

TOWN OF RIVER FALLS
WINTER
ROAD MAINTENANCE POLICY

TABLE OF CONTENTS

Introduction.....	2
Snow and Ice Control.....	3
Snow Removal from Roads	4
Ice Removal.....	4
Snow Plowing and Ice Priority Roads.....	5
Snow Plowing Agreements.....	5
Circumstances or Exceptions of this Policy.....	6
Snow Season Parking.....	6
Snow Removal from Driveways.....	6
Mailboxes	7
Employees.....	8
Where to Call for Information and Complaints.....	9
Salt.....	10
Environmental Impacts of Salt.....	11
Abrasives.....	12
Salt-abrasive Mixtures.....	13

October 2, 2000
Revised 5/7/07; 2/18/08; 10/19/09; 12/5/11; 11/19/12; 2/1/16

INTRODUCTION

The Town of River Falls roads are subject to freezing rain, ice, snow, and snow drifting any time during fall, winter and spring months. Normally winter storms can be expected during the months of November through April. The responsibility for keeping vehicular traffic moving on the Town's nearly 60.24 miles of roads during and following snow and ice storms lies with the Town's two road maintenance employees under the direction of the Town Chairperson and Supervisors.

The following policy and plan of operation for winter road maintenance has been adopted by the Town Board.

SNOW AND ICE CONTROL

The Town is responsible for maintenance of 60.24 miles of roads. Approximately 30 miles are classified into first priority plowing and sanding roads. The balance of the roads will be plowed and sanded as time allows.

According to State Statute §81.15 the Town has three (3) weeks to remove natural snow and ice accumulation. The Town's goal is to maintain the roads in as good winter driving conditions as weather, equipment, and budgets allows.

Planning and preparing for snow and ice operations is difficult due to the uniqueness of each storm. No two storms are ever identical. The interrelationship of factors such as rate of snowfall, moisture content, accumulation, temperature, time of day and wind velocity determines the uniqueness of each storm. The Town operations must be flexible enough to combat the unique aspect of each storm.

The amount of snow accumulation and time of day at which the storm occurs has a significant affect. High wind condition may cause roads to quickly fill in again with drifted snow. The temperature at the time of the storm will also affect conditions. Snow falling on warm pavement will clear off more easily. However, a moderate storm, coupled with a prolonged sub-freezing period will greatly increase the removal effort. Light, dry snows handle more easily than heavy wet snow.

Town personnel utilize area radio stations, TV, Pierce County Highway Department and State DOT forecasts to the extent they are available.

During snow and ice storms town road crews will respond to emergency conditions to the extent practicable. Road maintenance employees will respond to emergency requests such as fire calls, ambulance, or accidents at the direction of the Town Chairperson or designee. The Town road crews will not plow or sand on private property without authorization from the Town Chairperson. The Town will not take any responsibility for removal of snow that is plowed into private driveways from the road clearing operation. Driveway maintenance is the property owners responsibility.

It can be expected that road maintenance services during off hours will be minimal and only provided when extreme storm conditions arise. The motorist should expect reduced highway mobility (traveling less than posted speed limits) during the winter storm.

SNOW REMOVAL FROM ROADS

Planning for a snow removal operation begins when any snow is expected to accumulate. Each employee has priority roads to plow. The Town Chairperson will be aware of this plan and will review it periodically with road employees.

ICE REMOVAL

Due to cost and lack of approved storage buildings, the Town rarely applies straight rock salt to their roadways. The Town uses an abrasive sand treated with 100 to 200 pounds of salt per cubic yard. This amount of salt is necessary to keep sand from freezing in the pile and keeping the sand workable. Sand is applied only at curves, intersections, hills and steep grade hills. Certain weather conditions may allow additional small amounts of salt in the sand to promote a thawing or clearing of compacted snow or ice.

SNOW PLOWING AND ICE PRIORITY ROADS

Priority roads are classified as follows:

Number 1: Major and minor collector roads (State of Wisconsin - by function).

Number 2: All daily traveled school bus routes.

Number 3: All daily traveled milk routes.

All other roads will be plowed as soon as equipment is available or in the immediate area with available time.

In order to provide efficient operation it may be necessary to partially complete a minor road to reach a major road of higher priority.

SNOW PLOWING AGREEMENTS

Agreements have been signed with the City of River Falls and the Towns of Clifton, Kinnickinnic, and Martell, on exchange plowing of roads. Following is a list of the municipalities and the roads they have agreed to plow and sand:

City of River Falls-----950th St. from Cemetery Road to the dead end
Town of River Falls-----All of 975th St. from Cemetery Road to the dead end
Town of Clifton-----860th Ave. to the dead end at W10314 860th Ave.
Town of River Falls-----690th Ave. to the intersection of 1070th St. in Clifton.
Town of Martell-----870th Ave. to County Rd. W.
Town of Martell-----810th Ave. from W7251 810th Ave. to N8018 747th St.
Town of River Falls-----730th St. from 770th Ave. to the dead end
Town of River Falls-----850th St. to County Rd. M in Kinnickinnic.
Town of Kinnickinnic-----790th St. to State Rd. 29

The Town of River Falls will also have on file an agreement for substitute trucks and drivers in the event of equipment breakdown.

CIRCUMSTANCES OR EXCEPTIONS OF THIS POLICY

This policy will be adjusted to meet specific storm circumstances. Listed below are several special conditions:

- Plowing of snow will be limited in storms early in the fall and late spring on gravel surface roads, due to the lack of frost to support the snow plows. Plowing gravel off the road creates a hazard as well as being very expensive to the taxpayer.
- Operations may be suspended or reduced due to equipment breakdowns.

The Town Chairperson has the authority to suspend snow and ice control operations. This may be done in severe storm conditions when there is danger to operators or it is not practical or cost effective to continue.

SNOW SEASON PARKING

No person shall park or leave standing any motor vehicle on any street, road or highway right-of-way in the Town from November 1st of any year through April 1st of the following year, except by permit of the Town Board. Any vehicle found to be in violation of this section may be towed by the Town at the owner's expense.

SNOW REMOVAL FROM DRIVEWAYS

Things you should consider about your snow removal from your driveway:

- Standing in your driveway, facing the road, shovel all your snow to your right at your driveway entrance, thus the snow plow will take the snow down the road.
- If possible, don't plow your driveway until the snow plow has gone by.

State Statute 941.03 and the Town of River Falls General Code prohibit plowing any snow from driveways onto town roads. You are liable for fines and damages. If you hire someone to plow your driveway, be sure they know about this policy.

According to State Statute 86.105, the Town of River Falls may plow private driveways in an emergency situation. This will be done with the approval of the Town Chairperson or board designee.

The Town reserves the right to deny the request if the conditions are hazardous and/or present unnecessary risks to Town employees or equipment. Some private driveways, because of steep and narrow construction, are not built to accommodate the Town's heavy plowing equipment. These driveways could put the equipment at risk of damage. Our first concern is the safety of town employees as they maintain our public roads. The Town will only plow and sand driveways which have a grade of 10% or less.

Fees for plowing driveways shall be consistent with the established hourly rates for labor and equipment based on the current town fee schedule. Sand/salt is an additional minimum fee and varies based on length of driveway and volume applied. In the event that Town equipment becomes stuck due to poor conditions, towing service fees, and down time for Town equipment and labor, will be charged to the landowner.

MAILBOXES

Mailboxes are the only structure that private owners are allowed to install within the right-of-way without a permit as a matter of convenience to the landowners. Neither the Town of River Falls nor the U.S. Postal Service issues written permits for the placement of mailboxes within the public right-of-way. The mailbox installation and support along with the on-going maintenance and conformity with current U.S. Postal Service standards are the responsibility of the property owner. All mailboxes placed within the public right-of-way are owned by the property owner and are placed there at the owner's risk.

The proper location and installation of mailboxes can minimize potential hazards and provide for safe travel, convenient mail delivery, and effectively accommodate maintenance activities.

All mailboxes should be mounted at a height of 41 to 45 inches from the road surface to the bottom of the mailbox. The mailbox should be installed 6 to 8 inches from the edge of the curb

or road to the front of the mailbox door. Mailbox posts need to be a minimum of 2 feet off the shoulder.

Mailbox supports must be designed so that if struck it will bend or fall away from the striking vehicle to prevent severe damage to the vehicle or injury to the traveling public. Supports which will break away under vehicle impact include the following: 4 x 4 inch pine posts, steel channel section V-posts (less than three pounds per foot) and steel posts with a two inch inside diameter. Massive supports such as telephone poles, heavy metal posts, concrete posts, antique farm equipment, or other similar items are prohibited. Mailboxes must meet minimum/maximum standards of support, setting and size. A plastic mailbox becomes very brittle in the winter. An oversized mailbox may collapse from the weight of the snow.

Operators are instructed to be very cautious near mail boxes. In most cases a properly installed mail box will permit a snow plow to clear snow around it. Most cases of damaged mail boxes are caused by heavy snow hitting the box. The mail boxes are not usually hit by the plow. A mailbox with alleged damage from a direct hit by a town snow plow must be reported immediately and will be visually inspected by one member of the town board and one road employee. The Town will repair or pay up to \$25 to replace the box and post. The Town assumes no other liability for mail box damage or losses.

EMPLOYEES

When a major snow storm occurs, the Town Chairperson may at his/her discretion, hire one or more part-time persons to assist the two full time employees in operating Town equipment. The Town Chairperson may at his/her discretion hire one or more persons to operate town equipment if a full-time employee is unavailable. Agreements with substitute drivers will be on file and updated annually.

WHERE TO CALL FOR INFORMATION AND COMPLAINTS

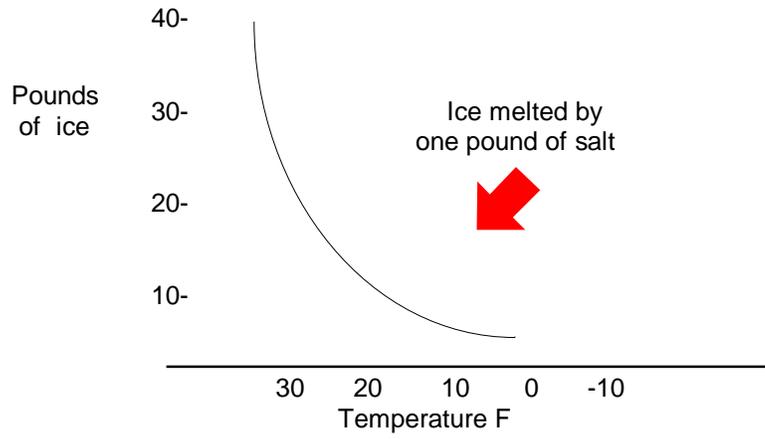
Information about road conditions and operations can be obtained by calling the Town Chairperson. After hours, call the Town Chairperson or Supervisors at their respective residences.

Complaints should be directed to the Town Chairperson. These will be investigated and discussed with the Town Board. Final action on complaints rests with the Board.

The Town Board, employees, spouses and family members will not respond to rude or belligerent complainants.

ADDENDUM - SALT

- | | | |
|-----------------|------------|--|
| USES | Anti-Icing | - Preventing snow/ice from bonding to pavement. |
| | Anti-icing | - Keep snow in plowable condition (slush). |
| | De-Icing | - Break-up ice/packed snow. |
| | Melting | - Melt glare/black ice. |
| | Melting | - Melt snow/ice residue after plowing. |
| CHARACTERISTICS | | - Requires water to dissolve salt. |
| | | - Requires heat to melt snow and ice. |
| | | - Very sensitive to temperature of snow and ice. |
| | | - Melting takes time. |
| APPLICATION | | - Apply only amount required for temperature, time and use |
| | | - Too little will refreeze; too much is a waste. |
| | | - Normal range is 100-300 pounds per lane mile. |
| | | - Eutectic temperature of -6°F, practical range 15-20°F rising. |
| | | - Concentrate spread near centerline or high side of pavement and
at critical locations. Watch for wind action. |
| | | - Apply early and let it work before plowing off. |
| | | - Do not apply if too cold or if dry snow is blowing clear of
pavement. |
| | | - Apply in increments to avoid over salting. |
| DEVELOPMENTS | | - A gradation of very fine salt is being evaluated for anti-icing. |
| | | - Liquid salt (23% solution) is used to prewet salt and applied
directly to pavements for anti-icing. The liquid salt starts to gel
below 10°F. |
| SPECIFICATIONS | | - A gradation of fine and coarse is useful to accommodate all
conditions (fine melts fast and coarse penetrates) ASTM
DO632-72, Type 1, Grade 1. |
| | | - Must be delivered and stored dry. No visible “free” moisture is
desirable. Less than 2% moisture. |



Salt melts more ice at higher temperatures.

ENVIRONMENTAL IMPACTS OF SALT

Salt solutions disturb a plants metabolism (water loss) and can create temporary loss of leaves etc., up to plant death. Splash or direct soil saturation can be harmful. New growth may be first affected. Timing may be more important than total amounts reaching the plant. Resistance is lowest during the growing season and highest when dormant. Low branches and young plants are more susceptible.

SALT TOLERANCE OF TREES*

Low Salt Tolerance

Filbert
Compact boxwood
Sugar maple
Red maple
Lambardy poplar
Speckled alder
Sycamore maple
Larch
Black alder
Italian poplar
European beech
Rose
Pineapple guave
Viburnum
Arctic blue willow
Spirea
Multiflora rose
Winged euonymus
Barberry
vine
Little leaf linden
Black walnut

Moderate Salt Tolerance

Birch
Aspen
Cottonwood
Hard maple
Beech
White spruce
Balsam fir
Douglas fir
Blue spruce
Texas privet
Xylosma
Pyracantha
European black current
Siberian crab
Boxelder maple
Japanese honeysuckle
Eastern red cedar
Green ash
Ponderosa pine

Golden willow
Lantona
Spreading juniper
Arbor vitae
Silver buffalo berry

Good Salt Tolerance

Mulberry
Apricot
White oak
Red oak
Hawthorne
Tamarix
Squaw bush
Russian olive
Scotch elm
White poplar
Osier Willow
Black locust
Gray poplar
Silver poplar
English oak
White acacia
Bottlebush
Oleander
Common matrimony

*from Deicing Salt And The Environment, Salt Institute, 1990

SALT TOLERANCE OF GRASS*

Sensitive

White Dutch clover
Meadow foxtail
Alsike clover
Red clover
Ladino clover
Burnet

Moderately Tolerant

White sweet clover
Yellow sweet clover
Perennial rye grass
Mountain brome
Harding grass
Beardless wild rye
Strawberry clover
Dallis grass
Sudan grass
Hubram cover
Alfalfa
Orchard grass
Blue grama
Meadow fescue
Reed conary
Big trefoil
Smooth brome
Tall meadow oat grass
Milkvetch
Sourclover

Tolerant

Alkali sacaton
Saltgrass
Nuttall alkali grass
Bermuda grass
Tall wheat grass
Rhodas grass
Rescue grass
Canada wild rye
Western wheat grass
Tall fescue
Birdsfoot trefoil

*from Deicing Salt And The Environment, Salt Institute, 1990

ABRASIVES

TYPES

- sand, crushed aggregate, cinders, slag, bottom ash

USE

- improve traction of snow and ice covered pavements

ADVANTAGES

- works immediately upon application
- not temperature dependent
- visible to the public
- materials available locally
- reasonable material cost
- applied with variety of available equipment
- may be more acceptable to the public than salt

DISADVANTAGES

- does not melt ice and snow
- traffic reduces effectiveness
 - blown off
 - pushed into snow
- covered by new snow
- poor on hard ice

- clogs drains and waterways
 - vehicle corrosion with freeze-proofing salt and chipping paint dust (after storm) contributes to particulate air pollution, limit fines to reduce impacts
 - may require clean up after storm
 - adequate coverage may require more equipment trips per mile than salt
- MATERIAL QUALITY**
- sharp edges, crushed rather than pit run
 - hard, in order to prevent breakdown under traffic
 - maximum size limited to 1/4 (100% passing 3/8 inch)
 - clean, eliminate or minimize material passing #50 sieve
- APPLICATION**
- rates of 1/2 - 2 cubic yards per two lane mile are common
 - volume is more important than weight
 - concentrate at critical locations:
 - hills
 - curves
 - intersection
 - railroad crossings
 - bridges
 - don't apply if it will soon be covered with new snow
 - heavy traffic may require re-application
 - don't plow it off
 - be careful when applying to hard (glare) ice
- STORAGE**
- abrasives with salt should be covered and stored on an impermeable base

SALT-ABRASIVE MIXTURES

- TYPES**
- more salt than necessary to freeze-proof abrasive
 - mixtures up to equal parts (volume of salt and abrasive have been used)
- USE**
- immediately improve friction plus
 - melt snow and ice when temperatures allow
- ADVANTAGES**
- one material (mixture) for all temperature conditions
 - may reduce deicing chemical use (if can wait for favorable temperatures)
 - improved friction while waiting for deicing action
- DISADVANTAGES**
- salt melting action reduces friction improvement (conflicting goals)
 - difficult to achieve optimum application rate of either material. May be too much salt and not enough abrasive or vice versa.

- may increase salt use over straight application of separate materials
- may lose salt (due to traffic action) while waiting for favorable temperatures
- more trips per mile will be required compared to straight salt

SALT CONSIDERATIONS-

desirable to have coarse graded salt. Large particles burrow into snow pack and aid breakup. Fines promote surface melting and loss of friction.

- salt mixed with abrasives has reduced melting over same amount of straight salt. Less melting capability (up to 50% less) likely due to absorption by aggregate.

APPLICATION

- rates of 200 to 500 lbs. per 2 land mile may be common for equal mixtures of salt and sand