LET'S MOVE YK!
YELLOWKNIFE TRANSPORTATION PLAN

INTERIM REPORT #2

Best Practices and Emerging Trends

December 2025

CITY OF YELLOWKNIFE

The City of Yellowknife acknowledges that we are located in Chief Drygeese territory. From time immemorial, it has been the traditional land of the Yellowknives Dene First Nation. We respect the histories, languages, and cultures of all other Indigenous Peoples including the North Slave Métis, and all First Nations, Métis, and Inuit whose presence continues to enrich our vibrant community.

Prepared for:

City of Yellowknife
4807 52 Street
Yellowknife, NWT X1A 2N4

Prepared by:

Urban Systems
550 – 1090 Homer Street
Vancouver, BC V6B 2W9

December 2025
All images provided by the City of Yellowknife, Urban Systems, or Adobe Stock unless noted otherwise.

CITY OF YELLOWKNIFE

URBAN SYSTEMS

CONTENTS

1.0 INTRODUCTION

1.1 PROJECT BACKGROUND

The City of Yellowknife is located in Chief Drygeese territory and has been the traditional land of the Yellowknives Dene First Nation for time immemorial.

As the Northwest Territories' capital and home to approximately half of the territorial population with over 20,000 residents, Yellowknife plays an important economic, cultural, and governmental role and is a critical transportation hub in Canada's North.

The City has produced many transportation related-plans, policies, and bylaws in recent years, including the *Integrated Parks, Trails, and Open Space Development Study (2005)*, *Bicycle Routing Study (2008)*, *Accessibility Audit Report and Implementation Strategy (2017)*, *Trail Enhancement and Connectivity Strategy Report (2018)*, *Wayfinding Strategy and Implementation Plan (2019)*, *YK Public Transit Review (2020)*, and ongoing Development and Design Standards.

The City is currently undergoing a Community Plan Comprehensive Update – **Let's Talk YK 2050** - to guide long-term growth and development. Building on this momentum, the City is also developing this Transportation Plan – which we're calling **Let's Move YK** – to help shape the future of transportation in Yellowknife. While the Community Plan update will establish broader high-level goals for growth, land use, housing, and transportation, Let's Move YK will build on it by providing detailed strategies, actions, and priorities for transportation.

LET'S MOVE!
YK

1.2 REPORT OVERVIEW

Best Practices and Emerging Trends is the second in a series of Interim Reports prepared as part of the Transportation Plan process and provides an overview of the best practices and trends from communities across Canada and internationally. This report includes the following sections:

1.0 Introduction

provides an overview of the plan and structure of this report.

2.0 Best Practices and Emerging Trends

summarizes best practices and trends related to winter cities and for each mode of transportation, including walking, cycling and rolling, public transit, and driving.

3.0 Jurisdictional Scan

summarizes the findings of interviews that were held with 10 communities across Canada, the United States, and Northern Europe with a focus on comparable winter and northern cities.

This report has been developed in parallel with ***Interim Report #1: Transportation in Yellowknife Today***. The findings of these two Interim Reports will be used to chart the course for the development of the Transportation Plan by identifying gaps and opportunities between current practices in Yellowknife and best practices and trends elsewhere.

2.0 BEST PRACTICES AND EMERGING TRENDS

2.1 WINTER CITIES

2.1.1 Background

Yellowknife is a remote northern winter city, with winter conditions typically lasting from October to April. During these months, temperatures often drop below –30° Celsius, and daylight hours are limited. Extreme cold, snowfall, ice buildup, and reduced daylight affect all modes of travel – driving, walking, cycling, rolling, and transit. These climate conditions shape the transportation context in Yellowknife, where planning and design must account for snow and ice management, freeze-thaw cycles, and permafrost impacts. Planning in cold climates must factor in seasonal variations to ensure that facilities are safe and comfortable year-round. A northern winter lens is essential to ensure transportation systems remain safe, reliable, and accessible year-round.

Winter City Lens

A winter city means planning transportation and public spaces with Yellowknife's seasonal realities in mind. If streets, open spaces, and amenities are designed for winter, they'll work in all seasons. This includes:

- **Lighting:** Bright, energy-efficient illumination for safety and comfort.
- **Winter Maintenance:** Clear sidewalks, bicycle infrastructure, and transit stops.
- **Connectivity:** Safe routes for walking, cycling, and snow-based travel.
- **Comfort Features:** Wind protection, warming shelters, and intuitive wayfinding.

Winter shouldn't be an afterthought: it should guide planning, design, and maintenance from the start.

Facts about Yellowknife Winters

Hello Darkness, My Old Friend

Unlike other winter cities that may experience extreme winter cold but have abundant daylight, Yellowknife winters can be very dark where between mid-December to January the city experiences around five hours of daylight, with sunrise around 10:00am and sunset by 3:00pm. This extended period of darkness can affect how people move around the city. However, this also means longer nights where there may be more chances to witness the spectacular Aurora Borealis. Yellowknife is one of the best places in the world to see the northern lights dancing across the sky and attracts tourists from around the world who rely on the City's transportation network in the Winter.

A World of Ice and Snow

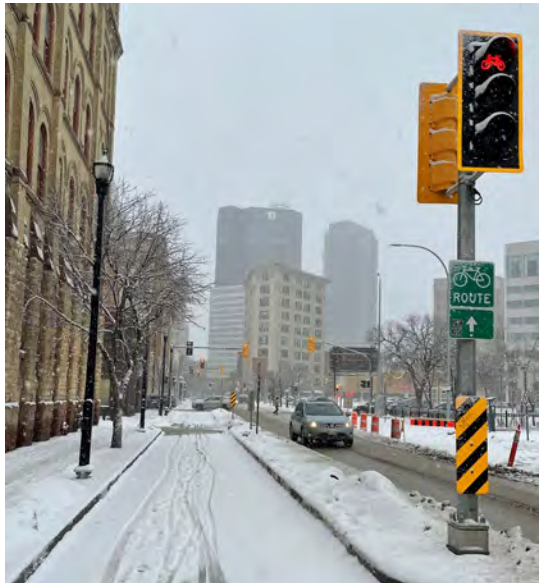
Yellowknife winters are known for their crisp, Arctic air and deep freeze. Temperatures often plunge well below -30° Celsius, transforming the city into a winter landscape. Frozen lakes become seasonal transportation corridors and provide community connections for vehicles using ice roads as well as snowmobiles, cross-country skiing, and other winter-based activities. Transportation infrastructure requires thoughtful maintenance to ensure accessibility for all users, from pedestrians, cyclists, and transit riders to drivers, even in deep freeze conditions.

Outdoor Arctic Adventures

From snowshoeing and cross-country skiing to fat biking and ice fishing, Yellowknifers embrace the winter and seek winter recreation opportunities. Designing multi-use trails and pathways that accommodate both active transportation and leisure activities ensures year-round connectivity. Even frozen lakes double as skating rinks and places for snowmobiling and cross-country skiing, reinforcing the need for safe access points and signage.

Winter Community and Culture

Events like winter festivals, art installations, and the aurora borealis, draw residents and visitors outdoors, even in the cold and dark. Streetscapes and public spaces designed for winter that feature heated seating, windbreaks, and lighting encourage gathering and movement, making cultural experiences accessible and enjoyable.



PROTECTED BICYCLE LANE WITH SNOW STORAGE SPACE BETWEEN VEHICLE LANE

MULTI-USE PATHWAY SNOW WITH SNOW CLEARING PRIORITY

2.1.2 Best Practices and Emerging Trends

Facility Design for Snow Storage and Clearance

One of the most effective ways to mitigate snow storage and clearing is through careful consideration of maintenance during the planning and design process.

On new streets or in street re-design projects, enough space should be provided to allow for snow storage on the side of the street in a buffer space between the pedestrian walking area and the roadway. This will allow snowplows to plow snow into the designated storage space rather into the roadway, on-street parking, and/or painted bicycle lanes. In addition, if bicycle facilities are provided, physical protection between the bicycle lane and motor vehicle lanes can also act as space for snow storage, while creating a comfortable and functional facility for people cycling. Painted bicycle lanes without physical separation from motor vehicles are less desirable in winter cities as the painted line is ineffective if it is covered with snow, and may result in forcing cyclists to share the road with vehicles.

Winter Maintenance Prioritization

Snow and ice control on the transportation network should be prioritized based on demand, with the highest demand facilities receiving the highest priority treatment, followed by treatment on other routes depending on their network importance. Winter maintenance standards should establish levels of service and desired pavement condition for each priority level and facility type.

In order to encourage cycling as a mode of commuting to work year-round, communities should strive to ensure that the bicycle network is cleared of snow in time for people commuting. This allows people to comfortably and reliably travel to work, school, and other key destinations by bicycle each day.

A jurisdiction's prioritization for clearing bicycle facilities can be done separately from snow clearing for streets. For example, a local street that is a low priority for motor vehicles may contain a high priority bicycle route. In this case, the bicycle facility along with the street might be cleared prior to other higher classification streets without bicycle facilities. Where bicycle facilities are in areas under the jurisdiction of different departments or agencies, winter maintenance priorities should be coordinated to ensure a consistent level of service, both in timing and extent of clearing. Consideration can be made to consolidate maintenance responsibilities for the network under one group or department.

Where high priority winter maintenance bicycle routes exist, consideration should be given to ensuring that the sidewalk adjacent to that bicycle route is cleared as quickly as the bicycle route. If a bicycle facility is cleared and an adjacent sidewalk is not cleared, pedestrians may choose to walk in the bicycle facility instead of the sidewalk. This may cause additional conflicts along the bicycle facility between cyclists and pedestrians. Sidewalk maintenance may need to be coordinated with local landowners where they are responsible for clearing the sidewalk to ensure that snow is not moved back and forth between the pedestrian and bicycle facility.

Snow Clearance Vehicles

Different types of infrastructure, such as bicycle facilities, have unique dimensions and characteristics, meaning that different types of snow clearing vehicles may be required to maintain the off-street pathways, bicycle infrastructure, and sidewalks throughout the winter.

Municipalities should consider the type of snow clearing vehicle required to clear a given facility early in the planning and design process to ensure that they will be able to maintain that new facility in a cost-effective manner. Considering maintenance practices and snow clearing equipment early in the planning and design of bicycle facilities, combined with design consistency, can lead to a lesser need for specialized maintenance equipment and training for different facilities.

Municipalities should be prepared to dedicate additional resources to clearing snow from bicycle facilities, especially protected facilities that may be too narrow for traditional snow clearing vehicles. Many jurisdictions with winter climates have a fleet of small, specialized snow clearing vehicles and attachments that can be mounted to All-Terrain Vehicles (ATVs) or other small utility vehicles. Some vehicles can serve both as snow clearing equipment during the winter and street sweepers throughout the rest of the year.

Sweepers are very effective at clearing to the bare pavement, especially when combined with a brine de-icing solution (as described later in this chapter). Sweeper attachments can be mounted on most existing snow clearing equipment, and some vehicles can be outfitted with both a plow and a sweeper.

While these specialized vehicles can be useful for clearing some narrower protected bicycle lanes and off-street pathways, they hold a disadvantage in that they require special training to operate, they typically operate slower than truck mounted plows, and they require a motor vehicle to transport them to the snow clearing or removal site. The preferred practice is to design protected bicycle lanes and off-street pathways so that typical truck-mounted plows can clear them. In order to do this, the protected bicycle lane and buffer or pathway should have at minimum 2.4 metres of clear space

OPPOSITE: SPECIALIZED SNOW CLEARANCE VEHICLE

Winter Forms of Active Transportation

Winter active transportation encompasses activities such as fat tire biking, winter cycling, cross-country skiing, and snowshoeing, which provide sustainable and recreational mobility options during snowy months. Supporting these modes requires specialized design and maintenance strategies.

For fat tire and winter cycling, municipalities should maintain snow-cleared and well-drained bicycle lanes and apply grit for traction. Cross-country ski and snowshoe trails need consistent grooming, signage, and separation from motorized traffic for safety.

Lighting and signage are critical components for supporting winter forms of active transportation, especially in northern communities where daylight hours are limited. Well-placed and innovative approaches to lighting along key routes improves visibility and can make people feel safer. Enhanced signage can provide clear navigational cues, helping identify designated winter routes that may have higher priority in snow and ice clearance, directions, and trail conditions. Illuminated wayfinding signs, reflective markers, and high-contrast signage are approaches to provide navigation cues in winter conditions.

INNOVATIVE LIGHTING IN OULU, FINLAND (GOVERNMENT OF OULU, 2023)

WINNIPEG IN WINTER

Celebrating Winter

Celebrating winter in the transportation context can involve exploring how outdoor spaces can be better used in the winter months for transportation. Frozen lakes and rivers can be transformed into seasonal active transportation routes, allowing residents to walk, cycle, skate, or cross-country ski between different parts of the community. These temporary connections are often featured on winter active transportation maps and become cherished parts of local mobility networks. Cities such as Ottawa and Edmonton also host pop-up winter streets and pedestrian-only events, closing roads to motor vehicles so people can enjoy activities like tobogganing, outdoor markets, and festivals. Embracing winter through these initiatives allow communities to foster a sense of celebration and encourage year-round active transportation.

2.2 WALKING

2.2.1 Background

Walking – including people using personal mobility devices such as wheelchairs and mobility scooters – is critical to how people move around the community. Walking is the most fundamental form of transportation as it is a part of every trip, whether that trip is made by bicycle, transit, or car. Walking can be an attractive alternative to driving for short trips, especially where destinations are close and they can be accessed through direct and convenient routes.

2.2.2 Best Practices and Emerging Trends

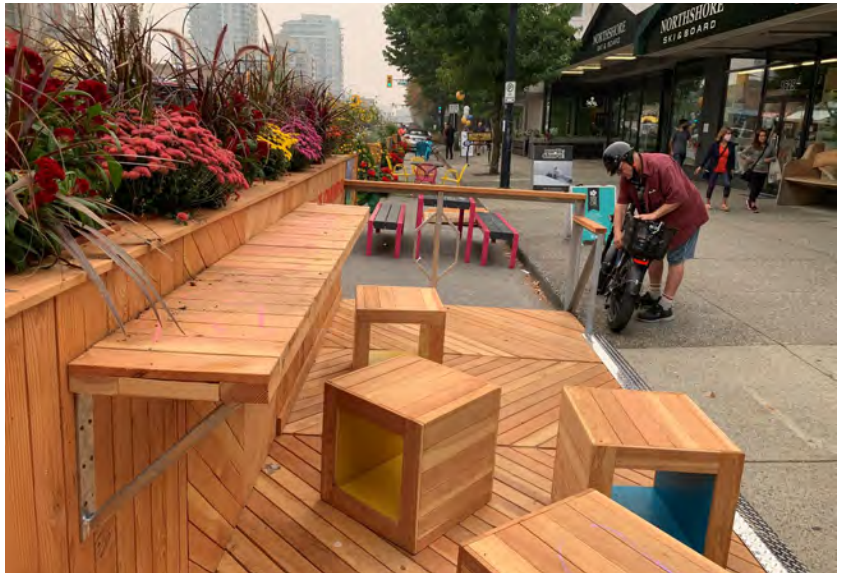
People-First Design

Since the advent of the automobile, use of the street has been predominantly framed within the context of driving; its design emphasizes the needs of people traveling by car. In reality, people use the street for diverse purposes, whether it is sitting outside of a local coffee shop with a friend, walking the dog to a nearby park, cycling to complete an errand, taking transit to catch a show downtown, or driving when necessary. How people use streets has also evolved as communities become denser, more urban and more mature; as innovation, technology, and new business processes emerge; and as individual, group or community circumstances and conditions change. A growing number of communities are adopting "People-First Design" as foundational policies in their Transportation Master Plans. This approach views the street as a multi-functional space that serves many users and modes of transport. It requires streets to be planned, designed, operated, and maintained to enable accessible, comfortable, convenient and safe access and mobility for all users, irrespective of their selected mode of travel.

PLAZA WITH CENTRAL FIRE PIT AND OVERHEAD CATENARY LIGHTING

PLAZA CREATED FROM CLOSURE OF STREET TO MOTOR VEHICLES

STREET CLOSURE TO MOTOR VEHICLES TO PROVIDE SPACE FOR SEATING AND AMENITIES



PARKLET PROVIDED IN FORMER ON-STREET PARKING AREA

Creating Great Public Spaces

Streets are a critical component of a community's public realm and can offer spaces for people to socialize, recreate, shop, and work. Places to rest and areas with shade are important to facilitate safe walking for people of all ages and abilities. Cities across the world are increasingly exploring ways to expand pedestrian space, particularly in urban areas, to realize the health, safety, social connection, and economic benefits of active transportation. Great streets seek to safely integrate pedestrians and cars by enhancing the design of the interface between street-level development and the right-of-way. Higher density commercial centres provide many opportunities for combining all types of transportation choices safely and creating vibrant pedestrian environments. Expanding space for pedestrians can include pedestrianizing entire streets, eliminating sidewalks and reducing the roadway width, significantly expanding sidewalks through road space reallocation and creating shared streets. Shared streets have very low motor vehicle speeds and volumes, enabling pedestrian activity over through movements. A shared street functions first as a meeting place and pedestrian area. The right-of-way is shared among people walking, cycling, and driving.

Some examples of ways to create great public spaces include:

- **Parklets** are open public spaces that can contain seating, tables, landscaping, and bicycle parking. They provide a space for people to sit, relax, and socialize, attract people with unique activations, and increase space for people to walk where sidewalks may be narrow or congested.
- **Patios** are typically private spaces that are extensions of the adjacent business, with seating, tables, and table service. Patios can liven sidewalks, enrich public life, and benefit businesses.
- **Plazas** can be created by repurposing streets that are not needed for vehicle capacity or that do not provide a critical network function. In many cases, short blocks can be closed to motor vehicle traffic to create plazas that function as public spaces.

Parklets, patios, and plazas are typically considered desirable in areas of high pedestrian activity, including commercial and multi-family residential areas. They can be found on any road type within these areas.

Universal Design and Accessibility

There is a strong connection between accessible transportation and quality of life for people with disabilities. Barriers make it harder for people with disabilities to use transportation systems, access opportunities, and participate in society. People with disabilities have a wide range of needs and strategies for travel. For example, people with sight loss may rely on auditory cues, while people with hearing loss may rely on visual cues.

Best practice in accessibility is to follow Universal Design principles, which create inclusion for all by making designs equitable, flexible, simple, and intuitive to navigate. Universal design considers people of all ages and abilities, focusing on those facing accessibility challenges in the transportation network. This includes people with different mobility, vision, hearing, strength, dexterity, and cognitive abilities. Many universal design strategies offer additional benefits for a broad range of people.

For example, curb ramps may have been intended to help people with mobility devices to navigate crossings, but they also make travel easier for caregivers using strollers and people carrying groceries in wheeled carts. In unique circumstances, there may be tension between the design needs of people with different accessibility needs, highlighting the importance of continuous engagement and learning from people with diverse lived experience. There are a variety of design strategies and treatments that can be used to improve accessibility, including:

- Ensuring surfaces are smooth, firm, slip-resistant, free of tripping hazards, and well-maintained year-round;
- Providing accessible curb ramps with Tactile Walking Surface Indicators (TWSIs);
- Providing frequent resting spots, especially on uphill segments;
- Accessible pedestrian signals;
- Van-accessible parking and bus stops; and
- Intuitive wayfinding.

PEDESTRIAN COUNTDOWN TIMER

ACCESSIBLE CURB RAMPS WITH TACTILE WALKING SURFACE INDICATORS (TWSI)

Accessible Pedestrian Signals

Accessible Pedestrian Signals (APS) are devices that communicate information about pedestrian signal timing in nonvisual formats, including audible tones, verbal messages, and/or vibrating surfaces. These non-visual cues can help inform people with sight loss when it is safe to cross a street.

APS should include locator tones which identify the presence of an APS and where the push button is located, tactile arrow push buttons to help align people with sight loss with the direction of travel, and walk tones to alert people with sight loss when they have the right-of-way to cross.

Sidewalks

Sidewalks are the most fundamental type of pedestrian infrastructure. Sidewalks should be provided on both sides of all streets to separate people walking from motor vehicles. Sidewalks should be at least 1.8 metres wide and should not have any obstructions such as street lights, utility poles, parking metres, or sandwich boards, to ensure they are universally accessible and can accommodate two people using mobility devices. In addition, where possible, a boulevard should be provided between the sidewalk and the motor vehicle lane. This boulevard space can help make pedestrians feel more comfortable by providing greater distance between motor vehicles, and can also be used for landscaping, street trees, and street furniture. This boulevard space is also critical in winter cities to provide a space for snow storage.

WIDE, ACCESSIBLE SIDEWALK WITH BOULEVARD

INACCESSIBLE SIDEWALK WITH OBSTRUCTION

Pedestrian Safety and Crossing Improvements

Pedestrian safety includes addressing **traffic safety** (e.g., separation from motor vehicles, reduced speeds and volumes) and **personal safety** (e.g., sightlines, lighting, eyes on the street).

Speed reduction, traffic calming, and safe intersection design are important tools for improving traffic safety for pedestrians. Vehicle speeds are one of the most significant factors influencing traffic safety, as a pedestrian is significantly more likely to be seriously injured of killed if struck by a vehicle travelling at higher speeds.

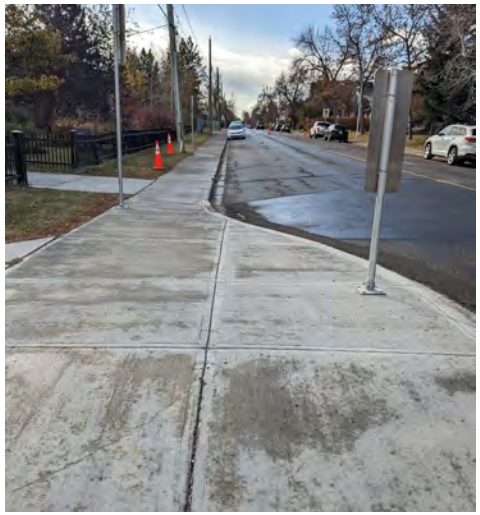
Safe intersection design principles include minimizing conflicts between users, reducing speeds at conflict points, ensuring clear sightlines and clarity of right-of-way, and making intersections as compact as possible. Specific best practices include:

- Providing **pedestrian countdown timers** and leading pedestrian intervals;
- Adding **curb extensions and median refuge islands** to reduce crossing distances;
- **Enhancing crosswalks** with additional pavement markings and flashing beacons such as Rectangular Rapid Flashing Beacons (RRFBs);
- Providing **separate traffic signal phases for left-turning vehicles**;
- **Improving lighting**;
- At locations where vehicles have a separate **channelized right turn lane**, redesigning those turn lanes to accommodate slower speeds; and
- Providing **tighter geometry** to reduce speeds.

Personal safety depends on a complex interplay between individual identity, interpersonal dynamics, and the design of the physical environment. A suite of design strategies known as Crime Prevention Through Environmental Design (CPTED) helps transportation practitioners mitigate personal safety concerns for pedestrians by considering sightlines, lighting, fencing, and patterns of pedestrian activity.

Crime Prevention Through Social Development (CPTS) is a newer approach that aims to address the root causes of crime including poverty and cultural marginalization, while placing less emphasis on surveillance in public space. In this way, CPTS more explicitly considers the needs of racialized and Indigenous pedestrians, compared to CPTED.

ENHANCED CROSSWALK WITH RECTANGULAR RAPID FLASHING BEACON (RRFB)



CURB EXTENSION TO REDUCE PEDESTRIAN CROSSING DISTANCE

MULTI-USE PATHWAY WAYFINDING

PEDESTRIAN WAYFINDING

OVERHEAD CATENARY LIGHTING

Wayfinding

Wayfinding helps people identify how they can navigate a city, neighbourhood, or active transportation network to get from their present location to their destination. Wayfinding can include signage, pavement markings, maps, landmarks, and other trip planning tools and is also important for people with disabilities to help navigate their communities. Wayfinding should be simple, easy to read, designed to be broadly accessible, easy to install, and allow residents and visitors to locate key amenities and facilities within a community. There are several types of pedestrian wayfinding, including information kiosks, pedestrian monoliths, pedestrian fingerboards, and digital hubs.

Lighting

Lighting is an essential element to consider when planning and designing pedestrian and bicycle facilities to ensure that active transportation is a safe, comfortable, and accessible transportation choice throughout all times of day and all seasons. This is especially important to ensure that active transportation is a practical and reliable transportation choice during periods of low natural light caused by shorter winter days.

Pedestrian Amenities

Pedestrian amenities enhance the pedestrian environment, adding convenience, comfort, security, and coherence to the streetscape. Amenities can include benches, tables, chairs, garbage receptacles, drinking fountains, public art, planters, and banners on street lights. Pedestrian amenities should be durable, weatherresistant, vandalism-resistant, cost-effective, easy to maintain, and have modular parts that are simple to repair or replace. The design and installation of pedestrian amenities must also consider long-term maintenance implications, including snow clearing and snow storage in winter climates.

Tactical Urbanism

Tactical urbanism is a set of tools and techniques that can be used to pilot low-cost, rapid implementation improvements to the street, and they can greatly enhance the pedestrian realm. Projects can last for hours, days, or weeks, and some become permanent. Communities across the world have implemented tactical urbanism pilot projects such as creating temporary curb extensions, parklets, and even full street closures. Additionally, temporary road space reallocation has become commonplace as cities across the world reallocate parking and traffic lanes to create wider sidewalks and safe spaces for pedestrians to walk and queue outside of businesses.

Decorative Crosswalks

Many communities across Canada have installed decorative crosswalk pavement markings. Decorative crosswalks can enhance the visibility of a crosswalk, can be used as branding and wayfinding along an active transportation corridor, and can add to the aesthetic appeal of the road. A common type of decorative crosswalk is the rainbow crosswalk, which supports the LGBTQ2S+ community while adding vibrant colour to the streetscape. Additionally, many communities have taken artistic approaches to crosswalk design that relate to local culture.

Promotion and Encouragement

There are a range of promotion and encouragement tools and tactics that can be considered to encourage walking, including:

- **Safe Routes to School** provide education, encouragement, enforcement, engineering and evaluation around school sites to improve safety for all street users – especially children and families – and encourage sustainable school transportation.
- **Piloting unique engagement and programming techniques** like tactical urbanism, school streets, or other temporary closures of streets for vehicles can create environments that support walking and pedestrians.
- **Clubs or groups** can help get people active while encouraging social interaction. A common example of a type of walking club is a Seniors' Walking Group.
- **Developing maps and wayfinding** around public transit stops and tourist destinations, highlighting amenities and destinations within five-, ten-, or fifteen-minute walking distances.

CURB EXTENSIONS IMPLEMENTED THROUGH A LOW-COST TACTICAL URBANISM APPROACH

RAINBOW CROSSWALK

MARKED CROSSWALK WITH CROSSING GUARD TO IMPROVE SAFETY FOR CHILDREN WALKING TO SCHOOL

2.3 CYCLING AND ROLLING

2.3.1 Background

As a form of transportation, cycling provides a convenient mode of travel for trips that are too far to walk and do not specifically require the capacity or range of a motor vehicle. Cycling currently accounts for approximately 2% of commute trips made by Yellowknife residents.

2.3.2 Best Practices and Emerging Trends

All Ages and Abilities Networks

Many communities are working to build complete and connected networks of All Ages and Abilities (AAA) bicycle facilities. The AAA approach aims to design safe, comfortable, and convenient networks of bicycle facilities, in order to attract people who are interested in cycling but concerned about safety.

AAA networks can yield significant gains in ridership and diversify ridership cyclists. Cities across North America have demonstrated the benefits of AAA infrastructure, including winter cities such as Montréal, Winnipeg, Whitehorse, and Saskatoon.

Physically separated facilities are required on corridors with high traffic volumes, while neighbourhood bikeways can serve quieter streets. Trails and multi-use pathways can also provide important connections, especially in smaller communities. Intersection treatments such as cross-rides, bicycle signals, and protected intersections can improve the safety and comfort of a bicycle facility.

Rapid Implementation Strategies

Quick build, or rapid implementation, projects are an effective way to reduce the implementation time of on-street protected bicycle lanes and can help build support for changes to the street design. Rapid implementation at a network level is more effective in increasing ridership than building projects in isolation. Cities such as Winnipeg, Calgary, and Edmonton have had success in rapidly implementing AAA bicycle networks in their downtown cores.

PROTECTED BICYCLE LANE ON BUSY STREET WITH HIGH TRAFFIC VOLUMES

NEIGHBOURHOOD BIKEWAY ON QUIET STREET WITH LOW TRAFFIC VOLUMES

Planning For E-bikes

The rapid growth in electric bicycles (e-bikes) for personal transportation and goods movement has opened new markets for active transportation. Deloitte predicts that over 130 million e-bikes will be sold over the next decade, and the growth is outpacing electric cars. E-bikes can make cycling more practical for seniors, older adults, people with reduced mobility, and anyone travelling in areas with steeper topography. Planning for e-bikes includes providing access to charging and designing cycling infrastructure to be wide enough to include passing. Given the speed and number of e-bikes anticipated opportunities for dedicated e-bike routes should be sought and/or expanded. Because e-bikes may travel at higher speeds, designs should also consider wider facilities or separated pedestrian and cycling facilities to reduce risk and severity of collisions.

Bicycle Parking and End-Of-Trip Facilities

Bicycle parking and other end-of-trip facilities such as showers, lockers, and repair stands help to make cycling more attractive and convenient. Both short-term (e.g., bicycle racks) and long-term (e.g., bicycle lockers, cages, and parkades) bicycle parking are important in making cycling a feasible everyday mode of transportation. Bicycle parking design should consider a range of bicycle shapes and sizes, including cargo bikes and bicycles with trailers. Bicycle racks can be branded and designed to enhance the streetscape as long as they remain fully functional. The *BC Active Transportation Design Guide* recommends that 50% of long-term and 10% of short-term bicycle parking be designed to accommodate e-bikes by providing an electrical outlet. Covered and lit parking spaces can also provide additional protection from the elements and add a greater sense of security. As electric bicycles and micromobility devices grow in popularity, communities need to consider how to provide suitable parking and charging facilities by updating zoning bylaws and design guidelines.

PROTECTED BICYCLE LANE CONSTRUCTED USING A RAPID IMPLEMENTATION APPROACH

SHARED E-BICYCLE

WEATHER PROTECTED BIKE RACKS

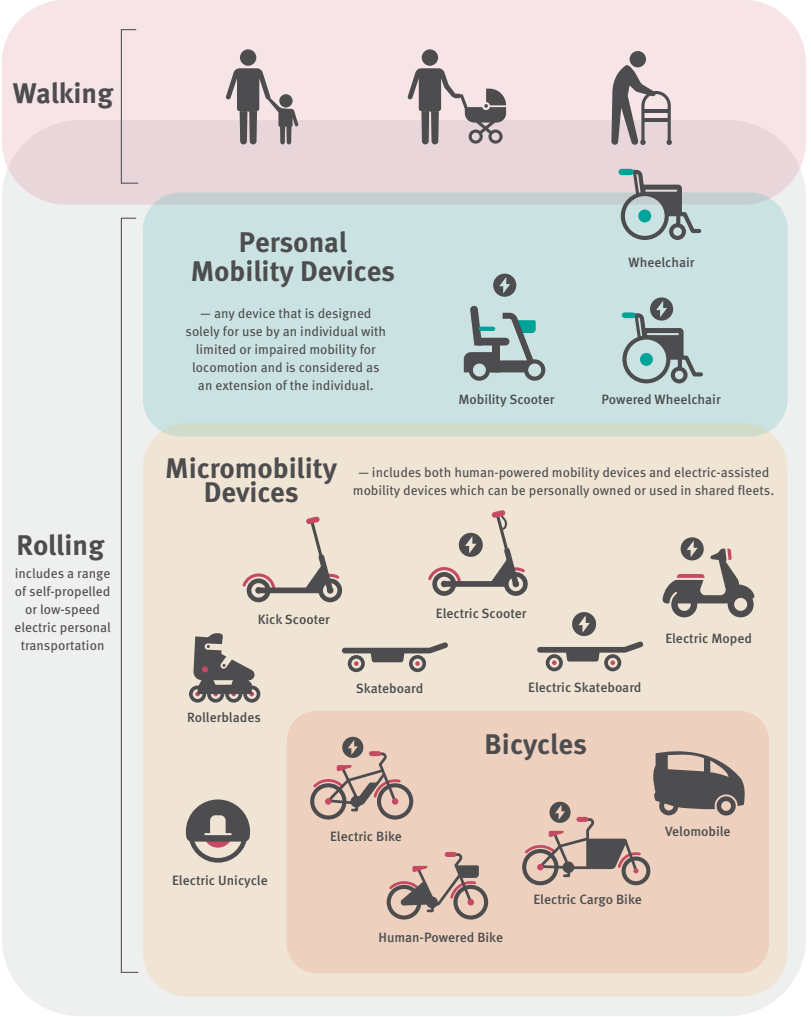
PUBLIC BICYCLE INFLATION AND REPAIR STATION

Other Types of Micromobility Devices

Micromobility can be defined as a wide range of human-powered or electric-assist mobility devices that can be personally owned or accessed in shared fleets (e.g. bike share). Other types of micromobility devices beyond bicycles and e-bikes (as described above) include skateboards, kick scooters, electric scooters, roller/inline skates, and a variety of small, one-person electric vehicles such as electric skateboards, electric unicycles, and other emerging devices.

Specific best practices and emerging trends for other types of micromobility devices include:

- **Electric Scooters:** Many communities are seeing a significant increase in the use of micromobility devices and are changing their regulations to the extent possible within the legal context to allow the use of these devices. On roadways with speed limits of 50km/h or less, e-scooters should use designated lanes for cycling or, where none exist, ride as near as possible to the right side of the street. Where the speed limit is greater than 50km/h, e-scooters must be ridden only in designated bicycle facilities. Sidewalk use is prohibited unless cycling is permitted there by traffic control device or bylaw. Municipalities can dictate whether e-scooters are permitted within municipal parks and lands.
- **Integrating Micromobility:** Micromobility devices, particularly electric devices, have not typically been integrated into strategic policy and enforcement regimes. Electric devices travel at speeds higher than standard bikes and are significantly faster than a typical walking speed. It is important that infrastructure decisions consider the faster speeds at which they move, including e-bikes and potential interactions with other users. Parking, particularly for increasingly popular larger cargo bikes, is also an important consideration for new end-of-trip facilities.



TYPOLOGY OF ACTIVE TRANSPORTATION MODES, INCLUDING MICROMOBILITY
(Source: Transport 2050, TransLink)

- **Shared Micromobility:** Shared micro-mobility services are increasingly common in North America. Cities like Vancouver, Kelowna, North Vancouver, and Richmond, among others, have implemented shared bike, e-bike, or e-scooter systems via a variety of ownership and operation models. These systems can make multi-modal transportation more convenient, including connecting to transit and providing a last-mile solution.

  Shared micromobility systems are typically dockless or docked models, meaning that users are required to park the devices at designated facilities (docked) or within broader geographic areas (dockless). Dockless systems are seen to offer more flexibility for users and municipalities. For example, municipalities do not need to allocate right-of-way space for docking stations. However, dockless systems can create accessibility challenges if devices are left in the middle of curb ramps or sidewalk clear zones.

SHARED BICYCLE PARKING

2.4 PUBLIC TRANSPORTATION

2.4.1 Background

Public transportation, including transit, school buses, taxis, and ride-hailing, can reduce the overall environmental and community impacts of transportation. Public transportation benefits those who choose to use it as well as those who have no other option. Public transportation provides an essential service for many community members. For people who do not drive, public transportation can often be the only option for getting to work, school, shopping areas, and recreational centres. Public transportation currently accounts for approximately 1% of commute trips made by Yellowknife residents.

2.4.2 Best Practices and Emerging Trends

On-Demand Transit

On-demand transit customers use smartphone apps, websites, or a phone number to book transit trips on-demand, similar to ride-hailing. This model can increase the flexibility and coverage of transit services, especially in off-peak times and areas with lower demand. It can also supplement or replace fixed route service, particularly in small communities and suburbs that are hard to serve with traditional transit. Examples of on-demand transit systems can be found in the Oakville and York Regions in Ontario; Halifax, Nova Scotia; and Bowen Island, B.C., among others. On-demand transit can be a strategy for areas or times of lower demand.

Shuttles

Shuttles typically operate a semi-fixed route designed to solve a specific problem and can be tailored to a variety of contexts. For example, in White Rock, shuttle services provide access to and from the waterfront, mitigating topography, and reducing demand for parking. Numerous communities operate free downtown shuttles aimed at supporting local business and tourism. Community shuttles serving older adults are common in many communities. Shuttles also offer an option for providing employee access to restricted areas such as airports and port facilities.

Facilities with large working populations can create challenges with traffic management. Places like ports, airports, and other industrial areas can have hundreds of workers working in shifts and may have limited transit options. As a result, many employees often arrive to work in private vehicles, which results in traffic issues during shift changes and breaks. These influxes of traffic volumes can have considerable impacts on nearby operations.

ON-DEMAND TRANSIT (Source: TransLink)

EMPLOYEE ONLY SHUTTLE (Source: Port of Seattle)

Transit Accessibility

Public transit is an essential component of a transportation system that serves all ages and abilities. Innovative public transit models adapted to the community context can provide an affordable, sustainable transportation option for residents who want or need alternatives to a private vehicle. In combination with walking and cycling, transit can provide an attractive alternative to automobile travel for both local and regional connections. The following features are desirable in the passenger zone to provide a minimum level of accessibility:

- Passenger landing pad (solid surface provided at a bus stop for customer waiting and loading/unloading activity);
- Wheelchair pad to ensure that the wheelchair ramp or lift is deployed safely and efficiently, and to facilitate the maneuverability of wheelchair users;
- Tactile Walking Surface Indicators; and
- Benches.

Additional features that can enhance accessibility, comfort, and safety include:

- Bus shelters; and
- Benches of various seating heights.

When individuals are unable to take the conventional transit system based on ability, custom paratransit service is available by application.

Transit Amenities

Having appropriate amenities at transit stops is a key way to improve the user experience and make transit a more convenient option for potential users. Basic amenities like transit maps, information, seating, accessibility features, weather protection, and waste receptacles can make the transit experience more user-friendly. Digital amenities like live bus arrival estimates and apps can also help transit users set expectations and plan their trips.

TACTILE INDICATORS TO IDENTIFY PRESENCE OF BUS STOP

BUS RAMP DEPLOYED TO ACCOMMODATE PEOPLE USING MOBILITY AIDS

BUS STOP WITH SHELTER AND BENCH

Heated Bus Shelters

Heated bus shelters provide warmth and comfort for transit riders during cold weather, improving the overall experience and encouraging transit use in winter months. These shelters can reduce exposure to harsh conditions, making waiting for buses safer and more pleasant, especially for older adults, people with disabilities, and people traveling with children. Heated bus shelters are often powered by electricity or solar energy and can be integrated with lighting and real-time information displays. While they involve higher installation and maintenance costs, they can be strategically placed at stops with higher ridership or transfer points. Examples of heated bus shelters can be found in Edmonton, Calgary, and Winnipeg.

Multi-modal Integration

Enhancing active transportation facilities and ensuring comfortable connections to transit stops can enhance the transit experience and make transit more accessible. Improved sidewalks, bicycle facilities, and adding micromobility systems near transit stops can help resolve the 'first- and last-kilometre' problem of accessing transit. Multi-modal transportation hubs can provide bicycle parking and other end-of-trip amenities at bus stops, and providing bicycle racks on all buses.

Fare Free Transit

Many communities have implemented fare free transit, either for some segments of the population such as children and youth, or for all community members. Summerland, B.C. has introduced fare free transit on a regional route for all Summerland residents, and Canmore, Alberta has implemented free local transit on three Roam Transit Routes. Some other communities have made transit free, such as BC Transit's Free Transit for Children 12 and Under Program, which allows children aged 6 to 12 to ride fixed-route and handyDART buses in B.C. for free, unaccompanied and without requiring a fare product or identification. Free transit for either children or youth or for all community members can make transit a much more attractive option.

HEATED BUS SHELTER

BICYCLE RACK ON BUS

2.5 DRIVING

2.5.1 Background

Travel by private vehicle is the dominant mode of transportation in Yellowknife today, as vehicles account for over 62% of trips made by Yellowknife residents. Driving takes place on the City's street network, which is made up of different components, each serving specific functions within the overall network.

This section focuses on driving, including parking management, goods movement, and emerging technologies.

2.5.2 Best Practices and Emerging Trends

Vision Zero

Governments around the world have implemented Vision Zero strategies, which aim to prioritize human health and safety by eliminating all traffic-related fatalities and serious injuries. This approach is based on the principle that transportation-related deaths and serious injuries are unacceptable. A key premise of this approach is the recognition that people make mistakes and collisions will occur, but the transportation system can be designed to minimize the risk and severity of collisions when they do occur.

Vision Zero follows the Safe System Approach, which includes six focus areas: safe speeds, safe road users, safe vehicles, safe road design, post-crash care, and safe land use planning.

Vulnerable road users, such as people walking and cycling, are disproportionally killed and injured by vehicle traffic collisions and need special consideration when streets are designed. Communities can see significant safety benefits by improving safety for pedestrians and cyclists by providing AAA pedestrian and cycling infrastructure that physically separate pedestrians and cyclists from other road users.

Successful Vision Zero programs utilize all available data sources (e.g., collision data, hospitalization data, police reports, etc.) with a focus on serious injury and fatality data (as opposed to all collision data), build strong partnerships with related stakeholders, and include bold, actionable implementation plans. In Oslo, Norway, major street network improvements and strong political support led to there being only one recorded motor vehicle fatality and zero pedestrian or cyclist fatalities in 2019

(Source: Transportation Association of Canada, Vision Zero and the Safe System Approach: A Primer for Canada)

Complete Streets

Complete Streets move people, not just cars. They are designed and operated to enable safe and comfortable use for all and balance the amount of space on the street to a variety of modes and separate users by speed. They recognize that streets have different roles, functions, and characteristics depending on their context. Complete Streets can be reviewed as a network to ensure the maximum people-moving efficiency and allocation of additional space for sustainable modes is considered holistically. Complete Streets can be flexible and include a range of policies, programs, and infrastructure designed to maximize the health, economic, safety, and sustainability benefits for the small community context. For example, repurposing parking to patio spaces to allow for increased bicycle, pedestrian, and public spaces in warmer months.

Road Space Reallocation

Many communities are actively considering the need to shift the amount of space currently allocated to drivers to other users to improve the access and/or mobility functions of the corridor.

This can include converting one or more parking or driving lanes into bicycle lanes, transit and/or truck-only lanes, wider sidewalks, or parklets. It can also involve creating turning lanes, dynamic curbside spaces, and converting entire streets to shared streets or pedestrian-only spaces. Examples include Meet Me on Bernard in Kelowna (Bernard Avenue closes to motor vehicles every summer in the downtown area), King Street in Toronto (converted to transit priority), and Main Street in Penticton (redesigned to relocate vehicle space for pedestrian space). There are numerous examples of pedestrianized corridors / downtowns (e.g., Copenhagen, Ljubljana) and shared streets (e.g., Calgary, Seattle, Auckland).

A COMPLETE STREET WITH DEDICATED PEDESTRIAN, CYCLING, AND VEHICLE INFRASTRUCTURE

EXAMPLE OF TEMPORARY ROAD SPACE ALLOCATION

Reduced Speed Limits and Speed Management

Reducing motor vehicle speeds is the most effective way to improve road safety for all road users. Vehicle speeds are the main factor in how serious a collision will be and whether a collision occurs at all. The faster people travel, the less time people have to react to the unexpected. The risk of death and injury increases significantly as travel speeds increase. Research shows that a pedestrian struck at 30 km/h has a 90% chance of surviving, while at 50 km/h they have only a 20% chance or less.

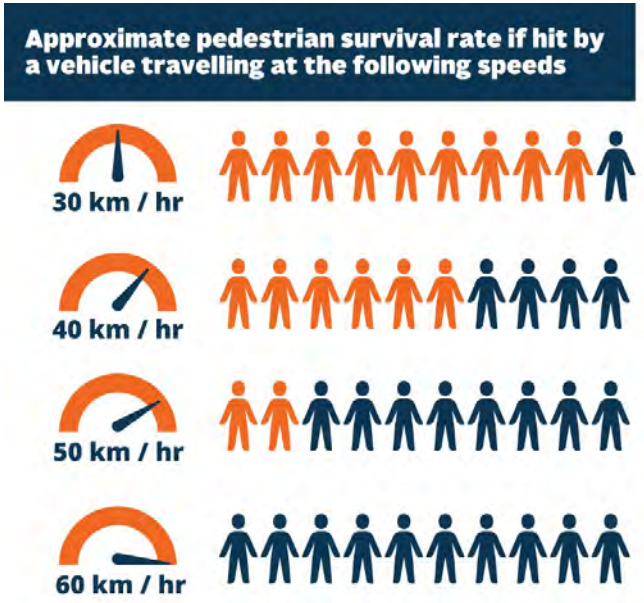
Many communities in Canada have reduced speed limits using a variety of approaches, ranging from blanket reduced speed limits throughout an entire municipality to reduced speed limits on certain road classifications or in certain neighbourhoods. However, a reduced speed limit by itself, may not be fully effective unless other measures such as engineering, education and enforcement measures are implemented.

Roundabouts

Modern roundabouts are circular intersections where vehicles travel counterclockwise around a central island. Vehicles entering the roundabout yield to traffic already circulating. Roundabouts are associated with improved safety due to fewer conflict points, slower approach speeds and safer impact angles. These benefits are more pronounced in single-lane roundabouts. Multi-lane roundabouts, while still safer than conventional signalized intersections, introduce more complexity, and crossing distance. Roundabouts are associated with a 75% reduction in injury collision compared to conventional intersections. Roundabouts can be considered instead of traffic signals to improve safety where space permits.

Smart Right Turn Channels

Channelized right-turn lanes negatively impact safety by facilitating higher-speed right turns and increasing pedestrian crossing distances. They also create conflicts and introduce a higher driver workload. Removing right turn lanes with a reduction in corner radius can improve safety for people walking and cycling by reducing vehicle turning speeds and the number of conflict points with vulnerable road users. Where removal of the channelized right turn lane is not feasible, another option is to redesign the channel as a 'smart right channel'. Smart right turn channels increase the entry angle to the cross street and reduce the turning radius which leads to increased visibility of pedestrians and conflicting traffic, while reducing right turns speeds and pedestrian crossing distances. Raising crosswalks across right-turn channels can further reduce vehicle speeds through the turn, enhancing pedestrian visibility.



(Source: Canadian Association of Road Safety Professionals)

SMART RIGHT CHANNEL WITH REDUCED SPEEDS

(Source: City of Kelowna)

Left Turn Protections

Left-turn movements across opposing traffic are complex and a major contributor to injury collisions. Protected phasing at signalized intersections can improve safety by reducing conflicts between oncoming vehicles and pedestrians.

Signalized turn phasing can reduce or eliminate this conflict point in two ways:

- **Fully protected:** Left turns are only permitted during a dedicated left turn phase (green arrow), followed by a red light where no turns are permitted; or
- **Protected-permissive:** Left turns are permitted during a dedicated left turn phase (green arrow), followed by a green light where drivers must yield to oncoming traffic before turning.

Fully protected left-turns can also virtually eliminate the conflict point between left-turn vehicles and pedestrians.

Left-turn calming (e.g. “centre-line hardening”) is a recent treatment in response to high-speed left turns where drivers are pre-occupied with the high-workload task of judging oncoming traffic in multiple lanes, and accelerate during the left-turn before checking for pedestrians crossing the departure leg. This treatment extends the median or introduces physical elements in the receiving lane, discouraging drivers from cutting the corner, helping lower speeds and improve pedestrian visibility. Left-turn calming strips on the exit leg can help control both left-turn speeds and their path, allowing trucks to move over them if needed.

Leading Pedestrian Intervals

Leading Pedestrian Intervals (LPIs) are traffic signal timing changes that give pedestrians a head start into the crosswalk before vehicles receive a green light. This early entry improves visibility and significantly reduces the risk of collisions. LPI’s have been shown to reduce pedestrian/turning vehicle collisions by 59%, with minimal delays to vehicle traffic.

Traffic Calming

Traffic calming uses engineering solutions and urban design to slow vehicle speeds, reduce traffic volumes, and enhance safety for all road users. Implementing traffic calming measures can involve physical changes to the street design (e.g. speed humps, chicanes, traffic circles, or curb extensions) and regulatory changes (e.g. turn restrictions). The goal of traffic calming is to improve safety and neighbourhood livability by mitigating the negative impacts of speeding and shortcutting, while still maintaining reasonable access for residents, public transit, snow clearing, and emergency services.

Traffic calming measures are important tools to address speeding and include:

- **Vertical deflection** (e.g., speed humps/tables/cushions, raised crossings, and intersections);
- **Horizontal deflection** (e.g., curb extensions, traffic circles, angle parking, and chicanes); and
- A suite of **volume management tools** (e.g., full/directional closures, intersection channelization, etc.).

Most traffic-calming treatments can be considered on local and collector residential streets. Vertical measures such as speed humps and raised crosswalks are not recommended on arterial streets as these roads have high traffic volumes and are intended to service regional movements, access neighbourhoods, and facilitate other uses such as goods movement and service vehicles, transit, and emergency vehicles. In some contexts, enforcement, or education interventions (e.g. speed display boards) may be more appropriate than physical changes to street design. The Transportation Association of Canada (TAC) *Canadian Guide to Traffic Calming* (2017) provides a comprehensive overview of the benefits and potential drawbacks of different traffic calming measures.

SPEED HUMP

TRAFFIC CIRCLE

Electric Vehicles

Electric, hybrid, and alternative energy vehicles (EVs) are becoming more affordable and more common across the world. To accommodate the transition to electric vehicles, charging infrastructure is required. Three levels of charging stations exist:

- Level 1: AC 120V: 8-12 hours for a full charge
- Level 2: AC 240V: 4-6 hours for full charge
- Level 3: DC Fast Charging: 0.5-1 hours for full charge

Level 2 and 3 chargers can be installed on-street and off-street at municipal facilities such as libraries, recreation centres, major parks, park-and-ride facilities, and public parkades. An infrastructure gap analysis considering residential and commercial density, land use mix, and traffic can help to pinpoint locations where a charging station would be appropriate. The targeted deployment of curbside Level 2 charging stations is one of the most cost-effective and catalytic ways that local government can support a shift toward electric vehicles in cities.

In the past, many municipalities offered free EV charging to incentivize EV usage. However, more municipalities are introducing fees for charging station use because it encourages turnover, which helps to manage demand for public EV charging. It also encourages at-home charging to reduce public costs and signals the value associated with receiving electricity for the vehicle. Examples of municipalities charging usage fees include Esquimalt, Whistler, Vancouver, and Montréal.

Car Share

Car share services increase mobility options and affordability by providing access to motor vehicles without having to purchase a private vehicle. This promotes sustainable transportation choices, allowing residents to make most trips by active transportation and transit and use a car only when required. Two-way car share services need to be picked up and returned to the same spot, whereas one-way car share allows users to start and end a trip anywhere within a designated home zone. Sometimes, car share services can reduce the need for on-site parking, if supported by site-level traffic analysis completed by a trained professional.

ELECTRIC VEHICLE CHARGING STATION

CAR SHARE VEHICLE

Ride Hailing

Ride hailing is powered by technology that matches travellers with vehicles and drivers. Customers use ride-hailing apps to enter their origin, destination, and desired departure time (alongside any other specifications). These inputs are then matched with a fleet of independent drivers and assigned based on specifications. Companies such as Uber and Lyft, have become major players in transportation ecosystems around the world. Like traditional taxi services, the presence of effective ride hailing helps support a private vehicle free lifestyle.

Curbside Management and Public Parking

A key to good parking management is to define the goals for parking management in specific areas. Well-defined goals, such as defining who the parking is for, where it should be, and how it is priced, can help optimize parking for its desired use.

Curbside space is typically used by commercial loading vehicles, taxi and ride-hailing services, drop-offs and pickups, short and long-stay private vehicles, and pocket parks. To balance curbside use, municipalities can reduce allowable parking time to encourage turnover, introduce user restrictions and implement static or dynamic pay parking to achieve a target occupancy rate. Loading areas for commercial vehicles are an important piece of curbside management. In areas with high demand for on-street parking, an adequate number of loading spaces must be designated close to business storefronts or loading bays to ensure the local goods movement systems operate efficiently. New technologies such as Populus and CurbIG enable communities to visualize curbside regulations and test policy changes.

- **Public Parking:** Modern approaches to the management of public parking include consideration for both off-street and on-street parking, pay parking systems, curbside management, type of vehicle (personal and commercial), and support for EV charging infrastructure. On- and off-street pay parking systems are typically implemented in commercial and mixed-use areas in which demand for curb space is high. The implementation of a pay parking system is best achieved through a dynamic pay structure, which can vary the cost per hour by time of day, day of the week, and season. This approach ensures that while demand is high, the cost of parking incentivizes shorter stays, and while demand is low, the cost of parking incentivizes people to stay longer, increasing foot traffic to businesses and the public realm. Alternatively, time-limited parking (such as two hour maximums) can facilitate turnover of on-street parking, when supported with appropriate enforcement. The anticipated growth of EVs will necessitate the implementation of an equitable charging network, particularly in older neighbourhoods where buildings may lack the required infrastructure.

PAY PARKING SIGN

PARKING METER

- **Residential Permit Parking:** There are several approaches to residential parking management. Most methods include regulating the provision of residential parking permits to be used in designated areas. The premise of regulating residential parking areas is to ensure that residents have an opportunity to access street parking, particularly in areas where off-street parking is limited, or there are major commercial, park, or employment uses (such as a hospital) nearby. Residential permit parking programs typically require funding for signage, hang tags or digital passes, registration system, and enforcement.
- **Accessible Parking:** Accessible parking spaces play a key role in enhancing equitable access to key destinations and residential developments. Many parking management tools are intended to limit the availability of parking for private vehicles, particularly in high-demand areas such as commercial and employment areas and urban neighbourhoods. Providing accessible parking enables those who may not be able to always walk, roll, or take transit to participate in daily life and complete essential errands. It is best practice to codify accessibility parking requirements in parking and zoning bylaws.

Within parking bylaws and guidelines as well as zoning bylaws it is important to consider:

- The number of accessible parking spaces required per regular space, lot size, or land use;
- Locating accessible spaces as close to entrances as possible via an accessible route;
- Increased stall width, access aisles, and slopes;
- Signage; and
- Van accessible spaces.

Goods Movement

The speed and reliability of trucks are essential components of a goods movement network and broader economic development priorities. Goods movement is about how the products we consume reach their destination. This includes journeys to, from, within, and through the City. Goods movement includes the industries of transportation, logistics, and warehousing, which typically take the form of trucks, trains, or, more recently, by bicycle and by foot.

The interface of truck routes with routes that prioritize active transportation and smaller vehicles must be carefully designed to prioritize the safety of vulnerable road users. The number of at-grade interfaces should be limited as much as possible to increase safety and reduce delay times for the broader goods movement network. The industry is also working to electrify the truck fleet which will require specific high-capacity charging stations.

Transportation Demand Management

Transportation Demand Management (TDM) aims to change travel behaviour by incentivizing sustainable transportation modes such as walking, cycling, transit, and rideshare, while disincentivizing single occupant vehicle (SOV) trips. TDM measures can include introducing paid parking, adding bicycle parking, creating dedicated parking for car share services, and providing subsidized transit passes. Historically, many local governments have required TDM plans to support new development applications such as rezonings and proposals requesting parking variances.

URBAN GOODS MOVEMENT USING CARGO BIKE

3.0 JURISDICTIONAL SCAN

A jurisdictional scan was conducted to review transportation planning and design approaches in ten other northern and winter cities. The jurisdictional scan included three types of communities: North American northern peer cities, leading North American winter cities for active transportation, and leading international northern cities.

North American Northern Peer Cities

- City of Whitehorse, Yukon
- City of Iqaluit, Nunavut
- Fairbanks Region, Alaska

Leading Winter Cities for Active Transportation

- Municipality of Jasper, Alberta
- Town of Canmore, Alberta
- City of Edmonton, Alberta
- City of Winnipeg, Manitoba
- City of Montréal, Québec

Leading International Northern Cities:

- City of Oulu, Finland
- City of Vaasa, Finland

These jurisdictions were selected because they either had similar characters to Yellowknife in terms of size, context, and/or climate, and/or because they have seen demonstrated successes in their evolution in transportation. These diverse contexts were selected to also recognize that winter is unique in each of these cities, and there is no direct comparison to Yellowknife. For example, as shown in **Table 1** on the following page:

- Because of its northern latitude, Yellowknife experiences very little daylight hours in the winter (similar to Fairbanks, Whitehorse, Iqaluit, Oulu, and Vaasa);
- Yellowknife is one of the coldest cities reviewed, with an average daily January temperature of -25.5° (comparable to Iqaluit and Fairbanks) and the highest number of days per year below 0°;
- Yellowknife receives a moderate amount of snowfall, with less snow than some other cities reviewed (such as Montréal and Iqaluit);
- Due to its compact urban core, Yellowknife has one of the highest walking mode shares among cities reviewed (comparable to Iqaluit and Canmore); and
- Yellowknife has a comparable mode share to most other Northern American cities reviewed.

TABLE 1: SUMMARY OF KEY WINTER CITY CHARACTERISTICS OF PEER CITIES

	Population	Latitude	Average January Daily Temperature	Average July Daylight	Average December Daylight	Number of Days Per Year with Maximum Temperature Below 0°	Average Annual Snowfall	Average Monthly Snowfall Between October and March	Average Monthly Snow Depth Between October and March	Transit Mode Share	Walking Mode Share	Cycling Mode Share
Yellowknife	20,340	62.4° N	-25.5°	18.7 hrs	5.1 hrs	173.5	155 cm	23 cm	26 cm	1%	18%	2%
Whitehorse	28,201	60.7° N	-15.0°	18.1 hrs	5.8 hrs	118.7	148 cm	17 cm	17 cm	3%	7%	3%
Iqaluit	7,429	63.7° N	-26.0°	19.3 hrs	4.6 hrs	125.2	190 cm	23 cm	25 cm	0%	21%	0%
Jasper	4,029	52.9° N	-8.8°	16.4 hrs	7.6 hrs	65.8	111 cm	16 cm	16 cm	3%	32%	13%
Canmore	15,990	51.1° N	-8.8°*	16.0 hrs	8.0 hrs	80.0*	183 cm*	21.9 cm*	13 cm*	3%	13%	7%
Edmonton	1,010,899	53.5° N	-12.3°	16.4	7.6 hrs	86.3	127 cm	17 cm	12 cm	8%	4%	1%
Winnipeg	749,607	49.9° N	-16.3°	15.8 hrs	8.2 hrs	114.7	126 cm	18 cm	11 cm	9%	5%	1%
Montréal	1,762,949	45.5° N	-9.2°	15.3 hrs	8.8 hrs	72.8	217 cm	34 cm	7 cm	28%	10%	3%
Fairbanks	94,951	64.8° N	-23.4°	19.9 hrs	4.0 hrs	data not found	165 cm	data not found	data not found	1%	3%	1%
Oulu	216,152	65.0° N	-8.2°	data not found	data not found	data not found	150 cm	data not found	data not found	data not found	data not found	18%
Vaasa	115,685	63.1° N	-6.8°	data not found	data not found	data not found	data not found	data not found	data not found	data not found	data not found	data not found

*Banff weather data from Canadian Climate Normals was used as a proxy for Canmore due to the unavailability of Canmore-specific data.

(Source: Census, 2021, Canadian Climate Normals, 1991-2020, United States National Weather Service NOWData 1991-2020, Climate Data, Wikipedia)

3.1 WHITEHORSE, YUKON

The City of Whitehorse is located on the traditional territories of the Ta'an Kwäch'än Council and the Kwanlin Dün First Nation, is home to over 28,000 residents, and serves as the capital of the Yukon.

Whitehorse has made strong commitments to sustainable transportation and safe mobility through its *Transportation Master Plan*, *Bicycle Network Plan*, and *Transit Master Plan*. The City's walking, cycling, and transit transportation mode share is 12.8%, and the *Transportation Master Plan (2024)* (TMP) has a target to increase this to 40% of commute trips by 2040, as well as targets to eliminate fatalities and serious injuries from the transportation network and to reduce greenhouse gas emissions by 10% from 2014 levels by 2040.

To help work towards increased year-round cycling and reduced reliance on single-occupancy vehicles, the City has been developing its cycling network, with investments focused on retrofitting existing roads, rapid implementation, trail enhancements, and safety improvements while focused on All Ages and Abilities (AAA) design principles.

Whitehorse's winter city context has shaped its approach to active transportation, with infrastructure designed to support snow clearing and stormwater management. The City continues to build on its northern expertise, integrating land use, accessibility, and sustainability into its transportation planning framework.

3.1.1 What Makes Whitehorse Unique

Whitehorse is a northern, remote capital city with a large geographic area, similar in size to Yellowknife, but with a more spread-out development pattern.

The Alaska Highway runs through the city, resulting in significant through-traffic, including high truck volumes and tourist traffic. The city's neighbourhoods are separated by the Highway and other major roads, contributing to a spread-out urban form.

The city's topography includes significant hills, making walking and cycling more challenging for commuters.

Seasonal traffic patterns are heavily influenced by school schedules, with noticeable drops in congestion when school is out, even during peak tourist season.

Whitehorse's Commitments to Advancing Transportation

Whitehorse's Transportation Master Plan includes several targets:

- **Mode Share:** By 2040, 40% of all trips to work or school will be undertaken through active transportation, transit, shared transportation, and other emerging mobility modes, with the remaining 60% or less being made using single occupancy vehicles.
- **Injuries and Fatalities:** By 2040, there will be no fatalities or serious injuries on Whitehorse's transportation network.
- **Greenhouse Gas (GHG) Emissions:** By 2040, total GHG emissions will be reduced by 10 per cent (relative to 2014 levels).

3.1.2 Planning Context

- Bicycle Network Plan (2018)
- Transit Master Plan (2018)
- Transportation Master Plan (2024)
- Climate Action Plan (2025)
- Vision Zero Policy and Safe Mobility Action Plan (under development)
- Traffic Calming Policy (under development)

3.1.3 Sustainable Transportation Initiatives

School zone improvement assessments. These assessments are focused on parent pick-up and drop-off infrastructure, traffic flow, and pedestrian safety around school sites.

Counters for monitoring active transportation. To better understand and support active transportation, the City has installed trail counters and intersection cameras throughout the city. These devices collect data on walking and cycling volumes, helping staff monitor usage patterns and evaluate the effectiveness of infrastructure investments.

3.1.4 Key Transportation Challenges

Urban sprawl and car dependency. Whitehorse's large geographic area and dispersed development pattern make it difficult to shift travel behaviour away from single-occupancy motor vehicles. Car dependency remains high, and the spread-out urban form creates barriers to walking, cycling, and efficient transit service.

Rapid population growth and keeping up with demand. The City has often had to respond reactively to immediate pressures such as congestion, increased demand for transit, and the need for upgrades to walking and cycling routes. This reactive approach can lead to rushed capital projects, strain on existing resources, and difficulty aligning new investments with long-term goals.

3.1.5 Key Transportation Successes

Integrated Transportation Master Plan. Whitehorse previously had standalone transportation plans which made implementation challenging due to a lack of harmonization. The 2024 TMP has improved coordination, prioritization, and implementation. By consolidating all transportation plans and documents together, this has helped streamline decision-making, ensuring both staff and the public are aligned to work towards a shared vision and roadmap for transportation. The TMP includes a clear prioritization and funding strategy in the action plan which helps defend project choices to Council and the public, ensuring that implementation is realistic and sustainable.

Quick win projects build public support. Early Transportation Plan implementation efforts should be focused on "quick wins." "Quick win" projects are projects that are easier to deliver and implement, highly visible, and have public buy-in and support. Implementing quick wins helps build momentum, demonstrate progress in implementing the Transportation Master Plan, and foster public and political support for broader, long-term transportation goals. Prioritizing these wins can help shift public perception and encourage the uptake of sustainable modes, laying the foundation for more ambitious initiatives. An example of a quick win is a protected bicycle lane built using a low-cost, rapid implementation approach on Chilkoot Way to connect two important multi-use pathways**.**

Pilot to permanent traffic calming. Whitehorse has successfully transitioned from pilot traffic calming projects to permanent installations. The City is currently finalizing a Traffic Calming Policy and works closely with operations and maintenance teams to ensure that traffic calming designs are compatible with winter conditions and do not hinder snow removal or other essential services. Ongoing feedback from staff and residents helps refine the program, making it responsive to community needs.

3.1.6 Lessons Learned for Yellowknife

Dedicated active transportation funding. Whitehorse has an Annual Spot Improvement Budget (~$50,000) that is used for smaller active transportation projects. This budget allows staff to deliver on quick, small-scale enhancements that come up from community requests.

Reliable data and winter-proof technology are vital. Accurate data collection is essential for evidence-based decision-making, but northern climates pose unique challenges. Whitehorse's experience shows that winter conditions can disrupt technology (e.g., cameras, parking meters, traffic counters), leading to gaps in monitoring and evaluation. The City recommends investing in winter-proof equipment, scheduling data collection during spring and fall to capture representative traffic volumes. COVID-19 further highlighted the need for resilient data strategies, as disruptions forced reliance on older data and projections.

Update bylaws and administrative frameworks early in the planning process. This will enable smoother implementation of future projects, reducing the risk of delays due to regulatory gaps or the need for later policy changes.

Establish roles for winter maintenance. Suggestion to have a snow and ice control policy and a standalone policy about the maintenance on trails.

3.2 IQALUIT, NUNAVUT

The City of Iqaluit, situated on the traditional territory of the Inuit, is home to approximately 7,400 residents and serves as the capital of Nunavut.

As a remote Arctic community, Iqaluit faces unique challenges and opportunities in advancing sustainable transportation. The City emphasizes improving walkability and reducing dependence on private vehicles through compact land use and active transportation initiatives in its Transportation Master Plan. Early efforts focused on enhancing pedestrian safety and connectivity, and recent projects have explored winter-resilient infrastructure to accommodate snow clearing and extreme weather conditions.

3.2.1 What Makes Iqaluit Unique

Iqaluit is a remote Arctic capital with no road access, where all travel in and out is by air and, seasonally by sea or snowmobile.

About half of the City's roads are gravel and half are asphalt, and there is very limited hard surface pedestrian infrastructure such as sidewalks. Residents commonly use ATVs and snowmobiles for daily travel, leading to parking requirements that include dedicated stalls and drive aisles for recreational vehicles. Parking areas often serve as storage for snowmobiles, ATVs, traditional gear, and outdoor items, requiring planners to balance vehicle and non-vehicle needs.

Extreme cold and permafrost conditions prevent the use of large concrete surfaces. As a result, drainage is typically managed with open ditches rather than curb and gutter.

The City is compact and dense, with mid-rise apartments in the core and a large transient population, making urban form and service delivery unique.

About 55% of residents are Inuit, many living in public rental housing, and centralized healthcare which brings elders and people with disabilities from across Nunavut to Iqaluit, increasing demand for accessible transportation and specialized services.

3.2.2 Planning Context

- Transportation Master Plan (2022)
- Parking Utilization Study (2024)
- General Plan (2025)

3.2.3 Sustainable Transportation Initiatives

Enhanced sidewalk and bicycle parking requirements in new developments. Council was supportive of expanding sidewalks and requiring bicycle parking in new developments to encourage active transportation.

Dedicated snowmobile trail network. The City maintains a separate trail network for snowmobiles and ATVs. This supports year-round mobility using modes suited to local conditions.

Transit study and pilot shuttle services. The City is conducting a transit study to explore new models for public transportation, driven by population growth and increased demand for reliable transit service. Private companies and the Elders Society are piloting shuttle and bus services, including a new shuttle for elders, to fill gaps in public transit and improve accessibility.

3.2.4 Key Transportation Challenges

Snow removal and drainage. Iqaluit's long winters and frequent blizzards create significant challenges for snow removal. Snow is often packed and sanded, forming a pseudo-surface over roads and walkways. When spring arrives, the accumulated sand and snow melt can clog open ditches and curb lines, leading to drainage problems and requiring extensive maintenance. The City's reliance on open ditches, rather than curb and gutter systems, is a direct response to permafrost and climate conditions. However, these systems are difficult to maintain and prone to blockage.

Vehicle import and disposal. Since Iqaluit is not connected to other communities by road, all vehicles must be imported by air or sea, making acquisition costly and logistically complex. Disposing of vehicles at the end of their life is equally challenging, resulting in abandoned vehicles scattered around the community. This issue has prompted the City to be cautious about increasing its vehicle fleet and to seek ways to reduce reliance on motor vehicles.

3.2.5 Key Transportation Successes

Iqaluit has made progress **in improving pedestrian infrastructure.** A sidewalk design study was completed, and its recommendations are now implemented through the development permitting process. New road cross-section standards include hard surface sidewalks, addressing previous gaps in walkability and accessibility.

Dedicated snowmobile trail network. Recognizing the importance of snowmobiles and ATVs for daily travel, the City maintains a dedicated trail network for these vehicles. These trails are separate from roadways and often utilize frozen creeks in winter, providing safe and efficient routes for motorized travel. In summer, some of these trails are repurposed as walking paths, ensuring year-round usage.

Pilot shuttle and bus services for elders. To address gaps in public transit and improve accessibility, Iqaluit has supported pilot shuttle and bus services for elders. Private companies and the Elders Society have launched new shuttle initiatives, offering specialized transportation for those with mobility challenges. These services are especially important given the city's role as a regional healthcare hub, bringing elders and people with disabilities from across Nunavut to Iqaluit for care.

3.2.6 Lessons Learned for Yellowknife

Ensure the Transportation Plan is actionable with clear prioritization and actions. A Transportation Plan is most effective when it includes specific, actionable steps and strong policy language, rather than being just a high-level strategy. Practical implementation mechanisms and clear next steps are essential to continuing momentum in advancing transportation.

Adapt infrastructure and planning to the local climate and context. Ensure infrastructure is suited to local climate challenges, such as permafrost, drainage, and snow removal. Practical design and maintenance capacity are critical for success.

Protect unique transportation corridors. Safeguard important routes like ice roads and sea ice corridors, which are vital for local access and cultural practices.

Plan for sufficient maintenance capacity and flexibility. Consider the City's ability to maintain infrastructure, especially during major storm events when contractor capacity may be stretched. Flexible contracting and the ability to scale up maintenance in response to unpredictable weather are essential for keeping routes clear and safe.

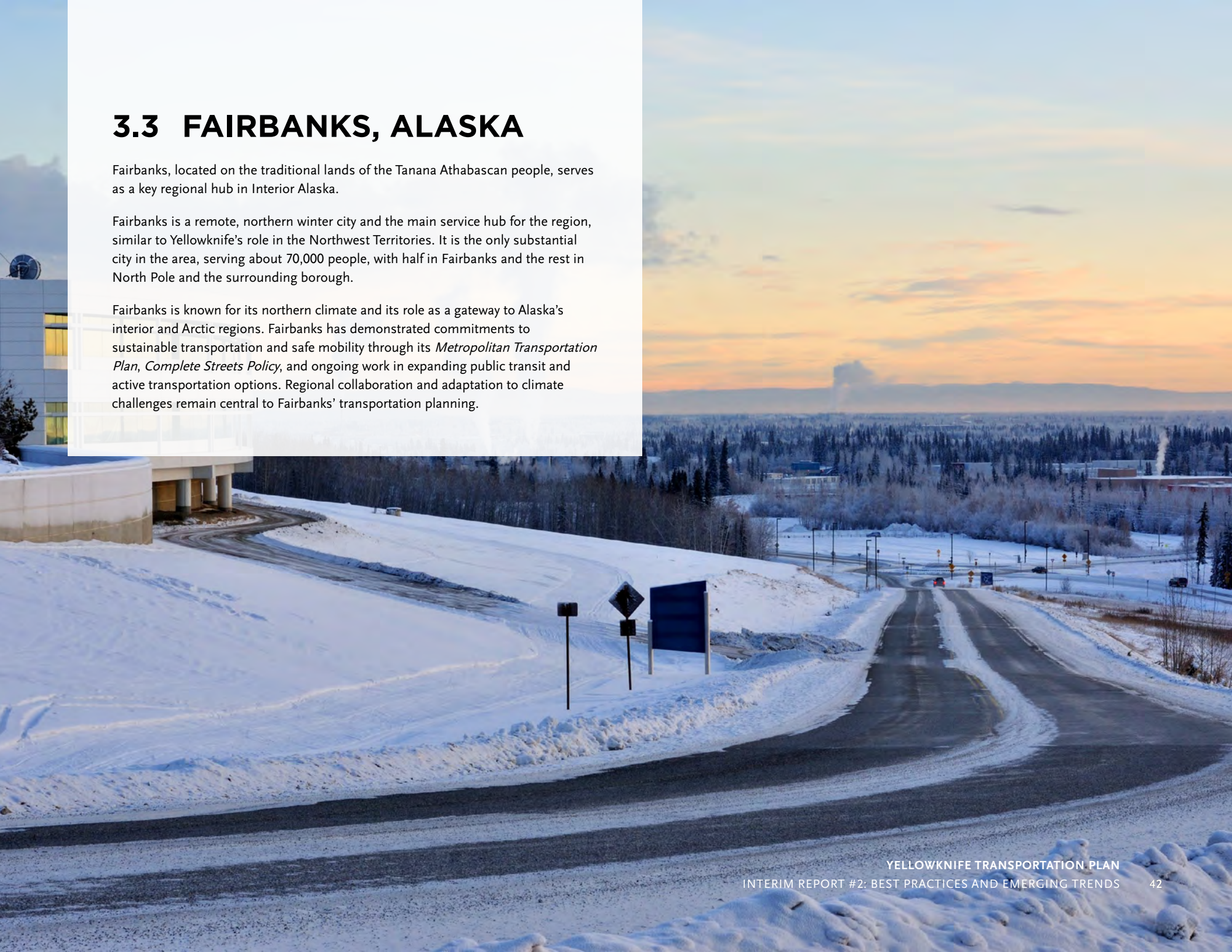
LET'S MOVE YK!

3.3 FAIRBANKS, ALASKA

Fairbanks, located on the traditional lands of the Tanana Athabascan people, serves as a key regional hub in Interior Alaska.

Fairbanks is a remote, northern winter city and the main service hub for the region, similar to Yellowknife's role in the Northwest Territories. It is the only substantial city in the area, serving about 70,000 people, with half in Fairbanks and the rest in North Pole and the surrounding borough.

Fairbanks is known for its northern climate and its role as a gateway to Alaska's interior and Arctic regions. Fairbanks has demonstrated commitments to sustainable transportation and safe mobility through its *Metropolitan Transportation Plan*, *Complete Streets Policy*, and ongoing work in expanding public transit and active transportation options. Regional collaboration and adaptation to climate challenges remain central to Fairbanks' transportation planning.



3.3.1 What Makes Fairbanks Unique

Fairbanks is unique for its complex governance structure and vast, spread-out geography. The region is served by Fairbanks Area Surface Transportation (FAST), a metropolitan planning organization, that coordinates transportation planning across the City, North Pole, and the surrounding borough. The large geographic area where many residents live far from services and infrastructure, makes transit and active transportation challenging to provide efficiently.

3.3.2 Planning Context

- Non-motorized Transportation Plan (2019)
- Freight Plan (2019)
- Metropolitan Transportation Plan (2023)
- Transit Plan (2024)
- Electric Vehicle Infrastructure Implementation Plan (2024)

3.3.3 Sustainable Transportation Initiatives

Safe Routes to School. Fairbanks has implemented a capital program focused on improving safety around schools, playgrounds, and parks. The program has evolved to address not only elementary and middle schools but also high schools, with recent studies and infrastructure improvements targeting areas with high volumes of student drivers and complex traffic patterns.

3.3.4 Key Transportation Challenges

Jurisdictional complexity. Fairbanks' transportation system is shaped by its unique governance structure, with overlapping responsibilities among the city, borough, and state, and more than 100 road service areas each providing varying levels of maintenance. This leads to inconsistent standards, unreliable upkeep, and challenges in coordinating improvements, especially on "orphan" roads that lack formal maintenance authority altogether. Coordination across these entities is challenging, affecting the planning and delivery of transportation projects.

Political barriers and resistance. Efforts to expand active transportation infrastructure, such as bike lanes, often face strong opposition from both the public and local officials. There is a cultural stigma around cycling and transit use, with perceptions that these modes are only for those who have lost their driver's license or are for high-income recreational users. Even when data and best practices support new projects, political decisions can sometimes override technical recommendations, slowing or derailing initiatives and making it challenging to build consensus for sustainable transportation solutions.

3.3.5 Key Transportation Successes

Electric vehicle charging infrastructure. Fairbanks has developed a local plan for electric vehicle charging stations, identifying optimal locations and supporting the transition to cleaner transportation options. The community has successfully sourced charging stations rated for extreme winter temperatures, ensuring reliable operation throughout the year.

Bike Friendly Fairbanks initiative. The "Bike Friendly Fairbanks" program has encouraged local businesses to install bicycle racks and support cycling culture. Through this initiative, multiple breweries and other businesses have added bicycle racks at their businesses, making cycling more accessible and convenient for residents. Bike Friendly businesses are featured on a "bikeways" map showing the cycling network. The City has also partnered with a trade school "Girls Who Weld" program to develop and distribute bicycle racks around the community.

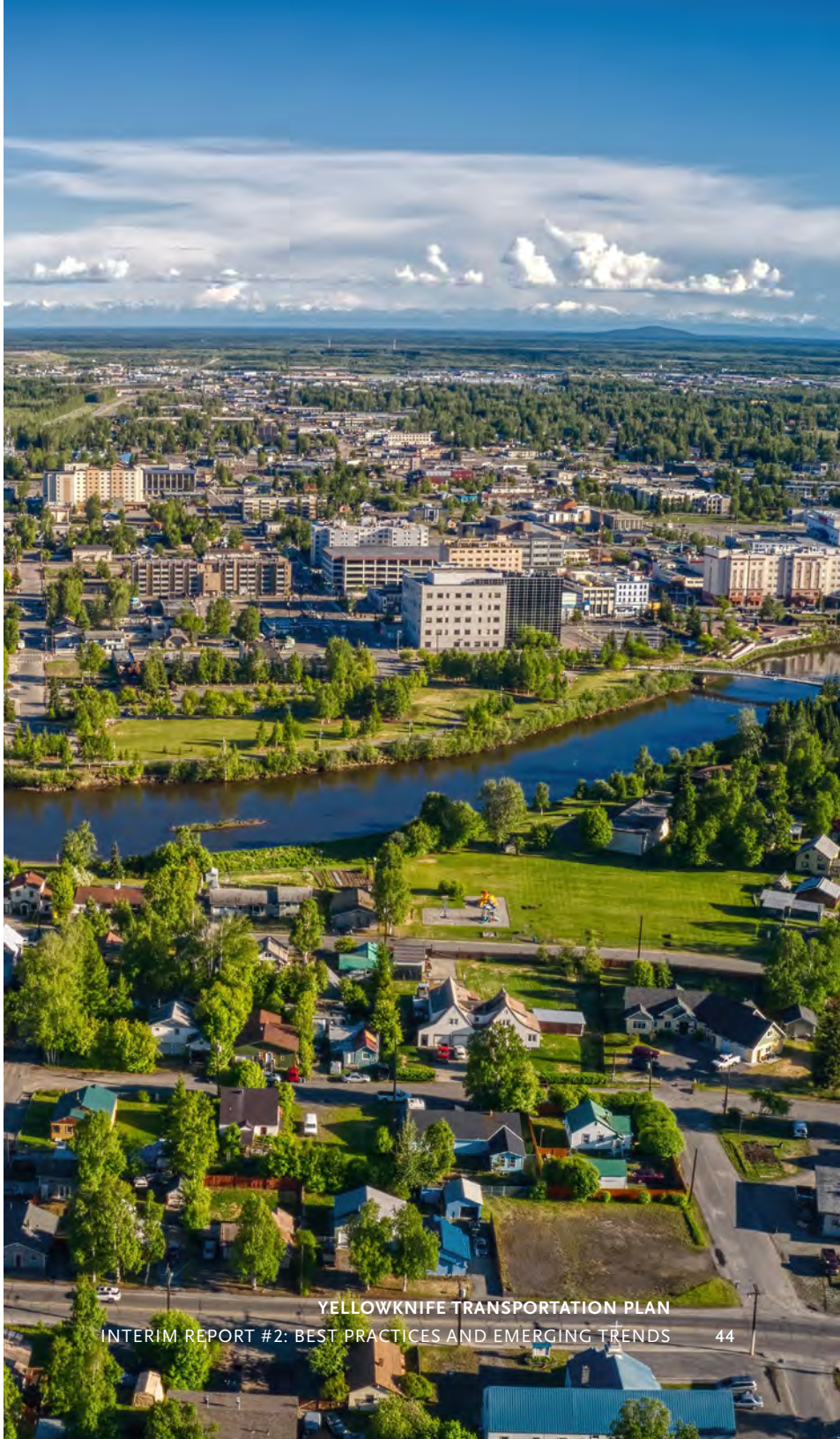
Natural gas bus fleet. Fairbanks has invested in transitioning its public transit fleet from diesel to compressed natural gas (CNG) buses. The City funded a CNG filling station at its maintenance facility and has begun purchasing new buses, aiming to gradually replace the fleet.

3.3.6 Lessons Learned for Yellowknife

Build political and community support for change. Efforts to expand active transportation in Fairbanks often face strong resistance from both the public and local officials, especially when projects challenge car-centric norms. Transparent communication, coalition-building, and focusing on benefits for all users are key strategies for overcoming political barriers and fostering acceptance of new mobility options.

Invest in strengthening community partnerships. Fairbanks' initiatives "Bike Friendly Fairbanks" and "Girls Who Weld" show the value of partnering with local organizations to start building a culture of active transportation.

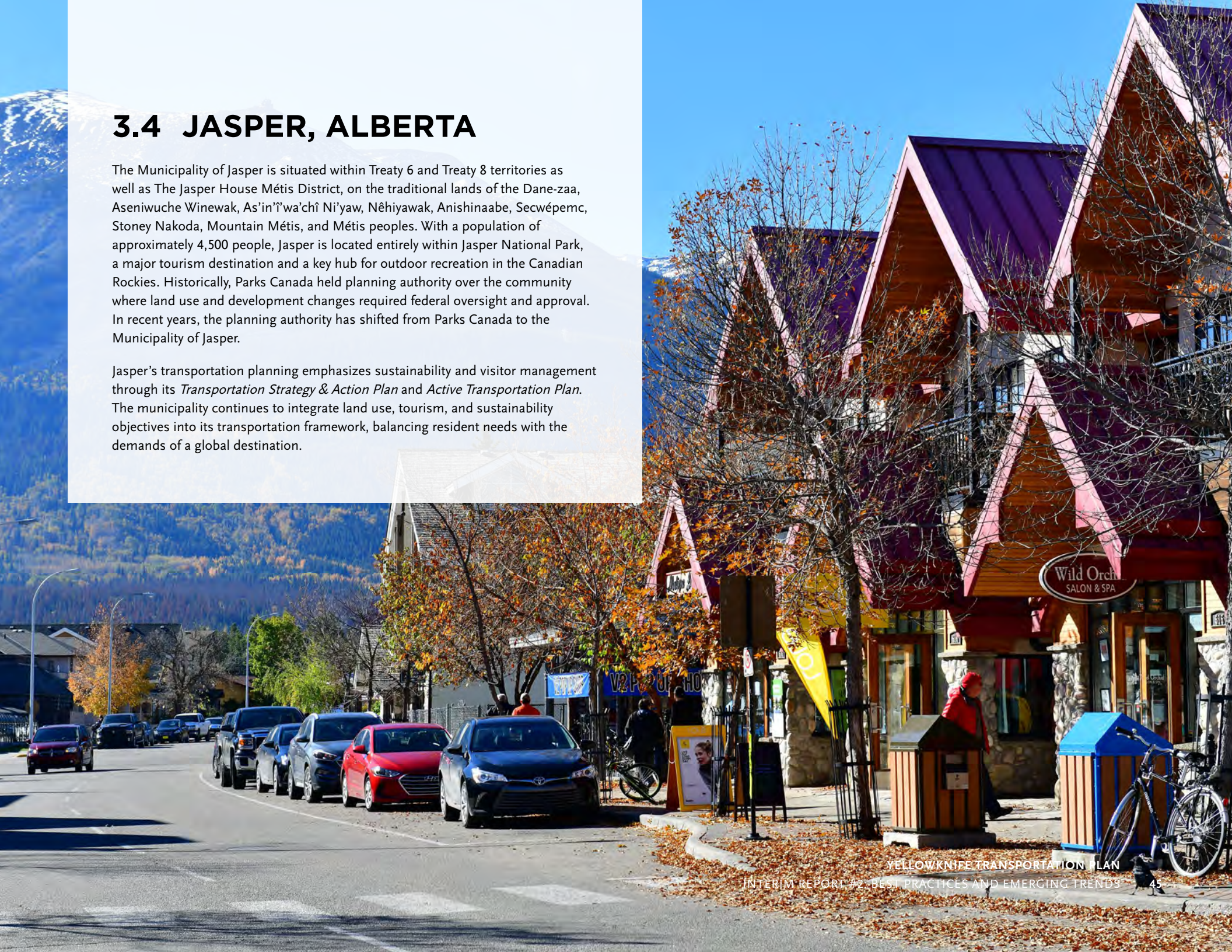
Adapt technology and infrastructure for northern climates. Fairbanks' experience with electric vehicle charging stations and natural gas buses highlights the importance of selecting technology and infrastructure that can withstand extreme cold. For Yellowknife, choosing equipment rated for northern conditions and climate are essential for reliable, year-round service.



3.4 JASPER, ALBERTA

The Municipality of Jasper is situated within Treaty 6 and Treaty 8 territories as well as The Jasper House Métis District, on the traditional lands of the Dane-zaa, Aseniwuche Winewak, As'in'î'wa'chî Ni'yaw, Nêhiyawak, Anishinaabe, Secwépemc, Stoney Nakoda, Mountain Métis, and Métis peoples. With a population of approximately 4,500 people, Jasper is located entirely within Jasper National Park, a major tourism destination and a key hub for outdoor recreation in the Canadian Rockies. Historically, Parks Canada held planning authority over the community where land use and development changes required federal oversight and approval. In recent years, the planning authority has shifted from Parks Canada to the Municipality of Jasper.

Jasper's transportation planning emphasizes sustainability and visitor management through its *Transportation Strategy & Action Plan* and *Active Transportation Plan*. The municipality continues to integrate land use, tourism, and sustainability objectives into its transportation framework, balancing resident needs with the demands of a global destination.



3.4.1 What Makes Jasper Unique

Similar to Yellowknife, Jasper faces land constraints, as any expansion of its boundaries would require a federal act of Parliament. As a result, Jasper has adopted an approach to intensification resulting in a compact layout which makes the distances between key destinations short, enhancing walkability and bikeability. An extensive trail network surrounds the town, encouraging recreation and active commuting.

Jasper's unique context ranging from seasonal tourism peaks, wildlife corridors, and mountainous terrain shapes its approach to active transportation, with designs that prioritize environmental stewardship and climate resilience. The increasing frequency and severity of wildfires in the region has further influenced planning priorities, highlighting the need for resilient infrastructure, emergency access routes, and strategies during evacuation scenarios.

3.4.2 Planning Context

- Active Transportation Feasibility Study (2023)
- Transportation Strategy and Action Plan (2023)

3.4.3 Sustainable Transportation Initiatives

Launch of local transit. Jasper's local transit launched in 2023, connecting key destinations to make it easier for residents and visitors to get around the community without relying on a motor vehicle. The system also includes a dedicated school route in partnership with the local school division.

3.4.4 Key Transportation Challenges

Impact of wildfires. The 2024 wildfires delayed the implementation of Jasper's Active Transportation Plan, as municipal resources shifted to emergency response and recovery. This has prompted Jasper to review its transportation priorities and consider how to integrate climate resilience and adaption to its future infrastructure projects.

3.4.5 Key Transportation Successes

Extensive trail networks with year-round maintenance. Jasper is surrounded by trails that support both recreation and commute trips. These trails are maintained year-round, supporting cycling in the winter months.

3.4.6 Lessons Learned for Yellowknife

Leverage compact urban form. Jasper's fixed municipal boundaries and compact layout make it easier to support active transportation trips. With short distances between destinations, walking and cycling become practical and convenience transportation options for residents and visitors alike.

Prepare for climate and emergency events. The 2024 wildfires in Jasper underscore the importance of resilient infrastructure and emergency planning. Yellowknife can learn from this by ensuring transportation networks are adaptable to climate-related disruptions, with contingency plans for evacuation and emergency access.

3.5 CANMORE, ALBERTA

The Town of Canmore is situated within Treaty 7 territory and the traditional lands of the Îyârhe Nakoda, Tsuut'ina, and Blackfoot Nations, as well as the Métis Nation of Alberta, Region 3.

Home to approximately 15,000 residents, Canmore is a gateway to Banff National Park and a hub for outdoor recreation. The Town has prioritized sustainable transportation and active mobility through its Integrated Transportation Plan and Active Transportation Strategy.

The mountainous terrain influences Canmore's approach to transportation planning, with infrastructure designed to accommodate steep grades, wildlife corridors, and seasonal conditions. Canmore continues to integrate land use, tourism, and sustainability goals into its transportation framework, supporting both residents and visitors in choosing active and low-carbon travel options .

3.5.1 What Makes Canmore Unique

Canmore is a winter mountain town that experiences population fluctuations where the number of visitors and tourists can outnumber local residents during peak periods in the busy summer months. Its proximity to both Calgary and the national parks makes Canmore a popular destination.

3.5.2 Planning Context

- Integrated Transportation Plan (2018)
- Connect Downtown Plan (2025)

Canmore's Commitments to Advancing Transportation

Canmore's Integrated Transportation Plan includes several targets:

- **Mode Share:** 40% of trips by foot, bicycle, bus on a typical summer day by 2030 mobility modes, with the remaining 60 per cent or less being made using single occupancy vehicles.
- **Injuries and Fatalities:** Reduce collisions by 10% annually.
- **Transit Ridership:** Increase transit ridership by 20% each year.

3.5.3 Sustainable Transportation Initiatives

Bike all winter initiative. In partnership with a local community organization, this program provides residents with free or subsidized equipment such as winter bicycle tires, lights, and fenders in exchange for a commitment to ride their bicycles in the winter.

School travel planning. In partnership with a local community organization, the Town supports the development of school travel plans in elementary schools.

3.5.4 Key Transportation Challenges

Seasonal population fluctuations. Canmore experiences significant increases in population due to tourism, especially in summer. This affects the transportation network and creates challenges in planning for peak versus off-peak demand.

Parking and access issues. Increased tourism has resulted in a growth of parking demand, especially near the National Park and downtown. Recent restrictions on vehicle access and parking at the national parks has shifted parking demand into Canmore, as tour companies and visitors seek alternatives.

Visitor confusion. Visitors are often unfamiliar with Canmore's transportation network and traffic features (e.g. Dutch-style intersection at Bow Valley Trail and Benchlands Boulevard). This results in driver confusion and non-compliance.

3.5.5 Key Transportation Successes

Free local transit. Canmore's local transit system offers free rides within the Town, making it easy for residents and visitors to get around without relying on a motor vehicle. Free transit is funded by revenue generated from Canmore's paid parking program. This has resulted in a growth in ridership.

Successful pilot projects leading to permanent changes. Initiatives such as pedestrianizing downtown blocks, coloured concrete for bike lanes, and paid parking began as pilots and were adopted permanently after demonstrating positive outcomes.

Paid parking program. Revenue generated from Canmore's municipal parking is reinvested into the Town's reserve in addition to other sustainable transportation initiatives such as free local transit and other active transportation projects.

3.5.6 Lessons Learned for Yellowknife

Council and policy alignment. Success in advancing sustainable transportation in Canmore was strongly linked to bringing Council along early, educating them on the benefits of mode shift, and ensuring supportive policy frameworks are in place to guide decisions.

Pilot before permanent implementation. Many successful initiatives in Canmore (e.g., pedestrianizing Main Street, paid parking) started as pilots, allowing the community to test, adapt, and respond to initiatives before they became permanent.

3.6 EDMONTON, ALBERTA

The City of Edmonton is located on Treaty 6 territory, the traditional territories of many First Nations such as the Nehiyaw (Cree), Denesuliné (Dene), Nakota Sioux (Stoney), Niitsitapi (Blackfoot), and the Métis Nation of Alberta. With a population of over one million residents, Edmonton serves as the capital city of Alberta and a major urban center in Western Canada.

Edmonton has demonstrated strong commitments to sustainable transportation and safe mobility through its *City Plan*, *Bike Plan*, and *Transit Strategy*. Early cycling infrastructure focused on painted lanes and retrofitting existing streets, but the city has since expanded its network using All Ages and Abilities (AAA) design principles, protected bike lanes, and multi-use trails.

Edmonton's winter city context has shaped its approach to active transportation, with infrastructure and maintenance practices designed to support snow clearing, lighting, and working towards year-round accessibility .

3.6.1 What Makes Edmonton Unique

Edmonton is a sprawling winter city characterized by extensive suburban development and a compact urban core. Its climate features long, cold winters and hot summers, which pose unique challenges for maintaining transportation infrastructure and supporting year-round active modes like walking and cycling. The City's river valley and ravine system create natural features that shape the city's transportation network.

3.6.2 Planning Context

- Winter Design Guidelines (2016)
- Edmonton Transit Strategy (2017)
- Complete Streets Design and Construction Standards (2018)
- City Plan (2020)
- Edmonton Bike Plan (2020)
- Safe Mobility Strategy (2021-2025)

3.6.3 Sustainable Transportation Initiatives

Vision Zero Street Labs. As a part of the City's *Safe Mobility Strategy*, Street Labs are community-led initiatives that use temporary rapid implementation traffic calming measures to address specific safety concerns identified by residents. All Street Labs are co-designed with the neighbourhood the project is in, allowing for tailored solutions. These temporary traffic calming measures are monitored to understand their impact before permanent changes are considered.

Active Transportation Network Expansion Program. In 2022, Edmonton's City Council approved an accelerated rollout of the active transportation network as a part of the implementation of the *Bike Plan* and the *Bike Plan Implementation Guide*. This decision led to the launch of the Active Transportation Network Expansion Program, a multi-year program running from 2024 to 2026 focused on completing missing gaps in the network.

3.6.4 Key Transportation Challenges

Public resistance to change. Edmonton's efforts to introduce transportation projects (e.g. bicycle lanes, reduced parking) encountered vocal opposition from residents and businesses who were much more vocal than those in support of the projects.

Transit. Edmonton's transit system faces challenges in attracting and retaining riders, especially outside of peak commuting hours. In suburban areas, transit may not be as convenient or time competitive as driving, leading to lower ridership.

Integration of e-bikes and e-scooters. The growth of e-bikes and e-scooters presents new regulatory and safety challenges. These modes travel at faster speeds than conventional bicycles, leading to conflicts on multi-use paths and sidewalks and pedestrians. Enforcement of age restrictions and dangerous rider behaviour is limited, and there are ongoing conversations about where these devices should be allowed to operate.

3.6.5 Key Transportation Successes

Expansion of the active transportation network. In the past two decades, Edmonton has expanded its network of protected bicycle lanes and multi-use trails and pathways, including the rapid implementation of a complete and connected AAA downtown protected bicycle lane network, which has been instrumental in increasing cycling mode share and helping to build support for further expansions to the cycling network. This initially started with smaller projects as the city was able to gradually expand and connect key corridors and destinations.

Winter maintenance for active modes. The City prioritizes predictable and timely snow clearing for bicycle lanes and multi-use pathways, often clearing these facilities before sidewalks. This approach ensures that walking and cycling remain viable options year-round, even during heavy snowfall and icy conditions.

3.6.6 Lessons Learned for Yellowknife

Proactive engagement and clear communication. Edmonton's experience highlights the importance of clearly explaining the benefits and trade-offs of proposed changes and demonstrating how these projects will improve mobility and safety for a broader range of users. Ensuring that projects are aligned with Council priorities and community values helps build trust and fosters a sense of shared ownership, making it easier for both council and the community to support the project and see themselves reflected in the outcomes.

Prioritize active modes during winter maintenance. Consistent and predictable snow clearing for cycling and pedestrian infrastructure is essential in winter cities. Edmonton's commitment to winter maintenance for cycling and pedestrian infrastructure through winter design guidelines and dedicated maintenance budget has enabled active transportation to thrive year-round.

3.7 WINNIPEG, MANITOBA

The City of Winnipeg is located on Treaty 1 territory, the traditional lands of the Anishinaabe, Cree, Oji-Cree, Dakota, and Dene peoples, and the homeland of the Métis Nation.

With a population of over 750,000 residents, Winnipeg serves as the capital city of Manitoba. Winnipeg has demonstrated strong commitments to sustainable transportation and safe mobility through its *Transportation Master Plan*, *Pedestrian and Cycling Strategies*, and *Transit Master Plan*.

Winnipeg's prairie climate, with cold winters and hot summers, has shaped its approach to active transportation, with infrastructure and maintenance practices designed to support snow clearing, lighting, and year-round accessibility.

3.7.1 What Makes Winnipeg Unique

Winnipeg's planning and design are shaped by its extreme winter climate and flat geography. Snow clearing and storage requirements are integrated into every planning and design decision, with minimum pathway widths (1.8 metres needed for snow clearing equipment) established from the outset to ensure cycling and pedestrian infrastructure remains accessible year-round.

The City's flat terrain, while an advantage for cycling, presents persistent drainage challenges, especially for transit stops and curb bump-outs, which can increase project costs and complexity.

3.7.2 Planning Context

- Winnipeg Transit Master Plan (2021)
- Road Safety Strategic Action Plan (2022)
- Complete Communities Direction Strategy (2022)
- Transportation Master Plan (2025)

Winnipeg's Commitments to Advancing Transportation

Winnipeg's Transportation Master Plan set a **mode share target** for 50% of trips to be made by walking, cycling, transit, and ride sharing by 2050.

Winnipeg also has made a **road safety target** to reduce fatal and serious injury collisions by 20%.

3.7.3 Sustainable Transportation Initiatives

Road Safety Branch. Winnipeg's new Road Safety Branch was established as an outcome of the *Road Safety Strategic Action Plan*. This branch works across various departments and closely with the transportation branch to improve road safety for all road users.

Bus Rapid Transit (BRT) expansion. Guided by the Winnipeg *Transit Master Plan*, the City is working on expanding BRT service into downtown Winnipeg to improve access to key destinations and to make transit more reliable, attractive, and efficient.

Graham Avenue pilot pedestrianization. As an outcome of the *CentrePlan 2050* and the City's larger placemaking strategy, several blocks of Graham Avenue have been designated as a pedestrian-focused area and car-free zone. The street features planters, places to sit, picnic tables, street murals, art installations, flexible public spaces, and other activations.

3.7.4 Key Transportation Challenges

Drainage and flat topography. Winnipeg's flat topography creates persistent drainage challenges, especially when designing transit stops, curb bump-outs, and accessible loading zones. Small changes to street design can require complex and costly drainage solutions, and even minor adjustments can be technically difficult to implement.

Competition for road space. There is ongoing competition for limited right-of-way space among cars, transit, trees, pedestrian buffers, patios, and active transportation facilities. As the City grows, balancing these competing demands remains a challenge. Decisions about how to allocate space often results in trade-off discussions which can generate public and political opposition, especially when projects impact parking, travel lanes, or curbside access.

3.7.5 Key Transportation Successes

Active transportation lens in road renewal projects. Winnipeg has a policy requiring active transportation facilities to be considered in all road renewal projects. This has become a major driver in the expansion of the active transportation network. By leveraging the larger roads budget, the City can build new bike lanes, multi-use pathways, and complete streets as part of routine road reconstruction, even when the dedicated active transportation budget is limited.

Dedicated active transportation capital budget. Winnipeg maintains a separate capital budget specifically for active transportation. This fund can allow the City to extend a proposed bicycle lane and fill in network gaps beyond the scope of an individual road renewal projects. For example, if a road renewal project covers only a portion of a corridor, the active transportation budget can be used to connect the corridor to the existing active transportation network.

Winter maintenance. The City clears every kilometre of sidewalk on all city streets and has a designated priority active transportation winter maintenance network, ensuring that key cycling and walking routes are maintained for year-round accessibility. The City's Snow and Ice Removal policy sets conditions for when and how routes are cleared, with higher priority given to routes that serve as neighbourhood greenways or informal cycling corridors.

Empowering advocacy groups to mobilize community engagement. Strong partnerships with advocacy groups have helped Winnipeg build public support, spread educational messages, and mobilize community engagement for active transportation projects. Recently, advocates have expanded their outreach by organizing community events, such as pancake brunches in areas targeted for new infrastructure, to connect directly with residents. This approach enables the city to gather contact information, build coalitions of support, and ensure that local voices are represented when projects move to the political arena.

3.7.6 Lessons Learned for Yellowknife

The importance of lighting. Limited daylight hours during winter create significant barriers for active transportation. Many pathways and trails lack adequate lighting, and retrofitting lights after construction is expensive and challenging, particularly in naturalized areas. Additionally, pavement markings are often obscured by snow or wear out quickly, making them unreliable for guiding users during winter months. When planning new infrastructure, it is important to integrate lighting from the outset and consider alternative ways to communicate route information beyond pavement markings.

Quick builds and pilot projects. Winnipeg's experience with quick-build protected bike lanes and traffic calming curbs shows that rapid delivery of improvements can help address urgent safety needs and capitalize on new opportunities. However, these temporary installations can be vulnerable to damage from snow clearing equipment and vehicles, especially on busier streets. Successful quick-build projects require careful selection of locations, robust monitoring, and a willingness to adapt designs based on maintenance feedback.

Seasonal winter connection routes. Winnipeg has successfully implemented temporary seasonal winter connection routes, such as skating and walking trails across frozen lakes, to expand the active transportation network during the coldest months. These seasonal facilities open new routes and connections that are only available for part of the year, providing unique opportunities for recreation and commuting.

Staff capacity and resources. Limited staff resources can delay the implementation of transportation plans and project delivery. Even with strong policy direction, progress can be slow if staffing resources is inadequate. Ensuring adequate staff capacity and securing budget for new positions are critical steps for successful implementation of a transportation plan.

3.8 MONTRÉAL, QUÉBEC

The City of Montréal is located on the traditional territory of the Kanien'kehá:ka (Mohawk) Nation.

Montréal is known for its vibrant culture, historic neighbourhoods, and its role as a hub for innovation and sustainable urban mobility. The City has demonstrated strong commitments to sustainable transportation and climate action through its *Climate Plan*, *2050 Integrated Land Use and Mobility Plan*, and *Vision Vélo 2023–2027 Cycling Strategy*.

3.8.1 What Makes Montréal Unique

Montréal stands out among North American cities for its distinctive urban form, climate, and governance structure. The City's central boroughs reflect a pre-war, streetcar-era design, featuring dense row housing, mixed-use buildings, and vibrant main streets. This has resulted in highly walkable neighbourhoods, though the older street layouts pose challenges due to limited right-of-way. In comparison, the suburban boroughs, developed in the post-war period, are characterized by auto-oriented planning, with tract housing, and separated land uses, conditions that often complicate efforts to promote sustainable transportation.

Montréal's long, snowy winters further shape its uniqueness; the city not only plows its streets but also removes snow entirely by loading it onto trucks and hauling it away, a practice rarely seen elsewhere in North America. Additionally, the city's governance structure is divided between borough and city jurisdictions, adding another layer of complexity to planning and service delivery.

3.8.2 Planning Context

- Vision Zero Strategy (2019)
- Integrated Land Use and Mobility Plan (2025)
- Vision Vélo 2023–2027 Cycling Strategy
- Low Emission Transportation Plan (2025-2027)

Montréal's Commitments to Advancing Transportation

Montréal's *Integrated Land Use and Mobility Plan* set a **mode share target** for 50% of trips to be made by transit, walking, and cycling by 2050.

Montréal also has a **Vision Zero commitment** to eliminate all road fatalities and serious injuries by 2040.

3.8.3 Sustainable Transportation Initiatives

The School Safety Capital Program supports permanent infrastructure improvements such as curb extensions, traffic calming measures, and pedestrian zones in areas surrounding schools, playgrounds, and parks. Initially focused on enhancing safety around schools, the program has since expanded to include any location with a high concentration of children, including parks and playgrounds. Several boroughs have piloted temporary school street closures under this initiative and are now working to make these closures permanent through capital investment.

The Pedestrian/Shared Streets Program provides funding for projects that reallocate at least 60% of vehicular space (e.g. parking and travel lanes) towards pedestrian, cycling, or public realm uses. These projects typically begin with tactical pilot installations, supported by operating budgets for a two-year quick-build phase. If successful, the projects then transition to permanent infrastructure with dedicated capital funding. This phased approach allows for testing and refinement before committing to long-term changes.

Parklet and patio guidance. The City published *Parklet and Patio Guidelines* to harmonize requirements across boroughs, with particular attention to sight lines at intersections and the safe placement of installations. Generally, parklets for public use are free of charge, while patios associated with businesses require an annual fee. Some parklets and patios, especially those created through the City's pedestrian and shared streets program, are required to remain in place year-round, supporting winter activation and public realm improvements even during colder months.

3.8.4 Key Transportation Challenges

Winter maintenance of cycling infrastructure. Montréal's retrofitted bicycle lanes are typically located at the curb where stormwater drains are also placed. Clearing these bicycle lanes is essential not only for cyclists but also for proper drainage. The City has also started to design infrastructure to better accommodate winter maintenance. The following are a list of approaches and considerations:

- Use tapered edges and bollards on traffic calming features like curb extensions and speed humps to accommodate snowplows and maintain visibility;
- Flex posts are incompatible with winter maintenance and must be removed before the season begins;
- Screw-in modular speed humps are more resistant to damage from snowplows and salting equipment than traditional speed humps;
- Install barrier curbs to help guide snowplows effectively and pair them with bollards to enhance visibility in snowy conditions; and
- When using medians or curbs with protected bicycle lanes, include vertical posts to ensure clear delineation and safety during winter operations.

Green infrastructure and stormwater management. In recent years, Montréal has experienced increased precipitation and snowmelt. As a result, the City is investing in green infrastructure and "sponge streets" to absorb stormwater and reduce pressure on aging sewer systems. These features help manage frequent heavy precipitation events and snowmelt, supporting both climate resilience and sustainable urban design.

3.8.5 Key Transportation Successes

Expansion and evolution of cycling infrastructure. Montréal has a well-established cycling network that has evolved from painted bicycle lanes to protected, separated bicycle facilities. The City has shifted toward uni-directional bicycle lanes for easier intersection management, while bi-directional lanes are still used in some contexts for efficient winter clearing. Maintenance strategies have been adapted for winter, such as using salt instead of crushed stone on bicycle lanes to improve traction and prevent accumulation. The City also ensures that bicycle lanes are plowed alongside sidewalks, leveraging existing equipment and operational experience.

Tactical urbanism and pilot projects. The City's Pedestrian and Shared Streets program provides funding for projects that dedicate at least 60% of vehicular space to other uses, such as bicycle lanes, parklets, or green infrastructure. These projects begin with a pilot phase, allowing for tactical, temporary installations and operational experimentation. If successful, the City invests in permanent infrastructure.

Year-round Bike Share. Montréal's BIXI bike share system, initially a seasonal service, now operates year-round with select stations and bicycles equipped for winter use. The expansion to winter service involved converting some on-street stations to permanent, off-street locations and equipping bicycle with studded tires for better traction. While e-bikes are not used in winter due to battery durability concerns, the standard bikes have proven popular, with winter ridership far exceeding expectations. BIXI's success has served as a "door opener" for winter cycling, encouraging more residents to try cycling in colder months and demonstrating the feasibility of year-round bike share in a winter city.

3.8.6 Lessons Learned for Yellowknife

Prioritize winter maintenance for active modes. Montréal's commitment to clearing sidewalks and cycling network year-round is a cornerstone to encourage year-round active transportation. The City uses specialized equipment and operational strategies to facilitate snow clearing and protect infrastructure from damage. Bicycle lanes are plowed not only for cyclists, but also to keep stormwater drains clear, which is essential for managing snowmelt and preventing flooding.

Use tactical urbanism and pilot projects. Montréal's approach to tactical urbanism and pilots enables rapid adaptation and community engagement. These pilot projects allow the City to experiment with new ideas, gather community feedback, and refine designs based on real-world use and maintenance experience. If a pilot proves successful, it is transitioned to permanent infrastructure through capital investment.

Focus on initiatives for children and youth. Montréal's capital program for school safety finances permanent infrastructure improvements around schools, playgrounds, and parks, including traffic calming measures, improved crossings, and expanded pedestrian zones. Boroughs also run temporary school street initiatives, some of which are transitioning to permanent school plazas. These efforts create safer, more walkable environments for children and families, and are supported by dedicated funding.

3.9 OULU, FINLAND

Oulu, located in northern Finland and home to approximately 216,000 residents, is widely recognized as a global leader in winter cycling. The city has integrated active transportation into its long-term mobility strategy, emphasizing sustainability, safety, and year-round accessibility.

Oulu is recognised as a leader in winter cycling. The City has an extensive cycling network with separated pathways designed for All Ages and Abilities (AAA) and maintained for winter conditions through systematic snow clearing and surface treatments.

PHOTO: TIMO PERÄLÄ

3.9.1 What Makes Oulu Unique

Oulu's development patterns are similar to many North American cities where neighbourhoods surrounding the urban core are made up of low-density single-family residential homes. Oulu has prioritized cycling and walking since the early 1970s, with direct, separated routes for active transportation to provide safe and efficient routes for cyclists and reduce motor vehicle dependency. The City has invested in a comprehensive network of direct, separated routes for active transportation, designed to ensure safety, efficiency, and year-round usability. Today, Oulu boasts more than 900 kilometres of cycling infrastructure and over 300 underpasses, significantly reducing reliance on motor vehicles and fostering a culture of sustainable mobility.

3.9.2 Planning Context

- Oulu City Strategy 2030

3.9.3 Sustainable Transportation Initiatives

Environmental program monitoring and reporting. As a part of the implementation of the City's Environmental Program, the City publishes annual monitoring reports to track progress toward its environmental goals. These reports include indicators for sustainable transportation, such as public transport ridership and cycling infrastructure development. Energy consumption and emissions data are reported to show how transportation and building measures contribute to carbon neutrality. The publication of these annual reports raises awareness and strengthens accountability for achieving environmental and transportation objectives.

3.9.4 Key Transportation Challenges

Adapting to changing winter conditions. Oulu's winters have become less predictable, with more frequent freeze-thaw cycles and unexpected snowmelt, making traditional maintenance methods less effective.

Drainage and snow storage issues. As weather patterns shift, proper drainage and snow storage have become critical for maintaining cycling routes. Without adequate space to store snow, paths can become blocked or unsafe, and melting snow can lead to icy or slushy conditions. Oulu's design philosophy emphasizes separated routes with enough space for snow storage, but adapting older infrastructure remains a challenge.

3.9.5 Key Transportation Successes

Separated active transportation network. Oulu has systematically prioritized cycling and pedestrian routes in all new developments, ensuring that these modes have the most direct and convenient access to destinations. Most routes are separated from car traffic, often using underpasses to avoid intersections, which improves safety and travel flow for cyclists and pedestrians.

Innovative winter maintenance contracts. Oulu pioneered maintenance contracts that pay contractors based on cyclist satisfaction rather than technical criteria. This approach has led to higher service levels, more responsive maintenance, and a culture of reliability for year-round cycling and walking. The city continues to refine these contracts to better serve active transportation users.

3.9.6 Lessons Learned for Yellowknife

Strong leadership and a clear vision are essential for driving organizational and cultural change toward sustainable transportation – strategies alone are insufficient without committed leaders and internal champions. Without strong leadership, plans and strategies may remain unimplemented. Oulu's success is attributed to having leaders and internal champions who pushed for cycling and walking infrastructure, maintained high standards, and fostered a culture of reliability and service.

Build buy-in for sustainable transportation. Cultural change requires ongoing education, open communication, and engagement with both the public and city staff. Oulu stresses the need for dialogue between planners, maintenance crews, and residents to align expectations, share best practices, and foster buy-in for new innovative approaches. Education campaigns and participatory processes help shift mindsets and build support for sustainable transportation.

Create a culture of reliability and expected high service for active transportation. Establishing a dependable, year-round cycling and walking network is crucial for building public trust and shifting travel habits. This means ensuring that infrastructure is maintained to a high standard year-round, so residents can rely on it for daily commutes and activities. If people cannot count on safe, clear routes in winter, they will default to car use.

Use available road space for high-quality, separated infrastructure. North American cities often have more road space than their European counterparts. Oulu's experience shows that reallocating space from cars to protected cycling and pedestrian routes is possible and effective. The perception of limited space is usually a perception issue, not a physical constraint.

Collect winter-specific data and metrics. Oulu highlights the importance of gathering data on winter experiences, such as resident satisfaction with outdoor life, accessibility, and safety during the winter months. This helps ensure that strategies address year-round livability and not just summer conditions.

3.10 VAASA, FINLAND

Vaasa, located on the west coast of Finland, is a vibrant city known for its innovative approach to sustainable mobility and its commitment to year-round accessibility.

With a population of approximately 115,000 residents, Vaasa serves as a regional hub and is recognized for integrating active transportation into its long-term urban planning.

The City's cycling and pedestrian networks are designed to accommodate all ages and abilities, with separated pathways and systematic winter maintenance ensuring safe and comfortable travel even during snowy months. Vaasa's transportation strategy emphasizes multimodal connectivity, climate resilience, and equitable access, supported by investments in infrastructure, traffic calming, and public engagement. Recent initiatives highlight Vaasa's leadership in combining infrastructure improvements with supportive policies, reinforcing its reputation as a forward-thinking winter city in Finland.

3.10.1 What Makes Vaasa Unique

Vaasa stands out for its compact urban structure and flat terrain, making it highly suitable for walking and cycling year-round. The city has a significant student population and is recognized as one of the happiest and sunniest cities in Finland. Historically Vaasa was a car-oriented city.

The City's commitment to enhanced winter maintenance, innovative pilot projects, and integrated planning demonstrates a proactive and context-sensitive strategy that sets Vaasa apart from other cities.

3.10.2 Planning Context

- Vaasa Master Plan 2040
- MoveIT: Low Carbon Dioxide Transport Service in the Vaasa Region

3.10.3 Sustainable Transportation Initiatives

Mini-Lifti car share. Mini-Lifti is Vaasa's electric car-sharing program, operated in partnership with Omago, a Finnish mobility service. Through this initiative, the city has access to a fleet of electric cars used by municipal staff for work-related travel during weekdays. Outside of work hours, these cars are available to Vaasa residents. The fleet is stationed at Vaasa City Hall, making it easily accessible for both city employees and the public.

3.10.4 Key Transportation Challenges

Political and public opposition to active transportation. Efforts to promote cycling and walking often face resistance from both politicians and segments of the public, especially those concerned about reducing car space or changing established habits. This opposition means changes must be implemented gradually to avoid backlash, and planners must negotiate internally to find acceptable compromises.

Budget constraints. The City's transportation projects depend on annual budget approvals, making it difficult to secure consistent, long-term funding. This uncertainty affects the ability to plan and execute multi-year infrastructure improvements, limiting the number of projects that can be undertaken each year.

3.10.5 Key Transportation Successes

New bus system. The introduction of a new bus system with biogas-powered vehicles and a rebranding effort significantly increased ridership. Fares are among the lowest in Finland, making public transport more accessible.

Innovative winter maintenance. Vaasa has advanced winter maintenance for active transportation by introducing dedicated contracts that hold contractors fully responsible for maintaining cycling and walking routes from October to April. These contracts incorporate bonus incentives tied to user feedback and satisfaction, encouraging contractors to deliver higher quality and more responsive service.

Data-driven bicycle parking criteria. Vaasa has established clear bicycle parking criteria for schools and public spaces, basing requirements on actual mode share data collected through regular surveys. The City conducts seasonal surveys to track changes in cycling and walking rates, ensuring parking supply matches real demand. Annual budgets are allocated to upgrade bicycle parking infrastructure, focusing on secure, weather protected designs that facilitate winter maintenance and year-round use.

3.10.6 Lessons Learned for Yellowknife

Adapt to the local context. There is a lot of value in learning from other cities through travel and professional exchanges. However, avoid directly copying of solutions from other cities. Instead, modify and adapt them to fit local climate and context. This ensures that strategies and approaches are realistic and practical and may be more likely to gain public and political support.

Use data-driven approaches to guide investments and demonstrate impact of investments. Implementing data-driven approaches such as deploying cameras for real-time modal share and emissions tracking, conducting targeted surveys, analyzing school routes for safety and maintenance prioritization, and systematically collecting user feedback allows cities to allocate resources effectively, justify investments, and demonstrate progress, resulting in more transparent, responsive, and impactful sustainable transportation planning.

4.0 CLOSING AND NEXT STEPS

This is the second report prepared as part of the Yellowknife Transportation Plan process and provides an overview of the best practices and trends from communities across Canada and internationally. This report has been developed in parallel with **Interim Report #1: Transportation Yellowknife Today**, which summarizes existing conditions for all modes of transportation in the City today.

The next phase of work will focus on charting the course for the future of transportation in Yellowknife. A future vision with supporting goals will be developed along with detailed strategies and actions to achieve the vision and goals. The strategies and actions will lay out the long-term plan, which will be followed by an implementation and monitoring strategy identifying short-, medium-, and long-term priorities.