CITY OF LEBANON

Winter Maintenance Snow Removal

and Ice Control Plan

26 February 2008

City of Lebanon Department of Public Works

Snow Removal & Ice Control Plan

Winter weather in New England is difficult to predict. There are many variables affecting winter maintenance operations such as type of precipitation, air and pavement temperature, traffic, wind, time of day and day of week. Winter maintenance is considered an art, not a science.

The City of Lebanon Department of Public Works (DPW) snow removal and ice control plan has been based for many years on the goal of obtaining bare and dry pavements at the earliest practical time following cessation of a storm. It is virtually impossible to provide bare pavement during a winter storm and the DPW does not attempt to do so. Judgment based on experience is essential in conducting and timing remedial work to overcome ice and snow hazards. As each storm situation varies, it is important to emphasize that this plan be used as a guideline to assist supervisors in making well informed, judgment decisions in the exercise of their snow removal and ice control responsibilities. A rigid application of this plan is impossible given the varying conditions that exist in each storm across the 100 miles of City roadways. No plan could be prepared that could dictate set procedures under all the variants.

Traffic and posted speed are the primary factors in determining the level of winter maintenance service with the road grade also being an important factor. The main runs, hills and other heavily traveled sections are maintained in such a manner that bare pavement is produced as soon as practical after termination of a storm. On City roads with low traffic, the DPW attempts to provide some bare pavement, but not necessarily from shoulder to shoulder, within a day or two after a storm ends.

It is impractical to develop specific rules on winter maintenance operations due to the numerous variables involved in winter storms. The judgment of the shift supervisor governs the type**,** quantities and application schedule of materials used to control snow and ice. It is the intent of the DPW to use the minimum deicing or anti-icing material needed to restore safe travel conditions as soon as practical following termination of winter storms. Salting and sanding units are equipped with calibrated mechanical spreaders that accurately control the application rates of materials. Employees are instructed in the proper dispensing of the necessary quantity at the appropriate time**.**

The winter maintained City roadways are comprised of three roadway types defined as follows:

Type 1a –Main Runs These roadways consist primarily of Routes 4, 10, and 120 (these are Hanover Street, Miracle Mile, Mechanic Street, Seminary Hill, Glen Road, Main Street, South Main Street, North Main Street, School Street, Bank Street, Airport Road, Lahaye Drive and Mascoma Street.) Should have full width bare pavement as soon as practical after a winter storm terminates.

Type1b- Other (Hills, Primary Access) These are the hill areas and consist of Slayton Hill Road, Poverty Lane, Hardy Hill Road, Daisy Hill Road, LaPlante Road should have full width bare pavement as soon as practical after a winter storm terminates.

Type 2 – Residential and other roads. These are all other roads some bare pavement as soon as practical after a winter storm terminates.

Type 3 – Dirt Roads Roadways which snow-covered is deemed acceptable.

These designations have been determined by traffic primarily but have been modified to include consideration of posted speed, highway grade, truck volume, accessibility to hospitals and emergency services, school zones, school bus routes, special events, second and/or third shifts at major industrial complexes and major commercial traffic.

OPERATIONS:

Snow removal and ice control usually requires the timely application of either chemicals, abrasives or a chemical-abrasive mixture to roadway surfaces in combination with aggressive snow plowing operations. Choice of material is dependent upon the weather and road conditions. Occasionally conditions such as low temperatures do not require material application. Materials available include the following:

Sodium Chloride – The use of sodium chloride (common salt) combined with snow plowing is the most effective, most economical and safest snow and ice control method currently available. Salt is most effective for melting purposes at temperatures above 20 degrees F., with reduced melting ability as the temperature drops. In general, the purpose of salt is to (1) reduce adherence of snow to the pavement, (2) keep the snow in a “mealy” condition and thereby permit nearly full removal by plowing, and (3) prevent the formation of ice or snow ice (hard pack). Salt is not intended to take the place of snowplows. It is economically and environmentally unacceptable to attempt to melt snow accumulations that are plowable.

Calcium Chloride. Calcium chloride is a chemical which melts ice at lower temperatures than sodium chloride. Flake calcium chloride is used as an additive

to abrasives (sands) to prevent freezing in stockpiles, to thaw culverts and catch basins, to help hold the abrasive in place on the pavement and on rare occasions to trigger sodium chloride action. Liquid calcium chloride at 32% strength can be used to pre-wet solid sodium chloride to trigger the chemical reaction at low temperatures. The addition of liquid calcium chloride also is beneficial in retaining de-icing material on the roadway by increasing the adhesion of the material to the roadway.

Abrasives. Abrasives (sand and fine mineral aggregates) are used primarily for immediate traction on hills, curves, intersections, railroad crossings and other areas to increase traction and minimize the use of salt. Sodium chloride, calcium chloride or an appropriate mixture of the two are usually added to abrasives in amounts dependent upon existing weather conditions.

Alternative De-Icers

There is considerable research being done on new deicing chemicals. Non-corrosive and environmentally friendly chemicals, in solid or liquid form, are now available but widespread use is currently limited due to the high costs and the need for specialized equipment to store and dispense them. Lebanon DPW has and will continue to try new products as they come on the market in an effort to provide an affordable and acceptable level of service while being environmentally responsible.

Application of De-Icing Materials

The use of chemicals, abrasives or chemical-abrasive mixtures is dependent not only on present roadway and weather conditions, but also on anticipated changes in these conditions and fiscal or logistical constraints experienced by Lebanon DPW. The effects of peak traffic periods, approaching nightfall or daybreak, precipitation type, and predicted end of storm, are considered and evaluated prior to selecting the proper materials and rate of application.

Adverse roadway conditions existing during periods of low temperatures, which are predicted to rise, would generally be treated in accordance with the recommendations for the higher temperature. If the time of day, trend and weather forecast is such that a drop in temperature may reasonably be expected, treatment would generally be in accordance with the recommendation for the lower temperature. Chemicals or abrasives should not be used at low temperatures if the pavement is dry and snow is blowing off the pavement as such use would be wasteful and may be counterproductive.

Rates of Application

Generally straight sodium chloride is the chemical of choice for most storm situations. Sodium chloride is used to prevent snow pack and ice build-up on the pavement and to aid removal of any build-up that occurs. The following instructional guidelines are recommended to adequately maintain highways under most conditions:

RECOMMENDED SNOW AND ICE TREATMENTS PER LANE MILE			
CONDITIONS	**TEMPERATURE**	**TYPE 1A & 1B & 2**	**Type 3**
Sleet & Freezing Rain	Variable	Salt 300 lbs. per lane mile and/or abrasive as needed. Salt Sand Mix maybe used in freezing rain storms.	Sand
Snow	20˚ and up	Salt 300 lbs. per lane mile.	Sand
Snow	Below 20˚	Salt 300 lbs. per lane mile. **(1)**	Sand

(1) An alternative low temperature treatment is to use a chemical mix of liquid de-icer at a rate of 10 Gallons per ton.

Chemicals or mixes are normally applied to the middle 1/3 of pavement width and on the high side of banked curves. Spread width may be increased or decreased depending on the action of traffic. Materials are applied early in the storm so that a brine develops on the pavement and prevents build-up of packed snow. It takes much less deicing chemical to remove compacted snow when the treatment is placed between the pavement/snow layer than if it is placed on top of the snow. If snow continues and accumulates on the pavement, plowing should continue and additional chemical or mix treatments should be made if compaction develops.

There are many additional circumstances which will necessitate modification to these treatments. Some of these circumstances are:

1. Rising or falling temperatures.

2. When pavement is cold and dry and snow is falling, chemicals are not applied. Plowing and treatment of icy spots, if they develop, is recommended.

3. An abrasive-chemical mix may be needed at extremely low temperatures, under extremely damp conditions or on very lightly traveled highways. Under these conditions the effectiveness of salt is reduced and abrasives may be needed for traction.

Spreading Practices

Each spreading unit is calibrated to insure that selected rates of application are attained. Timing of the initial application during each storm is very critical. It should be delayed until there is sufficient accumulation on the pavement to hold and contain the material spread. However, the pavement may become glazed prior to this time and may require an earlier treatment.

Portions of each plow run are unique due to various physical conditions and will require a greater application rate or an additional application during some storms. However, these areas should be judged and treated separately and not used as a barometer to evaluate and subsequently direct complete applications over the entire section. In order to conduct an efficient operation, periodic observation of the pavement surface conditions must be performed.

Width of material spread (throw plus roll) should be restricted. Reduction of the spread width by windrowing chlorides will increase the concentration of the chemical where it is needed and therefore increase the effectiveness of the application. Spreading operations should generally be conducted at speeds less than 25 mph. Air turbulence created at speeds greater than 25 mph makes it difficult to retain all the material discharged within the desired width. Spinner and belt speeds and spread pattern must be adjusted to obtain the correct spread rate and to retain the material within the lane (s) where the additional material is required.

Special Attention for Bridges

Bridge decks normally freeze or glaze sooner than adjacent pavement sections, especially in the late fall and early winter. Special care and good judgment is required in the use of de-icing chemicals on all bridge decks.

Accumulations of snow along gutter lines and sidewalk or catwalk areas of all bridges should be removed when accumulation of snow and/or ice affects highway safety. Removal operations should commence on the high side of bridges on banked curves to minimize snowmelt and re-freezing or glazing of the travel lanes.

Plowing Operations

Plowing operations are generally initiated after two inches of snow have fallen and continue until the storm has ended. Widening and intersection view clearing is performed following cessation of the storm as necessary, and generally during daylight hours when best visibility prevails.

For snow storms with a predicted accumulation in excess of two inches, plowing usually begins after the initial salt application has formed a brine and after two inches of snow has fallen (dependent on intensity of snowfall) and continues for the duration of the storm. After a storm terminates, a final cleanup plow run is made and a light salt application is laid down as necessary to remove any remaining residue.

For light accumulation snowfalls, snow squalls, and so-called “Alberta Clippers”

of short duration, plowing may begin immediately and may include simultaneous salting and/or sanding to provide the desired results quickly and efficiently.

Truck-mounted snowplows and wing plows are utilized to clear pavements and shoulders of frozen precipitation. Storm intensity (generally measured in inches per hour) varies considerably in Lebanon but average major snow storms are approximately one inch per hour. This one-inch per hour intensity rate and the allowable snow accumulation is used in planning the availability of equipment necessary for snow removal operations.

Frozen precipitation including sleet and the build-up of ice caused by freezing rain are special situations, and not subject to procedures indicated above. When a changeover from snow or sleet to freezing rain is predicted or anticipated, snow and/or sleet is left on the pavement to capture the freezing rain thereby preventing a glare ice situation, which without question is the most treacherous condition that occurs on highways. Treatment includes application of salt at a rate of 300 pounds per lane mile as needed throughout the storm. Heavy rain tends to wash off applied salt or sand, making it difficult to keep the pavement ice-free.

It is the policy of DPW to perform snow removal and ice control operations in a consistent and impartial manner throughout the City. There are a few plowing procedures that are frequently misunderstood. In an attempt to clarify our actions the following policies and procedures are explained:

Within the City of Lebanon it is important to understand that there are others involved in Snow Control Operations. The Department of Public Works does snow removal for most of the City however the State of New Hampshire, Department of Transportation (NHDOT) is responsible for some roadways within the City of Lebanon. The NHDOT is responsible for:

Route 120 from the Hanover town line to the Stop sign at the intersection of Hanover Street,

Route 10 (North Main Street) from Bailey Brothers to the Hanover line,

Route 12A from Applebee’s Restaurant to the Plainfield town line,

Route 4 from the intersection of Bank St. and Bank St. Ext. to the Enfield town line, also from the Route 4 Route 4A intersection to the Enfield town line and Payne Road.

Route 120 from Morse Farm to the Plainfield town line, and

Etna Rd. from Route 120 to Etna.

The Town of Enfield, through a cooperative agreement, is responsible for winter maintenance of the Lebanon portion of Methodists Hill Road and the Town of Plainfield maintains Old County Road. The Town of Plainfield also maintains the section of Methodists Hill Road nearest Plainfield.

Mailboxes and Other Structures within the Highway Right-Of-Way

Occasionally mailboxes or other devices are damaged by snow plowing operations due to poor visibility, the mailbox being buried in a snow bank or the weight/volume of the snow being plowed. This damage is not deliberate and in most cases is unavoidable. At the discretion of the department, DPW will repair, replace or re-erect boxes that are located within the highway right-of-way. DPW will work with the box owners to locate the box in the safest possible location and offer advice on its design to minimize potential damage.

Widening or Pushing Back Snow Banks

Following storms with heavy snowfall or when several storms result in substantial snow banking, DPW will undertake a roadway widening procedure, which will push back the snow banks and haul snow from downtown areas. This is a necessary operation because it accomplishes the following:

(A) Provides room for future snow storage.

(B) Reduces or prevents melted snow from running out onto the roadway pavement and creating icing conditions.

(C) Increases safe sight distance at intersections.

(D) Maintains a uniform line by eliminating protrusions at driveways and intersections.

Unfortunately there is no way to prevent depositing snow in previously cleaned driveways or walkways except to leave a hazardous projecting mound of snow. With hundreds of driveways of all sizes and descriptions along our roadways it is impossible to clear these individual drives.

Snow Hauling

After the initial storm response, it is often necessary to remove snow from selected areas of the City. Snow hauling is done on an "as-required" basis and, typically, as time allows. Snow hauling is done primarily with City forces and augmented by contract trucks. Therefore, the same personnel responsible for plowing, salting/sanding operations are also responsible for snow hauling.

Snow hauling typically begins a minimum of 12 hours after the crew is released after a storm.

In general, the priorities for snow hauling are as follows:

Business District, School Zones, City streets with sidewalks.

It must be stressed that this is a guide only. Snow hauling areas may have to be changed depending on conditions.

It is not possible to haul snow off every street. Some streets are designated “No Parking" and simply "pushed back" (i.e. with no snow hauling).

Signalized Intersections

At those locations where there is steep highway grades law enforcement officials or authorized DPW employees may put traffic signals on flash for the duration of the storm.

Sidewalks

Due to resource constraints and storm conditions, sidewalks plowing start at approximately the same time as street plowing starts. Not all of the sidewalks in the City of Lebanon receive snow control services.

Sidewalks receive winter snow control services by two distinct methods. In urbanized and more densely populated areas, snow control routes have been developed and a piece of equipment specifically designed for the task is assigned to the route, providing both plowing and sanding/salting services. In less populated areas, with sidewalks along collector and arterial streets, plow service may be provided on the sidewalk by utilizing the street plow unit equipped with a wing plow. The street is initially plowed and widened with the street plow, and, as a final pass, the snow is pushed back further off the sidewalk using the wing plow. Sanding and salting service is less consistent on sidewalks cleared with wing plows.

Those sidewalks that are kept plowed in winter are maintained in a manner similar to street plowing, according to a priority system. High priority sidewalks are those in the central business district, around schools and churches, and on other heavily traveled pedestrian routes.

Sidewalks are on a table attached (pages 25, 26). Sidewalks are plowed in the order shown, for each particular route, as resources allow. Priority sidewalks requiring attention maybe serviced prior to those listed ahead of them.

Level of Service

Due to the many factors affecting sidewalk plowing, it is virtually impossible to institute a prescribed service level, as identified for streets. During and following a snowstorm, sidewalk snow resources are applied to sidewalk plowing, sanding and salting on the routes established. However, depending on the storm conditions, very different results may be achieved. Currently, our goal can be stated as having all sidewalk routes completely cleared of snow within 24 hours after the end of a snowstorm, however, there will be times when sidewalk clearing may take longer due to the amount of snow fall or frequency of storms.

It is impossible to achieve the same results on sidewalks as on streets because of the very different nature of traffic. Vehicle traffic, in combination with salting and plowing, can result in bare conditions on streets. Pedestrian traffic does not assist snow control efforts on sidewalks in the same way. Sidewalk conditions are more subject to the weather and less affected by snow control efforts. De-icers are less effective on sidewalks than on street because of the difference in traffic.

The City's ability to maintain sidewalks was enhanced by acquiring better equipment, but the existing conditions are still largely determined by the weather. The nature of winter weather in Lebanon tends to produce freezing rain and rain, as well as snow, as temperatures fluctuate around the freezing mark. This type of weather can produce severe icing conditions on both streets and sidewalks, but the ability to control the surface conditions on sidewalks is less. Melting snow banks during the day, subsequent freezing at night, etc., can also cause more icing regardless of the number of times a particular sidewalk is salted and sanded.

It must be emphasized, however, that the conditions can be different for those sections receiving exactly the same service after each storm due primarily to weather conditions. Once icy conditions are established, the situation tends to be compounded in a cumulative way by subsequent winter storms. The amount of effort can be great in terms of repeat applications of sand and salt when this occurs, but has little perceived impact on the surface condition of the sidewalk.

Plowing Operations

Typically, plowing on sidewalks does not commence until accumulations are in excess of two (2) inches. Unlike street plowing conditions, a "brine sandwich" is not created by salting sidewalks as soon as a snowstorm commences.

Plowing continues according to the route until all sidewalks on the list have been completed. As noted previously, in severe conditions or when storms are close together or under heavy snow fall conditions, it may not be possible to complete the list before starting at the beginning again. After heavy snowfalls, sidewalk machines may be equipped with snow blowers instead of plows to service the sidewalk routes. The machines will be slower to complete the route with a blower, but heavier accumulations can be better handled.

Speed, equipment availability, and persistence is the key to keeping sidewalk routes maintained. The sooner a route can be cleared after a storm, the better the chances of keeping the whole route in good condition. The longer it takes to clear a route, the greater the chances for the snow to become packed, turn to ice, etc. Subsequent winter storms, rain, freezing rain, freezing temperatures, can all act to produce unfavorable conditions on sidewalks.

As noted previously, some sidewalks are cleared by a street snowplow using its wing plow. This activity follows initial street plowing and widening operations.

Sanding and Salting Operations

Once sidewalks have been plowed or cleared of snow, sanding operations commence, beginning at the top of the list. Sanding operations continue until the whole route is completed. As noted, this is the opposite sequence than that followed for arterial and collector streets, which are salted first, then plowed, then sanded or salted after plowing ceases. The same machine handles the sanding and plowing operations on sidewalks.

Sanding may become a daily process on sidewalks once icy conditions occur. Due to the freeze/thaw cycles that can occur, sanding is the only effective operation to provide some degree of traction on City sidewalks.

Sanding/salting is less frequent on sidewalks cleaned by wing plow. This service may be provided by street-salter or sidewalk machine if one can be made available. Use is made of a 1 Ton truck or 6 yd. truck to re-supply sidewalk sanders in the field, during heavy sanding operations.

Parking Lots

Due to resource constraints and storm timing, only the upper and lower parking lots (behind City Hall) are plowed during a storm, all other parking lots are generally not plowed until the end of the storm

Priority one:	Upper and Lower parking lots
Priority two:	Police Station
	Fire Station
Priority three:	Storrs Hill Ski Area
	Riverdale Park
	All Cemeteries

City parking lots receive winter snow control services by two distinct methods. The upper and lower parking lot areas have been identified as part of a primary route, providing both plowing and sanding/salting services. All other parking lots are plowed when a piece of equipment becomes available.

The upper and lower parking lots are kept plowed and serviced in a manner similar to street plowing, according to a priority system.

Level of Service

Due to the many factors that affect the plowing of parking lots, it is virtually impossible to institute a prescribed service level, such as identified for streets. Following a snowstorm, all snow resources are applied to streets and sidewalk plowing, sanding and salting on the routes established. However, depending on the storm conditions, very different results may be achieved. Currently, our goal can be stated as having all parking lots completely cleared of snow within 24 hours after the end of a snowstorm.

It is impossible to achieve the same results in the parking lots as on streets because of the very different nature of traffic. Vehicle traffic, in combination with salting and plowing, can result in bare conditions on streets. Vehicle traffic within a parking lot does not assist snow control efforts on parking lots in the same way. Parking lot conditions are more subject to the weather and less affected by snow control efforts. De-icers are less effective in parking lots than on streets because of the differences in traffic.

The level of service can only be stated in terms that snow plowing/sanding and salting activities begin in the parking lots after every storm and continue until completed or another storm intervenes.

Plowing Operations

Typically, plowing in parking lots does not commence until accumulations are in excess of three (3) inches. Access routes through the parking lots are plowed through by plow trucks as they pass through to allow access. Unlike street plowing conditions, a "brine sandwich" is not created by salting parking lots as soon as a snowstorm commences.

Plowing continues according to the priorities until all parking lots on the list have been completed. As noted previously, in severe conditions or when storms are close together, it may not be possible to complete the list before starting at the beginning again. After heavy snowfalls, the loader with plow may be required to service the parking lots.

Speed, equipment availability, and persistence is the key to keeping parking lots maintained. The sooner a lot can be cleared after a storm the better the chances of keeping the whole lot in good condition. The longer it takes to clear a parking lot, the greater the chances for the snow to become packed down, turn to ice, etc. Subsequent winter storms, rain, freezing rain, freezing temperatures, can all act to cause unfavorable conditions in the parking lots.

Sanding and Salting Operations

Once the parking lots have been plowed or cleared of snow, sanding operations may commence.

Sanding may become a daily process in parking lots once icy conditions occur. Due to the freeze/thaw cycles that can occur, sanding is the only effective operation to provide some degree of traction in City parking lots.

PLOW RUN 1 (# 20)

W. LEB MAIN RUNS

RT 4

Start at Long Acres
Miracle Mile to
Main St to Bailey Brothers
Turn around to
Bridge St both ways to
Seminary Hill to

GLEN RD

Glen Rd to
S. Main St to
Main St turn around to
S. Main St to

12-A

12-A (2x) inside to out
2nd time through go to

AIRPORT RD

Airport Rd to
Terminal Rd to
Commerce Ave to
Technology Dr both ways
Clean cul-de-sac during
Clean up
Commerce Ave to
Terminal Rd to
Airport Rd to
Glen Rd to
Miracle Mile to
Long Acres

START OVER

PLOW RUN 2 (# 38)

HANOVER St.
Go around park 2 or 3 times (outside to City Hall side)
Hanover St. to walking bridge turn around
Hanover St. to

MECHANIC ST.
Mechanic St. both ways
turn around Doug's Sunoco

SCHOOL ST.
School St. both ways
turn around State Rd. line

BANK ST.
Bank St. to
Bank St. Ext. to
Heater Rd. to Rt. 120 to

MT. SUPPORT RD (north)
Mt. Support Rd. to
La Haye Dr. Go across Rt. 120 to

CENTERRA DEVELOPMENT
Morgan Drive to BOTH WAYS to Lahaye Drive
To Mt Support turn around then Cavendish Ct. both ways go back on Morgan Drive to turn around to Centerra Parkway (2x) to
Lafayette St. both ways to

MT.SUPPORT RD. (south)
Mt. Support Rd. to

Heater Rd. to
Bank St. Ext. to
Bank St. to
Colburn Park

START AGAIN

PLOW RUN 3 (# 9)

HARDY HILL to
Whipple Rd. both ways
Hardy Hill Rd. to
Brook Road to
Blueberry Hill Rd to
Blueberry Meadow Lane both ways to
Westview Lane down
Down Blueberry Hill to
Blueberry Meadow both ways
Westview to Blueberry Hill Rd to
Brook Rd to Hardy Hill Rd
Hardy Hill too
Blueberry Hill Rd both ways to
Stevens Rd.

STEVENS ROAD
Stevens Rd. to
Eagle Ridge Rd. both ways
Stevens Rd. to Hanover line turn around
Stevens Rd. to
Alden Rd. both ways
Stevens Rd. to
Hardy Hill Rd to Farr Rd - turnaround
Hardy Hill to
Sunset Rock Rd dirt both ways

Sunset Rock Rd to
Jenkins Rd. to Dorsett Rd both ways
To Jenkins Rd to Brook Rd /Hardy Hill
Turnaround
Jenkins Rd to Sunset Rock to Rt 4

(RT. 4 PROPERTIES)
Eastman Hill Rd. both ways
Rt. 4 to rt. 4A to
Monica Rd. to End turnaround
Manchester Dr. to Rt. 4 turnaround
Manchester Dr. to
Hillside Dr. both ways
Manchester Dr. to
Monica Rd. to (4a to 4 east) to
Rudsboro Rd. to town line both ways
Clean fire station parking lot
Rt. 4 west to
Sunset Rock Rd. to
Hardy Hill Rd

START OVER

PLOW RUN 4 (# 8)

CARLTON AVE.
Carlton Dr. to
Tenley Dr. both ways to
Hitchcock Ave. to cul-de-sac to
Cottage Circle both ways to
Hitchcock Ave. to
Powers St. to
Floyd Ave. both ways to
Batchelder Ave. both ways to
Powers St. to
Whitcomb Ave. both ways to
Powers St. to
Jones Ave. both ways to
Tenley Dr. to
Carlton Ave. to Sem. Hill to Bridge St. to

CRAFTS AVE.
Crafts Ave. to
Beyerle St. both ways to
Crafts Ave. to
Chandler St. both ways to
Crafts Ave. to
Bridge St. turn around at store
Commercial Dr. both ways to

SOUTH MAIN STREET
Railroad Ave. both ways go on to S. Main St. to
Romano Circle both ways to
Waterman Ave. both ways to
Sewer Plant Rd. both ways to

TRUES BROOK ROAD
Trues Brook Rd. to
Derby Ln. to
Chelsea Cir. both ways to
Derby Ln. to
Trues Brook Rd. to turn around at town line to
Trues Brook Rd. to
Hall Rd. both ways to
Trues Brook Rd. to 12-A to
12-A
Interchange Dr. both ways
Dwinell Dr. both ways
Benning St. both ways plus old street entrance
go on to Seminary Hill to

SEM. HILL
Elm St. West to end of street turn around go to
Birch Terr. both ways to
Elm St. West to Sem. Hill to
Aldrich Ave. both ways to
Crawford St. both ways to
Johnston Ave. both ways to
Armstrong Ave. to
Hawthorn Ave. both ways to
Armstrong Ave.

START OVER

PLOW RUN 5 (# 3)

LITTLE HEATER RD
Little Heater Rd to
Edwards St to
Foch St to
Pershing St both ways turn around L.
Heater Rd
Foch St to
Edwards St to
Little Heater Rd to
RIVERDALE
Heater Rd to
Bank St Ext. to
Bank St to
Lilac Ave to
Benton St both ways to
Lilac Ave to end, to
Barnes St to
Cedar St to
Riverdale Pkwy to end
Clean out cul-de-sac, turnaround to
Riverdale Pkwy to Bank St turnaround
to Riverdale Pkwy to
Cedar St to
Walnut St both ways turnaround
Riverdale Pkwy
Barnes St to
Lilac Ave to
Benton St both ways to
Lilac Ave to
Bank St to
Cooper St both ways
Fortune St both ways to
Bank St to
BANK ST. EXT.
Excelsior St both ways to
Bank St Ext. to
Jefferson PL both ways to
Bank St Ext. to
Liberty Ln both ways to
Bank St Ext. to Farr Rd
Farr Rd both ways
Bank St Ext. to
Winona Cir. both ways to
Bank St Ext. to
Lower Dorothy Pearly both ways to
Bank St. Ext. to
Colby Ave. both ways to
Bank St. Ext. to
Lower Alden Rd. both ways to
TOWNSEND TERRACE
Heater Rd. to
Townsend Terr. to
Dorothy Pearly Rd. to mail boxes, turn
around to
Dorothy Pearly Rd. to
Townsend Terr. to
Alden Rd. both ways to
Townsend Terr. to
Heater Rd. to
Congress St. both ways to
Heater Rd. to
Labombard Rd. both ways to across Rt.
120 to
WOLF RUN
Heater Rd. to Bixby Both ways
Etna Rd. to
N. Labombard Rd. both ways to
Etna Rd. to
Wolf Run to end turn around to
Wolf Run to
Memorial Dr. to
Bassey St. both ways to
Memorial Dr. to Mt. Support, turn
around
Memorial Dr. to
Wolf Run to
Etna Rd. to
MOUNT SUPPORT
Mt. Support to
Placid Square both ways to
Mt. Support to
Dartmouth St both ways to
Mt. Support to
Verona Ave. both ways to
Hanover St. Ext. to interstate, turn
around to
Hanover St. Ext. to
Evans Dr. both ways to
Hanover St. Ext. to
Etna Rd. to Mt. Support turn around to
Etna Rd. to
Hanover St. Ext. to
Mt. Support to across Rt. 120

START OVER

PLOW RUN 6(# 10)

CHURCH ST
Spring St to
Chestnut St to
Abbott St both ways to
Chestnut St to
Spring St to
Pine St to Valley to Church both ways to
Valley to Pine
Spring St to
Church St to S. Park St turnaround to
Church St to
Valley St both ways to
Church St to
Davis St both ways to
Church St to
Spring St to
Water St to Rt. 4 West to
Blacksmith St both ways to
Foundry St both ways to Rt. 4 East to
Water St to
SLAYTON HILL
Dulac St to
Logan Ln both ways to
Dulac St to
Slayton Hill Rd to Rt. 4 turnaround to
Baxter Court both ways to
Slayton Hill Rd to
Dulac Street Ext both ways to
Slayton Hill Rd to
Farnum Hill Rd both ways to
Slayton Hill Rd to
Marie's Way both ways to
Slayton Hill Rd to stone house turn around to
Dunsinane Dr to end turn around to
Stage Coach Rd to end turn around to
Hetzel Rd to
Old Kings Hwy to Slayton Hill turn around to
Old Kings Hwy to
Hetzel Rd to
Stage Coach Rd to
Dunsinane Dr to
Slayton Hill Rd to
Dulac St to

SOUTH STREET AREA
Spring St to South St to
School St to
College Ave both ways to
South St to
Calvin St once through to
South St to
Spring St to
School St to
ELM ST SECTION
Elm to Prospect St turn around
Elm to Kimball to Union (BOTH WAYSs)
To Kimball to Forest to Prospect
To School turnaround to Reservoir Road turnaround
To Forest
Forest St to
Woodley Rd both ways to
Forest St to Rt. 4 turn around to
Kimball St to Elm
Elm St to Prospect St turnaround Elm to Kimball to Union both ways to Kimball St to Forrest to Prospect to School St, turnaround to
Reservoir Rd turnaround to Forest to Woodley both ways
Forest to Banks St Turn around to
Kimball to Shaw to bank turnaround
Shaw to Green
Green to Elm, Elm to Bank turnaround
Elm to Green to School turnaround
To Elm to Kimball turnaround
Elm to Green to Union to Kimball turnaround
Union to Green to Shaw
Shaw to
Kimball to School
LITTLE ELM
Little Elm St to
Parkhurst St to
Allen St to Bank St turn around to
Parkhurst St to Spencer St turn around to
Little Elm St to Bank St
START OVER

PLOW RUN 7 (# 4)

LOWER WEST SIDE
Mascoma St-Benton Hill to High St
High St both ways to
Mascoma St both ways Canteen turn around to Mechanic St turnaround to Mascoma St to Granite St to Eldridge St to Hanover St turnaround Eldridge to Young St turnaround Eldridge to Granite to Mascoma St. Mascoma St to Cameron St to Guyer St to Granite St to Mascoma St turn around Granite St to Guyer St both ways to Granite St to West St both ways to
Granite St to Fairview St both ways to
Granite St to Eldridge both ways to
Clark St Clark St both ways to Eldridge St to Colburn to Summer both ways to Ela St. Ela St to Winter both ways to Ela to Davis St both ways to Ela to Summer. Summer to Colburn. Colburn to Williams to Ela both ways. Williams to Young turn around. Williams to Colburn. Colburn to Amsden both ways. Colburn to Wheatley both ways. Colburn to Eldridge. Eldridge to Young both ways. Eldridge to Granite. Granite to Hough to Young both ways. Granite to Fairview both ways. Granite to Mason both ways. Granite to West both ways. Granite to Child both ways Granite to Guyer. Guyer to Bliss to Guyer. Guyer to Young St. Young St to Downes to Young to Williams then turnaround. Young St to Downes both ways. Young to Amsden. Young to Wheatly both ways. Young to Hough both ways Young to Worthen St. Worthen to Cameron turn around. Worthen to Young St. Young to Guyer. Guyer to Cameron. Cameron to Mascoma.
MASCOMA STREET
Mascoma St to
Peabody St to
Trenchen Camp Rd both ways to
Peabody St to
Mascoma St to
Bomhower St both ways to
Mascoma St to Rt. 4 turn around to
Myra Ave to
Freeman Ave both ways to
Ora Ave to
Avon Ave to Mascoma St turn around to
Ora Ave to
Freeman Ave to
Mascoma St to
80-84 St to
Mascoma St to

START OVER

Plow Run 8 (# 12)

LEBANON
plows down Mascoma St to
Old Pine Tree Cem. Rd to
Rt 4 (check with # 12 & W. Leb. main run truck to see if plows down Rt 4 - Sem Hill) to

WEST LEBANON

Farnum to Pleasant – Pleasant to Maple turnaround Pleasant to Farnum to Orcutt Orcutt to Maple both ways Farnum to Seminary Hill to Maple
Maple to Dana St to
Mack Ave both ways to
Dana St to
White Av (2 passes-push left to right)*
*at night: White Av both ways to Dana St to, Timothy Av both ways to Dana St to Maple St to
*during day: back down White Av into school parking lot to Dana St to Timothy St both ways to Dana St to Maple St to
Highland Av to Thomas BOTH WAYS to Highland to Pasture Ln both ways to Highland Av to Spring St West both ways to Highland Av to Green St West both ways to Highland Av to Winter St both ways to Highland Av to
Maple St to N. Main St turn around to Estabrook Circle both ways to Maple St to
Highland Av to Pearl St both ways to Highland Av to N. Main St turn around to Prospect St W. both ways to Highland Av to
Maple St to
Dana St to Main St turn around to Central to Atwood Av both ways to Central to Dana St to Maple St to
Tracy St both ways to Maple St to
Church St both ways to Maple St to
Main St
plows up to
NEAR HANOVER
Indian Ridge both ways to
Gould Rd both ways stay to right rule
Cambridge Pl to
Lash Rd to 2nd Gilson Rd to
Gilson Rd both ways including cul-de-sacs to
Longwood Ln both ways to
Lash Rd to
Beacon Rd both ways to
Lash Rd to
Cambridge Pl to –plows up-
Chambers Rd to
Faraway Ln to
Hill Top Dr both ways to
Faraway Lane both ways to
Chambers Cir both ways to
Chambers Rd to (plows up)
Wyeth Farm Rd both ways to
Scott Ave both ways to
Oak Ridge both ways to Oak Ridge turnaround to
Wildwood Dr both ways to
Oak Ridge to – to Rt 10plows up -
Richardson Pl both ways to
East Wilder Rd both ways to
Lakeview Dr to
Norris St both ways to Coburn Tr
Lake View Dr

START OVER AT MAPLE ST

Plow Run 9 (# 1)

POVERTY LANE
BUCKINGHAM PLACE
Buckingham Pl to
Wellington Cir both ways to
Buckingham Pl to
Nottingham Cir to
Buckingham Pl turnaround to
Tuck Rd both ways to
Nottingham Cir to
Buckingham Pl to Rt 4
POVERTY LANE
Poverty Ln to
C.A.P. Rd both ways to
Poverty Ln to
Loomis Rd both ways to
Poverty Ln to
Cross Rd to
Great Brook Rd to Rt 120
Merry Lane both ways
Barden Hill Rd both ways
Back to Great Brook to Cross Road
To Poverty Lane to
STONE HILL
Stone Hill Rd to end to
Deer Run Ln both ways to
Stone Hill Rd to
Moss Rd to
Foliage View Rd to end to
Rolling Ridge Rd to
Maple Hill both ways
Rolling Ridge Rd to
Foliage View Rd to Poverty Ln turnaround to
Moss Rd to
Stone Hill Rd to
Poverty Ln to Rt 4 to
START OVER

PLOW RUN 10 (# 52)

LaPlante Road Rt 4 end to Rt 120 both ways
To Walhowdon Way both ways
to LaPlante to Rt 4 to
Prospect St. to
Moulton Ave both ways to
Prospect St to Reservoir Road both ways
Prospect St to School St.
School St to Messenger St both ways
Back to Prospect St to Perley both ways
Prospect St to Hillcrest Dr
Hillcrest Dr to Ledge Ln both ways to
Skylark both ways Ledge to Houghton
Rd both ways to Hillcrest Dr
Hillcrest Dr to Prospect St, Prospect St to Rt 120. Rt 120 Plows up to Laro
Laro to Melrose both ways Laro to Gray
Gray to Garnet to Woodland
Woodland to Grandview
Turnaround a Gray St
Grandview to Woodland to Garnet to
Kinne to Rita both ways
Kinne to 120 turn around
Kinne to Gray to Laro to 120

Grandview Ave. to

DAISY HILL

Daisy Hill to
Storrs Hill Rd. both ways to
Daisy Hill to
Timberlane both ways
Daisy Hill to
Great Brook Rd. to
Daisy Hill to Morse Rd. both ways turn around in drive way dump snow straight ahead plows up when turning around then on down
Daisy Hill to RT. 120 to
Churchill Way both ways

RIVERSIDE DRIVE
Rt. 120 N. to
LaPlante Rd. to
Walhowdon Way both ways
LaPlante Rd. to Rt. 4 E. to
Stoney Brook Rd. both ways to Rt. 4 to
Riverside Drive to Fellows Hill Rd both ways
Riverside drive to
Mill Rd both ways
Riverside Dr to covered Bridge
Hardy Hill back Riverside Dr to Rt 4

START OVER

PLOW ROUTE 11 (Loader)

Taylor St to parking lot turn around
Spencer St
Suzor St
Kendrick St
Woodward St
Thompson St
Mahan St
Parking lot by Hanover St bridge
Mt Vernon St both ways
Barrows St both ways
Bush St both ways
Light St
Jordan Court both ways
Fire House front ramp
Gerrish Court both ways
Follensbee Av both ways
Millen Ln both ways
Court St to Flynn St both ways
City Hall alley
PARKING LOTS
Upper / Lower parking lots
Citizen's Bank front & rear
Fire Station One
Hanover St parking lot (by Hirsch's)
Mascoma Bank (rear parking lot)
City Hall alley way
Storrs Hill Ski Area parking lot
Police impound yard (On Call)
O&M sander storage area

NIGHT SNOW HAULING

WEST LEBANON

South Main St from Main St intersection working south
Sidewalk side to Home Depot's intersection

Seminary Hill (near school) go north up Main St (both sides) to intersection with Highland Av.

Bridge St (sidewalk side)

White Ave (sidewalk side)

LEBANON

High St (sidewalk side)

Hanover St (both sides)

Benton Hill (both sides) to NAPA

South Park St

School St (both sides) to Spring St

Bank St (both sides) to Shaw St

Campbell St (both sides)

Flynn St (both sides)

Colburn Park

Parking Lots

O&M Parking Lot

Other areas: Day time and continuing as needed.

SIDEWALK ROUTE 1

(LEBANON)

Taylor St	**Allen St**	Mascoma St to
Campbell St	**Banks St**	Mechanic St
City Hall	**Hanover St**	Benton Hill
Flynn St	**Hanover St Ext**	Church St
Court St	**Hanover St Ext**	Valley St
Mall	Evans Dr	Pine St
Colburn Park	**Wolf Rd**	Water St
School St	**Hanover St Ext**	Spring St
Abbott St	**Hanover St**	South St
School St	**Winter St**	**School St**
Messenger St	**Hanover St**	**Kimball St**
School St	**Eldridge St**	**Shaw St**
Bank St	**Hanover St**	Union St
Bank St Ext	Hough St (nr Listen's)	**Elm St**
Heater Road	High St	**Green St**
Bank St	Fairview St	Centerra Pkwy
Allan St	High St	Lafayette St
Parkhurst St	Mascoma St	

- Bolded indicates School Zone sidewalks

SIDEWALK ROUTE 2

(WEST LEBANON)

Mechanic St	
Seminary Hill (Nubridge)	Maple to Church
Carlton Dr	To Maple to Main
Seminary Hill to	To Hanover,
Jones Ave	Gould Rd
Hitchcock Ave	Rt 10 to Hanover town line
Seminary Hill	Back to Bridge St to
Elm St West	Crafts Ave
Seminary Hill	to Bridge St
Maple St	Hartford VT
Pleasant St	to Main St
Maple to the end	To South Main to
Dana to Highland Ave	Home Depot back to
Return to **Mack Ave**	Benning St
To **Highland**	Return to Kings Grant.
Prospect St West	
Pearl St	
Maple to	
Tracy St	**START OVER**

- Bold indicates School Zone sidewalks

SIDEWALK ROUTE 3

URBAN BUSINESS DISTRICT

Lebanon Mall

Libraries

GAR Hall

City Hall

Cemeteries Roadways