NOVEMBER 2021

FERNIE
CITY OF FERNIE
BRITISH COLUMBIA

Active Transportation Master Plan

CORPORATE AUTHORIZATION

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ACKNOWLEDGMENTS

We respectfully wish to acknowledge that the land on which this study took place is within the Ktunaxa ?amaki?is, the homeland of the Ktunaxa people.

Thank you to City of Fernie staff and council, and to the community members of Fernie who participated in public engagement activities.

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Courtesy Tourism Fernie

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EXECUTIVE SUMMARY

This City of Fernie Active Transportation Master Plan (ATMP) identifies transportation facilities that builds on the city's existing infrastructure and accommodates and benefits all Fernie residents and visitors regardless of travel mode. It builds upon the Fernie Master Plan and was developed to achieve that plan's 2040 targets for transportation sustainability.

EXECUTIVE SUMMARY

Fernie is a tight-knit community with a strong tourism base. The ATMP addresses the needs and requirements of the broadest range of users and enhances the City's existing attractive qualities. Bunt and Associates Engineering Ltd. (Bunt), in coordination with stakeholders, network users, and the City of Fernie (Fernie) produced this plan to support Fernie's long-term transportation and growth.

This **City of Fernie Active Transportation Master Plan** (ATMP) identifies transportation facilities that builds on existing infrastructure and accommodates and benefits all Fernie residents and visitors regardless of travel mode. It builds upon the Fernie Official Community Plan and was developed to achieve that plan's 2040 targets for transportation sustainability.

Fernie has a strong tourism base and is a tight-knit community. The ATMP addresses the needs and requirements of the broadest range of users and enhances the existing attractive features of Fernie. Bunt and Associates Engineering Ltd. (Bunt), in coordination with stakeholders and users and the city of Fernie (Fernie), produced this plan to support Fernie's long-term transportation and growth.

The Plan is the first step in identifying specific improvements that will provide the broadest benefit to the widest range of users. Changes identified in the ATMP accommodate demographic trends such as an increase in its youthful and active population and growth of visitors to the Historic Downtown. It will be used as a basis for new projects and guidelines that align with wider planning objectives and growth targets. It is designed to be phased in over twenty-five years, and is dependent upon internal and external funding.

Bunt began engaging stakeholders and network users in Summer 2020 to refine the ATMP's goals for a sustainable transportation network. Participants were challenged to imagine what they wanted from their City in the future and what would need to change to deliver that future. The study team then gathered travel behaviour patterns from data collected to determine how residents and visitors currently move. These travel trends were then extended into the future to determine where safety and active transportation performance could best be applied. Projected trends in tourism and population were also applied to fill out the future baseline with and without network changes.

The baseline study found that the majority of trips in Fernie are local and short. Most commutes are less than 15 minutes in duration and the majority of trips are made within the City. This is encouraging for active transportation, even in a winter environment.

The Plan's short-term goals prioritized value for expenditure and return on investment while minimizing disruption to existing service. The key areas recommended for immediate improvement are its Catalyst Projects and are the initial step required to address current active transportation constraints. These projects were also identified through direct stakeholder engagement and all work to enhance the local active transportation network, bring (and keep) more pedestrian traffic to the Historic Downtown core, as well as generally improve conditions for residents, employees, and tourists. Other mid-term goals are stated with regards to proposed external projects with respect to the BC Ministry of Transportation Infrastructure and how capital cost improvements to medians could be prioritized as well as other improvements, such as to CP rail crossings.

CATALYST PROJECTS

This Plan identifies a long-term vision for Active Transportation in Fernie. Implementing the Active Transportation Master Plan will take many years and the length of time will depend on the amount of external funding received. The following key catalyst projects identified represent the initial step required to address current active transportation constraints.

1. Enhance the Historic Downtown Public Realm with parklets, bicycle parking, additional seating areas, and curb extensions on 2nd Avenue.
2. Create a Multi-Use Pathway on Highway 3 from West Fernie to 4th Street.
3. Create Multi-use Pathways (Or Rolling Lanes) on 4th Street, 13th Street, and 3rd Avenue.
4. Trial Closure of 2nd Avenue (4th Street to 7th Street) as car-free days on summer weekends.

RECOMMENDED NETWORKS

PEDESTRIAN NETWORK

Identifies recommended sidewalk and intersection improvements based on desire lines, missing links, roadway classifications, crosswalk warrants, and safety considerations. See **Exhibit ES-1**.

CYCLING AND ROLLING NETWORK

Identifies recommended separated routes (dedicated facility) and shared routes (signed facility + traffic calming). Routes are based on desire lines, best practices, and vehicle volumes/speeds. See **Exhibit ES-2**.

VEHICLE NETWORK

Identifies recommended road classifications based on current traffic conditions (volumes, intersection operations) and future development (long term traffic model). See **Exhibit ES-3**.

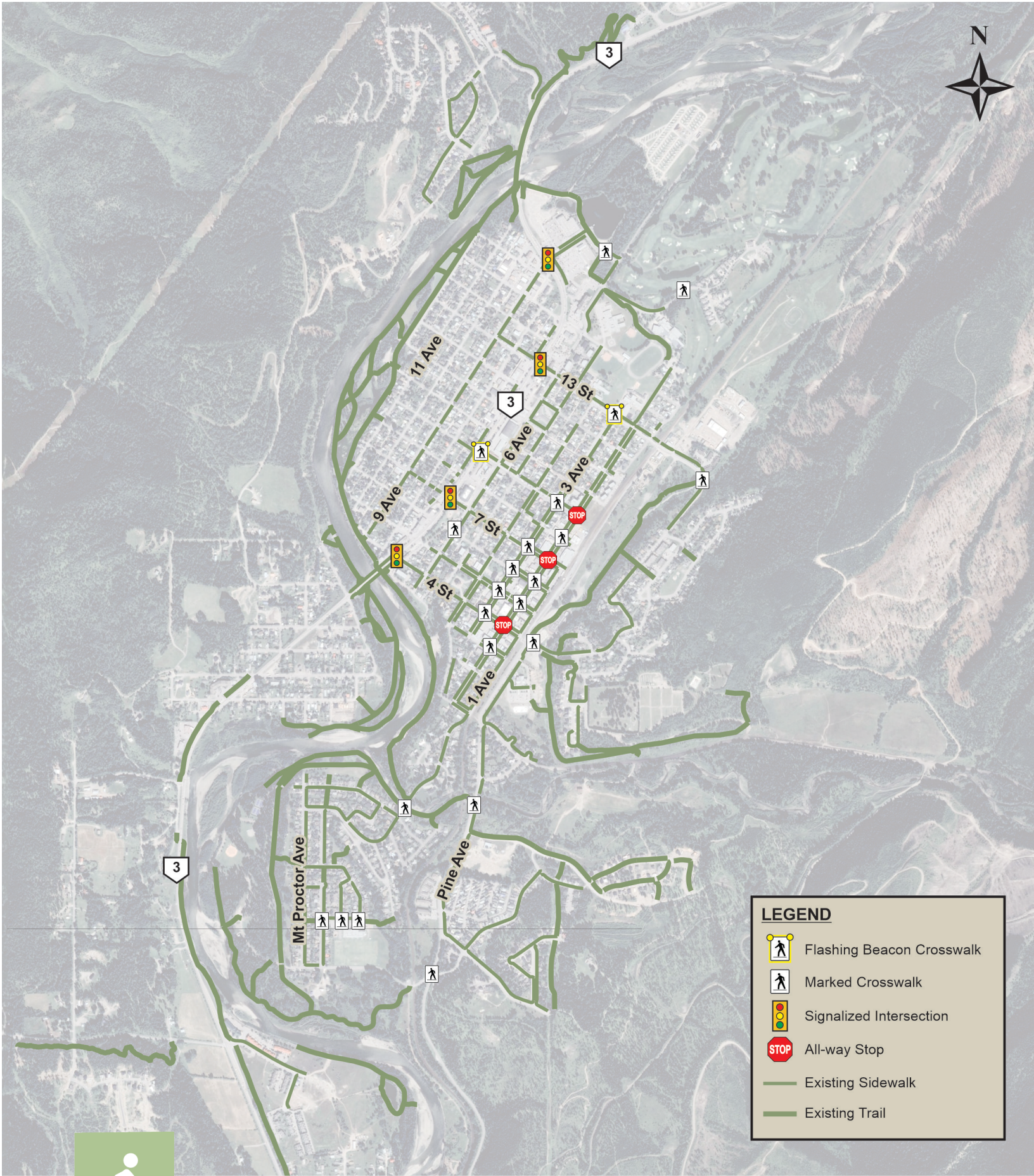

EXHIBIT ES-1: RECOMMENDED PEDESTRIAN NETWORK

EXHIBIT ES-2: RECOMMENDED CYCLING AND ROLLING NETWORK

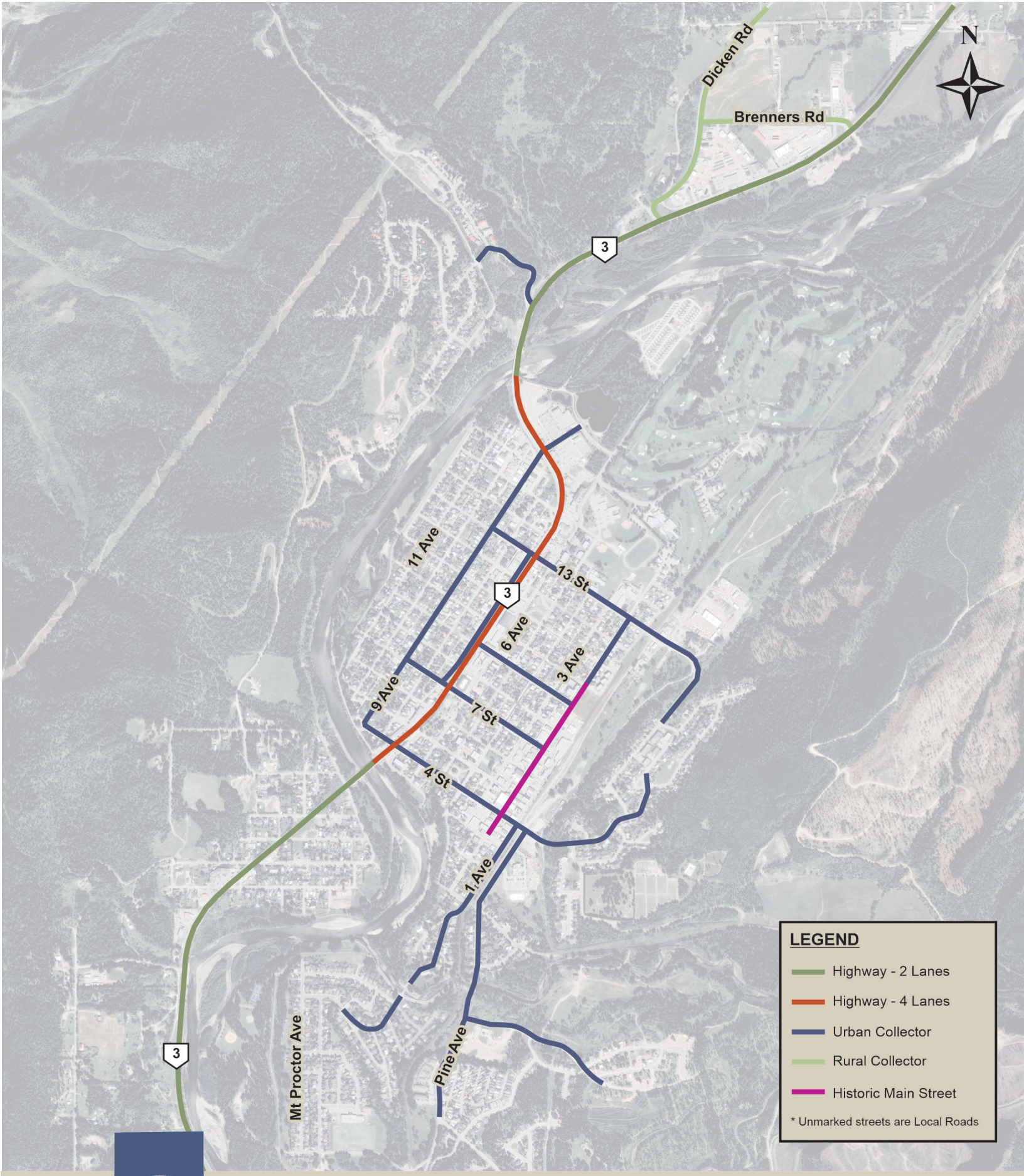

EXHIBIT ES-3: RECOMMENDED VEHICLE NETWORK

RECOMMENDED PROJECTS

As an integrated transportation plan, all modes of travel are considered. Prioritizing pedestrian, cycling, and rolling safety and accessibility builds on Fernie's reputation as a great community to reside in and a desirable destination to visit. Fernie already has existing infrastructure and attractive shops and restaurants that will only benefit from the Master Plan recommendations by encouraging more foot traffic.

RECOMMENDED PEDESTRIAN PROJECTS

RECOMMENDED CYCLING AND ROLLING PROJECTS

RECOMMENDED VEHICLE AND RAIL SAFETY PROJECTS

PROJECT PRIORITY RANKINGS

Projects were prioritized based on four criteria, which were each allocated a score of 1 to 5 (5 being the highest ranking). Combined scores of all criteria were used to separate projects into the following groups:

Priority A: Score 16 to 20

Priority B: Score 10 to 15

Priority C: Score under 10

The following criteria were used in project rankings:

PUBLIC INPUT

During the public engagement process, feedback was received on proposed projects through online surveys and stakeholder sessions. This input was used to identify public and stakeholder project priority. Projects with the highest level of agreement and/or identification were provided the highest score.

COST/BENEFIT

Class D capital cost estimates were prepared by TRUE Engineering. Capital cost estimates and anticipated operating cost impacts were compared to anticipated project benefit to identify a cost to benefit ratio. This ratio was then used to score projects with the lowest score having the highest cost to benefit.

CONNECTIVITY

A viable transportation network requires strong connectivity. Projects were scored on their ability to connect residents to identified key destinations, particularly for vulnerable road users. Projects that provided critical links received the highest score whereas lower scores were provided to projects that either created secondary connections or did not increase connectivity.

SAFETY

The safety of all users is an important consideration in a multi-modal transportation network. Projects were reviewed based on their anticipated public safety impact, particularly for vulnerable road users. Projects that are anticipated to have large impacts to public safety received the highest score.

PEDESTRIAN PROJECTS

Recommended pedestrian projects are identified in the **Figure ES-1** and **Table ES-1**. These projects support travel to key destinations for all ages and abilities and include new sidewalks to provide separation from vehicles and intersection corner improvements to improve pedestrian visibility.

FIGURE ES-1: RECOMMENDED PEDESTRIAN PROJECTS

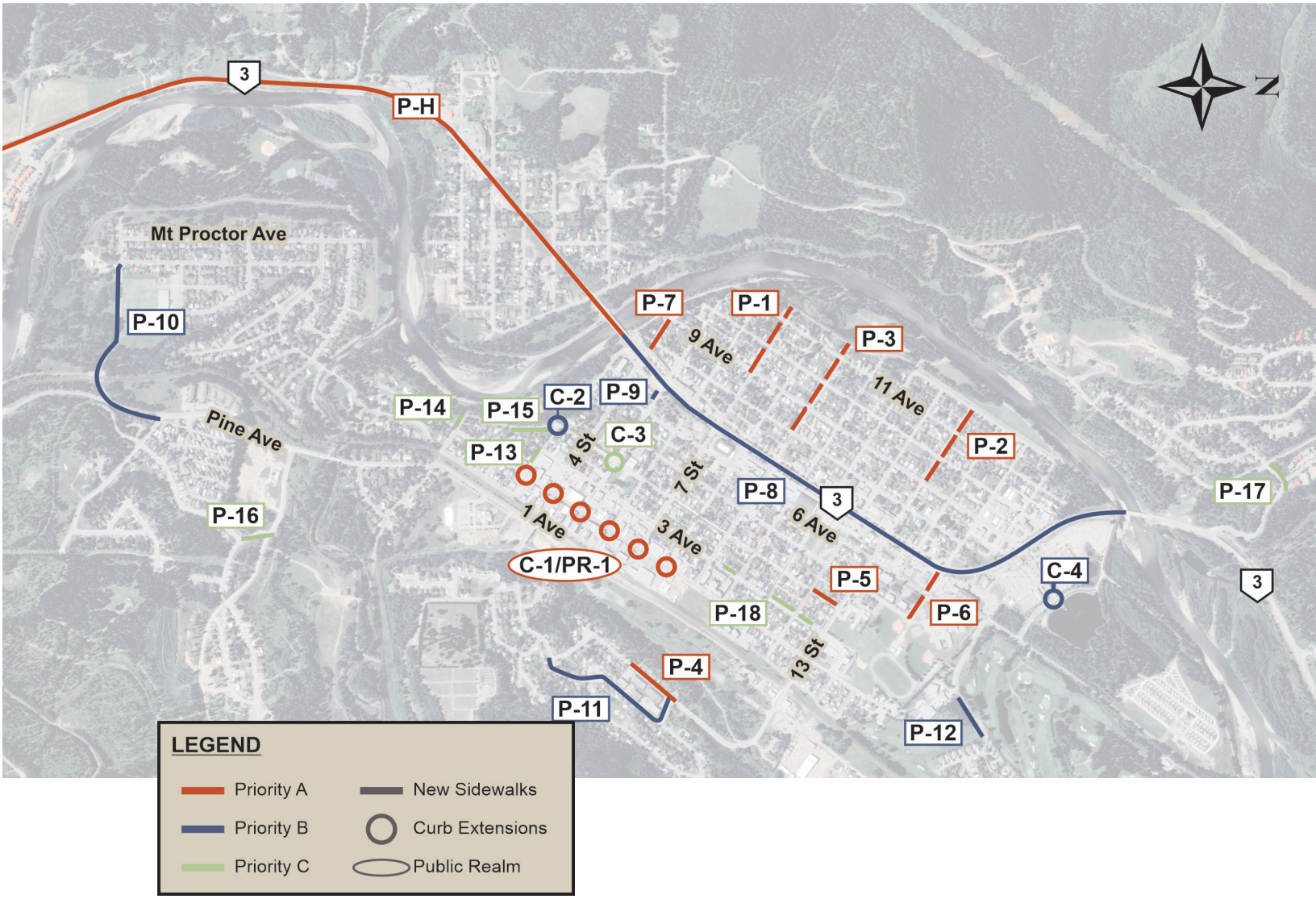

TABLE ES-1: RECOMMENDED PEDESTRIAN PROJECTS

MAP	PROJECT TYPE	LOCATION		BLOCKS	CAPITAL COST	PRIORITY
P-H	New Sidewalks	Highway 3	West Fernie	N/A		A
P-1		7 Street	Dyke Trail to 9 Ave	2	$100,000	
P-2		13 Street	Dyke Trail to 9 Ave	3	$100,000	
P-3		9 Street	Dyke Trail to 8 Ave	3	$150,000	
P-4		Ridgemont Ave	31 to 51	2	$100,000	
P-5		4 Avenue	12 Street to 13 Street	1	$50,000	
P-6		15 Street	Hwy 3 to 5 Ave	2	$100,000	
P-7		4 Street	9 Ave to Hwy 3	2	$100,000	
P-8		Highway 3	West Bridge to East Bridge	15	$1,125,000	B
P-9		5 Street	Hwy 3 to 6 Ave	1	$50,000	
P-10		Cokato Road/ Mt. Mclean Dr	Mt. Proctor Ave to Castle Mountain Rd	5	$250,000	
P-11		Ridgemont Dr	Ridgemont Ave	4	$200,000	
P-12		Fairway Drive	Secondary – Sky Morris	1	$50,000	
P-13		3 Street	3 Ave to 2 Ave	1	$50,000	C
P-14		1 Street	4a Ave to 2 Ave	1	$50,000	
P-15		4A Avenue	2 Street to 3 Street	1	$50,000	
P-16		Whitetrail Drive	Montane – Slalom	1	$50,000	
P-17		Cedar Ave	Burma Rd to Canyon Trail	1	$50,000	
P-18		3 Avenue	10 Street, 11 to 13 Street	2	$100,000	
C-1	Curb Extensions	2 Avenue	3 Street to 8 Street	5	$480,000	A
C-2		4 Avenue	3 Street	1	$80,000	B
C-3		4 Avenue	5 Street	1	$20,000	C
C-4		19 Street	Trail Crossing	1	$40,000	B
PR-1	Public Realm	2 Avenue	3 Street to 8 Street	5	-	A

CYCLING AND ROLLING PROJECTS

Recommended cycling and rolling projects are identified in **Figure ES-2** and **Table ES-2.** These projects provide dedicated facilities on medium and high vehicle volume corridors and supporting routes on low volume corridors.

FIGURE ES-2: RECOMMENDED CYCLING AND ROLLING PROJECTS

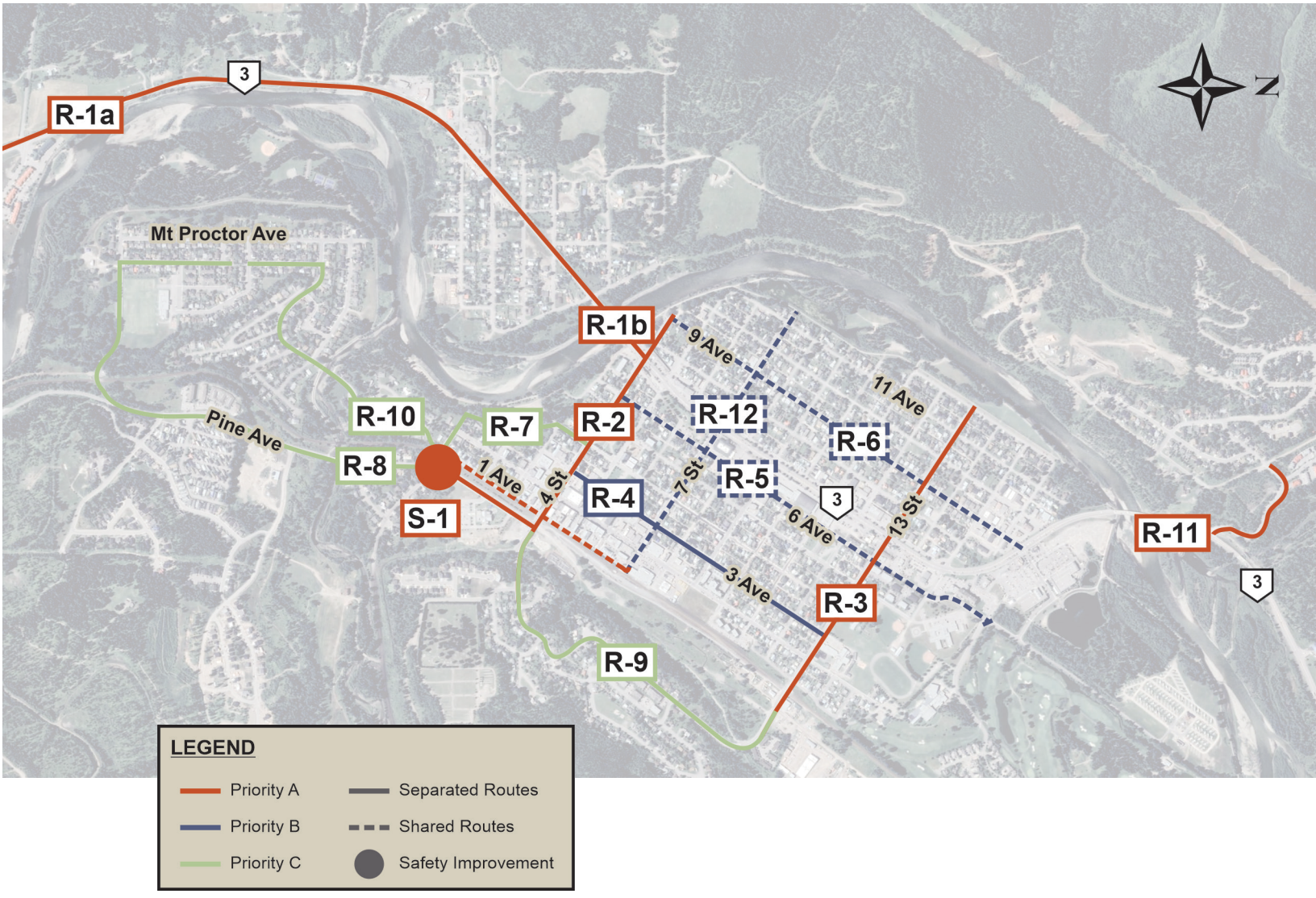

TABLE ES-2: RECOMMENDED CYCLING AND ROLLING PROJECTS

MAP	PROJECT TYE	LOCATION	LOCATION	CAPITAL COST	PRIORITY
R-1a	Separated Routes	Highway 3	West Fernie	$400,000 per block	A
R-1b		Highway 3	West Fernie Bridge	$600,000 per bridge length	A
R-2		4 Street	Annex to Ridgemont	$235,000 to $350,000 per block	A
R-3		13 Street	Annex to Ridgemont	$235,000 to $350,000 per block	A
R-11		Canyon Trail	Alpine/Parkland	$50,000-$100,000	A
R-4		3 Avenue	Maintown (4-13 Street)	$300,000 to $350,000 per block	B
R-7		4 Avenue	Maintown	$50,000 per block	C
R-8		Pine Avenue	4 Street to Minton Road	$50,000 per block + $1,500,000 per ped bridge	C
R-9		Ridgemont	4 Street to 13 Street	$50,000 per block	C
R-10		Park Avenue	4 Street to Mt. Mclean	$50,000 per block + $1,500,000 per ped bridge	C
S-1	Safety Improvement	Coal Creek	CP Underpass	***See note	A
R-5	Shared Routes (Level 1 – Signage)	6 Avenue	Maintown	Up to $1,200 per block	B
R-6		9 Avenue	Annex		
R-12		7 Street	Annex to Maintown		

*Cost estimates for 4 Street, 13 Street, and 3 Avenue assume full roadway rebuild (changes in pavement widths, new curbs, new drainage, etc.).

**Cost estimates for other roadways assume a multi-use pathway added within existing boulevard (no change to roadway design).

***Interim improvement (addition of railing) is estimated at $3,000. Ultimate improvements (widening to meet minimum width guidelines) requires the completion of a functional design to confirm capital costs.

VEHICLE AND RAIL SAFETY PROJECTS

Recommended vehicle and rail safety projects are identified in **Figure ES-3** and **Table ES-3**. All of these projects involve external stakeholders.

FIGURE ES-3: RECOMMENDED VEHICLE AND RAIL SAFETY PROJECTS

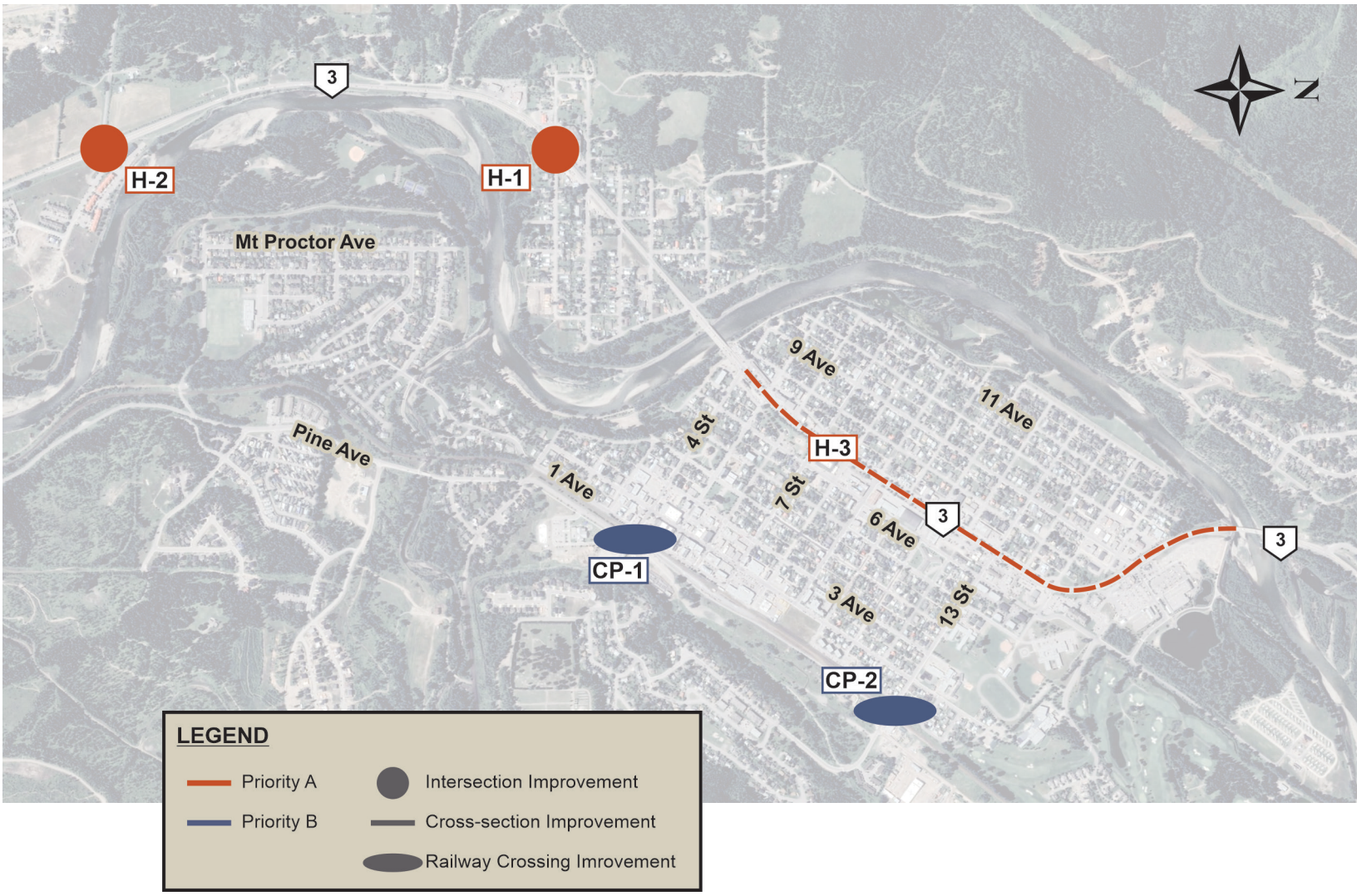

TABLE ES-3: RECOMMENDED VEHICLE AND RAIL SAFETY PROJECTS

MAP	PROJECT TYE	LOCATION		CAPITAL COST	PRIORITY
H-1	Intersection (Roundabout)	Highway 3	McDonald Ave	$11-14 million	A
H-2			Riverside Ave	$11-14 million	A
CP-1	Rail Safety (Improved Gates)	4 Street	Rail Crossing	$150,000	B
CP-2		13 Street	Rail Crossing	$225,000	B

CITY OF FERNIE ACTIVE TRANSPORTATION MASTER PLAN – REPORT STRUCTURE

The Plan and its recommendations are a starting point for enhancing forecast capacity needs of the local network and the eventual completion of the Master Plan over a multi-phase process. As Fernie looks to capitalize on its reputation as a tourist destination for all residents and visitors, the Plan will serve as a guide to deliver a safe and comprehensive multi-modal network that delivers the type of city that stakeholders want and deserve.

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INTRODUCTION

The purpose of the ATMP is to enhance usability for all forms of transportation and to allow for growth in the City of Fernie over a twenty-five year period that is respectful of the existing environment and causes little disruption to existing networks.

–1–
INTRODUCTION

Active transportation includes any form of human-powered transportation. It is often synonymous with cycling and walking, however there are many other forms of active transportation such as skateboarding, skating, and wheeling. Changes in technologies have introduced forms beyond solely human-powered modes, such as the recent growth in pedal assist or fully electric bicycles, and other mobility assistance devices called micro-mobility.

Fernie has a vibrant historic downtown and is a youthful and active city whose bountiful natural features make it attractive to tourists. However, limited active transportation connectivity between downtown and its more renown attractions reduce the Fernie's ability to take full advantage of these historic and natural advantages. The city of Fernie engaged Bunt & Associates to create an Active Transportation Master Plan to modernize accessibility for current and future citizens and visitors and enhance connectivity between residential neighborhoods and primary destinations.

With respect to Fernie's budget, assessments were based on best return on investment and categorized according to greatest return. Enhancing transportation systems to prioritize and encourage active transportation will have the best long-term impact and address the concerns of Fernie residents.

Section 7 Implementation Plan is based on a combination of technical analysis and input provided by Fernie residents, stakeholders, and administration. Priority levels to make phased decisions were assigned as A (top priority), B (mid-term goal), and C (long-term goal). **Section 5 Recommended Improvements** gives detailed overview of the recommended changes to all transportation systems, from pedestrian, to rolling and cycling, and some road improvements that will most directly impact the Historic Downtown and access to key destinations, as well as bring residential and commercial streets up to current multi-modal standards.

Recommended improvements represent a long-term vision for the transportation network to meet the priorities of the community. Projects are divided into priority groups to meet the long-term ATMP goals. Funding will need to be assessed each year with respect to the priority ranking. The ATMP will require many sources of funding and partnership with provincial and federal departments. The City will use the Master Plan to determine the best way to allocate their budget each year.

STRATEGIC CONTEXT

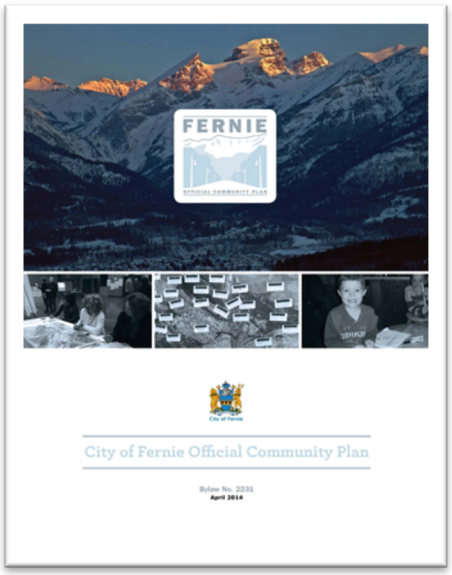
The ATMP addresses the city-wide multi-modal transportation needs for the next generation. It functions as a long-range strategic plan that guides transportation and investment. The Plan defines the role and function of the transportation system in Fernie and guides the City in designing and implementing an improved multi-modal transportation network over the next 25 years. Ensuring a robust transportation network that safely and comfortably incorporates all modes is important to Fernie's continued economic growth, livability, and success.

This plan prioritizes and encourages walking as the first choice for short trips, as well as cycling/rolling access to schools, local businesses, recreation facilities, and employment centres while also accommodating growth in vehicle traffic as required for economic sustainability and community development patterns. The plan establishes simplified street classification, provides guidance on complete street design, and incorporates information about road speeds and safety to enhance neighbourhood environments and minimize conflicts between street users.

The key benefits of this plan includes more desirable and varied transportation options for the public, a transportation system that is sustainable over time, and the provisioning of mobility options that will benefit both the health of citizens and the natural environment.

CITY OF FERNIE OFFICIAL COMMUNITY PLAN (OCP)

The City's OCP (2014) includes the following statement regarding the future transportation system:



"Fernie's functional, interconnected, multi-modal transportation system provides safe, convenient, and efficient movement of people and goods within and around Fernie in all four seasons. The system is affordable, cost-effective and prioritizes alternatives to the single occupant vehicle, emphasizing all season pedestrian and bicycle connections. With improved public transportation options and major employer-supported shuttles and community buses, the system is also helping Fernie meet its greenhouse gas (GHG) emission reduction goals. All roadways, including major routes like Highway 3, are designed as complete streets and safely accommodate all users in all seasons. Fernie is recognized for its pedestrian and bike friendly atmosphere."

Key OCP policies to be addressed by the Active Transportation Master Plan are identified in **Table 1.1**.

TABLE 1.1: OFFICIAL COMMUNITY PLAN POLICIES

POLICIES (ABRIDGED)	
2-A.1	Develop a Bicycle and Pedestrian Plan.
2-A.2	Identify priority street connections for pedestrian and cycling improvements.
2-A.3	Identify an on-street bicycle network.
2-A.4	Develop a multi-use pathway from the north end of town to Fernie Alpine Resort.
2-A.9	Provide sidewalks along one side of local roads within the urban area.
2-A.11	Plough and maintain core commuter walking trails during the winter.
2-A.15	Increase pedestrian safety at railway crossings.
2-A.23	Work with the Ministry of Transportation to develop a cyclist/pedestrian route parallel to Highway 3.
2-D.2	Revise Subdivision Servicing Bylaw to ensure complete street road standards.
2-G.3.	Work with the Ministry of Transportation to explore the addition of sidewalks on Highway 3 within the Maintown/Annex.
2-H.4	Support summer sidewalk cafes in the Historic Downtown as part of a pedestrian strategy.
2-H.6	Support Car Free special event days in the Historic Downtown in the summer months.
2-H.7	Provide crosswalks, lighting, benches, corner bulges throughout the Historic Downtown.

BRITISH COLUMBIA ACTIVE TRANSPORTATION STRATEGY

The BC Active Transportation Strategy (Move Commute Connect) outlines a goal to double the percentage of active transportation trips by 2030. This ATMP identifies the infrastructure needed to achieve this goal.

WHAT IS ACTIVE TRANSPORTATION?

WALKING

Including people walking, jogging, and people using mobility devices such as wheelchairs, walkers, and strollers.

CYCLING

Including all people travelling by bicycle using a full range of types such as bicycles with trailers, children's bicycles, recumbent bicycles, cargo bicycles, electric bicycles, fat tire bicycles, and bicycles built for people with mobility challenges.

ROLLING

Including people skateboarding, longboarding, scootering, in-line skating, and roller skiing.

WINTER-BASED MODES

Including modes that require conditions only available during colder winter months such as cross-country skiing, snowshoeing, kick sledding, and ice skating.

WATER-BASED MODES

Including connections to active forms of marine transportation, such as canoeing, kayaking, and stand-up paddle boarding. These more frequently considered recreational-based activities that are less viable as forms of transportation.

SMALL ONE-PERSON ELECTRIC VEHICLES

Including e-scooters, electric skateboards, hoverboards, Segways, self-balancing electric unicycles, and other emerging modes.

WHY ACTIVE TRANSPORTATION?

> HEALTH

Physical activity improves both physical and psychological health. Active transportation is an affordable way to add exercise to a daily routine.

> ENVIRONMENT

Active transportation reduces vehicle trips, traffic congestion, noise pollution, and greenhouse gas emissions. Active transportation also connects residents to their surrounding natural environment.

> SAFETY

Increasing awareness and visibility of active transportation users and facilities has been shown to result in lower vehicle speeds, which leads directly to safety benefits for vulnerable road users.

> SOCIETAL

Active transportation increases transportation options for residents. It is more equitable for lower income individuals, youth, seniors and others may not have, or may not desire access to a vehicle. Active transportation builds community by encouraging social interaction.

> ECONOMIC

Increased walking and biking can support local businesses since residents may shop more within their smaller, more local catchment area. More accessible and attractive transportation options can attract more visitors.

HOW CITY-WIDE MULTI-MODAL NEEDS WILL BE ACHIEVED

This ATMP addresses city-wide multi-modal transportation needs by setting the stage for mobility infrastructure and investment for the next twenty-five years. The key benefits of the plan include more efficient use of resources, more desirable and varied transportation options for the public, a transportation system that is sustainable over time, and the provisioning of mobility options that benefit both the health of citizens and the natural environment.

This plan addresses the following immediate and long-term multi-modal transportation needs by:

> Identifying existing deficiencies such as gaps in the existing network.

> Preventing future deficiencies by providing design standards and criteria to ensure appropriate active transportation facilities are implemented on new roadways.

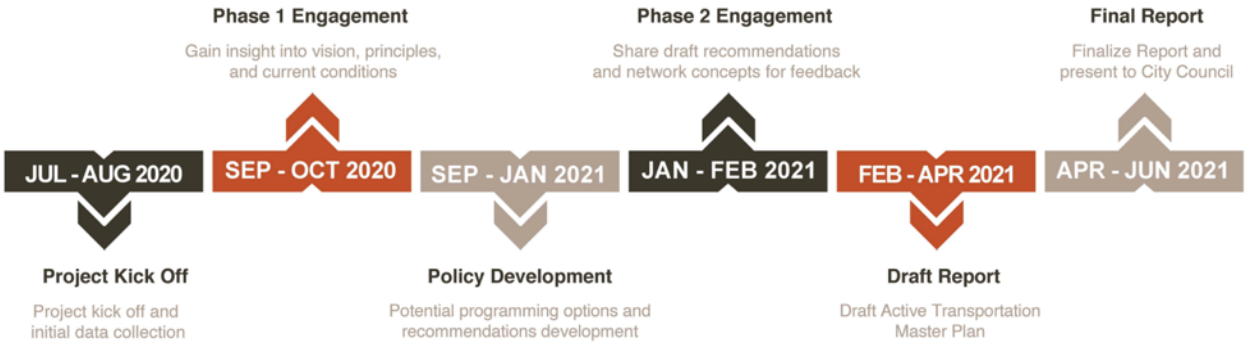
> Recommending safety improvements to actual and perceived safety.

> Providing a Network Plan that Fernie can build towards.

> Prioritizing improvements ranked to identify priority based on benefit.

> Stimulating growth through infrastructure and promotion.

PLAN PROCESS



PREPARATION

This Plan was the evolution of a multi-phase process beginning in July 2020. At the foundation of this process was developing an understanding of Fernie and how it is laid out, how people currently move around the city, and how they wish to move around the city.

Baselining for the ATMP involved reviewing existing transportation/land use plans, visiting Fernie, and getting a sense of existing missing links, as well as surveying residents and soliciting input on potential future active transportation networks. From this foundation it was possible to begin plan development and create a list of potential projects that were broad and far reaching for a variety of users. Residents provided input on potential projects to aid in the prioritization process in identifying active transportation solutions before the plan was refined and finalized for implementation.

STAKEHOLDER AND PUBLIC ENGAGEMENT

Public engagement occurred in two phases throughout the Plan preparation. Phase 1 engagement input was used to identify and inform network recommendations. Phase 2 input was used to confirm and prioritize recommended projects and give stakeholders and the public an opportunity to see the recommendations and provide further feedback.

From September to October 2020, a variety of platforms were used to communicate with stakeholders and the public to allow a full review of known issues and key elements they wanted to see addressed in a Master Plan. This included online surveys, virtual drop-in sessions and stakeholder interviews, and website engagement.

The recommendations as outlined in this Master Plan were preliminarily presented to the public and stakeholders in April of 2021 and more feedback was gathered through the same methods of survey, virtual sessions, the website, as well as an additional public information session on 27 April 2021. The outcome of the engagement process is provided in this plan and served as the basis for user-centered recommendations.

REFERENCE GUIDES

The following reference documents have been relied on for the completion of this Plan:

British Columbia *Active Transportation Design Guide*.
https://www2.gov.bc.ca/gov/content/transportation/transportation-infrastructure/engineering-standards-guidelines/traffic-engineering-safety/active-transportation-design-guide

CROW (Centre for Research and Contract Standardization in Civil and Traffic Engineering) *Design Manual for Bicycle Traffic.*
https://crowplatform.com/product/design-manual-for-bicycle-traffic/

NACTO (National Association of City Transportation Officials) *Designing for All Ages and Abilities.*
https://nacto.org/publication/urban-bikeway-design-guide/designing-ages-abilities-new/

NACTO (National Association of City Transportation Officials) *Urban Bikeway Design Guide.*
https://nacto.org/publication/urban-street-design-guide/

NACTO (National Association of City Transportation Officials) *Urban Street Design Guide*.
https://nacto.org/publication/urban-bikeway-design-guide/

TAC (Transportation Association of Canada) *Geometric Design Guide for Canadian Roads (3rd Edition).*

TAC (Transportation Association of Canada) *Pedestrian Crossing Control Guide (3rd Edition)*

Clean BC *Move Commute Connect - B.C.'s Active Transportation Strategy*
https://www2.gov.bc.ca/assets/gov/driving-and-transportation/funding-engagement-permits/grants-funding/cycling-infrastructure-funding/activetransportationstrategy_report_web.pdf

–2–

FERNIE NOW

Establishing a baseline is important to building an Active Transportation Master Plan that is relevant to Fernie. This section outlines the demographic and land use characteristics that influence existing transportation choices and travel patterns across the City.

–2–
FERNIE NOW

The city of Fernie is a municipality in the East Kootenay region. With a population of 5,668 (approximation by British Columbia Projections as of 2020), Fernie is the largest municipality in the Elk Valley. The community is encircled by the Rocky Mountains and bisected by Highway 3. The Elk River runs through the city providing a strong recreational draw but also limiting connectivity between communities.

Fernie is a significant tourism destination. While most visitors arrive using private vehicles, the primary draw is active outdoor recreational activities. Major tourism destinations near Fernie include Fernie Alpine Resort, Mount Fernie Provincial Park, and Island Lake Lodge. Many tourists also visit the community and outlying area to enjoy the large mountain trail network, camping sites, and fishing opportunities. Active transportation infrastructure will help support and expand this strong tourism base.

DEMOGRAPHICS

Demographics play a significant role in influencing transportation choices and travel patterns. The following characteristics were key considerations when developing the Active Transportation Master Plan.

POPULATION

Fernie population information is summarized **Table 2.1** and **Figure 2.1**. The city of Fernie has a young population with approximately 34% aged 30 years and younger.

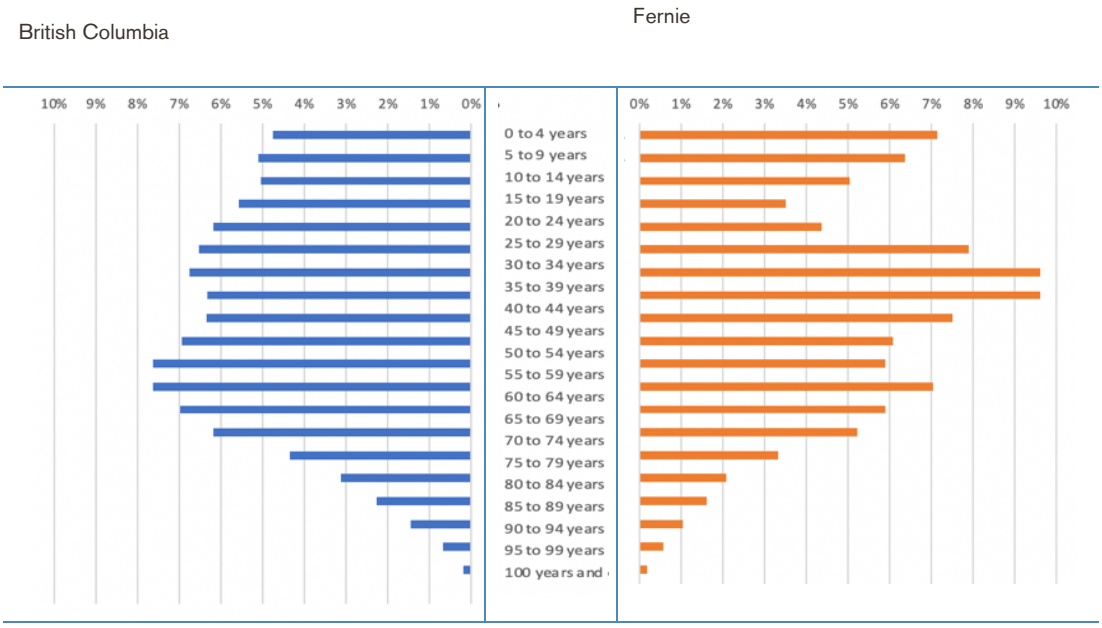
TABLE 2.1: DEMOGRAPHICS

	POPULATION	ANNUAL GROWTH	MEDIAN AGE
City of Fernie	5,668	2.7%	38
Province of BC	5,147,712	1.6%	43

FIGURE 2.1: DEMOGRAPHICS

Source: 2016 Canadian Census & 2020 BC Population Projections

AGE DISTRIBUTION



POPULATION GROWTH

LABOUR AND ECONOMY

City of Fernie economic driver information is summarized in **Table 2.2**. Major industries include mining (Teck Resources), retail, and hospitality.

TABLE 2.2: ECONOMIC DRIVERS

Source: 2016 Canadian Census

	EMPLOYMENT	MEDIAN HOUSEHOLD INCOME	MAJOR INDUSTIRES
City of Fernie	68.7%	$90,112	(1) Mining (2) Retail (3) Accommodation
Province of BC	59.6%	$69,995	(1) Retail (2) Health Care (3) Accommodation

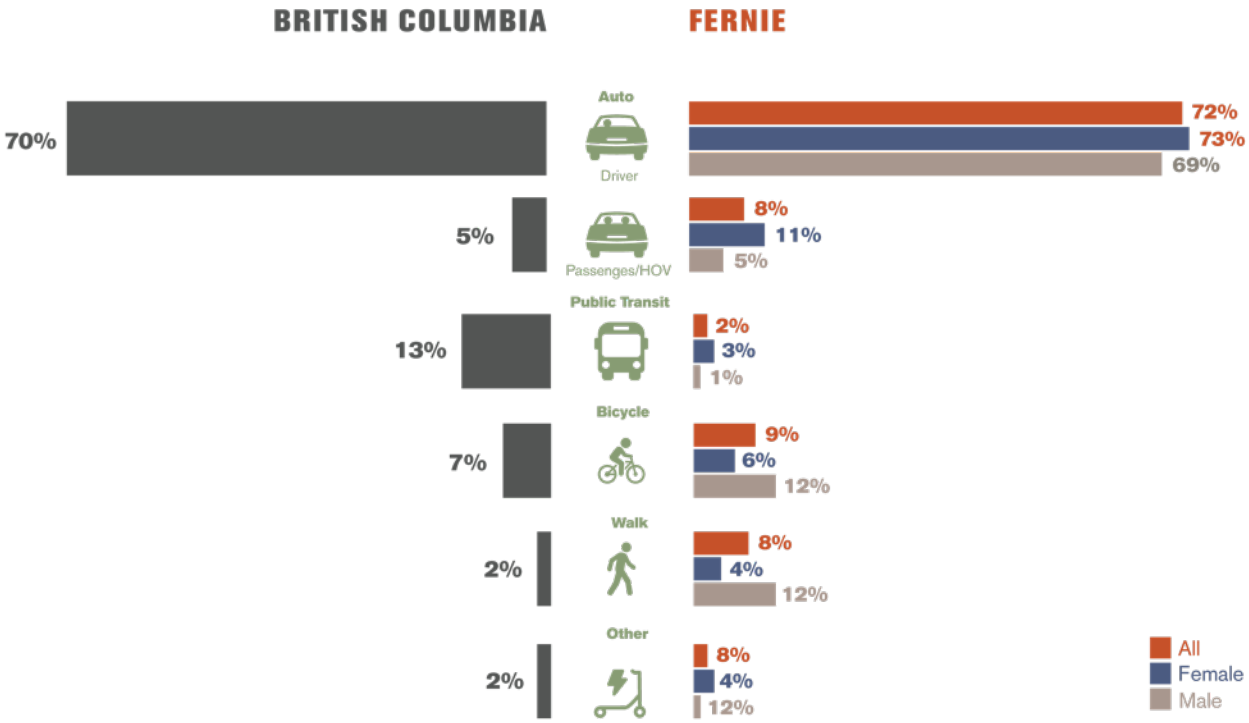
COMMUTING CHOICES

Modes of transportation used for employment commuting are summarized in **Figure 2.2**. A total of 17% of Fernie commuting trips are completed by cycling or walking (10% for males + 25% for females).

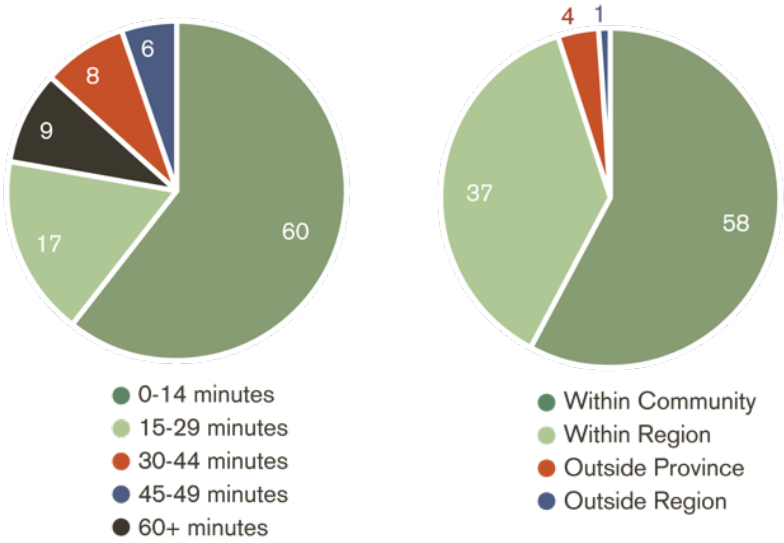
FIGURE 2.2: COMMUTING

Source: 2016 Canadian Census

MAIN MODE OF COMMUTING



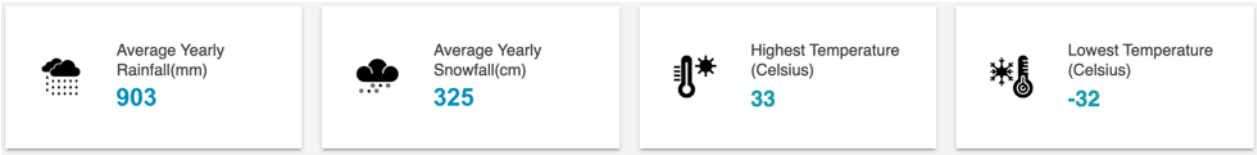
FERNIE COMMUTING DURATIONS AND DESTINATIONS

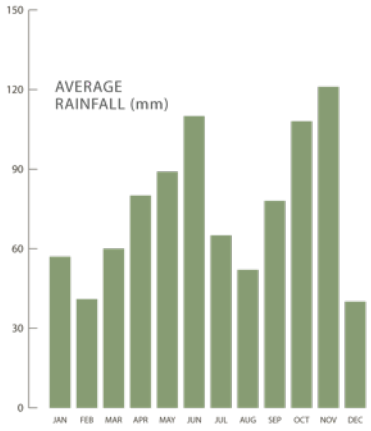


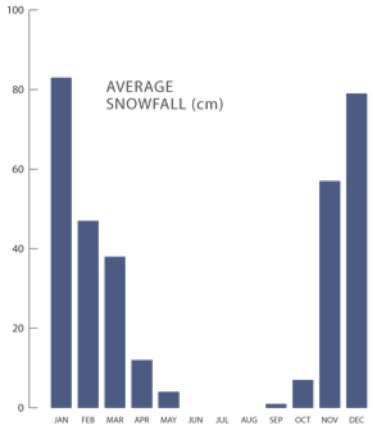
WEATHER

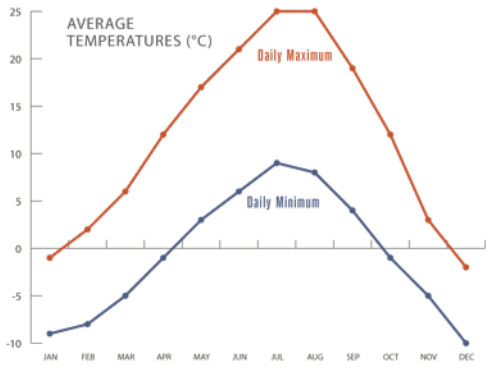
Weather conditions can impact transportation mode choices. Environment Canada weather data for Fernie is presented in **Figure 2.3** The data identifies that Fernie experiences large annual snowfall amounts comparable to St. John's, Newfoundland and Quebec City.

FIGURE 2.3: WEATHER









LAND USES

Residential uses are located in all Fernie neighbourhoods except Ghostrider. Commercial uses are primarily located in the Historic Downtown (2 Avenue – Maintown) or along Highway 3.

NEIGHBOURHOODS

Fernie's 11 neighbourhoods are identified in **Figure 2.4.** Neighbourhoods impacted by geographic and other barriers are:

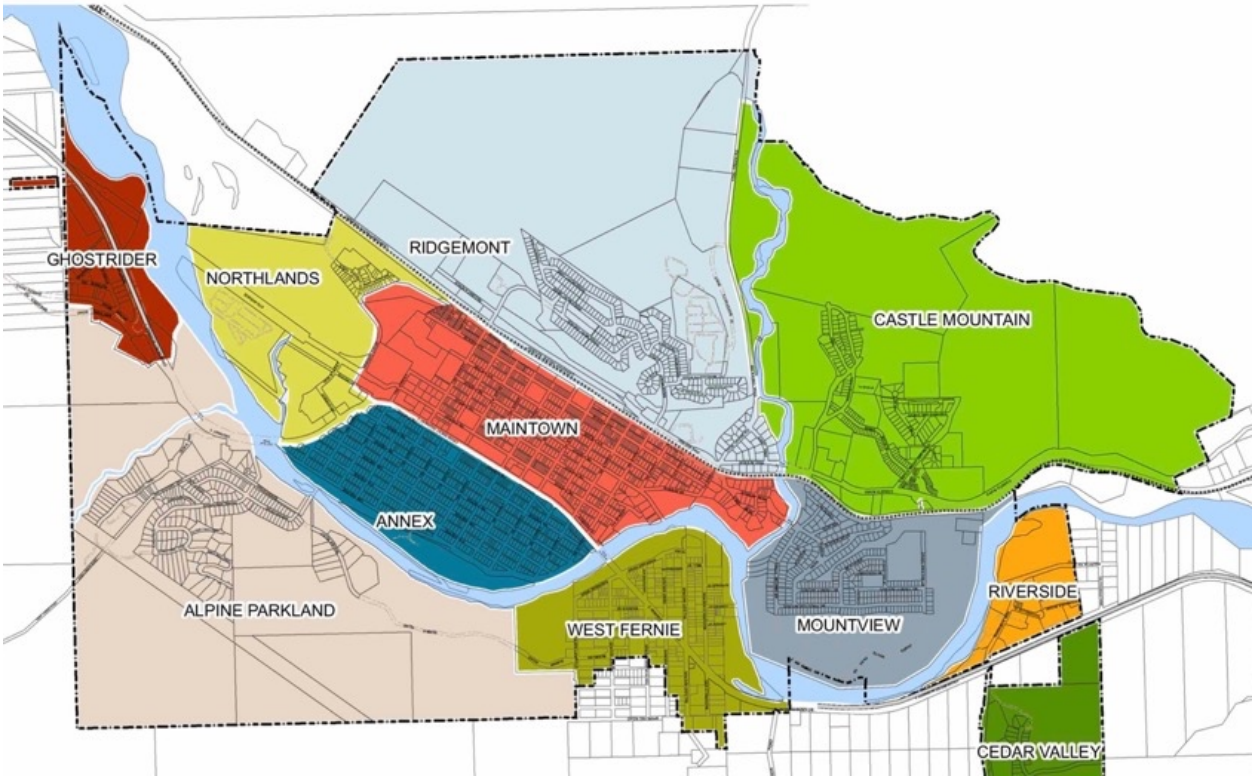
> Elevation Changes - Alpine Parkland and Ridgemont

> Elk River - Alpine Parkland, Cedar Valley, Ghostrider, Riverside, and West Fernie

> Cole Creek - Castle Mountain and Mountview

> Railway - Castle Mountain and Ridgemont

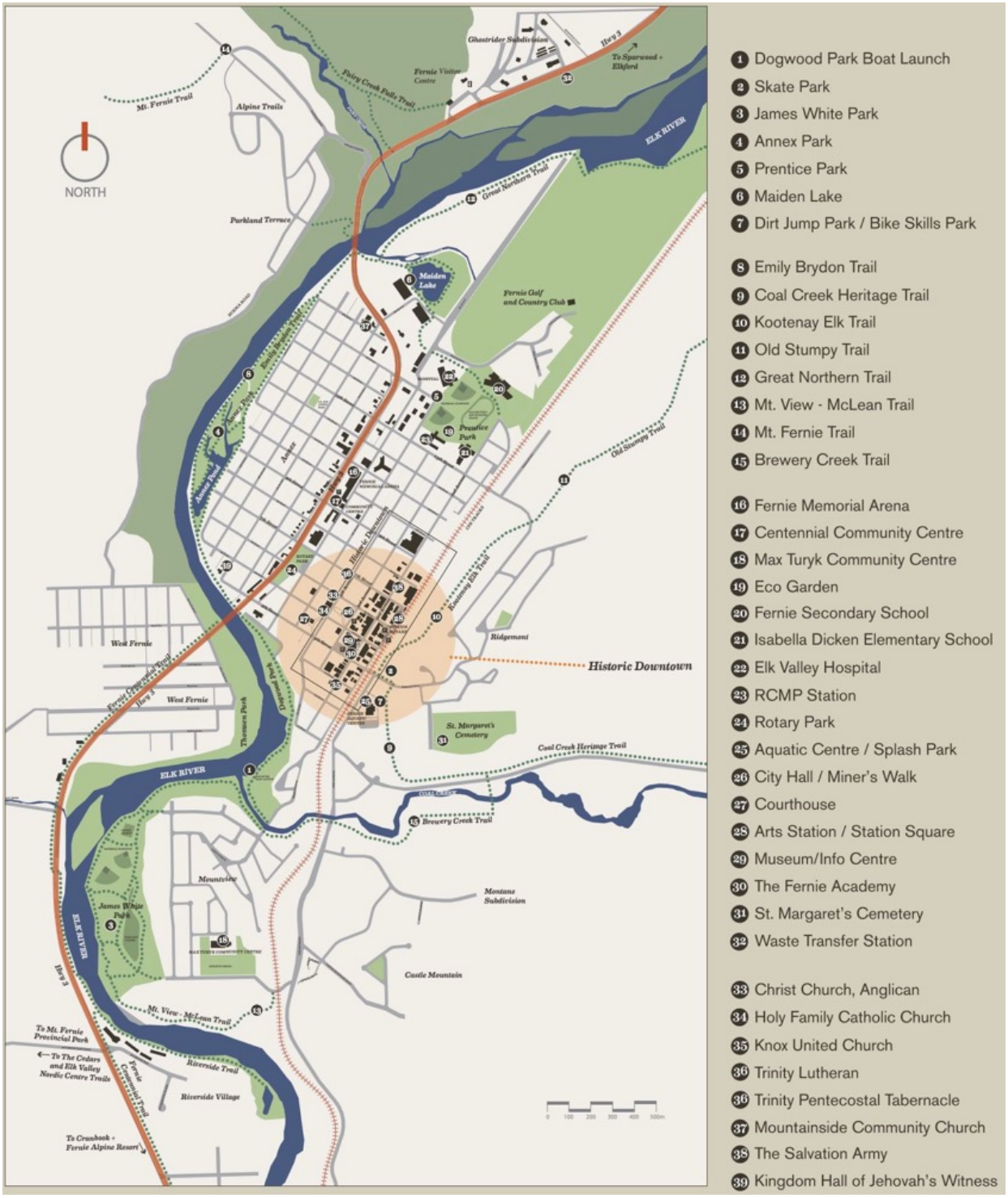
FIGURE 2.4: FERNIE NEIGHBOURHOOD MAP



LOCAL DESTINATIONS

Key destinations within the city of Fernie are illustrated in **Figure 2.5**.

FIGURE 2.5: FERNIE DESTINATION MAP



TOURISM

Winter-based recreation (downhill skiing, snowboarding, cross-country skiing, snowshoeing, snowboarding, fat biking) is a significant draw to the area. In the summer, tourism is drawn by water-based recreation (canoeing, kayaking, fishing) and trail networks (cycling, hiking). Other attractors include the Fernie Golf Club and the Historic Downtown. Outdoor travel destinations are illustrated in **Figure 2.6**.

FIGURE 2.6: TOURISM DESTINATIONS

Source: Tourism Fernie[2]

[2] https://tourismfernie.com/uploads/listings/92/TF-TravelPlanner-2019-web-spreads.pdf

EXISTING NETWORKS

PEDESTRIANS

Fernie has sporadic sidewalk infrastructure. The existing pedestrian network is illustrated in **Exhibit 2.1.**

A high-level summary of the existing pedestrian network as follows:

> Limited Facilities on Highway 3 - The highway generally has no pedestrian infrastructure.

> Shared Space on Local Streets - Many local streets have no sidewalk infrastructure. Pedestrians share road space with vehicles on many local roads.

> High Quality Downtown - The Downtown area has robust pedestrian amenities with sidewalks on each road edge and marked crosswalks with wheelchair ramps.

> Wide Intersections - Corner bulges or other opportunities to narrow pedestrian crossing distances are not currently implemented.

> Narrow Sidewalks - Substandard sidewalk widths are provided ranging from 1.2 to 1.5 metres.

> Snow is an Obstacle - Outside of the Downtown, many sidewalks remain uncleared during the winter.

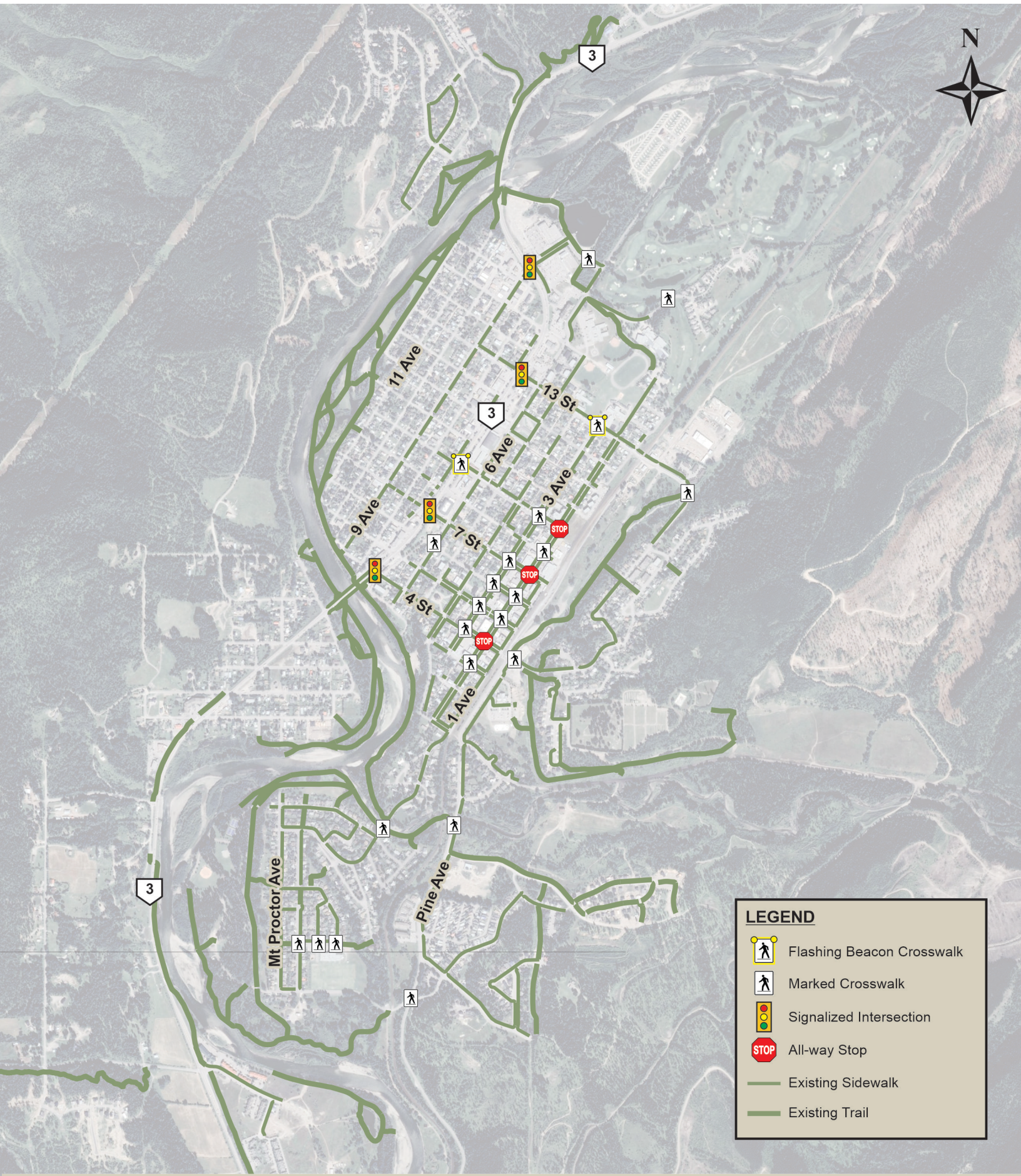


EXHIBIT 2.1: EXISTING PEDESTRIAN NETWORK

CYCLING AND ROLLING

The existing cycling network is focused on recreational activities (trails). Fernie does not currently have a designated commuting cycling network. The existing cycling and trail network is illustrated in **Exhibit 2.2**.

A high-level summary of the existing cycling network as follows:

> Highway 3, Elk River, and CP Rail are Barriers - Communities are isolated by highway, river, and rail.

> Strong Recreational Trail System - Fernie is surrounded by world class recreational bike trails.

> No Commuting Network - Cyclists primarily share roadways with vehicles.

> Snow is an Obstacle - Snow clearing and storage present considerable obstacles.

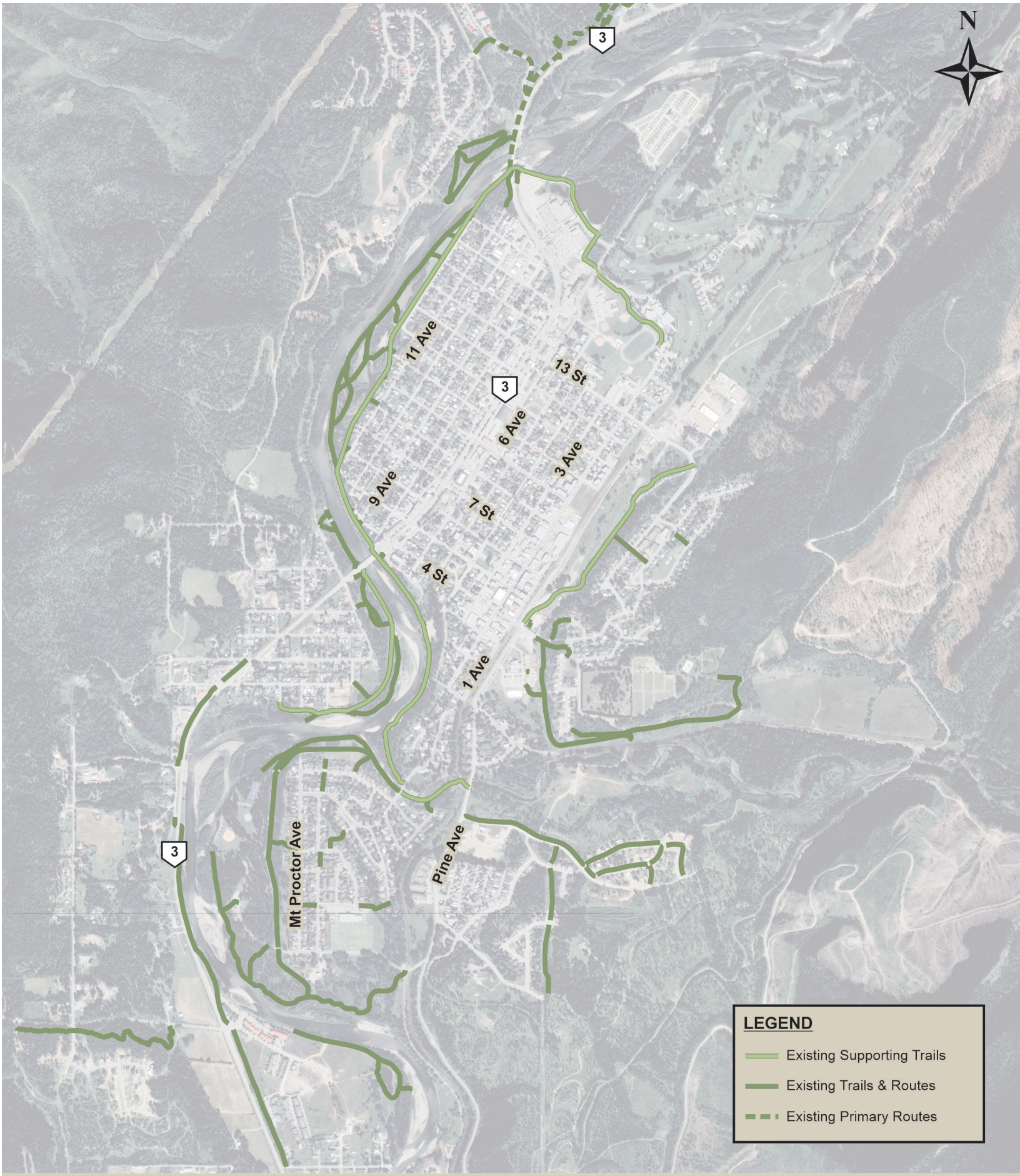


EXHIBIT 2.2: EXISTING CYCLING AND ROLLING NETWORK

TRANSIT

PUBLIC TRANSIT

The Elk Valley Transit System provides a limited service route between Fernie, Sparwood, and Elkford. This route stops in Fernie three times on weekdays (8:45, 13:45, 17:25). Fernie stop locations are illustrated in **Figure 2.7**.

In the Elk Valley Transit System's *Transit Future Service Plan (February 2020),* improvement options were identified and ranked for implementation. Based on the implementation priority, no local service within Fernie is expected to occur for the foreseeable future. Future service to Cranbrook may be provided.

SHUTTLES

The following shuttle services are provided in the city of Fernie:

> Health Connections (Medical Appointments) - Twice weekly service between Elkford and Cranford funded by Interior Health.

> Teck Resources (Employee Shuttle) - Private shuttle service provided by Teck Resources to bring employees from Fernie to their coalmine sites.

> Fernie Alpine Resort (Ski Hill Access) - Shuttle service (FernieStoke) between Fernie and the Fernie Alpine Resort. This service operates only during the ski season with a frequency of 20 minutes during the day and 1-hour during evenings. Stop locations are illustrated in **Figure 2.8**.

FIGURE 2.7: ROUTE 1 STOPS

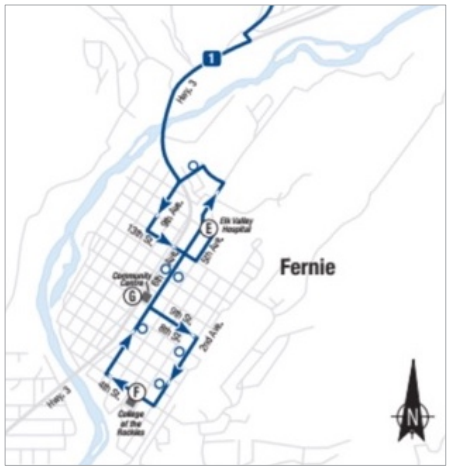
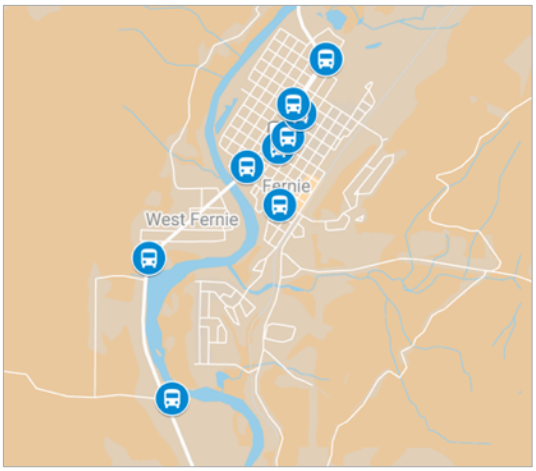


FIGURE 2.8: FERNIESTOKE STOPS



VEHICLES (ROADS)

Roadways are grouped according to the type of service they provide. These groupings determine the cross-section elements that should be provided on each roadway. The existing vehicle network is illustrated in **Exhibit 2.3**.

Roadway classifications are:

> Arterial - Major through roads that have a primary function of moving vehicles between communities and destinations. These roadways have the highest traffic volumes and require the greatest separation between vehicles and active transportation. The only Arterial level street within Fernie is Highway 3.

> Collector - Connect local streets within a community and serve secondary traffic generators such as commercial centres and schools. Independent pedestrian facilities (sidewalks or pathways) are needed on these roadways. Cycling facility needs (shared on-street with vehicles, bike lane, or shared pathway with pedestrians) depend on vehicle volumes and speeds.

> Local Streets - Provide direct access to residential and industrial properties. These roadways experience the lowest vehicle traffic volumes and therefore require no separate cycling facilities.

The daily volume guidelines identified for roadway classifications in the TAC *Geometric Design Guide for Canadian Roads* are summarized in **Table 2.3**. All Fernie Collector Streets currently operate below guidelines. The only Local Street exceeding guidelines (marginally) is 3 Avenue (4 Street to 7 Street).

TABLE 2.3: ROADWAY DAILY VOLUME GUIDELINES

ROAD CLASSIFICATION	DAILY VOLUME GUIDELINE
Collector (Industrial)	Up to 12,000 vehicles
Collector (Residential)	Up to 8,000 vehicles
Local (Industrial)	Up to 3,000 vehicles
Local (Residential)	Up to 1,000 – 2,0000 vehicles

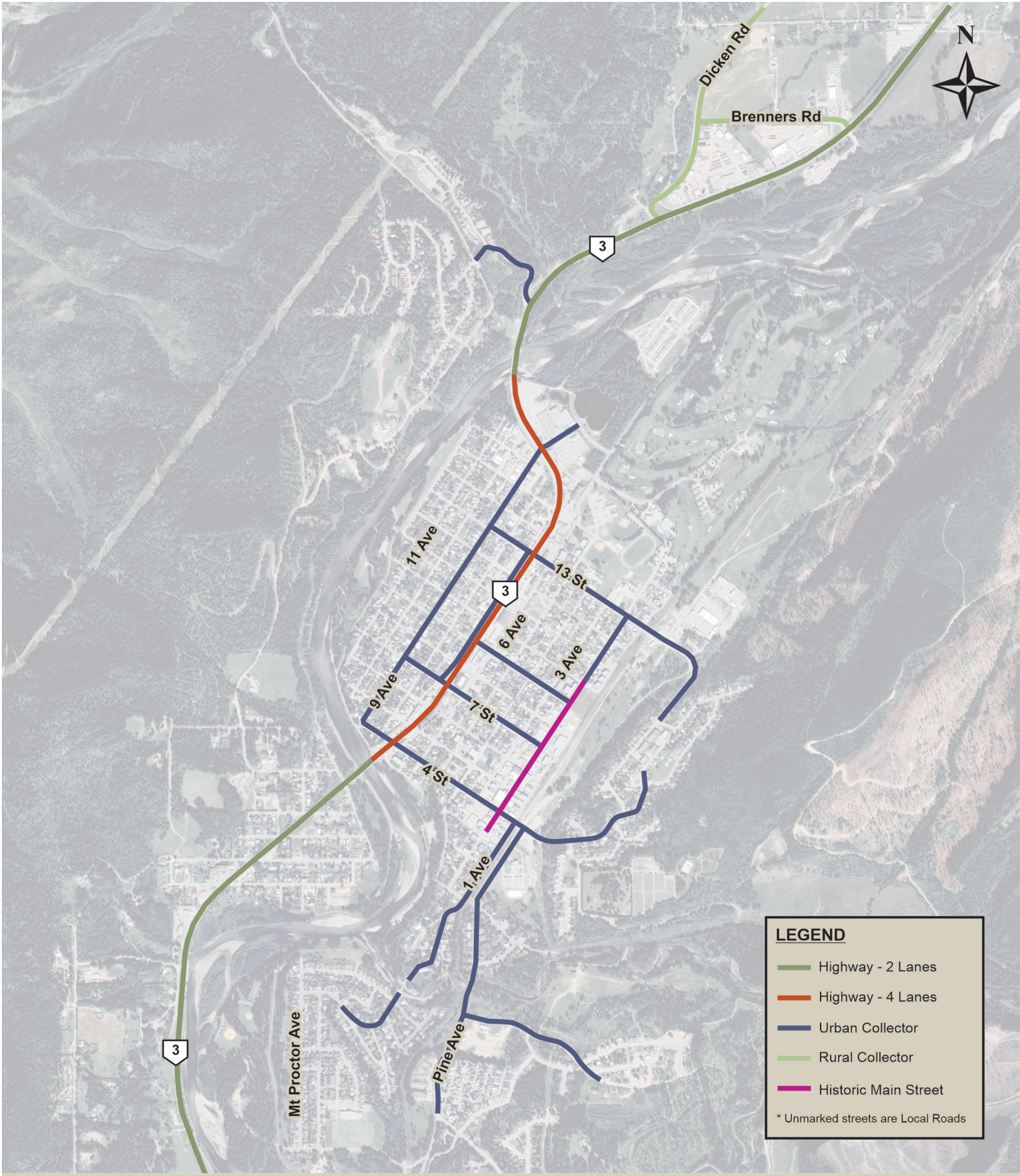


EXHIBIT 2.3: EXISTING VEHICLE NETWORK

VEHICLES (INTERSECTIONS)

Intersection capacity analysis was completed to identify existing operating conditions at major intersections during peak periods. Analysis was completed using current traffic volumes.

CONTROLS

Existing traffic controls and vehicle lane configurations at study intersections are illustrated in **Exhibit 2.4**.

ANALYSIS CRITERIA

Synchro 9.2 traffic analysis software was used to review intersection operational conditions based on the methods outlined in the Highway Capacity Manual.

The volume-to-capacity (v/c) ratio of an intersection movement represents the ratio between the demand volume and available capacity. The Level of Service (LOS) rating is based on average vehicle delays ranging from LOS A (minimal delay) to LOS F (significant delay).

RESULTS

Exhibit 2.5 identifies overall intersection level-of-service during the three peak hours (weekday AM, weekday PM, and Saturday). This exhibit also identifies specific vehicle movements nearing or exceeding acceptable movement criteria. The results identify:

> Local Intersections Operate Acceptably - No changes are required to Fernie intersections.

> Highway 3 (East Fernie and Maintown) Operate Acceptably - Highway intersections in East Fernie and the Maintown operate within overall acceptable limits. Higher delays occur at Highway 3 and 9 Avenue.

> Highway 3 (West Fernie) Exceeds Acceptable Delays - Side streets experience delays during the weekday PM peak period. Medium-term improvements (roundabout or signal at McDonald Avenue) may be required to improve side street mobility. BC MoTI is reviewing medium-term options.

> Highway 3 (Mt. Fernie Road/Riverside Way) Experience Delays - BC MoTI is aware of existing delays at these intersections and is separately reviewing short/medium-term improvement options.

GOODS MOVEMENT

Major goods movement corridors within Fernie are Highway 3 and the CP Railway tracks. Loading vehicles primarily use Collector streets to access commercial uses within the Historic Downtown.

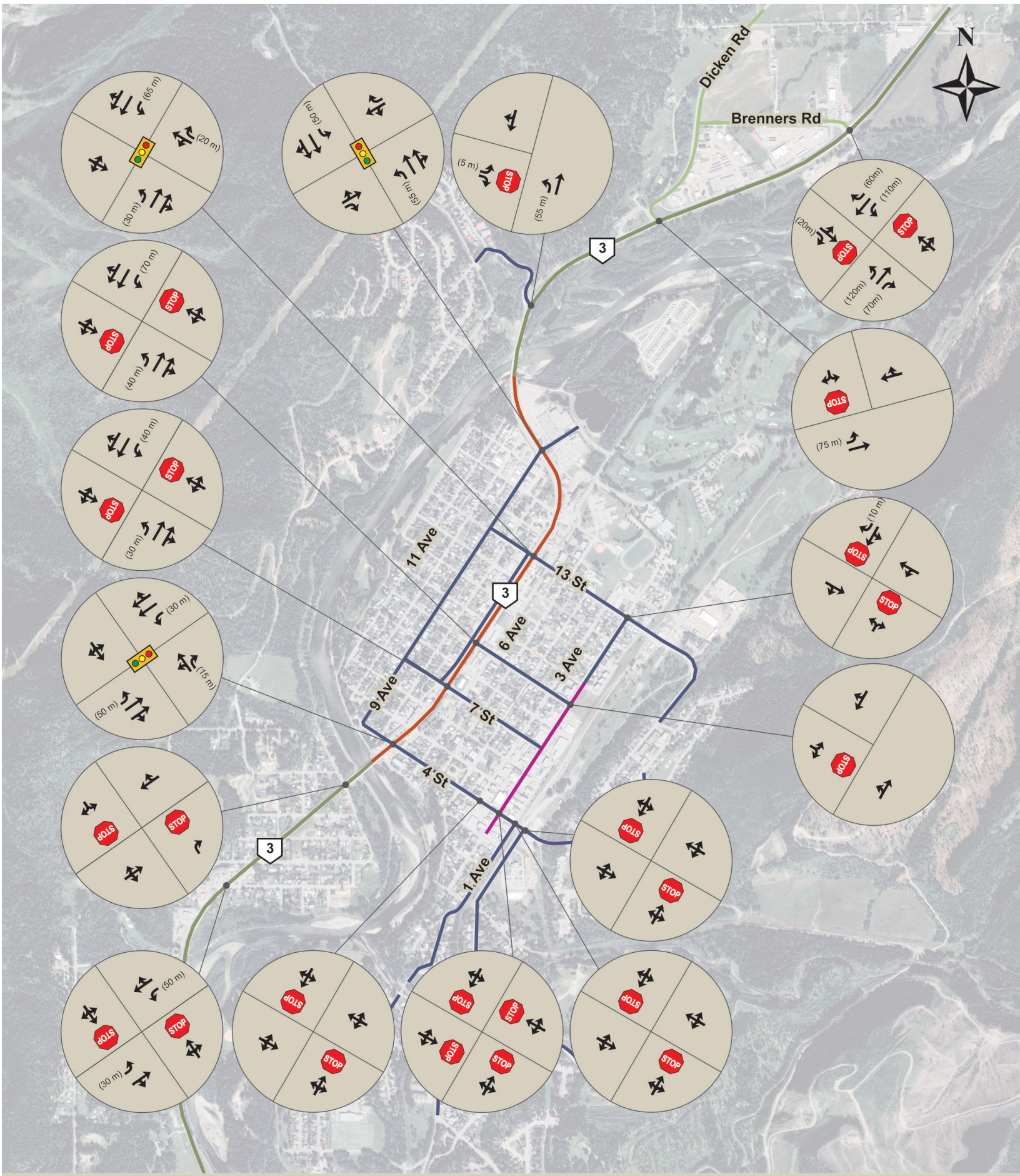


EXHIBIT 2.4: EXISTING INTERSECTION CONFIGURATIONS

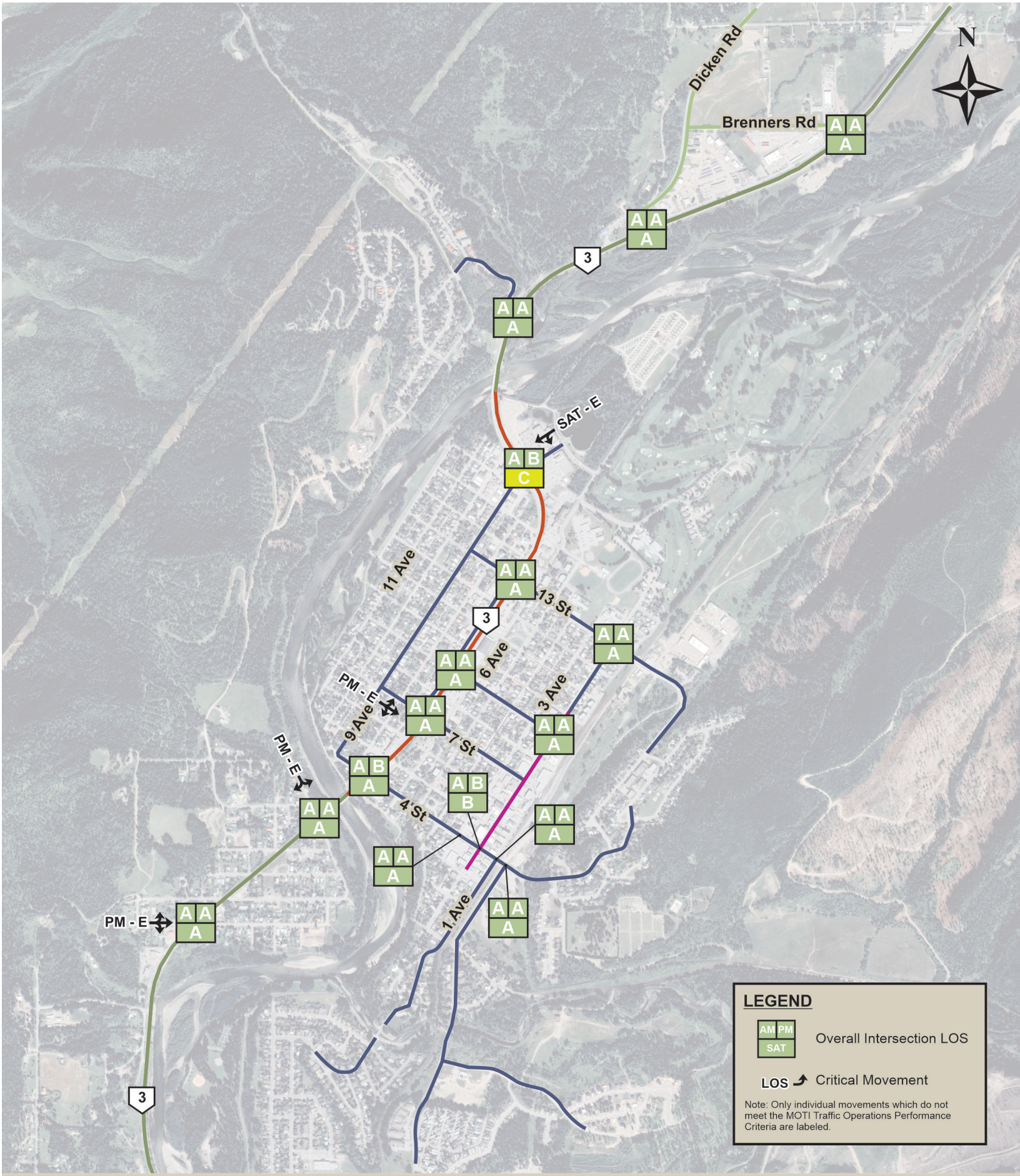


EXHIBIT 2.5: EXISTING INTERSECTION CAPACITY SUMMARY

–3–

ISSUES AND OPPORTUNITIES

Fernie residents, stakeholders, City staff, and Council provided insight about their concerns and aspirations related to long-term mobility planning. This section summarizes what was heard.

–3–
ISSUES AND OPPORTUNITIES

An engagement process was implemented early in the project to ensure all stakeholder groups, including the public at large, could share their insights and feedback on long-term mobility planning. From September 16th to October 12th, 2020, the Project Team connected with 803 community members through a variety of on-line methods with feedback received by 181 individuals.

ENGAGEMENT RESULTS

> Website - 614 visits.

> Online Survey - 129 responses.

> Online Mapping Tool - 43 respondents and 145 submissions.

> Stakeholder Interview - Nine groups including School District 5, Fernie Alpine Resort, BC Ministry of Transportation and Infrastructure, and others.

> Virtual Drop-in - Eight residents.

ONLINE SURVEY

The results from the online survey are summarized below.

MULTIPLE CHOICE SUMMARY

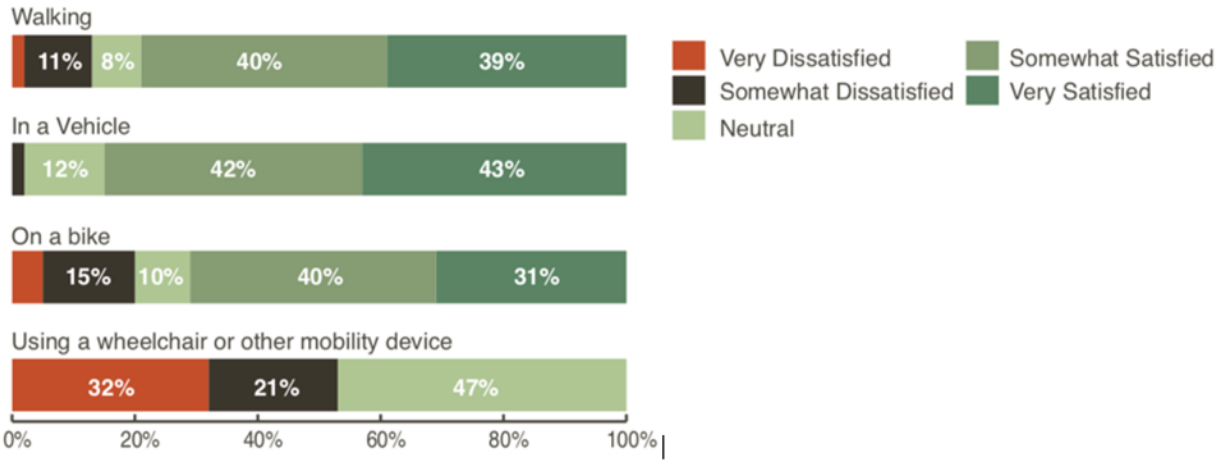
The most elected values or factors impacting transportation choices are summarized in **Table 3.1**.

TABLE 3.1: SURVEY 1 MULTIPLE CHOICE SUMMARY

QUESTIONS		CHOICE		
		#1	#2	#3
Primary Destinations	By Active Travel	Trails	Parks	Friends' homes, Schools
	By Vehicle	Fernie Alpine Resort	Grocery	Medical, Work
Factors impacting Active Travel	In Summer	Time (69%)	Precipitation (57%)	Safety (40%)
	In Winter	Snow Accumulation (74%)	Temperature (72%)	Snowfall (63%)
Values		Safety (66%)	Time Savings (62%)	Physical Activity (57%)

The level of satisfaction question summarized in **Figure 3.1** confirms most survey respondents are satisfied with their ability to move around Fernie by vehicle, cycling, and walking. A large dissatisfaction is noted for those with accessibility issues.

FIGURE 3.1: SATISFACTION WITH TRANSPORTATION MODES IN FERNIE



OPEN-ENDED QUESTION SUMMARY

An open-ended question was provided regarding concerns with the existing transportation system. The concerns raised are summarized in **Table 3.2**.

TABLE 3.2: COMMON CONCERNS

THEME (# OF OCCURRENCES)	COMMON SUB-THEMES (# OF OCCURRENCES)
Human Safety (82)	Conflict between modes/users (31) Snow and ice on sidewalks (23) Movement of children and families (22) Poor (year-round) condition of sidewalks (11)
Roads (46)	No dedicated bike lanes/space (23) Speeding and/or not abiding by rules of the road, on city streets (14) Snow-related obstacles (8)
Highway Interface (29)	Poor highway crossing for non-vehicle users (17) Insufficient/narrow sidewalk (9) No dedicated bike lane/space (9) Bridges too narrow for passage of bikes/pedestrians (7) Speeding (5)
User Behaviour (5)	Cyclists not abiding laws (7) No directional signage (4)
Isabella Dicken School/ 13th Street Safety (12)	No bike infrastructure on 13th (7) Narrow sidewalks (3) Eliminate vehicle parking (2)
Too Many Parked Cars (11)	-

DROP-IN SESSION

The following themes were identified in the virtual drop-in session:

> Connect neighbourhoods to Downtown and destinations including Schools, Ski Hill, and Visitor Centre. Pedestrian crossing opportunities along the Elk River in West Fernie were raised.

> Highway 3 is a barrier due to a lack of active transportation facilities and pinch points (West Fernie Bridge). Vehicle compliance concern were raised at 9 Street (flashing crosswalk light).

> 2 Avenue has poor pedestrian visibility at intersections due to parked vehicles.

> Unofficial trails are well used including Informal trails in Ridgemont and an illegal CP Rail Crossing.

MAPPED COMMENTS

The city of Fernie website engagement page included a mapping tool that allowed participants to identify specific places of concern and opportunity. All 145 comments are included in **Appendix D: Public Engagement.** Core themes included:

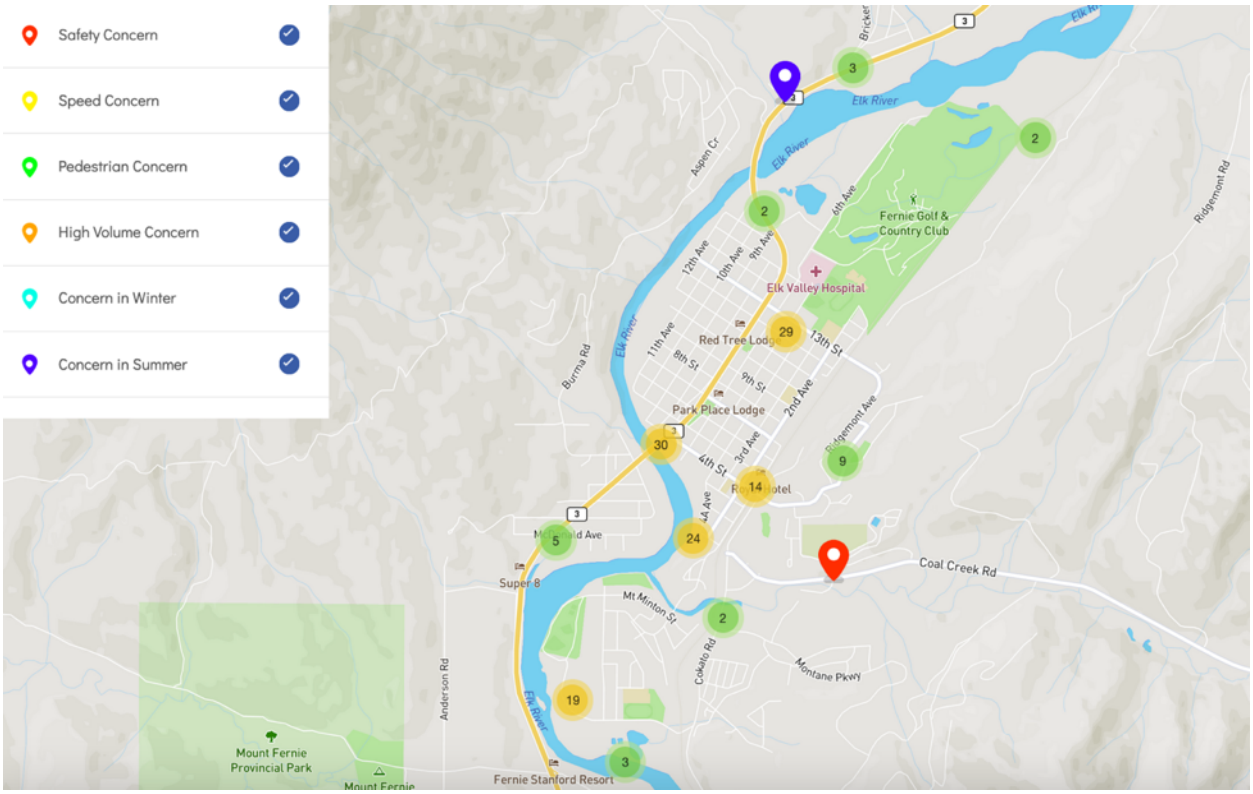
> Intersection challenges particularly at Highway 3 crossings. These were raised above all other safety concerns. Some mentioned the need for an underpass or overpass for active modes.

> Pedestrians and cycle access to key destinations with kids getting between home and school being of note. The lack of dedicated space on many corridors was noted.

> Flow of all modes on 2 Avenue and downtown is front of mind for change named by participants. Mentions of bike infrastructure – primarily requests for bike lanes and bike parking.

> Connect downtown with Fernie Alpine Resort with ample safe crossing of Lizard Creek.

> Create parking by the recreation centre and/or skate park with a pedestrian overpass to downtown.



–4–

NETWORK ASSESSMENT

Fernie's transportation network was assessed by way of a thorough data collection program and analysis of pedestrian, cycling and rolling, vehicle, and rail activities.

–4–

NETWORK ASSESSMENT

PEDESTRIAN ANALYSIS

Fernie has a sporadic sidewalk infrastructure. While ideally sidewalks would be added to all roadways, financial considerations require the identification of important missing links where sidewalk facilities would provide the greatest benefit.

KEY STRATEGIES

The following overarching pedestrian strategies are recommended:

EXPAND THE NETWORK

Work toward a standard of at least one sidewalk along roadways and/or traffic calm local roads to support shared space usage.

ADOPT NEW SIDEWALK STANDARDS

Update engineering standards to match current accessibility best practice.

CREATE PEDESTRIAN PRIORITY ZONE

A two-tiered approach to the pedestrian network may be considered, where the downtown area is designated as a Pedestrian Priority Zone with wider sidewalk standards and pedestrian priority treatments.

SEPARATE SIDEWALKS

Separate sidewalks from the roads with a softscape buffer/boulevard area. This will support pedestrian comfort, snow storage, and water absorption.

SUPPORT ACTIVITY

Further support pedestrian activity through:

> Enhanced Rest Areas - Create additional rest areas with benches and drinking fountains.

> Intersection Treatments - Add curb extensions at high pedestrian volume intersections (e.g., along 2 Avenue) to reduce pedestrian crossing distances and improve sightlines.

> Increase Parklet Usage - Add parklets along 2 Avenue that are available for public usage (not solely restaurant patios).

> Event Closures - Close portions of downtown streets to vehicles during specific days or weekends during the summer.

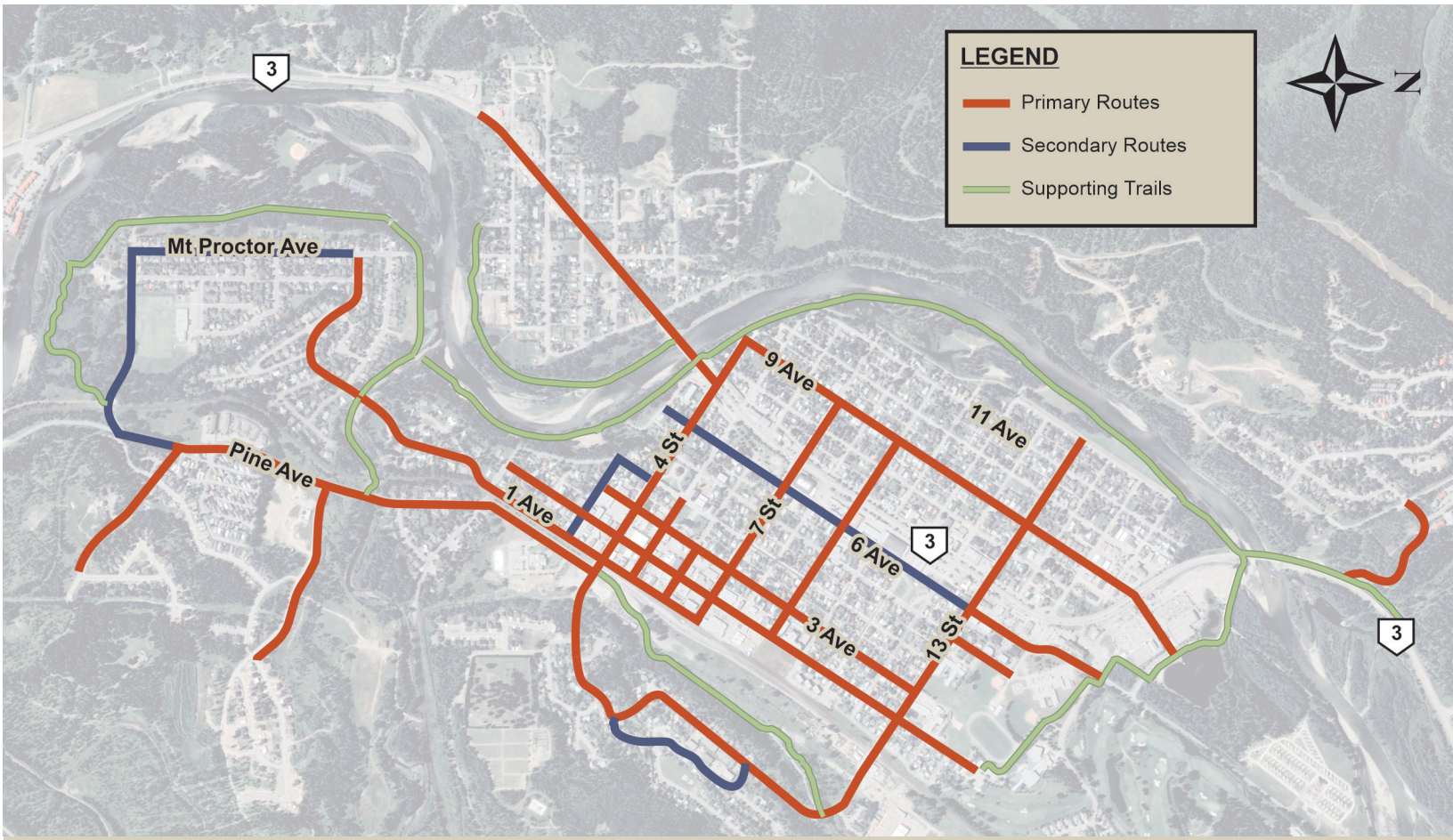
ROUTES/SIDEWALKS

PRIORITY ROUTES

Pedestrian routes are important on all roadways; however, priority routes need to be identified to ensure available financial resources are allocated most efficiently. These priority pedestrian routes are the most important for connecting communities. In terms of maintenance, these routes should be the highest priority for snow clearing.

With consideration of origins and destinations, vehicle speeds and volumes, and pedestrian volumes, identified pedestrian priority routes are summarized in **Figure 4.1**.

FIGURE 4.1: PEDESTRIAN ROUTES



GAP ANALYSIS

The existing active transportation network has been assessed for gaps in service and opportunities. The assessment sought to determine the adequacy of existing facilities based on the following criteria:

> Safety from field observations and collision records.

> Connectivity

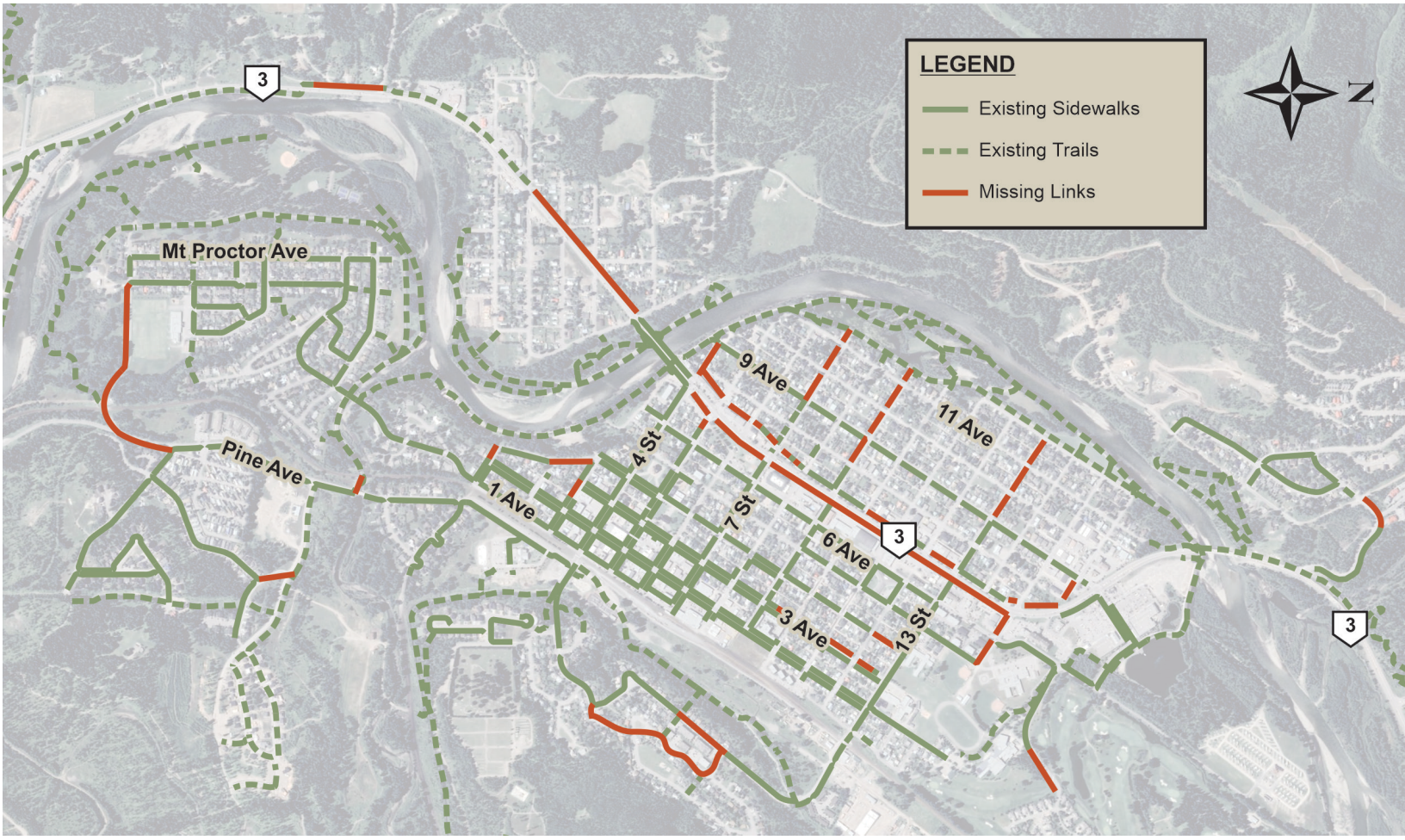
> Completeness of the network.

> Ability to serve key destinations including employment, recreational, and transit nodes.

> Ability to serve the needs of all user groups including vulnerable users (e.g., children, seniors, and people with mobility constraints).

The existing pedestrian network includes many streets with no sidewalk facilities. It is not feasible to add sidewalk facilities on all existing streets. Therefore, a focus is provided instead to identifying key missing links in the existing network. These missing links are identified in **Figure 4.2**.

FIGURE 4.2: PEDESTRIAN MISSING LINKS



CROSSING CONTROLS

The TAC Pedestrian Crossing Control Guide (3rd Edition) identifies appropriate pedestrian crossing controls based on considerations of daily traffic volumes, speed limits, and crossing distances. The crosswalk control selection matrix is illustrated in **Figure 4.3**. This matrix is used for locations that warrant pedestrian crossing control, which are identified in the guide as roadways with greater than 1,500 vehicles per day and locations with pedestrian demand (15 hourly pedestrians or system connection requirement).

FIGURE 4.3: TAC CROSSWALK CONTROL SELECTION MATRIX

Average Daily Traffic	Speed Limit [2] (km/h)	Total Number of Lanes [1]				
		1 or 2 lanes	3 lanes (two-way)	3 lanes (one-way)	2 or 3 lanes/direction w/ raised refuge	2 lanes/ direction w/o raised refuge
1,500 < ADT ≤ 4,500	≤ 50	GM	GM	GM	GM	GM+
	60	GM+	GM+	OF	RRFB or OF [3]	RRFB
	70	RRFB	RRFB	OF	OF	OF
4,500 < ADT ≤ 9,000	≤ 50	GM	GM	GM	GM	RRFB
	60	GM+	GM+	OF	RRFB or OF [3]	OF
	70	RRFB	OF	OF	OF	TS
9,000 < ADT ≤ 12,000	≤ 50	GM	RRFB	OF	RRFB or OF [3]	OF
	60	RRFB	RRFB	OF	RRFB or OF [3]	TS
	70	OF	OF	OF	TS	TS
12,000 < ADT ≤ 15,000	≤ 50	RRFB	RRFB	OF	RRFB or OF [3]	OF
	60	RRFB	OF	OF	RRFB or OF [3]	TS
	70	OF	TS	TS	TS	TS
> 15,000	≤ 50	RRFB	OF	OF	RRFB or OF [3]	TS
	60	RRFB	TS	TS	TS	TS
	70	OF	TS	TS	TS	TS

*GM = Ground Mounted Crosswalk (Side Signage and Paint – No flashing)

*RRFB = Rectangular Rapid Flashing Beacon (Side Signage and Paint – Flashing)

*OF = Overhead Flashing Crosswalk (e.g., Highway 3 at 9 Street)

*TS = Traffic Signal

A review of existing crossing controls identifies:

> Highway 3 (West Fernie) - No crossing controls are currently provided. While pedestrian volume thresholds are not met, there is a system connectivity requirement within West Fernie. Based on volumes and speed, a controlled crossing of Highway 3 should be considered in West Fernie. This controlled crossing can be implemented in combination with intersection improvements.

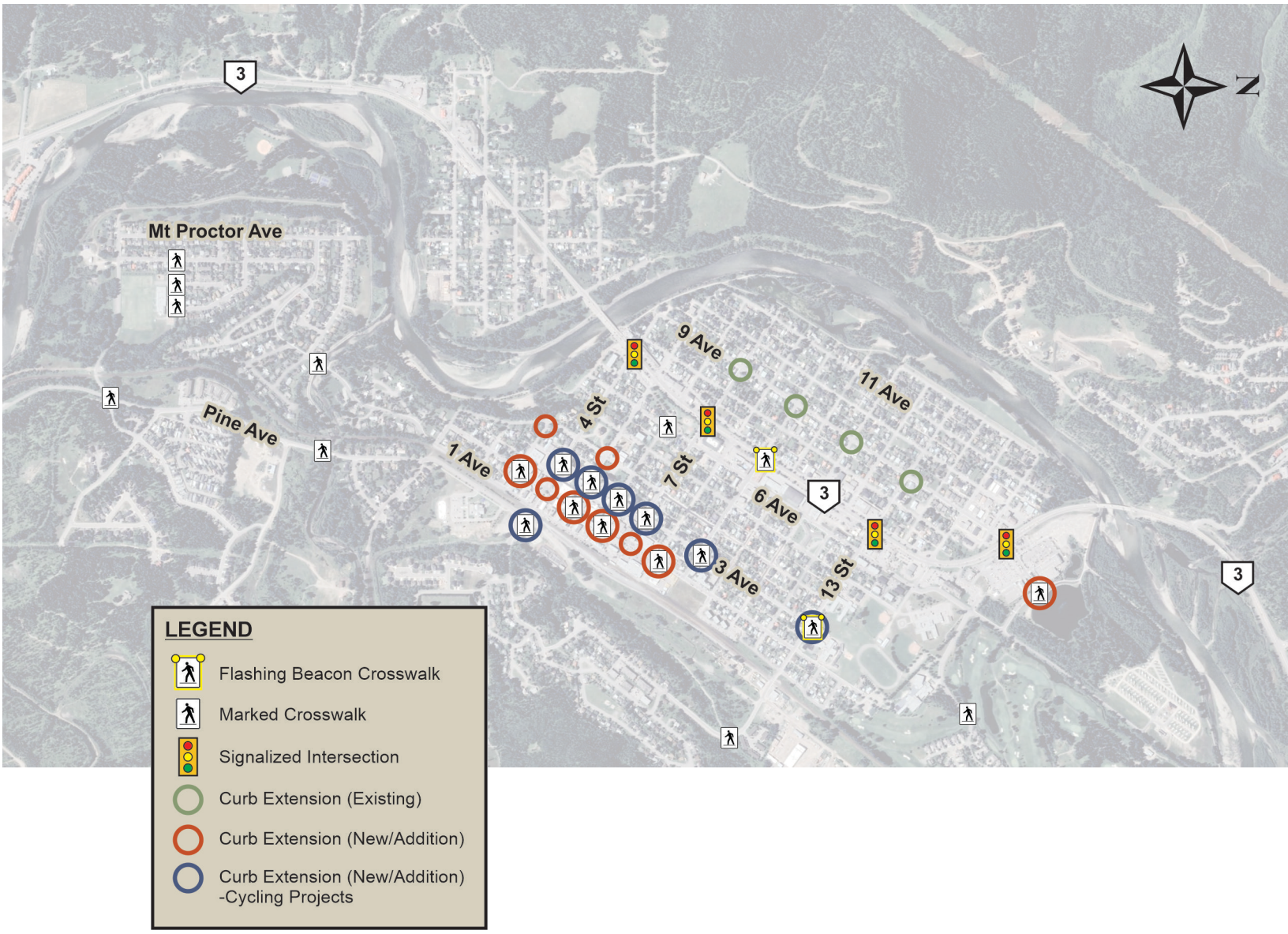
> Highway 3 (Maintown/Annex) - Based on existing volumes (~15,000 vehicles per day) and crossing distances (two lanes per direction with no refuge), the recommended crossing control for Highway 3 crossings are Overhead Flashing or Traffic Signal. Existing marked crosswalks (4 Street, 7 Street, 9 Street, 13 Street, 9 Avenue) meet these standards. As traffic volumes growth, the existing Overhead Flashing crosswalk at 9 Street may need to be upgraded to a traffic signal in the future.

> City Roadways - Based on volumes and typical two-lane crossing distances, only ground mounted signage is warranted within Fernie. Except for the 13 Street SW crossing, all crossings in Fernie are ground mounted.

CURB EXTENSIONS

Curb extensions help reduce pedestrian crossing distances and improve pedestrian visibility. Locations where reductions in pedestrian crossing distances are feasible and beneficial are identified in **Figure 4.4**.

FIGURE 4.4: CURB EXTENSION



CYCLING AND ROLLING ANALYSIS

The city of Fernie has a strong recreational trail system and a highly active population. However, limited connectivity is provided for rolling and cycling between residential neighbourhoods and primary destinations. A Rolling and Cycling network is identified to provide safe active transportation routes.

KEY STRATEGIES

The following cycling and rolling strategies are recommended:

> Minimum and Robust Network - Provide dedicated facilities only on routes where they are warranted. Fewer, but more robust cycling and rolling routes will provide the most efficient allocation of City resources. In the future, shared routes can be upgraded to separated route standards.

> Connect Key Destinations - Provide safe connections to key Fernie commuting trip destinations such as schools, the Fernie Alpine Resort, the downtown area, and connections over Highway 3. Connect to the existing recreational trail network.

> Consider Snow and Maintenance - Facilities will need to consider winter and summer conditions.

> Enable and Promote - The network should be supported with non-infrastructure initiatives such as wayfinding signage, mode split goal setting, supporting amenities, and monitoring.

ROUTES

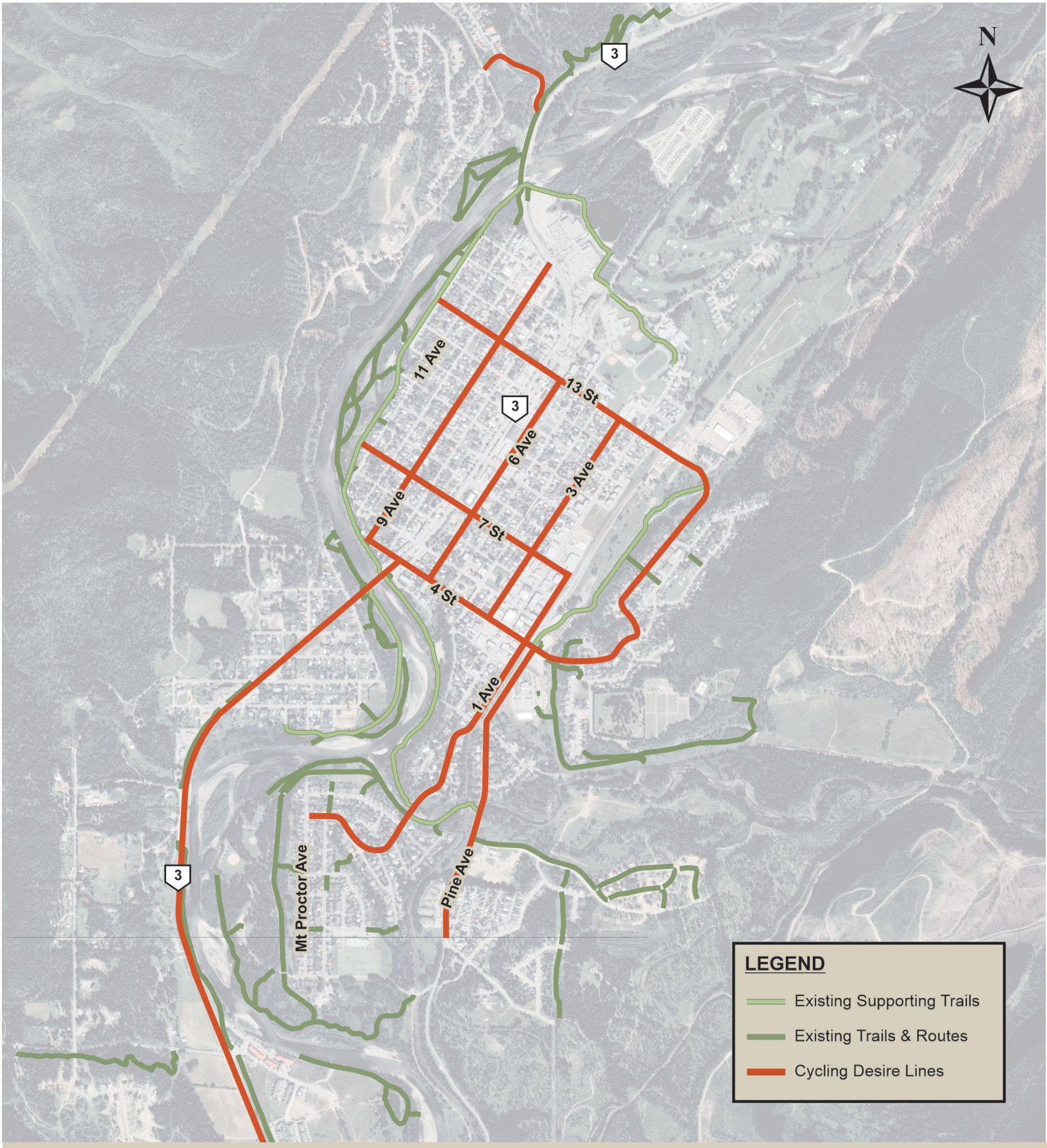
KEY ROUTES

To understand where cycling and rolling routes may be needed, first desire lines were identified with consideration of origins (e.g., residential neighbourhoods) and destinations (e.g., schools, commercial, Downtown). Identified cycling desire lines are summarized in **Table 4.1** and **Figure 4.5**.

TABLE 4.1: CYCLING DESIRE LINES AND ROUTES

ROADWAY	SECTION	RATIONALE
Highway 3	Fernie Ski Hill Road to West Fernie Bridge	Only connection to West Fernie
	East Fernie Bridge to Ghostrider	Existing route
Annex Park Trail	West Fernie Bridge to East Fernie Bridge	Connecting West and East Fernie (existing)
4 Street	Annex (9 Ave) to Ridgemont	Connecting Annex/Ridgemont to Downtown
7 Street	Annex (Park Trail) to Downtown (1 Ave)	Connecting Annex to Downtown
13 Street	Annex (Park Trail) to Ridgemont)	Connecting Annex/Ridgemont to School
Canyon Trail	Alpine to Highway 3	Connecting Alpine/Parkland to Highway 3 Route
Pine Avenue	Castle Mountain to 4 Street	Connecting Castle Mountain to Downtown
1 Avenue	Mountview to 7 Street	Connecting Mountain View to Downtown
2 or 3 Avenue	4 Street to 13 Street	East-west route in Maintown
6 Avenue	4 Street to 13 Street	East-west route in Maintown
9 Avenue	4 Street to Highway 3	East-west route in Annex

FIGURE 4.5: CYCLING DESIRE LINES AND ROUTES



ROUTE TYPES

With desire lines identified, the next step is determining which of the following route types should be provided on each route:

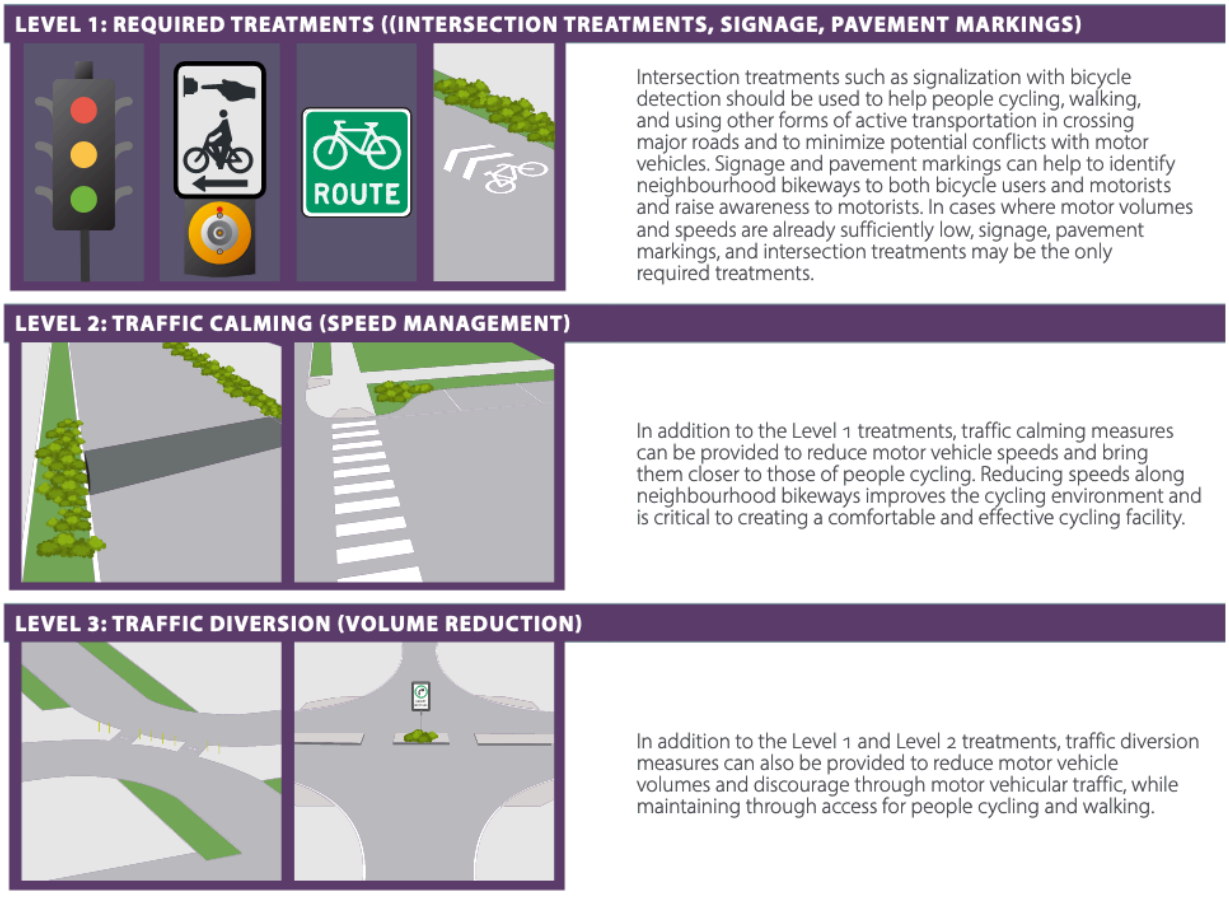
> Separated Routes - AAA quality routes with physical rolling/cycling separation from vehicles. These routes provide the highest quality active transportation network. Due to their higher capital and operating costs, these routes are typically provided on roadways with the highest vehicle volume or speeds and where separation provides the highest benefit.

> Shared Routes - Shared on-street routes that are signed but do not have physical separation between rollers/cyclists and vehicles. Traffic calming initiatives can be considered on these routes to reduce vehicle speeds and/or reduce vehicle volumes. Shared routes are low-cost routes which reflect the ability for cyclists to share the roadway with motorists. Potential treatments on these routes are identified in **Figure 4.6**.

A mix of facilities may occur on a single roadway (physically separated facility on a higher volume section and shared facilities on lower volume sections).

FIGURE 4.6: SHARED ROUTE TREATMENT LEVELS

Source: British Columbia Active Transportation Design Guide



VEHICLE ANALYSIS

A traffic model was developed using PTV Visum software to understand whether the current road infrastructure for vehicle traffic can accommodate the projected next 20 years of population and employment growth. Existing densities were used to calibrate the transportation model using the observed traffic volumes at major intersections within Fernie. The projected 2040 long-term densities are used to confirm future traffic volumes resulting from development growth using current traffic patterns.

Model outputs for the 2040 horizon are identified below:

> Existing Road Network - These outputs identify that the current road network (with a roundabout added at Highway 3 and McDonald Avenue) can accommodate 2040 densities with the only constraint being Highway 3 in West Fernie reaching the capacity of a 2-lane roadway.

> With a New Elk River Crossing - These outputs identify that a new Elk River crossing (Cokato Road to Highway 3) provide additional capacity but is not required to accommodate traffic.

The model confirms no significant vehicle infrastructure changes are required to accommodate growth within Fernie. The model also confirms no change to roadway classifications are required. Model assumptions, inputs, and outputs are provided in **Appendix C: Vehicle Model Assumptions**.

–5–

RECOMMENDED IMPROVEMENTS

Recommendations are based on site visits, stated City of Fernie growth goals, stakeholder and public engagement, and best practice. These recommendations build on Fernie's many positive attributes by enhancing existing systems while providing a solid return on investment.

–5–
RECOMMENDED IMPROVEMENTS

Active Transportation Best Practices were used to inform recommended improvements. This toolkit can be referenced in **Appendix A**. Furthermore, roadway classification analysis, which is dependent on vehicle volumes is a key consideration in active transportation facility selection. Vehicle analysis was therefore completed to provide inputs into facility selection and to optimize multi-modal transportation growth targets. Detailed data collection information is included in **Appendix B** and vehicle model assumptions is included in **Appendix C**.

PEDESTRIANS

The recommended pedestrian network is summarized in **Exhibit 5.1**.

PEDESTRIAN (SIDEWALKS)

The estimated capital cost for new sidewalks is approximately $50,000 per block. As curb geometry and crossing changes are necessary for cycling projects on certain roadways, curb extensions at these locations are instead included within cycling project designs.

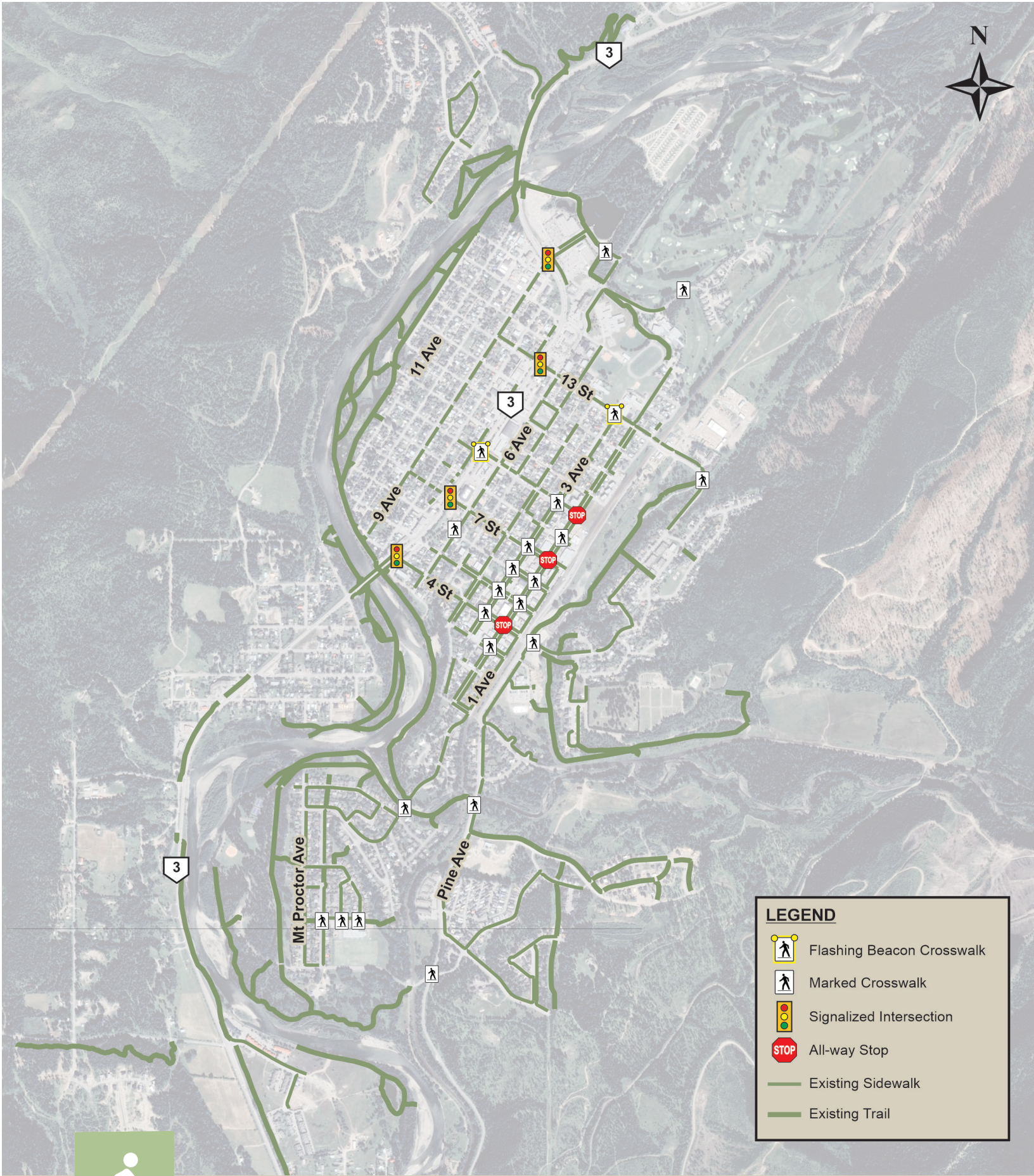


EXHIBIT ES-1: RECOMMENDED PEDESTRIAN NETWORK

PEDESTRIAN (CURB EXTENSION)

The estimated capital cost for curb extensions is $20,000 per corner. Recommended stand-alone curb extension projects are summarized in **Table 5.1**. As crossing reductions are included as part of cycling route designs (4 Street, 13 Street, 3 Avenue), curb extensions on separated cycling routes are not listed within this table.

FIGURE 5.1: CURB EXTENSIONS (2 AVENUE CONCEPT)

TABLE 5.1: SHARED ROUTE TREATMENT LEVELS

ROADWAY	INTERSECTIONS	CORNERS	CAPITAL COST
2 Avenue	3 Street	4	$80,000
	4 Street	4	$80,000
	5 Street	4	$80,000
	6 Street	4	$80,000
	7 Street	4	$80,000
	8 Street	4	$80,000
4 Avenue	3 Street	4	$80,000
	5 Street	1	$20,000
19 Street	Trail Crossing (6-9 Ave)	2	$40,000

PUBLIC REALM

Within the Historic Downtown, further public realm enhancements are recommended to highlight the multi-modal nature of the roadway. These improvements include:

> Additional Parklets - The addition of public use parklets. Current parklets are provided only for private use (restaurant patrons).

> Additional Bicycle Parking - The further addition of bike parking, particularly near intersections.

> Street Furniture - Additional seating areas.

SHORT-TERM PILOTS

Temporary pilot projects can cost-effectively improve the pedestrian experience. Potential pilot projects are identified below.

TEMPORARY CURB EXTENSIONS

Trial curb extensions at intersection corners to reduce walking distances. Trial extensions can be completed cost-effectively using delineation/paint or traffic calming curbs. Potential trial locations include:

- 4 Street and 2 Avenue
- 4 Street/Ridgemont Drive and Pine Avenue
- 5 Street and 2 Avenue
- 6 Street and 2 Avenue
- 7 Street and 2 Avenue
- 13 Street and 2 Avenue

FIGURE 5.2: TEMPORARY CURB EXTENSION EXAMPLES

Source: CBC News

DELINEATION

Source: city of Calgary

TRAFFIC CALMING CURBS

ADAPTIVE SIDEWALK

Consider the introduction of adaptive sidewalks in certain locations (e.g., Ridgemont). An adaptive sidewalk is a cost-effective way to provide a dedicated space for pedestrians in locations where no sidewalk exists. Dedicated space is provided using delineation, similar to cycling facilities.

FIGURE 5.3: ADAPTIVE SIDEWALK EXAMPLES

Source: city of Calgary

2 AVENUE CLOSURE

Trial the closure of 2 Avenue (4 Street to 7 Street) on summer weekends as car-free day events.

FIGURE 5.4: MAIN STREET CLOSURE EXAMPLE (BANFF AVENUE)

Source: 660 News

CYCLING AND ROLLING

The recommended cycling and rolling network is illustrated in **Exhibit 5.2**. Routes are based on desire lines, vehicle considerations, and the best practices.

Based on a consideration of available right-of-way and impact to other modes, a cycling facility is proposed on 3 Avenue as opposed to on 2 Avenue. This parallel route on 3 Avenue allows for pedestrian/destination focus improvements on 2 Avenue.

EXHIBIT 5.2: RECOMMENDED CYCLING AND ROLLING NETWORK

CYCLING AND ROLLING ROUTES (SEPARATED)

Recommended primary routes are summarized in **Table 5.2**.

TABLE 5.2: SEPARATED ROUTE IMPROVEMENTS

ROUTE	SECTION	OPTIONS	CAPITAL COST	OPERATING IMPACT
Highway 3	West Fernie	Multi-use Pathway	$200,000-$400,000 per block	Medium
	West Fernie Bridge	Multi-use pathway	$600,000	Medium
4 Street	Maintown (9 Ave to Pine Avenue)	Multi-use Pathway	$250,000 per block	Medium
		One-way Rolling + Sidewalks	$420,000 per block	High
13 Street	Maintown (9 Ave to Ridgemont Drive	Multi-use Pathway	$300,000 per block	Medium
		One-way Rolling + Sidewalks	$440,000 per block	High
3 Avenue	Maintown (4 St to 13 St)	Multi-use Pathway	$275,000 per block	Medium
		One-way Rolling + Sidewalks	$340,000 per block	High
Canyon Trail	Burma Road to Hwy 3	Multi-use Pathway (Extension)	$50,000-$100,000	-
Ridgemont	4 Street to 13 Street	Multi-use Pathway	$50,000 per block	Medium
Park Avenue	4 Street to Mt Mclean	Multi-use Pathway	$50,000 per block + $1,500,000 per bridge	Medium
4 Avenue	4 Street to Park Ave	Multi-use Pathway	$50,000 per block	Medium
Pine Avenue	4 Street to Minton Road	Multi-use Pathway	$50,000 per block + $1,500,000 per bridge	Medium

The primary route options are:

> Multi-Use Pathway - This option would add a new off-street facility on one side of the roadway that will be shared between people walking, cycling, and rolling.

Considerations: Provides dedicated facilities with lower cost. Intersection treatments will need to consider cycling visibility as higher collision potential exists when compared to the one-way rolling lane option.

> One-Way Rolling Lanes + Sidewalks - This option would add new off-street facilities on both sides of the roadway with pedestrians separated from rollers and cyclists.

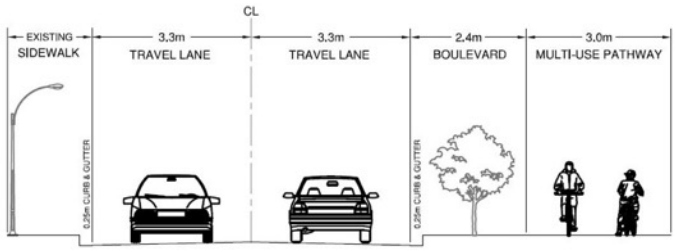
Considerations: Highest active transportation separation with the highest cost. Cyclists/rollers travel in the same direction of vehicle flow. Temporary facilities could potentially be provided within the existing roadway.

Cross-section concepts for 4 Street, 13 Street, and 3 Avenue are illustrated in **Figure 5.5**. The only option pursued for Highway 3 is a multi-use pathway. Canyon Trail is an existing multi-use pathway route that is proposed to be extended/improved.

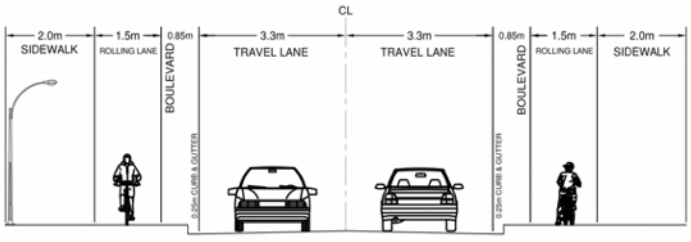
FIGURE 5.5: PRIMARY ROUTE OPTIONS

4 STREET

MULTI-USE PATHWAY

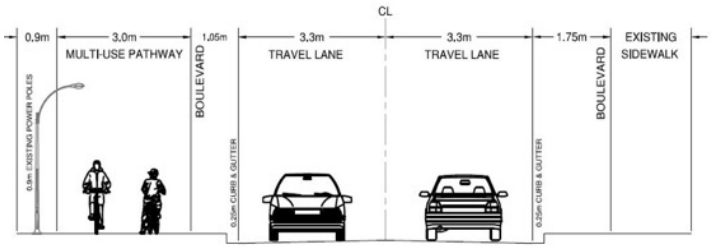


ONE-WAY ROLLING

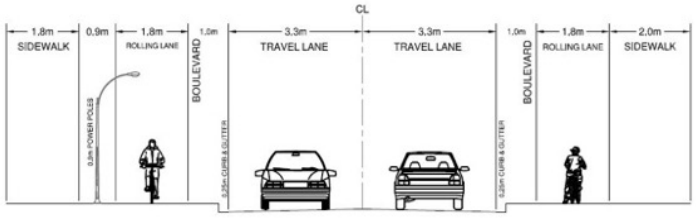


13 STREET

MULTI-USE PATHWAY

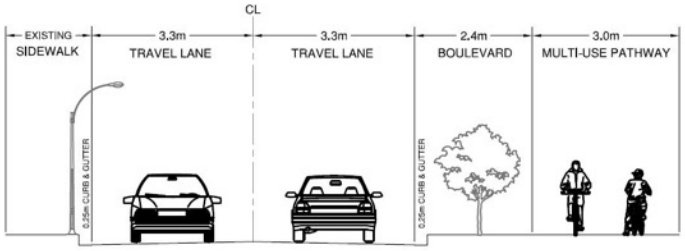


ONE-WAY ROLLING

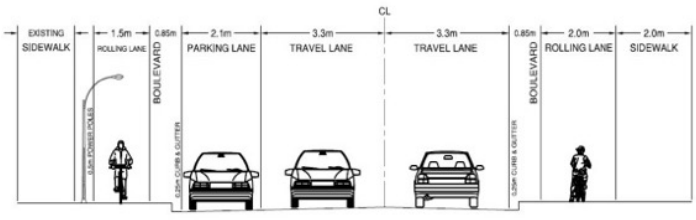


3 AVENUE

MULTI-USE PATHWAY



ONE-WAY ROLLING



CYCLING AND ROLLING ROUTES (SHARED)

Shared route projects are summarized in **Table 5.3**. These projects are primarily low-cost signage only projects with an estimated capital cost of up to $1,200 per block (4 signs per block). Custom signage with Fernie branding can be provided. Costs can be reduced by placing signage on existing pole infrastructure.

TABLE 5.3: SHARED ROUTE PROJECTS

ROUTE	SECTION	TYPE
6 Avenue	4 Street to 15 Street	Signage
9 Avenue	4 Street to 19 Street	Signage
1 Avenue	East of 4 Street	Signage
7 Street	Dyke Trail to 1 Avenue	Signage

TRAIL UNDERPASS

Site visits confirmed safety and sightline concerns related to the Coal Creek Trail underpass crossing of the CP Railway 9 (**Figure 5.6**) The minimum improvement capital cost for adding a barrier is $150 per lineal meter, but with this change the crossing would continue to have sub-standard width. A feasibility study should be completed to identify if widening is possible; feasibility will likely require an environmental review as a body of water will be impacted. The recommended width, if feasible, is 3.0 metre (minimum) to 3.5 metre (ideal).

FIGURE 5.6: COAL CREEK TRAIL CP UNDERPASS

VEHICLES

With consideration of anticipated future volumes and operations, the recommended vehicle network is summarized in **Exhibit 5.3**. The control of improvements along Highway 3 rests with the BC Ministry of Transportation and Infrastructure.

WEST FERNIE

New controls (roundabout or traffic signals) are recommended in West Fernie along Highway 3 to address existing vehicle capacity constraints. Anticipated highway intersections requiring upgrades are McDonald Avenue and Riverside Way. BC MoTI has identified an estimated improvement cost of $11 to $14 million. These costs include supplementary improvements such as access closures and drainage.

MAINTOWN

The only Arterial-level roadway within Fernie is Highway 3. Within the Maintown area (West Fernie Bridge to East Fernie Bridge), the roadway has no median and limited sidewalks. Typically, a roadway with this classification would have:

> Medians to limit vehicle movement by not allowing left turns at certain side streets or business accesses. Medians improve vehicle safety by reducing collision opportunities. Medians also reduce access opportunities.

> Sidewalks to provide a dedicated area for pedestrians.

The estimated capital cost is $335,000 per block to provide medians and $75,000 per block to provide sidewalks. To address active transportation needs, new sidewalks are recommended on this portion of Highway 3.

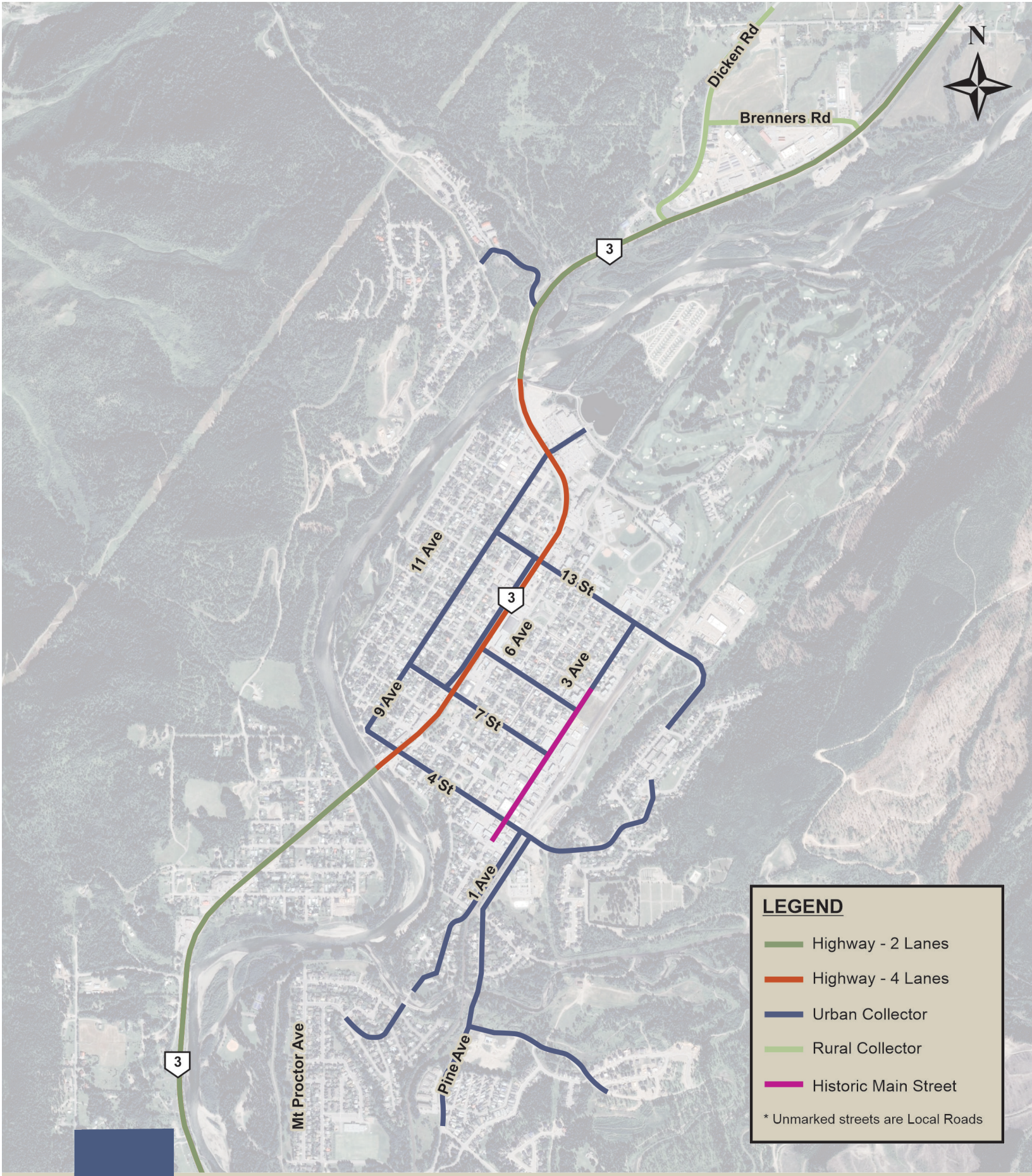
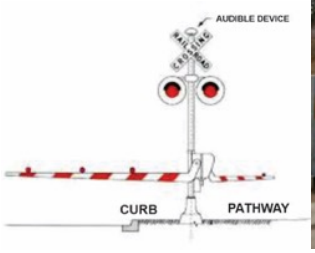


EXHIBIT 5.3: RECOMMENDED VEHICLE NETWORK

RAIL SAFETY

There are three at-grade rail/road crossings (Mount McLean Drive, 4 Street, 13 Street). All crossings include signs, lights, and audibles. The 4 Street crossing also includes vehicle gates. Additional controls, as illustrated in **Figure 5.7**, would improve safety at a capital cost of potentially $150,000 to $225,000 per crossing.

FIGURE 5.7: RAIL CROSSING CONTROLS



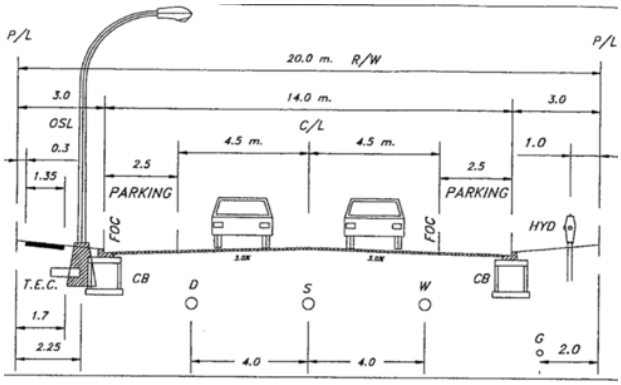
CROSS-SECTIONS

The city of Fernie's *Consolidated Subdivision and Development Servicing Bylaw No.1727* identifies the roadway cross-sections that are required to be constructed with new subdivisions. A roadway cross-section includes all portions of the public road right-of-way (e.g., driving lanes, parking, street trees, lighting, sidewalks, pathways). These cross-sections vary for the type of roadway (Local, Collector, or Arterial). Fernie's existing cross-section requirements do not provide any separate rolling or cycling facilities and have narrow sidewalk requirements. Revisions to these standards are recommended to support all transportation modes.

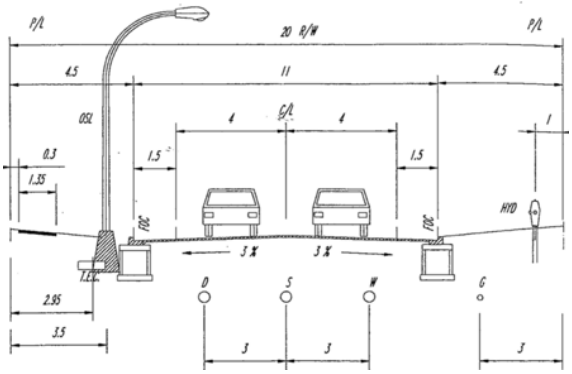
Existing cross-section standards for Collector and Local streets within Fernie are illustrated in **Figure 5.8** Many roadways within Fernie pre-date these standards, particularly in the Maintown and Annex.

FIGURE 5.8: ROADWAY CROSS-SECTIONS (EXISTING – SUBDIVISION DEVELOPMENT BYLAW)

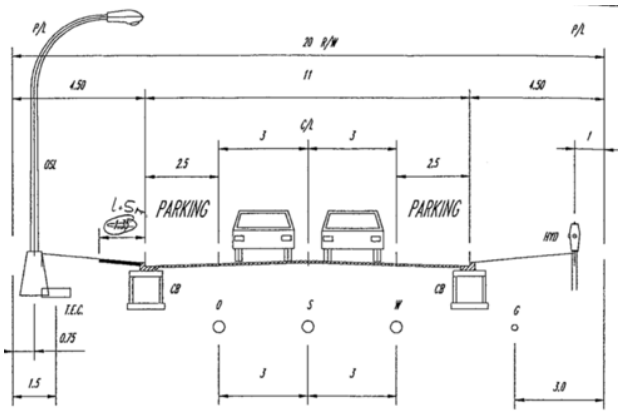
Collector (With Parking)



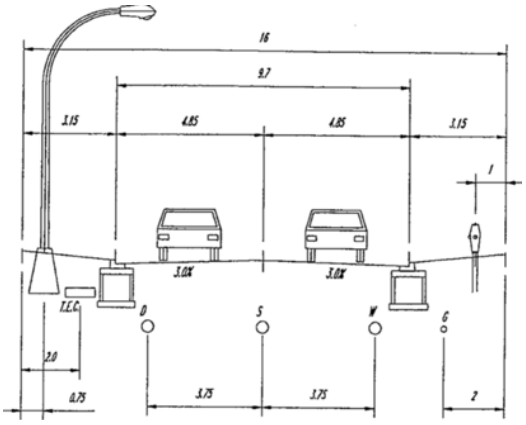
Collector (No Parking)



Local (Residential)



Local (Industrial)



LOCAL (RESIDENTIAL) STREETS

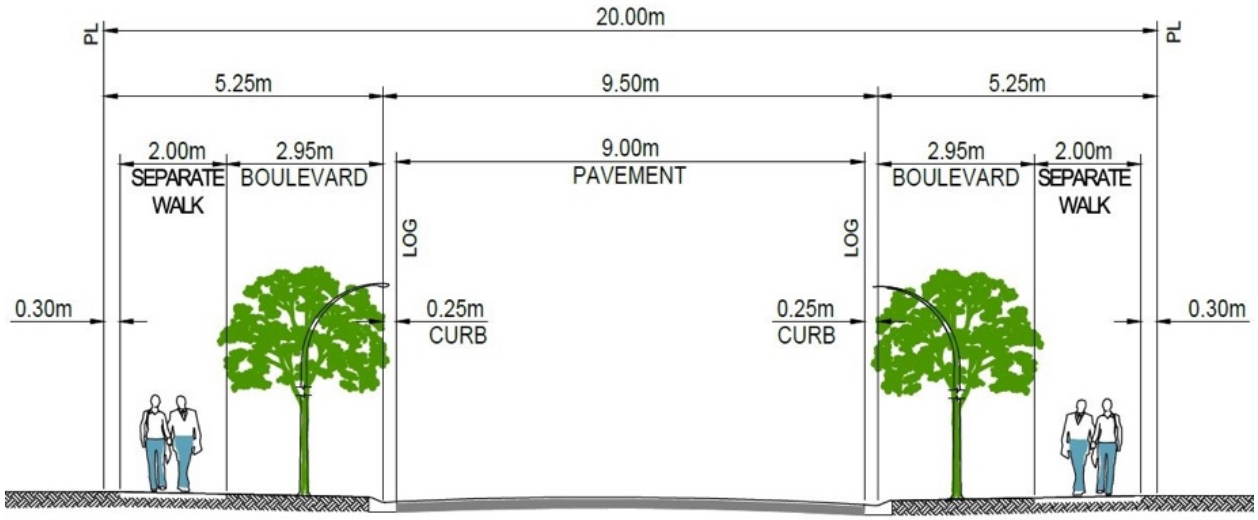
Local streets experience the lowest vehicle volumes and are the most numerous roadway type. The following changes are recommended to Fernie's standard subdivision cross-section for Local streets. The proposed Local Street cross-section is illustrated in **Figure 5.9**.

Wider Sidewalks > The new cross-section expands the sidewalk width to 2.0 metres, which accommodates two strollers or wheelchairs in opposite directions.

Reduced Pavement > The new cross-section reduces the vehicle pavement width from 10.5 metres to 9.0 metres. This lower pavement width is the standard residential cross-section used in most Canadian municipalities. On-street parking is maintained on both sides of the street. Lower vehicle operations speeds are anticipated with reduced driving widths.

Boulevards > Boulevards are provided between the sidewalk and roadway to reduce the level of snow storage occurring within the roadway. Snow would be stored within this boulevard.

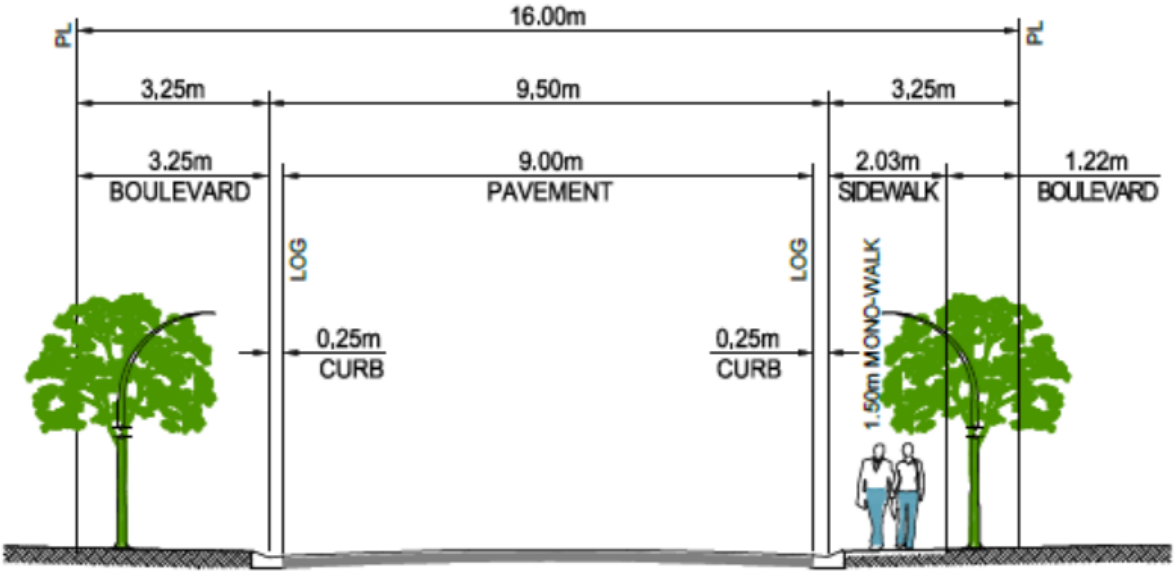
FIGURE 5.9: ROADWAY CROSS-SECTIONS (PROPOSED – LOCAL STREETS)



INDUSTRIAL STREETS

Industrial streets accommodate heavy vehicle movements. Minor changes to the cross-section are proposed to accommodate a sidewalk on one side and match pavement widths in other municipalities. The proposed Industrial Street cross-section is illustrated in **Figure 5.10**.

FIGURE 5.10: ROADWAY CROSS-SECTIONS (PROPOSED – INDUSTRIAL STREETS)



COLLECTOR STREETS

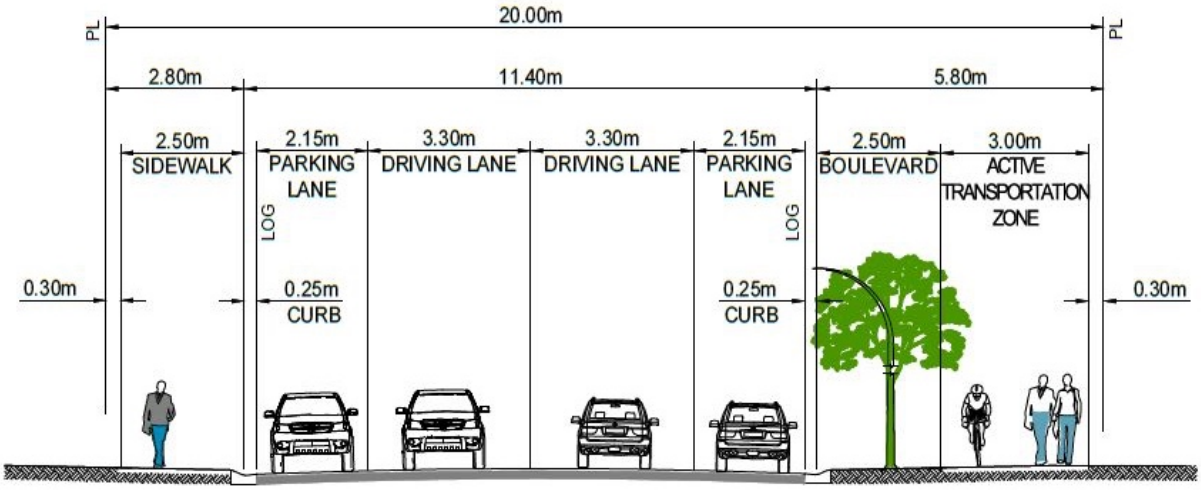
Collector Streets connect residential neighbourhoods to local uses (e.g., schools, commercial) and other higher-level roadways (e.g., Highway 3). The following changes are recommended to Fernie's standard subdivision cross-section for Collector streets. The proposed Collector Street cross-section is illustrated in **Figure 5.11**.

Active Transportation Zone > The new cross-sections provide 3.0 metre active transportation zones to accommodate both rolling, cycling, and pedestrians. These spaces can be used for multi-use pathways (if on one-side) or sidewalks and one-way rolling lanes (if on both sides).

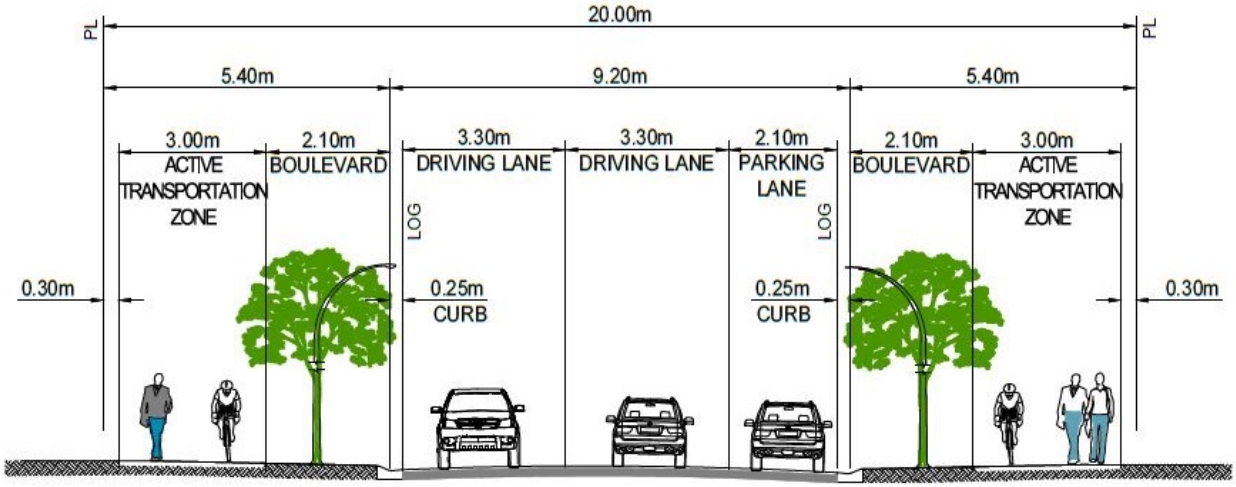
Reduced Pavement > The new cross-sections reduce the vehicle pavement width. The reduced pavement width will accommodate two-way vehicle flow and promote lower speeds. The width provided will depend on the need for on-street parking on one or both sides of the street.

Boulevards > Boulevards are proposed between the sidewalk and roadway to reduce the level of snow storage occurring within the roadway. Snow would be stored within this boulevard instead of parking or driving lanes.

FIGURE 5.11: ROADWAY CROSS-SECTIONS (PROPOSED – COLLECTOR STREETS)



COLLECTOR (PARKING BOTH SIDES)
11.40m/20.00m



COLLECTOR (PARKING ONE SIDE)
9.20m/20.00m

–6–

FEEDBACK ON RECOMMENDATIONS

Feedback was sought from the public and stakeholders on draft recommendations. This feedback was used to finalize recommendations, prioritize improvements, and create the Implementation Plan. The feedback was generally positive with the community supportive by the prospect of enhancing active transportation infrastructure.

–6–

FEEDBACK ON RECOMMENDATIONS

Phase 2 of the Fernie ATMP engagement resulted in connection with 740 community members with feedback from 137 individuals. Opportunity to learn about and provide feedback on the draft recommendations ran from April 13th to May 4th, 2021.

ENGAGEMENT RESULTS

> Website - 740 visits

> Facebook Posts - 8,097 users reached; 437 clicked

> Public Notice - Arena, Aquatic Centre, Annex Park, James White Park, Dogwood, Rotary, Railyard Dog Park, city of Fernie Notice Board, Fernie Chamber

> Online Survey - 137 responses

> Online Mapping Tool - 16 respondents and 48 submissions

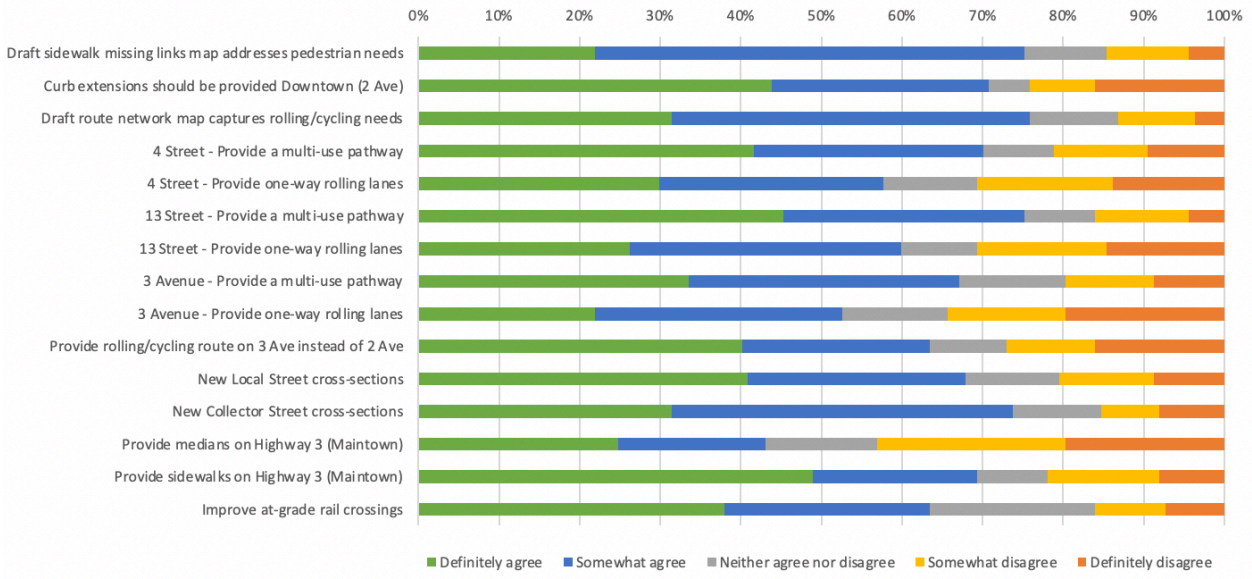
> Virtual Stakeholder Session - BC MoTI, Elk Valley Transit, Fernie Chamber of Commerce, Tourism Fernie, CP Rail, Development representatives, School District 5, Parent Advisory Committee, Fernie Trail Alliance, Ministry of Health, Fernie Seniors, Resorts of the Canadian Rockies, Youth Action Network, Accessibility Advocates

> Virtual Public Information Session - 11 residents

ONLINE SURVEY

The online survey gathered public feedback on potential improvement projects. The survey allowed participants to learn about the proposed projects, review the preliminary cost estimates, and indicate their level of support. The results of the survey are summarized in **Figure 6.1**.

FIGURE 6.1: SURVEY 2 RESULTS SUMMARY



Except for potential medians on Highway 3, most projects received 60-75% agreement. Support was highest for curb extensions on 2 Avenue, separated rolling/cycling facilities (4 Street, 13 Street, 3 Avenue), new cross-sections, providing a sidewalk on Highway 3, and improving at-grade rail crossings.

Most residents identified non-support for a rolling/cycling route on 2 Avenue. For those who wanted a dedicated route on 2 Avenue, the preferred option was a conversion of the roadway into a one-way to accommodate this separate facility.

MAPPED COMMENTS

The engagement page included a mapping tool that allowed participants to identify specific places of concern and opportunity. All 48 comments are included in **Appendix D.** Core themes included:

> Extend the proposed 3 Avenue separated route to 13 Street.

> Speed results and safety concerns in multiple locations.

> Consider a new pedestrian bridge to connect to West Fernie.

> Expand trail maintenance to include cut-through and other routes.

STAKEHOLDER COMMENTS

Feedback from stakeholders identified both specific comments related to stakeholder impacts and general comments on recommendations. These comments included:

> Highway safety and speed a concern, particularly for pedestrians.

> Connectivity to recreational and adjacent jurisdictions is important.

> Link Official Community Plan to the ATMP.

> Consider transit stops in designs, particularly 4 Street.

> Accessibility requirements should be considered when identifying recommendations.

–7–

IMPLEMENTATION PLAN

Recommended projects have been divided into three priority groups to meet Fernie's ATMP long-term vision. The Implementation Plan will act as a road map to help guide project prioritization and the steps needed to realize the vision.

–7–
IMPLEMENTATION PLAN

The Implementation Plan is based on a combination of technical analysis and input provided by Fernie residents, stakeholders, and administration. The recommended improvements outlined in Section 5 represent a long-term vision for the transportation network to meet the priorities of the community. Projects should be reassessed periodically to ensure they remain relevant.

FUNDING STRATEGY

Implementing the Active Transportation Master Plan will take many years and the length of time will depend on the amount of external funding received. The plan will require new and additional sources of funding through provincial and federal partnerships as well as requiring the City to reconsider how its limited budget is spent.

Key paths for funding the active transportation network are:

> Project Integration - Identifying opportunities to leverage future infrastructure projects to improve active transportation. For example, active transportation improvements could coincide with planned street paving or underground infrastructure projects.

> Provincial Funding - The provincial government contributes to local government infrastructure. Current funding programs include:

- Active Transportation Infrastructure Grants – Funding up to 70% (Max. of $500,000 per project).
- Community Safety Enhancement Program – Funding for small infrastructure improvements.

> Insurance Corporation of British Columbia - ICBC partially funds infrastructure that improves safety and reduces ICBC claims costs.

> Federal Funding - Several federal programs are provided for municipal transportation infrastructure.

> Green Municipal Fund - The Federation of Canadian Municipalities' Green Municipal Fund helps municipalities switch to sustainable practices. Current funding opportunities include grants for capital projects up to 15% of project value and low-interest loans.

> General Revenues - Incorporating recommendations into the city of Fernie's budgeting plan.

PEDESTRIAN PROJECTS

Recommended pedestrian projects are identified in **Figure 7.1** and **Table 7.1**.

FIGURE 7.1: RECOMMENDED PEDESTRIAN PROJECTS

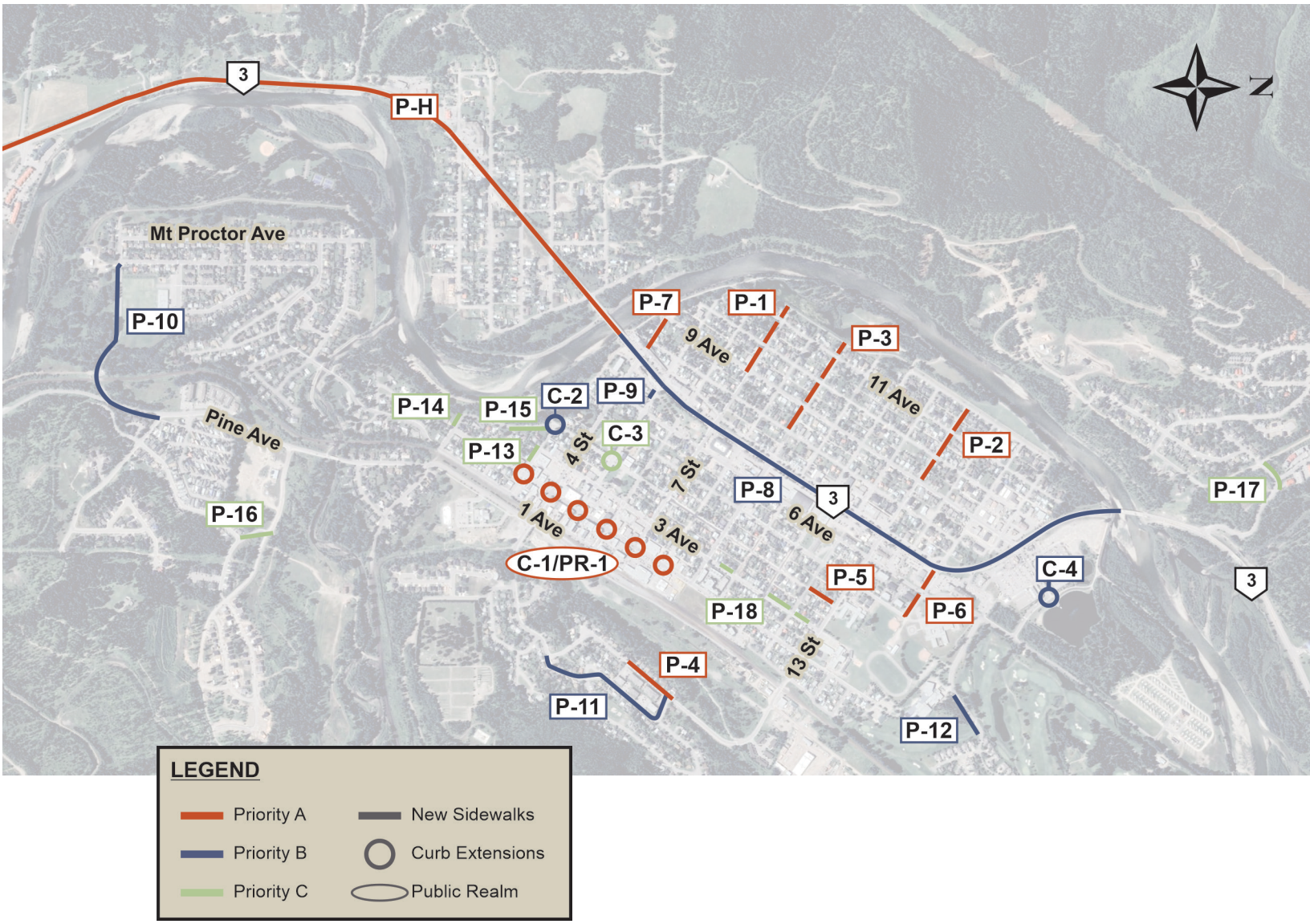


TABLE 7.1: RECOMMENDED PEDESTRIAN PROJECTS

MAP	PROJECT TYPE	LOCATION		BLOCKS	CAPITAL COST	PRIORITY
P-H	New Sidewalks	Highway 3	West Fernie	N/A		A
P-1		7 Street	Dyke Trail to 9 Ave	2	$100,000	
P-2		13 Street	Dyke Trail to 9 Ave	3	$100,000	
P-3		9 Street	Dyke Trail to 8 Ave	3	$150,000	
P-4		Ridgemont Ave	31 to 51	2	$100,000	
P-5		4 Avenue	12 Street to 13 Street	1	$50,000	
P-6		15 Street	Hwy 3 to 5 Ave	2	$100,000	
P-7		4 Street	9 Ave to Hwy 3	2	$100,000	
P-8		Highway 3	West Bridge to East Bridge	15	$1,125,000	B
P-9		5 Street	Hwy 3 to 6 Ave	1	$50,000	
P-10		Cokato Road/ Mt. Mclean Dr	Mt. Proctor Ave to Castle Mountain Rd	5	$250,000	
P-11		Ridgemont Dr	Ridgemont Ave	4	$200,000	
P-12		Fairway Drive	Secondary – Sky Morris	1	$50,000	
P-13		3 Street	3 Ave to 2 Ave	1	$50,000	C
P-14		1 Street	4a Ave to 2 Ave	1	$50,000	
P-15		4A Avenue	2 Street to 3 Street	1	$50,000	
P-16		Whitetrail Drive	Montane – Slalom	1	$50,000	
P-17		Cedar Ave	Burma Rd to Canyon Trail	1	$50,000	
P-18		3 Avenue	10 Street, 11 to 13 Street	2	$100,000	
C-1	Curb Extensions	2 Avenue	3 Street to 8 Street	5	$480,000	A
C-2		4 Avenue	3 Street	1	$80,000	B
C-3		4 Avenue	5 Street	1	$20,000	C
C-4		19 Street	Trail Crossing	1	$40,000	B
PR-1	Public Realm	2 Avenue	3 Street to 8 Street	5	-	A

CYCLING AND ROLLING PROJECTS

Recommended pedestrian projects are identified in **Figure 7.2** and **Table 7.2.**

FIGURE 7.2: RECOMMENDED CYCLING AND ROLLING PROJECTS

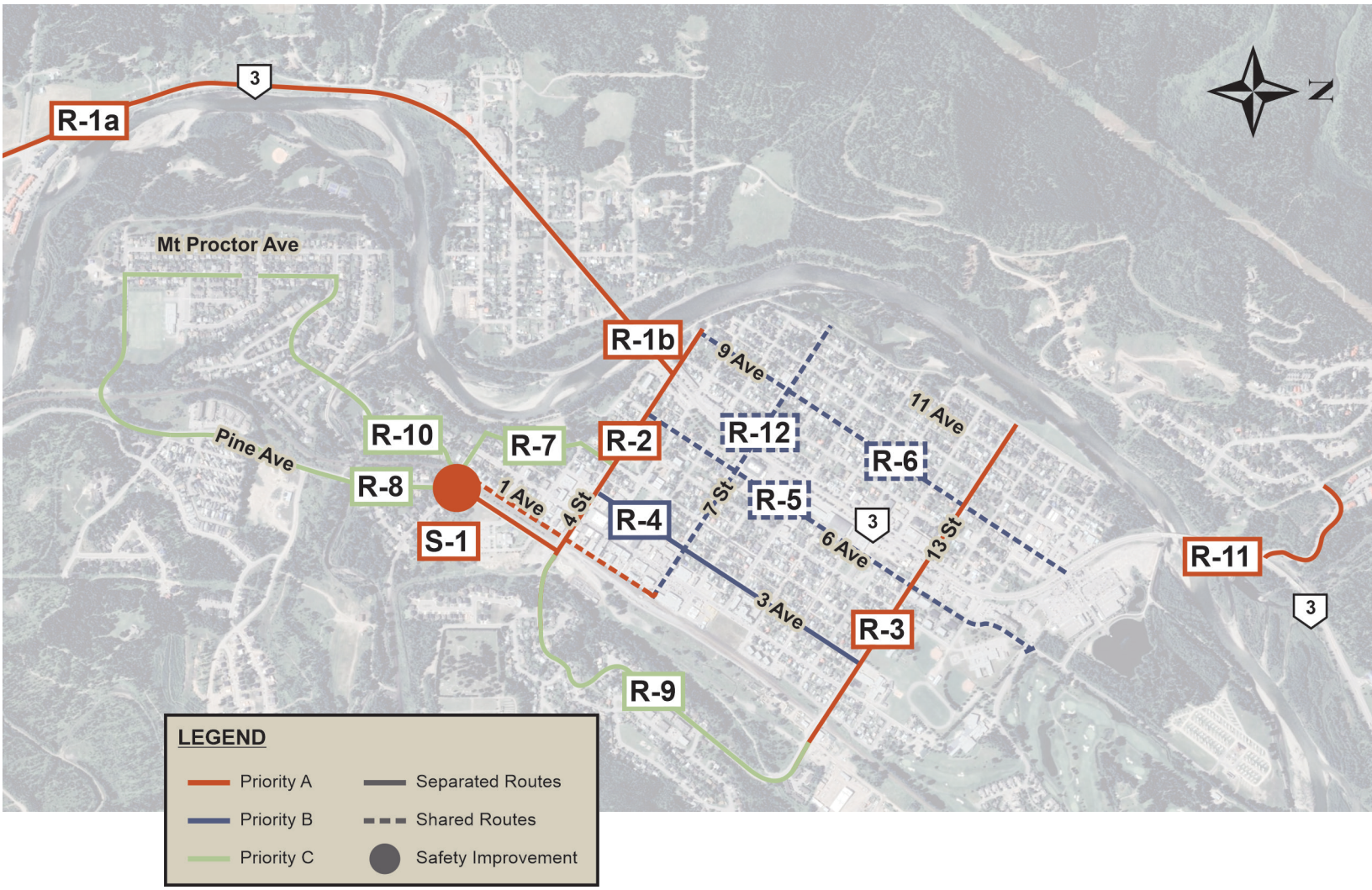


TABLE 7.2: RECOMMENDED CYCLING AND ROLLING PROJECTS

MAP	PROJECT TYE	LOCATION	LOCATION	CAPITAL COST	PRIORITY
R-1a	Separated Routes	Highway 3	West Fernie	$400,000 per block	A
R-1b		Highway 3	West Fernie Bridge	$600,000 per bridge length	A
R-2		4 Street	Annex to Ridgemont	$235,000 to $350,000 per block	A
R-3		13 Street	Annex to Ridgemont	$235,000 to $350,000 per block	A
R-11		Canyon Trail	Alpine/Parkland	$50,000-$100,000	A
R-4		3 Avenue	Maintown (4-13 Street)	$300,000 to $350,000 per block	B
R-7		4 Avenue	Maintown	$50,000 per block	C
R-8		Pine Avenue	4 Street to Minton Road	$50,000 per block + $1,500,000 per ped bridge	C
R-9		Ridgemont	4 Street to 13 Street	$50,000 per block	C
R-10		Park Avenue	4 Street to Mt. Mclean	$50,000 per block + $1,500,000 per ped bridge	C
S-1	Safety Improvement	Coal Creek	CP Underpass	***See note	A
R-5	Shared Routes (Level 1 – Signage)	6 Avenue	Maintown	Up to $1,200 per block	B
R-6		9 Avenue	Annex		
R-12		7 Street	Annex to Maintown		

*Cost estimates for 4 Street, 13 Street, and 3 Avenue assume full roadway rebuild (changes in pavement widths, new curbs, new drainage, etc.).

**Cost estimates for other roadways assume a multi-use pathway added within existing boulevard (no change to roadway design).

***Interim improvement (addition of railing) is estimated at $3,000. Ultimate improvements (widening to meet minimum width guidelines) requires the completion of a functional design to confirm capital costs.

VEHICLE AND RAIL SAFETY PROJECTS

Recommended vehicle and rail safety projects are identified in **Figure 7.3** and **Table 7.3**.

FIGURE 7.3: RECOMMENDED VEHICLE AND RAIL SAFETY PROJECTS

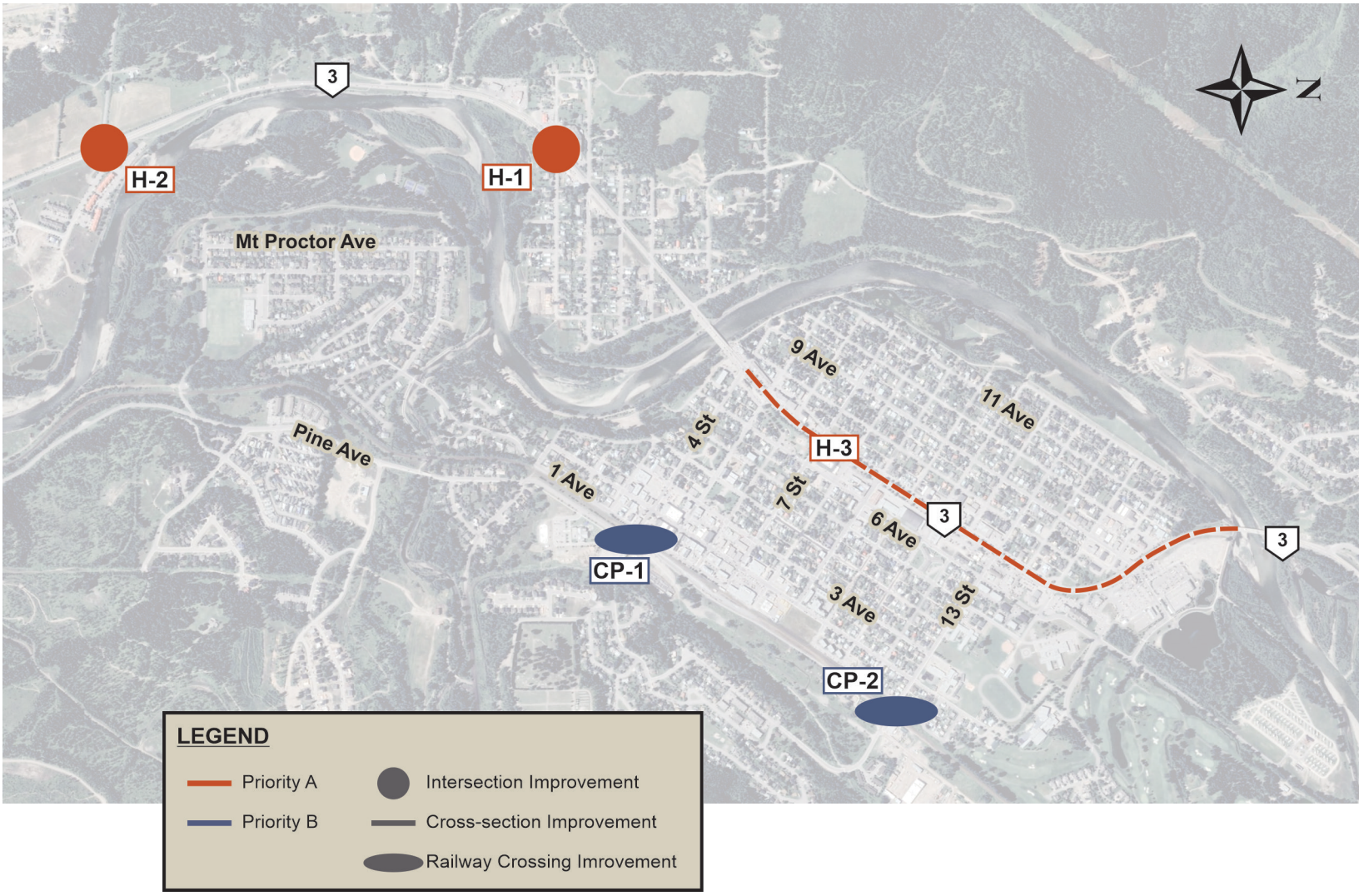


TABLE 7.3: RECOMMENDED VEHICLE AND RAIL SAFETY PROJECTS

MAP	PROJECT TYE	LOCATION		CAPITAL COST	PRIORITY
H-1	Intersection (Roundabout)	Highway 3	McDonald Ave	$11-14 million	A
H-2			Riverside Ave	$11-14 million	A
CP-1	Rail Safety (Improved Gates)	4 Street	Rail Crossing	$150,000	B
CP-2		13 Street	Rail Crossing	$225,000	B

–APPENDIX A–
ACTIVE TRANSPORTATION BEST PRACTICES

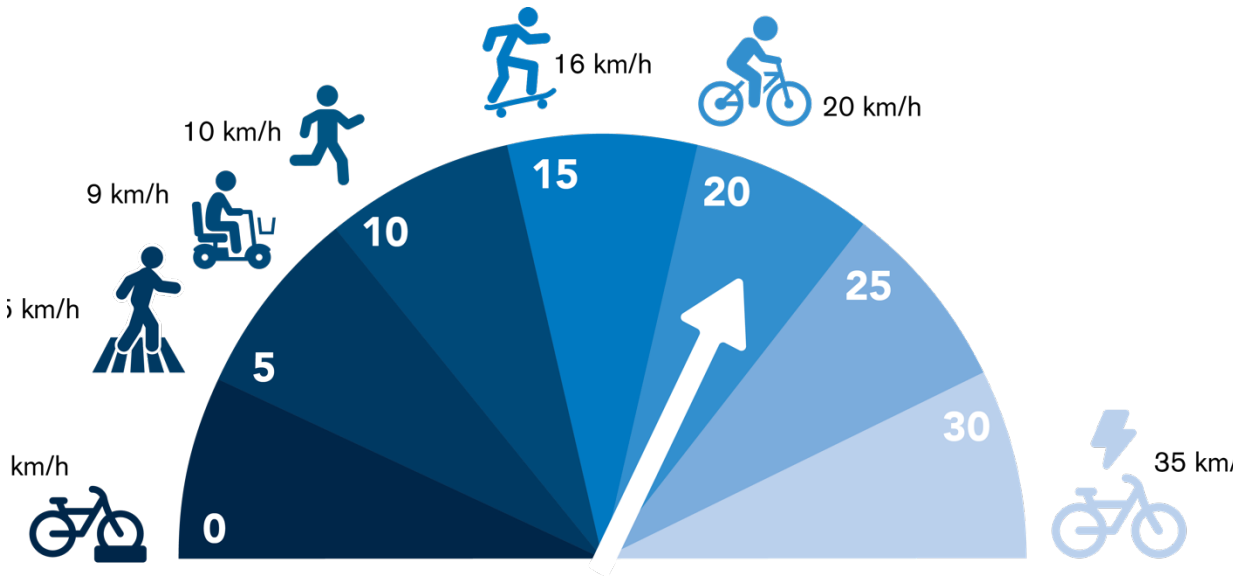
ACTIVE TRANSPORTATION BEST PRACTICES

Current best practices are reviewed to identify appropriate active transportation infrastructure designs and to identify where different facilities may be appropriate. These guidelines seek to deliver walking, cycling, and rolling facilities that are safe and comfortable for users of All Ages and Abilities (AAA).

DESIGNING FOR DIFFERENT USERS

A core component for designing AAA facilities is prioritizing safety for the diversity of users that will be using the facilities. Though traditionally multi-use trails have primarily focused on pedestrians and cyclists, an increasingly diverse set of users are enjoying these amenities including people on skateboards and scooters (both electric and human powered). Each of these users may have a differing set of needs and interact with each other differently.

At a basic level, speed is the primary consideration when mixing different users on the same path or trail. The typical speeds for different users is illustrated below.



SHARED SPACE FACILITY DESIGN CONSIDERATIONS

- Consider all potential users when designing a facility
- Separate cyclists and pedestrians when possible
- Mix rollers (skateboard/scooter) with cyclists rather than pedestrians
- Increase shared facility widths where separate pedestrian facilities are not feasible or desired
- Maintain a consistent set of rules for all users while taking into account diverse needs

Universal Design principles should be applied to the design of all infrastructure and programs to reach the goal of accommodating a variety of users and providing an equitable environment. These principles ensure that all levels of ability are considered in shaping the built environment and helps reduce the barriers that some people face in navigating their community.

UNIVERSAL DESIGN PRINCIPLES

Source: BC AT Design Guide

PRINCIPLE	GUIDELINES
1 Equitable Use Design is useful and marketable to people with diverse abilities	• Provide the same means of use for all users: identical whenever possible; equivalent when not • Avoid segregating or stigmatizing users • Provisions for privacy, security, and safety equally available to all users • Make the design appealing to all users
2 Flexibility in Use Design accommodates a wide range of individual preferences and abilities	• Provide choice in methods of use • Accommodate right- or left-handed access and use • Facilitate the user's accuracy and precision • Provide adaptability to the user's pace
3 Simple and Intuitive Use Use of the design is easy to understand, regardless of the user's experience, knowledge, language skills, or current concentration level	• Eliminate unnecessary complexity • Be consistent with user expectations and intuition • Accommodate a wide range of literacy and language skills • Arrange information consistent with it's importance • Provide effective prompting and feedback during and after task completion
4 Perceptible Information Design communicates necessary information effectively to the user, regardless of ambient conditions or the user's sensory abilities	• Use different modes (pictorial, verbal, tactile) for redundant presentation of essential information • Provide adequate contrast between essential information and it's surroundings • Maximize "legibility" of essential information • Differentiate elements in ways that can be described (e.g. make it easy to give instructions or directions) • Provide compatibility with a variety of techniques of devices used by people with sensory limitations
5 Tolerance For Error Design minimizes hazards and the adverse consequences of accidental or unintended actions	• Arrange elements to minimize hazards and errors: most used elements, most accessible; hazardous elements eliminated, isolated, or shielded • Provide warnings of hazards and errors • Provide fail safe features • Discourage unconscious action in tasks that require vigilance
6 Low Physical Effort Design can be used efficiently and comfortably and with a minimum of fatigue	• Allow user to maintain a neutral body position • Use reasonable operating forces • Minimize repetitive actions • Minimize sustained physical effort
7 Size and Space for Approach and Use Appropriate size and space is provided for approach, reach, manipulation, and use regardless of user's body size, posture, or mobility	• Provide a clear line of sight to important elements to seated of standing users • Make reach to all components comfortable for any seated or standing user • Accommodate variations in hand and grip size • Provide adequate space for the use of assistive devices or personal assistance

PEDESTRIAN FACILITIES

The design of sidewalks and pedestrian crossings have a significant impact on the safety, accessibility, and overall quality of experience for those walking or rolling. In keeping with principles of Universal Design, it is essential that the future design of pedestrian facilities consider the needs of those who may have visual or mobility impairments. Types of pedestrian facilities are illustrated below.

SIDEWALK WIDTHS

A notable requirement for sidewalk design in terms of accessibility, as well as comfort and usability for all pedestrians is the overall clearway width and treatment at driveways. Design of sidewalks that allow people to walk side-by-side and easily pass oncoming walkers (including parents with strollers and people in wheelchairs or with other mobility aids), is important to create a safe and welcoming pedestrian environment. The guidelines in the **Table 1** set out the recommended minimum sidewalk type and widths.

Table 1: Sidewalk Clearway Width Contextual Selection

Land Use	Road Type	Separation (Boulevard)	Widths	
			Desirable (m)	Minimum (m)
Residential	Local	Non-Separated or Separated	1.8	1.5
	Collector/Arterial	Separated	2.1	1.8
Industrial	Any	Separated	2.1	1.8
Commercial	Any	Separated	2.4 – 3.0	1.8

SIDEWALK DESIGN PRINCIPLES

- Provide non-separate sidewalks only if necessary due to constraints. If provided, ensure a level clearway of greater than 1.5m at driveways and ideally buffer with on-street parking
- Separate sidewalks on Arterial Streets with a minimum 1m planted boulevard to improve safety
- Locate street furniture outside clearway width
- Provide straight paths to minimize walking distances

CROSSING DESIGN PRINCIPLES

Safe and accessible pedestrian crossings are crucial to ensuring all ages and abilities can navigate the transportation network.

- **Provide curb/wheelchair ramps** at all intersection corners to allow access for all users
- **Enhance crosswalk markings at key locations** like schools and Downtown through the use of zebra or decorative crosswalk markings
- **Provide curb extensions** at intersections to shorten crossing distances and improve visibility. Curb extensions can also help reduce vehicle speeds
- **Consider raised crosswalks** at key crossings near schools

ROLLING AND CYCLING FACILITIES

Creating a network of rolling and cycling facilities that accommodates users of all ages and abilities requires a breadth of options that reflect the surrounding environment. The following five principles of good bikeway planning and design (CROW 2016) reflect the unique challenges and needs of those riding:

SAFETY: Perceived and real, road users should feel that they have enough space to ride, conflicts are minimized, and outcomes of crashes are not severe.

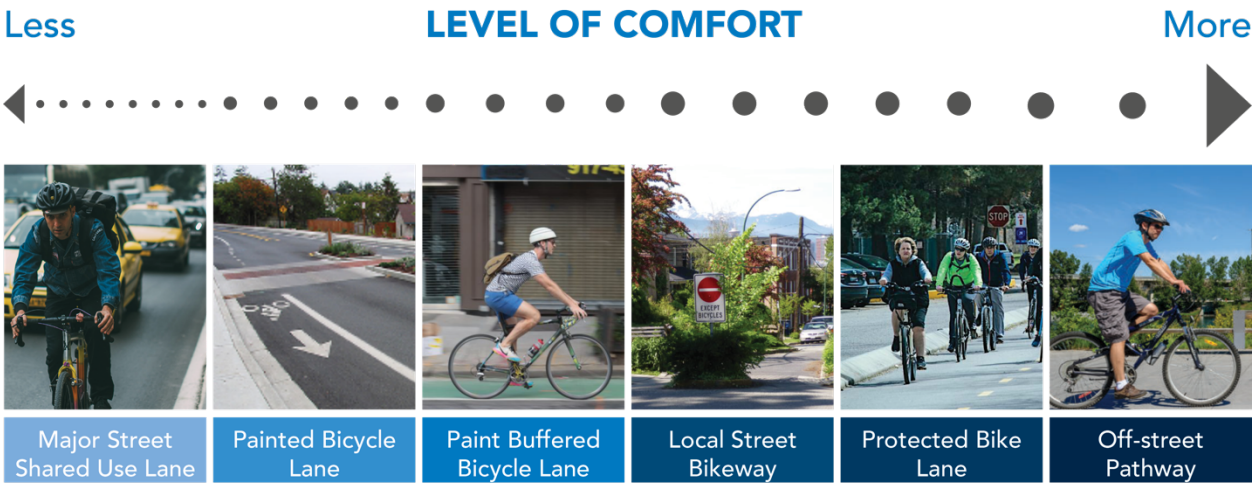
COMFORT: Surfaces should be smooth, turn angles and gradients gentle, with minimal obstructions.

DIRECTNESS: Alignments should be competitive with the driving network, have as few turns as possible, and minimal stops.

COHERENCE: Facilities and routes should be intuitive in their design and direction, and integrate seamlessly with other transportation systems.

ATTRACTIVENESS: Routes should be enjoyable, relatively quiet, and connect to points of attraction.

While many people enjoy cycling, it has been found that a large part of the population would enjoy riding a bicycle more often if a safe and convenient network was readily available. Understanding what types of facilities those on bikes find comfortable is important to encourage increased ridership. The graphic below illustrates the continuum of bicycle facilities based on the perceived level of comfort.



TYPES OF BICYCLE FACILITIES

Source: BC AT Design Guide

MULTI-USE PATHWAY

Typically located outside the road right-of-way and, in parks or other green spaces. These facilities are designed to support bi-directional users: pedestrians, cyclists, runners, in-line skaters and skateboarders etc. Users are expected to share the space on the path and follow organizational markings.

PROTECTED BICYCLE LANE

Dedicated cycling facility separated from motor vehicle traffic by a physical vertical barrier (curb, planter boxes, etc.). This facility can be designed for one-way or two-way travel. Users are expected to share the space on the path and follow organizational markings.

LOCAL STREET BIKEWAY

Facility where cyclists share the road with motorists on a street with low traffic volumes and speeds. These bikeways often have traffic calming measures to reduce speed and volume (30km/h, ≤ 1,000 average daily traffic volume). Where bikeways meet collector or arterial roads, signals or other design measures provide for safe crossing.

PAINTED BUFFERED BICYCLE LANE

Typically located outside the road right-of-way and in parks or other green spaces. These facilities are designed to support bi-directional users (pedestrians, cyclists, runners, in-line skaters, skateboarders, etc.). Users are expected to share the space.

PAINTED BICYCLE LANE

Facility where a portion of the roadway is designated for exclusive use by cyclists with pavement markings and regulatory signage. Motorists are typically not permitted to enter the bicycle lane to park, stand or drive, however, they are permitted to mix when performing a turn at an intersection.

EMERGING TRENDS

SHARED MICRO-MOBILITY

Micro-mobility refers to several small, one-person vehicles. The term is used primarily for electric scooters and shared bicycles. Many companies have begun providing shared dockless electric scooters in cities worldwide. The province of British Columbia is undergoing an e-mobility pilot project in six municipalities (Kelowna, Vancouver, North Vancouver City, North Vancouver District, West Vancouver, Vernon). As this technology grows, it is anticipated usage will expand to smaller municipalities.

The introduction of dedicated cycling facilities has been shown to reduce e-scooter collisions by 90%. Micro-mobility devices require paved surfaces to operate.

ELECTRIC BICYCLES

The market share of electric bicycles has grown significantly in the last 5 years. This growth is due both to new users and some adaptation of non-electric bicycles. Electric bicycles expand distances that riders are willing to cycle and attract users that would not be typically interested in cycling. As e-bicycle usage grows, it is anticipated that cycling usage in total will also grow.

ELECTRIC VEHICLES

The sale of Electrical Vehicles (EVs) continues to grow in Canada reaching a market share of 3.5% of all new vehicles in the third quarter of 2019[1]. This market share is currently heavily dependent on federal and provincial incentives resulting in new vehicle market shares of 10% in British Columbia.

As battery technology continues to advance, the share of EVs will continue to expand regardless of government incentives. The *Bloomberg New Energy Finance (2020)* expects that 28% of global vehicle sales will be EVs in the 2030s. Currently, only a handful of municipalities have electric vehicle charging requirements. The EV charging requirements in some of these municipalities are:

- Vancouver – 100% of resident parking spaces shall provide an outlet capable of Level 2 charging
- Surrey – 100% of resident and 50% of visitor spaces shall provide an outlet capable of Level 2 charging

Most Electrical Vehicle owners charge their vehicles at home. Therefore, proactively supporting home charging will be important. The impact to geometric roadway design is expected to be limited to potential EV charging stations added to off-street and on-street stalls.

[1] https://emc-mec.ca/new/electric-vehicle-sales-in-canada-q3-2019/

AUTONOMOUS VEHICLES (AVS)

There is currently large uncertainty on the impact and uptake of autonomous vehicles (AVs). A City of Calgary study[2] identified:

Autonomous Levels

"Autonomous Vehicle (AV) technology is an umbrella term encompassing different types of technology that hand over some or all functionality of driving from the human driver to the vehicle's computer. As defined by SAE International Inc., there are six different levels of automation, from a vehicle where all features are controlled by the human driver (Level 0), to technology that helps drivers keep in their lane (level 1-2), to vehicles that can drive by themselves with human supervision (level 3), to vehicles that can operate without human intervention or presence (level 4-5). As time progresses, new AV technologies will likely be developed and refined."

Saturation Estimates

Saturation (when almost all vehicles are autonomous) is impacted by the average vehicle age in North America which continues to increase and is currently 12 years. As vehicle age increases, the impact of new technologies takes longer to reach the average vehicle on the roadway.

"There are a variety of estimates as to when level 4-5 AVs will begin to operate on public roadways ranging from the early/mid-2020s to mid-2030s. It is predicted that by 2050, level 4-5 AVs will compose approximately 50% of the vehicle fleet (VTPI, 2017), while trucking and company vehicle fleets would be the first to adopt the technology due to high driver costs and the higher turnover rate of commercial vehicles." *(The Guardian, 2015)*

Impact on Parking Demand

Private vehicles are currently parked approximately 95% of the time. Autonomous vehicles will result in increased shared fleets with vehicles used throughout the day; this will result in a considerable reduction in parking needs as AVs would instead potentially require only curbside space for pick-up and drop-off in some locations.

While autonomous vehicles will reduce parking needs, the impacts are not anticipated to occur until at least the 2040s when fully autonomous vehicles will appreciably impact the average vehicle fleet. As such, it is not currently feasible to rely on autonomous vehicles to support changes to on-street parking.

Impact on Traffic Congestion

Significant uncertainly exists regarding the impact of AVs on traffic congestion.

[2] https://www.calgary.ca/content/dam/www/transportation/tp/documents/strategy/the-future-of-transportation-in-calgary.pdf

FACILITY SELECTION

Identifying the appropriate pedestrian or cycling facility type for a given location is largely a factor of the traffic environment. Illustrated below is the framework for identifying the appropriate facility type based on the traffic environment (speed and volume).

AAA BICYCLE AND PEDESTRIAN FACILITY SELECTION TOOL

ROADWAY CONTEXT			FACILITY TYPE	
Target Vehicle Speed	**Daily Vehicle Volume**	**Vehicle Lanes Per Direction**	**Bicycle Facility**	**Pedestrian Facility**
Greenway	N/A	N/A	Multi-use or Separate Pathways	
≤15 km/h	Low	-	Shared Street	
≤30 km/h	≤1,000			
≤40 km/h	500 - 1,500	Single	Local Street Bikeway	Sidewalk
	1,500 - 3,000		Painted, Buffered or Protected Bicycle Lanes	
	3,000 - 6,000			
	>6,000		Buffered or Protected Bicycle Lanes	
	Any	2+	Protected Bicycle Lane	
≤50km/h	≤6,000	Single	Protected Bicycle Lane (or Reduced Speed)	Sidewalk (>1.0m Separation)
		2+		
	>6,000	Any	Protected Bicycle Lane or Pathway	

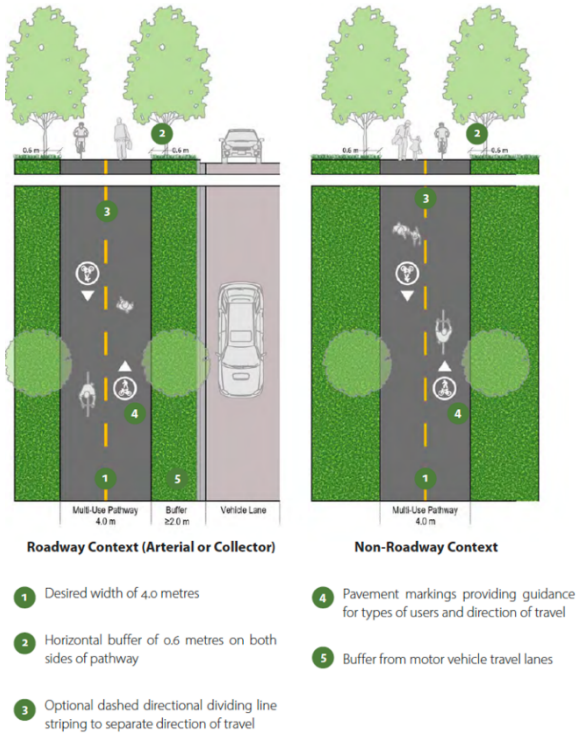
*Vehicle lanes are based on lane markings (e.g. centre line) or driving width (pavement width – parking = driving width). A driving width of 6.6m provides a single vehicle lane per direction. Driving widths of less than 6.0m are associated with residential streets where vehicles may have to yield to oncoming vehicles.

FACILITY GUIDANCE

MULTI-USE PATHWAYS (MUP) DESIGN

While pathways are generally considered more comfortable by users, their generally circuitous design and poor sightlines at intersections have resulted in safety concerns. Therefore, to capture the inherent comfort and enjoyment that MUPs offer, appropriate measures must be taken to ensure safety, such as:

- **Minimum 3m width** with 4m preferred
- **Avoid circuitous** routing
- **Maintain clear sightlines**, particularly at corners, by clearing vegetation or physical obstructions
- **Avoid bollards** or other obstacles
- **Apply centre line along path** to improve visibility for users at night
- **Consider delineating space** for pedestrians and cyclists where high volumes of users are expected



INTERSECTIONS

Intersections present the primary conflict points between pathway users and motor vehicle traffic. This makes their design a priority for ensuring a consistently safe and comfortable network of facilities. Trails and MUPs are unique in terms of bicycle and pedestrian facilities in that they function for both cyclists and pedestrians in two directions. This context results in an increased safety risk at intersections with the roadway as drivers must look out for users traveling in two directions and at varying speeds. These risks can be mitigated through design that highlights the presence of the facility and reduce conflicts by slowing turning vehicles and providing optimal signal phasing where applicable.

The following are recommended safety features:

- **Differentiate crossings** from the main roadway with alternative pavement colouring or set back crossings from the intersection
- **Provide leading** or protected bicycle/pedestrian signal phases where feasible
- **Raise crossings** at minor intersections and driveways
- **Provide high-conspicuity pavement markings** and/or signage
- **Provide refuge island** (≥3m in width) on uncontrolled collector and arterial streets, when possible, to allow pedestrians and cyclists to deal with one direction of traffic at a time and help slow drivers

TRAIL TERMINUS

Where a trail or MUP terminates at a roadway, and where no connecting off-street facility is present, it is important to provide a design treatment that allows for users (particularly cyclists) to transition smoothly to/from the roadway without the need to use an adjacent sidewalk. This ensures that the connection between facilities is deliberate and does not require a detour or dismounting of a bike. Design recommendations and considerations include:

- **Have an accessible curb ramp** at the roadway that is as wide or wider than the approaching facility
- **Provide cyclist crossings** on collector roads
- **Install a TAC-approved trail crossing sign** (e.g. WC-32) along the intersecting roadway
- **Ensure all transitions are smooth** and will not cause user discomfort

PAVEMENT MARKINGS AND SIGNAGE

Providing clear and consistent pavement markings is important to communicate facility information for all users. As MUPs and trails are multi-modal facilities it is important to clearly define roadway crossings, prompting vehicle drivers with visual markings/treatments at the crossings. The intent will be to encourage awareness and slower vehicle speeds and improve the safety and comfort for the MUP users. Within the Fernie context, signage is also important as pavement markings will not be visible during the winter season.

SUPPORTING AMENITIES

Common trail amenities include benches, bike racks, bicycle repair stations, water fountains, garbage/recycling bins, temporary shelters (in case of rain), wayfinding signage, and educational materials. The presence and location of trailside amenities can significantly improve the experience for all users. While the design of individual elements may be subject to site-specific context, the following design principles are considered useful:

- **Maintain a consistent look and feel**, to deliver a sense of continuity throughout the trail system
- **Place amenities well outside the clear zone of the pathway,** to ensure users are engaging with the amenities but do not obstruct other trail users (e.g Place benches ≥1m from edge of the pathway so those sitting are a comfortable distance from passing users); and to reduce the likelihood of users colliding with amenities
- **Ensure amenities do not obstruct sightlines** of trail users to reduce safety challenges associated with blocked sightlines

DRIVING LANES AND SPEEDS

Wide travel lanes often correlate with faster vehicle speeds.

DRIVING LANE WIDTHS

Vehicles can operate within lanes as narrow as 3.0 metres. However, buses and trucks typically require a lane width of 3.3 metres. NACTO design guidance identifies:

- Lane widths of 10 feet (3.0m) generally provide adequate safety in urban settings while discouraging speeding. Cities may choose to use 11-foot (3.3m) lanes on designated truck and bus routes
- Lanes greater than 11 feet (3.3m) should not be used as they may cause unintended speeding and assume valuable right of way at the expense of other modes

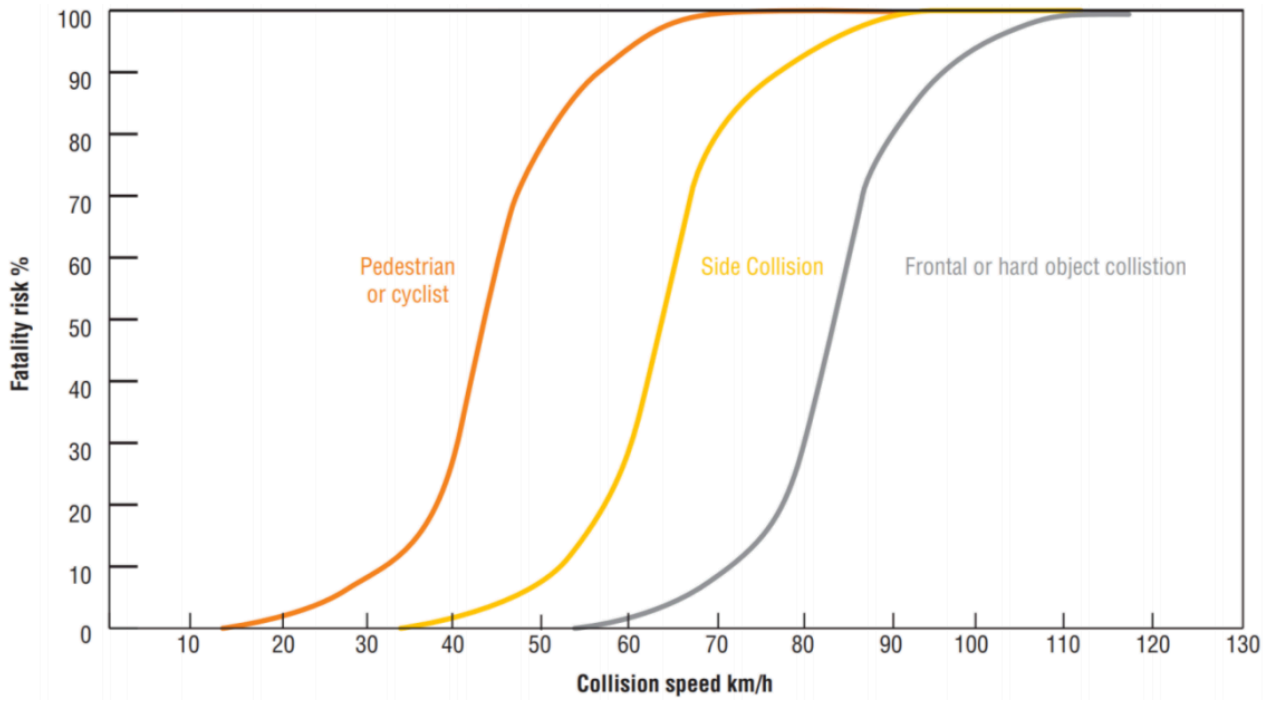
The recommended maximum driving lane width is 3.3 metres on Collector roadways. While snow can reduce driving lane widths during the winter season, this can be addressed through the use of boulevards to store snow outside the driving area.

SPEED LIMIT

Collision Impacts

The graph below provides the likelihood of a fatality due to a collision at various vehicle speeds. For pedestrians and cyclists, the greatest change in fatality occurs between 30 km/h and 50 km/h. Small changes in vehicle speeds in this range can have significant impact on collision outcomes.

Cumulative Probability of Collision Fatality



Posted Speed Reduction Impacts

While engineering changes are necessary to provide the largest reduction in vehicle speeds, NACTO[3] identifies that *"Even changing the posted speed limit sign creates safety benefits and allows cities to provide more and better safety treatments and improve overall quality of life."*

Case studies identified by NACTO are presented below:

Speed Limit Reductions Alone

[3] *City Limits Speeds*, NACTO. https://nacto.org/wp-content/uploads/2020/07/NACTO_CityLimits_Spreads.pdf

–APPENDIX B–
DATA COLLECTION

DATA COLLECTION

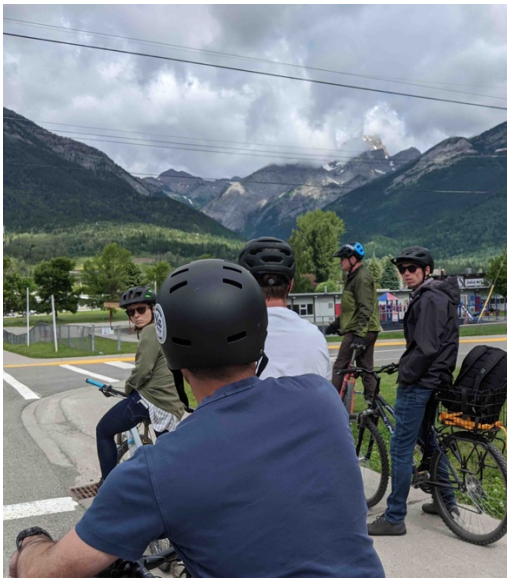
To identify how the transportation network currently operates within the City of Fernie, an extensive data collection process was completed. This process included reviewing historical data, collecting new transportation data, and completing site visits. This data includes collision history, historical traffic volumes, and current multi-modal transportation volumes. A summary of completed site visits is provided in the Table 1 below.

Table 1: Site Visits

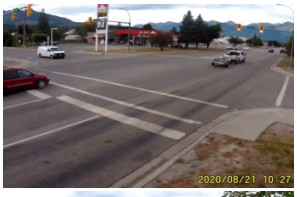
Type		Dates	Purpose
City-led Tours	Operations	July 13, 2020	Review of snow-clearing fleet, policies, and approaches
	Cycling		Identification of cycling routes and known problem sites
Self-guided Tours		July 12-14, 2020	Identification of missing links in the existing network
Data Collection		August 13-15, 2020	Transportation data collection
		August 20-22, 2020	Transportation data collection

Operations Facility Tour

Cycling Tour



Data Collection



TRANSPORTATION VOLUMES (HISTORICAL)

ACTIVE

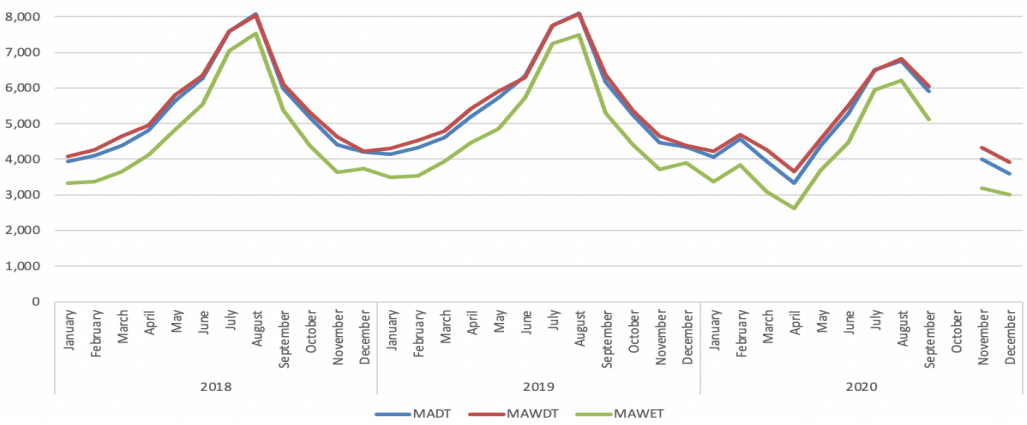
Statistics Canada census data identifies 17% of commuting trips within the City of Fernie are completed by active transportation (8% Walk + 9% Cycle). No historical local data is available for City Streets. Data for Highway 3 is limited to spot counts in West Fernie.

VEHICLES

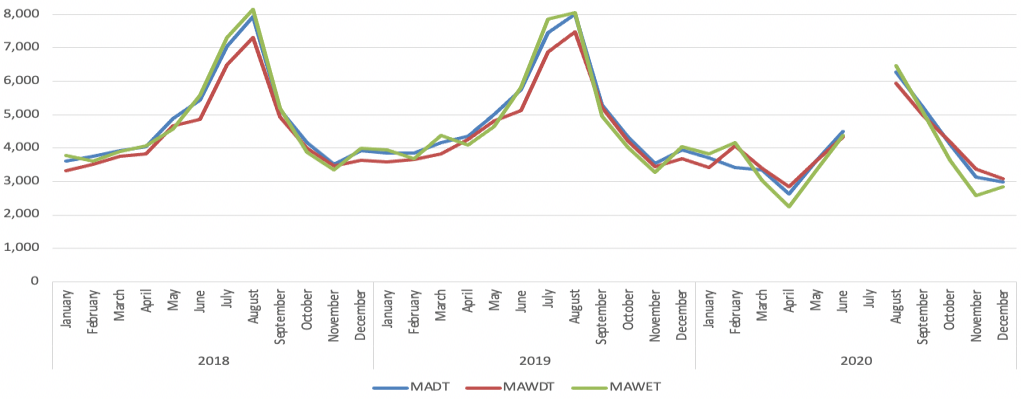
BC Ministry of Transportation and Infrastructure (MoTI) permanent count stations observe traffic volumes continuously. The nearest Highway 3 count stations are east of Cranbrook and at the Alberta border. Monthly average daily volumes from these count stations are illustrated in **Figure 1**. The data identifies peak volumes occur in August and an annual Highway traffic growth rate of 2% per year.

Figure 1: Highway 3 Monthly Average Daily Volumes

East of Cranbrook



West of the Alberta Border



MADT = Monthly Average Daily Traffic

MAWDT = Monthly Average Weekday Daily Traffic

MAWET = Monthly Average Weekend Daily Traffic

BC MoTI traffic data within the City of Fernie is limited to road tube (single day) counts completed approximately every three years at two locations. The last major collection occurred in 2006. The City of Fernie has limited traffic data. Road tube data was collected at nine locations from 2007-2015. Bunt & Associates previously collected traffic data at three locations in 2019.

TRANSPORTATION VOLUMES (EXISTING)

Bunt and Associates observed active transportation and vehicle movements at 16 intersections on a Friday (7:00-18:00) and Saturday (9:00-15:00) in August 2020.

Counts used in this study are summarized in **Table 2**.

Table 2: 2020 Traffic Data Summary

Count Dates	Intersection	
	East-West Road	**North-South Road**
2020-08-14 (Friday) 2020-08-15 (Saturday)	Highway 3	9 Street
		7 Street
		4 Street
		McDonald Avenue
	2 Avenue	9 Street
		4 Street
	1 Avenue	4 Street
	Pine Avenue	4 Street/Ridgemont Drive
2020-08-21 (Friday) 2020-08-22 (Saturday)	Highway 3	Brenners Road
		Dickens Road (*Outside of City boundaries)
		Canyon Trail
		9 Avenue
		13 Street
	2 Avenue	13 Street
	3 Avenue	7 Street
		4 Street

ACTIVE

Observed active transportation peak hour volumes are illustrated in **Exhibit 1**. Pedestrian volumes at major crossings are summarized in **Table 3**. Cyclist volumes on key routes are summarized in **Table 4.**

Table 3: 2020 Pedestrian Volumes

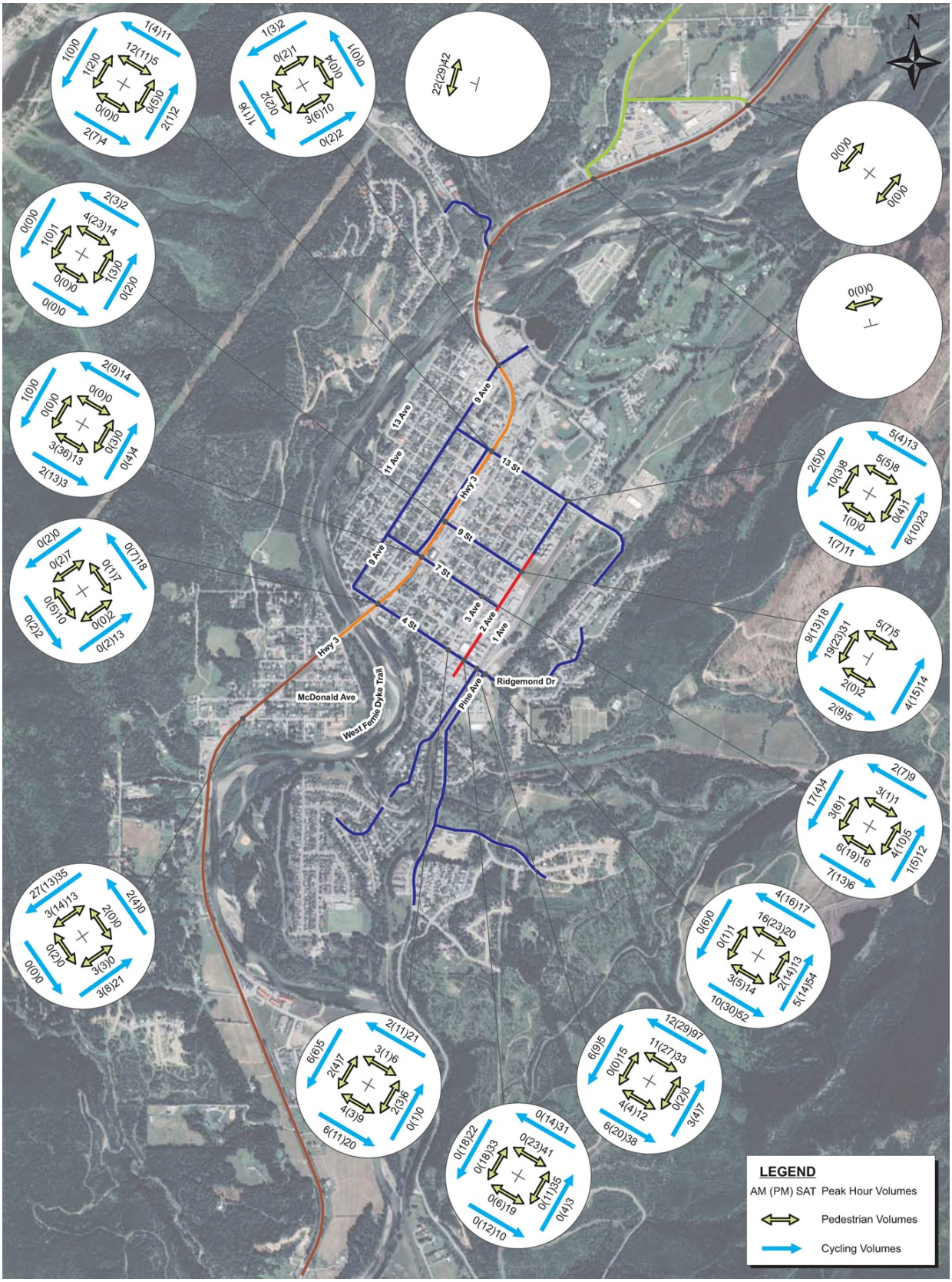
Major Road	Intersecting Road	Hourly Pedestrian Volumes	
		Friday	Saturday
Highway 3	McDonald Avenue	1.3	0.3
	4 Street	5.8	12.5
	7 Street	15.3	10.5
	9 Street	10.5	15.0
	13 Street	11.3	4.0
	9 Avenue	4.8	5.0
4 Street	3 Avenue	10.8	9.5
	2 Avenue	39.3	70.5
	Pine Avenue	7.0	10.8
13 Street	2 Avenue	11.0	8.5

*Friday based on 4-hour period (8:00-10:00 + 15:30-17:30); Saturday based on 2-hour period (11:45-13:45)

Table 4: 2020 Cyclist Volumes

Routes	Intersecting Road	Hourly Cyclist Volumes (Two-Way)	
		Friday	Saturday
4 Street	Highway 3	9.0	18.5
	3 Avenue	6.5	3.5
	1 Avenue	34.8	104.0
7 Street	Highway 3	10.8	12.5
	3 Avenue	15.8	17.0
13 Street	Highway 3	6.8	13.5
	2 Avenue	9.5	22.0
2 Avenue	4 Street	14.3	18.0

Exhibit 1: Existing Peak Hour Active Volumes

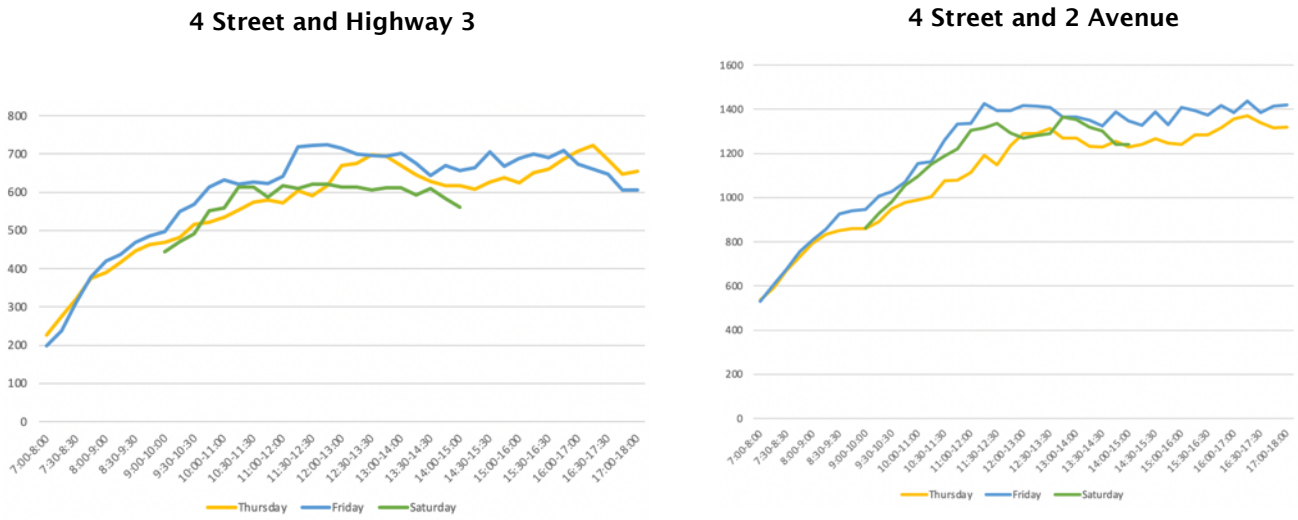


VEHICLES

Because of COVID-19 associated travel and work restrictions, vehicle traffic patterns were impacted. All observed August 2020 traffic volumes were increased by 10% to account for this. This factor was based on monthly average weekday daily traffic (MAWDT) data and 2019 data at Highway 3 and 13 Street.

Volumes at sample intersections are illustrated in **Figure 2** Hourly volumes are summarized for the weekday AM (Friday 8:00-10:00), weekday PM (Friday 15:30-17:30), and Saturday (11:45-13:45) peak.

Figure 2: Hourly Intersection Traffic Volumes



Factored existing traffic volumes are illustrated in Exhibit 3.4 (peak hour) and Exhibit 3.5 (daily). Daily traffic volumes are calculated by applying an observed factor of 11 to weekday PM peak hour volumes.

Exhibit 2: Existing Peak Hour Vehicle Volumes

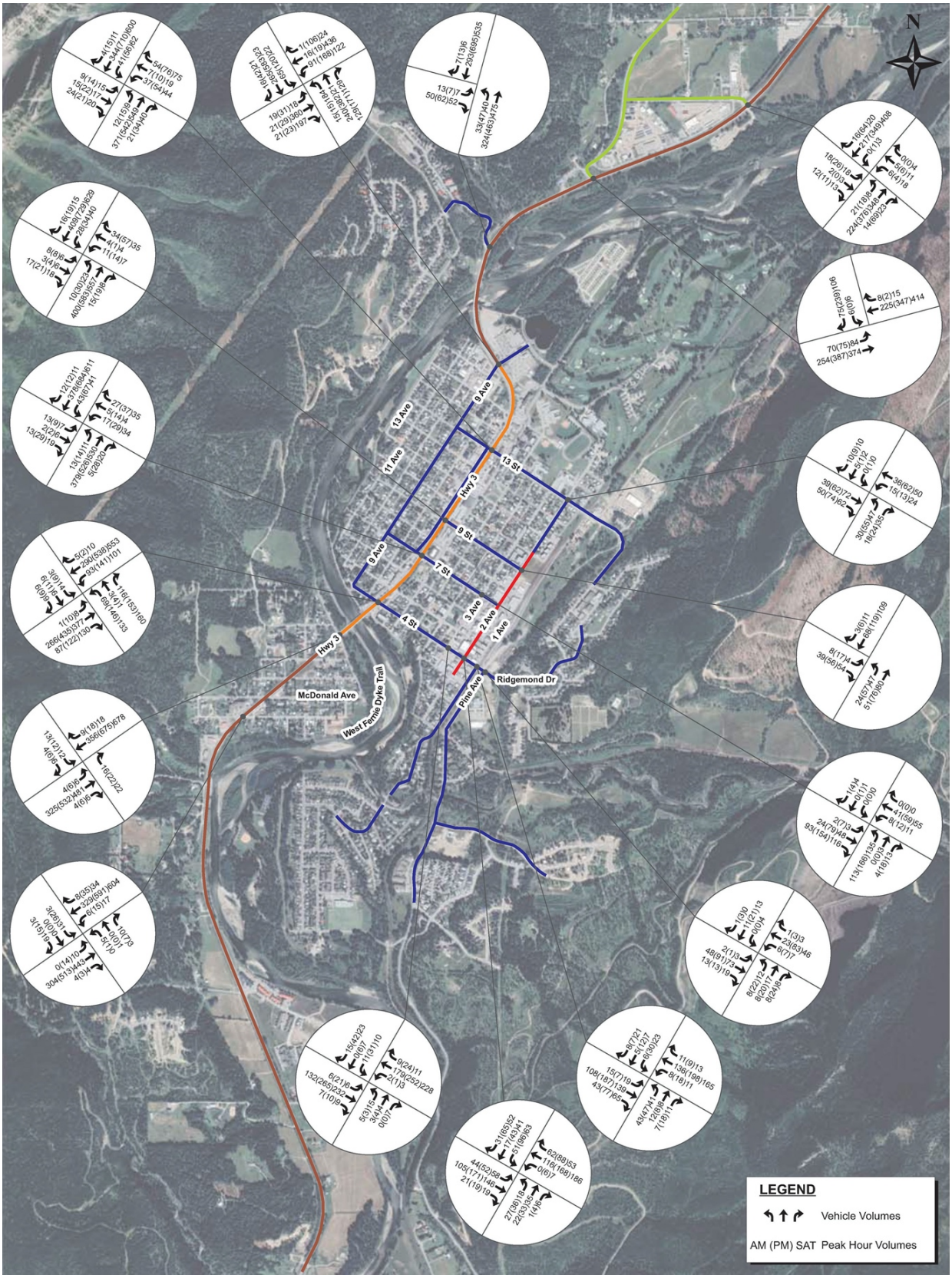
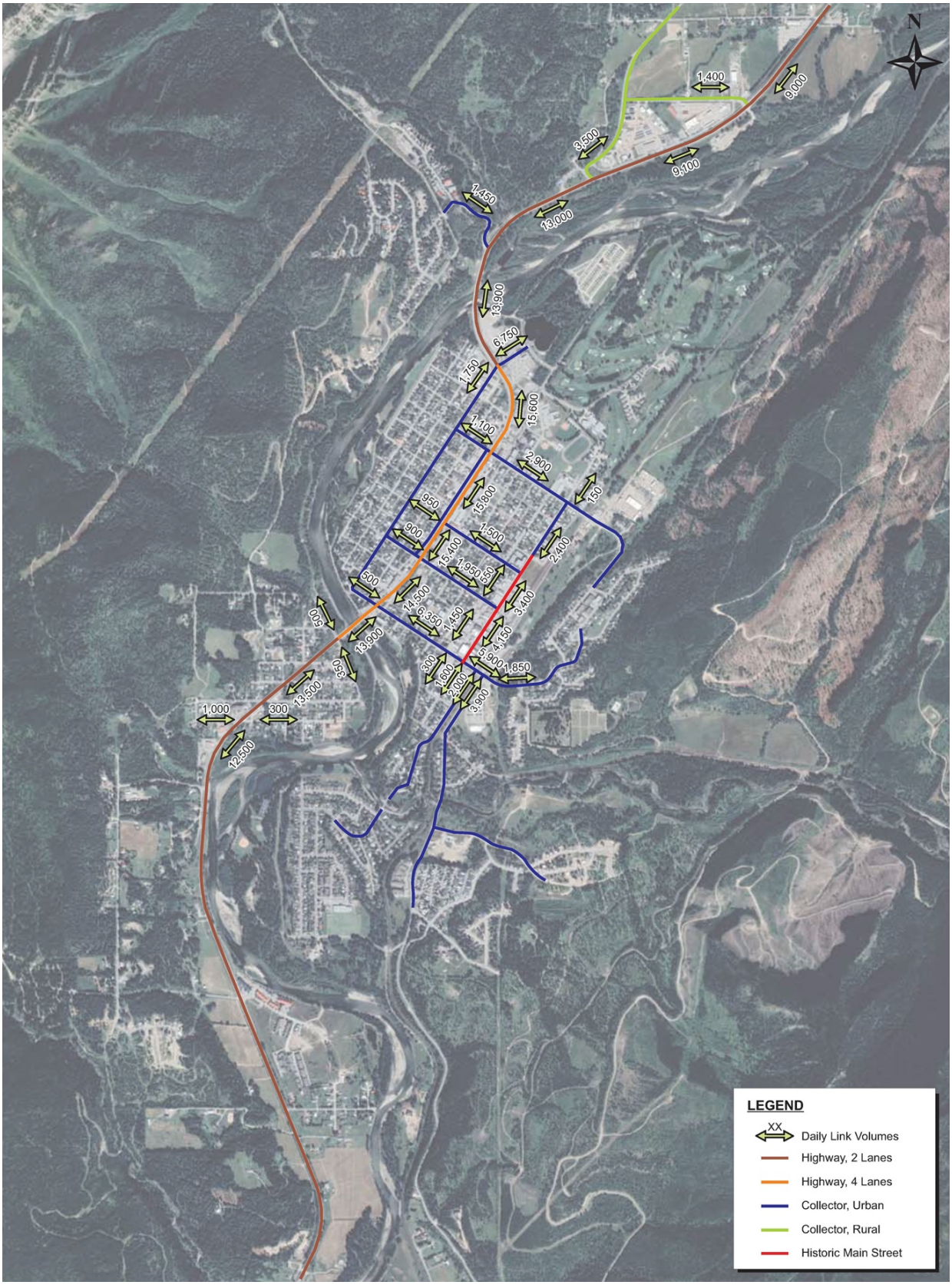


Exhibit 3: Existing Daily Vehicle Volumes

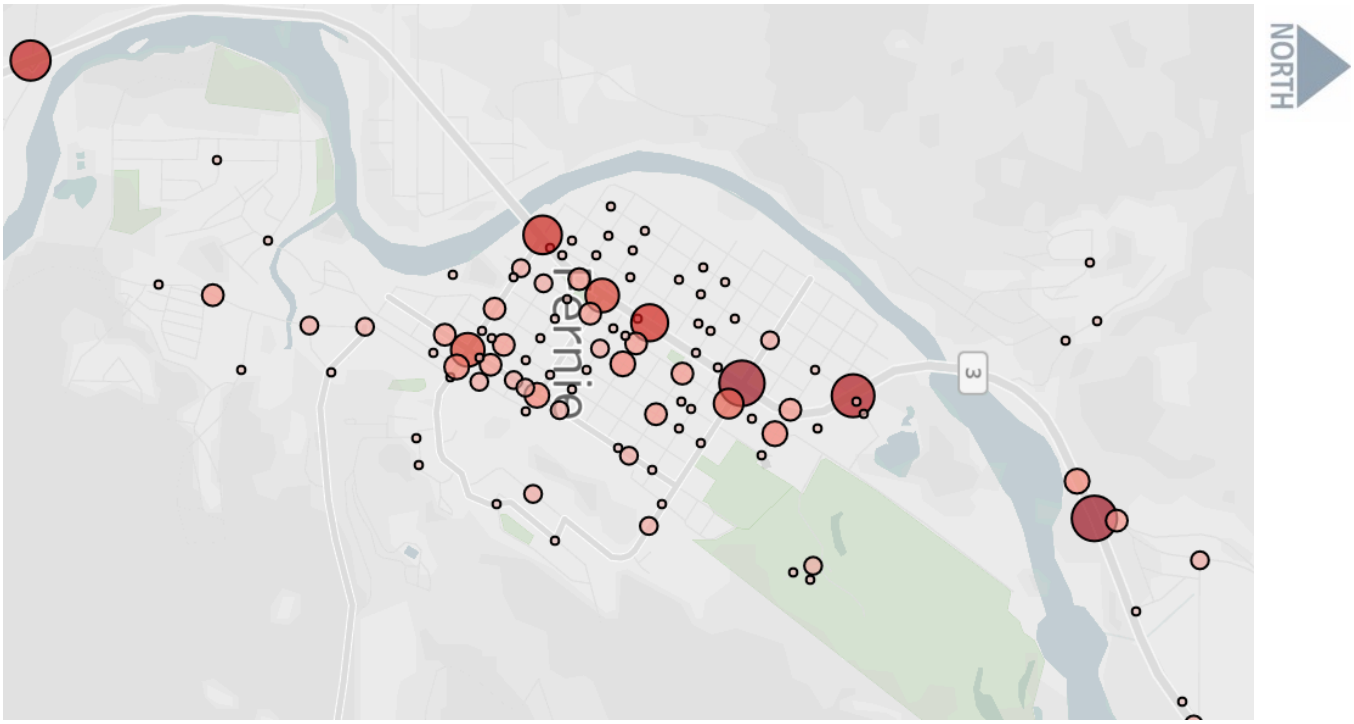


COLLISIONS

Collision data is used to inform facility design selection by understanding where there may be challenges related to speed, grade, visibility, or lack of facilities. Collision history was obtained from ICBC (Insurance Corporation of British Columbia) for the 10-year period from 2010 to 2019. The collision types observed for the 719 identified collisions within the City during this 10-year period are identified in **Table 5** and **Table 6.** Collision locations are illustrated in **Figure 3**.

Figure 3: Collision Locations (2015-2019)

Source: Tableau Public [1]



1 https://public.tableau.com/profile/icbc#!/vizhome/SouthernInteriorCrashes/SIDashboard

Table 5: Collision Injury Types (2010-2019)

Injury Type	Intersection Collisions		Mid-Block Collisions	
	Highway 3	All Others	Highway 3	All Others
Property Damage Only	84	70	182	197
Bodily Injury	49	18	90	26
Fatal Accident	0	0	3	0
Total	133	88	275	223

Table 6: Collision User Types (2010-2019)

Users Type	Total Collisions	% Occurring on Hwy 3	Average Collision Frequency Per Year
Pedestrian + Vehicle	11	27%	1.1
Cyclist + Vehicle	4	0%	0.4
Vehicles Only	704	57%	70.4
Total	719	57%	71.9

HIGH COLLISION INTERSECTIONS

Intersections with the highest frequency of collisions are summarized in **Table 7**. These intersections are illustrated in **Exhibit 4**.

Table 7: High Collision Frequency Intersections (Highway 3)

Intersection	Number of Collisions (10-year period)			
	Total	Property Damage	Bodily Injury	Fatal
Highway 3 Intersections				
Highway 3 and 13 Street (Signal)	18	12	6	0
Highway 3 and 9 Avenue (Signal)	16	10	6	0
Highway 3 and Fernie Ski Hill Road (Stop)	12	10	2	0
Highway 3 and 4 Street (Signal)	11	7	4	0
Highway 3 and 7 Street (Half-signal)	9	4	5	0
Highway 3 and 9 Street (Ped Flashing)	7	4	3	0
Other Intersections				
13 Street and 6 Avenue	4	4	0	0
7 Street and 3 Avenue	6	5	1	0
7 Street and 6 Avenue	4	2	2	0
8 Street and 5 Avenue	4	3	1	0
9 Street and 5 Avenue	4	4	0	0

FATAL COLLISIONS

All three fatal accidents identified in the collision history occurred on Highway 3 in wet or snow conditions. One fatal accident involved a pedestrian walking in the travel lane of Highway 3 near Dicken Road in dark and rainy conditions.

VULNERABLE USER (PEDESTRIANS/CYCLISTS) COLLISIONS

The locations of all vulnerable user collisions are illustrated in **Exhibit 5**. The only intersection with multiple collision involving vulnerable users was 9 Street and 2 Avenue (1 pedestrian, 1 cyclist).

Exhibit 4: Collision History (High Frequency Intersections)

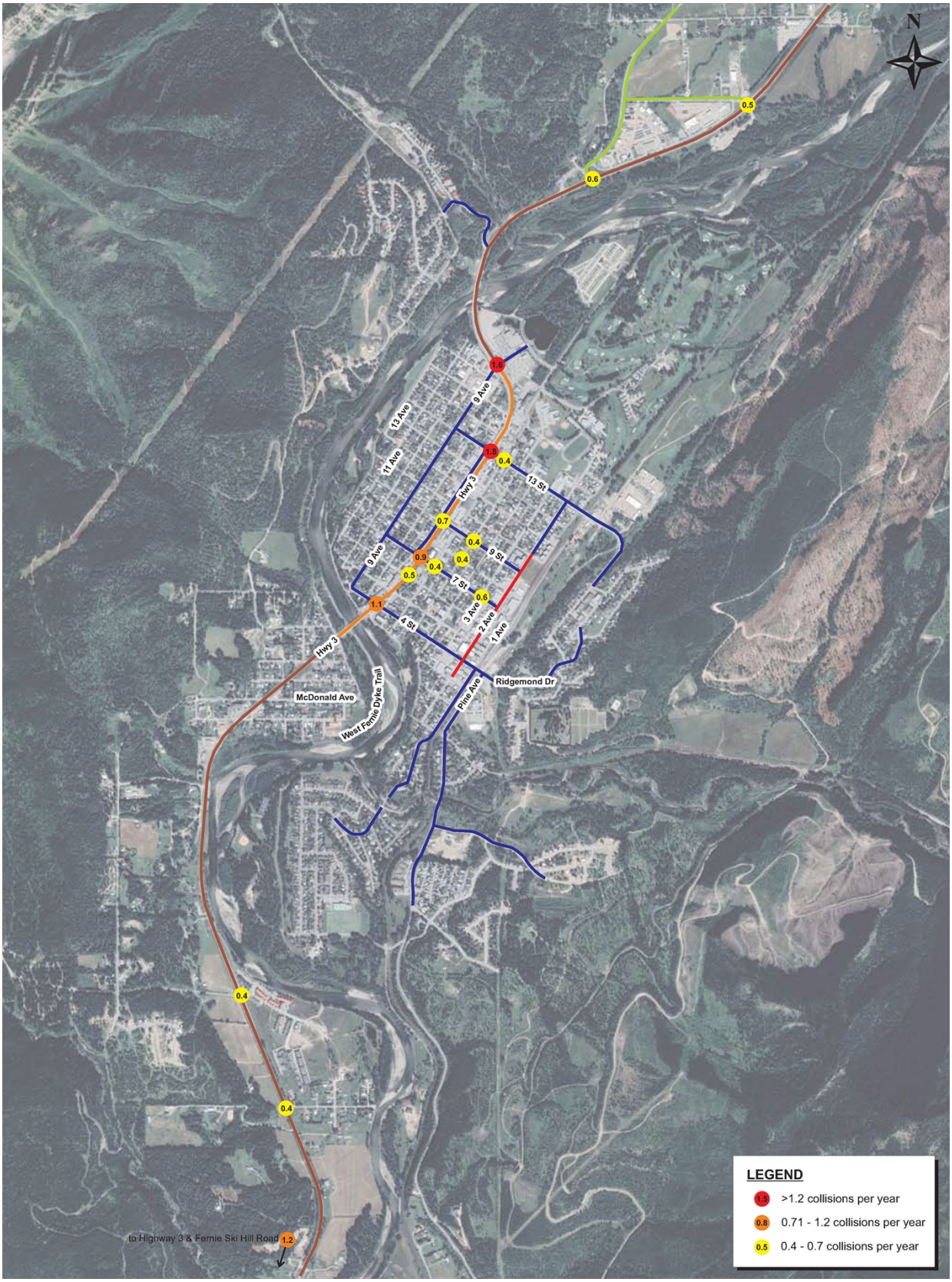
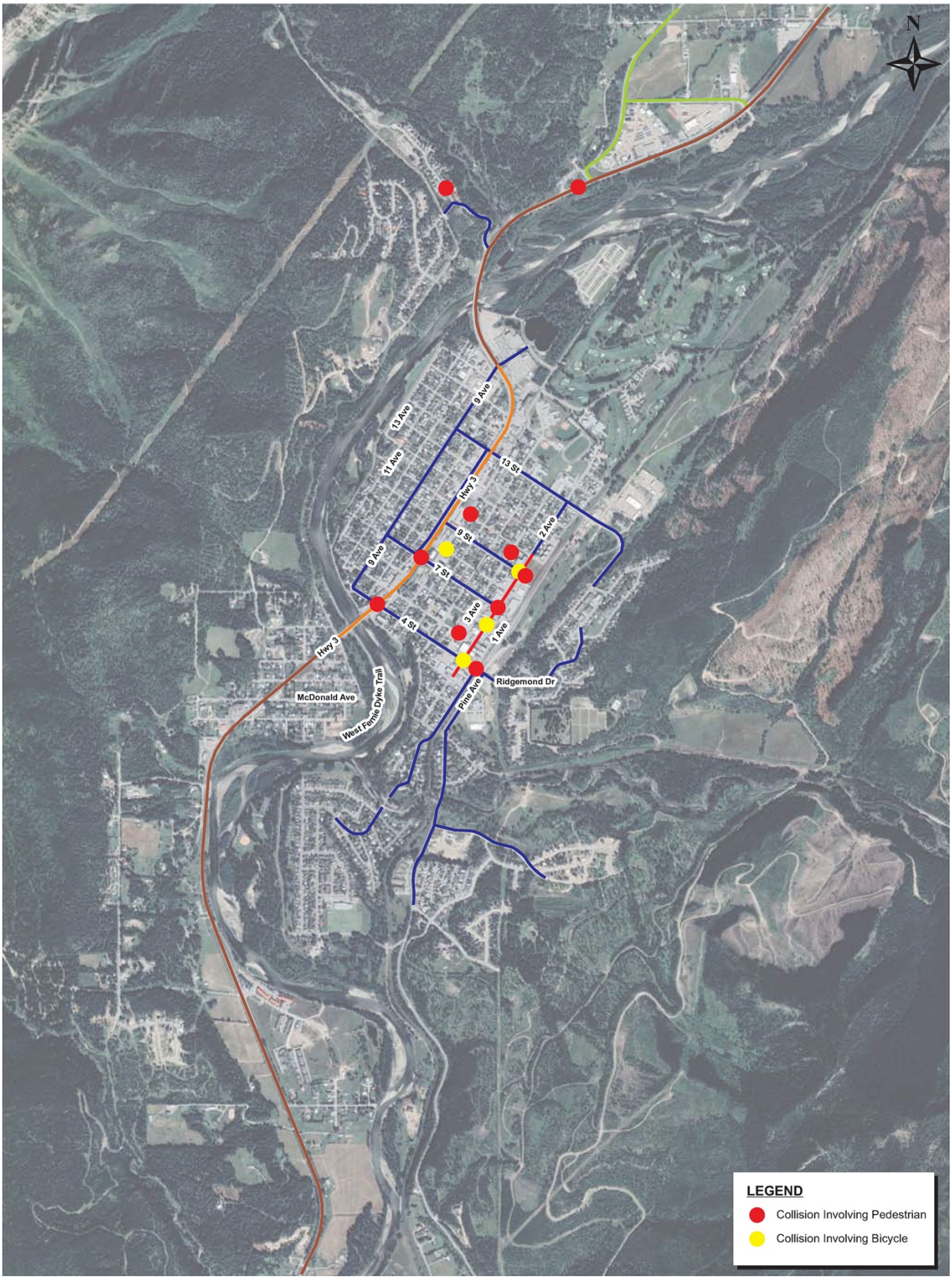


Exhibit 5: Collision History (Vulnerable User)



–APPENDIX C–
VEHICLE MODEL ASSUMPTIONS

VEHICLE MODEL ASSUMPTIONS

MODEL INPUTS

The long-term densities that were used as inputs into the transportation model are identified in **Table 1** (residential) and **Table 2** (non-residential). This information was provided by the City of Fernie.

Table 1: Residential Densities

Neighbourhood	Units	
	Existing	**Long-Term**
Alpine Parkland	241	269
Annex	533	613
Castle Mountain	338	492
Cedar Valley	54	154
Ghostrider	2	2
Maintown	1023	1217
Mountview	325	337
Northlands	26	42
Ridgemont	382	426
Riverside	117	183
West Fernie	321	465
Total	3362	4200

Table 2: Non-Residential Densities

Neighbourhood	Existing Floor Area (m^2)			Long-Term FLoor Area (m^2)		
	Commercial	Industrial	Institutional	Commercial	Industrial	Institutional
Alpine Parkland	-	-	1,164	-	-	1,630
Annex	25,119	-	2,251	35,167	-	3,151
Castle Mountain	-	559	-	-	783	-
Cedar Valley	-	-	-	-	-	-
Ghostrider	16,612	-	702	23,257	-	983
Maintown	59,013	-	42,884	82,618	-	60,038
Mountview	-	-	2,903	-	-	4,064
Northlands	20,340	-	-	28,476	-	-
Ridgemont	-	2,187	1,882	-	3,062	2,635
Riverside	4,682	-	28	6,555	-	39
West Fernie	2,639	-	-	3,695	-	-
Total	**128,405**	**2,746**	**51,814**	**179,767**	**3,844**	**72,540**

MODEL ASSUMPTIONS

ROAD CHARACTERISTICS

The following road characteristics were used for the Visum model.

Highway 2-lane = 80 km/h with 1,200 vehicle per hour lane capacity

Highway 4-lane = 60 km/h with 1,100 vehicle per hour lane capacity

Collector = 40 km/h with 800 vehicle per hour lane capacity

Local Street = 40 km/h with 500 vehicle per hour capacity

VEHICLE TRIP GENERATION

The following weekday PM peak hour vehicle trip generation rates were used based on the Institute of Transportation Engineers *Trip Generation Manual (10th Edition).*

Residential = 0.93 trips per unit (ITE use #210)

Commercial = 3.81 trips per 1,000 ft^2 (ITE use #820)

Industrial = 0.83 trips per 1,000 ft^2 (ITE use #110)

Recreational = 2.49 trips per 1,000 ft^2 (ITE use #435)

Institutional = 1.17 trips per 1,000 ft^2 (ITE use #522-530)

DISTRIBUTION

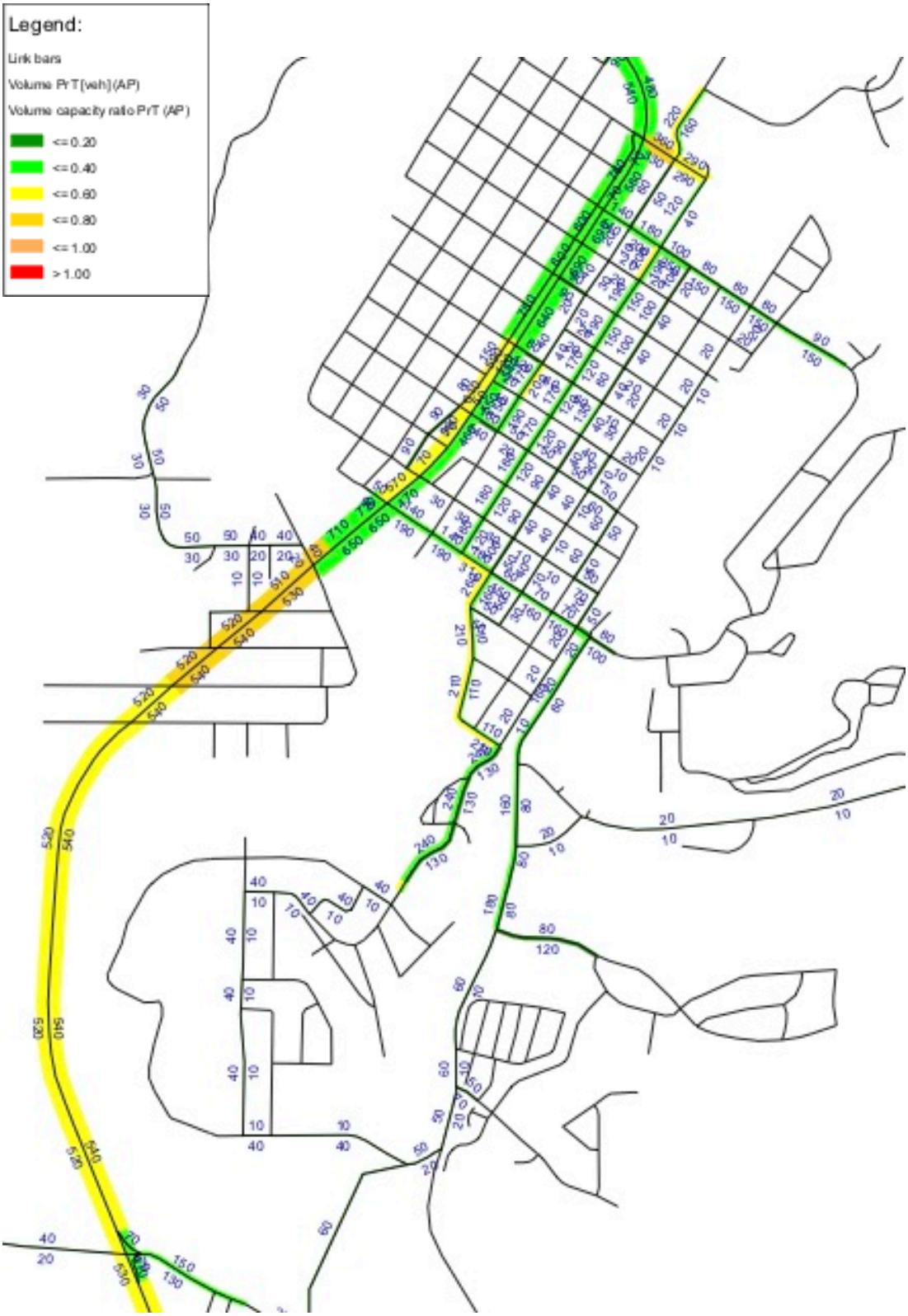
Vehicle trips were distributed using a matrix combination function based on distinct trip purposes (work-home; external place-home; external-external). Trips were then assigned to the road network within Fernie and outside of Fernie. Assignment is an iterative process based on optimal time strategies for users.

MODEL CALIBRATION

The base model was calibrated using existing 2020 volumes and provided existing land use densities.

Figure 1: Future Outputs with Existing Road Network

Figure 2: Future Outputs with New Elk River Crossing



–APPENDIX D–
PUBLIC CONSULTATION

CITY OF FERNIE
BRITISH COLUMBIA

Active Transportation Master Plan - What We Heard

What is the Active Transportation Master Plan?

The City is creating an Active Transportation Master Plan (ATMP) which addresses the city-wide multi-modal transportation needs for the next generation. The plan will also incorporate direction from the transportation plans of both neighbouring municipalities and the provincial government.

The ATMP will address immediate and long-term multi-modal transportation needs, including project prioritization that is based on expected need, cost estimates, and community input.

How We Engaged

From September 16 to October 14, 2020 phase 1 of the Fernie ATMP engagement received insights and feedback from 181 community members, and connected with 803 participants total. The engagement process was implemented to ensure all stakeholder groups, including the public at large could share their insights and feedback on the long-term planning for mobility in Fernie. Tactics Included:

Virtual Drop-in: The event hosted 8 community members from 5-7 pm on Wednesday, September 30.

Stakeholder Interviews: Between September 29 and October 14, there were 9 stakeholder groups interviewed. These interviews represented participation from organizations such as School District 5, Fernie Alpine Resort, Accessibility Advocates and the Ministry of Transportation and Infrastructure, among others.

Website: From September 16 to October 14, the website received 614 visits and added 56 new registrants.

Online Survey: Between September 16 and October 12, the survey received 129 responses, while the mapping and ideas tools captured another 43 respondents.

Next Steps

The next steps for project engagement will be a community and stakeholder check-in process once key actions and recommendations are established by the project engineers. These recommendations will be brought back for review, seeking additional feedback.

Thank you to those who participated! For more details on the project and to get involved visit https://letstalk.fernie.ca/active-transportation-master-plan.

Timeline

The project has now concluded phase 1 of engagement, and will begin engagement for phase 2 in 2021.

Jul - Aug 2020
Project Kick Off
Project kick off and initial data collection

Sept - Oct 2020
Phase 1 Engagement
Gain insight into vision, principles, current state and best practice analysis

Sept - Jan 2021
Options & Recommendations Development
Uncovering opportunity areas in the network and recommendations development

Jan - Feb 2021
Phase 2 Engagement
Share draft recommendations and network concepts for feedback

Feb - Apr 2021
Draft Report
Draft Active Transportation Master Plan

Apr - Jun 2021
Final Report
Finalize Report and present to City Council

FERNIE
CITY OF FERNIE
BRITISH COLUMBIA

What We Heard

Transportation Values

When asked about what residents value most when it comes to transportation, the top three identified values were:

- Safety - 66%
- Time Savings/ Convenience - 62%
- Physical Activity - 57%

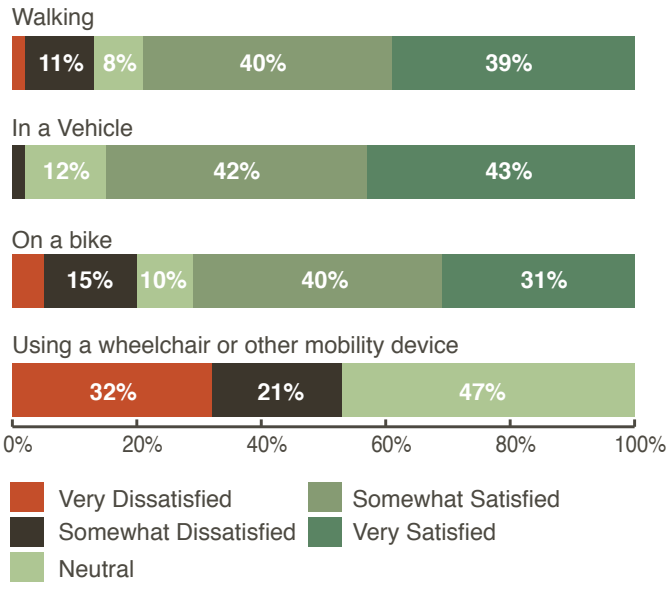
General Concerns

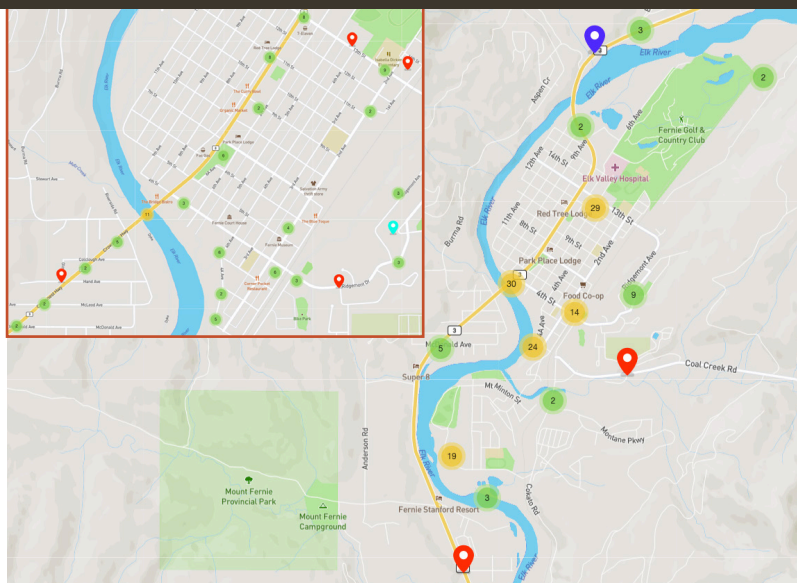
General concerns respondents had about the transportation system in and around Fernie included:

- Human safety (82 Mentions)
- Roads (46 Mentions)
- Highway interface (29 Mentions)
- User behaviour (14 Mentions)
- Isabella Dicken School/ 13th St. safety (12 Mentions)
- Too many parked cars (11 Mentions)

Level of Satisfaction by Mode

Participants reported how satisfied they were with their ability to get around Fernie by transportation type (mode):





Mapping Concerns

From a list of categories to pin to the map, the *Safety Concern* option was chosen in nearly half the cases, with 57 applications. The next most selected category was *Pedestrian Concern*. These were followed by *High Volume Concern* and *Speed Concern* with 10% and 9% of the overall pins, respectively.

Seasonal Considerations

The top three factors impacting respondents' decisions to use active modes in the winter time were:

- Snow Accumulation and Drifts - 74%
- Temperature - 72%
- Snowfall - 63%

The top three factors impacting respondents' decisions to use active modes in the summer time were:

- Time/ Convenience - 69%
- Precipitation - 57%
- Safety - 40%

Virtual Drop In Ideas and Issues

During the virtual drop in engagement session,the dominant ideas and issues that arose were:

- Idea - Improve pedestrian and cyclist infrastructure.
- Issue - Safety and the conflict between different modes.
- Issue - Safety and winter conditions.

Active Transportation Master Plan
Internal What We Heard Report

Submitted to Bunt & Associates

October 27, 2020

intelligent futures

Table of Contents

Executive Summary

The month-long ATMP engagement process has now been completed. The following report highlights what residents, businesses, institutions and community organizations have had to say in response to our questions regarding the long-term planning for mobility in Fernie. Using a variety of engagement approaches, feedback was obtained on transportation values, current use of and satisfaction with different modes, concerns and barriers with the existing system as well as ideas for the future system. This feedback is meant to inform recommendations for future mobility improvement.

1.0 Process and Participation

From September 16, 2020 to October 14, 2020, an engagement process was implemented to ensure all stakeholder groups, including the public at large could share their insights and feedback on the long-term planning for mobility in Fernie, as part of the Active Transportation Master Plan (ATMP). Throughout the course of the project, we heard from 181 community members and stakeholders.

1.1 How We Engaged

To share questions, comments and insights, people were encouraged to:

- Attend a public drop-in sessions held on September 30 by video conference
- Participate online via the project website, including an online survey: https://letstalk.fernie.ca/active-transportation-master-plan
- By direct invitation, participate in a one-on-one interview

Online Survey

The approach to online engagement gave residents an opportunity to share their insights 24/7 with a relatively minimal investment in time. This enabled the project team to gain a broader variety of insights into the long-term planning for mobility in Fernie. We asked questions about transportation values, current use of and satisfaction with different modes, concerns and barriers with the existing system as well as ideas for the future system.

Between September 16 and October 12, the survey received 129 responses, while the mapping and ideas tools captured another 43 respondents.

ONLINE SURVEY

The approach to online engagement gave residents an opportunity to share their insights in a way that allowed for 24/7 access with a relatively minimal investment in time. This enabled the project team to gain a broader variety of insights into the long-term planning for mobility in Fernie.

We asked questions about:

- transportation values
- current use of and satisfaction with different modes
- concerns and barriers with the existing system
- ideas for the future system

Number of responses

172

Dates open

Sept 16 - Oct 14

Virtual Drop-In

The virtual open house allowed interested community members to learn more about the project and share their views on the active transportation planning process. Due to the physical distancing measures currently in place, the most accessible format for connecting with a broad cross-section of participants was online. Using the Zoom platform, residents were invited to join the project team in a videoconference session where they could gain the information they needed to be able to participate in the process and share their ideas about how to create a better transportation system in Fernie.

The event hosted 8 community members from 5-7 pm on Wednesday, September 30.

Stakeholder Interviews

Throughout the engagement process, interviews were coordinated with key community stakeholders and subject matter experts from the School District 5, Interior Health, Fernie Chamber and Tourism Fernie, Accessibility Advocates, Elk Valley Transit, Fernie Trails Alliance, Ministry of Transportation Infrastructure, CP Rail, and the Resort of the Rockies. These conversations supported a broader and deeper understanding of both the assets and challenges related to long-term planning for mobility in Fernie.

Between September 29 and October 14, there were 9 stakeholder groups interviewed.

Website

Using the City's dedicated engagement website, *Let's Talk Fernie*, the team shared project details, project team members, advertised engagement opportunities, provided means for

feedback and displayed key subject matter information. The website remains live and will continue to develop as the project process unfolds.

From September 16 to October 14, the website received 614 visits and added 56 new registrants.

1.2 Engagement Communication

Engagement opportunities were communicated using the following:

- Via the Let's Talk Fernie website https://letstalk.fernie.ca/active-transportation-master-plan
- Direct invitations to one-on-one interviews, with direct ask to share the online survey with their networks/membership
- Open invitation to one virtual drop in session
- Traditional media release
- Social media advertisements via the City of Fernie accounts

1.3 Who We Heard From

The engagement process connected with 803 participants. The number of responses or points of contact and conversation are detailed below:

- Online Survey: 129 responses
- Online Map + Ideas: 43 responses
- Virtual Drp In: 8 participants
- Interviews: 9 participant groups
- Website: 614 visitors

2.0 What We Heard

The following section shares the questions that were asked as part of the community engagement process paired with what was heard from participants in response to these prompts.

2.1a Online Survey

The online survey responses came from residents of Fernie (95%), residents of the Elk Valley outside of Fernie (2%), seasonal visitors (1.5%) and second property owners (1.5%).

Check boxes

1. *In the summer, what is your primary mode of transport for each of the following (ten) places you go.*

   Car, as driver, was the top mode selected for these places:
   - **Place (% mode share)**
   - Fernie Alpine Resort (85%)
   - Grocery Store (67%)
   - Medical and Professional Services (57%)
   - Work (53%)

   Bicycle was the top mode selected for these places:
   - **Place (% selected)**
   - Trails (73%)
   - Parks (66%)
   - Family and Friends' homes (61%)
   - School (50%)
   - Restaurants/Bars/Cafes (46%)
   - Non-Essential Shopping (40%)

   Walking, car as passenger, and 'other' modes of transportation were not the dominant choice for any destination. However, walking was the second most popular mode choice for Parks, Trails, Restaurants/Bars/Cafes, and Non-Essential Shopping.

2. *Which of the following factors might impact your decision to walk or bike to your destination in the summertime?*

   The top three factors impacting respondent's decisions to use active modes were:
   1. Time/ Convenience (69%)
   2. Precipitation (57%)

3. Safety (40%)

3. *In the winter, what is your primary mode of transport for each of the following (ten) places you go.*

   Car, as driver, was the top mode selected for these places:
   - **Place (% selected)**
   - Fernie Alpine Resort (92%)
   - Grocery store (84%)
   - Medical and Professional Services (73%)
   - Work (70%)
   - School (58%)
   - Family and Friends' Homes (52%)
   - Non-Essential Shopping (49%)
   - Parks (45%)*

   Walking was the top mode selected for these places:
   - **Place (% selected)**
   - Restaurant/Bar/Cafes (48%)
   - Trails (47%)
   - Parks (45%)*

*Parks had equal mode share between walking and driving

4. *Which of the following factors might impact your decision to walk or bike to your destination in the winter time?*

   The top three factors impacting respondent's decisions to use active modes were:
   1. Snow Accumulation and Drifts (74%)
   2. Temperature (72%)
   3. Snowfall (63%)

5. *What do you value most when it comes to transportation?*

   The top three values identified by respondents were:
   1. Safety (66%)
   2. Time Savings/ Convenience (62%)
   3. Physical Activity (57%)

   Note that the fourth most common value identified was Carbon Neutrality, with 39% of respondents selecting this option.

Likert Scale

6. *How satisfied are you with your ability to get around Fernie using the following modes of transportation?*

Statement	Response	
Walking	*Very Satisfied* *Somewhat Satisfied* *Neutral* *Somewhat Dissatisfied* *Very Dissatisfied*	*39%* *40%* *8%* *11%* *2%*
In a vehicle	*Very Satisfied* *Somewhat Satisfied* *Neutral* *Somewhat Dissatisfied* *Very Dissatisfied*	*43%* *42%* *12%* *2%* *0%*
On a bike	*Very Satisfied* *Somewhat Satisfied* *Neutral* *Somewhat Dissatisfied* *Very Dissatisfied*	*31%* *40%* *10%* *15%* *5%*
Using a wheelchair or other mobility device?	*Very Satisfied* *Somewhat Satisfied* *Neutral* *Somewhat Dissatisfied* *Very Dissatisfied*	*0%* *0%* *47 %* *21%* *32%*

Open ended questions

7. What other concerns do you have about the transportation system in and around Fernie? The following themes surfaced as a result of the open responses.

Theme (# of occurrences)	Common Sub-Themes (# of occurrences)
Human Safety (82)	*Conflict between modes/ users (31)* *Snow and ice on sidewalks (23)* *Movement of children and families (22)* *Poor (year round) condition of sidewalks (11)*
Roads (46)	*No dedicated bike lanes/ space (23)* *Speeding and/or not abiding by rules of the road, on City streets (14)* *No snow removal (8)*

Highway Interface (29)	*Poor highway crossing for non-vehicle users (17)* *Insufficient/ narrow sidewalk (9)* *No dedicated bike lane/ space (9)* *Bridges too narrow for safe and convenient passage of bikes and pedestrians (7)* *Speeding (5)*
User Behaviour (14)	*Cyclists not abiding laws (7)* *No directional signage (4)*
Isabella Dicken School/ 13th Street Safety (12)	*No bike infrastructure on 13th (7)* *Narrow sidewalks (3)* *Eliminate vehicle parking (2)*
Too Many Parked Cars (11)	

Safety predominantly referred to the high potential for cyclists and vehicles to collide. With some reference to pedestrians experiencing similar situations, at intersections crossings in particular. Safety also extended to the condition and infrastructure for active users, especially as it concerns the movement of children in and around the community.

"Road sharing between motorists, bikes and pedestrians. Also right of way rules between all parties. A more developed bike trail system."

"Would love to encourage walking and biking as much as possible. While I think I can manage to bike/walk safely around town, it would be nice for all future infrastructure decisions to prioritize biking/walking (I.e. bike lanes/paths/sidewalks on both sides of the streets in new developments)."

"Really poor pedestrian amenities, intersection design favours car movement and plowing over user experience.... eg: sidewalks end way back from the street and kids have to step well out into the street to be seen. Other issues are with drivers parking over sidewalks and vegetation encroaching into them."

"In some areas of the city it is more difficult to bike with young children because it feels unsafe due to high traffic volume/no bike path"

City road and highway 3 concerns were primarily an extension of the issues listed in regard to safety. Moving across and along streets and highway 3 were listed as limiting factors to an uptake of active modes. For instance, twenty respondents mentioned highway 3 explicitly and thirty-two respondents mentioned roads - specific locations and in general. These folks almost all mentioned safety. Of those specific roads, reference to the 13th street and highway 3 and 2nd Avenue crossings surfaced most. The core challenge being the accommodation of all modes to safely flow through school zones and core commercial areas.

"To increase the ability to walk around town in winter, better snow clearing of sidewalks and access paths is required. To improve walking in summer, pave more sidewalks around town. Cutting in steps on the walkway to downtown from 33 Ridgemont Ave would be a great help. Currently there is no safe way to walk from upper Ridgemont to downtown in winter if you have a stroller or mobility limitations..."

"I think 2nd Ave is such a hazard to bikers. I always avoid biking down 2nd, especially with my kids but sometimes we have to get onto the street to access the places we are going. Wishing for a bike lane on 2nd!!

"There is no dedicated infrastructure for bikes, and cars do not yield to cyclists or provide them the right of way. In the summer there are sufficient sidewalks to get around but they disappear in the winter and again cars do not yield to pedestrians or provide them the right of way."

Other less prominent, but still common themes heard from respondents about concerns were 1. the need for community education on and enforcement of road rules 2. Having no direct path or trail available to the resort for pedestrians and cyclists 3. a lack of transit and insufficient frequency of existing resort shuttle service 4. limited bike parking at key destinations 5. a lack of school buses to certain communities and 6. a few neighbourhood specific complaints - with residents of West Fernie, the Annex, and Ridgemont being named explicitly as places highly impacted by poor connections to the core via active modes.

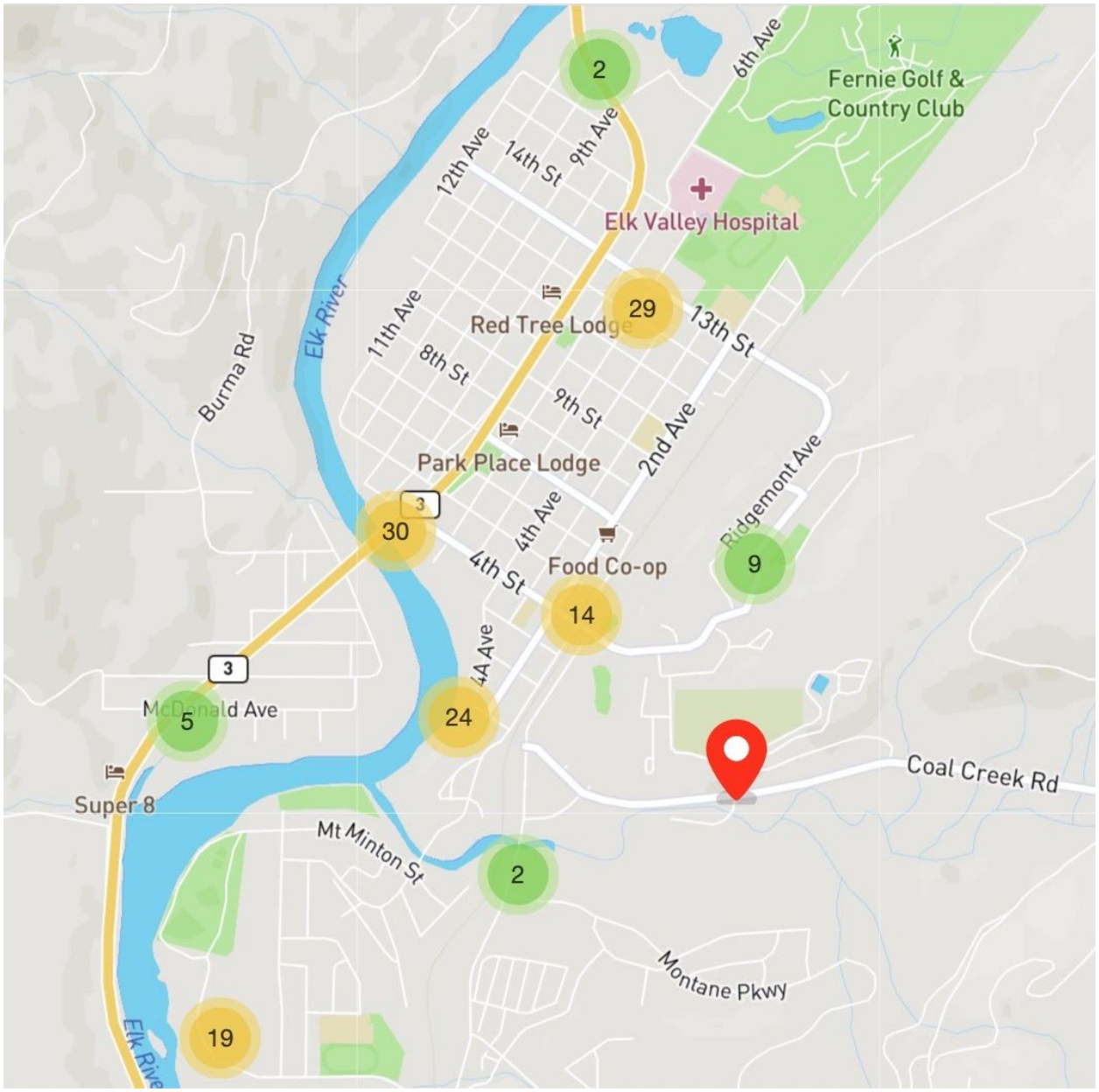
"Poor condition of some sidewalks. Lack of public transportation around town and to neighbouring communities."

For full results from the online survey, see the report provided by the online engagement tool provider:
https://www.dropbox.com/s/omkfglrqlpm6mnq/Survey_Responses_Report%20-%20ATMP%20October%2013%2C%202020.pdf?dl=0

2.1b Mapping Tool + Ideas

The online tool function allowed for participants to map places of concern and opportunity in the transportation network. The map shows where the distinct problem and opportunity areas are from the community's point of view. The results closely aligned with what was heard throughout other sources in the process.

The following highlights the core challenges and ideas Fernie's community members identified on a high level.



Map 1: community mapping tool

Concerns

From a list of categories to pin to the map, the *Safety Concern* option was chosen in nearly half the cases, with 57 applications. The next, most selected category was *Pedestrian Concern*. These were followed by *High Volume Concern* and Speed *Concern* with 10% and 9% of the overall pins, respectively.

Core themes raised included:

Intersection challenges at the highway 3 crossings in particular. These were raised more above all other safety concerns. Some mentioned the need for an underpass or overpass for active modes that crosses the highway between the existing bridge underpasses along the highway.

Pedestrians and cycle access to key destinations. Kids getting between home and school being of note. The overall condition of sidewalks and trails were also named as reasons that influence individual's uptake of active modes. From washed away or crumbling infrastructure to snow and ice cover, having dedicated space seems crucial to the users decision.

Ideas

Core themes raised when given the chance to share future opportunities were:

Flow of all modes on 2nd Avenue and downtown were front of mind for change named by participants. Mentions of bike infrastructure - primary requests for bike lanes and bike parking.

Connect downtown with Fernie Alpine Resort, with ample, safe crossing of Lizard Creek.

Create parking by the no-gas and/or skate park, with a pedestrian overpass to downtown.

For a complete look at the mapping (places and ideas) results, see the report provided by the online engagement tool provider:
https://www.dropbox.com/s/5qqyqg6f5hnjaqb/1.%20Active%20Transportation%20Master%20Plan%20excel%20report.xlsx?dl=0

2.2 Virtual Drop In Session

General Comments and Feedback

During the virtual drop in engagement session, a series of themes arose among participants, particularly concerning current challenges and solutions for the future. The following is a summary of the dominant ideas and issues discussed:

Idea. Improve pedestrian and cyclist infrastructure. Core recommendations included:

a. Broadly, connecting Fernie's neighbourhoods to Downtown and other important locations like the School, Ski Hill and Visitor Centre. Providing trail connections that consider both recreational and direct routes.
b. Highway 3 traffic lights accommodate both active and auto roads for safe movement along and crossing.
c. Build a pedestrian crossing over the Elk River. Suggestions included to Riverside or West Fernie.

"I would like a greater emphasis on making the transportation pathways more friendly for cyclists and pedestrians"

> *"Would love to see a pedestrian and bicycle crossing over the Elk between West Fernie and the Airport!"*

"An objective could be to connect each subvision and key destinations with a designated bike trail and sidewalks or walking trail"

Issue. Safety and the conflict between different modes.

a. Complaints of no safe access for active modes moving between downtown and Ridgmont as well as West Fernie. Currently the highway 3 bridge over the Elk River by 4th Street (in the west) acts as a pinch point for cyclists to safely pass.
b. Highway 3, north of the 7-11 to the North Fernie Bridge (on the east side) and the 1st St north (on the west side of the highway) both have major pedestrian safety concerns with proximity to the highway itself. Crossing at 9th was suggested to be upgraded to a signalized traffic light. Highway 3 and 13th St on the southwest side of the intersection needs to be addressed to keep cyclists off sidewalk and reduce the awkward crossings conflicts between the Annex - the Isabella Dicken School. This corridor (upgraded crossing),
c. Finally, 2nd Avenue was listed as a place where vehicle traffic and parked cars create poor visibility for pedestrians to safely cross this busy commercial corridor.

"CP rail crossing at old stumpy trail seems illegal, but trails leads you [to cross] there"

"the problem there [the signal at Hwy 3 and 13th Street, SW corner] is no button on both sides of the road so cyclists have an incentive to be on the sidewalk rather than staying on the right side of the road. If there was a pedestrian crossing on each side of the cross street then cyclists could stay on the right side of the road."

Issue. Safety and winter conditions

a. Steep unserviced trail from Ridegmont, "snow/ice. not sure its meant to be a trail but its an informal trail

"the steep hill from Ridgemont to the (new) dog park could use help...dangerous in winter"

2.3 Interviews

The interviews with key community stakeholders and subject matter experts from the School District 5, Interior Health, Fernie Chamber and Tourism Fernie, Accessibility Advocates, Elk Valley Transit, Fernie Trails Alliance, Ministry of Transportation Infrastructure, CP Rail, and the

Resort of the Rockies gave the team much insight into the unique perspectives and challenges of these impacted groups.

Much of what was captured from the public was reiterated with these groups including

Barriers to the Fernie transportation system (themes)	Comments and sub-themes
Crowded right of way (13th Street and 2nd Avenue)	• Parents parking illegally for pick up and drop off at Isabella Dickens School • 13th Street and Highway 3 intersection, big safety concern for kids crossing on foot and bike • Loading/ unloading of goods by large vehicles/ trucks in core • Staff on 2nd Avenue using street parking • Surface parking stifles growth
Winter conditions	• Snow drifts impact visibility, creates bline spots • Lack of snow removal on sidewalks and ramps makes some areas impassable for walkers and wheelchairs • Snow plow creates berms and plowing in driveways
No accessible transportation options	• Limited transit • Lag between drop off and pick up because of infrequent, regionally bound buses • Don't meet BC transit requirements for enhanced transit funding
Getting to/from Fernie	
Unsustainable funding source for shuttle service	• Currently winter service only
Cost of living/ labour mobility	• Service sector employees being pushed to other parts of the Elk Valley for housing
Connectivity of trails and pathways networks	• If we can create more flow between the trail networks, to keep people off roads is a huge network

Highway 3 active links and crossing	• Conflict between modes • Limit of the MoTI property, the limited width of the right of way to accommodate multi-uses
Residential parking in winter	• Increase in short term rentals translates to increased vehicles in neighbourhoods
Train crossing	
Poor lighting	• Winter especially dangerous
Fernie Alpine Resort auto-centric	

Opportunities for the Fernie transportation system (themes)	**Comments and sub-themes**
Winter conditions	• Prompt road and sidewalk snow removal ○ Priority for sidewalks/ active routes • Sand icy roads
Increased policing/ enforcement	• Have a close eye on vehicle behaviours around school bus • Enforce sidewalk clearing downtown
Signalized intersection at the Highway and Riverside Way	
Designing system for those with the greatest mobility needs	• Ramps to buildings • Curb cuts on sidewalks • Rick Hansen foundation programs as best practice • Para-transit, apply to province for handi-dart accessible bus for local routes • More paved trails • Use equity lens • Traffic calming measures

Tourism Master Plan for clues	
Precedent Places	• Banff shifting to pedestrian friendly downtown core in response to COVID • Whitefish rebuilt the corners of the sidewalk with larger bump outs for increased visibility for pedestrians • Shuswaps effort in widening the pedestrian bridge for walkers and bikers to avoid the road, supporting a continuous path connection • Castlegard is at the forefront with bike lanes and snow storage
Improve signage and wayfinding	• Map entire transport network • Clarity for tourists • Bike lanes – designated routes and communicate this on a map
Highway bridge crossings widened	• Accommodate active modes crossing the Elk to the north and west sides of highway 3
2nd Avenue Improvements	• Animate in a way that allows cars but doesn't say the car is the dominant mode in the space • Limit parking to 2 hours
Walking and Cycling	• Bike lanes don't always have to be separate, painted lines work in some cases • Trail to resort • Lanes for multi-use - walking, biking, wheeling, scooting
MoTi interest in active modes	• Intersection at mount fernie parkway – identified by ministry for improvements
Rail safety improvement program	• grant funding up to $500k for crossing

Other interesting tidbits of information that were raised by interviewees includes:
"…probably rivals Canmore for fat bikes per capita"

"From where people live, they can walk or ride their bikes to trailheads"

"the growing use of E-bikes and what comes along with that, there's a safety component for non-motorized people traveling, cars getting use to seeing them."

"When greyhound stopped service, it put a challenge on everyone trying to get anywhere"

"People want the lifestyle of active transport"

"Winter biking is becoming quite popular"

3.0 Next Steps

The next steps for project engagement will be a community and stakeholder check-in process once key actions and recommendations are established by the project engineers. These recommendations will be brought back for review, seeking feedback on whether key initiatives are supported (or not) by those the recommendations are intended to serve.