

OLMSTED COUNTY PUBLIC WORKS DEPARTMENT SNOW AND ICE CONTROL POLICY

PURPOSE

To help make citizens of Olmsted County more aware of snow removal procedures that allow for increased safety for the traveling public throughout Olmsted County, and to effectively utilize the resources available to the Public Works Department for snow and ice control.

POLICY

The following policy synopsis will be used as a “press release” at the beginning of each winter season.

OLMSTED COUNTY SNOW REMOVAL POLICY

OVERVIEW

Each year as the Minnesota winter approaches the public is concerned about access to work, school and business. The safety and convenience of the traveling public is the main concern to the Olmsted County Public Works Department. The goal of the Public Works Department is to have all County and Township roads passable as soon as reasonably possible after the snowfall has stopped. The traveling public is reminded to exercise caution and drive with care. The legal speed limit may not be possible depending on conditions. The public is also requested NOT TO CROWD THE PLOW. People who drive during the winter season will encounter snow and ice control equipment. Amber and/or blue flashing lights will generally be the first clue to the presence of snow removal equipment. You should start reducing your speed, pass with care and keep a safe distance, when encountering this equipment.

SNOW AND ICE POLICY

1. Dispatching of Snowplows

The County to the best of its ability will try to maintain the roadways during the course of snow periods. Operations will be halted when it is deemed to hazardous for our operators and the public or if reasonable progress is not made.

If snowfall stops during the night or early morning hours on weekdays, plows will be dispatched between 4:00 a.m. and 6:00 a.m. Weekend plowing will be handled in a similar fashion.

2. Operations

Generally plow operations will consist of three phases, making roads passable, widening and sanding, then general cleaning up.

All County roads will be done first before any Township Roads, under contract with the Public Works Department, will be done.

3. Personal Properties

- a. **Mailboxes and fences** damaged during snow removal will be evaluated case by case. Only those mailboxes and fences that were properly located, installed, and damaged by contact with County equipment will be repaired at the County's expense.
- b. **As snow is plowed from roadways**, operators will try to leave as little snow as possible across driveways. County removal of this windrow is not feasible and remains the property owner's responsibility.
- c. **Residents must remove parked vehicles** from County roads to assist in snow removal.
- d. **Public Works Department personnel may assist** stranded motorists by contacting law enforcement/emergency personnel. The Public Works Department will not attempt to remove stuck vehicles unless directed by law enforcement personnel to eliminate a safety hazard.
- e. **County residents are reminded that it is unlawful to plow snow from driveways onto or across Olmsted County roads.** Piles of snow left on or near the road can freeze into a solid mass creating a hazardous situation for vehicles and snowplows. Accidents and damages caused by snow piles placed in the roadway may result in liability to the property owner. Piles of snow increase the chance of snow drifting onto the roadway.

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SCOPE

Effective snow and ice control is achieved through planning, preparation, and observance of good tactical procedures.

GENERAL

- A. The removal of snow and ice from Olmsted County roads in Minnesota is one of the most important jobs confronting maintenance personnel during the winter season. The Public Works Department will utilize reasonable means to minimize hazards, slippery road surfaces, costly delays, and abnormal energy usage to the road user.
- B. Motorist safety and serviceability of county roads are the primary considerations of maintenance crews. Snow and ice control operations must provide reasonable safety for the public and employees.

POLICY STATEMENT

- A. Guidelines for snow and ice control describing recommended levels of service for various maintenance operations have been prepared for the purpose of promoting greater uniformity county wide in the winter maintenance of our county highway system.
- B. These recommended levels of service should be interpreted as policy for maintenance operations although it is expected that the area maintenance superintendent will continue to exercise judgment in situations where maintenance requirements differ from the guidelines. While variations in local conditions must be considered, consistency should be exercised in an effort to comply with policy.
- C. In order to provide efficient service on the county highway system, most trucks used for snow plowing and winging, sanding, or spreading chemicals will be operated by one person except when conditions exist requiring the use of a second person in the cab. Operations during hours of limited visibility may be hazardous and should be carefully evaluated to insure the safety of our personnel. It is the responsibility of each supervisor to determine that the operators can safely accomplish their assigned task.
- D. Information from the Olmsted County Sheriff's Department is appreciated especially as to weather and road conditions at any time day or night in response to emergency scenes.

- E. The news media should be advised first of extreme conditions and status of operations.
- F. The Olmsted County Board of Commissioners establishes the policy and provides personnel and equipment. The County Engineer enforces the policy in the most efficient manner. The county engineer, maintenance superintendent, and maintenance supervisors, are authorized to call out equipment and/or personnel.

OPERATION GUIDELINES

- A. Presently the county highway system is divided into four classifications according to traffic volumes as shown in Table A.

Table A. Snow and Ice Control Route Classification

Classification	Average Daily Traffic Vehicles Per Day
Principal- Arterial	Over - 10,000
Minor - Arterial	2,000 - 10,000
Major - Collector	500 - 2,000
Minor - Collector	0 - 500

- B. Levels of Service
 Recommended levels of service governing quality are shown in Table B. The guidelines are based on an anticipated average snowstorm of four inches falling in a six to eight hour period. Modification would be expected in a severe or light storm. It is expected that there would be about four severe storms during the winter when the recommended levels of service could not be attained.

Condition of the driving surface describes the desired appearance of the road after a storm before coverage is reduced to the normal 8 hour/day work schedule.

Level of service that is described in Table B is for weekdays which are workdays. Saturdays, Sundays, and holidays may receive a reduced level of service according to the resources available.

The level of service that is described in Table B is a theoretical guideline only. The actual condition of pavement may vary from these guidelines; the degree of variance is dependent on each type of storm encountered and resources available.

Table B. Snow and Ice Control Recommended Levels of Service

Classification	ADT	Recommended Levels of Service
Principal - Arterial	Over 10,000	All lanes will have substantially bare pavement within 48 hours after termination of storm.
Minor - Arterial	2,000 - 10,000	The right lane on divided roadways and both lanes on two lane roads will have bare wheel paths with Intermittent bare pavement within 72 hours.
Major - Collector	500 - 2,000	Both lanes will have intermittent bare wheel paths with sanded hills and curves within 72 hours.
Minor - Collector	Under 500	One wheel path in each lane will have intermittent bare pavement with sanded hills and curves. On gravel roads compacted snow is acceptable with intersection sanded or rocked.

C. Each snow plow route shall be reviewed annually and necessary change made depending on resources available. Snow plow routes may contain segments of road with more than one level of service.

SNOW PLOWING

A. Removal of snow and ice from the roadways is the top priority maintenance operation and takes precedence over other work. Roadways should be cleared and widened out as soon as is reasonably possible given resources available.

B. The principal operations of snow and ice control are:

1. Snow plowing to begin after any appreciable accumulation of snow (2 inches), and to continue throughout the storm before the snow becomes packed by traffic.
2. The spreading of chemicals and abrasives may occur at intersections, hills, curves, bridges, railroad crossing, highway junctions, traffic signal locations and straight away sections of the more heavily traveled County highways. The need for additional applications of abrasives and chemicals will depend on the length of the storm and the chemical's action on the surface.

- C. Care should be taken not to knock over mail boxes or to unnecessarily obstruct intersecting roads and streets or private drives. Patrons of mail routes are responsible for maintaining their mail boxes and must keep the approach to the mail box clear by promptly removing snow, etc. Care must also be taken to prevent damage to all guardrails, whether plate beam or cable type, as well as guard posts, signs, etc.
- D. At railroad crossings, the plow should be raised in time to avoid carrying snow and slush onto the tracks to pack in the flangeways, creating a hazard which could derail the train.
- E. The use of motor graders still remains one of the most effective methods for the removal of ice and compacted snow accumulations. However, care should be exercised in blading operations on sections where chemicals have been applied. If chemicals are applied blading operations should be delayed to give the chlorides time to penetrate through the ice or compacted snow. Chemicals will loosen ice or snow from the pavement surface after which they can be efficiently removed.
- F. County owned equipment shall not be used to tow stalled or disabled vehicles to garages or back onto the roadway. All towing should be performed by responsible private individuals. Employees should offer reasonable emergency aid to occupants of disabled vehicles. Where wrecker service, mechanical attention or services of the sheriff or highway patrol are required, the employee should attempt to make such arrangements if requested. When authorized by law enforcement personnel or maintenance supervisors, employees may remove stalled vehicles from the road if they present a hazard to traffic or maintenance operations. In extreme emergencies with proper authorization, employees may use county equipment to transport occupants of disabled vehicles to a safe place.
- G. As storm conditions vary throughout the maintenance areas, the equipment operators should determine when operations are ineffective and notify the supervisor or area office immediately of changes in weather, visibility and road conditions and ceasing or resumption of operations. During heavy storm periods, roads must be patrolled frequently by all supervisors to inspect and supervise the work.
- H. During lengthy snow falls or storms, plowing should continue as long as adequate visibility permits and reasonable results are obtained. Work should cease if the safety of the crew and equipment is unreasonably endangered or if continuous drifting makes plowing temporarily ineffective. If any roads are blocked, notify the supervisor. Maintain sufficient speed to distribute the snow over ditches and right of way whenever possible consistent with the safety of the traveling public. If your regular equipment is inadequate, inform the supervisor so that arrangements can be made for assignments of types of equipment more suitable for the work required.

- I. Trucks and spreading equipment shall be flushed and cleaned free of all snow and road chemicals periodically as time and work schedule permit.

ICE CONTROL

- A. The primary materials used in maintaining roads in a reasonably safe and serviceable condition throughout the winter season are sodium chloride, calcium chloride and various types of abrasives. The combination of materials used to combat any particular storm condition usually depends on such variable factors as temperature, traffic, wind and time of day. Desired effectiveness and economic considerations are also very important. Ice control includes the removal of sleet, ice, frozen slush ice and hard packed snow.
- B. Sodium chloride is normally used as crushed and screened rock salt shipped in bulk. As salt is economical and readily available, it is the principal de-icing material used in winter maintenance work. It will melt large quantities of snow and ice; however, the melting action is reduced at lower air temperatures. At temperatures above 20 - 25 degrees F., salt* is recognized as being effective and, when combined with calcium chloride, is effective at lower temperatures.
- C. Calcium chloride is available as Type I (regular flake) and Type II (concentrated flake or pellet). Both types are shipped in bulk. The ability to attract moisture and melt snow and ice as soon as applied is the key property of calcium chloride. This, in combination with rock salt, makes it particularly effective for prevention or removal of slippery road conditions. It may be used to attack severe icing conditions at lower temperatures.
- D. Upon warning or evidence of an approaching storm, maintenance forces should go into operation and continue until the storm ceases and the road surface condition meets the recommended level of service. Experience indicates that the job becomes much more difficult if the storm gets ahead of the maintenance forces. It is well to apply chemicals as soon as there is definite indication of snow sticking to the pavement or of the formation of ice. Chemicals (salt* and calcium chloride) should be applied to the middle four feet of the pavement (centerline of a two lane road if it has a normal crown, otherwise the high point of the traveled roadway).

*Salt referred to above is sodium chloride

CHEMICAL USAGE

A. The type and amount of chemical to be used in ice and snow control operations should correspond to such variable factors as temperature (rising, falling), type and amount of precipitation, wind velocity and direction, traffic volume, likelihood of trapping subsequent snowfall, amount and type of accumulation, weather forecasts etc. Supervisors should make an effort to reduce chemical usage wherever possible. Chemical application should be restricted to amounts necessary to meet level of service requirements. (Additional chemicals should not be used solely to attain level of service in the severest storms.) Usage of chemicals shall comply with Minnesota Statute 160.215 which is reproduced below.

B. Chemical Usage Statute

160.215 HIGHWAYS; SNOW REMOVAL; USE OF SALT OR CHEMICALS RESTRICTED. In order to:

- (1) Minimize the harmful or corrosive effects of salt or other chemicals upon vehicles, roadways, and vegetation;
- (2) Reduce the pollution of waters, and
- (3) Reduce the driving hazards resulting from chemicals on windshields; road authorities, including road authorities of cities, responsible for the maintenance of highways or streets during periods when snow and ice are prevalent, shall utilize such salt or other chemicals only at such places as upon hills, at intersections, or upon high speed or arterial roadways where vehicle traction is particularly critical, and only if, in the opinion of the road authorities, removal of snow and ice or reduction of hazardous conditions by blading, plowing, sanding, including chemicals needed for free flow of sand, or natural elements cannot be accomplished within a reasonable time.

C. This statute does not arbitrarily prohibit the use of chemicals on the roadway. Chemicals with abrasives may be used under the conditions specifically outlined in the law.

It is not possible to predetermine precisely when or where or the amount of chemicals with abrasives to be placed on the roadway. Each circumstance involving a hazardous condition and the particular need for vehicle traction must be judged on its own merits with consideration for safety of the traveling public using the particular roadway at the particular time.

As a policy, the salt content of the stockpiled winter sand should not exceed 10 percent.

In very extreme cases (i.e. packed snow and ice, sleet storms) on heavily traveled high speed roadways, a light application of straight chemicals may be applied in order to remove or prevent the adherence of the ice to the

pavement. This does not permit the indiscriminate use of chemicals as a snow and ice removal agent but does specifically have to be used in conjunction with plowing and blading. In the application of rich mixtures or straight chemicals, particular care should be taken to see that the distribution is contained totally within the traveled portion of the road and not upon shoulders or other untraveled areas of the roadway.

SAFETY PRECAUTIONS

The potential for damages to roadside property and to parked and operating vehicles increases greatly under winter conditions.

- A. Bridges require special consideration. Falling ice or snow can cause injury to persons below. When cleaning bridges, observe precautions not to dislodge icicles or allow snow to fall off the side if traffic may be below. Other governmental agencies maintaining roadways over our highways, etc. should be reminded periodically of this precaution.
- B. Frost and ice will form on road surfaces of bridges before other parts of roadway.
- C. Use of snow removal equipment on certain bridges can present unusual problems. It should be decided beforehand what methods or materials can be most effective for each bridge.
- D. Damaged traffic signs and signals should be repaired as soon as possible.
- E. Damage to property or to parked cars, mail boxes, fences, etc., should be reported immediately and the circumstances well documented (with witnesses when available).
- F. Drainage should be kept open if reasonably possible.
- G. Vehicle accidents on ice and snow can become cumulative. When a single vehicle obstructs a roadway, warning should be given to approaching motorists so as to avoid a chain reaction type incident.
- H. Removal of stalled or parked cars that are obstructing snow removal operations should be handled through our regular procedure of contacting the sheriff's office.

- I. During the winter season, special attention should be given to troublesome areas, such as curves and grades approaching road intersections, steep grades, and sharp turns. Small isolated slippery areas should also be given reasonable attention to minimize hazards.

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