

SNOW & ICE REMOVAL PLAN



UNIVERSITY OF
NORTHERN COLORADO

Environmental Health and Safety

**FACILITIES MANAGEMENT
LANDSCAPING & GROUNDS**

OCTOBER, 2024

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MISSION

During the winter season, Facilities Management is responsible for coordinating snow and ice removal from campus building entries, pedestrian walkways, parking lots, service drives, and loading docks. Our primary emphasis is to maintain as safe a walking surface as possible.

All possible efforts are made to remove snow and ice from campus walkways and parking lots prior to the start of classes and to keep them clear throughout the duration of a storm event. However, resources are limited so we ask everyone to exercise caution and take personal responsibility for their safety during inclement weather. If you encounter a hazardous area please contact Facilities Management immediately at 970-351-2446.

IMPLEMENTATION

This plan will be in effect during normal winter operations when weather conditions could cause accumulation of frost, sleet, ice/snow, or other occurrences on streets, walks, service drives, and parking lots on campus.

DEFINITION OF MANAGER

When “Manager” is used in this policy, it is defined as the person who is on duty at the time directing snow/ice removal operations for the Department of Facilities Management. These individuals include Manager for Landscaping & Grounds, Manager of Environmental Health and Safety, and the Assistant Vice President of Facilities Management and or any other individual who may be assigned the responsibility of Manager.

WEATHER FORECASTING

Weather forecasting is essential for good planning of snow and ice control operations and weather-related emergencies. An effective weather service must provide critical information about the storm sufficiently so that plans and preparations can be made. The Manager will utilize the services of professional weather forecasting services during the snow and ice season. These weather resources help provide the Manager with information that will assist in determining what impact present and forthcoming weather will have on overall operations. Forecasting resources will also provide on-screen tracking of weather systems and data for the Northern Colorado Region. The Manager will utilize 3-4 resources to attain an accurate reading on the forecast. The Manager also relies on information from the National Weather Service as it relates to snow and ice conditions in Weld County and surrounding regions of Northern Colorado.

MONITORING AND NOTIFICATION OF ICE AND SNOW ACTIVITY

The manager will monitor anticipated inclement weather and will notify via Team and email (Weather Distribution list) to all essential University personnel regarding event intensity and expected response and strategy to the expected storm.

COMMUNICATIONS

The Manager will notify all snow removal personnel and place them on “Alert Status”. Based on the severity of the storm this may include private contractors for parking lot snow removal. Pre-Storm communications are sent to all essential personnel to notify the course of action, expected storm arrival, and anticipated report time for snow personnel.

The Manager provides Storm Status Updates to the Manager of EHS and Assistant Vice President of Facilities Management. These updates ascertain actual conditions on campus and determine snow emergency declarations as needed.

Routine updates are provided to Essential Personnel throughout the duration of the storm and are dependent on snow intensity and duration.

COMMUNITY INQUIRIES

All issues concerning snow and ice control efforts will be routed to the Facilities Management Service Desk: 970-351-2446. After Normal office hours (8 am-5 pm) inquiries can be made by contacting the University Police Dispatch (970)-351-2245. The Manager will determine appropriate follow-up responses to all inquiries.

UNIVERSITY BOUNDARIES RESPONSIBILITY

The university is not responsible for snow or ice removal on City of Greeley streets, alleyways, bike lanes, or designated State Highways.

PRIORITIES FOR SNOW AND ICE CONTROL OPERATIONS

In order to make the most efficient use of available resources, the university has established priorities using the assumption that the severity of a storm does not exceed the capabilities of the snow removal operations of Landscaping and Grounds. Depending on the nature of the storm event, deviations and contingency plans may be utilized. Snow removal has been prioritized based on an Orange, Green, and Blue code system as follows:

In the event of heavy snow accumulations, snow removal efforts will be focused on select sidewalks and building access points designated as **Orange Priority**. This is to enable crews to maintain at least one clear path to each building. Keep in mind, this may not be the route an individual normally takes. Once these routes are clear, and as the storm allows, crews will continue clearing snow throughout the remainder of the campus.

Orange

This is Priority One. (Critical) These indicate service drives, parking lots/lanes, sidewalks, and loading or service docks that need to be open for the university to carry out its mission and for students' staff, and faculty to have minimal access to university facilities. Orange designated areas are very specific and do not include all sidewalks and drives that are used by the university community. We strongly recommend and encourage the community that during the storm that all users utilize the cleared Orange priority designated walks, drives, and parking areas first.

Green

This is Priority Two. (Necessary) As storm intensity and accumulation rates diminish, Snow removal operators will proceed to the Level Green walks, drives, and parking lots. Green designated areas indicate the next level of service and accessibility to university facilities that are necessary to provide safer access and increased mobility for the university community.

Blue

This is Priority Three (Beneficial). Once Green level areas are cleared of snow and ice, then Level Three blue designated areas will be cleared. These areas provide increased accessibility to facilities and mobility to the community. Once these areas are cleared the university has completed its snow removal mission.

Please See attached Snow Priority Maps.

SNOW /ICE CONTROL PROCEDURES

The depth, rate of fall, and timing of snow accumulations, weather forecasts, and traffic volumes will normally dictate when snow removal operations will begin. Reasonable efforts will be made to keep accumulation on the pavement surfaces at safe, navigable levels. If weather forecasts indicate a significant increase in pavement temperatures during or after the storm event, the Manager will have discretion regarding snow removal and or deicer (Ice-Slicer) applications. If forecasts indicate that the snow/ice will dissipate in a time period deemed reasonable by the Manager, applicable procedures will be implemented and may include time allowances for the melting of trace amounts of snow.

STAFF, STUDENTS & VISITORS REQUIRING MOBILITY ASSISTANCE

Every effort will be made to provide at least one accessible snow and ice-free route from designated ADA parking spaces to each campus building. Upon request, Landscaping & Grounds staff will provide customized snow and ice removal services as well as physically assist campus users on an as-needed basis. ADA ramps, reserved parking, and curb cuts will have high priority within 24 hours of the conclusion of a storm event. To request assistance both during and post-storm, individuals are to contact the service center at 970-351-2446

MOBILIZATION OF CONTRACTORS

It is at the discretion of the Manager to determine the need for the services of an outside Contractor to facilitate snow removal from University-owned parking lots, service drives, and loading /service dock areas. Activation is typically based on current snowfall depths, temperatures, and forecasted accumulation rates (>3-4"), snow moisture levels, and wind-speed. The contractor will be contacted in advance of the storm event and placed on "Alert" status. Mobilization will occur when University offices are closed and when the majority of parking lots are deemed primarily vacant. The contractor will work from 6 pm and throughout the night to clear parking lots with the objective to have all lots cleared by (8 am) the following day depending on the duration and severity of the snowstorm.

If the severity of a storm is such that University-owned equipment cannot move snow efficiently and safely, the Contractor will be mobilized to remove snow from sidewalks, major service drives, and arteries as directed.

SPECIAL EVENTS

Manager will direct snow and ice removal personnel to facilities hosting scheduled performances, athletic events, or special events. The Manager will be required to maintain an updated calendar of events and communicate snow removal activities with relevant parties.

USE OF SALT (ICE-SLICER) AND ABRASIVES

The University will utilize granular agents such as magnesium chloride, sand, and sand/salt mixtures to provide de-icing and traction and mitigate hazards associated with winter weather conditions. The advantages and disadvantages of each product must be considered. The University recognizes that commercial deicers are corrosive and contaminate surface and groundwater supplies in addition to damaging vegetation adjacent to roadways and walkways. Salt-based products change chemical balances of local waterways and sand can contribute to higher dissolved and suspended sediment loads in waterways while also contributing to poor air quality.

Commercially available Ice Slicer will be applied when pavement begins to freeze in parking lots and on walkways at the direction of the Grounds Manager. These products are used to break the bond of already existing snow and ice. They dissolve downward and penetrate until they reach the pavement. De-icers melt the ice and snow so it may be easily removed by mechanical means and are not intended to clear the surface completely. Moisture must be present for activation and cannot be utilized on dry surfaces for traction control. The product will not activate unless pavement temperatures (not Air Temperature) are above 0 F degrees and moisture is present. As a result, the product cannot be preventatively applied. Due to the corrosive nature of Ice Slicer, its environmental impacts, and burden placed on custodial staff when the product is in use, the Manager will have discretion to determine if conditions warrant the use of chemical ice-melting products. Product application rates will be strictly adhered to. Overuse of product will not result in improved results.

Sand and sand salt mixtures will be restricted to use on internal campus walkways to prevent washing into storm sewers and to reduce air pollution caused by the impacts of vehicle traffic. Sand will be swept and removed from campus walkways within 48 hours of dry pavement conditions utilizing a front-mounted broom or hand equipment.

STAFFING

Snow & Ice Removal is staffed by the Landscaping & Grounds Department which consists of 13 full-time employees aided by housing, dining, athletics, custodial staff, and corresponding building coordination staff. Campus safety is the collective responsibility of all University employees. As such, the monitoring and removal of ice buildup and snow at major building entrances, exits, and stairways are shared among all University staff. After hours, UNC Police will notify the Manager when snow/ice accumulation begins. Athletic Facilities staff will assist with snow removal and monitoring at athletic functions for the evening, weekend, and early morning activities. Temporary labor staffing may be utilized to assist with snow shoveling on an as-needed basis and at the discretion of the Manager.

EQUIPMENT

The primary heavy equipment available to remove snow/ice will be supplied by the Department of Landscaping & Grounds or its contractors. A private contractor will provide equipment and labor to remove snow from parking lots as the need arises. When depth and condition of snow are expected to attain levels whereby University-owned equipment becomes inadequate, Contractors will be activated to assist in snow/ice removal in parking lots, sidewalks, and service drives. When severe conditions are forecasted and imminent, heavy equipment is rented in advance and deployed as necessary.

The University utilizes many different types of equipment during snow and ice control operations.

1-ton Pickups with Sander and 6ft snowplows

Streets, parking lots, Service drives and wide sidewalks bike lanes, and Loading docks.

Tractors with front mount Sweeper/brooms

Wide service drives and walks, bike lanes
2017 Kubota / John Deere 5410

Front-mounted Sweeper/broom Mower tractors. with rear-mounted Ice Melt Chemical Spreaders. This equipment can also be mounted with 6 ft snow blades when snow conditions are wet and heavy.

Primarily used on all sidewalks.

1ea unit to kept in reserve as a back-up for Equipment Repairs.

Utility Vehicles mounted with snowplow blades and equipped with rear-mounted Ice Melter chemical applicators.

These lightweight units are utilized to remove snow off the Two Synthetic sports fields, Nottingham Football field and the Running track as well as campus sidewalks.

Bison Tractor front mount snowblower

Utilized with very deep drifting conditions

John Deere snowblower

interchanged from Sweepster Brooms as needed

John Deere snow blades

Interchange from brooms when conditions warrant

Bobcat Skidsteer 733

Used to move snow from loading docks, dumpster enclosures or to assist in snow hauling efforts and snow pile removals. Also used to clear intersections.

207 Kubota Tractor/ bucket-loader:

Used to clear dumpster enclosures. and snow pile removal, Clear deep snow-covered walks, and service drives.

Hand-operated equipment

Includes various gas-powered snow blowers, hand shovels, Ice chipper/scrapers, applicators/spreaders (*for granular chemical ice melt products*)

EQUIPMENT MAINTENANCE AND REPAIR

In order to have an effective snow and Ice Removal program, there must be a respective preventative maintenance program that ensures that all equipment is available to perform snow and ice removal functions. This also includes daily inspection and maintenance.

The Equipment Mechanic for Landscaping & Grounds reports one hour earlier than Equipment operators for snow duty to ensure equipment is ready for snow & ice removal. The Equipment Mechanic will remain on duty until the 8-12 hours shift ends. In addition, it may be necessary to have the Mechanic on duty at other times. Such determination will be made at the discretion of the Manager.

ANNUAL PREPARATIONS

Ice Slicer Purchases.

Secure Purchases of 16ea of 2500lbs Supersaks to be delivered on open bed trailer, and to be emptied and stockpiled inside Parsons.

Deadline: Oct 15.

Secure purchase of additional 16ea Supersaks to be stored at Parsons Garage and 8ea Supersaks to be stored in cold Storage Facility.
Deadline by Nov 01.

Monitor stockpiles and reserves and replenish supplies as needed.

Sander and Plow Installation & Test

Install sanders and snowplows on trucks and check wiring and operation of sanders/plows and perform necessary repairs and Preventative maintenance. Dismount sanders and plows afterward until first snow.

Deadline Oct 24.

Purchase and install curb markers

To delineate curb boundaries in parking lots

Deadline: Nov 1

Prepare mounting of Ice melt spreaders

For Utility vehicles and broom mounted mowers check mounting and wiring for proper operation and flow of material through hoppers.

Deadline: Nov 14

Equipment Winterization

Operators are responsible for winterizing equipment, ie., installing carpet, insulation, etc. before cold weather arrives.

Pre-Season Preparations Deadline, Oct 15

- Review & Update Snow removal Expectations/Responsibilities
- Review and update Personnel Assignments
- Review and Update Call tree. Verify personnel/phone numbers
- Determine Athletic Team Game Schedules: Wrestling, Basketball, Softball, Soccer, Baseball
- Verify "First call" with equipment rental companies for emergency snow removal equipment
- Install Curb markers in parking lots to delineate parking lot curb boundaries. Place in locations of likely curb damage. Nov 1

MANAGER PROCEDURES

Pre-Storm

- Check the weather forecast regularly monitoring expected snow arrival and accumulation rates
- Determine if 3 am-11 am shift is required

Typical storm (1-3 inches)

- Notify key personnel of eminent storm events. Provide details regarding shift work, use of ice slicer, timing, etc.
- Snow Removal Outlook Distribution list

Heavy snow of 4 inches or more

- Contact Snow contractor for parking lots schedule for the following evening after vehicles have left lots.
- Utilize Priority listing provided.
- Heavy snows that hinder Grounds equipment (typically 8 inches or more)
 - Contact equipment rental companies for rental equipment: Backhoe and bobcat and arrange delivery prior to snowfall

During the Storm

Monitor forecast

Safety vest reminders for hand shoveling

Special Considerations:

Monitor special events and activities

Theatre performances

Centennial Hall Events

UC/Campus Commons activities

Athletic Events

Food deliveries at UC, Holmes, and TK (Tuesday, Thursday,

Saturday at 4:30 am) **Critical for University Closure situations**

Check Service desk every hour regarding calls, complaints, etc.

Progress inspections.

- Move snow onto grass for melting room
- Check campus exterior steps,
- Parking lot entrances and general condition of lots
- Check snow pile locations: make sure they don't block wheelchair access,
- wheelchair ramps and reserved parking spaces.
- Notify via email Distribution list Snowstorm status and progress report as needed throughout the storm.
- Notification to Police at end of shift of intended plans.

Equipment Breakdowns

Assign operator to hand-shoveling until equipment is repaired (lengthy downtime)

Journaling

- Police call time and date
- Time of call-in's (if performed)
- Grounds attendance: late arrivals, no shows

- Equipment re-assignments if necessary.
- Periodic notes on accumulation, equipment issues, note times, wind speed, drifting, etc. throughout the storm. Journal entries every 2 hours or more.
- Equipment break-downs and duration of downtime. (time and duration)
- Note all conversations/discussions with Police & regarding snow as well as emails.

Post Storm

Campus inspection

Black Ice

Ice slicer/chemical Ice melt

Barricade off dangerous ice conditions with cones and /or caution tape.

Check loading docks, trash enclosures

Steps, ramps, disabled parking spaces

10 and 11th avenue curb cuts/crosswalks

Widen walks with brooms, blades, etc.

Check service desk for requests, slips, and falls, etc.

Snow removal around bollards

Synthetic Field & Track: Gator blades issue to Athletic staff with instructions (usually post-storm activity)

Notify Police of dangerously icy conditions: specific locations.

SNOW CREW EXPECTATIONS

PRE-STORM

Snow Duty Assignments

Snow removal equipment assignments are conditional, and maybe subject to change based on overall performance, dependability, attendance, and proven equipment capabilities.

Snow routes: All Snow Crew employees are expected to review assignment sheets, and to arrange and schedule “*Practice runs*” with equipment in assigned area prior to their scheduled assignments. Study the “*proposed*” routes on map.

Priority Map will dictate what walks, service drives and parking spaces should be cleared first and foremost. **Orange: Priority 1, Green: Priority 2, Blue: Priority 3**

Snow shift Hours: In general, snow removal shift begins at 3:00 am, and staff is expected to work through the day until 11:00 am. Lunch 11 am-12noon. 12noon -4pm shift start, and the end will be dependent on each snow storm situation. Some operators may be dismissed earlier to return to provide snow removal services for evening events or performances.

DURING THE STORM

Orange Priority: During the onset and peak of a significant storm (4-inches and greater), only these walks, services drives, and parking lots should be cleared. Efforts should be made only to keep these areas clear of snow and ice. Initial efforts should not be on Green or Blue designated areas. In major snow, it is more important to focus on clearing and keeping the main arteries (Orange) clear, rather than attempting to clear all walks, drives, and lots. The emphasis is to have the campus accessible for vehicles and students, but not necessarily convenient. It is very difficult to clear snow that is getting covered up as fast as it's cleared, so it is more efficient to focus efforts only on those main orange/critical designated walks, drives, lots, etc.

Once snow accumulation has slowed and depleted and operators can catch up will it be necessary to divert efforts to clear the green and blue designated areas.

SNOW CREW EXPECTATIONS

DURING THE STORM

Operators are to focus on making one single pass to open up walks first. Widening walks are to be done after the snow stops or when all walks are finally cleared. The priority is to clean the main pedestrian arteries open and clear.

Snow can only be removed with brooms or plows. Applying deicers is for the purpose of breaking the bond of ice from the pavement. Remove the snow then apply chemical ice-melt products.

Broom operators and utility vehicles equipped with Ice melt spreaders will apply on walks that are crucial and have a history of icing and snow-packed foot traffic. Operators shall use discretion and not over apply product.

Operators are always expected to be reachable during a storm event. Regular communication with one another regarding directions, scheduling, breakdowns, and assistance will be required.

Hand-shovelers are required to wear safety vests at all times.

Severe Ice conditions: Place **Orange Safety cones** and caution tape ASAP to prevent slips, falls and to prevent injuries. Notify Police if Building Access is to be closed temporarily.

POST STORM

Widen sidewalks/Create Melt Zones

Snow Brooms are to remove snow in a manner that pushes snow into adjacent turf areas and beyond, to prevent and minimize melting across sidewalks. Melting snow will freeze into ice. Operators shall provide some *"Melting Space"*. Hand shovelers will assist with widening of walks where applicable and the removal of potential melting-refreeze ice formation.

Chemical Ice melt Applications

Once the snow has been removed and no longer accumulating, chemical application can begin if instructed to do so. Do not use chemical products to *"Burn off"* the snow.

Ice slicer will only work if the pavement is moist or wet. Ice Slicer will not work when pavement temperature (not air temperature) is 15 degrees or less. Air Temperatures are based on 6ft above grade).

Turf Damage: Operators will be responsible for repairing damaged turf caused by equipment.

All Equipment operators are expected to carry a snow shovel and to assist in hand shoveling efforts and clearing of wheelchair ramps as needed. Safety vests are required.

Severe Ice conditions: Place Orange **Safety cones** and caution tape ASAP to prevent slips and falls and injuries.

Spreader and Sander Maintenance

All spreaders and sanders must be emptied of material at the end of each snow event day and washed down with water. **Conveyor chains and augers to be lubricated after each use. Ice slicer and all other chemical Ice-melting products are corrosive and must be washed off after every use. No overnight or long-term storage of Ice slicer in hoppers.**

Operators will be responsible for washing and lubrication and storage of spreaders and sanders after the last snow of the year.

