

COMPLETE STREETS DESIGN AND CONSTRUCTION STANDARDS

Pedestrian Through Zones

RECOMMENDATION

That the August 9, 2022, Integrated Infrastructure Services report IIS01193, be received for information.

Requested Council Action		Information only	
ConnectEdmonton's Guiding Principle		ConnectEdmonton Strategic Goals	
CONNECTED This unifies our work as we work to achieve our strategic goals.		Healthy City	
City Plan Values	ACCESS		
City Plan Big City Move(s)	Inclusive and compassionate	Relationship to Council's Strategic Priorities	Mobility Network
Corporate Business Plan	Serving Edmontonians		
Council Policy, Program or Project Relationships	<ul style="list-style-type: none">• C602 - Accessibility for People with Disabilities• C573A - Complete Streets• Complete Streets Design and Construction Standards Safe Mobility Strategy (2021-2025)• Safe Mobility Strategy (2021-2025)• Safe Crossings Program		
Related Council Discussions	<ul style="list-style-type: none">• UPE CR_7889 The Bike Plan Implementation guide• UPE00491 Mobility Network Assessment		

Previous Council/Committee Action

The following motion was passed at the March 14, 2022 City Council Meeting:

COMPLETE STREETS DESIGN AND CONSTRUCTION STANDARDS - Pedestrian Through Zones

That Administration provide a report on expanding the use of pedestrian through zones as identified in the Complete Streets Design and Construction Standards to enhance accessibility in our City. This report is to include the following:

1. An overview of how expanded pedestrian through zones and accessibility enhancements are currently considered as part of improvements to our mobility network.
2. An analysis of where increased use of pedestrian through zone enhancements would have the greatest impact (including GBA+ considerations).
3. An analysis of any impacts, considerations, and costs associated with an increased application of pedestrian through zones (drainage, maintenance, etc).

Executive Summary

- The term “pedestrian through zone” describes an area that prioritizes active modes of transportation, focusing on mobility for people of all ages and abilities.
- Pedestrian through zones are outlined in the Complete Streets Design and Construction Standards and include raised and continuous crossings.
- Enhanced crossings and a focus on pedestrian through zones are implemented throughout the city as part of new developments and with upgrades to existing infrastructure.
- Based on their impact on livability both now and in the future, areas where improved pedestrian through zones may have the greatest impact include primary and secondary corridors identified in The City Plan. These locations are often distinguished as vibrant streets that serve as critical connections and/or destinations for surrounding communities.
- Improved pedestrian through zones can also have a significant impact along neighbourhood streets with high pedestrian use.
- Impacts and constraints associated with the implementation of pedestrian through zones vary based on the type of infrastructure installed and are described in more detail in this report.
- Improved pedestrian through zones support key directions from The City Plan and Safe Mobility Strategy by providing safe streets and crossings that appropriately serve the context of the area.

REPORT

At the March 14, 2022, City Council meeting, a motion was passed requesting information related to the expanded use of pedestrian through zones throughout the City. This report outlines how Administration currently uses these zones within the context of new subdivisions and projects where upgrades are being made to existing infrastructure and how their use will be expanded to enhance accessibility across Edmonton. The report also describes the considerations and costs associated with installing enhanced pedestrian through zones, in addition to the context in which they have the greatest impact.

Overview of Current Pedestrian Through Zone Policies and Standards

The City of Edmonton's Complete Street Design and Construction Standards (Complete Streets Standards) were originally published in 2018 with a focus on amalgamating various guiding documents, including the Complete Streets Guidelines, the 2015 Roadway Design and Construction Standards, Universal Design Guidelines, and the Main Streets Guidelines. This document was developed with a strong focus on urban design for all users, especially active modes.

The City Plan outlines that expanding the way Edmontonians move can connect them to each other faster and easier, with a goal for half of the collective daily trips to be by cycling, transit and walking. Safe and livable streets are essential to support the vibrant, thriving, resilient and healthy city which The City Plan strives to create. Safe crossings connect Edmontonians to each other and to their community, and, as a key action in the Safe Mobility Strategy (2021-2025), the Safe Crossings Program helps to ensure everyone has equitable access to safe crossing locations.

Pedestrian through zones is one tool the City uses to support safe, convenient, and comfortable crossings. The term "pedestrian through zone" describes an area that prioritizes active transportation modes with a focus on mobility for people of all ages and abilities. Improving pedestrian through zones ensures that the safety and experience of people walking and cycling is prioritized by taking into consideration the context of the surrounding area. Typically reserved for people walking and wheeling, in some cases, this area can be shared with people cycling and may include separated and defined areas for people moving in different ways.

Pedestrian through zones are outlined in the Complete Streets Standards and are categorized into two types: raised crossings and continuous crossings. To help visualize the two types of infrastructure, images are included in Attachment 1.

Raised Crossings

Raised crossings include a vertical incline that raises the road to meet the height of a crosswalk (which may be lower in height than the sidewalk), creating a consistent level surface for crossing. Raised crossings consist of two ramps and a flat pedestrian or cyclist crossing surface.

Raised crossings improve pedestrian and cyclist safety. The vertical deflection requires drivers to be more cautious as they approach the crossing by slowing them down. This, in turn, increases yielding to people crossing and encourages slower travel speeds along a corridor, particularly when combined with other traffic calming measures. This gives drivers a longer reaction time and results in reduced collision severity, should a collision occur.

Raised crossings also have a beneficial effect on accessibility and comfort for people crossing. Raising the crossing reduces the amount of water, snow, and slush accumulation that often blocks curb ramps and alleviates the discomfort of navigating multiple ramps and gutters.

More than 70 raised crossings have been installed in Edmonton, largely in neighbourhood settings. Three main types of crossings fall under raised crossings:

- **Raised mid-block crossings:** The approaching road is raised up to the level of the mid-block pedestrian crossing.

COMPLETE STREETS DESIGN AND CONSTRUCTION STANDARDS - Pedestrian Through Zones

- **Raised crosswalks at an intersection:** Similar to a raised crosswalk in terms of the required infrastructure to be constructed, though located at intersections. These work best when installed in areas with a boulevard or other offset (such as an area for street furniture between the vehicle zone and active mode infrastructure).
- **Raised intersections:** a raised intersection means that ramps are provided on each approach to the intersection, and the entire intersection and crosswalks are elevated to the level of the sidewalk. They can be constructed with a variety of materials such as asphalt, concrete, or pavers. Special consideration is given to help sight impaired users to detect the curb edge by delineating the crossings through the use of Tactile Walking Surface Indicators (tactile warnings).

Continuous Crossings

Continuous crossings create an environment where the pedestrian experience is continuous and drivers must temporarily cross through the pedestrian space. Aside from tactile warnings on either side of the crossing for visually impaired people, continuous sidewalks look and feel like uninterrupted space. These continuous crossings act as a gateway treatment to indicate a change in roadway priority (i.e. arterial to collector or collector to local) and that the onus is on turning motorists to exercise caution and attention as they are driving through a pedestrian space.

Continuous crossings prioritize the experience of pedestrians and cyclists over vehicles moving along main roads in high activity areas. This is accomplished by using visual cues, including material transitions and bringing the driving surface up to the walking surface to warn drivers that they are entering a lower speed and lower vehicle volume area. The continuous crossing includes the uninterrupted continuation of the sidewalk (and consistent material/surface treatment) through the intersection, clearly identifying the pedestrian area over the roadway area.

Example images of raised and continuous crossings are included in Attachment 1. Both types of crossings are being implemented more frequently throughout Edmonton, either at the early greenfield development stages, during major reconstruction/renewal work, or at high priority locations.

Neighbourhood Planning and New Communities

Neighbourhood Structure Plans (NSPs) often identify priority pedestrian crossing points, with such locations shown on the active modes circulation plan. Modern NSPs indicate that additional crossing treatments, such as curb extensions, raised crosswalks or other treatments as outlined in the Complete Streets Design and Construction Standards should be implemented at priority crossing locations and that design specifics will be determined at the subdivision. The practice of identifying these priority pedestrian crossing locations in the NSP has become more robust over time and is clearly considered and shown in the most recently approved NSPs.

Transportation Impact Assessments completed for NSPs include a review of the active modes network in the plan area. The review takes into account a mix of pedestrian and cycling facilities including shared-use paths, bicycle facilities, multi-modal priority crossings and facilities in proximity to stormwater management facilities and open space, in addition to walkways within

COMPLETE STREETS DESIGN AND CONSTRUCTION STANDARDS - Pedestrian Through Zones

road, pipeline, or LRT corridor rights-of-way. The network is expected to provide strong connectivity to transit, parks, commercial and employment land uses, and any school site(s) within the neighbourhood, and opportunities for a logical network extension to adjacent neighbourhoods.

Subdivision Planning and Design

Pedestrian through zones are incorporated as part of subdivision planning and design work in the City of Edmonton. In greenfield construction, the continuity of pedestrian through zones without interruption has been accomplished by:

- Designing the street-oriented residential areas in such a way that vehicular access is typically from side streets or rear alleys instead of front driveways to create an uninterrupted pedestrian through zone.
- Using curb extensions, raised crosswalks and combinations of both to provide motorists with visual and geometric cues to slow down while providing pedestrians with a continuous walking and wheeling corridor at midblock crossings. Curb extensions or bulb-outs extend the curb toward the travelled way at intersections and midblock crossings.

Existing Infrastructure Upgrades

Where existing infrastructure is being upgraded, pedestrian through zone designs and mobility enhancements are reviewed as per the Design, Tradeoffs, and Evaluation process of the Complete Streets Design and Construction Standards. The design process for upgrading existing infrastructure poses many challenges that are not encountered in growth or greenfield projects. When upgrading existing infrastructure designs must consider the location of existing buildings, mature trees, utility infrastructure, private landscaping within public right of way, and numerous other constraints within an existing right-of-way. These constraints must be addressed, while considering the needs of all street users and incorporating input through public engagement. Strategic compromises and trade-offs may need to be made to balance technical feasibility, costs and other constraints. There may be instances in such situations where it is not feasible or possible to completely align with the requirements of these standards.

During neighbourhood renewal, a review of the walking network within a community is typically done to identify higher-use pedestrian corridors to consider the strategic application of mobility enhancements. Priority areas that are reviewed include bus routes, commercial areas, schools, multi-family housing, seniors centres, community leagues, centres serving people with reduced mobility and recreational and park spaces. Some traffic calming measures, such as raised crosswalks, contribute to the outcomes desired from mobility enhancements and complement each other in certain applications within the neighbourhood context. Administration also coordinates with utility providers to relocate infrastructure out of the pedestrian through zone, allowing for a clearer space for people who walk.

Existing accesses are also reviewed during infrastructure renewal activities to determine how effective the existing pedestrian through zones are, particularly where there are existing vehicular driveways that interrupt sidewalk mobility and opportunities for rear access.

Greatest Impact for Pedestrian Through Zones

An analysis was completed to determine where increased use of pedestrian through zones would have the greatest impact on livability. The prioritization of these locations is based on the same principles used for the Safe Crossings program, which are centered around Equity, Lived Experience, Current State and Future State.

Based on the analysis completed, improved pedestrian through zones are most impactful in areas that align with some or many of the priority factors noted below:

- Areas that provide access to essential services (schools, playgrounds, senior centres, or medical care facilities).
- Areas with stronger community reliance on transit as a primary means of transportation.
- Locations that Edmontonians have flagged for the City as a concern via telephone, email, or inquiries to 311.
- Areas with consideration of potential safety risks for people at any given crossing, in particular locations with demonstrated safety concerns.
- Evaluation of location-specific crash history and the number of people walking, cycling, driving and using mobility aids.
- Consideration of predicted population increases to evaluate increased demand and proactive prioritization of safety upgrades.

An important factor was identifying crossing areas that fall within or along the City's primary and secondary corridors (vibrant urban residential and commercial streets) as defined in The City Plan. These are commonly vibrant streets that serve as critical connections and/or destinations for surrounding communities. Improved pedestrian through zones can also have a significant impact along neighbourhood streets with high pedestrian use.

While the principles used to prioritize locations for raised crossings and continuous crossings are similar, there are some differences in the prioritization process due to the design considerations of locations that would benefit from each measure. The main differences between continuous sidewalks and raised crossings are the road type and the surrounding land use. Raised crossings are used at locations with lower traffic volumes with narrower cross-sections and are typically considered on local and collector roads. Raised crossings can be more easily installed and can be used standalone or as part of a series of traffic calming measures in a community. Continuous sidewalks, however, are typically recommended along major commercial corridors, which act as major destination areas for people walking and cycling. They are also typically implemented along entire corridors to maintain a consistent experience for people driving, walking and cycling. Given this, the possible locations for each type of treatment will be different. Beginning in 2023, raised crossings are one of the new tools that will be included in the Safe Crossings program which prioritizes locations for safety upgrades.

Due to the design considerations of continuous crossings, work is currently underway to update the Complete Street Design and Construction Standards to provide additional guidance around the implementation of this type of infrastructure.

Impacts and Considerations

There are a wide array of benefits that result from the application of enhanced pedestrian through zone treatments, including enhanced mobility for people of all ages and abilities, improved safety for vulnerable road users, and enriched user experience. At the same time, there are impacts and considerations with the implementation of pedestrian through zones to take into account in the location selection and design process. The following list covers some of the common impacts and considerations when selecting the location of and designing raised or continuous crossings:

- **Grades/Geometric Design Factors:** Roadway geometry considerations, including intersection configurations, accesses or grades (slopes) of roadways.
- **Land Use Context:** Land use context influences the look and feel of a street and plays into the type of infrastructure that is effective and appropriate.
- **Drainage:** Ensuring roadway drainage can be collected effectively and efficiently to avoid pooling or flooding.
- **Operations:** Adding raised or continuous sidewalks requires consideration of snow removal or snow clearing requirements.
- **Traffic Speeds:** Posted and design speed limits greatly influence the type of infrastructure to be installed.
- **Traffic Volumes:** Amount of daily road traffic.
- **Traffic Calming:** Raised or continuous crossings should be incorporated with other traffic calming measures for the greatest effectiveness.
- **On-street Parking:** Sometimes, adding raised or continuous sidewalks can contribute to a reduction of parking.
- **Emergency Response Routes:** Raised crossings can impact emergency response times and require careful consideration when selecting locations.
- **Transit:** Raised crossings may reduce service efficiency and have negative impacts on the longevity of transit vehicles as well as passenger safety and comfort.
- **Heavy Vehicles:** Raised crossings may not be suitable for routes that are frequently used by heavy vehicles and goods movement.
- **Vehicle Control (controlled, uncontrolled):** Priority to all modes should be clearly identified at intersections.
- **Pedestrian and Cycling Control:** Existing or planned pedestrian and cycling facilities should be identified and integrated into the design of raised crossings.

More detail on each consideration can be found in Attachment 2.

Budget/Financial Implications

Improved pedestrian through zones or enhanced pedestrian crossings are commonly considered and incorporated as part of routine neighbourhood renewal or arterial renewal projects. Other projects, such as streetscapes, often also include consideration of enhancements of this nature. In new or greenfield developments these types of enhancements may be paid for by developers if identified during the Neighbourhood Structure Planning phase.

COMPLETE STREETS DESIGN AND CONSTRUCTION STANDARDS - Pedestrian Through Zones

Locations that are not identified for renewal require separate funding to undertake enhancements of this nature. The costs of improvements can vary greatly by location, the number of installations, if it can be tied to an adjacent capital project and the type of infrastructure.

COMMUNITY INSIGHT

Feedback from Edmontonians has significantly influenced the City's policies and guidelines that are in place to shape infrastructure projects, including The City Plan, the Safe Mobility Strategy, the Complete Streets Guidelines and the Accessibility for People with Disabilities Policy C602. Administration continues to listen to and engage with the public and varied community stakeholders during the different phases of a capital project including planning, design and construction. The feedback gathered through the engagement process helps Administration adjust designs and mitigate any potential impacts to reflect the needs of Edmontonians. The results from these engagement initiatives are shared with Council and with the public on the City's website as they become available.

GBA+

Gender Based Analysis Plus (GBA+) considerations are important factors in the planning and design of City infrastructure projects. As an example, GBA+ factors, such as universal accessibility, have influenced the City's Complete Streets standards and Accessibility for People with Disabilities Policy which play an important part in how the City's infrastructure is designed.

As projects advance, public engagement is also a critical factor in influencing how projects are planned and designed for those who use or wish to use City infrastructure. Detailed GBA+ analysis for Edmonton's transportation infrastructure projects is commonly initiated during the planning and design phases of a project. GBA+ analysis is conducted to identify stakeholders through the development of public engagement plans and identify meaningful ways of connecting with those stakeholders to gather input that will help shape the plans and designs. The process supports Administration in identifying any stakeholders who may be interested or impacted by the project and those who may be less likely to participate in traditional engagement methods.

The input gathered often leads to the incorporation of equity measures that enhance the accessibility and usability of Edmonton's transportation infrastructure. Such measures include examples such as universal accessibility enhancements, including the widening of active mode infrastructure, enhanced pedestrian through zones, and the addition of accessibility ramps to enhance mobility for all users.

ATTACHMENTS

1. Examples of Infrastructure
2. Key Impacts and Considerations