



ETSAB: A REVIEW OF WINTER MOBILITY AND ACCESSIBILITY OF PATHWAYS TO TRANSIT STOPS

RECOMMENDATION

That the October 11, 2023, Edmonton Transit Service Advisory Board report EXT02023, be received for information.

Report Purpose

Information only.

Note: Giselle General, Chair and Serena Tang, Vice-Chair of the Edmonton Transit Service Advisory Board will be attending to present this report, if selected.

Executive Summary

This report presents the results of an analysis of the commutes of ETS Advisory Board (ETSAB) members during January to March 2023. Based on the analysis, this report also presents a list of solutions and recommendations to be considered for improving the Edmonton Transit Service stops and transit centres, resulting in an improved customer experience. This report highlights opportunities for improvement based on the experience of ETSAB board members and is not intended to represent a comprehensive review of best practices. This report does provide insight into user experience from our most recent winter and related solutions for the short and long term. To summarize the solutions and recommendations:

- Encourage more integration and communication with city operations that handles Snow and Ice Removal to support cleared pathways near transit stops.
- Heated shelters and, at minimum, non-heated bus shelters be added to bus stops that currently offer no protected waiting area.
- Continue to strive for timeliness and adherence to posted schedules to maximize connections.



Figure 1. Photo of downtown Edmonton taken from an ETS bus stop in winter.

REPORT

Edmonton Winters

As the northernmost metropolis in North America, Edmonton has earned a name for itself as a winter city. Daily-life and activities continue in Edmonton through the winter months every year, along with special events and celebrations that make the most of the season. Edmonton has also received internal commendations and attention for its Winter City Strategy and related documents.

Winter conditions do present challenges for commuting by all modes of transportation. Icy paths obscured by snowfall, windrows that narrow or block off space and low temperatures can be both minor and major obstructions to people's mobility within the city, including posing a risk of major injury¹. This report focuses on people walking and rolling to and from transit stops, who are particularly affected by winter conditions.

Winter coats and boots are essential to get around Edmonton when the temperatures drop below -20 degrees Celsius but still only offer temporary protection from the cold. When we live in a city that receives extreme cold weather warnings with windchill values that will feel as low as -40², every minute counts when we step out the door and are waiting for our train or bus to arrive and hope that we have not missed our connection. If there are delays or a missed connection, the rider may be forced to make a decision to wait for the next vehicle which extends their time outside where there may be no guarantee of finding a warmer shelter while they are waiting.

¹ <https://globalnews.ca/news/8493469/cold-weather-injuries-mental-health-alberta/>

² <https://www.cbc.ca/news/canada/edmonton/extreme-cold-warning-issued-as-freezing-temperatures-grip-edmonton-1.6756316>

Extreme Temperatures



Figure 2. Photo taken from an LRT train crossing the North Saskatchewan River. The temperature that day was below -20 degrees Celsius, and wisps of cold air obscure the view from the LRT.

Unpredictable Pathways

We all tread more carefully when the sidewalks are uneven with snow or that may be hiding a patch of ice that could cause us to slip. Unpredictable pathway conditions are an issue that Edmontonians face, and many 311 reports are imputed each winter to bring attention to them³. For transit users, these uncleared paths impact many parts of the commute. People need to slow down to navigate the path as safely as possible to prevent slipping or losing footing. Those with mobility aids or strollers or shopping trolleys also cannot move as freely as they do on cleared pathways without ice and snow. This slower pace requires the transit rider to use more time to walk to their transit stop while hoping that their connection is on time and is not early or delayed.

Missing a bus or train connection pales in comparison to falling and injuring our bodies. Poorly maintained pathways can cause strained joints, bruising, and more major injuries. Safety of our residents should be a top priority no matter what methods of transportation we choose.

Hence the members of ETSAB wanted to see how our winter commutes would be impacted by some of the obstacles listed above.

Winter Commute Review

At our annual retreat in September 2022, the board chose Winter Mobility and Accessibility as one of the sub-committee topics that would be explored for the upcoming year. We knew that city employees work very hard every year to be as efficient as possible to clear all roads,

³ <https://edmontonjournal.com/news/local-news/snowy-sidewalk-complaints-to-edmonton-311-pile-up-after-first-snowfall>

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pathways, and sidewalks in a timely fashion with the resources they have. We wanted to review first hand information and observations on how these efforts were translating.

Methodology

The sub-committee established what data was within our ability to record and analysed in order to inform the parameters of this project. Because one focus of this review was to observe the accessibility of winter pathways from a regular transit user's perspective, the data that we chose to record should be accessible to the public and empirical. Below are the types of data that we recorded per transit commute:

- Date of Transit Trip
- Time of Day
- Time of the start of the Trip
- Heading to or from a destination
- Length of Trip to transit stop
- Type of Transit Stop
- Temperature during commute
- Whether there was snowfall in the past 24 hours
- Type of commute (work, errand, leisure)
- Overall perception of commute
- Negative Obstacles (obstructed pathway, exposure to cold, uncleared transit stop)
- Positive incidences (cleared pathways, shelter at transit stop, accessible transit stop)
- Photo of Transit Stop

Our timeline for recording our transit trips was roughly 60 days, with the first recorded trip on January 15, 2023 to the last recorded trip of March 9, 2023.

We limited the number of participants to our current advisory board members. While this meant that our scope would be limited with a less representative sample, collecting data from board members ensured a manageable quantity of high-quality data. As board members had reduced their commutes by transit due to workplace changes, we opted to include all transit trips for all purposes rather than just commutes (Attachment 3). One board member was able to observe neighbourhood sidewalks and paths that led to transit stops on their walks to their daycare, and provided information from those commutes.

Limitations

The board members noted at the initial planning stage of this sub-committee that with our parameters and limitations that we would not have as thorough of a review as we would like. Our sub-committee members come from different backgrounds and live in different areas of Edmonton, but would lack the perspective from demographics that we do not overlap with, such as an elder who relies on transit or a shift worker who may not always commute during weekday hours.

Even though we cannot represent all types of transit users and recognize our limits, we still wanted to go forward and record our commutes to give a more detailed review from a group of

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transit users from our latest winter months. We feel that feedback from a rider's perspective from all types of data collection, from 311 submissions to focus groups, can yield helpful information.

City of Edmonton Winter Policies and Procedures

The City of Edmonton received a \$4.7 million boost for Parks and Road Services “to help clear roads faster, and new approaches to snow management will help eliminate windrow and drainage issues that drew complaints from residents last year”⁴. News reports of this boost focus on improvements to snow and ice removal services on roadways, but do mention details with potential positive impacts for pedestrian pathways, such as increased supplies of sandboxes and additional snow collections planned in school zones⁵. Residents depend on community sandboxes along with sidewalk salt to help make ice clearing easier and to reduce slippery conditions, and school zones share space with residential areas.

Snow and Ice Control Policy

The City of Edmonton's Snow and Ice Control Policy states that “the purpose of this policy is to set snow and ice control guidelines that support the following outcomes for Edmontonians⁶:

- Safety: To prevent or reduce collisions, slips, falls and injury to people, and to ensure that emergency responders can reach those that need help.
- Reliability: Edmontonians understand when active pathways and roadways are to be cleared and to what standard they are cleared to.
- Connectivity: Edmonton's snow clearing approach enables Edmontonians to move safely, whether walking, rolling, biking, using transit or driving, through a mobility network of active pathways and roadways.”

These policy outcomes are echoed by many conversations and discussions among Edmonton residents who commute around the city and rely on cleared pathways all year round. Safe commutes that are predictable and can be made with ease are especially vital for elderly residents and young people who may need extra support while getting around. As each winter rolls around, we hope that Parks and Road Services keep these outcomes top of mind as they take on an essential service to Edmontonians.

Snow and Ice Control Procedure

The City of Edmonton Snow and Ice Control Procedure for Active Pathways and Public Amenities Network have inventory adjacent to LRT stations and transit centres such as city maintained sidewalks, wheelchair ramps, share pathways, all season staircases and bus stops listed as their first priority⁷. These listed inventory items are to be maintained to a bare pavement standard within 24 hours following the end of snowfall. While the procedure focuses on the inventory, we hope that the transit centres and LRT stations that have exposed walking surfaces to outdoor elements are also maintained at the same time.

⁴ <https://edmonton.ctvnews.ca/how-edmonton-plans-to-deal-with-snow-and-ice-this-winter-1.6127900>

⁵ <https://edmontonjournal.com/news/local-news/edmonton-will-spend-4-7m-more-clearing-snow-and-ice-this-year>

⁶ City of Edmonton Snow and Ice Control Policy.

https://www.edmonton.ca/sites/default/files/public-files/assets/PDF/Snow-Ice-Control-Policy_C409K.pdf

⁷ https://www.edmonton.ca/sites/default/files/public-files/assets/PDF/Snow-Ice-Control-Procedure_C409K.pdf

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Section 2.4.5 of the procedure states that “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.” It is reassuring to have a section in the procedure that states that these pathways will be monitored.



Figure 3. Photo of residential sidewalk on 107 ave that is uncleared and impacted by snow.

Community Standard Bylaw

City of Edmonton’s Community Standards Bylaw outlines that a person “shall maintain any sidewalk adjacent to land they own or occupy clear of all snow and ice under Property Maintenance”⁸. There is no further explanation in the Community Standards Bylaw in regards to how unobstructed or to what extent the sidewalk needs to be cleared to. This basic expectation could potentially be improved by providing more details on how long a resident has to clear the sidewalks.

311 Reports and Efficiency

Edmontonians are told that they are able to use the 311 app to report areas in the city that need to be addressed. Entries on this app also help notify city operations about areas on active pathways and public amenities that need to be addressed. Residents seem to have an understanding on the presence of the 311 app and its usage, seeing that there were 34 entries

⁸ <https://www.edmonton.ca/sites/default/files/public-files/assets/Bylaws/C14600.pdf>

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submitted about walk complaints in November 2022 after one of the first snowfalls of the winter season⁹. The same article states that “more than 7,900 complaints about snow on walks between November and April” were made during Winter 2021/2022.

The City of Edmonton 311 app is a resource that residents have at hand to help city operations address issues that may have been glossed over or not yet gotten to. Our board members did send 311 requests to address any transit stop and sidewalk issues that they encountered while collecting data.

Walkability and Mobility Goals

Walkable cities are important and tied to many aspects of our livelihoods, as well as a factor in meeting certain city planning goals and climate goals. The City Plan’s section on walking and rolling talks about creating a walkable city that is also enjoyable. “Sidewalks and pedestrian connections, both public and private, are an important part of the pedestrian network and provide both connectivity to everyday needs and a first means of accessing the city-wide pedestrian network.¹⁰”

Consistent and reliable pathways around residential and commercial areas are an accessibility issue and should be top of mind, and seeing the focus on “special consideration will be given to pedestrian thoroughfares that are integrated with recreation facilities, schools, and transit” will hopefully mean that pathways will be continuously maintained and improved as Edmonton continues to grow.

Better infrastructure will not only benefit residents that are currently commuting more by foot, but also show other residents this viable option. When people can see that the pathways are safe and easy to travel on and also hear positive experiences from their peers, that can encourage them to try a different type of commuting.

Winter Transit Commute Data Collection

Within our timeline, we were able to record 68 transit commutes. The Sub-committee members provided qualitative analysis of the gathered data to find emerging patterns in our commutes around the city (Attachment 2).

Observation of Data

Time of Day

The highest percentage of transit trips occur during the morning peak period that is often referred as rush hour, between the hours of 6:00 am to 9:30 am. The next highest percentage of trips were during 3:00 pm to 6:30 pm. Many of our board members have work schedules that reflect weekday office work and therefore our observations showed us how the transit commutes and stops were during peak times of commuting.

⁹<https://edmontonjournal.com/news/local-news/here-are-the-neighbourhoods-with-the-most-snow-on-walk-complaints-this-winter>

¹⁰ The City Plan (2020), pg 117 “Systems and Networks”.

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Figure 4. Photo of a temporary bus stop that one of the board members regularly commuted to.

Commute Length

Our collected data showed that most trips to a transit stop or from a transit stop to the destination was completed in under 10 minutes, with over half of the data reporting a commute time of up to 5 minutes.

Transit Stops

Bus stops were the most common type of transit stop that the board members were boarding or leaving a transit vehicle, accounting for 73% of all stops that we commuted to. The next most common stops were Transit Centres not serviced by the LRT.



Figure 5. Photo of ETS bus stop by 142 st and 104 ave.

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Temperature

The data shows that the reported transit trips occurred most frequently during mild-cold weather (Higher than -10°C), with over half of trips occurring when the temperature is higher than -10°C . This information can be useful for transit providers to plan for weather-related disruptions and identify areas where infrastructure improvements may be necessary to provide better shelter for users during extreme weather.

User Experience

When asked to rank their commute with 1 being a negative experience and 5 being a positive experience, the majority of the recorded commutes were ranked positively, with 85% rating their experience as a 4 or 5 out of 5. For trips that were ranked more positive, the most common recorded details that made their commute positive were commute lengths that were not too long, that the transit stop was accessible and there were no winter obstacles, and the pathways to the stop were accessible. These factors align well with the City of Edmonton Snow and Ice Policy outcomes of safety, reliability, and connectivity. As transit riders, being able to rely on obstacle-free commutes and transit boarding spaces will influence our transit experience.

Conversely, commutes that were ranked more negative were said to have pathways that were difficult to traverse and lack of heating or shelter from the weather at the transit stop. We have observed that length of exposure to the winter weather has an impact on the transit experience. A longer commute could still be a positive experience if the transit stop has the infrastructure to offer comfort and reprieve from the low temperatures that day.



Figure 6. Photo of an intersection with snow and ice creating a difficult obstacle to cross while on foot.

Recommendations

- 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

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Edmonton Transit System is separate from the area of city operations that clears sidewalks and paths, but encourages more integration and communication to support cleared pathways that are near transit stops.

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

Conclusion

Every resident in the city of Edmonton is hardworking and has places to be at all times of the year, and being able to commute safely especially in the wintertime should always be essential. Residents who rely on transit or other non-vehicular modes of transportation should receive the same level of attention to their pathways that drivers receive for the roads.

We want transit users to be able to worry less about how their commute might be that day so that their energy and focus can be on more important things going on in their lives. Our main goal with this report and review is to provide feedback from a resident's point of view over a timeframe to identify short term and long term occurrences as they ride transit. The biggest takeaway from our data analysis is that winter commutes could be improved with the inclusion of infrastructure that will provide shelter from the cold. These additions are already showing up at transit centres and we hope that more can be built and utilized to help keep transit users more comfortable in the coming years.

ATTACHMENTS

1. Collected Data from the Winter Mobility and Accessibility Sub-committee During January to March 2023
2. Analysis of Collected Data
3. Overview of Winter 2022-2023 Commutes from ETSAB Board Members

OTHERS REVIEWING THIS REPORT

- Craig McKeown, Branch Manager, Parks and Roads Services
- Carrie Hotton-MacDonald, Branch Manager, Edmonton Transit Service