

ADMINISTRATION RESPONSE - ETSAB REPORT: A REVIEW OF WINTER MOBILITY AND ACCESSIBILITY OF PATHWAYS TO TRANSIT STOPS

RECOMMENDATION

That the October 11, 2023, City Operations report CO02025, be received for information.

Requested Council Action		Information Only	
ConnectEdmonton's Guiding Principle		ConnectEdmonton Strategic Goals	
CONNECTED This unifies our work to achieve our strategic goals.		Urban Places	
City Plan Values	ACCESS		
City Plan Big City Move(s)	A community of communities	Relationship to Council's Strategic Priorities (	Mobility Network
Corporate Business Plan	Serving Edmontonians		
Council Policy, Program or Project Relationships	- City Policy C409K - Snow and Ice Control - CO00778 Snow and Ice Control - Options to Increase Service Standards		
Related Council Discussions	- EXT02023 ETSAB: A Review of Winter Mobility and Accessibility of Pathways to Transit Stops, Urban Planning Committee, October 11, 2023 - CO01733 Snow and Ice Control 2022-23 Winter Season Results, Community and Public Services, June 19, 2023		

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Executive Summary

- The Edmonton Transit Service Advisory Board (ETSAB) prepared a report, “ETSAB: A Review Of Winter Mobility And Accessibility Of Pathways To Transit Stops” that outlines recommendations to improve mobility and accessibility for riders using public transit during winter.
- Administration agrees integration is critical to support service delivery for Edmontonians. Work is underway to improve the transit rider experience, including reviewing bus stop-related amenities and on time performance.
- Priority snow clearing cycles include consideration of transit-related needs. There are transit rider impacts associated with these cycles and service levels. Snow and Ice Control service levels are informed by the Snow and Ice Control Policy C409K, Snow and Ice Control Procedure and the annual budget.
- Climate-related impacts affecting the transit rider experience include the frequency and severity of extreme weather events, such as freezing rain, heavy snowfall, freeze/thaw cycles, as well as extreme heat and poor air quality from wildfires. These impacts may put additional pressure on service levels, infrastructure, and the amenities needed to support mobility and the transit rider experience.
- ETS is exploring options for bus stop and bus shelter designs through a research study with the University of Alberta’s School of Urban and Regional Planning and assessing equity-related needs.
- On-time performance is a performance measure used by public transit agencies, including ETS. Adhering to published schedules supports the transit rider experience and helps deliver an efficient service. There are a number of factors that may impact on-time performance in transit including weather, construction and detours, traffic volumes, ridership volumes, fleet reliability, collisions, security disorder on-board buses, driving behaviours and inaccurate schedules.

REPORT

The Edmonton Transit System Advisory Board (ETSAB) is a Committee of Council which provides advice to Urban Planning Committee about public transit in Edmonton. ETSAB prepared a report “ETSAB: A Review of Winter Mobility and Accessibility of Pathways to Transit Stops” (EXT02023) which includes research and analysis conducted by ETSAB members from January to March 2023. The report shares rider experiences on transit during winter and includes three recommendations for Administration to improve the rider experience.

Administration’s response to ETSAB’s recommendations are outlined below.

ETSAB Recommendation 1

- *Encourage more integration and communication with city operations that handle Snow and Ice Removal to support cleared pathways that are near transit stops. ETSAB recognizes that Edmonton Transit System is separate from the area of city operations that clears sidewalks and paths, but*

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encourages more integration and communication to support cleared pathways that are near transit stops.

Administration agrees that integration and collaboration is critical for the provision of services to Edmontonians. City Operations branches work collaboratively to maintain the mobility network to support a positive experience in the movement of people and goods throughout Edmonton. Transit riders are impacted by winter weather during several steps of their transit journeys, including when traveling to the transit stop or station, waiting at stations and transferring between services. Winter maintenance practices for sidewalks, pathways, roads, and transit facilities influence the transit rider experience and are components of the Snow and Ice Control priority system for snow and ice clearing.

The Parks and Roads Services branch is responsible for the Snow and Ice Control program, including transit adjacent pathways, roadways, staircases, and park and ride parking lots. Parks and Roads Services works closely with ETS. This includes direct communication between staff on a daily basis, regular meetings about snow and ice control planning and collaborating to respond to 311 inquiries.

The two branches coordinate actions related to severe winter weather events. For example, during a major freezing rain event in November 2022, City Operations branches worked together to determine how to best address icy road conditions, assist stuck buses and communicate with transit riders during a temporary service pause while road crews applied traction material to arterial roadways.

The Snow and Ice Control program aims to support Edmonton as a safe and liveable winter city, where residents can safely and conveniently access spaces, services, facilities and transportation networks during the winter months. To improve the safety, mobility and livability of Edmontonians, Administration continually adjusts Snow and Ice Control operations to align with industry best practices, changing weather patterns, and public and Council feedback.

The active pathway priority hierarchy outlined in the Snow and Ice Control procedures prioritizes high use facilities (recreation centers, seniors centers, active festivals) and accessibility networks (walks, bus stop access, staircases). This means that not all bus stops and pathways to transit stops receive immediate winter maintenance following a snowfall. As outlined in CO01733 Snow and Ice Control 2022-23 Winter Season Results, there will be a decrease in service levels during the 2023-2024 winter season compared to the 2022-2023 winter season, during which a one-time funding increase was provided, meaning that the length of time between a snowfall and winter maintenance on roads and active pathways is expected to increase. Service levels will increase incrementally every year until 2026 in alignment with the 2023-2026 budget.

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The priority service cycle for snow and ice clearing during the 2023-2024 winter season is as follows:

1. Arterial bus route (Priority 1 Roadways) maintenance will increase from four days to five days, while bus routes on collector roads (Priority 2 Roadways) will remain at five days.
2. City facilities including LRT stations, high traffic bus stops and paved trails (Priority 1 Active Pathways) will continue to be cleared within one day while city sidewalks, wheelchair ramps, bridges, city parking lots and stairs (Priority 2 Active Pathways) will increase from four days to six days.
3. Manually cleared areas such as remaining bus stops, paths and other public amenities (Priority 3 Active Pathways) will be cleared within 22 days as opposed to 13 in 2022-2023.

The service levels are conservative estimates based on the approved budget and anticipated weather conditions.

There are a number of challenges that arise for winter maintenance at bus stops. First, service delivery is based on a priority system and standards that measure time to complete at the end of a snowfall. If snow falls again before the priority service cycle is completed, the priority order is restarted and resources are redeployed to higher priority areas. Second, large equipment is more efficient at clearing large areas of snow cover but not all areas are accessible by the equipment - these situations require crews to remove snow and ice manually which may take longer. Third, snow clearing at bus stops on private land, such as shopping malls and mobile home parks, is the responsibility of the private landowner. Private landowner compliance with snow removal bylaws may be inconsistent and, as a result, the rider experience at those stops may not be the same as experience on City maintained roadways.

ETSAB Recommendation 2

- *More heated shelters and at minimum non-heated bus shelters at bus stops that currently only have bus stop signs or benches to provide minimum shelter from winter environment.*

Administration agrees that bus stop related amenities need to be reviewed and, as such, there is related work underway. There are over 5,050 ETS bus stops in Edmonton with varying levels of infrastructure, ranging from a bus stop sign to larger transit centres with heated indoor spaces. ETS has more than 2,300 unheated bus shelters, serving approximately 45 per cent of bus stops. Bus shelter allocation is based on physical characteristics of the stop location, including whether there is suitable space, the needs of those with limited mobility, how busy a stop is and how long people have to wait at a stop.

ETS provides heated waiting areas at LRT Stations and Transit Centres; heated bus shelters are not a service standard. There are important tradeoffs when assessing the feasibility of heated bus shelters, including climate mitigation and adaptation, maintenance impacts, financial implications, and user safety which includes risks from both melting and refreezing ice, as well as from spaces being used for non-transit purposes.

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Providing a positive transit rider experience includes consideration of rider comfort at all stages of the journey. Climate change impacts will likely mean more extreme weather events in Edmonton, which means transit riders may seek respite from extreme cold, extreme heat, wind and poor air quality. The design of transit stop amenities should consider solutions to adapt to these conditions, while also balancing other factors such as cost to operate and maintain the amenities, climate impacts and safety impacts. For example, providing heated shelters could increase the likelihood of misuse and vandalism. Also, heated shelters could provide respite from extreme cold and thereby support increased ridership and lower community greenhouse gas emissions; however, this would need to be balanced with the increased greenhouse gas (GHG) emissions from heating a structure with low energy efficiency.

There are one-time capital costs involved with purchasing a heated shelter and installing a power feed, and ongoing operating costs for power, maintenance and security requirements. Specifically, the cost per heated shelter includes:

- \$17,000 for the heated bus shelter.
- \$50,000 to \$100,000 to install a power feed, depending on site conditions.
- \$2,500 annually for power consumption and additional maintenance. Higher operational costs would also be incurred related to snow and ice removal as heating may cause freeze and thaw cycles of snow and ice, creating inconsistent ice surfaces.
- Costs associated with offsetting the greenhouse gas emissions associated with heating.

Changing the standard for bus shelters to incorporate heated shelters would be an enhanced service level, requiring direction from Council and a funding source.

As ETS continues to incorporate equity analysis into service planning, it is necessary to consider equity-related needs for bus stops and related amenities. Through a partnership with the University of Alberta School of Urban and Regional Planning, a research study is being undertaken to review bus stop design and stop amenities that influence the transit user experience, including safety and comfort. Amenities, including shelters, lighting, benches and tree canopy coverage near the stop, as well as real-time information displays of the next bus arrival, have been found to positively affect the waiting experience of riders. As extreme weather conditions become more prevalent in Edmonton, innovative stop designs to shelter or shade riders from these elements is essential. Through this research study and engagement with Edmontonians, ETS will review options to inform future bus stop design, including design of shelters and waiting areas.

ETSAB Recommendation 3

- *Continue to strive for timeliness and adherence to posted schedules to maximize connections.*

Administration agrees with the importance of continuing to strive for timeliness and adherence to posted schedules to maximize connections. Reliability of service is one of the guiding principles for City Policy C539A, Transit Service Policy and a critical component of the rider journey. As also noted in the ETS 2023 Annual Service Plan, increasing system-wide schedule adherence is a priority.

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For conventional bus service, a bus is considered “on time” when it leaves a timing point between zero and five minutes after its scheduled time. Timing points are the key stops defined on route brochures, and are generally located at transit centres, major transfer points and other mid-points along routes. On-time performance for individual routes is shared in the route performance report cards which are available online and annually in the ETS Annual Service Plan.

Administration reviews route timings five times per year and adjusts schedules based on historical performance and known traffic pattern changes due to significant construction projects or route changes. Factors that impact on-time performance include weather, construction, traffic volumes, ridership volumes, fleet reliability, driving behaviour, collisions, security disorder on buses and inaccurate schedules. For the first half of 2023, significant impacts included LRT-related construction, Fort Road construction, and changes to travel patterns and traffic volumes.

Providing accurate trip planning information to transit riders is also an important component of reliable service provision. ETS currently supports real-time tracking of transit service through third party applications such as Google Maps and Transit App. To enhance the rider experience, the ETS Trip Planner tool is being upgraded to provide improved near real-time information for riders. Signage at LRT stations also provides riders with estimated arrival times for LRT trains. Research shows that offering real-time data via mobile apps or digital signage at bus and LRT stations reduces frustration and anxiety by enabling riders to predict vehicle arrival times accurately and make informed travel decisions, especially in cases where service is detoured.¹

COMMUNITY INSIGHT

ETS regularly engages with riders through an online monthly transit rider satisfaction survey that assesses satisfaction with various aspects of service provided by ETS including on-time performance, safety and security, comfort and other measures. This input informs service related decisions. In 2022, over 2,450 transit riders participated in the monthly transit rider satisfaction survey. A summary of the key survey findings during this period is outlined below:

- 82 per cent of survey respondents were satisfied with their overall transit experience.
- 72 per cent of survey respondents were satisfied with the availability of shelters or benches at bus stops and transit centres during their first stop/station experience.
- 74 per cent of survey respondents were satisfied with the length of waiting time to transfer to another bus/LRT vehicle.
- 77 per cent of survey respondents were satisfied with the number of transfers required to reach their final destination.

In addition, in July 2023 Administration conducted a survey with 830 transit riders through Edmonton's Insight Community to understand perceptions of current bus shelters and features riders value the most. The following are the top three most important features rated as essential or very important by the vast majority of respondents:

¹ Watkins, Kari Edison, Brian Ferris, Alan Borning, G. Scott Rutherford, and David Layton. "Where Is My Bus? Impact of mobile real-time information on the perceived and actual wait time of transit riders." *Transportation Research Part A: Policy and Practice* 45, no. 8 (2011): 839-848.

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- 93 per cent of respondents selected rain and snow protection.
- 89 per cent of respondents selected an accessible path of travel to the bus stop.
- 88 per cent of respondents selected wind protection.

GBA+

Persons with mobility and accessibility challenges including seniors, persons with disabilities, parents with strollers and active transportation users, as well as those who use multiple modes of transportation, have greater difficulty moving around in snowy and icy winter conditions and may face additional barriers to clearing snow. This results in safety hazards (e.g. increased slips and falls) and day-to-day barriers to mobility for themselves and others in the community. Persons with limited mobility are disproportionately affected by Snow and Ice Control measures and face an increased risk of injuries due to icy conditions.

People who use active pathways and public transportation are affected differently by snow and ice, compared with those who use roads and vehicles. ETS transit rider research has shown that certain groups such as women and caregivers are more likely to do trip chaining, meaning they make multiple connections in a trip to serve multiple purposes (such as commuting, shopping, and bringing children to childcare). Snow and ice events also disproportionately impact transit riders who trip chain, as they experience the winter conditions at each transfer point of their journey. These individuals face increased barriers and risk of injury with snow and ice accumulation along any part of their route. Riders from marginalized communities represent a higher proportion of transit riders compared to the overall population. Demographics of survey respondents from the ETS 2022 transit rider satisfaction surveys are outlined below:

- 21 per cent of respondents indicated their annual household income was below \$30,000.
- 18 per cent of survey respondents were between the ages 15 and 24.
- 8 per cent of survey respondents were aged 65 and older.
- 54 per cent of survey respondents identified as a woman.
- 8 per cent of respondents identified as Indigenous.

As the impacts of climate change are increasingly felt in Edmonton, including an increase in extreme weather events, there will be a particular impact on transit riders and active transportation, as these modes are generally more exposed to weather conditions.

When prioritizing snow clearing service, the Snow and Ice Control service levels consider a variety of factors in relation to priority levels, routing adjustments and types of services. City Policy C409K: Snow and Ice Control lists equity as a core guiding principle, stating:

“...prioritization of winter maintenance activities based on equity is required to provide a mobility network that is accessible to people of all abilities and needs, and for all modes of transportation.”

To align with this principle, the Active Pathways group was developed to prioritize pedestrian centered transportation snow and ice clearing - recognizing that private vehicle travel is only one method of transportation within the city. This group prioritizes high use pedestrian centers and related transportation networks such as public facilities and bus stops, among others. Previously,

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this type of inventory was prioritized after roadways infrastructure and would only be cleared once all roadways were complete. This allows both vehicle and pedestrian traffic to be prioritized at the same level for all users.

The GBA+ lens, when applied to transit mobility during the winter months, will continue to be used to help identify inequalities that may exist in the Snow and Ice Control program and ETS operations. This approach considers residents' lived experiences, protects vulnerable mobility network users, addresses unintentional systemic service delivery inequity and contributes to Vision Zero, which aims for a long-term goal of zero traffic-related fatalities and serious injuries.