CRANBROOK

ACTIVE TRANSPORTATION NETWORK PLAN

BACKGROUND REPORT

December 2023

This Active Transportation Network Plan Background Report was prepared by ISL Engineering and Land Services Ltd. with input provided by City staff.

"We all live in systems that shape our travel behaviour, and most of us live in systems that give us almost no choice in how we get around"

Charles Montgomery, Author: Happy City

TABLE OF CONTENTS

People need safe facilities and priority where they need to cross the road and connect trails.

1. OVERVIEW

This background report informs the Active Transportation Plan and includes a policy review, community profile, data review, existing infrastructure assessment, and gap analysis which together provide a starting point to develop recommendations for the plan improvements.

1.1. Project Background

The development of transportation systems and infrastructure is of key interest to the City of Cranbrook. Chief among these is the development of a convenient active transportation network that is comfortable for people of all ages and abilities.

The City's existing infrastructure for people walking and rolling need further development. Amenities are outdated and some existing pathways have poor accessibility and connectivity. Previous community engagement has found public interest in the development of the local pathway network, including the Rotary Way and NorthStar Rails to Trails. Interest in low emission transport, such as e-bike and/ or e-scooter sharing programs, has also been expressed.

1.2. Process

The project process includes:

» Engagement (Phase 1 - gathering ideas and concerns)

» Background Report (this document)

» Draft Active Transportation Plan (including draft recommendations)

» Engagement (Phase 2 - inviting feedback on draft recommendations)

» Final Active Transportation Plan (including the final recommendations, future network map, cost estimates, and an implementation plan)

People are already choosing creative active transportation options to get around Cranbrook.

2. POLICY REVIEW

The Active Transportation Plan will consider past plans, their continued relevance, as well as if previous recommendations still align with current best practice. This information will inform the development of recommendations that support municipal policies and direction.

2.1. Local Plans and Policies

There are many City of Cranbrook Plans and Policies developed to date that the Active Transportation Network Plan may either wish to align with, or provide updated recommendations that supersede those in previous plans based on changing best practices and guidance. Below are some highlights that provide support for improved active transportation infrastructure, investment, or simply related recommendations that this plan may align with.
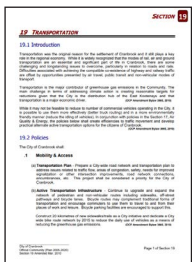
Official Community Plan

Being updated, but previous OCP included upgrade and expansion of the active transportation network, add bike parking, improve accessibility and address safety concerns along the Highway.
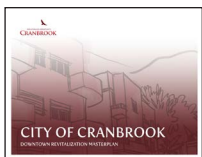
Downtown Revitalization Plan

Includes complete streets, 30 km/h speed limits, pedestrian priority, accessibility, safety, mobility hubs to integrate modes, a connected all ages and abilities AT network, and combining utility and transportation upgrades to reduce costs.

Transportation Master Plan

Make AT accessible, attractive, integrated, reduce the environmental transportation impacts, design safe streets for all modes that create social interaction.
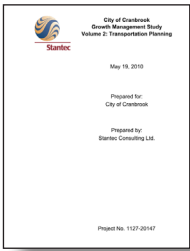
Growth Management Study

Modeled growth scenarios and focused on road capacity with little discussion of active transportation ability to absorb trips.
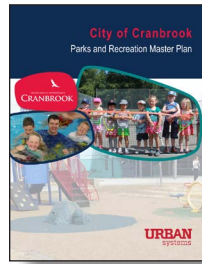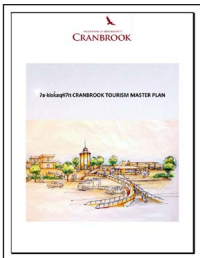
2023 Tourism Master Plan

Includes investment in arrival gateways, urban parks, grade separated crossings of the Highway, Creating a Cranbrook vibe with pedestrian friendly streetscapes, wide sidewalks, wayfinding and amenities, and investment in an all ages and abilities AT network that brings travelers downtown.

2011 Integrated Community Sustainability Plan

Established aesthetics of the development of public spaces. Recommendations included an update to the City's 2006 Cycle Walk Trail Master Plan.

Parks and Recreation Master Plan

Includes Rotary Way extensions to Confederation Park, Museum of Rail Travel, Moir Centennial Park and NorthStar Rails to Trails, and extension of the rail trail further south.
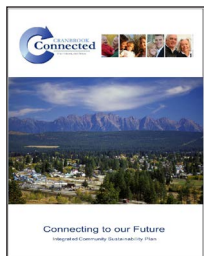
2021 Community Climate Action Plan

Targets include reducing GHGe to 20% below 2007 levels by 2030 and 80% below by 2050. Vehicle make up 64% of the community GHGe and thus mode shift to AT can support climate objectives.

2020 - 2024 Strategic Plan

Investing in transportation infrastructure is a key pillar of the plan.

2021 Streets, Traffic, and Parking Bylaw

Includes several updates relating to active transportation including requirements for residents to clear their sidewalks, where they must walk, ride a bicycle, motorized scooter or other small wheeled transport.

The Rotary Way trail system provides an excellent foundation for active transportation in Cranbrook. It could connect the entire community over time.

BELL & YEL

WARN WHE
PASSING

Providing connectivity is just part of the solution. Providing safe places to park your bicycle at destinations is critical, as is sufficient storage at home. If we want more people to travel actively, they need secure bicycle parking.

2.1. Provincial and Federal Policies

There are a few Provincial and Federal policies and guides related to active transportation that can provide supporting rationale and direction for the recommendations that will be made in the Active Transportation Network Plan.

2019 Provincial Active Transportation Strategy

Included goal to double percentage of active trips taken by 2030, provide cost share funding to help communities build safe AT networks, and provide incentives such as the e-bike rebate to get more people moving actively.

2019 BC Active Transportation Design Guide

Aims to separate people traveling actively where vehicle volumes and speeds are higher, or reduce volumes and speeds to levels that are safe to share the road.
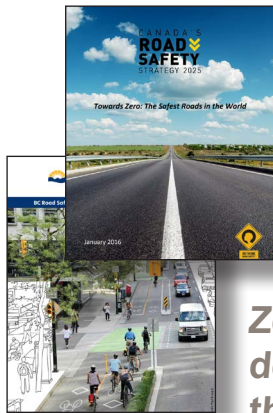
The BC and Canada Road Safety Strategies

Both are working towards Vision Zero, that is eliminating death and serious injury through a safe system approach.
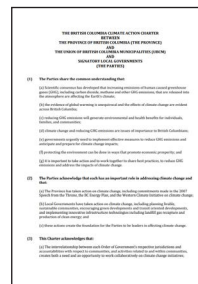
BC Climate Action Charter

Aims to foster a built environment that reduces car dependency, develops alternate transportation options and integrates transportation and land use planning.
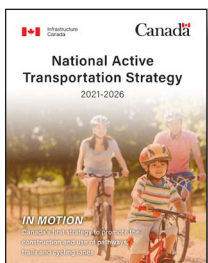
The 2021 Canada National AT Strategy

Commits to providing funding for infrastructure that is safe and accessible.

BC Motor Vehicle Act

Includes recent updates to introduce safer passing distances when drivers pass people riding bicycles.
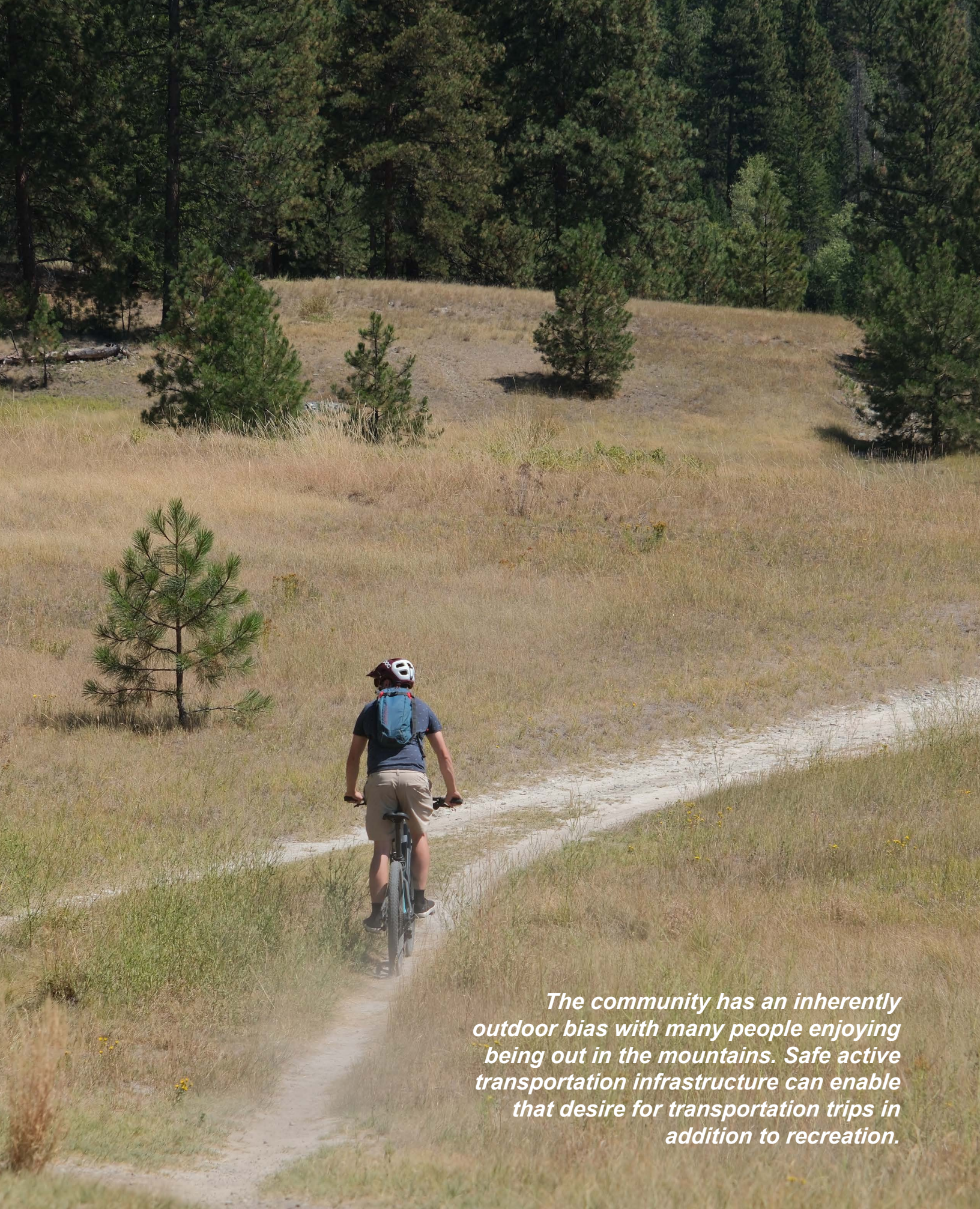
The community has an inherently outdoor bias with many people enjoying being out in the mountains. Safe active transportation infrastructure can enable that desire for transportation trips in addition to recreation.

3. COMMUNITY PROFILE

This profile provides an overview of the community and its demographics, highlighting the City's older population, the changing work-from-home dynamic, short vehicle commutes, and the generally flat topography of the community

3.1. Regional Context

The City of Cranbrook is located within the Regional District of East Kootenay and is the largest urban centre of the region. The community is located a 15 minute drive south of Canadian Rockies International Airport. Cranbrook features a humid, relatively dry climate. When precipitation does fall, a good proportion of it will fall in the form of snow. Environment and Climate Change Canada reports Cranbrook as having the most sunshine of any B.C. City.

Cranbrook itself is mostly flat, although the City is surrounded by rising hills, where many homes are located, as well as the nearby Purcell and Rocky Mountains. There are several other natural attractions within close proximity to the City, including Jim Smith Lake Provincial Park, Elizabeth Lake, the Cranbrook Community Forest, and Idlewild Park.

Cranbrook contains 13 public and private grade schools, as well as the College of the Rockies, which enrolls 2,500 students.

3.2. Indigenous Context

The region was originally inhabited by Ktunaxa peoples. Today, St. Mary's IR 1A is home to the Ktunaxa Nation and contains the St. Eugene Mission residential school, which has been transformed into the St. Eugene Golf Resort & Casino.

3.3. Economic Context

Cranbrook serves as a major commercial and transportation hub for the region. It is also home to the Canadian Museum of Rail Travel. The community has a lower labour participation rate (62%) than the Province (70%). Significant industry sectors include sales and service occupations, trades, health care, as well as mining and forestry services.

3.4. Census 2021 Demographic Data

How many People Live in Cranbrook?

Population in 2021 was 20,499 Residents, an increase from 20047 in 2016.
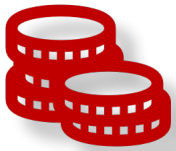
How many residents are on lower incomes?

60% of residents earn less than $50,000. Enabling more people to get around by active transportation can reduce transportation cost burdens of car ownership.

What type of homes do people live in?

Housing is 65.2% single family homes, 5.8% duplex, 5.2% movable dwelling, and 23.3% multi-family of some kind.

Do residents own or rent?

73.5% of homes are owned while 26.4% are rent.

What does family composition look like?

There are 29.6% single person households, 20.4% couples with children, 30.8% couples without children, and 8.8% single parent households.

What is the age profile of residents in Cranbrook?

32% of residents are 60 years of age or older. As people age in the community, driving may not always be an options and safe ways to walk or cycle may support an active and healthy lifestyle.

3.5. Census 2021 Commute Data

Do more people work from home now?

COVID has changed work patterns to a degree. 9% of residents worked from home in 2021, a change from 4.7% in 2016. It is not clear how this will continue going forward.

Do residents work within or outside of Cranbrook?

79% work within Cranbrook. 21% work outside of Cranbrook.

Do people ride a bicycle to commute to work?

1% of residents stated they commute by bicycle. The small size of Cranbrook, means it would be an option for more people if it were safer.

Do people walk to work, or walk to get the bus to work?

9% of people walk to work, and 1% take transit. They need good continuous and well maintained sidewalks routes to bus stops.

How many people drive to work?

Most people (87%) drive to work, reflecting the auto orientated nature of the transportation network today.

Could people change their mode of commute?

68% of commutes are less than 15 minutes. Cranbrook's size is ideal for making trips within the community by bicycle.

Do men and women travel the same by active transportation?

6.6% of men walk compared with 11.7% of women, while 1.1% of men cycle compared with 0.8% of women.

People will not choose active transportation if it is not safe. Where it feels less safe to walk or ride a bicycle than drive a car, the system is inequitable.

4. COLLISION HISTORY

A review of collision history involving people walking and cycling can help identify potential safety issues for people traveling actively. A lack of collisions doesn't inherently show the system is safe, it can often indicate that it's too dangerous for people to use.

4.1. Collisions Involving Pedestrians

Between 2018 and 2022 there were 15 reported collisions involving pedestrians in Cranbrook. Table 4.1 lists the collision locations while Figure 4.1 illustrates those locations.

Table 4.1: Pedestrian Involved Collisions in Cranbrook 2018-2022

Pedestrian Collision Location	Number
KOOTENAY ST N & VICTORIA AVE N	1
KOKANEE DR N & WILLOWBROOK DR	1
CRANBROOK ST N & WILLOWBROOK DR & TURNING LANE	1
CRANBROOK ST N & THEATRE RD & VICTORIA AVE N & MALL ACCESS & TURNING LANE	1
9TH AVE S & KING ST W & VAN HORNE ST N & VAN HORNE ST S & TURNING LANE	1
37TH ST S	1
2ND ST N & VICTORIA AVE N	1
18TH AVE S & 6TH ST S	1
16TH AVE S & 6TH ST S	1
14TH AVE S	1
14TH AVE N & 2ND ST N	1
12TH AVE N & 2ND ST N & KOOTENAY ST N	1
11TH AVE S & BAKER ST	1
11TH AVE S & 1ST ST S	2

4.2. Collisions Involving Cyclists

Between 2018 and 2022 there were 11 reported collisions involving people cycling in Cranbrook. Table 4.2 lists the collision locations while Figure 4.1 illustrates those locations.

Table 4.2: Cyclist Involved Collisions in Cranbrook 2018-2022

Pedestrian Collision Location	Number
12TH AVE N & 2ND ST N & KOOTENAY ST.	1
13TH STS & 8TH AVE S & SPRUCE DR S	1
17TH AVE N & 2ND ST N	1
21ST AVE S & 2ND ST S	1
22ND ST N & CRANBROOK ST N & RAILS.	1
2ND ST N & VICTORIA AVE N	1
3RD AVE S & VAN HORNE ST S & PARKING	1
4TH ST S & 7TH AVES	1
6TH ST N & 6TH ST NW & CRANBROOK S.	1
6TH ST N & KOOTENAY ST N	1
RIDGEVIEW RD & THEATRE RD	1

4.3. How does Cranbrook Compare?

To understand if the number of pedestrian and cycling collisions is high or low. The number of pedestrian and cyclist involved collisions in other municipalities of similar size or local proximity were compared. Table 4.3 illustrates that the AT collision rate is higher than some locations but much less than others. It does not indicate a significant issue, but does suggest improvement is possible.

Table 4.3: Cycling Involved Collisions in Cranbrook 2018-2022

Municipality	Population	AT Mode Share	Pedestrian Collisons	Cyclist Collisions	AT Collisions per 1000 Residents
Cranbrook	20,499	10.1%	15	11	1.27
Squamish	23,819	9.9%	15	30	1.89
Courtenay	28,420	9.9%	55	54	3.83
Pitt Meadows	19,146	4.2%	26	24	2.61
Salmon Arm	19,432	8.7%	6	7	0.70
Kimberley	8,115	17.7%	3	2	0.62
Fernie	6,320	10.9%	1	1	0.32

Legend

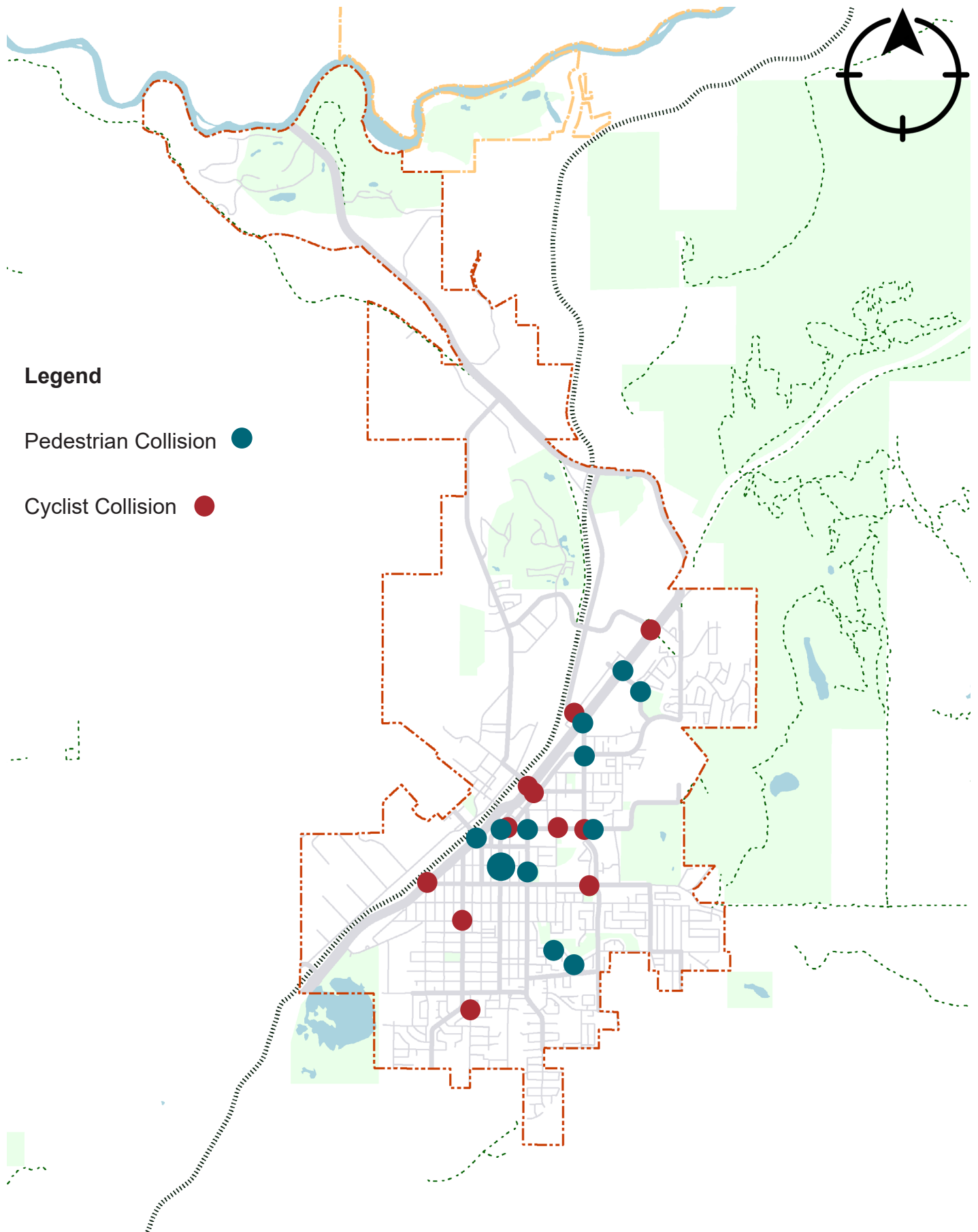Pedestrian Collision ●

Cyclist Collision ●

Figure 4.1: ICBC Cycling and Pedestrian Collision locations 2018-2022

There are pros and cons with the existing active transportation network. There is a great base to build on, favourable topography in many parts of the community, but it needs greater connectivity and better separation from traffic.

5. EXISTING CONDITIONS

A review of existing conditions considers current infrastructure in Cranbrook for people walking, riding a bicycle, or otherwise rolling. It considers who we design for, available facility types, overall network connectivity, and notable gaps.

5.1. Summary of Key Challenges

Cranbrook has an established urban core providing many amenities for residents and destinations that could be accessible by active modes with the right infrastructure. The outlying areas of the community are never too far away by bicycle, but safe infrastructure is limited in many locations. The paved trail system provides attractive routes for some trips and can form the basis of a larger and better connected network for all ages and abilities. Below are some key findings from the review of existing conditions:

» There is a good paved multi-use pathway network, but it needs consistent facility type and safe crossings.

» There are missing sidewalks along some key routes.

» Maintenance is a significant issue, for example at curb ramps, the joints between the roadway and curb have often deteriorated.

» The highway corridor is hostile to people walking and cycling, due to close proximity to the roadway, high traffic speeds and volumes, the lack of sidewalk in places, high-speed channelized turns, long blocks and a lack of safe crossings in places.

» Safety issues have been highlighted with "high collision location" signage, that could be better addressed through design. i.e., adding curb extensions to tighten the intersection and reduce crossings distances.

» Winter maintenance is an issue and designs must be considerate of winter conditions, i.e., pre-cast curbs to create quick build bike lanes may be problematic. Preferred solutions are likely behind the curb and accessible to snow clearing equipment.

» There are existing door zone bike lanes that are dangerous for people cycling, with observations also identifying trucks parked partly in the bike lane.

» Some pedestrian crossing types are not appropriate for the number of lanes, volumes and speeds of traffic.

5.2. Existing Network for People Walking

There are sidewalks along most of the roadways in the urban core, but outlying areas are less well catered for with pedestrians often having to share the road or use a gravel shoulder. People walking also have access to the Rotary Way Trail that provides important connections throughout the urban core. Rural areas are even less well catered for and people walking will have to share the road. The key infrastructure types are shown below and locations are illustrated in Figure 5.1.
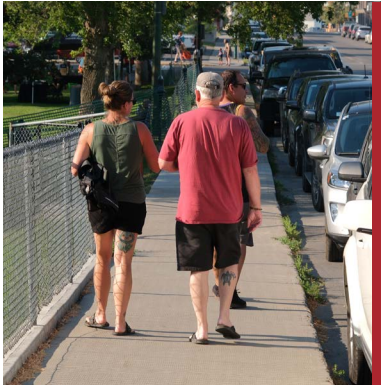
Sidewalks

Should provide space for two wheel chairs to pass and include curb ramps or continuous sidewalks to be accessible for everyone.
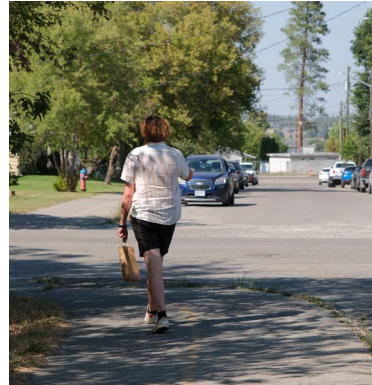
Multi-Use Path

Can be less comfortable for people walking due to conflicts with those rolling at higher speeds.

Shoulder

Provides space separate from motor vehicles, but typically not comfortable or accessible for all.
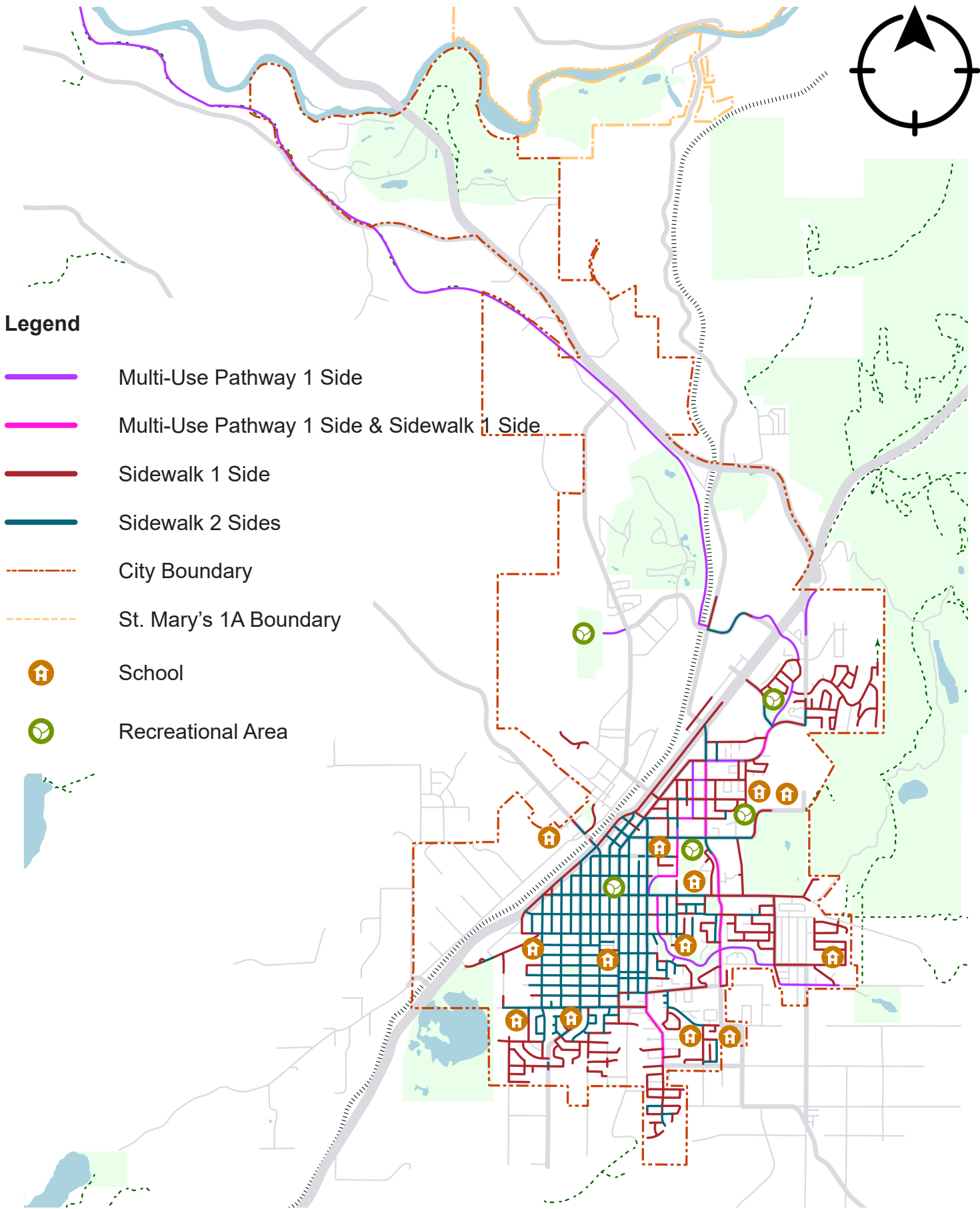

Shared Roadway

May be comfortable in urban areas where volumes and speeds are low, but less so in rural areas with higher speeds.

Unpaved Trails

Typically used for recreation, but can provide important connections, not accessible and conditions vary with weather.

Legend

— Multi-Use Pathway 1 Side

— Multi-Use Pathway 1 Side & Sidewalk 1 Side

— Sidewalk 1 Side

— Sidewalk 2 Sides

—·—·— City Boundary

- - - - St. Mary's 1A Boundary

🏠 School

🌳 Recreational Area

Figure 5.1: Existing Pedestrian Network

5.2. Crossing Facilities for People Walking

Pedestrians always have right-of-way at road crossings and intersections unless otherwise marked or controlled. There are a few key crossing types in Cranbrook as shown below.

Unmarked Crosswalk

People walking always have right-of-way over motor vehicles at unmarked crosswalks

Marked Crosswalks

Where traffic is otherwise uncontrolled marked crosswalks typically feature zebra stripes and may include flashing beacons

Marked Crosswalks

Stop-controlled intersections typically feature marked crosswalks with parallel white bars

Signalized Crosswalks

Typically marked with parallel white bars and controlled with a pedestrian signal

5.3. Gaps for People Walking

Cranbrook has developed an extensive network of sidewalks, as well as retrofitted several routes with multi-use pathways. Key gaps, that if addressed, could improve the network's connectivity, safety, attractiveness are shown below.

Missing Connections

Even in the urban core, there are sections of missing sidewalk that present barriers to some people.
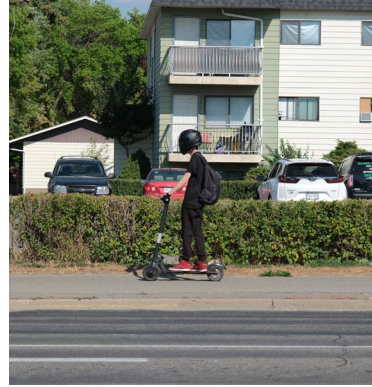

Unmaintained Sidewalks

Root heave, and freeze/thaw cycles can create barriers even where sidewalks are present.

Inappropriate Crossings Types

A flashing beacon creates a safety risk on multi-lane roads as vehicles can obscure sight lines to people crossing.

Lack of Dedicated Bike Infrastructure

This can force people rolling onto the sidewalks where conflicts with pedestrians can occur.

Poor Road Surface

The road surface can also present barriers to people, especially those in wheelchairs with uneven and potholed surfaces in places.
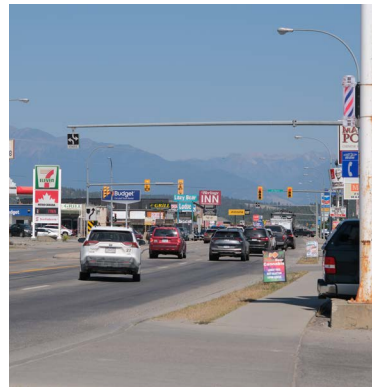

Limited Separation

Most sidewalks offer little separation from adjacent motor vehicle traffic, reducing the comfort of these facilities.

Wide Streets

Wide streets enable people to drive faster. Curb extensions would change the feel of local streets and reduce crossing distances


Hostile Highway Corridor

The speed, volume, lack of sidewalks in places, lack of maintenance, and unsafe crossings are a barrier to pedestrians along this key commercial corridor.

5.4. Existing Network for People Rolling

The existing network for people rolling varies from the Rotary Way trail which is typically separate from motor vehicles to painted bike lanes and shared lanes. The urban core is relatively flat in grade making cycling an options for many. However, the extremities of the city typically start to climb the nearby slopes and may be challenging for some. There are no protected bike lanes in the City.
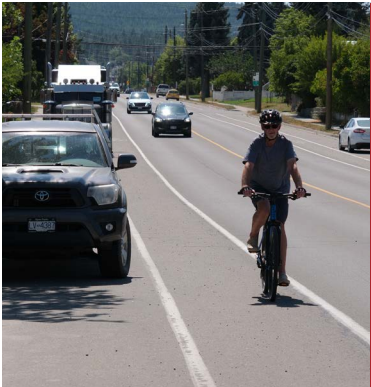
Painted Bike Lane

Not comfortable for all ages and abilities as it does not protect people rolling from motor vehicles. Greater risk added if in the door zone.

Multi-Use Path

Comfortable for all ages and abilities, but greater conflicts between active modes.

Paved Shoulder

Provides a space for people walking and rolling but is not comfortable for all ages and abilities as it is unprotected from motor vehicles.

Unpaved Shoulder

Not suitable for all ages and abilities as it is unprotected, is not accessible, and conditions vary with the weather.

Shared Roadway

Not comfortable for all ages and abilities except when vehicle volumes and speeds are low.

Unpaved Trail

Not comfortable for all ages and abilities due to uneven and variable surface, and safety concerns due to remoteness and a lack of lighting.
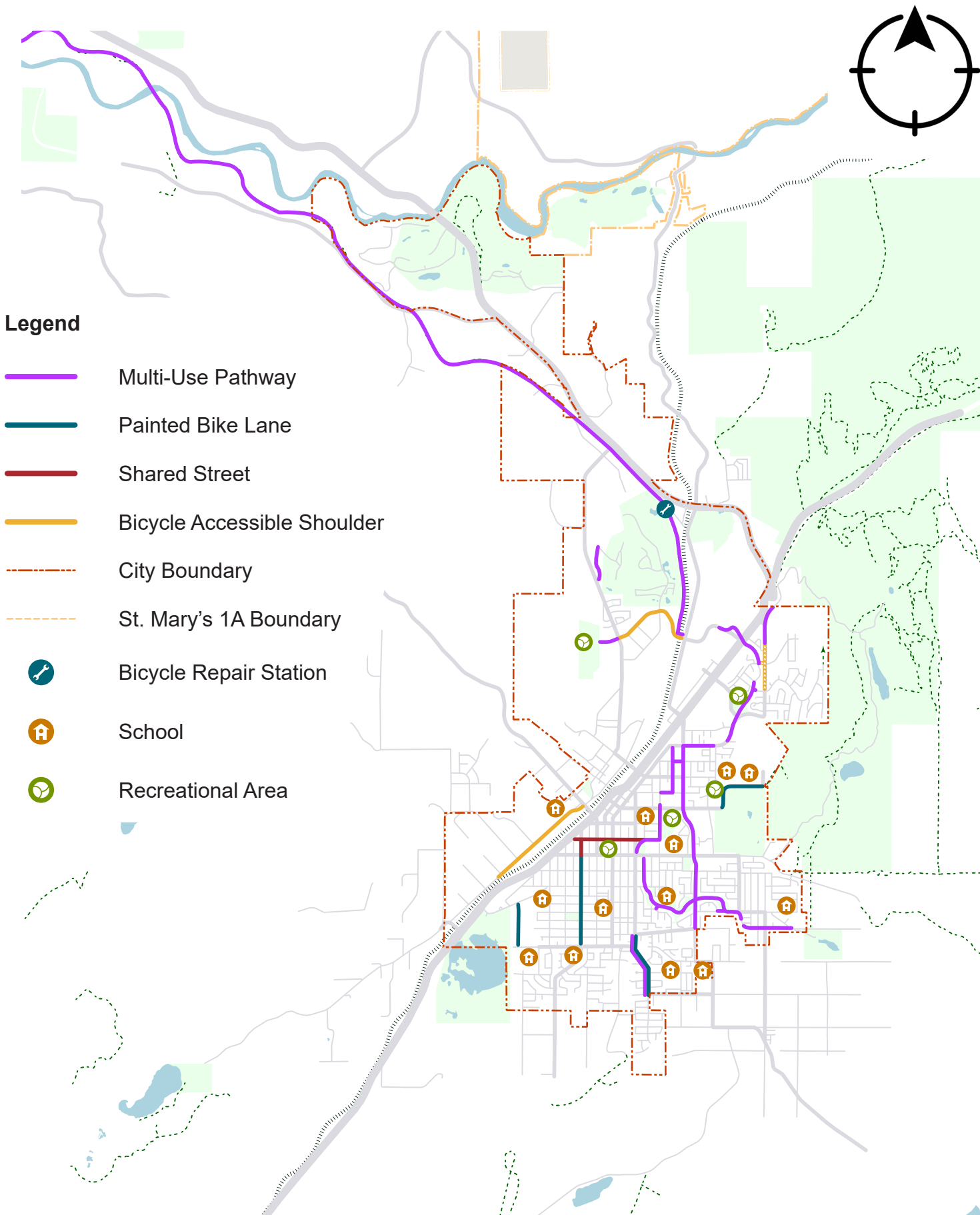
Legend

- ▬▬ Multi-Use Pathway
- ▬▬ Painted Bike Lane
- ▬▬ Shared Street
- ▬▬ Bicycle Accessible Shoulder
- —·—·— City Boundary
- — — — St. Mary's 1A Boundary
- 🔧 Bicycle Repair Station
- 🏠 School
- ⊘ Recreational Area

Figure 5.2: Existing Network for People Rolling

5.5. Existing Crossing Facilities For People Rolling

People biking and rolling in some cases have right-of-way at road crossings and intersections. There are a few key crossing types in Cranbrook as shown below.

Unmarked Crossing

People rolling are treated as vehicles by the Motor Vehicle Act and therefore have equal right-of-way with vehicles, unless otherwise marked.
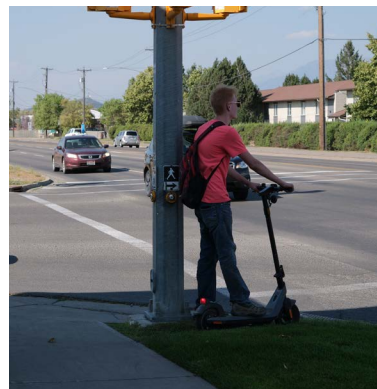

Marked Crossings

Where marked, crossrides feature elephant feet, such markings convey priority for those biking and rolling.

Marked Crossing

Stop-controlled intersections along bike routes may feature shared crossings marked with elephant feet.

Signalized

Signal controlled intersections may feature crossrides marked with elephant feet, although they are not always provided.

5.6. Gaps For People Rolling

Cranbrook has the core of a good all ages and abilities network for people riding bicycles or rolling by other micromobility options. Key gaps, that if addressed, could improve the network's connectivity, safety, attractiveness are shown below.

Missing Links

The current network of multi-use pathways is safe but limited in its reach. Expansion would connect more people safely.
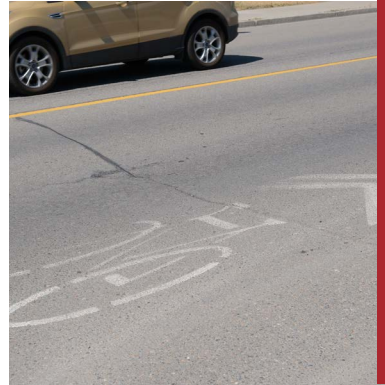

Shared AT Facilities

Shared facilities can create conflicts. Design should consider areas of high conflict and provide etiquette eduction.

Painted Lanes

Painted lanes are not suitable for all ages and abilities. They also present a risk of dooring where directly adjacent a parking lane.

Shared Roadways

Shared roadways are only comfortable for most where speed and volume of traffic is low.

Unsafe Crossings

Some key connections do not have marked crossing where people rolling (and walking) should have priority.
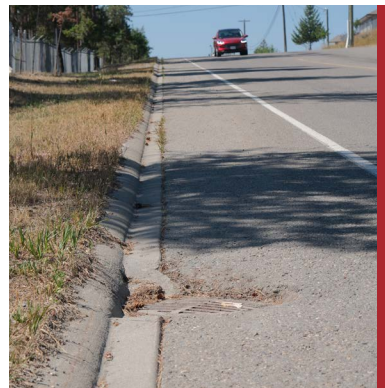
Bicycle Parking

To encourage travel by bike it should be plentiful at all key destinations, secure, and weather protected.

Lack of Sweeping

Where the bike lane becomes uncomfortable or hazardous to ride, people on bicycles will ride close to or in the car lane.

Unsafe Catch Basins

Uneven catch basins present a hazard, especially where speeds are high downhill, and visibility limited after dark.
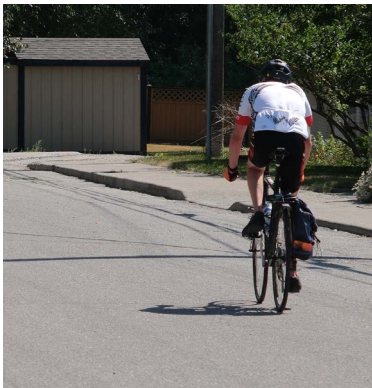
Steep Grades

Sometimes unavoidable, but design should consider increased speed differentials.
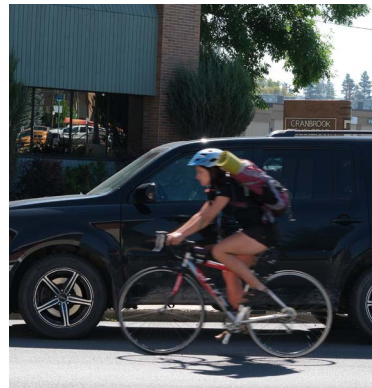
5.7. All Ages & Abilities Network

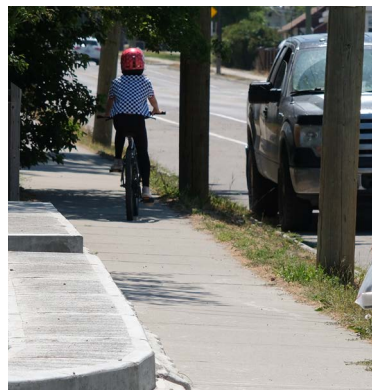People rolling have different levels of comfort when sharing the road with motor vehicles as shown below.

Fearless

Will cycle anywhere and do not need safe infrastructure. Typically represent a small percentage of the population.
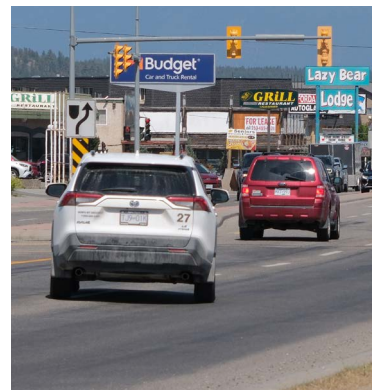

Confident

Typically prefer not to share the road with vehicles but will tolerate shared roadways or painted lanes.

Interested but Concerned

Will only use safe infrastructure separate from traffic.

No Way, No How

Not interested in riding a bicycle and that is okay

When we think about designing for people rolling, whether by bicycle or other micromobility modes, it is typical to evaluate the network that is comfortable for all ages and abilities, or comfortable for most. This is the network that is separate from motor vehicle traffic or shares only low speed, low volume roadways where those low volumes and speed are enforced through design. If we map only those routes comfortable for everyone, we can quickly build a picture of how connected the bicycle network is in the community and identify where gaps exist.

Phase 1 of the public engagement activities asked people what their level of comfort was riding a bicycle. The results indicated that, of those that bike:

80% feel confident or interested but concerned (will only ride on or prefer comfortable facilities that are separated from traffic)

20% feel fearless (will comfortably ride anywhere and share space with motor vehicles)
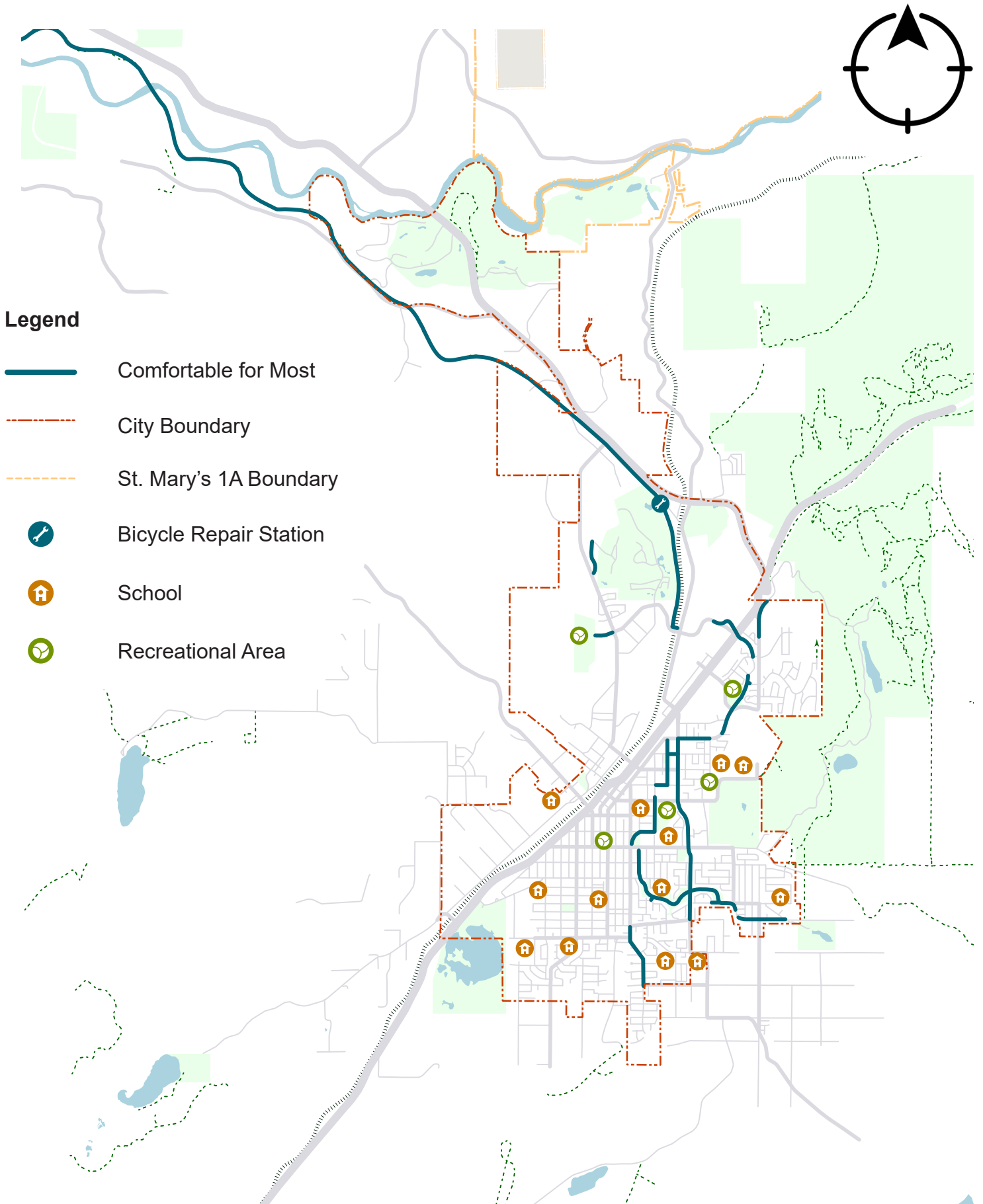
Legend

—— Comfortable for Most

—··— City Boundary

—··— St. Mary's 1A Boundary

🔧 Bicycle Repair Station

🏠 School

🌳 Recreational Area

Figure 5.3: Existing Network for People Rolling that is Comfortable For Most

5.8. Access to Transit

Transit is not a form of active transportation, but people do travel actively to access transit. BC Transit operates seven different transit routes in the City covering all of the denser urban areas in the community as shown in Figure 5.4.

When the pedestrian network is continuous and provides access to transit, it makes it easier for people to make multi-modal trips in the community. To that extent, upgrades to the sidewalk network support trips on foot but also those by transit, and likewise, making transit more comfortable and convenient encourages it's use and trips to the bus stop. Bus stops should have paved waiting areas, ideally with weather protection, seating, lighting, waste receptacles and transit information.

Likewise, some people may wish to ride a bicycle to transit, and thus bike racks on the buses support such multi-modal trips, as does secure bicycle parking at transit stops, and in particular, the transit exchange in downtown.
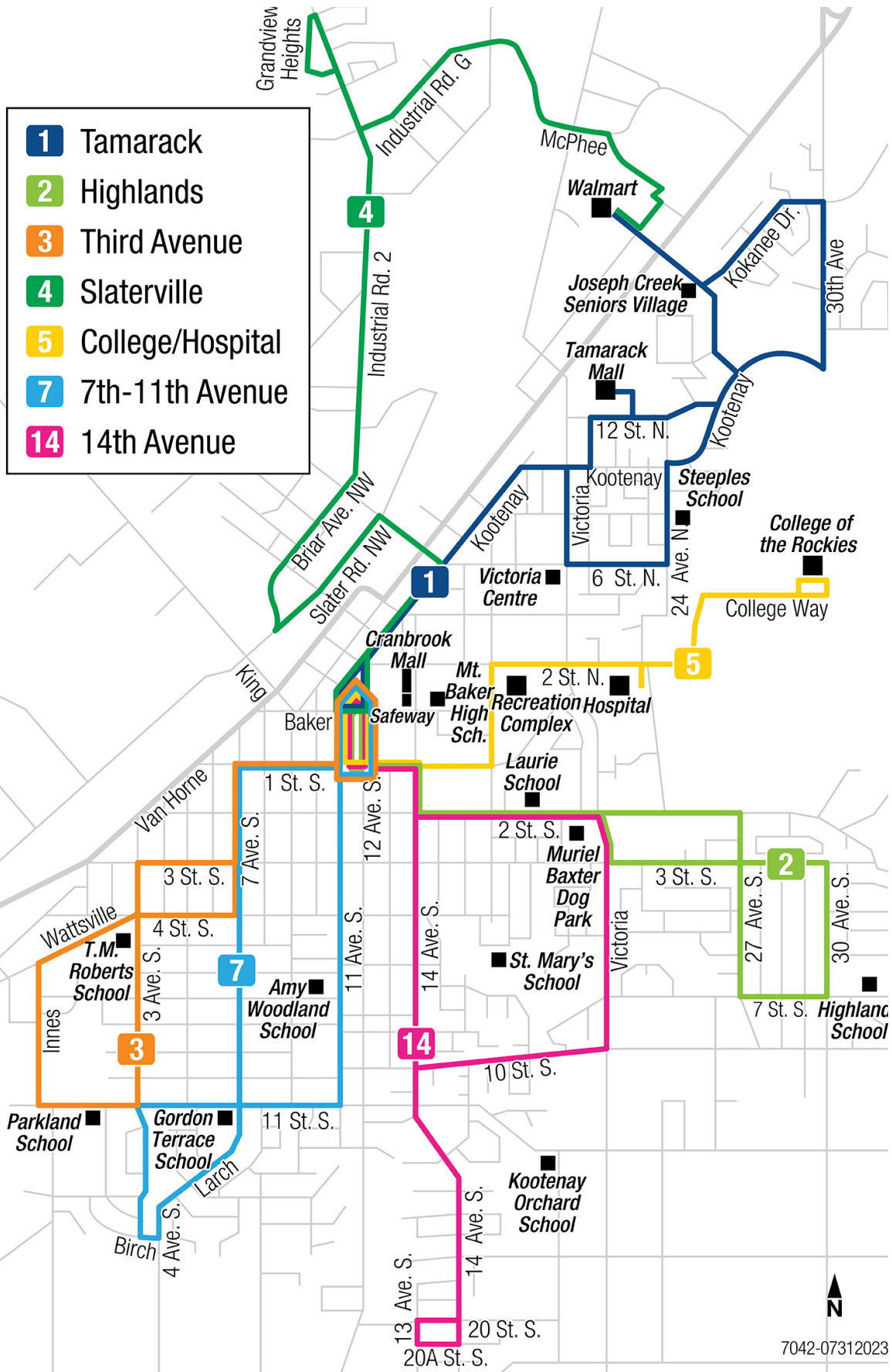
Figure 5.4: BC Transit Service Route Map

Legend:
- **1** Tamarack
- **2** Highlands
- **3** Third Avenue
- **4** Slaterville
- **5** College/Hospital
- **7** 7th-11th Avenue
- **14** 14th Avenue

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5.9. Supporting Active Transportation

In addition to the basic infrastructure provision that is safe and comfortable for most people in the community, their are other elements of City planning and decision making that can support increased trips by active modes.

Land Use Planning

People will choose the most convenient mode of transportation for the trip they need to make. When destinations are reasonably close and the infrastructure makes it safe, walking, riding a bicycle or taking another form of micromobility become competitive in their convenience with driving or taking public transit, if not more so. Cranbrook is largely planned with different land uses separate from each other as has been typical in North America. Mixing land uses throughout Cranbrook would support shorter trips between residential, employment, and commercial lane uses making trips by foot, bicycle or micromobility an easier choice for some trips.

Ride Sharing

Ride sharing includes shared motor vehicles, bicycles (including e-bikes), and e-scooters. All three can support active transportation in different ways. Shared vehicles allow a household to be less reliant on their own private vehicle. As well as the potential reduction in transportation costs, where a person does not automatically have the convenience of their own private automobile, they tend to use the car less and explore other options more.

Shared mobility reduces reliance on private vehicle ownership and provides different options for specific trips.

High residential densities, close to employment and commercial land uses would enable more short trips that could more easily be made by active transportation

Ride Hailing

Similar to ride sharing, ride hailing (i.e., taxis and alternatives such as Uber) can also reduce reliance on vehicle ownership by promoting viable alternatives on an on-demand basis. They similarly changes the cars role from all trips to essential trips and increase use of other modes.

Incentives

In May 2023, the Government of B.C. announced its E-Bike Rebate Program, providing up to $1,400 reimbursements for those purchasing e-bikes. As e-bikes reduce the level of effort and travel time, they are an ideal tool for shifting some vehicle trips to active transportation. The Program reached its funding limit on its first day and a wait list has since been started for those who could not secure a rebate. Some municipalities in B.C. have also offered direct rebates that cover a portion of the purchase of an e-bike.

Disincentives

Conversely to the incentives, where the car is the dominant mode of transportation and the City is seeking mode-shift to meet municipal, provincial and federal objectives, disincentives to car travel can also encourage more people to move to transit or active transportation. Examples of ways to discourage or reduce car trips include paid parking, reduced road capacity, restricted routes for vehicles, parking re-allocation, i.e., for bike lanes, wider sidewalks or boulevards.