risk areas will be displayed on the Snow and Ice Control map. Inspection and maintenance of these areas will be assigned to one of the motor grader operators. Motor grader operators shall initially remove hard pack snow and ice by scraping with cutting edge and without the use of winter sand material. If road top conditions remain slippery, winter sand shall be applied to these areas. Placement of the winter sand will be performed by the assigned truck driver at the request of the motor grader operator assigned to this high risk area. High risk areas include only paved surface roadways. Intersections shall be sanded within 500 ft of the crossroad or railroad crossing. Curve areas should be covered 200 ft. before and 200 ft. beyond the curve area, with winter sand being placed within each lane of the curve. Application rate of winter sand mixture shall be approximately ½ ton per 500 ft. length per lane.
2. Tandem trucks should be traveling no faster than 20 mph when placing winter sand mixture to road surface. Sand spreaders should be calibrated accordingly.
3. Gravel surfaced roadway high risk areas will be identified by the motor grader operator assigned to that route, and inspected and maintained by the same individual. Winter sand will not be applied to gravel surfaced roadways. Either scraping with the motor grader or placement of a crushed Class 1 material will be acceptable to establish skid resistance and traction.

4. Winter sand is considered as a 10% salt 90% sand mixture. Material is available at the Mn/DOT Highway Dept. Shop in Warren. All drivers must keep a running total of loads by completing the report form provided in the mailbox at the Mn/DOT truck station in Warren, MN. This form shall be completed for each load. A tally sheet for the season shall be kept by each driver to verify the salt/sand loads used.
5. If 24-hour temperature forecasts predict temperatures falling to below 10 deg., a 50% salt and 50% sand mixture should be applied. This would result in about 55% winter sand and 45% straight salt when loading the tandem truck, or 5.5 buckets winter sand and 4.5 buckets of salt with 1 ¼ CY bucket on Warren Shop Loader (Unit 221).
6. Melted ice and snow pack (slush material) should be bladed off when conditions warrant. Slush material should not be left on the road top for extended periods, as it may freeze at cooler temperatures.
7. Generally, a reduced level of service regarding ice control on all county roadways is appropriate on weekends and holidays. Unless the ice has created an unusually hazardous condition at a high risk area, ice control operations will generally be delayed until the next normal working day. The Maintenance Superintendent should be consulted prior to performing ice control work on weekends and holidays.
8. If ice control operations begin prior to 7:00 am, the employee will end the workday after 8 hours of being on duty, or after necessary ice control work is complete, whichever is later. The Maintenance Superintendent must approve any hours of work beyond 8 hours if the work is not directly related to ice control operations.
9. Only extreme cases of severe ice conditions would warrant winter sand placement on continuous tangent sections of paved roadways. The operator should receive approval from the Engineer or Maintenance Superintendent prior to placement of winter sand material to this high of a degree.

GENERAL WINTER EQUIPMENT OPERATIONS

1. All trucks shall be so equipped that air tanks can be filled prior to starting the truck in the shop. Running time inside the building shall be minimized. Open overhead doors when starting trucks. This requirement is necessary to reduce the amount of exhaust trapped inside the buildings.
2. Extra care shall be exercised when plowing snow or removing ice adjacent to railroad tracks. If any damage to railroad tracks is suspected by an operator during snow removal or ice control operations, it shall be reported to the Engineer, Superintendent or Office Manager immediately so the proper railroad authority can

be informed. If office personnel is not available, daytime and evening phone numbers for Burlington Northern, Minnesota Northern, Northern Plains, and Canadian Pacific will be provided to each operator so any emergency damages to the rail lines can be reported immediately.

Burlington Northern – (Anytime) 1-800-832-5452 and press option for emergency
Northern Plains – 1-701-280-7338 (Anytime Dispatcher)
(Workday) 1-701-229-3330
(Cell) 1-701-740-7844 (Anytime)
(Cell) 1-701-739-2450 (Anytime)
(Cell) 1-218-686-6256 (Anytime)
Minnesota Northern – (Workday) 1-218-281-4704 and press option 6
(Cell) 1-701-739-4124 (Anytime)
(Cell) 1-218-280-2160 (Anytime)
Canadian Pacific – 1-800-766-4357 (Anytime
Dispatcher)
(Workday) 1-218-681-1900

- 3. The attached list of cell phone numbers is for your use for safety and emergency purposes only. The numbers shall not be given out to the general public. Unless approval is given from each individual cell phone owner, personal calls shall be minimized as each of the cell phones is a personal phone.

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