

City of Berlin Public Works Department

Snow & Ice Control Policy Statement and Operating Procedures



Revised 2007/2008

Governing Laws: RSA 231:92-A, RSA 507-B:2-b

City Ordinances: Chapter 13 Streets, Sidewalks and Other Public Places, Chapter 15 Traffic and Vehicles

Approval Date of Policy Statement: _____

Next Revision Date: _____

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SNOW AND ICE CONTROL POLICY STATEMENT

INTRODUCTION: The City receives an average of 100 inches of snow per year. The average snow storm deposits 5” of snow. Storms range from flurries and freezing rain to full scale blizzards.

OBJECTIVE: It is the goal of the City of Berlin to provide timely, efficient and cost-effective winter maintenance on the roadways of the municipality for the safety and benefit of the City’s residents and the general motoring public. The City’s objectives will be achieved by the implementation and execution of the procedures and tasks outlined in the **Snow and Ice Control Operating Procedures** described following this statement.

LEVEL OF SERVICE: It is not possible to maintain “black” snow and ice free travel surfaces during adverse weather conditions. It is the intention of the City to provide practical, safe access to homes, businesses and municipal facilities during the winter season.

COMMAND: During regular work hours, the Senior Foreman decides when Public Works crews will go out to conduct snow and ice control operations. During off work hours, the Police Department dispatch contacts the foreman on-duty when on duty Police Department personnel determine that a response is needed by the Public Works Dept. In general, crews respond as soon as reasonably possible after the call out.

EXECUTION: The policy outlined above is intended to serve as the normal operating policy for winter maintenance, snow removal and/or ice control for the City of Berlin. 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
- Snow Accumulation in Excess of 1” Per Hour
- Freezing Rain or Other Icing Conditions
- Traffic Congestion
- Emergencies
- Personnel illness

SNOW AND ICE CONTROL OPERATING PROCEDURES

SAND AND SALT SPREADING: Spreading sand and salt on City streets is performed for several reasons. The most obvious, are to melt the ice and snow build-up on the pavement and to provide better traction for vehicles. Applying salt in the early stages of a snow storm also develops brine which breaks the bond between the pavement and snow. This results in easier and better snow plowing operations. Sand and salt is mixed and applied at a minimum salt ratio of one part to three parts sand except in “*salt free*” areas. In “*salt free*” areas only sand is applied to prevent salt contamination of private wells.

OTHER DEICING AGENTS: Other deicing agents are effective at lower temperatures and have lesser and/or greater environmental impact. Cost and the need for specialized equipment and experimentation by the Department have forestalled their use at this time.

Each ward is generally assigned one truck. In each ward, the streets are treated according to priority.

The following is the schedule of priorities used by the Department for sand and salt application:

Sanding and Salting Priorities

- Priority 1. Truck Routes, Arterials and Emergency Routes
- Priority 2. Collector Streets
- Priority 3. Steep Grade Streets in General
- Priority 4. Flat to Moderate Grade Streets in General

It should be noted that as the temperature decreases, the melting quality of salt also decreases. Below 20⁰F salt is relatively ineffective and below 6⁰F is totally ineffective. See Appendix A for Sand and Salt Data.

PLOWING OF STREETS: The Senior Foreman on duty will generally commence plowing operations after an accumulation of 3-5 inches of snow. The decision to begin plowing will depend on several factors, including but not limited to; the characteristics of the snow, the rate of snowfall, the weather forecast and the time of day. The Senior Foreman on duty, at his or her discretion, may elect to begin snow plowing operations at greater or lesser accumulations.

Plow routes are as established in Appendix B. Plow routes are subject to discretionary changes due to manpower availability, equipment availability and varying weather conditions. At the completion of plowing, sanding and salting operations are conducted as required.

SIDEWALK PLOWING: The City plows approximately 25% of existing sidewalks. This equals approximately 15 miles of sidewalk. The sidewalk plows are dispatched along with the street plows. Generally, two sidewalk tractors are sent out.

Sidewalks are generally plowed in order of the following priority:

- Priority 1. Downtown Area
- Priority 2. Walks in immediate vicinity of schools, churches and funeral homes
- Priority 3. Major collector walks leading to schools
- Priority 4. Remainder of walks

Sidewalks are also sanded on an as needed basis.

Sidewalks to be plowed are listed in Appendix C.

SNOW REMOVAL/POST STORM OPERATIONS: The accumulation of snow deposited by the plows on the sides of streets results in many complications. Travel ways become narrow in many cases not permitting two way traffic. Snow covers walkways, forcing pedestrians to walk in the street. High snow banks may obstruct the vision of drivers and pedestrians. On street parking is reduced. Last but not least, catch basins are covered over causing a possible drainage problem, especially in low areas. For these reasons, the City removes the snow from streets.

After plowing is completed, the Senior Foreman on duty determines if there is sufficient snow to warrant removal. If there is, one snow removal unit is scheduled to be sent out. A unit generally consists of a snow blower, two sidewalk tractors, a grader or loader and several dump trucks. Depending on the amount of snow to be removed, the City may augment its own dump truck fleet with the use of hired private trucks and drivers.

In the process of removing snow, the sidewalk tractors push the snow away from the sidewalks, poles, signs and other obstructions, into the roadway. The grader then windrows the snow either in the center of the street or on the side, depending on quantity. The snow blower picks up the windrows and places it into the trucks. The snow is then hauled to one of the City's snow dump sites. Three snow dump sites are located on City property as indicated below:

- 1. on the west side of the Mt. Carberry Landfill access road
- 2. at the south end of the Wastewater Treatment Facility Property
- 3. at the north end of Madison Ave. below the High School parking lot

The City utilizes a fourth snow dump site on the east side of Riverside Dr. on private property under an agreement with the owner.

Once the snow is unloaded, it is pushed with a piece of equipment (normally a bull dozer) to maximize the use of space at the dump site.

When conditions permit, snow is plowed back or blown onto empty lots or outer right of way limits eliminating the need to fill trucks and haul snow. With only one snow blower out at one time and 60 miles of roads to clear, a priority schedule is required. The following is a schedule of the snow removal priorities used by the Department.

Snow Removal Schedule
(Priority Snow Removal Maps are in Appendix?)

- Priority 1A. Downtown - East Mason St. Area (commencing at 4:00 AM weekdays, earlier if necessary)
- Priority 1B. Areas around schools
- Priority 1C₁. Truck Routes
 - 1C₁. Route 110, Coos St. & Hutchins St.
 - 1C₂. Unity St. & Glen Ave
- Priority 1C₂. Areas around churches & funeral homes
- Priority 2. Collector & Feeder Streets
- Priority 3. Residential Streets with sidewalks
- Priority 4. Remaining Streets

Note: The schedule may be altered due to emergencies or other reasons.

The downtown area and heavily traveled truck routes must be cleared during the early A.M. hours. Otherwise, parked vehicles and traffic congestion hampers the snow removal operation. The plow crew generally begins preparing snow for removal at 4:00 A.M. However, if conditions warrant, the crew may start as early as 11:00 P.M...

MISCELLANEOUS: In addition to sanding and salting, plowing and removal many other tasks are performed by the City throughout the winter.

Salt barrels and boxes are distributed throughout the City. Crews keep these supplied with a sand-salt mixture throughout the winter as resources allow. These barrels are positioned in strategic areas near hills areas and intersections. Presently, there are approximately 150 barrels or boxes out along the roads. Sand and salt barrel locations are listed in Appendix D.

Many times throughout the winter crews are dispatched to clear ice from public ways and drainage facilities.

There are six City owned parking lots that require sanding and salting, plowing and snow removal. Three of these are located along Cole Street. There is one lot on Mason Street between the two bridges (Tondreau Lot). The remaining two are the City Hall

parking lot and City garage yard.

SCHOOLS: The Public Works Department does not have the responsibility for the clearing of snow and winter treatment of City schools and parking lots. On days when school is in session, effort is made to conduct street winter maintenance activities to assist with bus routing and delivery.

The school superintendent or designated official representative may contact the Public Works Department for help in assessing the condition of the City's roads in order to determine the safety of students using school buses. The school representative(s) shall make the decision to cancel or postpone school for that day.

PARKING: The City has enacted a winter parking ban effective from November 1st to April 1st of each year. This ban prohibits parking in or on the City's roads streets or rights of way (ROW) between the hours of 12:00 PM and 7:00 am. The City has the right to tow or ticket 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.

Appendix A
Sand and Salt Data

APPLICATION OF SALT

POUNDS OF ICE MELTED

PER

POUND OF SALT

<u>Temperature Degrees F.</u>	<u>One Pound of Sodium Chloride (Salt)</u>
30	46.3 lbs. of ice
25	14.4 lbs. of ice
20	8.6 lbs. of ice
15	6.3 lbs. of ice
10	4.9 lbs. of ice
5	4.1 lbs. of ice
0	3.7 lbs. of ice
-6	3.2 lbs. of ice

SALT COMPARISON COSTS

YEAR	PRICE PER TON	TONS USED	COST
1970 - 1971	\$17.35/TON	4,845.35 TONS	\$84,066.00
1971 - 1972	\$17.35/TON	3,814.72 TONS	\$66,185.39
1972 - 1973	\$18.30/TON	4,578.90 TONS	\$83,793.27
1973 - 1974	\$19.30/TON	4,022.60 TONS	\$77,636.18
1974 - 1975	\$21.20/TON	4,101.15 TONS	\$36,944.38
1975 - 1976	\$22.69/TON	4,435.69 TONS	\$100,645.80
1976 - 1977	\$24.59/TON	3,294.28 TONS	\$81,006.34
1977 - 1978	\$27.04/TON	3,801.36 TONS	\$102,788.77
1978 - 1979	\$28.95/TON	2,851.32 TONS	\$82,545.71
1979 - 1980	\$29.28/TON	1,556.95 TONS	\$45,587.48
1980 - 1981	\$32.80/TON	2,331.53 TONS	\$76,474.18
1981 - 1982	\$34.25/TON	2,265.96 TONS	\$77,609.12
1982 - 1983	\$37.79/TON	1,859.42 TONS	\$70,267.48
1983 - 1984	\$38.21/TON	2,368.28 TONS	\$90,491.77
1984 - 1985	\$36.20/TON	2,118.92 TONS	\$76,704.90
1985 - 1986	\$36.20/TON	1,798.28 TONS	\$65,097.73
1986 - 1987	\$31.85/TON	1,714.11 TONS	\$52,596.34
1987 - 1988	\$32.70/TON	1,790.37 TONS	\$58,545.09
1988 - 1989	\$38.87/TON	2,475.53 TONS	\$96,223.85
1989 - 1990	\$41.21/TON	1,427.56 TONS	\$58,828.52
1990 - 1991	\$44.21/TON	1,869.59 TONS	\$82,654.57
1991 - 1992	\$44.45/TON	1,896.71 TONS	\$84,271.47

1992 - 1993	\$42.89/TON	1,759.70 TONS	\$75,473.53
1993 - 1994	\$41.41/TON	1,670.68 TONS	\$69,182.86
1994 - 1995	\$44.00/TON	1,344.68 TONS	\$58,681.36
1995 - 1996	\$43.48/TON	2,408.10 TONS	\$91,656.68
1996 - 1997	\$42.81/TON	1,846.13 TONS	\$79,032.83
1997 - 1998	\$41.80/TON	1,822.56 TONS	\$76,183.01
1998 - 1999	\$38.25/TON	1849.62 TONS	\$70,747.97
1999 - 2000	\$34.12/TON	1848.19 TONS	\$63,060.24
2000 - 2001	\$37.95/TON	2565.92 TONS	\$97,366.66
2001-2002	\$47.97/TON	2033.32 TONS	\$97,538.36
2002-2003	\$41.70/TON	2,451 .91 TONS	\$102,244.65
2003-2004	\$41.00/TON	1,794.47 TONS	\$73,573.27
2004-2005	\$46.49/TON	2,314.07 TONS	\$107,581.11
2005-2006	\$51.25/TON	2795.82/TON	\$143,285.77
2006-2007	\$50.83/TON	2131.55/TON	\$116,909.00
2007-2008	\$56.15/TON		

SAND COMPARISON COSTS

YEAR	COST PER TON	TONS USED	COST
1984 - 1985	\$4.00/TON	1,442.49 TONS	\$5,566.16
1985 - 1986	\$4.00/TON	1,585.71 TONS	\$6,943.74
1986 - 1987	\$4.00/TON	1,571.08 TONS	\$8,298.02
1987 - 1988	\$4.00/TON	1,332.64 TONS	\$5,810.04
1988 - 1989	\$4.00/TON	3,793.09 TONS	\$17,866.26
1989 - 1990	\$4.20/TON	2,555.16 TONS	\$12,762.68
1990 - 1991	\$3.60/TON	2,795.39 TONS	\$12,342.59
1991 - 1992	\$3.60/TON	3,302.53 TONS	\$14,936.21
1992 - 1993	\$4.60/TON	2,814.96 TONS	\$12,948.82
1993 - 1994	\$4.60/TON	2,985.47 TONS	\$14,599.49
1994 - 1995	\$4.75/TON	1,655.69 TONS	\$7,119.49
1995 - 1996	\$4.50/TON	3,744.56 TONS	\$19,410.37
1996 - 1997	\$5.40/TON	3,339.72 TONS	\$18,034.49
1997 - 1998	\$5.75/TON	4,210.10 TONS	\$24,826.10
1998 - 1999	\$6.25/TON	2,859.84 TONS	\$17,874.00

1999 - 2000	\$6.25/TON	3,072.71 TONS	\$19,204.44
2000 - 2001	\$6.25/TON	3,859.03 TONS	\$24,118.94
2001-2002	\$3.25/TON	2,848.86 TONS	\$9,258.78
2002-2003	\$7.25/TON	3,571.38 TONS	\$25,892.51
2003-2004	\$7.50/TON	2,892.26 TONS	\$21,691.95
2004-2005	\$7.85/TON	3,423.46 TONS	\$26,874.16
2005-2006	\$10.25/TON	3464.49/TONS	\$35,511.02
2006-2007	\$11.50/TON	2627.58/TONS	\$27589.59

Appendix B

Plow Routes

Plow routes are subject to discretionary changes due to manpower availability, equipment availability and weather conditions.

PLOWING ROUTE FOR WARD I

W1A – LIGHT BLUE

City Garage to Rt. 110 to compact line to Duguay Street to Alice Street to Duguay Street to Wight Street to Labossiere dead end to Sixth Avenue to Madigan Street to Sixth Avenue to Petrograd Street to Charron Avenue to Hill Street to Third Avenue to Haskell Street to Second Avenue to Coolidge Street, south on Second Avenue to Haskell Street to Third Avenue to Hill Street to Second Avenue up Hill Street to Charron Avenue to Petrograd Street to Russian Street dead end to Mt. Forist Street to Petrograd Street to Charron Avenue to dead end to Petrograd Street to Sixth Avenue to Jolbert Street to Fifth Avenue dead end to Jolbert Street to Fourth Avenue to Mt. Forist Street to dead end back down Fourth Avenue to Jolbert Street, Third Avenue to Sixth Avenue to Madigan Street to Fifth Avenue to Sixth Avenue to Hinchey Street to Fifth Avenue to Sixth Avenue to Labossiere Street to Fifth Avenue to Sixth Avenue to Wight Street to Third Avenue to Laurel Street to Second Avenue to Harding Street dead end to Second Avenue to Coolidge Street to First Avenue to Mink Street to Western Avenue to Legassie Street dead end to Western Avenue to Coach Street dead end to Western Avenue to Ash Street dead end to Western Avenue to Corbin Street to Wentworth Avenue dead end to Corbin Street to Gordon Avenue dead end to dead end of Corbin Street to Gordon Avenue to Cascade Street back to Williams Street to Wentworth Avenue to Cascade Street to Williams Street to Western Avenue to Wentworth to Corbin Street to Williams Street to Gordon Avenue to Corbin Street to Western Avenue to Cascade Street to Berlin-Gorham townline to Old Glen Avenue to Nibroc Street to Old Glen Avenue to Watson Street to Glen Avenue to Brown Street to right-of-way off Brown Street to Glen Avenue to Brown Street to Glen Avenue after first pass, Boulay Street and Rocky Lane.

PLOWING ROUTE - WARD I

W1B – DARK GREEN

Public Works Department Garage to compact line at White Mountain Distributors to Pleasant Street on truck route to Glen Avenue to town line back up Route 110 to intersection with new bridge to intersection of East Mason Street back to Glen Avenue to Main Street to intersection of Pleasant and Main Street down Pleasant Street (note: when no traffic) to intersection of Pleasant and Glen Avenue back up Pleasant Street to Diana Street to Glen to Pleasant Street to Exchange Street to Pleasant Street to Green Street to Exchange Street to Pleasant Street to Green Square to Pleasant Street to Mechanic Street to Main Street to Pleasant Street to intersection of Pleasant Street and Main Street, south on Main Street to Glen Avenue then north on Glen Avenue to Green Square to Pleasant Street to Mt. Forist Street to First Avenue to Gilbert Street to Green Street to underpass to First Avenue to Gilbert Street to First Avenue to Green Street to Roderick Street to dead end to First Avenue to dead end to Green Street to Second Avenue to Madigan Street to Third Avenue to Hinchey Street dead end to Third Avenue to City Garage, on truck route to Western Avenue to Gerrish Street to First Avenue to Western Avenue to Gorham and Berlin town line, north to Mt. Forist to First Avenue, south to Mink Street to Western Avenue to First Avenue to Mt. Forist Street to Green Street to Second Avenue to Coolidge Street, north to Harding Street to First Avenue to Second Avenue to Laurel Street to First Avenue to Second Avenue to Shepard Street to First Avenue to Second Avenue to Clark Street to First Avenue to Second Avenue to Mt. Forist Street to First Avenue to Second Avenue to Hamlin Street to First Avenue to Second Avenue to Green Street to Second Avenue to Mannering Street to Third Avenue to Sessions Street to Second Avenue to Third Avenue to Jolbert Street to Second Avenue to Third Avenue to St. Joseph Street to Second Avenue to Third Avenue to Mt. Forist Street to Second Avenue to Third Avenue to Clark Street to

Rouleau Road to Mt. Forist Street to dead end Rouleau Road to Clark Street to Second Avenue to Third Avenue to Shepard Street to Second Avenue to Third Avenue to Laurel Street to Second Avenue to Third Avenue, move to Third Avenue and Hinchey Street to Fourth Avenue to Wight Street to Hinchey Street to Fifth Avenue to Wight Street to Jolbert Street, north to Madigan to Fourth Avenue to Jolbert Street back to Madigan Street to Third Avenue to Fourth Avenue to Hinchey Street to Madigan Street to Fifth Avenue to Hinchey Street to Third Avenue.

PLOWING ROUTE FOR WARD II

W2A - ORANGE

Willow Street to York Street to Cole Street to Green Street to underpass to Pleasant Street to Union Street to Green Street to Cole Street to York Street to Pleasant Street to Cole Street to Mason Street to Pleasant Street to Oak Street to Willard Street to School Street to dead end of Washington Street to School Street to High Street to dead end, south to School Street to Willard Street to State Street to High Street to Willard Street to high school lot, south to School Street to Mason Street to Granite dead end to Mason Street to Cole Street to Cushing Street to Cole Street to York Street to Granite Street to School Street to Willard Street to Oak Street to Mason Street to School Street to Granite and York to Emery to Willard Street to Madison Avenue to Hillside Avenue to Emery Street to Blanchard Street dead end to Emery Street to Willow Street to Hillside Avenue to Madison Avenue, turn left to new high school, around parking lot, south to Madison Avenue to River Street dead end to Madison Avenue to Portland Street to Willow Street to Hillside Avenue, then north on Willow to Portland Street to Madison Avenue to Park Street to Willow street to Madison Avenue to State Street to Willow Street to Madison Avenue to Pine Street to Willow Street to Madison Avenue to Hillside Avenue, north on Madison Avenue to Pine Street to Willard Street to Madison Avenue to State Street to Willard Street to Madison Avenue to Park Street to High Street, back to Willard Street to Portland Street to High Street to Jasper Street to River Street to High Street to River Street to Jasper Street dead end to Carl Street to Madison Avenue back to Jasper Street to Dewey Street to Madison Avenue to Jasper Street to River Street to Madison to Jasper to Portland Street to Willard Street, move to Hillside Avenue and Washington Street to Emery Street to Willard Street to Washington Street to School Street to Emery Street to High Street to Washington Street to Hillside Avenue.

PLOWING ROUTE FOR WARD II & III

W2B - PURPLE

City Garage to Mannering Street to Hillside Avenue to High Street to School Street back up High Street to Hillside Avenue to Church Street to School Street to Hillside Avenue to Prospect Street to School Street, north on Prospect Street to Winter Street to Hillside Avenue to Poplar Street to Smyth Street to Ramsey Street to Hillside Avenue back to Smyth Street to Jordan Avenue to Smyth Street back to Smyth Street to Poplar Street to lower Lincoln Avenue to Portland Street to Hillside Avenue back to Lincoln Avenue to Myra Street to Hillside Avenue to BeeBe Street dead end back down to Lincoln to Portland Street to Prospect Street to dead end to Portland Street to Arthur Street to Winter Street to Portland Street to Livermore Avenue to Winter Street to Portland Street to Harrington Avenue to Winter Street to Portland Street to lower Lincoln to Hillside Avenue to Winter Street to Prospect Street to Portland Street back down Prospect Street to Cedar Street to Hillside Avenue to Prospect Street to Spruce Street to Hillside Avenue to Prospect Street to Hillside Avenue to Church Street to dead end back to Noyes Street to High Street to Church Street to Portland Street to High Street to Church Street to Holt Street to High Street to Church Street to Hillside Avenue to High Street.

PLOWING ROUTE FOR WARD III

CATES HILL & RIVERSIDE DRIVE

W3A - YELLOW

City Garage to Hillside Avenue to Ridgeview to Oxford Street to Ridgeview to dead end to Adams Street to Presidential Avenue east to dead end to Hillside Avenue to east end Hanover Road to Cates Hill to Rt. 16 back to top of Cates Hill then north to dead end, Paul Bisson's then south to Farley Road dead end to Cates Hill Road to Grandview Meadows to Cates Hill Road to Hanover Road west dead end to Cates Hill to Myra Street then back up to Cates Hill to Route 16 south on Riverside Drive to Twitchell Lane to North Road to dead end back to Morning Street to Riverside Drive to North Road to Twitchell Lane to dead end to Riverside Drive to Daley Street dead end to Riverside Drive to Woodrow Street dead end to Riverside Drive to Noury Street to Howard Street to McGee Street to Riverside Drive to dead end McGee Street to Noury Street dead end to Riverside Drive to Woodward Street to Howard Street to Noury Street south on Howard Street to Woodward Street dead end to Howard Street to Providence Avenue, north on Howard Street to Woodward Street to Riverside Drive to Providence Avenue to Howard Street to St. Vincent de Paul to Riverside Drive.

PLOWING ROUTE FOR WARD III

MAIN STREET & RIVERSIDE DRIVE

W3C – RED

City Garage to Hillside Avenue to Willard Street to School Street to High Street to Main Street to Twelfth Street to Page Hill Road to stop sign at top of hill to Riverside Drive to Cates Hill to Coos County Nursing Home to Riverside Drive to Providence Avenue to St. Vincent Nursing Home to Riverside Drive to Fourth Street to dead end to Main Street to Maple Street to Brown Avenue to Fifth Street to Norway Street to Sixth Street to Main Street to Norway Street to Seventh Street to Main Street to Norway Street to Eighth Street to Main Street to Norway Street south to Fifth Street to Sweden Street to Seventh Street to Norway Street to Sweden Street to Eighth Street to Norway Street to Sweden Street south to Seventh Street to Denmark Street to Eighth Street, south to dead end Denmark Street to Seventh Street to Sweden Street to Fifth Street to Main Street to intersection of Eighth Street and Sweden Street to Tenth Street to Norway Street to Eighth Street to Ninth Street on Norway Street to Main Street to Norway Street to Tenth Street to Main Street to Norway Street to Eleventh Street to Main Street to Norway Street to Twelfth Street to Main Street to Norway Street south to Tenth Street to Sweden Street to Sherry Street to Twelfth Street to Nansen Street south dead end to Twelfth Street to Sweden Street to Eighth Street to Norway Street to Williamson Avenue (at this point the two graders should be together) to Main Street to Norway Street to Twelfth Street to Nansen Street to Williamson Avenue to Norway back on Williamson Avenue to Nansen to Twelfth Street, move to intersection of Williamson and Norway to Pine Island Avenue to Riverside Drive to Norway to Providence Avenue to Riverside Drive to Norway Street dead end to Providence Avenue to Pine Island Avenue to Nansen Street to Providence Avenue, down Providence Avenue to Riverside Drive to Twitchell Lane to North Road to dead end back to Morning Street to Riverside Drive to North Road to Twitchell Lane to dead end to Riverside Drive.

PLOWING ROUTE FOR WARD III

W3B – LIGHT GREEN

Public Works Garage to Wight Street to Mannering Street to Hillside Avenue to Portland Street back to Spring Street to Quinn Court to School Street to High back to Church Street (lower end) to School Street to Success Street to School Street to Ottawa Street to Cambridge Street to School Street to Main Street to Ottawa Street to School Street to First, Second and Third Street to Main Street back to School Street to Spring Street to Spruce Street to Summer Street to Elm Street to Moreau to Elm Street to Summer Street to Guilmette Street to Spring Street back to Houle Street to School Street back to Guilmette Street to Summer Street to Elm Street dead end to Summer Street to Ruby Street to Summer Street to Susan Street back to Summer Street to Poplar Street to Highland Park Avenue to Whittmore Street back to Highland Park to Poplar Street to Hillside Avenue to Summer Street to Cedar Street to Hillside Avenue back to Summer Street to Spruce Street to Hillside Avenue, up Hillside Avenue to Poplar to Highland Park Avenue to dirt road back to Landry Street to Finland Street to Eighth Street to Sweden Street back up Eighth Street to Finland Street dead end to Johnson Road to Denmark to Eighth Street back to dead end Denmark Street to Johnson Road to Finland to Eighth Street to Highland Park Avenue, Highland Park Avenue dirt road to 12B Street to Sweden Street to Tenth Street back up Sweden Street to 12B Street to Bret Street back to 12B Street to lower end Denmark Street north on Denmark Street to Twelfth Street to Sweden Street to 12B Street back to Twelfth Street down to Sherry Street to Sweden Street back to Twelfth Street to Nansen Street south end to Twelfth Street to Denmark Street to Pine Island Avenue to Hermanson Avenue to Williamson Avenue to Sweden Street to Pine Island Avenue to dead end Williamson Avenue to Sweden Street to Twelfth Street to Williamson Avenue to Nansen Street to Twelfth Street to Williamson Avenue to Norway Street to Twelfth Street to Williamson Avenue, Main Street to

Norway Street to Pine Island Avenue to Williamson Avenue to Hermanson to Pine Island Avenue to dead end Nansen Street to Riverside Drive to Norway Street to Providence Avenue to Pine Island Avenue to Nansen Street to Providence to Pine Island Avenue to Hermanson Avenue to Providence to Pine Island to Paine Street to St. Vincent's to Pine Island Avenue to Sweden to Dustin Street to dead end to Pine Island to Denmark Street to 12th Street to Highland Park to City Garage.

PLOWING ROUTE FOR WARD III & IV - LIBERTY PARK

W4C - BROWN

City Garage to Hillside Avenue to Main Street to Twelfth Street Bridge to Hutchins Street to lower part of Wood Street to Hutchins Street to Sully Street to Horne Street to north end of Horne Street to Bridge Street to Hutchins Street back to Horne Street to Myrtle Street to Hutchins Street to Horne Street to Sully Street to Hutchins Street to Bridge Street to Maynesboro Street to Hutchins Street to Bridge Street to Maynesboro Street to Hutchins Street to Wood Street to Maynesboro Street to Bridge Street - north on Maynesboro Street to Wood Street to Verdun Street to Bemis Street to Maynesboro Street to verdun Street to Argonne Street to Maynesboro Street to verdun Street to Franklin Street to Maynesboro Street to Verdun Street to Marne Street to Maynesboro Street to Verdun Street to Bridge Street to Maynesboro Street to Bermico Street to Pershing Avenue to Bemis Street to Turcotte Street to dead end to Bermico Street to Verdun Street to dead end Pershing Avenue to Bermico Street to Bridge Street to Verdun to Pershing Avenue to Wood Street to Rheims Street to Bemis Street to Verdun to Rheims Street to Argonne Street to Verdun Street to Rheims Street to Franklin Street to Verdun Street to Rheims Street to Marne Avenue to Verdun Street to Rheims Street to Bridge Street to Verdun Street to Rheims Street to Pershing Avenue to dead end to Rheims Street to Bridge Street to dead end to Rheims Street to Bemis Street to dead end to Rheims Street to Wood Street to dead end to Rheims Street to north 100' on Rheims to Wood Street to Verdun Street - north 100' on Verdun Street to Bridge Street to Maynesboro Street north 100' on Maynesboro street to bridge Street to Hutchins Street to Page Hill Road to stop sign at top of hill to Hutchins Street to Walsh Street to Pinecrest to dead end to Walsh Street to Haven Avenue to dead end to Walsh Street to Countryside Avenue to dead end to Walsh Street to East Milan Road north to Success Road to Success town line to East Milan Road to Berlin-Milan town line south to Chalet, around Chalet to East Milan Road to Industrial Park road to dead end to East Milan Road to Twelfth Street Bridge.

PLOWING ROUTE FOR WARD IV

W4A - BLUE

Goebel Street to Merrimack Street to dead end to Goebel Street to Devens Street to Standard Street to Goebel Street to dead end to East Mason Street to Champlain Street, south on Champlain Street to Strafford Street to Goebel Street to Champlain Street to Merrimack Street to Goebel Street to Champlain Street to dead end, north to East Mason Street to Burgess Street to Strafford Street to Champlain Street to Burgess Street to Merrimack Street to Champlain Street to Burgess Street to Thomas Street to Champlain Street to Burgess Street to Alpha Street to Burgess Street to dead end, north to East Mason Street to Hillsboro Street to Strafford Street to Burgess Street to Hillsboro Street to Merrimack Street to Burgess Street to Hillsboro Street to Berwick Street to Burgess to Hillsboro Street to dead end to Grafton Street to Rockingham Street to East Mason Street to Hillsboro Street to Rockingham Street to dead end, north to dead end East Mason Street to Rockingham Street to Grafton Street to Sullivan Street to East Mason Street to King Street to Grafton Street to East Mason Street to Hutchins Street to Grafton Street to East Mason Street to Carroll Street to Grafton Street to East Mason Street to Sullivan Street to Grafton Street to Lancaster Street to dead end to Grafton to Howland dead end to Enman Hill to dead end to Grafton Street to Blais Street to dead end to Grafton Street to Kent Street to Forbush Avenue to Blais Street to Grafton Street to Forbush Avenue to Trudel Street dead end to Forbush Avenue dead end to lower end Trudel Street to Forbush to lower end Blais Street to Kent Street to Grafton Street to Howland Street to Coos Street to Grafton Street to Gendron Street to Coos to Grafton Street to Beaudoin Street to Coos Street to Grafton Street to Lancaster Street to Coos to Grafton Street to King Street to Coos Street to Grafton Street to Hutchins Street to Coos Street to Grafton Street to Sullivan Street, to Pershing Avenue - Ward III.

PLOWING ROUTE FOR WARD IV

W4B - PINK

City Garage to East Mason Street to Hillsboro Street to Grafton Street to Enman Hill to dead end to Grafton Street to Hillsboro Street to East Mason Street to Unity Street to Coos Street to Hutchins Street to Bridge Street then south on Hutchins Street to Coos Street to Unity Street to Champlain Street to Goebel Street to East Mason Street back to Champlain Street to East Mason Street to Grafton Street to Burgess Street to East Mason Street to Grafton Street to Hillsboro Street then west to Champlain Street to Coos Street to Burgess Street to Grafton Street to Coos Street to Hillsboro to Grafton Street to Coos Street to Rockingham Street to Grafton Street to Coos Street to Sullivan Street to Grafton Street to Coos Street to Hutchins Street to Grafton Street to Belknap Street to Sullivan Street to Coos Street to Belknap Street to Carroll Street to Coos Street to Belknap Street to Hutchins Street to Columbia Street to Lancaster Street to Belknap Street to Hutchins Street to King Street to Coos Street to Belknap Street to Lancaster Street to Coos Street to Forbush Avenue to Beaudoin Street to Coos Street to Forbush Avenue to Gendron Street to Coos Street to Forbush Street to Howland Street to Coos Street to Forbush Avenue to Kent Street to Grafton Street to Forbush Avenue west to Lancaster Street to Wescott Street to Marble Street to Forbush Avenue to Wescott dead end to Marble Street to Derrah Street to Westcott Street to Lancaster Street to Derrah Street to Kent Street to Forbush Avenue to dead end Kent Street to Derrah Street to Lancaster Street dead end to Columbia Street to Hutchins Street to Gauthier Street to Hutchins Street, south on Hutchins Street to Napert Street (all on one side) to Dutil Street to Gauthier Street turn back down Dutil Street to Napert Street to Hutchins Street to Bridge Street south on Hutchins Street by way of truck route to Unity Street to dead end to East Mason Street to parking lots.

Appendix C

Sidewalks to be Plowed

SIDEWALKS TO BE PLOWED

WARD I

Wight St.	All
Third Ave.	Wight St. to Madigan St. (east side)
Mt. Forist	Third Avenue to tracks (both sides)
Madigan St.	Third Avenue to Second Avenue(both sides)
Mannering St.	All
Second Avenue	Tracks to Harding St. (low side)
Green St.	All
First Ave.	Green St. to Gerrish St. (low side)
Pleasant St.	Post Office to Kelley's Auto Parts (both sides)
Glen Ave.	All
Western Ave.	Mt. Forist to end of sidewalk

WARD II

Main St.	St. Anne's to Kelley's (both sides)
Pleasant St.	Exchange St. to St. Anne's (both sides)
Exchange St.	All
Mechanic St.	All
Main St. to Pleasant St.	Bickford Ln. between Family Dollar and Rite Aid
York St.	All (both sides)
Willow St.	From York St. to Hillside Ave. (both sides)
Emery St.	Willow St. to Willard St. (one side)
Blanchard St.	All(both sides)
Mason St.	Main St. to Granite St. (both sides)

Granite St.	Mason St. to York St. (both sides)
School St.	Mason St. to Church St. (both sides)
Church St.	Pleasant St. to Hillside Ave. (both sides)
Willard St.	Oak St. to Dead End(both sides)
Oak St.	Willard St. to Mason St. (both sides)
High St.	Main St. to Portland St. (both sides)
Portland St.	High St. to Willard St. (one side)
Hillside Ave.	tracks to Church St. (both sides)
Hillside Ave.	Church St. to end of sidewalk on Ramsey Hill
Pine St.	School yard to Madison Avenue(both sides)

WARD III

Spring St.	(south side)
School St.	Church St. to Spring St. (both sides)
Main St.	St. Anne's to Williamson Ave.
Eighth St.	Main St. to Finland St.(both sides)
Finland St.	Eighth St. to Highland Park Ave.
Denmark St.	Eighth St. to dead end (one side)
Poplar St.	All
Riverside Dr.	Twelfth St. to NHCTC
Hutchins St.	Bridge St. to Twelfth St.
Twelfth St.	Hutchins St. to Riverside Dr.

WARD IV

Bridge St.	(south side)
Wood St.	Hutchins St. to Maynesboro St.
East Mason St.	Main St. to Hillsboro St. (both sides)
Goebel St.	Mason St. to Devens St. (low side)
Champlain St.	East Mason St. to Merrimack St.(low Side)
Burgess St.	Coos St. to St.Alpha St.
Grafton St.	Champlain St. St. to Enman Hill Rd.
Cheshire St.	Coos St. to Belknap St.
Columbia St.	Hutchins St. to Lancaster St. (one side)
Coos St.	Howland St. to tracks (both sides)
Hutchins St.	Coos St. to Columbia St.
Unity St.	Coos St. to Glen Ave.

Appendix D

Sand and Salt Barrel Locations

SAND & SALT BARRELS

GENERALLY FILLED IN THIS ORDER

WARD I

7th Ave.
6th. Ave. & Madigan St.
Madigan St. dead end
6th Ave. south of Madigan St.
6th Ave. south of Jolbert St.
Jolbert St. & 5th Ave.
Dead end of 5th Ave.
5th Ave. north of Jolbert St.
4th Ave. & Jolbert St.
Russian St. & Petrograd St.
North end of Charron Ave.
Haskell St.
Hill St.
Harding St. dead end
Shepard St. between 1st & 2nd Ave.
Clark St. between 1st & 2nd Ave.
Session St. between 2nd Ave. & 3rd Ave.
Jeskey Lane
Jolbert St. & 2nd Ave.
2nd Ave. between Jolbert & Hamlin St.
Hamlin St. between 1st & 2nd Ave.
Gilbert St. by Bartlett School
Mt. Forist St. & 1st. Ave.
Mt. Forist St. between 1st & 2nd Ave.
1st Ave. & Mink St.
Legassie St.
Coach St.
Ash St.
Corbin St. #84
William St. between Wentworth & Western Ave.
Nibroc St. - 2 barrels
Brown St.
Green St. & Pleasant St. - 1 box
Western Ave. by Tupick - 2
Western Ave. by Caron's - 1 box
Police Station
6th Avenue south of Hinchey St.

WARD II

Berlin High School - 2 Hillside Ave. & Blanchard St.
Willard St. - south of River St.
Dewey St. between Willard & Jasper Sts.
River St.
Portland St. between Willard & Jasper Sts.
Church St. north of Hillside Ave. - 4 barrels
Church St. & Hillside Ave.
Church St. & Portland St.
Spruce St. between Prospect & Hillside Ave.
Winter St. between Prospect & Arthur St.
Portland St. between Livermore Ave. & Arthur St.
Lincoln Ave.
Portland St. & Arthur St.
Willard St. & School St.
Marston School Playground
Hillside Ave. & Poplar St.
Hillside Ave. & Cedar St.
Hillside & Winter St.
Spring St.
Summer St. & Elm St.
Guilmette St. & Houle St.
Guilmette St. east of Summer St.
Spring St. & School St.
Success St. & School St.
Prospect St. between School St. & Perkins Place
Success Street between Main Street & School Street
School St. by St. Anne's Hall
Intersection of Pleasant St. & Main St. by St. Anne's Church
Mason St. by City Hall - 1 box
Cambridge Street south side above Main Street
Harrington Ave. middle of hill
Court House

WARD III

3rd St. & School St.

4th St.

Maple St. - 4 locations

Cates Hill by Coos County Home

McGee St. & Howard St.

Howard St. between McGee & Noury St.

Sherry St. between Sweden St. & 12th St.

Intersection of Sherry St. & Sweden St.

12th St. between Sweden St. & Denmark St.

11th St. & Norway St.

7th St. at Denmark St.

Denmark St. dead end south

North end of Denmark St.

North end of Finland St.

North end of Finland St. at top of hill

Finland St. at 8th St.

Finland St. in middle of hill between Highland Park and 8th St.

Dead end of Whittemore Ave.

Cates Hill - 3

McGee St. & Riverside Dr.

WARD IV

Strafford St. & Champlain St.
Thomas St.
Burgess St. between Thomas St. & Merrimack St.
Alpha St.
Burgess St. between Berwick St. & Alpha St.
Burgess St. south of Berwick St. - 2
Berwick St. between Hillsboro St. & Burgess St.
Hillsboro St. & Berwick St.
Merrimack St. between Burgess St. & Hillsboro St. - 2
Hillsboro St. between Strafford St. & East Mason St.
East Mason St. between Rockingham St. & Hillsboro St.
South end of Rockingham St. - 3
Dead end of East Mason
Sullivan above Grafton St. - 2
Sullivan St. & East Mason St.
Carroll St. & East Mason St.
Carroll St. above Grafton St. - 2
Cheshire St. above Grafton St. - 2
King St. at E. Mason St.
King St. between E. Mason St. & Grafton St.
King St. & Coos St.
Lancaster St. dead end
Beaudoin St. & Grafton St. on Grafton St.
Grafton St. between Beaudoin St. & Gendron St. - 2
Beaudoin St. above Coos St.
Coos St. between Beaudoin St. & Gendron St.
Enman Hill by Charest - 4
Kent St. at Water Works Pump Station
South end of Trudel St. - 2
North end of Trudel St.
Dead end of Forbush Ave.
Dead end of Howland St.
Forbush Ave. west of Howland St.
Derrah St. east of Marble St.
Dead end of Pershing Ave.
Pershing Ave. east of Rheims St.
Rheims St. & Bridge St. - 2
Marne St. between Verdun St. & Rheims St.
Franklin St. between Verdun St. & Rheims St.
Argonne St. between Verdun St. & Rheims St.
Bemis St. between Verdun St. & Rheims St.
Wood St. between Verdun St. & Rheims St.
Lancaster St. middle of hill
Dead End of Champlain St.

Appendix F

Winter Workforce Requirements

PUBLIC WORKS DEPARTMENT

WINTER WORK FORCE

There are currently 30 union employees available to the Public Works Department for winter maintenance. Below is an accounting of the minimum number of employees required to conduct operations in accordance with this policy. This accounting does not consider any employee leave time.

PUBLIC WORKS GARAGE

Mechanics	4
Utility Person	1
Carpenter	1
Welder	1
Total.....	7

PLOWING

Winter Plows, Street	11
Winter Plows, SW	2
Total.....	13

RECYCLING CREW

Driver/Laborer	2
TOTAL.....	2

SEWER CREW

Leader	1
Laborers	2
Total.....	3

GARBAGE CREW

Drivers	2
Laborers	4
Total.....	6

GRAND TOTAL.....	31
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Appendix G
Snow Removal Equipment Inventory

SNOW REMOVAL EQUIPMENT INVENTORY

Trucks with Plow, Wing and Salt Box

<u>No.</u>	<u>Make</u>	<u>Year</u>	<u>Age</u>	
12	International	1985	22 yrs.	
28	International	1980	27 yrs.	
29	International	1992	15 yrs.	
31	International	2001	6 yrs.	
32	International	1978	29 yrs.	Average Age - 19 years
33	Oshkosh	1989	18 yrs.	
34	Oshkosh	1989	18 yrs.	

Graders with Wing and Plow

<u>No.</u>	<u>Make</u>	<u>Year</u>	<u>Age</u>	
52	Austin-Westin	1972	35yrs.	
56	Caterpillar	1984	23 yrs.	Average Age - 29 years

Front End Loaders with Wing and Plow

<u>No.</u>	<u>Make</u>	<u>Year</u>	<u>Age</u>	
40	Hough	1974	33 yrs.	
58	Fiat Allis	1979	28 yrs.	
59	John Deere	2000	7 yr.	
48	John Deere	2004	3 yr.	
49	John Deere	2004	3 yr.	
50	John Deere	2003	5 yr.	
51	John Deere	2004	3 yr.	
53	John Deere	2004	3 yr.	
55	John Deere	2004	3 yr.	Average Age – 9.8 years

Sidewalk Plows with Sanders

<u>No.</u>	<u>Make</u>	<u>Year</u>	<u>Age</u>	
70	Bombadiere	1978	29 yrs.	
71	Bombadiere	1984	23 yrs.	
84	Holder	1988	19 yrs.	
85	Holder	1996	11 yrs.	Average Age – 20.5 years

Snow Blowers

<u>No.</u>	<u>Make</u>	<u>Year</u>	<u>Age</u>	
45	Snogo	2006	1 yrs.	
57	RPM Tech	1998	7 yrs.	Average Age - 4 years

TRUCKS FOR SNOW HAULING

<u>No.</u>	<u>Make</u>	<u>Year</u>	<u>Age</u>	<u>No. Of Wheels</u>	<u>C.Y.</u>
18	International	1999	8 yr.	10	12
23	International	1988	19 yrs.	6	6
24	International	1988	19 yrs.	6	6
21	International	1989	18 yrs.	10	12
22	International	1989	18 yrs.	10	12
30	Oshkosh	1989	18 yrs	10	12

Average Age - 17 years