Attachment 3

Jurisdictional Scan of Winter Operations Priorities

Administration conducted a review to understand and compare snow and ice control practices of different winter cities across Canada and one European city with pedestrian-first approach to sidewalk snow removal.

City	Edmonton	Calgary	St. Albert	Regina	Saskatoon	Winnipeg	Ottawa	Toronto	Montreal	Stockholm (Sweden)
Population (2021)	1,010,889	1,306,784	68,232	226,404	266,141	749,607	1,017,449	2,794,356	1,762,949	1,657,000 (1.4M 2013)
City Area (km^2)	765.61	820.62	47.84	178.81	226.56	461.78	2,788	631.10	364.74	188
Density (people per km^2)	1,320	1,592	1,426	1,266	1,175	1,623	364	4,435	4,833	8,814
Snow Removal Budget ($Million) **(2021 unless indicated)**	$55.5M (1.9% city operating) $54.90 per capita $72.5K per km^2	$42M (1.1% city operating) $32.14 per capita $51.2K per km^2	2019: $4.3M (2.1% city operating) $63.02 per capita $89.8K per km^2	$8.8M (1.8% city operating) $38.87 per capita $49.2K per km^2	2019: $13.1M (2.6% city operating) $49.22 per capita $57.8K per km^2	$41.9M (3.5% city operating) $55.89 per capita $90.7K per km^2	$82M (1.9% city operating) $80.59 per capita $29.4K per km^2	$88.4M (0.6% city operating) $31.64 per capita $140.1K per km^2	2019: $166.4M (2.9% city operating) $94.39 per capita $456.2K per km^2	2013: $30M CAD equiv. (0.4% city operating) $20.84 per capita (2013) $159.6K per km^2
Avg Precipitation in Winter (cm)	123.5	128.8	123.5	82.4	76.6	113.7	223.5	142	209.5	33.9
Avg Snow Depth in January (cm)	16	4	Not Available	16	14	16	17	7	11	Not Available
Fleet Size (in-house and/or contract info)	257 owned 147 contracted	105 owned 16 contracted	16 owned Contract info not available	75 owned Contract info not available	Not available	300 owned Contract info not available	Not Available	258 owned 1,366 Contracted	1,100 owned Contract info not available	All contracted services
Winter Parking Ban	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Attachment 3

Approach to Snow Removal in Residential Areas (roads, back alleys/ lanes)	
Edmonton	• Priority 4 (of 4) • Areas are sanded as required • Maintained to a 5 cm snow pack • Blading to bare pavement pilot initiated pilot 2021-22
Calgary	• Priority 3 and 4 (of 4) • Removal only when necessary. Pack down soft spots, level out ruts and sand/salt icy driving lanes. • Areas sanded and plowed when temperature conditions allow. • Back alleys are not routinely plowed, only by 311 request.
St. Albert	• Priority 3 (of 3) • Removal after 6-9 cm of snow pack accumulated in driving lanes. • Snowpack after March 7 will only be plowed, and snow will be left to melt with no formal clearing. • Snow piles removed as resources allow.

Regina	• Category 3 (of 5)
	  ○ High volume residential roads and school zones - plowed when >5 cm snow
	• Category 5 (of 5) - remaining residential roads plowed after >15 cm of snow.
	  ○ Driving lanes and turning lanes to be plowed to compacted snow surface, rut heights to be reduced as required
	• Alleys are only plowed to a compacted surface after >15 cm from single snow event.

Saskatoon	• Priority 3 (of 3) • School zones are graded to bare pavement. • Residential streets are not part of priority levels. Grading occurs later in season with >15cm accumulation.
Winnipeg	• Priority 3 (of 3) • Maintained to a compacted snow surface. Plowing after 8-10 cm snowfall accumulation or equivalent conditions. May be cleared to bare pavement when conditions allow for full plowing operations. • Back alleys maintained to compacted snow, only plowed following inspection and/or after 5 cm snowfall or equivalent accumulation.
Ottawa	• Priority 5 (of 5) • Most residential roads are cleared following an accumulation of 7cm or more. • Bus stops are cleared following an accumulation of 7cm or more

Toronto	• Clearing of neighbourhood roads begins at 8 cm when snow first accumulates. • Maintained to a safe, passable pavement.
Montreal	• Priority 3 (out of 3) • Plowing begins at 2.5 cm snow accumulation, continues until complete. • Snow loading for removal begins once there is 10-15 cm of snow. • Plowing of alleys is restricted to those adjacent to commercial thoroughfares, commercial deliveries, fire services, and those with main property entrances.

Stockholm (Sweden)	• Roads plowed with minimum of >4-5 cm loose snow or >2-2.5cm wet snow.
	• Inner city:
	  ○ Priority 3 of 3 - residential streets with associated walkways and pedestrian, bicycle and moped paths.
	  ○ Plowed to make them passable
	• Suburbs:
	  ○ Priority 2 of 3 - includes local streets and walkways. Priority 3 includes stairs if there are no alternative walkways.
	  ○ Plowed to make them passable.

Timelines for Clearing Residential Roads	
Edmonton	• Completed within 7-9 days once a residential blading cycle is initiated.
Calgary	• From end of snowfall, starts within 4 days, after Priority 2 routes complete
St. Albert	• Approximately 10-12 days, unless snowfall >10 cm. Requires resources to be diverted to Priority 1 and 2.
Regina	• Category 3: Plowed within 48 hrs of snow event, routine cleanup follows within 14 days. • Category 5: No timeline to complete plowing and ice control activity on local/residential roads, routine maintenance within 21 days. Alleys cleared within 96 hrs.
Saskatoon	• Priority 3 starts within 72 hrs of the snowfall ending. • No timelines for residential streets.
Winnipeg	• 5 working days following the start of work.
Ottawa	• Minimum depth of snow before deployment: 7 cm or more • Time needed to clear snow in normal conditions: 10 hours

Toronto	• Starts within 14-16 hours of the end of snowfall.
Montreal	• No timelines provided.
Stockholm (Sweden)	• Depending on road class (1-6), plowing could take anywhere from 2-14 hours. • Some work in areas is completed within a single day/night shift

Approach to Residential and Private Property Sidewalk Clearing	
Edmonton	• Property owner's responsibility to clear sidewalks adjacent to property of snow and ice as soon as possible (no time limit in Bylaw). • The City is only responsible for clearing sidewalks adjacent to City-owned/maintained property.
Calgary	• Property owners are required to clear snow and ice (minimum width of 1.5 m) down to bare pavement on sidewalks that border their property within 24 hours of snowfall ending (bylaw).
St. Albert	• Arterial sidewalks and trails, collector sidewalks and trails, bus stops cleared at 2-5 cm of snow accumulation. Plowed within 48 hours.
Regina	• As of Jan 2022, all property owners must clear sidewalks following snow/ice event, down to bare pavement as much as possible, within 24-48 hrs depending on location (Bylaw) • City only maintains sidewalks that are adjacent to City-owned properties
Saskatoon	• Property owners must clear sidewalks within 48 hrs (bylaw). At least 1.2m wide, no more than 3cm of snow pack. • Businesses expected to clear sidewalks within 24 hrs.
Winnipeg	• Plowing begins following a 5 cm snowfall accumulation or equivalent local drifting conditions. • City maintains sidewalks on Priority 3 (Residential) streets to compacted snow surface following 8 cm accumulation, within 5 working days of starting work. • City prioritizes Priority 3 sidewalks near elementary schools, within 5 working days from start of work; for those near seniors complexes in conjunction with Priority 1 or 2 sidewalk work, within 36 hours following the end of an average event. • Sidewalks on Priority 1 and 2 streets and Priority 1 and 2 Active Transportation Pathways are normally

	maintained to a compacted snow surface, within 36 hours following the end of an average event. • Sidewalks on Priority 1 and 2 streets within downtown are generally plowed to a paved surface when conditions allow.
Ottawa	• Home/ business/ property owners are responsible.
Toronto	• All home, business and property owners must clear the adjacent sidewalk of snow or ice within 12 hours of the end of a snowfall (bylaw) • Property owners responsible for clearing ice and snow from private property (driveways, parking spaces, steps, ramps and landings) within 24 hours after snowfall ends to provide safe access for people and vehicles.
Montreal	• Municipality is responsible. • Homeowners are encouraged to clear their front walk. • All sidewalks (P1, P2 or P3) - clearing begins at 2.5 cm snow accumulation, continues until complete.
Stockholm (Sweden)	• In 2021–2022, the City is implementing an expanded pilot project to reduce slipperiness of sidewalks through waste salting (sweeper brushes snow away and applies saline solution to prevent freezing) • Ground heating is present under many city sidewalks and walkways. Can be found in central high-traffic areas. Projects often financed in collaboration with construction projects, and between the City and property owners

Approach to Residential Windrows (may be referred to as another name)	
Edmonton	• After clearing residential roads, windrows >30 cm that block driveways are cleared with enough access for one vehicle to pass (about 3.5m). Cleared to level snowpack within 12 hrs of windrow placement. • Windrows <30 cm that block driveways are the responsibility of the property owner
Calgary	• Accessibility clearing only: plow windrows away from high priority wheelchair ramp locations • 500 wheelchair ramp locations were selected for enhanced windrow clearing pilot (in progress). • During the clearing of traffic islands and medians, the windrows in front of crosswalks are cleared
St. Albert	• Snow piles are removed as resources allow
Regina	• Snow ridges minimized on all roads, not removed. Left around parked vehicles. Only removed where they impact street, lane, travel widths or sight lines. • Ridges removed from all school drop zones and transit stops.

	• Snow ridges minimized (not removed) across alley entrances, intersections, driveways to reduce height to <30 cm, remain in curb lane. • No clearing of snow ridges created by plowing in alleys.
Saskatoon	• Windrows only removed when areas cannot accommodate more snow, or when it becomes a visibility/access issue (eg, back alleys). Windrows removed from accessible parking areas and transit stops. • Snow piles remain in parking lanes in school zones, except in loading zones. Removed once >60cm.
Winnipeg	• Windrows across private approaches and walks resulting from sidewalk clearing are not removed. • Monitor high piles of snow at bus stops, crosswalks, lane entrances and intersections for visibility issues. • Selective removal of windrows on Priority 1 and 2 roads and adjacent boulevards where there are safety, business parking or sidewalk access issues. • Windrows >20 cm in front of front driveways cleared during worker's same shift. • Removal from high volume transit stops. • Not removed from commercial, industrial or apartment loading zones, or from boulevards adjacent to schools. • Removed on request from religious buildings for events.
Ottawa	• The City aims to distribute snow on both sides of the road. • Snow banks are removed or reduced in size when they begin to restrict sightlines, travel widths, and pedestrian and cycling traffic. Snow banks that restrict sightlines at intersections and at pedestrian, school and railway crossings are removed within 24 hours after crews are made aware of the situation. • If weather permits, snow banks are pushed back to curbs to provide more driving width on the roads and to make space to store snow. • Homeowners are responsible for removal of windrows at the end of their driveways.
Toronto	• Plows with special blades clear up to 3m space of windrows (>25 cm) in front of driveways, up to 2 hrs from when streets are plowed. Can only be done on wide streets with no parking.
Montreal	• Any snow banks left from plowing that obstruct entrance to private property or parking area must be cleared by the owner/ occupant
Stockholm (Sweden)	• Snow banks or dikes are plowed to the side of the road when possible when time and conditions permit and placed to maximize access (eg: on the side of road with no sidewalk) where possible. • City will open dikes to prioritize access to hospitals, pedestrian crossings, bus stops. • Residents are expected to remove dikes to access their property

Approach to Accessibility	
Edmonton	• Priority 2 - Active Pathways - City-maintained sidewalks, wheelchair ramps, shared pathways, all season staircases, some parking lots and bus stops are cleared within 48 hours following the end of snowfall. • City maintains a series of Priority 1 and Priority 2 bike route networks. Includes protected bike lanes, as well as designated painted bike lanes and designated shared pathways. P1 cleared within 24 hrs, P2 cleared within 48 hrs. • Windrow-free zones around school drop-off zones,crosswalks, bus stops, signed accessible parking stalls, fire hydrants • Residents can apply for an accessible parking area in front of their property. These are also windrow-free zones. • Maintains sidewalks around some seniors facilities.
Calgary	• Clears snow from 500 km of pathways, including sidewalks adjacent to public property • Reduces windrows at busy crosswalks and wheelchair curb ramps for better access. • Snow Angels volunteer program provides shoveling services for those with limited mobility
St. Albert	• Ensuring neighbourhoods with the highest mobility issues are addressed as quickly as possible. • Clearing neighbourhoods with design and geographical challenges, such as hills/high inclines
Regina	• Additional prioritization on sidewalks in the downtown area, around schools and seniors complexes. • Snow Angels community grant program
Saskatoon	• Community-run Snow Angels Program available for those with limited mobility. • City-maintained sidewalks and paved park paths with lighting are plowed within 48 hrs with >5cm; some locations downtown plowed within 24 hrs. Sand application after plowing. • Transit stops and bike only lanes (Priority 2, similar to Priority 2 roads) plowed after >5cm snow event, within 36 hrs.
Winnipeg	• Owners/occupants who sign an annual declaration confirming they are physically unable to perform snow clearing work themselves and do not have means to arrange for or pay others for this work will have private crosswalks between sidewalk and the curb cleared to 0.7 m width by City after street clearing operations.
Ottawa	• City provides do-it-yourself grit boxes close to steep hills and in areas where there are many pedestrians, seniors and persons using mobility devices. Residents are encouraged to spread the grit on slippery spots on sidewalks and other problem areas. • Operates Snow-Go (contractor matching service) and Snow-Go Assist (subsidized snow clearing) programs.

	• Snow Angels volunteer recognition program
Toronto	• City clears sidewalks for free to seniors who have no relatives to assist them (available in parts of Toronto, York and East York only.) • 2021-22 Season: Council has requested Administration to transition the current sidewalk clearing program for seniors and persons with disabilities to a proposed, mechanical sidewalk winter snow clearing sidewalk service. • Sidewalks with high pedestrian volume (arterial roads, school zones, transit areas, and accessibility locations) are cleared first, where mechanical clearing is possible. City recently completed a 2-yr trial to test smaller sidewalk plows for clearing of areas previously inaccessible. • Bike lanes salted/plowed at the same time as adjacent streets. • Transit stops plowed within 48 hrs of a snow event.
Montreal	• Bike paths are cleared at the same time as streets and sidewalks. • Priority clearing of roads and sidewalks around hospitals, schools, and reserved lanes, bus routes and major shopping streets.
Stockholm (Sweden)	• Prioritize high capacity modes of transport (walk, bike, transit). • Priority 1 of 3 (inner city and suburbs) includes bus lanes and bike lanes • Priority 2 and 3 (inner city) includes pedestrian and bike/moped paths. • Cities in Sweden employ “gender-balanced budgeting” to prioritize snow clearing from walkways, bike paths and transit stops before or at the same time as clearing roads. • Property owners and owner associations must remove snow and icicles from roofs, especially if the edge hangs over an adjacent pedestrian/bike lane to ensure accessibility.

Application and Use of Materials	

Edmonton	• Sand, salt, liquid brine (calcium chloride)
	• Base mix: sand with 3% salt. Salt is added later in different quantities (condition dependent).
	• Calcium chloride currently used only as:
	  ○ pre-wetting agent to sand/salt mix to improve adhesion of mix.
	  ○ applied to P1 bike lanes and active pathway inventory as anti-icing agent.

Calgary	• Sand and sanding chip, salt, liquid brine (calcium chloride or sodium chloride) • 3% salt blended into the sand material to produce ‘pickle’ blend. • Pickle and salt combination use is dependent on conditions. Pre-wetting of pickle with salt brine.

	• Anti-icing pilot was conducted in 2017 with a mix of salt brine and beet juice. City is continuing trials in some downtown areas.
St. Albert	• Sand, salt, liquid brine. No longer use calcium chloride as an anti-icing agent, but do use it to mix in their snow pile to keep it from freezing. • Salt is used only when necessary. Sand is pre-wet with liquid calcium chloride before use
Regina	• Sand/salt applied to roads in order of category system. Also selectively applied to sections of roads (intersections, bridges, merge lanes, ramps, in front of schools) and as needed. • Liquid salt pilot project, testing direct application on small sections of streets instead of sand/salt mix.
Saskatoon	• Sand/salt applied on high traffic streets and intersections. • Sand with 5% potash salt and liquid de-icer applied to streets depending on conditions. • Salt and liquid de-icer (magnesium chloride) used to soften ice after grading at higher temperatures.
Winnipeg	• Sand, salt liquid brine (mixed with beet juice) • Treated sand is generally mixed with 5% salt as a base mix. Application to Priority 1 and 2 roads dependent on conditions, with additional applications at controlled intersections, bridges, subways, curves, inclines. Restricted spot-based application on Priority 3 streets at intersections, crosswalks, corridors. Rarely applied to bike lanes.
Ottawa	• Dry salt, wet salt, sand salt mix, liquid brine and abrasive materials on streets
Toronto	• Salt (sodium chloride) as de-icer. May be pre-wet with salt brine. In advance of snow or ice, anti-ice trucks will apply salt brine to expressways, hills and bridges, as soon as snow begins to stick to roads. • Salting continues until enough snow has accumulated to begin plowing
Montreal	• Sand/gravel (mixed with salt as needed) is spread as soon as roads and sidewalks become icy.
Stockholm (Sweden)	• NaCl (rock salt), brine, sand combination. Used on both roads and sidewalks, depending on conditions. • The material normally used is sand, 0–8 mm, mixed with about 3% by weight salt

Approach to Multi Modal Networks	
Edmonton	• Protected bike lanes are cleared within the first 24 hours. Painted bike lanes are cleared at the same time as adjacent main roads.

	• Active pathways are maintained as required throughout winter • Bus stops are maintained within 48 hrs or 5 days of snow event (location-dependent)
Calgary	• The downtown cycle tracks are Priority 1, cleared within 24 hours after snowfall ends. • On-street bicycle lanes are Priority 2, cleared within 48 hours after a snowfall ends. • Approximately 500 km of pathways are cleared within 24 hours of a snowfall ending
St. Albert	• After a snowfall of 1-5 cm, the City sends out plowing and sanding equipment. Sidewalks and trails are cleared in accordance with prioritized rankings.
Regina	• Coordinate systematic plowing activity to ensure various transportation networks are approachable after storms.
Saskatoon	• Residential sidewalks are required to be cleared in 24-48 hrs. • City facility sidewalks, Meewasin Trail, park pathways with street lighting, pathways along freeways and arterials and bridge/overpass walkways are graded within 48 hours.
Winnipeg	• Streets and sidewalks designated as Active Transportation Priority Routes (P1AT, P2AT, P3AT) and will be cleared and sanded to the same service level as all Priority 1 infrastructure, within 36 hours following snowfall.
Ottawa	• Network of approximately 50 km of cycling facilities are maintained during winter. • On-street cycling lanes are plowed following 2.5 to 5 cm of accumulation within 24 hours of snowfall. • Raised cycle tracks and multi-use pathways are plowed following 2.5-5.0 cm of snow accumulation, however they are maintained to a snowpack standard. Snow removal is scheduled when snow banks encroach on 50% of the existing width of the bike lane. • Bus stops maintained within 24 hours of end of snowfall.
Toronto	• Bike lanes and cycle tracks are salted and/or plowed at the same time as the adjacent road, based on the levels of service. • Park pathways connecting to TTC routes, schools, arenas and community centres are cleared after 8 cm of accumulation, within 24 hours of snowfall.
Montreal	• 200 km of bicycle lanes are considered a 'core network' of the 1000 km total multi-modal network. Core lanes are plowed to bare asphalt. Paint-only lanes are plowed to adjacent road standards
Stockholm (Sweden)	• The City's ambition is to plow a number of commuter lanes for cyclists at an early stage. • Waste salting pilot project on sidewalks

Attachment 3

Approach to Freezing Rain	
Edmonton	• Based on forecasted weather and monitoring of conditions. • Route work is triggered for P1 and P2 routes, applying traction materials as needed. • P3 and P4 routes: application is dependent on road conditions. Sand and chip mixtures used, and/or some ice blading on P4 to break up slippery surfaces.
Calgary	• No information available
St. Albert	• No information available
Regina	• Cycle through high priority roads frequently during freezing rain and freeze thaw cycles. Use sand, salt and mixed aggregates. No ice breakers. Use serrated blades on graders and underbody plow trucks when dealing with rutted roads
Saskatoon	• Ice inspections occur every 4 hours on all freeways, high use streets, and on emergency facility access routes. • Ice inspections occur every 8 hours on all medium use streets and all transit routes. • Ice inspections occur every 12 hours on all remaining Business Improvement Districts, bus routes, school zones, and around City Hall and downtown yards. • De-icer and sand for traction is applied as needed
Winnipeg	• No information available
Ottawa	• Crews remove snow and ice from some ditches.
Toronto	• Salters are sent out immediately to start spreading.
Montreal	• Salt and rocks are spread on sidewalks. • Montreal has sidewalk-sized ice breakers, only used in warmer temperatures.
Stockholm (Sweden)	• Several of the City's sidewalks and walkways are heated from below. • Ground heat is laid mainly in central places where there are a lot of people, and in connection with other major excavation work. • Ground heating is often financed in collaboration between the City of Stockholm and property owners.

Approach to Thaw and Melting

Edmonton	• Approach is based on forecasted weather and monitoring of conditions. • Crews adjust tasks to plow loose snow/ice/slush from roads and apply traction aid materials. Includes grading and sanding. Blading cycles to maintain 5 cm snowpack on residential roads. • Graders used to unblock gutters/catch basins and address ponding on P1 and P2 roads. • Melt conditions on roads are not typically addressed /groomed until cooler conditions return, to avoid creating excessive ruts.
Calgary	• In some areas, inlet control devices installed in storm drains to manage how fast water flows into the pipes from the storm drain. This is also designed to keep extra water on the road until the stormwater system can accept the extra water. If the water on the road or street has not drained after 90-120 minutes, residents are asked to contact 311 or fill out the online service request
St. Albert	• Public is encouraged to clear snow, ice or debris; create a channel to help water flow into the catch basins. • Any snowpack after March 7 will only be plowed, and snow left to melt with no formal clearing. The estimated time for removal is approx. 10-12 days.
Regina	• List of catch basins and maps are regularly monitored by the catch basin crew. • Make drainage channels in outer city areas/new subdivisions to mitigate potential flooding conditions. • For managing ruts in residential areas and other locations, the City uses underbody plow trucks and graders.
Saskatoon	• City crews clear snow from streets to reduce snow melt when the weather warms up. • Grading on residential/ local streets may be required just prior to the spring melt, if the snowpack on streets is 15 cm thick. • Residential streets may be plowed near the end of winter, as the weather begins to warm up if the snowpack is more than 6” deep. This grading will prevent the formation of deep ruts that can damage vehicles during the freeze/thaw cycle heading into the spring melt.
Winnipeg	• During extended periods of mild weather, it may be necessary to undertake additional plowing of back lanes, where specifically warranted, to reduce rutting.
Ottawa	• City crews remove snow and ice from catch basins on roads and sidewalks to ensure melting snow drains when required. • Roads are designed to drain based on the sewer capacity. • Roadside ditches are cleared at the outlet end of the ditch system to provide drainage for the spring melt.
Toronto	• Catch basin clearing is done by patrolling staff and field investigators to minimize flooding. • Localized flooding is dealt with by patrolling staff and field investigators if possible. If the catch basin has an issue below grade, then it is referred to Toronto Water to repair. • Level of service for local roads is safe and passable, so some snow will remain on the road. If rut formation

	leads to a safety issue the contractor is asked to return and clear it
Montreal	• Storm drains are cleared by City crews upon request/ demand. • No specific equipment to address melting, but Calcium Chloride is used.
Stockholm (Sweden)	• No information available

Approach to Resident and Council Communications	
Edmonton	• Various tactics used to keep residents informed. 311 scripts, postcard mailer with parking ban info, information around parking bans, regular media advisories, snow clearing online map, web page updates, digital media, social media. Media monitoring and research is also done. • Council: Provide a package to Councillors at the beginning of each season and provide Councilors with operational updates during the season when necessary, information session provided.
Calgary	• Seven day snow plan on City website, social media, parking ban alerts via social media.
St. Albert	• Snow and Ice Alerts on City webpage, FAQs, social media, provide status and operations updates
Regina	• Public: PSAs, social media, paid media, push notifications, hand-outs (as required), respond to callers of Service Regina helpline. • Council service requests, briefing notes, report, field visits.
Saskatoon	• Snow and Ice Alerts on City webpage, FAQs, social media to provide status and operations updates.
Winnipeg	• City website includes: status updates, parking ban info, and status map (% complete by area of the city); FAQs for snow clearing and ice control; FAQs for parking bans; FAQs for Know Your Zone app.
Ottawa	• Snow and Ice Alerts on City webpage, FAQs, and social media to provide status and operations updates.
Toronto	• PlowTO Map, online snow removal tracking map, social media updates on operations and parking bans. Resident mailers and ad campaigns before/during the season • Council: Provide a winter binder to Councillors at the beginning of each season and provide Councillors with updates during the season when necessary

Montreal	• Website, social media for the public that shows operations updates and plans. App that provides removal operations updates and notifications, information about parking etc.
Stockholm (Sweden)	• App and phone numbers for residents to report snowy or icy conditions.

Community Sandboxes	
Edmonton	• 769 sandboxes (1.1 box per sq km) • Provide dry sand for anyone to use, filled within 5 days of snow event after all active pathways have been cleared/maintained.
Calgary	• 29 sandboxes (0.04 box per sq km) • Provide a sand-salt mix ('pickle') for individual non-contractor use only. No refill or service timelines.
St. Albert	• 34 sandboxes (0.7 box per sq km) • Provide salt-calcium chloride blend for residential use only. No refill or service timelines.
Regina	• 13 sandboxes (0.07 box per sq km) • Provide a sand-salt mix for individual use only. Refill as needed.
Saskatoon	• 0 sandboxes
Winnipeg	• 0 sandboxes
Ottawa	• 4 grit boxes (0.001 box per sq km) • Provide salt and grit for anyone to use in key locations. No refill or service timelines.
Toronto	• 0 sandboxes
Montreal	• 0 sandboxes
Stockholm (Sweden)	• 0 sandboxes

Publication of Performance Measures	
Edmonton	• Formally under development • 2021 Audit Report -- "PARS should develop and implement relevant, sufficient, reliable, comparable, and consistent performance measures to support management decision-making and demonstrate achievement of Corporate, Branch and Snow and Ice Control goals." • Refer to Attachment 2 for performance measures.

Calgary	• Percent of time City completes Snow and Ice Control on Priority 1 through lanes within 24 hours. (100% sanded/salted and 90% plowed)
	  ○ Reporting: 100%
	• Percent of time that City completes Snow and Ice Control on Priority 2 through lanes within 48 hours. (100% sanded/salted and 90% plowed)
	  ○ Reporting: 100%
	• Satisfaction with road travel conditions due to Snow and Ice Control.
	  ○ Reporting: 77%

St. Albert	• Status of neighborhood plowing updated on website

Regina	• Snow removal on Category 1 and 2 roads within 24 hours
	  ○ Reporting: 85% of the time
	• Ice Control Cycles on major roads within 24 hours
	  ○ Approximately 90-95% of roads were cycled

Saskatoon	• Under Development • 2019 Audit Report -- "Communication of Key Performance Indicators (KPI's) and performance monitoring be integrated into a formalized communication plan."

Winnipeg	• Citizen satisfaction with snow removal (annual and trend analysis)
	  ○ Reporting: 77% - trending positively
	• Total costs for winter maintenance of roadways per lane kilometer (annual and trend analysis with select city comparator)
	  ○ $5,159 - no general trend - second highest of comparator cities

	• Cost per lane kilometer to apply salt / sand for ice control (annual and trend analysis) ○ $1626 - trending up
Ottawa	• Not routinely reported
Toronto	• 2020 City Auditor Report - "Transportation Services does not have appropriate performance metrics that measure the effectiveness of the winter maintenance program and service levels."
Montreal	• Unknown
Stockholm (Sweden)	• Unknown