



TOWN COUNCIL – AGENDA REQUEST FORM

THIS FORM WILL BECOME PART OF THE BACKGROUND INFORMATION USED BY THE COUNCIL AND PUBLIC

Please submit Agenda Request Form, **including back up information, 8 days prior** to the requested meeting date. **Public Hearing requests must be submitted 20 days prior to requested meeting date to meet publication deadlines** (exceptions may be authorized by the Town Manager, Chairman/Vice Chair).

MEETING INFORMATION

Date Submitted: October 3, 2022
Submitted by: Public Works Director Kyle Fox
Department:
Speakers:

Date of Meeting: October 22, 2022
Time Required: 20 minutes
Background Info. Supplied: Yes: No:

CATEGORY OF BUSINESS (PLEASE PLACE AN "X" IN THE APPROPRIATE BOX)

Appointment:	<input type="checkbox"/>	Recognition/Resignation/Retirement:	<input type="checkbox"/>
Public Hearing:	<input type="checkbox"/>	Old Business:	<input type="checkbox"/>
New Business:	<input checked="" type="checkbox"/>	Consent Agenda:	<input type="checkbox"/>
Nonpublic:	<input type="checkbox"/>	Other:	<input type="checkbox"/>

TITLE OF ITEM

Proposed Winter Maintenance / Salt Use Policy & Procedure Updates

DESCRIPTION OF ITEM

The Town Council to consider the recommended updates to the current Winter Maintenance Policy which includes the previously separate Salt Use Policy within it.

REFERENCE (IF KNOWN)

RSA:	Warrant Article:	_____
Charter Article:	Town Meeting:	_____
Other:	N/A	

EQUIPMENT REQUIRED (PLEASE PLACE AN "X" IN THE APPROPRIATE BOX)

Projector:	<input type="checkbox"/>	Grant Requirements:	<input type="checkbox"/>
Easel:	<input type="checkbox"/>	Joint Meeting:	<input type="checkbox"/>
Special Seating:	<input type="checkbox"/>	Other:	<input type="checkbox"/>
Laptop:	<input type="checkbox"/>	None:	<input type="checkbox"/>

CONTACT INFORMATION

Name:	<u>Kyle Fox</u>	Address:	<u>6 Baboosic Lake Road</u>
Phone Number:	<u>603-424-5137</u>	Email Address:	<u>kfox@merrimacknh.gov</u>

APPROVAL

Town Manager: Yes No: Chair/Vice Chair: Yes No:
Hold for Meeting Date: _____



TOWN OF MERRIMACK INTER-DEPARTMENT COMMUNICATION

DATE: October 3, 2022

AT (OFFICE): Department of Public Works

FROM: Kyle Fox ⁷³
Public Works Director

SUBJECT: Proposed Winter Maintenance and Salt Use Policy Update

TO: Paul Micali
Town Manager

I am pleased to present you with a draft update to the Town of Merrimack's Winter Maintenance and Salt Use Policy. The draft policy and associated procedures can be found as Attachment A to this memo. The attached policy would replace the existing Draft III Winter maintenance policy and Procedures from the 1980's and the July 5, 1984 Salt Use Policy – those policies can be found in attachment B to this memo.

The draft policy and procedures were developed by Highway Division staff, utilizing best management practices and guidance from Primex, the Town's risk management provider, the previous policies, and the needs of our stakeholders. The policy document is intended to be a high level guiding principle document that informs the procedures used by the Town's operations staff. The procedures give a more detailed view of the winter maintenance and salt use procedure proposed by Public Works.

The draft policy and procedures were completed in June. In an effort to provide you and the Town Council with stakeholder feedback regarding the proposed policy, I sent out a request for comments on July 25 to various Departments and groups in Town. Lori Barrett, Operations Manager and I presented the draft policy to Merrimack Village District (MVD) Commissioners at their July 18, 2022 Board Meeting. The solicitation for comments and the comments received can be found in attachment C.

MVD is a key stakeholder in our winter maintenance operations. Throughout the development of these draft documents, we have been in contact with MVD and participated in a number of their salt mitigation meetings as a partner to the process. One important outcome of their mitigation meetings was an award MVD received from NHDES to purchase signage to delineate at our road intersections where the locations of the Wellhead Protection Areas are (WHPAs). We are assisting MVD with the installation of the signs as part of the partnership. Once the Town Council approves a new Winter Maintenance and Salt Use Policy, it is our intention to utilize the posts that hold the WHPA signs to install new *No Salt* and *Limited Salt Use* signs at appropriate locations at or in the WHPAs.

We are looking forward to discussing the draft policy and procedure with you and the Town Council. Please let me know if you have any questions.

CC: Lori Barrett, Operations Manager

Attachment A

Draft Winter Maintenance and Salt Use Policy

STANDARD OPERATING POLICY
Merrimack, New Hampshire

Date: Draft June 2022

Policy: Winter Maintenance and Salt Use Policy

Governing Laws: RSA 231:92-a, RSA 507-B:2-b; *Chapter 183 Vehicles and Traffic, Article III - Parking Restrictions; Chapter Streets and Sidewalks 169:4 Snow Obstruction on Streets*

Approval Date:

Next Review Date:

OBJECTIVE: It is the goal and intent of the Town of Merrimack to provide efficient, environmentally responsible and cost-effective winter maintenance, snow removal and ice control on the roadways, sidewalks and municipal parking lots of the municipality for the safety and benefit of the Town's residents, businesses and the general public.

PROCEDURE: The objective stated above will be achieved by implementation and execution of the procedures and tasks outlined in the Town of Merrimack's Winter Maintenance and Salt Use Procedures. Due to the many variables that are inherent in New England weather, each storm and/or weather event may require different effort and/or emphasis on any number of maintenance tasks, which together, determine the overall winter maintenance, snow removal or ice control strategy.

LEVEL OF SERVICE: It is not possible to maintain snow and ice-free roads or sidewalks during a storm. It is the intention of the Town to utilize its best efforts, within the means available, to provide practical, safe access to homes, businesses and municipal facilities during and after winter storms.

Notwithstanding with any other provisions of this policy, snow removal or treatment operations may be suspended at any time when continuing operations would pose a hazard to persons or property.

Pre-treatment and ice control may be addressed prior to the actual storm beginning, during the actual storm as seen effective, and following the storm. It should be noted that salt has a much slower effect on melting snow and ice at temperatures below 20 degrees Fahrenheit, and consequently may not be applied until it is warmer.

It is the Town's policy to start to conduct snow removal operations upon accumulations of (2) two-inches of snowfall. Removal of snow shall always be by mechanical means when practical before implementing chemical use. The Operations Manager may, at his or her discretion based upon weather information reports, elect to not remove snow until greater or lesser accumulations, dependent on time of year and changing weather conditions before, during and after a storm.

Staffing for winter storms will be determined by the Operations Manager utilizing available information provided by contracted weather forecasting service, road weather information systems (RWIS) and any other available information. During off hours, nights and weekends, the Merrimack Police Department shall notify the on-call Public Works Highway Foreman that road conditions warrant snow removal or ice control response.

Sidewalk snow clearance will be conducted as soon as practical after winter storms. Equipment and personnel availability and the need to maintain safe roadways will take priority.

LOW SALT OR SALT FREE AREAS: The Town of Merrimack has established a list of roadways or portions of roadways as "low salt or No Salt" areas to assist in protecting drinking water resources. In the event of extreme icing or winter conditions, the Town may, at its discretion, decide it is in the best interest for public safety to salt roadways. Gravel roads will not be treated with salt at any time during winter maintenance.

No Salt Route	Gravel Roads Subdivision Roads within the Wellhead Protection Area
Limited Salt Route	Collector/Arterial Roads within the Wellhead Protection Area Subdivision Roads without Access to Public Water
Salt Route	All Other Roads

No salt routes may be treated with aggregates, abrasives or non-chloride based chemicals.

Limited salt routes may be treated with aggregates, abrasives, non-chloride based chemicals, or chloride based chemicals at an application rate up to 50% of normal application rates.

Salt routes may be treated with aggregates, abrasives, non-chloride based chemicals, or chloride based chemicals per normal application rates.

COMMAND: Direction of all winter maintenance activities for the Town of Merrimack is vested with the Public Works Director or his/her designee.

EXECUTION: The policy outlined above is intended to inform the standard operating procedures for winter maintenance, snow removal and/or ice control for the Town of Merrimack. One or more of the following, which may delay or prevent the implementation of this policy, may affect all or any part of this Policy:

- Equipment Breakdown or availability
- Snow Accumulation in Excess of 1" Per Hour
- Extreme weather conditions; Freezing Rain, Icing, low temperatures, windy conditions
- Traffic Congestion

- Emergencies
- Personnel illness or employee shortages
- Right-Of-Way Obstructions
- Other events beyond the reasonable control of the Town

MAILBOXES: Occasionally, mailboxes are damaged during snow plowing operations, this damage is not intentional and in most cases is unavoidable. Reporting the damage to the Highway Division in a timely manner will ensure minimal mail delivery interruption as a temporary mailbox will be placed at the curb within a reasonable timeframe upon completion of the storm until the necessary repair or replacement can be completed.

The Town will only replace mailboxes if they had been previously installed to USPS standards and able to withstand the weight or lateral force of the snow rolling off a plow. Posts that are poorly installed, rotted or too weak to withstand winter weather are not the responsibility of the Town. The mailbox and/or post replacement is a standard size white or black box mailbox and/or a 4x4 pressure treated wood post (standard installation). If the property owner chooses, they may be reimbursed the cost of the standard installation towards the replacement of the mailbox and/or post. Should a difference of opinion between the property owner and the town occur regarding the repair or replacement of the mailbox and/or post, a claim will be submitted to the Town's insurance carrier for review and resolution.

DAMAGE TO PRIVATE PROPERTY: The Town shall not be held liable for damages to private property that is located within the public right of way. (RSA 231:90 - 92-a)

In the event of personal property damage, the Town of Merrimack will only be responsible to repair or replace damaged property having been in actual contact with the snow removal equipment that is on private property and not within the public right-of-way. In the event that lawn damage occurs during plowing operations the Town will repair the damage in the spring. The Town will assume no responsibility for damage to underground irrigation systems, private lighting, trees, shrubs, fencing, or similar landscaping installed in the right-of-way during snow plowing or ice control operations.

NOTICE: This policy may be posted in appropriate public places in the Town including the Town's website, www.merrimackng.gov, as determined by the Town Manager. All residents are encouraged to familiarize themselves with the content as it describes the condition that one might encounter before, during and following a winter storm event.

ADOPTION: The Town of Merrimack has adopted the Winter Operations Snow Removal and Ice Control Policy effective June ____, 2022.

Finlay C. Rothhaus, Chairman

Nancy M. Harrington, Vice Chair

Thomas P. Koenig, Councilor

Barbara Healey, Councilor

Nancy A. Murphy, Councilor

Lon S. Woods, Councilor

Andy Hunter, Councilor

TOWN OF MERRIMACK, NH WINTER MAINTENANCE AND SALT USE PROCEDURES

EQUIPMENT: The Highway Division utilizes all the assets of the Division as needed to address snow emergencies. A list of the current rolling stock assets is included in the Appendix A.

All spreaders will be calibrated each year before winter maintenance begins and following any repairs to the spreader or related equipment to ensure proper application rate. Calibration will be completed per UNH T² Green SnowPro training workbook, latest edition.

PERSONNEL: The Town of Merrimack has twenty-three (23) full-time Highway positions and five (5) Equipment Maintenance positions assigned to its winter maintenance operations.

Contracted plow services are utilized to maintain a number of municipal parking lots. Details of the services are included in Appendix E.

Employees are trained on the Town's Winter Maintenance and Salt Use Procedures at our annual winter kick off meeting and through the UNH T² Green SnowPro Workshop which teaches best management practices on salt reduction for winter operations.

Merrimack Public Works is staffed in a single shift model. Winter storms carry the requirement for employees to work long hours including multiple day events. Employees are encouraged to take breaks as needed to operate efficiently and safely throughout the duration of the storm.

ROUTES: The Town is divided into 10 pre-treat routes that cover the Town's major and minor arterial roads, collector roads, subdivision primary roads, and municipal parking lots as shown in Appendix B. The Town is divided into six plow zones for plowing operations that are further broken into three routes for each zone as shown in Appendix C. No salt roads and no salt use roads are identified in appendix B and C to help operators know when material restrictions exist. The Town has three levels of service priority for sidewalk winter maintenance as shown in Appendix D.

MATERIALS: The Highway Division uses a combination of salt, sand and liquid deicer each winter season.

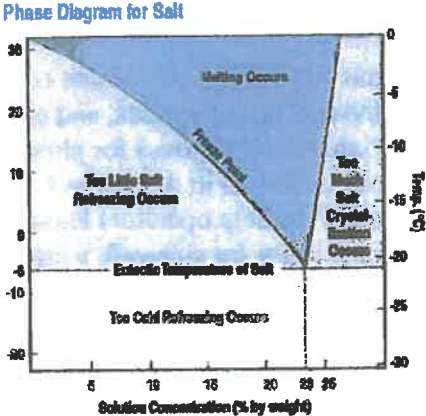
Sand is used as an abrasive and is applied to the road to improve the traction of motor vehicles. Gravel roads will only be treated with aggregates or abrasives. Sand is purchased each year and stockpiled near the Highway Division's salt storage building.

Salt use will be used in accordance with the Winter Maintenance and Salt Use Policy. The salt is stockpiled inside the salt building located at 80 Turkey Hill Rd which is capable of storing approximately 3000 tons. Salt is employed by the Division as a de-icing and anti-icing agent and may be applied at the beginning of the storm, before plowing operations begin. Salt will be used on those roads that have sufficient enough traffic volume to work the brine across the roadway. The treatment is applied to the center of the roadway where traffic can activate it without bouncing/scattering off the traveled way. The treatment, in conjunction with traffic action, creates a watery brine preventing snow and ice from adhering to the roadway. The road crown assists with the spreading of the brine mixture.

Salt and liquid calcium or magnesium chloride, are employed as anti-icing and de-icing agents. Salt is mixed with liquid deicers to improve its effectiveness at lower temperatures. In general salt by itself starts to be less effective at temperatures below 20 degrees Fahrenheit. When mixed with liquid deicers, salt can be effectively used at temperatures as low as 5 to 10 degrees Fahrenheit. Application rates are adjusted based on the temperatures and type of moisture during the winter event.

POUNDS OF ICE MELTED PER POUND OF SALT	
Temperature Degrees F	One Pound of Sodium Chloride (Salt)
30	46.3 lb of ice
20	8.6 lb of ice
15	6.3 lb of ice
10	4.9 lb of ice
5	4.1 lb of ice
0	3.7 lb of ice
-6	3.2 lb of ice

Note: A reference from the Snowfighter's Handbook published by the Salt Institute shows just how quickly salt's effectiveness plunges with temperature. Referenced in UNH T² Green SnowPro Workbook.



The following chart Salt Application Rates for Deicing Roads will be used as a general guideline for material application during winter operations.

Salt Application Rates for Deicing Roads (Pounds per Lane Mile)

Pavement Temp. (°F) and Trend (↑↓)	Weather Condition	Maintenance Actions	Salt Prewet - Pretreated with Salt Brine	Salt Prewet - Pretreated with Other Blends	Dry Salt	Winter Sand
>30↑	Snow	Plow, treat intersections only	150	125	150	Not recommended
	Frz. Rain	Apply chemical	175	150	200	
30↓	Snow	Plow and apply chemical	175	150	200	Not recommended
	Frz. Rain	Apply chemical	200	175	225	
25-30↑	Snow	Plow and apply chemical	200	175	225	No recommended
	Frz. Rain	Apply chemical	225	200	225-275	
25-30↓	Snow	Plow and apply chemical	250	200	275	Not recommended
	Frz. Rain	Apply chemical	275	250	275-300	450
20-25↑	Snow or Frz. Rain	Plow and apply chemical	275	275	275-300	450 for Frz. Rain
20-25↓	Snow	Plow and apply chemical	275	250	300-325	Not recommended
	Frz. Rain	Apply chemical	300	275	325-400	450
15-20↑	Snow	Plow and apply chemical	300	275	325	Not recommended
	Frz. Rain	Apply chemical	300-375	275-300	325-400	450
15-20↓	Snow or Frz. Rain	Plow and apply chemical	325	300	350	450 for Frz. Rain
0 to 15↑↓	Snow	Plow, treat with blends, sand hazardous areas	Not recommended	300-350	Not recommended	600 and spot-treat as needed
<0	Snow	Plow, treat with blends, sand hazardous areas	Not recommended	350-500	Not recommended	600 and spot-treat as needed

COMMUNICATIONS: Public Works equipment is furnished with two way radios capable of transmitting and receiving communications. Each piece of plow equipment is assigned a unique call number. Radios are manned at the Highway Facility allowing communication with Fire and Police Departments.

Supervisors have cell phones and that are used to communicate with each other, the Highway Facility and Police and Fire if necessary.

Snow plow equipment is furnished with GPS monitoring system. This allows supervisors to track progress and ensure total completion during a snow/ice event. This will also allow supervisors to locate and dispatch the nearest truck to an area of concern. The GPS system allows trucks to be located in the event of an emergency or equipment failure.

PARKING AND PUBLIC SAFETY CONCERNS: The Town has enacted a winter parking ban effective from November 15th to April 15th of each year. No vehicle or trailer shall be parked on any public street or highway between the hours of 11:00 p.m. and 6:00 a.m. The Town has the right to ticket or tow violators. The purpose of this winter parking ban is to allow winter maintenance crews unobstructed snow removal and ice control routes, as much as possible, to maintain the maximum effectiveness of their efforts. The ordinance can be found in Town code 183-17.

PLOW ROUTE PRIORITIES: With approximately 180 centerline miles of roads from which to remove snow and control ice, the Highway Division assigns priorities for winter maintenance route activity. Priorities within each zone generally follow the guidelines below;

Priority One –Major and minor arterial roads, collector roads, school areas and selected intersections, hills and curves throughout the Town.

Priority Two – These are the remaining collector and residential streets that complete the Town's road network.

ROADS NOT RECEIVING WINTER MAINTENANCE: The Town of Merrimack does not maintain a number of roadways as part of its ongoing winter maintenance activities. The areas not maintained by the Town include:

- A. Town roads classified as Class VI roads
- B. Private roads
- C. Roads maintained or within the jurisdiction of the State of NH DOT
- D. School District sidewalks and parking areas, which are the responsibility of the school district. **Note: O'Gara Dr and Lyons Rd are roads owned by the School District but plowed by Town forces.

SIDEWALK SNOW REMOVAL:

- A. Sidewalk snow clearance will not begin until all roads have been cleared and treated in accordance with the Winter Maintenance and Salt Use Policy. If there are insufficient personnel available to conduct sidewalk snow removal operations, as well as street and road clearance, the streets and roads shall take priority.
- B. If there are sidewalks leading to the schools, these will be considered priority, and be cleared first. See attached Appendix D for the list of sidewalk priorities.

POST STORM OPERATIONS: There will be a continued effort after the end of the precipitation to mechanically scrape any snow and or ice accumulation on the roadway. This effort may continue immediately following the storm or on the subsequent work day or days depending upon circumstances and road conditions.

Snow banks resulting from the previous storm accumulations shall be pushed back, or shelved, using the plow and wing of the equipment to make space for future snow storms as deemed necessary by the Operations Manager.

Removal of accumulation of snow from intersections, cul-de-sacs and municipal parking lots may be required to ensure safety for our winter operations and the motoring public. Removal of snow would be done at the direction of the Operations Manager in accordance with environmental regulations.

APPENDIX A

CURRENT EQUIPMENT LIST FOR

WINTER OPERATIONS

APPENDIX A
Current Equipment List for Winter Operations

Unit I.D.	Description	Front Plow	Wing Plow	Unibody/ Spreader	Liquid Tank
H-2	F-250	Yes			
H-3	F-250 Ext cab	Yes			
H-4	F-250 Ext cab	Yes			
H-5	F-250	Yes			
H-6	F-250 ext cab	Yes			
H-7	F-350 dump	Yes			
H-8	F-350 dump	Yes			
H-9	F-350 dump	Yes			
H-10	F-450 dump	Yes			
H-11	F-350 crew cab flatbed	Yes			
H-12	Grader	Yes	Yes		
H-13	Volvo Excavator				
H-16	CAT 938M Loader	Yes			
H-17	CAT backhoe	Yes			
H-18	6 whl Bucket truck	No	No		
H-19	6 whl Basin truck	No	No		
H-20	6-whl dump	Yes	Yes	Spreader	Yes
H-21	6-whl dump uni body	Yes	Yes	Unibody	No
H-22	6-whl dump uni body	Yes	Yes	Unibody	Yes
H-23	6-whl dump uni body	Yes	Yes	Unibody	Yes
H-24	6-whl dump uni body	Yes	Yes	Unibody	Yes
H-25	6-whl dump uni body	Yes	Yes	Unibody	Yes
H-26	6-whl dump uni body	Yes	Yes	Unibody	Yes
H-27	6-whl dump	Yes	Yes	Spreader	Yes
H-28	6-whl dump	Yes	Yes	Spreader	Yes
H-29	6-whl dump	Yes	Yes	Spreader	No
H-30	6-whl dump	Yes	Yes	Unibody	Yes
H-31	6-whl dump uni body	Yes	Yes	Unibody	Yes
H-33	10-whl dump uni body	Yes	Yes	Unibody	No
H-34	6-whl dump uni body	Yes	Yes	Unibody	Yes
H-35	6-whl dump	Yes	Yes	Spreader	Yes
H-43	Trackless sidewalk tractor	with plow or snowblower			
H-44	Maclean sidewalk tractor	with plow or snowblower			
M-1	F-350 service body				

= GPS/AVL equipped

Work Force = 29 Total

1 Operations Manager

3 Highway Foremen *Maintenance*

1 Equipment Foreman

16 Highway Equipment Operators

3 Highway Maintainers

4 Mechanics

1 Administrative Assistant

APPENDIX B

PRE-TREAT ROUTES

PRE-TREAT ROUTE # 1

D.W.HIGHWAY

GREELEY ST. to BEDFORD RD.

Limited Salt - Twin Bridge Rd to Elm St

PARKING LOTS - AS DIRECTED

TOWN HALL

POLICE DEPARTMENT (UPPER AND LOWER)

CENTRAL FIRE STATION (ACCESS LANE/DOORS)

O'LEARY CENTER

CONGREGATIONAL CHURCH

LIBRARY

MYA BUILDING

PRE-TREAT ROUTE # 2

O'GARA DR

BABOOSIC LAKE RD TO MCELWAIN ST

MCELWAIN ST

BABOOSIC LAKE RD TO O'GARA DR

WOODBURY ST

DW HWY TO MCELWAIN ST

EAST CHAMBERLAIN HILL

DW HWY TO TOP OF HILL

COLUMBIA CIRCLE

DW HWY TO BRETTON DR

FRONT ST - HILL ONLY

Limited Salt - DW HWY TO CENTER ST - ONLY

HILLSIDE TERRACE

BABOOSIC LAKE RD TO WIRE RD

PRE-TREAT ROUTE # 3

TURKEY HILL RD.

HIGHWAY GARAGE to AMHERST RD

CONTINENTAL BLVD.

Limited Salt - AMHERST RD. to INDUSTRIAL DR.

CAMP SARGENT RD.

Limited Salt - GREELEY ST. to NATICOOK RD.

EXECUTIVE PARK DR.

AMHERST RD. to CUL-DE-SAC

PRE-TREAT ROUTE # 4

PEASLEE RD.

AMHERST RD. to NATICOOK RD.

Limited Salt - Haines Terr to Naticook Rd

TINKER RD.

CAMP SARGENT RD. to TOWN LINE

Limited Salt - Naticook Rd to Dunbarton Dr

MANCHESTER ST.

D.W. HIGHWAY to TOWN LINE

ROBERT MILLIGAN PKWY.

D.W. HIGHWAY to CUL-DE-SAC

STAR DR.

D.W. HIGHWAY to END

PRE-TREAT ROUTE # 5

BABOOSIC LAKE RD.

TURKEY HILL RD. to TOWN LINE

Limited Salt - Ash st to Town Line

SOUTH BABOOSIC LAKE RD.

Limited Salt - BABOOSIC LAKE RD to TOWN LINE

FOUR SEASONS LOOP - Limited Salt

GREENWOOD RD - SOUTH BLR To AUTUMN LN

AUTUMN LN - GREENWOOD RD to FOUR SEASONS LN

FOUR SEASONS LN - AUTUMN LN to SOUTH BLR

CARTER RD.

Limited Salt - BABOOSIC LAKE RD to SHORE DR

PARKHURST RD.

Limited Salt - BABOOSIC LAKE RD to WOODWARD RD

WOODWARD RD.

Limited Salt - PARKHURST RD TO BEAN RD

PRE-TREAT ROUTE # 6

JOPPA RD.

TURKEY HILL RD. to BEDFORD RD.

BEAN RD.

BABOOSIC LAKE RD. to BEDFORD RD.

LAWRENCE RD.

Limited Salt - BEDFORD RD. to TOWN LINE

McQUESTION RD.

TURKEY HILL RD. to BABOOSIC LAKE RD.

MADLINE BENNETT DR.

BABOOSIC LAKE RD. to CUL-DE-SAC

PRE-TREAT ROUTE # 7

TURKEY HILL RD.

HIGHWAY GARAGE to BABOOSIC LAKE RD.

BABOOSIC LAKE RD.

TURKEY HILL RD. TO D.W.HIGHWAY

WIRE RD.

D.W.HIGHWAY to BEDFORD RD

Limited Salt - Jason Dr to Town Line

PATTEN RD.

JOPPA RD. to BABOOSIC LAKE RD.

CATSKILL DR.

WIRE RD. to BEDFORD RD.

PRE-TREAT ROUTE # 8

BEDFORD ROAD

D.W.HIGHWAY to TOWN LINE

PEARSON RD

BEDFORD RD TO TOWN LINE

BACK RIVER RD

BEDFORD RD to TOWN LINE

COUNTRY CLUB LN

BACK RIVER RD to WATERVILLE DR

BELMONT DR

BACK RIVER RD to WATERVILLE DR

PRE-TREAT ROUTE # 9

MEETINGHOUSE RD.

TURKEY HILL RD. to AMHERST RD.

NATICOOK RD.

AMHEST RD. to CONTINENTAL BLVD.

CRAFTSMAN LN.

Limited Salt - BOSTON POST RD to TOWN LINE

BOSTON POST RD.

Limited Salt - RT 101A to TOWN LINE

SEAVERNS BRIDGE RD.

Limited Salt - BOSTON POST RD. to TOWN LINE

BATES RD.

SEAVERNS BRIDGE RD. to PEASLEE RD.

PRE-TREAT ROUTE # 10

AMHERST RD.

CONTINENTAL BLVD. to COUNTY RD.

Limited Salt - Turkey Hill Rd to Twardowsky Fields

COUNTY RD.

AMHERST RD. to TOWN LINE

SEAVERNS BRIDGE RD.

AMHERST RD. to TOWN LINE

WILSON HILL RD.

Limited Salt - McQUESTION RD. to TOWN LINE

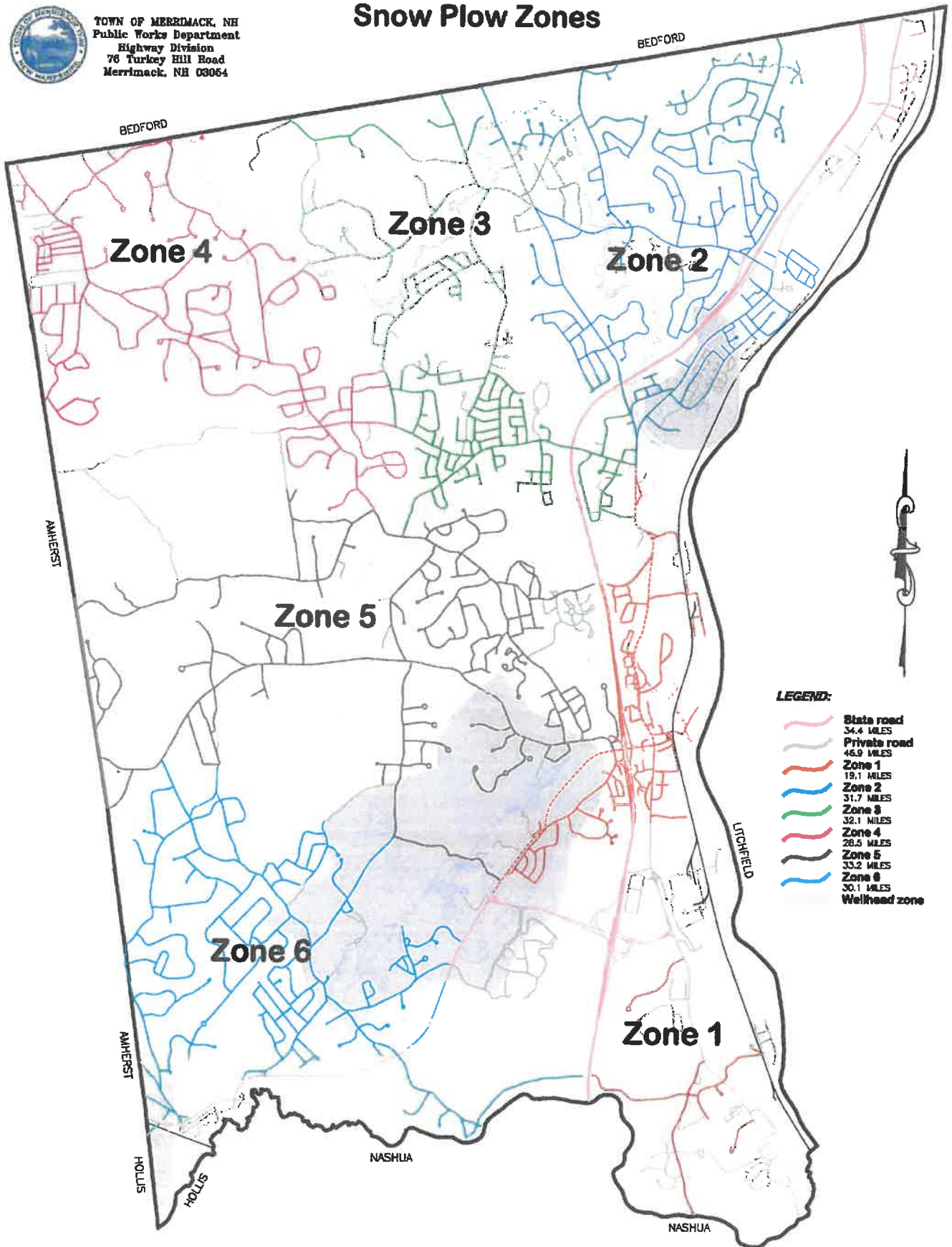
APPENDIX C

PLOW ZONES



TOWN OF MERRIMACK, NH
 Public Works Department
 Highway Division
 76 Turkey Hill Road
 Merrimack, NH 03064

Snow Plow Zones

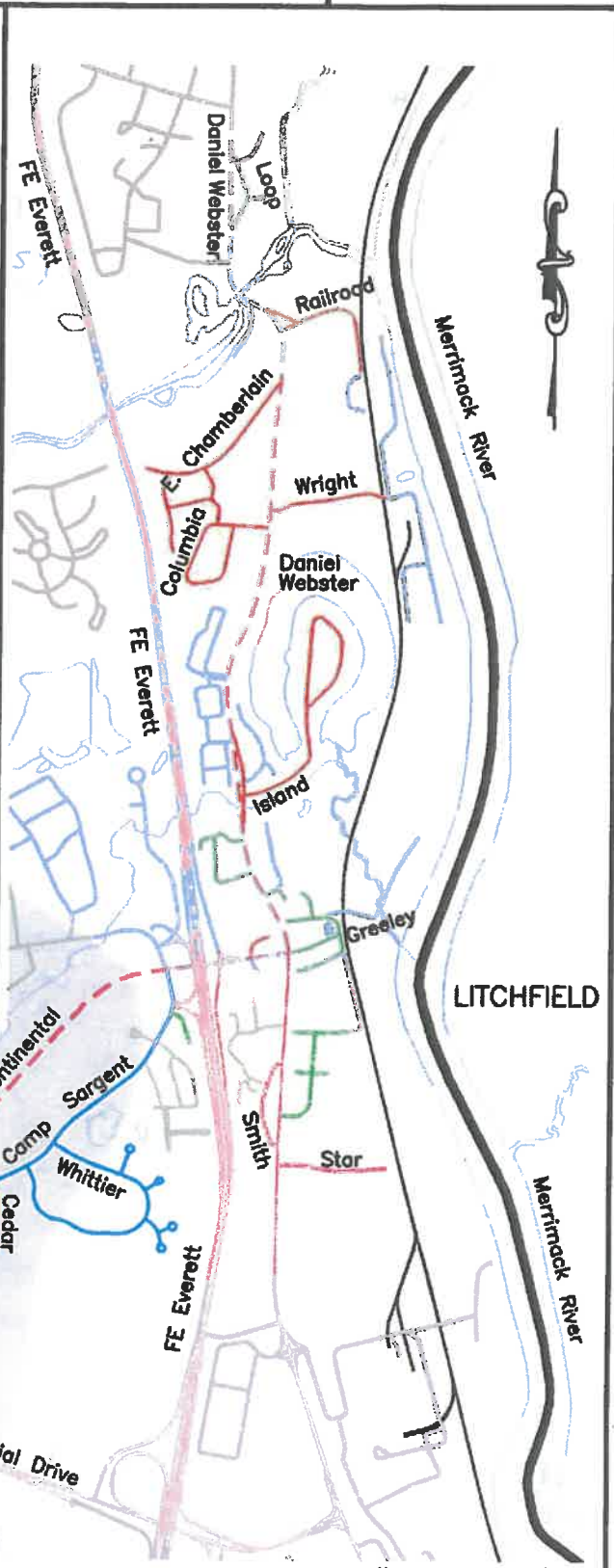
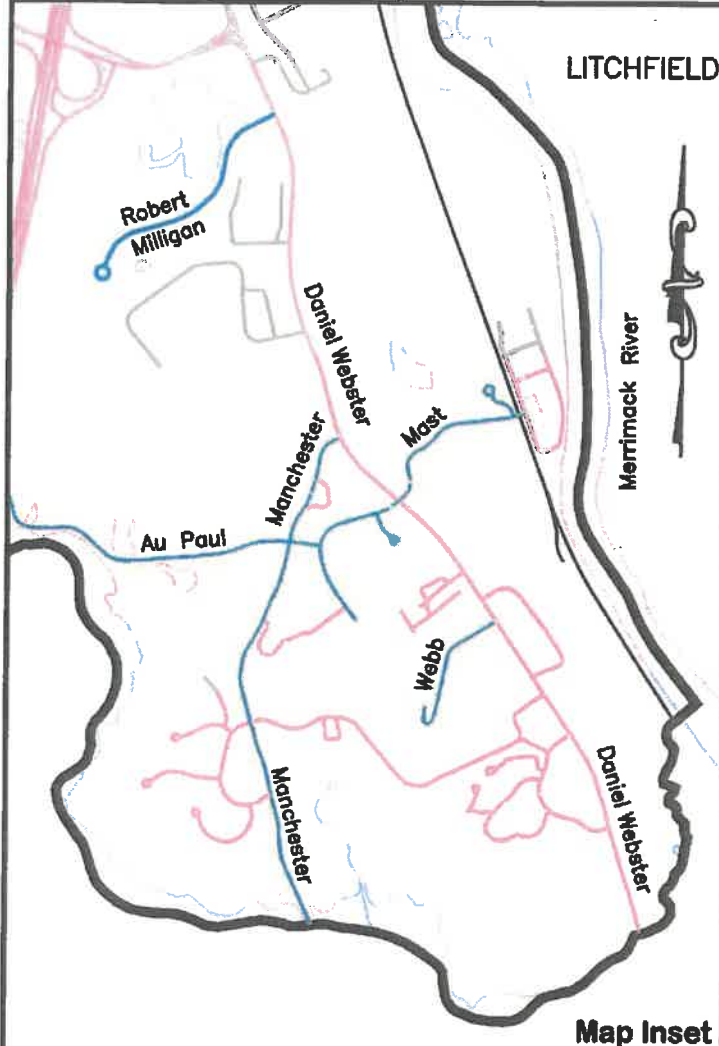




TOWN OF MERRIMACK, NH
 Public Works Department
 Highway Division
 78 Turkey Hill Road
 Merrimack, NH 03054

ROUTE	MILES	DRIVER	NOTES
	7.2		
	3.5		
	1.8		
	6.6		

Zone 1



WELLHEAD PROTECTION AREA

SCALE 1" = 2000'

ZONE 1

PRIORITY A

Continental Blvd

Daniel Webster Hwy

Greeley Street to Bedford Road

Twin Bridge Rd to Elm St

Note: Limited Salt

Note: NO Salt

PRIORITY B

Camp Sargent Rd

Greeley Street to Continental Boulevard

Manchester St

Star Dr

Robert Milligan Pkwy

PRIORITY C

Al Paul Ln

Angelo Dr

Arbor St

Beech St

Bretton Dr

Caron St

Cedar Ln

Columbia Cir

Cranston Cir

Crows Nest

Daniel Webster Dr

Danville Cir

Douglas St

E Chamberlain Rd

Englewood Dr

Findlay Way

Greeley St

Griffin St

Gull Ln

Henry Clay Dr

Herrick St

Hillcrest Dr

Hoyt St

Hoyt St. Ext

Island Dr

Jennifer Dr

John Tyler St

King St

Loop Rd

Mast Rd

Oak St

Railroad Ave

Smith Rd

Spruce St

Tallant Rd

Webb Dr

Whitney St

Whittier Rd

Willow Ln

Wright Ave

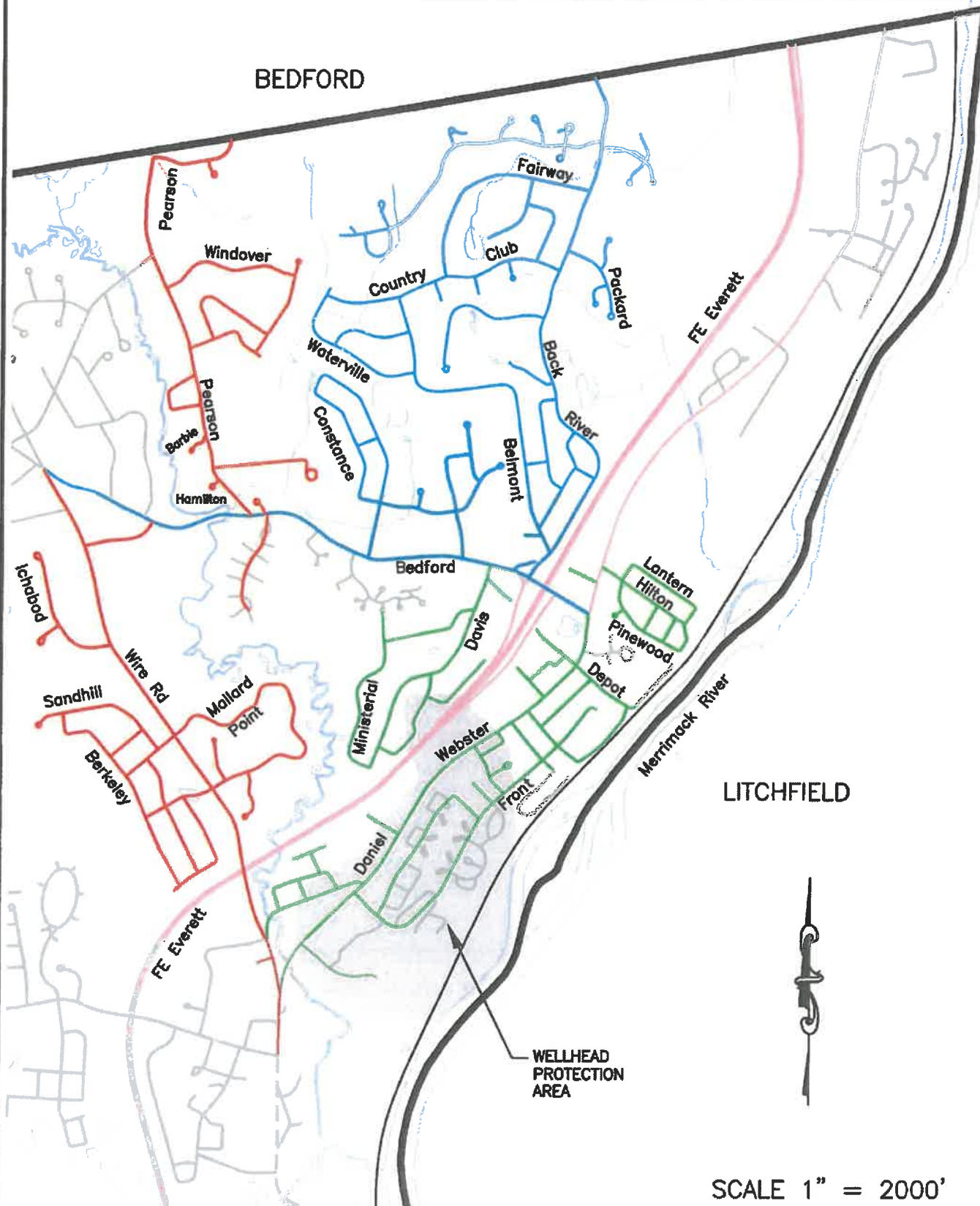


TOWN OF MERRIMACK, NH
Public Works Department
Highway Division
76 Turkey Hill Road
Merrimack, NH 03054

ROUTE	MILES	DRIVER	NOTES
	11.5		
	10.4		
	9.8		

Zone 2

BEDFORD



LITCHFIELD

WELLHEAD PROTECTION AREA

SCALE 1" = 2000'

ZONE 2

PRIORITY A




Back River Rd
Bedford Rd DW Highway to Wire Road
Belmont Dr
Center St
Country Club Ln
Front St
Front St Hill DW Highway to Center St
Pearson Rd
Wire Rd DW Highway to Bedford Road

PRIORITY B

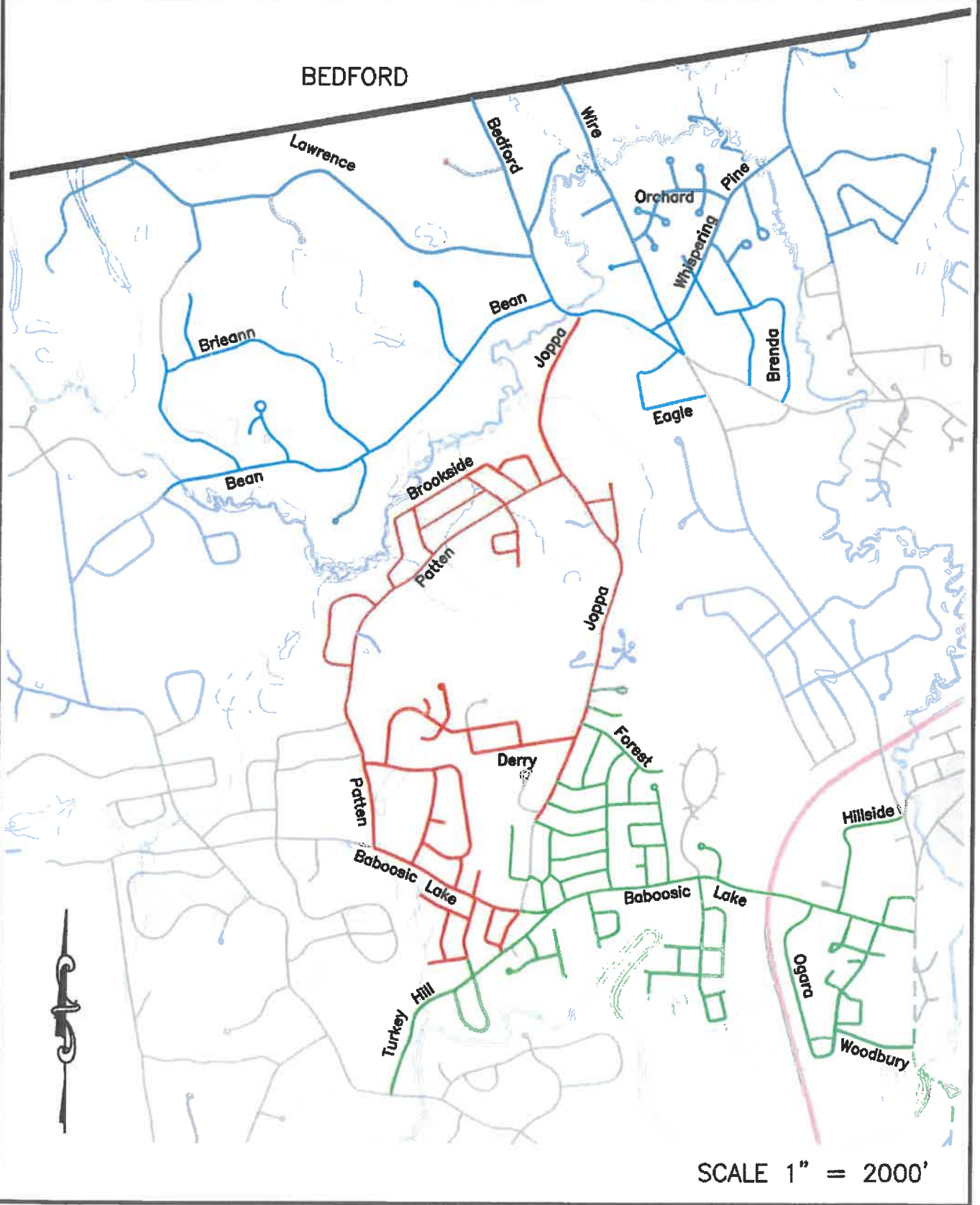
Allen Rd	Crane Ln	Lantern Ln	Reeds Ferry Way
Audubon Cir	Davis Rd	Level St	Ries Dr
Barbie Ct	Deer Run	Liberty Ln	Rita St
Belair Ave	Depot St	Lilac Ct	Roundtree Dr
Berkeley St	Dolly Rd	Lyons Rd	Sandhill Dr
Bow St	Drake Ln	Mallard Point Rd	Short St
Bradford Dr	Dumpling Way	Maple St	Small Rd
Bramber Ln	Elm St	Matthew Dr	Sunny Dale Dr
Brant Dr	Fairway Dr	McGaw Bridge Rd	Tamworth Ln
Brewster St	Farrar Ln	Mill St	Tennis Ct
Bristol St	Glen Forest Dr	Ministerial Dr	Twin Bridge Rd
Brookfield Dr	Grapevine Rd	Mount Lawny Ln	Vista Way
Buck Meadow Ln	Greenfield Dr	Nutmeg Ln	Waterville Dr
Butternut Ln	Hamilton Ct	Oakridge Ave	Weston Rd
Cabot Rd	Harris Ave	Packard Dr	Wheeler St
Canterbury Way	Heather Cir	Paige Dr	William St
Cathy St	Hickory Ln	Pheasant Run	Windover Ln
Catskill Dr	Hilton Dr	Pine St	Wood St
Chapel Ln	Ichabod Dr	Pinewood Dr	Woodhaven Cir
Clay St	Ivy Dr	Pleasant St	Woodridge Rd
Collins Ave	Joanne St	Priscilla Ln	
Constance St	Kendall Ct	Rainbow Ave	
	Kittredge Ln	Raymond Dr	



TOWN OF MERRIMACK, NH
Public Works Department
Highway Division
76 Turkey Hill Road
Merrimack, NH 03054

ROUTE	MILES	DRIVER	NOTES
	11.3	_____	_____
	9.9	_____	_____
	10.9	_____	_____

Zone 3



ZONE 3

PRIORITY A

Baboosic Lake Rd
Bean Rd
Bedford Rd
Joppa Rd

Lawrence Rd

Ogara Dr
Patten Rd
Turkey Hill Rd

Wire Rd

PRIORITY B

Balsam Ln
Baldwin Ct
Beacon Dr
Beaver brook Dr
Birch St
Birchwood Dr
Bishop St
Blair Rd
Bowman Ct
Brenda Ln
Briann Dr
Brookside Dr
Bryant Cir
Burt St
Bushel Ct
Carriage Ln
Chadsworth Ct
Church St
Cider Ct
Circle Dr
Conifer St
Courtland Dr
Crestview Cir
Crabtree Ct
Currier Rd
Deerwood Dr

DW Hwy to Patten Rd
Bedford Rd to Profile Dr
Wire Rd to Town line

Cota Rd to Baboosic Lake Rd
Bedford Rd to Town Line

Derry St
Dodier Ct
Dover St
Dumas Ln
Dunloggin Dr
Eagle Dr
Edgewood Ave
Evergreen Dr
Fairview Ter
Falcon Dr
Fernwood Dr
Fir St
Forest Dr
Franconia Dr
Freedom St
Friar Tuck Ct
Glenwood Ln
Greenwich Dr
Hadley Rd
Haise Way
Halletts Way
Hancock Ln
Hartwood Dr
Harvest Ct
Hemlock Dr
Heritage Dr
Hillside Ter
Huckleberry Ln
Independence Dr
Jakes Ln
Jason Dr
Jefferson Dr
Juniper Way
King Henry Ct
Klara Dr
Knollwood Dr
Lincoln Ct
Little John Ct
Lois Ln
Macintosh Ct
Mayflower Rd
McElwain St
Minuteman Ave
Orchard Dr
Pilgrim Ave
Pinehaven Dr
Pinetree Ln
Powderhouse Rd
Quincy Ln

Note: Limited Salt

Note: NO Salt

Jason Dr to Town Line

Ridgewood Dr
Robin Ln
Rose Ln
School St
Shady Ln
Souhegan Dr
Sundale Dr
Tanglewood Way
Tiffany Ln
Timber Ln
Valleyview Dr
Walden Dr
West Rd
Westcott Dr
Whispering Pines Ln
Woodbury St
Woodland Dr
Worester Ave

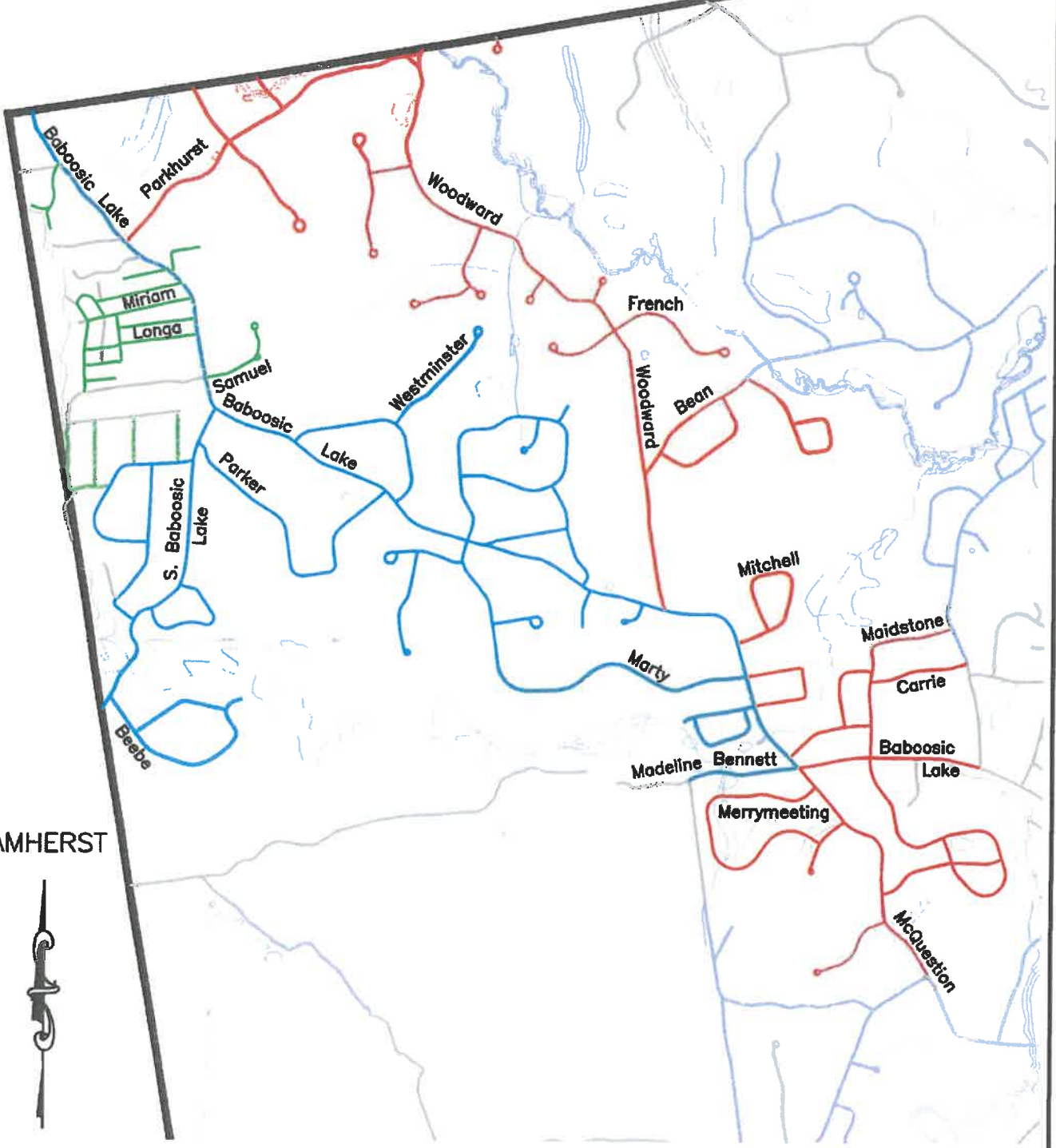


TOWN OF MERRIMACK, NH
 Public Works Department
 Highway Division
 76 Turkey Hill Road
 Merrimack, NH 03054

ROUTE	MILES	DRIVER	NOTES
	12.5	_____	_____
	12.7	_____	_____
	3.3	_____	_____

Zone 4

BEDFORD



AMHERST



SCALE 1" = 2000'

Zone 4

PRIORITY A

Baboosic Lake Rd

Bean Rd

Madeline Bennett Ln

McQuestion Rd

Parkhurst Rd

South Baboosic Lake Rd

Woodward Rd

Patten Rd to Town line Ash Ln to Town Line

Baboosic Lake Rd to Profile Dr

Wilson Hill to Madeline Bennett

Baboosic Lake Rd to Parkhurst Rd

Steeplechase Dr to Parkhurst Rd

PRIORITY B

Arnold Rd

Ash Ln

Autumn Ln

Bambi Trl

Beebe Ln

Bridle Path

Carrie Dr

Carter Rd

Cavalier Country Ln

Chelsea Dr

Cobblestone Pl

Colman Path

Conservation Dr

Danbury Dr

Dick Dr

Donald Rd

Draycoach Ct

Dwyer St

Ellie Dr

Four Seasons Ln

French Ct

Goldstone Cir

Greatstone Dr

Greenwood Rd

Hamlet Cir

Hitchinpost Ln

Holly Ln

Hunter Ln

Jebb Rd

Jessica Dr

Lakeside Dr

Lesa Dr

Linda Ln

Linden Way

Longa Rd

Madison Ln

Maidstone Dr

Marty Dr

Mary Paul Ln

G Mayhew Rd

Meadowview Ln

Merrymeeting Dr

Miriam Rd

Mitchell St

Mountain View Dr

N Jebb Rd

Olde Rd

G Parker Dr

Pebble Ct

Powers Cir

Proctor Rd

Profile Dr

Rennie Rd

G

Richards Rd

G

Samuel J Dr

Shore Dr

Silver Doe Ln

Steeplechase Dr

Stonedge Way

Stowell Rd

Surrey Ln

Thomas Rd

G

Tomahawk Dr

Trowbridge Dr

Westminster Ln

Windsor Dr

Woodbine Ln

Note: Limited Salt

Note: NO Salt

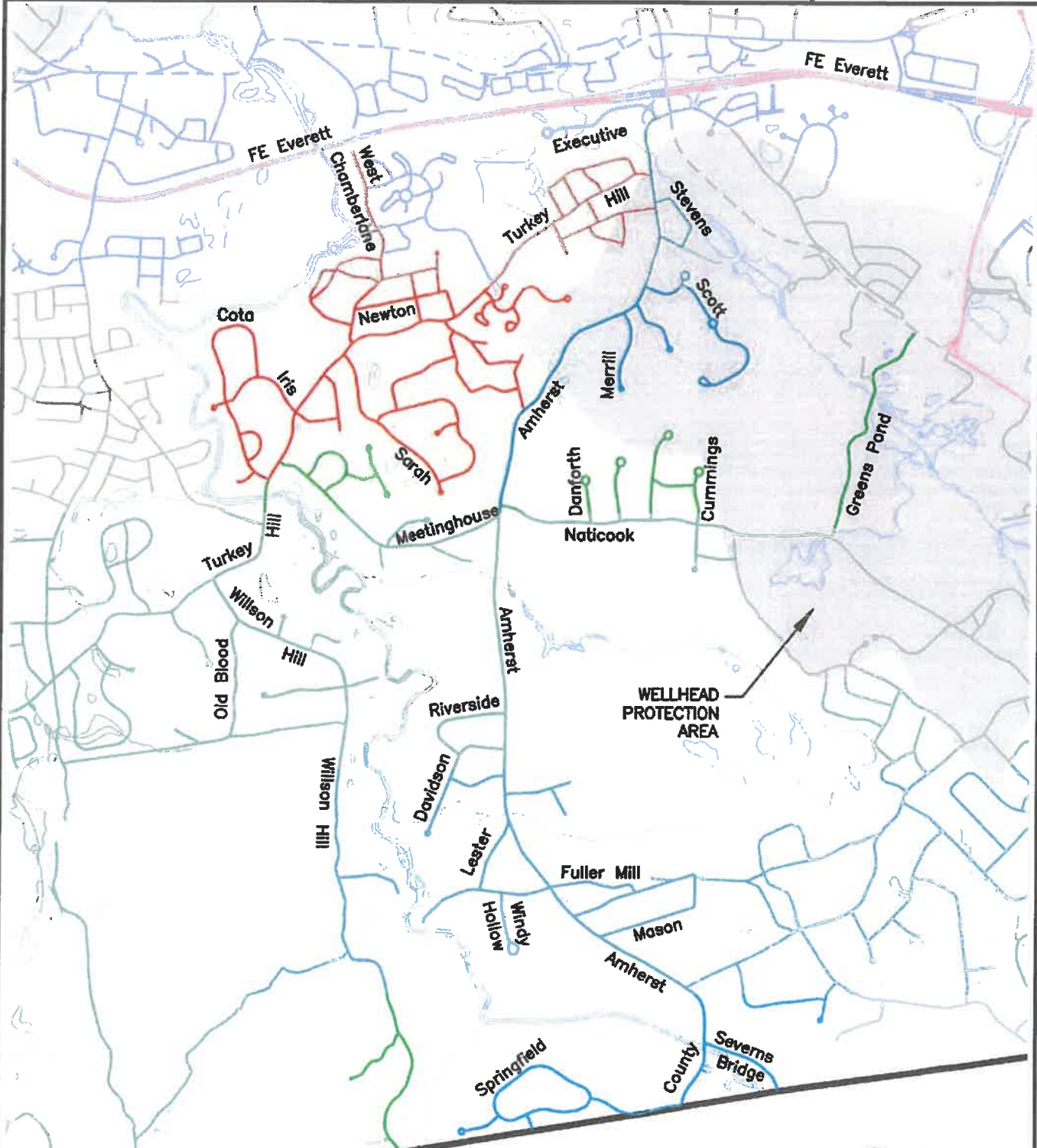
NOTE: G = Gravel Road



TOWN OF MERRIMACK, NH
 Public Works Department
 Highway Division
 78 Turkey Hill Road
 Merrimack, NH 03054

ROUTE	MILES	DRIVER	NOTES
	11.5		
	11.5		
	10.2		

Zone 5



AMHERST



SCALE 1" = 2500'

ZONE 5

PRIORITY A

Amherst Rd	Greeley St to Town line	Twardowsky Field to Turkey Hill Rd
Meetinghouse Rd		
McQuestion Rd	Turkey Hill Rd to Wilson Hill Rd	
Naticook Rd	Amherst Rd To Greens Pond	Cummings Rd to Greens Pond Rd
Seaverns Bridge Rd	Amherst Rd to Town line	
Turkey Hill Rd	Amherst Rd to Cota Rd	
Wilson Hill Rd		

PRIORITY B

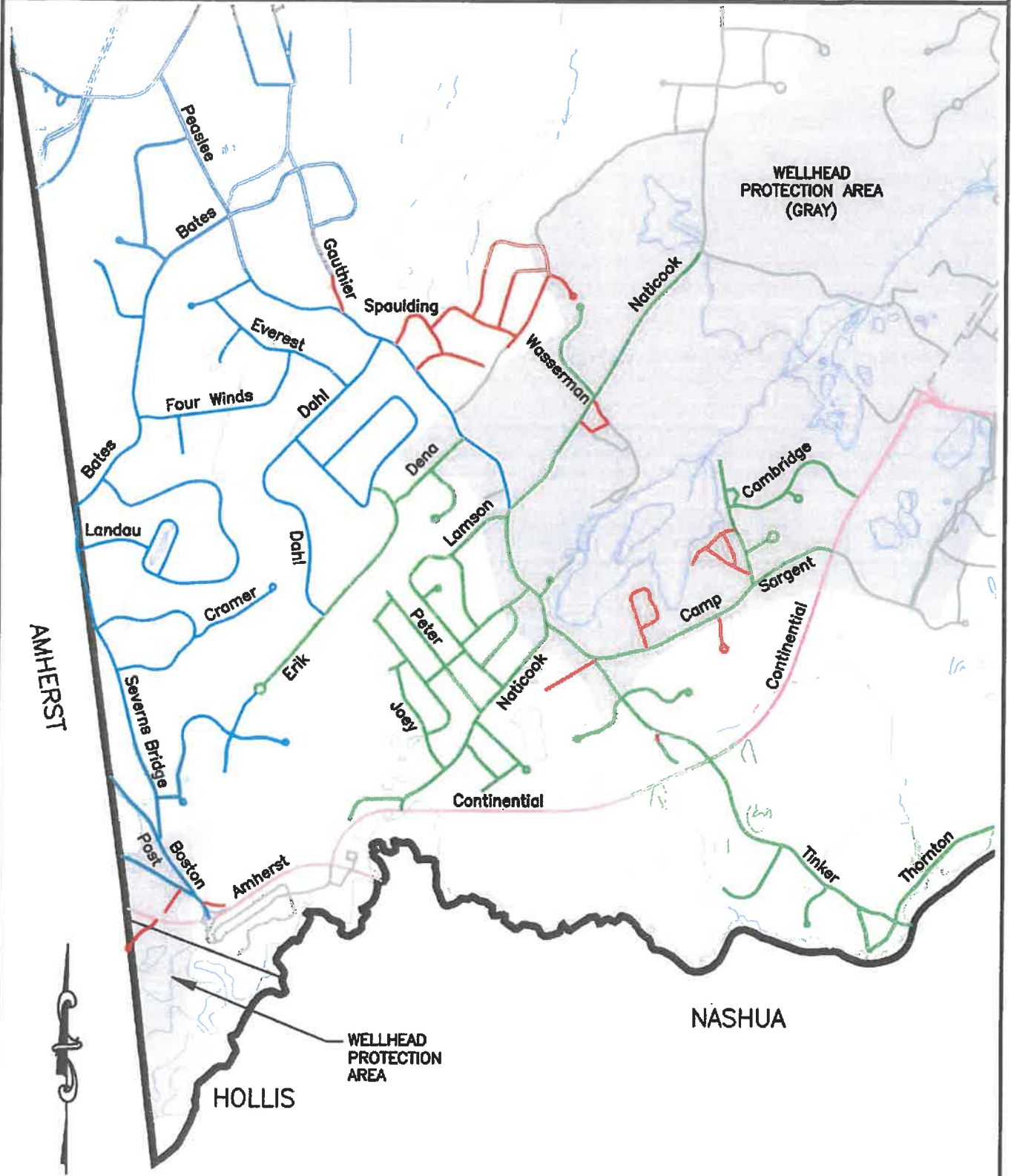
Acacia St	Gerard Dr	Rimmon Ct
Atherton Rd	Greens Pond Rd G	Rivergate Rd G
Bancroft St	Harrington Dr	Riverside Dr
Berry Ln	Hassell Rd	Rutherford St
Bigwood Dr	Heidi Ln	Sarah Dr
Bon Ave	Hutchinson Rd	Savannah Way
Bryce Dr	Iris Dr	Scotch Pine Ln
Candy Ln	Jade Rd	Scott Dr
Cassie Ln	Jo Ellen Dr	Sharon Ave
Christopher Rd	John Ln	Springfield Cir
Cota Rd	Kelly Way	Stevens Ave
County Rd	Laurel St	Sunrise Dr
Cowin Rd	Lester Rd G	Sycamore Ln
Craig Dr	Lexi Circle	Taconic Dr
Cross St	Mason Rd	Tomasian Dr
Cummings Rd	Merrill Rd	Upham Rd G
Danforth Rd	Mullikin Rd	W Chamberlain Rd
Davidson Ave	Nathan Hale Rd	Wallace Dr
Den Ave	Newton St	Watkins Rd
Eden St	Northwood Dr	Whitewood Ln
Edward Ln	Old Blood Rd	Wildcat Falls Rd
Erla Rd	Oxford St	Windy Hollow Cir
Executive Park Dr	Palmeri Dr	Wintergreen Dr
Farmer Rd	Park Ave	
Forsythia Ln	Penrose Ln	Note:Limited Salt
Foster Rd	Piedmont Ave	Note: NO Salt
Fox Meadow Ln	Pollard Rd	Note: G = Gravel Road
Fuller Mill Rd G	Riley Ln	



TOWN OF MERRIMACK, NH
 Public Works Department
 Highway Division
 78 Turkey Hill Road
 Merrimack, NH 03064

ROUTE	MILES	DRIVER	NOTES
	13.1	_____	_____
	3.9	_____	_____
	13.1	_____	_____

Zone 6



SCALE 1" = 2000'

ZONE 6

PRIORITY A

Bates Rd

Boston Post Rd

Camp Sargent Rd

Naticook Rd

Peaslee Rd

Seaverns Bridge Rd

Tinker Rd

Continental Blvd to Naticook Rd

Greens Pond to Continental
Amherst Rd to Naticook Rd

Bates Rd to Boston Post Rd

Naticook to Town Line

Greens Pond Rd to Tinker
Haines Tr to Naticook Rd

Naticook Rd to Cummings

PRIORITY B

Abbey Rd

Aldrich Cir

Blueberry Ct

Brek Dr

Cambridge Dr

Castleton Ct

Charles Rd

Christina Rd

Coles Rock Rd

Craftsman Ln

Cramer Hill Rd

Curt Rd

Cynthia Rd

Dahl Rd

Dawn Ave

Dena Ave

Dirt Rd

Drouin Way

Dunbarton Dr

Elizabeth Dr

Erik St

Everest Dr

Fields Farm Rd

Four Winds Rd

Gail Rd

Gauthier Rd

Greenleaf St

Haines Ter

Hall Ave (1 & 2) G

Hampstead Rd

Hansom Dr

Hawthorne Rd

Highnoon Ave

Holts Lndg

Ingham Rd

Jay Rd

Joey Rd

Kyle Rd

Lamson Dr

Landau Way

LeBlanc Ln

Lorraine Rd

Majestic Ln

Maryann Ln

May Dr

Morningside Ave

Nora Rd

Old Kings Rd

Penny Ln

Peter Rd

Portside Dr

Queens Way

Rainier Ct

Regal Dr

Robert W Brundige Way G

Royal Ct

Rushmore Ct

Sands Ter

Spaulding Dr

Stuart Dr

Sunset Dr

Thornton Rd

Thornton Rd W

Warren Ln

Wasserman Park

Wasserman Hgts

Westborn Dr

Winchester Dr

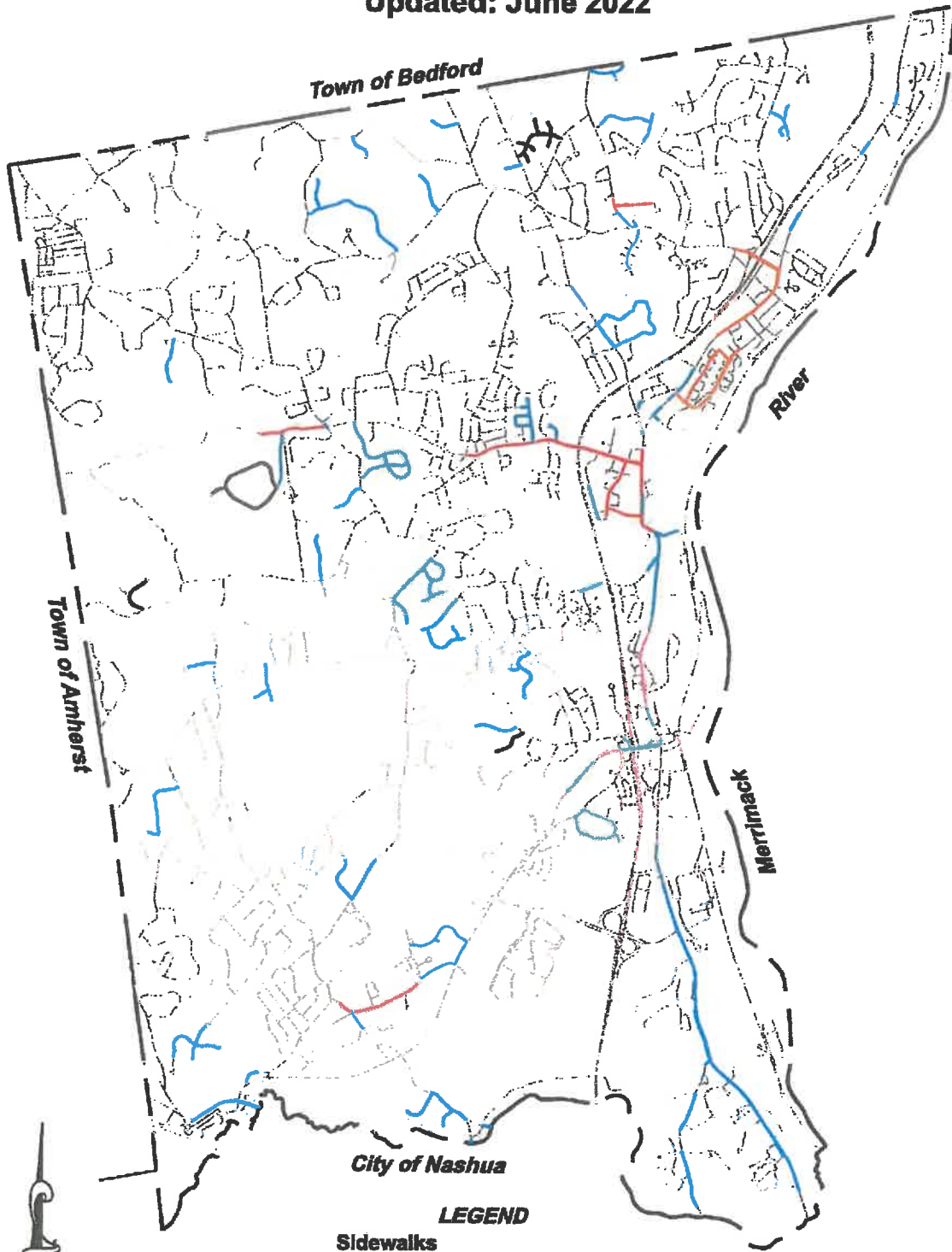
Note: Limited Salt

Note: NO Salt

Note: G = Gravel Road

APPENDIX D
WINTER SIDEWALK
MAINTENANCE

Town of Merrimack Public Sidewalks Updated: June 2022



Town of Bedford

Town of Amherst

River

Merrimack

City of Nashua

LEGEND

- Sidewalks
Winter Maintenance Priority**
- **First**
4.40 MILES
 - **Second**
2.88 MILES
 - **Third**
23.93 MILES
 - **Not Accepted**
2.32 MILES
 - **Proposed TAP Grant**
3,600 FEET
Road Poly

Scale: 1"=3500' ±

Town of Merrimack Public Sidewalk List

Updated: June 2022

Road Name	From	To	Sidewalk Length	Winter Maintenance Priority	Width	Sidewalk Material	Curbing Material
Baboosic Lake road	109 Baboosic Lake Road	DW Highway	6,200	First			
Baboosic Lake Road	68 Baboosic Lake Road	DW Highway	3,000	First			
Camp Sargent Road	Veteran's Park West Entrance	Ingham Road	3,066	First			
Daniel Webster Highway	Baboosic Lake Road	Church Street	442	First			
Daniel Webster Highway	454 DW Highway	Baboosic Lake Road	1,273	First			
Lyons Road	Pearson Road	Elementary School	1800	First			
Madeline Bennett Road	Baboosic Lake Road	Middle School	2,300	First			
McEhwin Street	Baboosic Lake Road	High School	2,150	First			
Pearson Road	Lyons Road	16 Pearson Rd	200	First			
Railroad Avenue	438 DW	20 Railroad Ave.	1,500	First			
Woodbury Street	Mayfair Lane	DW Highway	1,250	First	5		
Bedford Road	Back River Road	DW Highway	1,030	Second			
Bedford Road	Davis Road	SB On Ramp	487	Second			
Bedford Road	SB On Ramp	SB On Ramp	118	Second			
Bedford Road	Smart Lane	Back River Road	210	Second			
Bedford Road	NB Off Ramp	DW Highway	601	Second			
Bedford Road	SB On Ramp	NB Off Ramp	471	Second			
Camp Sargent Road	Sherwood Lane	Gull Lane	374	Second	5	Asphalt	Granite
Camp Sargent Road	1 Continental Boulevard	Gull Lane	172	Second	5	Concrete	Granite
Camp Sargent Road	1 Continental Boulevard	Camp Sargent Road	59	Second	5	Concrete	Granite
Center Street	Front Street	Front Street	2,199	Second			
Continental Boulevard	7 Continental Boulevard	7 Continental Boulevard	160	Second	5	Concrete	Granite
Continental Boulevard	1 Continental Boulevard	1 Continental Boulevard	125	Second	5	Concrete	Granite
Continental Boulevard	3 Continental Boulevard	3 Continental Boulevard	97	Second	5	Concrete	Granite
Continental Boulevard	7 Continental Boulevard	7 Continental Boulevard	332	Second	5	Concrete	Granite
Daniel Webster Highway	560 DW Highway	Bedford Road	3,289	Second			
Daniel Webster Highway	Hummingbird Drive	619 DW Highway	644	Second			
Front Street	63 Front Street	69 Front Street	351	Second			
Front Street	Caldwell Lane	Caldwell Lane	517	Second			
Front Street	DW Highway	Center Street	437	Second			
Front Street	Essex Green	Center Street	1,792	Second			
Front Street	31 Front Street	Caldwell Lane	259	Second			
Front Street	Caldwell Lane	63 Front Street	472	Second			
Front Street	Center Street	Essex Street	1,058	Second			
Aldrich Circle	Cambridge Drive	Cul de Sac	107	Third			
Amherst Road	Gresley Street	Executive Park Drive	152	Third			
Amherst Road	Continental Boulevard	Amherst Road	468	Third	5	Asphalt	Granite
Baboosic Lake Road	Danbury Drive	Baboosic Lake Road	175	Third			
Baboosic Lake Road	McQuestion Road	Baboosic Lake Road	43	Third			
Bedford Road	Pearson Road	Lilac Court	152	Third	5	Asphalt	Asphalt
Bramber Lane	Bedford Road	Cul de Sac	1,489	Third			
Briann Drive	West Road	Bean Road	4,213	Third	5	Asphalt	Asphalt
Cambridge Drive	Ingham Road	Continental Boulevard	2,459	Third			
Camp Sargent Road	Whittier Road	Whittier Road	383	Third			
Camp Sargent Road	Ingham road	Continental Boulevard	1,232	Third			
Cassie Lane	Riley Lane	Cul de Sac	437	Third			
Chadsworth Court	Cul de Sac	Bedford Road	923	Third			
Chelsea Drive	Jessica Drive	Ellie Drive	311	Third			
Conservation Drive	Linden Way	Cul de Sac	1,560	Third			
Conservation Drive	Linden Way	End of Wall	81	Third			
Continental Boulevard	4 Continental Boulevard	4 Continental Boulevard	171	Third			
Continental Boulevard	2 Continental Boulevard	2 Continental Boulevard	188	Third			
Continental Boulevard	21 Continental Boulevard	11 Continental Boulevard	1,800	Third			
Craig Drive	Sarah Drive	Kelly Way	1,520	Third			
Craig Drive	Kelly Way	19 Craig Drive	273	Third			
Crestview Circle	Lawrence Road	End	854	Third	5	Asphalt	Asphalt
Daniel Webster Highway	Twin Bridge Road	501 DW Highway	338	Third			
Daniel Webster Highway	Gresley Street	304 DW Highway	66	Third			
Daniel Webster Highway	132 DW Highway	138 DW Highway	591	Third			
Daniel Webster Highway	Manchester Street	130 DW Highway	1,262	Third			
Daniel Webster Highway	Harris Pond Plaza	Harris Pond Plaza	477	Third			
Daniel Webster Highway	Nashua T/L	Mast Road	4,763	Third			
Daniel Webster Highway	Mast Road	143 DW Highway	3,287	Third			
Daniel Webster Highway	140 DW Highway	Pennichuck Water	6,750	Third			
Daniel Webster Highway	144 DW Highway	240 DW Highway	5,800	Third			
Daniel Webster Highway	386 DW Highway	386 DW Highway	281	Third			
Daniel Webster Highway	Loop Road	453 DW Highway	330	Third			

Town of Merrimack Public Sidewalk List

Updated: June 2022

Road Name	From	To	Sidewalk Length	Winter Maintenance Priority	Width	Sidewalk Material	Curbing Type
Daniel Webster Highway	437 DW Highway	Railroad Avenue	624	Thrd			
Daniel Webster Highway	East Chamberlain road	420 DW Highway	561	Thrd			
Daniel Webster Highway	510 DW Highway	McGaw Bridge Road	647	Thrd			
Daniel Webster Highway	696 DW Highway	698 DW Highway	535	Thrd			
Daniel Webster Highway	Maple Ridge Drive	728 DW Highway	220	Thrd			
Daniel Webster Highway	401 DW Highway	401 DW Highway	169	Thrd			
Daniel Webster Highway	389 DW Highway	393 DW Highway	253	Thrd			
Daniel Webster Highway	650 DW Highway	660 DW Highway	558	Thrd			
Daniel Webster Highway	420 DW Highway	360 Shopping Mall	3,300	Thrd			
Dumas Ln	Briann Drive	End	1050	Thrd			
Dumpling Way	Packard Drive	Cul de Sac	510	Thrd			
Ellie Drive	Jessica Drive	Jessica Drive	647	Thrd			
Ellie Drive	McQuestion Road	Jessica Drive	1,002	Thrd			
Englewood Drive	Whittier Road	Findlay Way	190	Thrd			
Englewood Drive	Findlay Way	Cul de Sac	120	Thrd			
Erik Street	Greenleaf Street	Cul de Sac	523	Thrd	5	Asphalt	Asphalt
Erik Street	52 Erik Street	Greenleaf Street	733	Thrd	5	Asphalt	Asphalt
Executive Park Drive	Amherst road	Executive Park Drive	54	Thrd			
Fields Farm Road	Mary Ann Lane	Peaslee Road	2,228	Thrd			
Fox Meadow Lane	Meetinghouse Road	Meetinghouse Road	1,740	Thrd			
Freedom Street	Independence Drive	Independence Drive	1,316	Thrd			
Grapevine Road	Pearson Road	Cul de Sac	1,253	Thrd	5	Asphalt	Asphalt
Greeley Street	Amherst Road	NB On Ramp	612	Thrd			
Greeley Street	Amherst Road	NB Off Ramp	558	Thrd			
Greeley Street	NB Off Ramp	DW Highway	721	Thrd			
Greeley Street	Whitney Street	DW Highway	440	Thrd			
Greeley Street	NB On Ramp	Whitney Street	262	Thrd			
Greenleaf Street	17 Greenleaf Street	Erik Street	1,543	Thrd	5	Asphalt	Asphalt
Greenleaf Street	Erik Street	Cul de Sac	824	Thrd	5	Asphalt	Asphalt
Hamilton Court	Hamilton Ct	Cul de Sac	100	Thrd			
Harrington Drive	Wilson Hill Road	Cul de Sac	1,500	Thrd			
Hartwood Drive	25 Hartwood Drive	Independence Drive	260	Thrd			
Hoits Landing	Tinker Road	End	1360	Thrd			
Independence Drive	Baboosic Lake Road	Freedom Street	547	Thrd			
Independence Drive	Hartwood Drive	Cul de Sac	366	Thrd			
Independence Drive	Freedom Street	Hartwood Drive	278	Thrd			
Independence Drive	Freedom Street	Freedom Street	305	Thrd			
Jason Drive	Wire Road	Cul de Sac	545	Thrd			
Jessica Drive	baboosic Lake Road	Ellie Drive	4,434	Thrd			
Kelly Way	Craig Drive	Cul de Sac	474	Thrd			
Kendal court	Grapevine Road	Cul de Sac	141	Thrd	5	Asphalt	Asphalt
Level Street	29 Level Street	Cul de Sac	998	Thrd			
Laxi Circle	Pollard Rd	Cul de Sac	450	Thrd			
Lilac Court	Bedford Road	Cul de Sac	160	Thrd	5	Asphalt	Asphalt
Linda Lane	McQuestion Road	Cul de Sac	1,151	Thrd			
Loop Drive	DW Highway	1 Loop Road	168	Thrd			
Madelins Bennett lane	McQuestion Road	End	1,950	Thrd			
Mallard Point Road	Wire Road	Wire Road	4,884	Thrd			
Manchester Street	21 Manchester Street	23 Manchester Street	554	Thrd			
Manchester Street	23 Manchester Street	25 Manchester Street	805	Thrd			
Manchester Street	Heron Cove Drive	Nashua T/L	1,191	Thrd			
Manchester Street	Heron Cove Drive	Heron Cove Drive	796	Thrd			
Maryann Lane	Fields Farm Road	Cul de Sac	346	Thrd			
McGaw Bridge Rd	McGaw Bridge	Belair Avenue	600	Thrd			
Meetinghouse Road	22 Meetinghouse Road	Fox Meadow Lane	794	Thrd			
Meetinghouse Road	Fox Meadow Lane	Fox Meadow Lane	340	Thrd			
Meetinghouse Road	Nathan Hale Lane	22 Meetinghouse Road	716	Thrd	5	Asphalt	Asphalt
Merrill Road	Amherst Road	Cul de Sac	1,339	Thrd			
Milford Road	Pennichuck Brook	706 Milford Road	800	Thrd			
Milford Road	Boston Post Rd	Pennichuck Brook	2,950	Thrd			
Mt. Lawny Lane	Packard Drive	Cul de Sac	544	Thrd			
Nathan Hale Drive	Meetinghouse Road	Cul de Sac	928	Thrd	5	Asphalt	Asphalt
Naticook road	Wasserman Heights	92 Naticook Road	1,520	Thrd	5	Asphalt	None
Naticook road	224 Naticook Road	228 Naticook Road	586	Thrd	5	Asphalt	Asphalt
O'Gara Drive	Turnpike Access Road	High School	1,199	Thrd			
Packard drive	Back River Road	Dumpling Way	745	Thrd			
Packard Drive	Dumpling Way	Cul de Sac	354	Thrd			

Town of Merrimack Public Sidewalk List

Updated: June 2022

Road Name	From	To	Sidewalk Length	Winter Maintenance Priority	Width	Sidewalk Material	Curbing Type
Pearson Road	7 Pearson Road	9 Pearson Road	186	Third	5	Asphalt	None
Pearson Road	5 Pearson road	7 Pearson road	114	Third	5	Asphalt	Granite
Pearson Road	Bedford Road	5 Pearson Road	303	Third	5	Asphalt	Asphalt
Pollard Rd	Amherst Road	Cul de Sac	1,200	Third			
Portside drive	Tinker Road	Cul de Sac	660	Third			
Railroad Avenue	DW Highway	22 Railroad Avenue	879	Third			
Riley Lane	Cassie Lane	Fox Meadow Lane	578	Third			
Rose Lane	Baboosic Lake Road	Cul de Sac	679	Third			
Sarah Drive	17 Sarah Drive	Cul de Sac	1,595	Third			
Scotchpine Lane	Wintergreen Drive	Cul de Sac	306	Third			
Thornton Road West	Nashua T/L	Thornton Road	162	Third			
Tinker Road	Camp Sargent Road	Dunbarton Drive	707	Third			
Tinker Road	Holts Landing	Stuart Drive	1,423	Third		Asphalt	Granite
Tinker Road	Thornton Rd West	White Oak Drive	464	Third			
Twin Bridge Road	DW Highway	3 Twin Bridge Road	218	Third			
Wasserman Heights	Naticook Road	Cul de Sac	1,633	Third	5	Asphalt	Asphalt
West Chamberlain Road	Grayhawk Road	Cascade Circle	384	Third			
West Chamberlain Road	36 West Chamberlain Road	Grayhawk Road	322	Third			
West Chamberlain Road	Cascade Circle	Cul de Sac	88	Third			
Westcott Drive	Bean Road	Cul de Sac	1,433	Third			
Whitney Street	Greeley Street	6 Whitney Street	240	Third			
Whittier Road	Camp Sargent Road	Camp Sargent Road	3,388	Third			
Windover Lane	Pearson Road	Level Street	1,919	Third			
Windy Hollow Circle	Tomasian Drive	Cul de Sac	1,000	Third			
Wintergreen Drive	Scotchpine Lane	Cul de Sac	1,290	Third			
Wintergreen Drive	Turkey Hill Road	Whitewood Lane	243	Third			
Wintergreen Drive	Whitewood Lane	Scotchpine Lane	469	Third			
Wire Road	Mallard Point Road	Mallard Point Road	1,018	Third			
Wire Road	DW Highway	4 Wire Road	98	Third			
Baldwin Court	Orchard Drive	Cul de Sac	350	Not Accepted			
Bushel Court	Orchard Drive	Cul de Sac	200	Not Accepted			
Captain Bannon Circle	Madeline Bennett lane	End	5,230	Not Accepted			
Cider Court	Orchard Drive	Cul de Sac	300	Not Accepted			
Crab Tree Court	Orchard Drive	Cul de Sac	350	Not Accepted			
Harvest Court	Orchard Drive	Cul de Sac	250	Not Accepted			
McIntosh Court	Orchard Drive	Cul de Sac	400	Not Accepted			
Orchard Drive	Wire Road	Whispering Pine Lane	2,000	Not Accepted			
Ritter Bush Court	Captian Bannon Circle	Cul de Sac	550	Not Accepted			
Watkins Road	Amherst Road	Around Cul de sac	1,200	Not Accepted			
Whitetail Ridge	Wilson Hill Road	End	1,400	Not Accepted			

APPENDIX E

BID DOCUMENTS FOR

MUNICIPAL PARKING LOT

PLOWING

SNOW PLOWING, SALTING & SANDING:

The Contractor is responsible for all storms forecast to have accumulations of 2" or more. Plowing is to be started within one (1) hour after the accumulation is equal to or greater than two inches (2"); or in the case of a forecasted storm of 2" or greater where actual accumulation falls less than 2", then plowing shall commence no later than one (1) hour after completion of the storm.

Salting and sanding is to be accomplished by the Town outside of this contract. The Highway Division of Public Works shall be notified by the Contractor when material application is needed (Highway phone number is 423-8551).

During weekdays and at times when Town Business is in session, contractors will be required to plow access roads, aisles between parked cars, etc. to facilitate vehicular movement. It is expected that the bulk of the plowing will need to be scheduled when the staff and visitors have vacated the parking areas. Every effort shall be taken to ensure that all designated areas are free from snow, ice, and are sanded and salted before 8:00 am each day.

The above work shall be performed in a manner so as not to encumber walkways, entrances and exits or streets.

STORAGE OF EQUIPMENT:

The Contractor shall not store the equipment on the parking lot sites.

CONTRACT EQUIPMENT AND LABOR REQUIREMENTS:

The Contractor shall furnish trucks and equipment in numbers as may be required from time to time for snow plowing purposes. The Contractor shall furnish with each separate piece of equipment, capable licensed drivers in sufficient numbers to ensure they are operated safely and efficiently. The Contractor shall furnish additional drivers to relieve the regular drivers when extended periods of work are expected.

The equipment, before being accepted for actual work, must be in proper mechanical condition, fully equipped as required for efficient operation, properly registered and insured in accordance with the laws of the State of New Hampshire and must be equipped with accessories such to meet the existing weather conditions.

Available equipment shall be listed on the enclosed Proposal Form. **The Town prefers that all equipment be garaged within ten (10) miles of Merrimack Town Hall.**

The Contractor shall employ and use only competent people in the execution of this contract. Whenever the Town notifies the Contractor that any person employed by the Contractor for the execution of this contract is incompetent, unfaithful, unsafe, disorderly or otherwise performing in an unsatisfactory manner, such person shall be replaced and not used again, for work covered by the contract, without the consent of the Town.

**TOWN OF MERRIMACK, N.H.
REQUEST FOR PROPOSALS**

**WINTER MAINTENANCE FOR
MUNICIPAL PARKING LOTS, DRIVEWAYS,
AND ACCESS ROADS**

SPECIFICATIONS

LOCATIONS OF MUNICIPAL LOTS REQUIRING MAINTENANCE:

Town Hall (6 Baboosic Lake Road)
Library (470 DW Highway)
Adult Community Center (470 DW Highway)
First Congregational Church (7 Baboosic Lake Road)
Police Department (29 Baboosic Lake Road)
Central Fire Station (432 DW Highway)
North Fire Station (643 DW Highway)
MYA Building (487 DW Highway)

GENERAL:

It is the intent of this Proposal to obtain the services of a Contractor to take full responsibility for plowing the municipal parking lots listed above, to have pavement bare as the weather will permit, and provide access to parking spaces during the normal hours of use. Proposals will only be considered from Contractors that have the equipment necessary to perform the task and a satisfactory record of performance.

METHOD OF PAYMENT:

The Contractor shall be paid in five (5) equal payments; the first payment shall be due December 1, 2019 and monthly thereafter. In order for payment to be made, the Contractor shall submit each invoice in duplicate to the Town of Merrimack DPW, 6 Baboosic Lake Road, Merrimack, NH 03054-0940 to the attention of Mr. Kyle Fox, Public Works Director.

INFORMATION FOR CONTRACTORS:

Normal business hours at each location:
Town Hall (8:00 AM to 9:00 PM)
Library (10:00 AM to 9:00 PM)
Adult Community Center (9:00 AM to 5:00 PM)
First Congregational Church (9:00 AM to 5:00 PM)
Police Department (Open 24 Hrs)
Central Fire Station (Open 24 Hrs)
North Fire Station (Open 24 Hrs)
MYA Building (Varied hours)

Town of Merrimack

REQUEST FOR PROPOSALS
WINTER MAINTENANCE FOR
MUNICIPAL PARKING LOTS, DRIVEWAYS,
AND ACCESS ROADS

PROPOSAL FORM

List of equipment proposed to be furnished by the undersigned on this proposal for snow plowing Municipal lots.

TRUCKS	QUANTITY	YR.	MAKE	CAP.	BLADE SIZE	REG.	ADDRESS GARAGED DURING CONTRACT
GVY 2000 LBS. TRUCK							
GVY 10,000 LBS. TRUCK							
RUBBER TIRED FRONT AND REAR LOADERS							
LIFTUP TRUCK							

Name, address and telephone number on Contractor's agent who is on twenty-four (24) hour call.

NAME _____

ADDRESS _____

TELEPHONE _____

PROPOSAL FORM (Continued)

Snow Plowing Municipal Lots for the Winter Season 2019-2020

The undersigned, as Proposer, declares that the only persons or parties interested in the contract as principals are those named herein; that this Proposal is made without collusion with any other person, firm or corporation; that the Proposer has carefully examined the locations of the proposed work, the Request for Proposals, and all attachments referred to therein, the proposed form of contract, and proposes and agrees if this offer is accepted, that the proposer will contract with the Town, in the form of the contract referred to herein and to be annexed hereto, to provide all necessary machinery, tools, apparatus and other means of repair and to do all the work specified in the contract, in the manner and time herein prescribed, and according to the requirements of the Town as therein set forth, and will take in full payment therefore the:

Lump Sum for the Winter Season 2019-2020 of:

Dollars \$ _____

Written _____ Figures _____

For the purpose of cost accounting, please show the itemized annual price for each of the following locations. The total of these itemized prices must equal the lump sum above.

- | | |
|---|----------|
| 1. Town Hall – 6 Baboosic Lake Road | \$ _____ |
| 2. Library - 470 DW Highway | \$ _____ |
| 3. Adult Community Center – 470 DW Highway | \$ _____ |
| 4. First Congregational Church – 7 Baboosic Lake Road | \$ _____ |
| 5. Police Department – 29 Baboosic Lake Road | \$ _____ |
| 6. Central Fire Station – 432 DW Highway | \$ _____ |
| 7. North Fire Station – 643 DW Highway | \$ _____ |
| 8. MA Building – 487 DW Highway | \$ _____ |
| TOTAL | \$ _____ |

REFERENCES

Name: _____
Street Address: _____
City, State, Zip Code: _____
Telephone No.: _____
Contact: _____

Name: _____
Street Address: _____
City, State, Zip Code: _____
Telephone No.: _____
Contact: _____

Name: _____
Street Address: _____
City, State, Zip Code: _____
Telephone No.: _____
Contact: _____

The above proposal is provided in accordance with the Town of Merrimack's Proposal dated November 28, 2016, except as indicated below:

Contractor: _____
Street Address: _____
City, State, Zip Code: _____
Phone No: _____ Fax No: _____

Authorized Signature: _____
Printed Name: _____
Date: _____

Attachment B
Reduced Salt Use Policy
Draft III Snow & Ice Policy

REDUCED SALT USE POLICY

Adopted by the Board of Selectmen on November 1, 1984,

to be effective immediately.

BACKGROUND

The Board of Selectmen, in considering the use of salt for snow removal during the winter months, has become increasingly concerned with the impact on the environment as a result of salt application. Accordingly, the Board took action on July 5, 1984, and instructed as follows:

"John Grady noted that several communities do have salt policies although not in writing that they don't use salt in areas of town where there are wells and it is the feeling of the Conservation Commission that something should be done in Merrimack.

IT WAS MOVED by John J. Grady

THAT town administrators develop a "reduced salt use" policy for those areas of town that are not served by a public water system; further that special attention be paid to provide for safety at bridges and intersections. Said policy will be presented to the Board at our regular meeting in August."*

Currently the Town of Merrimack, as a matter of policy, has listed the following streets as "No Salt" routes:

All of Sargent Acres:

Cedar Lane
Douglas Street
Beech Street
Arbor Street
Spruce Street

All of Knollwood:

Danforth Road
Hassell Road
Hutchinson Road
Cowin Road
Cummings Road
Gerard Drive
Palmeri Drive

*Motion amended to first meeting in September. No policy submitted at this time. Town Manager instructed to submit policy for 9/20/84

NO SALT ROUTES Cont'd.

Continental Boulevard from Omni Spectra to 1,000 feet past Digital;
 Naticook Road from Camp Naticook to Cummings Road; Watkins Road (Dirt)
 Scott Drive and Bryce Drive off of Amherst Road; and Thornton Road West.

DIRT ROADS:

Thomas Road	Rivergate Road
Miriam Road	Uphan Road
Mayhew Road	Lester Road
Longa Road	Fuller Mill Road
Birch Road	Level Street
Pinetrail Road	Fairway Drive (portion)
Richards Road	Reis Drive
Donald Road	Gull Lane
Greenwood (portion)	Hall Avenue
Woodward Road (portion)	Manchester Street (portion)
Farkhurst Road	Thornton Road East
Stowell Road	Hightnoon Avenue
West Road (portion)	Greenspond Road
Old Blood Road	Tallant Road
Mill Road	Shore Drive
Bowers Lane	

REDUCED SALT USE POLICY

The following policy was adopted by the Board of Selectmen after several months of consideration and with appropriate input from various organizations, such as the Merrimack Conservation Commission and Planning Board, the Merrimack Village Water District, the Highway Safety Committee, the Merrimack School Board, and the Nashua Regional Planning Commission. The Board of Selectmen, over the years, has become increasingly concerned with the amount of road salt being used. As a result, the policy was adopted on November 1, 1984, to become effective immediately. It should be clearly understood that this policy is designed to reduce the use of salt during normal winter operations. However, in the case of severe weather, ice storms, etc., the stated policy of "No Salt" on certain roads is to be set aside so that roads may be properly treated to provide safe travel conditions.

P O L I C Y

In an effort to reduce the amount of salt used and to lessen the adverse impact on the environment, the following streets are to be designated as "No Salt" routes:

Area I

- | | |
|------------------------|------------------|
| 1. Center Street (all) | 6. Depot Street |
| 2. Front Street | 7. Harris Avenue |
| 3. Maple Street | |
| 4. Pleasant Street | |
| 5. Mill Street | |

as well as other town streets in this area.

In addition to the town-maintained roads in Area I, the town will encourage the owner/developer of the Commons to reduce and/or eliminate the use of all salt and chemicals within this area and to encourage the snow removal process by mechanical means. This area is of particular concern to the town due to the proximity of two major wells, owned by

Area II

1. Railroad Avenue (all)
2. Wright Avenue

Area III

- | | |
|---|-------------------------|
| 1. Willow Lane (all) | 5. Thornton Street |
| 2. Lozeau Drive | 6. Caron Street (all) |
| 3. Greeley Street (all east of Route 3) | 7. King Street (all) |
| 4. Griffin Street (all) | 8. Herrick Street (all) |

Area IV

- | | |
|-----------------------------|----------------|
| 1. Thornton Road East (all) | 4. Stuart Road |
| 2. Manchester Street | 5. Drouin Way |
| 3. Thornton Road West | |

Area V

- | | |
|-----------------------|--------------------|
| 1. Ingham Road | 4. Highnoon Avenue |
| 2. Morningside Avenue | 5. Sunset Drive |
| 3. Dunn Avenue | |

Area VI

- | | |
|---------------------|-----------------------------|
| 1. Greens Pond Road | 3. Continental Boulevard |
| 2. Tallant Road | 4. Camp Sargent Acres (all) |

Area VII

- | | |
|-----------------|---|
| 1. Watkins Road | 4. Berry Lane |
| 2. Scott Drive | 5. Stevens Drive |
| 3. Bryce Drive | 6. Amherst Road (from Cross Street to intersection of Turkey Hill Road) |

Area VIII

- | | |
|--|------------------|
| 1. Naticook (from Danforth to Peaslee) | 5. Cummings Road |
| 2. Danforth Road | 6. Palmeri Drive |
| 3. Hassell Road | 7. Gerard Drive |
| 4. Cowin Road | |

Area IX

All streets west of Baboosic Lake Road, as listed:

- | | |
|-----------------------------|-------------------|
| 1. Beebe Lane | 12. Mayhew Road |
| 2. Coleman Path | 13. Carter Road |
| 3. South Baboosic Lake Road | 14. Miriam Road |
| 4. Four Seasons Lane | 15. Thomas Road |
| 5. Autumn Lane | 16. Birch Road |
| 6. Greenwood Lane | 17. Richard Road |
| 7. Surrey Lane | 18. Donald Road |
| 8. Hunter Lane | 19. Pinehill Road |
| 9. Holly Lane | 20. Arnold Road |
| 10. Sunset Avenue | 21. Shore Drive |
| 11. Longa Road | 22. Jebb Road |

Area X

- | | |
|----------------|----------------|
| 1. Farmer Road | 3. Foster Road |
| 2. Mason Road | |

In addition, all roads that are not serviced by the Merrimack Village District, will be subject to reduced salt applications.

Note: The Town does not use salt on any dirt roads. This practice will continue.

Other Considerations

1. Presalting of any routes, not historically done, will only be accomplished under the circumstances of potentially extreme weather conditions and not as a matter of regular course. This judgment will of course have to be determined by the Director of Public Works, Highway Superintendent, or their designee.
2. A salt/sand mixture will be used in the so called "development routes" (roads within developments that are not considered main routes, arterial roads, etc.) in proportions that are necessary to provide antiskid conditions 90% sand/10% salt.
3. Implement, beginning with the budget process, a planned tree removal project, designed to remove evergreen trees and others from at least the south side of roads, to allow the sun to penetrate shaded areas and thus melt snow and ice naturally.
4. Increase our efforts to train public works officials and employees in the proper and most efficient use of salt, abrasives and other chemical de-icers and to continue to explore innovative alternatives to the use of salt.
5. An all-out effort to be made to educate the travelling public to the reduced salt policy and the need to be more aware of travel safety.
6. Increase our accounting after each storm to determine the amount of materials used, the area covered and the results. A standardized reporting form could be developed to allow supervisors to review the results and critique the same.
7. Implement new and use the given devices available to the town for the proper and predetermined use of chemicals during a given storm. All spreaders should be calibrated before the winter season using the materials to be used (salt, mixtures of sand and salt, etc.).

General Policies Relating to Major Routes,
Highways and School Bus Routes

The following is adopted by the Board, recognizing that this general information is taken from the Pennsylvania D.O.T MANUAL BASING APPLICATIONS ON STORM CONDITIONS.

Treatment Procedures

The rates of application of chemicals and antiskid materials and procedures set forth herein, are intended as guidelines only and are to be adjusted in accordance with existing conditions. There are roughly five major kinds of storms. Each requires a somewhat different approach. All maintenance personnel should know what the basic kinds of storms and how to combat them.

Storm Condition

Procedures

Condition 1

Temperature - near 30°
Precipitation - snow, sleet
or freezing rain
Pavement condition - wet

If freezing rain, apply salt at 200 pounds per mile. If snow continues and accumulates, plow and salt simultaneously. If rain continues to freeze, reapply salt at 200 pounds per mile.

Condition 2

Temperature - below 30°
and falling
Precipitation - snow, sleet
or freezing rain
Pavement condition - wet
or sticky.

Immediately apply chemical at 500 to 600 pounds per mile. If freezing rain, at 200 to 400 pounds per mile. If snowfall continues and accumulates, plow and repeat chemical application simultaneously.

Condition 3

Temperature - below 20°
and falling
Precipitation - dry snow
Pavement condition - dry

Plow as soon as necessary. Do not apply chemicals. Continue to plow and patrol to check for wet, packed or icy spots; treat them with heavy chemically treated antiskid material.

Treatment Procedures (Cont'd.)Storm ConditionProceduresCondition 4

Temperature - below 20° and
at night

Precipitation - snow, sleet
or freezing rain

Pavement condition - wet.

Apply chemicals or antiskid material as often as required by traffic conditions. If temperature starts to rise, apply chemicals at 600 to 800 pounds per mile, then start plowing as soon as feasible. Continue until bare pavement is obtained.

Condition 5

Temperature - below 10°

Precipitation - snow or
freezing rain

Pavement condition - accumulation
of packed snow or thick ice.

Apply antiskid. Apply chemicals at the rate of 500 pounds per mile. When snow or ice becomes slushy, remove by plowing. Repeat application and continue blading until pavement is clear.

NOTE: The above mileages are based on a two-lane pavement.

The light, 200-pound application of salt called for in Conditions 1 and 2 must be repeated as often as possible for the duration of the condition. Careful judgment shall be exercised in the application of antiskid materials outlined in the five conditions above since changing conditions may require adjustment of these procedures. Also, if chemicals are applied during low temperatures, high winds and drifting snow, slippery conditions may develop where otherwise the pavement would remain dry.

Chemical Application

Proportions for Chemical Mixtures

Chemical application for snow and ice control cannot be determined by any set formula, owing to conditions encountered which will vary according to location, temperature, humidity, wind, traffic, precipitation, and time of day. Addition of calcium chloride to salt acts as a triggering agent and greatly speeds up the slower melting action of salt at low temperatures. Caution should be exercised when chemicals are mixed. If the salt is wet, caking will result. Much will depend on the judgment of the Superintendent, Foremen, or their designee, as to the method and application treatment. However, it is suggested that salt and calcium chloride for immediate use be mixed in the following proportions:

Temperatures above 25° -- straight salt

Temperatures between 15° and 25° -- one part calcium to three parts salt

Temperatures between 5° and 15° -- one part calcium to two parts salt

Temperatures below 5° -- equal parts of calcium and salt

Below 0° -- care should be exercised in the use of chemicals

By using these recommendations as a guide and basing the proportions on the average temperature during snowstorms, the best standard mixture can be determined.

SPREADING CHEMICALS

Chemicals are usually applied as soon as there is a definite indication of snow sticking to the pavement or the formation of ice. The initial application of chemical is very critical, because the promptness of the application and the amount of chemical applied determines if the snow or ice will stick to the pavement. When the pavement is wet, it may be practical to make a chemical application slightly ahead of the actual storm to prevent development of a slippery condition.

Caution should be exercised in the use of chemicals during periods of sharp temperature drops, because slush and brine may refreeze. When the snow has stopped, all slush should be plowed promptly from the surface of the pavement so the pavement may dry quickly and refreezing of the slush will be prevented.

The chemicals will be spread over a maximum width of four to six feet along the center of the roadway. On a superelevated curve, when traffic and road conditions permit, the chemicals will be spread on the high side of the roadway.

Antiskid Application

Order of Operations

At the beginning of a storm, antiskid spreaders* should be dispatched to cover predesignated locations which become hazardous immediately. These locations will include bridge decks, steep grades, sharp superelevated curves and major intersections.

Spreading Antiskid

On a two-lane highway, the rate which antiskids are spread will be approximately 800 pounds per mile on ice and approximately 500 pounds per mile on packed snow. The pattern of spread will be such that material will cover one lane only. This pattern will reduce the danger to oncoming and passing traffic.

Spreader Adjustment and Speed

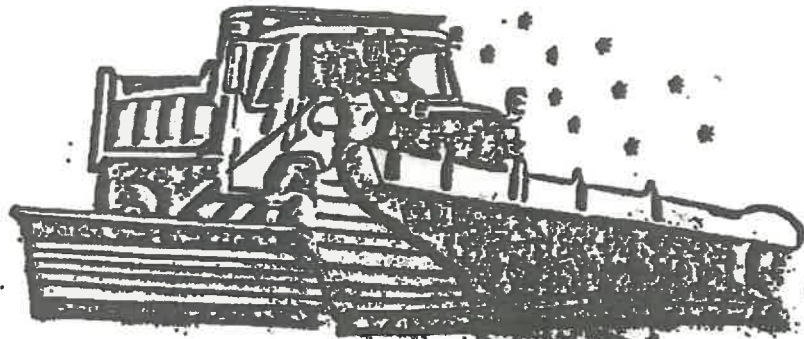
Once the rate of application of chemicals or antiskid material has been determined by the Superintendent or his designee, the operator must estimate the average speed he will travel and then make his gate setting as determined from the calibration chart in those trucks so equipped.

*Units that spread sand, salt or any other abrasives useful in antiskid operation.



MERRIMACK
New Hampshire

DRAFT III



SNOW & ICE POLICY
OPERATIONS MANUAL

DRAFT III

MERRIMACK

NEW HAMPSHIRE

SNOW & ICE POLICY - OPERATIONS MANUAL

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RESOLUTION

Be it resolved that the Board of Selectmen of the Town of Merrimack N. H. adopts the following statements of policy regarding winter snow and ice clearing operations:

1) Notwithstanding the circumstances involved with changing climatic conditions, the Town will endeavor to keep Town roads, Town parking lots in a reasonably safe condition for travelers and,

2) Town employees will endeavor to exercise reasonable care and diligence in the performance of their duties consistent with the intent of the attached Town of Merrimack, "Snow & Ice Policy" and,

3) Travelers who use Town roads, parking lots and walkways are expected to demonstrate due care and reasonable caution, especially under adverse winter conditions.

Executed at Merrimack, New Hampshire, this _____ day of October, 1992.'

FORWARD

Of course, the most important element of any winter maintenance operation is people. In Merrimack, New Hampshire, we are fortunate to have many dedicated employees. This Snow and Ice Policy manual is created in an effort to communicate with those whose task is providing safe roadways during winter storms and to enlighten and help those whose lives are impacted by the New England winter.

The intent of this manual is to provide the Public Works employee, and the affected public with information, including the latest procedures and techniques, for addressing winter storms. It will help Public Works employees give the public the most effective snow and ice control program possible and, therefore, safe winter roads, while remaining environmentally sensitive.

1. STATEMENT OF PURPOSE

The main objective of the Snow and Ice Policy is to provide an acceptable standard of winter maintenance that will provide reasonably safe roadways during, and after, adverse weather conditions throughout the winter season. It will also state the use of equipment, the general operation directives, and support programs. The intent of this document is to be used as an internal Public Works operations manual to insure the implementation of Policy approved by the Town Manager and the Board of Selectmen. Winter storms cause hazardous driving which, in turn, becomes a factor in delays to traffic, an increase in the accident rate and general interference with the normal business and social life of the public. Each winter storm is an emergency condition. Work during storms must be carried out on this basis, and advance preparations are to be organized with this in mind.

2. GENERAL OPERATING POLICY

The Town of Merrimack, located near New Hampshire's southern border, historically witnesses an annual snowfall of sixty inches. The Department of Public Works, primarily through its Highway Division, will continue to carry out a complete snow removal/ice control program on all streets and highways under its jurisdiction within the Town, with the exception of the F. E. Everett Turnpike, and portions of the D. W. Highway under the jurisdiction of the New Hampshire Department of Transportation, and private roads which are the responsibility of others.

3. GENERAL OPERATING POLICY Cont'd.

Since 1984 the Town has adopted a "Reduced Salt Policy". While maintaining safe roads during the winter months, the Board of Selectmen was concerned with reducing the amount of road salt on Town streets. Currently the Highway Division of the Department of Public Works maintains over 420 lane miles of Town road. The Policy includes a reduction of salt on many streets, as well as the total elimination of salt on other streets. Appropriate signage throughout the Town advises motorists and residents of this salt reduction.

The Public Works Director has direct responsibility for daily operations of the Department, acting under the general direction of the Town Manager and authority of the Board of Selectmen. The Appendix contains an organization chart identifying Department positions.

During the interval between November 1st and April 30th, potential snow and ice conditions require the Department of Public Works to have its resources in constant readiness. Preparations to meet this responsibility, therefore, must be made prior to November 1st.

4. SUPERVISOR RESPONSIBILITIES

Supervisors must be aware of roadway and weather conditions at hand. The knowledge of what is the generally accepted practice or procedure, (see Appendix B Department Directives) to follow or implement is essential in addressing winter snow and ice evolutions. This knowledge (see Appendix B) includes, but is not limited to: a) clear understanding of the chain of command, 1984 Reduced Salt Policy, equipment and manpower, primary and

4. SUPERVISOR RESPONSIBILITIES Cont'd.

secondary spreader and plowing assignments, dispatcher duties, documentation procedures, contractual obligations and responsibilities, applicable Town ordinances and Departmental directives, all of which are contained in the Appendix.

5. SNOW AND ICE STORM CONTROL CENTER

The Town of Merrimack, during inclement winter weather, will man and maintain a snow and ice control center which is located on the first floor of the Department of Public Works Highway Division facility at 80 Turkey Hill Road (Telephone #424-9411). The snow and ice control center, or storm center, will be the responsibility of the on-duty/on-call Highway Division Supervisor, until such time as he is relieved of this responsibility by another Public Works Supervisor such as the Highway Superintendent, Assistant Public Works Director, or the Public Works Director. It shall be the responsibility of the storm center Supervisor in-charge to maintain a record of this center's activities by maintaining the "Dispatcher's Log" documenting all pertinent storm information (see Appendix J for sample). This information includes, but is not limited to: current weather conditions, road condition, Supervisor in Charge, weather forecasts, temperature, manpower utilization, equipment utilization and problems, service requests, telephone calls and visitors. It shall be the policy of the storm center (see Appendix for Directive #1) to utilize a dispatcher to maintain the "Dispatcher's Log" entries, and to assist with the telephone communication duties if three or more pieces of equipment are needed to address a snow or ice evolution; thus allowing the Public Works Supervisor to assess in the field the effectiveness of the response to the weather problem.

5. SNOW & ICE STORM CONTROL CENTER Cont'd.

The Director of Public Works, or his designee, will, during the interval between November 1st and April 30th, provide the Town's Police Department and Command Center with a monthly Public Works Supervisor duty roster, thus apprising the Police Department (which is manned at all times), who to call in the event of a winter snow or ice problem is developing or has occurred.

6. RESOURCES AVAILABLE

To assist the Public Works Department in the planning and execution of Winter Operations in order to provide timely winter street clearing services, and to gauge the level of activity required prior to, during, and following winter storms, the Town utilizes the following:

- A. Snow/ice storm warning forecasts and updates are obtained from a contracted weather service, which is subject to change.

The current service is:

Weather Services Corporation

131A Great Road

Bedford, Ma. 01730

617/275-8860 or 1/800/634-2549

The communication is two-way with information provided to the Town on standard warning sheets, using a prescribed format and calling procedure (see Appendix E), and with questions by the Town handled via telephone. Emergency weather advisories will be issued immediately throughout storms, or during normal working hours. During off-duty hours the emergency weather advisories will be passed on to the Police Department.

6. RESOURCES AVAILABLE Cont'd.

B. Weather forecasts are provided by the National Weather Service located in Concord, N. H. (Telephone No. 225-3161). In addition the weather forecasts are broadcasted continually, and receivers monitor this forecast at the Public Works Garage, Town Offices and the residence of the Public Works Assistant Director.

C. Weather forecasts are provided by local radio and television stations, including the dedicated weather channel on cable television.

D. Assistance is available on local road conditions from the Merrimack Police Department. During off-duty Public Works hours (3:30 p.m. - 7:00 a.m.), the Department of Public Works utilizes information provided by police shift commander on duty/ patrol. To provide the best possible response in the shortest time, it is important that the following information be provided by the Police Department, and conveyed to the Department of Public Works at the time contact is made.

E. Private contractors as directed by the Highway Superintendent and/or the Assistant Director of Public Works (see Appendix C).

POLICE DEPARTMENT

1) COMMUNICATIONS DIVISION

A. Forecasted Storm

The Town of Merrimack has contracted with a private weather service for information on forecasted snow/ice storms.

1. Whenever the dispatcher has received information from the private weather service they should, if during regular business hours, refer them to the dispatcher at the Department of Public Works.

If it is after regular business hours, then the dispatch center should:

- a) Advise the on-duty Shift Supervisor of the details of the storm warning.
- b) Advise the on-call Department of Public Works Foreman of the details of the storm warning.
- c) Document on the forms provided by the weather service the information received.
- d) Document on the station log the information received.

B. Inclement Weather, Actual

Whenever the dispatcher receives a complaint from a citizen, they should obtain all of the necessary information needed to send a Police Officer to investigate. Once that information has been obtained they should:

1. Document in the station log, as well as assigning a "Q" sheet to the officer.
2. Notify the sector car of the complaint and make the request that the complaint be investigated.
3. If the Police Officer advises that the roadway is hazardous and makes the request that the Department of Public Works should be notified, then the Shift Supervisor is to be advised and he should evaluate the information.

Whenever possible the Shift Supervisor should evaluate the situation personally prior to making the request for Department of Public Works to be notified.

C. Notification

Prior to calling the on-call Department of Public Works foreman, the following information should be obtained:

1. Is the problem Town-wide, or is it a specific problem?
2. What is the specific nature of the problem?
3. SNOW - How much on the road and is it snowing heavily at the time?
4. ICE - Severity, is it Town-wide, or a specific problem?
5. DEBRIS - Type, size and is it blocking traffic?
6. WASHOUT - How large an area is it? Does it hamper or block traffic flow?

Attempt to explain in as much detail as possible the problem that exists.

1. Is the road closed? If so, by cruiser or barricade?
2. Is the Fire Department standing by?

The decision will be made ultimately by the Foreman of the Department of Public Works, however any input by the patrol officer on the scene may assist the Department of Public Works in a timely arrival. In ALL cases, proper documentation will be made of the times and the corresponding requests.

2) PATROL DIVISION

Inclement weather observation - Once the police officer has observed weather that affects the safe operation along the roads, he should:

1. SNOW - Once it begins to snow steadily and the roads become covered, the decision to notify the Department of Public Works should be made.
2. ICE - Discretion should be used, i. e., location, time of day, main roads vs. developments. If there is a doubt whether or not to notify the Department of Public Works then the call should be made.

The patrol officer shall contact dispatch advising them of the nature and severity of the problem.

The patrol shift supervisor will evaluate this information and, if practical, personally assess the situation. He will then notify dispatch with all of the required information and request that the Department of Public Works be notified.

4. Once contact is made via telephone, and the Public Works notification list, follow-up should be by radio between the Department of Public Works and the Police Department. It's the responsibility of the Department of Public Works to establish radio contact with the Police Department as soon as assistance is on-site, or on Town roads. Communication will be maintained until the problem is addressed satisfactorily. The Department of Public Works will notify the Police Department when all work is complete.

7. PRE-STORM PLANNING

When possible, it's important to review the STORM PLAN for each winter storm. The Assistant Public Works Director, Highway Superintendent, Equipment Maintenance Superintendent and Highway Division Foreman will meet to review the STORM PLAN. This meeting will cover equipment and its status, the personnel and their assignments, and the type of snow/ice treatment that is expected to be used. It's fully understood that the storm plan expresses the best intentions based on available information.

7. PRE-STORM PLANNING Cont'd.

The Assistant Public Works Director and Highway Superintendent, through their foreman, will be able to make adjustments to cope with changing storm conditions. Therefore, the STORM PLAN is subject to change to meet the latest available information. Changes in the STORM PLAN will be documented on the post-storm report which will be submitted to the Public Works Director within 96 hours of the storm's ending. (See Appendix M for sample Post Storm Report).

8. WINTER STORM EQUIPMENT READINESS

It's the policy of the Department of Public Works to have all snow fighting equipment operational on or before October 31st of each snow season. The Equipment Maintenance Superintendent is to make ready all equipment by the above date. All trucks are to have a preventive maintenance check, spreaders are to be mounted and checked for proper operation, all plows are to be checked for welding repairs and adjustments, and all spreader chains are to be adjusted and serviced.

During winter storms, the Equipment Maintenance Superintendent will be responsible for all repairs to equipment. Highway Division personnel will be responsible for the washing and greasing of all snow equipment as soon after a storm as weather permits. The washing of the equipment is to include the spreader, the truck and the plow. The greasing of the equipment is to include the spreader and the chassis.

8. WINTER STORM EQUIPMENT READINESS Cont'd.

If during any one storm a truck is not able to be put back in service in one hour, the Equipment Maintenance Superintendent will notify the Storm Control Supervisor.

At the end of each winter storm the Equipment Maintenance Superintendent will be given a list by the Highway Superintendent of all repairs needed and and schedule those repairs so that the equipment is ready for the next storm, and that he might comment on same.

At the end of the winter season the Equipment Maintenance Superintendent will be responsible for preparing the snow equipment for summer storage. All spreaders are to be removed from the trucks, spinners removed, washed, greased and covered with a light coat of oil. All calcium tanks are to be drained and flushed clean and stored under spreader racks. All plows are to be checked for blades, welding repairs and stored in the truck storage area. Any necessary work that is to be performed on any snow fighting equipment is to be scheduled by the Equipment Maintenance Superintendent.

9. STORM READINESS

To maintain a minimum initial response time in the event of a storm, it shall be standard practice throughout the winter season that at the close of the working day, prior to weekends, holidays and when a storm is forecasted, the trucks and equipment will be fueled at the end of each day, the plows and sand spreaders attached, and the trucks otherwise prepared for storm operations. Plows are not to be used until snow is one and one-half inches or more, unless authorized by a Department of Public Works Supervisor.

10. MARKING DRAINAGE STRUCTURE AND OTHER FEATURES

Important drainage inlets and outlets which are located off the curb line and which are likely to be hidden under snow and ice, and fixtures which are located in hazardous locations, such as curbs, steps and outcropping of ledge, shall be marked with temporary or semipermanent markers such as wooden stakes or reflectorized posts. Yellow paint markings on the pavement will be permitted to mark catch basins which are along the curblines. All markers should be placed prior to December 1st, and remain throughout the year except for those that are offensive to the homeowner.

11. ANNUAL CALIBRATION OF SPREADER UNITS

The Highway Division Foremen are responsible for all calibrations as follows:

1. October 31 has been designated as the date for completing calibrations for all Town owned equipment.
2. All spreader units must be calibrated annually to apply the applicable snow and ice control material at the specified rate of application dictated by Policy. (See Appendix P.)
3. Hopper type spreaders: Using a 6 cubic yard load and 20 M.P.H. vehicle speed as a basis for calibration, obtain the desired unloading time by making the required control adjustments.
 - a) Adjust gate opening
 - b) Set engine throttle at speed required
 - c) Adjust conveyor speed by setting control valve
 - d) Adjust width of spread by setting control valve
4. A Calibration Chart Card must be completed for all spreader units and displayed by attaching it to the sun visor inside the truck cab.

11. ANNUAL CALIBRATION OF SPREADER UNITS Cont'd.

6. A record showing the date of calibration, truck equipment number, make of spreader and spreader equipment number must be submitted to the Highway Superintendent's office as units are completed.
7. In the event that minor adjustments are needed prior to the start of the snow removal season (November 1st), each foreman must arrange to have these adjustments made immediately. During storms and while sanding operations are in progress, further adjustments to spreader equipment might be required, due to the moisture conditions that prevail and affect the rate of application.

12. WINTER STORM OPERATIONS SPREADERS

Utilizing the resources identified in Section 6 of this manual, the Snow and Ice Control Center will be activated by the on-call/on-duty Public Works Supervisor when made aware of an unsafe or potentially unsafe roadway/bridge condition. The staffing and response will be a judgment based on experience, forecasted weather and actual weather conditions. As each or any stage of the operation changes or concludes, the Department of Public Works will notify the Police Department.

The initial response will be to enact those procedures outlined in Public Works Directive #1 and #2 located in the Appendix B of this manual, implementation of primary spreader responses also shown in the Appendix N, and the Reduced Salt Policy found also in the Appendix O. The Public Works Supervisor opening the Snow and Ice Control Center will immediately notify the Police Department that the center has been activated. The Public Works Supervisor will contact other employees of the Department and outside contractors if applicable, documenting same on the storm progress worksheet. (See sample in Appendix F.)

12. WINTER STORM OPERATIONS SPREADERS Cont'd.

Although significant improvements have been made in weather forecasting, accurate predictions of the specific effect of winter conditions on the roads in the Town of Merrimack are not possible. An overall plan has been developed to provide for clearing of the roads, and this plan is generally followed. However, each storm event is unique and deviations from the plan occur often. Decisions must be made using individual judgment based upon a current assessment of the situation.

The storm control Supervisor will then call in, on an as-needed basis, snow emergency personnel by using a list of names and phone numbers of those who are to report for winter storms. When a call to report to work is received, the employee is expected to report to work as soon as possible. At this time they must punch the time clock and dress in such a manner as to be able to perform in inclement weather. After punching in they are to report to the storm control Supervisor for storm instructions. In some circumstances, because of pending severe weather conditions, the Storm Control Center will be manned prior to the start of the storm.

Start of Storm: Prior to leaving the garage, the assigned operator will assure that the truck is loaded with the prescribed snow and ice control material, the spreader is properly set for the type of material to be applied, and that the plow, if required, is installed in its proper position, ready for use in what the storm operation instructions are. If there have been last minute changes in assignments, the operator should be made aware of them by the Storm Supervisor. These changes can only come from the Storm Center Supervisor, Superintendent, or Assistant Public Works Director.

12. WINTER STORM OPERATIONS SPREADERS Cont'd.

As soon as there is snow accumulation on the road, snow and ice control materials will be applied to all routes starting with primary streets (see Appendix N) at the prescribed application rate and other streets as instructed.

SPREADING: SNOW & ICE CONTROL MATERIALS

General Instructions: It has been the field practice to put full loads of snow and ice control materials on the trucks regardless of the amount required on a particular run. In order to allow this practice to continue, two conditions must be met - the rated capacity of the equipment must not be exceeded, and with only the type of material called for in the Policy. Any deviation from the amount, or type of material designated by this Policy, will have to be justified.

Hopper Type Spreader: Generally the snow and ice control material will be distributed along the centerline separating each lane of pavement with the exception that the material will be applied to the high side of the curves. Salt shall be placed in a windrow off a dead spinner at the specified application rates. The abrasives shall be spread 4 - 5 feet either side of centerline and/or 8 - 10 feet in width where multi-lane coverage is required at the specified application rate.

A PRE-MIXTURE OF SAND AND SALT

A winter mix of sand and salt will be the primary application on all Town development roads and parking lots provided these development streets are outside of "No Salt" areas.

12. WINTER STORM OPERATIONS SPREADERS Cont'd.

The pre-mixture may be applied with a temperature range of 20 degrees F to 32 degrees F.

STRAIGHT SAND

Straight sand will be used as follows:

- a. To be applied to all Town roads and lots, inside "NO SALT" areas.
- b. When temperatures exceed 30° and rising to above freezing.
- c. Calcium will be sprayed on sand when temperatures are 20° and falling.

SPECIAL MIXTURES

Special mixtures may be used for experimental purposes, for emergency conditions, or for selected areas. The use of special mixtures will require prior approval of the Assistant Director of the Highway Superintendent. The special mixtures will consist of sand, salt and liquid calcium.

Control of Sand/Salt Usage:

In order to provide the control needed to stay within the estimated amounts of snow and ice control materials, a record of the type and amount of materials being used by each truck driver per storm is necessary. This record will help to pinpoint use of materials on a per storm basis so that immediate and corrective action can be taken. A storm report on all activity throughout the storm will be completed by the Assistant Public Works Director and forwarded to the Director within 96 hours after the storm. A sample storm report is included in this manual. (See Appendix M.)

The liquid calcium is to be stored in a PVC type container at the Public Works Highway facility. The mix is to consist of 68% water and no greater than 32% calcium chloride. This liquid is to be sprayed on straight salt loads if air temperature reaches 20° or less.

12. WINTER STORM OPERATIONS SPREADERS Cont'd.

SPECIAL MIXTURES

ESTIMATED SAND-CHEMICALS REQUIREMENTS

Listed below are the estimated quantities of snow and ice control materials required by the Town to combat winter storm conditions. The amounts were determined from an average of the past six year's use.

For the Town to stay within the estimated amounts of snow and ice control materials. Strict adherence to the specified application rates, the judicious use of repeat applications, the frequent plowing required to minimize snow build-up that would tend to reduce the effectiveness of the snow and ice control material.

<u>YEAR</u>	<u>TONS</u> <u>SALT USED</u>	<u>GALLONS</u> <u>CALCIUM USED</u>	<u>CUBIC YDS.</u> <u>SAND USED</u>
1986-87	2432	N/A	8925
1987-88	2475	3174	8390
1988-89	2800	6259	10,700
1989-90	2866	2519	13,125
1990-91	1850	2967	5300
1991-92	2632	461	6405

13. WINTER STORM OPERATIONS PLOWING

PLOWING OPERATIONS (See Plow Routes & Assignments in Appendix N)

General Instructions: A plow will be assigned to each Highway truck. Plow routes are designated for mostly right-hand turns to avoid leaving windrows in intersections. The plow will be set at an 80 degree angle to the road, and be equipped with blades. The same setting of plows will be used for all storms. Snow plow blades shall be checked for wear, not only at the end of each storm, but also at intervals during the course of plowing. Generally, the regular steel blades should be worn to 1/2" of the mold board. Plowing widths and instructions will be given prior to and during storms by Storm Center Supervisors, Highway Superintendent or Assistant Director. It will be Town policy to start plowing roads only after there is one and one-half inches of snow build-up on the roadways, or more. All plowing operations are to start after primary treatments by spreaders have concluded.

Plowing Speed: Plowing speed is to be gauged by the distance the snow and/or slush is cast or thrown by the plow. Under no circumstances will the speed of the vehicle be such that the material is cast an excessive distance from the edge of shoulder. In any event, plowing speeds shall be adjusted to prevent the showering of pedestrians, sidewalks, buildings, vehicles at grade separations (bridges) and across narrow medians onto opposing lanes when plowing to the left. The Town's policy of safe plowing speeds is not to exceed 20 MPH under all conditions. Special care will be taken to comply with the above.

Following all road clearing operations and post plowing spreading operations sidewalk clearing in designated areas only (see Appendix H) will generally begin. Due to a one shift operation, limited sidewalk clearing may not take place for some time following a storm.

13. WINTER STORM OPERATIONS PLOWING Cont'd.

It is important to note that the plowing plan (see Appendix N) which has been presented, and the accompanying maps are subject to change with each storm manual review. Also the time frame for clearing can vary markedly depending upon condition and continuing effects of a storm. Other factors affecting the plan are:

1. Night time plowing
2. Commuter traffic
3. Parked cars
4. Equipment breakdown
5. Assistance to the Fire or Police Departments
6. Assistance to school buses
7. Time length since the start of the storm

In order to guide the Department in utilizing the best available techniques in snow and ice clearing operations a set of guidelines is provided in Appendix C.

Operator and citizen safety is an important consideration during all snow clearing operations and suggested safety practices are provided in Appendix D.

14. TIMING OF A STORM AND/OR DURATION

The worst time for a storm is during the high commuting periods. If it begins to snow at 8:00 in the evening and is over by early morning, snow removal crews have ample opportunity to prepare the roads for the commuting hours. Under the best conditions, it takes a Public Works crew about three (3) hours to mobilize and complete initial salting applications. Consequently when a storm starts between 4:30 in the morning or 3:30 in the afternoon, travelers will need to take extra precaution until Public Works crews are able to treat the primary streets shown in the Appendix. (See Appendix N)

14. TIMING OF A STORM OR DURATION Cont'd.

It is recognized that the duration of a storm is directly relative to the cost associated with same. Three inches of snow that falls over a 24 hour period may cost twice as much to clear as six inches of snow that falls in eight hours. Storms of long duration increase salt use, equipment and employee hours. Storms of extended duration tax available resources to keep roads open over a prolonged period of time.

15. SCHOOL CANCELLATIONS

Notification of school cancellations is via the public media, i. e., local radio and television. It is asked that the public not to call Police, Fire, or the Highway Division phones as this ties up necessary emergency lines.

The decision is made by the School Superintendent after he consults with the School Bus Coordinator, a member of his staff. The on-duty Storm Center Supervisor will call the School Bus Coordinator at 4:15 a.m. on school days to apprise him/her of road conditions at that time.

Many factors are taken into account, with the children's safety being foremost, of course. On occasion, the Department of Public Works may have most of the Town roads plowed, but has not been able to clear schools. This can be a factor to be considered. Plowing all schools is an enormous task, and although a private contractor may ensure parking areas are plowed in time for school starting, the cost would be exorbitant versus the Highway Division doing the job. Many people are unaware that the Town's Public Works Department is responsible for plowing all schools in addition to our other duties. It should also be known that the Merrimack School Department doesn't have a delayed opening policy. Please respect your School Superintendent's decision as it is not an easy one and much is taken into consideration before judgment is made.

16. AFTER STORM

After Storm: After snow has ceased falling and the travelway is safe, ice may form at isolated locations following thawing, frost action or seepage. Wherever possible an attempt shall be made to eliminate these isolated ice patches at their source. Where this is not possible, such ice patches are thoroughly sanded. Hazardous conditions developing at such locations should be anticipated at the time of lowering temperatures, and treated by sanding wet pavement areas in advance of actual ice formation. It is a function of the Highway Division foreman to investigate the causes of these ice formations, and to seek the elimination of their source. In some cases, an application of salt, calcium and/or sand will be applied to eliminate the ice condition. Ice control vigilance must be maintained throughout the winter season so as to provide proper attention to these areas.

Post-Storm Critique: The Public Works Director, Assistant Public Works Director, Highway Superintendent along with all supervisors will hold a post-storm critique after the first storm when a full call-out is ordered. During the remainder of the winter, periodic critiques (approximately every fifth storm) will be held to review operations, and initiate the necessary actions to maintain the highest level of service practical.

At the end of each storm it is also critical that the Assistant Director conduct a post-storm critique to review the storm and see if changes should, or can be made prior to the next storm.

After a storm event, or during periods of lessened storm activity, a number of operations are to take place to insure readiness for subsequent winter operations.

16. AFTER STORM Cont'd.

1. Equipment needs to be inspected using preventive maintenance techniques, and repairs made as necessary. Special attention needs to be given to tires, brakes, snow plows--including wings, shoes, bearings, spinners and chloride feed systems.

2. Materials, including salt, need to be reordered to insure an adequate stockpile on-site.

3. Plow routes are to be driven and checked for identification of problems, especially illegal plowing by driveway contractors, problem mailboxes, snow castles, etc. It is desirable that the route drivers identify these problems and report them to the Storm Center Supervisor.

4. It is important to wing-back snow on road shoulders following each major storm, and to clear critical areas to make room for future storage. If the snow bank height becomes excessive, the top of banks will have to be cut down for proper visibility or future snow storage. If the snow is allowed to melt in place and refreeze, the result is a heavily compacted mass which cannot be moved without considerable effort by snow plows. Therefore, winging back is an on-going function which needs to be addressed as soon as storms subside, and the amount of stockpiled snow dictates that winging back is needed.

5. Generally the Town doesn't haul snow. However, at specific locations, intersections, cul-de-sacs without storage space, school bus route problem areas or sites of repeated accidents, the Town may selectively utilize the loader and dump trucks and haul snow from the site. The principle purpose of hauling is safety. The hauled snow shall be dumped at a suitable and acceptable place.

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16. AFTER STORM Cont'd.

6. It is important that roadway drains and catch basins be kept open to allow melting ice and snow to run off. A salt or solid calcium chloride application may be needed to free them of ice and snow.

7. Following a storm, generally within forty-eight hours, an investigation will be made of all complaints received during the storm, which have been documented on a Service Request form. The investigation will be completed by the Highway Superintendent or his designated representatives. Their findings shall be made known to the complainant as soon as practicable.

17. APPLICABLE ORDINANCE/LAWS

POLICE DEPARTMENT

Town Ordinance: All-night Parking in Winter 183-17

No vehicle or trailer shall be parked on any public street or highway between the hours of 11:00 p.m. and 6:00 a.m. from November 15 to April 15. The Town of Merrimack's Police Department has developed a policy that deals with the ordinance against Winter Parking. It states in part, that whenever possible written warnings will be given between November 15 and November 30. That vehicles which will be issued a summons for violating this ordinance should not be issued prior to 2:00 a.m. The exception to this will be whenever our area has been placed in a "Snow Alert", or if the Shift Supervisor deems it necessary to do otherwise.

Applicable Ordinance/Laws - Cont'd.

During snow clearing operations it is important that motor vehicles are not parked in a manner to create an impairment to traffic or to interfere with the removal of snow or ice, or the sanding or salting of public streets and highways, or to delay or preclude the delivery of emergency services, Police, Fire and Ambulance which would constitute a hazard contrary to the public health, safety and welfare. Because of this, the Board of Selectmen adopted a Parking Ordinance (Appendix L).

17. APPLICABLE ORDINANCE/LAWS Cont'd.

When Department of Public Works notifies the Police Department we are plowing, the Police Department begins to enforce N. H. RSA 236:20 Obstructions and Encroachments, which states: 236:20 Snow Obstruction. Any person who shall put or place or cause to be put or placed any snow or ice upon the surface of the traveled portion of any Class I or Class III highway or state maintained portion of any Class II highway for any purpose, except to provide a place necessary for crossing, recrossing and traveling upon said highways by sleds, logging or farm equipment, shall be guilty of a violation if a natural person, or guilty of a misdemeanor if any other person. The provisions of this section shall not apply where snow or ice is pushed across the traveled surface of said highways for the purpose of snow removal from land adjoining said highways.

The Public Works Department will notify the Police Department for appropriate action against motorists and residents who violate either the parking ordinance or obstruction statute. Where snow castles are built in the road edge snow banks, the Public Works Department will destroy the castles and provide the resident with a notice concerning the action taken, why it was necessary and a warning against future action.

Police will comply whenever a vehicle is parked or stalled on the roadway in such a manner as to be a hazard to motorists, or to hamper plowing operation to the extent that the roadway may become blocked, it shall be considered an obstruction and shall be removed by the Police Department at once to a location beyond the shoulder, or to a nearby location where it is no longer in the way. The Public Works driver shall report the condition to the Snow & Ice Control Center Supervisor who will then determine what course of action should be taken.

18. COMMUNICATIONS/PUBLIC INFORMATION

A. "During the storm" all communication from the public concerning conditions and problems should be directed to the Public Works Highway Division Office, 80 Turkey Hill Road, Merrimack, NH 03054, Tel.#424-9411. Emergency requests during non-working hours should be directed to the Police Department Communication Center, Tel. #424-3774 for relay to the Highway Division/Snow and Ice Control Center Supervisor.

B. Complaints or requests for service, when received, must be written on a Service Request form with the required information noted. The form to be used is provided in Appendix K.

The complaints will be reviewed and investigated by the Department and corrective action taken as appropriate.

C. Because of the volume of complaints specific to objects in the Town's right-of-way and damage to property, the following Town policy has been established.

1) Policy prohibits encroachment of the Town right-of-way without prior approval by the Board of Selectmen. Objects in the right-of-way are placed there at the owner's risk, and the Town assumes no responsibility for any damage to objects placed in violation of the statutes.

2) To insure mail delivery to all rural residents, the Town has provided blanket authorization for mailboxes located in the Town right-of-way. The Town retains control over specific locations of the mailboxes, and may require the homeowner to move the box to a more suitable location.

a. The Town will fix a damaged mailbox or replace a mailbox only when the Department of Public Works determines that a plow physically hit the mailbox. This determination is made by observation of cut marks, paint off the plow blade, etc.

b. Heavy snow coming off the plow blade will often knock over and damage mailboxes which have not been adequately mounted or braced, or those mailboxes whose doors have been left open.

18. COMMUNICATIONS/PUBLIC INFORMATION Cont'd.

b. Continued.

Also, mailboxes are damaged by private contractors and homeowners during driveway clearing operations. The Town will not fix or replace mailboxes in these situations.

3) The Town will restore or replace objects located on private property damaged as a result of its snow or ice clearing operations.

Rural Mailboxes: When there is a heavy accumulation of snow, the location of mailboxes close to the roadway makes difficult the push-back operations of this Department, and renders the boxes quite susceptible to damage as a result of our activity. It shall be Departmental policy to avoid as much as possible the leaving of a windrow of snow in front of rural mailboxes, and to use special care and consideration when plowing in their vicinity. If mailboxes are damaged during plowing operations, and the damage can be serviceably repaired by Town maintenance forces, the Highway Superintendent may elect to repair the damage. If the repairs cannot be accomplished by maintenance forces, the claimant shall file a claim with the Town's insurance carrier via the Finance Director, Tel. #424-2331.

TOWN OF MERRIMACK BOARD OF SELECTMEN POLICY RESOLUTION

WHEREAS, during the winter months, on occasion mailboxes become damaged or broken as a result of snow being thrown against them by Town Public Works snow plows during snow removal; and **WHEREAS**, On occasion mailboxes are damaged by actually being struck by Town Public Works snow plows:

NOW, THEREFORE, BE IT RESOLVED, that the Merrimack Board of Selectmen establishes this Policy resolution concerning mailboxes:

A. Residents and taxpayers are advised of the important of proper placement and anchoring of their mailboxes and posts so that damage to the boxes does not result from winter snow removal operations.

B. All mailboxes should be securely fastened to a sturdy post which is sufficiently anchored in the ground to resist the impact of plowed snow.

18. COMMUNICATIONS/PUBLIC INFORMATION Cont'd.

C. No part of the mailbox or post may be closer than six inches from the face of the curb or edge of pavement to prevent contact by the snow plow.

D. In the event of a mailbox or post is physically struck by the Town Public Works snow plow, it will be repaired or replaced only if the mailbox is not closer than six (6) inches from the face of the curb or edge of pavement as provided in Paragraph C above. The repair or replacement by Public Works will only be with a standard Post Office approved mailbox and/or fence post.

E. No mailbox or post will be repaired or replaced if damage was caused by the force of snow thrown by plows.

4) Recovery of damages will be pursued by the Town if Town equipment is damaged due to objects placed in the Town right-of-way.

5) When conditions are especially severe, the Town Manager may issue a special snow emergency statement advising the local media, radio stations, industries and schools that conditions may adversely affect their operations.

One or all of the following parties will be notified when this occurs:

Merrimack Police Chief - Contact Communications Ctr.	-				424-3774
Merrimack Fire Chief	-	"	"	"	424-3690
Merrimack Rescue	-	"	"	"	424-3690
Merrimack School Supt.	-	"	"	"	424-2131
Merrimack School Bus Coordinator		"	"	"	424-4942

18. COMMUNICATIONS/PUBLIC INFORMATION Cont'd.

MEDIA LISTING

<u>Type</u>	<u>Contact Person</u>	<u>Telephone</u>
<u>Radio Stations</u>		
WFEA (Manchester)	News Director	669-5777
WGIR (Manchester)	" "	625-6915
WZID (Manchester)	" "	669-5777
WSMN (Nashua)	" "	882-5107
WHOB (Nashua)	" "	889-1063
<u>Television Stations</u>		
TV 13 (Nashua)	" "	883-7435
WMUR Ch. 9 (Manchester)	" "	623-8061
WGOT Ch. 60 (Manchester)	" "	647-6060
<u>Cable Systems</u>		
Souhegan Cablevision		424-2000
<u>Newspapers</u>		
Union Leader		668-4321
Nashua Telegraph		882-2741
The Village Crier		424-7610

6) It is important that as part of the communication/public information program that the following issues be communicated each year to residents at or near the beginning of the winter storm season:

- a) Snow should not be blown/plowed or shoveled into the Town highway.

18. COMMUNICATIONS/PUBLIC INFORMATION Cont'd.

- b) The nightly parking ban needs to be respected and co-operation is needed during other times of the day when storms are occurring, and parked cars need to be moved.
- c) Children cannot be allowed to create castles, forts, tunnels and other similar structures in roadside snow banks.
- d) Mailboxes need to be properly installed and lids closed when not in use.
- e) Snow plows must be respected, given their width, weight and speed. Drivers often will attempt to crowd snow plows or homeowners will attempt to protect their shoveled drive by standing at the entrance. Both practices invite disaster because of the lack of maneuverability of these vehicles, the generally icy conditions, and often the inability to see perfectly under blowing snow conditions.
- f) Objects in the Town right-of-way need to be moved or relocated during the winter.

19. MISCELLANEOUS

A. Winter Damages

Asphalt curbing and lawn damage, particularly within sub-divisions, is a very common occurrence. Unless these damages pose a hazard, repairs will not be made until spring, though an investigation and/or verification of such damages will be made in a very timely manner. When spring arrives, Town forces will be dispatched to attend to all service requests received through the winter season. Care is taken that although warmer weather is present the ground off the edge of pavement must be strong/stable enough to support whatever Public Works equipment may be necessary for each particular service request.

B. Personnel Situations

All equipment operators within Public Works are unionized and covered by a collective bargaining agreement. As such there are a number of factors that must be considered as each storm situation presents itself. Personnel situations will be governed by the current Labor Agreement.

C. Vacations

The Department head, or a designee shall schedule vacations. Winter vacation requests will be only allowed when a judgment is made that operations will not be impaired.

20. PUBLIC SAND

As a service to Town residents, a public sand pile will be established each winter in a designated area at the Highway Garage. This sand (treated with salt to prevent freezing) is available on a self-serve basis in small containers. This material is not available in large quantities, or for commercial use.

APPENDIX
(Diskette: #034)

- A. Organizational Chart/Chain of Command
Diskette: #035
- B. Department Directives
Diskette: #036, 037, 038, 039
- C. Guidelines to Snow and Ice Clearing
Diskette: #041, 042, 043
- D. Guidelines to Safety
Diskette: #044, 045, 075, 046, 047, 048
- E. Sample Weather Report Form
Not on Disk.
- F. Storm Progress Work Sheet
Not on Disk.
- G. Contractor Snow Plowing Policy
Diskette: #049, 050, 051
- H. Sidewalk Plowing List
Diskette: #052, 053
- I. Foremen's Down Time Summary
Diskette: #079
- J. Sample Log Entries (Dispatcher Duties)
Not on Disk.
- K. Service Request Forms
Diskette: #054
- L. Applicable Town Ordinances
Not on Disk
- M. Storm Report Sample
Diskette: #055, 056
- N. Plow Routes/Spreader Evolutions
Diskette: #057
- O. 1984 Reduced Salt Policy
Diskette: #058, 059, 060, 061, 062, 063, 064, 066, 067, 068, 069, 070, 071
- P. Charts
Diskette: #076, 077, 078
- Q. Typical Terms
Diskette: #072
- R. Media Listing
Diskette: #074

Attachment C

**Stakeholder comments to the draft
Winter Maintenance and Salt Use Policy**

Kyle Fox

From: Kyle Fox
Sent: Wednesday, June 29, 2022 2:55 PM
To: Paul Micali; Brian Levesque; Mark DiFronzo; Timothy J. Thompson; ron.miner@mvdwater.org; Sarita Croce; Kristopher Perreault
Cc: Lori Barrett; Dawn Tuomala
Subject: Winter Maintenance / salt use Policy and Procedure
Attachments: Winter Maint and Salt Use Policy.pdf; Winter Maint and Salt Use Procedure.pdf
Importance: High

Hi all,

The Department of Public Works has been working to update our Winter Maintenance Policy and Procedures. We would like to present our proposal to the Town Council in August but wanted to reach out to our stakeholders first to offer time for you to give comments on the policy. The intent of the document is to have a policy that establishes the general rules by which winter maintenance and salt use programs will function and the procedure establish the guidelines for executing the mission of the policy. **Please provide comments to Lori and I by July 29.**

Tim,

Could you forward this to the Conservation Commission and the Planning Board to see if they would like to discuss the policy and offer comments? Lori and/or I would be available to attend the meeting(s) to discuss the policy and answer questions.

Thank you for taking the time to review this important document – we look forward to hearing your comments.

Kyle

Kyle Fox, PE

Public Works Director
Public Works Department
6 Baboosic Lake Road
Merrimack, NH 03054
(603) 424-5137
<https://www.facebook.com/MerrimackDPW>

Kyle Fox

From: Don Provencher (MVD) <don.provencher@mvdwater.org>
Sent: Saturday, July 9, 2022 10:32 AM
To: Kyle Fox
Cc: ron.miner@mvdwater.org; 'James Emery'; 'Jill Lavoie'; Paul Micali; Brian Levesque; Mark DiFronzo; Timothy J. Thompson; Sarita Croce; Kristopher Perreault; Lori Barrett; Dawn Tuomala
Subject: RE: Winter Maintenance / salt use Policy and Procedure
Attachments: 23WHPA211022.pdf; 45WHPA211022.pdf; 78WHPA211022.pdf

Hi Kyle! Hope all is well!

First, on behalf of MVD, I would like to thank you and the PWD staff for developing the updated Draft Salt use Policy and Procedure, both of which were immediately forwarded to the MVD commissioners a week or so ago by Ron Miner, MVD Superintendent, for our review, via the e-mail below. I am sure it was quite an undertaking to prepare!

MVD has been interested over the last few years in identifying which streets in town are designed as "low salt" and "no salt" use by the PWD, so we can confirm that MVD's Well Head Protection Areas (WHPAs) are adequately protected. As you likely know, salt applied on roads and more so, parking lots, has affected MVD wells. In fact, as you know, MVD is abandoning Well-3 (located behind the Dunkin Donuts near the MVD office adjacent to Green Pond), due to elevated sodium and chloride, and has developed a new replacement Well-9 further down Naticook Brook near MVD Well-2. Salt contamination is a real thing that our customers are already paying for! Once a well is lost due to salt, it is cost-prohibitive to treat to be placed back in use. We understand that parking lots in the WHPAs, and the NH DOT are significant contributors to the salt loads, and MVD thanks the Merrimack PWD for taking the salt matter seriously!

I've reviewed the Draft Salt Use Procedure document, as well as the attached three maps, which I understand were developed to identify proposed locations for "Aquifer Protection" signs to be installed. MVD also would like to make use of those same "Aquifer Protection" sign posts to include new "low salt area" and "no salt area" signs, to match up with the list of streets in town that are designed as "low salt" and "no salt" use in the Draft Salt use Procedure document. However, to identify where those proposed "low salt area" and "no salt area" signs should be placed, it would be beneficial to take the list of "low salt" and "no salt" streets, and create street maps with streets color coded as such. If I understand correctly, I believe the maps in the Draft Salt Use Procedure document are color coded based on the plow routes, and not based on the salt use designations. Can you confirm that I am looking at that correctly? If so, I'd like to discuss what kind of effort it would require to produce street maps that are color coded to match the proposed "low salt" and "no salt" list of street, overlaid with MVD's WHPAs, so we can all understand and identify where proposed "low salt area" and "no salt area" signs should be placed. I found it challenging in cross-referencing a list of streets against a street map, and I am sure a color coded street map of "low salt" and "no salt" streets would answer the question visually, hence my request.

Please feel free to reach out to me about this at your earliest convenience. Thanks, Don

Donald A. Provencher, P.E., Chair
Board of Commissioners
Merrimack Village District
2 Greens Pond Road
Merrimack, NH 03054
Home Phone (603) 883-4444
Cell Phone (603) 785-5887

MVDWater.org

 Please consider the environment before printing this email

From: Ron Miner [mailto:ron.miner@mvdwater.org]
Sent: Wednesday, June 29, 2022 3:12 PM
To: don.provencher@mvdwater.org; 'James Emery' <James.Emery@gza.com>; 'Jill Lavoie' <jill.lavoie@mvdwater.org>
Cc: kenneth.ayers@mvdwater.org; wolf.von.schoen@mvdwater.org; john.lyons@mvdwater.org; 'Paul McLaughlin' <paul.mclaughlin@mvdwater.org>
Subject: FW: Winter Maintenance / salt use Policy and Procedure
Importance: High

Good Afternoon Everyone,

Please see the attached email and Draft Salt use Policy and Procedure, Kyle is looking for comments by July 29th.

Thanks,

Ron Miner

Superintendent
Merrimack Village District
2 Greens Pond Rd.
Merrimack, NH 03054
Tel: (603)424-9241 x107
Cell: (603)440-8722
Fax: (603)424-0563
email: ron.miner@mvdwater.org

From: Kyle Fox <kfox@merrimacknh.gov>
Sent: Wednesday, June 29, 2022 2:55 PM
To: Paul Micali <pmicali@merrimacknh.gov>; Brian Levesque <blevesque@merrimacknh.gov>; Mark DiFronzo <mdifronzo@merrimacknh.gov>; Timothy J. Thompson <tthompson@merrimacknh.gov>; ron.miner@mvdwater.org;
Sarita Croce <scroce@merrimacknh.gov>; Kristopher Perreault <kperreault@merrimacknh.gov>
Cc: Lori Barrett <lbarrett@merrimacknh.gov>; Dawn Tuomala <dtuomala@merrimacknh.gov>
Subject: Winter Maintenance / salt use Policy and Procedure
Importance: High

Hi all,

The Department of Public Works has been working to update our Winter Maintenance Policy and Procedures. We would like to present our proposal to the Town Council in August but wanted to reach out to our stakeholders first to offer time for you to give comments on the policy. The intent of the document is to have a policy that establishes the general rules by which winter maintenance and salt use programs will function and the procedure establish the guidelines for executing the mission of the policy. **Please provide comments to Lori and I by July 29.**

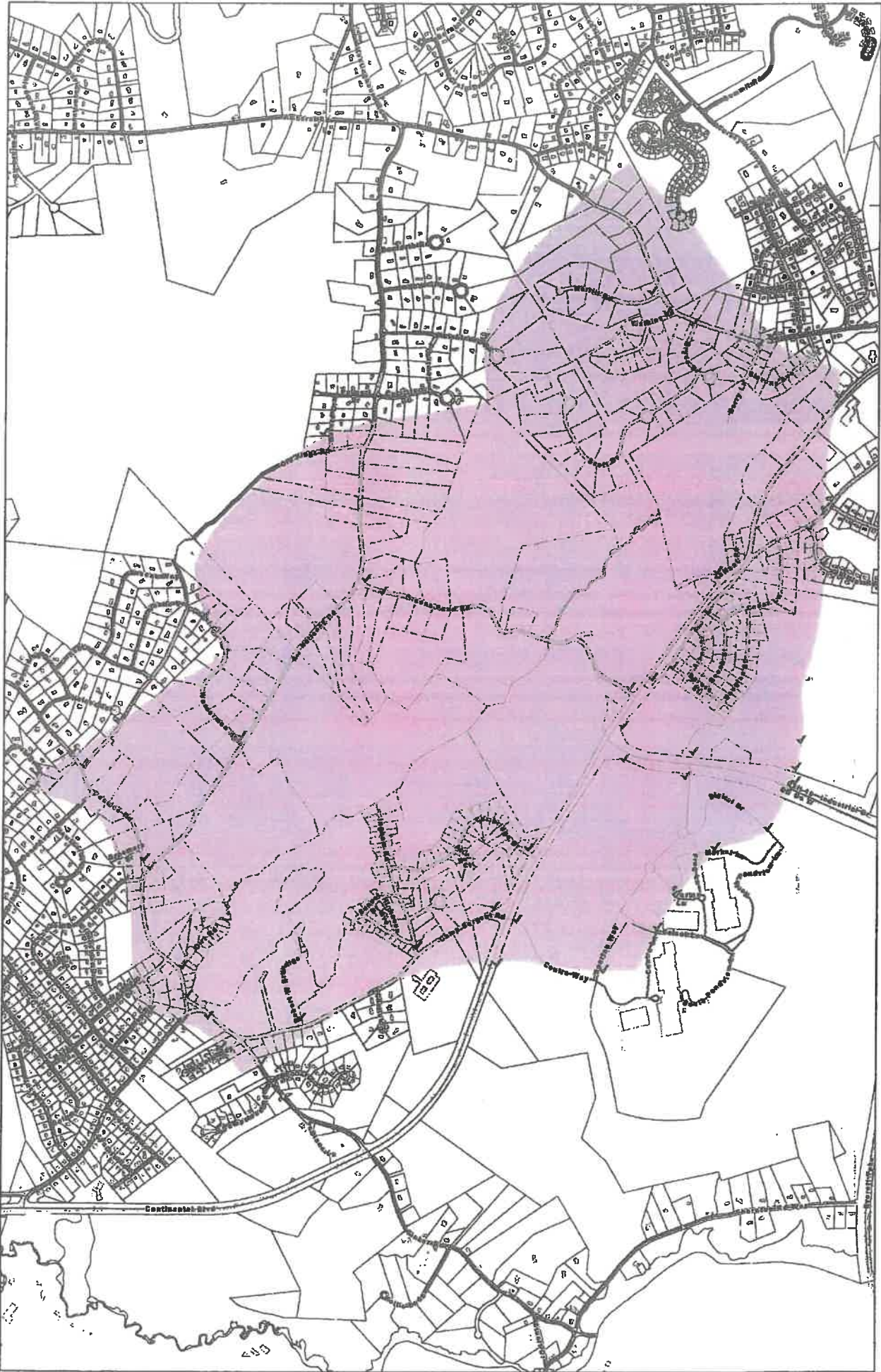
Tim,

Could you forward this to the Conservation Commission and the Planning Board to see if they would like to discuss the policy and offer comments? Lori and/or I would be available to attend the meeting(s) to discuss the policy and answer questions.

Thank you for taking the time to review this important document – we look forward to hearing your comments.

Kyle

Kyle Fox, PE
Public Works Director



Kyle Fox

From: Timothy J. Thompson
Sent: Tuesday, July 12, 2022 9:19 AM
To: Kyle Fox
Cc: Dawn Tuomala; Lori Barrett
Subject: FW: Winter Maintenance / salt use Policy and Procedure

See below from the MCC.

*Timothy J. Thompson, AICP
Community Development Director
Town of Merrimack, NH
6 Baboosic Lake Road
Merrimack, NH 03054*

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v: 603.424.3531

f: 603.424.1408

e: tthompson@merrimacknh.gov

www.merrimacknh.gov

twitter.com/ComDevMerrimack

--

*"Growth is inevitable and desirable, but destruction of community character is not.
The question is not whether your part of the world is going to change.
The question is how." -- Edward T. McMahon, The Conservation Fund*

From: Steve Perkins
Sent: Tuesday, July 12, 2022 9:03 AM
To: Timothy J. Thompson <tthompson@merrimacknh.gov>
Cc: Ellen Kolb <ekolb@merrimacknh.gov>; Andy Hunter <ahunter@merrimacknh.gov>
Subject: RE: Winter Maintenance / salt use Policy and Procedure

Tim,

Thank you for passing this along. We appreciate Kyle's offer to present us with additional details and/or a presentation but after discussion at our meeting yesterday we agree that is not necessary.

The MCC is appreciative that the draft policy seeks to minimize the use of salt in designated areas when it is reasonable and prudent to do so and incorporates Green SnowPro best practices at the DPW winter kick off meeting.

Thank you for the opportunity to provide feedback, we have no further concerns.

Steve

From: Timothy J. Thompson
Sent: Wednesday, June 29, 2022 2:59 PM
To: ConservationCommission; Barbara Healey; Jaimie von Schoen; Lynn Christensen - (External); Maureen Tracy; Nell Anketell; Nelson Disco; Paul McLaughlin; Robert L. Best; Tom Koenig
Cc: Robert Price; Casey Wolfe; Rhonda Fleming; Stefanie Brinn
Subject: FW: Winter Maintenance / salt use Policy and Procedure

To the Planning Board and Conservation Commission:

Please see the below e-mail and attachments from Public Works. Please forward any comments you may have to me and I will coordinate the submission of them to Kyle and Lori.

Bob/Steve: If either of you would like a presentation, let me know and I will pass along to Kyle.

*Timothy J. Thompson, AICP
Community Development Director
Town of Merrimack, NH
6 Baboosic Lake Road
Merrimack, NH 03054*

--
v: 603.424.3531
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From: Kyle Fox
Sent: Wednesday, June 29, 2022 2:55 PM
To: Paul Micali <pmicali@merrimacknh.gov>; Brian Levesque <blevesque@merrimacknh.gov>; Mark DiFronzo <mdifronzo@merrimacknh.gov>; Timothy J. Thompson <tthompson@merrimacknh.gov>; ron.miner@mvdwater.org;
Sarita Croce <scroce@merrimacknh.gov>; Kristopher Perreault <kperreault@merrimacknh.gov>
Cc: Lori Barrett <lbarrett@merrimacknh.gov>; Dawn Tuomala <dtuomala@merrimacknh.gov>
Subject: Winter Maintenance / salt use Policy and Procedure
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Tim,
Could you forward this to the Conservation Commission and the Planning Board to see if they would like to discuss the policy and offer comments? Lori and/or I would be available to attend the meeting(s) to discuss the policy and answer questions.

Thank you for taking the time to review this important document – we look forward to hearing your comments.

Kyle

Kyle Fox, PE
*Public Works Director
Public Works Department
6 Baboosic Lake Road
Merrimack, NH 03054*

Kyle Fox

From: Timothy J. Thompson
Sent: Wednesday, July 13, 2022 12:42 PM
To: Kyle Fox
Cc: Lori Barrett; Dawn Tuomala
Subject: RE: Winter Maintenance / salt use Policy and Procedure

Kyle:

I have reviewed the documents (the policy and the procedure), and have no comments other than to say that I am impressed by the breadth and comprehensiveness of the documents, and that, if followed, should be an effective way of balancing safety with the environmental concerns of road salt.

Thanks for the opportunity to review.

Tim

*Timothy J. Thompson, AICP
Community Development Director
Town of Merrimack, NH
6 Baboosic Lake Road
Merrimack, NH 03054*

--

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--

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The question is not whether your part of the world is going to change.
The question is how." -- Edward T. McMahon, The Conservation Fund*

From: Kyle Fox
Sent: Wednesday, June 29, 2022 2:55 PM
To: Paul Micali <pmicali@merrimacknh.gov>; Brian Levesque <blevesque@merrimacknh.gov>; Mark DiFronzo <mdifronzo@merrimacknh.gov>; Timothy J. Thompson <tthompson@merrimacknh.gov>; ron.miner@mvdwater.org;
Sarita Croce <scroce@merrimacknh.gov>; Kristopher Perreault <kperreault@merrimacknh.gov>
Cc: Lori Barrett <lbarrett@merrimacknh.gov>; Dawn Tuomala <dtuomala@merrimacknh.gov>
Subject: Winter Maintenance / salt use Policy and Procedure
Importance: High

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Tim,

Could you forward this to the Conservation Commission and the Planning Board to see if they would like to discuss the policy and offer comments? Lori and/or I would be available to attend the meeting(s) to discuss the policy and answer questions.

Thank you for taking the time to review this important document – we look forward to hearing your comments.

Kyle

Kyle Fox, PE

Public Works Director

Public Works Department

6 Baboosic Lake Road

Merrimack, NH 03054

(603) 424-5137

<https://www.facebook.com/MerrimackDPW>

Kyle Fox

From: Brian Levesque
Sent: Wednesday, July 27, 2022 12:20 PM
To: Kyle Fox
Subject: RE: Winter Maintenance / salt use Policy and Procedure

Kyle,

I have reviewed your well prepared proposed policy. The police department is always concerned with winter weather and the effect on motorists. I am pleased to see that you are still maintaining the major and minor arterial roads with salt. We have seen first-hand how the pre-treatment and treatment of the roads during inclement weather reduces accidents. It would be concerning the police department if that was eliminated. We are supportive of your policy and procedure as written.

If you need anything else, please let me know.

Brian

From: Kyle Fox
Sent: Monday, July 25, 2022 11:04 AM
To: Mark DiFronzo <mdifronzo@merrimacknh.gov>; Brian Levesque <blevesque@merrimacknh.gov>
Subject: FW: Winter Maintenance / salt use Policy and Procedure
Importance: High

Mark/Brian,
Friendly reminder to send me any comments you have on the proposed policy update by Friday.

Thanks,
Kyle

Kyle Fox, PE

Public Works Director
Public Works Department
6 Baboosic Lake Road
Merrimack, NH 03054
(603) 424-5137
<https://www.facebook.com/MerrimackDPW>

From: Kyle Fox
Sent: Wednesday, June 29, 2022 2:55 PM
To: Paul Micali <pmicali@merrimacknh.gov>; Brian Levesque <blevesque@merrimacknh.gov>; Mark DiFronzo <mdifronzo@merrimacknh.gov>; Timothy J. Thompson <tthompson@merrimacknh.gov>; ron.miner@mvdwater.org;
Sarita Croce <scroce@merrimacknh.gov>; Kristopher Perreault <kperreault@merrimacknh.gov>
Cc: Lori Barrett <lbarrett@merrimacknh.gov>; Dawn Tuomala <dtuomala@merrimacknh.gov>
Subject: Winter Maintenance / salt use Policy and Procedure
Importance: High

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Tim,

Could you forward this to the Conservation Commission and the Planning Board to see if they would like to discuss the policy and offer comments? Lori and/or I would be available to attend the meeting(s) to discuss the policy and answer questions.

Thank you for taking the time to review this important document – we look forward to hearing your comments.

Kyle

Kyle Fox, PE

Public Works Director

Public Works Department

6 Baboosic Lake Road

Merrimack, NH 03054

(603) 424-5137

<https://www.facebook.com/MerrimackDPW>

Kyle Fox

From: Jill Lavoie <jill.lavoie@mvdwater.org>
Sent: Thursday, July 28, 2022 8:56 AM
To: ron.miner@mvdwater.org; Jamie Emery; Kyle Fox; Lori Barrett; Don Provencher
Subject: FW: Salt Use Policy and Procedure

All,

Please see Aubrey Voelker (from NHDES) comments below regarding the proposed salt use policy from the Town.

Thanks
Jill

Jill Lavoie
Business Manager/Water Quality Testing

Merrimack Village District
2 Greens Pond Road
Merrimack, NH 03054
(603) 424-9241 x103

From: Voelker, Aubrey <Aubrey.R.Voelker@des.nh.gov>
Sent: Thursday, July 28, 2022 8:02 AM
To: jill.lavoie@mvdwater.org
Subject: RE: Salt Use Policy and Procedure

Hi Jill,

Thank you for forwarding this to me. The plan is well thought out and comprehensive. I would love to see other communities adopt a similar winter maintenance plan to what is proposed here. Once municipalities are able to apply for Green SnowPro certification (we are currently writing the rules which will then have to be approved), creating/having a winter maintenance and salt reduction plan is highly likely to be a part of the certification. I might reach out to you when the time comes to possibly share this as an example of what we are looking for, especially for communities that may be starting from scratch.

Thank you!

Aubrey Voelker, Coordinator
Salt Reduction Program and Green SnowPro
Watershed Assistance Section
NH Department of Environmental Services
P.O. Box 95 Concord, NH 03302-0095
Phone: (603) 271-5329
Email: Aubrey.r.voelker@des.nh.gov



From: Jill Lavoie <jill.lavoie@mvdwater.org>
Sent: Tuesday, July 26, 2022 10:04 AM
To: Voelker, Aubrey <Aubrey.R.Voelker@des.nh.gov>
Cc: ron.miner@mvdwater.org
Subject: Salt Use Policy and Procedure

EXTERNAL: Do not open attachments or click on links unless you recognize and trust the sender.

Hi Aubrey,

I was off on Friday and Monday so I'm just catching up from our meeting on Thursday. Attached is the proposed winter maintenance plan forwarded by the Town of Merrimack DPW for your review.

Please forward any comments or questions to me and Ron Miner, cc'd here.

Thanks!
Jill

Jill Lavoie
Business Manager/Water Quality Testing

Merrimack Village District
2 Greens Pond Road
Merrimack, NH 03054
(603) 424-9241 x103

Kyle Fox

From: Kyle Fox
Sent: Wednesday, September 28, 2022 2:51 PM
To: ron.miner@mvdwater.org
Cc: Lori Barrett
Subject: RE: Consultants comments on the DRAFT Salt Use Policy and Procedures documents

Ron,
Please find below in red responses to some of the comments you provided. I will include the comments and responses in the backup to the Town Council.

Kyle

Kyle Fox, PE

Public Works Director
Public Works Department
6 Baboosic Lake Road
Merrimack, NH 03054
(603) 424-5137
<https://www.facebook.com/MerrimackDPW>

From: Ron Miner [mailto:ron.miner@mvdwater.org]
Sent: Monday, August 1, 2022 7:26 PM
To: Kyle Fox <kfox@merrimacknh.gov>; Lori Barrett <lbarrett@merrimacknh.gov>
Cc: 'Don Provencher (MVD)' <don.provencher@mvdwater.org>; 'Ken Ayers' <Kenneth.ayers@mvdwater.org>; 'Wolfram von Schoen' <wolf.von.schoen@mvdwater.org>; 'John Lyons' <John.lyons@mvdwater.org>; 'Paul McLaughlin' <paul.mclaughlin@mvdwater.org>; 'James Emery' <James.Emery@gza.com>; 'Jill Lavoie' <jill.lavoie@mvdwater.org>
Subject: Consultants comments on the DRAFT Salt Use Policy and Procedures documents

The following is MVD and our Consultants comments on the *DRAFT* Salt Use Policy and Procedures documents:

1. MVD understands that the previous 1984 policy regarding “No Salt Routes” included all streets within the MVD Well Head Protection Areas (WHPAs), and that this new draft policy has been changed to now allow collector and arterial roads in MVD’s WHPAs to now be “limited Salt Routes” instead of the previous “No Salt Routes”. This change in policy, in addition to more roadways being constructed within WHPAs since 1984, is contrary to protecting MVD wells, and would result in potential further salt loading within MVD WHPAs. MVD wells within Merrimack have experienced significant increases in sodium and chloride since the 1990’s to present. Please explain how this policy change will not result in increasing salt loading and further degradation of MVD well water quality. **The draft policy proposes to allow limited salt use on main roads within WHPAs. This proposal is being made understanding the need to balance environmental concerns with safety of the motoring public.**
2. The Merrimack DPW should develop a program like other towns have to use liquid brine to anti-ice the roads prior to a storm that does not start out as rain first, thereby reducing the use of crystalized salt. The use of brine is not mentioned in the Standard Operation Policy or Salt Use Procedures Document.

This is not to be confused with the Highway Division's reference to liquid calcium and magnesium chloride which is used in smaller quantities with road salt as a wetting agent to help it stick to the pavement. The practice of applying brine before a winter storm is a proactive *anti-icing* approach (as opposed to de-icing). Brine is used to prevent the development of bonded snow and ice on the road surface. Salt brine is effective to 0 degrees Fahrenheit (and below) and is proven to be extremely effective. By spreading freezing point depressant materials before a storm, it is possible to prevent the bond from ever forming between the roadway and snow or ice. The water part of the brine evaporates, and the salt that remains helps prevent ice from forming a bond with the roadway. Salt brine also adheres to the roadway and is not blown off by vehicles driving on the road. Research has shown that timely applications of anti-icing materials can cut the cost of maintaining a safe road surface by 90 percent compared to traditional deicing. ***Advantages of spraying brine before storms include a faster return to normal road surfaces, a reduction in airborne salt particles, a better application to roadway surfaces, increased efficiency in snow and ice removal resulting in the use of less salt and manpower.*** As an example of local municipalities going this route, the City of Dover uses groundwater exclusively for their water supply and have prevented salt from becoming an issue in their public supply wells by anti-icing with liquid brine. They have done this inexpensively and as a result have saved a substantial amount of money by purchasing less salt while protecting their local groundwater sources. ***We are continually looking for ways to improve our operations in the balance of safety, environment, and cost. Brine is something that we have experimented with and will continue to do so when practical. Another program we are working to implement the use of liquid magnesium chloride at our truck spinners to reduce the use of rock salt. Pages 2 and 3 of the proposed procedures manual contains charts that show the effectiveness of different chemicals at different temperatures. Sodium Chloride, which includes rock salt and brine, are ineffective at temperatures below 15 degrees Fahrenheit. Our salt use program was developed around the theory of anti-icing, not de-icing. Our pre-treatment program is designed to place the salt onto the roadways as the precipitation begins to oppose the development of a bond between the pavement and the precipitation. It takes much more salt to melt ice than to prevent bonding of ice, and that is the primary goal of our program.***

3. MVD recommends Expanding the areas of no salt use within the WHPA's *or* use brine to reduce the use of crystalized salt in the limited and salted areas. The City of Dover spent about \$4,000 per truck to convert their sanders to being able to use brine, they have two 4,000 gallons tanks to mix and store brine for storms. It does not appear that Merrimack has any plans in place to work toward this important goal of using brine in a substantive way. This needs to be addressed in the Salt Use Procedures and Operating Policy. ***Our trucks are equipped with saddle tanks to utilize liquid chemicals. We are in the process of utilizing a new switch and go body truck that was purchased this year to be able to spread liquid anti-icing chemicals.***
4. The Procedures document includes calibration of salt spreaders per UNH T2 Green SnowPro training workbook latest edition. MVD recommends that the Public Works Department (PWD) maintain calibration logs, if not already maintained, and to make the logs available upon request, in an effort to demonstrate a record of the Town's commitment to this important procedure. Measurement of salt use must occur in order to better measure any benefits/adverse impacts that may be attributable to the Town's salting protocol ***All trucks are calibrated at the beginning of the winter season and after any work on the equipment occurs.***

5. MVD recommends that the Town Council fund the training of PWD management and staff to achieve and maintain Green SnowPro certification, so that any changes and improvements can be incorporated into the Procedures document. All PW snow operations staff are trained both in-house and through the green sno-pro program. No additional funding is required to continue this program.

6. Page 1, 7th paragraph mentions “No salt roads and no salt use roads”. Can you explain the difference? That is a typo that we will correct – it should say “No salt roads and limited salt use roads”

7. The procedures document indicates that pre-treatment of salt prior to storm events includes applying a mixture of liquid deicers with crystalized salt, and application of that mixture at the center of both travel lanes within a roadway. However, road center application is not possible when encountering oncoming traffic heading in the opposite direction of the salt truck. This causes the salt application to deviate off the center line and extend to the travel lane’s gutter line where traffic will not be able to drive on and activate the salt. This leaves the crystalized salt to be plowed into the gutter, becoming completely ineffective. The Town does not possess equipment to apply liquid salt brine only. Liquid salt brine is more effective at pretreatment of roadways and will not leave crystalized salt behind to become ineffective. MVD recommends that the Town work towards procuring liquid brine application equipment to be used for “Limited Salt Roads”, instead of using crystalized salt. We have two types of spreaders. The unibody spreaders discharge the salt on the driver side of the truck, placing it on the centerline of the road. The traditional spreaders utilize a controllable spinner to direct the salt to the center of the road.

8. MVD understands that the plow / salt routes are not arranged specifically to cover only “No salt”, “Limited Salt”, or “Full Salt” roads. Salt truck drivers are trained using the list of “No Salt” and “Limited Salt” roads in the Procedures document to manually change their application rates accordingly, as they are driving, when changing between full salt, to limited salt, to no salt roads. These manual changes are subject to errors or confusion, particularly when a different driver covers another driver’s route, or when drivers have been working extended hours. The Town’s plow / salt trucks are equipped with GPS monitoring to allow supervisors to track progress and to locate and dispatch trucks to areas of concern. MVD is aware that technology exists where GPS can be interconnected with automatic applicators on salt trucks, such that salt application automatically changes when salt trucks move from a no salt to limited salt to full salt roads. MVD recommends that the Town works to procure and implement such automatic GPS-controlled applicators in the future. However, in the immediate, MVD and PWD are collaborating on a sign installation effort to notify traffic and salt trucks where aquifer protection zones, Limited salt, No salt, and Full salt roads exist, so that residents know to drive carefully in salt restricted areas, and to assist the salt truck drivers in knowing where to change their application rates. MVD is adamant that sufficient signage is employed to accomplish this measure, at a minimum, wherever salt application rates and roads change, at the boundaries of WHPAs, as well as within long stretches of roads. Our operators are trained professionals and are able to accomplish the goals and requirements of our policies. We are happy that our groups are working together to install signage indicating the locations of the WHPAs – this will be a helpful reminder to our operators.

9. MVD recommends that sidewalk deicing be consistent with roadway deicing applications, such that No Salt, Limited Salt, and Full Salt application be applied to sidewalks consistent with roadway salt application. Sidewalk treatment will follow the salt use policy. We generally try not to salt the sidewalks unless necessary. It is primarily the sidewalks in school zones that may receive chemical treatment.

10. MVD recommends that deicing practices for Town-owned parking lots located within MVD's WHPAs be consistent with "No Salt" roads, regardless of whether the road serving the parking lot is a Limited Salt Road. This recommendation is exclusively for Town-owned parking lots located within MVD's WHPAs. Wasserman Park is located within a WHPA – it is necessary at times to utilize salt in the parking lots and access roads to provide safe passage for users of the facility.

11. MVD has prepared maps that outline No Salt and Limited Salt roads within MVD's WHPAs. We recommend that these maps be provided to the PWD salt truck drivers so that they can become familiar with knowing these transitions, and not rely on memory or a list of roads to make salt application changes. As mentioned at our visit to the Board of Commissioners meeting, we will develop maps similar to those prepared by MVD for our drivers once the policy is approved.

12. MVD recommends that Continental Boulevard remains a No Salt road from its intersection with Dodson Way down to its intersection with Industrial Drive, due to its close proximity to MVD Wells 2 & 9; and that all of Front Street within the WHPA of MVD Wells 4 & 5 remains a No Salt road due to its close proximity to MVD Wells 4 & 5.

13. Provide and encourage opportunities/avenues for the public to bring in photos and or comments to Public Works and/or Town Manager when it is observed that the salt left on the roads is excessive and has not performed the job it was intended to do (e.g. this would include photos or observations that show that the salt has been thrown off or plowed off the deicing surface to the side of the road thereby limiting the impact of the anti-icing/deicing program).

Thank you,

Ron Miner

Superintendent
Merrimack Village District
2 Greens Pond Rd.
Merrimack, NH 03054