Procedure

Snow and Ice Control Procedure

This procedure falls under the Snow and Ice Control Policy C409K.

Program Impacted	Movement of People and Goods: *Edmonton has an accessible and varied transportation system moving people, goods and services efficiently.* Public Safety: *Edmontonians are safe and secure in our community.*
Approved By	City Manager
Date of Approval	TBD
Approval History	n/a
Next Scheduled Review	TBD

To achieve a safe and reliable mobility network, snow and ice control activities will be carried out in the following manner.

1. Snow Clearing Priority Hierarchy

1.1. Roadway and Goods Movement Network

1.1.1. Priority 1

Freeways, arterial roadways, business districts:

Maintain to a bare pavement standard within 36 hours following the end of snowfall.

Alleys/back lanes in business districts:

Maintain to 5 cm snowpack within 36 hours following the end of snowfall.

1.1.2. Priority 2

Collector roadways, Transit Park and Ride access roads:

Maintain to a bare pavement standard within 48 hours following the end of snowfall.

1.1.3. Priority 3

Industrial roadways:

Maintain to a bare pavement standard within 5 days following the end of snowfall.

Rural roadways:

Maintain a level snowpack within 5 days following the end of snowfall.

1.1.4. Priority 4

Residential roadways and alleys/back lanes:

Maintain to 5 cm snowpack and completed within 7-9 days once a residential blading cycle is initiated.

1.2. Active Pathways and Public Amenities Network

1.2.1. Priority 1

Inventory adjacent to City facilities (City Hall, recreation centres and seniors centres), transit centres and LRT stations such as: City maintained sidewalks, wheelchair ramps, shared pathways, all season staircases and bus stops :

Maintain to a bare pavement standard within 24 hours following the end of snowfall.

Prioritized bike route network (network of protected bike lanes, designated painted bike lanes and designated shared pathways):

Maintain to a bare pavement standard within 24 hours following the end of snowfall.

1.2.2. Priority 2

Excluding inventory listed in 1.2.1, all other City maintained sidewalks, wheelchair ramps, shared pathways and parking lots, all season staircases, access to bus stops adjacent to City property, pedestrian bridges:

Maintain to a safe and passable surface beginning at the end of snowfall and completed within 48 hours following the end of snowfall.

1.2.3. Priority 3

Other manually cleared active pathways and public amenities (breezeways, benches and fire hydrants), pedestrian only streets:

Maintain to a safe and passable surface within 5 days following the end of snowfall.

Community sandboxes:

Refill within 5 days following the end of snowfall.

2. Procedures for Snow and Ice Control

2.1. Roadways (Non-Residential)

2.1.1. Clear snow from all priority 1, 2 and 3 roadways following the end of snowfall where there is an accumulation of 2 cm or more, as per the priority hierarchy in section 1.1, Roadway and Goods Movement Network.

2.1.2. All priority 1 and 2 roadways are routed for snow and ice control. They will be monitored and maintained as required throughout the winter season and in response to 311 notifications, even when there is no snowfall. This may include, but not limited to, material application and snow plowing.

2.1.3. Alleys/back lanes in business districts are cleared during one of three circumstances: priority 1 snow clearing following the end of snowfall, maintenance blading between snowfall to maintain the snowpack, or in response to 311 notifications.

2.1.4. Snow will be removed from business districts by the City of Edmonton based on several factors including, but not limited to,

2.1.4.1. When windrows have been temporarily placed in a center stack formation,

2.1.4.2. When driving lanes are reduced to less than 3.2 metres in width by windrowed snow,

2.1.4.3. When accessibility to parking areas is restricted,

2.1.4.4. When line of sight has been obstructed due to windrow placement,

2.1.4.5. Current and forecasted weather.

2.1.5. Snow will be removed from arterial roadways when curb lanes are reduced to less than 3.2 metres in width by windrowed snow.

2.1.6. Snow will be removed from collector roadways when the driving lanes are reduced to less than 3.2 metres in width or parking area restricts safe vehicular movement.

2.1.7. Snow will not be removed from industrial or rural roadways unless to permit safe vehicular movement.

2.1.8. Snow will be removed from roadways adjacent to the designated windrow free zones and school drop-off zones based on several factors including, but not limited to, windrow size, impacted parking areas, sightlines, current and forecasted weather.

2.2. Residential Roadways (Including Alleys/Back Lanes)

2.2.1. Residential roadways (including alleys/back lanes) are cleared only during one of three circumstances: through a residential blading cycle during phase 2 of the parking ban, maintenance blading between snowfall to maintain the snowpack, or in response to 311 notifications.

2.2.2. The decision to initiate a residential blading cycle will be made by the City of Edmonton based on several factors including, but not limited to, residential roadway conditions, current and forecasted weather, a minimum snowpack of 5 cm consistently citywide and status of snow clearing on priority 1, 2 and 3 roadways.

2.2.3. Residential roads and alleys/back lanes are maintained to approximately 5 cm snowpack condition in the driving lane.

2.2.4. Shared streets will receive the same level of service as the adjacent residential roadway on which they are located.

2.2.5. Snow will not be removed from residential roadways unless to permit safe vehicular movement.

2.2.6. Notification of a citywide residential blading cycle will be announced through a variety of communications channels. A phase 2 parking ban will be implemented as explained in section 2.8, Parking Ban.

2.2.7. Culs-de-sac are not cleared as part of the residential blading cycle given the techniques and equipment required. They will be cleared as per section 2.3, Cul-de-sac Clearing, set out below.

2.3. Culs-de-sac

2.3.1. Cul-de-sac clearing events will be initiated by the City of Edmonton based on several factors including, but not limited to, snow accumulation which impedes access, safety concerns, time of the year, and current and forecasted weather.

2.3.2. Service will include stacking and removal of snow from the cul-de-sac to achieve bare pavement.

2.3.3. Cul-de-sac clearing, when initiated, can take between four to six weeks; typically they will be cleared no more than three times during a winter season.

2.4. Active Pathways and Public Amenities

2.4.1. Clear snow from all priority 1, 2 and 3 active pathways and public amenities following the end of snowfall where there is accumulation of 2 cm or more, as per the priority hierarchy in section 1.2, Active Pathways and Public Amenities Network.

2.4.2. Snow will not be removed from active pathways and public amenities.

2.4.3. Property owners are required to clear snow and ice from sidewalks, including corners and any pedestrian infrastructure on the sidewalks adjacent to their property, as per the requirements of the Community Standards Bylaw #14600.

2.4.4. Painted bike lanes will receive the same level of service as the adjacent roadway on which they are located (except for those identified as higher priority in section 1.2.1).

2.4.5. All active pathways and public amenities will be monitored and maintained as required throughout the winter season and in response to 311 notifications, even when there is no snowfall. This may include, but not limited to, material application, snow blowing and snow sweeping.

2.5. Windrow Encroachments

2.5.1. Driveways

2.5.1.1. Windrows (that are consistently 30 cm or less in height) left behind blocking driveways will be the responsibility of the adjacent property owner to clear. Windrows (that are consistently 30 cm or more in height) left behind blocking driveways will be cleared by the City of Edmonton to level snowpack within 12 hours of windrow placement.

2.5.1.2. When the City of Edmonton clears windrows on driveways, it is to allow a three metre wide opening, sufficient for a small car to pass safely.

2.5.2. Sidewalks

2.5.2.1. If windrow encroachment on sidewalks is consistently over 30 cm or more, and is 3m in length or greater, the City of Edmonton is responsible for clearing the windrow in response to a 311 notification. The adjacent property owner is responsible for clearing all other windrow encroachments.

2.5.3. Protected Bike Lanes

2.5.3.1. If windrow encroachment on protected bike lanes is consistently over 30 cm or more, and is 3m in length or greater, it is the City of Edmonton's responsibility to clear.

2.5.4. The following will be left clear of any windrows:

Bus stops, crosswalks, signed accessible parking stalls, windrow free zones, school drop-off zones, fire hydrants.

2.6. Material Application

2.6.1. In addition to using mechanical means, the City of Edmonton may apply different materials for snow and ice control on the mobility network such as sand, salt, chips and calcium chloride.

2.6.2. A mix of sand and salt is typically applied to improve surface traction. The proportion of sand and salt may vary depending on the conditions including, but not limited to, air temperature, pavement temperature, humidity and dew point.

2.6.3. Chips may be used on snowpack and icy conditions in order to provide additional traction.

2.6.4. Salt may be used as a de-icer to melt any residual snow or ice depending on the conditions stated above.

2.6.5. Calcium chloride is used to pre-wet the sand-salt mix applied on roadways. Calcium chloride is used as an anti-icer/de-icer only for priority 1 active pathways and public amenities.

2.7. Community Sandbox

2.7.1. The City of Edmonton provides a courtesy service in the form of free sand in designated community sandbox locations as well as roadway maintenance yards during winter for communities to use on icy sidewalks and pathways.

2.7.2. Communities can request a sandbox by reaching out to the City of Edmonton. The City of Edmonton will assess the request based on the location being requested, availability of other sandboxes in the vicinity, accessibility to crews for filling and potential to block traffic or sidewalk access.

2.7.3. The City of Edmonton will inform the community if the request has been approved or not. If approved, the sandbox will be placed by the City of Edmonton.

2.7.4. Once placed, the sandbox will be refilled by the City of Edmonton after all active pathways have been cleared. Residents can also request additional refills by calling 311.

2.8. Parking Ban

2.8.1. The City of Edmonton may declare a parking ban at its discretion based on factors including, but not limited to, amount of snowfall, rate of snow accumulation, and current and forecasted conditions.

2.8.2. The parking ban, when declared, will operate in two phases. During the first phase, no parking is permitted on arterial roadways, within business districts and roadways marked with seasonal no parking signage (collector roadways).

2.8.3. After Phase 1 is completed, Phase 2 will begin. At this point, parking would be prohibited on residential roadways, culs-de-sac, alleys/back lanes, and industrial roadways. Residents will need to arrange for alternative parking such as parking on their driveway or in their garage, in surplus parking on a neighbours property (with permission) or on cleared collector roads, many of which are within neighbourhoods.

2.8.4. Best efforts to ensure a minimum notice of 8 hours will be provided to the public before a parking ban is set to begin and a further minimum notice of 8 hours will be provided to the public when the City of Edmonton moves from Phase 1 to 2 of a parking ban, through a variety of communications channels. Exceptions may be necessary for emergencies.

2.9. Public Inquiries

2.9.1. Residents should call 311 for any inquiries or concerns related to the Snow and Ice Control program. The operational teams will address inquiries where an action may be required by the City of Edmonton.

2.9.2. Resolving the issue is dependent on several factors including, but not limited to, the nature of inquiry, accessibility, safety concerns, current and forecasted weather, and roadway conditions. Typically, 311 inquiries requiring City of Edmonton action will be resolved within 7 days.

2.9.3. Residents are provided with a reference number which they can use to track the status of their inquiry.

2.10. Monitoring Impacts

2.10.1. Environmental and Infrastructure Impacts:

2.10.1.1. The City of Edmonton will monitor the safety impacts of using the various snow and ice control activities in consideration with impacts on the environment and infrastructure

through studies including, but not limited to traction, collisions, river water, soil and vegetation, corrosion, concrete and asphalt.

2.10.2. Snow Storage Site Management:

2.10.2.1. Snow removed from the mobility network will be hauled to the City of Edmonton snow storage sites to meet Environment Canada and Alberta Environment and Parks guidelines and Codes of Practice, as outlined in the Salt Management Plan.

2.10.3. Salt Management Plan:

2.10.3.1. The City of Edmonton will report to both Alberta Environment and Parks and Environment Canada annually on road salt usage and road salt management to meet Codes of Practice established by the Transportation Association of Canada and adopted by Environment Canada.

2.11. Severe Snowfall Event

2.11.1. A severe snowfall response can be initiated at the discretion of the Branch Manager for Parks and Roads Services. This severe snowfall response can be initiated if there is a snowfall of 30 cm or more within 24 hours or less that threatens access to the mobility network. The focus of this severe snowfall response will be to restore immediate mobility, not to address mobility network capacity.

2.11.2. A severe snowfall response includes:

2.11.2.1. Deployment of all available resources to restore mobility.

2.11.2.2. Delegation of control for deployment of all available resources in all City departments associated with snow clearing to the Director of Infrastructure Operations.

2.11.2.3. Declaration of city-wide parking ban.

2.12. Snow Emergency

2.12.1. In the event of an extreme winter storm that causes the closure of a significant portion of the mobility network, the City Manager at their discretion can declare a snow emergency. This will activate the Emergency Operations Centre. In a snow emergency, all snow clearing activities will be controlled through the Emergency Operation Centre and will focus on providing mobility for emergency and essential services only until general mobility can be restored.

3. Definitions

3.1. **Mobility Network:** Entire transportation network that is maintained by the City of Edmonton for snow and ice control including the roadways and goods movement network as well as the active pathways and public amenities network.

3.2. **Snow Clearing**: Mechanical clearing of snow and ice including, but not limited to, plowing, brooming/sweeping and snow blowing.

3.3. **Freeways**: High traffic volume and speed roads with limited access and typically grade separated intersections.

3.4. **Arterial Roadways**: Roadways carrying larger volumes of traffic (people driving as well as those riding transit, walking and wheeling, cycling, and delivering goods) between areas with relatively few and controlled access points.

3.5. **Business Districts**: Roadways with commercial property on both sides having curb line sidewalks and on-street parking. This includes roadways in all 13 Business Improvement Areas within Edmonton (excludes industrial roadways).

3.6. **Alleys/Back Lanes**: Streets providing direct access to adjacent lands typically parallel to other classification of streets and mainly used for access, deliveries, and waste collection. In core urban areas, some alleys are evolving into shared streets, with alley oriented development.

3.7. **Bare Pavement**: Bare pavement is defined as a dry or wet surface generally clear of snow and ice (some patches of snow and ice may be present).

3.8. **Collector Roadways**: Roadways providing travel between residential and arterial roadways with direct access to adjacent properties. Designated bus routes through a residential area are also categorized as a collector roadway.

3.9. **Industrial Roadways**: Roadways providing direct access to wholesale or manufacturing complexes.

3.10. **Rural Roadways**: Roadways on which minimal development or improvement has been made, such as oiled or gravel roads.

3.11. **Residential (Local) Roadways**: A street or designated portion thereof abutted by sites which are primarily occupied by residential buildings. These are typically low-speed, low traffic volume.

3.12. **Active Pathways and Public Amenities**: All mobility corridors or infrastructure that are not roadways including, but not limited to, sidewalks, bus stops, shared pathways, protected bike lanes, parking lots, all season staircases, wheelchair ramps and transit facilities.

3.13. **Transit Centres**: Bus facilities that act as a hub for several bus routes, providing an easy way for transit users to transfer from one bus to another, or in some cases, from a bus to the LRT.

3.14. **Protected Bike Lanes**: On-street bike lanes protected from moving cars, parked cars, and sidewalks, by a physical barrier.

3.15. **Painted Bike Lanes**: On-street bike lanes marked with paint and designated for bikes only but without physical separation from vehicular traffic.

3.16. **Shared Pathways**: Paved, off-street paths outside of road carriageway that are marked with signs that indicate that they are shared by people on bikes and pedestrians.

3.17. **City Maintained Sidewalks**: Sidewalks maintained by the City include those around public schools, City facilities or buildings such as recreation centres, senior centres or City Hall, as well as sidewalks around the perimeter of City assets such as parks, public utility lots and parking lots.

3.18. **All-Season Staircases**: Staircases that lead to a City maintained recreational space, City maintained sidewalks or shared pathways. In case of parallel staircases, only one staircase will be cleared for snow and ice control.

3.19. **Bus Stops Adjacent to City Property**: Bus stops with amenity pads located on or adjacent to City maintained sidewalks (i.e. not located on a sidewalk located on or adjacent to private property).

3.20. **Pedestrian Bridges**: Bridges meant for pedestrian or bike access that are restricted from vehicular traffic or are adjacent to vehicular traffic.

3.21. **Manually Cleared Active Pathways and Public Amenities**: Active pathways and public amenities that can’t be reached mechanically and require manual snow clearing. Examples include breezeways with permanent bollards and City infrastructure like benches and fire hydrants.

3.22. **Breezeways**: Connections within or between neighbourhoods that can be accessed with a bike or on foot. Most breezeways have a paved or concrete surface.

3.23. **Pedestrian Only Streets**: Unlike shared streets that allow people walking, wheeling, cycling, and driving to share the space, a pedestrian only street either prohibits vehicles from using the street at all times, or at specific times.

3.24. **Blading**: Mechanical plowing of snow and ice to leave a consistent, level snowpack.

3.25. **Shared Street**: These streets significantly limit motor vehicle traffic. Design elements like pavement material and entry features define the space and make it clear that shared streets are primarily designed for people walking, wheeling and cycling.

3.26. **Cul-de-sac**: A street or passage closed at one end with no through traffic abutted by sites which are primarily occupied by residential buildings.

3.27. **Snow Removal**: The complete removal of accumulated snow from a roadway or active pathway, usually undertaken after snow clearing is completed. This involves crews loading and removing windrowed snow from roadways or active pathways to an engineered snow storage site.

3.28. **Windrows**: The placement of snow into a long continuous row during snow clearing of roadways and active pathways.

3.29. **Windrow Free Zones**: Signed sections of a roadway, typically in front of a school, that are left free of windrows.

3.30. **School Drop-off Zones**: Designated areas in front of and surrounding schools that provide curb access for drop-off and pick-up by school buses. These are typically signed as windrow free zones.

3.31. **Pre-wet**: Calibrated/standardized application of calcium chloride brine to sand-salt mix as the mix is being distributed on the roadway to help activate the melting process, reduce material usage and prevent material scatter.

4. References

The following are legislative and administrative references relevant to this administrative procedure:

4.1. Community Standards Bylaw 14600