

Calgary



# STEP FORWARD

A strategic plan for improving walking in Calgary

Transportation Department  
August 2016  
[calgary.ca/pedestrianstrategy](http://calgary.ca/pedestrianstrategy)



# Message from Mac Logan

## General Manager of Transportation

The Calgary Transportation Plan, adopted in 2009, declared a new, more integrated direction for the planning and development of transportation infrastructure in Calgary. Since then, The City has developed new policies and strategies to support transit (RouteAhead), cyclists (Cycling Strategy) and the development of streets that accommodate all users (Complete Streets Guide). Today, STEP FORWARD provides another layer of transportation sustainability. I am extremely proud of the team and the collaborative approach they took to craft this essential strategy with stakeholders. They have developed a plan to create a safer, more inviting and better maintained realm for pedestrians.

Walking finds its way into all trips. Attracting more and longer walking trips will help us become a more environmentally and economically sustainable city. It will also help our citizens be healthier and spend less on transportation.

Walking is inclusive. It is available to all, including young and old Calgarians alike. Investments in pedestrian network development and maintenance makes our communities more walkable which supports local business and strengthens the social fabric of our neighbourhoods.

Supporting walking today involves the coordination of a number of City departments and outside partners. I am thrilled that STEP FORWARD includes an action plan that will



involve the right players to deliver tangible improvements to our pedestrian network. Together these actions represent a real difference and will mean better walking opportunities for Calgarians.

Whether you walk as part of your commute, to get to shops or services or just as a fun and enjoyable part of an active lifestyle, you will see significant change over the next decade as we pursue this plan to improve walking in Calgary.

Please join us in making Calgary an even better place to live and make a living.

Sincerely,

**Malcolm Logan**

General Manager, Transportation



# Letter of endorsement

## Pedestrian Strategy Steering Committee Letter of Endorsement

March 15, 2016

Dear Pedestrian Strategy Project Team,

We, the Steering Committee, endorse the Step Forward Pedestrian Strategy, including the supporting report TT2016-0250 and its recommendations.

We, the committee members, were happy to serve on this project's steering committee and support the project's aims of:

- Improving pedestrian safety, reducing pedestrian-vehicle collisions, providing universal accessibility.
- Improving the quality and experience of the pedestrian realm, promoting a culture of walking.
- Furthering walking as a safe, convenient and viable year-round travel option for more Calgarians.

After having reviewed the final recommendations of TT2016-0250, the Steering Committee is confident that through its 49 approved actions the strategy will make significant progress on: reducing pedestrian casualties; more people walking; better winter walking conditions; more walkable communities; more children walking to school; and higher public confidence in the pedestrian system.

We are pleased to have had the opportunity to contribute to this strategy by offering what we know about the conditions that are needed to improve pedestrian safety, community health and foster a vibrant and liveable city. We are confident that Step Forward will improve walking for all Calgarians.

Sincerely,

**Joe Olson**

Acting Steering Committee Chair  
Manager Liveable Streets Division  
Transportation Planning

**Cllr. Diane Colley-Urquhart**

The City of Calgary – Ward 13

**Cllr. Evan Woolley**

The City of Calgary – Ward 8

**Cllr. Druh Farrell**

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**Jeff Chase**

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**John Bolger**

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**Troy McLeod**

The City of Calgary – Roads

**Paul Stacey**

Calgary Police Service

**Graham Matsalla**

Alberta Health Services

**Greg Hart**

Safer Calgary



# Executive summary

## Purpose

In 2009, Calgary adopted a Municipal Development Plan (MDP) and Calgary Transportation Plan (CTP) that set a new direction for planning and building our transportation system. These plans emphasize Calgarians' desire to build a city that is more economically, socially and environmentally sustainable.

The City of Calgary has adopted a series of strategy documents to guide this change. We have strategies to improve street design for all modes (Complete Streets Guide), grow transit service and the transit network (RouteAhead), and increase cycling safety and infrastructure (Cycling Strategy).

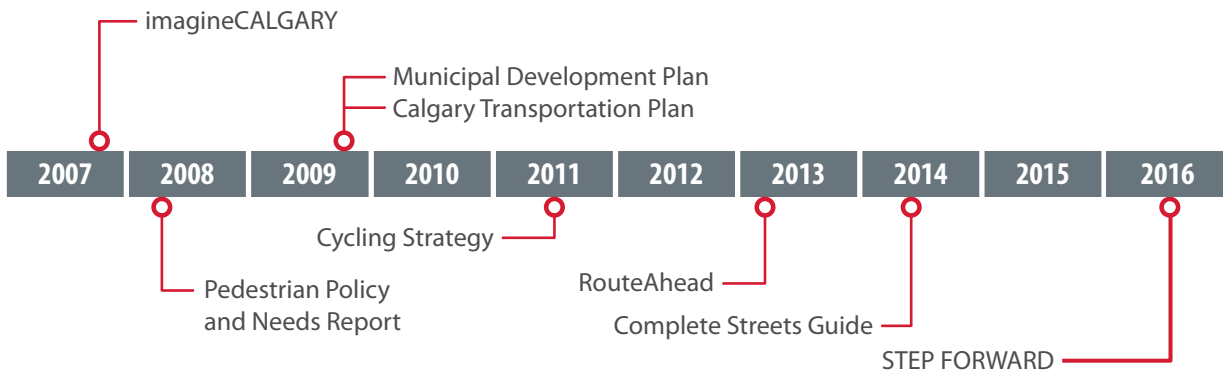
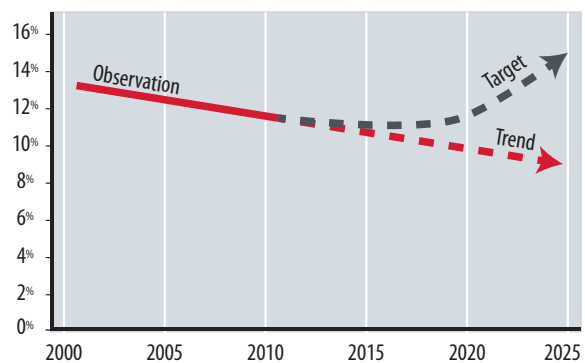
Although various City documents, policies, guidelines and programs include the pedestrian realm as a key part of their subject matter, no one document focuses specifically on how to satisfy the needs of pedestrians. STEP FORWARD has been created to fill that gap. This document lays out a vision for a safe, walkable Calgary, and

provides a plan of 49 concrete actions to lead us towards that vision.

The walking mode share in Calgary has been in decline for a long time. From 2001 to 2011, the walking mode share for all day, all purpose trips city-wide fell from 13.2 per cent to 11.7 per cent. One goal of STEP FORWARD is to increase the walking mode share to 15 per cent by 2025.

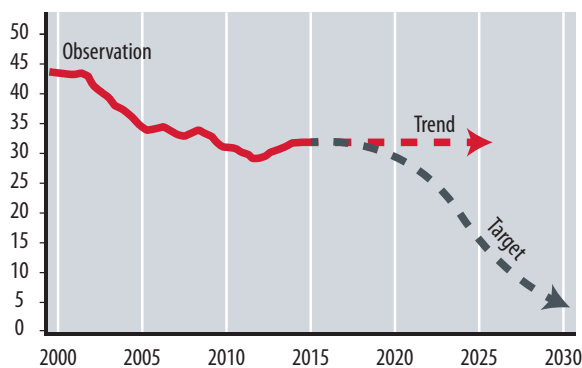
### Percentage of walking trips in Calgary

Mode share for all trips, city wide, all day.

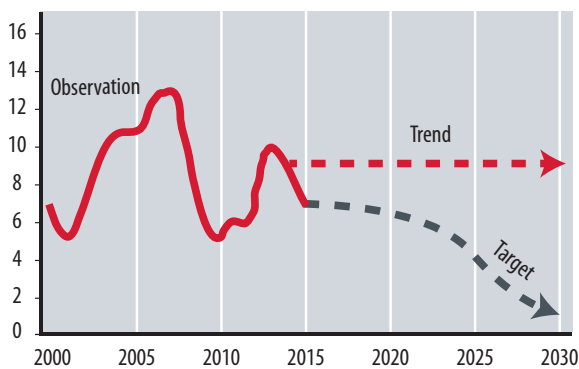


Over the past decade, the pedestrian collision rate (injuries and fatalities combined) has averaged 30 collisions per year per 100,000 population, with between six and 12 fatalities per year. Since no collisions or fatalities are acceptable, another goal of STEP FORWARD is to achieve significant reductions in collisions and fatalities by 2025 with a long term goal of eliminating them entirely. (See page 66 for a further discussion of Vision Zero.)

### Pedestrian casualty collisions per 100,000 population



### Number of pedestrian fatality collisions



## Methods

In order to better understand attitudes around walking, we conducted a telephone survey of Calgarians and an extensive consultation program with three streams of public engagement. These included in-person discussions, an online forum and a review of the engagement results of the Main Streets project, which engaged people on similar issues. Overall, we had 1,000 interactions with Calgarians about their opinions related to walking.

We found that most Calgarians do walk at least occasionally, however the walking network does not always feel safe, enjoyable and easy to use. While people do sometimes walk despite these barriers, many agreed that improving the network and experience would lead them to walk more.

In order to develop a list of possible actions to improve walking in Calgary, we had a lot of conversations through:

- Brainstorming sessions with City departments to address known issues.
- Dialogue on pedestrian needs with local experts like Safer Calgary and Alberta Health Services.
- Direct engagement with the public, to clarify both areas of concern and ideas for improvements.
- Review of guiding principles and lessons learned from other cities to see if they would be of benefit in Calgary.



An initial list of over 200 potential City actions was developed. The list of potential actions was then prioritized to ensure the City’s focus will be on high-value, feasible actions that will have a significant impact on walkability or pedestrian safety.

## Results

The result is a list of 49 key actions organized into three time frames, as listed below.

We worked closely with the affected internal business units to develop high-level (order of magnitude) cost estimates for all 49 actions.

Based on the estimates provided, the total capital costs for STEP FORWARD were developed, as summarized in Table 1 (next page).

In the short term, capital costs of \$3.5 million for 2016, \$4.75 million for 2017 and \$4.75 million for 2018 and an associated annual operating cost of \$2.5 million (additional maintenance and staffing costs) has been identified to deliver on the key short term actions. (See page 55 for detailed breakdown of supported actions.)

Four dedicated Transportation Planning staff are required to carry out the actions in STEP FORWARD. Two engineers and five field staff

### Immediate actions 2016 – 2018

Focus on actions with immediate and noticeable impact in the **short term**, particularly around pedestrian safety:

- Build more Rectangular Rapid Flashing Beacons (RRFBs).
- Expand Active and Safe Routes to School Programs.
- Pilot new techniques to reduce pedestrian/vehicle conflicts at intersections.
- And 18 other key actions.

### Instigate change 2019 – 2022

Make significant improvements to the connectivity and accessibility of the network in the **medium term**:

- Build missing links in the sidewalk network.
- Review and improve pedestrian facilities in transit station areas.
- Build midblock crossings in high use areas.
- And 19 other key actions.

### Transformation to a walkable city beyond 2022

Advance projects in the **long term** that, while costly relative to other pedestrian improvements, do the most to promote walking and walkability in Calgary:

- Improve the walking environment on the priority Main Streets corridors.
- Build new high-value pedestrian under/over passes and bridges.
- Embed walking principles in community design and development review.
- And three other key actions.

in Roads are required to deliver and maintain the additional pavement markings, signs, and crossing controls identified in STEP FORWARD.

The Pedestrian Strategy Coordinator will serve as a key conduit between The City and other agencies and organizations that have a mandate to improve walking in Calgary. They will collaborate with these partners on the development and delivery of campaigns to promote walking and active and healthy living and work with BRZs, advocacy and community groups to ensure strong public support for pedestrian initiatives.

STEP FORWARD also includes a monitoring program to measure the cumulative impact of the 49 actions and supporting collaborations. The results reflect the goals we are trying to achieve rather than the methods being used to achieve them.

For STEP FORWARD, we will be looking for the following key results:

1. More people walking.
2. Fewer pedestrian injuries and deaths.
3. Better winter conditions for walking.
4. More walkable communities.
5. More children walking to school.
6. High public confidence in our pedestrian system.

Pages 64-70 provide specific information for each key result on where we are today, historic trends (if available), and the direction we want to go in the future. We have also identified the key partners that are critical to our success on each measure and the most important actions we can take to promote change. The Pedestrian Strategy Coordinator will report back to Council and Calgarians on progress and the latest trends every one to two years.

Table 1: Capital funding requirement summary

FOCUS AREA	SHORT TERM*	MEDIUM TERM	LONG TERM
	Current budget cycle	Next budget cycle	Subsequent budget cycles
Safety	\$8,200,000	\$6,000,000	\$6,000,000
Plan, design, construct	\$4,600,000	\$12,000,000	\$34,000,000
Operations and maintenance		\$1,500,000	
Education and encouragement	\$200,000	\$500,000	
<b>Total</b>	<b>\$13,000,000</b>	<b>\$20,000,000</b>	<b>\$40,000,000</b>

\* Short-term covers 2016, 2017 and 2018

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# A vision for 2025

Come for a walk through Calgary in 2025. You'll be surprised how comfortable a big city can be for the many who choose to walk it each day. We have a safe, enjoyable and easy-to-use network that encourages people to walk. It connects Calgarians to places they love and draws visitors from across the globe. Calgary, despite its size, has embraced a culture of walking and, as a result, we are a happier, healthier and more prosperous city.

For one thing, safety has been improved for those who walk – the most vulnerable users of our roads. Since we reduced the speed limit in

*“These days, there are so many fun and inviting places to walk!”*



residential areas, the number and severity of pedestrian-vehicle collisions has dropped. Better crossings for larger streets have reduced conflicts and made roadways a more comfortable place for everyone. And thanks to a great collaboration between The City, parents' groups, health care providers and schools, more kids are walking to school than we've seen in decades.



These days, there are so many fun and inviting places to walk! Our park and river pathway networks have grown, and new connections into communities ensure you don't have to drive to enjoy these great facilities. We've continued to invest in the Centre City – the social and economic heart of Calgary – and we've improved the walking experience in a number of our "main street" areas, creating great places to shop, stroll and enjoy vibrant street life.

Wherever you walk in Calgary, you will find a network that is well maintained and easy to use. Citizens, businesses and The City each do their part to ensure sidewalks are cleared of snow and



ice. Improved maintenance of broken sidewalks, along with ongoing efforts to add wheelchair ramps, urban braille and audible signals, helps make the city accessible to all Calgarians. Wayfinding and online tools help residents and visitors alike to explore the city on foot.

As a result of these efforts, 15 per cent of all trips in Calgary are now walking trips. That represents about a 20 per cent increase over the past decade. Our investments have led to healthier lifestyles, a more sustainable city and a stronger community fabric.

Just think how far we have come since the pedestrian strategy was first adopted by The City back in 2016! It was an important step forward: co-ordinating efforts, encouraging change and starting a conversation about walking in Calgary that continues to this day.

*“Our investments have led to healthier lifestyles, a more sustainable city and a stronger community fabric.”*

## What is walkability?

*“Streets and their sidewalks – the main public places of a city – are its most vital organs.”*

*~ Jane Jacobs, 1961*

When Jane Jacobs was writing in the early 1960s, cities across North America were undergoing an unprecedented change in how they looked, felt and operated, with widespread adoption of the automobile as the primary way of getting around. As more people began driving, our buildings and development patterns changed to suit the vehicle rather than the person. Huge parking lots proliferated. Sidewalks narrowed, and in some cases disappeared. Prioritization of car movement at the expense of other travel modes has had impacts that go beyond mobility alone.

How we interact with each other has fundamentally changed. The car makes it possible to wake up in the morning, get in your car, go to work and return without ever setting foot outside. If our streets are the organs that sustain a city, is Calgary a healthy city?

Walkability is more than mobility. It is more than providing people the ability to walk. Walkability allows people of all ages and physical abilities to experience a city and interact in a meaningful way.<sup>1</sup> It provides a balance between movement and place, allowing people to get from point A to point B, but also giving them the physical space to stop, experience and interact with one another. Walkability is about equality. It ensures that people of all means can walk to get where they need to go.

Change is on the horizon though. As the negative aspects of building our cities to favour the car have become apparent (pollution, cost, congestion, safety issues), people are increasingly demanding change. Cities that have invested heavily in walkability and the public realm have been found to attract and retain new residents that choose the city first, then their career.<sup>2</sup> Designing with walking in mind enhances quality of life by creating complete communities that do not require travelling great distances to meet ones daily needs.

### Key principles of walkability

A focus on walkability can mean different things when designing a community, a building, a streetscape or a park. In general, the following key principles can be applied to projects of any scale to ensure that people who walk are well served:

- Create direct, simple connections to nearby destinations.
- Create well-designed, interesting spaces to walk in.
- Consider scale and make sure spaces, street blocks, etc. are the right size for people to use (not too big or too small).
- Start with people and where they want to walk and put parking, loading and storage out of people’s way.
- Manage conflict between users rather than blocking off pedestrians.
- Match feelings of safety to actual safety.



This section of Bute Street at Haro Street in Vancouver is at the high end of the walkability spectrum.

The vision of Calgary in 2025 presented here is about building a city that is inherently walkable. This does not involve harkening back to an era before cars. Cars are and will continue to be an important means of getting around the city. The actions included within this strategy are incremental changes that will provide the balance between auto mobility and placemaking that has been lost over time.

This will take a lot of time and effort. In many cases, we must start with providing people the ability to walk safely from one place to another. We must ensure that transit users can get to their destination after they get off the bus. These investments are the building blocks of a walkable city. Over time, the focus can shift to constructing streets that are places people want to be, revising land use patterns to provide desirable mixes, and building complete communities with homes, stores and offices that interact with the street, rather than turning their back to it.

As we invest in turning spaces into places, walking becomes a means of experiencing more and more of the city. This will in turn have economic, health, social and environmental benefits that far exceed the costs. In the success of our very own East Village we see these principles at work.<sup>3</sup> We have a lot of work ahead of us. Let's get started!

*“The General Theory of walkability explains how, to be favoured, a walk has to satisfy four main conditions: it must be useful, safe, comfortable and interesting”*

*~ Jeff Speck, Walkable City, 2012*



# Where are we now?

The first step in establishing a strategy is to look at the current conditions and figure out what needs to change in order to get a better result. For STEP FORWARD, we carefully reviewed all the current information on walking in Calgary, evaluated today's pedestrian network and programs, asked Calgarians about their needs and desires, and investigated the potential benefits of increasing how much we walk.

## A bit of history

Calgary has some great places for walking. We have vibrant retail streets, beautiful parks and an extensive network of pathways. Some older parts of the city provide a fine-grained network of narrow tree-lined streets. These areas are built

with short blocks that offer lots of route choices. The buildings face the street rather than being hidden behind garages, driveways and parking lots. This style of streetscape is left over from a time when walking played a more prominent role in people's everyday lives. Recently, some development, redevelopment and business revitalization has created new, walkable areas in other locations across the city.

The problem facing Calgary is that highly walkable places represent a small part of the city. Calgary has seen periods of rapid growth, primarily near its edges. Over time, standards were adjusted to focus on automobile use, with increased lot yields and more cul-de-sacs. As a result, new residential subdivisions became less



A low speed, tree-lined street in Calgary.

pedestrian friendly, with fewer sidewalks, fewer trees and fewer destinations within walking distance of homes. The lack of neighbourhood destinations and an unpleasant walking environment has led to a city where people rely on cars for almost every trip they make – and the large infrastructure price tag that comes with it.

In 1995 and 1996 Calgary adopted the GoPlan and the Calgary Plan respectively, which identified that a fundamental change was required in the land use pattern of the city to influence travel behaviour. Follow-on policy work increased community density minimums and introduced the concept of neighbourhood nodes.

In 2009, Calgary adopted a new Municipal Development Plan (MDP) and Calgary Transportation Plan (CTP) that set a new direction for planning and building our transportation system. These new plans emphasize Calgarians'

desire to build a city that is more economically, socially and environmentally sustainable.

Policies and plans developed after the approval of the CTP and MDP have begun to transform the way we build our city and how we move around it. See **Appendix 4** for a list of all City policies, strategies and guidelines relating to pedestrians and the pedestrian experience. We have strategies to improve street design for all modes (Complete Streets Guide), grow transit service and the transit network (RouteAhead), and increase cycling safety and infrastructure (Cycling Strategy). Although various City documents, policies, guidelines and programs include the pedestrian realm as a key part of their subject matter, no one document focuses specifically on how to satisfy the needs of pedestrians. STEP FORWARD has been created to fill that gap.

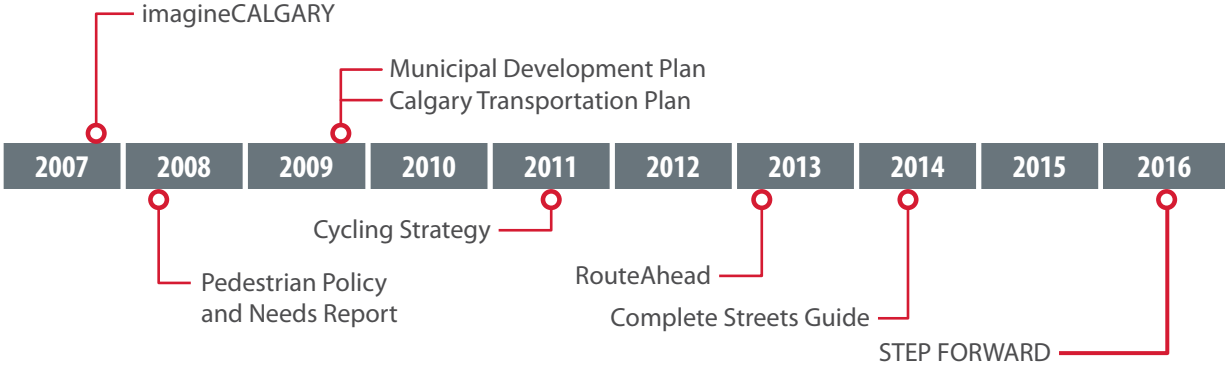


A new street in Calgary that promotes higher speeds and poor walkability.

Figure 1: Timeline of recent transportation policies and strategies in Calgary

**Vision documents**

Policies that shape how we build our city



**Strategy documents**

Actions that move us towards our city's vision

## Today's pedestrian network

There are lots of different ways that Calgary provides flat, smooth, dry surfaces that people need in order to walk from one place to another. To understand how the system works, we have to see all the pieces working together to form a network of connections. A single walking trip might rely on sidewalks, a pathway, a bridge and a variety of street crossings. A disconnect at any point along the way could mean detours and delays or even an inability to safely complete the journey as a pedestrian.

The pedestrian network is made up of the following types of facilities:



## Sidewalks

Sidewalks are the spaces at the sides of roadways used for walking and accessing buildings. Sidewalks provide mobility along the street network and are also the transition from the roadway (where people travel by car, bus, or bike) to the properties that front onto the street.

Over 5,500 kilometres long, sidewalks make up the bulk of Calgary's pedestrian network.

### Current challenges

- Traditionally, Calgary provided sidewalk space on both sides of every street, but this standard was gradually relaxed. By the 1980s, newly developing residential communities were beginning to omit sidewalks on one side of local streets, and many industrial areas were built with no sidewalks, except along arterial streets. This practice has been eliminated with the 2014 Complete Streets Guide and policy, but there are many gaps in the network.
- Calgary's sidewalks are aging. Fifty per cent of the sidewalks in the city are now more than 40 years old. Beyond that age, sidewalks are more likely to break down, creating obstacles and tripping hazards, particularly for those with limited mobility. Our current maintenance program replaces approximately 31 km of sidewalks per year, but this will not be enough to keep pace with future needs.

## Pathways

Multi-use pathways are off-road facilities that welcome walking, cycling, skateboarding and in-line skating. They provide an additional system of pedestrian infrastructure across the city, particularly near parks and rivers.

Calgary has over 800 kilometres of paved pathways, one of the longest pathway networks in North America.

### Current challenges

- Multi-use pathways have many user groups and are very popular. In some locations, the number of people walking and biking can cause congestion and confusion. Calgarians have asked for more pathways to be twinned to provide separate spaces for walking and biking.
- Often, when pathways meet a roadway, they create a midblock crossing. Where other alignments are not feasible, these need to be carefully designed to make sure that crossings are appropriately placed and safe to use. In the past, pedestrians have been rerouted to adjacent road intersections. Pedestrians frequently ignore these detours and choose to cross at uncontrolled midblock locations instead.



## Engineered walkways

Engineered walkways are asphalt or concrete paths placed between two properties to make additional connections for walking and biking. Engineered walkways provide a shorter or more direct route where roads aren't well connected, such as at the end of a cul-de-sac. They are sometimes used to provide easier access to transit service from the inner parts of communities.

Calgary has over 2,100 engineered walkways with a total length of 96 kilometres.

### Current challenges

- Engineered walkways are usually short and have less use than pathways and sidewalks. Because of this, they have traditionally been low priorities for maintenance and replacement.
- Neither The City nor adjacent businesses or homeowners are required by policy or bylaw to clear engineered walkways. Many become difficult to use in winter conditions.
- Engineered walkways are not typically illuminated, which, combined with the fact that they are often narrow, fenced spaces, can make them uncomfortable at night.



## +15 System

Conceived of in the post-war era and built starting in 1970, the +15 (Plus Fifteen) system is a network of above ground indoor walkways and bridges that connect buildings throughout the downtown core. The +15 system provides an alternate walking realm in the heart of downtown that both complements and competes with outdoor public space. The system is very popular during inclement weather.

There are over 18 kilometres of walkways in the +15 system.

### Current challenges

- Although the +15 network is extensive, there are a few missing links that create discontinuities in the network. At this time, there are two large sections of +15 that do not connect to each other at any point.
- In some places +15 competes with the outdoor public realm. More work is required to ensure these systems are complementary and street life remains healthy.



## Pedestrian malls

Pedestrian malls are streets or laneways that are closed to regular vehicle traffic for much or all of the day, giving pedestrians full access to the facility. Stephen Avenue, the best example of this facility in Calgary, is an economic driver, a tourist destination in its own right, and a public space used for events, music and festivals.

Calgary currently has one formal pedestrian mall and no shared spaces on public right of way. Street festivals create temporary pedestrian mall type environments for short periods of time.

### Current challenges

- Pedestrian malls can be difficult to plan and build, particularly when transitioning from a street that's been oriented towards vehicle traffic for a long time.
- Street festivals and intermittent closures can be labour intensive, as temporary traffic controls must be assembled for the event.
- The businesses and residents of these streets rely on service vehicles for loading and deliveries, and emergency vehicles must also be able to access the street. This requires that street furnishing and event areas do not fully block the roadway, or a suitable alternative exists.



## Pedestrian bridges

Pedestrian bridges are built specifically for people to walk or bike over natural and man-made barriers like rivers and expressways.

### Current challenges

- Pedestrian bridges can be very expensive to build and maintain. Many pedestrian bridges, such as the Peace Bridge, are well used and incredibly successful, seeing thousands of users each day. Other locations have very low usage and do not provide good value relative to their cost. A new system to identify, prioritize and build high value crossings is required.
- Bridges have not always been located in the best places. It is not uncommon to see many pedestrians crossing an intersection at street level just a few steps away from a nearby pedestrian bridge. There is currently no program to decommission underutilized bridges rather than continuing to maintain them.
- Many bridges, even among those that see regular use, are nearing the end of their design life (or service life) and do not meet today's standards for width and accessibility.



## Underpasses

Underpasses are pedestrian facilities that allow people to walk under difficult to cross barriers, such as major roadways or rail lines. Current examples in the city include the underpasses south of 9th Avenue S, where they are designed adjacent to vehicle traffic, and the tunnel under 10th Street N.W. in Confederation Park which provides a regional pathway connection.

### Current challenges

- Existing underpasses are often dark and gloomy places, particularly in contrast to bright daylight. They also provide some shelter from the elements. As such, people report feeling uncomfortable using underpasses for security reasons.
- Vehicular underpasses, like those under the CP Rail tracks that connect the downtown to the Beltline, were built with narrow bridge spans and marginal pedestrian facilities. Improving the pedestrian realm in these key connections is often both technically challenging to design and expensive to construct.



## Street crossings

The final vital links in the pedestrian network are roadway crossings. The City uses a wide variety of crossing controls to assist pedestrians in getting across city streets. These include crosswalks (two parallel lines) and ladder crosswalks (striped crosswalks), pedestrian corridors (overhead flashers), walk signals at signalized intersections, and half signals (which stop traffic with a red light only when a pedestrian activates the crossing). Recently, a new type of warning light system called Rectangular Rapid Flash Beacons (or RRFBs) has been piloted successfully in Calgary.

There are currently more than 8,500 marked crossings in Calgary. There are 248 pedestrian corridors and 28 RRFBs in operation.

### Current challenges

- Some crossings offer high visibility to pedestrians in the daytime, but little at night. Street lighting is designed to provide a particular lighting level for driving. Depending on the spacing and placement, it may not ensure that a crossing is well lit so that people walking are more visible to drivers.
- The current system for determining where to put pedestrian crossing controls is based on warrant scores. Because warrants are based on the observed number of people crossing, this system does not reflect where people would like to cross. There also appears to be a gap between what conditions meet the warrant for a crossing control and conditions where people feel safe. Regardless of how safe they actually are, feeling unsafe can be a deterrent to making the choice to walk.



## The current pedestrian program

The City of Calgary is a large and complex organization delivering a wide variety of programs and services. As shown in Figure 2, there are a number of different departments, business units and divisions that support the needs of pedestrians in one way or another.

With so many different programs and services that in some way contribute to the pedestrian experience, it is complex to measure exactly how much of The City's overall resources are dedicated to this effort.

Generally speaking, The City breaks down expenditures in two broad buckets. **Capital** expenditure refers to the money spent constructing new roads, pathways, traffic signals, etc., while **Operating** expenditure refers to money spent operating and maintaining the existing City assets (pothole repair, sidewalk replacement, repainting lines, etc.) and providing services (snow clearing, education campaigns, development permit approvals).



## Current capital budget for pedestrians

There are a number of capital funds that address pedestrian needs. The Roads Business Unit has separate capital programs for building new sidewalks and for replacing old sidewalks. Transportation Infrastructure manages large projects, such as interchanges and LRT lines, many of which include pedestrian infrastructure. The Parks Business Unit has yet another capital program to build new pathways that serve both pedestrians and cyclists, typically located within linear or regional public spaces.

The 2015-2018 Action Plan budget was developed to coordinate capital spending and direct more investment into strategic areas within the city. Many of the projects support pedestrians, as well as drivers, transit riders, cyclists and local land use at the same time. An estimate of the total commitment to pedestrians was made based on separating out the pedestrian-specific infrastructure costs from these multimodal projects.

Based on these calculations, approximately \$25M/year has been budgeted towards pedestrians under Action Plan. This is about seven per cent of the annual Transportation capital budget for the 2015-2018 period.

There are also a number of external bodies that fund pedestrian capital projects throughout the city, including:









- Calgary Municipal Land Corporation (CMLC)
- the Calgary development industry
- Parks Foundation Calgary
- Province of Alberta

Figure 2: Existing programs and who delivers them







## Existing programs serving pedestrian needs




### PLANNING & DEVELOPMENT

-  Downtown improvements
-  Underpasses beneath CPR tracks
-  Regional and community connectivity (ASPs)
-  Transit oriented design and mixed-use areas
-  Municipal Development Plan
-  2020 Sustainability Direction
-  Urban design guidelines
-  Public realm and streetscapes

### CALGARY POLICE SERVICE

-  Collision investigations
-  Collision records
-  Enforcement
-  Education

### COMMUNITY SERVICES

-  This Is My Neighbourhood
-  Advisory Committee on Accessibility
-  Seniors Age Friendly Strategy
-  Active, Creative & Healthy Calgary
-  Public Art Program
-  Special Events Services
-  Enforce snow clearing bylaw
-  Enforce pathways bylaw
-  Build and maintain pathways
-  Snow and ice control (pathways)
-  Design and maintain open spaces
-  Street trees

### TRANSPORTATION

-  In service reviews/Safety audits
-  Safer Mobility Plan
-  Pilot new safety tools
-  Signal timing
-  Pedestrian control warrents/Crossings
-  Street lighting and signs
-  Repair broken sidewalks
-  Snow and ice control (sidewalks)
-  Gravel clearing/Street cleaning
-  Construct new sidewalks
-  Design intersection treatments
-  Install wheelchair ramps
-  Build and maintain pedestrian bridges
-  Build sidewalks on vehicle bridges
-  Site design (development permits)
-  Complete streets (new communities)
-  Connectivity index
-  Regional network planning
-  Innovative design for intersections
-  Household travel surveys
-  Pedestrian counts
-  Missing sidewalk links
-  Pathway and sidewalk network plans
-  Travel options (TDM)
-  Complete streets (retrofits)
-  Pedestrian strategy
-  Design and maintenance of LRT areas
-  Ensure walking connections to transit

\$ Indicates that existing program is underfunded

Note: Figure illustrates a variety of programs. It does not represent all actions completed by The City.

## Current operating budget for pedestrians

It is difficult to precisely calculate the total operating budget directed at pedestrian needs. Roads, Parks and Transportation Planning have programs related to pedestrians, while others including Planning incorporate the needs of pedestrians in their regular activities.

In many cases, the operating costs of serving pedestrians are not easily separated from other activities. For example, in many cases, the same crews that clear snow from roadways also clear snow from sidewalks, sharing travel time and equipment between tasks. When tasks are integrated in this way, it is hard to separate the cost of the service with respect to one of several user groups. The expenditures are focused on the street as a whole.

Figure 2 notes various programs that serve pedestrian needs being provided by different departments, business units and divisions of The City. Those programs that are currently underfunded are marked with a “\$”.

## Case study: Rotary Mattamy Greenway

The Rotary Mattamy Greenway is a planned (and partially built) pathway system that encircles Calgary near the edges of the city. This pathway system provides pedestrian and cycling connections within and between 55 communities. It provides means to cross barriers to walking, such as streams, wetland areas and major roadways, as well as serving as a destination in its own right.

This project was funded jointly by The City of Calgary, Parks Foundation Calgary, the development industry and private donors, and is largely located on provincial lands. Without the support of all these parties, the Greenway, which will be one of the longest urban parks in the world, would not have been possible.



The Greenway provides connections and parks for 55 communities.

## How much are we walking?

The walking mode share in Calgary has been in decline for a long time. From 2001 to 2011, the weekday mode share for city-wide all day, all purpose trips fell from 13.2 per cent to 11.7 per cent.<sup>4</sup> Although that doesn't seem like a large change, it represents close to 70,000 trips that are occurring by some other mode each day.

Some of the decrease in the walking mode share was offset by an increase in transit use – which itself relies on good walking connections to be effective. At the same time, the proportion of people travelling in vehicles has been moving upwards.

This change is complex and affected by multiple factors. For example, children are walking to school less frequently. In 2011, only 17.6 per cent of grade school children walked to school in the morning, down from 26.9 per cent in 2001.<sup>5</sup> As more children are driven to schools, school sites become busier traffic areas. This decreases the appeal for parents to let their kids walk, creating more pressure to drive kids to school.



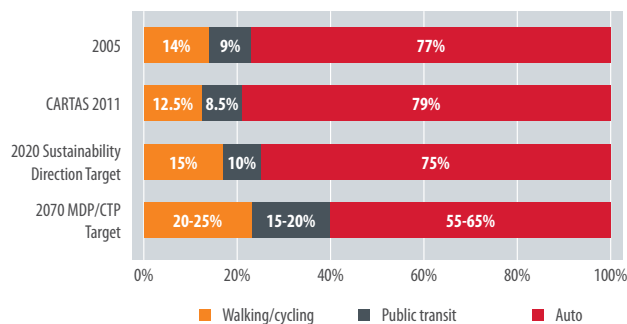
The walking mode share for travel to work increased from 6.4 per cent to 8.2 per cent between 2001 and 2011.<sup>6</sup> The walk mode share for all non-work trips, including shopping, recreation and other non-work activities dropped from 12.2 per cent to 11.5 per cent during the same time frame.<sup>7</sup> Where people live relative to work, shopping or activities, cars per household, and the cost of fuel and parking all have the potential to impact these numbers.

### What is mode share?

Every time you travel from one place to another, that's a trip. Travelling to work and then back home counts as two trips. City planners study travel patterns by adding up all the trips people make and counting each one by travel mode: walking, biking, driving, as a passenger, as a transit rider, etc.

The walking mode share is the percentage of all the trips people are making that are being made exclusively by walking (rather than on a bus or in a car).

Calgary's mode share



## Asking around

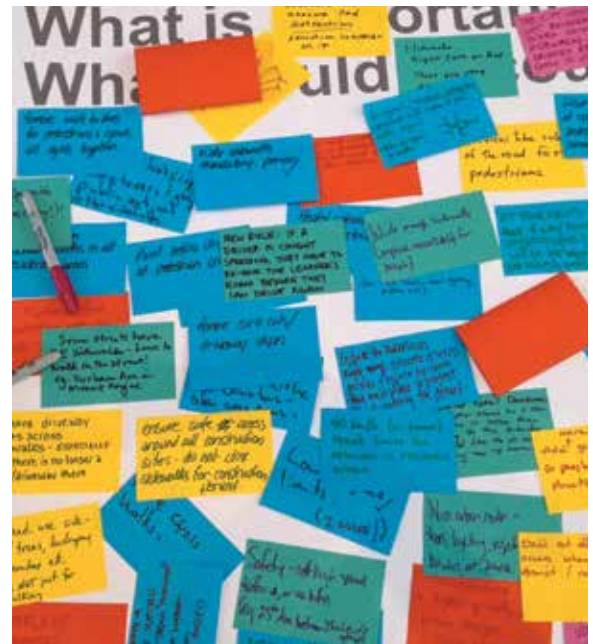
In order to better understand attitudes around walking, we conducted a telephone survey of Calgarians as part of the research program for STEP FORWARD. The telephone survey was conducted by an independent research firm on behalf of The City of Calgary. It provides a statistically valid sample that is representative of Calgary's demographic make-up.

After the research survey there was also an extensive outreach program with three streams of public engagement. These three streams included: in-person discussions, an online forum and a review of the engagement results of the Main Streets project, which engaged people on similar issues. Overall we had over 1,000 interactions with Calgarians on their opinions related to walking.

What we found was that although most Calgarians do walk (at least occasionally), people expressed that the walking network does not always feel safe, enjoyable and easy to use. While people do sometimes walk despite these barriers, many agreed that improving the network and experience would encourage them to walk more.

## Is it safe?

Concerns about safety were well reflected in what we heard from Calgarians. Every stream of engagement included items related to safety. Whether it was general statements about the need for slower traffic or safer crossings, or pointing out a "bad intersection," the underlying message of the importance of safety was clear.



*“Cars often don’t have enough time to stop for a pedestrian once they see them appear from behind a parked car. I’m tired of the ‘sorry wave’.”*

*-Public engagement*



Feeling secure when walking is an important aspect of safety in our communities.

From our engagement, the following top concerns related to safety were identified:

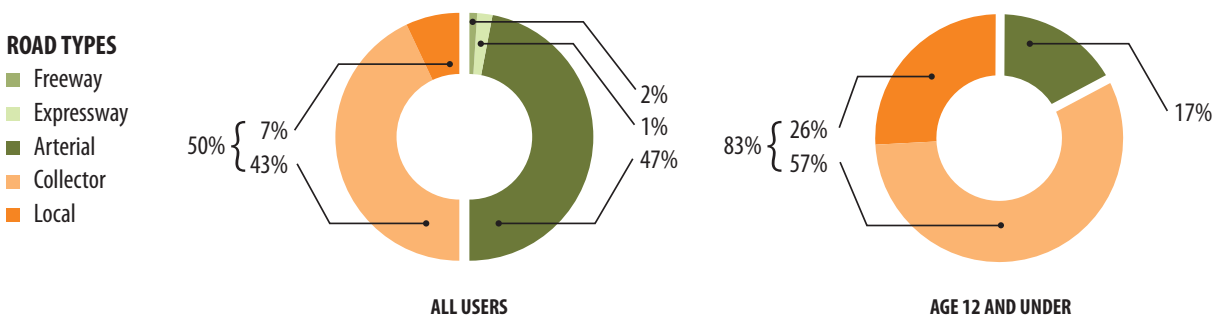
- **Street crossings and intersections**
- **Speeding, education and distraction**
- **Separated sidewalks and pathways**

As part of The City’s overall traffic safety program, records are kept for the locations of all collisions reported to Calgary Police Service (CPS). From this data, The City has been tracking the frequency of collisions involving pedestrians.

One way that this data is useful is in the identification of high collision locations. Map 2 shows high frequency collision locations for pedestrians based on 2014 data. These locations are places where physical improvements can likely be made to reduce the probability of future collisions.

The data also shows us important trends in the overall safety of walking in Calgary. Figure 3 shows the frequency of pedestrian casualty collisions by road type for all users, and for children under 12. As shown, 50 per cent of all pedestrian collisions (and 83 per cent of collisions for small children) occur on residential and collector roads within communities.<sup>8</sup> Although new road standards such as those included in the Complete Streets Guide, aim to improve safety within new communities, it would be very difficult to retrofit every existing street and intersection with physical improvements to reduce this widely distributed risk.

Figure 3: Pedestrian casualty collisions by road type, 2008-2012



Tracking and improving safety for pedestrians is very important, because they represent the most vulnerable users of our transportation system. Although pedestrians are only involved in about 12 per cent of all reported injury and fatal collisions, they represent about 25 per cent of all fatalities.<sup>9</sup> In 2014, even when crossing a street with the right of way, 208 pedestrians were hit requiring hospitalization and medical care.<sup>10</sup> Since there is a clear connection between perceptions of safety and people's willingness to walk, improving safety on our streets will have the added benefit of furthering the overall goal to increase walking in Calgary.

### Is it enjoyable?

The telephone survey and public engagement activities used to develop this strategy confirmed that walking means more to Calgarians than just getting from A to B safely. People told us that many streets are simply not pleasant

*“All neighbourhoods should have areas that attract walkers. I would like to have a “high street” idea where there are shops, culture, restaurants, coffee shops, etc. that attract people’s interest and where people want to go.”*

*-Public engagement*

to walk along. A lack of trees and lighting is compounded by narrow sidewalks that place people immediately next to fast moving traffic. We also heard that there is a lack of places to walk within communities. People also expressed desire for more character destination areas where walking is fun and interesting.

Pedestrian scale development also plays an important role in where people walk and how much they walk. A lot of Calgary was developed during a time when auto-oriented development dominated the streetscape. While the car has been, and will continue to be, the dominant mode among the mobility choices available to



Streets with trees, furniture and active retail spaces are more comfortable and enjoyable.





Kingsland Public Art Committee, *Paint the Pavement*, Calgary, AB.

Calgarians, the way our buildings interface with the street needs to change. Our streets do not need to service the automobile at the expense of all other modes and users. Neither do our buildings. The quality of the walking experience is an important part of encouraging people to walk more.

From our engagement, the following top concerns related to an enjoyable experience were identified:

- **Streetscape**
- **Land use**
- **Tactical urbanism**

## What is “tactical urbanism”?

Placemaking is a term people use to describe methods to reinvent and reshape public spaces through better design. Placemaking activities are used to create and implement larger scale transformative projects that can improve an area in a relatively short period of time. This can provide it with a strong sense of place, which serves as a magnet for people and opportunities for future development. For example, New York City greatly reduced vehicular space in Times Square to create a new high-value pedestrian mall initially using little more than some paint and plastic lawn chairs. On a smaller scale, placemaking can see temporary infrastructure, like a roundabout, and is often about events to bring a community together and strengthen the connection between people and shared places.

Tactical urbanism, as a component of placemaking, is a general term used to describe a hands-on community-based approach to low-cost, temporary changes in the public realm intended to improve local areas. This can involve painting murals on streets or other infrastructure, reclaiming streets for a street party or social uses, or engaging in community activities like a little free book exchange to generate interaction in the community. This capitalizes on a community’s assets, inspiration and potential, to create public spaces that promote happiness and well being. Tactical urbanism is also referred to as guerrilla urbanism, pop-up urbanism, city repair or D.I.Y. urbanism. Using these techniques, several North American cities (including Seattle, Washington and Austin, Texas) have been able to use limited city resources to encourage residents to safely engage in these practices with inspiring results.

## Is it easy to use?

No matter how they travel, people need facilities that support their mode of travel. That might be a road free of potholes or a sidewalk without large cracks and other tripping hazards. Every year, staff from The City of Calgary audit the conditions of sidewalks across the city and identify locations where sidewalks need repair or replacement. Poor conditions have a number of causes and can be found in locations across the city.

In winter, these issues are compounded by snow and ice that can turn even wide, flat sidewalks into safety hazards. Although parts of the system are well maintained, many Calgarians encounter obstacles in winter as a result of links in their journey that are not regularly or effectively cleared.

From the standpoint of people with mobility limitations, navigating the city can be even more challenging. Although we have standards for wheelchair ramps at corners, and programs for audible signals and Urban Braille in key locations, the application is inconsistent, particularly in communities that were built before these standards were put in place, and the overall

*“Nothing is more frustrating than suddenly coming to the end of a sidewalk when the street continues onward to one’s destination.”*

*~ Public engagement*



Poor snow clearing can make walking an unsafe or unreliable travel choice.

## Case study: 42nd Avenue S.E.

42nd Avenue S.E. is an arterial that carries mostly commercial and industrial traffic supporting businesses on both sides of the street. The proximity of the 39th Avenue LRT Station means it sees moderate volumes of pedestrian traffic walking between transit and their places of employment. The streetscape provides no sidewalks on the north side. Both sides of the road have a number of driveways, and intersection corners provide no wheelchair ramps, compounding the low walkability in the area. Worn grass and trampled snow demonstrate that some pedestrians are willing to brave the uncomfortable and sometimes risky conditions, but the area remains auto-oriented.

This is a difficult issue to resolve using existing City tools. Since the termination of the Industrial Sidewalk Retrofit program and given that 42nd Avenue is not

a candidate for major redevelopment, there is no City program with funding and resources to address areas like 42nd Avenue. A solution may be complex and expensive, particularly if the right-of-way is not currently available to add the pedestrian infrastructure needed to improve the public realm.

We know that if the pedestrian infrastructure could be installed, the potential exists for more people to access the area through walking and transit. In turn this could spur modest redevelopment which can result in amenities (i.e., a new restaurant or gym) which would make commuting to the area without a car more feasible.

Until a means to complete the missing link and improve the streetscape is identified, this area will tend to remain car dependant, despite its close proximity to the LRT.



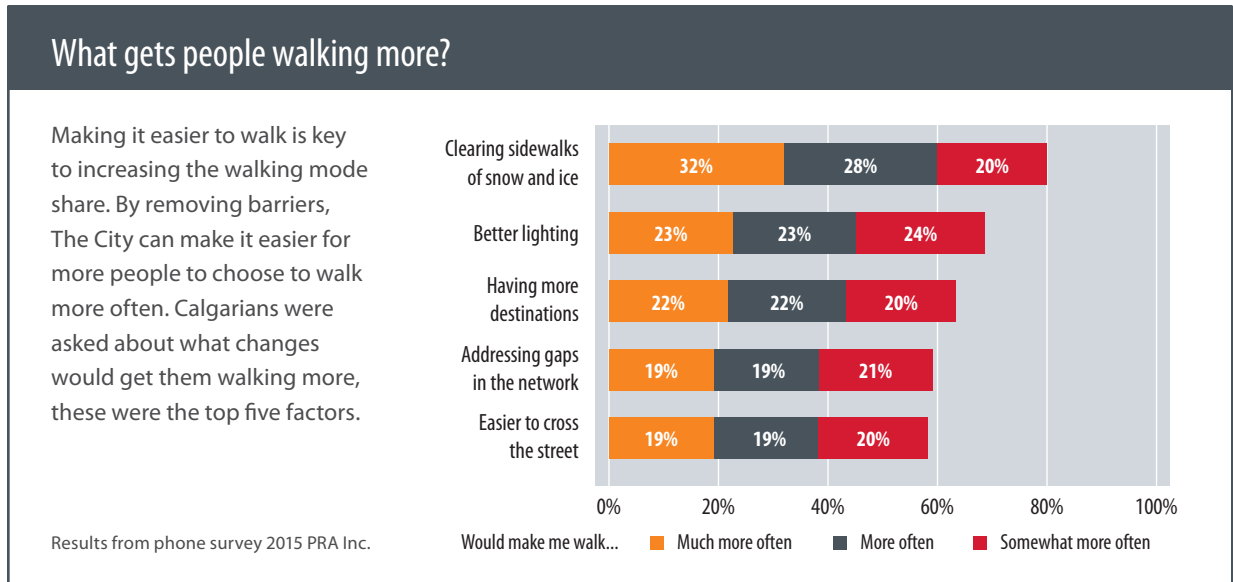
network is unreliable for those who are most likely to have difficulty travelling the city by modes other than walking.

For a pedestrian, Calgary is a city of many barriers. There are two major rivers and numerous streams and bodies of water. There are heavy rail and LRT lines, expressways, busy streets and long blocks of impermeable development. In many places, pedestrians are inconvenienced or put at risk by a lack of sidewalks or pathways beside roads that cars can freely travel. Through our engagement, everyone was able to identify a missing link,

sidewalk detour, closed crosswalk or obstacle that interfered with their ability to walk efficiently.

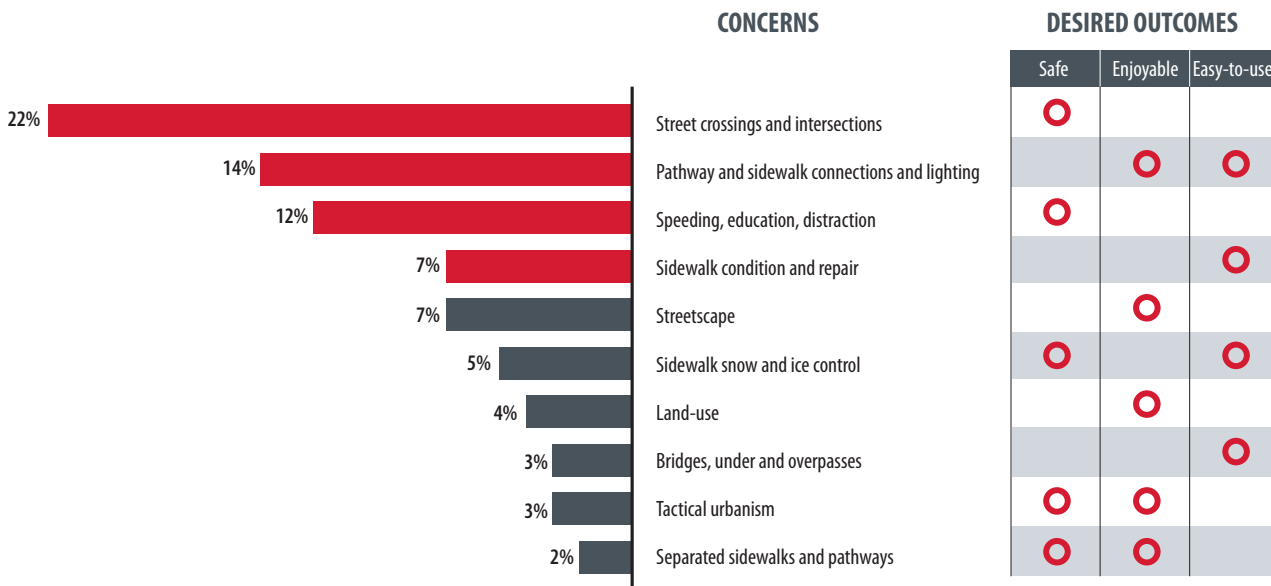
From our engagement, the following top concerns related to ease of use were identified:

- **Pathways/sidewalk connections and lighting**
- **Sidewalk conditions and repair**
- **Sidewalk snow and ice control**
- **Bridges, under and overpasses**



Overall, we found that Calgarians are passionate and engaged when it comes to pedestrian issues in our city. After tabulating all the comments and interactions we had, the following top priority concerns were identified:

Figure 4: Top ten concerns (per cent of total responses)



## How do we compare?

Different cities measure walking, mode share, safety and walkability in different ways. Even where similar measures are used, differences in population density, demographics, natural geography and culture can all affect the results. Providing comparisons, where available, helps to put the local experience into perspective and can validate the concerns raised during public engagement.

### Safety

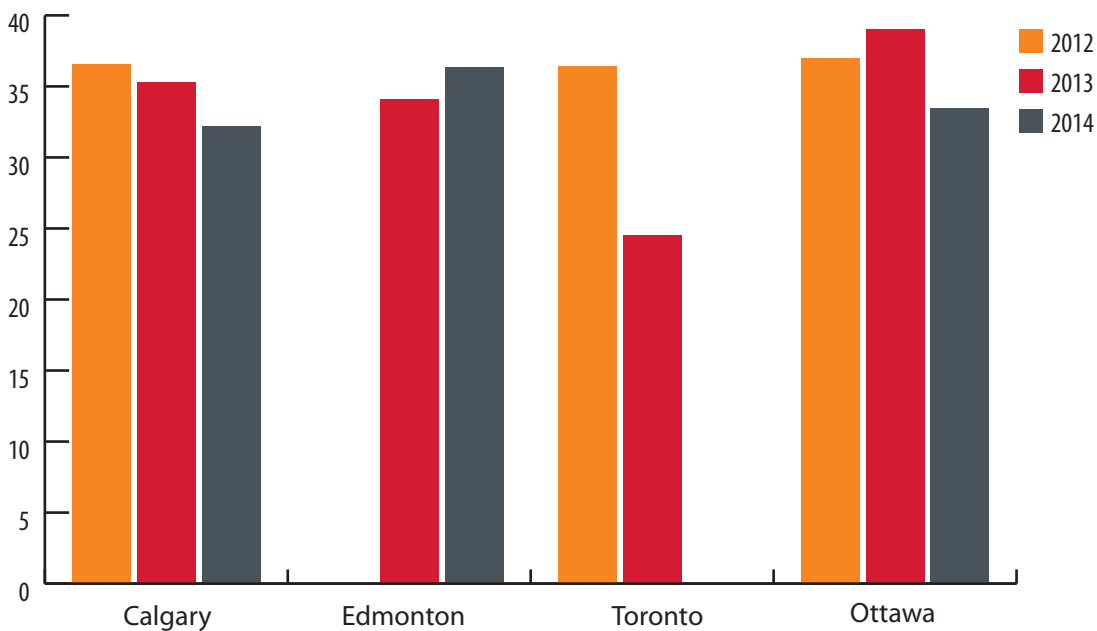
In terms of safety, one measure used in Calgary is the number of pedestrians injured or killed by a vehicle per hundred thousand population. This allows us to take into account the growth of the city when looking at historical trends, but it also helps normalize the result for comparison against

other larger or smaller cities. Figure 5 summarizes some recent results from other Canadian cities.<sup>11</sup> As shown, Calgary is in a similar range to these comparison cities. At the same time, we share a goal with these cities to reduce the number of vehicle/pedestrian collisions that happen on our streets, and other cities with similar collision trends are taking action to improve their record.

### Walkability

It can be difficult to make comparisons when it comes to walkability. Some cities are closely flanked by large suburban areas that act like extensions of the city, while others, like Calgary, have only a few satellite municipalities. Growing cities like Calgary can also score lower because partially built communities rarely have the amenities (grocery stores, schools, etc.) in place to achieve high walkability.

Figure 5: Pedestrian collisions per 100,000 population



**Walk Score®** is an online, independently calculated walkability index that, based on a number of metrics (walking routes to nearby amenities, distance, population density, block length and intersection density), provides a score between zero and 100 on how walkable a city or neighbourhood is.<sup>12</sup>

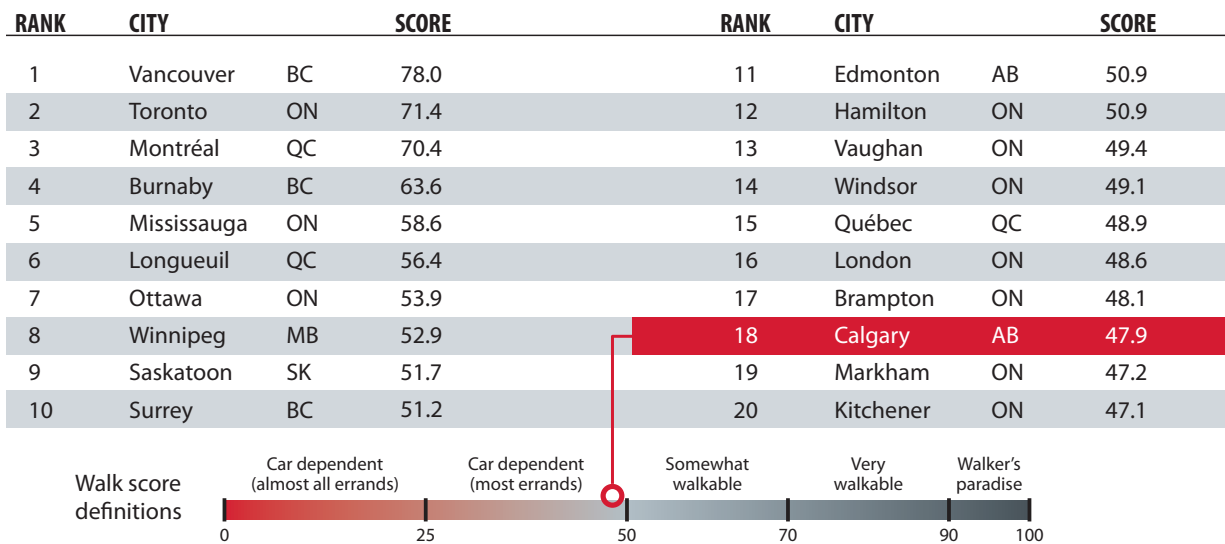
Calgary’s overall **Walk Score®** is 47.9. This places the city 18th out of 22 Canadian cities with populations greater than 200,000.<sup>13</sup> A score of 47.9 qualifies the city as “Car-Dependent,” indicating that most errands require a car. Cities achieving 70 – 80 (such as Vancouver, Toronto, or Montreal) are considered “Very Walkable.”

While a walkability index alone is not the means by which to judge the success or failure of a city’s pedestrian experience, it is a way to see how we measure up against other cities, particularly



when the measures used in the index are examined. The presence of everyday amenities, distance from where we live and how we can access them translate into how much time and money we spend driving, how active we are and the time we have left to devote to other activities. Examining the practices of other cities that

Figure 6: Top 20 Canadian cities ranked by Walk Score® (population of 200,000 or higher)

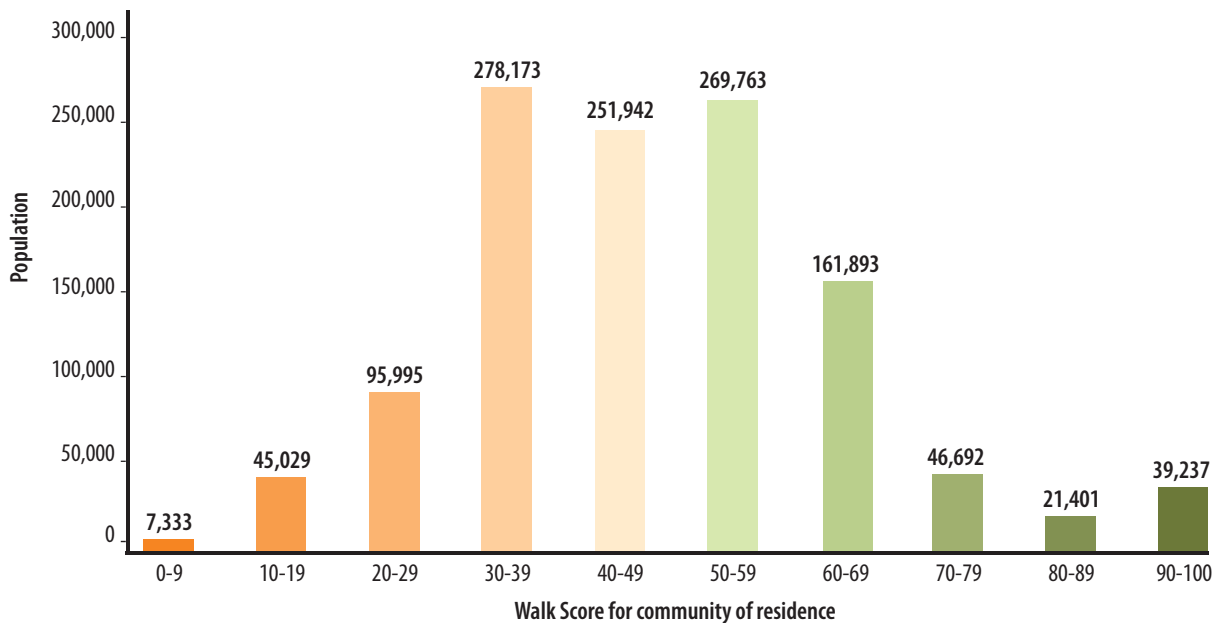


score higher can help inform future changes to Calgary that will greatly benefit the walking experience here.

A closer investigation of the results on a community by community basis shows that different parts of Calgary can offer quite different pedestrian experiences, as shown in Map 3 (see **Appendix 3**). An analysis of how many people live in communities with different levels of walkability is shown in Figure 7.

In order to improve overall walkability in Calgary, we can work to both improve the walkability in lower scoring communities and increase the number of people who live in areas that already offer high walkability. The City of Calgary’s Complete Streets guide will help to ensure that new communities are built to a higher standard of walkability, but more can be done at the planning and design level to ensure land use patterns and building forms support pedestrian use.

Figure 7: Calgary’s population sorted by the Walk Score® of their neighbourhood





## What are others doing?

Calgary is not the only city that has decided to develop a strategy to increase walking. Many cities have created and implemented their own strategies to achieve this result.

As part of STEP FORWARD, a review of the pedestrian strategies of other cities was conducted. We selected cities that were either global leaders in walkability or cities with similar climate and culture to Calgary. The strategies employed by these other cities serve as examples of how we can organize our efforts to achieve real change.

### Toronto Walking Strategy (2009)

*“The Toronto Walking Strategy outlines what it takes to make Toronto a great walking city – a city where people love to walk. It strives to create an environment where walking is an appealing, convenient, safe and stimulating experience for everyone in every Toronto neighbourhood...The Walking Strategy is an integrated approach that brings together several City divisions and agencies to create physical and cultural environments that encourage walking.”*



#### Key lessons

- The Walking Strategy is a holistic approach to enhancing the pedestrian realm. It recognizes that safety, education/encouragement and design are required to successfully get more people walking.
- The Strategy is integrated and identifies the need to bring together many different City departments and agencies to be successful. The Public Realm Section within the Transportation Department is responsible for the coordination and implementation of the Strategy.
- The framework recognizes the importance of the development process in securing improvements to the public realm.



## San Francisco Pedestrian Strategy (2013)

*“People walking are a key measure of a healthy city. This Pedestrian Strategy is part of the City’s broader effort to address the safety of all road users.”*

### Key lessons

- San Francisco has effectively utilized data to target improvements.
- Proposed improvements have been prioritized, with targets set for a minimum number of improvements annually.
- Key focus areas to advance the Pedestrian Strategy are: physical street improvements, education and outreach, enforcement, policy and institutions, and performance monitoring.
- Pedestrian Strategy precedes and lays a foundation for a Vision Zero campaign.

## Chicago Pedestrian Plan (2012)

*“The goal of the Chicago Pedestrian Plan is to improve all aspects of the street environment and to eventually eliminate pedestrian fatalities in ten years. This plan identifies the goals, actions, and milestones that are necessary to improve Chicagoans safety, connectivity, livability and health.”*

### Key lessons

- Policies and programs identified for each focus area have short, medium and long-term actions.
- The tools identified to improve walkability, and safety particularly, provide flexibility on how they are applied. Context based approach.
- Milestones, in addition to action items, are included to aid in evaluation of the Plan.





## Making London (UK) a walkable city (2004)

*“The aim of the Walking Plan for London is to see more people making walking their first choice for short journeys and making more trips over longer distances by a combination of walking and public transport. In addition, the Plan supports the revitalisation of public spaces and the creation of a high quality urban environment that enriches Londoners’ experience and appreciation of walking as a valued and enjoyable activity.”*

### Key lessons

- Focuses on walking for short trips and a combination of walking and public transit for longer trips, integrating a multimodal perspective into the Plan.
- Improving the quality of public space makes: a beautiful city, a sustainable city, a prosperous city, a connected city and a safer city.
- Coordination between groups responsible for pedestrian infrastructure and promotion of walking mentioned throughout the document. Also included are partner organizations for successful implementation of the Plan.

## Melbourne Walking Plan (2014)

*“Our vision for Melbourne as a connected city means a place for people, a city with great streets inked by a well-designed transport system. The Walking Plan includes strategies and actions that will ensure we keep a strong focus on the vital role that walking plays in the city and continue to improve the environment for walking.”*

### Key lessons

- The Plan links the importance of walking to economic benefits (idea generation and knowledge transfer) of a compact central city. Illustrates a high quality walking environment is key to retail and hospitality success.
- Planning for transit growth and walking growth at the same time.
- Importance of creating new pedestrian connections and permeable new developments for integration with the walking network.
- Many of the action items include reviewing existing frameworks or working within existing programs.





## Walk Edmonton: Steps to a walkable city (2010)

*“The intent of this project was to identify the barriers and root causes behind the slow progress in achieving walkability in Edmonton, and to identify and prioritize solutions to address those root causes over the next three to five years.”*

### Key lessons

- Four categories that influence decision to walk are identified (quality of journey, streetscape, pedestrian infrastructure, and policies and programs).
- Proposed solutions include a lead department responsible for carrying out the solutions, as well as potential partner organizations, an assigned priority, timeframe and funding availability.
- Many of the solutions proposed are large-scale changes, including changes to policy (such as land use zoning by-law amendments).
- A companion document to the strategy identifies lack of funding as being problematic for implementation.

## Minneapolis Pedestrian Master Plan (2009)

*“The purpose of the Minneapolis Pedestrian Master Plan is to: Provide guidance on making Minneapolis a great walking city where people choose to walk for transportation, recreation, and health.”*

### Key lessons

- The Plan links the importance of walking to economic benefits (idea generation and knowledge transfer) of a compact central city. Illustrates a high quality walking environment is key to retail and hospitality success.
- City growth in residential and employment populations will strain the walking network, which already experiences crowding and delay around pedestrian generators, such as transit stops and retail hubs. Overcrowding on sidewalks can squeeze out the social functions the sidewalk plays.
- Planning for transit growth and walking growth at the same time.
- Importance of creating new pedestrian connections and permeable new developments for integration with the walking network.
- Many of the action items include reviewing existing frameworks or working within both programs.

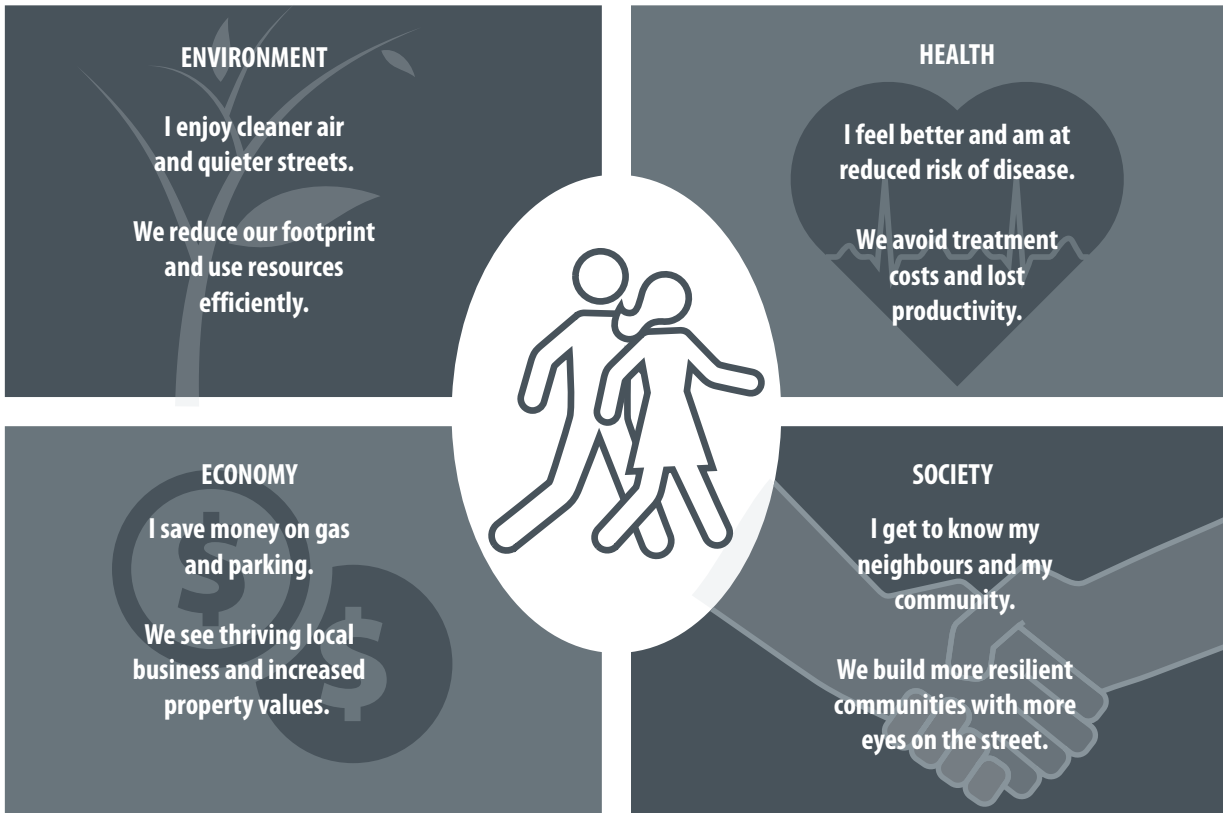


## Why invest in walking?

Having looked at potential issues with our current system, and considering what Calgarians are asking for, it's clear that increasing walking in our city will require coordinated effort and investment. Dedicating resources to achieving a safe, enjoyable, and easy to use pedestrian network will mean less resources available for other activities. Therefore, before we dive into the work of developing an action plan, it is important to have a clear understanding of why we are pursuing this goal.

Walking is the basic unit of transportation for every community, but its benefits extend far beyond being just one of many ways to get around. It is low cost, healthy, helps people feel better and is good for the environment.<sup>14</sup> People like to visit places where they can walk safely and comfortably to go shopping, eat, drink, see and be seen. Calgarians and visitors to our city choose to spend time in character areas where they can stroll and look into small shops, visit entertainment venues, and stop in outdoor spaces, patios and cafes.

Figure 8: Key benefits of walking



## Economic benefits

Walking affects the local economy in a number of ways. First and foremost, walking is one of the most cost effective ways to travel. It costs less to provide a person with a walking trip than any other kind of trip, and cities spend less to build and maintain walking routes than routes for other types of travel. People who walk also save money on parking, fuel and operating a vehicle, leaving more to spend on other needs and wants. Walking reduces congestion on our city's streets, facilitating the movement of goods and freeing up lost time that commuters spend in traffic. In this way, investments in pedestrian infrastructure benefit all residents, regardless of how they travel.

Walking also is closely tied to property value and retail activity.<sup>15</sup> Neighbourhoods where walking is convenient and easy attract investment by the business community, which in turn attracts and retains educated, energetic workers. Local businesses benefit from customers that spend



Walking boosts local retail shopping revenue and increases property value.

more time on the street because of slower traffic speeds and wider sidewalks.

In areas where walking is easy and convenient, property is more valuable and in higher demand. It has become common for real estate listings to include **Walk Score**® on rental and sale ads, and in one American study, “an additional one point increase in **Walk Score**® was associated with between a \$500 and \$3,000 increase in home values.”<sup>16</sup>

Making walking safer is also a high value investment for communities. In Calgary, over the past decade, more than 3,700 pedestrians were injured and 87 killed when they were struck by a vehicle.<sup>17</sup> Beyond the emotional toll, this costs society approximately \$65 million per year in healthcare costs and lost productivity.<sup>18</sup>

## Health benefits

There are many links between health and walking. Walking is a healthy activity and an easy way to incorporate physical activity into a person's daily routine through a small change. People who walk to work or school report being less stressed and bored and are more likely to enjoy their travel experiences.<sup>19</sup> Children who are more active are more creative, learn better and feel less depressed. In adults, walking has been tied to being a healthy weight, feeling better and living longer. Regular walking has been shown to reduce the risk and prognosis of dozens of diseases and conditions, including type II diabetes and heart disease.<sup>20</sup> More physical activity can help Calgarians get healthier and decrease the likelihood of death from heart disease and cancer, which are currently the



Walking is an easy, affordable and safe way to be more active.

top two causes of death (57 per cent of deaths) in Alberta.<sup>21</sup>

Given the enormous cost of treating health problems that arise from inactivity, investing in programs that encourage walking can have a significant net benefit for society.<sup>22</sup> Individually, most people would be hard pressed to put a price tag on a happier, healthier, and longer life.

## Social benefits

Walking is a basic way to move and to participate in city life. Walking is key for social inclusion and equity because it's available to children, young people, older adults, and people who are not able, can't afford, or don't want to drive themselves. When people walk, they experience the communities that they walk through. Walking allows people to be socially involved, to meet neighbours, interact with friends and to communicate on a personal level with each other.<sup>23</sup> These interactions become more difficult the more we constrain ourselves to private vehicles carrying us from one place to another.

Because of these considerations, investing in walkability has added benefits for the communities in which that investment occurs. These additional benefits can include reduced costs for policing, fewer demands on social services and a strong network of neighbours that can quickly and effectively work together in an emergency situation.

## Environmental benefits

Walking is kind to the environment in a number of ways. Some ways are very apparent, like the fact that walking doesn't use fuel. Walking is clean and quiet, unlike vehicles, which produce 2.3 to 2.7 kilograms of CO<sub>2</sub> per litre of gas or diesel, not to mention other kinds of greenhouse gases, air pollutants and noise.<sup>24</sup> Calgary knows well the high cost associated with extreme weather events. By investing in walking, we can be leaders in taking action on climate change, which has the potential to reduce the frequency of these dangerous and damaging situations.



Walking connects people with their communities

Less obvious is the fact that walking takes up a much smaller footprint. This is because walking trips are generally shorter and pedestrians can share smaller spaces. Whereas cars require a lane for every 1,000 vehicles, pedestrians require much less land to be paved.

When less land is paved, rainfall is more easily absorbed by parks and trees. Fewer contaminants from engines find their way into waterways, and less solar energy is absorbed into pavement.

Keeping our transportation infrastructure right-sized protects Calgary's surrounding lands, both communities and important ecosystems, such as the Nose Creek Valley and Fish Creek Provincial Park. The financial resources saved, both to build and maintain extra roadways can be used to benefit our city in many other ways.

## Crime Prevention Through Environmental Design (CPTED)

### What is CPTED?

Pedestrian safety and feelings of safety are about more than just risks presented by moving vehicles. Crime Prevention Through Environmental Design (CPTED – pronounced “Sep-ted”) enhances safety by influencing the physical design of our environment and encouraging positive social interaction. CPTED recognizes that our environment directly affects our behaviour, because we constantly respond to what is around us.

### How does CPTED work?

A public space or environment designed using CPTED principles reduces opportunities for criminal acts to take place and helps people to feel safer while using or crossing the space. By doing so, it improves the quality of life for users and encourages more people to use the space, which itself is a further deterrent to criminal activity.

CPTED uses strategies like natural access control to restrict access, natural surveillance to increase visibility and territorial reinforcement to promote

a sense of ownership. All these strategies work together to create safer communities. CPTED complements crime prevention strategies such as locks and bars, police and security personnel.

### CPTED in Calgary

Since 1991, the Calgary Police Service (CPS), Crime Prevention Unit, has been actively involved in the CPTED audit process and the training of Calgary Police officers and civilians. The CPS conducts approximately 200 CPTED audits annually. Each audit requires a site visit and CPTED inspection by trained Calgary police personnel. After the site visit, a report that identifies needed improvements is completed and sent back to the requesting agency.

### CPTED and STEP FORWARD

A number of actions discussed in the following chapter, such as, piloting pedestrian specific lighting, creating a tactical urbanism program and improving engineered walkway conditions will contribute to the application of CPTED principles in Calgary.



# What can we do?

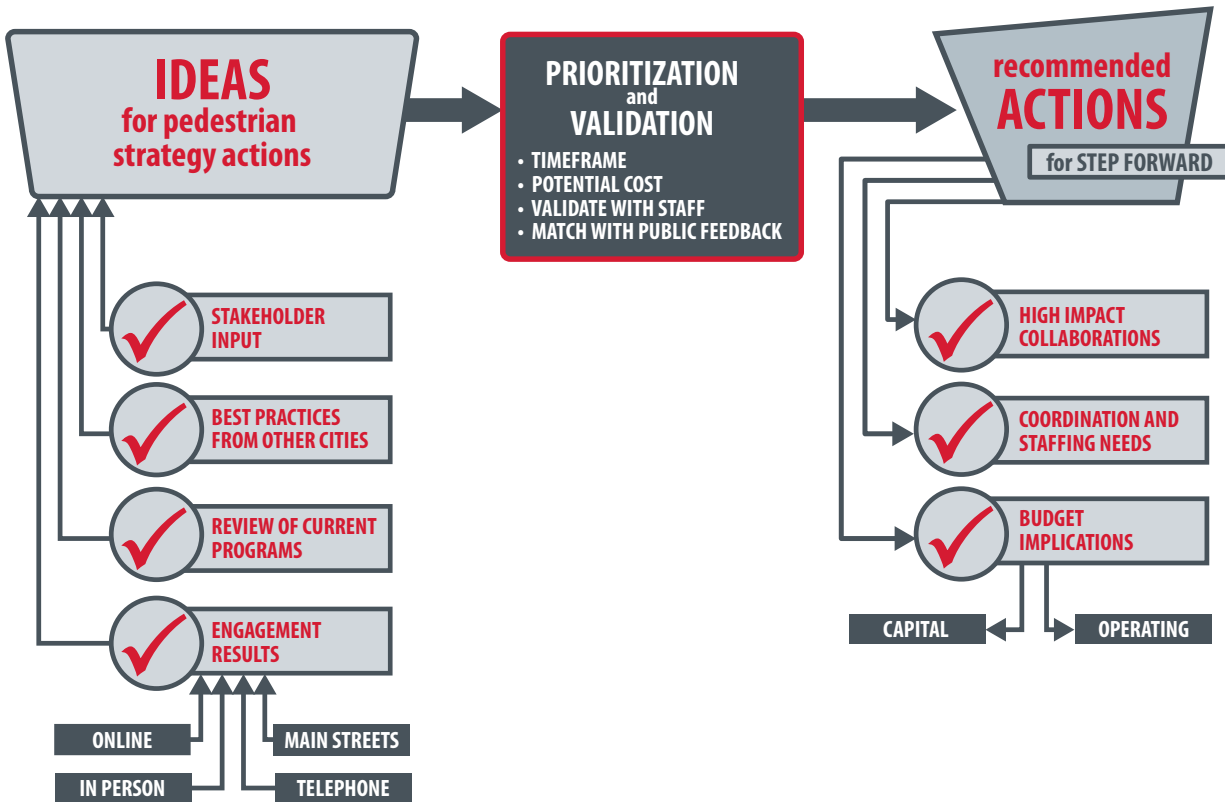
When it comes to walking, it is clear that there is a desire for improvement in Calgary. The previous chapter noted many opportunities to improve our system and encourage more people to walk. The next step in preparing a strategy is to identify actions that will lead to the desired changes.

In developing STEP FORWARD, we generated a number of ideas for actions, prioritized those actions that would have the most impact, and

organized them into an overall plan of action for The City as a whole. The process of turning input and ideas into a plan of action is summarized in Figure 9.

This chapter describes the process and presents the resulting recommended actions. The following chapter will address the funding, resources and partnerships needed to carry out the plan.

Figure 9: Turning ideas into action



## Develop actions

In order to develop a list of possible actions to improve walking in Calgary, we cast a wide net:

- Brainstorming sessions with City departments to address known issues.
- Dialogue on pedestrian needs with local experts like Safer Calgary and Alberta Health Services.
- Direct engagement with the public, to clarify both areas of concern and ideas for improvements.
- Review of guiding principles and lessons learned from other cities to see if they would be of benefit in Calgary.

An initial list of over 200 potential City actions was developed.

*“This intersection only gives a walk signal if the button is pressed... We should make automatic walk signals a requirement at all intersections”*  
*-Public engagement*

In order to better organize City effort, these actions were sorted into four implementation focus areas: Safety, plan and design, operate and maintain, and educate and encourage. These broad categories of action relate to each other and all are needed to support a safe, enjoyable and easy-to-use pedestrian realm.

We also sorted the engagement feedback from the public into these same categories, as shown in Figure 10. Each action in the following sections responds to one or more of the 37 themes arising from the public engagement and is grouped into one of the four implementation focus areas.

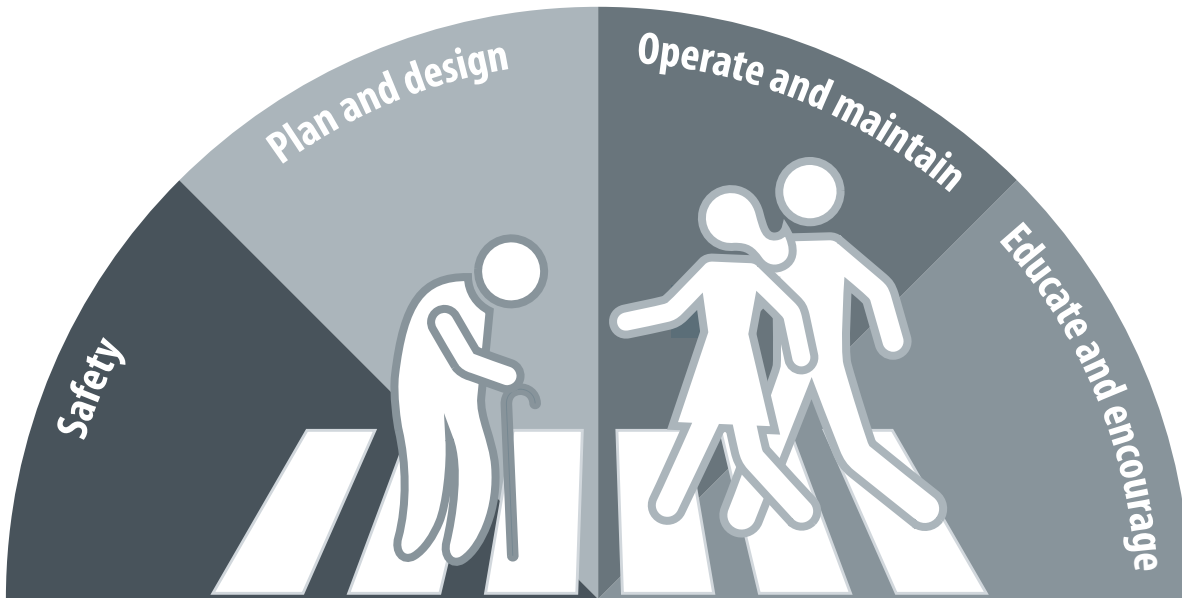
## Prioritize

The next stage of the action development process was to review the pool of ideas generated and choose the most effective ideas to advance.

In order to do this, we considered each idea in terms of how much impact it would have on our goals: Would it increase walking? Would it make the system more safe, enjoyable or easy to use? Would it promote a more walkable city?

We also considered how much effort each idea would be to implement, including the financial cost, the amount of staff effort, and the political and public support needed to move it forward.

Figure 10: Implementation focus areas and related engagement themes



WHAT CAN WE DO

Safety	Plan and design	Operate and maintain	Educate and encourage
1. Speed limit	10. Universal accessibility	26. Sidewalk snow and ice control	32. Pedestrian education
2. Signals and signs	11. Bridges	27. Sidewalk condition and repair	33. Driver education
3. Street crossings	Under/overpasses	28. Sidewalk closures and detours	34. Healthy lifestyles and sustainability
4. Train crossing	12. Car parking	29. Engineered walkways	35. Walking culture
5. Schools	13. Driveways	30. Street names and wayfinding	36. Visibility campaigns
6. Turning vehicles	14. Sidewalk obstacles	31. City work co-ordination	37. Research and innovation
7. Lighting	15. Missing sidewalks		
8. Distracted walking and driving	16. Connections to transit		
9. Feeling secure	17. Pathway and sidewalk connections		
	18. Separated pathways		
	19. Shared public areas		
	20. Redevelopment		
	21. Land use		
	22. Derelict properties		
	23. Street furniture		
	24. Streetscape		
	25. Tactical urbanism		

Thirty-seven recurring concerns highlight the need to take action in each of the four focus areas.

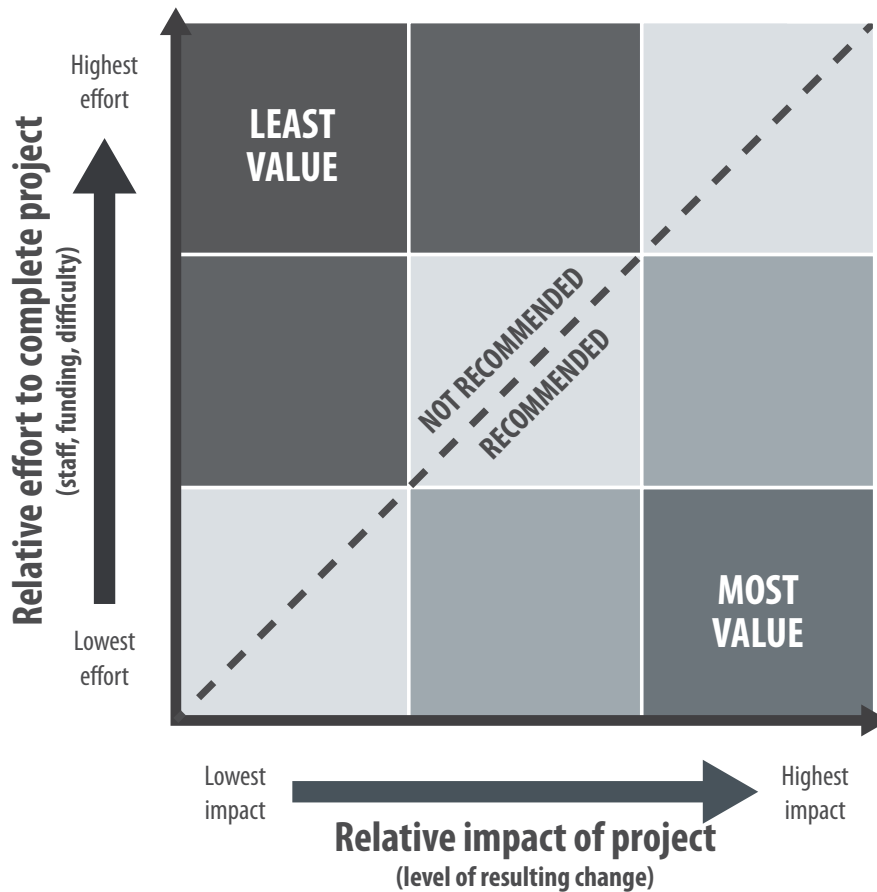
Based on the impact and effect, each idea was valued on a prioritization framework, as shown in Figure 11.

Organizing the ideas in this way, it became clear that there were some high impact actions that would take a long time to implement, some actions with high or moderate impact that were feasible but needed a few years to deliver, and others that could be implemented right away, even though the impact of the individual action might be small.

We also needed to take into account the budget cycles at The City of Calgary. The current Action Plan capital budget and four year operating budget are due to expire in 2018. Given the established capital and operating budgets in this time frame, and a focus on low-cost, high value actions in the near term, only small adjustments to The City's planned budgets are proposed.

For the next round of business planning, governing the 2019-2022 time period, larger budget adjustments are feasible. Some of the

Figure 11: A prioritization framework



proposed actions with largest potential impact will require significant resources and time beyond 2022 to implement.

At the same time, we worked closely with all the affected business units at The City to validate the proposed actions. For each action, the people who would be responsible for carrying out the action were consulted to clarify how the action could be implemented, estimate the resources needed, and to ensure their support. Many actions were revised and some removed through this process.

Finally, we also took into account the feedback we received from the public with respect to which issues were a priority for them. We worked to ensure that the top issues identified by the public were well addressed in the range of actions selected, and that, as much as possible, the full range of concerns raised were addressed in some way.

As a result of these considerations, we narrowed the list of ideas several times until we ended up with 50 key recommended actions for STEP FORWARD spanning three distinct time frames.

For the short-term actions, the details are available to make projections on the resources (capital and operating) required to deliver them. For the medium- and long-range actions, a rough estimate of resources was developed. For these projects, detailed business cases will need to be prepared so that the actions are appropriately funded during future rounds of budgeting.

## The action list

The following section outlines the 49 key actions that emerged from the prioritization and validation process. The actions are sorted into three time frames as shown in the action framework on page 43.

**Appendix 2** provides more details on each action, including:

- A full description validated by the affected staff.
- Timelines for implementation.
- Estimated capital and operating costs.

The action list includes tasks for several City departments. Each action addresses one or more of the key themes raised by Calgarians and the gaps in our current program.

**No one action will achieve the vision for walking in Calgary. The effect of all these actions together will be a safer, more enjoyable, and easier-to-use network which will encourage more walking in Calgary.**

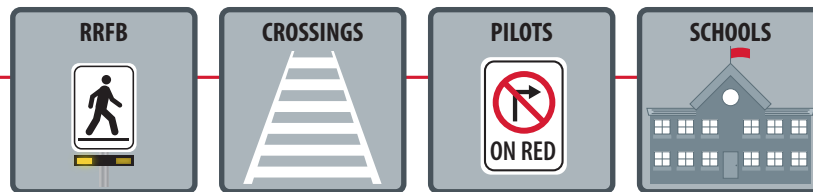


## The STEP FORWARD action framework

### Immediate actions

2016-2018

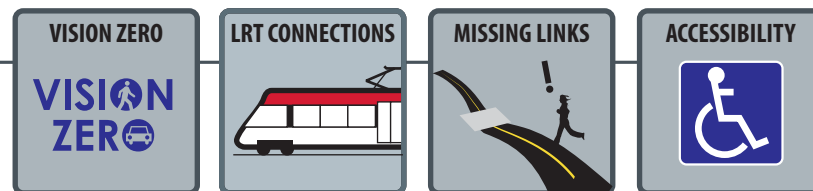
In the **short term**, focus on actions with immediate and noticeable impact, particularly around pedestrian safety. Look for alternate funding sources (e.g., Innovation Fund) to pilot new measures to improve the pedestrian experience. Work as a corporation to build relationships with external partners. Develop the business cases, charters, and project frameworks to support the allocation of resources for medium-term actions.



### Instigate change

2019-2022

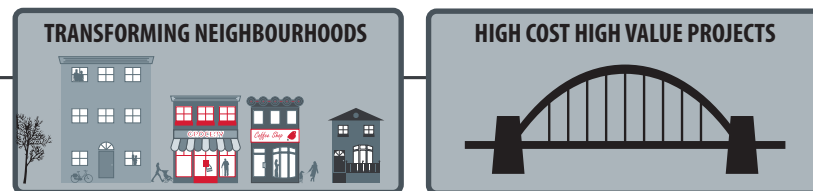
In the **medium term**, use the assembled relationships and resources to make significant improvements to the connectivity and accessibility of the network. Having developed a foundation of safety measures that work, launch a Vision Zero campaign for systematic improvements in overall safety. Create a culture of walking through programs that facilitate, encourage and celebrate the pedestrian experience. Begin the planning and engagement for long-term projects.



### Transformation to a walkable city

beyond 2022

In the **long term**, advance projects that, while costly relative to other pedestrian improvements, do the most to promote walking and walkability in Calgary. Transform neighbourhoods and increase the number of people who live within walking distance of necessities. Invest in major infrastructure that overcomes barriers. Begin a phase of reassessment and plan for the next iteration of the pedestrian strategy.



## The immediate actions 2016-2018

See Appendix 2 for detailed action descriptions



### Action 1 Install more RRFBs

*Rectangular rapid flashing beacons or RRFBs are a new technology to make crossings more visible using flashing lights at the point where pedestrians enter the roadway. RRFBs have high compliance from drivers and are a cost effective way to improve crossings where pedestrians are not being seen.*

### Action 8

**Develop design guidelines for pedestrian-scale lighting for sidewalks and pathways.**

*Pedestrian-scale lighting promotes safety and comfort for people walking on sidewalks and pathways in places where typical street lighting is too widely spaced or doesn't cast enough light onto walking areas.*

2. Use City Charter to reduce legal barriers to pedestrian safety initiatives.
5. Update the pedestrian crossing warrant system.
6. Conduct safety audits for locations with multiple pedestrian collisions.
7. Install more ladder crosswalk markings.

17. Create a tactical urbanism program.
18. Conduct a downtown public realm audit to increase public spaces for events.
28. Update the construction hoarding policy to encourage keeping sidewalks open.
29. Create a pedestrian-specific 311 service request category.
37. Create a STEP FORWARD implementation team.

### OTHER ACTIONS





## Action 38

### Expand Active and Safe Routes to School programs

*Safe and Active Routes to Schools is an education program that helps get students traveling to their local schools by walking and cycling. The number of children walking to school will increase by ensuring safe routes exist and providing children and their parents information on them.*

39. Promote the Mayor's "Walk Challenge" and other walk-to-school initiatives.
40. Put forward at least three innovative pedestrian projects for Council's Innovation Fund.
41. Create pedestrian safety campaigns for key issues like distracted driving and winter visibility.
42. Add questions to the Citizen Satisfaction Survey to keep track of attitudes on walking.
43. Organize and host pre-conference events for international Walk21 Conferences.



## Pilot projects

*Pilot projects are often the best way to gather data and limit risk when The City is considering new infrastructure and programs. By testing new and innovative ideas in a few locations, we can monitor and measure projects on a trial basis and decide if they are right for Calgary. Pilot projects are typically high impact and low cost.*

Pilot projects include:

3. Pilot enhanced lighting at pedestrian crossings.
4. Pilot pedestrian zones in areas with multiple desire lines.
9. Pilot new techniques to reduce pedestrian/vehicle conflicts at intersections.
23. Pilot the use of shrubs in empty tree boxes.

# Instigate change

2019-2022

See Appendix 2 for detailed action descriptions



## Action 12

### Build midblock crossings

*Midblock crossings have usually been avoided in Calgary, which can lead to long detours for people walking on pathways, or between storefronts across retail streets. Making guidelines based on best practices and safety considerations will help The City know where there should or should not be midblock crossings. Implementing these guidelines in high use areas will promote safe and enjoyable walking experiences.*

## Action 16

### Launch a Vision Zero campaign

*Beginning with Sweden in the late 1990s, Vision Zero is a program that aims to reduce traffic deaths across all travel modes to zero. It has since been adopted by cities around the world with good success. Launching a Vision Zero campaign will help to focus safety efforts and move us towards zero faster.*

- 10. Install more audible pedestrian signals, countdown timers and wheelchair ramps.
- 11. Develop guidelines for pedestrian push buttons and improve signal timing for pedestrians.
- 13. Develop guidelines for pedestrian safety solutions (smart right turns, pedestrian refuge islands, raised crossings).
- 14. Pilot/implement recommendations from the Calgary School Site Review project.

- 15. Improve pedestrian safety at LRT and CP/CN rail crossings.
- 19. Update plans for the +15 Network.
- 22. Develop guidelines for Urban Braille.
- 30. Improve snow and ice control for pedestrians.
- 31. Improve engineered walkway conditions.



## Action 21

### Build missing links in the sidewalk network

*Changes in how the city has been built over time means that sometimes sidewalks end or are missing. Fixing these links will make walking safer and is necessary to get people walking to more places more often.*

- 32. Review closed crosswalks (bedsteads) and re-open whenever possible.
- 33. Include all sidewalk closure information on the pathway closures map.
- 34. Build pedestrian wayfinding in high-use areas beyond downtown.
- 44. Expand and promote the “Go Here” washroom locator app.
- 45. Create community walking maps that identify places of interest and heritage.



## Action 24

### Review and improve pedestrian facilities in transit station areas

*Transit stops and stations are key pedestrian destinations. Most people get to transit by walking, and transit stations need to be accessible and easy to get to. Reviewing the pedestrian network within 800m of each LRT station and transit hub will identify missing links and poor infrastructure conditions.*

- 46. Teach City leadership and staff about pedestrian and accessibility needs.
- 47. Develop a walking audit tool to assess public spaces.
- 48. Collaborate with school boards to include walking in the school curriculum.
- 49. Encourage property owners to undertake prompt snow and ice clearing from sidewalks.

# Transformation to a walkable city

## Beyond 2022

See Appendix 2 for detailed action descriptions



### Action 20

Build new high-value pedestrian under/over passes and bridges

*Pedestrian bridges and underpasses connect areas that are otherwise separated by geography (like rivers) or infrastructure (like major roads.) They ensure that people who walk and bike can travel with ease, but they can be expensive. The City will prioritize building these links to make sure they are good investments.*

### Action 26

Improve the walking environment on the priority Main Streets corridors

*Our main streets are the lifeblood of our communities, with spaces for living, shopping, services, food and entertainment. Walking is the main way to access these streets. Investing in improvements in these areas will make sure that they are safe, easy to use and enjoyable for all.*

- 25. Embed walking principles in community design and development review.
- 27. Twin pathways in high-use areas.

- 35. Fund the clearance of winter gravel off sidewalks during spring clean-up.
- 36. Increase funding to improve the response time of snow clearing on City managed sidewalks.

## Case study: Peace Bridge

Opened in 2012, Calgary's Peace Bridge is an example of how high quality pedestrian infrastructure can influence a city. In 2008, The City began taking steps to construct two new river crossings for walking and biking in the Centre City to supplement the existing heavily used and congested structures. These bridges were to provide more space for people to both walk and bike across the river and connect the city's popular public spaces. When it was first proposed in 2008, many Calgarians were sceptical about the project. The location (near other river crossings) was questioned and the eventual selection of the intricately designed structure was seen by some as excessive.

Seeing the bridge project as something more than just a piece of infrastructure, the iconic design was ultimately approved and constructed. Even before it opened, the bridge began to gather international attention as one of the top contemporary

architectural projects in the world. This international recognition has helped grow Calgary's tourism industry.

The Peace Bridge design features include a wider surface, subtle separation between pedestrians and cyclists, glass roof panels and glass balustrades to enable viewing of the Bow River and no piers in the river. These superior design features elevate the importance of pedestrians and set a higher standard for new pedestrian structures.

The Peace Bridge has been an overwhelming success architecturally and functionally and attracts 4,400 users on an average weekday. The bridge is not just a safer and easier means to get across the Bow River, it has become a public gathering place. Citizens travel from across the city to visit. It is common for new couples or graduating classes to have their photos taken at the bridge. Outside of Canada, the bridge is also seen as a leading design for building pedestrian and cyclist infrastructure.



## Acting strategically

The 49 actions identified in STEP FORWARD represent a broad range of activities, new tools to benefit pedestrians and major infrastructure projects. Given that The City does not have unlimited resources to implement these actions, the selection of specific locations or areas to prioritize some of the actions must be strategic.

There are four main types of prioritization that will be used when carrying out the actions identified in the strategy. The detailed action descriptions in **Appendix 2** use the following key terms:

### 1. High pedestrian activity area

Some actions (e.g., Improve snow and ice control to clear road crossings and transit stops, expand pedestrian wayfinding program) would be very expensive to implement at every intersection or street in the city. In order to be efficient with resources and have the most impact on pedestrian experiences, these actions will be prioritized to areas where there are, or are expected to be, many pedestrians in the area on a daily basis. High pedestrian activity areas have been defined based on Land Use Planning



criteria (Transit Oriented Development areas, major activity centres), as shown in Map 1.

The criteria are not based on current pedestrian volumes. Many of these areas are experiencing a gradual increase in density as redevelopment occurs, and creating high quality streetscapes is part of the strategy to attract more investment, development, and ultimately residents and employees to these areas.

## 2. High pedestrian collision areas

Places where people are more frequently involved in collisions with vehicles are obvious places of concern for The City of Calgary. Some actions, particularly those related to piloting new safety measures or improving safety responses, will be focused on high collision areas. The high collision areas map is included as Map 2 in **Appendix 3** of this document. This information is updated annually, and these actions will respond to changing trends over time.

## 3. Specific prioritization to be developed as part of the action

For some actions, creating a prioritization list or guidelines around use is itself part of the action. These actions may be prioritized on a combination of factors, or governed by a warrant system. For example, increasing the use of ladder crossings (Action 8) will be limited to places where (at minimum) a crosswalk is warranted, and locations will be prioritized based

on a customized set of criteria (i.e., proximity to schools), as well as the context and road type that is being crossed. This system will be developed as part of the action, which directs additional use “in suitable locations.”

## 4. Citywide application

This category describes actions that will impact the entire city rather than specific locations (e.g., distracted road user campaigns) and therefore do not need geographic prioritization. Other actions (such as updating the pedestrian crossing warrant) have very broad application and will be enacted in all areas of the city at the same time. If other criteria are not mentioned in the detailed description of the action in **Appendix 2**, the action is intended to support pedestrians city wide.

The action list includes tasks for many business units. Each action addresses one or more of the key themes raised by Calgarians or the gaps in our current program. **No one action will achieve the vision for walking in Calgary. The effect of all these actions together will be a safer, more enjoyable, and easier-to-use network which will encourage more walking in Calgary.**

## Actions for seniors and accessibility

Throughout this document we refer to walking and to pedestrians but this includes everyone, of all age groups, and of all physical abilities, whether walking or using an assistive device. Seniors and people with disabilities face barriers to mobility on a daily basis. Being able to move about the city enables social participation and ensures access to community and health services.

### Seniors and mobility

The ability to move from place to place, whether by driving, cycling, walking or using transit is a key to active aging in place. Aging increases the risk of losing the ability to drive due to illnesses that affect vision, motor function and/or cognitive abilities. Living in more walkable neighborhoods or in areas with easy access to high quality transit service can reduce the negative impacts of losing the ability to drive.



Throughout the public engagement process for the Seniors Age-Friendly Strategy, older adults identified accessibility challenges within the pedestrian environment in Calgary, particularly in the winter.

### People with disabilities

Many of the actions identified in this strategy will help make streets more accessible and easy to use for people with disabilities, including those in wheelchairs, with walkers, or anyone who simply needs a little extra time to get across the street.

There are other people who are not normally considered to have a disability who also encounter barriers to movement, such as people with small children, carrying heavy shopping or luggage or with temporary injuries. Everyone can benefit from a better design of the pedestrian environment.

Some of the STEP FORWARD actions that will improve conditions for seniors and people with disabilities are:

- Action #8: Develop design guidelines for pedestrian-scale lighting for sidewalks and pathways.
- Action #10: Install more audible pedestrian signals, countdown timers and wheelchair ramps.
- Action #11: Develop guidelines for pedestrian push buttons and improve signal timing for pedestrians.
- Action #21: Build missing links in the sidewalk network.
- Action #22: Develop guidelines for Urban Braille.
- Action #28: Update the Construction Hoarding policy to encourage keeping sidewalks open.
- Action #30: Improve snow and ice control for pedestrians.
- Action #35: Fund the clearance of winter gravel off sidewalks during spring clean-up.
- Action #44: Expand and promote the “Go Here” washroom locator app.



# How do we make it happen?

It is one thing to identify a series of actions that could improve the walking experience in Calgary, and quite another to create real change in our facilities and City practices. This chapter will review the funding, staffing and structural changes that need to occur at The City of Calgary in order for the 49 actions identified in STEP FORWARD to become a reality.

## Secure funding

The first question to resolve in developing an implementation plan is how much will the proposed program cost and how will we pay for it?

Working closely with the affected internal business units, we developed high-level (order-of-magnitude) cost estimates for all 49 actions. These estimates are noted in the detailed action list included in **Appendix 2**.

## Capital costs

Based on the estimates provided, the total capital costs for STEP FORWARD were developed, as summarized in Table 1.

These estimates provide a sense of the amount of funding that is needed to provide the safe, enjoyable, easy-to-use network that

Table 1: Capital funding requirement summary

FOCUS AREA	SHORT TERM*	MEDIUM TERM	LONG TERM
	Current budget cycle	Next budget cycle	Subsequent budget cycles
Safety	\$8,200,000	\$6,000,000	\$6,000,000
Plan, design, construct	\$4,600,000	\$12,000,000	\$34,000,000
Operations and maintenance		\$1,500,000	
Education and encouragement	\$200,000	\$500,000	
<b>Total</b>	<b>\$13,000,000</b>	<b>\$20,000,000</b>	<b>\$40,000,000</b>

\* Short-term covers 2016, 2017 and 2018

is needed to increase walking in Calgary. Each individual action will be supported by a project plan and business case that will establish the costs in more detail. These business cases will feed into The City's budgeting process where Council decides how much of The City's financial capacity resources is directed to which programs and projects.

### Comparison of capital costs

Though some of the budget requirements in STEP FORWARD seem significant, it is worth noting that pedestrian infrastructure is generally more affordable than other transportation infrastructure. Because of the lower material costs, investment in pedestrian infrastructure results in more jobs per dollar spent than other forms of infrastructure, and they are typically planned and executed more quickly.

#### Typical installation costs for various infrastructure

##### Crossings

Standard pedestrian crosswalk	\$300
Enhanced (ladder or zebra) crosswalk	\$1,800
Rapid rectangular flashing beacon	\$40,000
Traffic lights	\$300,000
Interchange	\$75,000,000

##### Corridors

1 km pathway	\$250,000
1 km sidewalk	\$360,000
1 km of collector road	\$820,000
1 km of LRT track	\$50,000,000+

## Operating costs

It is challenging to estimate the long-term operating costs associated with many of the actions. Some services, like snow and ice control, can vary significantly (up or down as much as 200 per cent) depending on the severity of the winter season. Pilot projects could require operating funds but only if they are adopted as new practices city wide.

Other actions could affect both capital and operating funding. For example, as more new crosswalks are painted (a capital cost), they are added to the inventory that must be maintained (an operating cost).

The staff required to carry out a number of small projects or programs is considered an operating cost. This is unlike the staff to support a major capital project like an LRT line, which are paid for out of the capital budget for that project.

Operating impacts for future years will be developed in more detail in 2016, as more information is developed for the business cases for each action.

Although the long-term costs still need more thought and evaluation, a summary of the anticipated short-term annual capital and operating costs has been developed, as presented in Table 2. The key actions associated with these costs are noted.

Table 2: Short-term (2016 – 2018) detailed annual funding requirements\*

	PROGRAM AREA	ANNUAL CAPITAL	ANNUAL OPERATING
Safety	Rectangular rapid flashing beacons (Action 1)	\$850,000	
	Pedestrian crossing improvements (Action 5)	\$750,000	
	Pilot pedestrian zones (Action 4)	\$350,000	
	Other crosswalk enhancements (audible signals, countdown timers, ladder crosswalks, etc. – Actions 3, 7 and 10)	\$1,050,000	
	Subtotal	\$3,000,000	\$0
Plan and design	Missing sidewalk/pathway links (Action 21)	\$720,000	
	Additional sidewalk block replacements**	\$740,000	
	Missing pathway lighting (Action 8)	\$180,000	
	Data collection	\$30,000	
	Subtotal	\$1,670,000	\$0
Operate and maintain	Maintain new street crossings (Actions 1, 3, 7 and 10)		\$675,000
	New connections maintenance (Action 21)		\$155,000
	Other maintenance**		\$500,000
	Subtotal	\$0	\$1,330,000
Educate and encourage	Safe and Active Routes to School (Action 38)	\$80,000	\$100,000
	Subtotal	\$80,000	\$100,000
Staffing	Transportation Planning (3 staff, Action 37)		\$360,000
	Roads (7 staff, Action 37)		\$740,000
	Subtotal		\$1,100,000
Total		\$4,750,000	\$2,530,000

\* This table is a detailed breakdown of a **full annual year** of strategy funding requirements (e.g. 2017, 2018). 2016 requirements are less (approximately \$4 million) as implementations will not begin until part way into 2016.

\*\* Existing program underfunded

**The budget impacts of STEP FORWARD were determined based on how much more money would be required over and above current funding levels.** For example, the line item for additional lighting on pathways represents spending over and above what Parks already has dedicated to building and maintaining lighting in park areas.

## Sources of funding

Having developed an estimate of the short-, medium- and long-term financial needs of the pedestrian strategy, a preliminary investigation of possible sources of funding to support these projects and programs was conducted. The STEP FORWARD strategy will require capital and operating budget to accommodate the proposed actions. For the short term (2016-2018), there is currently some budget (approximately \$4 million) under the existing City-Wide Active Modes Program (Program 126-103) that can be applied to the Pedestrian Strategy funding requirements.

A number of other potential funding sources are currently being examined:

- Surplus capital from other business units
- Calgary Police Service revenue (e.g., red light cameras)
- External partners (e.g., Alberta Health Services)
- Federal fuel tax revenue
- Private sponsorships (e.g., for twinning pathways)
- Partnership with land developers.

In 2016, City staff will continue to work internally and with external partners to identify funding sources to meet the capital and operating requirements identified in Table 2.

## Invest effort

In order to deliver the vision for walking in Calgary laid out in STEP FORWARD, The City will need more than just concrete, pedestrian signals and paint. We will also need people dedicated to planning, designing, constructing, maintaining and evaluating the many projects outlined in the list of actions.

As we have learned from the Cycling Strategy, a coordinator and supporting staff dedicated to addressing the needs of a particular travel mode is an effective model to lead change across The Corporation. This focused team will support and be supported by the staff in numerous divisions across The City to deliver on STEP FORWARD's 49 actions.

Current Transportation Planning and Roads staff are allocated to delivering high-priority programs and services. Community traffic calming, road safety improvements and complete streets projects (among others) are managed, built and maintained by the same workforce that will be responsible for implementing the pedestrian strategy. In order to assemble a team focused on delivering the 49 actions, new staff are needed.

## Transportation Planning staffing requirements

Four dedicated Transportation Planning staff are required to carry out the actions in STEP FORWARD. Their titles, placement and roles are detailed below:

### **Pedestrian Strategy Coordinator (Liveable Streets Division, Transportation Planning)**

Coordinate and plan pedestrian improvements, develop pilot projects, oversee the implementation of the 49 actions, and strengthen relationships with internal and external partners. Monitor and report on plan progress.

### **Pedestrian Education Planner (Liveable Streets Division, Transportation Planning)**

Develop an ongoing education and promotion program and work with internal and external partners on advancing current pedestrian-encouragement initiatives in Calgary.

**Pedestrian Planner (Liveable Streets Division, Transportation Planning)** Support the Pedestrian Strategy Coordinator in the implementation of the 49 actions including guideline development, planning pedestrian network, engaging communities on pedestrian issues, and co-ordinating with the Pedestrian Design Coordinator to deliver pedestrian improvements.

**Data Analysis Technician (Data Division, Transportation Planning)** Design and implement procedures to collect and analyze pedestrian-specific data to support the monitoring program, pilot projects, and the planning and prioritization of pedestrian projects.

## Case study: Cycle Strategy

After the approval of the Calgary Transportation Plan, The City was looking for ways to make progress on increasing cycling in Calgary. In 2011, The City adopted a Cycling Strategy that identified 50 key actions to improve cycling in Calgary. Across The Corporation, The City has ten staff focused on the delivery of these actions and supporting cyclist's needs over the short term. The Transportation Planning team has collaborated with staff across the City to complete or make significant progress on 46 of the recommended actions in the cycling plan. There is data to show that significant progress has been made towards a more bicycle friendly city for riders of all ability levels.

A similar action oriented approach to organizing efforts is proposed for STEP FORWARD.



Bicycle staff meeting with Calgarians.

## Roads staffing requirements

Many of the current pedestrian-related services and programs reside in the Roads Business Unit. In order to grow these services to close gaps and support the 49 actions in STEP FORWARD, additional staff will be required.

Two engineers and five field staff in Roads are required to deliver and maintain the additional pavement markings, signs, and crossing controls identified in STEP FORWARD. The titles, placement and roles of the pedestrian staff are detailed below:

### **Pedestrian Coordinator/Traffic Engineer**

**(Traffic Division, Roads)** Perform engineering reviews of designs of pedestrian facilities; design and provide construction administration and project management for construction of pedestrian treatments, such as RRFBs, crosswalks, and curb extensions; conduct traffic studies and warrant studies to identify appropriate pedestrian facilities and treatments; and provide support and coordination on projects with pedestrian facility components.

### **Pedestrian Safety Engineer (Traffic Division, Roads)**

Conduct safety reviews and analysis, including pedestrian focused road safety audits; plan, design, implement and evaluate pedestrian safety countermeasures; and provide education and awareness materials and support related to pedestrian safety issues.

**Field Staff – (5 Full Time Equivalents)** Install and maintain new crosswalks, ladder crosswalks and other road markings, new RRFBs and other pedestrian control devices, and new pedestrian scale lighting for sidewalks and crossings.

## Other staffing requirements

### **Dedicated staff from other partner business units are not anticipated in the short term.**

Existing staff from these business units will be able to deliver on actions that are to be led by their area. They will also support the delivery of actions that are led by Transportation Planning or Roads staff.

In the medium and long terms, staffing needs to support major planning/infrastructure projects, such as planning, design and implementation on Main Streets Corridors (Action 26) will depend on the number of

## The case for dedicated staff

The Alliance for Biking and Walking (ABW) is an international organization that supports advocacy groups with research and resources. Bike Calgary and Walk Calgary are local affiliates of this umbrella organization.

In its 2014 benchmarking report, the ABW conducted analyses of staffing in 52 American cities.<sup>25</sup> Cities with more staff dedicated to active modes tended to have higher levels of bicycling and walking, and lower rates of cyclist and pedestrian fatalities.

Increasing the walking mode share in Calgary could divert between 150,000 and 200,000 trips per day from other modes of travel by 2025. The staffing levels required to accommodate similar trip amounts by other modes (planning, constructing and maintaining road or transit capacity) would far exceed the staff proposed to support those trips as pedestrians.



competing priorities placed on staff. These will be determined by the appropriate Directors for future budget deliberations.

## Coordination between business units

Today there are a number of business units within The City of Calgary whose work touches on the lives of pedestrians in some way (see Figure 2 on page 14). There are many City staff supporting pedestrians in these various areas, and many of the programs deliver excellent results. At the same time, there has been a lack of overall focus and coordination in these efforts, which has led to some gaps and inefficiencies in the facilities and services.

As outlined in the previous section, STEP FORWARD proposes a team of dedicated staff operating out of the Liveable Streets division in Transportation Planning. This group specializes in the combination of planning, design, and education and encouragement efforts that are

at the core of the actions in STEP FORWARD. This team will work collaboratively with a number of key internal groups to deliver on the actions.

## 1. Within Transportation

### Transportation Planning

Beyond pedestrians, staff in this business unit plan and coordinate projects for cyclists and motorists, implement Complete Streets, address community traffic concerns and review the many development applications The City receives from a transportation perspective. All of these programs offer opportunities to improve walking in Calgary through collaborative effort.

### Roads

Roads is responsible for constructing new smaller-scale pedestrian infrastructure, replacing or retrofitting old infrastructure, and maintaining the existing pedestrian network throughout the year. Pedestrian design staff are embedded in Roads in part to support these functions.

Many opportunities to improve pedestrian infrastructure arise in conjunction with other major road work. It is significantly less expensive to improve a sidewalk when the adjacent roadway is being rebuilt. Similarly, improving signal timing for pedestrians can be done more efficiently if it is coordinated with other optimization work for the same systems. Heightened coordination is critical as The City increases its focus on addressing pedestrian travel needs.

### Transportation Infrastructure

Transportation Infrastructure designs, builds and replaces large-scale pedestrian infrastructure. Prioritizing this work is important to ensure pedestrian amenities are constructed or replaced where and when needed. Coordination is also required to make sure supporting sidewalks and pathways exist to connect a new bridge to as many users as possible.

### Calgary Transit

Every transit trip begins and ends with a walking trip, which means transit customers are also a focus in STEP FORWARD. Co-ordinating Transportation Planning activities with Calgary Transit planning and operations is critical to ensuring high-quality pedestrian connections are provided and maintained to support transit access across the city. This applies to both existing facilities and planning for new transit services, such as Greenline LRT.

## 2. With other business units

### Calgary Recreation

Recreation currently has a number of initiatives that align with the education and encouragement actions of the strategy. Coordination is needed so that there is broad coverage and consistent messaging between the efforts of different groups.

### Calgary Parks

Pathways serve as both recreation facilities and great pedestrian connections away from the noise and hazards of vehicle traffic. Parks implements and maintains this network of connections. Coordination between Parks, Transportation Planning and Roads will help to create a seamless walking experience for people as they pass from one facility to another.

### Planning & Development

Planning plays a key role in working with developers to ensure new communities are highly walkable. They also work with individual redevelopment sites to support the surrounding pedestrian network. Coordination is needed to ensure City-led improvements link up with developer contributions to the pedestrian environment.





Feeling secure when walking is an important aspect of safety in our communities.

### 3. With Calgary Police Service

The Calgary Police Service proactively tackles many of the same critical safety issues (e.g. distracted driving, speeding) that STEP FORWARD is trying to address. Transportation Planning currently coordinates with the Calgary Police Service through the Safer Mobility Leadership Team. Collaboration with CPS has been used effectively to support new cycling and Complete Streets projects, where education and enforcement are needed to support changes in infrastructure. A strong partnership with the Calgary Police Service is key to improving pedestrian safety.

In some jurisdictions, ticketing revenue for certain kinds of offences is directed to safety improvements and educational campaigns. The City will work with CPS to explore funding opportunities to expand our efforts to protect Calgarians when they walk.

## Collaboration with external partners

When we reviewed successful pedestrian strategies in other cities, one of the key things we learned was the importance of working with partner agencies and organizations with similar goals. Collaboration can include cross promotion of activities, joint projects with shared resources, provision of expertise and grants or other funding support.

The Pedestrian Coordinator will serve as a key conduit between The City and other agencies and organizations that have a mandate to improve walking in Calgary. They will collaborate with others on the development and delivery of campaigns to promote walking and active and healthy living. They will maintain ongoing consultation and engagement with BRZs, advocacy and community groups to ensure strong public support for pedestrian initiatives. The Coordinator will also build partnerships with international leaders in pedestrian policy, design, planning and programming and seek out opportunities to participate and contribute to research on pedestrian innovation.

The following page lists the agencies and organizations that have been identified as key partners to lend support and help deliver on the strategy actions.

## Partner agencies and organizations

### **ALBERTA HEALTH SERVICES**

Alberta Health Services delivers medical care on behalf of the Government of Alberta's Ministry of Health through 400 facilities throughout the province, including hospitals, clinics and care facilities, while providing a variety of programs and services.

### **ALBERTA MOTOR ASSOCIATION**

Since 1937, generations of School Safety patrollers have kept Albertans safe. Funded and coordinated by the Alberta Motor Association (AMA), the AMA School Safety Patrol™ program has since grown to include approximately 500 schools.

### **ALBERTA TRANSPORTATION, OFFICE OF TRAFFIC SAFETY**

The Alberta Office of Traffic Safety provides an umbrella to coordinate and deliver results and programs that address traffic safety issues across Alberta.

### **CALGARY BOARD OF EDUCATION**

The Calgary Board of Education (CBE) is the public school board in Calgary, Alberta, Canada. From kindergarten to Grade 12, the CBE operates a variety of programs and services. They are responsible for educating more than 114,000 students in over 220 schools.

### **CALGARY BUSINESS REVITALIZATION ZONES**

Calgary's Business Revitalization Zones (BRZs) goal is to represent their member businesses by promoting and enhancing their respective business districts. BRZs in Calgary have added millions of dollars in infrastructure to their prospective areas in lighting, sidewalk enhancements, street furniture and vegetation.

### **CALGARY CATHOLIC SCHOOL DISTRICT**

CCSD is the largest Catholic school district in Alberta, serving more than 53,000 students in 105 schools located in Calgary, Airdrie, Cochrane, Chestermere and the Municipal District of Rocky View.

### **FEDERATION OF CALGARY COMMUNITIES**

Incorporated in 1961, the Federation of Calgary Communities is a support non-profit organization to over 200 member non-profit organizations, including the 150 community associations of Calgary and area.

### **PARKS FOUNDATION CALGARY**

Parks Foundation Calgary (PFC) is a non-profit organization dedicated to improving the lives of all Calgarians. Since its establishment in 1985 as an agent for The City of Calgary, PFC has been the guardian of our community's natural environment, helping individuals, organizations and communities to create and enhance the city's parks and green spaces.

### **SAFER CALGARY**

The Safer Calgary coalition is a broad alliance of individuals and groups representing a common interest of decreasing the potential for preventable harm and death in the city of Calgary.

### **SHAPE ALBERTA**

SHAPE (Safe Healthy Active People Everywhere) is an Alberta wide non-profit organization that promotes the Active & Safe Routes to Schools programs throughout Alberta. They encourage students to walk or bike to school on a regular basis.

### **WALK CALGARY**

Walk Calgary is a non-profit advocacy organization partnering with Bike Calgary to promote a more walkable city.

# Is it working?

Once we start taking steps toward a more pedestrian friendly city, it will be important to keep track of how effective our efforts have been. This chapter outlines the methods we will use to monitor our progress and keep the public informed on how we are doing.

## Six key results

The primary goal of STEP FORWARD is to increase the number of people walking in Calgary. STEP FORWARD identifies 49 actions that The City and its partners will undertake over the next ten years to achieve this goal, each focusing on a specific aspect of walking that can be improved.

The monitoring program is a way of measuring the cumulative impact of all those individual actions. The results we are measuring reflect the goals we are trying to achieve rather than the methods being used to achieve them.

For STEP FORWARD, we will be looking for the following key results:

1. More people walking.
2. Fewer pedestrian injuries and deaths.
3. Better winter conditions for walking.
4. More walkable communities.
5. More children walking to school.
6. High public confidence in our pedestrian system.

For each key result, the following pages provide specific information on where we are today, historic trends (if available), and the direction we want to go in the future.

We have also identified the key partners that are critical to our success on each measure and the most important actions we can take to promote change.

Like any strategy, STEP FORWARD will evolve over time. By monitoring our progress, we will be able to expand programs that are working well and change direction on programs that are not.

**Ultimately, a monitoring program is about accountability – demonstrating that the investments being made in pedestrian safety are translating into more people walking.**

### What is RBA?

Results Based Accountability (RBA) is a framework for creating accountability in public agencies (among others) that was developed by the Fiscal Policy Studies Institute. The framework starts with Outcomes (what you want to experience in the world) and then works backward to what Actions and partners are needed to create that outcome.

For STEP FORWARD, the six key results are indicators – ways of using data to measure if these outcomes are being achieved. For each key result, a number of different actions, both by the City and our partners have the potential to influence the outcome. By monitoring the results over time, we can stay focused on what we are trying to achieve (e.g. more people walking) rather than on how much effort we have put to any one program (e.g. kilometers of sidewalk repaired per year).

## Key Result 1: More people walking

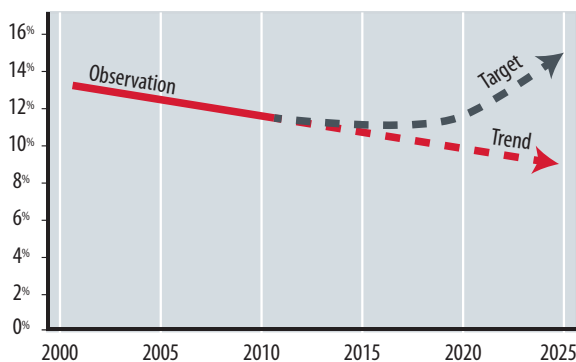
We measure the number of people walking by the percentage of total trips that people make by walking compared to other modes like biking, driving, or taking transit. This is called the walking mode share.

The City measures this using the Household Activity Survey, which tracks how Calgarians travel choices change over time.

**This indicator is trending the wrong way.**

### Percentage of walking trips in Calgary

Mode share for all trips, city wide, all day.



Data sources: HAS & CARTAS

Key partners that can act to improve the result:

- The City of Calgary (Planning & Development, Roads, Transportation Planning and others)
- Alberta Health Services
- Advocacy groups (Walk Calgary, Safer Calgary and others)
- Development industry



Some areas of the city (particularly the Centre City) have seen increases in the walking mode share. Overall the number of walking trips in the city has been declining proportional to other modes of travel.

The long-term CTP/MDP target is to increase the combined walking and cycling share to 20-25 per cent by 2070. The shorter term 2020 Sustainability Direction has the target of 15 per cent combined walking and cycling trips.

**STEP FORWARD has a target of 15 per cent of total trips to be made by walking by 2025.**

Key actions that will change this trend:

- Target significant barriers to walking (Actions 12, 20, 21)
- Create complete communities that are walkable (Actions 24, 25, 26)
- Establish life-long habits of walking (Actions 17, 38, 39)

## Key Result 2:

### Fewer pedestrian injuries and deaths

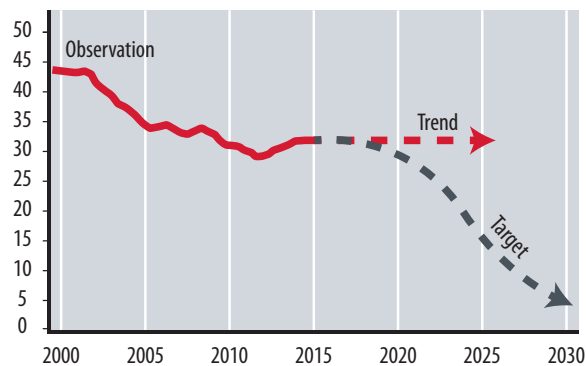
We measure safety for pedestrians in terms of the number of injuries and fatalities (called “casualty collisions” when combined) proportional to the population of Calgary.

The Roads Traffic Safety group works with the Calgary Police Service to maintain records of all traffic related pedestrian injuries and fatalities and produces an annual report summarizing trends.

**This indicator has been consistent over the past decade.**

Pedestrian fatalities are too small a sample size to project a per capita trend, but no deaths are acceptable. The City will continue to make every

#### Pedestrian casualty collisions per 100,000 population

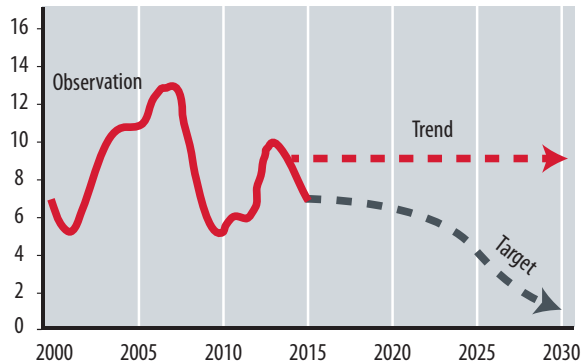


Data source: CPS collisions

Key partners that can act to improve result:

- City of Calgary (Roads, Transportation Planning and others)
- Calgary Police Service
- Alberta Transportation
- Alberta Health Services
- Advocacy groups (Safer Calgary, community associations)

#### Number of pedestrian fatality collisions



effort to eliminate deaths due to vehicle collisions with pedestrians. STEP FORWARD further supports this objective through a number of measures that aim to reduce the frequency and severity of collisions. Action 17 directs The City’s Safer Mobility program to adopt a Vision Zero mandate.

The Safer Mobility Plan has set a target to reduce the casualty (injury and fatality) collision rate per capita with vulnerable road users (pedestrians, cyclists and motorcyclists) by 12 per cent (relative to 2013 levels, based on a rolling three-year average).

**STEP FORWARD has a target of fewer than four pedestrian fatality collisions, and fewer than 15 pedestrian casualty collisions annually per 100,000 population (based on a rolling three-year average), by 2025.**

Key actions that will change this trend:

- Make physical improvements to reduce the likelihood/severity of pedestrian-vehicle collisions (Actions 1, 7, 12, 15).
- Target high incident locations and key behavioural factors (Actions 6, 41).
- Experiment with innovative solutions (Actions 3, 4, 9, 13, 14).
- Adopt a Vision Zero mandate through the Safer Mobility Program (Action 16).

## Vision Zero

The Vision Zero Initiative was first conceived in Sweden in 1994 and approved in 1997 as a new approach to road safety. It is the political ambition that no one should ever die as a result of traffic and is summarised in the one sentence: “No loss of life is acceptable.” The Vision Zero approach is based on the simple fact that humans are fallible and fragile. The road system is required to keep us moving, but must always take this human fallibility into account.

Transport systems are traditionally designed for maximum capacity and mobility; therefore, road users are held responsible for their own safety. The Vision Zero initiative takes the opposite approach by placing the burden for safety on system design, recognising the potential for human error and the low tolerance the human body has for the mechanical force of a moving vehicle. Vision Zero programs focus on updating design specifications, improving collision hotspots and changing practices to minimize the consequences of human errors. These improvements aim to reduce the likelihood and severity of vehicle-vehicle collisions, single-vehicle collisions, vehicle-bicycle

collisions, and vehicle-pedestrian collisions. Pedestrian fatalities represent only one aspect of the Vision Zero initiative.

STEP FORWARD Action 16 directs The City’s Safer Mobility Program to adopt a Vision Zero mandate in order to improve pedestrian safety (among other benefits). This would likely occur during the next renewal of the Safer Mobility Plan in 2018. It is beyond the scope of the pedestrian strategy to identify and marshal all the resources necessary to achieve all of the Vision Zero objectives. The focus of STEP FORWARD remains on the pedestrian, and the monitoring of pedestrian-specific safety data is an element of that.

In Sweden, as in many other jurisdictions that have adopted a Vision Zero mandate, concerted effort and collaboration among key agencies and stakeholders has resulted in fewer traffic fatalities over time. Although simply declaring the goal does not in itself guarantee improvements in safety, Vision Zero provides an organizational framework for ongoing efforts and investments to support a new approach to design.

## Key Result 3:

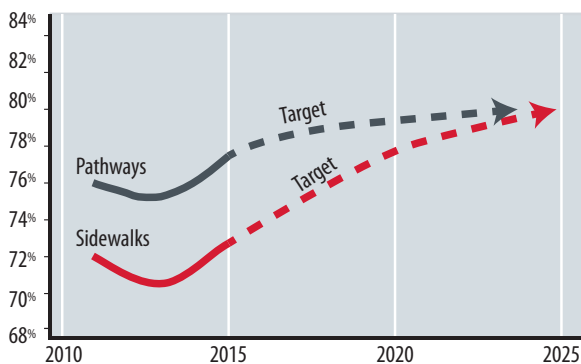
### Better winter conditions for walking

Weather in Calgary can be unpredictable at the best of times. Snow or ice can turn a safe and pleasant sidewalk or pathway into a treacherous or impassable route. Snow and ice control is currently a shared responsibility between residents, business owners and The City (including Roads, Parks, and Transit divisions).

It is not currently known to what extent residents and businesses achieve snow and ice control relative to the levels mandated in bylaw (clear within 24 hours of the end of snowfall). Because



#### Percentage of Calgarians satisfied with snow clearance



Data source: Winter Conditions Survey

Key partners that can act to improve the result:

- The City of Calgary (Roads, Transit, Parks, Community Neighbourhood Services, Community Standards)
- Community associations and BRZs
- Businesses and residents

of the variety of performance standards for different areas of the city, many of which are not directly City control, public satisfaction with snow and ice control on sidewalks and pathways is the best available measure of the success of the overall effort.

Public satisfaction has been measured by Roads semi-annually since 2010, with insufficient data to project a long-term trend.

**STEP FORWARD has a target of 80 per cent satisfied or very satisfied with snow clearance on sidewalks and pathways by 2025.**

Key actions that will change this trend:

- Reduce obstructions at transit stops and road crossings (Action 30).
- Test alternative materials and equipment to improve efficiency and effectiveness (Action 30).
- Increase the priority of City snow clearing on sidewalks in high pedestrian activity areas (Action 36).

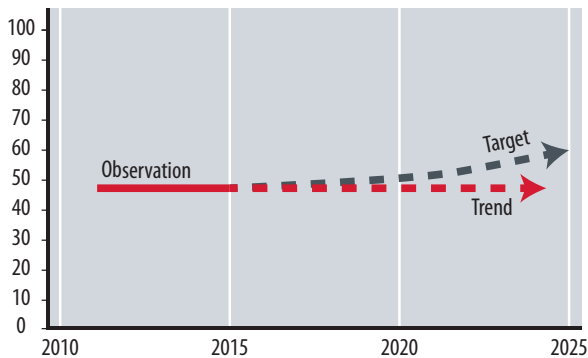
## Key Result 4: More walkable communities

There are a number of measures of walkability that could be used to track our progress. **Walk Score®** is a commonly known and independently collected measure of walkability, which is updated on an annual basis. Calgary's overall **Walk Score®** has been measured at 48 (at the high end of "car dependent") since the rating was first available in 2012.

This indicator is has been consistent for Calgary since the measure was first released.

While some highly walkable communities have

### Calgary's overall Walk Score®



Data source: Walk Score®

Key partners that can act to improve result:

- The City of Calgary (Planning, Transportation Planning and others)
- The development industry
- Community associations
- Advocacy groups



begun to be developed in recent years, this progress has been offset by continued growth of large suburban communities with few walkable amenities. New connectivity standards and Complete Street standards will help improve our overall walkability, as will increases in density in major activity centres and around transit hubs.

**STEP FORWARD has a target of 60 for Calgary's overall Walk Score® by 2025.**

This would move Calgary from "Car Dependant" to "Somewhat Walkable," and put us in the top five cities over 200,000 in Canada. See page 27 for more information.

Key actions that will change this trend:

- Connect people with the places where they want to go (Actions 20, 21, 24, 47).
- Create more opportunities for people to live in the vicinity of necessities (Actions 25, 26).



## Key Result 5: More children walking to school

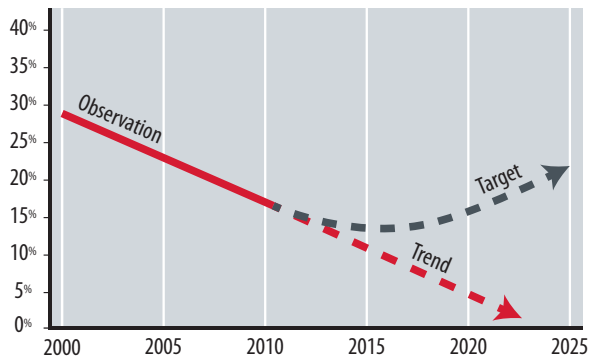
The school trip is one of the most common trip types for children. The number of children walking to school serves as an indicator of how much children are walking in general.

The City measures this using the Household Activity Survey, which tracks travel choices, including by children, within each household surveyed.

**This indicator is trending the wrong way.**

The number of children walking to school (grades K-12) has been in decline for many years. Children

### Percentage of K-12 students walking to school



Data source: HAS

Key partners that can act to improve the result:

- The City of Calgary (Planning, Transportation Planning, Community and Neighbourhood Services)
- Calgary Public and Separate School Boards, private and charter schools
- Community associations
- Advocacy Groups (AMA, Safer Calgary, SHAPE and others)



tend to live farther from school than in the past, particularly with a proliferation of specialized and private schools with large catchment areas. At the same time, the number of parents driving kids to school in private vehicles has led to increased safety concerns for those that do live within walking distance of their school, creating a negative feedback loop that further drives down walking.

**STEP FORWARD has a target of 20 per cent of students (K-12) walking to school by 2025.**

Key actions that will change this trend:

- Provide Safe and Active Walk to School resources and support encouragement programs (Actions 38, 39).
- Improve safety in the immediate vicinity of schools (Actions 1, 7, 14)

## Key Result 6: High confidence in our pedestrian system

The public perception of walking is a critical factor in whether or not people choose to walk. We will measure public confidence in our walking system through a new question in the annual Citizen Satisfaction Survey.

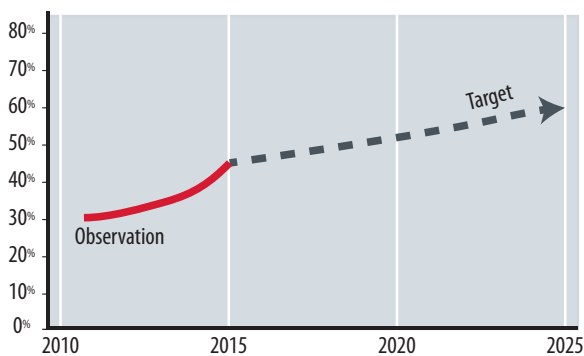
Similar questions were asked in a semi-annual Roads survey, as well as during the telephone research for STEP FORWARD. There is insufficient data to formulate a long term trend.

**Currently fewer than 50 per cent of Calgarians report being very satisfied with walking facilities.**

In the available data, walking, jogging or running on sidewalks scored higher than cycling, transit



### Percentage of people very satisfied with walking facilities



Data source: Citizen Satisfaction Survey

Key partners that can act to improve result:

- The City of Calgary (Roads, Parks, Transportation Infrastructure and others)
- Advocacy groups (Walk Calgary, Safer Calgary, SHAPE, and others)

or driving a private vehicle in terms of satisfaction with facilities. People should have no hesitations around choosing to walk, so continued awareness of their perceptions is important.

**STEP FORWARD has a target of 60 per cent of Calgarians reporting very satisfied with walking programs and facilities in Calgary by 2025.**

Key actions that will change this trend:

- Promote a culture of walking. (Actions 17, 34, 46, 48)
- Eliminate common irritants reported by pedestrians. (Actions 11, 27, 28, 32)
- Deliver high profile projects that raise awareness and encourage conversation about pedestrian needs. (Actions 16, 20, 26)

Figure 12: Key results for STEP FORWARD

INDICATOR	MEASURE	NOW	TARGET BY 2025	SOURCE
1. More people walking	Percentage of trips made by walking (all day trips)	11.7%	15%	My Travel Log (City of Calgary)
2. Fewer pedestrian injuries and deaths	Annual number of injuries and fatalities	Fatalities – 7 Injuries/100k – 29	< 4 < 15	Collision records (Calgary Police Service)
3. Better winter conditions for walking	Percentage of Calgarians satisfied with Snow and Ice Control	Sidewalk – 73% Pathway – 78%	80%	Roads Winter Driving Conditions Survey (City of Calgary)
4. More walkable communities	Overall Walk Score® in Calgary	48	60	walkscore.com
5. More children walking to school	Percentage of K-12 students that walk to school	17.6%	20%	My Travel Log (City of Calgary)
6. High confidence in our pedestrian system	Percentage of Calgarians who are very satisfied with walking facilities	45%	60%	Citizen Satisfaction Survey (City of Calgary)

## Data collection

In addition to the six broad measures of progress mentioned above, STEP FORWARD will be supported by an expansion of existing data collection. This will allow The City to monitor pedestrian activity on Calgary’s streets and pathways and support pilot projects with before-after analysis.

Unlike cars, which travel along roads or through intersections in predictable paths, people walk in many different directions at once, passing between each other, and frequently changing direction. Pedestrians can suddenly stop to check a phone or look in a store window and may cut through parking lots, plazas or even buildings to shorten their route.

Because pedestrian data is important, both in assessing existing facilities and prioritizing new ones, we will continue to grow our efforts to track pedestrian movements through the city. In key and suitable locations (like major bridge crossings), automated counting can be used to collect and make public information on how many pedestrians travel the route each day.

In many other locations, spot counts will be used to monitor pedestrian volumes (including to assess crossing warrants) and to support pilot projects. Other important pedestrian studies, such as yield compliance (which measures the effectiveness of a crosswalk or other crossing control), intercept surveys (where people are stopped on the street to find out more about

their current walking trip), and collision history reviews, will be used to support specific STEP FORWARD actions and projects as needed. The high pedestrian activity areas (Map 1) and high pedestrian collision areas (Map 2) will require additional data collection to assess needs and determine locations of highest priority.

A specialist in designing pedestrian studies and analyzing the results has been identified as one of the staff required to support STEP FORWARD. The cost of data collection for specific pilot projects will be included in the cost of those projects. For broader monitoring of the pedestrian network, the Data Division of Transportation Planning will need approximately \$80,000 in capital funding for new permanent pedestrian counters at key locations and \$25,000 per year to conduct spot counts and other specific studies at various locations across the city. This has been reflected in Table 2 in the previous chapter.

## Reporting back

STEP FORWARD sets out an ambitious list of actions that use various City resources to deliver a safe, enjoyable, and easy to use network for pedestrians. The plan has many components and spans a number of years.

Keeping Council and the public informed of progress along the way is an important part of the strategy. This has the following benefits:

- Ensures the ongoing commitment of City staff across The Corporation to the STEP FORWARD objective and actions.
- Ensures the ongoing support from Council to provide the resources needed to deliver the actions.
- Reassures the public that resources are being wisely invested in actions that are having a positive impact.

- Maintains the public profile of our successes, which in itself encourages more people to consider walking.

One method to provide this feedback is to post current progress on all our key results online along with updates on current projects. This demonstrates accountability to the public and provides a clear line of communication for those seeking more information.

A report to Council (through the Transportation and Transit Committee) is a way of providing more detailed feedback on a consistent basis. The report should summarize progress on the actions taken, the latest results from the monitoring program and identify next steps. This is also an opportunity to recommend any revisions to the strategy or specific actions based on experience and new ideas that come up over time. Based on pace of action and rate of change in the key results, we recommend a **progress report be presented every one to two years.**

Like any strategy document, STEP FORWARD can only look so far ahead in terms of actions and resources needed to support pedestrians. **In roughly a decade, we anticipate the need to revisit the strategy as a whole, evaluate what has and has not been working, and chart a course for the years to follow.**

By then, we anticipate that Calgary will have made significant progress on creating a safe, enjoyable and easy-to-use network. We may be looking for methods to address pedestrian congestion, integrate new wearable technology or ensure pedestrian safety from autonomous vehicles. A decade from now we will be able to look back at this document and see it was an important step forward on a journey to make walking a vital part of the life of our city.

# List of appendices

- Appendix 1: Glossary
- Appendix 2: Detailed list of actions
- Appendix 3: Maps
- Appendix 4: Linkages to existing policies
- Appendix 5: References
- Appendix 6: Acknowledgements

# Appendix 1: Glossary

## **Accessibility**

Ease of access / egress to any location by walking, cycling, transit and private vehicles, or for commercial vehicles. *Calgary Transportation Plan*

## **Activity centre**

All areas defined as Major Activity Centres (MACs), Community Activity Centres (CACs) or Neighbourhood Activity Centres (NACs) in the MDP and as outlined in the MDP Urban Structure. *Complete Streets Guide*

## **Arterial street/road**

Provides a reasonably direct connection between multiple communities and major destinations and carries between 10,000 and 30,000 vehicles per day. *calgary.ca*

## **Audible signal**

An integrated device that communicates information about the WALK and DON'T WALK intervals at signalized intersections in non-visual formats. *apsguide.org*

## **Auto-oriented development**

Sometimes called “car-oriented”, an auto-oriented development is one which increases the demand for personal vehicle use. Normally low density, homogeneous land use types and with little support for other transportation modes.

## **Bedsteads**

A fixed obstacle installed perpendicular and staggered across a pedestrian route that restricts or slows movement and forces cyclists to dismount to get through.

## **Business revitalization zone (BRZ)**

A self-help program by which businesses in an area can jointly raise and administer funds to improve and promote their businesses. *calgary.ca*

## **Business unit (City)**

City structure below the department level, led by a Director who reports to the appropriate General Manager.

## **Calgary Municipal Land Corporation (CMLC)**

A wholly owned subsidiary of The City of Calgary to implement and execute the Rivers District Community Revitalization Plan. *CalgaryMLC.ca*

## **CPS**

Calgary Police Service

## **CT**

Calgary Transit

## **CN**

Canadian National Railways

## **CP**

Canadian Pacific Railway

## **Capital spending/budget**

Funds that are available for constructing assets such as buildings, LRT lines and bridges. Funds to cover the cost of these assets are normally provided through ongoing programs or one-time grants from the provincial and federal governments. *RouteAhead (Revised)*

## **Citizen Satisfaction Survey**

The City of Calgary uses the Citizen Satisfaction Survey to understand the needs and perceptions of Calgarians and identify areas for improvement. *calgary.ca*

**City asset**

Infrastructure that belongs to The City.

**Calgary Transportation Plan (CTP)**

Provides the policy framework and direction for the development of the transportation network in The City. In conjunction with the MDP the CTP provides a long-term strategy for a more sustainable city through the integration of land use and mobility policies. *RouteAhead*

**Complete street**

A street that moves people, by foot, bike, bus and car; provides places where people can live, work, shop and play; supports the natural environment; facilitates movement of trucks and service vehicles, and supports our economy. *Complete Streets Guide*

**Congestion**

A condition lasting 15 minutes or longer where travel demand exceeds the design capacity of a transportation facility. *Municipal Development Plan*

**Connectivity**

The links between spaces and built form, including sidewalks, +15 links, and parks and plazas, which facilitate ease of pedestrian navigation and contribute to walkability (see “walkability”). *Urban Design Guidelines*

**Construction hoarding**

Construction hoarding permits are issued to occupy space on City owned right-of-way (i.e., alley, sidewalk, boulevard and street) for the purpose of hoarding of building materials and equipment around a construction site. *calgary.ca*

**Countdown timer**

A signal that includes a visual cue for the remaining time to cross the street, normally displayed on the pedestrian signal.

**Crossing warrant**

See “warrant”

**Crosswalk**

Sometimes known as a “crossing,” a crosswalk is any part of a roadway specifically intended for pedestrians to cross, which may be so indicated by signs, lines, marking or other devices.

*TCAT Geometric Design Guide for Canadian Roads*

**Cul-de-Sac**

Sometimes called a “dead-end,” a cul-de-sac roadway open to vehicles at one end only.

**Department (City)**

City structure that has a General Manager reporting directly to the City Manager. The City has six departments: Planning, Development & Assessment, Transportation, Utilities & Environmental Protection, Community Services & Protective Services, Chief Finance Office and the Deputy City Manager’s office.

**Division (City)**

City structure below the business unit level, led by a Manager who reports to the appropriate Director.

**Engineered walkway**

Asphalt or concrete paths placed between two properties to make additional connections for walk and biking.

# Appendix 1: Glossary

## **Enhanced crosswalk**

A crosswalk with additional treatments (i.e., lighting, road marking) to make the pedestrian crossing more prominent.

## **Green Line (LRT)**

Currently under development, an addition to Calgary's transit network, adding 40 kilometres of new LRT track. *calgary.ca*

## **Half signal**

A control device use at an enhanced crosswalk location, where an on-demand traffic signal stops vehicles with a red light in one or more directions while pedestrians have priority to cross.

## **Intersection**

The area where two or more roads join or cross, within which are included the roadway and roadside facilities for traffic movement. *TCAT Geometric Design Guide for Canadian Roads*

## **Ladder crossing**

This is an enhanced crosswalk with large painted blocks parallel to the roadway, rather than thin lines running perpendicular.

## **Light Rail Transit (LRT)**

Electrically-powered rail cars, operating on protected rights-of-way, adjacent to or in the medians or roadways or rail rights-of-way. Generally at grade, with some sections operating in mixed traffic and/or tunnels or on elevated bridge structures. *Municipal Development Plan (Revised)*

## **Midblock crossing**

A pedestrian crossing located between intersections.

## **Mode share/modal split**

The proportion of total person trips using each of the various types of transportation. The proportion using any one type is its modal share. *Municipal Development Plan (Revised)*

## **Multi-use Pathway**

See "pathway"

## **Municipal Development Plan (MDP)**

A statutory plan, prepared and adopted by bylaw in accordance with the Municipal Government Act. The MDP guides land use development within The City. In conjunction with the Calgary Transportation Plan, the MDP provides a long-term strategy for a more sustainable city through the integration of land use and mobility policies. *RouteAhead*

## **Network**

Refers to the transportation system as a whole. This is sometimes used mode specific (i.e.. transit network, pedestrian network etc.). *RouteAhead (Revised)*

## **Operating costs/budget**

Funds approved by council through The City's three year budget and business plan process, the operating budget provides the funds that are available on an annual basis to cover the costs of operating a program. The operating budget includes funds for staff salaries/wages, maintenance of vehicles, buildings and other infrastructure. *RouteAhead (Revised)*



**Pathways**

A pathway is a hard-surfaced, typically asphalt, and located off street. It is a multi-use amenity, and no one user or type of user is given preference. The pathway system is a city-wide linear network that facilitates non-motorized movements for recreational and transportation purposes. *Parks Standard Specification*

**Pedestrian**

A person on foot or using a mobility device.

**Pedestrian bridge**

A bridge which is designed primarily to move pedestrians over a barrier but can also support other active modes.

**Pedestrian control warrant**

See “warrant”

**Pedestrian corridor**

An enhanced crosswalk with pedestrian activated overhead flashing lights.

**Pedestrian mall**

Streets or laneways that are closed to regular vehicle traffic for much or all of the day, giving pedestrians full access to the facility.

**Pedestrian realm**

See “public realm”

**Pedestrian refuge island**

A pedestrian refuge island is a protected area that allows pedestrians to cross one direction of traffic at a time. Refuge islands differ from medians in that they are not continuous, but are only provided at the crossing location. *Chicago Pedestrian Plan*

**Pedestrian scale**

Sometimes called “human scale,” refers to the scale (height/proportions) and comfort level that the street level and lower stories of a building provide for pedestrians as they walk alongside a building or buildings. *MDP*

**Pedestrian-scale lighting**

Lighting which is installed at a scale to support the pedestrian realm.

**Placemaking**

Placemaking is a people-centred approach to the planning, design and management of public spaces. “Spaces” and “places” have very different meanings. A space is a physical description of a piece of land, whereas a place is defined by surrounding linkages and built form and connotes an emotional attachment to the piece of land. *Centre City Urban Design Guidelines*

**+15 (Plus 15) System**

Sometimes called a “sky-walk,” +15 is a network of weather-protected, publicly accessible and grade-separated (fifteen feet above the road grid) pedestrian walkway systems, which operates through and between buildings in the Centre City. It is composed of walkways, bridges, at-grade entries and vertical connections, associated public spaces at +15 level (both open and enclosed) and wayfinding signage. *Urban Design Guidelines*

**Public realm/space**

The area around, between and within buildings that are publicly accessible, including streets, squares, parks and open spaces. These areas and settings support or facilitate public life and social interaction. *Municipal Development Plan (Revised)*

# Appendix 1: Glossary

## **Rectangular Rapid Flash Beacon (RRFB)**

Roadside poles fitted with rectangular bar of LED lights which display intermittent rapid flashes when activated by a pedestrian to increase their visibility when crossing the roadway.

## **Redevelopment**

The creation of new units, uses or lots on previously developed land in existing communities. *Municipal Development Plan*

## **Right-of-Way (ROW)**

Publicly-owned land containing roads and streets, utilities, sidewalks and/or other public assets.

## **Roadway**

A generic term that encompasses all types of roads and streets. *Calgary Transportation Plan*

## **RouteAhead**

A City of Calgary policy that sets out a strategic plan for transit.

## **Safety audit**

A review of the conditions in an area motivated by reducing collisions.

## **Sidewalks**

The area principally used by pedestrians and located to the side of a roadway within the right-of-way. *Urban Design Guidelines*

## **SNIC**

Snow and Ice Control

## **Street lighting**

Lighting designed for the movement of vehicles in the roadway.

## **Streetscape**

All the elements that make up the physical environment of a street and define its character. This includes paving, trees and vegetation, lighting, building type, style setback, pedestrian, cycle and transit amenities, street furniture, etc. *Municipal Development Plan*

## **Sustainability**

Meeting the needs of the present without compromising the ability of future generations to meet their own needs. It includes environmental, economic and social sustainability. *Municipal Development Plan (Revised)*

## **Tactical urbanism**

A general term used to describe a collection of low-cost, temporary changes to the built environment intended to improve local neighbourhoods and city gathering places.

## **Traffic light/signal**

An automated set of coloured (red/yellow/green) lights to control the flow of vehicles.

## **Transit Oriented Development (TOD)**

A compact, mixed-use community within walking distance of a transit stop, that mixes residential, retail, office, open space and public uses in a way that makes it convenient to travel on foot or by public transportation instead of by car. *MDP*

**Transportation Demand Management (TDM)**

Policies and programs which aim to facilitate mobility choices in The City using alternative modes of transportation.

**Underpass/overpass**

Passageway for vehicles and pedestrians that run under or over a railway. The passageway includes the entire right-of-way above/below grade.

**Urban braille**

A system of tactile information to service the needs of the visually impaired using both colour and texture in order to provide warning signals and cues related to orientation. *City of Hamilton Urban Braille Guidelines*

**Vision Zero**

A multi-national road traffic safety initiative which aims to achieve a transportation system with no fatalities or serious injuries while still accommodating vehicle traffic needs.

**Vulnerable users**

All road users not confined within an enclosed vehicle.

**Walkability**

Walkability is the measure of the overall walking and living conditions in an area and is defined as the extent to which the built environment is friendly to the presence of people walking, living, shopping, visiting, enjoying, or spending time in an area. *City of Edmonton Walkability Strategy*

**Warrant**

A criterion that identifies a potential need for a physical feature, such as a traffic barrier, extra lane, or other item. *TCAT Geometric Design Guide for Canadian Roads*

**Wayfinding**

A term used to describe how people respond to the built environment to orient themselves. Elements that contribute to wayfinding include reference points such as signage, natural areas or parks, landmark buildings, bridges, distinctive lighting, public art, etc. *Municipal Development Plan*

# Appendix 2: Detailed list of Actions

## ACTION DESCRIPTION

### SAFETY ACTIONS

- 1 Develop an interim warrant for the installation of **more RRFBs** (Rectangular Rapid Flashing Beacons) in each Ward, in suitable locations and review the increased operational funding requirements.
- 2 Work with the province to ensure that the **City Charter initiative** includes a legal framework to allow a reduction in the unposted speed limit, should The City of Calgary choose to implement residential speed limits in the future, or to make bylaws to permit new pedestrian safety techniques or walkability initiatives, if required.
- 3 Develop design guidelines and pilot installations for **street lighting to illuminate roadway crossings** in areas with high pedestrian activity.
- 4 Develop design guidelines and implement pilot **pedestrian-zones** that accommodate multiple pedestrian and desire lines across a roadway, in two locations of high pedestrian activity
- 5 Update the current pedestrian crossing **warrant system** with consideration of adopting the recently updated TAC guidelines, and revise Calgary's system to allow for hybrid solutions.
- 6 Establish a program for **in-service road safety reviews** to investigate trends and contributing factors including common roadway attributes, at high pedestrian collision locations and explore the potential for collecting and assessing near-miss reporting data for pedestrian collisions.
- 7 Develop guidelines for the use of **ladder crossings** and increase installations in suitable locations (e.g., near schools, transit stations, institutions).
- 8 Establish design guidelines for **pedestrian-scale lighting** that provides criteria for where and when pedestrian lighting is appropriate and pilot in suitable locations.
- 9 Develop design guidelines for the separation of pedestrian and turning vehicles at intersections with turning controls such as **no right turn on red, red turn arrows, pedestrian scrambles, protected left and lagging left turn signals and leading pedestrian intervals** (advance green light for pedestrians) and pilot installations in high pedestrian activity locations.
- 10 Increase annual funding for installation of **wheelchair ramps, audible pedestrian signals and countdown timers** in areas of high pedestrian activity and review the operation and criteria of use for count-down timers (to ensure consistent use and to address potential negative impact on vehicle speeds).
- 11 Develop guidelines for the requirement of pedestrian **push button devices** and develop standards for signal timing length, timing combinations to benefit pedestrians during off-peak use. Implement the new pedestrian push button standards city wide.
- 12 Develop guidelines for the appropriate placement of, and design standards for, **mid-block** pedestrian crosswalks in locations such as regional pathway alignments and along Main Streets. Investigate a model for City and development industry cost sharing.

LEAD BUSINESS UNIT	TIMEFRAME			FUNDING	
	2016-2018	2019-2022	2023 or later	Operating	Capital
Roads	○				\$\$
Transportation Planning	○				
Roads	○				\$\$
Roads	○				\$\$
Roads	○				
Roads	○			\$	
Roads	○			\$\$	
Roads	○				\$\$
Roads		○		\$	\$\$
Roads		○			\$\$
Roads		○		\$	\$\$
Roads and Calgary Parks		○			

\$ = 50,000

\$\$ = 500,000

\$\$\$ = 1,000,000-2,000,000

\$\$\$+ = 2,000,000+

# Appendix 2: Detailed list of Actions

## ACTION DESCRIPTION

### SAFETY ACTIONS

- 13 Research and develop a **design standards tool-box** of pedestrian safety solutions such as smart right turns, pedestrian refuge islands, revised roundabout designs (particularly for multi-lane roundabouts), and raised crossings.
- 14 Pilot potential solutions that were identified in the **Calgary School Site Review report**, identify funding for a program to improve safety at existing schools, and apply the recommendations to the design of new schools.
- 15 Implement the current **railway crossing safety** improvements and for the next budget cycle identify additional locations in high pedestrian activity areas.
- 16 Expand the Safer Mobility Plan and launch a **Vision Zero** Campaign.

### PLAN AND DESIGN ACTIONS

- 17 Establish a **Tactical Urbanism** program to facilitate public requests for creative projects to activate streets as places and to support the non-traditional use of the road right-of-way.
- 18 Conduct a **downtown public realm audit** to identify bookable public spaces and alternative spaces for temporary and seasonal activities. Identify the amenities available onsite and the bylaws that influence potential uses.
- 19 Revise the Centre City Plan 2007 to provide updated direction and policy on the **+15 Network** for future expansions and improvements.
- 20 Develop guidelines for where new pedestrian **under/overpasses and river bridges** are needed and best value and build the top five best valued structures.
- 21 Transform the Industrial Sidewalk Retrofit program (126-176) into a **Sidewalk Missing Links** program with a prioritization process to address deficiencies in the sidewalk network.
- 22 Develop design guidelines and develop standard specifications for a Calgary **urban braille system** that can be applied in high pedestrian activity areas.
- 23 Establish a pilot program to plant suitable large shrubs or perennials into Centre City **redundant tree boxes** (empty boxes that cannot sustain tree health). Monitor the pilot to evaluate effectiveness and identify funding requirements to expand the program to other suitable locations.
- 24 Conduct **pedestrian facility reviews** (connectivity and accessibility) for all **transit station areas** within a 600 m radius (10 min. walk). Address all deficiencies identified in transit station area reviews.
- 25 Collaborate with the **development industry and CPAG**, to embed walking principles in community design and the development application review process.
- 26 Improve the pedestrian experience by transforming streetscapes as planned, designed and prioritized through the **Main Streets project**.
- 27 **Twin pathways**, or provide parallel on-street bicycle lanes where appropriate, in high use areas to improve the pathway experience for pedestrians and reduce conflicts between user groups.

LEAD BUSINESS UNIT	TIMEFRAME			FUNDING	
	2016-2018	2019-2022	2023 or later	Operating	Capital
<b>Transportation Planning</b>					
Transportation Planning		○			
Roads		○			\$\$\$
Roads		○			\$\$\$
Roads		○ → ○		\$	\$\$\$+
<b>Calgary Recreation</b>					
Calgary Recreation	○				\$
<b>Calgary Parks</b>					
Calgary Parks	○			\$	
<b>Local Area Planning &amp; Implementation</b>					
Local Area Planning & Implementation	○ → ○				
<b>Transportation Planning</b>					
Transportation Planning	○ → ○ → ○			\$	\$\$\$+
Roads		○			\$\$\$
<b>City Wide Policy &amp; Integration</b>					
City Wide Policy & Integration		○			\$
<b>Calgary Parks</b>					
Calgary Parks		○		\$	
<b>Calgary Transit</b>					
Calgary Transit		○ → ○		\$	\$\$\$+
<b>Transportation Planning and Local Area Planning &amp; Implementation</b>					
Transportation Planning and Local Area Planning & Implementation	○ → ○ → ○				
<b>Local Area Planning &amp; Implementation</b>					
Local Area Planning & Implementation			○		\$\$\$+
<b>Calgary Parks</b>					
Calgary Parks			○		\$\$\$

\$ = 50,000      \$\$ = 500,000      \$\$\$ = 1,000,000-2,000,000      \$\$\$+ = 2,000,000+

# Appendix 2: Detailed list of Actions

## ACTION DESCRIPTION

### OPERATE AND MAINTAIN ACTIONS

- 28 Update the current policy for **construction hoarding** and revise the fees for sidewalk closures to discourage the number, distance and duration of closures and monitor the revisions to evaluate effectiveness.
- 29 Establish a **311** – SR specific for all pedestrian related concerns.
- 30 Enhance the existing **snow and ice control operations** to reduce obstructions at transit stops and road crossings in high pedestrian activity areas. Investigate and trial alternative materials and equipment.
- 31 Undertake an assessment of **engineered walkways**, develop a management plan, amend the bylaw to address public concerns, and identify funding requirements to upgrade and maintain the walkways city wide.
- 32 Assess **closed crosswalks** (bedsteads) at signalised intersections and determine the conditions required to accommodate pedestrian crossings, with the priority for Main Streets locations.
- 33 Include all **sidewalk closure information** on the pathway closures online map and mobile app.
- 34 Partner with BRZs and community groups and expand the Centre City pedestrian and transit **wayfinding program** into other high pedestrian activity areas.
- 35 Develop a program to **clear winter gravel off sidewalks** and crossings during spring clean-up.
- 36 Increase the **snow clearing response time to P1** (within 24 hours of a snow event) on City managed sidewalks in high pedestrian activity areas.

### EDUCATE AND ENCOURAGE ACTIONS

- 37 Establish a **Pedestrian Implementation Team**, consisting of new and existing staff members as a lead staff group to coordinate, guide and monitor implementation of the strategy actions.
- 38 Collaborate with partner agencies and organizations to implement **Active and Safe Routes to School** programs, incorporating school travel planning toolkits and walking route maps, for schools city wide.
- 39 Collaborate with partner agencies and organizations to promote **walking initiatives** (including the Mayor’s “Walk Challenge,” Calgary Recreation’s #getmovingYyc and SHAPE’s “International Walk to School Week”) to encourage more walking.
- 40 Collaborate with partner organizations to identify and prepare business cases for at least three **innovative pedestrian projects** that can be considered for funding, including through Council’s Innovation Fund.
- 41 Collaborate with partner agencies and organizations to develop **pedestrian safety campaigns** (including distracted walking and winter visibility) and translate materials for non-English speaking Calgarians.



LEAD BUSINESS UNIT	TIMEFRAME			FUNDING	
	2016-2018	2019-2022	2023 or later	Operating	Capital
Roads	○				
Transportation Planning	○				
Roads	○ → ○			\$\$\$	\$
Roads		○		\$\$\$	
Roads		○			\$\$\$
Roads		○			\$
Local Area Planning & Implementation		○			\$\$
Roads			○	\$\$\$	
Roads			○	\$\$\$	
Transportation Planning	○				
Transportation Planning	○			\$	\$\$
Transportation Planning	○			\$\$	
Transportation Planning	○				\$\$
Transportation Planning	○				\$\$

\$ = 50,000

\$\$ = 500,000

\$\$\$ = 1,000,000-2,000,000

\$\$\$+ = 2,000,000+

# Appendix 2: Detailed list of Actions

## ACTION DESCRIPTION

### EDUCATE AND ENCOURAGE ACTIONS

- 42 Include questions regarding walking in the **Citizen Satisfaction Survey** to provide data and to monitor the progress of the pedestrian strategy's performance measures (RBA curves).
- 43 Organize and host pre-conference events in Calgary in advance of the international **Walk21** Conferences and write abstracts for submission to the conferences.
- 44 Collaborate with Crohn's & Colitis Canada to further expand and promote the "Go Here" **washroom locator** mobile app.
- 45 Partner with BRZs and community groups to develop **community walking maps** (print, online and mobile apps) that identify places of interest and heritage sites for suitable neighbourhoods.
- 46 Establish **staff training** programs for City Leadership (Councillors and senior management) and City staff to embed a culture of walking and mobility needs in The Corporation.
- 47 Develop a **walking audit tool** to enable site assessments of pedestrian needs and the level of service provided across a range of public spaces (similar to Transport for London's Pedestrian Environment Review System).
- 48 Collaborate with school boards to investigate ways to include a culture of **walking in the school curriculum** from elementary to high school level.
- 49 Investigate ways to encourage property owners to undertake **prompt snow and ice clearing** from sidewalks, support those not able to carry out snow clearing, and improve bylaw enforcement on non-compliance.

LEAD BUSINESS UNIT	TIMEFRAME			FUNDING	
	2016-2018	2019-2022	2023 or later	Operating	Capital
Transportation Planning	○			\$	
Transportation Planning	○			\$	
Calgary Neighbourhoods		○			\$
Transportation Planning		○			\$\$
Transportation Planning		○		\$	
Transportation Planning		○			
Transportation Planning		○		\$\$	
Calgary Neighbourhoods	○ →	○		\$\$	

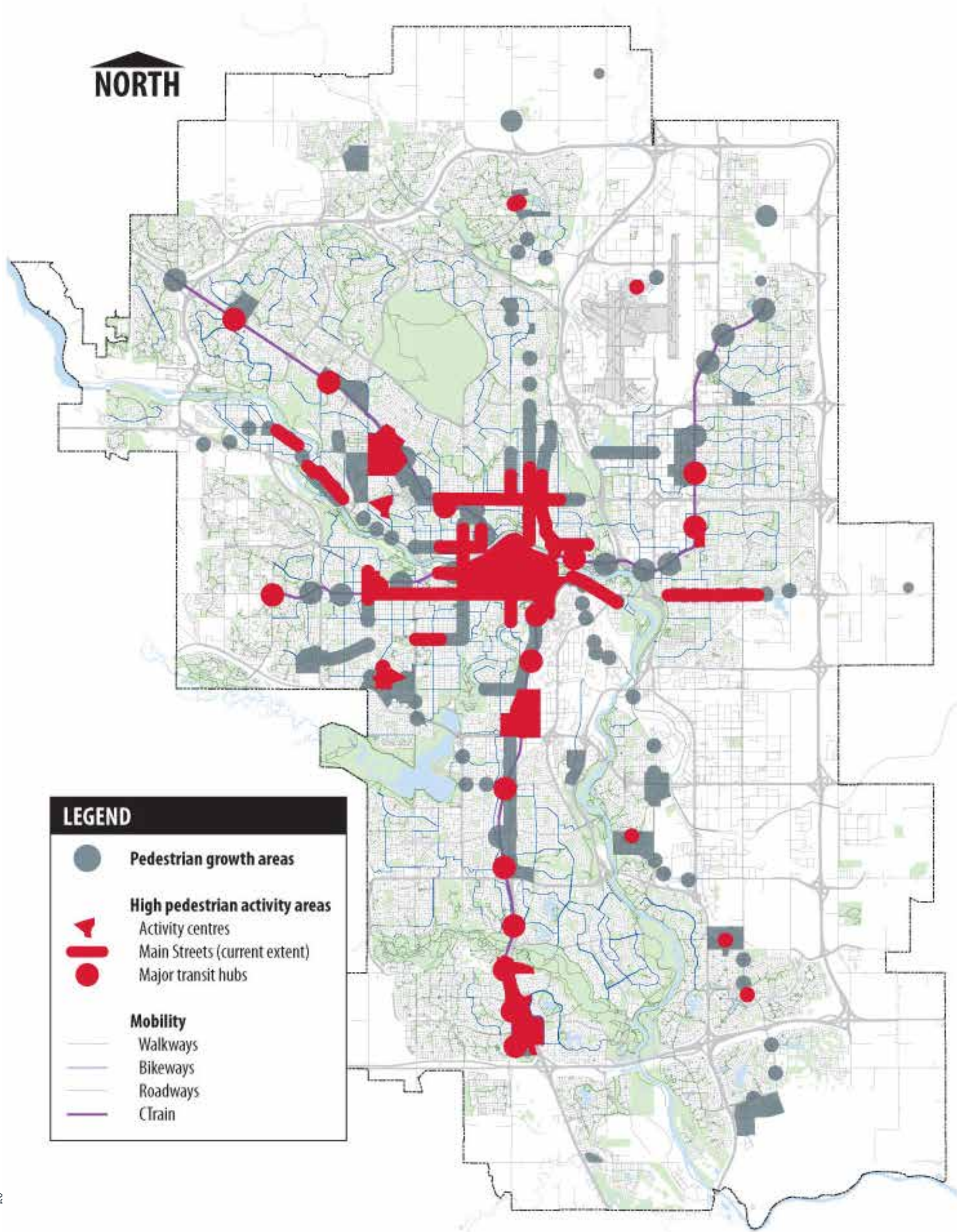
\$ = 50,000      \$\$ = 500,000      \$\$\$ = 1,000,000-2,000,000      \$\$\$+ = 2,000,000+

# Appendix 3: Maps

# MAP 1

## High pedestrian activity areas

Current main streets, major transit stops and selected activity centres

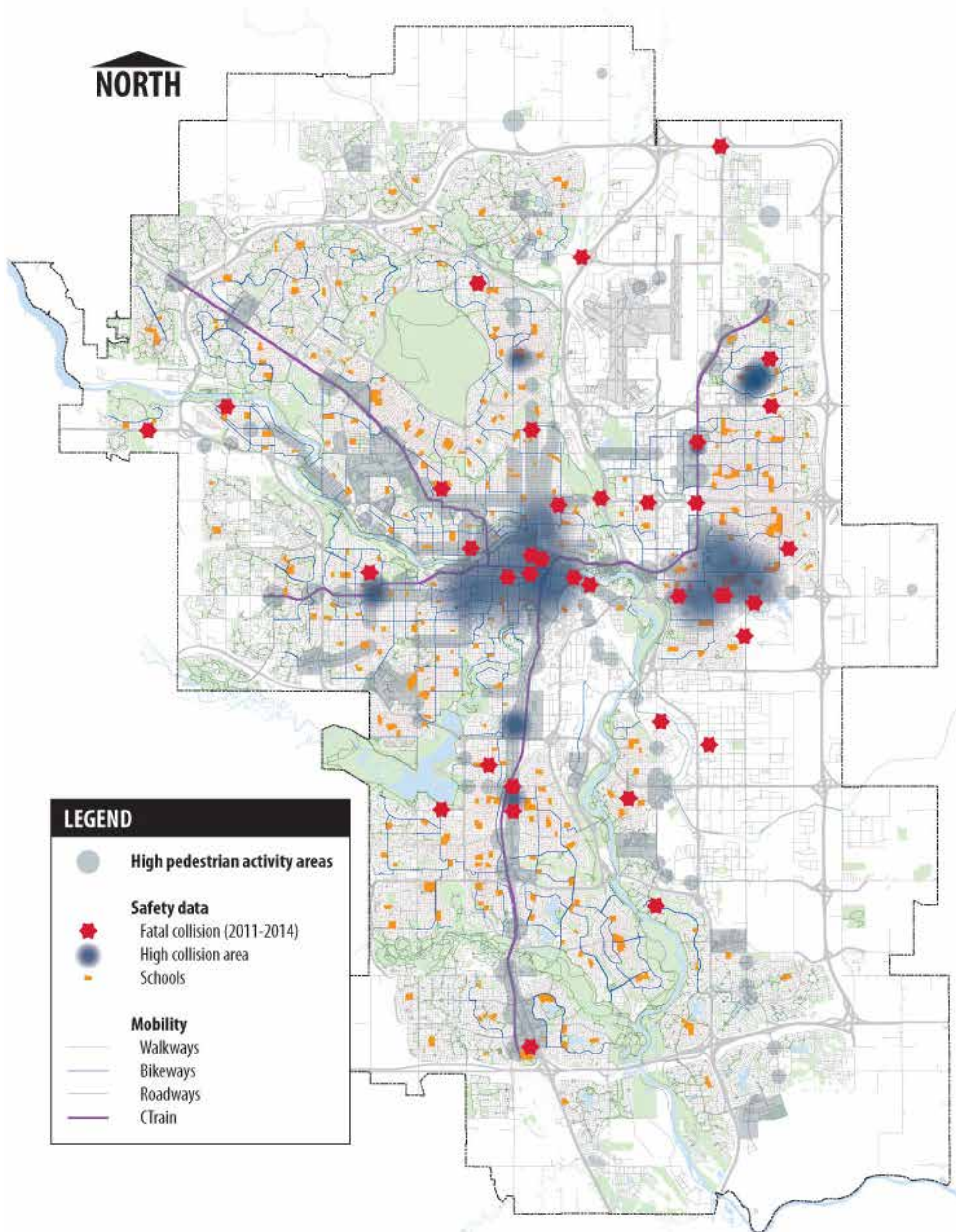


# Appendix 3: Maps

# MAP 2

## High pedestrian collision areas

Fatal collision locations, areas with high concentrations of pedestrian collisions and schools

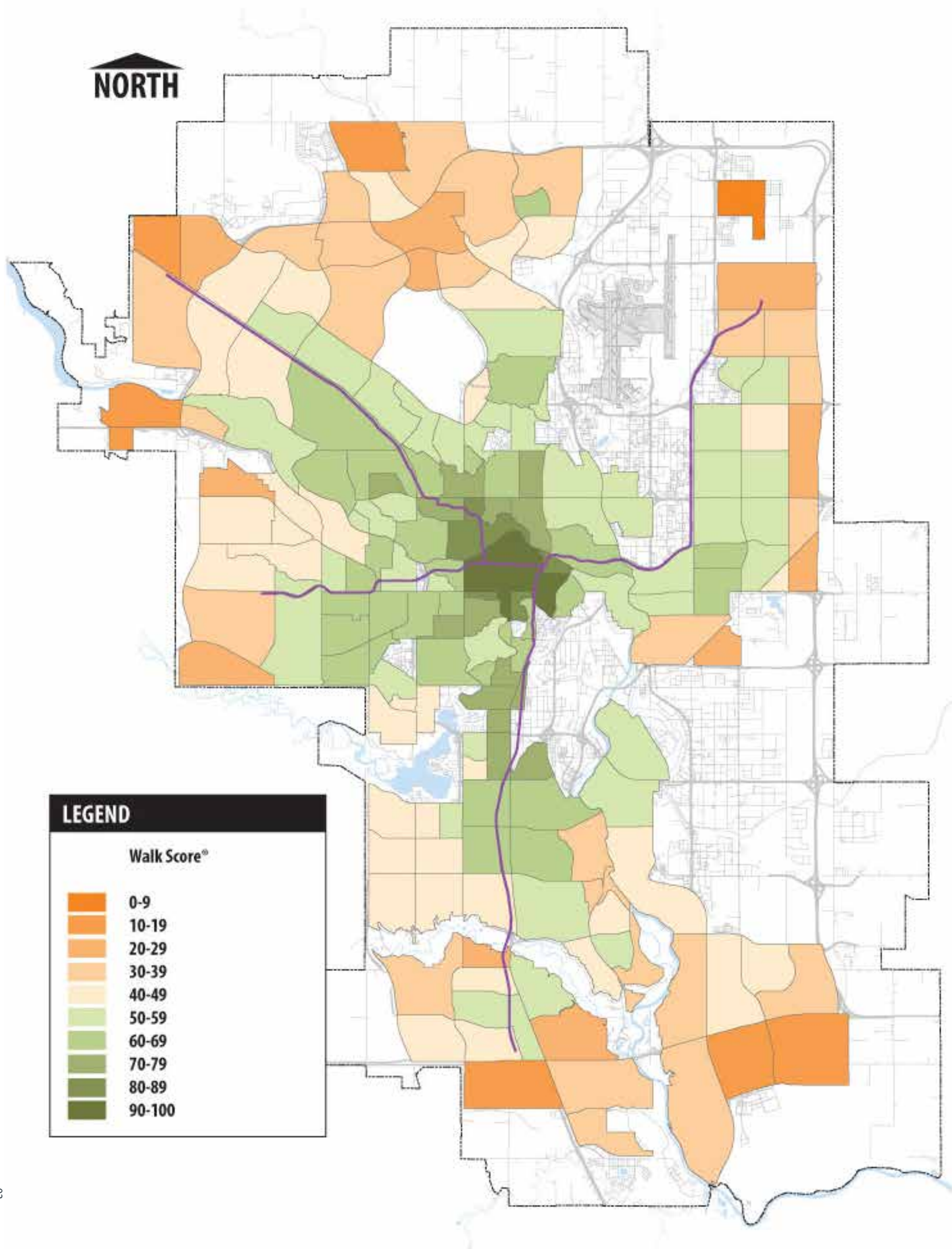


# Appendix 3: Maps



# MAP 3

## Walk Score<sup>®</sup> of Calgary communities





# Appendix 4: Linkages to existing policies

STEP FORWARD (SF) recognizes linkages to other City policies, strategies and guideline documents. All these documents guide and support each other at the Corporate and business unit level in the shared purpose of bringing about improvements to the City environment.

## Alignment with Council Priorities

STEP FORWARD aligns with Council Priorities from Action Plan 2015-2018:

### A prosperous city

Priority P8 “Respond to the needs of an aging population.” SF addresses accessibility of public space, community amenities and transit service points.

### A city of inspiring neighbourhoods

Priority N5 “Invest in established neighbourhoods”, SF includes repairing and upgrading roads infrastructure to improve safety, accessibility and reduce environmental impacts.

Priority N8 “Make it easier to build developments that meet our MDP and CTP objectives.” SF is aligned with the MDP and CTP.

Priority N9 “Provide great public spaces and public realm improvements”, SF includes linking sidewalks and bikeways to encourage pedestrian and cycle commuting.

Priority N11 “Promotion of public safety through education, prevention, and partnerships”, SF will promote public safety and awareness through education and engagement with citizens.

### A city that moves

Priority M3 “Invest in strategic road improvements in priority growth areas”, SF will promote the advancement of traffic safety initiatives with a focus on multi-modal safety.

Priority M4 “Invest in active transportation infrastructure, including cycling and pedestrian networks”, SF is the planning and implementation of a Pedestrian Strategy.

### A healthy and green city

Priority H2 “Encourage a broader range of innovative and clean energy technologies.” SF will deliver programs to engage the community to advance the goal of reducing greenhouse gases.

### A well-run city

Priority W7 “Continue to transform the organization to be more citizen-focused in its approach and delivery of service.” SF includes supporting 311 to ensure quality customer service.

Priority W8 “Increase collaboration across the organization, including alignment of budgets with service delivery to achieve City priorities.” SF will promote and foster relationships throughout the corporation that improve services and deliver value to customers.

# Appendix 4: Linkages to existing policies

## Alignment with City policies

STEP FORWARD is part of a broader City policy framework and the strategy aligns with the goals and objectives of:

### Calgary Transportation Plan (CTP) adopted by Council 2009

Goal #3. Provide affordable mobility and universal access for all.

Goal #4. Enable public transit, walking and cycling as the preferred mobility choices for more people.

Goal #6. Advance environmental sustainability.

### Municipal Development Plan (MDP) adopted by Council 2009

Goal 2.5. Connecting the city.

Objective 2.5.1. Transportation choice – Maintain automobile, commercial goods and emergency vehicle mobility in Calgary while placing increased emphasis on sustainable modes of transportation (walking, cycling and transit).

### 2020 Sustainability Direction (Adopted by Council 2010)

Goal: Smart Growth and Mobility Choices.

Objective: Increase Transportation Choice;  
Optimize Existing Transportation System.

### Pedestrian Policy and Needs Report (Adopted by Council 2008)

- Plan and build compact, mixed-use communities.
- Give priority to the planning, design, implementation and operation of pedestrian routes and facilities with all land use and transportation planning and design.
- Improve existing pedestrian routes and facilities to build missing links.
- Design facilities, educate the public and enforce laws to increase acceptance and understanding and decrease conflicts among the users of pedestrian facilities.
- Give priority to pedestrian route in everyday maintenance and facility improvements in yearly programs.
- Provide pedestrian routes that are of engaging character, safe and feel secure.

## Alignment with City guidelines and other companion documents

STEP FORWARD recognizes linkages to other guidelines and companion documents. These are all considered “living documents” as they are continually updated and revised based on the on-going collaboration between business units. The relevant documents include:

### Transportation

- Safer Mobility Plan 2015 (Update)
- Complete Streets Policy & Guide 2014
- RouteAhead 2013
- Transportation Impact Assessment (TIA) Guidelines 2011
- Cycling Strategy 2011
- Traffic Calming Policy 2003
- Calgary Pathway & Bikeway Plan 2000

### Calgary Neighbourhoods

- Seniors Age-Friendly Strategy 2015
- Universal Design Handbook & Access Design Standards 2010

### Local Area Planning & Implementation

- Calgary School Site Review report (preliminary document)
- Centre City Urban Design Guidelines 2015
- Civic District Public Realm Strategy 2015
- Beltline Area Redevelopment Plan 2015
- Large Retail/Commercial Area Urban Design Guidelines 2014
- Centre City Illumination Guidelines 2011
- Centre City Mobility Plan 2010
- Downtown Underpass Urban Design Guidelines 2010
- Calgary Downtown Retail District Strategy 2009
- Public Toilets in the Centre City 2008
- Centre City Plan 2007
- Transit Oriented Development Policy Guidelines 2005

### Calgary Parks

- Our BiodiverCity: Calgary’s 10 year biodiversity strategic plan 2015
- Centre City Parks & Public Realm Enhancements Plan 2010
- Parks Urban Forest Strategic Plan 2007
- Centre City Parks: Open Space Management Plan 2006

### Calgary Recreation

- Recreation Master Plan 2010
- Public Art Policy 2003



# Appendix 5: References

## Legend

### Page Number – Chapter or section (text relevant to reference)

Text referencing research and report documents.

### Page 3 – What is walkability (walkability allows people of all ages)

<sup>1</sup> Abley, Stephen. (2005). Walkability Scoping Paper. Land Transport New Zealand.

### Page 3 – What is walkability (attract and retain new residents)

<sup>2</sup> Thomas, Elli, Ilona Serwicka & Paul Swinney. (2015). Urban demographics: Where people live and work. Centre For Cities. DAC Beachcroft.

### Page 4 – East Village (principles at work)

<sup>3</sup> The City of Calgary. Land Use Planning & Policy. (2010). East Village Area Redevelopment Plan.

### Page 17 – How much are we walking (mode share city wide all day, all purpose)

<sup>4</sup> The City of Calgary. Transportation Planning. (2013). Travel Behaviour Report Series: Vol. 2. Fig. 7. Page 14.

### Page 17 – How much are we walking (grade school children walked)

<sup>5</sup> The City of Calgary. Transportation Planning. (2013). Travel Behaviour Report Series: Vol. 2. Fig. 19. Page 23.

### Page 17 – How much are we walking (mode share for travel to work)

<sup>6</sup> The City of Calgary. Transportation Planning. (2013). Travel Behaviour Report Series: Vol. 2. Fig. 12. Page 19.

### Page 17 – How much are we walking (mode share for all non-work trips)

<sup>7</sup> The City of Calgary. Transportation Planning. (2013). Travel Behaviour Report Series: Vol. 2. Fig. 25. Page 27.

### Page 19 – Is it safe? (collisions for small children)

<sup>8</sup> The City of Calgary. Roads. (2015). Calgary Safer Walking Report 2015. Appendix A.

### Page 20 – Is it safe? (injury and fatal collisions)

<sup>9</sup> The City of Calgary. Transportation Planning. (2014). Traffic Collision Annual Report 2014. Fig. 1.3. Page 8

### Page 20 – Is it safe? (even when crossing a street with right of way)

<sup>10</sup> The City of Calgary. Transportation Planning. (2014). Traffic Collision Annual Report 2014. Fig. 4.8. Page 32.

### Page 26 – Safety (results from other Canadian cities)

<sup>11</sup> Calgary. The City of Calgary. Transportation Planning. (2014). Traffic Collision Annual Report 2014.

Edmonton. [http://www.edmonton.ca/transportation/RoadsTraffic/OTS Motor Vehicle Collisions 2014 Annual Report.pdf](http://www.edmonton.ca/transportation/RoadsTraffic/OTS%20Motor%20Vehicle%20Collisions%202014%20Annual%20Report.pdf)

Toronto. [http://www1.toronto.ca/City%20Of%20Toronto/Transportation%20Services/ Road%20safety/ Files/pdf/ped2013sept.pdf](http://www1.toronto.ca/City%20Of%20Toronto/Transportation%20Services/Road%20safety/Files/pdf/ped2013sept.pdf)

Ottawa. Own correspondence with City of Ottawa.

# Appendix 5: References

Page 27 – Walkability (calculated walkability index)

<sup>12</sup> <https://www.walkscore.com/methodology.shtml>

Page 27 – Walkability (18th out of 22 Canadian cities)

<sup>13</sup> <https://www.walkscore.com/cities-and-neighborhoods/>

Page 33 – Why invest in walking (It is low cost, healthy, helps people feel better)

<sup>14</sup> The City of Calgary. Transportation. (2009). Calgary Transportation Plan. Page 3–6.

Page 34 – Economic benefits (Walking is closely tied to property value)

<sup>15</sup> Hack, Gary. (2013). Business Performance in Walkable Shopping Areas. Active Living Research. Robert Wood Johnson Foundation.

Page 34 – Economic benefits (between a \$500 and \$3000 increase)

<sup>16</sup> Cortright, Joe. Impresa, Inc. (2009). Walking the Walk: How Walkability Raises Home Values in U.S. Cities. CEOs for Cities.

Page 34 – Economic benefits (over the past decade more than)

<sup>17</sup> The City of Calgary. Transportation Planning. (2014). Traffic Collision Annual Report 2014. Fig. 4.2. Page 27.

Page 34 – Economic benefits (this costs society)

<sup>18</sup> Parachute. (2015). The Cost of Injury in Canada. Ver. 2.2. Parachute: Toronto, ON. The Conference Board of Canada. Public Health Agency of Canada.

Page 34 – Health benefits (report being less stressed and bored)

<sup>19</sup> Wolff, Elisabeth. Katharina Gaudlitz. Brigitt–Leila von Lindenberger. Jens Plag. Andreas Heinz. Andreas Strohle. (2011). Exercise and physical activity in mental disorders. European Archives of Psychiatry & Clinical Neuroscience. 261 Suppl 2:S186–91.

Page 34 – Health benefits (type II diabetes and heart disease)

<sup>20</sup> Colberg, Sheri R. Carmine R. Grieco. (2009). Exercise in the treatment and prevention of diabetes. Current Sports Medicine Reports. 8(4):169–75.

Page 34 – Health benefits (heart disease and cancer)

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Page 35 – Environmental benefits (2.3 to 2.7 kilograms of CO<sub>2</sub>)

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Page 58 – Inset box: The case for dedicated staff (In its 2014 benchmarking report)

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# Appendix 6: Acknowledgements

## Steering Committee members

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Councillor Druh Farrell	Councillor, Ward 7
Councillor Evan Woolley	Councillor, Ward 8
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Erin Chrusch	Office of the Mayor
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Joe Olson	Manager of Liveable Streets
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