Town of CANMORE

2018 Integrated Transportation Plan Update

FINAL REPORT

June 27, 2018

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Town of Canmore

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A. Introduction and Study Purpose

What is an Integrated Transportation Plan?

An Integrated Transportation Plan (ITP) is a long-range strategic plan that guides transportation decisions and influences land use by identifying transportation infrastructure requirements and policies for municipalities to attain their vision and goals for economic growth. An ITP also considers environmental planning and sustainability principles and provides the framework for implementing coordinated improvements on a town-wide basis.

Rather than placing a high degree of emphasis on traffic modelling and forecast capacity issues as Transportation Master Plans have typically done in the past, the Canmore Integrated Transportation Plan takes a more integrated approach in revisiting the role and function of the transportation system in Canmore, and in understanding the overall vision and guiding principles of designing and reshaping the multi-modal transportation network. This ITP also provides an opportunity for proactive thinking, anticipating community needs, and preparing for emerging trends in transportation solutions.

2014 Background

The 2014 Integrated Transportation Plan (ITP) was approved by Council for planning purposes. Guiding principles of the ITP were developed through stakeholder and public consultation, and a review of previous planning documents. It laid the groundwork for principals in community planning and roadway design that would enable greater choice and opportunity for residents and visitors to move around and connect in our community. These principles have informed a number of important projects over the past three years, including new pedestrian bridges on Spring Creek and Cougar Creek, improved connectivity to Bow Valley Trail, the Benchlands roundabout and pathway improvements, Cougar commuter pathway improvements, regional transit enhancements, introduction of local transit, and Canmore's first Complete Streets rehabilitation on Spring Creek Drive.

Why an Update?

In order for the Town of Canmore to achieve its ambitions targets for active transportation modal share, the 2014 ITP needed to evolve to further support that goal but also account for a growing body of knowledge in the field of integrated mobility and multimodal network planning. While 2014 ITP was forward thinking in considering multiple modes, it was less proactive and precise in its discussion of transportation and land use trade-offs.

This document addresses these types of practical questions but also proposes strategic improvements to the 2014 ITP in order to meet the travel needs of the community, now and in the future. While the majority of the 2014 ITP remains unchanged, network performance has been studied in greater detail, in order to provide clearer guidance on requirements for Canmore's roadways in order to accomplish community goals. This will

create the conditions for developing a coherent, consistent, and connected network of active transportation infrastructure that best responds to the needs of Canmore's residents and visitors.

Complete Streets Approach & Multi-Modal Targets

The 2014 ITP introduced a Complete Streets approach, in which a multi-modal transportation network was developed to accommodate all transportation modes and multiple street functions. The focus of the approach is to **'create places where people want to be'.** This approach has been preserved, and greater emphasis has been placed on best practices for safe and efficient street designs that will enable a greater number of people to make a greater proportion of their trips by foot, bicycle, and bus. This approach aligns well with Canmore's guiding documents, which provide a number of social, economic, and environmental guiding principles. This is reflected in proposed network updates that are sustainable, and foster community connection and inclusion.

To be successful in maintaining road capacity and community character, a target of 40% trips taken by foot, bicycle or bus is recommended. The target is for a typical summer day during the summer months in 2030.

B. Revised Transportation Network

Street Network (Chapter 4)

The recommended target for 2030 walk, cycle, and transit on the network around the Town Centre is 40% during a typical summer day. In scenarios with significant growth, if this target is met, network performance will *improve* over 2017 conditions during a typical summer day, and greater activation of Main Street will be permitted. To achieve this target a number of network changes are recommended, which promote more sustainable choices.

Currently, the majority (80%) of daily trips made in Canmore are via automobile. With the expected growth in Canmore's population and visitation, the anticipated proportion of daily trips made by automobile will grow to 84%. With successful implementation of the Integrated Transportation Plan, by 2030 the proportion of trips made by automobile will drop to a targeted 60%. This modal shift from car trips to walk, bike, and transit trips is required to create capacity in the road network for those that need and want to drive, and to accommodate growth.

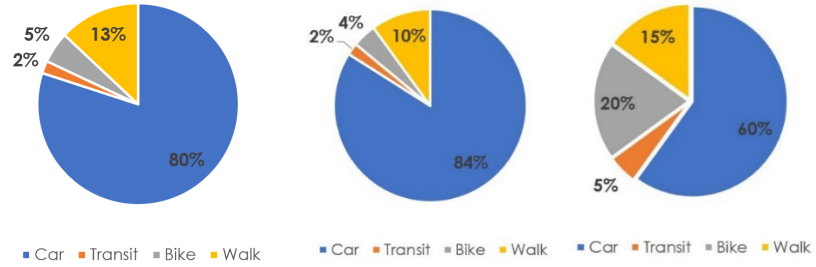


Figure E-1: Target 2030 walk, cycle, and transit

A number of strategies are required to achieve these targets:

- Simplified street classifications
- Complete Streets design guidance
- Appropriate road speeds
- Continued evolution of Main Street to an Activity Street
- General intersection improvements

	Arterial		Collector		Local		Activity Street (Local)
	Ideal	Minimal	Ideal	Minimal	Ideal	Minimal	
Speed limit (km/h)	50		30		30		20
Bicycle Infrastructure	Curb protected	Buffered bike lanes	Buffered bike lanes	Bike lanes	Shared travel lane	Shared travel lane	Shared travel lane
Median Separation	Yes, center boulevard	Yes, center line	No center line	No center line	No center line	No center line	No center line, no sidewalks
Travel Lane Width (m)	3.3	3.0	3.0	3.0	5.0-6.0 (no lane differentiation)	6.0-7.0 (no lane differentiation)	<5.0 (no lane differentiation)
Housing Present	No	Yes	No	Yes	Yes	Yes	Yes

Figure E-2: Simplified Street Classifications and Design Criteria

Multi-modal Collector Street

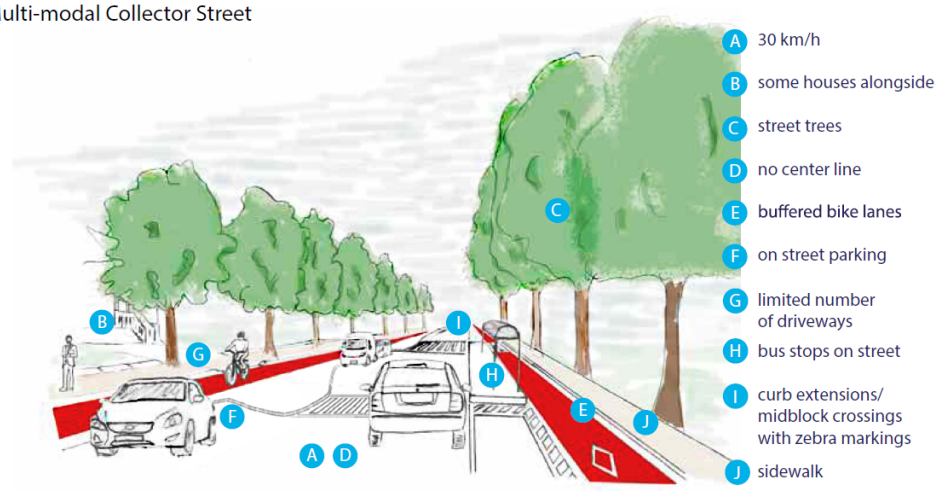


Figure E-3: Concept Design Sketch of a Multi-modal Collector

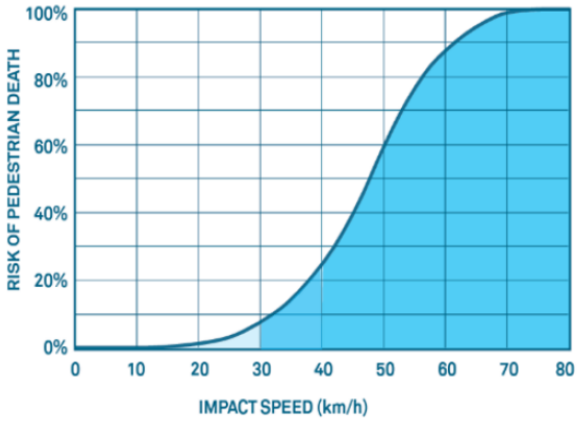


Figure E-4: Implications of 30 km/hr Design

Figure E-5: Town Center Street Classifications

Refer to Chapter 4 for more Street Network content.

Active Transportation Network (Chapter 5)

The primary objective of the active transportation network is to integrate the recreational trail network and the street network with key origin and destination desire lines of pedestrians and bicyclists making utilitarian trips. Key destinations include the Town Centre / Main Street, Elevation Place, the schools, the Canmore Recreation Centre, and popular Town parks.

Five basic yet intertwined network design principles, responding to basic needs of active travelers, must be followed to encourage cycling, and walking uptake. They are the following:

- Directness
- Safety
- Comfort
- Continuity
- Attractiveness

A planned active transportation network has been developed and is shown below. The network focuses on cycling; however, the routes, new connections and existing trail system can also serve additional modes. Walking trips will particularly benefit from new and direct connections. The network aims to provide a greater degree of separation between the walking and cycling modes. This will reduce conflicts and thereby enhance the pedestrian network as more space is allocated toward existing pedestrian facilities because cyclists will be within their own dedicated facilities.

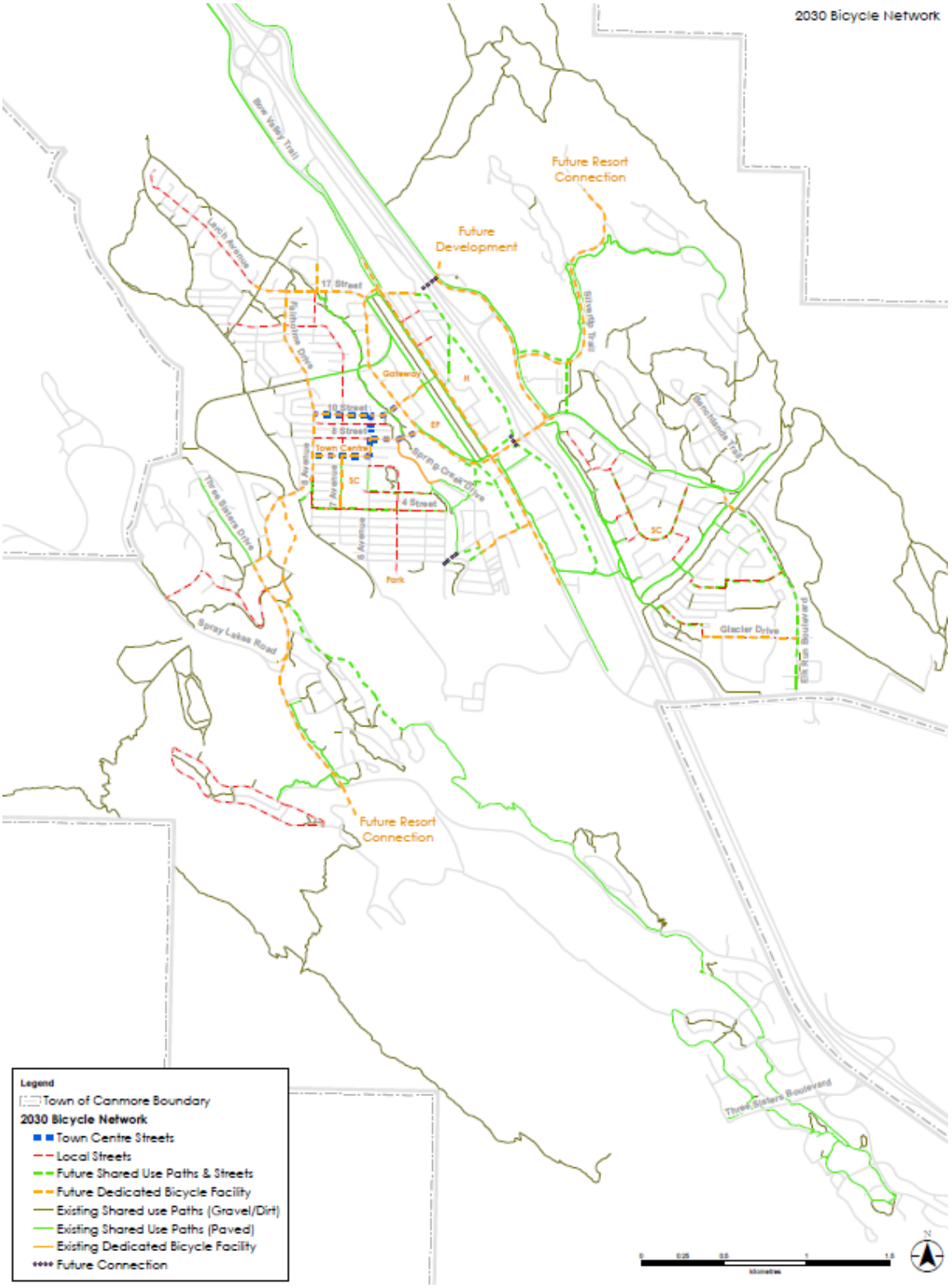


Figure E-6: 2030 Bicycle Network

Chapter 5 also covers the following critical elements to a successful active transportation network: bicycle infrastructure design, year-round

maintenance, bicycle parking, measures to encourage active transportation use, and accessibility.

Traffic Calming (Chapter 6)

Two key traffic calming goals are examined in this chapter:

- Safety: streets should be safe for everyone and all road users.
- Liveability: streets should be a liveable environment for pedestrians, cyclists, and motorists of all ages.

There are four key traffic calming objectives which can help to achieve these goals:

- Reduce vehicle speeds
- Discourage through traffic on local streets
- Minimize conflicts between street users
- Enhance the neighborhood environment

Traffic calming measures can divide into two broad categories of Social / Cultural Measures, which influence driver behaviour through psychological means, and Physical Measures, which prevent or reduce traffic movement through physically changing the road configuration or installing physical elements.

Social / Cultural Measures. One way to reverse the negative impacts of vehicles is to target resident driving habits to be more cognizant and considerate of other road users. Social and cultural measures include educational programs, and enforcement.

Physical Measures. Physical Measures generally prevent or reduce traffic movement through physically changing the road configuration or include installation of physical elements such as barriers and signage. These measures can include:

- Vertical Deflection
- Horizontal Deflection
- Road Narrowing
- Less Comfortable Driving
- Interactions & Conflicts
- Obstructions
- Signage
- Complete Streets Application
- Shared Streets

More details on these measures can be found in Section 6.3.

30 km/hr Speed Limit. At 30 km/h, local street dedicated bicycle infrastructure is deemed unnecessary, as sharing the road is the norm. For this, it is necessary that the road is uninviting for driving at faster speeds. To be most effective, this should be achieved through the design of the roadway rather than through signage and enforcement. Establishing lower speed limits in neighbourhoods is about influencing behaviour, supporting quality of life, and providing options for how people get

around. When properly 'traffic calmed', streets with 30 km/h speed limits knitted together can form areas or zones. They provide a secondary bicycle network as well as a pedestrian network. Liveability, permeability and traffic safety has proven to rise in such streets and areas. In addition, by lowering travel speeds, other modes (walking, cycling, and transit) are more likely to be used. The relatively short distances between most residences and the arterial roadway network in Canmore mean that for the significant increases in pedestrian comfort and neighbourhood liveability, there is a minimal change in travel times for those travelling by car.

Transit Network (Chapter 7)

Local transit service provides an alternative mode of transportation for basic trip types, provides mobility for seniors to access community services, provides an accessible transportation service, and also provides safe transportation for youth. As the community continues to grow and evolve, the need for a well-integrated public transit system becomes more pressing.

Canmore has both Local and Regional transit service via ROAM (Bow Valley Regional Transit Services Commission) as shown in the figure below.

Figure E-7: ROAM (Bow Valley Regional Transit Services Commission)

Transit is a key to network performance. Transit can be both a primary mode of transportation and an alternative in inclement weather for those who generally walk and cycle. Transit strategies are implemented by the Bow Valley Regional Transit Commission as approved by Council and guided by separate strategic documents. Future transit strategic planning should be guided by a requirement to contribute to 5% of travel trips around the Town Centre in 2030, up from the estimated 1-2% currently.

Commercial Goods Movement (Chapter 8)

Movement of goods and other industrial traffic is important to the economic vitality of Canmore, for both the regional movement of goods and also the servicing and delivery needs of local businesses. Commercial vehicles need to be accommodated on streets in industrial areas, on those that lead to and from industrial areas, and on collector and local roads for access to commercial and residential areas.

Recommendations to improve commercial goods movement within the Town of Canmore have been made through a review of the Town's existing goods movement policies, existing truck routes, and a peer review of policies in similar jurisdictions in Alberta. These recommendations recognize a balanced need to serve the highway-based commercial business, serve local businesses and industries, along with the needs of residential and non-industrial areas within the Town. These recommendations can be found in Section 8.2. The proposed truck routes and dangerous goods movement routes is shown below.

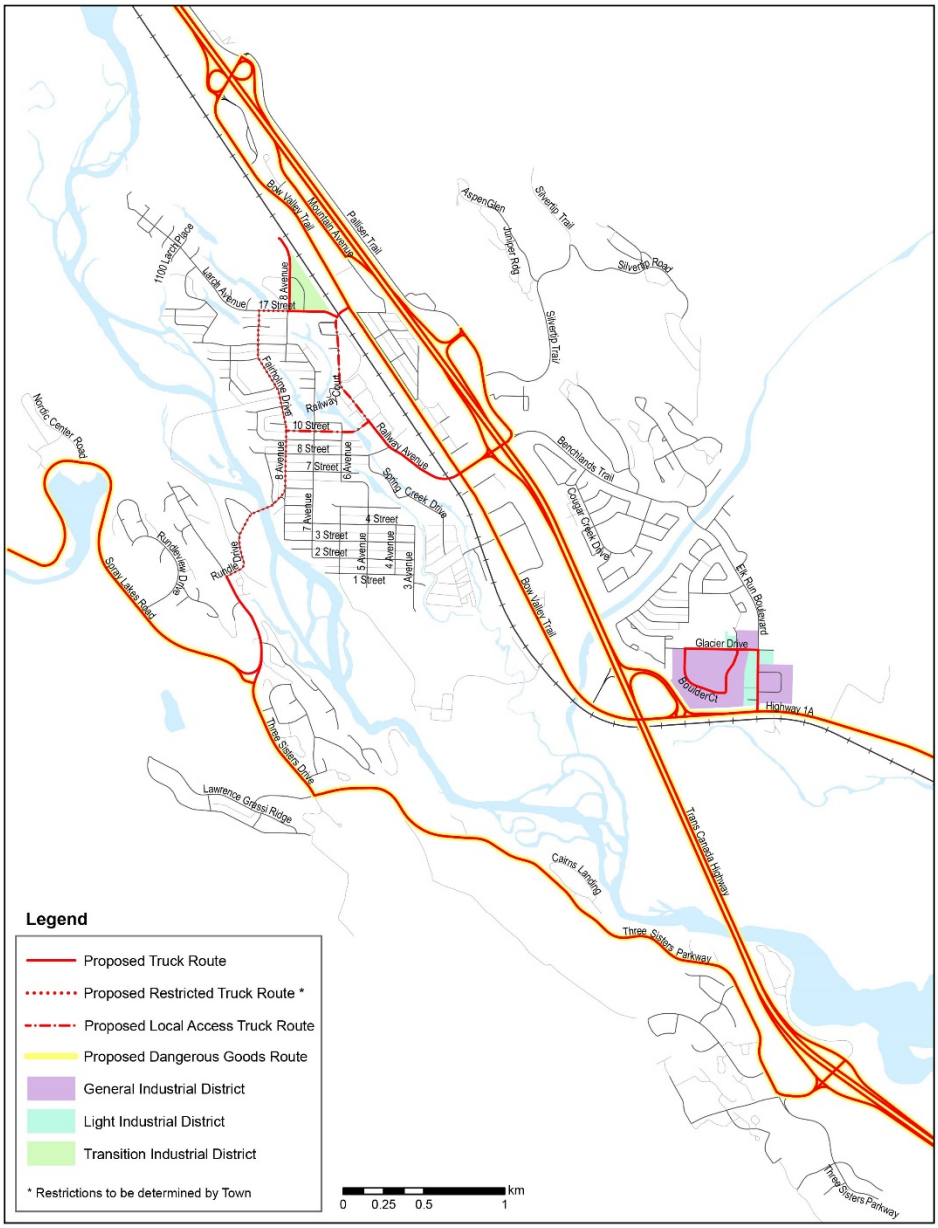


Figure E-8: Proposed truck routes and dangerous goods movement routes

C. Sustainable Transportation Policies (Chapter 9)

There are several documents that outline transportation policies, including the following:

- Town of Canmore Land Use Bylaw 22-2010
- Municipal Development Plan, 2016

The following high level sustainable transportation policies provide a synthesis of elements of the above documents and are intended to reinforce existing policies. The recommended policy changes in Section 9.1 reflect the three key aspects of sustainable transportation, including the encouragement of active transportation and reinforcement of healthy communities, land use policies that encourage sustainable transportation movements, and environmental stewardship of transportation infrastructure improvements. The

high-level sustainable transportation policies are as follows:

Healthy Communities by encouraging active transportation	➢ Provide access and mobility for everyone, through an active transportation network for all skill levels, and alternative mobility options, including a local and regional public transit system. ➢ Create human movement corridors, focused on pedestrian and bike transport through a safe and connected network of walkways and cycling routes. ➢ Create a more pedestrian friendly downtown and continue enhancement of the public realm.
Land Use shapes the way we move	➢ Accommodate future growth within the defined Urban Growth Boundary; increase the average density of residential development to limit consumption of new land for new growth. ➢ Manage parking supply and pricing to encourage use of alternative transportation modes. ➢ Integrate transportation and land use planning by promoting compact, mixed-use land use that creates a sense of community.
Environmental Stewardship protects our ecosystem	➢ Protect and enhance the natural environment, mitigating negative impacts through sustainable and energy efficient transportation systems. ➢ Promote a high standard of environmental management and aesthetic quality in the planning, design, and maintenance of transportation facilities. ➢ Engage in responsible planning and construction methods, through appropriate studies, impact assessments, and protection plans.

D. Implementation Plan (Chapter 10)

Network Level Recommendations

Several network level recommendations are needed to achieve the ITP's mode share targets. In order to ensure success, these recommendations must be further developed with coordination with parking management planning, transit planning, Town Centre Enhancement planning, street, drainage and utility rehabilitation, and budget planning. Successful implementation of network changes requires input from various municipal departments, community groups, residents, visitors, business organizations, and Council. In addition to infrastructure changes, policy updates, business development, communications and engagement, hotel management, education, and promotion will play important roles in achieving the goals of the ITP.

The recommendations have been categorized into the following focus areas.

- Safety, Comfort and Accessibility
- Network flow, Main Street as an Activity Street
- 20% Cycle Mode Share
- 15% Walk Mode Share
- 5% Transit Mode Share

- Education and Promotion
- Evaluation of Implementation Options

See Chapter 10.1 for specific recommendations.

1.0 INTRODUCTION

The Town of Canmore is a unique mountain community in Alberta nestled in the Bow Valley with a permanent resident population of approximately 14,000, and a total population including non-permanent residents of around 18,000. Originally a mining town, Canmore has transformed itself into a tourist and recreation destination. Over the last fifteen years, strong population growth and an increase in visitors has resulted in a vibrant town centre, a number of new residential and commercial areas, growth in use of the Canmore Nordic Centre, and new civic facilities such as the Civic Centre and Elevation Place.

1.1 What is an Integrated Transportation Plan?

An Integrated Transportation Plan (ITP) is a long-range strategic plan that guides transportation decisions and influences land use by identifying transportation infrastructure requirements and policies for municipalities to attain their vision and goals for economic growth. An ITP also considers environmental planning and sustainability principles and provides the framework for implementing coordinated improvements on a town-wide basis. An ITP avoids the pitfalls of piece-meal planning and "band-aid" solutions by providing an integrated vision for the Town to strive for.

Rather than placing a high degree of emphasis on traffic modelling and forecast capacity issues as Transportation Master Plans have typically done in the past, the Canmore Integrated Transportation Plan takes a more integrated approach in revisiting the role and function of the transportation system in Canmore, and in understanding the overall vision and guiding principles of designing and reshaping the multi-modal transportation network. This ITP also provides an opportunity for proactive thinking, anticipating community needs, and preparing for emerging trends in transportation solutions.

1.2 Background/History

The 2014 Integrated Transportation Plan (ITP) was approved by Council for planning purposes. Guiding principles of the ITP were developed through stakeholder and public consultation, and a review of previous planning documents. These guiding principles (Section 2.3) identify and define what is important to the community, setting the vision for Canmore's future transportation system.

The 2014 Integrated Transportation Plan (ITP) laid the groundwork for principals in community planning and roadway design that would enable greater choice and opportunity for residents and visitors to move around and connect in our community. These principles have informed a number of important projects over the past three years, including new pedestrian bridges on Spring Creek and Cougar Creek, improved connectivity to Bow Valley Trail, the Benchlands roundabout and pathway improvements, Cougar commuter pathway improvements, regional transit enhancements introduction of local transit, and Canmore's first Complete Streets rehabilitation on Spring Creek Drive.

The projects above are long-term investments in managing travel demand. The return on these investments will grow each year, as a greater proportion of the community is enabled to travel without an automobile. In the meantime, Main Street and other corridors in Canmore's Town Centre continue to experience high levels of congestion on a number of peak season days. Even during a typical summer day, moderate congestion levels are experienced.

Without continued changes to the function of our roads and the way people travel, and with the expected growth in Canmore's population and visitation, we can expect to see much worse levels of congestion in the future.

1.3 Why is an Integrated Transportation Plan Update Needed?

In 2014, the Town of Canmore adopted an Integrated Transportation Plan (ITP). Not only did the plan seek to guide future transportation and land use decisions, it also embodied an innovative paradigm shift towards modal integration. Rather than a traditional focus on motor vehicles, the plan also aimed to enable people to take more trips by transit, foot and by bicycle. A step-by-step approach was proposed to increase modal share for all road users. This was done in part by creating better conditions for active road users such as new infrastructure to support people walking and cycling.

Given the Town of Canmore's desire to achieve ambitions targets for active transportation modal share (defined in Section 1.4), the 2014 ITP needed to evolve to further support that goal but also account for a growing body of knowledge in the field of integrated mobility and multimodal network planning. While 2014 ITP was forward thinking in considering multiple modes, it was less proactive and precise in its discussion of transportation and land use trade-offs. This ultimately led to practical challenges and further questions when undertaking local infrastructure projects. For example, what is the target mode share for various corridors and what minimal requirements for bicycle, pedestrian, and transit infrastructure is required to meet reach those targets?

This report addresses these types of practical questions but also proposes strategic improvements to the 2014 ITP in order to meet the travel needs of the community, now and in the future. While the majority of the 2014 ITP remains unchanged, network performance has been studied in greater detail, in order to provide clearer guidance on requirements for Canmore's roadways in order to accomplish community goals. This will create the conditions for developing a coherent, consistent, and connected network of active transportation infrastructure that best responds to the needs of Canmore's residents and visitors.

1.4 Aligning with Canmore's Values

The 2014 Integrated Transportation Plan and 2016 Municipal Development Plan were developed through significant engagement with the community and build on past founding documents such as Mining the Future. Recommended updates to the ITP have been developed to provide a network that provides capacity for future growth, with outcomes that are consistent with Canmore's community values, goals, and vision. Transportation solutions should contribute positively to a wide range of community outcomes, including safety, the environment, community connection, accessibility, inclusivity, and the economy. The outcomes must be focused on the long-term and provide lasting benefit.

To this end, the 2014 ITP focused on presenting a transportation network which provides safe and efficient movement of all users, and promotes attractive streets and liveable neighbourhoods, while ensuring capacity for vehicle and goods movement, even with future growth. The plan accommodates both local users as well as tourists. The 2014 ITP introduced a Complete Streets approach, in which a multi-modal transportation network was developed to accommodate all transportation modes and multiple street functions. The focus of the approach is to **'create places where people want to be'.** This approach has been preserved, and greater emphasis has been placed on best practices for safe and efficient street designs that will enable a greater number of people to make a greater proportion of their trips by foot, bicycle, and bus.

This approach aligns well with Canmore's guiding documents, which provide a number of social, economic, and environmental guiding principles. This is reflected in proposed network updates that are sustainable, and foster community connection and inclusion. To be successful in maintaining road capacity and community character, a target of 40% trips taken by foot, bicycle or bus is recommended. The target is for a typical summer day during the summer months in 2030.

The plan also allows for, and anticipates, many trips to continue as foot and bicycle trips in the winter and for transit share to increase during colder months. At an estimated 20% alternative transport mode share in the winter, the average annual mode share for driving would be 70%, with walking and cycling representing just under 25% of all travel trips in the area around the Town Centre, an attainable target that has been met in many diverse communities worldwide. Achieving this target will create sufficient capacity in the vehicular network to accommodate growth. To accomplish this target, the ITP has been updated to include:

Update of street classification to simplify the number of designs, provide consistent designs and allow for an intuitive understanding of the road hierarchy; Increased focus on moving vehicle traffic and goods around the Town Centre, and moving

people into the Town Centre and allow for greater activation of Main Street; Develop best practice guidelines for street design that will enable 40% non-vehicular travel in the network around the Town Centre during summer months; Update the implementation plan identifying short-term and long-term intersection and corridor improvements to realize the overall vision.

In addition to these revisions, achieving this mode share target will require updates to supporting guidelines, policies, and standards, including:

- Land Use Bylaw
- Engineering Design & Construction Standards;
- Changes to the Alberta Traffic Safety Act and associated regulations in order to facilitate best practices in cycling facility design and operation

1.5 Update Process

A study was undertaken in 2017 to determine how to accommodate travel demand in a way that was consistent with previous planning documents at a level of detail that was sufficient to identify corridor concept designs that were feasible and aligned with Complete Streets principles.
The scope of this update has included:

- Assessing the status of transportation demand in Canmore in 2017 and in 2030 (Section 4.2 and 4.3);
- Consolidating Complete Streets philosophies into a clear set of design principles to inspire coherent, consistent, and connected solutions (Section 4.4);
- Developing a transportation network vision that is consistent with community values, and that provides quality options for all residents (Section 4.6);
- Developing a bicycle network vision in view of making cycling a feasible mode for users of all ages and abilities in Canmore (Chapter 6).
- Developing an implementation plan which identifies short-term and long-term network improvements for Canmore (Chapter 10).
- An Integrated Parking Management Plan is simultaneously under development, to support the vision of the Integrated Transportation Plan.

1.6 Future Updates

Through the ITP study process, many existing local issues may be identified by the public; however, the ITP is a strategic long-term plan that cannot address every issue within the Town. While short- term recommendations and new policies have been identified, the ITP is a living document that requires updates every 5-10 years as land use, community needs, and travel patterns change over time, and as new transportation challenges and opportunities arise from these changes.

The ITP Implementation Plan will include specific short-term and long-term capital improvements and strategies that will change the current design and operation of streets to encourage and accommodate targeted levels of walk, cycling, and transit use. This document will be managed separately and updated through strategic planning and each budget cycle with updated details and revisions as influenced by growth development, available funding, and council priority.

2.0 PLANNING CONTEXT

The Canmore Integrated Transportation Plan has been developed within the context of municipal planning policies and initiatives. The following section highlights the key planning documents and guiding principles influencing the ITP.

2.1 Background Planning Documents

Various planning documents were reviewed for background information for the ITP. The main background documents are summarized and listed as follows:

2.1.1 Town of Canmore Transportation Master Plan

The *2001 Transportation Master Plan (TMP)* provides a roadmap for the development and implementation of transportation improvements to accommodate growth, with a vision to provide a multi-modal transportation system, and the safe and efficient movement of people and goods. The *2006/07 Update* to the TMP focused on updating traffic volume projections, cycling network recommendations, and updating road network improvements. The TMP was used as a basis to understand the existing transportation conditions and needs of the Town.

2.1.2 Canmore Municipal Development Plan

The *Canmore Municipal Development Plan (MDP), last updated in 2016*, is a statutory plan adopted by bylaw under the provisions of the Municipal Government Act that provides the policies and guidelines to direct future growth and development in the Town of Canmore. These policies were adopted into the guiding principles of the ITP. The plan is focused on the orderly and economic distribution of land uses, the form of future development, and protection of key natural areas and features, and defines the general type and location of development that is appropriate to the Town.
In order to become Alberta's premier walking and cycling community, the MDP recommends the creation of a multi-modal transportation network through Complete Streets and a trail network that prioritizes and encourages walking, cycling, and transit while accommodating the private automobile within a reasonable capacity. Where additional capacity is required, new active transportation and other multi-modal connections will be favoured over adding vehicle lanes to existing corridors. The envisioned transportation network places added emphasis on streetscaping and the public realm to nurture Canmore's unique sense of place.

2.1.5 Open Space and Trails Master Plan

The *Open Space and Trails Master Plan, June 2015,* provides recommendations for the trail network, infrastructure, and open spaces within the Town. These recommendations and improvements were focused on the development of a well-connected and functional open space and trail network which serves both active transportation needs and recreational opportunities.

2.1.6 Transit Feasibility Study

The *Town of Canmore Transit Feasibility Study, January 2006,* identified that the "conditions exist within Canmore to make a 'starter' transit system feasible". A one-route transit system was proposed with 56 bus stops. The study provided a

basis for transit recommendations of the ITP.

2.1.7 Town Centre Enhancement Concept Plan

The *Town Centre Enhancement Concept Plan, October 1998,* outlined clear urban design policies to reinforce the Town Centre as the Town's primary area of social interaction and focus for civic and cultural identity. The plan recommended implementation strategies for the transportation and infrastructure network required to support the growth in the Town Centre.

Additional relevant studies which were reviewed include:

- Bow Valley Trail Area Redevelopment Plan, 2012
- Teepee Town Area Redevelopment Plan, 2004
- Town of Canmore Central Business District Traffic Study, 2005
- Bow Valley Trail / Mountain Avenue / Railway Avenue Functional Planning Study, 2005
- Bicycle Friendly Business District Guidebook, 2014
- Downtown Canmore Parking Study, 2018
- Integrated Parking Management Plan, 2018

2.2 Vision Statement

The *Town of Canmore 2016-2018 Strategic Plan* states the following vision, goal, and strategic initiative:

VISION	➤Canmore is a resilient and vibrant community socially, economically, and environmentally. Its strength is in its resourceful and engaged citizens, who thrive together on the strength of the community's heritage, long-term commitment to the diversity of its people, and health of the mountain landscape.
GOAL	➤Canmore has a unique sense of place ➤Canmore is a safe community ➤Canmore has a diverse economy that is resilient to change ➤Canmore is a municipal leader in environmental stewardship
PRIORITY	➤Address traffic congestion and parking in downtown core

The ITP builds on this strategic initiative to define a multi-modal transportation system that helps Canmore become the kind of community its residents want it to be. It is recommended that through actions set out in the ITP, the Town of Canmore is envisioned to be ***Alberta's premiere walking and cycling community***, and achieve a 40% mode share of sustainable modes (walk, cycle, transit) during the summer by 2030. This goal is reflected in the recommendations for the Town, particularly through focusing on the design of Complete Streets and improving the active transportation network.

2.3 Guiding Principles

Guiding principles were developed through stakeholder and public consultation, and a review of other planning documents. The guiding principles identify and define what is important to the Town of Canmore, setting the vision for the future transportation system.

A multi-modal transportation network will connect neighbourhoods and places of interest.	➤ Active travel options will be available for all trips, year-round. ➤ The severance impacts of the TransCanada highway and CPR will be mitigated through the provision of walking and cycling connections. ➤ Where vehicle capacity is required, new multi-modal linkages will be favored over adding lanes to existing corridors.
The transportation system will provide mobility and access for all.	➤ The cycling network will build on the existing trail system and roadway network to provide safe and convenient connections for all ages and abilities. ➤ A local transit service will provide a reliable, convenient, and efficient transit service to the largest proportion of the population possible. ➤ The regional transit service will be integrated with a local service in Canmore. ➤ A highly connected active transportation system will support a walkable urban form.
The transportation system will reinforce the Town Centre as a commercial, civic, and cultural focal point in Canmore.	➤ The transportation system within the Town Centre will be multi-modal, but will favour walking as the highest priority mode, supporting intense development in a walkable environment. ➤ To achieve this multi-modal priority, set mode split targets for 2030 of 60% auto, 20% bike, 15% ped, 5% transit. ➤ Land use form / density and the walking network will maximize 10- minute walking access to the Town Centre, major facilities, and other activity nodes.
Transportation corridors will be aesthetically pleasing and inviting as destinations as well as movement spaces.	➤ All streets will serve multiple functions, and major streets[3] will support active, transit, and automobile modes. ➤ Land use and activity will front onto streets and be connected to the street at all levels of the street hierarchy.

The transportation system will be developed and maintained in a responsible and sustainable manner.	➤ Transportation investments in Canmore will be based on life-cycle costs, with consideration to capital, maintenance, and operational costs, as well as the economic benefit to users and the Town as a whole. ➤ Canmore's transportation network will be developed in a manner that leads to long-term efficiency and durability. ➤ The transportation system should support economic prosperity within Canmore.

[3] Major streets typically constitute Arterial streets.

3.0 ENGAGEMENT STRATEGY

Various stakeholder groups and the public were engaged throughout the study process of the 2014 ITP, through a thorough engagement process that involved in-person interviews, public open houses, stakeholder workshops, self-guided feedback opportunities, and online information. Other applicable stakeholder and public engagement has occurred through concurrent studies, such as the Bicycle Friendly Business District Workshop and the Canmore Wayfinding Program.

3.1 2014 ITP Engagement

Engagement with a Stakeholder Advisory Group (SAG) occurred through three workshops that were held in 2013 and 2014. The workshops were focused on determining the vision for transportation in Canmore, the identification of transportation options and alternatives, and the evaluation of transportation option and recommendations. Input from the SAG consultation was incorporated in the ITP wherever possible. The SAG included over 50 members:

- Town of Canmore, Town Council
- Town of Canmore, Administration and Staff
- Town of Banff
- Downtown Canmore
- Canmore Business & Tourism
- Canadian Rockies Public Schools
- Canmore Community Cruisers
- Government of Alberta
- Alberta Health Services
- RCMP
- Local Businesses
- Developers
- Bow Valley Builders and Developers Association (BOWDA)
- Bow Valley Regional Transit Services Commission
- Media

Three rounds of public consultation were conducted as part of the Integrated Transportation Plan. The initial round consisted of in-person interviews and public input via a large map for location- based comments. Two open houses were subsequently held at Elevation Place in the Town of Canmore. The first open house was held in April 2013, following the understanding and identification of the desired transportation system, in which feedback was obtained on the guiding principles of the study, along with the problems and opportunities of the transportation network. The second open house was held in March 2014, following the preliminary recommendations of the ITP, in which feedback was obtained on the recommended transportation network and the short- term infrastructure improvement priorities. Public feedback provided during the open houses was considered and incorporated in the recommendations of the ITP where possible, along with other public correspondences throughout the course of the study.

3.2 2018 ITP Update Engagement

Key stakeholders and the community were invited to presentations in April 2018. At these presentations, the proposed updates to the ITP were presented, together with a presentation on parking management. Areas of focus for implementation were outlined with an opportunity to provide feedback on expected challenges with implementation, and any concerns around direct impacts of the plan. People were invited to provide feedback to inform the development of the Integrated Parking Management Plan.

Subsequent to April presentations, the Integrated Transportation Plan Update was drafted, including a recommended implementation plan. An Integrated Parking Management Plan has been drafted in parallel. In May, workshops were held with key stakeholders to review and further develop the Integrated Parking Management Plan.

The ITP and Integrated Parking Management Plan were brought forward to Council in June 2018 with recommendations for adoption for planning purposes, including strategic planning and budget development.

3.3 Future Implementation Engagement

Subsequent to adopting the ITP for planning purposes, Administration will establish a framework for engaging on specific projects and initiatives. Further engagement and Council approvals will be required as projects are identified for implementation. For larger projects such as the Railway Avenue Complete Streets Rehabilitation, Council approvals will be needed for both the concept designs and capital budget. To develop concept designs, community engagement and directly impacted stakeholder engagement will be required. Work will be ongoing in these areas and will be tailored to the scope and scale of the projects.

4.0 STREET NETWORK

The 2014 ITP focused on presenting a transportation network which provides safe and efficient movement of all users, while at the same time promoting attractive streets and liveable neighbourhoods. It accommodates both local users as well as tourists. To achieve this, the 2014 ITP provided a Complete Streets policy, in which a multi-modal transportation network was developed to accommodate all transportation modes and multiple street functions. The focus of the approach is the **'create places where people want to be'.**

Looking back, the focus of the 2014 ITP was an effective starting point. A logical next phase in development of the plan is to outline a functional and holistic transportation network in greater detail, with elaboration on place and movement functions for each corridor. Secondly, the transportation network provided 'fixed' design forms for each street, based on 2014 state-of-the-art design knowledge. New insights require an update to how these streets are to be retrofitted.

Therefore, the updated ITP focuses on providing a transportation network which gets '*the right user on the correct street*'. For example, through traffic exiting the highway does not need to travel through Main Street to access mountain recreation. It can be redirected to other roads that are better suited to carry through traffic.

In Section 4.2, an analysis of the existing (2017) use of the transportation network is undertaken. Then, using growth factors, the 2030 future horizon is analysed. This shows what would happen in Canmore if no action was taken to manage traffic growth. After that, an improved future vision for Canmore is laid out, step by step. In this vision, the balance between traffic and land use, or place versus movement, is taken into account. With this update, the basic Complete Streets motto of '*creating places where people want to be*' is outlined in detail.

4.1 Existing Street Network

The 2014 ITP transportation network is presented through road classifications. In this classification, a distinction in different street classes is made, each with a different function. The arterial is of the highest order, the local street of the lowest. In the 2014 ITP, the road classification successfully brought balance between the functions of each street. Arterials are primarily for the flow of vehicles through the town, while local streets are primarily for living along (quietly). Figure 4-1 shows the existing road classification.

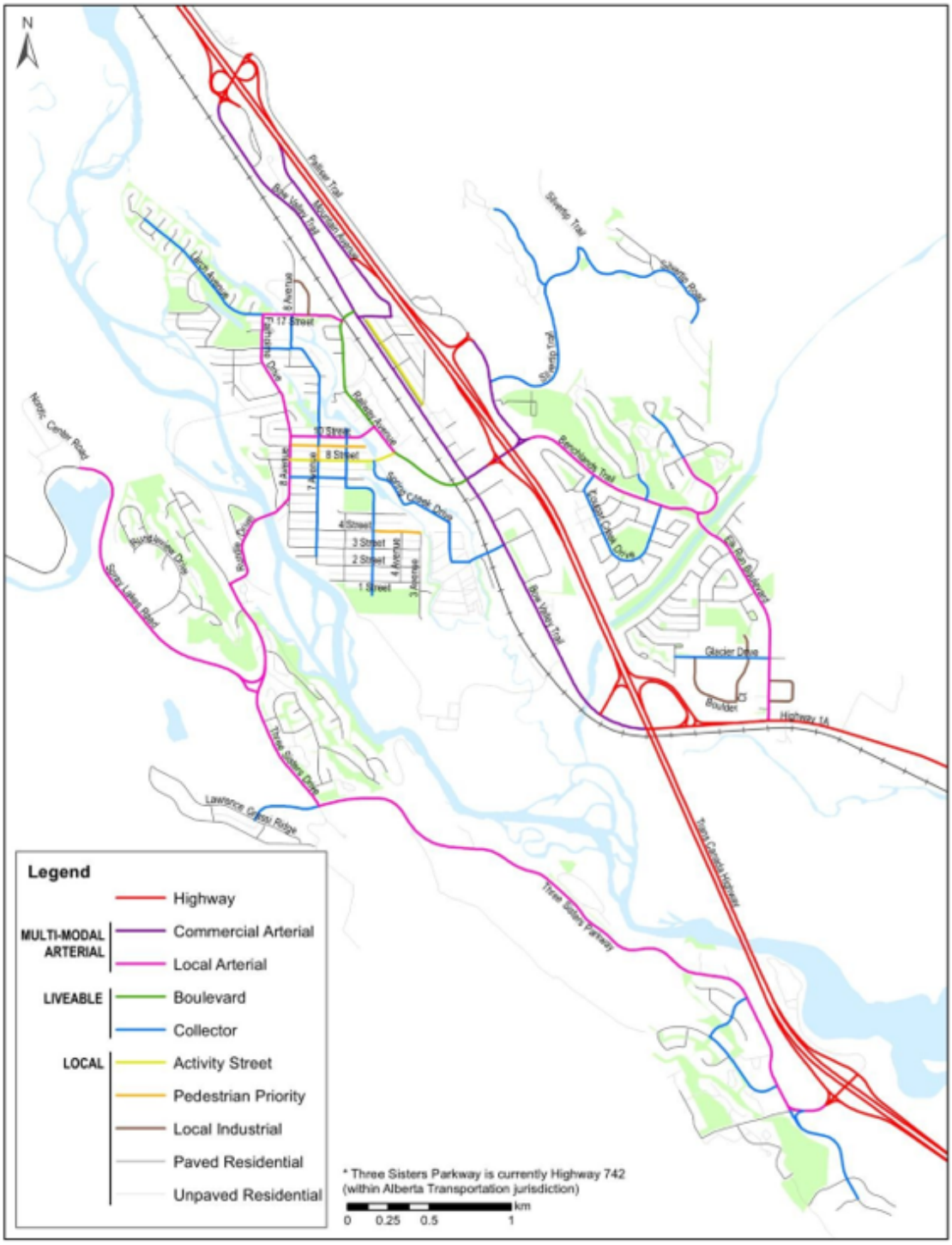


Figure 4-1: Existing Street Classification (2014 ITP)

The road classification defines the function of each street and is the first step in improving Canmore's connectivity and access. It provides conditions for the form and the use of each street. However, the downtown core, one of the most important destinations in Canmore, largely remains a street for the movement of vehicles. Main Street, listed as an 'activity street', remains the most direct, and preferred route through town from east to west. The form and the use of Main Street

are not aligned with the classification as an activity street. There is no balance between traffic and place. Room for people to stay, to shop, to eat, drink and enjoy is limited to the existing sidewalk space. Similarly, 10th Street, which has both a traffic function and shops and houses fronting onto it, is classified as an arterial. As such, it effectively supports Main Street in transporting motor vehicles through town east-west. This severely impacts the opportunity to further improve the downtown core as a more attractive, active, and economically vibrant destination.

4.2 Existing Traffic Volumes & Congestion Levels

The 2017 traffic volumes on Canmore's main roadway network were gathered and estimated by use of the existing counts and studies. The volumes listed in this section are at the peak period (annual seasonal peak day, ASDT). This is the average tourist season day (mid-June to mid-September) and must be interpreted as such. The 2017 ASDT is calculated for vehicular traffic and bicycle traffic alike. Figure 4-2 shows the ASDT in 2017 for vehicles.

The traffic volumes are also plotted against the capacity of each road, according to their existing form. On several locations, the appearance of the street is not in line with what might be expected according to the classification given to the road or street in the 2014 ITP. For instance, a street classified as a local street could have more than one lane per direction, transporting more than the desired amount of traffic. The existing Volume/Capacity ratio shows that with the existing road layout, problems in traffic flow occur. This can be seen in Figure 4-3.

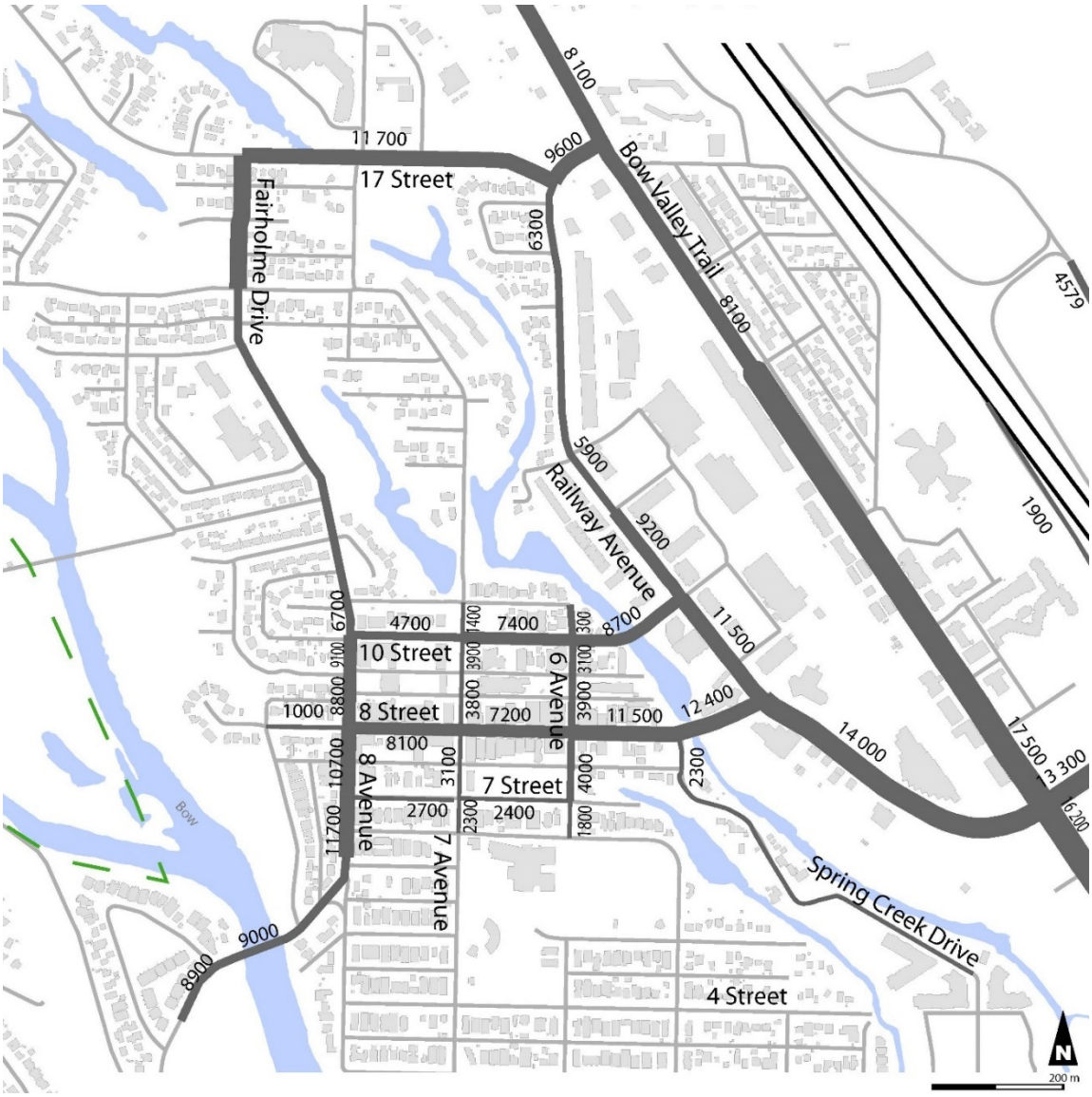


Figure 4-2: 2017 Typical Summer Daily Traffic Volumes

Currently, Main Street experiences moderate levels of congestion on a typical summer day as illustrated in Figure 4-3. The Policeman's Creek bridge is at capacity and sections of Main Street are approaching capacity.

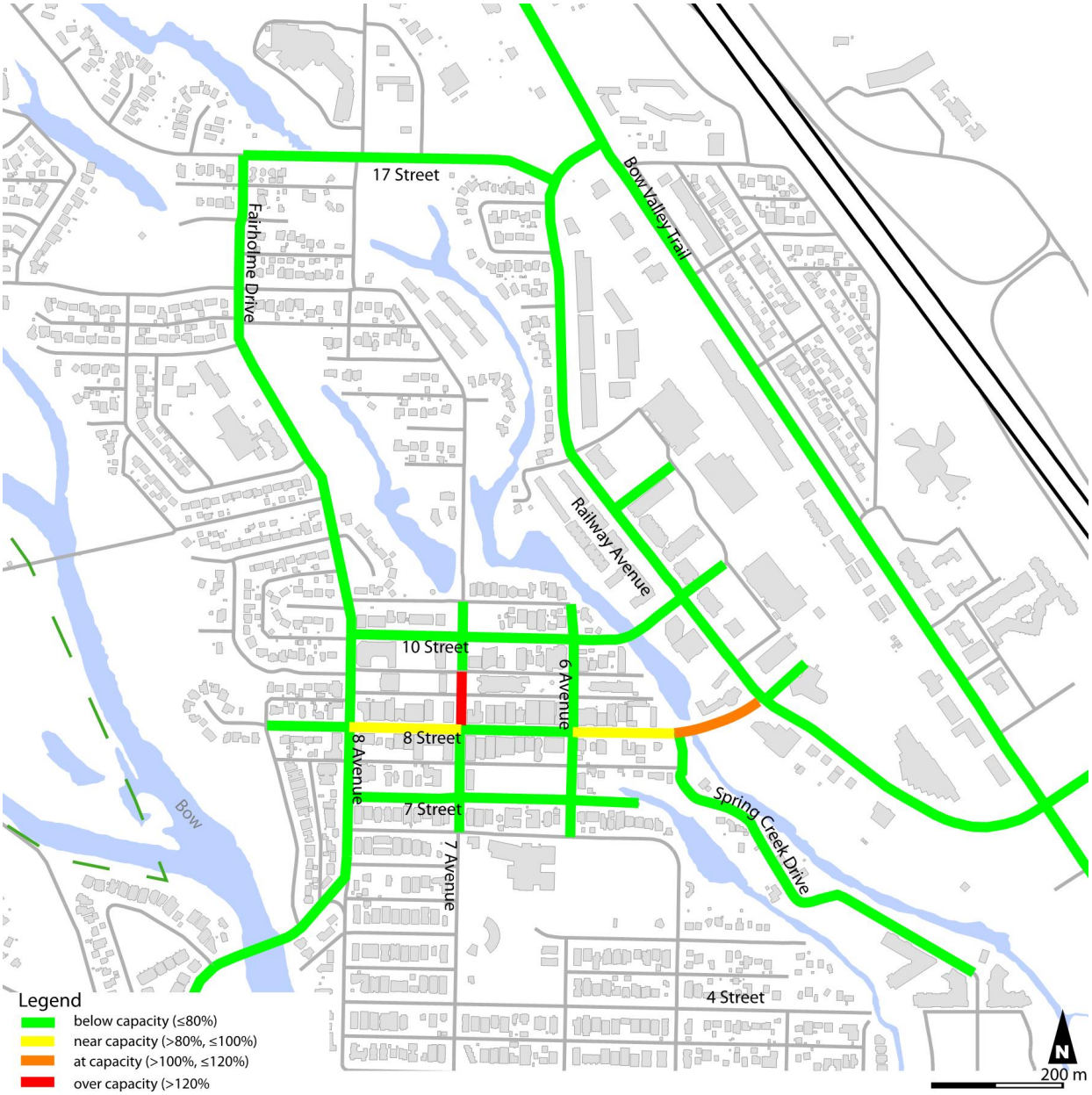


Figure 4-3: 2017 Typical Summer Daily Traffic Congestion

4.3 Projected 2030 Traffic Volumes & Congestion Levels

Without changes to the function of Canmore's roads and the way people travel, and with the expected growth in Canmore's population and visitation, Canmore can expect to see much greater daily traffic volumes (Figure 4-4).

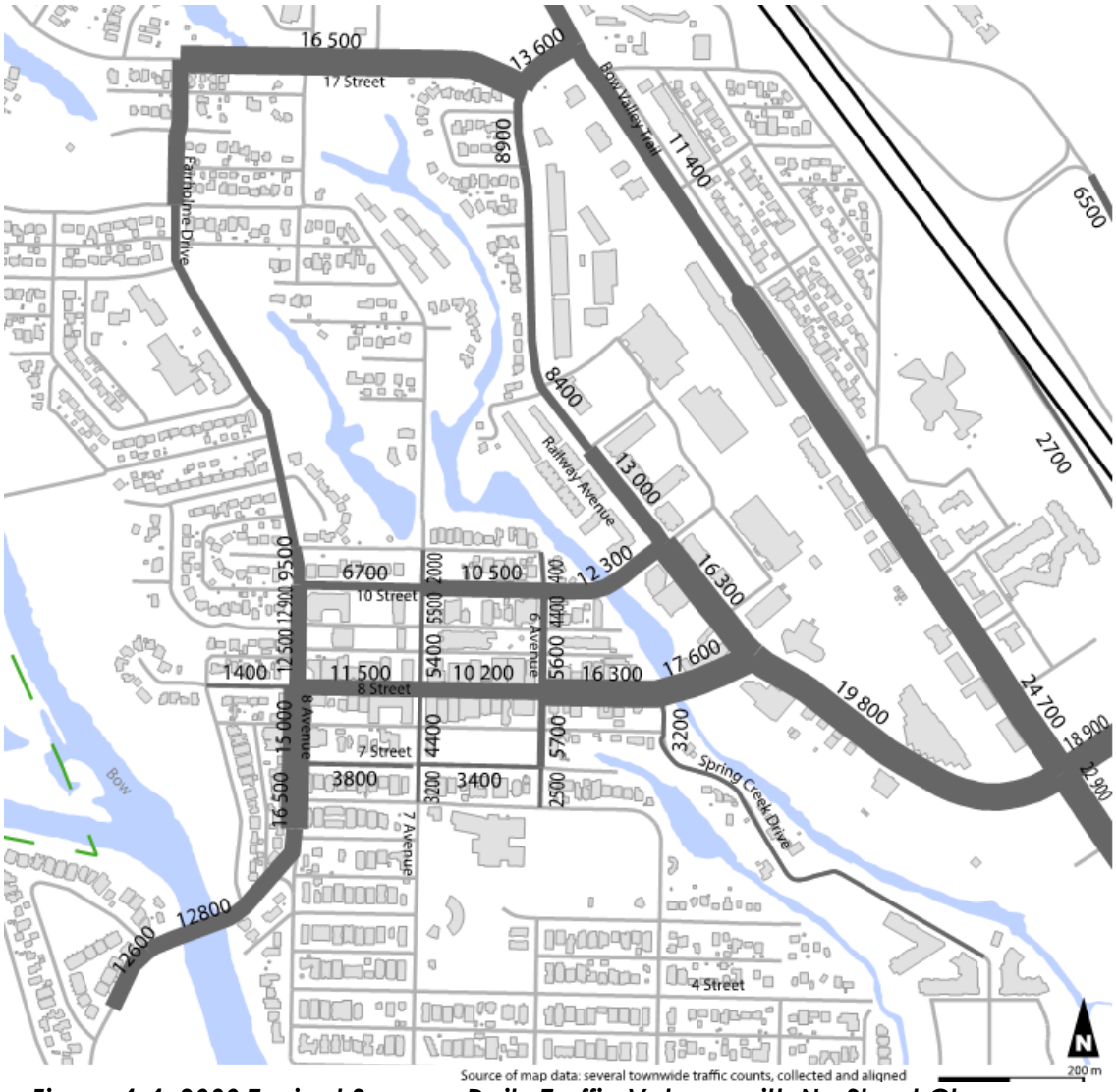


Figure 4-4: 2030 Typical Summer Daily Traffic Volume with No Street Changes

If Canmore does not change the function of the street network, the levels of congestion shown in Figure 4-5 below could be expected. Main Street, 6th Avenue, and 7th Avenue within the Town Centre will experience grid-lock conditions during typical summer weekends. Congestion levels during peak summer days (i.e. 15% more traffic) will be much worse.

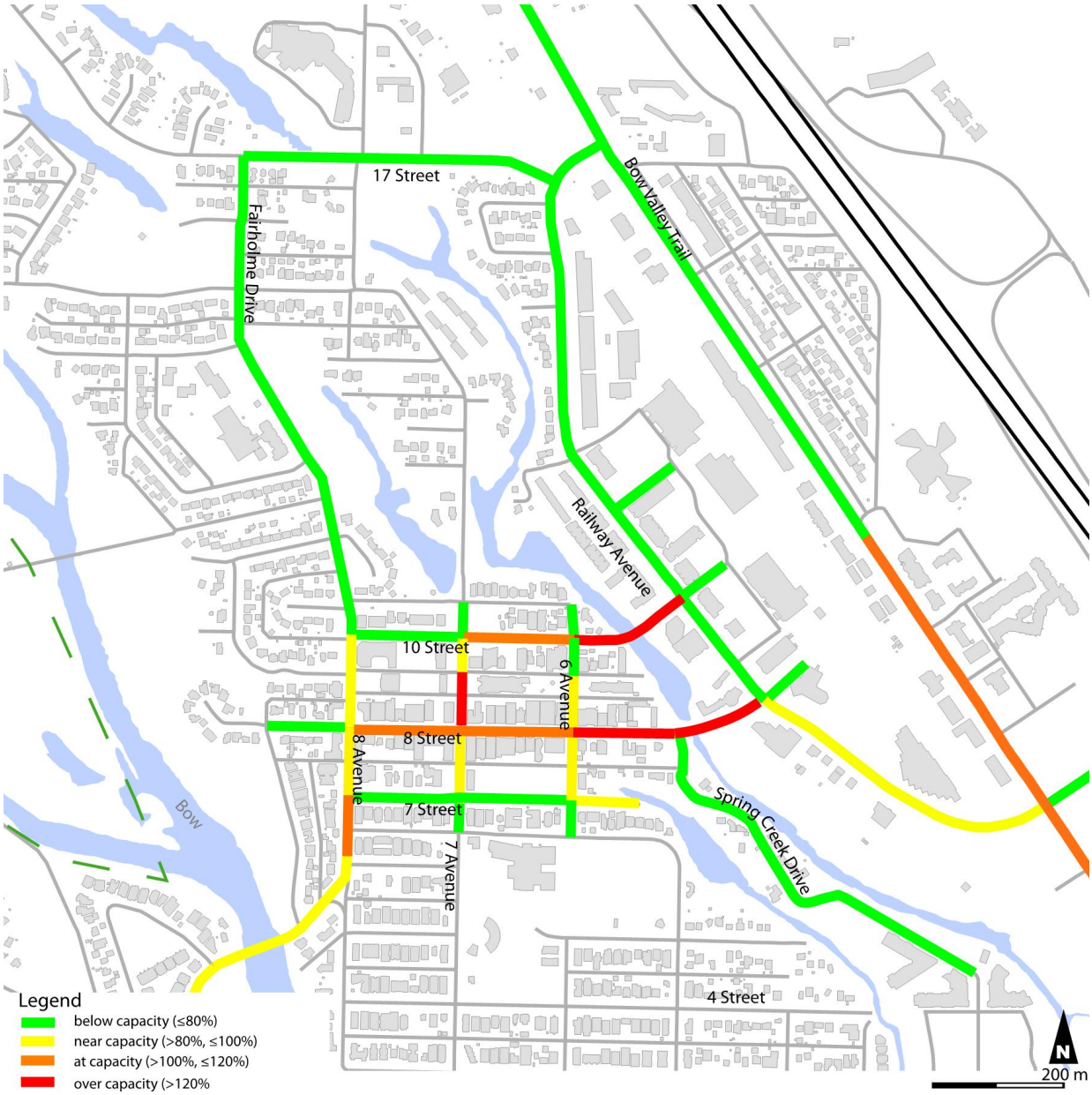


Figure 4-5: 2030 Typical Summer Congestion Levels Congestion with No Street Changes

4.4 Achieving Revised Mode Share Targets

The recommended target for 2030 walk, cycle, and transit on the network around the Town Centre is 40% during a typical summer day. In scenarios with significant growth, if this target is met, network performance will *improve* over 2017 conditions during a typical summer day, and greater activation of Main Street will be permitted. The target average annual mode split for walking, cycling and transit is 30% on the network around the Town Centre. To achieve this target a number of network changes are recommended, which promote more sustainable choices.

Development of policy, parking policy, and transit strategies all play fundamental roles in supporting reaching the target mode shares and are the focus of separate efforts currently underway. The development of those documents is to be integrated

with the updated ITP to ensure consistent and synergistic outcomes.

Outside of these areas, the focus of the ITP update is on the network. How streets are classified and designed is fundamental to enabling choice. The sections below outline recommended updates to street design and classification.

4.4.1 2030 Modal Split

Currently, the majority (80%) of daily trips made in Canmore are via automobile, as shown in Figure 4-6.

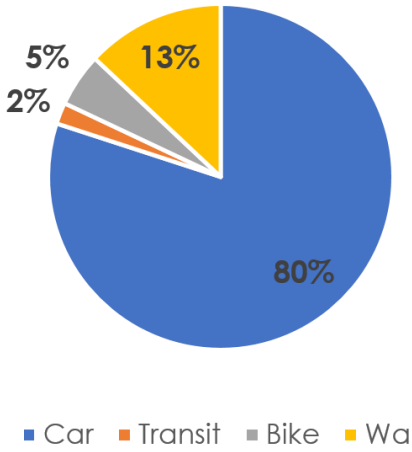


Figure 4-6: Town of Canmore Transportation Mode Split, 2017

With the expected growth in Canmore's population and visitation, the anticipated modal split in 2030 if no changes are made to the current network is shown in Figure 4-7.

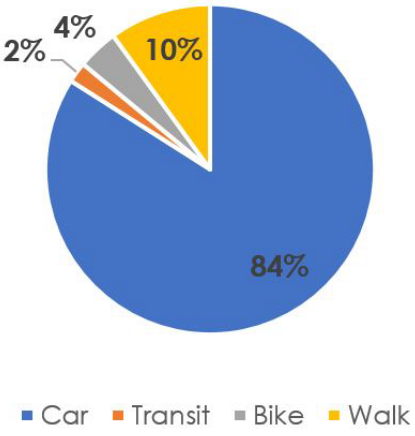


Figure 4-7: 2030 No Street Changes – Anticipated Modal Splits

With successful implementation of the Integrated Transportation Plan, 2030 mode split is shown in Figure 4-8 This modal shift from car trips to walk, bike, and transit trips is required to create capacity in the road network for those that need and want to drive, and to accommodate growth.

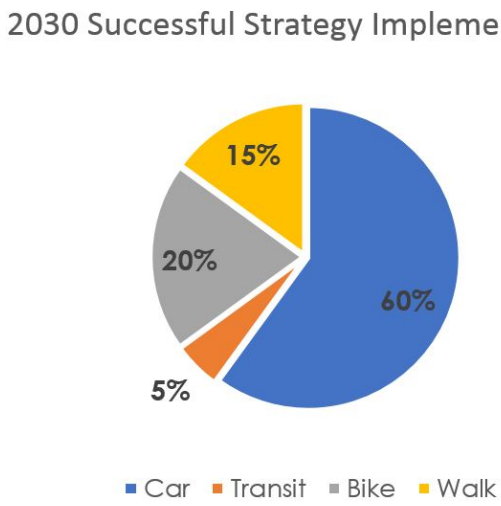


Figure 4-8: 2030 Successful Strategy Implementation – Anticipated Modal Splits

In order to accomplish this mode share target roughly 80% of people must be enabled to choose an alternative form of transport for some trips in the summer. The required change in choice is shown in the graphs below. It is important to note that the majority of all trips are expected to be taken by car, and that many people will never choose alternative transport out of necessity or personal preference. That is ok. There is room on the road for all future travel if the majority of people are encouraged and enabled to choose alternatives at least on occasion. Figures 4-9 and 4-10 illustrate the required transition.

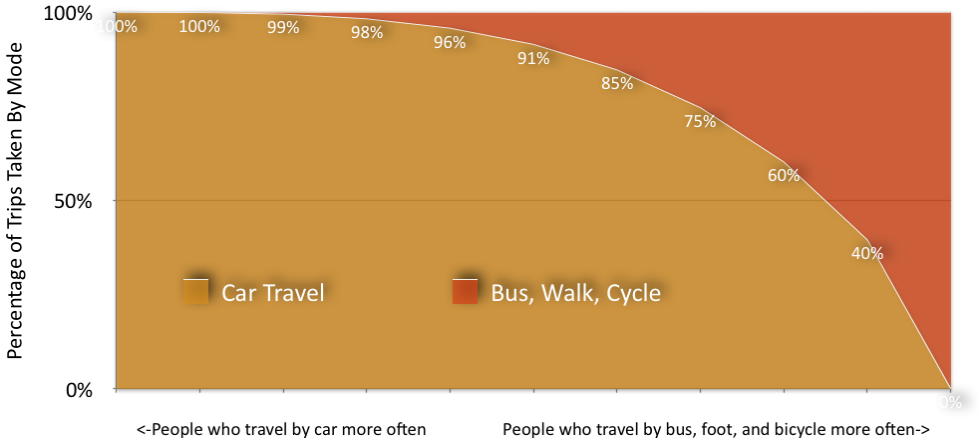


Figure 4-9: Current Mode Splits – 80% Vehicular Mode Share, Summer Period

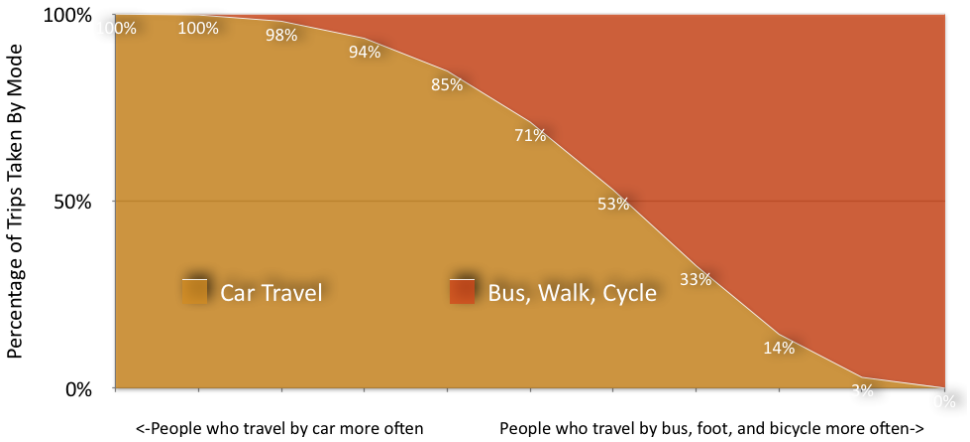


Figure 4-10: Current Mode Splits – 60% Vehicular Mode Share, Summer Period

4.5 Complete Streets Approach

The Complete Streets approach is a fundamental review of the balance between traffic modes (walking, cycling, transit, driving) on the street, as well as the balance between land use, space, and traffic. Fundamental principles include:

4.5.1 Functional Streets

There is a strong relationship between the form, the function, and the use of the road (Figure 4-11). Traditionally, North American traffic engineering follows a passive approach where the existing use of the road is taken as the desired use, and function and form are adapted to that use. The '85th percentile' rule is part of this doctrine. Traffic safety, liveability and an attractive community are not priorities in this approach, as it is mainly (car) traffic driven.

Many countries around the world have followed the Netherlands and Sweden in a new approach. Recognizing that the behaviour of users is influenced by the form and shape of the road, and that one can determine this street layout according to its function, higher levels of traffic safety and efficiency can be achieved through the establishment of appropriate roadway classifications.

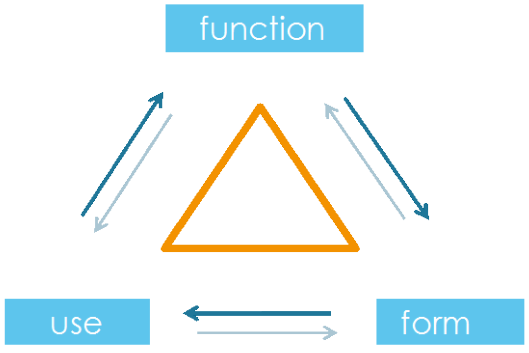


Figure 4-11: Relationship Between Form, Function & Use

Starting with the function of the street, establishing a clear and streamlined set of street typologies, speed limits and road design forms will make roads more predictable, less confusing for drivers and therefore safer. For this, the two main

traffic functions of each street are identified: Flow and Exchange2. Based on these two primary functions of a street, besides the highway as the major flow route, arterials are the main through roads (mostly flow), and local streets for access (mostly interaction) are distinguished. A middle category, collector roads (more flow along the segments, but with more interaction at intersections) connects these two street types. This results in three main types of streets in the urban area. Besides that, intuitively designed roads tell the story through the road AND the surroundings. Housing, shops, planters, trees, and street furniture are not just decoration, they play an important role in the ultimate form, and thus in the ultimate use of the road and should be taken into account from the start of the design process.

4.5.2 Balance Place & Link

In addition to transportation functions, streets have many other functions. This can be anything from living, working, and shopping to playing, eating, drinking, or walking a dog. There is a balance between transportation functions and other public functions, where – through physical impact and speed, transportation often dominates other functions. Therefore, in order to let other functions blossom, a careful balance must be struck on each road. For a shopping street, this balance is different than for a local residential street, for a boulevard, an arterial road, or a highway.
Understanding the desired balance of function plays an important role in setting the correct road class; 'lower' road classes will be designed in such a way that traffic is not the most important function. It is in these classes where place functions will emerge, like living (local streets) or shopping (activity streets).

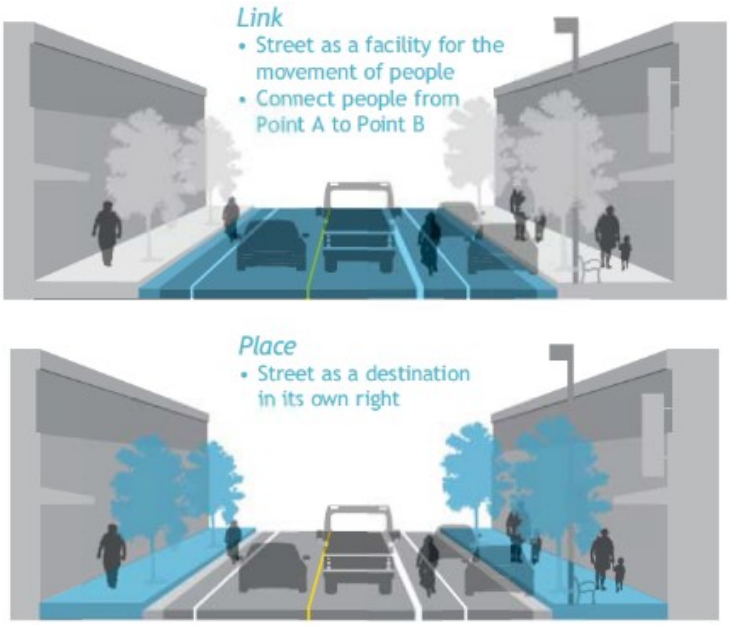


Figure 4-12: Balance Between Link & Place

4.5.3 Appropriate Lighting Levels

Lighting levels on paths and roadways contribute to the safety and comfort of a corridor. As a result, lighting plays an important role in how Canmore's streets and paths are used and the safety of the community. Excessive lighting too can be a problem, especially in a natural setting like the Bow Valley. Establishing

appropriate lighting type and level for each updated street classification is recommended as part of the implementation plan.

4.5.4 Appropriate Roads Speeds

Avoiding physical injury or harm, and the perception of danger is of the highest importance. Where transportation modes with greatly varying mass use the same functional space within the roadway, speeds must be low enough to ensure that even in case of a collision, the chance of serious injury or death is low. This is a key theme in the design of 30 km/h local streets, where the street design encourages a low operating speed to ensure **that people driving, and cycling can safely share the same space.** Incorporating traffic calming features will help to achieve this.

Where speeds are increasingly threatening to safety (over 30 km/h) as illustrated in Figure 4-13 various modes that have a highly different mass and or direction **should be physically separated**. This design methodology is reflected in the characteristics of motorways and highways, with their lack of intersections, dividing medians and wide lanes.

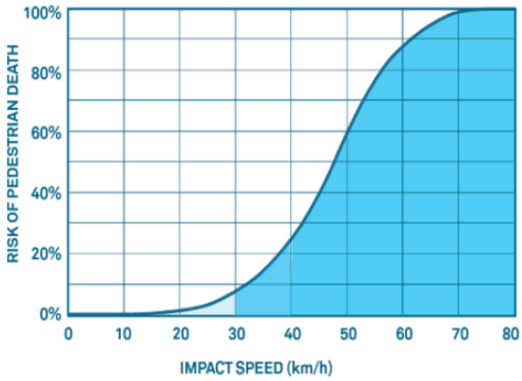


Figure 4-13: Relationship between motor vehicle impact speed and pedestrian fatality risk
(Source: Global Street Design Guide, NACTO 2017)

4.5.5 Recognizable Streets

Each of three road typologies has a dedicated speed limit. Furthermore, each road type has a fixed set of desired design features, and undesired design features. Some of these features are mandatory, others are recommended. This approach leads to standardization, without forcing a uniform design template for each street. With this, the updated Complete Streets philosophy greatly influences compliance and helps drivers assess their required behaviour on each street. The goal is to create an environment where drivers unconsciously and instinctively slow down and anticipate other users and potential conflicts. Examples of this are, for instance, the need for separated cycle facilities on a 50 km/h road versus the ability to safely mix of cyclists and motorized vehicles on 30 km/h roads. Or the need for a separation of directional lanes (minimally a center line) on 50 km/h roads versus the need to remove delineator lines on 30 km/h roads. In short, this dedicated set of design characteristics for each street classification strives for an operating speed that is aligned with the intended or posted speed.

4.5.6 Street Classifications

With this enhanced Complete Streets approach, the classifications used in the 2014 ITP are simplified according to the following table:

2014 ITP Street Classification	Simplified Street Classification	Theoretical Capacity
Highway	Highway	2100 veh/lane/hour
Commercial Arterial	Arterial	7500 veh/lane/day
Local Arterial	Arterial	7500 veh/lane/day
Boulevard	Collector	5000 veh/lane/day
Collector	Collector	5000 veh/lane/day
Activity Street	Local street	3000 veh/day (both directions)
Pedestrian Priority	Local Street	500 veh/day (both directions)
Paved Residential (Non Bike Network)	Local street	2000 veh/day (both directions)
Paved Residential (Bike Network)	Local Street	1000 veh/day (both directions)

Table 4-1: Street Classifications and Their Capacities
(Source: Various Dutch CROW guidelines)

4.5.7 Complete Streets Design Characteristics

Self-explanatory roads ask for a set of key design characteristics which make a street appear in such a way that it is instantly recognized as a certain class or type. Signs and markings are not suited for this; the form of the street and the street surroundings are sensory input for users of the street. On the other hand, any set of design items should not become a blue print, a uniform design template. That would halt innovation which, together with the long waiting period between design and construction, could result in an obsolete design before it's even built. Therefore, the design characteristics must be uniform on critical aspects, but free on design aspects. For instance, it should say it needs separation of bicycles from cars, but it should not say which material the bicycle surface treatment should be, what separator should be used or what width should be applied.

From a winter maintenance perspective, a major difference between traditional road design and Complete Streets road design is the addition of on-street bicycle facilities and/or off-street multi-use pathways. Typically, snow and ice control of painted bike lanes require an adjustment in the operations of the snow clearing equipment. They would be required to clear the bicycle lane in addition to the travel lane by plowing to the curb. Protected bicycle facilities require specialized equipment (and additional labor forces) to clear these narrower on-street facilities, and there are differences in the quality of snow clearing that is achievable based upon the physical separation (or lack of separation) of cycling infrastructure. Multi-use pathways can be cleared by smaller clearing equipment, if they are wide enough, or in some cases by hand shovelling, similarly to a sidewalk. An additional aspect that should be given consideration during the design process is planning for the storage or removal of snow, based upon the design of the roadway cross-section.

Self-explanatory roads tell the story through the design of the road AND the surroundings. Housing, shops, planters, trees, and street furniture are not just decoration, they play an important role in the ultimate form, and thus in the ultimate use of the road and should be taken into account from the start of the design process.

Table 4-2 provides an overview of the key design aspects for each street classification. For each street type a concept of the desired and undesired characteristics is shown in Figures 4-13 through 4-15. In these figures, there is an ideal and a minimum design form. Together, they show the range of design options for each street. This, in conjunction with the desired bicycle network (Figure 5-3), provides the guidance for building appropriate bicycle infrastructure for an all-ages and all-abilities network.

	Arterial		**Collector**		**Local**		**Activity Street (Local)**
	Ideal	Minimal	Ideal	Minimal	Ideal	Minimal	
Speed limit (km/h)	50		30		30		20
Bicycle Infrastructure	Curb protected	Buffered bike lanes	Buffered bike lanes	Bike lanes	Shared travel lane	Shared travel lane	Shared travel lane
Median Separation	Yes, center boulevard	Yes, center line	No center line	No center line	No center line	No center line	No center line, no sidewalks
Travel Lane Width (m)	3.3	3.0	3.0	3.0	5.0-6.0 (no lane differentiation)	6.0-7.0 (no lane differentiation)	<5.0 (no lane differentiation)
Housing Present	No	Yes	No	Yes	Yes	Yes	Yes
Street Trees Present	Yes	No	Yes	No	Yes	No	Yes
On Street Parking	No	Yes, in parking bays	Yes, in parking bays	Yes, on street	Yes, in parking bays	Yes, on street	Very restricted on-street parking
Intersecting with Major Side Streets	Signalized intersections, roundabouts	Signalized intersections, roundabouts	2-way yield, 2-way stop, signalized intersection, roundabout	2-way yield, 2-way stop, signalized intersection, roundabout	2-way yield, 2-way stop, signalized intersection, roundabout	2-way yield, 2-way stop, signalized intersection, roundabout	2-way yield, 2-way stop, roundabout
Intersecting with Minor Side Streets	2-way yield, 2-way stop, signalized intersection, roundabout	2-way yield, 2-way stop, signalized intersection, roundabout	Roundabout, 4-way stop, yield for right (preferred with raised intersection)	Roundabout, 4-way yield, 4-way stop, yield for right (preferred with raised intersection)	4-way yield, 4-way stop, yield for right (preferred with raised intersection)	4-way yield, 4-way stop, yield for right (preferred with raised intersection)	4-way yield, 4-way stop, yield for right (preferred with raised intersection)
Bus	Bus bay	On street	Bus bay	On street	On street	On street	Rather no bus
Dedicated Crossing	Zebra with center island	Zebra on raised crosswalk	Zebra	Nothing	Zebra	Nothing	Pedestrians can cross over anywhere (bylaw)
Theoretical Capacity (veh/day)	7,500/lane	7,500/lane	5,000/lane	5,000/lane	1,000 (bike route)	2,000 (non-bike route maximum)	3,000

	Arterial		Collector		Local		Activity Street (Local)
Desired Active Transportation Share (%)	30	20	50	30	70	50	90

Table 4-2: Complete Streets Design Criteria

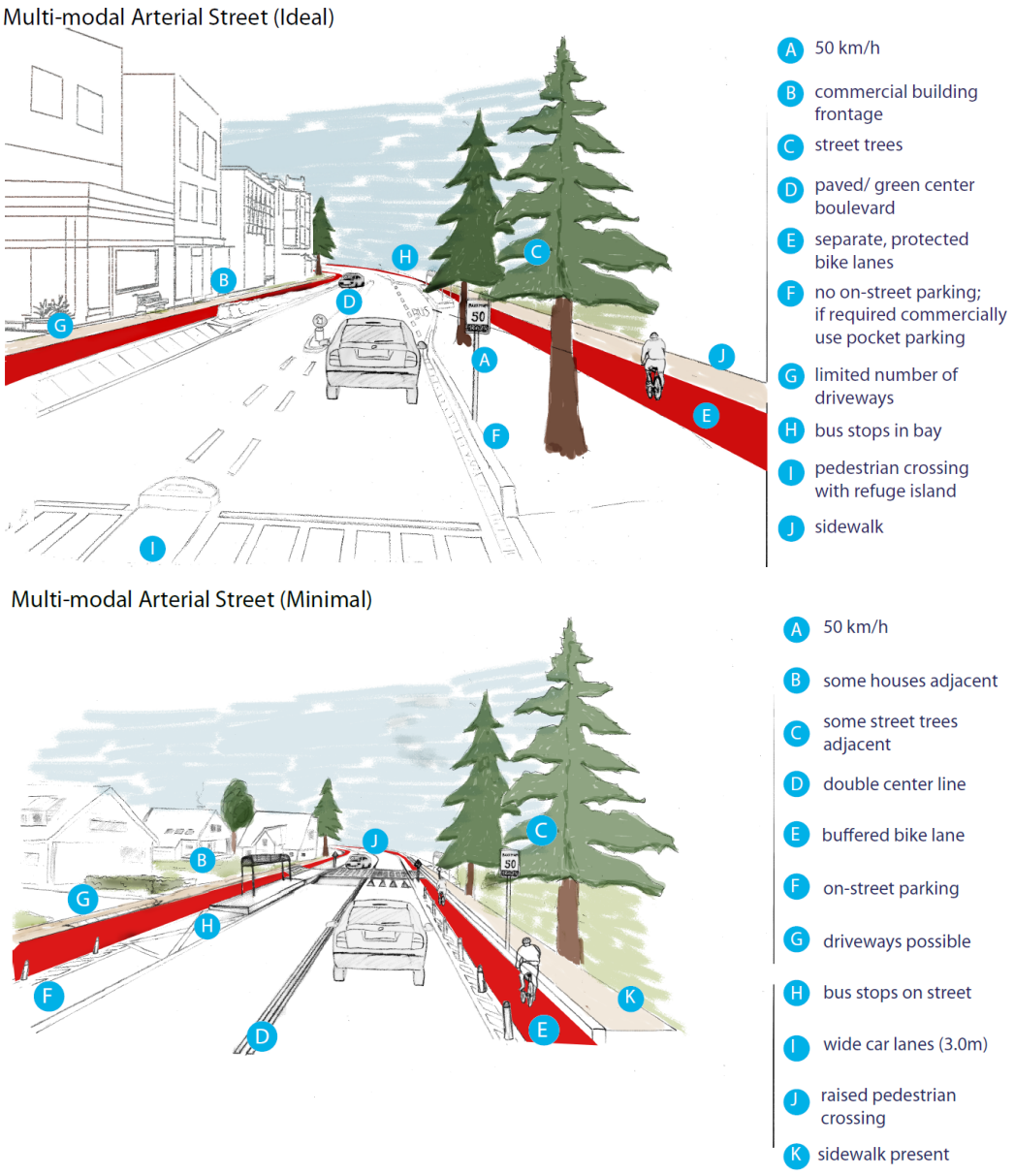
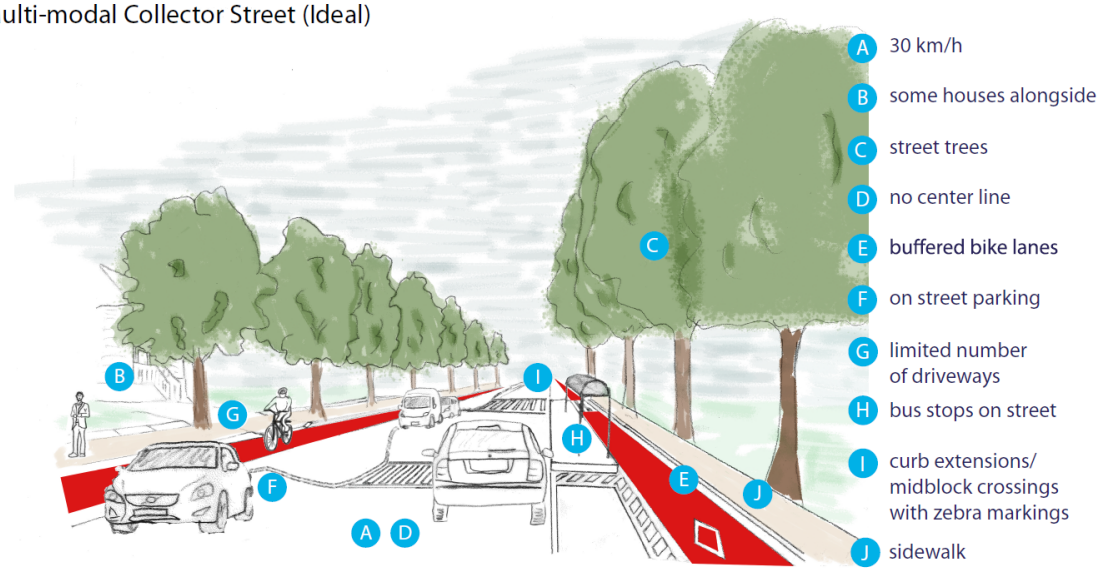


Figure 4-14: Key Design Characteristics of a Multi-Modal Arterial Street

Multi-modal Collector Street (Ideal)



Multi-modal Collector Street (Minimal)

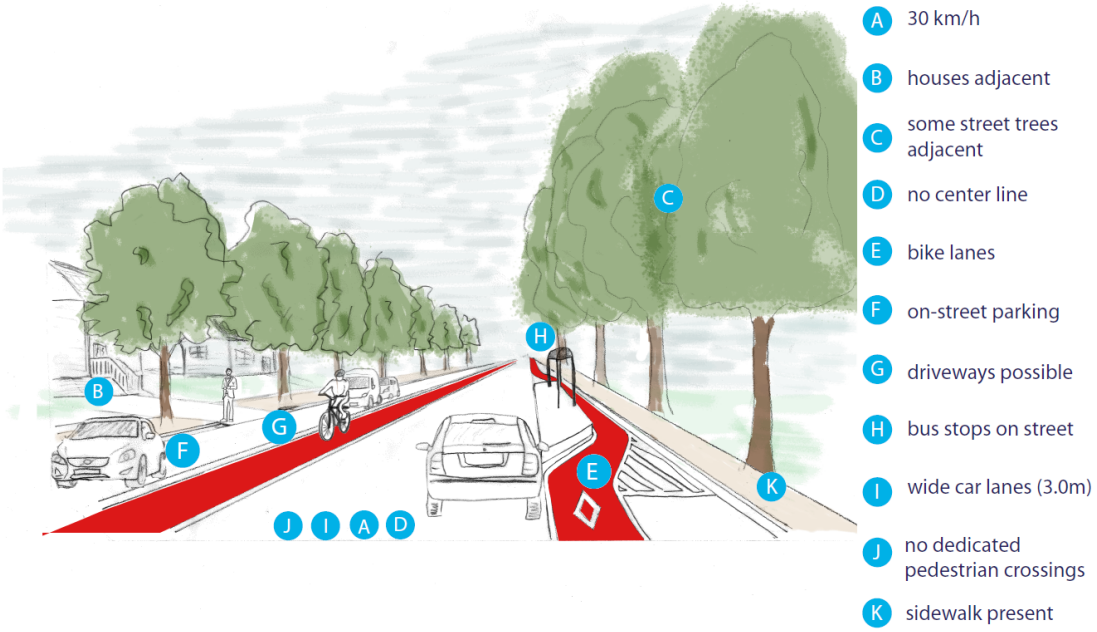
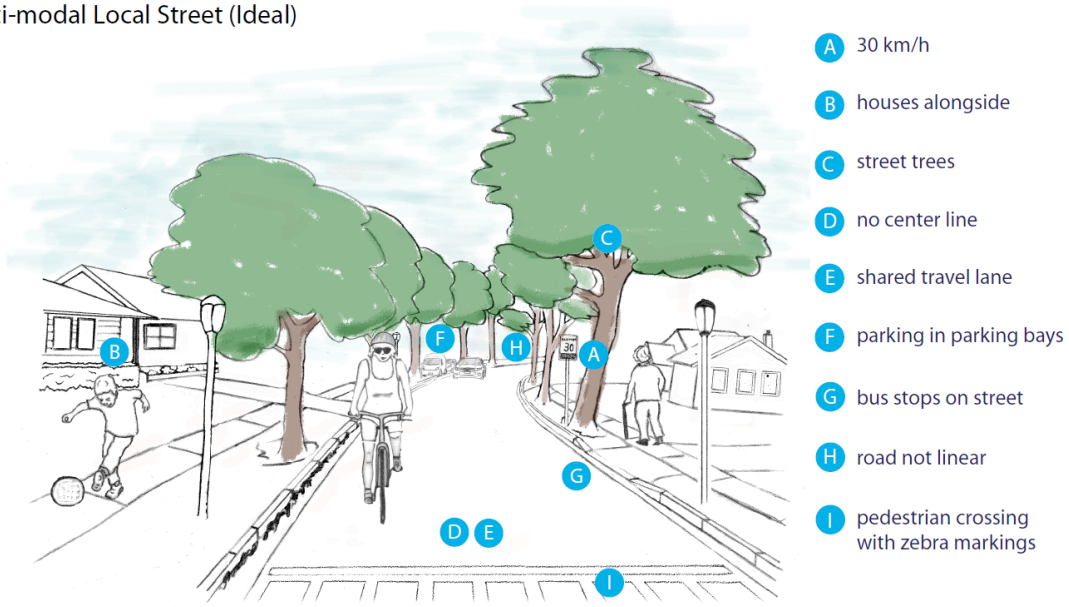


Figure 4-15: Key Design Characteristics of a Multi-Modal Collector Street

Multi-modal Local Street (Ideal)



Multi-modal Local Street (Minimal)

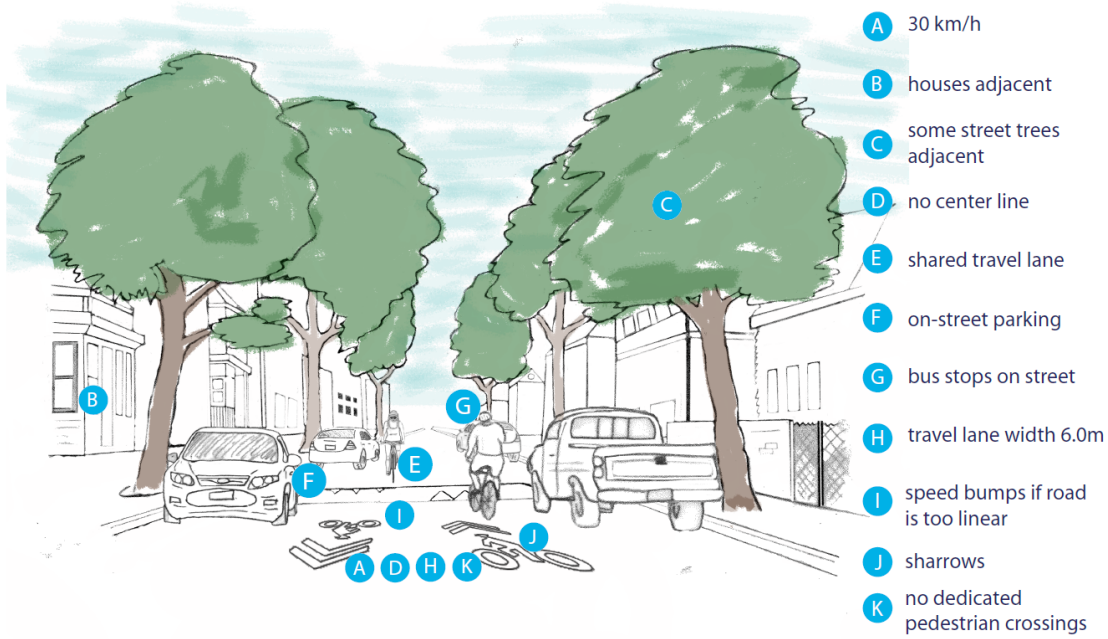


Figure 4-16: Key Design Characteristics of a Multi-Modal Local Street

4.6 Town Center as the Heart of the Community

4.6.1 Continued Evolution of Main Street to an Activity Street

The ITP seeks to maximize the number of people that can access the Town Centre, and to create an inviting and activated environment for people once they get there.

The MDP identifies the need to find opportunities to maintain the mountain town character and Town Centre as the commercial and cultural heart of Canmore. Today, there are multiple competing requirements of the Town Centre, from

balancing the need to be a people place and a commercial centre with a healthy vibrancy for businesses, to a location with commercial access needs and that currently serves as a through corridor for surrounding areas. Town Centre currently functions mainly as several separate links within a network. In future there will be designated locations that will serve more as places, while others serve more as links.

Flow improvements are envisioned for the road network around the Town Centre that enable through vehicular traffic and goods movement to move more easily around Main Street and 7th Avenue. Through this accommodation, the activation of Main Street is further enabled. Less space will be required to convey through traffic and to store cars, and there will be greater opportunity to use space for retail, plaza, walking, cycling, landscaping, events, and other activations that create vibrancy. This transition will be gradual, occurring over a number of years, and ultimately culminating in more significant changes to Main Street in the future.

Shifting the way that Town Centre functions will create the right conditions to foster a range of potential outcomes. Through engagement and planning for the Town Centre, various options can be explored for the re-evolution of Main Street.

To facilitate this redistribution, while maintaining an appropriate street scale for the Town Centre, 10th Street has been reclassified as a collector (as opposed to an arterial classification in the 2014 ITP). Together with 7th Street and Main Street (between 6th Ave and Railway) it forms a 'Town Centre loop'. These streets provide relatively easy access to the parking lots at 9th Street and 7th Street, while remaining safe and accessible streets for walking and cycling, as well as for living and working along. With this loop, local traffic will be traveling to and from downtown with a reduced impact to Main Street.

In addition to this loop, the 17th Street – Fairholme Drive – 8th Avenue route continues to serve as an arterial, facilitating through traffic and transit which allows bypass of the Town Centre during times of congestion. Improvements along this corridor to improve the flow of traffic are essential for this approach. The proposed street classifications are shown in Figure 4-16.

Ease of access to the Town Centre will vary based on route selection and mode choice. For motor vehicles, travel between the TransCanada Highway and the Town Centre will be most easily facilitated along 17th Street and Fairholme Drive, and the Three Sisters Parkway, which are arterial roadways. Main Street will provide a high level of ease for active modes to access, while providing a lesser level of ease for motor vehicles to access. 10th Street and 7th Street will provide equal ease of access to pedestrians, cyclists, and motorists.

Figure 4-17: Proposed Town Centre Street Classifications

4.6.2 Revised Street Network & Traffic Flow

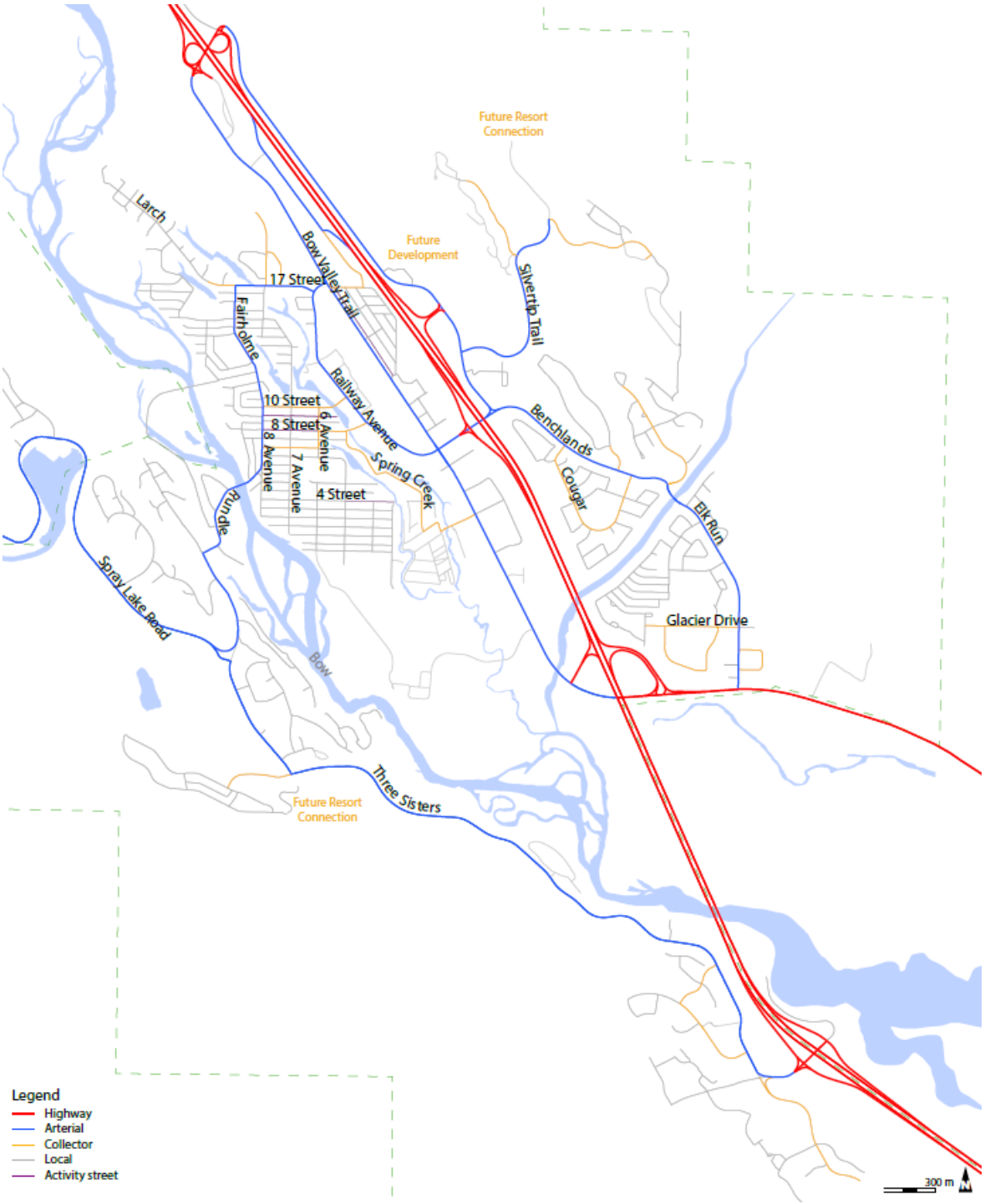


Figure 4-18: Proposed Street Classifications

The combined effect of modal shift, and shift of traffic routing is shown in Figure 4-18 which shows a relative increase or decrease in vehicle trips. While approximately 60% of trips will be made by car, the network is anticipated to remain within capacity during typical summer days – even with significant growth.

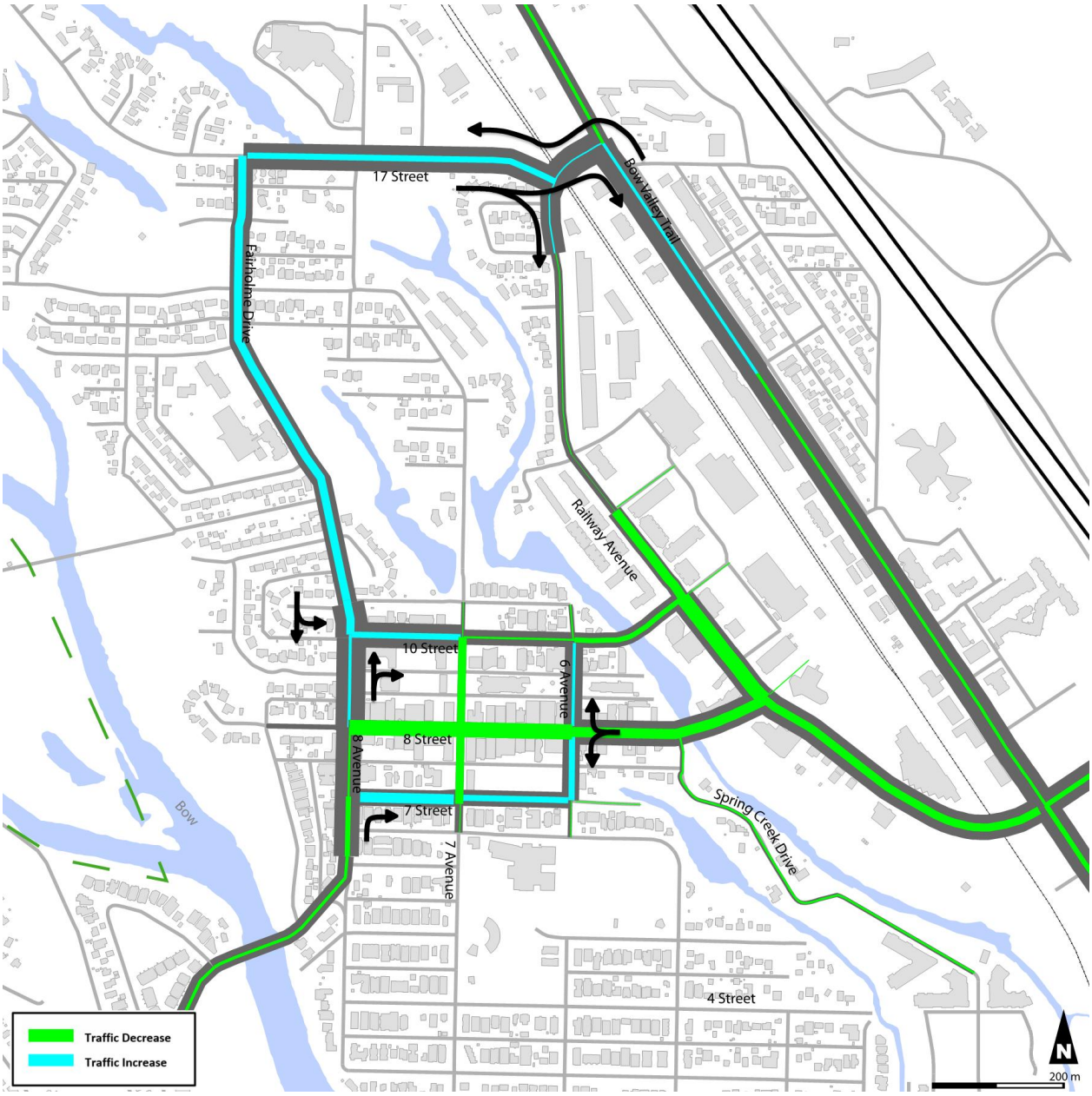


Figure 4-19: Change in 2030 Traffic Flow with Proposed Changes

Without changes to the function of Canmore's roads and the way people travel, and with the expected growth in Canmore's population and visitation, Canmore can expect to see much greater daily traffic volumes (Figure 4-4).

Typical summer daily traffic volumes and congestion levels with a successful strategy implementation are shown in Figures 4-19 and 4-20. Note that no segments of the road network are anticipated to experience at-capacity or over-capacity conditions as a result of better utilization of the network for vehicular trips and a large offset of vehicular trips to other modes of travel (walk, bike, transit).

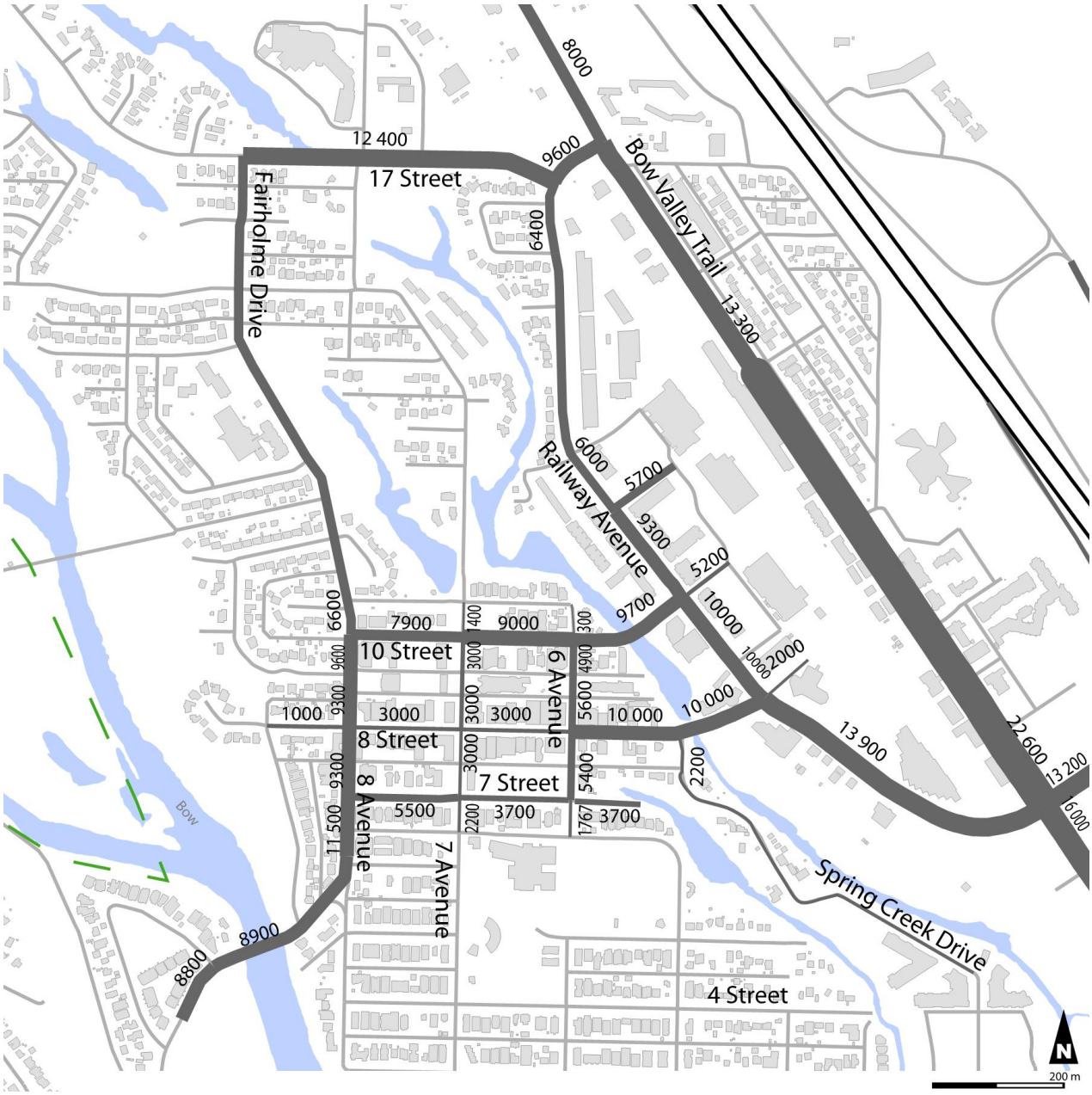


Figure 4-20: 2030 Typical Summer Daily Traffic Volumes with Successful Implementation Strategy

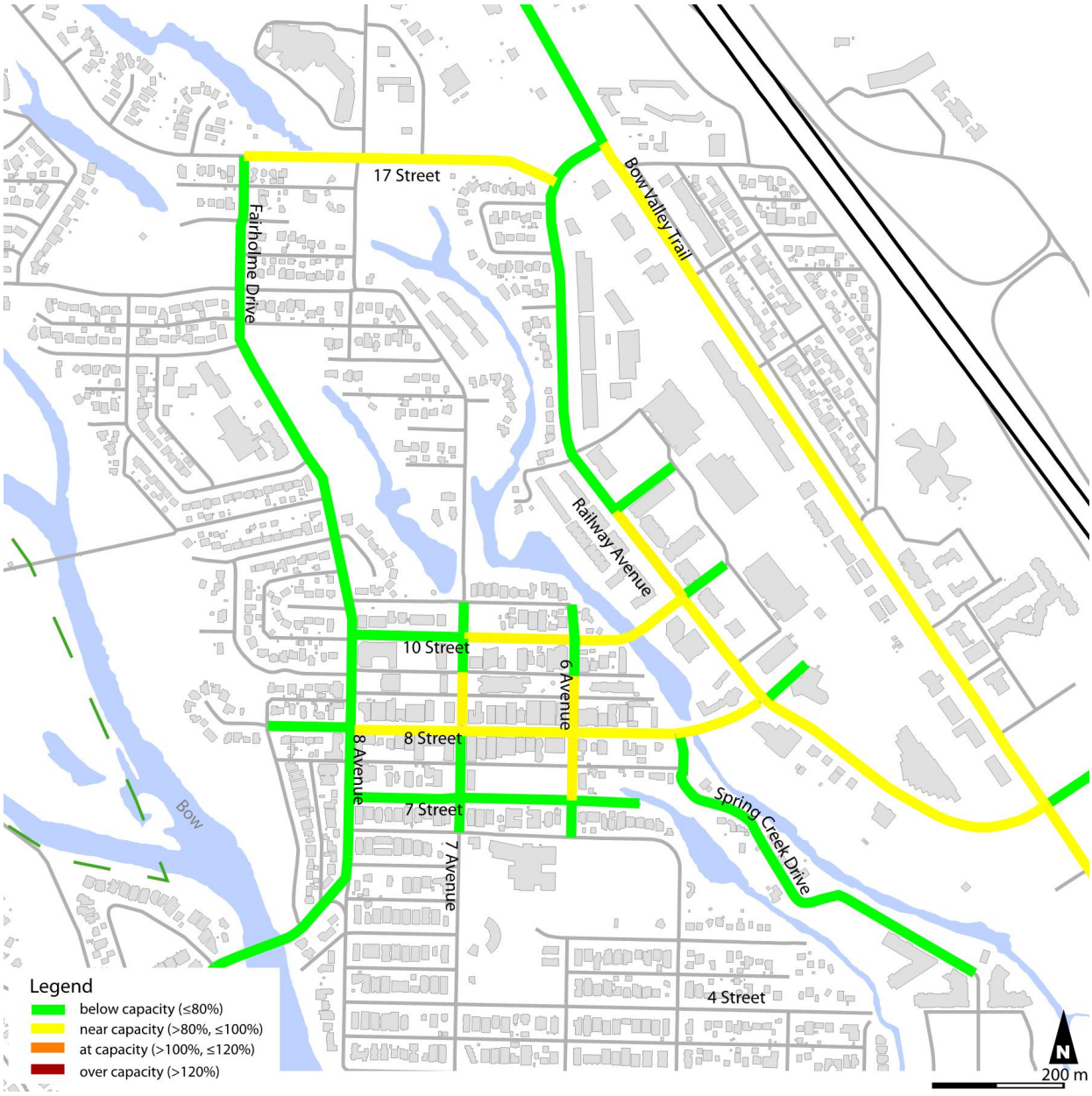


Figure 4-21: 2030 Typical Summer Congestion Levels Congestion with Successful Strategy Implementation

4.7 General Intersection Improvements

From an operational perspective, the majority of intersections operate adequately in the Town of Canmore and vehicular delays are minimal. Modifying intersections to increase vehicular capacity and flow often negatively affects safety for all users and reduces convenience for active mode users. It is recommended that intersection improvements focus on increasing safety and comfort for all users.

Where modifications are made at intersections, they should be designed to reinforce the hierarchy of streets and encourage vehicular flow on collector and arterial roadways around the Town Centre. Improvements for vehicular operational efficiency should be done very strategically. At signalized intersections, optimized

signal plans and timings are preferable to increasing intersection geometry through channelized turn lanes, large corner radii, approach widening, etc. Consideration should be given to such modifications as reducing corner radii, providing curb extensions, and using roundabouts where they may provide a suitable alternative to signalized intersections. In certain contexts, it may also be appropriate to consider prohibiting right turn movements during the red signal phase.

More specific recommended intersection modifications within the Town Centre are proposed in Section 10.1- Network Level Recommendations.

4.8 Parking

For the latest information on parking management within Canmore, refer to the Integrated Parking Management Plan (IPMP) which has been developed in parallel with the ITP.

The Integrated Parking Management Plan identifies and evaluates potential parking management strategies suitable for implementation in Canmore's Town Centre. It describes factors to consider when evaluating strategies, including their benefits, costs, implementation requirements, obstacles, and ways to overcome those obstacles. This IPMP discusses the expected impacts of emerging mobility services and technologies on travel demands and the effectiveness of strategies.

5.0 ACTIVE TRANSPORTATION NETWORK

Active transportation plays an important role in Canmore, in both recreational trips and utilitarian trips. The Integrated Transportation Plan is focused on creating a multi-modal transportation network through Complete Streets that prioritize pedestrians and cyclists wherever possible, complemented by a trail network. In addition to connectivity between key places of interest and activity nodes, the active transportation recommendations focus on the guiding principles of providing safe and convenient connections for all skill levels, all year-round.

The recommendations are not limited to walking and cycling only, and also include alternative active modes including roller skiing, skateboarding, longboarding, rollerblading, push scooter, families with strollers, elderly with mobility aids, and cross-country skiing in the winter.

5.1 Existing Active Modes Network

The existing trail system predominantly serves recreational trip purposes, although some of these routes do connect key destinations and align with trip makers' desire lines. The widths of the trails vary, and the surface treatment of existing trail infrastructure varies from paved asphalt pathways, to gravel / organic trails, and to informal connections created by users over time. The grid street network layout within the Town Centre is conducive to purposeful active mode trips, as it allows for direct paths between desired origins and destinations within the area. Within the Town Centre, pedestrians use existing paved sidewalks and cyclists mostly share the road infrastructure with vehicles. More recent construction has included separated, protected bike lanes connecting to the Town Centre.

5.2 Future All-Ages, All-Abilities Active Transportation Network

The primary objective of the active transportation network is to integrate the recreational trail network and the street network with key origin and destination desire lines of pedestrians and bicyclists making utilitarian trips. Key destinations include the Town Centre / Main Street, Elevation Place, the schools, the Canmore Recreation Centre and popular Town parks.

5.2.1 Basic Network Design Principles

The 2014 ITP network of bicycle infrastructure in Canmore was developed based on a person's skill level: beginner, intermediate, and expert. This means that streets and routes are dedicated to and designed for specific abilities of people rather than how people would like to use routes.

While it is important to bear in mind that while people indeed do not all have the same skills, experience, and abilities, skill level is not the optimal criterion upon which to develop a unique bicycle network that fits the needs of everyone and for all trip purposes. Five basic yet intertwined network design principles, responding to basic needs of active travelers, must be followed to encourage cycling, and walking uptake. They are the following:

1. **Directness:** a network must offer direct access to and between a variety of places to commute, visit, spend time, shop, etc.

2. **Safety:** A truly safe network is one that is statistically safe and perceived to be safe.
3. **Comfort:** A comfortable network is one that provides an enjoyable experience. Two examples of treatments: soft, smooth materials that make it easy to travel on; wide bicycle lanes and tracks to encourage social interaction and to easily pass.
4. **Continuity:** A continuous network provides a seamless experience between and through intersections and has no breaks or dead ends.
5. **Attractiveness:** Quiet, clean, aesthetic streets are more pleasant, and thus attractive, than congested noisy, polluted, and grey streets.

5.2.2 Identifying and Serving Target Groups

A good active transportation network is one that can serve the needs and abilities of everyone. By identifying target groups, understanding their needs, and addressing their concerns, planners and engineers can lay the foundations of a direct, safe, comfortable, continuous, and attractive network for all.
In Canmore, two main target groups that typically have different transportation needs are ***residents*** and ***visitors***. While residents need to commute to work, access amenities such as schools, city hall, grocery stores, etc. on an every-day basis, visitors want to easily travel from their accommodation to sites of interest, being downtown or recreational sites and trails. The former group is most typically looking for directness first and safety second, as people in this group want to get to their destination fast, and certainly faster than by car. School kids are a special case of commuters as they require extra care in terms of safety and comfort, thus creating a forgiving environment in case of a mistake or a fall. The latter group, visitors, usually cycle and walk because it is fun and healthy. It consists mostly of families and athletes, who are looking for an enjoyable experience and who do not mind a detour if it is interesting.

5.2.3 A Unique Network of Connections & Places

A transportation plan that encourages active transportation modes should aim to develop a coherent active transportation network that provides access, quality, and speeds at least equal to those of the motorized transportation network; this will make walking and cycling attractive and therefore compete with motorized transportation modes. An active transportation network should hence be distinct from the motorized vehicle and be planned and built as such. Typically, a bicycle network has a mesh width that is about three times as dense as the car network. Of course, for Canmore this network can not be expected to be built overnight.

It is important to note that the way this system of networks comes forth is not by building a lot of cycling and pedestrian infrastructure, but by prioritizing those modes in the car network using traffic calming measures and self-explaining environments, and creating meaningful connections such as underpasses, overpasses, and shortcuts, that respond to the needs of previously-identified target groups.

At a sublevel, each target group must be prioritized over another when and where necessary. For example, the downtown area must be developed to accommodate cycling commuters and shoppers, while the outskirts of the town, and the routes leading to these areas, must accommodate recreational cycling and walking.

A planned active transportation network has been developed and is shown in Figure 5-1. The network focuses on cycling; however, the routes, new connections and existing trail system can also serve additional modes. Walking trips will particularly benefit from new and direct connections. The network aims to provide a greater degree of separation between the walking and cycling modes. This will reduce conflicts and thereby enhance the pedestrian network as more space is allocated toward existing pedestrian facilities because cyclists will be within their own dedicated facilities.

The development of a designated cycling network encourages and allows cycling to be the mode of choice for all types of trips. The multi-use paths will continue to function as multi-use paths, but those routes that have been identified on the designated network will play a more important role for people who bike. The network itself largely makes use of existing facilities; however, it also aligns with the Complete Streets projects that have been identified. Thus, it is intended to both strengthen the necessity for high-quality facilities in a Complete Streets application as well as provide an additional guide in tandem with the Complete Streets network to help guide infrastructure improvements.

Future connections that should be considered, in addition to the planned active transportation network, include pedestrian and cycling connectivity across the Bow River to Three Sisters. Connectivity along the Three Sisters Parkway may also be explored by means of an off-road route to accommodate active modes.

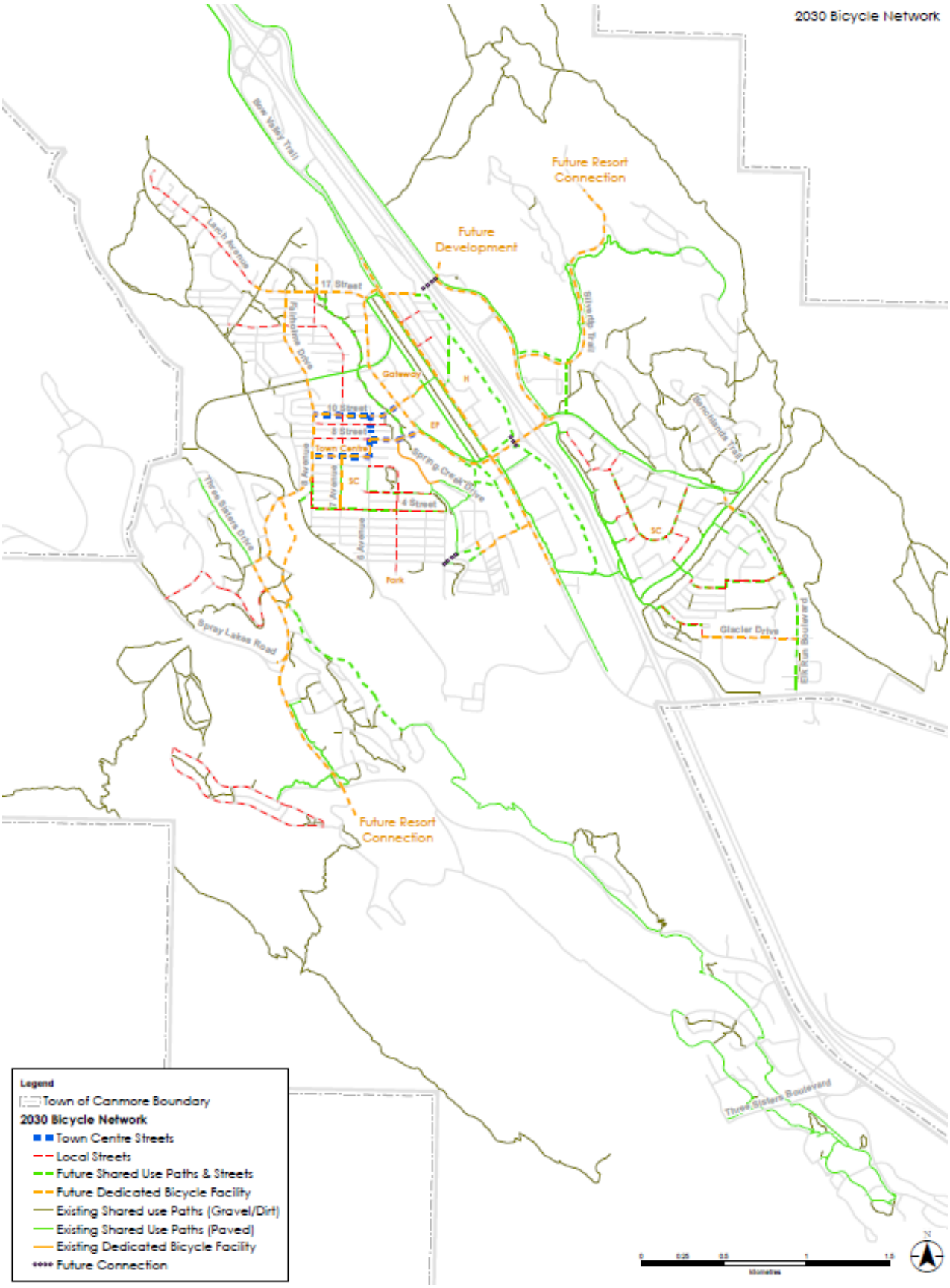


Figure 5-1: Existing & 2030 Bicycle Facilities

5.2.4 Bicycle Infrastructure Design

A good network can be developed through the systematic implementation of infrastructure that is consistent with the street class and function for which it is intended. Mode segregation is needed where motorised traffic is heavy and fast (arterials and collectors), while mixing can be achieved by means of traffic calming (collectors, local and activity streets).

The desired bicycle network, combined with street classifications, provides insight into the desired type of bicycle infrastructure. In this desired type, a range of treatment types are possible, as street classes have a range between minimum and ideal forms (refer to **Table 4-2**: Complete Streets Design Criteria).

Intersections represent challenging, higher-conflict areas for cyclists. Key principles that should be applied to the design of intersections include user safety, comfort, and directness to ensure that facilities are accessible to all users.

Cycling facilities should be designed in accordance with best practices. The Alberta Bicycle Facilities Design Guide will provide recommendations for the application of best practices within an Alberta context.

5.2.5 Year-Round Maintenance

The routes, trails and paths in the designated cycling network should be maintained year-round, including managing vegetation, removing debris, and clearing snow and ice in the winter. On-street facilities should be cleared as a high priority, ensuring that snow clearing windrows do not block on-street cycling facilities. Routes that provide key connections should be prioritized to receive earlier maintenance (e.g. schools, municipal facilities, hospitals, transit stops, commercial areas and senior's facilities) and mapping should be updated as the network is built out, to ensure that this information is easily accessible.

Long term maintenance of infrastructure also plays an important role in supporting opportunities to walk and cycle, and attention should be given to ensuring that operational programs address longer term needs to maintain comfortable and safe walking and riding surfaces (addressing trip hazards, etc.) as well as ensuring that signage and other street furniture and amenities are kept in a good state of repair.

5.2.6 Bicycle Parking

Secure and convenient bicycle parking and end-of-trip facilities are an important aspect of cycling trips. Parking facilities should provide a secure place to lock bicycles, and should pose minimal interference with other street activities, especially pedestrian movements. Bicycle parking facilities can be integrated with street furniture within the Town Centre or covered to encourage greater poor-weather and year-round cycling. The design of bicycle parking facilities should be carefully considered and should be implemented in accordance with best practices (e.g. *Bicycle Parking Guidelines* published by the Association of Pedestrian and Bicycle Professionals).

Parking demand can also be managed by promoting and providing

appropriate facilities for active modes. While existing bicycle parking is provided both by the Town and by private business owners, a cooperative and comprehensive program should be developed. The program could allow business owners to request the Town provide facilities in their location. The program should also consider utilizing cash-in-lieu funds for bicycle parking facilities. Bylaws already require that new developments provide minimum bicycle parking facilities that are secure and of high quality.

5.2.7 Encouraging Active Modes

In general, the most effective way to encourage active modes and increase active mode share is by supplying a safe, well-connected, continuous, and intuitive network that allows for convenient and direct travel and short trip times between desired origins and destinations. This is largely achieved through hard infrastructure measures, but also by setting the correct policies and initiatives. These and additional hard and soft measures can be used to encourage active transportation modes, as shown in **Table 5-1**. Some of these measures have been directly incorporated into the recommendations found within the study.

Hard Measures (Infrastructure and Design)	Soft Measures (Policies and Initiatives)
Walking	
▪ Minimize conflict with other road users through separated paths and safe crossings ▪ Create intuitive and easily visible paths and sidewalks ▪ Install curb cuts and ramps at all street intersections (from roads to pathways/sidewalks) and install mid-block crossings ▪ Maintain infrastructure year-round, including removal of vegetation, debris, and snow/ice ▪ Provide adequate signal green times to accommodate all users (elderly and mobility impaired) ▪ Pedestrian count down signals to indicate when they will be given a walk light, and not crossing time remaining ▪ Avoid steep slopes on pathways ▪ Provide illumination along pathways ▪ Implement strong wayfinding cues through signage and intuitive design	▪ Prioritize snow/ice clearing of sidewalks and trails in the winter ensuring that windrows and piles do not obstruct or melt and create pools on facilities ▪ Encourage built form and land use to adhere to the 3 Ds (Density, Diversity, Design) ▪ Encourage a neighbourhood mobility concept of traffic calming and mixed land-use for local amenities that reduce trip distances ▪ Create a 'Parking Benefit' fund from visitor pay parking for streetscape and sidewalk improvements ▪ Publish pedestrian network maps with key attractors both online and at key locations, such as Elevation Place, Canmore Recreation Centre, Alberta Tourism Information Centre ▪ Engage in various educational and social marketing initiatives to support modal shift ▪ Initiate a school 'walking bus' program where children walk as a group with a guardian or older student

Cycling	
▪ Ensure cycling lane widths can accommodate two one directional riders side by side to allow for overtaking ▪ Removal of dangerous obstructions, such as bollards in pathways and boulders beside pathways ▪ Use a combination of proven and innovative surface treatments, stenciling, signs and sign placements ▪ Mark cycling crossings and combined crossings differently from pedestrian only crossings (zebra stripes), by using green surface markings ▪ Install curb ramps at all street intersections (from roads to pathways/cycle tracks) ▪ Maintain infrastructure year-round, including removal of vegetation, debris, and snow/ice ▪ Optimize signal timings for a typical average speed (18- 21 km/h) to create a cyclist 'green wave' ▪ Design catch basin placement and grate orientation to accommodate bicyclists ▪ Ensure bicycle parking is provided close to destinations ▪ Provide foot rests on bike lanes and paths at signalized intersections where bicyclists are prone to frequent stops so that dismounting becomes unnecessary ▪ Implement strong wayfinding measures	▪ Prioritize path/lane snow clearing in the winter, and ensure snow plow windrows from street clearing do not obstruct cycling infrastructure ▪ Plan for integration with future transit infrastructure, such as providing secure, covered parking facilities at bus stops, and bike racks on buses ▪ Hosting bike-to-work days ▪ Further promote the Canmore Bike Month by integrating it with school curriculum / physical education courses ▪ Publish updated cycling information / maps online and at key locations, such as Elevation Place, Canmore Recreation Centre, Alberta Tourism Information Centre ▪ Create joint programs to support employers / businesses desiring improved bicycle facilities such as parking or lockers ▪ Do not mandate helmet use, but remind of benefits ▪ Provide bicycle repair and tire pump stations ▪ Engage in various educational and social marketing initiatives to support modal shift ▪ Support a winter cycling education and skills training program

Table 5-1: Measures that Encourage Active Transportation

5.2.8 Accessibility

The ITP envisions a transportation system will provide mobility and access for all. Most trips, regardless of which modes they involve, will begin and end as pedestrian trips. To support a community that is inclusive of those of all ages and abilities, it is important to make sure that the planning and design of public infrastructure supports a variety of mobility needs. It is important for communities to consider ageing local populations, and visitors and residents that need to access amenities and take part in daily life within their community.

At intersections, which can be particularly challenging to the visually or mobility impaired, elements such as audible signals, accessible push button locations, increased minimum "WALK" times/phases, reduced crossing distances, wheelchair ramps that are aligned with the crosswalk, and tactile warning indicators should be considered. Leading pedestrian phases allow pedestrians to proceed before vehicles get a green signal and can make crossing more comfortable. Providing transit infrastructure that is sheltered and connected to infrastructure for walking and cycling can support travel options for those with reduced mobility. Having street furniture and public space that includes seating

areas can encourage and support people in taking part in public life. Consideration should be given to grades along walking routes, to facilitate access as topography allows.

6.0 TRAFFIC CALMING

Many streets in the Town of Canmore are considered safe and pleasant streets along which to drive, walk, cycle, and live. On some streets, however, speeding vehicles, short-cutting traffic and conflicts between various road users detract from the safety and liveability of the street. Traffic calming offers a means of resolving traffic and safety problems to preserve and enhance neighbourhood liveability. It is one potential measure available to address undesirable traffic characteristics on a community street and is complemented by police enforcement and public education. The development of a traffic calming policy will allow the Town to evaluate and implement traffic calming effectively and consistently.

6.1 Traffic Calming Goals and Objectives

The focus of the traffic calming policy is to address issues where high traffic speeds and through- traffic affect the safety and liveability of residential neighbourhoods.

- **Safety.** Streets should be safe for everyone and all road users, including pedestrians, cyclists, and motorists. Research and studies have indicated that traffic calming can make streets safer for everyone using the street, particularly through measures that promote lower vehicular speeds.
- **Liveability.** Residential neighbourhoods should have low volumes of through traffic, low volumes of truck traffic, low vehicle travel speeds, few collisions, and less noise and air pollution. Traffic calming can preserve and create a more liveable environment for pedestrians, cyclists, and motorists of all ages. Attractively designed and landscaped traffic calming devices can also enhance the streetscape and liveability and maintain the unique community identity of the Town of Canmore.

It is intended that these goals be pursued in a manner which is consistent with the Town's transportation and land use plans, ensuring that the effectiveness of the road network is not compromised, such that arterial and collector roads can continue to transport people and goods to maintain the Town's economy. Emergency response and transit service should be considered during the design process for traffic calming measures.

Objectives to achieve the goals of improving safety and liveability include:

- **Reduce vehicle speeds.** As many of the conflicts and collisions which occur on local streets are the result of excessive speeds and excessive through traffic, measures that promote lower speeds can reduce the number of collisions and decrease the severity of these accidents.
- **Discourage through traffic on local streets.** Local neighbourhood streets are primarily intended for access to properties, not for accommodating through traffic. Reducing through traffic helps to improve safety by reducing the potential for conflicts. Reducing through traffic also reduces delays for local traffic, pedestrians, cyclists, and other road users, and helps to improve liveability by reducing noise and other negative impacts of traffic.
- **Minimize conflicts between street users.** Reducing the potential conflict points among road users helps to improve safety by reducing the frequency of conflicts and thereby reducing the frequency of collisions.
- **Enhance the neighbourhood environment.** The liveability of a community can be enhanced by reducing the apparent dominance of traffic, including reducing noise from traffic, reducing air pollution and reducing other traffic impacts on neighbourhood streets. Traffic calming measures can also enhance the streetscape and aesthetics by providing opportunities for landscaping and public art.

6.2 Traffic Calming Planning Process

Potential traffic calming measures can be applied to both existing roadways in retrofit situations as well as during the review of draft subdivision plans, where some applications will include the consideration of traffic calming devices within the municipal road allowance. In retrofit situations, the process in developing a traffic calming plan should be based on the process identified in Figure 6-1 This framework focuses on handling reactive requests, and is a simple process involving a thorough review that is transparent to stakeholders.

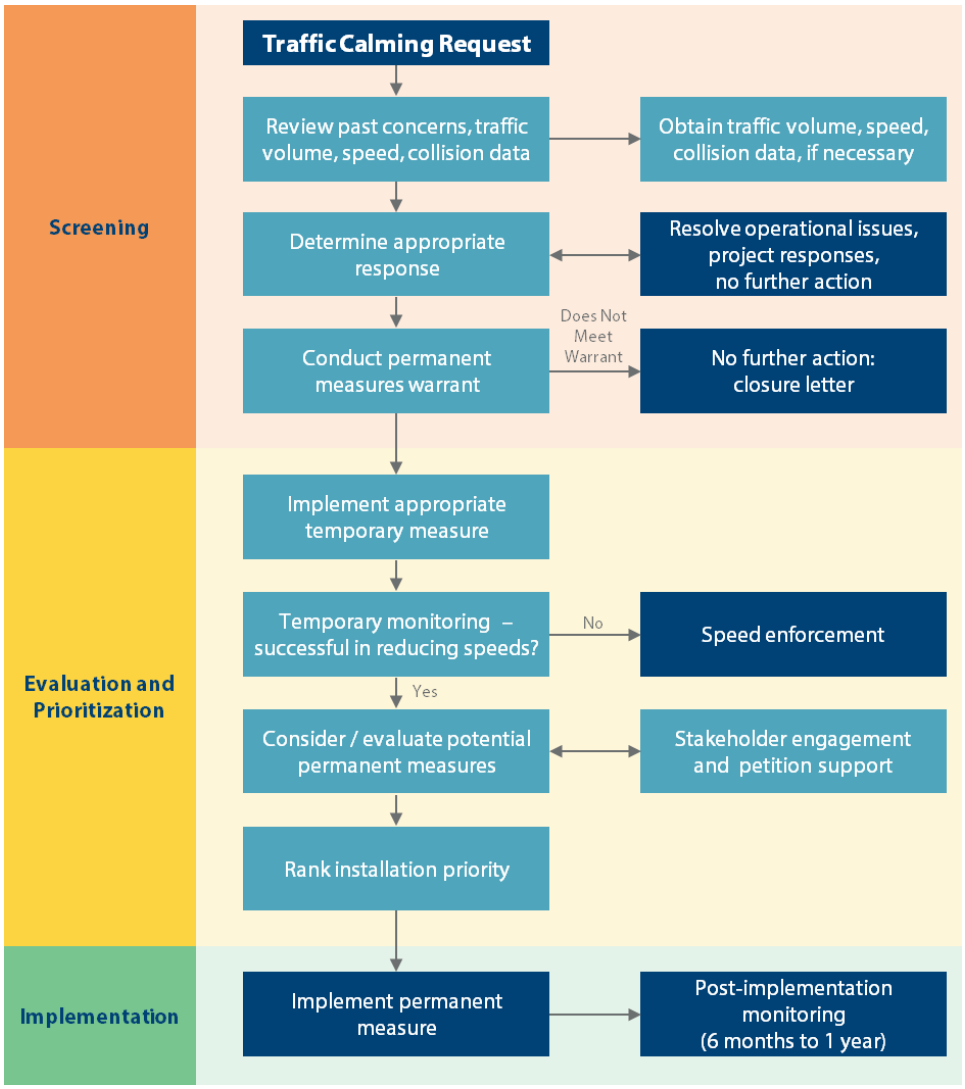


Figure 6-1: Traffic Calming Planning Process

6.3 Potential Traffic Calming Measures

A toolbox of potential traffic calming measures that are suitable for implementation in Canmore has been identified. The toolbox is divided into two broad categories of Social / Cultural Measures, which influence driver behaviour through psychological means, and Physical Measures, which prevent or reduce traffic movement through physically changing the road configuration or installing physical elements.

- **Social / Cultural Measures.** One way to reverse the negative impacts of vehicles is to target resident driving habits to be more cognizant and considerate of other road users. Social and cultural measures include educational programs, and enforcement.
- **Physical Measures.** Physical Measures generally prevent or reduce traffic movement through physically changing the road configuration, or include installation of physical elements such as barriers and signage. Effects from the implementation of physical measures may be both positive, including positive reductions in noise and air pollution or increases in safety through the reduction in conflicts between automobiles and non-auto modes; and

negative, including restrictions to local access, increased response times for emergency services such as fire and ambulance, and maintenance problems such as snow removal and street sweeping.

- **Vertical Deflection.** These measures create vertical motion in a vehicle when the vehicle is driven over the device, reducing vehicle speeds as motorists slow to avoid unpleasant vertical movement. These measures may also contribute to volume reductions as it may take motorists longer to reach their destination as a result of reduced speeds.
- **Horizontal Deflection.** Horizontal deflection measures require a motorist to change the direction of the vehicle, reducing vehicle speeds, reducing through traffic, and also potentially reducing conflicts between automobiles and other modes of travel.
- **Road Narrowing.** Providing only narrow spaces for maneuvering enhances the alertness and stimulates low driving speeds. Local streets should be narrow enough to stimulate safe and careful overtaking (passing): cars or cyclists cannot be overtaken when there is opposing traffic. Occasional '**narrowing**', at pinch points (one direction at a time) or meandering helps reduce speed and prevent overtaking as well.
- **Less Comfortable Driving.** Smooth road surfaces increase driving speeds, while uncomfortable, **uneasy surfaces** stimulate low driving speeds.
- **Interactions & Conflicts.** Sharing the space between different users increases the amount of **conflicts** on the road. Even though one may expect this to reduce traffic safety, the opposite proves to be true. When confronted with a situation, which seems more complex, users behave more safely and cautiously. Sharing the road with cyclists and car drivers (and sometimes even with pedestrians) at low speeds is a way to stimulate conflicts, as is removing center lines at roads or traffic signs at intersections.
- **Obstructions.** These measures are used to reduce or eliminate traffic volumes. However, they typically severely restrict local access to residents, generate problems with traffic infiltrating other parallel routes or adjacent neighbourhoods, and impact emergency service providers.
- **Signage.** Signage can be used to complement traffic calming measures. Regulatory signs are generally not as effective as self-enforcing traffic calming measures such as vertical and horizontal deflection, and obstructions, and should only be used when warranted.
- **Complete Streets Application.** In addition to specific devices placed at discrete locations, a Complete Streets application can be used as an alternative measure to calm traffic along entire roadways. Pavement and lane widths can be reduced and more emphasis placed on vertical elements of the streetscape. The narrower view field naturally tempers driving speeds. The addition of on-street parking has a similar effect. Complete Streets allow a "Slow by Design" directive, as drivers' speeds are largely a product of roadway geometry, street design and the urban form.
- **Shared Streets.** Some Canadian cities make use of so called 'sharrows', indicating the shared use of the road by car drivers and people cycling. The Town of Canmore sees the use sharrows as an unsafe solution at streets with speed limits of more than 30 km/h. At 30 km/h streets and lower, sharrows may be used to raise awareness for the sharing of modes, but often these markings have little added value. At speed limits over 30 km/h the use of sharrows is strongly discouraged.

Traffic calming can be done multiple ways. The most important key feature is 'to make driving fast impossible'. This can be achieved through several types of treatments:

Category	Illustration	Description
Horizontal or vertical deflections	Raised pavement areas  Chicanes 	**Horizontal or vertical deflections** 'break' the linearity of the street. Slowing down to go over a bump or table or making tight turns helps prevent users from reaching higher driving speeds. Speed humps, bumps and tables are vertical deflectors, while sharp turns and chicanes are horizontal deflections
Road narrowing	Narrowing  Use of obstacles 	Providing only narrow spaces for maneuvering enhances the alertness and stimulates low driving speeds. Local streets should be narrow enough to stimulate safe and careful overtaking (passing): cars or cyclists cannot be overtaken when there is opposing traffic. Occasional '**narrowing**', at pinch points (one direction at a time) or meandering helps reduce speed and prevent overtaking as well.
Less comfortable driving	Different pavement type  Rumble strips 	Smooth road surfaces increase driving speeds, while uncomfortable, **uneasy surfaces** stimulate low driving speeds.

Category	Illustration	Description
Interaction and conflicts	Uncontrolled intersections  Shared space 	Sharing the space between different users increases the amount of **conflicts** on the road. Even though one may expect this to reduce traffic safety, the opposite proves to be true. When confronted with a situation, which seems more complex, users behave more safely and cautiously. Sharing the road with cyclists and car drivers (and sometimes even with pedestrians) at low speeds is a way to stimulate conflicts, as is removing center lines at roads or traffic signs at intersections.
Closures	Cul-de-sac  Diagonal diverters 	**Closing** streets down for car traffic is a rigid way of ensuring a traffic calmed, low volume street. This can have severe implications for the road network, but can greatly enhance the walking, cycling and staying functions of the street.

Table 6-1: Traffic calming categories and examples

6.4 30 km/hr Speed Limit

At 30 km/h, local street dedicated bicycle infrastructure is deemed unnecessary, as sharing the road is the norm. For this, it is necessary that the road is uninviting for driving at faster speeds. To be most effective, this should be achieved through the design of the roadway rather than through signage and enforcement. Establishing lower speed limits in neighbourhoods is about influencing behaviour, supporting quality of life, and providing options for how people get around. When properly 'traffic calmed', streets with 30 km/h speed limits knitted together can form areas or zones. They provide a secondary bicycle network as well as a pedestrian network. Liveability, permeability and traffic safety has proven to rise in such streets and areas. In addition, by lowering travel speeds, other modes (walking, cycling, and transit) are more likely to be used. The relatively short distances between most residences and the arterial roadway network in Canmore mean that for the significant increases in pedestrian comfort and neighbourhood liveability, there is a minimal change in travel times for those travelling by car.

7.0 TRANSIT SERVICE

Public transit is playing an increasingly important role in jurisdictions small and large; providing for the basis of a more environmentally sustainable, socially equitable and economically robust community. Local transit service provides an alternative mode of transportation for basic trip types, provides mobility for seniors to access community services, provides an accessible transportation service, and also provides safe transportation for youth. As the community continues to grow and evolve, the need for a well-integrated public transit system becomes more pressing.

7.1 Local Transit Service

Local transit service is available within the Town of Canmore via ROAM (Bow Valley Regional Transit Services Commission) Route 5. This route services many areas of Canmore, running from the Cougar Creek area to Three Sisters, seven days a week. The weekends see additional service to the Canmore Nordic Centre. This route and its stop locations are shown in Figure 7-2 as yellow.

7.2 Regional Transit Service

A regional transit service between Canmore and Banff is provided through ROAM Transit Route 3. The routes runs 7 days a week with more frequent service during weekday mornings and evenings. This route also shown in Figure 7-2 as green, and in more detail in Figure 7-1 below.

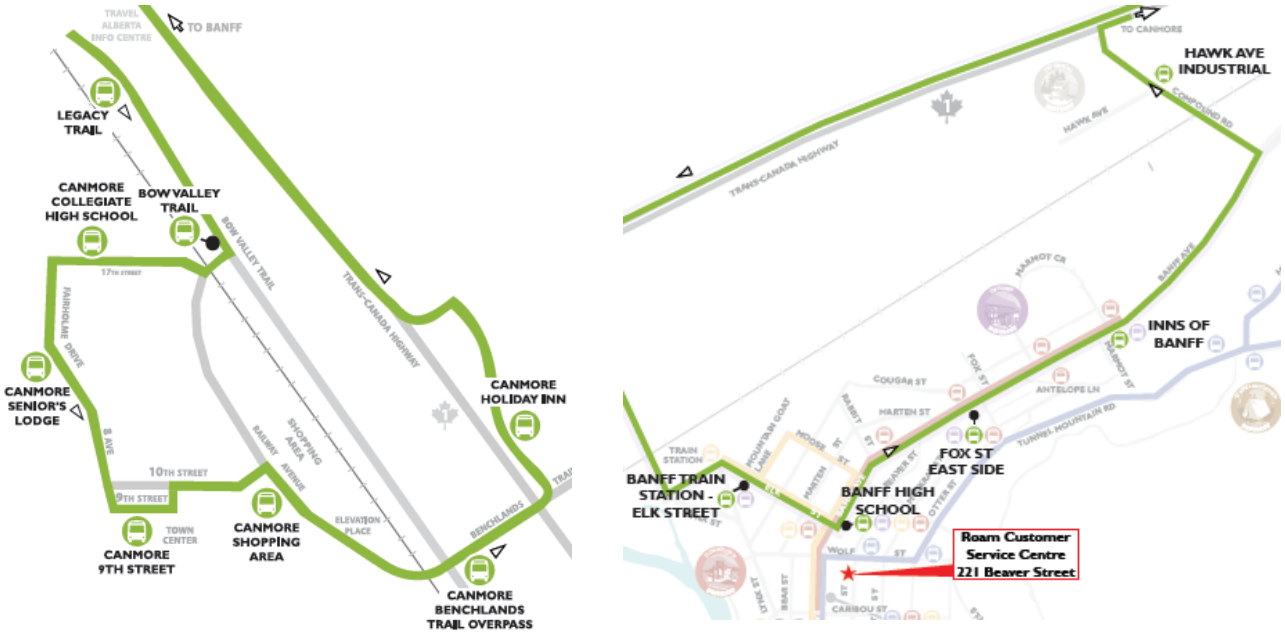


Figure 7-1: Canmore-Banff Regional Service

(Source: http://roamtransit.com)

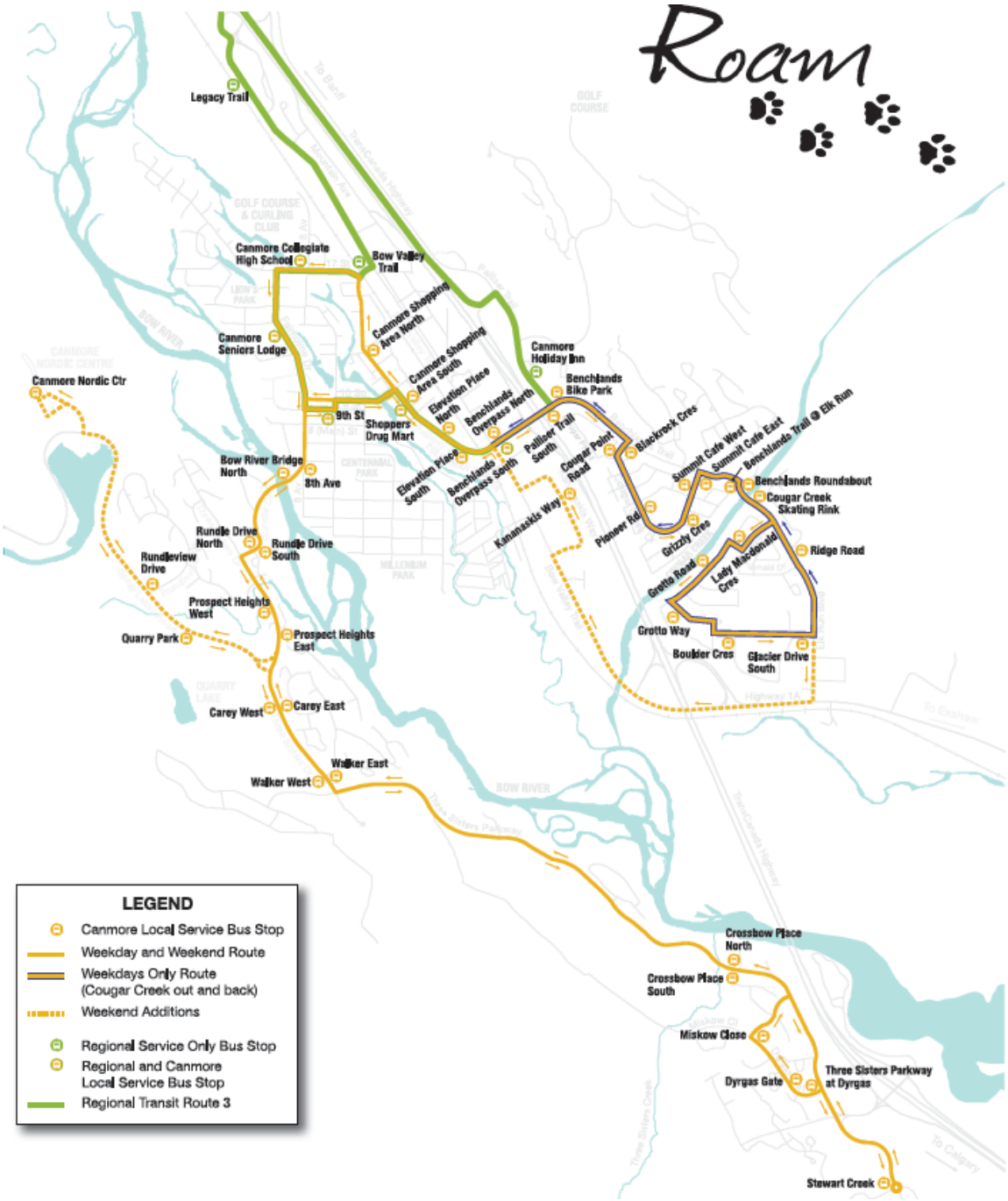


Figure 7-2: ROAM Local & Regional Service
(Source: http://roamtransit.com)

In addition to integration with ROAM services, the Town should work collaboratively with the Calgary Regional Partnership (CRP) for future consideration of regional rail connections or similar links between the Bow Valley area and the City of Calgary. The Town's planning and relevant future plans should reflect and align with future land requirements and infrastructure provision, identified through work with the CRP. The Town should also continue to support the pilot with On-It Regional Transit between the Bow Valley and Calgary.

7.3 Transit Mode Targets

Transit is a key to network performance. Transit can be both a primary mode of transportation and an alternative in inclement weather for those who generally walk and cycle. Transit strategies are implemented by the Bow Valley Regional Transit Commission as approved by Council and guided by separate strategic documents. Future transit strategic planning should be guided by a requirement to contribute to 5% of travel trips around the Town Centre in 2030, up from the estimated 1-2% currently.

The Town plays an important role in supporting an increase in transit ridership and should support transit service by meeting infrastructure requirements and providing information on travel options with visitors and residents. Transit infrastructure should be well-connected to accessible walking and cycling facilities, and should include such amenities as shelters, lighting, benches, bicycle parking and other furniture. Where possible, transit routing should be accommodated along collector and arterial roadways within the community.

Inherent to transit system planning is a service allocation policy to provide reasonable coverage of the community and access to transit. However, the priority is on developing utilization of the system and development of transit ridership. The social, environmental, and financial benefits of a transit service will be greater with higher community transit ridership than simply community coverage. It is also important that the selected transit service meets the broad needs of the community for both residents and visitors and is within the financial capability of the community.

7.4 Mobility Hubs

A mobility hub is more than just a transit station and is best implemented with improvements to the surrounding area. It is a place of connectivity to seamlessly integrate different modes of transportation including walking, biking, and both local and regional transit, and provide access to the concentration of trip destinations in and adjacent to the Town Centre. The investment in transportation infrastructure by developing mobility hubs will serve as a catalyst for local economic growth, while providing additional benefits of:

- An opportunity for placemaking and public realm improvements, and the creation of unique destination;
- Improved way-finding, guiding visitor traffic to shopping and dining destinations, along with other points of interest; and
- Reducing traffic congestion through the Town Centre, and encouraging alternative modes of transportation, including transit service, walking, and cycling.

Mobility hubs outside of the Town Centre will facilitate travel between various bus systems and modes. Connectivity throughout the greater region (e.g. On-It Regional Transit at Benchlands Trail and Bow Valley Trail) can be bolstered through the provision of mobility hubs. Sites along Fairholme Drive, Railway Avenue, and land adjacent to the Canmore Cemetery have potential uses that may include intercept parking and park and ride facilities.

7.5 Semi-Public Transportation

In addition to local transit service, semi-public transportation services should also be accommodated within the Town, including charter coach buses and activity tour buses. As these types of services are not scheduled and have variable wait and loading times, it is advisable that they do not interfere with regional and local scheduled services. These types of vehicles are incompatible with regular scheduled community service and should be parked elsewhere.

Coach buses and tour groups desire access to businesses in the Town Centre and are vital to Canmore's economy. Negative impacts should be mitigated by providing a safe parking area for these buses close to the Town Centre. Specific signage should be provided to encourage and direct larger vehicles away from Main Street. Larger vehicles should pick-up and drop-off passengers in the Town Centre, and park in peripheral and intercept lots, which should provide sufficient reserved space, along with clear information and signage for access to the Town Centre.

8.0 COMMERCIAL GOODS MOVEMENT

Movement of goods and other industrial traffic is important to the economic vitality of Canmore, for both the regional movement of goods and also the servicing and delivery needs of local businesses. Commercial vehicles need to be accommodated on streets in industrial areas, on those that lead to and from industrial areas, and on collector and local roads for access to commercial and residential areas.

Recommendations to improve commercial goods movement within the Town of Canmore have been made through a review of the Town's existing goods movement policies, existing truck routes, and a peer review of policies in similar jurisdictions in Alberta. These recommendations recognize a balanced need to serve the highway-based commercial business, serve local businesses and industries, along with the needs of residential and non-industrial areas within the Town.

8.1 Existing Conditions

Commercial vehicle activity within the Town is primarily focused in the following locations:

- The industrial land use area in the vicinity of Elk Run Boulevard, Glacier Drive, and Boulder Crescent;
- The industrial land use area in the vicinity of 17th Avenue, 8th Avenue, and Industrial Place;
- The Mountain Avenue area with various gasoline stations and retail land uses;
- Bow Valley Trail and Railway Avenue; and
- Within the Town Centre for servicing commercial and retail land uses.

The TransCanada Highway (Hwy 1) and the Bow Valley Trail / Hwy 1A are the primary routes serving regional goods movement, integrated with a network of mostly arterial roads that provide access within the Town of Canmore. The only dangerous goods routes are the provincial highways intersecting the Town of Canmore, including Hwy 1, Hwy 1A / Bow Valley Trail, and Highway 742 Spray Lakes Road / Three Sisters Parkway. The existing truck routes and dangerous goods routes are shown in **Figure 8-1**.

Truck Routes are designated roads for use by trucks. Restrictions such as time of day, or number of axles, may be placed on the roads. Generally, trucks are permitted on other roads only to make deliveries, supply a service or obtain fuel, repairs, food or accommodation.

Dangerous Goods Routes are designated roads for use by trucks hauling goods identified in the Province of Alberta's *Dangerous Goods Transportation and Handling Act*.

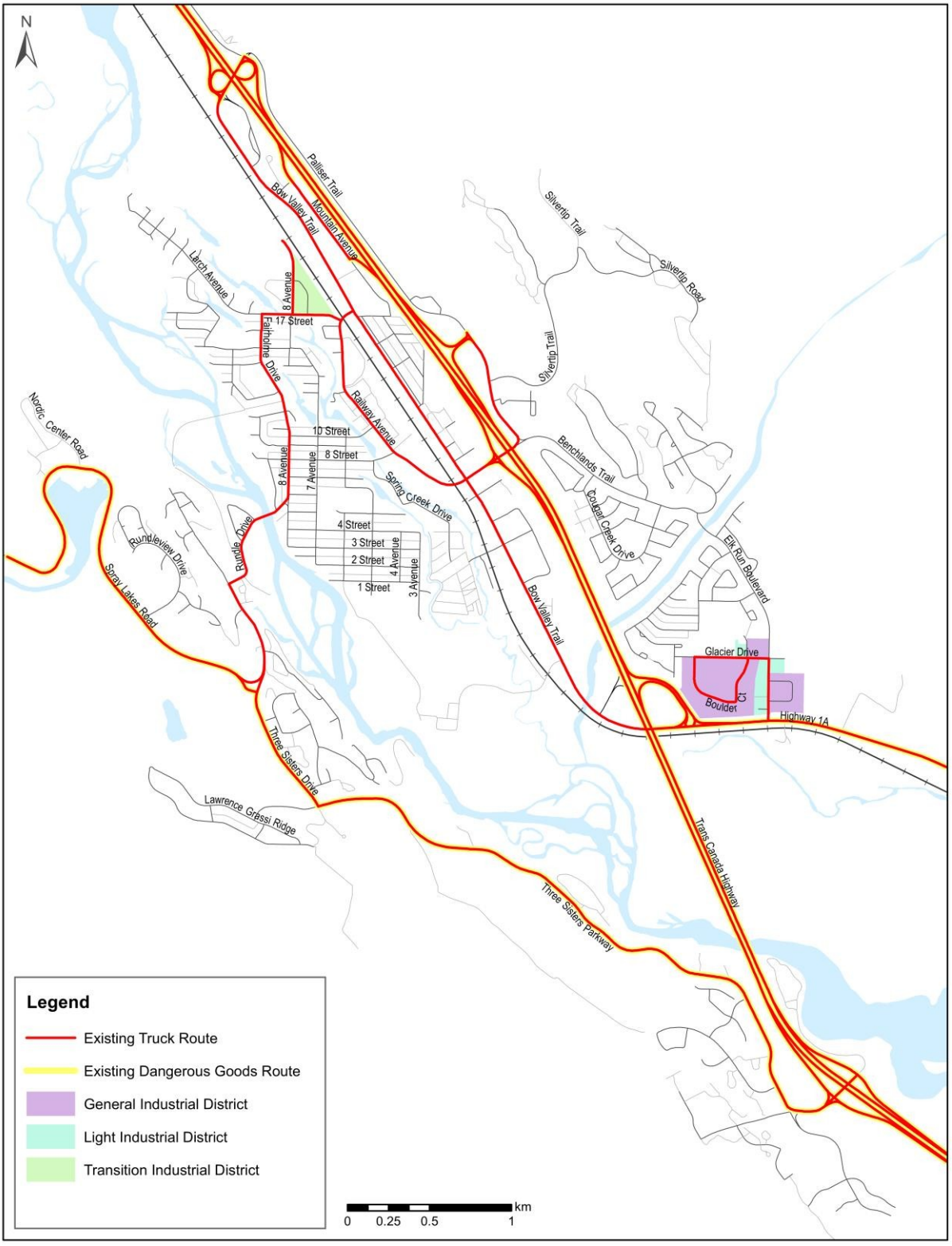


Figure 8-1: Existing Truck Routes and Dangerous Goods Movement Routes

8.2 Goods Movement

Based on the review of existing policies and conditions of truck routes and dangerous goods movement, along with relevant goods movement literature and policies in other jurisdictions, the recommendations for the Town of Canmore are as follows:

- **That Railway Avenue between 10th Street and 17th Street, and 10th Street between Railway Avenue and 8 Avenue be designated as "Local Access Truck Routes",** to focus travel along designated corridors through the Town Centre.
- **That the bylaws be revised to include a more detailed definition of a 'Truck' / 'Commercial Vehicle', include a section specific to Commercial Goods Movement,** and include route restrictions. Consolidating relevant truck bylaws within one section improves the organization of the regulations. A more detailed definition of a 'Commercial Vehicle' should assign restrictions on the vehicle based on weight, size, length, and/or axle limit, and allows for more stringent regulation of goods movements on Town roads. In addition, route restrictions should be defined in the bylaws to limit certain factors such as vehicle weight, vehicle size, speed, time of day, etc. for specific routes within the Town. These bylaws should be revised similar to those assessed in the peer review of other jurisdictions;
- **That the existing truck route network be maintained,** implementing route restrictions for the truck route on 17th Street from Industrial Place to Fairholme Drive, and the Fairholme Drive / 8th Avenue / Rundle Drive corridor. As these routes maintain a connected network, particularly servicing goods movement between the northwest and the southwest, and the industrial land use at 17th St and Industrial Place, the overall truck route network should be maintained. However, the bylaws and routes should be revised to include restrictions (i.e. weight, size, speed, time of day, etc.) for the route on 17th Street from Industrial Place to Fairholme Drive, and the Fairholme Drive / 8th Avenue / Rundle Drive corridor, to minimize negative impact to the surrounding residential areas while maintaining a connected truck route network;
- **That consideration be given to revise the bylaws** to include restrictions for local access and deliveries for areas such as the Town Centre. These example restrictions (i.e. weight, size, speed, time of day, using laneways, etc.) would mitigate negative impact to the adjacent neighbourhoods. Stakeholders should be consulted to understand their servicing and delivery needs; and

- **That a Dangerous Goods Movement bylaw and route map be developed** using the Government of Alberta's *Guidelines for the Establishment of Dangerous Goods Routes in Alberta Municipalities, November 2009*. While all provincial highways are designated dangerous goods routes, municipalities are responsible for developing dangerous goods routing bylaws on roads located within their communities. The Town of Canmore should develop a bylaw, considering routes to complement the provincial highways and to accommodate the current and future movements of dangerous goods, particularly the Class 3 Flammable Liquids movement on Mountain Ave and Bow Valley Trail, and for industrial land uses.

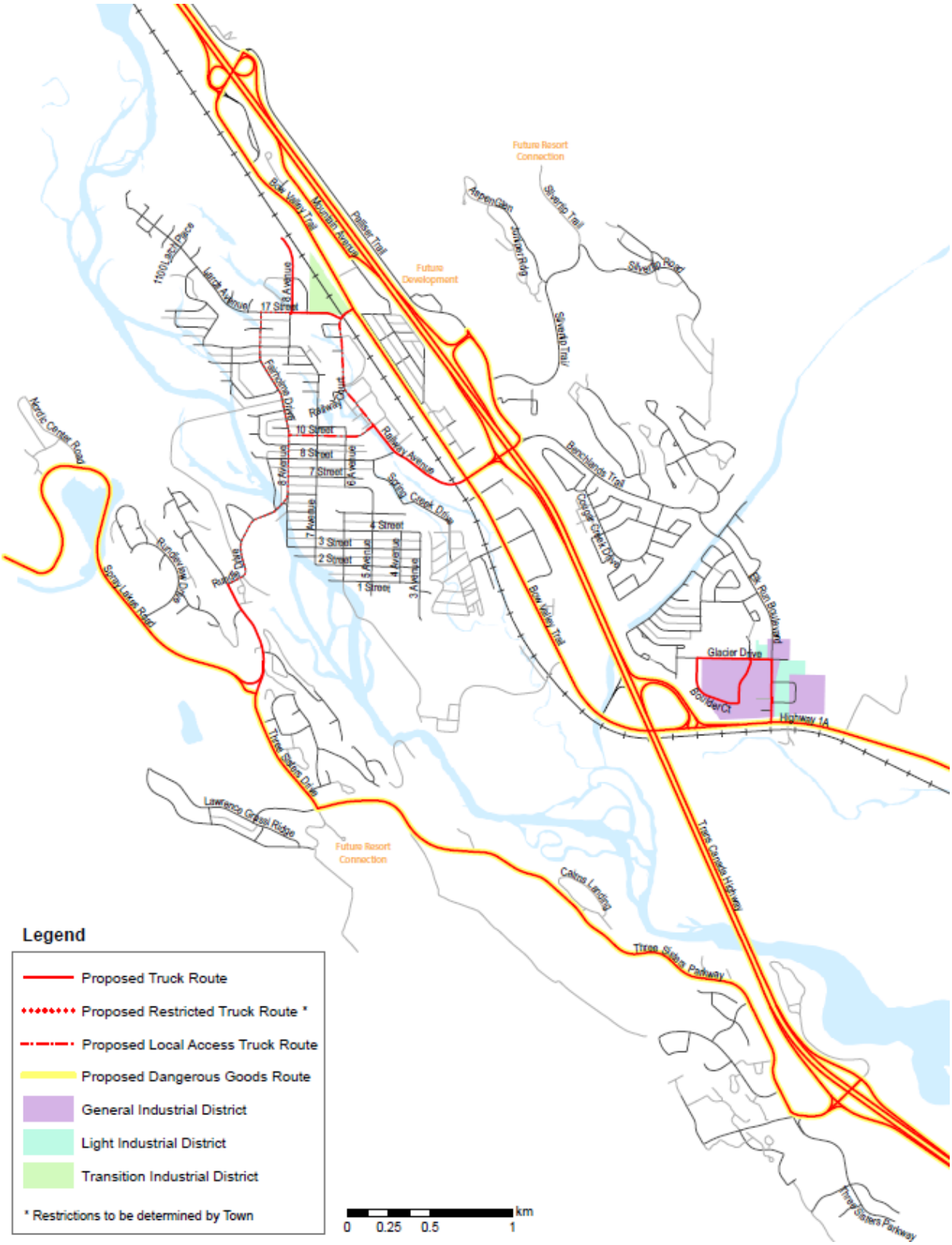


Figure 8-2: Proposed Truck Routes and Dangerous Goods Movement Routes

9.0 SUSTAINABLE TRANSPORTATION POLICIES

In order to provide a transportation system that meets the needs and aspirations of the community, it is necessary to adopt transportation policies that enable this process. Transportation policies provide the basis for network structure, design standards, land-use integration, resource allocation and general accessibility and mobility organization.

There are several documents that outline transportation policies, including the following:

- Town of Canmore Land Use Bylaw 22-2010
- Municipal Development Plan, 2016

The following high level sustainable transportation policies provide a synthesis of elements of the above documents and are intended to reinforce existing policies. The recommended policy changes reflect the three key aspects of sustainable transportation, including the encouragement of active transportation and reinforcement of healthy communities, land use policies that encourage sustainable transportation movements, and environmental stewardship of transportation infrastructure improvements. The high-level sustainable transportation policies are as follows:

Healthy Communities by encouraging active transportation	➢ Provide access and mobility for everyone, through an active transportation network for all skill levels, and alternative mobility options, including a local and regional public transit system. ➢ Create human movement corridors, focused on pedestrian and bike transport through a safe and connected network of walkways and cycling routes. ➢ Create a more pedestrian friendly downtown and continue enhancement of the public realm.
Land Use shapes the way we move	➢ Accommodate future growth within the defined Urban Growth Boundary; increase the average density of residential development to limit consumption of new land for new growth. ➢ Manage parking supply and pricing to encourage use of alternative transportation modes. ➢ Integrate transportation and land use planning by promoting compact, mixed-use land use that creates a sense of community.
Environmental Stewardship protects our ecosystem	➢ Protect and enhance the natural environment, mitigating negative impacts through sustainable and energy efficient transportation systems. ➢ Promote a high standard of environmental management and aesthetic quality in the planning, design, and maintenance of transportation facilities. ➢ Engage in responsible planning and construction methods, through appropriate studies, impact assessments, and protection plans.

9.1 Recommended Policy & Standard Changes

The reviewed documents identify numerous transportation policies which have contributed to the development of a more multi-modal and sustainable transportation system. Underlying conditions have changed since the development of these documents and the transportation system aspirations continue to evolve to be more multi-modal in nature. It is therefore recommended that the following policy updates pertaining to existing documents be adopted by the Town to reflect the new direction and to further support a more sustainable transportation system.

As relates to the Town of Canmore Land Use Bylaw 22-2010:

- *Section 4.0:* It is recommended that this section also address location of parking stalls in relation to the land use they intend to serve. Standards should be developed that ensure building frontage onto the street and parking lots do not impede active mode users, diminish the public realm, and contribute to a wide corridor. Parking lots should be located behind buildings that front onto streets.
- *Section 4.3.0.5*: Mixed used developments that contain more than one land use should be able to reduce the aggregated parking supply required for the entire development. *Section 4.3.4 Shared Parking* does provide a mechanism that recognizes parking demand varies over time; however, it does not give clear instruction. To incentivize mixed uses, a reduction to 90% of aggregated requirements should be considered as a starting point, whereby no contribution to the Cash-in-Lieu program be required to obtain the reduction. If parking reductions below 90% of aggregated requirements are desired by the developer, the Cash-in-Lieu policy remains applicable.
- *Sections 3.29, 3.32, 3.34, 3.35, 3.37, 4.3 and Section 9*: Update the requirements for bicycle end-of-trip facilities based on land use. Provide information on the location and styles of bike parking that will support an increased modal shift towards cycling. Long term and short-term parking needs should also be addressed.

In addition to these recommended policy changes, updates to the Engineering Design and Construction Guidelines should be undertaken. Specifically, the street cross sections should be updated to align with the ITP street classifications, and associated design elements presented in Section 4.4.7. Street lighting standards that are safe and appropriate for all users, while not creating excessive nighttime light pollution for the Town should also be included with this update.

The Town of Canmore *Traffic and Road Use Bylaw 2014-06* allows the chief administrative officer to prescribe speed limits. In conjunction with designs that support the functioning of 30km/h local roadways, accompanying changes should be made to identify the speed limit on these roadways. For broader changes to speed limit, Town Council would be involved, in coordination with the requirements of provincial regulations.

Changes to the Alberta Traffic Safety Act and associated regulations are required to facilitate the application of best practices in cycling facility design and operation. Currently, the rules within the act are motor-vehicle focused and are restrictive to certain bicycle facility design best practices. This work is being undertaken as part of a collaborative initiative between several jurisdictions and the Province of Alberta.

To support the vision of the ITP, the following list of policies should also be considered for adoption. These policies are intended to give clear direction to achieve the broader policy directives stated in the synthesis above and are more closely coupled with regulation or measures, some of which have been presented previously in this study.

- A policy for traffic calming to identify and evaluate potential locations suitable for traffic calming, and suitable temporary and permanent measures.
- A policy that prioritizes snow clearance on primary active transportation networks. The policy should ensure that resources be used to clear these facilities first.
- A policy that would require special events to improve bike parking and provide enhanced and more convenient facilities.
- Consider adopting a policy to support car sharing and bicycle sharing initiatives, to support the shift towards 2030 mode share targets. Investigate opportunities to support electric vehicle charging stations in Canmore.
- A policy that stipulates Low Impact Development (LID) design principles should be applied when and wherever streets are improved or corridors are being redeveloped to reduce the environmental impacts of transportation infrastructure.
- A policy to undertake an Intersection Control Study where new traffic signals are round to be warranted, to evaluate whether a roundabout may be an appropriate alternative to signals.
- The adoption of an Integrated Parking Management Plan
- A policy to incorporate multi-modal and comprehensive transportation system performance measures and targets. These measures will also provide future transportation planning direction and aid in creating open, objective processes. The targets should be adapted to suit the local context. Examples include, but are not limited to the following:
- Connectivity index – The City of Calgary Interim Complete Streets Guide specifies target indices for street and active transportation networks.
- Directness factors – The Metro Portland area stipulates a maximum factor to be used to determine maximum allowable block sizes.
- Accessibility indicators – Most often used in conjunction with transit stops but can be applied to numerous facilities. Stipulate that a certain percentage of the population should be within a given distance or travel time of a facility.
- Vehicle kilometers travelled – This measure allows the transportation system to be evaluated based on the level of automobile travel dependency it imposes.
- Multi-modal trip time indicators – This measure evaluates the average time for trips across all modes, giving them equal importance.

10.0 IMPLEMENTATION PLAN

For information on the implementation strategies and phasing for transportation infrastructure, please refer to the most current Integrated Transportation Management Plan (ITMP). For information on the implementation strategies specifically related to parking, refer to the most current Integrated Parking Management Plan (IPMP). These supporting documents will be managed separately and updated through strategic planning and each budget cycle, with updated details and revisions as influenced by growth development, available funding, and council priority.

10.1 Network Level Recommendations

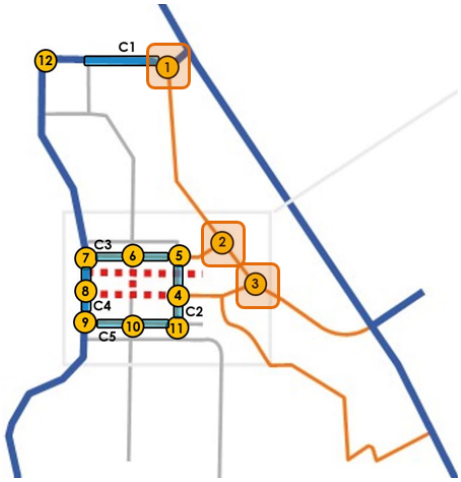
The following recommendations include network level recommendations for achieving required mode share targets. In order to ensure success, the recommendations must be further developed with coordination between parking management planning, transit planning, Town Centre Enhancement planning, street, drainage and utility rehabilitation, and budget planning.
Successful implementation of network changes requires input from various municipal departments, community groups, residents, visitors, business organizations, and Council. In addition to infrastructure changes, policy updates, business development, communications and engagement, hotel management, education and promotion will all play important roles in achieving the goals of this plan.

10.1.1 Safety, Comfort and Accessibility

1. Establish lighting standards for roadways and paths, and address deficiencies over time
2. Update engineering guidelines with accessibility requirements
3. Continue to fund accessibility improvements each year for specific issues and retrofit
4. Adjust road speeds in accordance with street classification and local conditions as required
    a. Residential speeds – address issues with speeding on residential roads through traffic calming as a first priority, and enforcement as a last resort

10.1.2 Network flow, Main Street as an Activity Street

1. Improve through traffic and goods movement flow around Main Street and the Town Centre

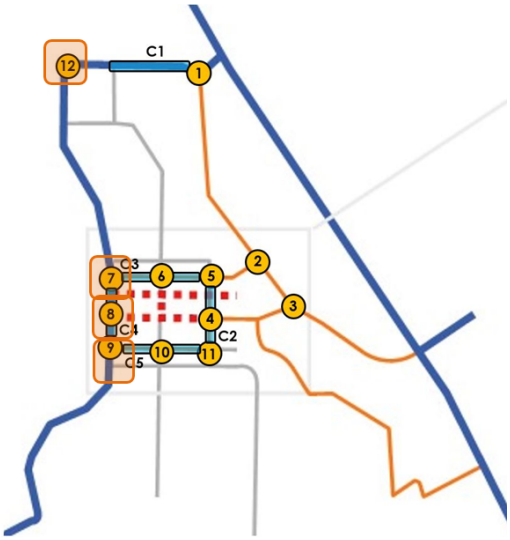


Phase 1: Encourage Traffic to Use 10th Street and 17th Street

Railway Avenue & 17th Avenue (1)
Install signal or protected intersection. Examine a realignment so that 17th Street is the main road and Railway intersects at a "T".

Railway Avenue & 10th Street (2)
Examine installation of roundabout and removal of signals.

Railway Avenue & 8th Street (3)
Signal timing revisions to limit NB left turn phase. Remove southbound and eastbound channelized right turn islands.



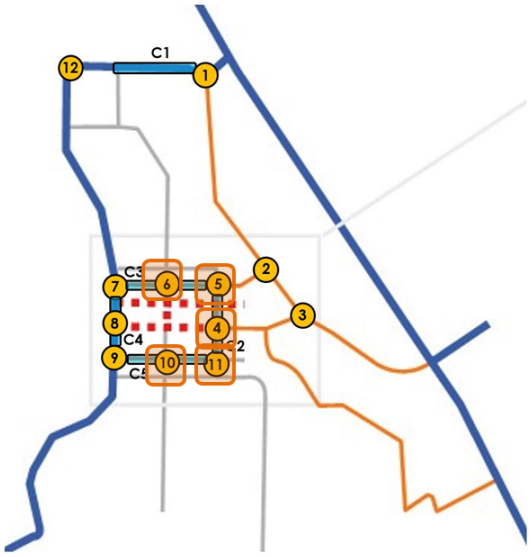
Phase 2: Encourage Traffic Flow Along Fairholme Drive & 17th Street

Fairholme Drive & 17th Street (12)
Install signal or protected intersection. Examine a realignment so that 17th Street is the main road and Railway intersects at a "T" (original alignment).

8th Avenue & 10th Street (7)
Examine installation of small scale roundabout to facilitate southbound and westbound traffic flows. This needs to facilitate transit movements.

8th Avenue & 8th Street (8)
Examine raised crossing/texture change/local road access. This location needs to facilitate transit movements.

8th Avenue & 7th Street (9)
Monitor and examine delay for 7th Street traffic turning left onto 8th Avenue. Small-scale roundabout may be required.



Phase 3: Encourage Traffic Flow Along Fairholme Drive & 17th Street

6th Avenue & 8th Street (4)
Examine raised crossing/texture change/local road access. Review signal timing short-term. Eventual removal of signals long-term replaced with 4-way stop.

7th Street & 6th Avenue (5)
Examine installation of small scale roundabout.

10th Street & 7th Avenue (6)
Reconfigure stop control (2-way on 7th Avenue).

7th Street & 7th Avenue (10)
Complete Streets intersection improvements underway.

7th Street & 6th Avenue (11)
Reconfigure stop control. Examine installation small scale roundabout.

2. Reduce through traffic, increase public space on Main Street
3. Expand intercept parking to reduce vehicular congestion and offset parking impacts of alternative transportation facilities and Town Centre Enhancement

10.1.3 20% Cycle Mode Share

1. Rapidly implement a complete network of separate and protected cycling facilities around the Town Centre. This network can include short, medium, and long-term interventions, but should be complete and accessible for people of all ages and abilities. Key corridors for short-term interventions include:
   a. Palliser Trail and Benchlands Trail
   b. Bow Bridge Corridor
   c. Fairholme Drive and 17th Avenue Corridor
2. Focus Complete Streets roadway rehabilitation on key corridors and areas including:
   a. Railway Avenue
   b. Bow Valley Trail
   c. Bow Bridge Corridor
   d. Town Centre
3. Investigate bicycle share and opportunities to increase access to bicycles for motorists arriving at hotels and intercept parking facilities
4. Establish winter maintenance standards for the cycling network
5. Update Engineering Design Guidelines with reference to the upcoming Alberta Bicycle Facilities Design Guide
6. Participate in updates to provincial regulation, and update local bylaws as required
7. Update land use bylaw requirements, specifically with regards to connectivity to the network and for bicycle storage requirements

8. Continue to fund construction of support infrastructure such as bicycle parking facilities and maintenance stands
9. Continue to fund School Travel Planning improvements

10.1.4 15% Walk Mode Share

1. Update Engineering Design Guidelines for functional and accessible designs
2. Complete missing year-round, accessible walking connections, with priority on the following areas:
    a. Canmore General Hospital
    b. Schools, Municipal Facilities
    c. Railway Avenue
    d. Bow Valley Trail
    e. Teepee Town
    f. Three Sisters River Pathway
    g. Palliser Trail
3. Improve winter maintenance and increase enforcement of private walkway clearing

10.1.5 5% Transit Mode Share

1. Grow current ridership:
    a. Fare free transit can add 20-60% ridership (TCRP Synthesis 101)
    b. Improve bus stops, add shelters and lighting, improve pedestrian connectivity and accessibility
2. Capture new growth:
    a. Establish design requirements for new development areas. Ensure new bus stops are conveniently located, central, connected, and constructed at time of development
    b. Establish new routes for resort centres and new development areas
3. Regional connectivity:
    a. Develop hub for connectivity between services
    b. Continue On-it pilot between the Bow Valley and Calgary
    c. Advocate for provincial support in establishing a sustainable model for making the On-it service permanent
4. Develop Engineering Design Guidelines for transit stops

10.1.6 Education and Promotion

1. Support educational and promotional programs including:
    a. Ongoing communications related to new infrastructure and travel options
    b. Creation of educational materials and training in schools
    c. Promotion of good etiquette
    d. Bell and light promotion for cycling

10.1.7 Evaluation of Implementation Options

In order to evaluate options for implementation, decision makers should consider social, economic, and environmental impacts and benefits of transportation decisions. Priority should be given to all improvements that encourage mode shift, are aligned with strategies, priorities and projects identified the Integrated Parking Management Plan, Town Centre Enhancement Plan, and Transit Strategy. Road, drainage, and utility rehabilitation should be factored into

decisions, but not be the primary driver for Complete Street rehabilitation. Complete Street rehabilitation should be focused on high impact corridors first.

Ongoing monitoring will be an important component of evaluating progress towards mode share targets. Adjustments may be required to the prioritization of projects as implementation progresses, and as more information becomes available about the effectiveness of various measures. Measures should be considered as part of a holistic set of improvements, and consideration should be given to completing network level improvements, as possible.

- End of Report -