PRINCE GEORGE ACTIVE TRANSPORTATION PLAN

FINAL REPORT

Prepared by the:

City of Prince George

in association with
OPUS International Consultants

December 2010

Sponsored by the:

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EXECUTIVE SUMMARY

Active Transportation is defined as all human-powered forms of travel, such as walking, cycling, skating and using mobility aids. Active Transportation can also be combined with other transportation modes such as public transit.

Over the past 12 years, the City of Prince George has completed formal planning studies on the Trail Network (1998 and 2008), the Cycle Network (2001), the Transit System (2003), and the Pedestrian Network (2004). Much has been implemented from these studies since their inception, including over 100 km of new bicycle lanes, new sidewalks, a pedestrian/cyclist underpass on Highway 16, and a revamped transit system that has more than doubled the ridership. However, there are a number of discontinuities and other impediments within and between these networks which limit the use of the city's active transportation system.

In 2008, a grant from the provincial Built Environment and Active Transportation (BEAT) Program helped the City initiate a comprehensive study of the local Active Transportation System. The objectives of the study were to expand on the previous studies; address the discontinuities and impediments in the existing system; and recommend the necessary standards, policies, initiatives, and infrastructure improvements to develop a comprehensive, safe and convenient active transportation system.

The study began with a detailed literature review that included relevant city plans and documents; current industry guidelines from the Transportation Association of Canada and the Institute of Transportation Engineers; and phone interviews with other municipalities to understand their approach to Active Transportation Planning.

Although public and stakeholder consultation was previously conducted for each of the four individual network studies over the past few years, specific input was solicited directly for the Active Transportation Plan. This included a public open house (March 2009), internal and external stakeholder meetings, and a public survey with 162 responses. Additional public input was provided through the Smart Growth on the Ground planning charette (May 2009), the Prince George "myPG" sustainability plan, and an open house with the Urban Cycling Coalition.

There are three main sections outlining the issues and recommendations in the Active Transportation Plan. These sections, and the chief findings, are as follows:

Standards and Guidelines:

- The active transportation network should be planned and designed for users of all ages, and to be continuous within and between modes, through the application of network guidelines.
- Ten pathway standards are recommended, including on and off-street trails, bicycle lanes, shared lanes, sidewalks, walkways, and structures. The conflict between bicycle lanes and on-street parking can be resolved through the removal of parking on arterial roads, and creating a shared parking/bicycle lane on one side of collector roads.
- Safe cycle and pedestrian pathways can be accommodated through intersections, roundabouts, interchanges and bridges.

Infrastructure:

For each area of the city, two sets of maps are presented showing:

- The planned cycle network, including trails, bike lanes, and shared lanes.
- The planned pedestrian network, including sidewalks, walkways, and trails.

Policies and Programs:

- The priority of the active transportation modes should be clarified in the City of Prince George planning, design and operations work.
- Through Land Use Planning and Transportation Demand Management, the City can help shift travelers to the active transportation modes. This would be complemented by strategic marketing and promotional efforts.
- More education for motorists, cyclists and pedestrians will help reduce frustration and improve safety for all users. This should be followed by strategic enforcement to ensure all users are adhering to the rules of the road.
- The main pathways should be maintained in all seasons. This includes snow clearing, sweeping, and patching. However, during major snowfall events, the first priority should continue to be the clearing of the traffic lanes.
- The City should track user data for the active transportation system to evaluate what efforts are most effective, and what priorities should be established.
- Outside the City budget, funding for system development can be sought through senior government grants, and through partnerships with local business.

The Implementation Plan has been developed from the items listed above, and in consideration of the findings of the "myPG" Sustainability Plan and an additional round of public and stakeholder consultation. The Implementation Plan consists of:

1. Adopting Standards: Standards should be applied to future City infrastructure projects, and formalized in future editions of the City's Subdivision and Development Servicing Bylaw and Design Guidelines.
2. Developing New Infrastructure: Active Transportation Projects are divided into short (0-5 years), medium (5-10 years) and long (10+ years) term priorities. A conceptual planning-level cost estimate (based on pathway costs/metre) is provided for each project for use in prioritization and programming. At an annual funding target of $500,000/year for new sidewalks, bicycle facilities and trails, the 2015 and 2020 proposed active transportation networks will be as shown in Maps 10 and 11 respectively. However, individual project estimates should be updated using detailed designs and site-specific considerations for project budgeting purposes.
3. Implementing Policies and Programs: The success of the Active Transportation System depends on the priority it is given, how transportation demand is managed, and how the system is marketed, maintained, and monitored. A number of policy/program initiatives are provided in Table ES-1. Many initiatives can be implemented at no capital cost through reconsideration of existing City policies and practices. The educational and promotional initiatives have modest costs, but can generate significant benefits in public awareness and use of the system. The maintenance of active transportation infrastructure has been repeatedly raised as concerns by the public and stakeholders. By re-strategizing the existing programs, many of these concerns can be addressed. However, to improve on the maintenance levels-of-service, and to keep pace with expansions in the active transportation network, additional maintenance funding will be necessary over time.

This study has been based on the best information and input available at the time of writing. The chief findings of the study should be revisited after five years, and the study comprehensively revisited after ten years.

Table ES-1: Proposed Policy and Program Implementation

Suggested Timing	Initiatives	Program/Policy Type	High-Level Cost Estimate
Continue	Improve attractiveness of transit as a user choice	Trans. Demand Management	As budget and ridership allow
	Develop and deliver In-School educational programs	Education	Printing costs
	Issue advisory and educational media releases	Education	None*
	Host Active Transportation promotions to increase awareness and users	Promotion	$3,000-$5,000
	Pursue local partnerships to attract dedicated users	Promotion	None*
	Clear snow from sidewalks; prioritize high volume and transit routes	Maintenance	As existing
	Monitor Canada Census and ISRE survey data	Data Collection	None*
	Include pedestrian and cycle counts with traffic counts	Data Collection	None*
	Periodically install trail counters at strategic locations.	Data Collection	Negligible
	Continue using fare-box passenger counters to evaluate transit demand.	Data Collection	None*
	Coordinate with other agencies on active transportation initiatives	Coordination	None*
	Apply for grants from senior government and other agencies	Funding	None*
Annually	Host cycle skills education courses	Education	$5,000-$7,000 (minus fees)
	Initiate annual traffic/cycle/pedestrian enforcement campaign	Enforcement	None*
	Revisit sweeping strategy to address concerns with debris in bike lanes	Maintenance	$200/km
	Repair identified potholes in bicycle facilities	Maintenance	Under Pothole Program
	Clear snow in bicycle facilities between snow events, as time permits	Maintenance	$300/km
	Clear snow from critical and/or heavily used walkways and trails	Maintenance	$100/km
	Repaint bicycle lane lines and symbols	Maintenance	As existing
2011	Establish priority of Active Transportation Modes in OCP	Priority Definition	None*
	Incorporate high-level planning objectives into OCP	Land Use Planning Policies	None*
	Incorporate development criteria into next Zoning Bylaw update	Land Use Planning Policies	None*
	Produce educational videos for internet and television	Education	None*
	Establish a feedback forum for active transportation users	Data Collection	None*
2011-2020	Strategically expand active transportation infrastructure, including bicycle parking and other end-of-trip facilities, amenities, etc.	Trans. Demand Management	See Section 8.3
2012	Develop “Walkability” index	Land Use Planning Policies	None*
	Publish Map/Guidebook of local cycle, trail, and transit routes	Education; Promotion	$5,000 printing
	Install on-street signing	Education	See Section 8.3
	Develop cost-sharing program opportunities with private sector	Funding	None*
2013	Create and promote name/logo for Active Transportation System	Promotion	$5,000 - $10,000
2014	Initiate comprehensive inspection of pedestrian network	Maintenance	$25,000
When deemed appropriate	Consider re-instating pay parking Downtown as and when deemed appropriate by the outcome of the Downtown Parking Pilot review.	Trans. Demand Management	To be determined

* - *Initiatives require no direct capital costs, but would still require staff time and resources.*

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1.0 INTRODUCTION AND BACKGROUND

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1.1 Background

In 2008, the City of Prince George began the process of developing an Active Transportation Plan for Prince George. The need for the Plan was identified by the Prince George Active Communities Strategic Plan which outlined a recommendation to *"support the collaboration of the Transportation, Planning and Leisure Services departments to develop, enhance and implement models of Active Transportation within Prince George"*.

In the summer of 2008, the City was successfully awarded a grant from the Built Environment and Active Transportation (BEAT) program for the development of the Plan. The BEAT program is a joint initiative of the British Columbia Recreation and Parks Association (BCRPA) and the Union of British Columbia Municipalities (UBCM). The BEAT initiative provides funding to British Columbia municipalities for the creation of Active Transportation planning with the objective to increase and improve options for Active Transportation and support initiatives aimed at environmental health benefits, age-friendly planning and healthy community planning.

To aid in the Plan's development, OPUS Hamilton and Associates were contracted to assist with the Plan as they have developed other transportation related plans for Prince George such as the Pedestrian Network Plan, Downtown Transportation and Parking Study and the Dangerous Goods Route Study. Their role consisted of researching Active Transportation, reviewing relevant City documents and assisting in the public consultation process. Together, the team of OPUS Hamilton and the City of Prince George have achieved the goal of developing an Active Transportation Plan for Prince George.

Photo courtesy of the Prince George Citizen

1.2 Active Transportation

Active Transportation is a relatively new term that is becoming increasingly important to communities in North America. The BEAT program defines Active Transportation as:

> *"all human-powered forms of travel such as walking, cycling, jogging/running, roller-, in-line and ice-skating, skate-boarding, use of a wheelchair or scooter, cross-country skiing, canoeing and kayaking. The most popular forms are walking and cycling, and Active Transportation can be combined with other modes such as public transit"*.

Active Transportation is not necessarily a term that most people are familiar with, however many people partake in Active Transportation as a way of life. Those without automobiles or who aim to reduce the use of their personal vehicle use Active Transportation to commute to and from work, run errands, to visit a friend or even to visit key destinations.

Increasing Active Transportation in our communities has never been more critical given our need to reduce greenhouse gas emissions, peak oil, increasing obesity and poor health rates. Statistics Canada (2006) has noted that 72.3% of Canadians drove their vehicle to work, while only 9.0% used an active mode such as walking or cycling. Communities nationwide are focusing on these alternate modes of transportation for many reasons that relate to personal health, environment, safety, quality of life and economics as follows:

Health

- Reduced major health risks
- Reduced automobile emissions
- Reduced stress levels
- Improved time management by incorporating exercise into commuting

Environment

- Reduced greenhouse gas emissions and associated climate change impacts
- Reduced air pollution
- Conserved green space with reduced vehicle parking/roadway requirements

Quality Of Life

- Reduced noise, pollution and congestion on roadways
- Increased social interaction
- Reduced crime with increased activity and surveillance from the street

Economic

- Reduced personal costs for motor vehicle ownership/operations
- Reduced infrastructure costs
- Increased tourism potential
- Increased value of Real Estate
- Increased tax savings through transit passes

1.3 Community Profile

The City of Prince George is located in central British Columbia and has a population of 70,981 (2006 Census, Statistics Canada) over a land base area of 32,900 hectares. The community of Prince George is developed at the crossroads of Highways 97 and 16, and the confluence of two major rivers of the Fraser and the Nechako.

The community of Prince George is characterized by vast expanses of forested areas, majestic rivers and cutbanks, four season living, CN Rail, government/service agencies, world-class facilities, post-secondary education institutions, affordable housing, above average incomes, First Nations communities and a great community spirit.

Prince George has been referred by many as a 'young city', which is reflected in the demographics of the local population in relation to the remainder of the province (see Figure 1). But like many other North American communities, the population is aging with a projected boom in the senior population (see Figure 2).

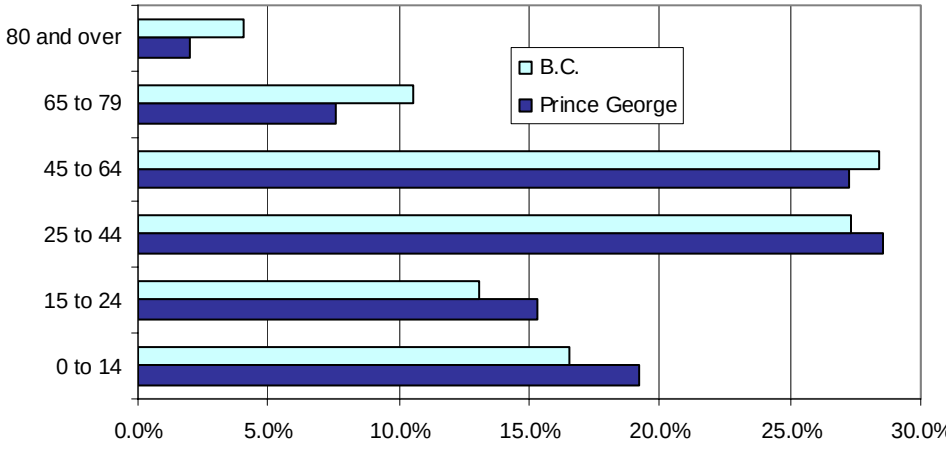

Figure 1 - Age Distribution in Prince George versus B.C., 2006

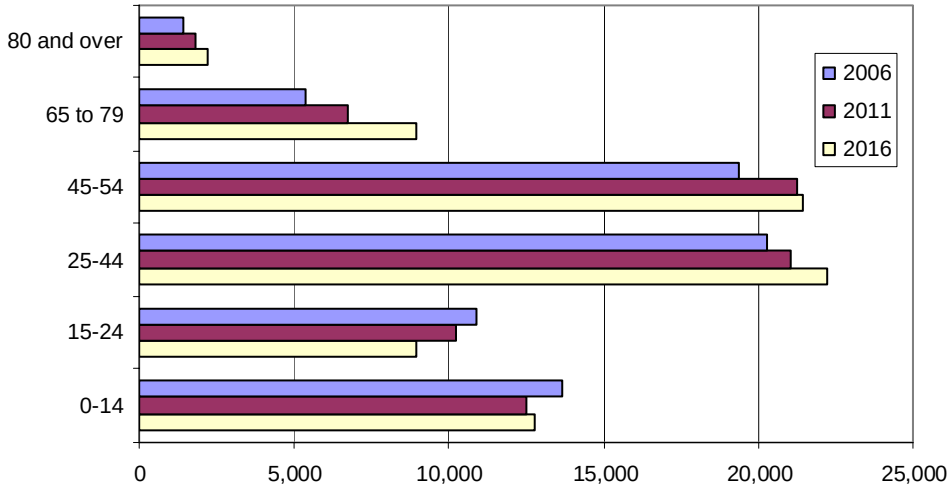

Figure 2 - Population Growth by Age Group, 2006-2016

The City of Prince George is situated within the traditional territory of the Lheidli T'enneh First Nation, and has been formed by various development influences and city planning approaches for more than 100 years. The City was incorporated in 1915, with the development of the Downtown and the CN yards, along with residential neighbourhoods in the Millar Addition and Central Fort George. The original plan was designed according to the 'City Beautiful' design principles, resulting in crescents streets, axial connections to the Downtown and prominent boulevards. After World War 2, large mills were established and the City experienced rapid growth in a sprawling form with sparsely populated areas in and around city limits. Later developments saw growth in the north and western areas of the City (see Figure 3).

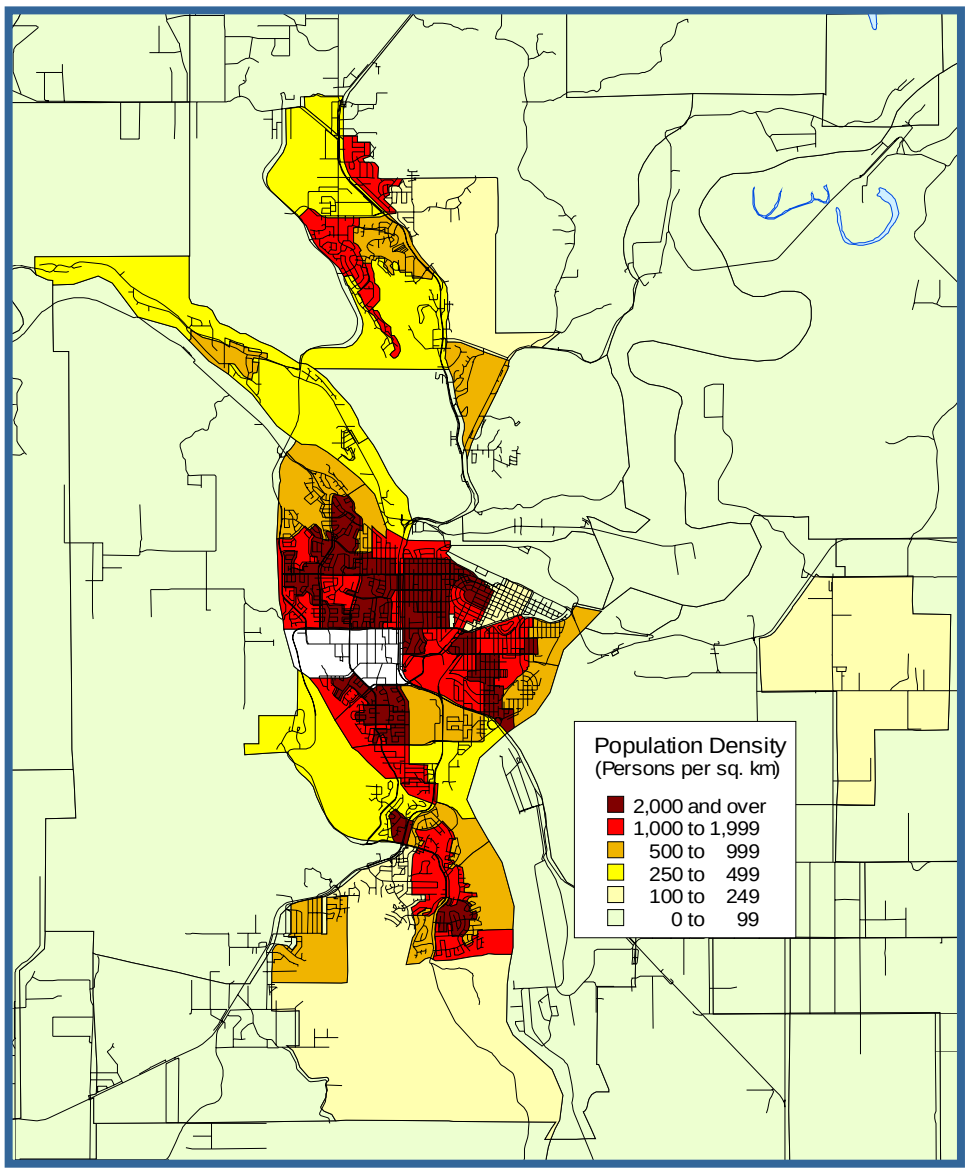

Figure 3 - Population Density in Prince George, 2006

The City has a higher degree of automobile dependence than B.C. as a whole, due in part to the low-density, spread-out development which can make walking, cycling and transit less feasible. Other challenges such as winter weather, difficult topography and limited connectivity in the Active Transportation network also make non-motorized transportation modes less attractive. This is reflected in the census data on transportation choices for commuting in Prince George, versus the rest of B.C. (see Table 1).

Transportation Mode	Prince George			B.C.
	1996	2001	2006	2006
Car, Truck or Van as Driver	81%	83%	81%	72%
Car, Truck or Van as Passenger	9%	8%	8%	8%
Public Transit	2%	2%	2%	10%
Walk/Bicycle	6%	6%	7%	9%
Other	2%	1%	2%	1%

Table 1 - Transportation Modes for Commuting
Source: Statistics Canada

Obesity rates have been increasing within the region and could be attributed to more sedentary lifestyles and the dependence on the personal automobile (see Figure 4).

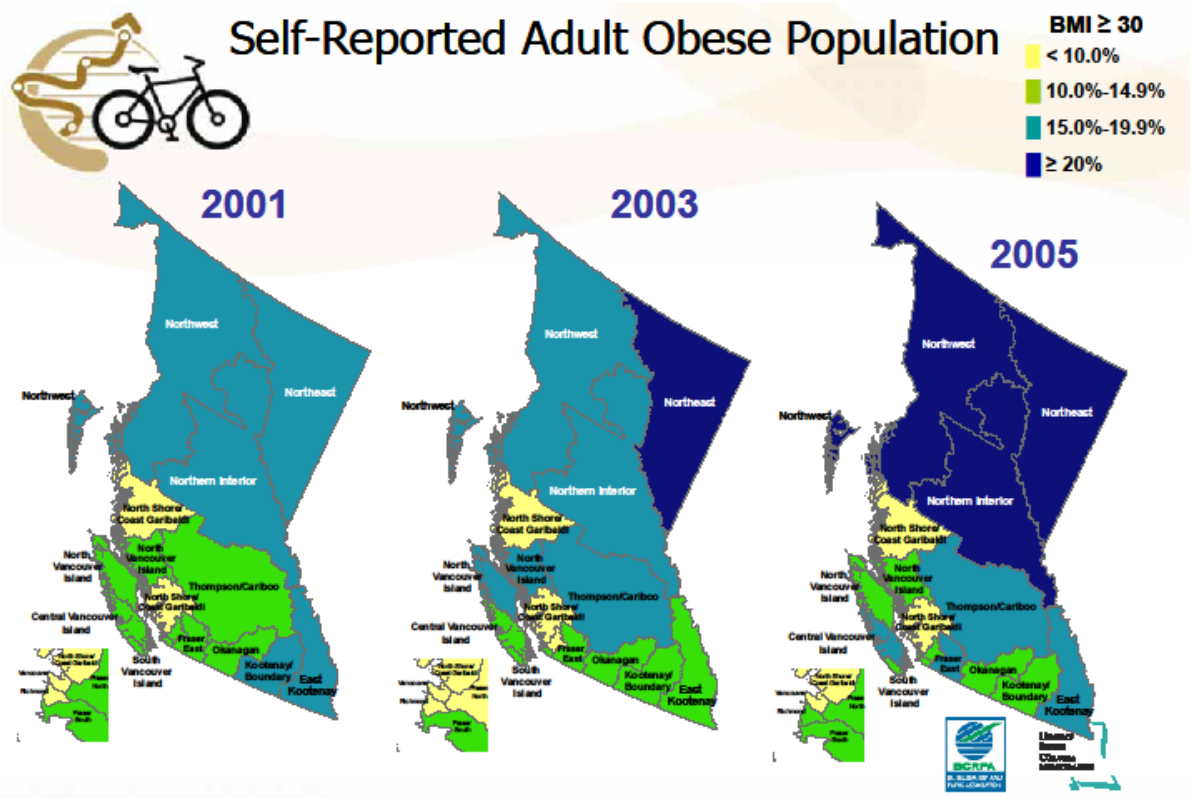

Figure 4 – Self-Reported Adult Obese Population in B.C.
(Source: British Columbia Recreation & Parks Association)

Overall, the community is generally satisfied with boulevard and walkway services, street lighting and traffic signs and signals. While there is some satisfaction with sidewalk maintenance, the community is not satisfied with road maintenance (see Table 2).

City Service	2003	2004	2007	2008	Trend
Boulevard Maintenance	56%	67%	70%	66%	☺
Road Maintenance	34%	34%	29%	24%	☹
Sidewalk Maintenance	62%	64%	66%	58%	😐
Street Lighting	84%	75%	75%	74%	😐
Traffic Signs, Controls & Markings	81%	80%	80%	77%	😐

Table 2 - Community Satisfaction with Existing City Services
(Source: Quality of Life Survey Results 2003-2008)

1.4 Active Transportation Vision

A vision statement has been developed for Active Transportation in Prince George based upon the context, needs and desires for the community, as follows:

> *To provide a strong network of Active Transportation infrastructure and supporting policies to facilitate and encourage more of the population to live an active lifestyle.*

1.5 Plan Purpose & Objectives

The purpose of the Active Transportation Plan is to recommend the necessary infrastructure, policies, and educational initiatives to allow and encourage the residents of Prince George to adopt a healthier, more active lifestyle. The Plan provides recommendations, tools and creative solutions that can be pursued for the Active Transportation Network in Prince George. To achieve this goal, a number of objectives that relate to the community context, priorities, trends, and projected development have been identified as follows:

- Develop an Active Transportation Network that meets the vision and is consistent with local and provincial legislation policies and regulations
- Provide a planning, design and communications toolkit for Active Transportation
- Determine community needs and desires for Active Transportation
- Build upon the existing Active Transportation Network and various City initiatives
- Provide a well connected Active Transportation Network that provides year round access and healthy transportation alternatives
- Promote safety and accessibility for all ages, skill and mobility levels
- Promote public interest and support for the Active Transportation Network while educating both user groups and motorists
- Embark upon an Implementation Strategy that identifies the resources, policies, guidelines and strategies required to achieve the Plan recommendations
- Coordinate the Active Transportation Plan with the Integrated Community Sustainability Plan ("myPG"), and incorporate recommendations into the Official Community Plan.

1.6 Method

The development of the Active Transportation Plan began in 2008, and consisted of the following four phases of development:

Phase 1: Technical Assessment & Review

- Inventory and assessment of existing conditions
- Review and analysis of Prince George Active Transportation-related plans and policies
- Identify existing and previously planned Active Transportation facilities
- Research on Active Transportation practices in other winter communities
- Public consultation including stakeholder meetings, an Open House and a Web-Based Survey

Phase 2: Development of the Draft Active Transportation Plan

- Develop the Plan vision, objectives, policies, priorities and strategies
- Develop a Route Selection Process and determination of candidate routes and associated facility types
- Develop an Implementation Strategy that identifies priorities, costs, best practices, phasing, funding, management tools and performance indicators
- Review of the Plan by stakeholders and the public

Phase 3: Finalize the Active Transportation Plan

- Revise the Draft Plan
- Present the Plan to Council, and distribute for final public and stakeholder input.

Phase 4: Develop Implementation Plan for Active Transportation

- Use the public/stakeholder feedback and the results from myPG to develop an implementation plan and finalize the study.

1.7 Format of Report

The Active Transportation Plan report is divided into the following sections:

- Section 1.0: methodologies, community profile, vision statement, objectives and definitions;
- Section 2.0: summaries of the Active Transportation-related City documents and municipal practice interviews;
- Section 3.0: details on the public consultation process;
- Section 4.0: maps and context of the existing Active Transportation Network;
- Section 5.0: guidelines for the design, planning and development of the Active Transportation Network;
- Section 6.0: proposed Active Transportation infrastructure
- Section 7.0: policies and programs;
- Section 8.0: implementation;
- Section 9.0: closing remarks; and
- Appendices

1.8 Definitions

The definitions relating to Active Transportation are diverse in many communities. Upon review of these definitions and those espoused in previous Prince George Active Transportation-related plans, the Prince George Active Transportation Plan identifies the following definitions as appropriate within this community setting:

Accessibility
The provision of practical measures which allow people with disabilities to access locations, infrastructure, and services within the community.

Active Transportation
All human-powered forms of travel such as walking; cycling; jogging/ running; roller-, in-line and ice-skating; skateboarding; use of a wheelchair or scooter; cross-country skiing; canoeing; and kayaking. The most popular forms are walking and cycling, and Active Transportation can be combined with other modes such as public transit. (Source: BEAT)

Active Transportation Network
The connection of transportation corridors and amenities that can include bike lanes/routes, sidewalks, trails and walkways to support a variety of Active Transportation modes and activities that can also be supported by public transit.

Arterial Road
A road which is used to carry high volumes of inter and intra-city traffic, including a large percentage of heavy traffic. Arterial roads should provide little or no direct access to adjacent properties.

Bicycle Facilities
Any facility designed for use by cyclists, including bicycle pathways, parking racks, and signage.

Bike Lane
A pathway facility located on the road shoulder, and designated for one-way cyclist/small wheeled traffic, and defined with a painted stripe, symbols and/or signing.

Bike Lane with On-Street Parking
A bike lane located between on-street parking and the travelled roadway.

Blueway
A water path or trail that is developed with launch points, camping locations and points of interest for canoeists and kayakers.

Boulevard Trail
A bi-directional pedestrian and cyclist pathway that is located within the road right-of-way, but offset and/or physically separated from the roadway.

City
The City of Prince George.

Collector Road
A road which is used to carry moderate volumes of traffic between city neighbourhoods and the arterial road network, as well as provide some degree of access to the adjacent properties.

Cyclist
A person who rides or travels by bicycle, unicycle, or other pedal-powered device.

Greenway
A cleared corridor of undeveloped land that is reserved for recreational use or environmental preservation. Greenways may be built along a river, between urban centres, etc.

Highway
All public roadways, lanes, bridges or other public way designed for and regularly used by motorized vehicles licensed by the Province.

Lane Diet
A reduction in the number of road lanes dedicated for vehicular traffic in order to re-allocate the space for use by pedestrians, cyclists, etc. Lane Diets must be justified by a study of the traffic operation and safety implications of reduced laning prior to implementation.

Local Road
A road used to provide access to adjacent properties, and carry a low amount of traffic to the collector and arterial road networks.

Motor Vehicle
A vehicle that is designed to be self-propelled or propelled by electric power obtained from overhead trolley wires, but does not include a motor assisted cycle, nor a vehicle on rails.

Multi-Use Trail
A paved off-street trail that accommodates bi-directional travel for pedestrians, cyclists and other non-motorized transportation modes.

Off-Highway Recreational Vehicle
A motorized vehicle used for recreational purposes and includes a snowmobile (as defined in the Snowmobile Regulations under the Motor Vehicle (all terrain) Act); a four-wheeled all terrain vehicle (also known as a quad); a three-wheeled all terrain vehicle; a two-wheeled mini-bike; a two-wheeled dirt bike; motorcycles when used off-road; dune buggies; go-karts; mopeds; or any other motorized vehicle that does not comply with the Motor Vehicle Act.

Pathway
Any concrete, asphalt, paver-brick, granular, or earthen-surfaced facility including sidewalks, walkways, trails, and bike lanes, and is designed for travel by pedestrians, cyclists, and other non-motorized transportation modes.

Paved Shoulder
The paved edge adjacent to the travelled lanes of a roadway, generally separated from the travelled portion of the road by a white line.

Pedestrian
A person who travels on foot, or in a wheelchair or other mobility aid.

Roadway
The part of a road over which motor vehicles may travel.

Sharrows
Painted chevrons along the edge of a paved road that indicate the shared use of the road by cyclists and vehicular traffic.

Sidewalk
A public pedestrian facility located within the road right-of-way, but physically separated from the travelled portion of the roadway.

Small Wheel Users
An Active Transportation mode that can include skateboarding, roller skating, in-line skating and the use of a scooter.

Trail
A paved, granular or earthen-surfaced public pathway that accommodates pedestrians, cyclists and other similar uses, and which connects to or through greenbelt, parkland, or undeveloped right-of-way.

Walkability
A measure of the extent to which the built environment is friendly to the presence of people walking, living, shopping, visiting, enjoying or spending time in an area. (source: The Walkable and Liveable Communities Institute Inc.)

Walkway
A public pathway through a dedicated right-of-way that connects between roadways, or between a roadway and a school, and is designed to accommodate pedestrian, cyclist and other non-motorized transportation.

Wheelability
A measure of the extent to which the built environment is friendly to people that use transportation devices with wheels such as a bicycle, stroller, wheelchair, scooter, skateboard and in-line skates.

Wheeled Users
Persons who use devices with wheels as modes of transportation, such as bicycles, in-line skates, skateboards, wheelchairs, or scooters.

Whiteway
A corridor or trail that accommodates pedestrian, cross-country, snowshoe or sled travel over snow covered surfaces.

Widened Curb Lane
A roadway that allows motor vehicles and cyclists to share a lane, ideally providing motorists and cyclists with enough room to pass each other without having to change lanes.

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2.0 LITERATURE REVIEW

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2.1 Review of Relevant City Documents

Over the past decade, the City of Prince George has produced a number of plans and policies that have a direct influence on the design, development and management of the Active Transportation Network. This section outlines these various documents in reverse chronological order.

Smart Growth on the Ground Downtown Prince George Concept Plan, 2009

The Smart Growth on the Ground Downtown Prince George Concept Plan is a detailed vision for the year 2035 of a sustainable and vibrant downtown Prince George. This vision was created by a team of stakeholders, community representatives, and experts who describe a downtown that functions as the civic and cultural centre of Prince George, a downtown where lush streets and parks set the scene for thriving businesses and lively and liveable neighbourhoods, and where people of all kinds are attracted not just to visit but to live and invest. Key physical features of the vision include expanded park, cultural, and civic facilities; greenway connections to the rivers; higher density mixed use neighbourhoods, and a network of bike-friendly, pedestrian-friendly, all-season and animated green streets.

This Plan was approved by City Council on September 14th, 2009, and is meant to serve as a toolkit and resource to realize this vision.

Relevance: Corridors and destinations of the Active Transportation Network.

Prince George Parks and Open Space Master Plan (POSMP), 2008

This document identifies trends, challenges, standards, analysis of existing parkland provision, recommendations for parkland acquisition and development, and acquisition and funding opportunities.

The Prince George Vision for Parks and Open Spaces is as follows:

> "The City of Prince George is a vibrant 'City in Nature' where park and open spaces provide a wide range of quality of life amenities and services, all within a safe, accessible, and connected community central to a unique and beautiful natural environment near the Fraser and Nechako Rivers".

Parkland is provided in 3 broad levels that include City, District, and Neighbourhood Parks. City Parks serve the community at large and include a diverse range of 4 sub-categories of City Aesthetic, City Athletic, City Natural and City Passive Parks. District Parks are primarily provided to accommodate the need for recreational play at a district level, while Neighbourhood Parks serve the population of a neighbourhood with active and passive leisure opportunities. Open Space categories include Green Spaces, Special Purpose Areas, Schools & Public Parks, and Trails. Overall, 7.5% of Prince George land is public park and open space.

Relevance: Corridors and destinations of the Active Transportation Network.

Prince George Centennial Trails Project, 2008

This plan represents the results of a two year term for the Trails Task Force as supported by City Council. The Plan is intended to be implemented over a 7 year timeframe and proposes trail development as follows:

Phase I (2008-2011)
- Heritage River Trail
- UNBC – River Connector Trail
- Hart Connector Trail

Phase II (2012-2014)
- Blackburn Trail

As Opportunities Arise (2008-2015)
- Various community and neighbourhood trails

The Centennial Trails Plan outlines a number of recommendations relating to revisions to the 1998 City Wide Trail System Master Plan, trail hierarchies, partnerships, promotions/marketing, and funding opportunities. Public consultation for the Plan included a survey which identified key findings such as the need for increased trail maintenance, connectivity, increased unpaved trails and increased volunteer opportunities.

Relevance: Trail guidelines and development recommendations to include in the Active Transportation Network.

Transit Riders Guide, 2009

The Transit Rider's Guide is a collection of the individual route maps of the various bus routes servicing Prince George as well as an overall system map identifying the routes and exchanges. There is also a timetable provided for each route, generally updated two to three times per year.

Relevance: Transit route and general information that supports the Active Transportation Network.

Municipal Winter Trail Design Standards, 2008

The City of Prince George Winter Trails Master Plan was developed as an addendum to the City Wide Trail System Master Plan (1998) to identify where and how trails could be adapted for winter activities (e.g. cross country skiing, dog sledding, etc). The Plan provides trail mapping, routes, and skill classification system that can be used by residents and visitors of the City for their enjoyment. This master plan also provides City of Prince George planning and operations staff with detailed land use information on trail locations, and standards for trail design and maintenance.

Relevance: Trail development in support of winter active transportation activities.

Active Communities Strategic Plan, 2007

The Prince George Active Communities Strategic Plan was developed to address the ActNow BC goals to increase physical activity and healthy eating by 20% by 2010. The report identified objectives with indicators to address the Active Communities Initiative, including:

- Plans and Policies
- Opportunities and Participation
- Supportive Environments
- Communication, Education, Community Identity and Involvement
- Accessibility

Relevance: the plan recommended that the City develop, enhance and implement models of Active Transportation in Prince George

Pedestrian Network Study (PNS), 2004

The Pedestrian Network Study was undertaken to develop a plan that:

- prioritized the installation of new sidewalk links;
- prioritized rehabilitation of existing sidewalk links; and
- suggested changes to existing pedestrian network policies and practices.

The study provided maps and lists showing recommended priorities for new sidewalk installations and existing sidewalk repairs, along with planning-level cost estimates.

Relevance: Improvements to some parts of the Active Transportation Network facilities.

Subdivision and Development Servicing Bylaw No. 7652, 2004

This bylaw identifies all of the required development and servicing standards for Prince George. The sections which are transportation-related are Divisions 1, 2 and 16.

Schedule D includes the following transportation-related drawings:

- Urban Walkway;
- Signal/Sign Pole Elevations;
- Trail Standards;
- Local, Collector, Arterial Roads (includes bike lanes as designated); and
- Recommended Planting Offset Downtown.

Relevance: Improvements to some parts of the Active Transportation Network facilities.

Smart Growth Direction for City of Prince George: Development Concept for 5th & Tabor, 2004

This report provides a smart growth concept for a City-owned site and includes recommendations for residential and commercial zoning, design and layout, with open space, parks and walkways within the site. The transportation

features would focus on pedestrians, cyclists and those using aids such as scooters.

Specific transportation recommendations are as follows:

- Minimize off-street parking with required access from rear lanes;
- Use on-street parking with street trees, boulevards, and sidewalks;
- Upgrade bus stops and shelters;
- Provide a pedestrian-oriented environment;
- Require bicycle parking facilities; and
- Connect all on-site corridors to the City walking and cycling routes.

Relevance: Example as to how infrastructure and City policies can be changed to support Active Transportation.

Transit Service Review Stage1-2, 2003

This study found a transit mode share of 2 percent in the City (2001 Census) and noted that Prince George has lost 4 percent of its population since 1996. At the time, it stated that transit service is below average when compared to similar, medium-sized systems and that the existing routes provided inconsistent coverage, circuitous routing, long travel times, and inappropriate use of local streets.

Since this time, the transit service has been revised in the City and indications from the Operations Department are that ridership has experienced a significant increase since the implementation of new routes and schedules.

Relevance: Improvements to the Active Transportation Network.

Conventional Transit Service Policy, 2003

This policy proposed a level of service to be provided by the City's conventional transit system based on the maximum walking distance to a bus stop, the hours and frequency of service, the staging procedure for new subdivisions, and minimum passenger levels. Guidelines for bus stop configuration and snow clearing are also provided. This policy was passed by council in December 2003.

Relevance: Policies related to transit integration for the Active Transportation Network.

Snow and Ice Control Policy, 2002

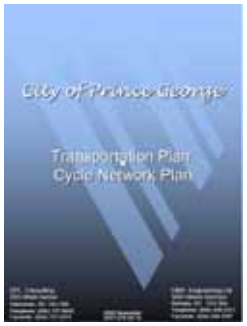
This policy provides the procedures for snow and ice control operations regarding maintenance of passable streets and parks, use of de-icing chemicals and ploughing of roads and sidewalks.

For example:

- Sidewalks in the Downtown core and along arterials will be ploughed when snowfall exceeds 50mm
- Selected pathways and trails will be cleared when snowfall exceeds 50 mm
- Snow placed on streets, sidewalks or lanes in a hazardous manner is not permitted

A copy of the Snow and Ice Control Policy is located in the Appendix.

Relevance: Maintenance of the Active Transportation Network in winter weather conditions



Cycle Network Plan, 2001

The Cycle Network Plan encourages cycling in Prince George by recommending improvements to improve the comfort and accessibility of the cycle network. The Plan reviews the basic principles of planning for bicycles and provides an inventory of the existing cycling facilities. Upgrades are recommended for existing facilities including: designated cycling facilities, bridges, and highways. For a more complete bicycle network, new east-west and north-south cycling routes are identified and illustrated on the map. The Plan makes the following recommendations, amongst others:

- Consider cyclists' needs in infrastructure projects,
- Pursue skills training programs,
- Introduce an annual Bike Week,
- Create a commuter cycling map,
- Increase the frequency of snow removal on bridges,
- Provide end of trip facilities,
- Develop links between on- and off-road facilities, and
- Pursue route specific recommendations

Relevance: Improvements to the Active Transportation Network.

Official Community Plan (OCP), 2001

The Official Community Plan was adopted in 2001 and establishes a framework for future growth. It states the City's mission is to fulfil its destiny as British Columbia's 'Northern Capital' through the provision of an excellent quality of life. Specific principles were identified including:

- Create a vibrant downtown that is a showcase of the community;
- Build a sustainable community;
- Build strong neighbourhoods with amenities close to home;
- Provide for the needs of all age groups;
- Retain environmental quality; and
- Build a beautiful City.

The OCP has a specific Active Transportation related vision of "encouraging decreased dependence on private vehicles by promoting compact development and alternative forms of transportation such as public transit and bicycles" - Section 4.3(9). Other related policies are included under the sections of Environmental Quality (Ch. 4), Residential (Ch. 6), Commercial (Ch. 7), Industrial (Ch. 8), Parks, Recreation and Culture (Ch. 9), Public Institutional (Ch. 10) and Transportation (Ch. 11). These policies have been outlined for reference in the Appendix.

Chapter 11 (Transportation) states that the City will work towards completing the sidewalk network so there will be sidewalks on both sides of arterial roads, one side of collector and local roads and the City will review and prioritize sidewalks for improvement or installation. The City will also work towards signing the Bicycle Network and providing bicycle racks on transit buses.

The Prince George Social Plan (2002) is a supplement to the OCP and identifies issues around inadequate sidewalks and street lighting as well as safety concerns relating to motorist conflicts with cyclists and pedestrians.

Relevance: Policies that will impact the Active Transportation Network

City Wide Trail System Master Plan, 1998

This plan proposes a trail hierarchy and lists critical links required for the trail network. Major trail linkages were proposed to link major community areas with the Downtown core and major destinations. The trail classifications in the plan include:

- City Trails (Multi-Use) 3.0 metre wide paved asphalt surface
- Local Trails – 2.0 metre wide granular surface
- City Trails 1.0 metre wide compacted earth surface
- On-Street Bicycle Lanes, 2.0 metre preferred on both sides of the street

Relevance: Trail design standards, trail hierarchy recommendations and missing links of the Active Transportation Network

2.2 Municipal Practice Review

Active Transportation initiatives have been pursued in other Canadian communities. A review of a number of these communities with similar populations and/or climatic conditions was undertaken to provide a baseline of current and planned Active Transportation Networks and help guide the development of the Prince George Active Transportation Plan. The communities that were interviewed include:

- Halifax Regional Municipality, Nova Scotia
- City of Fredericton, New Brunswick
- City of Winnipeg, Manitoba
- City of Whitehorse, Northwest Territories
- City of Minden, Ontario
- City of Rossland, British Columbia

Of these communities, the City of Fredericton, Halifax Regional Municipality and the City of Minden also have challenging winter conditions like Prince George. However, only Fredericton is similar in population while the other municipalities surveyed are substantially larger or smaller in population in comparison to the City of Prince George.

Issues that were common to most of the communities interviewed were:

- No stable, comprehensive, universally accepted list of terms used to describe all Active Transportation activities and facilities. Without common terms, discussion of Active Transportation and its related facilities is limited;
- A lack of monitoring programs;
- A lack of additional policies that indirectly support Active Transportation such as land use policies; and
- The need for political will and public support for an Active Transportation Plan to be successful.

The details of these interviews can be found in Appendix B. A summary of the key findings from each of their Active Transportation Plans are outlined in this section.

Halifax Regional Municipality, NS — Pop. 372,679

The Halifax Regional Municipality Active Transportation Plan was adopted in August of 2006 and has the goal of doubling the number of people who use Active Transportation modes for a portion of their entire trip. The plan was revised in 2009 with additional routes and details on alternate routes aimed at those starting out. Highlights of the plan are as follows:

Definitions — Active Transportation is defined under 4 modes which include *Active Commuting, Active Workplace Travel, Active Destination Orientated Trips* and *Active Recreation.*

Design — Both the facility design and operational design of AT infrastructure is recognized to ultimately influence use of the network.

Guidelines — A companion report entitled *Active Transportation Plan Technical Appendix: Facility Planning, Design Guidelines and Draft Trail By-Law* was developed and provides extensive technical recommendations and standards for Active Transportation.

Hierarchy — The network is defined by a 'Spine' system with direct routes between major nodes and is complemented by a secondary 'community' system serving local destinations and connecting to the 'Spine' system.

Maintenance — Policies include raising priorities for snow clearing and removal on both on-road and off-road Active Transportation facilities and transit stops.

Monitoring — Monitoring programs include counts and surveys at least every five years.

Multiple-Use — Pedestrians and cyclists act as the design modes with other Active Transportation modes falling within one of these two categories. ATV's are allowed to cross the Active Transportation Network at designated crossings within rural areas.

Routes — A route selection process was utilized to recommend new or upgraded routes and is based on a set of principles relating to accessibility, safety and distribution for instance that are ranked on a point scale rating.

Staffing — Dedicated staff positions were recommended for capital project integration, community liaison and trail by-law enforcement.

Fredericton, NB

Pop. 50,535

The Fredericton Trails/Bikeways Master Plan was adopted in September of 2007 and has a goal to develop and promote a comprehensive AT network consisting of off-road facilities wherever possible and supported by key on-road links where needed and/or desired. Highlights of the plan are as follows:

Cycling Bike routes include bike lanes and signed-only routes, with the latter being rural in nature without a formal separation from motorist traffic. Parking is permitted in bike lanes wherever 'No Parking' signs have not been installed.

Multiple-Use Shared use of the trails is becoming more familiar despite some earlier conflicts. City Council is working with the snowmobile clubs to accommodate their use and resolving conflicts by relocating trails as required. Non-emission mobility assisted devices are accommodated on trails and sidewalks wherever possible.

Promotions Maggie DeWolfe is the travelling Active Transportation Information Station for Fredericton. Maggie travels the trails, visits businesses and provides information on Active Transportation.

Regulations The Municipalities Act enables communities to close any section of 'highway' but allow pedestrian access. The Municipal Thoroughfare Easements Act provides easement rights to existing thoroughfares which were previously challenging to pursue.

Winter In the winter many trails are groomed for Active Transportation use.

Winnipeg, MB

Pop. 633,451

The City of Winnipeg Active Transportation Study was produced in 2005 and implemented an Active Transportation Program in April of 2007, having hired a coordinator and set up an advisory committee in July of 2007. As a result they are in the early stages of program development and are concentrating on increasing the amount of Active Transportation infrastructure. Highlights of the study are as follows:

Maintenance Maintenance objectives were outlined as maintenance was identified as key to improving comfort and safety levels of users. Policies include the Snow and Ice Control Program to maintain the City's roadways and sidewalks, and the maintenance and repair of roadways, pathways and sidewalks play a large part in ensuring the usability of Active Transportation facilities.

Definitions Active Transportation definition: *"Any human-powered mode of transportation such as cycling, walking, skiing, and skateboarding. The main emphasis is on travel for a specific purpose or to a specific destination. However, this definition does not exclude travel for purely recreational purposes".*

Multiple-Use The plan is aimed to distribute efforts to a 60/40 percent split between cycling and walking, and an 80/20 percent split between commuting and recreation.

Regulations Provincial and municipal regulations do not equally address Active Transportation modes and results in limitations where skateboarding is not allowed on both streets and sidewalks for instance.

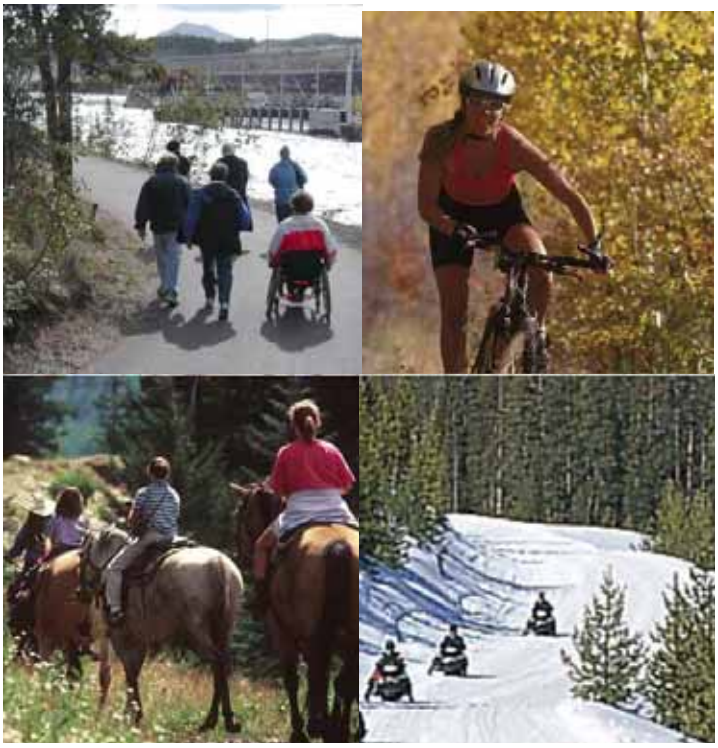
Winter Trails are unofficially maintained by cross-country skiers who cut individual tracks. Skating trails exist along the Assiniboine River.

Promotions The City supports many organizations such as cycling coalitions and NGOs which provide programs that support and encourage Active Transportation and recognises that there are partnering opportunities. The City also recognises that they should lead by example and in adopting Active Transportation facilities at and near civic buildings and in embracing programs that support and promote Active Transportation among civic employees.

Whitehorse, YT

Pop. 20,461

The 2007 Trail Plan is a document that will give guidance to the City of Whitehorse for trail planning, development and programming over the coming decade. It takes an adaptive management and "best practices" approach to trail system management.



Multiple-Use The broadest categories of multiple use trails in the Plan include *motorized multiple use* and *non-motorized multiple use.*

User Conflicts The plan classifies user-conflict into six categories: unintentional; releaser-cue; uninformed; responsibility-denial; status-confirming; and wilful.

Promotions *Wheel 2 Work Whitehorse* is an Active Transportation social marketing campaign that uses incentive prizes to encourage more people to commute by bicycle during the summer season. Whitehorse has also recognized the benefits of community-based social marketing as an attractive alternative to information-based campaigns.

Implementation The implementation strategy is divided into four areas: *Rationalizing the present trail system, Nurturing a positive trail culture, Getting the word out,* and *Building and maintaining a comprehensive trail system.*

Minden, ON

Pop. 5,556

In 2008, the Village of Minden produced the Active Transportation Plan for Minden with the goal of raising physical activity levels through Active Transportation (AT) promotion and planning. The plan was revised in 2009 with additional routes and details on alternate routes aimed at those starting out. Highlights of the plan are as follows:

Promotions Initiatives such as 'Park the Car and Get Movin' campaign are promoting reduced car trips.

Regulations The provincial Strong Communities Act, 2004 requires all land use planning decisions to be consistent with the Provincial Policy Statement, which includes the promotion of Active Transportation modes, the development of safe streets and increased densities/mixed uses to minimize trip lengths.

Winter Some connector pathways to schools, hospital and the community centre are maintained during the winter.

Before and after illustration of possible modifications (subject to feasibility study)

Intersection At Bobcaygeon Rd. and Parkside St.
BEFORE

Intersection At Bobcaygeon Rd. and Parkside St.
AFTER

Rossland, BC

Pop. 3,278

In January of 2009, the City of Rossland prepared an Active Transportation Plan as a resource for municipal staff and political representatives, to assist in identifying, prioritizing and budgeting for missing components of a comprehensive Active Transportation Network. Highlights of the plan are as follows:

Multiple-Use Motorized use is only banned on trails located on private land.

Pedestrians The plan recommends have a grading system for trails.

Promotions Recommendations include distributing a summary of the AT plan via mail box drop, downloadable on the City's website and summarized through a Press Release. Other programs and initiatives relate to creating an Incentive Education Program for school children, volunteer initiatives, a public education campaign (maps, brochures, posters etc.) and participating in provincial/national public health campaigns (Move for Health Day).

Regulations The OCP requires all new subdivisions under the Preliminary Layout Review to dedicate and build trail systems or link to the existing system.

Routes Routes have been assessed by criteria relating to estimated amount of use, utility and costs for instance and have been assigned a scored based on a weighting formula.

Winter Pedestrian and access routes are ploughed in winter. Many trails are well used for snowshoeing and some trails are suitable for cross-country skiing. Where snow clearing is not possible, it is recommended to add 'use at your own risk' warning signs.

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3.0 PUBLIC CONSULTATION

Photo courtesy of the Prince George Citizen

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3.1 Public Consultation Process

The development of the Active Transportation Plan included an integrated public consultation process to ensure that the community has an active voice in the decision making and planning process. The public consultation process included stakeholder consultation, an Open House and a Web-Based Survey. All of the input received was reviewed and analyzed further in Section 5.0 in order to prioritize the expressed needs and desires.

Photo Courtesy of the Prince George Citizen

3.2 Stakeholder Consultation

Various consultations were conducted with a number of stakeholders groups that included the Active Communities Committee and City staff amongst others. The following is a summary of these consultations:

Active Communities Committee

The need for an Active Transportation Plan for Prince George was a major recommendation of the Active Communities Strategic Plan. Consultation with the Active Communities Committee confirmed this support for the Plan and how necessary this Plan would be to impact the quality of life in Prince George.

Overall, the Committee's main concern was to insure that both City Council and City Administration commit to implementing the Plan and its associated priorities within a reasonable time period. Other concerns related to the education of motorists, use of reflective yellow signage, more pedestrian controlled crosswalks (like 15th Avenue and Jarvis Street), snow ploughing on trails (more than twice per year) and bike lanes with symbols painted on the pavement at various intervals to identify this infrastructure.

City Staff

City staff from the various planning, development, community and operational divisions of the City were consulted. Findings from this consultation confirmed the following:

- Subdivision & Development Servicing Bylaw Revision – The revision to the bylaw should include alternatives on design standards and recommendations.
- Snow storage/clearance – Snow storage and clearing considerations must be reflected in the design standards with consideration for public expectations where possible.
- Maintenance – Any expansions or adjustments to maintenance levels should be reviewed by Council so that potential consequences are considered.
- Promotions/Marketing – Active Transportation connectivity, safety, amenities, operations, education, programs and marketing must be carefully considered in order to successfully accommodate and increase Active Transportation in this community.
- Trails – The PG Centennial Trails Plan proposes trail heads, trail info centres and Kilometer 0 Markers that should be pursued.
- Consideration of operating costs should be part of any new capital infrastructure.

Other Consultation Forums

Additional Active Transportation related consultation forums or discussions took place over the initial development phase of the Active Transportation Plan. The following is a summary of these events:

Urban Cycling Coalition

- The recently formed Urban Cycling Coalition (UCC) is a committee of the Prince George Cycling Club whose goal is safe, efficient, convenient, enjoyable cycling in and around the City of Prince George. The Coalition held a public forum on March 24th, 2009 to gather input on cycling concerns and potential solutions from the public. The event was well attended by 70 people and the preliminary results from the forum have identified 3 key barriers to transportation that include the lack of connectivity between cycling routes, gravel/sand debris in bike lanes and motorist etiquette.

Smart Growth on the Ground

- The Smart Growth on the Ground (SGOG) project is an initiative to incorporate principles of sustainability into the development practices of Prince George. A contribution to the SGOG project included an interactive walk-ability assessment that was conducted by UNBC students and assessed walk-ability based upon the location of residences in relation to various amenities. The result of this assessment is the Prince George Walkability map that identifies the Downtown core as 'very walkable'. A workshop on March 5th, 2009 contained a 45 minute power session to identify key issues and options for Active Transportation within the East Bowl area. The results of the SGOG Active Transportation Workshop along with the Walkability map is included in the Appendices.

Millar Addition Citizen's Coalition

- The Millar Addition Citizen's Coalition has recently been formed by residents of the Millar Addition located on the southeast edge of the Downtown core. The Coalition's vision includes a green pedestrian corridor below the banks of Patricia Boulevard, linking the Fraser River, Cottonwood Island to the Downtown Core. The proposed Green Corridor Plan is included in the Appendices.

3.3 Open House

On March 10th, 2009, the City of Prince George hosted an Open House to solicit feedback on Active Transportation from the public in general. The event was advertised in local newspapers, the City's website and through interviews on the local Shaw television channel and CBC Radio Canada. Target stakeholders were also invited by email or by telephone.

The Open House was attended by over 50 people, who were presented with an array of informational boards explaining the principles and objectives of Active Transportation in Prince George. Attendees at the Open House were encouraged to write down their 'vision' of Active Transportation and mark up the maps with key barriers and missing links within the Active Transportation Network. Representatives were on hand from the Hub for Action on School Transportation Emissions (HASTE) or Walking/Cycling Bus Program, as well as from the Bike To Work Week Program that was initiated in Prince George in May 2009.

The brochure and presentation boards from the Open House are illustrated in the Appendix.

3.4 Web-Based Survey

As part of the public consultation strategy for the Prince George Active Transportation Plan, an online survey was administered containing both qualitative and quantitative questions. The survey was constructed in order to gain information, views and opinions from a wide variety of stakeholders on Active Transportation in the City of Prince George.

The survey was conducted from March 3 to March 24, 2009. The following options were available for survey completion:

- Online via a link from the City's website (http://www.city.pg.bc.ca/index.cfm),
- Respondents could contact the City to request a hard copy of the survey be mailed or faxed to them,
- The survey was available for collection from City Hall, and
- Online at kiosk computers at the Open House on March 10, 2009.

The survey provided statements regarding the current use of Active Transportation and potential improvements to Active Transportation in Prince George. The results of the on-line survey were compiled for this analysis and a summary of the responses to these statements is provided below.

A total of 162 responses were collected. Of these, 82 respondents provided additional comments at the end of the survey which have been summarized. The detailed survey results are located in the Appendix.

Respondents were asked to rank Active Transportation methods in order of most frequent use. Of the respondents, 94 indicated that their most frequently used mode of Active Transportation was walking and 26 respondents selected cycling as their most frequently used mode of transportation, of which 19 indicated they cycle on road. Only 2 respondents indicated that they did not use any forms of Active Transportation at all. The distribution of respondents by their most frequently used mode of Active Transportation is shown in Figure 5 below.

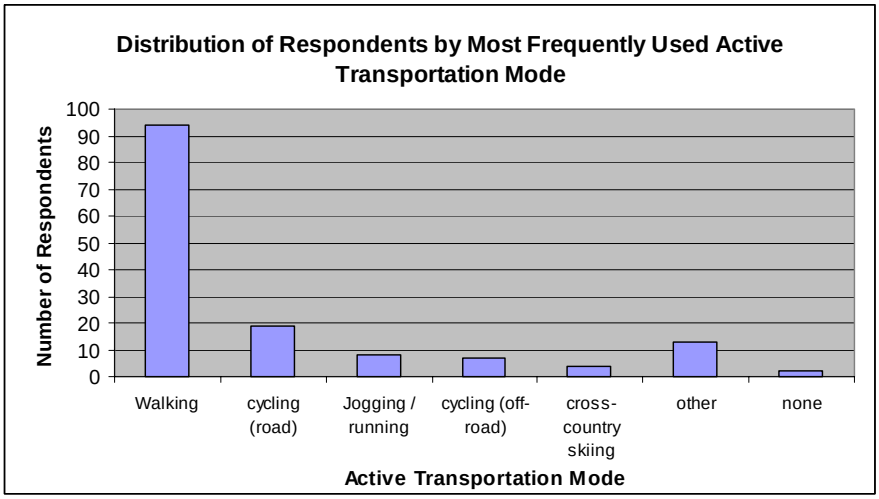

Figure 5 - Most Frequently Used Active Transportation Mode

Of the respondents, the total number of users of each mode of Active Transportation, regardless of rank, is shown below in Figure 6. 149 of the respondents walk and a total of 190 respondents cycle (on and off-road).

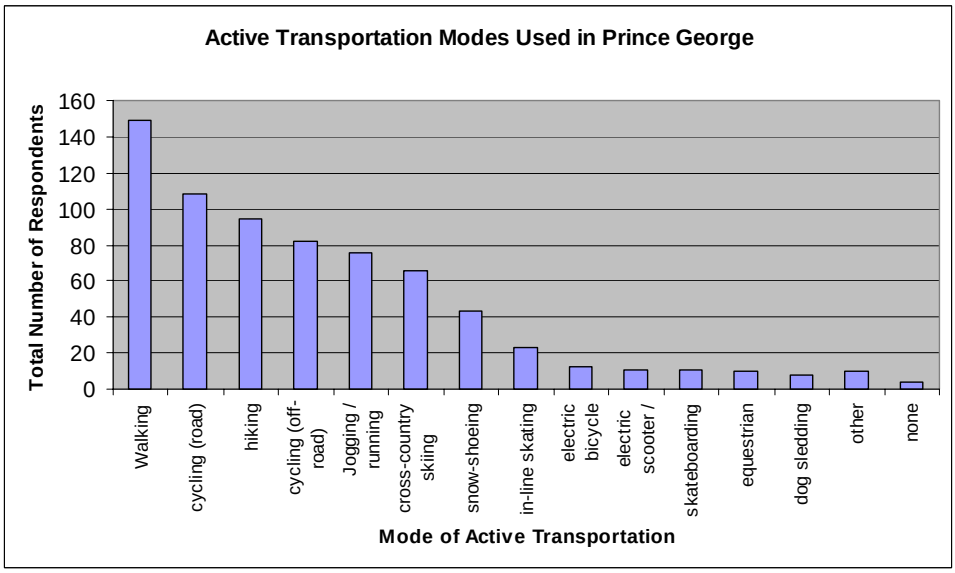

Figure 6 - Active Transportation Modes

As shown in Figure 7, only 16% of commuters travel a distance of less than 2 kilometres.

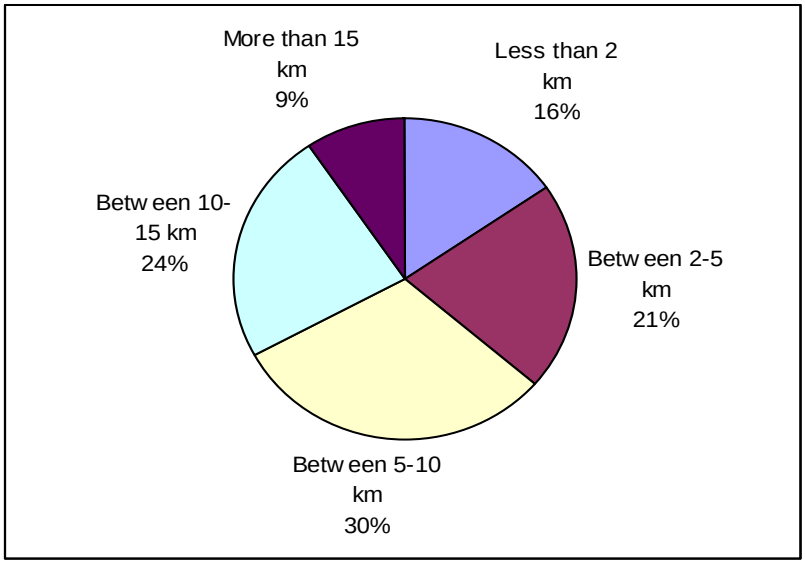

Figure 7 - Distance from Home To Work/School

Of the respondents, 84 replied that they most frequently used Active Transportation for exercise or pleasure, and 51 stated that they most frequently used Active Transportation to commute to school or work. The distribution of respondents by the trip type for which they most frequently used Active Transportation is shown in Figure 8 below. Figure 9 shows the total number of respondents that used Active Transportation for each of type of trip, regardless of rank.

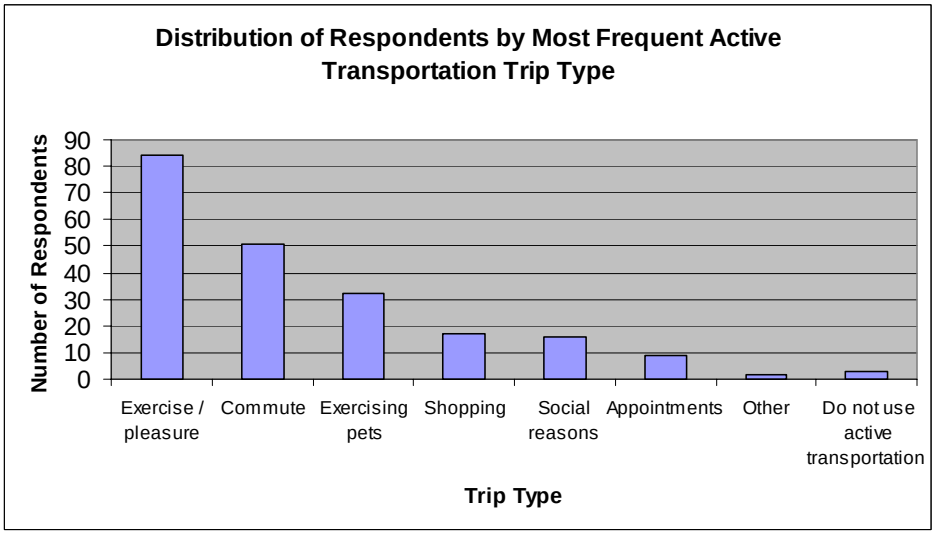

Figure 8 - Most Frequent Active Transportation Trip Type

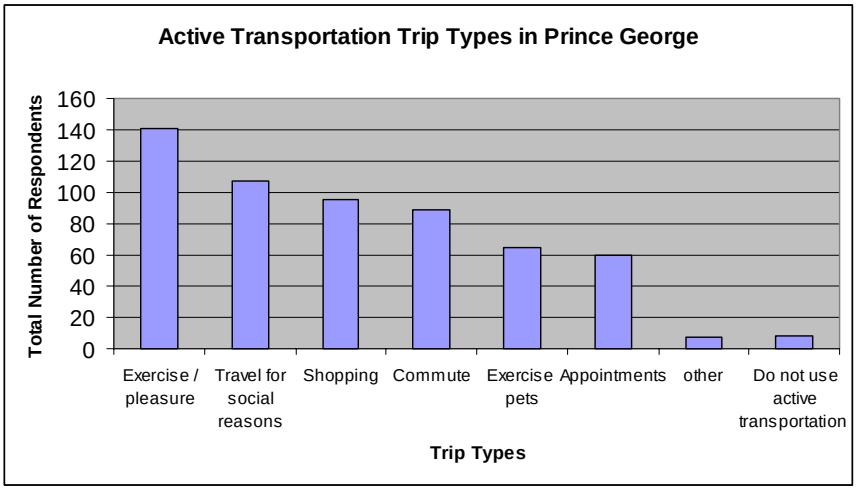

Figure 9 - Active Transportation Trip Types

As shown in Figure 10, the majority of respondents currently use Active Transportation in both summer and winter. Figure 11 shows approximately equal numbers use Active Transportation during daylight hours only or anytime.

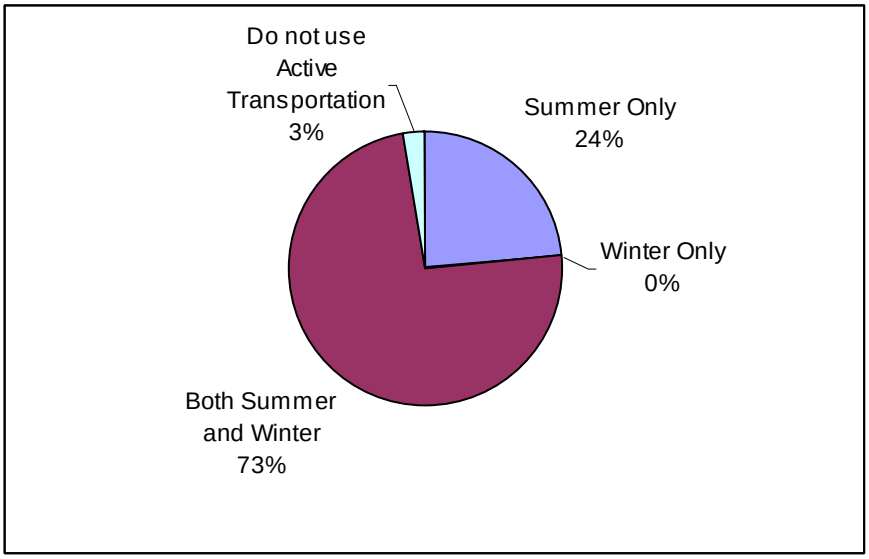

Figure 10 - Primary Time of Year for Active Transportation Use

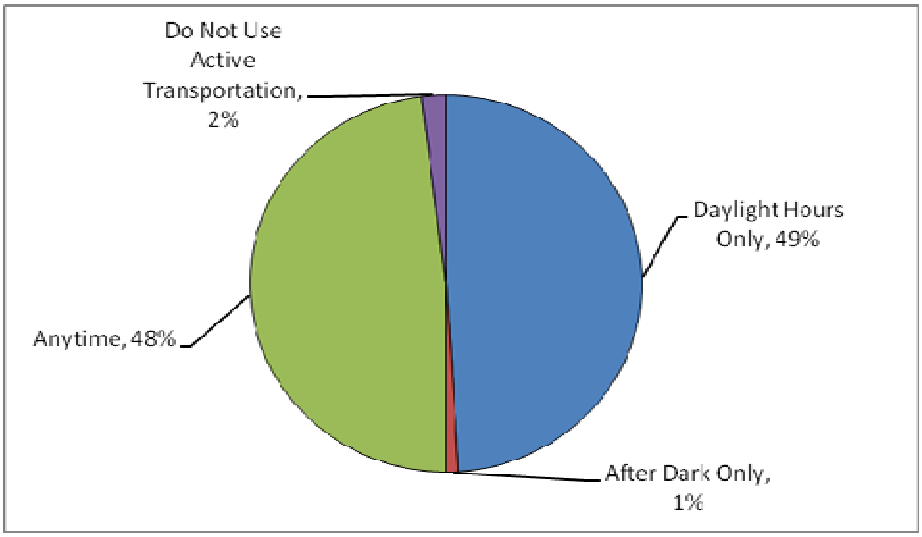

Figure 11 - Primary Time of Day for Active Transportation Use

Of the respondents, 122 indicated that they used Active Transportation for exercise and 117 respondents used transportation for pleasure. Figure 12 shows the distribution of respondents by their reason for using Active Transportation.

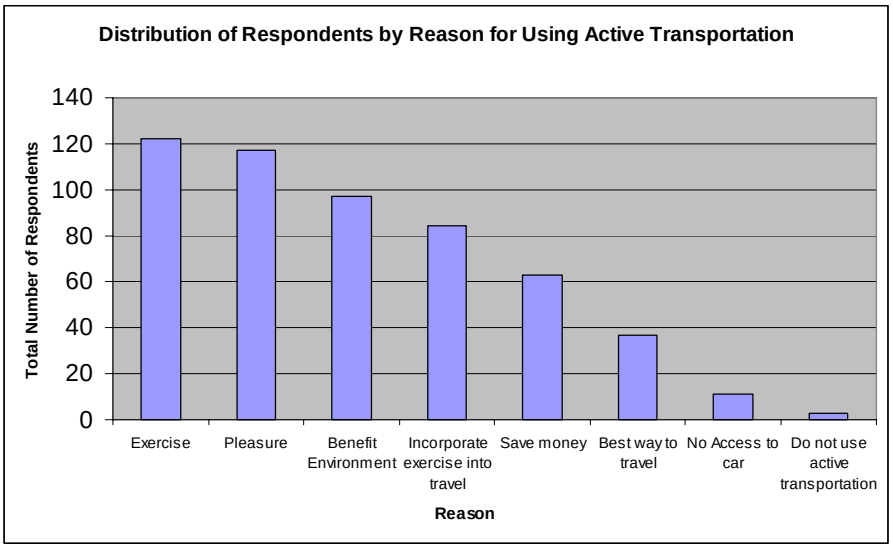

Figure 12 - Respondents by Active Transportation Reason

ACTIVE TRANSPORTATION IMPROVEMENTS

Respondents were asked to rank potential improvements to Active Transportation in Prince George in order of the initiative which would most encourage them to use Active Transportation. The proposed improvements that were outlined for selection in the survey included:

a) No improvements necessary, I am happy with the level of Active Transportation facilities
b) More bike lanes
c) More trails
d) More sidewalks
e) Better connections to transit stops and key destinations (school, shopping, etc.)
f) Maps of local trails, bikeways and pedestrian routes
g) Improved signage of pedestrian and bikeways
h) Improved lighting
i) Dedicated routes
j) More routes accessible to wheelchairs, strollers, etc
k) Better road maintenance
l) Better snow clearance
m) Better maintenance of trails and pathways
n) Better education for motorists
o) Better education for cyclists and pedestrians
p) Improved Urban Design
q) Safe and/or convenient storage for equipment e.g. bike racks and lockers
r) End-of-trip facilities such as showers at work
s) More dedicated routes for different types of active transport, e.g. cycling only trails
t) More mixed routes e.g. mixed use trails
u) More training opportunities for people new to a method
v) other

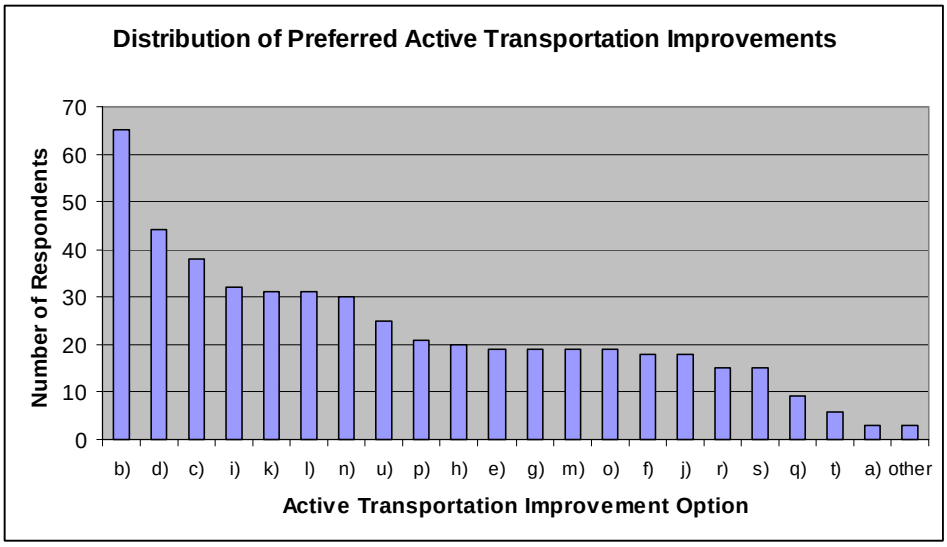

Figure 13 - Preferred Active Transportation Improvements

Of the respondents, 65 replied that more bike lanes would most encourage them to use Active Transportation and 44 stated that more sidewalks would most encourage them to travel more by Active Transportation. A distribution of respondents by improvements that would most encourage them to travel by Active Transportation is shown in Figure 13. Figure 14 shows the total number of respondents that would be encouraged to use Active Transportation given each improvement regardless of rank.

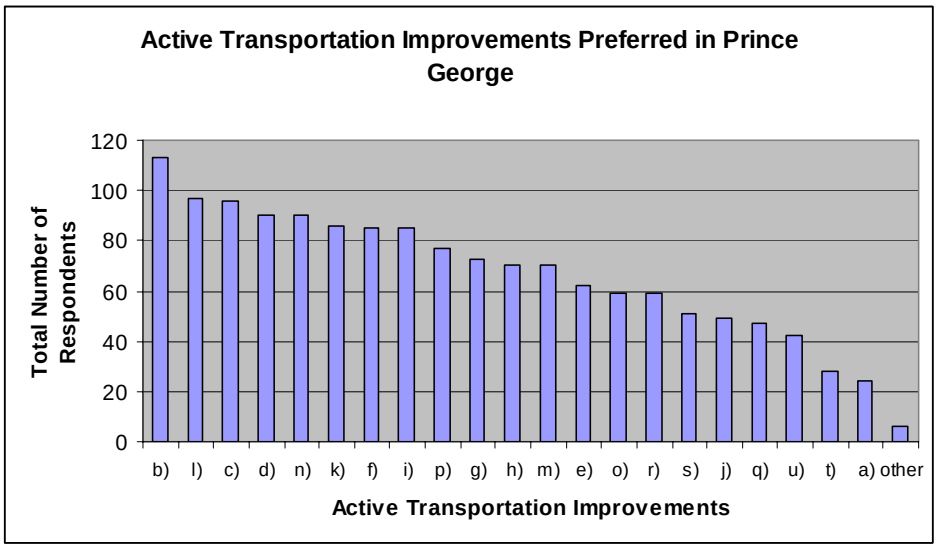

Figure 14 - Active Transportation Improvements in Prince George

Figure 15 below shows the Active Transportation modes respondents would try if Active Transportation facilities were improved. 102 respondents indicated they would try cycling as a mode of transportation.

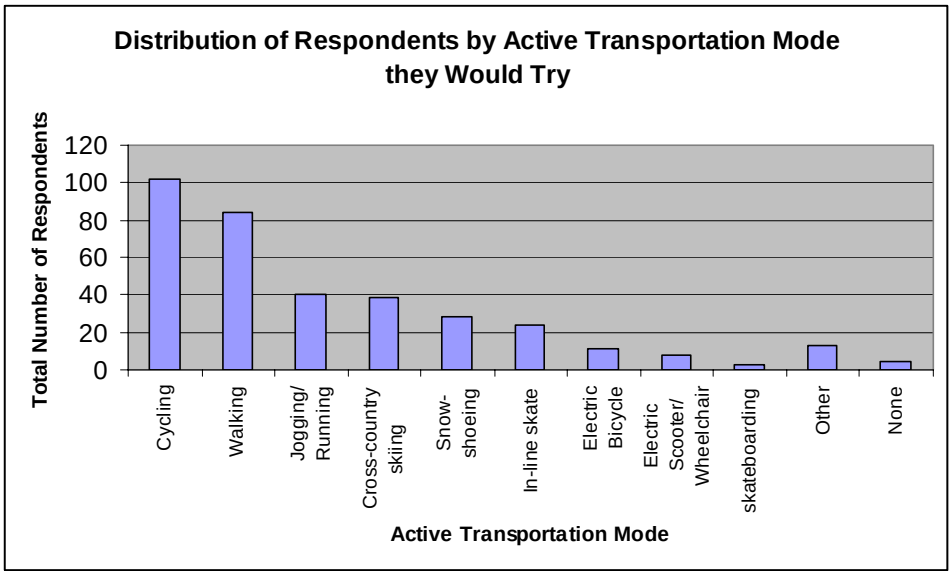

Figure 15 - Respondents by Active Transportation Mode They Would Try

Respondents were asked to identify the priorities where they felt Active Transportation facilities could be improved. Table 3 summarizes the prioritized locations or corridors that respondents indicated.

PRIORITY	LOCATION / CORRIDOR
1	Downtown Connection
2	College Heights Connection
3	Gladstone Sidewalk (Domano to Loyola)
4	Hwy 97/Bypass
5	UNBC Connection
6	Hart Connection
7	Cottonwood Island Trails
8	Schools (in general)
9	15th Avenue Corridor
10	5th Avenue Corridor

Table 3 - Priority Locations for Active Transportation Improvements

Respondents were asked to identify what they felt were the three greatest challenges to improving Active Transportation Network in Prince George. Table 4 summarizes the greatest challenges indicated by respondents.

PRIORITY	CHALLENGE
1	Lack of maintenance of Active Transportation facilities particularly around snow clearance
2	Lack of funding and money
3	Lack of Active Transportation Network and Facilities
4	Safety concerns regarding drivers, and lack of driver education and enforcement of violations
5	Lack of political will and that of decision makers
6	Land use planning, low density, urban sprawl
7	Poor air quality and dust
8	Lack of social marketing and negative attitudes toward AT
9	Transportation priority given to vehicles rather than AT

Table 4 - Greatest Challenges in Active Transportation

ADDITIONAL COMMENTS

The survey also provided respondents with the opportunity to provide additional comments relating to Active Transportation in the City of Prince George. Of the total 162 respondents, 82 provided additional comments. Each individual comment was read through and any distinct patterns found were noted. The top 10 most frequently made comments representing the general concerns are summarized in Table 5.

COMMENT	NUMBER OF RESPONSES
Lack of maintenance of Active Transportation facilities particularly around snow clearance	24
Fears regarding safety and security particularly personal safety when sharing the road with vehicles	21
The Active Transportation Network and Facilities should be increased	20
Concerns regarding attitudes of vehicle drivers towards Active Transportation users; lack of enforcement of violations	14
The prioritization of Active Transportation links and facilities should be those that connect origins and destinations; more links in dense areas to encourage land use policies that support density	14
Increase social marketing and education of Active Transportation both for users and non-users e.g. vehicle drivers	13
Reluctance to use modes of Active Transportation due to concerns regarding air quality; concerns regarding idling vehicles	6
Hierarchy should be given to Active Transportation modes over motor vehicles	5
Bike racks on buses are very popular	4
Active Transportation should be integrated with transit e.g. with sidewalk to all bus stops	3

Table 5 - Top Concerns

WEB-BASED SURVEY SUMMARY

A summary of the Web-Based Survey are outlined below:

- Walking and cycling are the most frequently used Active Transportation modes
- 16% of respondents travel less than 2km to their work or school
- Active Transportation is used mostly for exercise or pleasure
- 73% of respondents use Active Transportation in both winter and summer
- 50% of respondents use Active Transportation during daylight hours and roughly 50% use it any time of day
- Priorities for overall Active Transportation overall improvements include more bike lanes, trails and sidewalk; and better snow clearance
- Many respondents indicated that they would try cycling if Active Transportation facilities were improved
- Priority places identified for Active Transportation improvements include College Heights, connections to the Downtown Core and Highway 97
- Main challenges for Active Transportation include lack of funding/money, lack of maintenance particularly around snow clearance, lack of Active Transportation Network facilities and safety/security concerns relating to sharing the road with motorists

3.5 Summary of Results from Public Consultation

The public consultation for the Active Transportation Plan included stakeholder meetings, a public Open House and a Web-Based Survey. The results of the consultation confirmed the need for an Active Transportation Plan, and the desire for residents to partake in Active Transportation within the community.

The top three priorities consistently identified for improving the existing Active Transportation Network were: (a) expand and improve connectivity of network infrastructure; (b) increase frequency of both summer and winter maintenance activities; and (c) educate the traveling public to improve the safety and priority of the active transportation users. These are the chief issues that must be addressed in order to realize the vision for Active Transportation in Prince George.

4.0 EXISTING ACTIVE TRANSPORTATION NETWORK

Photo courtesy of the Prince George Citizen

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4.1 Active Transportation Network Overview

Prince George has many existing Active Transportation facilities, including on-road cycle routes, off-road trails, pedestrian sidewalks, walkways and public transit. However, these facilities are not always continuous or integrated between modes, resulting in a network with a number of operational and safety concerns.

A more continuous and comprehensive Active Transportation Network can be developed by the strategic implementation of the existing plans for the Bicycle and Trail Network, Pedestrian Network and Transit System.

4.2 Bicycle and Trail Network

The existing Bicycle and Trail Network has been heavily influenced by both the 2001 Cycle Network Plan and the 1998 City Wide Trail System Master Plan. Further expansions to this Network are anticipated to follow the recent 2008 Centennial Trails Plan.

Bicycle Network

The Cycle Network Plan was completed in 2001 in conjunction with the City's Transportation Study. The plan proposed guidelines and standards for the development of cycle network infrastructure, and identified existing and recommended links in the designated cycle network.

Since the adoption of the Cycle Network Plan, over 100km of bicycle lanes have been installed. These have largely been placed where the existing road widths allow. In addition, over $900,000 in senior government grants have helped fund a number of major cycle facilities since 2001, such as the Hwy 16 Underpass, the Cemetery Trail, and the trail connection across the new Cameron Street Bridge.

Trail Network

Since the adoption of the City Wide Trail System Master Plan in 1998, the City has built a number of trail projects including the Gladstone Trail System, Cemetery Trail, portions of the Heritage River Trail System, the UNBC trails, and the Beaverly Trail. The existing Trail Network also includes pathways through City parks, trails along the riverfront, and a number of well-used informal pathways which provide safe and direct routes throughout the community. More recent trail links have been planned in the Prince George Centennial Trails Project, as well as in various Neighbourhood and Park Master Plans.

Map 1 illustrates the existing and planned Bicycle and Trail Networks in 2010.

Map1: Bicycle and Trail Network (2010)

Hart Highlands Inset

Blackburn Inset

Legend

- On Road Bike Lane - Proposed
- On Road Bike Lane - Existing
- Off Road Path - Proposed
- Off Road Unpaved Path - Existing
- Off Road Paved Path - Existing
- Overpass - Proposed
- Staircase
- Underpass
- Hospital
- Pool
- Public Library
- UNBC / CNC
- Highway
- Road
- School
- Park
- River
- Island
- City Boundary

0 1,000 2,000 4,000 Meters

Map Document: (P:\Active Transportation Plan\2010 AT Plan Maps\Map 1 Bicycle and Trail Network.mxd)
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4.3 Pedestrian Network

The Pedestrian Network consists of sidewalks and walkways throughout the community. The majority of the existing sidewalks are directly located adjacent to the curb, with the exception of some of the older residential areas such as the Millar Addition. Existing walkways consist of 1.5 metre wide asphalt or granular pathways, while new walkways are constructed to a 1.8 metre wide standard. Since the adoption of the Pedestrian Network Study in 2004, over $1 million dollars have been spent on new sidewalk links and sidewalk rehabilitation.

The proposed new sidewalk links are illustrated in Map 2.

Photos Courtesy of the Prince George Citizen

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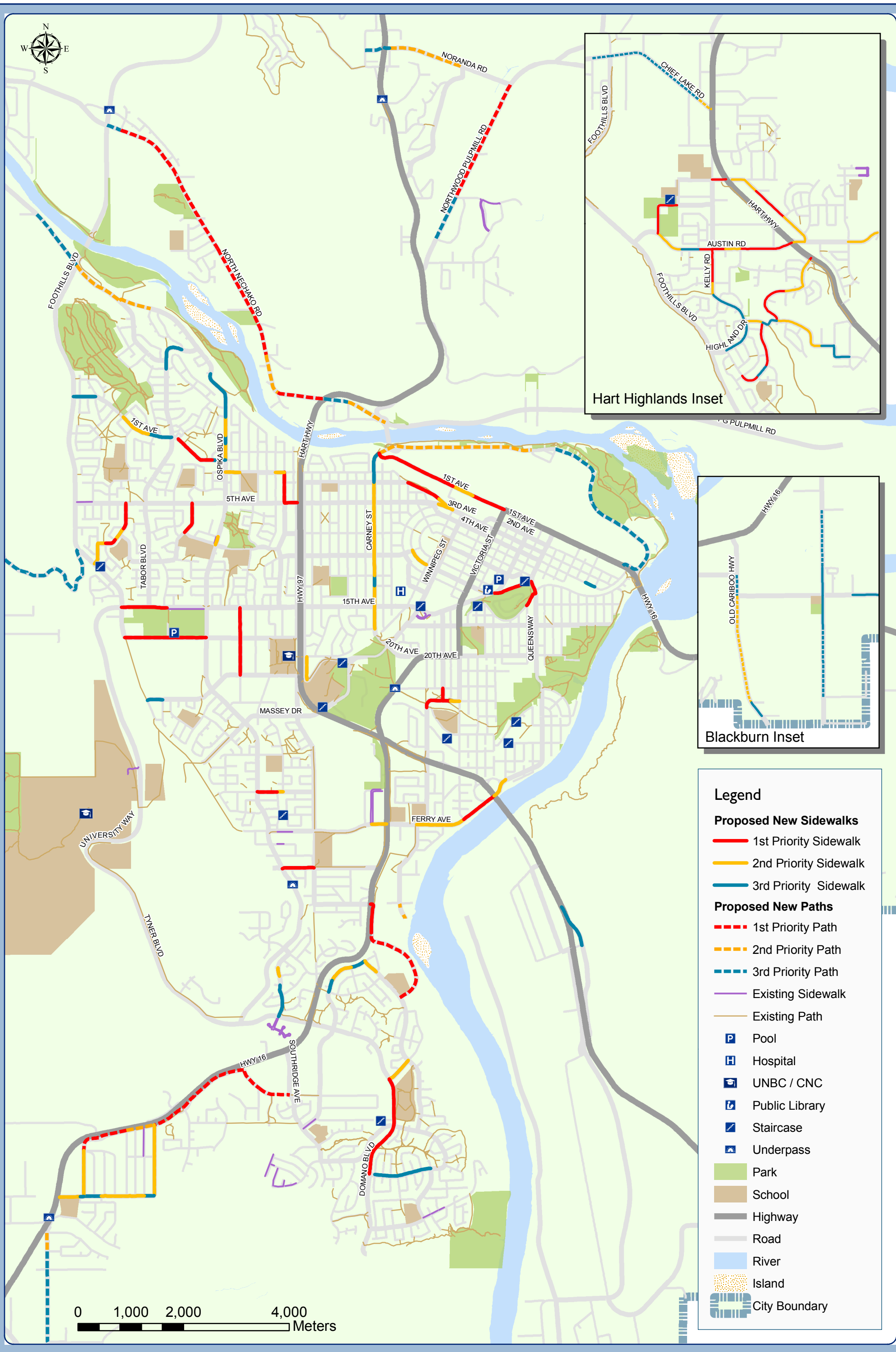

Map 2: Pedestrian Network Priorities (2010)

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4.4 Transit System

The Transit System was rebuilt and expanded in 2003, which has helped ridership grow to its current level of over 1.7 million riders per year. In BC Transit's 2009/2010 Annual Report, Prince George was identified as having the highest transit ridership growth in the province.

The key transit markets in Prince George, like many other communities, are students/young adults (age 15-24) and seniors (over age 80). Furthermore, approximately 86% of the Prince George population live within walking distance (400 metres) of a transit route.

The City currently promotes transit through a number of service and marketing initiatives, such as bike racks on buses, free transit on air quality advisory days, and the Universal Bus Pass (U-Pass) Program. The U-Pass provides all students at the University of Northern British Columbia (UNBC) and the College of New Caledonia (CNC) with a bus pass and free access to the civic swimming pools for a set fee of $48 per semester, whether they use the service or not. This program aims to reduce traffic and parking demands on city and campus infrastructure.

The existing transit system is illustrated in Map 3.

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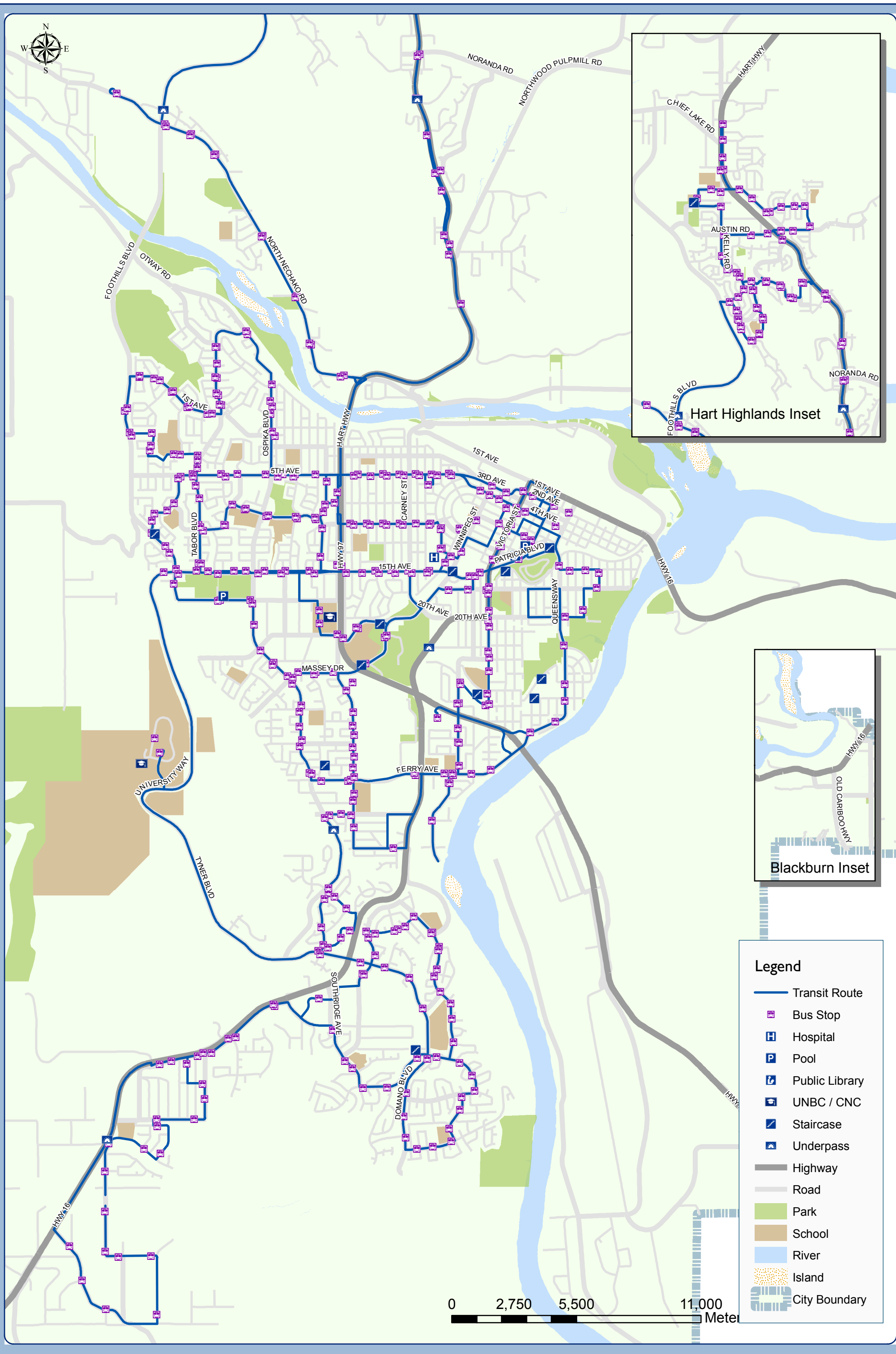

Map 3: Transit System (2010)

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4.5 Active Transportation Origins & Destinations

The bulk of Prince George's population resides in the 'Bowl' area of Prince George, with some increased densities in College Heights and the Hart Highlands (see Figure 16). These community areas represent the origins of Active Transportation in Prince George. These origins must be linked to various destinations with the necessary Active Transportation routing and infrastructure in order to provide a complete Active Transportation Network.

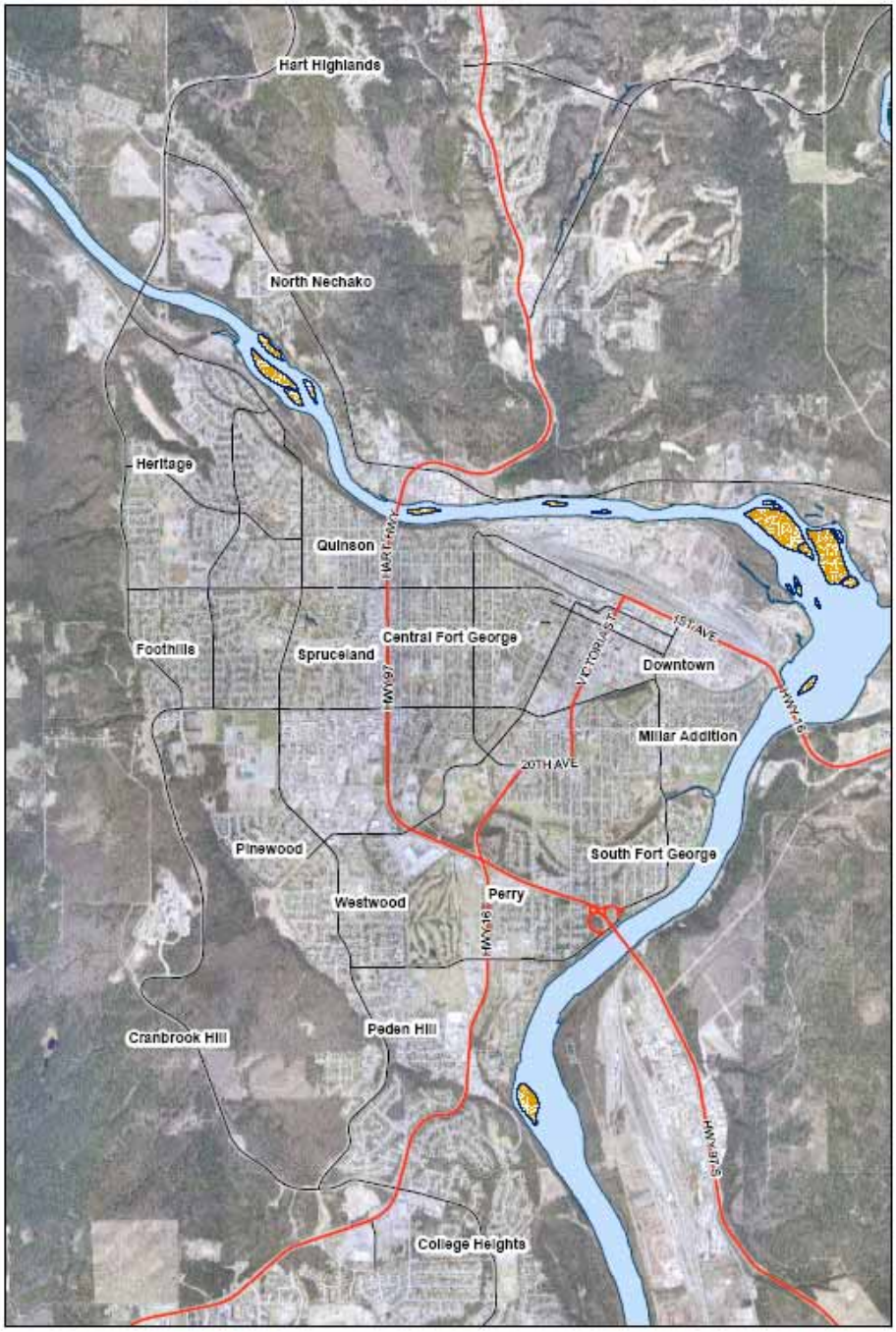
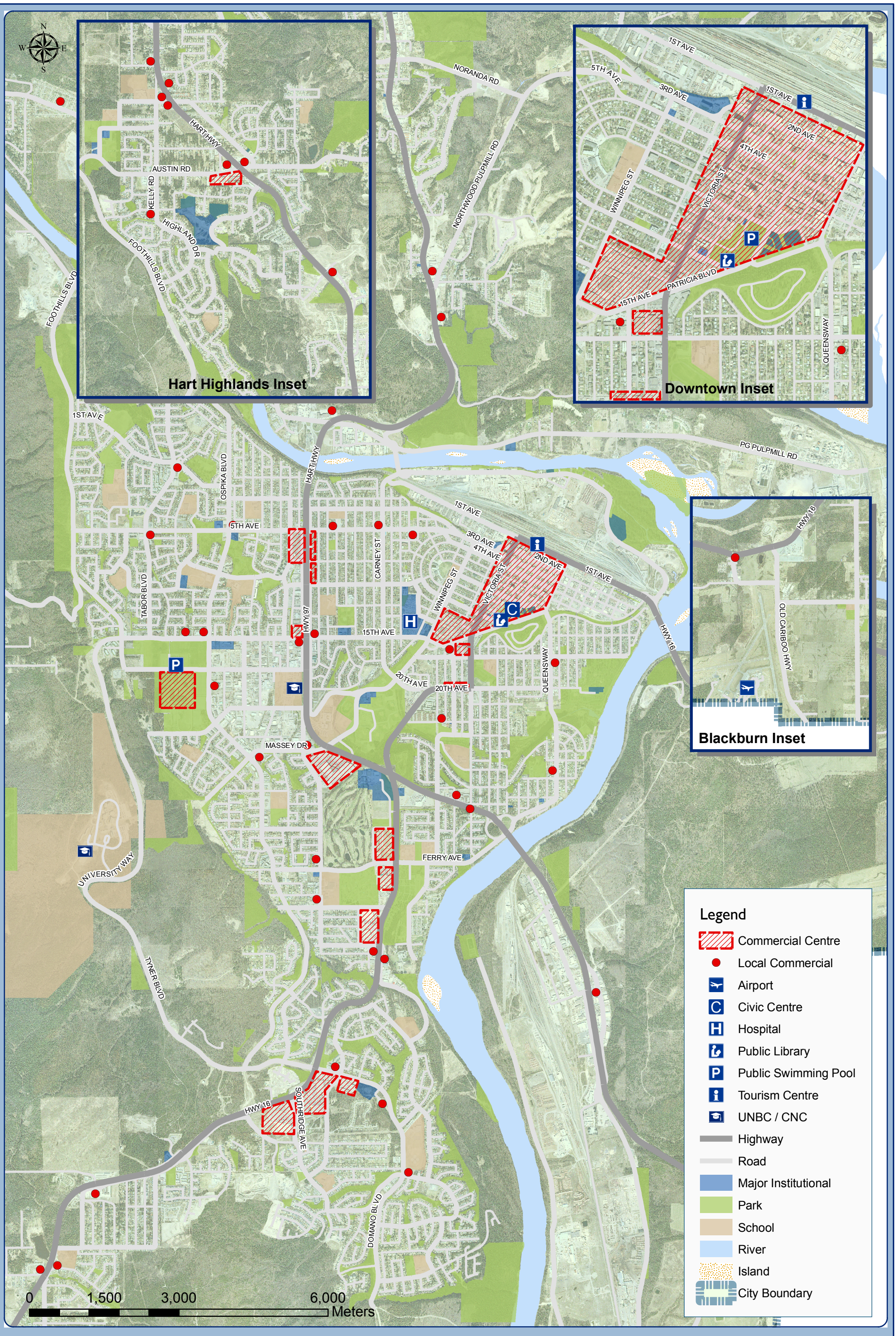


Figure 16 – Community Areas of Prince George

The majority of attractions and destinations are situated with the Bowl area and include commuter, utilitarian and recreation destinations such as:

- Downtown Office/Retail Core
- Major Employment and Commercial centres
- Educational institutes (Schools & College/University)
- Health Care facilities
- Recreation and Community centres
- Civic facilities

This information has been illustrated in Map 4 Active Transportation Origins & Destinations.



Map 4: Active Transportation Origins and Destinations

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5.0 STANDARDS AND GUIDELINES

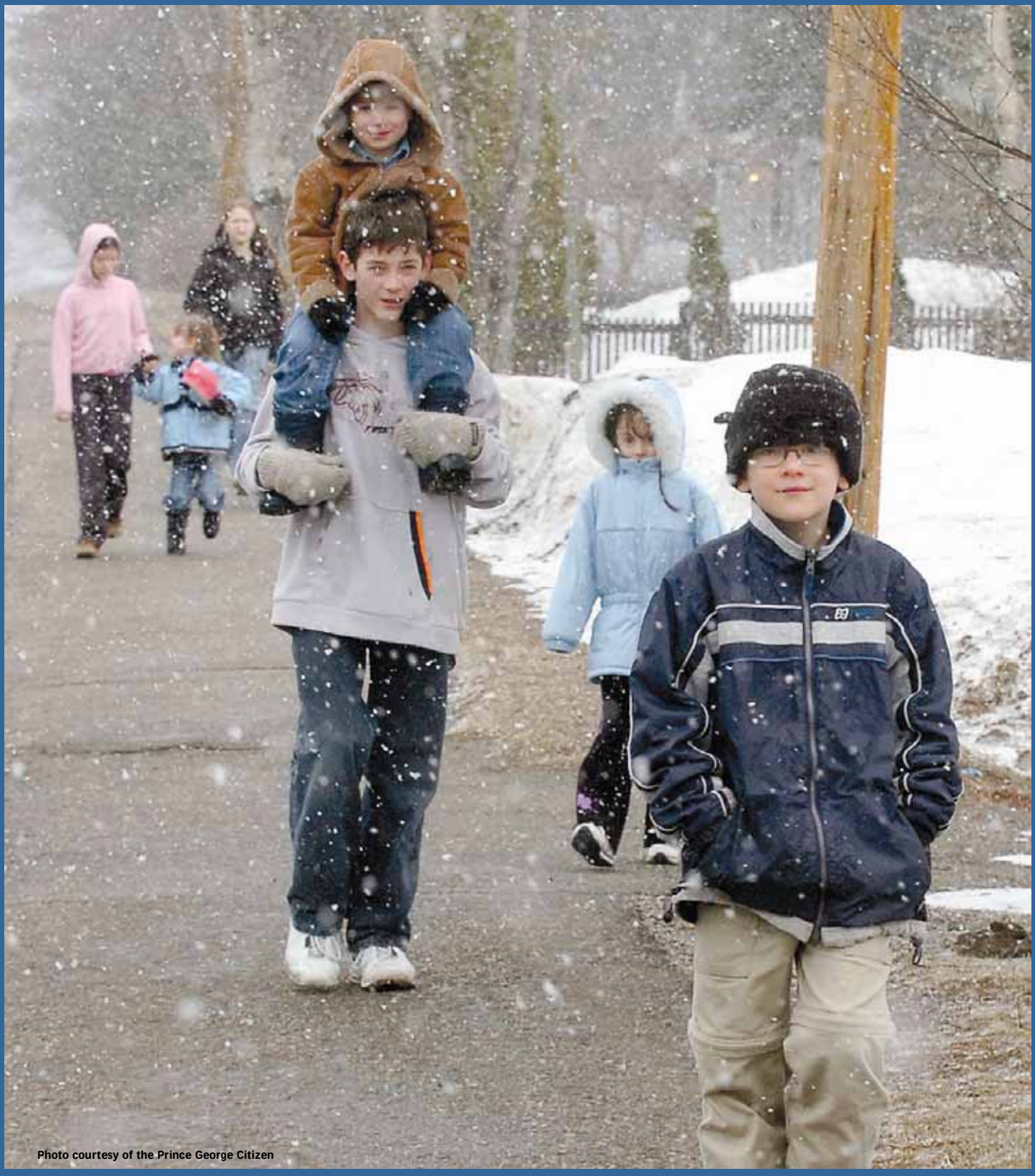

Photo courtesy of the Prince George Citizen

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In the following sections, the specific issues and concerns about the Active Transportation Standards, Infrastructure, Policies, and Programs are compiled into tables from the following sources:

- Trails Master Plan (TMP),
- Cycle Network Plan (CNP),
- Pedestrian Network Study (PNS),
- Centennial Trails Project (CTP),
- Urban Cycling Coalition (UCC#, indicating the number of comments on the issue),
- Smart Growth on the Ground (SGOG),
- Active Transportation Open House,
- Online Public Survey,
- Active Transportation Planning work (ATP),
- "myPG" input, and
- other sources.

For each issue, the tables identify both the affected network(s) (i.e. Bicycle, Pedestrian, Trail, Transit), and the source(s) of the concern. Each issue is then discussed and prioritized according to:

- Safety
- Connectivity
- Accessibility
- Integration
- Visibility
- Aesthetics
- Ease of Resolution
- Diversity

Photo courtesy of the Prince George citizen

Following each table are recommended solutions described and/or illustrated graphically.

5.1 Network Planning Guidelines

The development of a strong and usable Active Transportation Network starts at the network planning stages. To attract users to sustainable transportation modes, safe and useable facilities must be provided to serve known trip destinations in a connected, logical and coherent network. This was emphasized in the Pedestrian Network Study, Cycle Network Plan, and "myPG"; and was identified as one of the top three priorities in the Urban Cycling Coalition's Forum.

The need for more sidewalks and the need to accommodate small-wheeled modes were also cited as concerns. The complete list of identified network planning issues is shown in Table 6.

Issue	Network	Source	Comments	Priority
Ensure all trails, sidewalks, bike and skate routes are continuous, and connect to the major city centres.	All	Open House Survey #1,2,6 UCC(23) PNS, CNP myPG	*Identified as most important priority of the local cycling community.*	**H**
Improve integration between cycle network, trails and transit.	Bicycle Trail Transit	CNP myPG	*One integrated system will create more user benefits than discrete, unconnected networks.*	**H**
Bicycles and Pedestrians should be considered in all public and private infrastructure developments.	Bicycle Pedestrian	CNP UCC(4) myPG	*Active transportation modes can be better and more easily accommodated the earlier they are considered.*	**H**
Build more sidewalks, especially abutting schools and on major traffic routes.	Pedestrian	Open House Survey (#8) PNS	*A budget for new sidewalks should be considered. The priorities are as noted in the Pedestrian Study.*	**H**
Increase amount of sidewalks in residential areas	Pedestrian	Open House	*The Pedestrian Study only identified new sidewalk priorities on arterial and collector roads. As the benefits of sidewalks on residential streets are more localized, residential sidewalks are provided either with new development or as Local Area Service projects.*	**L**
Ensure the transportation system provides for small wheeled active transportation such as inline skates and skateboards.	Inline Skating	Open House	*Inline skating and skateboards should be able to use the paved trails, bicycle lanes and sidewalks. Smooth and well-maintained pavement is necessary.*	**L**

Table 6 - Network Planning Issues

The following guidelines and considerations are recommended for planning the Active Transportation Network:

1. Planning and design of the Active Transportation Network should be primarily based on two design modes: Cyclist and Pedestrian. Most other modes fall under these two categories.
2. The bicycle network portion should consist of a primary "spine system", and a secondary "community system".
    - The "spine system" should consist of routes designed to be direct and that support cycling for commuting purposes. This would be comprised mainly of on-road bike lanes, paved shoulder bikeways with some shared lanes as well as linear off-road Multi-Use Trails, serving as a higher-order cycling network for experienced and confident cyclists.
    - The community system should consist of routes that lead into the spine system. Community system routes should connect local destinations such as schools, community centres, residential areas, local stores, commercial nodes, parks and recreational areas.
3. Multi-use trails should be a priority for pathway development for connections from all parts of the City to the Downtown.
4. Bicycle, pedestrian, and transit networks should connect seamlessly together to provide one integrated and versatile system. All routes should be continuous (i.e. barrier-free), and a variety of routes should be provided where possible
5. Bicycle and pedestrian-friendly design guidelines should be adopted for all roadways, and incorporated into every development plan and construction project, whether or not a road is officially designated as part of the Cycle or Pedestrian Networks.
6. Bicycle lanes, where provided, should be on both sides of the road.
7. The bicycle and pedestrian network must accommodate all ages. Children may cycle for recreation or to school and other short-distance destinations, while adults are more likely to cycle for longer distances. Children may also exhibit more unpredictable behaviour, and therefore require greater accommodation with regards to safety.
8. The four main underlying principles of Crime Prevention Through Environmental Design (CPTED) should always be considered when implementing Active Transportation:
    - Natural Access Control: attract desired movement; restrict others.
    - Natural Surveillance: people can observe activities; sight lines are clear.
    - Territoriality: define space ownership with clear boundaries.
    - Maintenance: preserve quality spaces; attract desired activity.
9. Sidewalk networks around schools and other major pedestrian generators (as identified in the Pedestrian Network Study) should be priorities.
10. Skateboarders, in-line skaters and cross-country skiers have special design requirements, which should be considered when designing a trail.
11. Rest and staging areas should be provided at strategic locations along the Active Transportation Network, based on demand, topography, available

viewscapes, etc. These can be identified, coordinated and implemented through partnerships with the private sector.

12. Walkability should be encouraged and supported by quality place-making that includes well designed streets, densified land uses, pedestrian corridors, landscaped areas, greenspaces and plazas. These elements create a human scale and sense of security that both enhances and increases pedestrian use.

5.2 Pathway Facilities

To implement the planned active transportation network, a clear hierarchy of standard pathways must be defined. Some of the issues with the existing amount, location and nature of the existing pathway standards are listed in Table 7.

Issue	Network	Source	Comments	Priority
Construct more standard bicycle lanes.	Bicycle	UCC(22) CNP, myPG	*The existing bicycle lane program has been well-received by the community, and should be expanded.*	**H**
Eliminate parking in designated bicycle lanes.	Bicycle	Open House UCC(18)	*Bicycle lanes were originally installed as budget allowed; parking restrictions will be identified as the next phase.*	**H**
Provide safe clearances to bicycle traffic, especially in corners.	Bicycle	UCC(4)	*Standard bicycle lane widths are especially required in corners.*	**H**
Provide warning and route signing for on-road bicycle facilities.	Bicycle	UCC(7)	*As the network becomes integrated, signed routes should be identified.*	**M**
Use signing to clarify that bicycle lanes are uni-directional.	Bicycle	Open House	*Bicycle lanes are always uni-directional pursuant to the law, with the exception of PG Pulpmill Rd which is planned for upgrade.*	n/a
Separate bike pathways from roadways for safety and comfort.	Bicycle	UCC(3)	*Boulevard and Multi-Use trails address this concern.*	n/a
Provide more scenic locations for cycling.	Bicycle	UCC(2) myPG	*Cycling should be an aesthetic experience, planned with development.*	**M**
Ensure sidewalks are placed on the north side of the streets to take advantage of sun exposure.	Pedestrian	Open House PNS	*This is the current practice now, and may become a standard or policy.*	**H**
Reduce crossfall on older sidewalks to improve safety, especially in winter.	Pedestrian	Open House PNS	*Crossfalls will be adjusted to 1-2% city standard as sidewalks are rehabilitated.*	**M**
Improve sidewalk connections near bus routes.	Pedestrian Transit	Open House PNS	*Pedestrian Study identified transit routes as a high priority for sidewalks.*	**H**
Improve sidewalk accessibility so wheelchairs and scooters don't have to use the road shoulder.	Pedestrian	UCC(1)	*All sidewalks should provide accessible ramps, and meet minimum clearance standards.*	**H**

Table 7 - Pathway Standard Issues

Ten categories of pathway standards have been developed based on these issues, as well as current standards, research, past studies, and the spatial needs of the primary users (see Figure 17). These standards are described in the following sections.

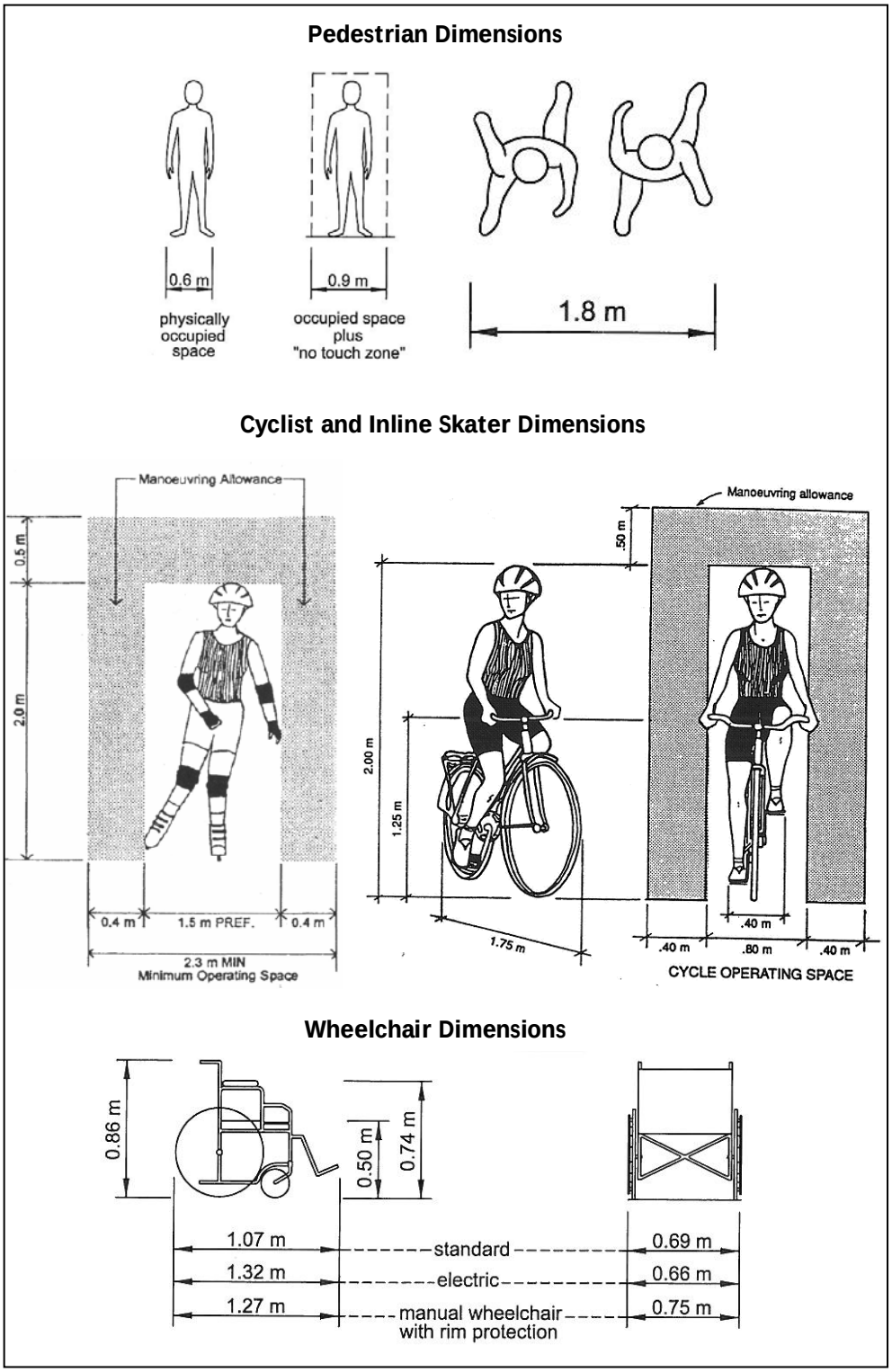


Figure 17 - Spatial Needs of Active Transportation Users
Source: Transportation Association of Canada

5.2.1 Multi-Use Trails

1. Multi-Use Trails are wide, hard-surfaced pathways connecting to or through city greenbelt, right-of-way, or parkland (see Figures 18 and 19). There are three types of Multi-Use Trail:
   - **Granular:** 3 metres, hard-packed fine granular
   - **Paved:** 3 metres minimum, asphalt
   - **Paved Divided:** 4 metres asphalt, middle painted line delineation
2. Additional width should be provided where usage is heavy, and on pathway curves with radii less than 32 metres. A wider granular shoulder strip can be provided for the comfort of runners.
3. The minimum right-of-way width of a multi-use trail should be between 3.0m and 5.0m.
4. The recommended minimum clear height for a multi-use trail is 2.4m – 3.0m.

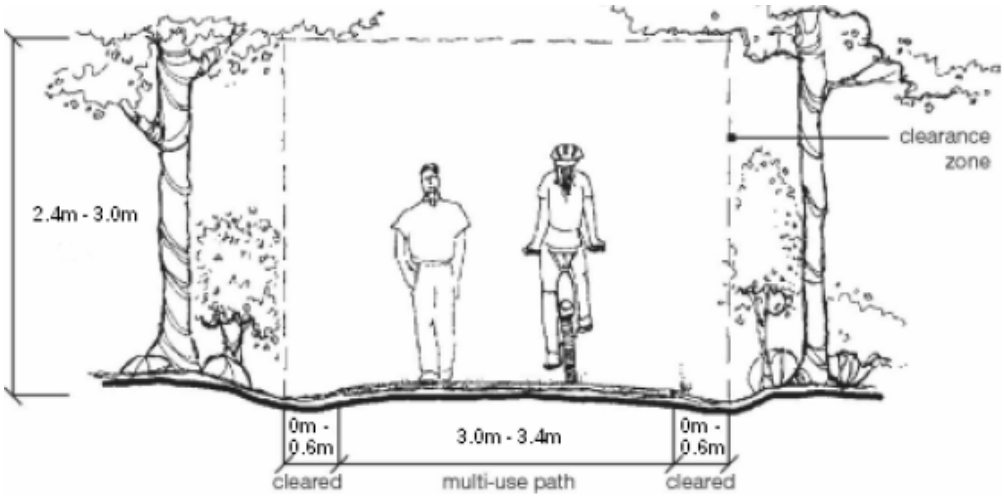


Figure 18 - Cross-Section of a Typical Multi-Use Trail

5. Multi-Use Trail design should consider the design speed for cyclists and all other expected users.
6. Grades in excess of 5% should be avoided wherever possible to keep trails accessible, and safe for inexperienced users. Steep grades should incorporate rest areas.

Figure 19 - Multi-Use Trail in Cottonwood Island Park

7. In some locations, Multi-Use Trails could be accommodated adjacent to some railroad right-of-ways. These would require physical separation from the railway by a planted berm or fence (see Figures 20 and 21).

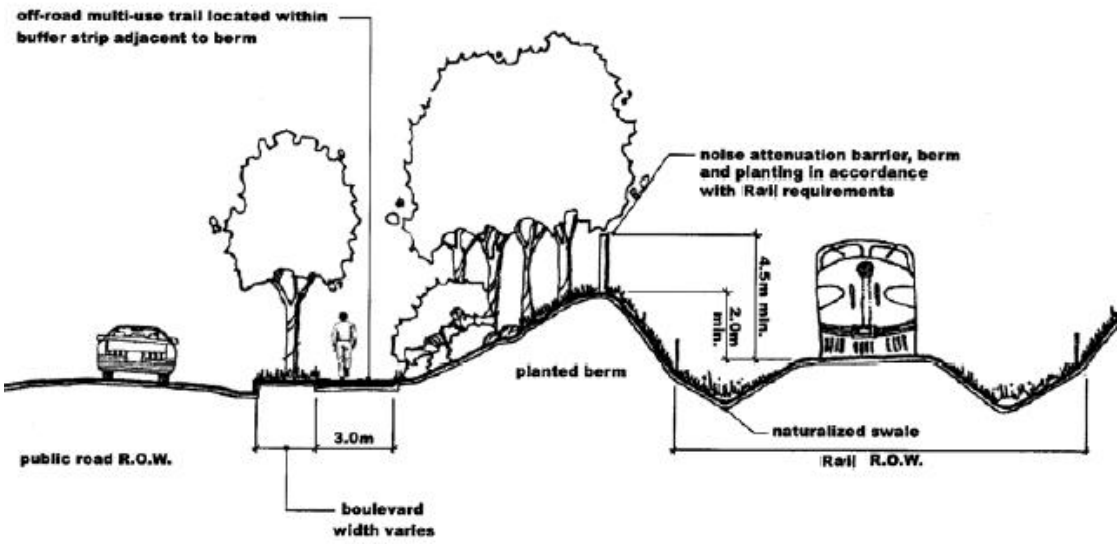


Figure 20 - Pathway and Rail Right-of-Way Separated by a Berm

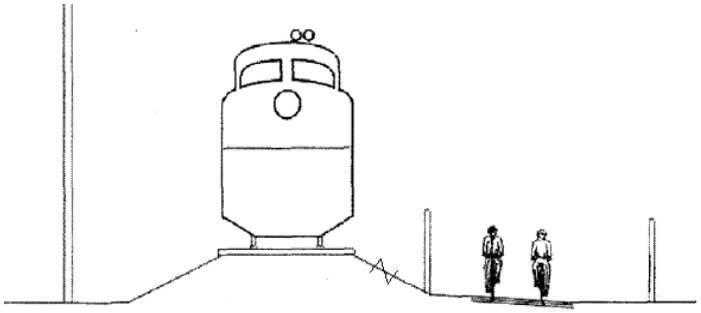


Figure 21 - Pathway and Rail Right-of-Way Separated by a Fence

8. Transitions between on-road cycling facilities and Multi-Use Trails must be designed in consideration of the changes in the cyclists' trajectory, and of the change between sharing a pathway with motor vehicle traffic and sharing a pathway with pedestrians. Barriers should be considered at trail entrances to prevent access by unauthorized users such as motor vehicles, but should not restrict those with disabilities (see Figure 22).

Figure 22 – Vehicle Barrier at the North end of the Cemetery Trail

9. Environmental information should be used in the planning and management of all trails. Where sensitive habitats are known, the proposed trail alignments, design, or uses shall be altered to mitigate negative impacts on the environment. Setbacks from fish bearing and non-fish bearing streams shall be determined in consideration of relevant guidelines, and in consultation with the Department of Fisheries and Oceans (DFO) and the BC Ministry of Environment.

10. Federal and provincial trail sign standards should be used, as they are unobtrusive, easily understandable, vandal-resistant and relatively inexpensive.

11. Pathways should include "Share The Trail" signage (see Figure 23) with advisory messages such as:
    - Yield to other users when entering and crossing the trail
    - Speed limit is 30 km/h
    - Travel no more than two abreast
    - Stay to the right, except when passing
    - Always look ahead and behind before passing
    - Pass slower traffic on their left; yield to oncoming users.
    - Give a clear warning signal before passing. Use voice signal, not horn or bell, when passing horses
    - Move to the side of the trail and stop to allow others to pass
    - Keep all pets on a short leash, unless in an off-leash park
    - Don't litter, and clean up after your pets
    - Off-highway motorized recreational vehicles are prohibited except on designated motorized trails
    - Protect and respect the environment.

Figure 23 - "Share the Trails" Signing

5.2.2 Minor Trails

1. Minor trails complement the Multi-Use trail network, providing access to more natural areas with minimal maintenance requirements (see Figure 24). However, the narrower and rougher surfaces reduce their level of accessibility for small-wheeled users and the disabled.

2. There are four types of minor trails:
   - **Local Trails:** 2 m granular surface, maintained seasonally
   - **Equestrian Trails:** 1 m granular or earth surface, maintained seasonally
   - **Rustic Trails:** 1 m natural surface, maintained seasonally (see Figure 25)
   - **Mountain Biking Trails:** <1m natural surface, with technical trail features built and maintained to the International Mountain Biking Association & Whistler Trail Standards

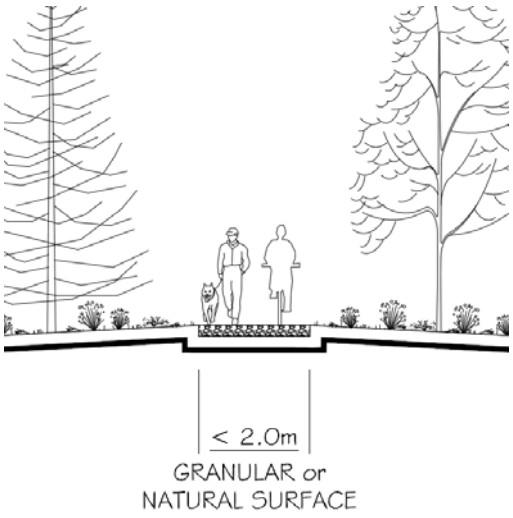


Figure 24 - Minor Trail Cross-Section

Figure 25 - Rustic Trail along the Cranbrook Hill Greenway

5.2.3 Boulevard Trails

1. Boulevard Trails are Multi-Use Trails that are located along the road right-of-way. They may be designed through rural sections (see Figures 26 and 27) or urban sections (see Figures 28 and 29).
2. Boulevard Trails should be considered when a major city trail link is planned along an existing road right-of-way, or in lieu of sidewalks on roadways where posted speeds exceed 60km/h. For roads with posted speeds greater than 70 km/h, Boulevard Trails should be required. As with sidewalks, the boulevard trail standard should be revisited to determine if a 1.5-2.0 metre offset from the curb is feasible (see 5.9).

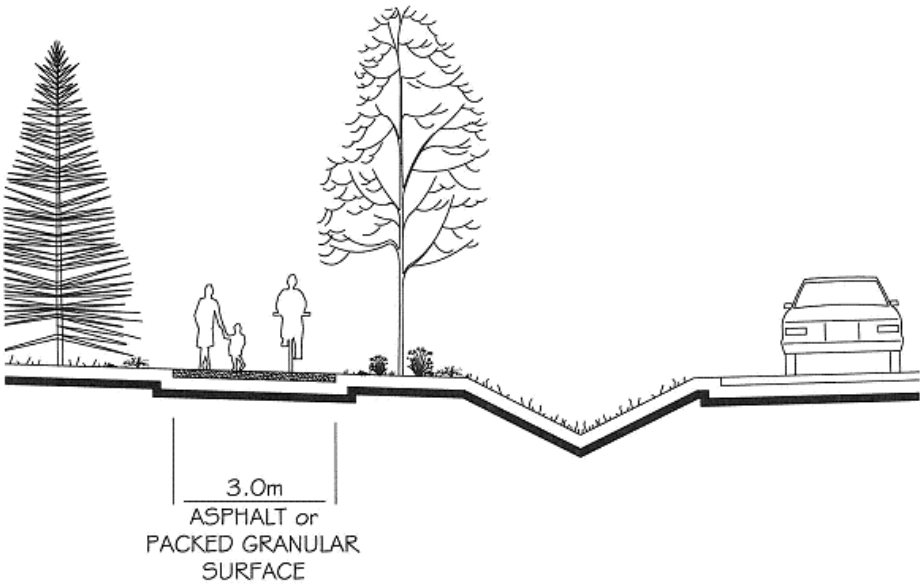


Figure 26 - Rural Boulevard Trail Cross Section

Figure 27 - Rural Boulevard Trail, Hart Highway

3. Boulevard Trails appear similar to sidewalks, but invite multi-use bi-directional traffic. Therefore, additional signing may be necessary to clarify use and warn of potential conflicts. Trail signing can be used to legitimize (and legalize) bicycle traffic on the trail. Also, bicycle crossing signs should be considered at major driveways or intersections where known conflicts exist (see Figure 30).

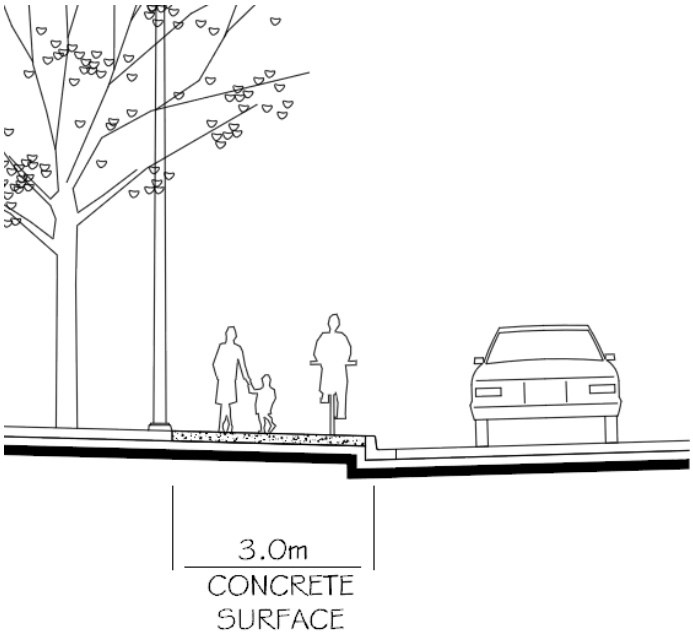


Figure 28 - Urban Boulevard Trail Cross-Section

Figure 29 - Urban Boulevard Trail, Ferry Avenue

Figure 30 - Bicycle Crossing Sign

5.2.4 Bicycle Lanes

1. Bicycle lanes are cycling facilities within an urban (curbed) roadway demarked with a single solid white line, and are typically recommended where feasible on arterial and collector roads designated to have cycling facilities.
2. The recommended width for bicycle lanes is 1.5 m from the face of the curb, but a 1.2 metre width may be used in constrained situations. A greater width of 1.8 to 2.0 metres should be considered on major roadways with higher traffic volumes, speed limits (>60 km/h), truck volumes, or grades (>8%).
3. Frequent parking in bicycle lanes impedes the functionality and safety of the facility, and should therefore be controlled (see Figure 31).
    - On arterials, on-street parking should be removed where bicycle lanes are necessary. Parking demand can generally be accommodated on the side streets and in parking lots. The removal of parking conflicts on arterial roads also improves traffic flow and safety on main routes. Buses stopping briefly for passengers are not generally a major impediment to bicycle traffic. However, pullouts should be used where possible, and especially at timing points and exchanges.
    - On collectors with at least 11.5 metres width, a single bicycle lane should be provided on one side of the street with restricted parking, and a shared parking/bicycle lane should be provided on the other side of the street (see Figures 32 and 33). The parking side should be selected based on the following considerations (in order of priority): abutting a sidewalk; maximizing the parking supply; facilitating snow removal; and minimizing the pedestrian crossings. The selected parking side should be consistent between blocks to minimize transitions.

Figure 31 - Parking in Bike Lane on Arterial Road

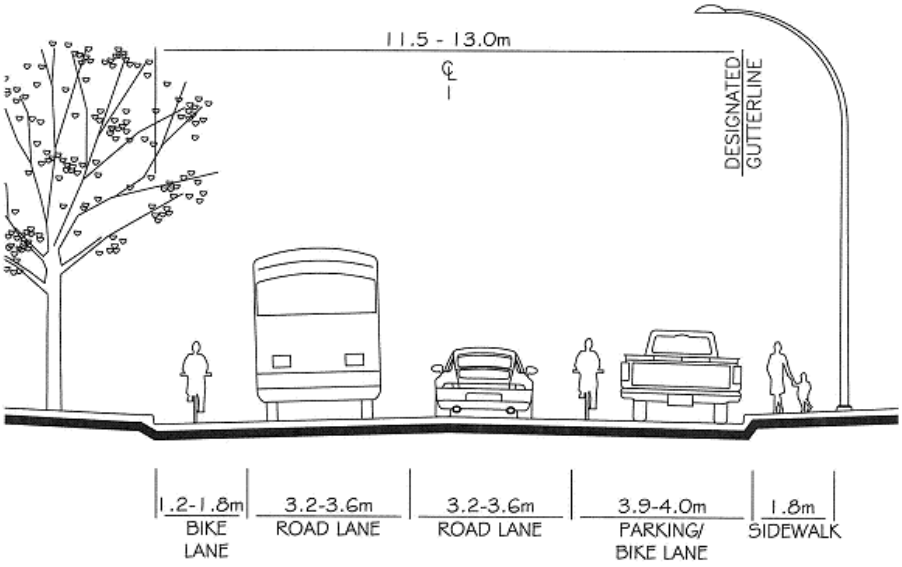


Figure 32 – Shared Bicycle/Parking Lane on Collector

Figure 33 - Bicycle/Parking Lane, Third Avenue

4. Local roads typically have lower traffic volumes, narrower widths, and frequent on-street parking. Therefore, bicycle lanes are typically unnecessary and/or infeasible on these streets.

5. Bicycle lanes are not recommended when the posted speed is greater than 80 km/h. In constrained road widths, bicycle lanes are not recommended with posted speeds greater than 50 km/h, heavy truck traffic greater than 12% of total traffic, and/or Average Daily Traffic greater than 3,000 vehicles per day.

6. As bicycle routes are established, bicycle route signing and pavement symbols should be installed to guide cyclists, and identify their presence to drivers (see Figure 34).

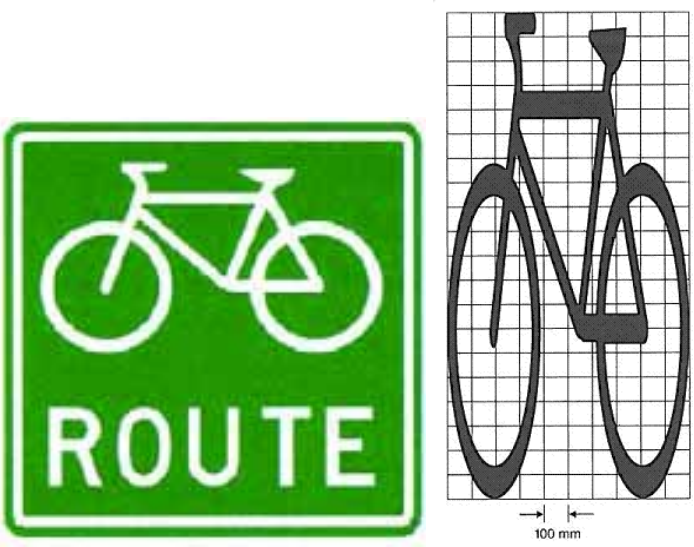


Figure 34 - Bicycle Route Sign and Pavement Symbol

5.2.5 Paved Shoulders

1. Paved shoulder cycling routes are located on roads with rural sections (i.e. no curbs), and are demarked with a single solid white line (see Figures 35 and 36).
2. The recommended width for paved shoulders is 1.5 m, but a 1.2 metre width may be used in constrained situations. A greater width of 1.8 to 2.0 metres should be considered on roads with heavy traffic volumes, higher speed limits (>60 km/h), higher truck volumes, or steeper grades (>8%). A gravel shoulder of 0.5 to 1.0 metre width should also be provided to provide additional support to the pavement structure, and allow cyclists additional recovery area.

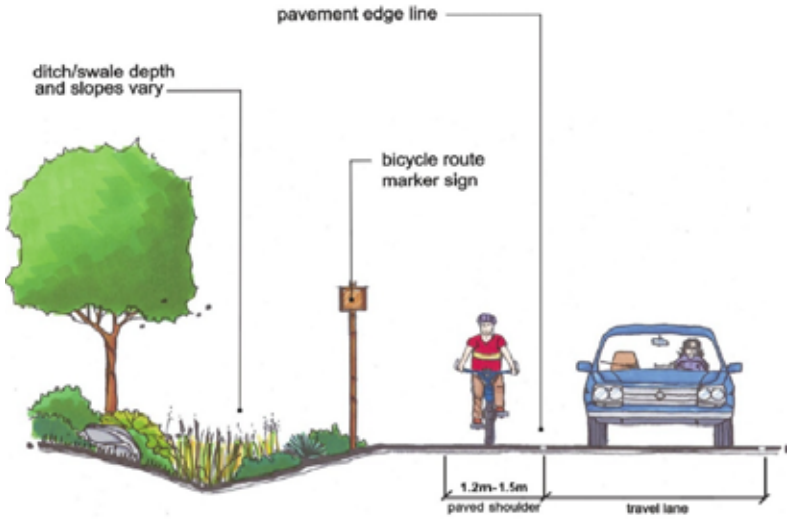


Figure 35 - Paved Shoulder Cross-Section

3. Paved shoulders on rural roads need not be denoted as reserved bicycle lanes since the parking demand is typically negligible.

Figure 36 - Paved Shoulder, North Nechako Road

4. As bicycle routes are established, bicycle route signing and pavement symbols should be installed to guide cyclists, and identify their presence to drivers.

5.2.6 Shared Lanes

1. In areas where the road width is insufficient to install a bicycle lane or paved shoulder and the posted speed is 60 km/h or less, a shared curb lane may be considered. Shared lanes may be installed on long continuous roadways, or on short segments between existing bicycle lanes/paved shoulders.
2. Shared lanes should be between 4.0 and 4.5 metres wide (see Figure 37). A width greater than 4.5 metres should be converted into bicycle lanes or paved shoulders.

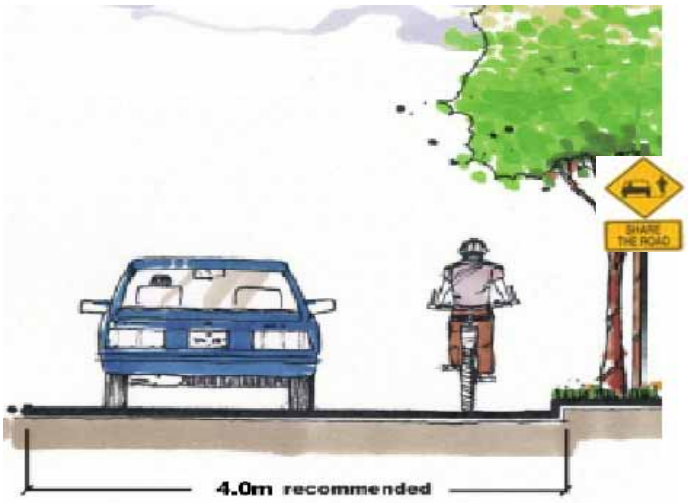


Figure 37 - Shared Lane Cross-Section

3. On very low volume rural roads with constrained pavement width, the existing traffic lanes may be designated as shared lanes provided that sight lines are good.
4. Shared lanes should be identified with "Share the Road" signing, and painted bicycle symbol/sharrow markings (see Figure 38). The "Share the Road" signs are specifically intended to warn motorists and cyclists of the shared lane use, and therefore should not be used for other than these specific situations.

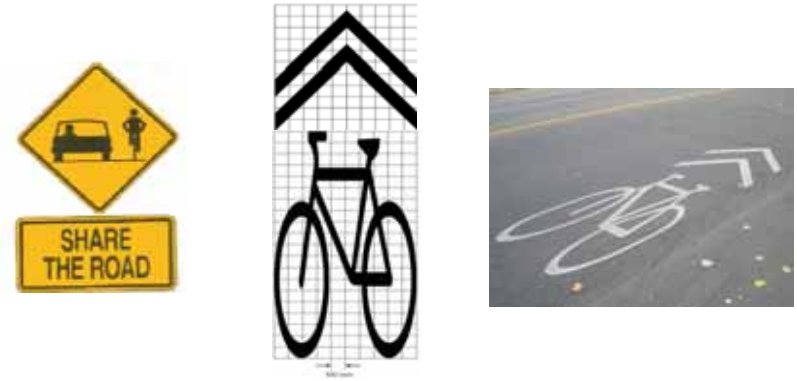


Figure 38 - Shared-Lane Signing and Pavement Markings

5.2.7 Sidewalks

1. Sidewalks are pedestrian pathways within urban road right-of-ways, physically separated from vehicular traffic (see Figure 39). Sidewalks are considered warranted on both sides of arterial roads, and one-side of lower class roads. Sidewalk connections should also be provided to all transit stops, as every transit trip begins and ends with a pedestrian trip.

Figure 39 – Downtown Sidewalk, Third Avenue

2. The standard sidewalk design locates the sidewalk immediately behind the curb. The benefits of this are (a) easier snow clearing, by pushing the snow into the street for pickup; (b) easier pedestrian access to the street for parking, transit, etc under heavy snow conditions (see Figure 40), and (c) no ambiguity in the jurisdiction for landscaping between the sidewalk and street (see Figure 41). However, the benefit of an offset sidewalk is a more comfortable and aesthetic pedestrian environment with a green buffer between the sidewalk and traffic stream (see Figure 42). The capital and maintenance costs, and the implications to lighting and utility placement, should be evaluated for both options.

Figure 40 – Offset Sidewalk in Winter, Eighth Avenue

Figure 41 – Unmaintained Boulevard,

Figure 42 – Offset Sidewalk with Greenspace

3. The Sidewalk Warrant Sheet, derived in the Pedestrian Network Study (2004), should be used to establish priorities for new sidewalk installations. The calculation is shown in Table 8.

4. When sidewalks are planned for one side of the street only, the choice of sides should be based on the following considerations (in order of priority):
    - Existing desire lines, e.g. visibly worn paths.
    - Adjacent pedestrian generators, e.g. schools, commercial centres, high density residential developments, etc.
    - Constructability, e.g. available right-of-way, conducive topography,
    - Connectivity with other pedestrian facilities, e.g. between blocks.
    - Sun exposure, i.e. north or east side of the street
    - Availability of adjacent parking
    - Funding opportunities, e.g. Local Area Service agreements
    - Existing street lighting
    - Snow storage and removal
    - Aesthetics, i.e. providing a view

5. A vertical clearance of no less than 2.0 metres should be provided over all sidewalks to prevent hazards to pedestrians, especially the visually impaired (see Figure 43). This is especially necessary for signs and tree branches, which may have sharp edges.

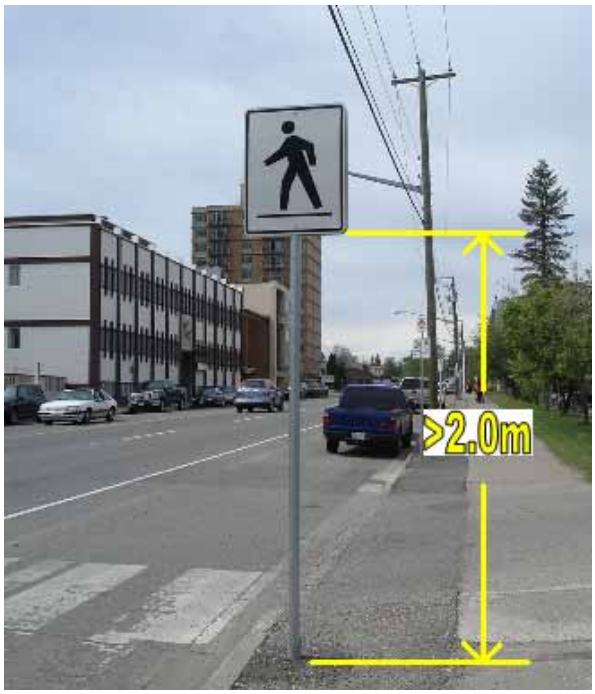


Figure 43 - Vertical Clearance on Sidewalks

Pedestrian Potential:

Feature:	Rating:	Score: (0 if none)
Adjacent Commercial Development:	City Centre Regional Commercial Other Commercial	7 6 5
Transit Route on Street:	Yes	2
Transit Stop Proximity:	< 500 m	2
Existing Pedestrian Route/Footpath:	Yes	2
Elementary School Proximity:	< 0.5 km 0.5 - 0.9 km 1.0 – 1.4 km 1.5 – 2.0 km	4 3 2 1
Middle/High School Proximity:	< 0.5 km 0.5 - 0.9 km 1.0 – 1.4 km 1.5 – 2.0 km	4 3 2 1
Park Proximity:	< 500 m	2
Employment Proximity:	< 0.5 km 0.5 - 1.0 km	2 1
Other Local Interest Proximity:	High interest Medium interest	2 1

Pedestrian Deficiencies:

Sidewalk Continuity on Block:	%0 1 - 24% 25 – 49% 50 – 74% 75 – 99%	5 4 3 2 1
Pedestrian Accidents in Vicinity over past 5 years:	> 6 crashes 4 - 6 crashes 1 – 3 crashes	10 6 4
Posted Traffic Speed:	80 + km/h 70 km/h 60 km/h 50 km/h 40 km/h	5 4 3 2 1
Daily Traffic Volume:	> 20,000 vpd 15,000 – 19,999 vpd 10,000 – 14,999 vpd 5,000 – 9,999 vpd 2,000 – 4,999 vpd	5 4 3 2 1
Road Lanes (Including Parking):	Six lanes Five lanes Four lanes Three lanes Two lanes One lane	6 5 4 3 2 1
Street Segment Length:	> 300 m 240 – 299 m 180 – 239 m 120 – 179 m 60 – 119 m	5 4 3 2 1
Formal Request Received:	Yes	5
High Proportion of Vulnerable Users:	Yes	5
Total Score (Maximum 73 points)		

Table 8- Sidewalk Warrant Sheet

6. The standard sidewalk width for Prince George is 1.8 metres, although a 1.5 metre width may be considered in constrained situations. A width of 2.5 to 3.0 metres should be provided in areas with heavy pedestrian volumes (e.g. Downtown). When the inside of the sidewalk abuts wall or other vertical face, an extra 0.5 metres width should be provided for the safety and comfort of pedestrians.
7. There should not generally be any obstacles in the sidewalk. However, if obstacles are unavoidable, the lateral clearance should be no less than 1.2 metres for wheelchair passage, and 2.0 metres for snowploughing.
8. Sidewalk crossfalls should be kept between 1.0 and 2.0% to the curb to manage drainage while maintaining a surface that is safe for pedestrians.
9. Sidewalks can be concrete or paver brick. Asphalt sidewalks are no longer supported for new or rehabilitated facilities, although minor asphalt patching work may be appropriate for maintenance.
10. Sidewalks should be continuous across accesses to private developments to provide for the safety and comfort of pedestrians. On sidewalks with erect curb (e.g. arterials), the front and back of the sidewalk should both be lowered to preserve the standard 1-2% crossfall to the curb.
11. On lower class roads with a high density of access, mountable or semi-mountable curb should be considered where the frequency of curb/sidewalk drops becomes problematic to pedestrians (see Figure 44).

Figure 44: Sidewalk Drops

12. Where gratings must be located in sidewalks, no opening shall be wider than 13mm. Bar grating should be perpendicular to the path of travel.

5.2.8 Walkways

1. Walkways are short connections between streets, or between streets and such destinations as schools, shopping centres, or residential areas (see Figure 45).
2. Walkways are generally situated in right-of-ways between 3 and 6 metres wide (depending on their length), and are designed according to the Multi-Use Trail standard.
3. Strategic placement of bollards or fencing at the entrances to walkways is necessary to prohibit access from motorized vehicles, while allowing for the safe and comfortable passage of pedestrians, cyclists, wheelchairs, and other small-wheeled users.
4. As walkways are typically located between private properties, fencing should be installed along the full length of the pathway to discourage nuisance activity. The principles of Crime Prevention Through Environmental Design (CPTED) should be considered in walkway design.

Figure 45 - Walkway, Pilot Street

5.2.9 Crosswalks and Grade Separated Crossings

1. Crosswalks establish the right-of-way between pedestrians and motorists to allow pedestrians to safely cross the street. Crosswalks include signing and pavement markings, and may also include flashing beacons or signals where volumes are heavy. All crosswalks should be illuminated.
2. The warrants and configuration of crosswalks depend on (a) the suitability/safety of the location, (a) the number of pedestrians crossing, and (c) the number of available gaps in traffic, as defined by the Transportation Association of Canada.

3. On wide arterial roads, median refuge islands should be considered where crosswalks are warranted (see Figure 46). Refuge islands improve the safety and ease of crossings by allowing pedestrians to cross one side of the street at a time.

Figure 46 - Pedestrian Refuge Island, 5th Avenue at Voyageur

4. On local and collector roads (especially Downtown), sidewalk bulbs should be considered where possible at intersections. Sidewalk bulbs calm traffic by narrowing the traveled roadway, and also improve safety by increasing the visibility of pedestrians and decreasing the crossing distance.
5. Crosswalks should be provided where Multi-Use Trails cross roadways. For this reason, Multi-Use trails should connect to roadways at existing intersections wherever possible, and should connect to the road at a 90 degree angle for safety and visibility.
6. All crosswalks should include curb ramps for accessibility. Patterns of cross-hatching, dimpling or scoring should be applied at ramps to alert the visually impaired of the presence of the ramp. When ramps are not parallel to the crosswalk, textured grooves are used to help the visually impaired align themselves with the crosswalk (see Figure 47).

Figure 47 - Crosswalk, Ferry and Ospika

7. Crosswalks should be painted at or near right angles to the roadway.
8. Parking should be restricted within at least 6.0 metres of a crosswalk to protect sight lines for pedestrians.
9. At locations where the traffic and pedestrian crossing volumes are heavy but a signal is not feasible, a grade-separated crossing may be considered (see Figure 48).
    - Underpasses generally cost less than overpasses, are easier to maintain, and are preferred by equestrians. However, in some neighbourhoods there may be concerns with graffiti and the personal security of users.
    - Overpasses have relatively few concerns with personal security, and are preferred for winter trail crossings. However, the effort to climb the overpass may induce some users to cross at street level regardless.

Figure 48 - Highway 16 Underpass at Heritage Trail

5.2.10 Stairways

1. Stairways may be considered along pathways where steep grades cannot be avoided, and ramps would be unsafe or infeasible. Stairways should not be used on equestrian or winter use trails.
2. Stairways should include a bike ramp so that trail users can wheel their bike beside them (see Figure 49). The ramp should be designed to prevent bicycle handlebars from catching in the handrail.

Figure 49 - Bike Rail on a Staircase

3. A series of short flights of 14 steps or less, with landings in between, is preferable to a single long flight.
4. Steps should be of firm, non-slip materials with a maximum rise of 150mm and maximum tread of 280mm. Tread nosings should be clearly marked and rounded to 6mm radius.
5. Continuous handrails should be installed on both sides where flights consist of more than three risers.
6. Signage may be considered to direct physically disabled users to the nearest accessible route around the stairway.

5.3 Transit System

Transit issues raised during the Active Transportation Plan are listed in Table 9 below. These issues are generally being addressed in the forthcoming Transit Master Plan, developed by the City and BC Transit.

Issue	Network	Source	Comments	Priority
Have Transit maps at key Bus Stops showing routes/times would be helpful	Transit NTIC ATAC	Open House	*Was provided previously, and will be reinstated in the future.*	**H**
Wrap designated bus stop sign posts with reflective tape to assist visually impaired.	Transit	ATAC	*Work with committee to determine locations.*	**M**
Doors on buses are only 35 inches wide, which is not enough for larger 33 inch scooters.	Transit	Open House	*Bus doors are standard sizes.*	n/a
Bike racks appreciated.	Bicycle	UCC(1)	*Bike racks will remain a feature on the buses.*	n/a

Table 9 - Transit Issues

5.4 Intersections and Roundabouts

As intersections and roundabouts have numerous conflict points, their designs must include consideration of cyclists and pedestrians. Some concerns with intersections are listed in Table 10 below, with guidelines following.

Issue	Network	Source	Comments	Priority
Need cyclist-controlled signals.	Bicycle	Open House UCC(8)	*Existing signals with camera detectors could be configured for bicycles.*	**M**
Consider using pedestrian push-buttons only on cross streets where the signal rests on the through movement. Otherwise, the walk signal should activate every cycle.	Pedestrian	Open House	*Pedestrian push-buttons are used to alert the signal controller of the presence of pedestrians so that the green phase can be extended accordingly. The pedestrian pushbutton also activates the audible signal to provide accessibility without excess noise.*	n/a

Table 10 - Intersection Issues

1. On the approach to major or signalized intersections (e.g. intersecting collector or arterial roads, and/or with significant right turning volumes), the bike lane/shoulder lines should be dashed for a minimum of 15 metres (see Figure 50) before the intersection. This allows right turning vehicles to merge into the bicycle lanes, rather than risk turning into bicycle traffic from the traffic lane.

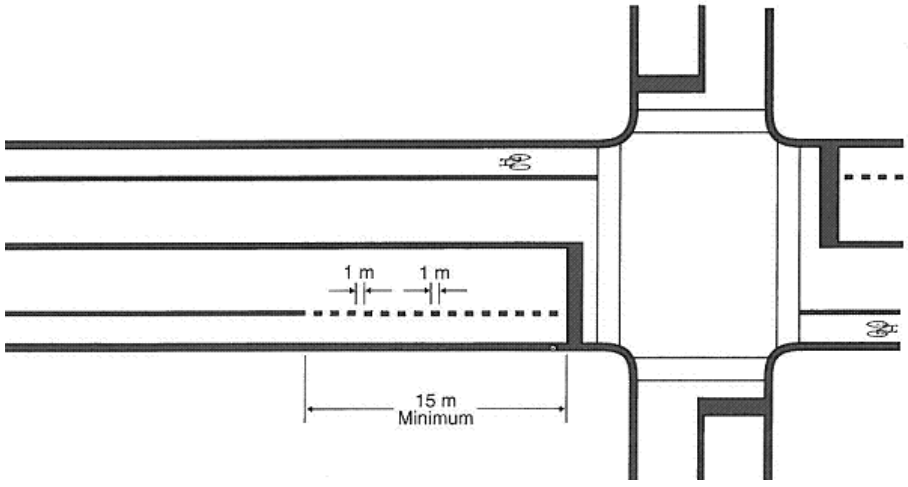


Figure 50 - Bicycle Lane Markings at Intersections (source: TAC)

1. Pedestrian push-buttons should be clearly identifiable, and placed on signal poles facing pedestrians at a maximum height of 1065 mm to be reachable by all pedestrians, including children and those in wheelchairs.

2. Signal timing should be adjusted to accommodate bicycle traffic. Signal actuation sensors should be calibrated to detect the presence of bicycles. Where sensors cannot be configured or do not exist, additional signal push-buttons can be considered for the convenience of cyclists where demand exists.
3. All signals should include audible devices for the visually impaired.
4. Countdown pedestrian heads should be used to advise pedestrians how much time remains for crossing. In locations frequently used by seniors or persons with disabilities, additional pedestrian clearance time may be considered.
5. Intersection curb radii should be kept between 3 and 9 metres wherever possible to improve the safety and visibility of pedestrians, and to reduce the necessary crossing distances.
6. All roundabouts should accommodate bicycles and pedestrians. This may include the use of shared pathways outside the traffic stream, as shown in Figure 51.

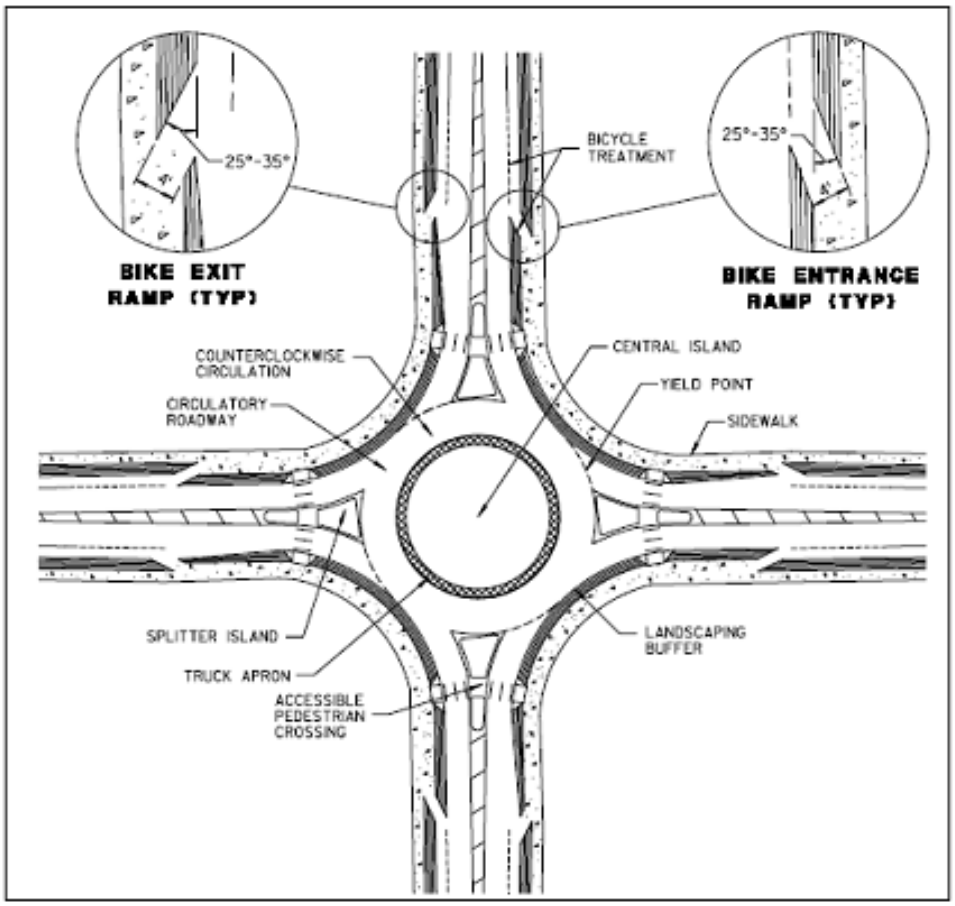


Figure 51 - Bicycle Accommodation at Roundabouts (source MoTI)

5.5 Interchanges

1. With higher traffic speeds and volumes at interchanges, cycle pathways must be designed clearly and safely. Design concepts for cycle facilities through on and off-ramps are shown in Figure 52.
2. In situations where it may be more desirable to allow cyclists to choose their own merge, weave or crossing manoeuvres, bicycle markings may be discontinued through the crossing area.

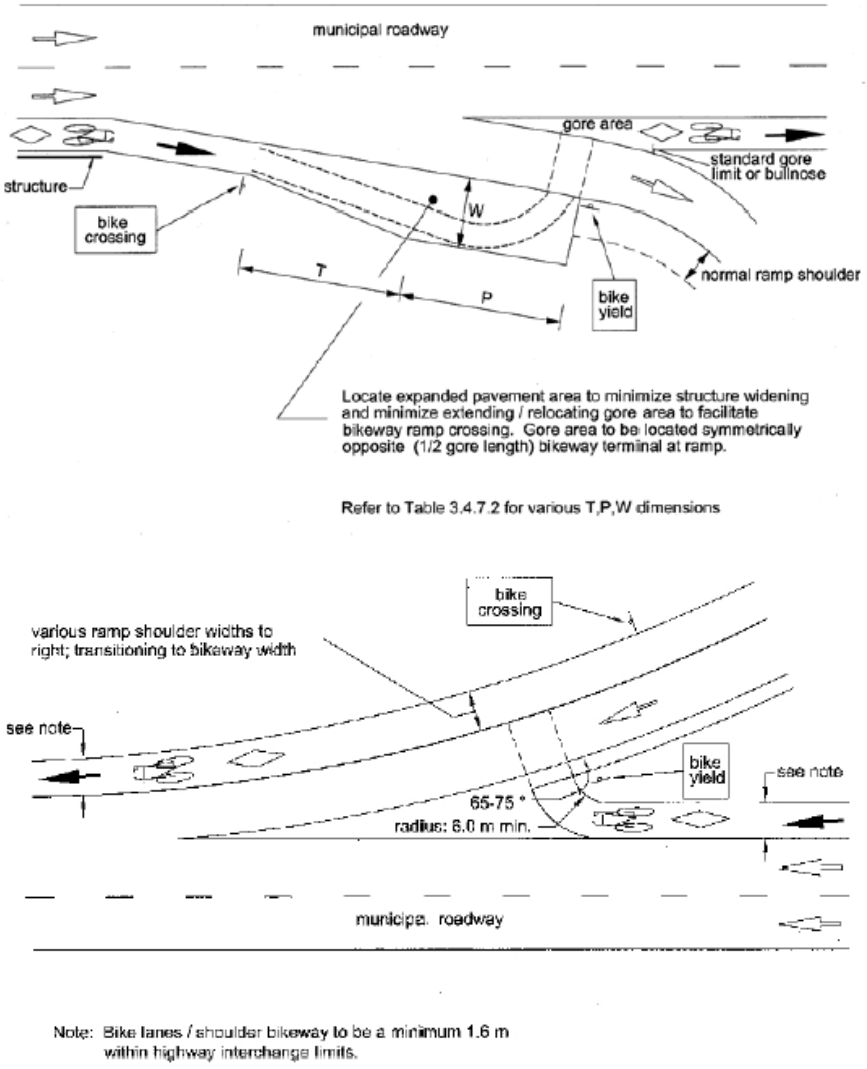


Figure 52 - Bicycle Laning at On-Ramp

5.6 Bridge Crossings

1. A bicycle route can be routed across a road bridge in one of three ways:
    - Demarking a bicycle lane on the travelled way;
    - Sharing the sidewalk with pedestrians (see Figure 53); or
    - Widening the roadway to permit shared use of the traffic lane.
2. Multi-use trail bridges should be designed with non-slip surfaces, and include cover plates over expansion joints. When planks are used, gaps should be provided greater than 3.8 mm to allow for drainage, but no more than 7.6 mm to minimize the hazards for users (see Figure 54).
3. Slopes on bridges should not exceed 5% gradient and a 2% crossfall. Access to bridges should be via ramps, not stairways.
4. Sightlines onto the bridge should be free of obstructions, and the approach to the bridge should be wider than the trail to accommodate potential congestion on or near the bridge. The approach railings should extend at least 4.6 metres from each end of the bridge and should be flared out to funnel pathway traffic onto the bridge.
5. Bridges should include vertical hand rails attached to the outside of the structure. Railings should be 50 mm wide and at least 107 cm above the surface or the bridge decking for pedestrians, and 137 cm for cyclists. Safety 'rub-rails' may be considered along to prevent a cyclist's handlebar from catching the vertical supports of the railing (see Figure 55).

Figure 53 - Multi-Use Trail on Cameron Bridge

Figure 54 - Pathway Bridge in Carrie Jane Gray

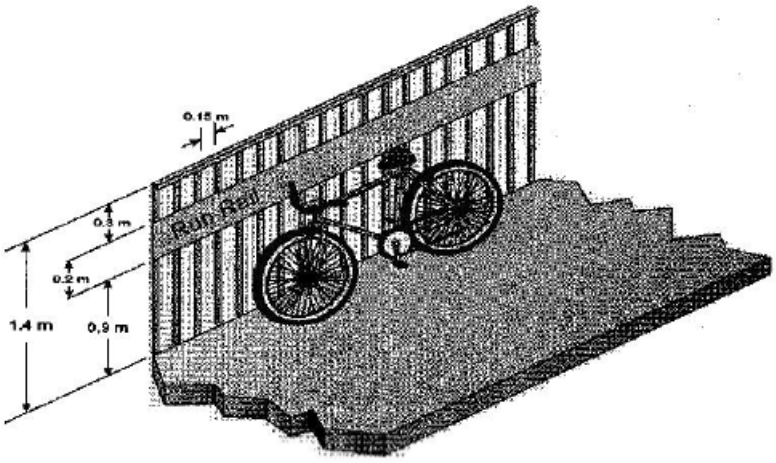


Figure 55 - Bicycle Rub-Rails on Handrail

5.7 Safety

1. The design of off-road cycling and pedestrian systems should take into consideration stopping sight distances for bicycles and wheelchairs (see Table 11).

Grade %	Design Speed (km/h)								
	10	15	20	25	30	35	40	45	50
Minimum Stopping Sight Distance (m)									
+12	8	13	18	-	-	-	-	-	-
+10	8	13	18	24	-	-	-	-	-
+8	8	13	19	25	32	-	-	-	-
+6	8	13	19	25	32	40	-	-	-
+4	8	13	19	26	33	41	49	-	-
+2	8	14	20	26	34	42	51	61	-
0	9	14	20	27	35	44	53	63	74
-2	9	14	21	28	36	45	55	66	77
-4	9	15	21	29	38	47	58	69	81
-6	9	15	22	30	39	50	61	73	86
-8	9	16	23	32	42	53	65	68	92
-10	10	16	24	34	44	56	70	84	100
-12	10	17	26	36	48	61	76	92	110

Source: Geometric Design Guide for Canadian Roads, TAC, 1999. (TAC Table 3.4.5.1)

Table 11 - Minimum Stopping Sight Distances

2. Users of the Active Transportation Network should be easily visible to people on adjacent roadways where possible.
3. Pedestrian and bicycle routes should be located in areas with significant street frontage (and the associated doors and windows), as opposed to streets with few buildings fronting onto them.
4. Bushes or other shrubbery can provide hiding places for potential offenders. Caution should be exercised in their placing. Bushes that are planted further back from paths and sidewalks make it more difficult for people to move unseen.
5. Pathways should be well maintained. Burned-out lights, overgrown pathways, and damaged facilities indicate a general state of disrepair and detract from the feeling of security of the area.
6. Where possible, trail access points should be located in developed areas next to public parks, shopping centers, or residential developments. Many public amenities, including rest rooms, telephone booths, parking areas, and refreshment facilities, will already be in place.
7. Construction activities must provide for pedestrian and cyclist safety and movement. This should include, but not be limited to:
    - construction notices issued to the media;
    - advance signing for construction activities;
    - not obstructing pathways with construction traffic control; and
    - temporary pedestrian and bicycle detours where necessary.
8. Catchbasin covers should be bicycle friendly. Bicycle covers on proposed bicycle routes should receive priority for adjustment.

5.8 Amenities

The Active Transportation Network should be complemented by amenities which improve the safety and comfort of users. Table 12 shows that bicycle parking is a major issue for the cycle network. Guidelines for bicycle racks and other amenities are listed below.

Issue	Network	Source	Comments	Priority
Provide more parking facilities for bicycles, especially Downtown and large commercial areas.	Bicycle	CNP UCC(21)	*More bicycle racks are required. Add to new development policy.*	**H**

Table 12 - Active Transportation Amenity Issues

5.8.1 Bicycle Racks

1. Bicycle parking should be provided on every commercial block, especially Downtown.
2. New development or redevelopment should provide bicycle parking, especially in business, commercial, multi-family residential, institutional, and recreational zones. Trip end facilities (e.g. showers) should also be provided for employees of large businesses.
3. Bicycle racks should be placed adjacent to the entrance that it serves without inhibiting pedestrian movement. Racks should be no more than 15 m from the entrance, and should be clearly visible along a major building approach line to maximize security.
4. Horizontal bicycle parking stalls should be 1.8 metres in length by 0.6 metres in width. Vertical stalls should be 1.1 metres in length by 0.6 metres in width. Aisles between stalls should be 1.2 metres.
5. Bicycle racks should be designed to provide lateral support to the parked bicycle. Bikes should be supported by the frame, rather than the wheel, as wheel racks are less secure and can damage the bicycle (see Figure 56).
6. Racks, whether as single units or grouped together, should be made from materials that can resist being cut by common hand tools, and be securely fastened to a mounting surface to prevent theft.

Wheel-Supported: not recommended

Frame-Supported: recommended

Figure 56 - Bicycle Rack Designs

5.8.2 Lighting

1. Lighting directly improves the safety, security and comfort of pathways, and should therefore be implemented as and where feasible. Pathway lighting design should incorporate CPTED guidelines and standards.
2. Pathways along or crossing major roads should benefit from existing street lighting. If street lighting does not exist on these corridors, the installation of lighting should be identified as a priority.
3. Pathway lighting should also be provided:
    - Along the sidewalk side of local and collector roads.
    - At or near the ends of walkways.
    - Along Multi-Use Trails that have a high volume of commuters (see Figure 57).
    - In all underpasses.

Figure 57 - Pathway Lighting, Cemetery Trail

5.8.3 Benches

1. On pathways with high volumes of pedestrians, benches should be installed periodically to provide space for resting (see Figure 58).
2. Benches should be mounted on a firm, level surface directly adjacent to a pathway, or such that they are conveniently accessible from the pathway.
3. Benches should be provided in areas that afford attractive views, wherever possible.
4. These facilities should incorporate local art or unique design features where possible.

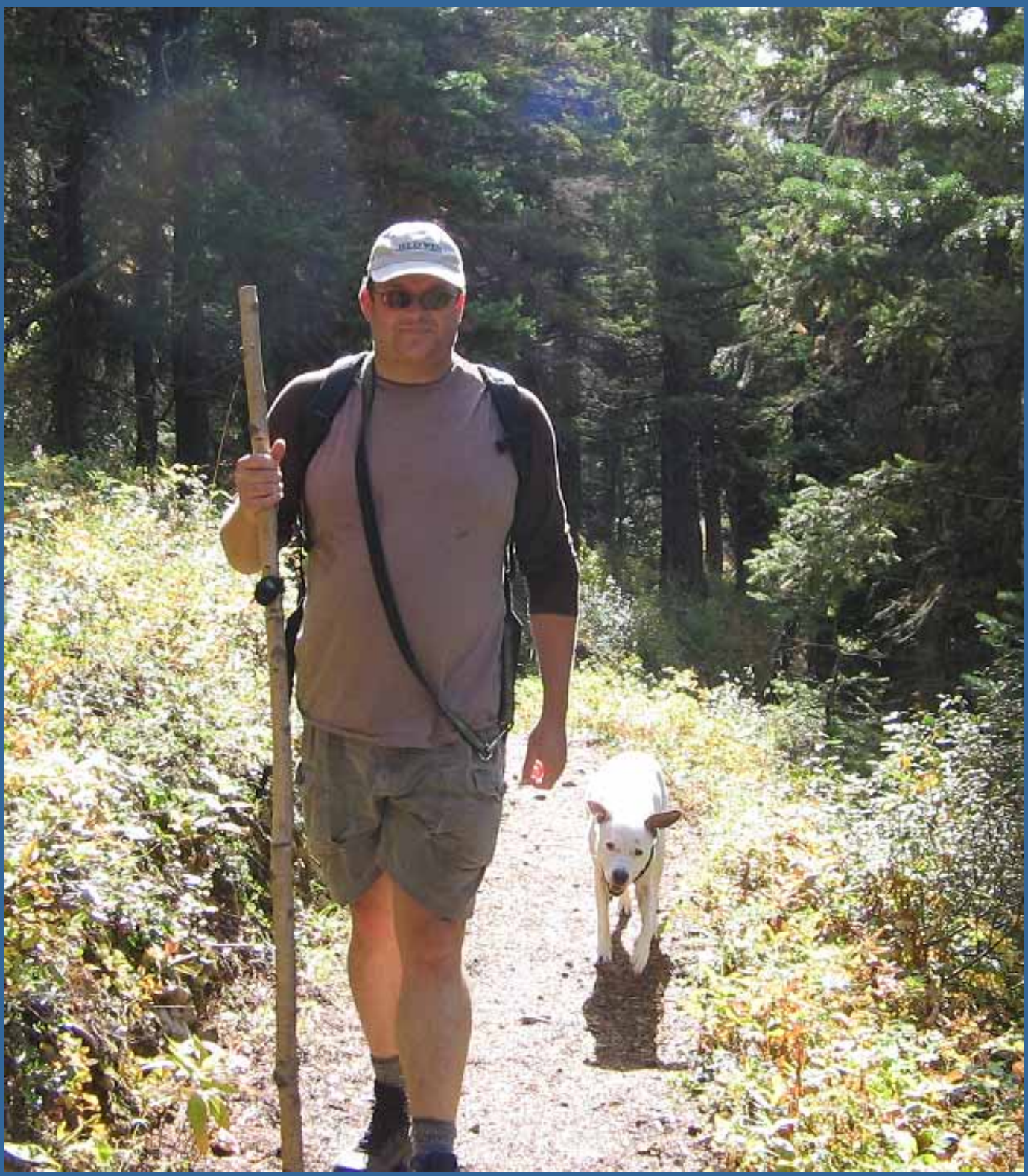
Figure 58 – Pedestrian Bench, Gladstone Trail

5.8.4 Waste Receptacles and Recycling Bins

1. Waste receptacles and recycling bins should be provided periodically along the Active Transportation Network, and should be bear-proof in bear corridor areas.
2. Waste receptacles and recycling bins should be accessible and securely mounted on a firm pad directly adjacent to the path or walkway.
3. Where lids are provided, they should be easy to operate with one hand and have openings no higher than 1065mm from grade. Signage on these facilities should be clearly identifiable (see Figure 59).
4. Waste receptacles and recycle bins should be located in conspicuous areas that do not create an obstacle for pedestrians.

Figure 59 - Waste Receptacle, Third and Quebec

6.0 ACTIVE TRANSPORTATION INFRASTRUCTURE



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While the Prince George Active Transportation Network has substantially evolved since the 1998 City Wide Master Trail Plan, the 2001 Cycle Network Plan, and the 2004 Pedestrian Network Study, there are still many outstanding issues that must be addressed in order to achieve the goal of a comprehensive and usable system. This section outlines the issues, explains the recommended infrastructural improvements, and provides maps of the proposed networks at a conceptual planning level. The actual pathway alignments will depend on the findings in the detailed design stage.

Only the planned major pathway links are included. Sidewalks, Trails and Bike Lanes which are driven by development are not shown. Also, as in the Standards Section, the infrastructural improvements to the Transit system will generally be addressed in the forthcoming Transit Master Plan.

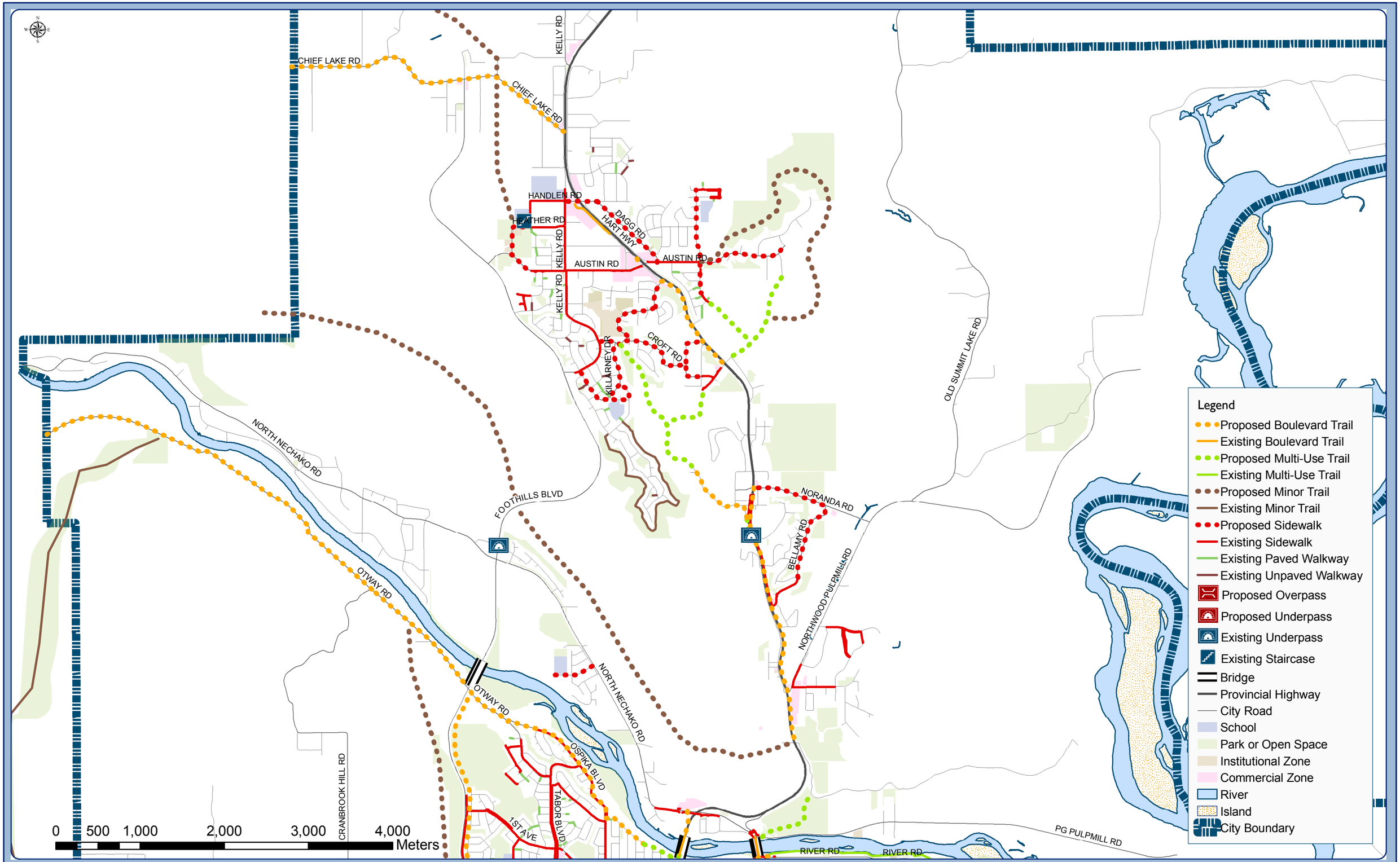
6.1 Hart - North Nechako

Table 13 - Infrastructure Issues in the Hart-North Nechako Area

Hart – North Nechako				
Issue	**Network**	**Source**	**Recommendation**	**Priority**
Heavy pedestrian demand on Handlen-Weisbrod between Dagg and Kelly Road School.	Pedestrian	PNS	*Install sidewalk from South Kelly to Dagg. Storm system exists; need curb/gutter (see Figure 60).*	**H**
Poor bicycle connection between Hart and the Bowl. Southbound shoulder on Hart Hwy is too narrow for safety, especially in light of the highway traffic speeds and volumes.	Bicycle	Open House Survey (#6) CNP, CTP, UCC(10)	*Safer bicycle corridor required between the Bowl and Hart area. Project could be divided into three phases: (1) trail between Glengarry and Kenworth underpass; (2) trail on the east side of Hwy 97 between Kenworth and Hoferkamp; and (3) new trail connection between Hoferkamp and Cameron Bridge.*	**H**
Hart area in general is poorly serviced by bike lanes and cycling safety.	Bicycle	UCC(1)	*A stronger, more continuous network is required.*	**H**
Foothills paved shoulders are occasionally less than standard widths, especially around the Nechako River Bridge.	Bicycle	CNP UCC(4)	*Existing shoulders are popular with users, but should be widened to standard width. Can also reallocate laning within existing pavement width. Remove "Share the Road" signing, and replace with cycle route signing.*	**H**
Missing link in west highway frontage road, across Chief Lake Road intersection.	Bicycle, Pedestrian	ATP	*Low-cost improvement would create continuous link between North Kelly and South Kelly.*	**H**
Missing connection from east highway frontage road to Weisbrod signalized intersection.	Bicycle, Pedestrian	ATP	*Low-cost improvement would connect Northeast Hart neighbourhood to Kelly Road School/Hart Trail.*	**H**
Austin Road is challenging for cyclists between South Kelly and Dagg Road.	Bicycle Pedestrian	CNP PNS UCC(1)	*Install bicycle lanes with future road widening project.*	**H**
North Kelly may be too narrow to sustain paved shoulders at standard width.	Bicycle	ATP	*Convert to Shared Lanes.*	**H**

Hart – North Nechako				
Issue	**Network**	**Source**	**Recommendation**	**Priority**
North Nechako bike lanes should extend west of Foothills to Bench Drive, or build riverside trail.	Bicycle Pedestrian	Open House N Nechako Bike Path Committee	*Paved shoulders east of Foothills are appreciated (UCC3). Between Foothills and Pidherny, paved shoulders appear feasible within the existing gravel shoulder. West of Pidherny, expensive road widening appears necessary in places.*	**H**
Hart Highlands Elementary School lacks ped/cycle connection on Sussex.	Bicycle Pedestrian	ATP	*Construct sidewalk and shared laning. Will require curb/gutter/storm.*	**M**
Glenview Elementary School lacks ped/cycle connection on Dawson Road.	Bicycle Pedestrian	ATP	*Construct sidewalk and shared laning. Will require curb/gutter/storm.*	**M**
Edgeview Elementary School lacks ped/cycle connection on Craig.	Bicycle Pedestrian	ATP	*Construct sidewalk and shared laning. Will require curb/gutter/storm.*	**M**
Improve pedestrian connection across the John Hart Bridge and in the North Nechako Interchange, and maintain in winter.	Pedestrian	Open House UCC(1)	*Low pedestrian volumes; discuss with MoTI*	**M**
Undeveloped connection to Ridgeview Trail system from Sadler Drive.	Trail	Open House	*Connection is desirable and should be formalized.*	**M**
Current bicycle lane on north side of PG Pulpmill Road is bi-directional, which is a safety concern for cyclists riding against traffic, and contravenes Motor Vehicle Act.	Bicycle	CNP Open House, User meetings	*Existing bi-directional lane is enjoyed by some users (UCC3), but should be upgraded to two uni-directional cycle lanes.*	**M**
Missing connection on frontage road on west side of Hwy 97, across Austin Road.	Bicycle, Trail	ATP	*Connect trail to Austin signalized intersection to link the Hart trail to the future trail between Birchwood and Monterey.*	**M**
Pedestrian demand on Dagg Road, as route to both school and mall.	Pedestrian	PNS	*Construct sidewalk. Identified as a high priority in the Pedestrian Study, but requires curb/gutter and storm system.*	**M**
Pedestrian demand on Birchwood Road, on route to mall.	Pedestrian	PNS	*Construct sidewalk. Identified as a priority in the Pedestrian Study, but requires curb/gutter and storm system.*	**L**
Transit service demand to pulp mills	Transit	Open House	*May consider as special service, depending on demand.*	**L**
Opportunity for winter trail through Harper Valley.	Trail	UCC(1)	*Private land, but could consider negotiating a link.*	**L**

Figure 60 – Handlen Road



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Map 5a: Hart/North Nechako Proposed Pedestrian Network

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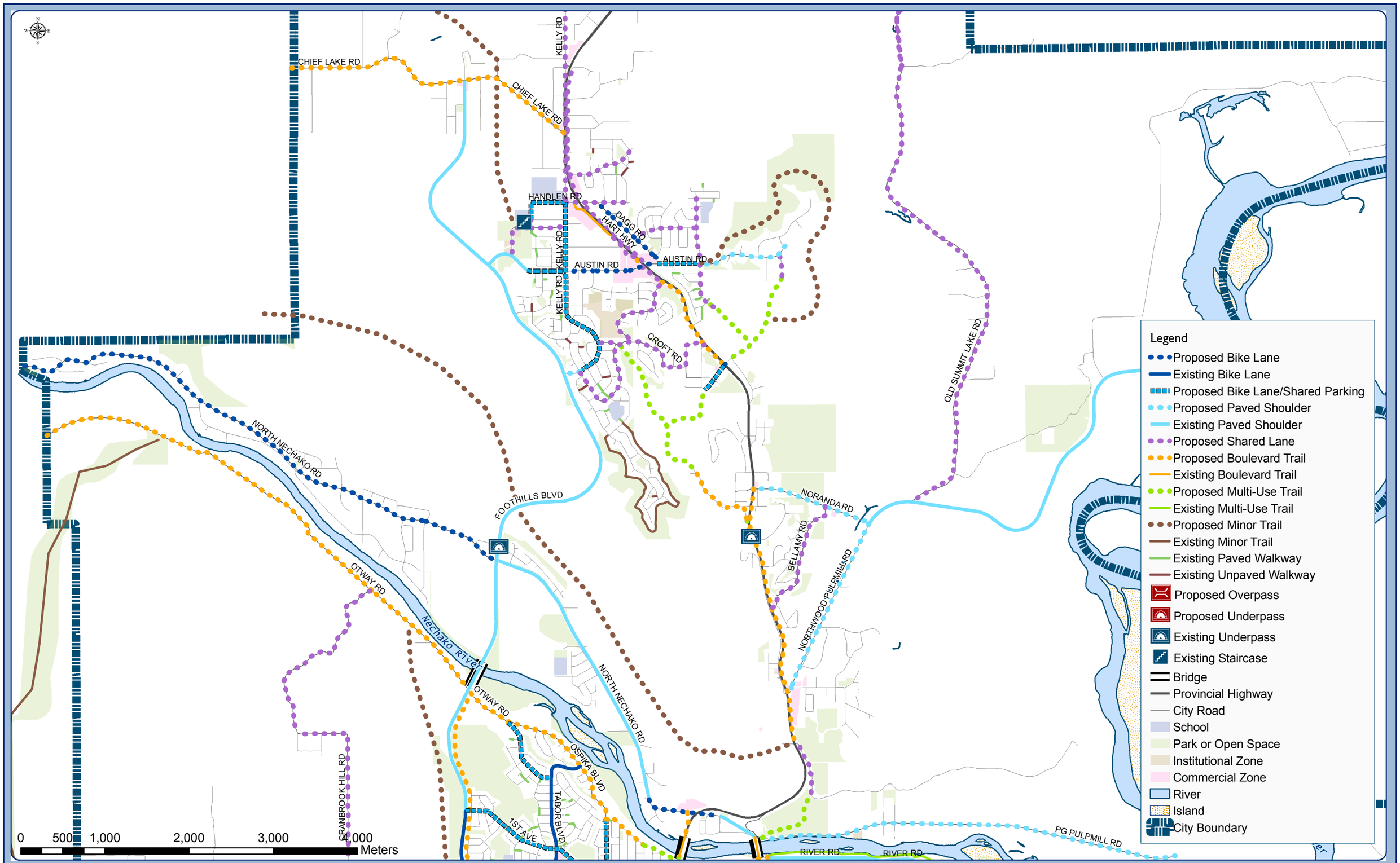

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Map 5b: Hart/North Nechako Proposed Cycle Network

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6.2 North Bowl – Cranbrook Hill

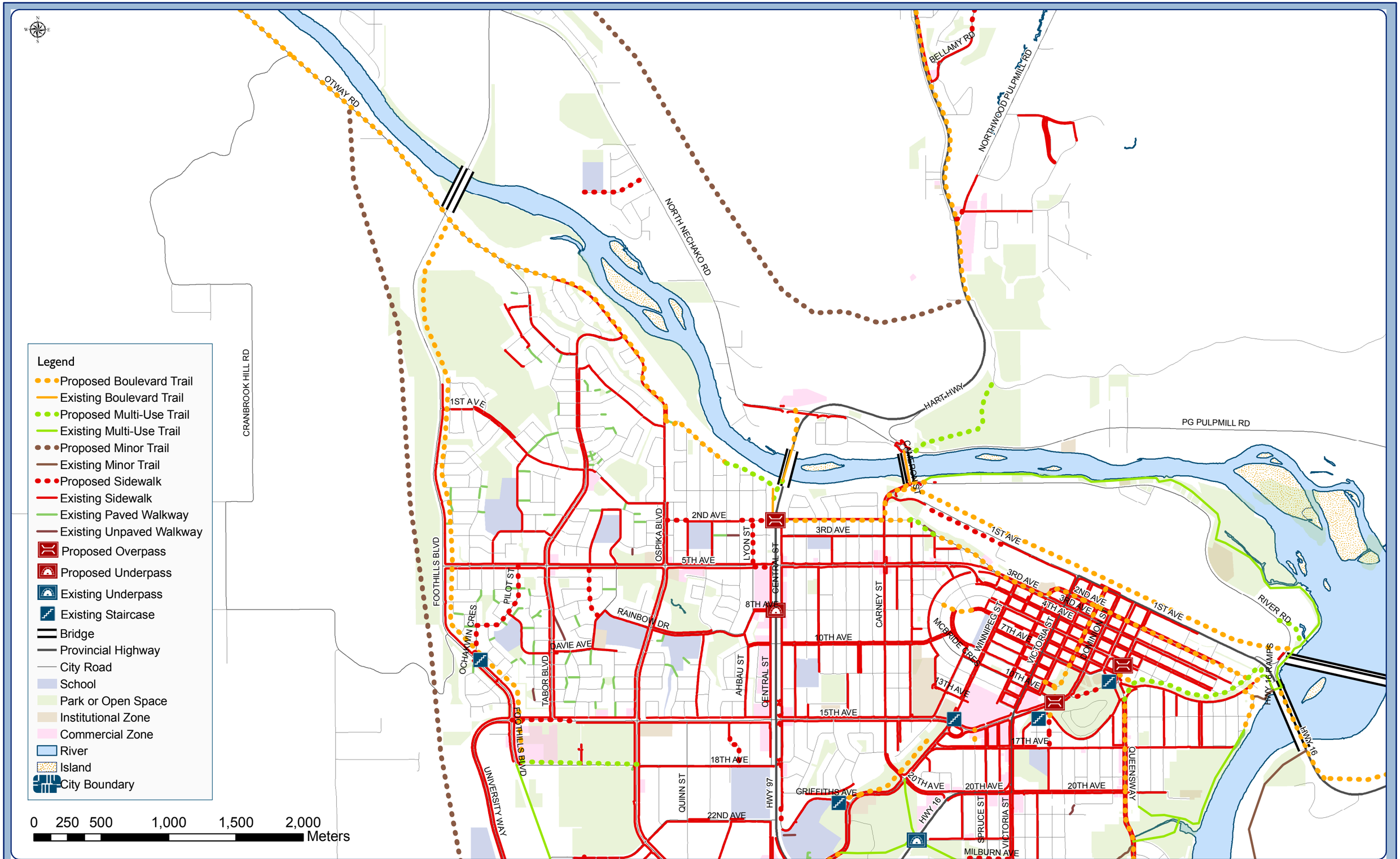
Table 14 - Infrastructure Issues in the North Bowl – Cranbrook Hill Area

North Bowl – Cranbrook Hill				
Issue	**Network**	**Source**	**Recommendation**	**Priority**
Cyclists have difficulty crossing Hwy 97 at 5th, 10th and 15th Avenues. Pedestrian crossings are not accessible, and more snow clearing on islands is desired.	Bicycle, Pedestrian	Open House Survey (#4), CNP, UCC(13)	*Future widening of 5th and 10th required to create necessary cycle lanes between highway and Ahbau. Fifteenth Ave can be painted solution. Discuss potential traffic island improvements with MoTI.*	**H**
Heavy pedestrian/cycle crossing demand across Hwy 97 at 8th Avenue, between Spruceland Mall and residential area on east side.	Bicycle, Pedestrian	Open House	*Consider grade-separated crossing to safely connect ped/cycle route across highway. Then would add cycle lanes to 8th, between highway and Ahbau.*	**H**
Need bicycle route between Spruceland and Downtown. Cycle safety concerns around the existing "S" curve on 3rd Avenue.	Bicycle	Open House Survey (#1,10) CNP, SGOG UCC(2)	*Implement cycle route on 3rd Avenue, as envisioned by SGOG.*	**H**
No formal pedestrian link on 3rd Avenue, between Cassiar and Watrous.	Bicycle Pedestrian	Open House, PNS SGOG	*Sidewalk is identified priority in Pedestrian Study.*	**H**
Need green corridor connection between Downtown and river trail system, i.e. around Lower Patricia.	Bicycle Pedestrian Trail	Open House, CNP UCC(2) SGOG	*Important trail connection to develop. Can consider a canal system.*	**H**
Lack of ped/cycle facilities on Lower Patricia (behind City Hall), between Dominion and Queensway.	Bicycle	Open House CNP, PNS	*Existing four traffic lanes can be converted to two lanes, with bike lanes and a Two-Way Left Turn Lane. Sidewalk should be continuous on the north side.*	**H**
Bicycle connection is lacking between Foothills and Downtown on 15th Avenue. Frontage Road should be safer for cyclists.	Bicycle	Open House Survey (#1,9) CNP, UCC(5)	*Ample width to install cycle lanes with removal of on-street parking. Where parking is unavoidable, parking bays may be considered. Traffic volumes are low on frontage road, but a formal laned route for cyclists is preferred. Also facilitate connection to future river trail.*	**H**

North Bowl – Cranbrook Hill				
Issue	**Network**	**Source**	**Recommendation**	**Priority**
On-street parking and the road narrowing at Alward are impediments to cyclists on 10th Avenue.	Bicycle	Open House UCC(1)	Remove on-street parking on north side of 10th Avenue, and create shared bicycle/parking lane on the south side (incorporating width from sidewalk bulb at Alward).	**H**
Difficult and confusing to find designated cycle routing around 5th Avenue, especially with E Central traffic congestion at drive-thru.	Bicycle	UCC(9)	*Clear, unimpeded bike lanes with signing necessary to direct cyclists to parallel routes. If on-street traffic congestion remains a problem on East Central, can install "No Stopping" zone along designated bike lane.*	**H**
No public sidewalk on south side of Fifth Avenue, between Ahbau and Highway 97. Heavy traffic volumes and recent history of severe pedestrian collision.	Bicycle,	ATP	*Install sidewalk. Will require property acquisition.*	**H**
8th Avenue appreciated by cyclists, but lacks designated laning, and should extend further across Hwy 97 and into Downtown.	Bicycle	UCC(3) SGOG	*Paint bicycle lanes, and improve continuity pursuant to concepts from SGOG.*	**H**
Improve crossing of Carney Street at 8th Avenue for pedestrians and cyclists.	Bicycle, Pedestrian	Open House UCC(1)	*Investigate crossing to determine what is required.*	**H**
Winnipeg Street too narrow for cyclists.	Bicycle	Open House, CNP	*Consider reducing Winnipeg to two-lanes with two-way left turn lane, and bike lanes after new Duchess Park High School traffic volumes are evaluated.*	**H**
Need to complete trail connection around riverfront, between Queensway and Otway.	Trail	CTP	*Major recreational route, with many property and railway impediments.*	**H**
No cycling facilities on 1st Avenue, between Ospika to Foothills.	Bicycle	CNP	*Install bike lanes with shared parking on the south side (abutting sidewalk).*	**H**
Missing wheelchair ramps on east side of Ospika Blvd, north of 1st Avenue.	Pedestrian	Open House PNS	*Install ramps to improve accessibility. Some hydro poles may conflict.*	**H**
Need sidewalk on the south side of 15th Avenue, between Foothills and Ospika.	Pedestrian	Survey #9 PNS	*Install sidewalk. High priority in Pedestrian Study*	**H**
Trails and bridges damaged by flooding in Cottonwood Island Park.	Trail	Open House Survey (#7) UCC(15)	*Rebuild trails and bridges in popular recreational park..*	**H**

North Bowl – Cranbrook Hill				
Issue	**Network**	**Source**	**Recommendation**	**Priority**
Heritage River Trail is appreciated by cyclists, and should be extended and made continuous around Bowl. The CN right-of-way is not an option.	Bicycle Trail	UCC(10) CTP	*Keep Heritage River Trail as a priority link in the trail plans. Construct boulevard trail along street system, between Cameron Bridge and Foothills Blvd.*	**H**
No pedestrian or cycle connection across Queensway, near 6th/Lower Patricia	Bicycle Pedestrian	SGOG ATP	*Not suitable location for at-grade crosswalk. Consider grade-separated crossing.*	**M**
No pedestrian connection to Spruceland Mall from north of 5th Ave.	Pedestrian	PNS	*Construct sidewalk on Lyon, between 2nd and 5th Avenues.*	**M**
No pedestrian or cycle connection across Patricia, between Connaught Hill and Library.	Bicycle Pedestrian	SGOG ATP	*Safety concerns with at-grade crossing. Consider overpass to connect directly to Connaught Hill (instead of stairway).*	**M**
Reroute #1/11 bus route to Winnipeg Street to serve Duchess Park	Transit	SD57	*Consider routing*	**M**
"V" gate at Radcliffe Drive and Ospika is an impediment to cyclists, scooters, and baby strollers.	Bicycle	Open House	*Investigate why gate was installed; remove if possible.*	**M**
No cycle links on Ahbau, especially between 5th and 8th Avenues.	Bicycle	Open House	*Install bicycle lanes with shared parking between 5th and Rainbow. Create shared traffic lanes south of Rainbow.*	**M**
Summer parking conflicts in paved shoulder on Foothills, near Nechako River Bridge.	Bicycle	ATP	*Construct off-street parking/ park facility for river users.*	**M**
Lack of accessible pedestrian connection between Vancouver Street and Parkwood Mall.	Pedestrian	Open House ATP	*Raise Vancouver Street sidewalk to meet pedestrian network in Parkwood Mall.*	**M**
Cycle demand across Hwy 97, around 2nd Avenue.	Bicycle	Open House CNP, UCC(2)	*Consider overpass as long term solution..*	**M**
Lack of width on Cranbrook Hill Road for cyclists.	Bicycle	Open House ATP	*Formalize shared laning from Foothills to Otway with signing and paint marking.*	**M**
Rough trails on Connaught Hill.	Trail	Open House	*Consider paving trails.*	**L**
Concern with cycle safety on 3rd Avenue Downtown, with angle parking.	Bicycle	UCC(1)	*Parking conflicts are unavoidable unless angle parking is removed.*	**L**
Request for a bicycle lane on 4th Avenue	Bicycle	Open House	*Will be considered with revitalization project through the Downtown.*	**L**
Request for a sidewalk on east side of Alward.	Pedestrian	Open House	*Sidewalk already exists on west side of Alward.*	**L**

North Bowl – Cranbrook Hill				
Issue	**Network**	**Source**	**Recommendation**	**Priority**
Request for a sidewalk on Winnipeg, north of 15th Avenue underpass.	Pedestrian	Open House	*Sidewalk terminates at a stairwell that accesses Parkwood Mall. A better and accessible connection is desirable, but is constrained by adjacent development.*	**L**
Desire for more sidewalks in Crescents area to improve neighbourhood for walking around Simon Fraser Seniors Home.	Pedestrian	Open House	*The Crescents are local streets, outside the identified priorities of the Pedestrian Study. Collectors in neighbourhoods can be considered for sidewalk improvements.*	**L**
Drainage problems on trails in Fort George Park.	Trail	Open House	*Will be considered when trails are rehabilitated.*	**L**
Request to extend #55/5 bus route to downtown near 2nd/Queensway.	Transit	Open House	*Consider routing.*	**L**
No formal Transit exchange at 7th and Dominion.	Transit	Open House	*Transit exchange supported by downtown land use, although existing timing points are working now.*	**L**
Otway Road is a popular route for recreation, but is too narrow, and has high speed traffic and heavy trucks.	Pedestrian Bicycle	UCC(2)	*A parallel trail could be developed in the future, but would be very costly. Improve road sharing signage for now.*	**L**
No bicycle lane on Victoria Street.	Bicycle	UCC(1) SGOG	*Four traffic lanes required for volumes, and right-of-way constrained through downtown. Bike lanes could be installed, but would require removal of on-street parking.*	**L**
Request for sidewalks on Freeman, between 1st and 15th Avenues.	Pedestrian	Open House	*Local street, outside the identified priorities. Can be constructed as LAS project.*	**L**
Lack of sidewalk continuity between Kerry and 5th Avenue.	Pedestrian	PNS	*Evaluate pedestrian volumes, and construct sidewalk on either Lacoma or Kerry.*	**L**
Lack of sidewalk continuity on 2nd Avenue.	Pedestrian	PNS	*After proposed overpass at Hwy 97/2nd Avenue is built, complete pedestrian connection to Ospika via 2nd Avenue.*	**L**
Missing link in sidewalk on 1st Avenue	Pedestrian	PNS	*Complete sidewalk on south side of 1st Ave, between Carney and Fort.*	**L**



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Map 6a: North Bowl/Cranbrook Hill Proposed Pedestrian Network

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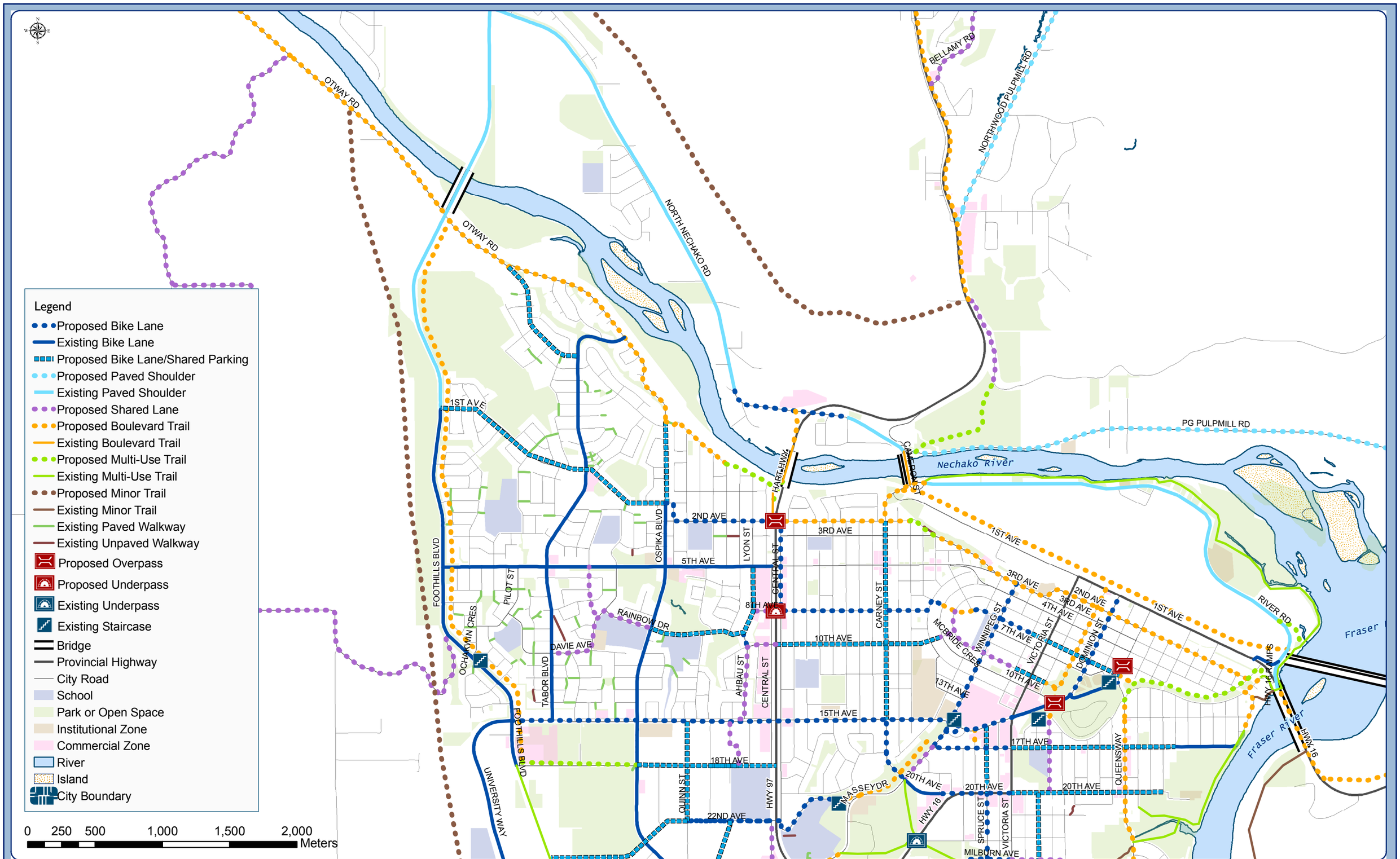

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Map 6b: North Bowl/Cranbrook Hill Proposed Cycle Network

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6.3 South Bowl – UNBC

Table 15 - Infrastructure Issues in the South Bowl - UNBC Area

South Bowl – UNBC				
Issue	**Network**	**Source**	**Recommendation**	**Priority**
Improve Massey for cyclists between Westwood and 20th Avenue and H16 Underpass.	Bicycle	Open House, CNP, CTP	*Good choice for a bicycle route, but road width is constrained. Construct boulevard trail, with off-street connection through Carrie Jane Grey Park.*	**H**
Improve access to Pine Centre Mall from Massey for cyclists and pedestrians.	Bicycle, Pedestrian	Open House	*Evaluate crosswalk at Massey access to Pine Centre, and upgrade as required. Also, rehabilitate stairway to PGSS, or convert to accessible ramp.*	**H**
Narrow bike lanes on University Way/Tyner.	Bicycle	UCC(2)	*High speeds and steep grades on this main route to UNBC. Improve width by reallocating width, and widening as necessary. Remove "Share the Road" signing, and replace with bicycle route signing.*	**H**
Frequent on-street parking on Ospika around Exhibition Park conflicts with cycle traffic, and causes safety concerns.	Bicycle	UCC ATP	*Remove parking in cycle lanes, pursuant to cycle lane standards for arterial lanes. Ample parking is available in Park.*	**H**
Missing sidewalk link on Pinewood, between Ospika and Vanier.	Pedestrian	PNS	*Install sidewalk; high priority in Pedestrian Study. Sidewalk can continue west across Ospika as a lower priority (see Figure 61).*	**H**
Missing sidewalk link on Range, between Ospika and Westwood.	Pedestrian	PNS	*Install sidewalk; high priority in Pedestrian Study*	**H**
Missing sidewalk link on east side of Highway 97 Bypass, between Griffiths and 20th Avenue.	Pedestrian	Open House, PNS	*Install sidewalk*	**H**
Need sidewalk or off-street trail on Tyner Blvd.	Bicycle, Pedestrian	Open House Survey (#5) CNP PNS	*Important cycle route, and high priority in Pedestrian Study. Trail under construction. Sidewalks and improved bike lanes will be constructed with urbanization of University Heights Neighbourhood.*	**H**
Sub-standard cycle lane widths on Ospika, south of Ferry.	Bicycle	ATP	*Reallocate lane width to create standard cycle lane widths.*	**H**

South Bowl – UNBC				
Issue	**Network**	**Source**	**Recommendation**	**Priority**
Corner islands on Hwy 97 at 22nd and 18th Avenue are challenging for wheelchairs.	Pedestrian	Open House	*Discuss with MoTI the need for smooth wheelchair ramps.*	**H**
Safety concerns at 20th Avenue pedestrian crossing at Victoria Street.	Pedestrian	Open House	*Discuss with MoTI. This is near the new seniors home.*	**H**
Significant transit delays at Lansdowne as buses wait to turn left onto Ferry.	Transit	System Operators	*Install remote control on buses to activate pedestrian signal.*	**H**
No facilities for cycle or pedestrians on Lansdowne.	Bicycle Pedestrian	ATP	*Will require curb/gutter/ storm for sidewalks. Install Shared Laning signing.*	**H**
Unpaved multi-use trail from Webber to UNBC.	Trail	TMP CTP	*Paving scheduled in 2010.*	**H**
Lack of cycle connection between highways and downtown via Ferry/Queensway.	Bicycle Trail	ATP	*Construct boulevard trail from Ferry Avenue to proposed overpass at Queensway/Patricia.*	**M**
Twentieth Avenue has no facility for cycling west of Victoria Street.	Bicycle	ATP	*MoTI jurisdiction. Consider removing parking and constructing bicycle lanes.*	**M**
Ferry narrow for cyclists, and missing sidewalk on south side, between Ospika and Westwood.	Bicycle Trail	ATP	*Short term, complete sidewalk links, and install Shared Cycle Laning. Long term, underground Hydro and install boulevard trail on south side.*	**M**
Reroute #46 bus route to CNC on weekdays	Transit	CNC Students	*Consider routing*	**M**
No sidewalk or bike lanes on Milburn, (Upland to Victoria) and Spruce (Milburn to Strathcona).	Bicycle Pedestrian	CNP PNS	*High priority location, but requires road widening, curb/gutter and storm system first.*	**M**
Safety concerns on Upland Street sidewalk at Hwy 97 Underpass.	Pedestrian	Open House	*Important pedestrian route constrained at underpass. Evaluate widening options.*	**M**
Rough surface on Heritage River Trail, between Carrie Jane Grey Park and Fort George Park.	Trail	CTP	*Upgrade major recreational trail to paved Multi-Use standard.*	**M**
Poor accessibility at bus stop on 18th Avenue at Aquatic Centre.	Pedestrian Transit	Open House	*May need temporary concrete pad until Exhibition Park is rebuilt.*	**M**
Concerns with traffic speeds on University Way, and the safety of pedestrians and cyclists.	Bicycle, Pedestrian	Open House	*Discuss increased enforcement with RCMP.*	**M**
Lack of pedestrian/cycle connectivity on 18th Avenue.	Bicycle, Pedestrian	CNP PNS	*Develop network with Exhibition Park Master Plan.*	**M**
Steep pedestrian link on Norwood, between 20th Ave and Porter.	Pedestrian	ATP	*Well-used connection. Consider stairway at either Norwood or Oak.*	**L**

South Bowl – UNBC				
Issue	**Network**	**Source**	**Recommendation**	**Priority**
Missing sidewalk link on north side of 22nd Avenue at CNC.	Pedestrian	Open House	*Pedestrian connections exist to CNC, and on the south side of 22nd. A link on the north side would be beneficial.*	**L**
No sidewalk on Olds, on the route to Pinewood School.	Pedestrian	ATP	*Install sidewalk.*	**L**
Safety concerns for pedestrian crossings at Hwy 16/Hwy 97 intersection.	Pedestrian	Open House	*Relatively low volumes of pedestrians. Discuss with MoTI.*	**L**
Missing sidewalk link on Hopkins, between seniors housing and Ospika.	Pedestrian	ATP	*Construct sidewalk on north side.*	**L**
No sidewalk on north side of 17th, between Pine and Juniper.	Pedestrian	Open House	*17th Avenue sidewalk is installed on south side, adjacent to the school.*	**n/a**

Figure 61 – Pinewood Sidewalk

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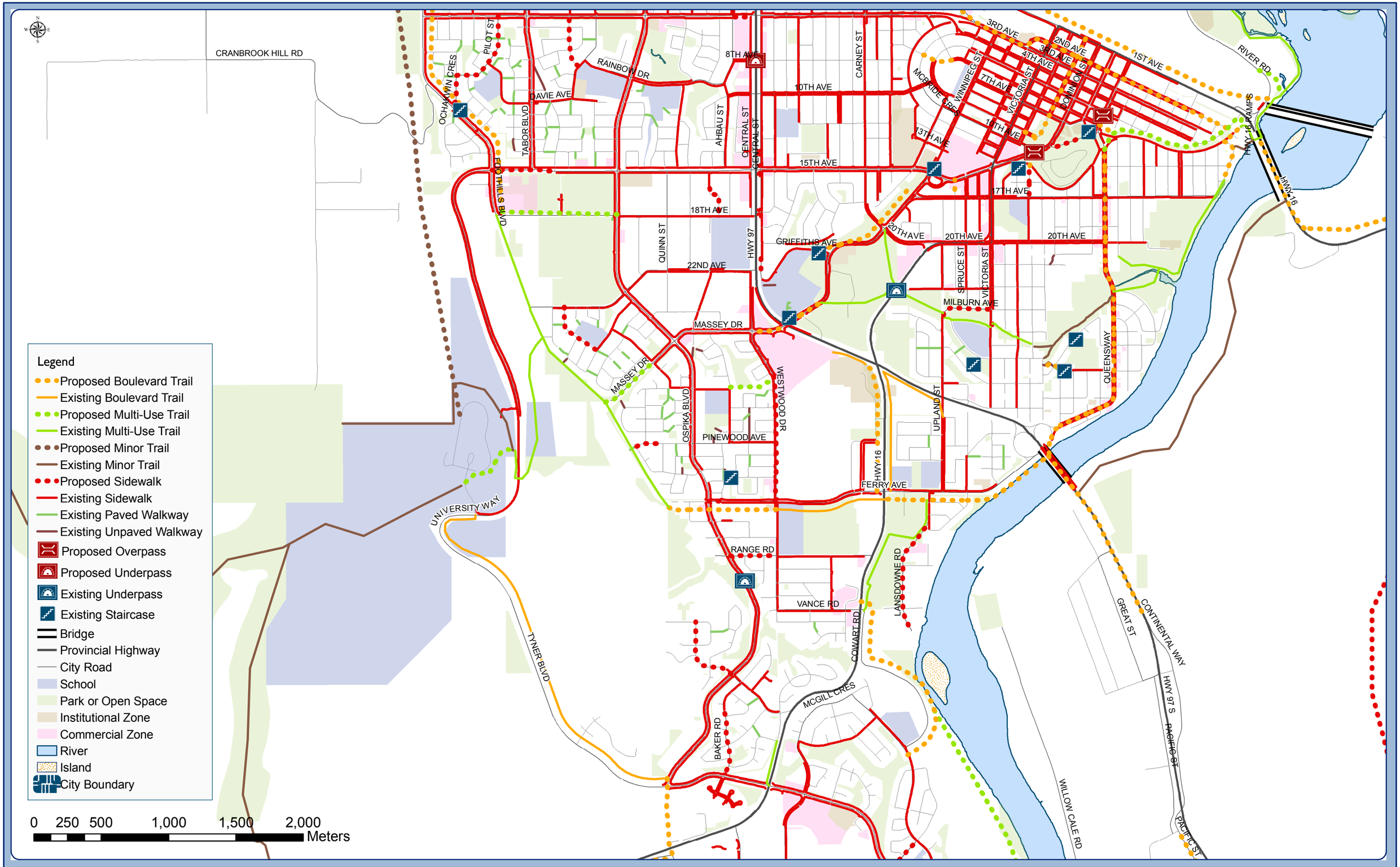

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Map 7a: South Bowl/UNBC Proposed Pedestrian Network

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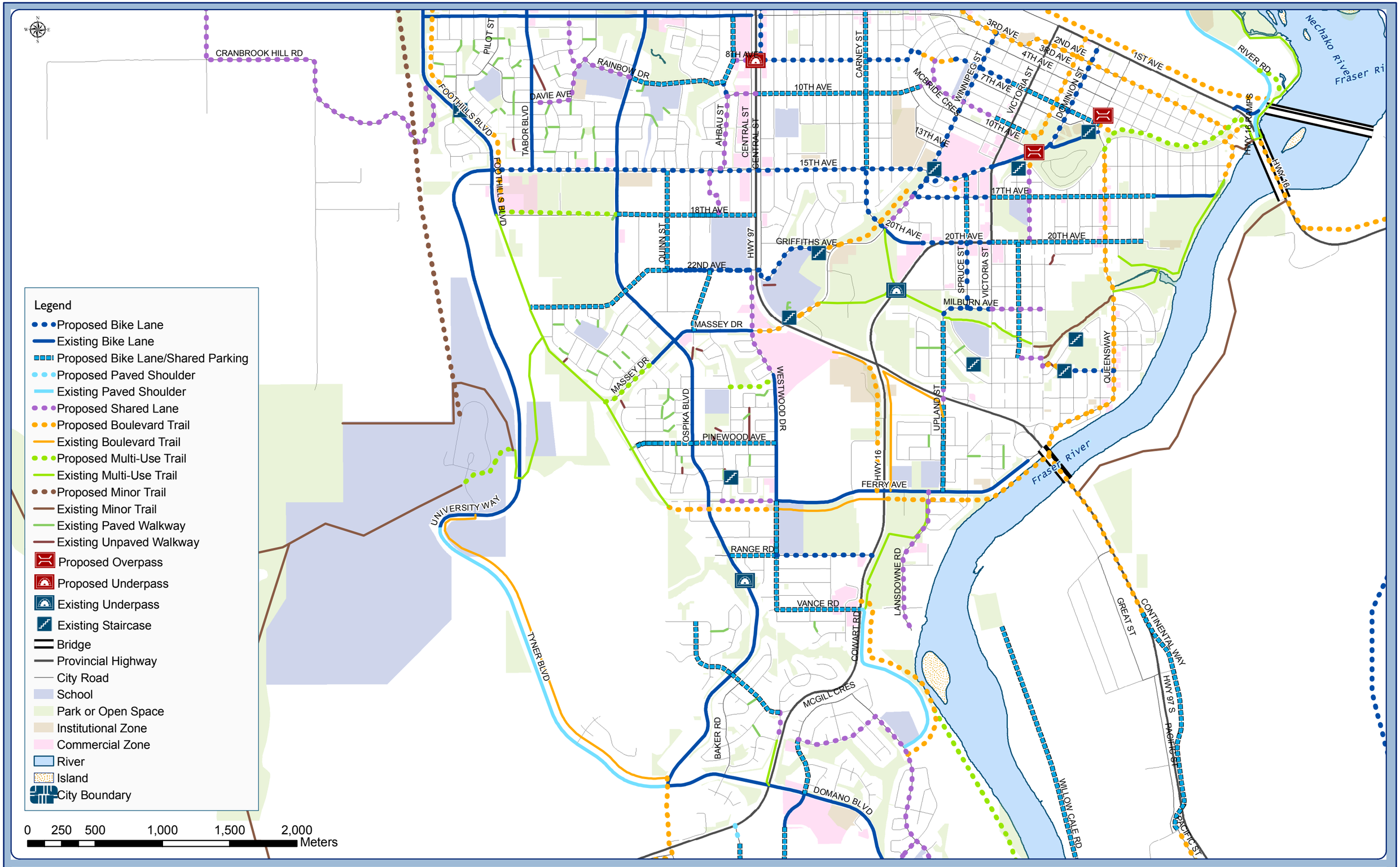

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Map 7b: South Bowl/UNBC Proposed Cycle Network

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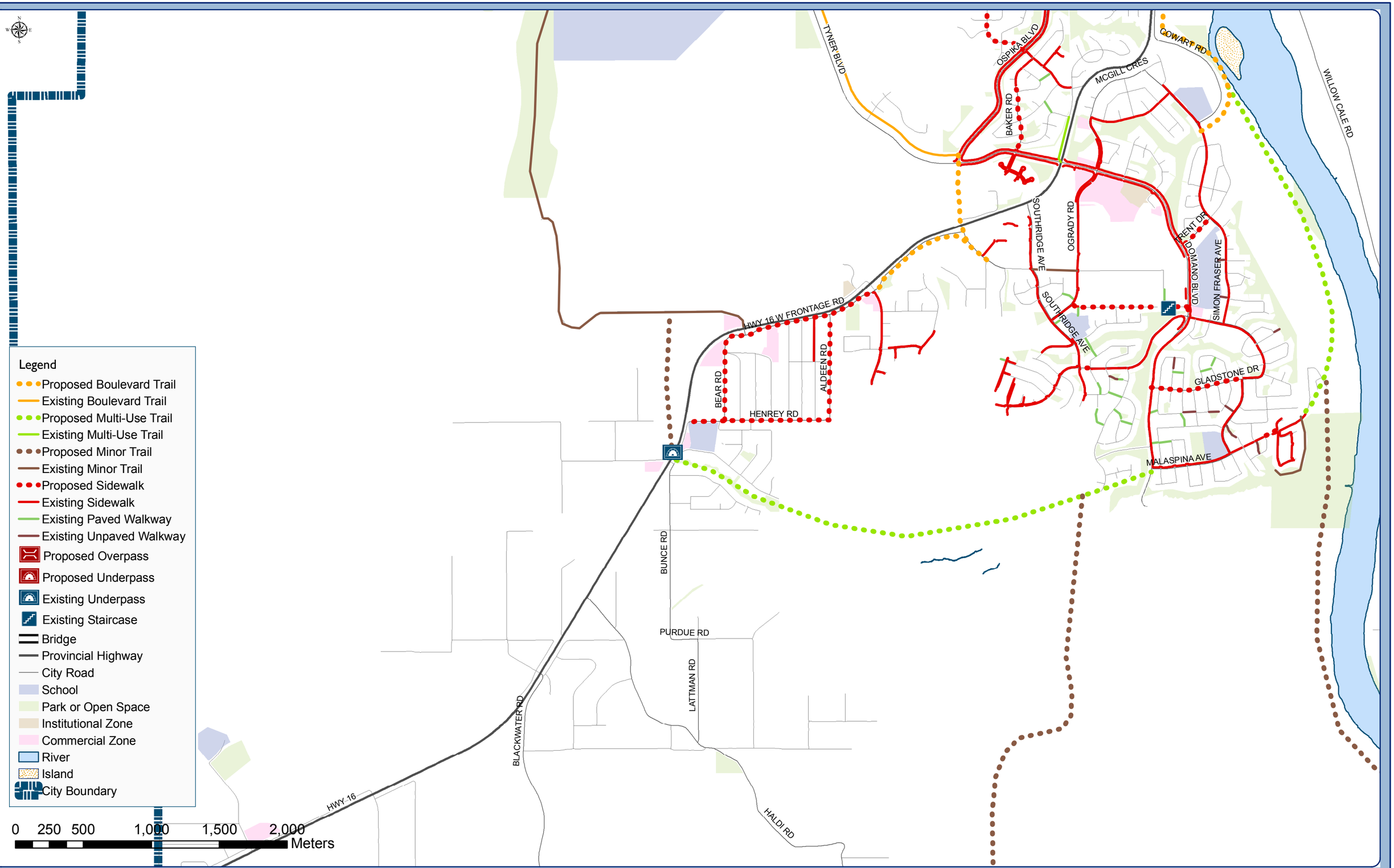
6.4 College Heights – West

Table 16 - Infrastructure Issues in the College Heights - West Area

College Heights - West				
Issue	**Network**	**Source**	**Recommendation**	**Priority**
No sidewalk on O'Grady, between Bernard and Southridge.	Pedestrian	Open House PNS	*High priority in Pedestrian Study. Install sidewalk.*	**H**
No connection for pedestrians or cyclists on Hwy 16 frontage road, between Marleau and Westgate.	Bicycle Pedestrian Trail	CNP PNS	*Frontage road is narrow, causing conflicts between cyclists, pedestrians and vehicles. Construct boulevard trail.*	**H**
No bike lanes on St Lawrence Road.	Bicycle	CNP	*Install bike lanes.*	**H**
Missing sidewalk link on St Lawrence, east of Southridge.	Pedestrian	ATP	*Install sidewalk.*	**H**
No sidewalk on Gladstone from Domano to Loyola.	Pedestrian	Open House Survey (#3) PNS	*Identified improvement in Pedestrian Study. Install sidewalk (see Figure 62).*	**H**
Pedestrian demand on Trent, but no sidewalk.	Pedestrian	PNS Open House	*Identified as medium priority in Pedestrian Study. Install sidewalk*	**M**
No sidewalk on Malaspina, east of Loyola.	Pedestrian	Open House	*New developing area will increase pedestrian volumes in area. Install sidewalk.*	**M**
No sidewalk on Cowart Road from Simon Fraser to Hwy 16	Pedestrian	Open House PNS	*Sidewalk identified as a priority connection in Pedestrian Study. But will require curb/gutter/storm.*	**M**
Pedestrian demand on Bernard, between Domano and O'Grady. Also a school route.	Pedestrian	ATP	*Install sidewalk.*	**L**
Need a bike/trail route out to West Lake along the Highway	Bicycle	Open House UCC(2)	*Identified in the regional trails plan. Good connection, but existing demand is relatively low.*	**L**
No sidewalks on Baker Road.	Pedestrian	Open House, PNS	*Identified lower priority in Pedestrian Study. Install sidewalk.*	**L**
Highway 16 Peden Hill is too narrow for cyclists and pedestrians.	Bicycle Pedestrian	Open House Survey (#2) CNP, UCC(5)	*Important connection, but severe topography makes construction of a boulevard trail cost-prohibitive. Parallel routes should be used (e.g. Cowart, Ospika).*	**n/a**
No sidewalk on Marleau, which is a route to school.	Pedestrian	ATP	*Sidewalks would require curb/gutter/storm. Marleau will be realigned in the future, with the Ospika South Extension. Install Shared Laning signing.*	**n/a**
No sidewalk adjacent to Southridge School.	Pedestrian	Open House	*Sidewalk exists on non-school side of Southridge.*	**n/a**
No sidewalks on Wheeler Road.	Pedestrian	Open House	*Local Road; not identified priority in Pedestrian Study.*	**n/a**

Figure 62 – Gladstone Sidewalk



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Map 8a: College Heights/West Proposed Pedestrian Network

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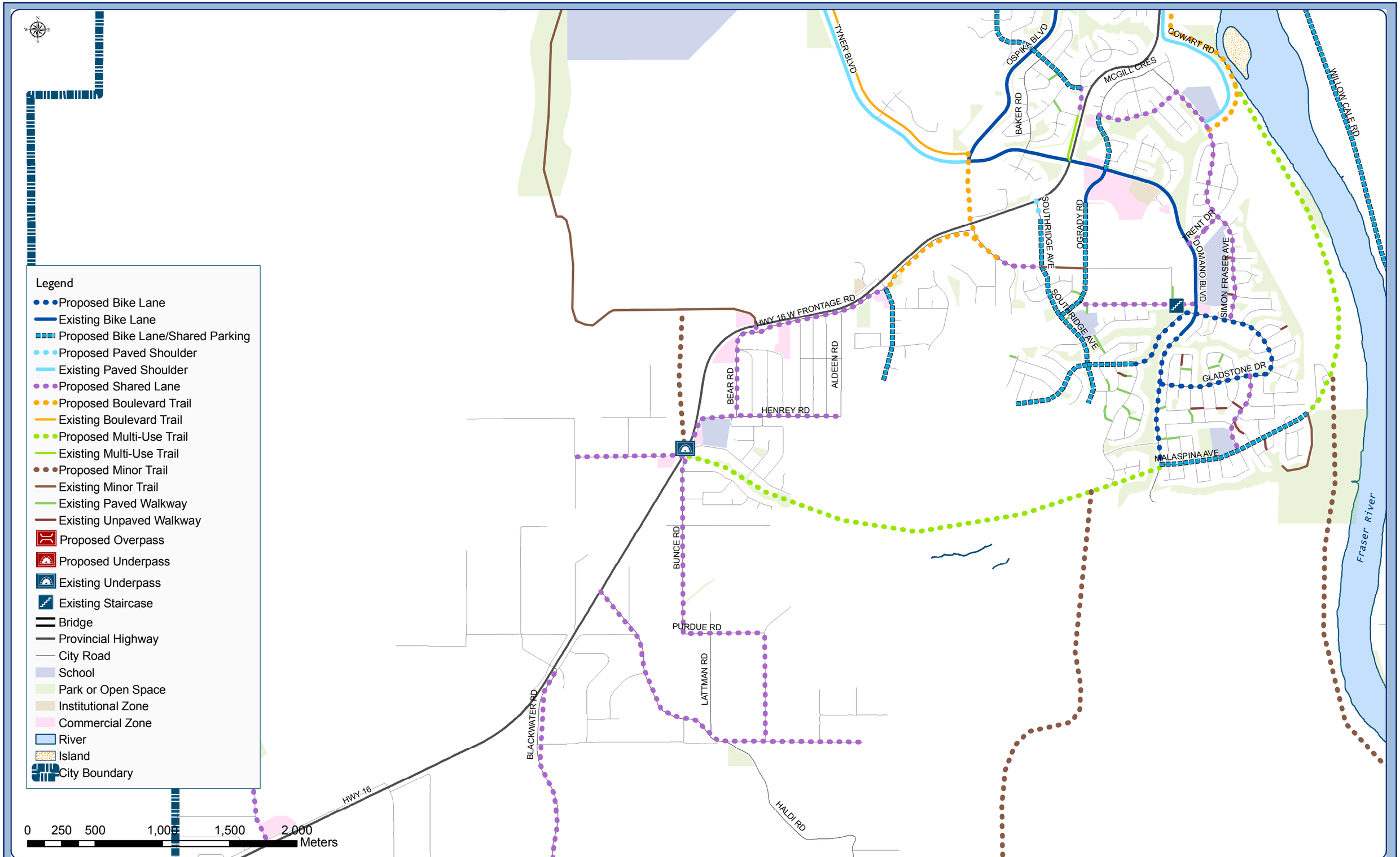

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Map 8b: College Heights/West Proposed Cycle Network

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6.5 Blackburn

Table 17 - Infrastructure Issues in the Blackburn Area

BCR - Blackburn				
Issue	**Network**	**Source**	**Comments**	**Priority**
No bike network to airport.	Bicycle	UCC(1)	*The proposed Boundary Road will improve cycling around the airport. Other facilities needed on perimeter roads.*	**M**
Need connection from Blackburn to the Downtown via trail	Bicycle Trail	CTP	*Trail system will be considered with development of Airport Logistics Park.*	**L**

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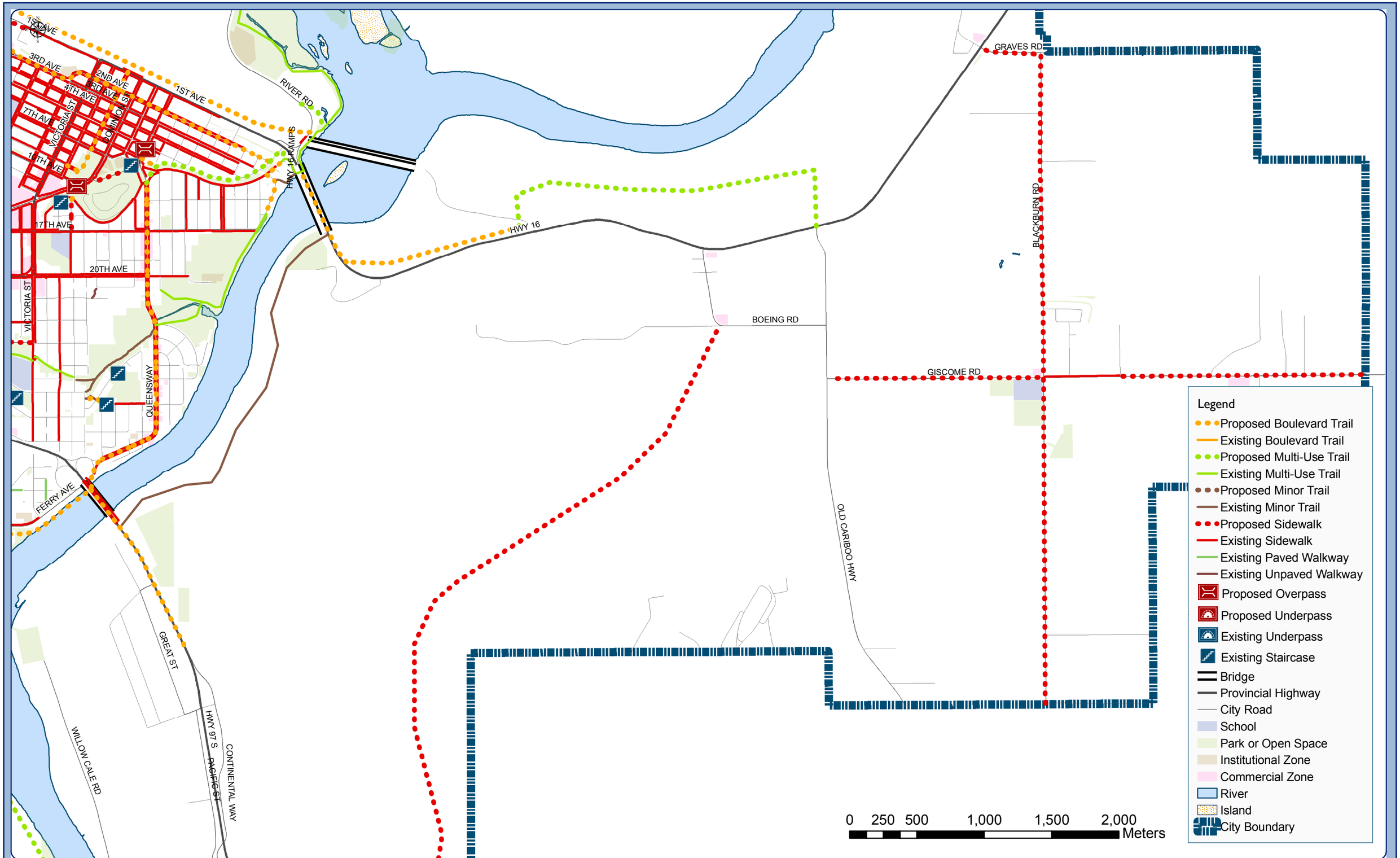

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Map 9a: Blackburn Proposed Pedestrian Network

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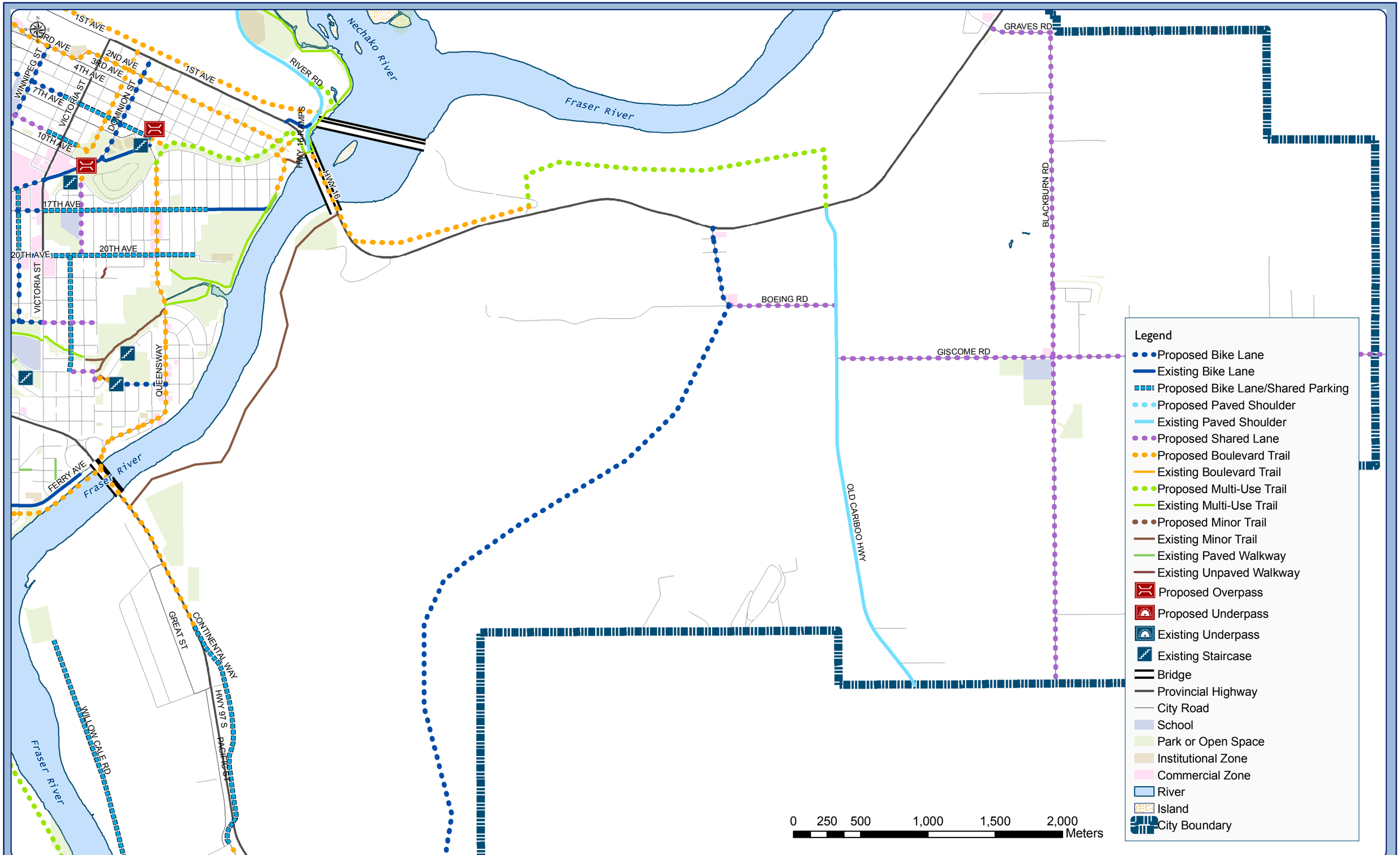

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Map 9b: Blackburn Proposed Cycle Network

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7.0 POLICIES AND PROGRAMS

Photo courtesy of the Prince George Citizen

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7.1 Priority Definition

In consideration of the health, economic, social, and environmental benefits of Active Transportation, many large communities have identified cycling and walking modes as priorities in their transportation systems. Prince George currently does not have such a policy. This was raised as a concern, as shown in Table 18 below.

Issue	Network	Source	Comments	Priority
The priority of pedestrians and cyclists in the transportation system is unclear.	Pedestrian Bicycle	Draft PNP UCC(2) myPG	*Walking and cycling are important and beneficial transportation modes, and should be identified as a priority through City policy.*	**H**

Table 18 - Active Transportation as a Priority

To set the priority of cyclists and pedestrians in the network, the following policy statement could be incorporated into the Official Community Plan and Sustainability Plan:

"*The mobility and safety needs of cyclists and pedestrians of all abilities are important considerations in the City's policies, budget, planning, engineering, maintenance, and development decisions***."**

7.2 Land-Use Planning Policies

Land-use directly influences people's transportation choices. As new development and redevelopment becomes oriented toward active transportation, more people are likely to walk, cycle, and use transit. Some identified issues are shown in Table 19.

Issue	Network	Source	Comments	Priority
Some people don't cycle to work or shopping due to the lack of secure bicycle parking and showers.	Bicycle	UCC(4)	*Large employers and commercial developments should provide suitable end-of-trip facilities for cyclists.*	**H**
Some areas of the community have more potential walking destinations than others.	Pedestrian	UNBC presentation myPG	*By applying a community walkability calculation, the potential for walking trips in a neighbourhood as a function of land use can be gauged (see Figure 63).*	**M**

Table 19 - Planning Policy Issues

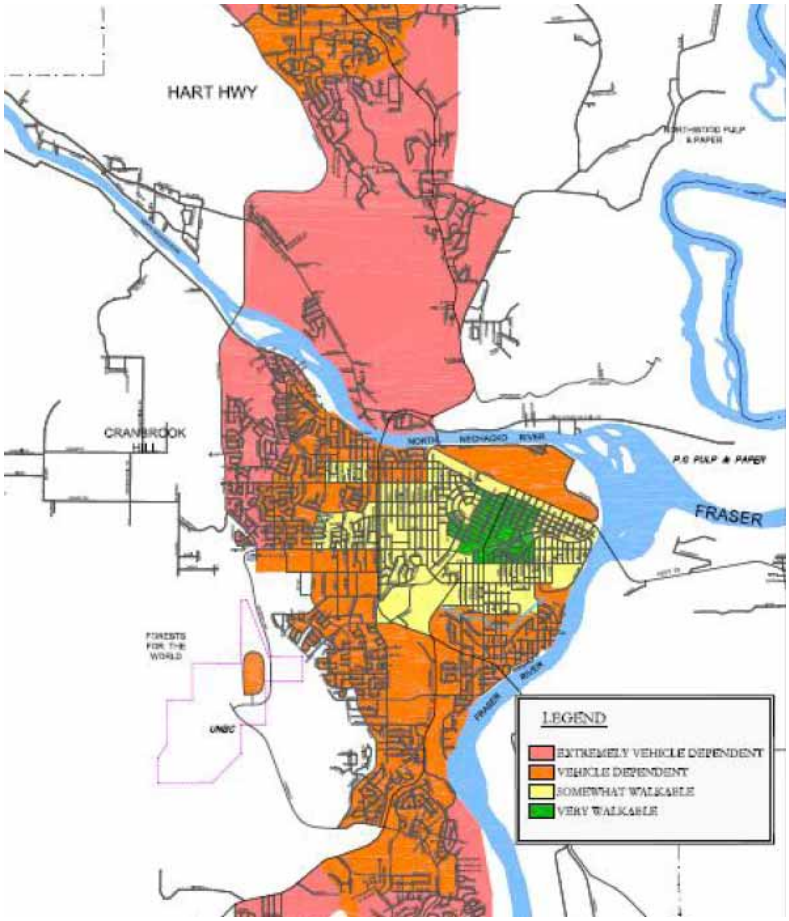

Figure 63 - Walkability in Prince George
Source: UNBC Student Presentation (2009)

A number of land-use statements and policies that encourage Active Transportation are listed below:

1. Urban densification and mixed land use facilitates Active Transportation by (a) increasing the number of potential trip destinations per square kilometre; (b) reducing the travel distance for trips; and (c) allowing for more concentrated public investment in the Active Transportation network.

2. A "Walkability" index may be used to plan city neighbourhoods, and evaluate the extent to which they foster a demand for walking trips. The index developed by UNBC is based on density of potential walking destinations, such as schools, retail commercial, parks, etc. Another index used in Vancouver is based on (a) net residential density; (b) street connectivity; and (c) land use mix.

3. Every building to which the public is invited should have a safe, accessible and convenient connection to the public pedestrian network (see Figure 64). Buildings entrances should also have a safe buffer for pedestrians, physically separated from the areas designated for vehicles. Further guidelines are available in "Promoting Sustainable Transportation Through Site Design" (ITE, 2004).

Figure 64 – Pedestrian Pathway to Mall

4. Similar to the City's Transit Policy, 85% of the City's population should live within 400 metres of the designated cycle network.

5. Convenient and secure bicycle parking should be available for all public and private development in the City. This is calculated under the Zoning Bylaw as a percentage of the parking stalls provided. Bicycle parking facilities are divided into long term parking facilities (lockers, compounds, etc) and short term parking facilities (bike racks).

6. Large employers should provide showers and other end-of-trip amenities to facilitate employees cycling to work.

7.3 Transportation Demand Management

Transportation Demand Management (TDM) is a set of practices that seek to reduce or redirect vehicular traffic demand by creating disincentives to driving, and by providing incentives for alternative transportation choices. A number of standard TDM initiatives, (e.g. toll bridges/roads, high-occupancy vehicle lanes, local gas taxes, etc) are not feasible in Prince George due to its size and situation. However, TDM can be accomplished by implementing simple measures that discourage vehicle use, and increasing the convenience, comfort and affordability of the Active Transportation System. Some ideas are listed in Table 20, with suggested measures following.

Issue	Network	Source	Comments	Priority
Reinstate parking fees downtown to encourage alternative forms of transportation.	Bicycle Pedestrian Transit	Open House Transit Study	*The parking meters were removed to enable a study of the merits of pay parking, and identify suitable payment infrastructure.*	**M**
Consider allowing skaters to ride the bus during inclement weather.	Transit	Open House	*Will be considered.*	**L**
Consider allowing bicyclists, pedestrians, skaters, etc ride the bus in an emergency.	Transit	Open House	*Will be considered.*	**L**
Include late night bus service.	Transit	Open House Transit Study	*Service provided on weekends. Will monitor demand on weekdays.*	**L**
Long distances and steep grades are an impediment to cycle commuting.	Bicycle Transit	UCC(1), myPG Transit Study	*Bike racks on buses already provided.*	**n/a**

Table 20 - Transportation Demand Management Issues

1. Pay parking should be considered for re-instatement Downtown. This would help shift trips to active transportation modes by increasing the cost of driving, as has occurred at CNC and UNBC. Although there would be a cost to re-instate pay parking, the costs could eventually be recovered in revenue.

2. Transit routes should be kept as direct and frequent as possible to be competitive with the automobile. Transit fares should remain as low as possible, with attractive cost incentives for passes and multiple trip purchases.

3. Corporate transit programs, such as “Pro-Pass” and “U-Pass” should be actively encouraged to build dedicated ridership in exchange for reduced cost of passes.

4. Free transit rides should remain available to anyone in an emergency.

5. The active transportation network must be a safe, comprehensive, and well-maintained system that connects to known destinations.

6. Excess road capacity should be re-allocated to active transportation modes (i.e. “lane diets”). This includes the removal of parking and traffic lanes (where volumes permit) on arterial and collector roads to provide space for cycle lanes, bus stops, and/or widened sidewalks.

7.4 Education

Active Transportation is generally not well-understood. The 2005 "Go For Green" National Active Transportation Survey indicated that many adults consider Active Transportation to be reserved for those who are eccentric and/or fitness-conscious. In addition, many youth have low opinions of public transit, and rarely walk or cycle to school due to concerns about traffic safety and personal security. Although survey respondents generally understood the benefits of Active Transportation, many had difficulty envisioning choosing Active Transportation over the personal motor vehicle.

There are two education objectives in Active Transportation: (a) to improve attitudes, understanding and awareness; and (b) to teach people how to use and interact with the Active Transportation modes in order to improve safety and reduce frustration. The need for community education in Active Transportation was supported by some of the identified issues, as shown in Table 21.

Issue	Network	Source	Comments	Priority
Increase education initiatives with ICBC to improve safety for cyclists, pedestrians, and motorists.	All	Open House UCC(#3)	*Education initiatives are being considered at the City's Traffic Safety Committee.*	**H**
Inconsiderate and dangerous driving habits can pose a hazard to cyclists.	Bicycle	UCC(27) myPG	*More driver understanding and awareness of cyclists is needed, through the media, workshops, pamphlets, etc.*	**H**
Improper and dangerous cycling habits can frustrate drivers, and pose a hazard to other road users. Children especially may lack the skills for safe cycling.	Bicycle	CNP UCC(12)	*Education and skills training is necessary to ensure cyclists of all ages understand the rules of the road.*	**H**

Table 21 - Education Issues

The education of motorists was consistently stated throughout the public consultation process as one of the key requirements to implementing a successful Active Transportation System. Motorists do not routinely look for cyclists and pedestrians, especially during peak traffic times. There is also a perception by some motorists that Active Transportation users should not be on the road. Conversely, cyclists and pedestrians need to be aware of the rules and etiquette of the road, understanding the responsibility they have for their own personal safety.

Transport Canada (2008) advocates the use of a five-step process for educating and encouraging the community in Active Transportation, as follows:

a. Identify the desired behaviour change
b. Identify the barriers
c. Design the behaviour change program
d. Pilot the program
e. Evaluate and improve the program

This process has been undertaken throughout North American municipalities for community and workplace Active Transportation programs. The process can be used to target individuals, specific user groups, or the general public, and may include such mediums as flyers/brochures, media releases, internet websites, video broadcasts (online and television), informational road signing, classroom intervention, formal courses (for both children and adults), and word-of-mouth.

Some educational topics are listed below:

- **Pedestrians**: walking with traffic; being seen by drivers; crossing the street safely at intersections, crosswalks and signals; safe routes to school.

- **Cyclists**: traffic laws and etiquette; bicycle handling skills; bicycle safety and protection; bicycle maintenance;

- **Trail Users**: trail etiquette; crossing roadways; personal security.

- **Transit Users**: interpreting routes and schedules; safety and security; riding etiquette.

- **Motor Vehicle Drivers:** watching for Active Transportation Users; traffic laws and etiquette.

- **All users**: health and fitness; environmental considerations.

Some resources for developing Active Transportation educational programs include:

- Participate PG committee
- Walking, The Activity of a Lifetime
- International Walk to School Day (www.iwalktoschool.org)
- Pedestrian and Bicycle Information Centre (www.pedbikeinfo.org)
- Bike Sense
- Bicycles at Rest (www.capitalbikeandwalk.org)
- National Centre of Biking and Walking (www.bikewalk.org)
- Velo Quebec (www.velo.qc.ca)

7.5 Marketing and Promotion

In addition to educational initiatives about how to safely use and interact with the Active Transportation Modes, marketing campaigns are needed to raise the profile of Active Transportation. As more people become aware of the choices available, more are likely to choose Active Transportation modes.

Some marketing issues are listed in Table 22, with suggested marketing initiatives following.

Issue	Network	Source	Comments	Priority
Need to promote cycling as a healthy and environmentally-responsible way to commute.	Bicycle	UCC(2) myPG	*The Bike to Work week promotion raises awareness of bicycle commuting.*	**H**
Develop Active Transportation map online and/or hard copy for tourists.	Trail Bicycle	Open House CNP UCC(5)	*Will be developed as network is implemented.*	**H**
Transit guide should include bus stops illustrated on maps	Transit	Open House	*Will consider in future Riders Guides.*	**M**
Employers could offer employees incentives for choosing active transportation modes to work.	All	UCC(4)	*The employer benefits from reduced parking demand and healthier employees.*	**M**
Community agencies and local businesses could offer rewards or discounts to cyclists.	Bicycle	UCC(4)	*Rewards are already available at some retailers and restaurants.*	**M**
Facilitate second-hand bicycle trading (e.g. through swap meets) to provide affordable opportunities for people to acquire bicycles.	Bicycle	UCC(2)	*Cost-effective ways to increase bicycle ownership would increase cycling.*	**L**
Consider free fares during the week, not just during Air Advisory Days	Transit	Open House	*This would require an increase in tax subsidy, but has been done elsewhere.*	**L**

Table 22 - Marketing Issues

1. Adopt a formal logo and/or name for the Active Transportation System. The logo would be incorporated into the signing of both on and off-road pathways to demonstrate consistency and continuity in the system.

2. The Active Transportation System should be promoted with advertisements in the media (i.e. newspaper, radio, television, internet), and on the street (i.e. signing, buses, bus benches/shelters).

3. Pocket maps of the developed Active Transportation System should be published to safely guide users around the City. These could be made available in both hardcopy and downloadable from the City's website. The brochures may also include educational tips for users, as discussed in the previous section.

4. Promotional events for Active Transportation should be hosted or sponsored. These include Bike To Work Week, the Commuter Challenge, Walk/Bike to School Week, Free Fare for School and Daycare Field Trips, etc.

5. Partnerships with local businesses and institutions should be created to generate interest and commitment in Active Transportation. This may include transit passes (e.g. UPass, Pro-Pass), and cost incentives for bicycle users (e.g. discounts at local retailers). These initiatives can also be coordinated with Participate PG.

6. An award system should be created to honour those in the community that make a difference to the Active Transportation System and/or users.

7.6 Enforcement

Effective education and marketing programs can greatly improve the interaction between motor vehicles and Active Transportation Users. However, enforcement is also required to ensure that the rules are followed for the safety of all users.

Laws concerning motor vehicle traffic (e.g. speeding, yielding right-of-way at crosswalks, etc) are generally well-enforced. As shown in Table 23, additional enforcement is necessary for a number of issues.

Issue	Network	Source	Comments	Priority
Cyclists who break traffic laws can frustrate drivers, and can pose a hazard to traffic, pedestrians, other cyclists, and themselves.	Cycle	CNP UCC(5)	*Just like motor vehicle enforcement, cycle traffic enforcement is necessary to improve safety for all.*	**H**
Enforce against motorized vehicle use on trail system, especially at Gladstone trail system	Trail	Open House	*Can use ParkWatch program in concert with RCMP, and can sign and educate the public.*	**H**
Restrict heavy vehicles to the arterial road network, rather than local cycle routes (e.g. 8th Avenue)	All	Open House	*This would require a Truck Route Study for Prince George, and a bylaw adopted by Council.*	**M**
Consider a bylaw to allow cycling on the sidewalks during winter conditions.	Bicycle	Open House	*Bicycle use on sidewalks will need to be evaluated for safety and legality.*	**M**
Unleashed dogs can attack cyclists.	Bicycle	UCC(4)	*Bylaw services can be contacted to enforce against pet owners that allow their dogs to attack cyclists and pedestrians.*	**M**
Mobility-aid scooters should be required to use the road, rather than the sidewalk, due to the danger to pedestrians.	Pedestrian	Open House	*Mobility aids are legally allowed to use the sidewalks, but must be cautious of pedestrians.*	**n/a**

Table 23 - Enforcement Issues

For cyclists, the most common infractions are:

1. Cycling without lights at night;
2. Failing to stop or yield;
3. Failing to indicate the intention to turn or alter course; and
4. Cycling the wrong way.

These infractions also account for the majority of bicycle/car collisions, and should therefore be targeted for safety reasons. Enforcement should also target cyclists without helmets, due to the potential for severe injuries in a collision.

Bicycle enforcement can be provided by a Selective Traffic Enforcement Program (STEP). The STEP program is comprised of two to three weeks of concentrated cycle enforcement, typically in Spring. This is not as costly as continuous enforcement, but effectively conveys the message early in the season that cyclists are expected to obey the traffic laws.

7.7 Maintenance

Once Active Transportation facilities are built, they must be maintained in a safe, useable condition, and swept of dust, debris, and other impediments. The clearing of bicycle lanes was the most frequently raised issue by the public, as shown in Table 24.

Table 24 - Maintenance Issues

Issue	Network	Source	Comments	Priority
Sweep bike routes regularly to remove gravel and debris.	Bicycle	Open House UCC(35) myPG	*For dust control and vehicle safety, traffic lanes are cleared first in Spring. However, bike lane sweeping should be a priority soon afterward, perhaps using a priority hierarchy based on use.*	**H**
Ensure sidewalks are well-maintained.	Pedestrian	Open House PNS	*Important to maintain and rehabilitate sidewalks for the safety of pedestrians.*	**H**
Revisit the amount and promptness of ploughing on sidewalks. Identified problem areas include: ➢ Harper School area ➢ Massey Blvd, near Pine Centre/Hwy 97 Underpass ➢ 6th Avenue, Winnipeg to Edmonton ➢ Ferry/Westwood at sidewalk ramps	Pedestrian	Open House PNS	*Ploughing sidewalks in winter is important for pedestrian safety, comfort and accessibility, especially on high-volume routes.*	**H**
Clear pedestrian walkways in winter.	Pedestrian	Open House PNS	*Walkway clearing was identified as a priority in the Pedestrian Study.*	**H**
Plough bus stops to the same or better standard as private driveways	Transit	Open House	*Winter maintenance of bus stops is important to the success of the service.*	**H**
Traffic control for construction activities is often placed in the middle of the bike lanes or sidewalk.	Pedestrian Bicycle	ATP	*Impediments to the active transportation network may cause safety concerns, especially around construction projects.*	**H**
Potholes in bicycle lanes should be repaired quickly.	Bicycle	UCC(3)	*Potholes in bicycle lanes pose a safety risk to cyclists. The City's pothole reporting and response procedure should be applied to cycle lanes the same as for traffic lanes.*	**M**
Plough bike lanes in winter; do not leave snow piled in bike lane	Bicycle	Open House UCC(10)	*For safety reasons, the first priority for ploughing is traffic lanes. Cycle lanes and shoulders are then cleared as time and resources permit.*	**M**

Issue	Network	Source	Comments	Priority
Trails need more maintenance.	Trail	UCC(3)	*Trails are maintained based on their class, as described in Section 5.0.*	**L**
Keep pedestrian pushbuttons in good repair to avoid encouraging pedestrians to walk against the traffic signal.	Pedestrian	Open House	*Signal operations are routinely inspected. Any malfunctioning apparatus should be reported.*	**n/a**
Make people responsible for clearing snow on sidewalks in front of their house. Will then cost less for the City, and savings can go toward installing more sidewalks.	Pedestrian	Open House PNS	*This was considered by Council, but City sidewalk clearing was determined to be an important service.*	**n/a**

Without adequate maintenance practices, pedestrians and cyclists may encounter hazards in the City pathways that could cause slips, trips, falls, bicycle tire punctures, etc. Some users may then choose to share a clear roadway with vehicular traffic, rather than the designated pathway.

The recommended maintenance policies are as follows:

1. In the spring, summer and fall months, priority should be given to periodic sweeping and debris-removal on arterial and collector roads, and the cycling facilities and sidewalks thereon. These are the roads with the highest safety risks to pedestrians and cyclists. Sweeping efforts will also reduce dust problems on high volume routes.

2. All hard-surfaced pathways not on the arterial or collector road network should be swept once in spring, and again as necessary.

3. Paved bicycle pathways should be kept as smooth as possible. Hazards such as raised utility covers or wheel-catching drainage grates should be rectified. Pavement overlay projects should be safely feathered from the new surface to the existing one, particularly to avoid creating any lips between the new paved surface and the gutter. The City's Pothole Hotline should extend to bicycle pathways. Once identified, potholes, cracking, and drainage problems should be repaired in bicycle pathways as quickly as those in traffic lanes.

4. All trails should continue to be inspected annually for surface hazards and overgrowth. Repairs and pruning should follow as necessary.

5. Sidewalks and walkways may be passively monitored by City Operations staff, with surface defects, vegetation overgrowth, and other hazards rectified as identified. This monitoring may be complemented by public feedback through the online Pedestrian Hazard reporting system.

6. A thorough inspection of the condition of all sidewalks and walkways should be undertaken no less than once every ten years. This should include inspection of associated signing, lighting, and other amenities. These inspections should form the basis of the City's annual rehabilitation strategy.

7. The traffic lanes should continue to be the first priority for snow clearing, due to (a) the safety concerns to all users from traffic in winter conditions, and (b) the relatively lower volumes of cyclists in the winter months. However, once traffic lanes are cleared, on-street bicycle facilities should be ploughed as soon as possible.

8. Sidewalks, walkways and paved trails should routinely have snow ploughing and ice control over the winter months, with priority given to those facilities with (a) bus stops, (b) proximity to major streets, (c) high volumes of pedestrians, and (d) a significant proportion of vulnerable users (e.g. around schools, hospitals, seniors housing).

9. New bicycle and pedestrian facilities should be designed and constructed so as to reduce potential maintenance problems. This may include using materials and construction techniques that increase the longevity of new surfaces; building paved aprons at intersections with gravel roads and accesses to reduce the tracking of debris; and establishing clear maintenance responsibilities in advance of construction.

10. Pavement markings for bicycle lanes and crosswalks should be repainted early in the spring, as the weather allows. Locations of heavy usage and/or extraordinary wear may be candidates for thermoplastic.

11. Traffic control for construction and maintenance activities should not be placed in bike lanes, sidewalks, etc unless these pathways are officially closed. Where pathway closures are necessary, appropriate signing, cones, and barricades must be provided for the safety of users (especially to warn the disabled community). Safe and accessible pathway detours should be made available, especially for projects of long duration. Affected user groups should be notified of all major and/or prolonged closures.

Cost implications of increased maintenance practices will be discussed in Section 8.0 Implementation.

7.8 Data Collection and Monitoring

To chart the City's progress in achieving the goals of active and sustainable transportation, clear priorities and measurable targets should be established. This should be supplemented with a data collection and monitoring program, as recommended below:

1. Canada Census and ISRE survey data should continue to be used to monitor the transportation choices of Prince George commuters. A reasonable 10 year target for commuting by sustainable modes is 15%.

2. All traffic counts conducted in Prince George should include pedestrian and cyclist data to help the City develop an understanding of where, when, and in what amount active transportation traffic is generated.

3. Trail counters should be installed periodically to determine how much trails are being used. This data can be used to plan links, and prioritize improvements.

4. Passenger counting equipment should be installed on city buses to monitor ridership. The ridership data can be used to adjust routes and frequencies, and can help determine what level of amenities should be provided at each bus stop.

5. A feedback forum should be established to provide users with an opportunity to provide input into the continuing development of the Active Transportation System.

7.9 Inter-Agency Coordination

Active transportation involves multiple facilities, users, and jurisdictions. Therefore, there are a number of agencies and stakeholders that may contribute to and/or be affected by the development of the system. These include, but are not limited to:

1. Ministry of Transportation and Infrastructure
2. Regional District of Fraser Fort George
3. School Districts
4. Royal Canadian Mounted Police
5. Insurance Corporation of British Columbia
6. Northern Health
7. Prince George Accessible Advisory Committee
8. Prince George Council of Seniors
9. Prince George Cycling Club
10. Other associated groups and agencies.

A coordinated and communicative approach is necessary to confirm priorities and synchronize projects across jurisdictional boundaries. The City should continue to work with these agencies on the development, maintenance, and regulation of the Active Transportation System.

7.10 Funding

To maximize the investment in the Active Transportation System, the City should continue to explore every opportunity to partner with other government agencies and the private sector. Some opportunities for this are:

1. Senior government grants (e.g. Cycling Infrastructure Partnership Program) are often available for specific project funding. These grant programs often require shelf-ready designs. The City should therefore pro-actively prepare designs for priority projects in anticipation of these grant programs. Successful projects in the past have included the trail link across the Cameron Street Bridge, and the Hwy 16 Underpass at the Heritage River Trail.

2. Where a major improvement can potentially reduce vehicle collisions, grants may be available through the Road Improvement Program (RIP) of the Insurance Corporation of BC. Some previous RIP projects have included the Hart Trail and the Ferry Avenue Bicycle Lanes.

3. Pursuant to recent amendments to Section 906 of the Local Government Act, developers can contribute to the development of the City's Active Transportation System (either specific improvements, or a general fund) in lieu of constructing or paying a levy toward off-street parking facilities.

4. Local corporations and businesses could sponsor infrastructure in exchange for naming rights and advertizing space, as currently occurs for the transit shelter and bench infrastructure.

5. Proposed new sidewalks which are not included in the City's Capital Plan can be funded by Local Area Service (LAS) agreements. Under this program, the City pays for the sidewalk improvement, and recovers the cost from the adjacent property owner(s) though taxes over the following years. To generate more interest in this program, the City could contribute to LAS sidewalk improvements in proportion to how much they benefit the network (as determined by sidewalk warrant index in Section 5).

6. Some private businesses desire bicycle racks, but lack the space to install them. In cities like Vancouver, these businesses may apply to install bicycle racks on City property. The permit is free, but stipulates terms of location, ownership, and maintenance.

7. Transit revenue can be generated from advertizing on the buses, and on the bus stop infrastructure (i.e. benches, shelters, etc).

8. Phased development agreements (Section 905.1 of Local Government Act) can be used to ensure active transportation infrastructure is constructed concurrently with new developments.

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8.0 IMPLEMENTATION

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8.1 Implementation Plan Development

The Implementation Plan has been developed through consideration of the outcomes of the "myPG" Sustainability Plan, and through further public and stakeholder consultation.

Outcomes from "myPG"

The MyPG Integrated Community Sustainability Plan (ICSP) was completed in June 2010, with 19 goals identified. The Active Transportation Plan supports nine of these goals, either directly or indirectly, as follows:

Society:

- **Clear Identity and Pride**: The ATP proposes the development of the trail network, with connections between recreational, cultural, and commercial points of interest.
- **Equitable Community**: The ATP helps provide equitable access to community activities and services to citizens of all levels of ability and income.
- **Healthy and Active Community**: The ATP identifies incentives to increase the use of transit, walking and cycling, and proposes greater investment in walking, cycling and transit infrastructure.
- **Safe Community**: The ATP provides opportunities for citizens to engage in pro-social activities, and proposes the development of a safer and more continuous active transportation network.
- **Supportive and Engaged**: The ATP allows citizens to become engaged in the community through recreation and commuting on the active transportation network.

Environment:

- **Clean Air**: The development and implementation of a strong active transportation network will help citizens choose transportation modes with little or no environmental impact.
- **Green City, Green Practices**: According to LivesmartBC, the transportation sector accounts for 36% of all greenhouse gas emissions. The ATP provides for greener transportation choices, and provides citizens with access to green spaces.
- **Reduce Carbon Emissions**: By choosing active transportation modes, citizens can directly reduce their carbon emissions.

Economy:

- **Fiscal Responsibility**: With a shift in transportation demand to active modes, the City can defer the need for system capacity improvements.

Outcomes from Public and Stakeholder Consultation

An online survey during the summer of 2010 generated 61 responses on the draft plan. The complete summary of responses is included in the appendix. The most common responses are listed below:

1. More bicycle lanes should be implemented, especially resolving discontinuities in the network.
2. Bicycle lanes should be kept in good repair, and kept clear of debris, snow and parking conflicts.

3. The three proposed pathway links generating the most support are: (a) North Nechako Road paved shoulders, west of Foothills; (b) Otway boulevard trail, Foothills to Miworth; and (c) Hart Trail, Cameron Bridge to Hart Highlands.
4. Active Transportation should be a high priority for the City; the plan should be implemented as soon as possible.
5. Safety is a concern; more separation between cyclists and motorists is desirable.
6. New developments and redevelopments must support pedestrians and cyclists, especially providing secure and convenient bicycle parking.
7. Public education on Active Transportation is required.
8. The City needs to coordinate with other agencies and the private sector.

The Prince George Cycling Club and Urban Cycling Coalition provided a detailed review of the first draft of the Active Transportation Plan. The complete comments are in the Appendix, and are summarized as follows:

1. Implementation of the plan must be a priority.
2. Immediate low-cost priorities should be:
   - Remove parking from bicycle lanes
   - Install cyclist-controlled signals
   - Install more bicycle parking and other end-of-cycle trip facilities
   - Provide more education and promotion initiatives
   - Allow local industry to sponsor infrastructure in exchange for advertizing space.

3. Major cycle link priorities should be:
   - Hart Trail, and cycle links on main arterials in the Hart
   - Fifth Avenue, from Ahbau to Hwy 97
   - Pedestrian and cycle infrastructure around City Hall.
   - Hwy 97 crossings, especially at 8th Avenue
4. Maintenance priorities should be:
   - Sweep bike lanes of gravel and debris
   - Repair potholes in cycle facilities
   - Remove snow piles in cycle lanes
5. Other link priorities should be:
   - 17th Avenue bike lanes, Massey to the River Trails
   - PG Pulpmill Road, conversion to two unidirectional bike lanes
   - Winnipeg bike lanes, Massey to 3rd Avenue
   - Cottonwood Park Trail network
6. Roundabouts must be planned for cycle and pedestrian safety.
7. A standing committee for Active Transportation should be created.

In general, the public and stakeholder feedback underscore the issues already identified in the plan, but provide helpful input on priorities.

8.2 Standards and Guidelines Implementation

The development of a clear hierarchy of pathway standards and the implementation of the supporting planning and design guidelines from Section 5 will ensure a consistent level of service for users. These can be incorporated into a forthcoming update of City standards and guidelines at little or no additional cost.

Network Planning Guidelines

The Network Planning Guidelines in Section 5.1 explain how the Active Transportation Network should be planned and developed, from a high level perspective. These guidelines should be incorporated into all City planning and design work, including, but not limited to, the following:

- Updates to the Official Community Plan
- Development of Neighbourhood Plans
- Development of City Standards and Design Guidelines
- Future transportation planning studies
- Approvals for new development
- Capital project prioritization
- Design of transportation and park projects

Pathway Standards

Section 5.2 provides ten pathway standards for Active Transportation. These include three types of trails, three types of cycle facilities, and four types of pedestrian facilities. In general, these standards can be incorporated into the forthcoming update to the City Subdivision Standards and Design Guidelines.

There are some outstanding issues, such as the treatment of walkways, and the placement of sidewalks relative to the curb. These issues will require additional consideration and discussion to finalize operational objectives and pathway standards.

Transit Standards

As discussed in Section 5.3, transit standards will be addressed in the forthcoming Transit Master Plan, developed between the City and BC Transit.

Other Standards

The remaining standards concerning intersections, roundabouts, interchanges, bridges, and amenities may be directly considered as these facilities are developed.

8.3 Infrastructure Implementation

The infrastructural improvements identified in Section 6 have been prioritized in consideration of their strategic importance, constructability, and anticipated benefits relative to the estimated costs. The project lists in the following sections are intended as a guide to develop the network (based on an assumed funding level and schedule), and can be re-prioritized and rescheduled in consideration of Council priorities and as new information becomes available.

In a number of cases, the suggested pathways can be staged to achieve a more connective network sooner. For example:

- A minor trail could be built, and upgraded later to a multi-use trail.
- A shared lane can be used until the road is widened for bike lanes.
- A sidewalk can be upgraded to a boulevard trail.

Low-Cost Priorities

A number of relatively low-cost initiatives and improvements are required to raise existing active transportation infrastructure to current and consistent standards. These may include, but are not limited to, the following:

1. Identify and rectify minor deficiencies in the trail network. These could be short discontinuities or impediments in the pathways, or a need for signs, lighting, or other amenities. The list of deficiencies could be compiled and prioritized by City staff as time permits. The deficiencies could be rectified as time and budget permit.

2. Identify and rectify deficiencies and inconsistencies in the on-street cycle network. With a focused audit of bicycle lanes and paved shoulders, the City could identify locations where the lanes are narrower than necessary; painted bicycle symbols are needed; or signing is inconsistent, non-standard and/or confusing. Convenient and secure bicycle parking facilities should be installed around the city.

3. Ensure signing and paint markings at intersections, interchanges and roundabouts safely facilitate cycle and pedestrian traffic. For example, shoulder paint markings on 5th and 15th Avenues on the approaches to Hwy 97 could be revisited to create a dedicated area for cyclists. Also, bicycle lane lines should be dashed on the approach to every collector and arterial intersection to allow motorists to safely merge into the cycle lanes. This reduces the chance of conflicts between cyclists and right turning traffic.

4. Continue to install wheelchair ramps in sidewalks, in consultation with the Prince George Accessibility Advisory Committee (PGAAC). This has traditionally been done as an extension of the sidewalk rehabilitation program, as and when budget permits. The ramps typically cost about $2,000 each, but are critical to making the sidewalks accessible. The

PGAAC committee can continue to help identify which sidewalks are priorities.

5. Install bollards, signing, fencing, and/or lighting on problematic walkways. Walkway connections between streets are important links in the pedestrian and cycle network, but can occasionally invite illegal or nuisance behaviour. Fencing and lighting can help control problems with theft and vandalism. Bollards and signing may help control problems with motorized vehicles using the pathways.

6. Remove unnecessary crosswalks, and bring the remainder to current standards. Signed/marked crosswalks are used to establish right-of-way between pedestrians and vehicles, and are therefore warranted based on the volumes of passing traffic and crossing pedestrians. Some crosswalks may not meet warranting volumes, but are still necessary from a pedestrian or trail network perspective. In locations where crosswalks are required, the paint markings and signing should conform to guidelines from the Transportation Association of Canada. In locations where crosswalks are no longer necessary, the crosswalks should be removed in consultation with the affected users. Once removed, pedestrians would still be able to cross the street, but would be required to wait for a safe gap in traffic.

7. Configure actuation cameras at signalized intersections to recognize cyclists. This prevents cyclists from having to use the pedestrian buttons to activate the signal. At signals without intersection cameras, additional pushbuttons could be considered for cyclists.

8. Standardize transit stop infrastructure, based on passenger use. With ridership surveys, the number of passengers boarding at every stop can be determined. This information can then be used to establish where and what transit stop infrastructure should be provided (e.g. shelters, benches, route/schedule information, waste receptacles, etc). All stops should be made accessible.

Short Term Priorities

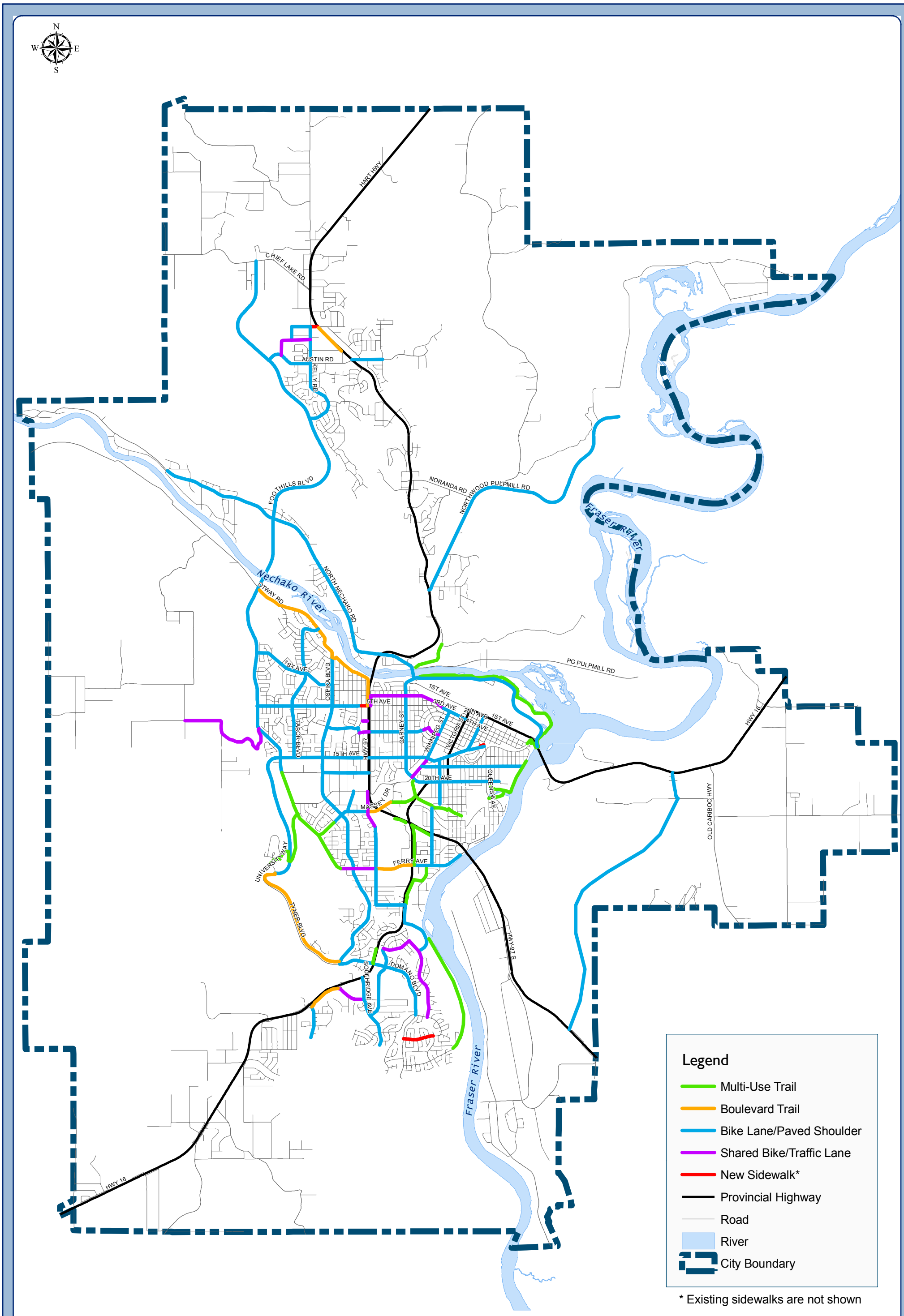
Short term priorities are projects and initiatives recommended within the next five years due to their ease of implementation, and/or their significant benefits/needs relative to their costs. The complete list of short-term priorities is shown in Table 25. These links have been combined with the existing network (shown in Map 1) to create the Proposed 2015 Active Transportation Network illustrated in Map 10.

A conceptual planning-level ("order-of-magnitude") cost estimate is provided for each project using approximate cost/metre figures (including contingency) based on recent projects and material costs. The cost estimating figures are shown in the Appendix. The estimates are intended to facilitate project prioritization and program development only, and do not account for major utility relocation, severe topographical/geotechnical/environmental/ hydrological impediments, costly property acquisition, etc. Therefore, a more detailed cost estimate based on design and site-specific considerations is required for project budgeting.

From these estimates, approximately **$500,000/year** would be necessary to complete all short-term priorities within five years.

Area	Description	Length (m)	Comments	High-Level Cost Est.
Hart/North Nechako	Handlen Rd Sidewalk, S Kelly to Hwy 97	150	Requires road construction and storm drainage	$34,000
	N Nechako Paved Shoulders, Foothills to Bench	2,600	Some road widening/ditching may be required.	$208,000
	Hart Trail, Cameron Br. to Hofferkamp	Unknown	Environmental issues; need to revisit route.	Unknown
	Highland Bike Lanes, Foothills to Handlen	2,400	Revisit laning to address parking conflicts.	$15,000
	Handlen-Heather Park Bike Lanes, S Kelly to Heather	700	Requires coordination with School District 57.	$5,000
	Austin Road Bike Lanes, Hwy 97 to Dawson	600	Revisit existing laning.	$4,000
	Heather Road Shared Lanes	800		$1,000
	Northwood Paved Shoulders, H97 to Noranda	2,200	To be coordinated with utility work.	$176,000
North Bowl/ Cranbrook Hill	Fifth Avenue Sidewalk, Ahbau to Hwy 97	100	Property constraints; consider 5th Ave Widening	$25,000
	Patricia Sidewalk, Dominion to Queensway	220	High priority link in Downtown.	$55,000
	Cranbrook Hill Shared Lanes, Foothills to Kluss	2,600	Safety improvement for mountain bikers.	$3,000
	Dominion St Bike Lanes, Lower Patricia to 1st	800	Coordinate with Downtown Redevelopment	$5,000
	Winnipeg Bike Lanes, 15th Ave to 3rd Ave	1,100	Can reduce Winnipeg to two traffic lanes.	$10,000
	9th - Ross Shared Lanes, Melville to Winnipeg	500	Consider in context of future Duchess Park.	$1,000
	10th Avenue Bike Lanes, Hwy 97 to Ross	1,300	Shared parking lane, south (hospital) side	$8,000
	Carney Bike Lanes, 15th to River Road	1,800	Revisit laning to address parking conflicts.	$12,000
	1st Ave Bike Lanes, Ospika to Foothills	1,800	Revisit laning to address parking conflicts.	$11,000
	Rainbow Bike Lanes, Ahbau to Ospika	800	Revisit laning to address parking conflicts.	$5,000
	15th Avenue Bike Lanes, Foothills to Victoria	3,600	High priority route; parking conflicts to address.	$33,000
	Ospika Bike Lanes, 15th to McDermid	2,200	Requires removal of on-street parking.	$18,000
	Tabor Bike Lanes, 15th to Ospika	3,100	Requires removal of on-street parking.	$28,000
	Fifth Avenue Bike Lanes, Foothills to Ahbau	2,700	Requires removal of on-street parking.	$25,000
	3rd - East Central Shared Lane, Cassiar to H97	1,800		$2,000
	Patricia Bike Lanes, Queensway to Dominion	400	Reduce Patricia to two traffic lanes.	$4,000
	Ospika- Dezell Blvd Trail, Hwy 97 to Tabor	1,800	Part of Heritage River Trail system	$684,000
South Bowl/ UNBC	18th Avenue Bike Lanes, Hwy 97 to Ospika	1,000	Parking lane on south side, near college.	$6,000
	Nicholson Bike Lanes Massey to 22nd Ave	500		$3,000
	Ferry Ave Shared Lanes, Ospika to Westwood	500	Constrained widths.	$1,000
	Massey Blvd Boulevard Trail, Westwood to CJG	700	Build into third traffic lane; topog. constraints.	$280,000
	Westwood Shared Lanes, 22nd Ave to Lorne	900		$1,000
	Westwood Bike Lanes, Ferry to Vance	900		$6,000
	Upland St Bike Lanes, Ferry to Milburn	1,300	Revisit laning to address parking conflicts.	$8,000
	Spruce St Bike Lanes, 15th Ave to Milburn	1,000		$8,000
	17th Ave Bike Lanes, Massey to HRT	2,300	Revisit laning to address parking conflicts.	$16,000
	Carney Bike Lanes, 15th to Massey	600	Revisit laning to address parking conflicts.	$6,000
	20th Ave Bike Lanes, Vine to Gorse	1,600	Revisit laning to address parking conflicts.	$11,000
	Ospika Bike Lanes, 15th to Ferry	2,700	Requires removal of on-street parking.	$25,000
	Massey Shared Lanes, 20th Ave to 15th Ave	500		$1,000
	Vance Rd Bike Lanes, Westwood to Hwy 16	600		$4,000
College Heights/ West	Gladstone Sidewalk, Loyola to Domano	700	High priority for residents.	$175,000
	Eton Shared Lanes, McGill to Simon Fraser	700		$1,000
	McGill Bike Lanes, Eton to Domano	500		$3,000
	O'Grady Bike Lanes, Domano to Southridge	1,200		$8,000
	Southridge Bike Lanes, Hwy 16 to St Mary	1,500	Revisit laning to address parking conflicts.	$9,000
	Hwy 16 W Blvd. Trail, Westgate to Marleau	1,000		$550,000
	Marleau Shared Lanes, Southridge West	400		$1,000
	Simon Fraser Shared Lanes, Eton to Gladstone	1,700		$2,000
			Total Cost (2011-2015):	**$2,482,000**

Table 25 : Short Term Pathway Priorities



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Map 10: Proposed 2015 Active Transportation Network

CITY OF PRINCE GEORGE
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Medium Term Priorities

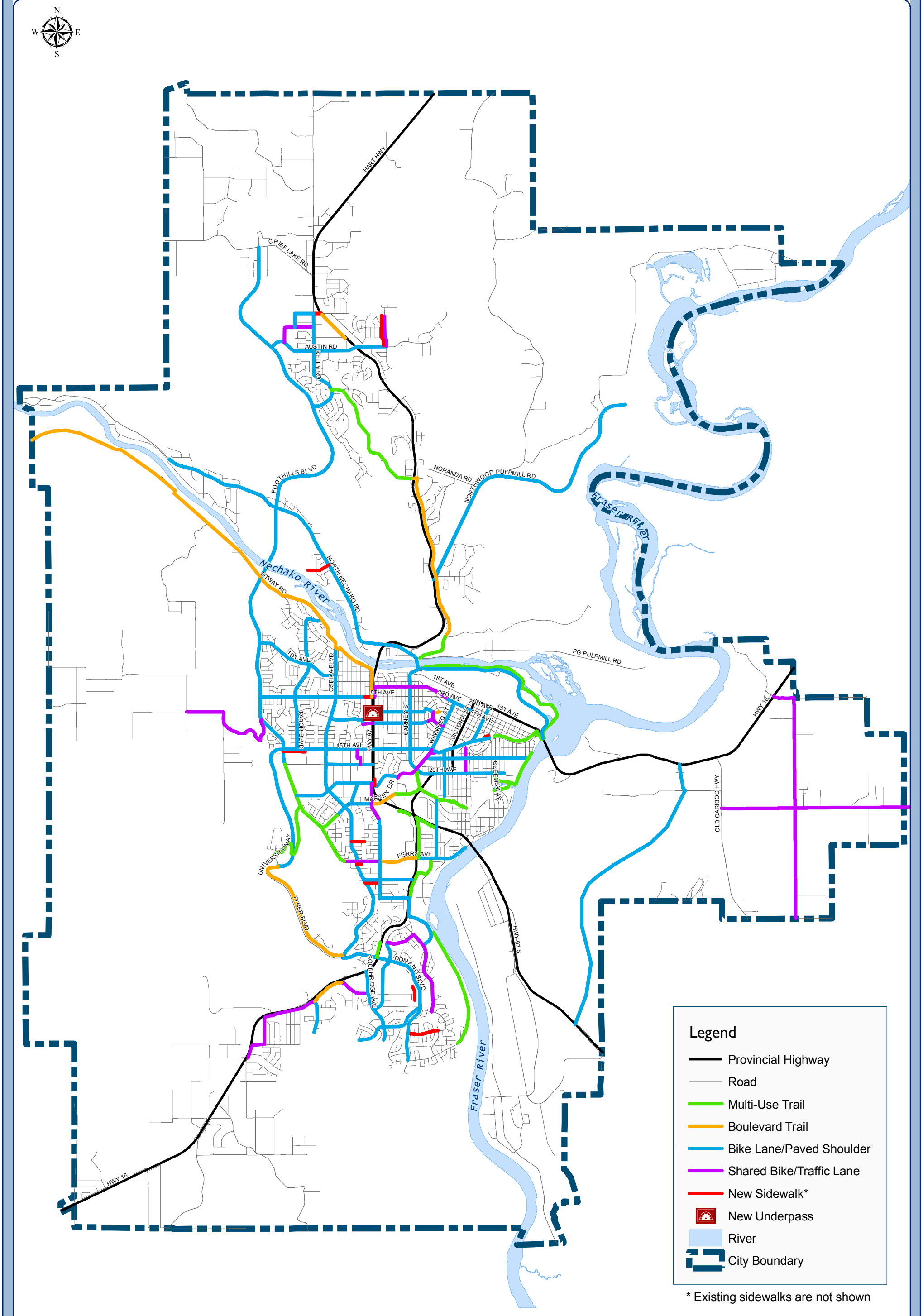
Medium term priorities are projects and initiatives recommended in five to ten years. These projects may be more costly, involve significant impediments (e.g. property, topography, etc), and/or have lesser benefits relative to their costs. The implementation of these projects may require detailed designs, stakeholder negotiations, grant applications, etc. These links have been added to the proposed 2015 network (shown in Map 10) to create the Proposed 2020 Active Transportation Network illustrated in Map 11.

As with short-term priorities, a conceptual planning-level ("order-of-magnitude") cost estimate is provided for each project using approximate cost/metre figures (including contingency) based on recent projects and material costs. The cost estimating figures are shown in the Appendix. The complete list of medium-term priorities is shown in Table 26. These estimates are intended to facilitate project prioritization and program development only, and do not account for major utility relocation, severe topographical/ geotechnical impediments, costly property acquisition, etc. Therefore, a more detailed cost estimate based on design and site-specific considerations is required for project budgeting.

The delivery of the proposed medium-term priorities within five to ten years would also require approximately **$500,000/year**.

Area	Description	Length (m)	Comments	High-Level Cost Est.
Hart/North Nechako	Dawson Rd Sidewalk, Austin to Cluff	700	Route to school; requires road/drainage construction.	$158,000
	Craig Dr Sidewalk, N Nechako to Churchill	300	Route to school; requires road/drainage construction.	$68,000
	Dawson Rd Shared Lanes Austin to Cluff	700		$1,000
	Austin Road Bike Lanes, S Kelly to Hwy 97	600	Incorporate with Austin Road four-laning.	Unknown
	Hart Multi-Use Trail, Highland to Kenworth	3,000	Trail exists as dirt road.	$362,000
	Hwy 97 Blvd Trail, Kenworth to Hofferkamp	2500	Upgrade existing pathway	$200,000
North Bowl/ Cranbrook Hill	8th Ave Bike Lanes, Hwy 97 to Ross	1,300	Designated route; connects to proposed underpass	$31,000
	Hwy 97 Underpass at 8th Avenue	20	Very strong ped/cycle demand; coord with MoTI	$900,000
	15th Avenue Sidewalk, Foothills to Jarvis	400		$100,000
	Otway Boulevard Trail, Foothills to Greenway	4,800	Popular recreation route to Miworth	$384,000
South Bowl/ UNBC	Ferry Sidewalk, east of Ospika	100		$25,000
	22nd Avenue Bike Lanes, Foothills to Hwy 97	1,850		$13,000
	East Central Sidewalk, north of Griffiths	200	Route to school.	$50,000
	Pinewood Sidewalk, Vanier to Ospika	270		$68,000
	Range Sidewalk, Ospika to Westwood	350		$88,000
	Griffiths Bike Lanes, E Central to Massey	700		$7,000
	Range Road Bike Lanes, Ospika to Hwy 16	1,050		$9,000
	Pine Bike Lanes, 20th Ave to Heritage River Trails	700		$5,000
	Oak St Shared Lanes, Connaught to 20th	600		$1,000
	Nicholson St Shared Lanes, 15th to 18th Ave	300		$1,000
College Heights/ West	St Lawrence Bike Lanes, Domano to East View	1,600		$12,000
	Domano Sidewalk, Trent to Bernard	300		$75,000
	Domano Bike Lanes, Hwy 16 to Malaspina	2,700	Remove parking on existing lanes, and extend.	$25,000
	Westgate Bike Lanes, Hwy 16 to Embree	700	Revisit existing laning to address parking conflicts	$5,000
	Hwy 16 Frontage-Bear Shared Lanes	1,600		$2,000
	Henrey Shared Lanes, Hwy 16 U/P to Bear	400		$1,000
Blackburn	Blackburn Road Shared Lanes, Graves to City Limits	4,700		$6,000
	Giscome Shared Lanes, Old Cariboo to City Limits	3,900		$5,000
			Total Cost (2015-2020):	**$2,591,000**

Table 26: Medium Term Pathway Priorities



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Map 11: Proposed 2020 Active Transportation Network

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Long Term Priorities

Long term priorities are infrastructure projects that may be cost-prohibitive and/or have lesser community benefits relative to their costs. Some of these projects may require:

- Significant infrastructure to be installed beforehand, such as storm systems to facilitate the construction of sidewalks;
- Coordination with other projects, such as road rehabilitation or private development; and/or
- Funding assistance from senior governments or other agencies.

All projects from Section 6 which are not identified as short or medium-term priorities may be considered long-term projects. These projects would have no foreseeable timing within the next ten years.

8.4 Policies and Programs Implementation

The implementation of the Active Transportation Policies and Programs from Section 7 will assure the effective administration, regulation, maintenance, and monitoring of the network.

Priority Definition:

The Policy Statement in Section 7.1 establishes that the mobility and safety of pedestrians and cyclists are important considerations in all aspects of City business. Therefore, this statement should be incorporated into the Official Community Plan, expected to be completed in 2011.

Land Use Planning Policies:

The Land Use Planning Policies in Section 7.2 can be used to guide City development in three ways, as listed below. All three of these initiatives can be completed internally, with no capital costs.

1. Incorporate high level objectives, such as urban densification, transit-oriented development, and active transportation network catchment, into the 2011 Official Community Plan.

2. Incorporate development criteria, such as on-site bicycle amenities and connection to the active transportation network, into the next update to the Zoning Bylaw. Some of these criteria already exist.

3. Develop a "Walkability Index" suitable for Prince George neighbourhood and infrastructure planning, and for the establishment of priorities in the capital program. The Index may be based on the work completed by UNBC and/or the City of Vancouver, but must take into account the physical infrastructure available to Active Transportation users. A "Wheelability" Index could also be considered for cycle users.

Transportation Demand Management:

There are three primary Transportation Demand Management (TDM) initiatives from Section 7.3 that would be effective in Prince George:

1. Options for re-instating pay parking Downtown should be considered as and when deemed appropriate by the outcome of the Downtown Parking Pilot study.

2. With every update to the Riders Guide, the Transit System should seek to improve in attractiveness to users. Routes must be kept direct to minimize travel time, and as frequent as the budget allows. Fare and Pass incentives should continue to be pursued to attract dedicated ridership. In particular, the "Pro-Pass" and "Community Pass" programs should be developed, and offered to local business and residents. The costs of these initiatives would be covered as general transit administration.

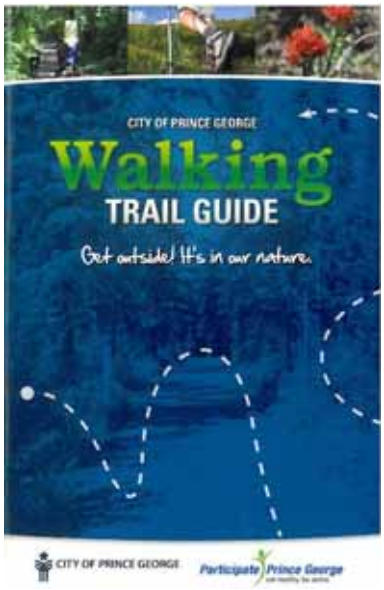
3. The Active Transportation infrastructure should be strategically developed to create one safe and connected system. Critical missing links on routes with heavy demand should be given priority. Bicycle parking and other end-of-trip facilities should be readily available and secure. As the system becomes more integrated, it will become safer and more attractive to users. New infrastructure may be costly, as outlined above in Section 8.3. However, excess road capacity can be re-allocated to bicycle lanes or widened shoulders at little more than the cost of repainting lane lines.

Education:

The educational objectives discussed in Section 7.4 can be met with the following educational initiatives:

1. A comprehensive pocket map/guidebook of the City's active transportation system can help users plan and navigate their trips. The map should include the existing transit, cycle, pedestrian and trail routes, and classify the facilities by type (e.g. cycle lanes, boulevard trail, etc). Transit information should be limited to the physical bus routes, as these are not as frequently amended as bus schedules (which are available in the Riders Guide). The map should be supplemented with notes for users on trip-planning, safety, and etiquette.

   Once developed, the cost of printing these guidebooks would be approximately $5,000 for an order of 5,000 copies (based on the costs of the 2010 walking guide for Prince George). These guidebooks would be made available at civic facilities (e.g. City Hall, library, etc), recreational facilities (e.g. YMCA, swimming pools, etc), educational institutions (e.g. UNBC, CNC, etc), and tourist information offices. A printable version of the guidebook would also be available on the City's website.



2. Educational videos could be developed by City staff to effectively reach adolescent and adult audiences. The production costs would be covered by employee time, and the videos would be placed on the City's website, and made available to local television media (e.g. Shaw Cable, PGTV). The focus of the educational videos should be safety for both active transportation users and motor vehicle drivers. However, additional topics could be covered, such as using active transportation facilities, road etiquette, preparing for inclement weather, etc. Educational videos can be developed at any time.

3. In-school programs could be delivered to grade-school students. These programs can be especially effective because the audience is already in a learning environment, and the lessons can be specifically tailored to the school's age group and local conditions. Education material could also be made available to post-secondary students at student services offices. The cost of in-school educational programs would amount to staff time and printing costs, both of which could be shared with partners at the school institutions. Many such programs are already under way in Prince George, and should be continued and expanded as necessary.

4. Media releases should be issued to local newspapers, television and radio stations to inform the public of new developments in the active transportation system, as well as advisories on changing conditions and safe practices. Media releases cost nothing, but can effectively spread important messages in a timely fashion. Media releases can be issued at any time.

5. On-street signing could also be an effective approach to educating the public about active transportation, and can be tailored to the specific conditions in which the sign is placed. A current example is the use of the "Share the Road" warning signing, which indicates to drivers and cyclists where dedicated cycle facilities have been discontinued. Non-standard signing should be used sparingly, as the educational advantages may be offset by the distraction created by additional signing in the road environment.

6. Formal courses should be hosted to teach cyclists how to ride safely. These may require bringing in experts from outside Prince George. These courses could cost between $5,000 and $7,000, but some of the costs could be recovered from student fees.

Marketing and Promotion:

Section 7.5 lists a number of effective marketing strategies. With guidance from Community-Based Social Marketing (www.cbsm.com), these may be implemented as follows:

1. A formal name/logo for the Prince George Active Transportation System should be developed and promoted with signing and the media. The name/log could be developed at little cost, but the advertizing could cost between $5,000 and $15,000 (depending on the amount of coverage desired). This initiative would be effectively implemented after a few years, when the system has reached an effective size to be recognizable.

2. The City should continue to host major promotional events for Active Transportation, such as Bike To Work Week, Walk/Bike to School Week, and Free Transit Fare days. These events can cost approximately $3,000, but can be very effective in generating new riders and raising awareness about Active Transportation.

3. Partnerships with other agencies and local industry should continue to be pursued to generate committed users of Active Transportation. The U-Pass has successfully increased transit ridership at the local post-secondary institutions, and a similar program could be instated for groups of employees (i.e. Pro-Pass). Cost-incentive programs with local retailers can also be expanded for Active Transportation users. When effectively administered, there is no additional cost for these programs except staff time.

Enforcement:

The educational and marketing initiatives described above should be supplemented with an enforcement campaign to ensure motorists, cyclists, and pedestrians are adhering to safe behaviours. Once a year, the local police could initiate a focused enforcement program for Active Transportation, as described in Section 7.6. This would be similar to other campaigns the RCMP already undertake in a year, and would not require any additional resources.

Maintenance:

In order to maintain an effective level of service, the maintenance budget needs to keep pace with the expansions in the transit, cycle, trail, and pedestrian networks. The implementation of the recommendations from Section 7.7 is discussed below.

1. More frequent sweeping of the bicycle lanes and paved shoulders was repeatedly listed as one of the highest priorities for the local cycling community. The roads are generally swept well early in the year. However, as traffic passes, road debris is often blown toward the shoulders, causing problems for cyclists. Throughout the summer, the main arterial and major collector roads are swept routinely. This sweeping plan should be revisited to ensure all cycle routes are included in the schedule, and that the cycle lanes are monitored to evaluate the effectiveness of the sweeping program. Sweeping costs approximately $200/kilometre (including both sides of the road).

2. Continue snow clearing program for sidewalks. Priority should be given to high-volume pedestrian routes and accessible transit stops.

3. The City's pothole reporting and repair program should continue to respond to potholes and other pavement deterioration in the bicycle lanes at the same priority as in the roadways. Furthermore, all City road paving projects should include an evaluation of the adjacent bicycle lanes to determine if these need rehabilitation also.

4. Sidewalk and walkway conditions should be passively monitored by City staff in their day-to-day work, such that problem areas can be identified and resolved in a timely fashion. However, once every ten years, a thorough inspection is recommended to identify all outstanding deficiencies, and establish rehabilitation priorities. The last such inspection was completed in 2004 as part of the Pedestrian Network Study for approximately $25,000.

5. Although there are fewer cyclists riding in winter, clearing snow out of the bike lanes at least improves the safety for those who choose to ride. Furthermore, removing snow piles from the road shoulders also facilitates drainage. For safety reasons, the first priority must be clearing snow out of the traffic lanes. However, between major snow events, the snow could be cleared out of the bike lanes, as time and resources permit, at an estimated cost of $300/kilometre.

6. A few main walkways are already cleared of snow in winter, as are a number of links in the Multi-Use Trail network. However, the existing City snow-clearing equipment would have difficulty negotiating many walkways due to the constrained widths. Where possible, clearing activities should be extended to other critical and/or well-used walkways.

7. The cost to paint lane lines and symbols on cycle facilities is discussed in Section 8.3. However, these lines and symbols require repainting every year or two. These costs would have to be added to the City's line painting program.

Data Collection and Monitoring:

As discussed in Section 7.8, the following Data Collection and Monitoring initiatives can be used to evaluate the success of the system and plan improvements. Many of these initiatives are already under way, and can be continued at little or no cost:

1. Use Canada Census and ISRE survey data to monitor the use of sustainable transportation modes in Prince George.

2. Include pedestrian and cycle counts with all traffic counts. Traffic signal hardware may be configured to count all volumes (including pedestrian calls and cyclist movements) at priority intersections.

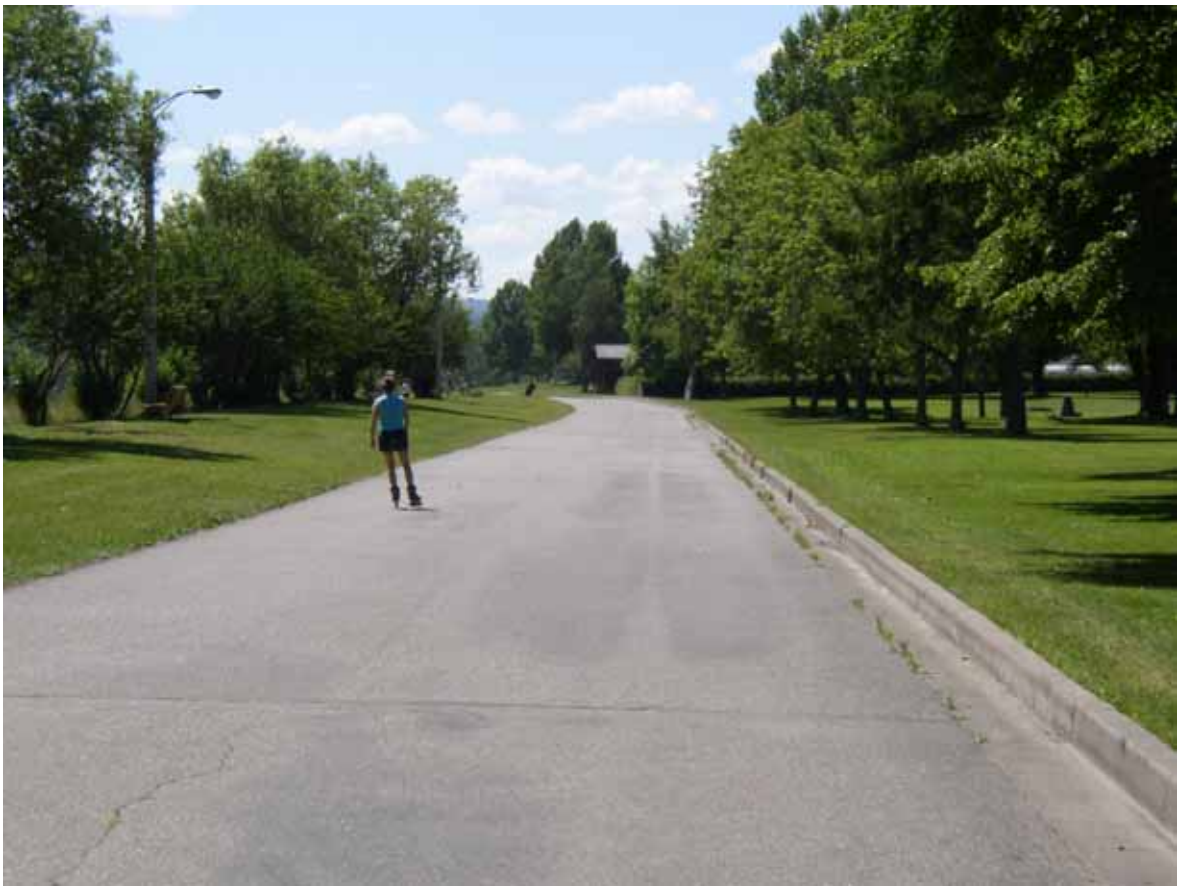
3. Periodically install trail counters at strategic locations.

4. Continue to use transit fare-box passenger counters to evaluate route and stop demands.

5. Establish a feedback forum for active transportation users.

Inter-Agency Coordination:

The City should continue to communicate and coordinate with the agencies listed in Section 7.9 in the development, maintenance, and regulation of the active transportation system.



Funding:

A number of funding opportunities exist to help fund active transportation infrastructure improvements, as described in Section 7.10. Many of these are currently being pursued. There are two primary sources for external funding:

1. Grants are available from senior governments and other agencies. The City should continue to apply for these grants, which generally cost only Staff time. However, applications must generally be based on shelf-ready projects, so an advance City investment in project design is often required.

2. The City could work with the private industry and residents on cost-sharing initiatives through such means as development contributions, sponsored infrastructure, advertizing revenue, and Local Area Service Contracts. These generally require some coordination to ensure fair and equitable programs are in place.

Policy/Program Implementation Summary:

Table 27 summarizes the implementation of the policies and programs:

Suggested Timing	Initiatives	Program/Policy Type	High-Level Cost Estimate
Continue	Improve attractiveness of transit as a user choice	Trans. Demand Management	As budget and ridership allow
	Develop and deliver In-School educational programs	Education	Printing costs
	Issue advisory and educational media releases	Education	None*
	Host Active Transportation promotions to increase awareness and users	Promotion	$3,000-$5,000
	Pursue local partnerships to attract dedicated users	Promotion	None*
	Clear snow from sidewalks; prioritize high volume and transit routes	Maintenance	As existing
	Monitor Canada Census and ISRE survey data	Data Collection	None*
	Include pedestrian and cycle counts with traffic counts	Data Collection	None*
	Periodically install trail counters at strategic locations.	Data Collection	Negligible*
	Continue using fare-box passenger counters to evaluate transit demand.	Data Collection	None*
	Coordinate with other agencies on active transportation initiatives	Coordination	None*
	Apply for grants from senior government and other agencies	Funding	None*
Annually	Host cycle skills education courses	Education	$5,000-$7,000 (minus fees)
	Initiate annual traffic/cycle/pedestrian enforcement campaign	Enforcement	None*
	Revisit sweeping strategy to address concerns with debris in bike lanes	Maintenance	$200/km
	Repair identified potholes in bicycle facilities	Maintenance	Under Pothole Program
	Clear snow in bicycle facilities between snow events, as time permits	Maintenance	$300/km
	Clear snow from critical and/or heavily used walkways and trails	Maintenance	$100/km
	Repaint bicycle lane lines and symbols	Maintenance	As existing
2011	Establish priority of Active Transportation Modes in OCP	Priority Definition	None*
	Incorporate high-level planning objectives into OCP	Land Use Planning Policies	None*
	Incorporate development criteria into next Zoning Bylaw update	Land Use Planning Policies	None*
	Produce educational videos for internet and television	Education	None*
	Establish a feedback forum for active transportation users	Data Collection	None*
2011-2020	Strategically expand active transportation infrastructure, including bicycle parking and other end-of-trip facilities, amenities, etc.	Trans. Demand Management	See Section 8.3
2012	Develop “Walkability” index	Land Use Planning Policies	None*
	Publish Map/Guidebook of local cycle, trail, and transit routes	Education; Promotion	$5,000 printing
	Install on-street signing	Education	See Section 8.3
	Develop cost-sharing program opportunities with private sector	Funding	None*
2013	Create and promote name/logo for Active Transportation System	Promotion	$5,000 - $10,000
2014	Initiate comprehensive inspection of pedestrian network	Maintenance	$25,000
When deemed appropriate	Consider re-instating pay parking Downtown as and when deemed appropriate by the outcome of the Downtown Parking Pilot review.	Trans. Demand Management	To be determined

* - *Initiatives require no direct capital costs, but would still require staff time and resources.*

Table 27: Policy and Program Implementation

8.5 Updating the Active Transportation Plan

This report is based on the best available information at the time of writing, including City policies and direction, current technical standards and guidelines, and the input from stakeholders and the public. However, as this supporting information changes with time, and as the standards, infrastructure, policies, and programs are implemented, new priorities will emerge. For this reason, the chief findings of the report should be revisited after five years. A comprehensive update should be considered after ten years.

9.0 CONCLUSION

Photo courtesy of the Prince George Citizen

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The Prince George Active Transportation Plan is a comprehensive study that integrates all the sustainable transportation modes into one strong, continuous and sustainable network. The study brings together the findings of other major Prince George studies concerning the pedestrian, trail, cycle, and transit networks, and compares local practices with those in other communities. Through multiple rounds of detailed public and stakeholder consultation, the local issues with the Active Transportation Network have been identified, evaluated, and prioritized.

The findings of this report will be used as the basis for amending the current planning, design, regulation and maintenance of the Active Transportation Network, and developing a prioritized improvement plan with identified funding sources.

Recent investments in the local Active Transportation System (e.g. Transit Service, bike lanes, etc) have already demonstrated an increase in the usage of sustainable modes. As the System grows, and as locational and systemic barriers are eliminated, Prince George should see a marked shift away from the reliance on personal automobile. This in turn will help the City meet its myPG sustainability goals of creating a "Safe, Active, Healthy and Equitable Community".

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Prepared by the **City of Prince George**
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