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Appendix 1 – Map of Citywide Snow Routes and Districts

Purpose

This Winter Operations Plan sets out a policy and procedural framework for ensuring that Lincoln Transportation and Utilities (LTU) continuously improves on the effective delivery of winter maintenance services and the management of road salt used in winter maintenance operations.

The plan is meant to be dynamic, to allow the municipality to evaluate and phase-in any changes, new approaches and technologies in winter maintenance activities in a fiscally sound manner. At the same time, any modifications to municipal winter maintenance activities must ensure that safety is not compromised.

Definitions

<u>Anti-icing</u> - the application of liquid deicers directly to the street surface in advance of a winter event. <u>De-icing</u> - the application of solid and/or liquid deicers onto the street surface after the on-set of the winter event.

<u>Highway</u> - includes a common and public highway, street, avenue, parkway, driveway, square, place, bridge, viaduct or trestle, any part of which is intended for or used by the general public for the passage of vehicles and includes the area between the lateral property lines thereof.

<u>Paved Street</u> - a street with an asphalt surface, concrete surface, or composite pavement.

<u>Pre-wetting</u> - is the incorporation of liquid deicers with dry granular material, by truck-mounted material spreaders, as product is being applied to the street surface.

<u>Unpaved Street</u> - a street that does not have a solid concrete or asphalt surface. Rather the surface is comprised of soil, rock or road gravel, spread evenly and crowned for proper drainage.

<u>Winter Event</u> - is a weather condition affecting streets such as snowfall, wind-blown snow, freezing rain, frost, black ice, etc. to which a winter event response is required.

<u>Winter Event Response</u> - is a series of winter control activities performed in response to a winter event. <u>Continuous Winter Event Response</u> - a response to a winter event with full deployment of manpower and equipment that plow/salt the entire system.

<u>Spot Winter Event Response</u> - a response to a winter event with only a part deployment of manpower and equipment or with full deployment to only part of the system.

<u>Winter Event Hours</u> - the total number of hours per year (brine application, plowing, material spreading, etc.) when winter event responses were underway.

<u>State of Repair</u> – means a street is in reasonable repair so that it is in a reasonably safe condition and suitable for public vehicular travel.

- **1.0 Winter Operations Management Objective.** The City of Lincoln is committed to improving winter maintenance operations while continuing to ensure public safety. The City of Lincoln will optimize the use of winter maintenance materials containing chlorides on all municipal streets while striving to minimize negative impacts to the environment. The City of Lincoln Transportation and Utilities staff will strive, insofar as reasonably practicable, to provide safe winter street conditions for vehicular and pedestrian traffic as set out in the level of service policies and within the resources established by the City Council of Lincoln.
- **2.0 Policy Statement.** The City of Lincoln will provide efficient and cost-effective winter maintenance to ensure, insofar as reasonably practicable, the safety of users of the municipal street network in keeping with accepted standards while striving to minimize adverse impacts to the environment. These commitments will be met by:
 - 2.1 adhering to the procedures contained within the Winter Operations Plan;
 - **2.2** reviewing and upgrading the Winter Operations Plan on an annual basis to incorporate new technologies and new developments;
 - 2.3 committing to ongoing winter maintenance staff training and education; and
 - **2.4** monitoring on an annual basis, the present conditions of the winter maintenance program, as well as the effectiveness of the Winter Operations Plan.

3.0 Winter Maintenance Program

3.1 The System Maintained

3.1.1 City Street System

	Lane Miles
	(approx.)
Emergency Snow Routes	578
Other Arterials	457
Bus Routes	33
School Routes	132
Residential Streets (approx.)	1,543
Total =	2,743

Table 1

3.1.2 Winter Maintenance Activities

- 3.1.2.1 Anti-icing/de-icing brine application
- 3.1.2.2 Snow plowing
- 3.1.2.3 Granular material application
- 3.1.2.4 Material storage
- 3.1.2.5 Snow removal
- 3.1.2.6 Snow storage
- **3.2** Levels of Service. The City of Lincoln provides the following levels of service during the winter maintenance season in response to a winter event:
 - **3.2.1 Weather monitoring.** From November 15 to March 15, current and extended forecasts will be monitored once every shift or twice per calendar day, at intervals determined by the operations manager.

3.2.2 Snow accumulation

- 3.2.2.1 The minimum standard for addressing snow accumulation is,
 - 3.2.2.1.1 after becoming aware of the fact that the snow accumulation on a street is greater than or equal to the depth set out in Table 2, to deploy resources as soon as practicable to address the snow accumulation; and
 - 3.2.2.1.2 after the snow accumulation has ended, to address the snow accumulation so as to reduce the snow to a depth less than the depth set out in Table 2, or as practicable, within the time set out in Table 2,
 - 3.2.2.1.2.1 to provide a minimum lane width of the lesser of ten feet for each lane or the actual lane width, or
 - 3.2.2.1.2.2 on a transit route, school route, or residential street with two lanes, to provide a total width of at least 16 feet,
 - 3.2.2.1.3 streets shall be treated by priority with resources allocated to the next lower priority as they become available,

- 3.2.2.1.4 deployment of plowing resources to residential streets will be determined on a per-storm basis evaluating actual street conditions such as: snow accumulation, moisture content, short and long-range forecasts.
- 3.2.2.2 If the depth of snow accumulation on a street is less than the depth set out in Table 2, the street is deemed to be in a state of repair with respect to snow accumulation.
- 3.2.2.3 For the purposes of this section, the depth of snow accumulation on a street may be determined in accordance with subsection 3.2.2.4 by a municipal employee, agent or contractor, whose duties or responsibilities include one or more of the following:
 - 3.2.2.3.1 patrolling streets;
 - 3.2.2.3.2 performing winter maintenance activities;
 - 3.2.2.3.3 supervising staff who perform activities described in paragraph 3.2.2.3.1 or 3.2.2.3.2.
- 3.2.2.4 The depth of snow accumulation on a street may be determined by,
 - 3.2.2.4.1 performing an actual measurement;
 - 3.2.2.4.2 monitoring weather reports; or
 - 3.2.2.4.3 performing a visual estimate.
- 3.2.2.5 For the purposes of this section, addressing snow accumulation on a street includes, but is not limited to,
 - 3.2.2.5.1 plowing the street;
 - 3.2.2.5.2 applying deicers;
 - 3.2.2.5.3 any combination of the methods described in clauses 3.2.2.5.1 3.2.2.5.2.
- 3.2.2.6 This section does not apply to that portion of the street designated for parking.

SNOW ACCUMULATION

The minimum standard for addressing snow accumulation is as follows:

Priority	Depth	Time
Emergency Snow Routes	<u>></u> 1"	6 hrs.
Other Arterials	<u>> 2"</u>	9 hrs.
Transit Routes	<u>></u> 3″	12 hrs.
School Routes	<u>></u> 3″	16 hrs.
Residential Streets	As-needed	48 hrs.

Table 2

3.2.3 Ice formation and icy streets

- 3.2.3.1 The minimum standard for the prevention of ice formation on streets is doing the following in the 24-hour period preceding an anticipated formation of ice on a priority street:
 - 3.2.3.1.1 monitor the weather in accordance with section 3.2.1;
 - 3.2.3.1.2 patrol, and;
 - 3.2.3.1.3 if the municipality determines, as a result of its activities under paragraphs 3.2.3.1.1 or 3.2.3.1.2, that there is a substantial probability of ice forming on a street, treat the street to prevent ice formation within the time set out in Table 3, starting from the time that the municipality determines is the appropriate time to deploy resources for that purpose.
- 3.2.3.2 If the municipality meets the minimum standard set out in subsection 3.2.3.1 and, despite such compliance, ice forms, the street is deemed to be in a state of repair until conditions improve.
- 3.2.3.3 The minimum standard for treating icy streets after the municipality becomes aware of the fact that a street is icy, shall be to deploy resources within the time set out in Table 3.
- 3.2.3.4 For the purposes of this section, treating a street means applying material to the street including, but not limited to granular salt, liquid de-icers, sand (spot treatment only), or any combination of these materials.
- 3.2.3.5 Streets shall be treated by priority with resources promptly allocated to the next lower priority streets as they become available,
 - 3.2.3.5.1 due to limited resources, <u>icy residential streets</u> are not treated proactively or continuously, spot treatments may be applied in response to actual conditions or public requests.

Priority	Time
Emergency Snow Routes	6 hrs.
Other Arterials	10 hrs.
Bus Routes	14 hrs.
School Routes	16 hrs.
Residential Streets	N/A
Table 3	



The minimum standard for treating icy streets is as follows:

- 3.3 *Winter Maintenance Season.* While seasonal winter weather can commence and end at irregular dates on a calendar, for long-range planning purposes, the winter maintenance season within which the City of Lincoln prepares to perform winter maintenance commences on November 15th and ends on March 15th.
- **3.4** Winter Preparations. In the months prior to the start of the winter maintenance season, the City of Lincoln undertakes the following tasks to prepare for the upcoming winter season.

Prior to the Winter Season 3.4.1

- 3.4.1.1 Coordinate bidding and/or renewal of material, parts and service contracts supporting winter operations.
- 3.4.1.2 Conduct mandatory training for staff and contract operators covering policies, procedures, equipment training and safety precautions.
- 3.4.1.3 Train Supervisors on the routes of representative streets (to be patrolled during a winter event), record keeping requirements, callout procedures and the deicing chemicals.
- 3.4.1.4 Pre-season and calibrate equipment to ensure proper working order. Schedule and complete all equipment repairs.
- 3.4.1.5 Arrange for restocking materials and begin filling storage facilities.

3.4.2 **One Month Prior to the Winter Season**

- 3.4.2.1 Continue pre-season checks and calibration of equipment.
- 3.4.2.2 Allow operators (staff and contract) time to familiarize themselves with any new equipment, material application rates, material application equipment and their route.
- 3.4.2.3 Have 80% of the fleet ready to respond to a winter event.

Table 3

- 3.4.2.4 Issue route assignments.
- 3.4.2.5 Have sufficient staff available to operate the fleet if conditions warrant a winter event response.

3.4.3 Two Weeks Prior to the Winter Season

- 3.4.3.1 Have 95% of the fleet ready to respond to a winter event.
- 3.4.3.2 Have staff available to operate the required complement of the fleet if conditions warrant a winter event response.

3.4.4 At the Start of the Winter Season

- 3.4.4.1 Mission ready to respond to winter events as per this Plan.
- **3.5** Winter Patrol. The purpose of the patrol is to monitor weather and street conditions and mobilize operators and equipment should a winter event response be required. Supervisors will be familiar with local conditions in their patrol area. The routes of representative streets may be modified, insofar as reasonably practicable, depending on the type and severity of winter event or the direction from which the storm approaches.

3.6 **Operations**

3.6.1 Staffing. The City of Lincoln accomplishes winter maintenance services through the deployment of assigned personnel and equipment assets, contracted services, and augment City resources.

3.6.2 Winter Materials Used Annually (average)

Material	Avg. consumption	Planning factors
Solida		
301103		
Rock salt (NaCl)	8,827 tons	12,000 tons
Sand (spot treatment)	489 tons	600 tons
Liquids		
Anti-icing & De-icing brine	419,200 gallons	525,000 gallons

Table 4

3.6.3 Baseline Application Rates. The following figures are the baseline application rates, which will be adjusted as appropriate for the conditions and deicing performance:

Baseline Ap	plication Rates
Granular salt (NaCl)	150 pounds per lane mile
Sand (residential only)	500 pounds per lane mile
Liquid Anti-icing	50 gallons per lane mile
Liquid De-icing	100 gallons per lane mile
Liquid Pre-wet	20 gallons per ton of salt

Table 5

3.6.4 Prior Year Statistics

	15/16	16/17	17/18	18/19	19/20	20/21	21/22
Seasonal snow accumulation	20.5″	7.5"	21.4"	55.5″	17.0"	49.5″	6.0″
Days with measurable snowfall	12	9	24	28	20	19	5
Continuous winter event responses	9	2	4	5	2	3	0
Spot winter event responses	4	11	15	14	15	16	5
Winter event hours	515	388	595	1,092	809	768	170
Service requests	1,013	563	310	1,723	2,141	2,433	37
	Tab	le 6					

3.6.5 Yard Facilities. LTU provides winter maintenance services from three principal facilities.

		West District	Northeast District	Southeast District
Location	1	901 West Bond St., 68521	3200 Baldwin Ave., 68504	3180 South St., 68502
Material	Salt	1,500 tons	5,900 tons	1,500 tons
Storage	Sand	200 tons	200 tons	200 tons
Brine stor	age	104,000 gal.	104,000 gal.	39,000 gal.

Table 7

3.6.6 Winter Maintenance Areas

3.6.6.1 <u>Priority Routes</u>. Priority routes used for treatments and plowing will be reviewed and updated annually. These can be found on LTU's website.

- 3.6.6.2 <u>Brine Application Routes</u>. Routes used for brine application will be reviewed and updated annually.
- 3.6.6.3 <u>Residential Districts</u>. Residential districts will be reviewed and updated annually.
- 3.6.6.4 <u>"N" Street Cycle Track</u>. The paved surface of "N" Street, from Pinnacle Arena Drive to South 23rd Street, includes both travel lanes for motor vehicular traffic (northern lanes) as well as a dedicated bicycle lane (southern lane). Winter maintenance services along this portion of "N" Street are provided by a collaborative effort between the Departments of Parks & Recreation & LTU. These efforts are delineated as follows:
 - 3.6.6.4.1 <u>De-icing material application</u>. The application of liquid and granular deicing material throughout all lanes will be provided by LTU. This will be accomplished in conjunction with City-wide maintenance activities.

3.6.6.4.2 <u>Plowing</u>.

3.6.6.4.2.1 Motor vehicle lanes.

LTU is responsible for plowing the northern lanes for motor vehicle traffic. Snow accumulation in these lanes (for both eastbound and westbound traffic) must all be plowed to the northern curb; snow accumulation in the motor vehicle lanes may not be plowed to the median common to the Cycle Track.

- 3.6.6.4.2.2 <u>Cycle Track lane</u>. The Department of Parks & Recreation is responsible for plowing the Cycle Track. Snow accumulation in this lane may be plowed to either the southern curb or the median common to the motor vehicle lanes, at the Department's discretion. A minimum lane width of ten feet must be maintained to allow for subsequent complete removal contingencies.
- 3.6.6.4.2.3 <u>Windrow de-confliction</u>. Whichever department is last to complete the plowing of their respective portion of "N" Street shall be responsible for the cleanup of windrows; windrows may not be left in either the motor vehicle lanes or the Cycle Track.

- 3.6.6.4.3 When snow accumulation in the Cycle Track lane exceeds what may be effectively plowed by dedicated equipment, LTU will provide complete removal services.
- 3.6.6.5 <u>Complete Removal Operations</u>. A map of all districts designated for complete snow removal is included on LTU's website.
- 3.6.6.6 <u>City Quadrants</u>. During periods of reduced staffing, or when fast developing weather conditions preclude a full pre-planned response, the City will focus winter maintenance efforts on specific areas of interest which are organized geographically into City quadrants. These areas of interest include bridges, overpasses and key intersections.
- **3.6.7** Snow Removal and Disposal. Operations staff remove and haul snow to the sites listed in the table below when it is determined that the accumulation of piled snow impedes traffic on the street and/or sight lines at intersections.

	Snow	Dump Sites	
Name	Location	Drainage/runoff	Surrounding
Name	Location	Drainage/runon	land use
			Light
London Park	East of S. 56 th & London	South 100' into Beal Slough,	industrial,
London rank	Road.	which empties into Salt Creek.	commercial,
			railroad, park
		North 100' into a drainage	
Sawver Snell	North of S. 3 rd & South	ditch, then through 0.2 miles	Park, light
Sawyer Shen	Street	of storm water pipe that	industrial
		empties into Salt Creek	
	West side of	West directly into a drainage	
West Havmarket	Downtown, between	ditch, then through 0.5 miles	Industrial
West haymarket	BNSF tracks and the	of storm water pipe that	maastriar
	Cook Foods facility.	empties into Salt Creek.	
	East of N. 1 st &	North 100' into a drainage	Undeveloped,
Impound Lot	Charleston St.	ditch, then SE 900' into Salt	formerly an
		Creek.	impound lot
	West of N. 27 th &	East 200' into a drainage	
Theresa Street	Theresa St.	ditch, then North 700' into	Industrial
		Salt Creek.	
Baldwin Vard	22 9 Paldwin Avo	Two sites, both drain directly	Industrial
Daluwin falu	SS & Daiuwin Ave.	into Deadman's Run Creek.	muustilai

Table 8

- **3.6.8** Vulnerable Areas. The application and storage of road salt and the storage of snow at snow disposal sites poses potential risks to source water and some species of fauna and flora.
 - 3.6.8.1 When combined, the refinement of salt application techniques and the implementation of snow dump site best management practices reduce environmental risks. Within this Plan, snow dump sites are regarded as Vulnerable Areas.
 - 3.6.8.2 Snow Dump Site Best Management Practices
- Judicious use of de-icing chemicals, to mitigate secondary effects like heavy metal speciation and soil character changes from chlorides.
- Improved chemical storage and mixing (prescribed blending).
- Improved technology with direct brine application to street surface.
- Route snow removal and meltwater to less sensitive receiving waters or treatment facilities.
- Resume street sweeping as soon as weather and conditions permit.
- Remove debris from dump areas each spring.
- Re-vegetate stockpile areas as necessary each year with salt-tolerant species to prevent additional erosion and pollutant runoff.
- Provide vegetated buffer strips at least 100 feet in diameter between the snow dump site and collection stream.
- If snow melt is being directed to a storm sewer inlet, add inlet barriers or filters.
- Emplace snow fences around the perimeter of the dump sites.

3.6.9 Weather Monitoring

- 3.6.9.1 From November 15 to March 15, current and extended forecasts will be monitored once every shift or twice per calendar day, at intervals determined by the operations manager.
- 3.6.9.2 To determine an effective event response and allocate appropriate resources, LTU supplements street patrol information with weather information from various sources including:
 - 3.6.9.2.1.1 Lincoln-Lancaster County Emergency Management: <u>https://www.lancaster.ne.gov/492/Emergency-</u> <u>Management</u>
 - 3.6.9.2.1.2 National Weather Service: http://weather.gov/oax/
 - 3.6.9.2.1.3 ClearPath Weather: http://www.clearpathweather.com/

- 3.6.9.2.1.4 Weather Sentry: http://www.weather.dtn.com/
- 3.6.9.2.1.5 Community Collaborative Rain, Hail & Snow Network https://www.cocorahs.org/
- 3.6.9.2.1.6 Pavement and bridge deck sensors installed at various key sites across the city
- 3.6.9.2.1.7 Situational awareness of staff
- 3.6.9.3 The LTU Maintenance Operations Division Manager reports directly to the Director or Assistant Director for the city's preparedness and response action. The Maintenance Manager is on the contact list following National Weather Service conference calls with local emergency management.

3.6.10 Communications

3.6.10.1 Electronic correspondence

- 3.6.10.1.1 <u>Winter Weather Warning Order.</u> When a potential winter weather event has been forecast for the City of Lincoln, but the need to mobilize contractors and/or other City augment resources is not yet apparent, the Maintenance Manager or designee will issue a Warning Order via e-mail, text, or phone call to inform City staff about conditions and planned operations.
- 3.6.10.1.2 <u>Winter Operations Order</u>. When a winter weather event has been forecast for the City of Lincoln that will likely warrant mobilizing contractors and/or other City augment resources, the Maintenance Manager or designee will issue a Winter Operations Order via e-mail, text, or phone call which will outline the detailed plan for the winter maintenance operation.
- 3.6.10.1.3 <u>Winter Maintenance Operations Update</u>. Throughout continuous winter event responses, the Maintenance Manager or designee will periodically issue e-mail updates to City staff on conditions and operations.

- 3.6.10.2 <u>Radio field reports</u>. All winter maintenance vehicles are equipped with two-way communications. Staff are responsible for reporting changing weather and/or street conditions as the changes are observed. Radios utilized by municipal staff communicate across channels as per the table below:
- 3.6.10.3 <u>Beehive</u>[™] LTU utilizes a work order management system known as Beehive[™] to log and track public requests for service. As requests are entered or imported by office staff, supervisory personnel can efficiently dispatch operators to the problem locations to reconcile the complaint, if appropriate, and track completion progress.
- 3.6.10.4 <u>Automatic Vehicle Location (AVL)</u>. Is used on city and contractor snow removal equipment to track progress and relay information.
- 3.6.10.5 <u>Public Communications</u>. Media information is managed by the City Communications team.
 - 3.6.10.5.1 The City's website is the primary source of information for street conditions, emergencies, parking bans, etc. Information is also pushed to the city's social media accounts and local media outlets: www.lincoln.ne.gov/snow
- **3.6.11 Call Out Procedures**. Operational decisions will be made by the Maintenance Operations Division Manager, or designee, with the aid of available forecasting, level of service policy, and field reporting.

Supervisors shall inform the Manager of changing of street and weather conditions observed in the field. When a winter event response is required, the Manager will contact staff as per the shift schedule and provide direction. In the absence of the Manager, a Supervisor shall be designated and initiate a call out.

3.6.12 Incident Command System (ICS)

3.6.12.1 <u>ICS Policy Statement</u>. When resources and personnel are activated in response to winter storm conditions, the command and control structure will model the Incident Command System (ICS).

3.6.12.2 ICS Prior to the Winter Season

- 3.6.12.2.1 Review of coordination with other city departments, such as the Lincoln Police Department for parking ban enforcement and City Communications for pre-season awareness PSA's and actual storm related messages.
- 3.6.12.2.2 Coordinate the contractual snow removal services. Meet with the contractors to review call-out procedures, the command structure, assignments, communication, pay requests, and damage reporting.

3.6.12.3 ICS Operations

- 3.6.12.3.1 Correlate existing positions and functions from the Winter Operations Plan into an Incident Command structure. This will define areas of responsibility and assist in identifying potential staffing gaps.
- 3.6.12.3.2 Based on the magnitude of a potential storm, the Director may elect to activate other General and Command Staff positions within the ICS.

3.6.12.4 ICS Support with Lincoln-Lancaster County Emergency Management

- 3.6.12.4.1 An activation of the EOC may be requested by the city when a storm is of a duration or magnitude that it exceeds LTU's capabilities or resources. The EOC could also be activated as an alternate Snow Center.
- 3.6.12.4.2 Emergency Management maintains a list of mutual aid resources that could be requested if the storm exceeds LTU's resources.
- 3.6.12.4.3 In a storm causing widespread impacts, Emergency Management will facilitate Unified Command coordination.
- **3.6.13 Street Closure Procedure.** In the event a street must be closed due to a severe winter storm, LTU or the Lincoln Police Department will request signs be placed to close the street. Upon receiving a request to close a street to traffic, the Department's designee will organize personnel and equipment to place the signs and barricades. The designee will contact the Communications Team to request that a media release be sent to the local news and radio stations advising of the street closure. Streets will be deemed to be closed once the signs and barricades are placed. Should timing, resources, or other impacts delay placement of signs and barricades, the Communications Team will advise the public of the hazards and the street is considered to be in a state of repair until mitigated.
- **3.7 Decommissioning Winter Operations.** After the winter season expires, the City of Lincoln undertakes the following tasks to decommission winter operations.

3.7.1 Two Weeks After the Winter Season Ends

- 3.7.1.1 Cease routine patrols.
- 3.7.1.2 Continue monitoring weather forecasts. Task the night shift to patrol if the forecast indicates an overnight winter event is possible.
- 3.7.1.3 Decommission 35% of the fleet.

- **3.7.2** One Month After the Winter Season Ends. One month after the winter season ends cease all winter highway maintenance operations and decommission the remainder of the equipment providing weather forecasts warrant the decommissioning.
- **3.8 Training.** The City of Lincoln provides winter operations training for all staff involved in the delivery of winter services. It is compulsory for the municipal staff and the City's contractors to attend the training sessions.

3.8.1 Operator Training

Winter Operations Training – Equipment Operators

- Equipment Inspection.
- Equipment Calibration.
- Record Keeping.
- Health and Safety.
- Level of Service policies, practices, and procedures.
- Identification of Plow Routes including variations for year to year and issues identified along the route.
- De-icing chemicals application procedures, rates, storage, and handling Identification of vulnerable areas.
- Yard and Equipment maintenance.

3.8.2 Supervisor Training

	Winter Operations Training – Supervisors
~	Weather monitoring and forecasting results including:
	 Road Weather Information System.
	 Value added Meteorological Service.
	• Eutectic temperatures & brine stratification.
	 Pavement temperatures & dew point.
~	Record Keeping.
~	Health and Safety.
~	Level of Service - policies, practices, and procedures.
~	Identification of Plow Routes - including variations for
	year to year and issues identified along the route.
~	De-icing chemicals - usage, application rates, storage
	and handling Identification of road salt vulnerable areas
	and the procedures to follow in those areas.

- Call-out procedures.
- Emergency contacts.
- Yard and Equipment maintenance.

3.9 Record Keeping

3.9.1 Maintenance Operations staff is responsible for maintaining the following records:

|--|

3.9.1.1.2 Route plowed and strategy used (plow only, salt only, anti-ice, combination plowing/salting)

3.9.1.2 Supervisors

3.9.1.2.1	Crew Cards	
3.9.1.2.2	Snow Event Reports	
3.9.1.2.3	Vehicle Accident Reports	
3.9.1.2.4	Injury Reports	
3.9.1.2.5	Beehive [™] entries and service updates	

4.0 Plan Improvements. The current winter maintenance policies, practices and procedures form the baseline upon which improvements can be made to improve winter operations and/or the use and management of materials. The City of Lincoln plans to undertake the improvements as listed in the below table:

Plan Improvement Goals				
	2022/2023	2023/2024	Long Term Goals	
Equipment	Increase liquid and material spreader fleet via 12 new super combo units	Continue fleet replacement plan of incorporating super combo units	Modernize aging fleet to leverage technological & environmental benefits	
Yards	No budgeted improvement plans	Brine production and storage at Baldwin shop	Brine production at all shops, additional strategic material stockpiles	
Materials	Refine application rates and techniques	Refine application rates and techniques	Refine application rates and techniques	
RWIS	Upgrade RWIS locations	Incorporate mobile RWIS into route forecasting	Advanced RWIS capability	
Additional	Continue development of AVL supported applications	Route optimization, Advance AVL capabilities	Additional snow disposal sites	

5.0 Program Review and Updating. At

the end of each winter season, a review of winter operations will be conducted. Performance measures will be used to evaluate the effectiveness of the Winter Operations Plan in obtaining its objectives and guide development of future improvements.







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