City of Nelson Active Transportation Plan

H-90088.00

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Prepared By

Sarah Rocchi
Vice President (Projects)

Opus International Consultants (Canada) Limited

#850 - 1185 W. Georgia Street
Vancouver, BC
V6E 4E6, CANADA

Telephone: (604) 684.4488
Facsimile: (604) 684.5908

Date: February, 2010
Reference: H-90088.00
Status: FINAL

Contents

List of Maps and Figures

List of Tables

Appendices

1.0 Introduction and Background

1.1 Background

The Built Environment and Active Transportation (BEAT) program is a joint initiative of Union of British Columbia Municipalities (UBCM) and the British Columbia Recreation and Parks Association (BCRPA) that provides funding for the creation and implementation of Active Transportation programs aimed at improving community health. The City of Nelson was one of fourteen communities to be awarded a 2009 BEAT Community Planning Grant for the development of a Comprehensive Active Transportation Plan. In the application for the funding, The City of Nelson proposed the following:

> *"The City of Nelson will conduct an environmental audit and engage in an active transportation assessment. This will result in an understanding of the extent as to which Nelsonites depend on the personal automobile for transportation and the resulting amount of greenhouse gas emissions. This will also result in an inventory of Active Transportation assets as well as assess existing pedestrian and cyclist routes/pathways within the City."*
>
> *"The City will undertake community consultations in order to determine local active transportation needs. These community consultations will assist staff in prioritizing needs for the Comprehensive Active Transportation Plan."*
>
> *"The City will use the information gathered in the environmental audit, active transportation assessment and community consultations to develop a Comprehensive Active Transportation Plan. This will identify multi-use trails, pedestrian and cyclist amenities and public transit improvements to encourage forms of human-powered transportation."*

Completing an Active Transportation Plan with the BEAT Community Planning Grant will enable the City of Nelson the opportunity to conduct an inventory of its Active Transportation assets and produce a formalized Active Transportation Plan to encourage and create opportunities for alternative modes of transportation.

1.2 Benefits of Active Transportation

Active Transportation is a generic term that refers to all forms of human-powered transportation modes, including walking and cycling and variants such as small-wheeled transport and wheelchair travel. As with any other mode of transportation, trip purposes vary considerably, and range from recreational pursuits to shopping and commuter trips. In order for Active Transportation to be effective, a network must be established that integrates all modes such as transit and linkages to key facilities. It must also crucially recognize the needs of different Active Transportation users.

Communities are focussing on alternate modes of transportation for many reasons relating 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: strengthened community through mobility, equity, and efficiency
- Reduced crime with increased activity and surveillance on the street

Economic

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

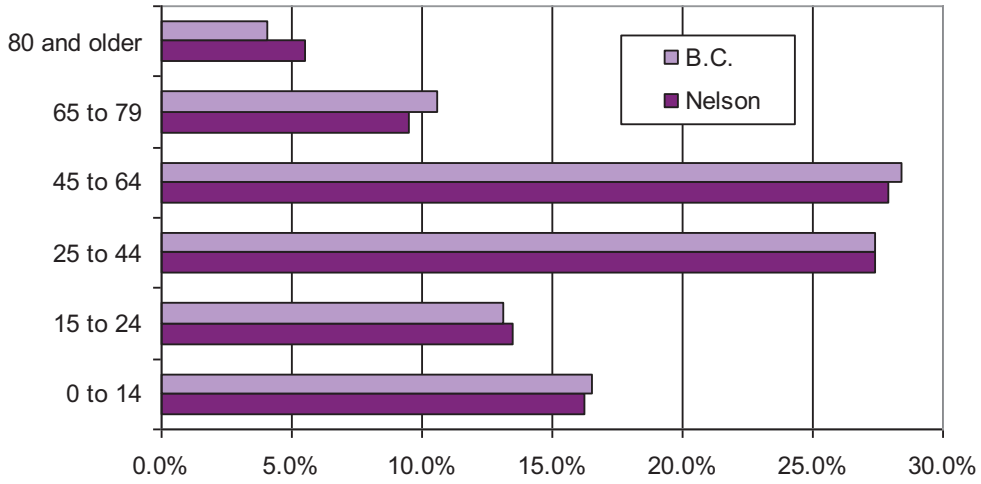
1.3 Community Profile

The City of Nelson comprises 7.2 square kilometres predominantly on the south shore of the Kootenay River with a resident population of 9,800. While it is urban in character, it has many parks and public places that offer diverse public use featuring creeks, mountains and easy access to a wilderness environment. This tends to attract residents who have an interest in active modes of transportation.[1]

The age demographics for Nelson are fairly reflective of the province, as shown in Figure 1.

[1] Corporation of the City of Nelson

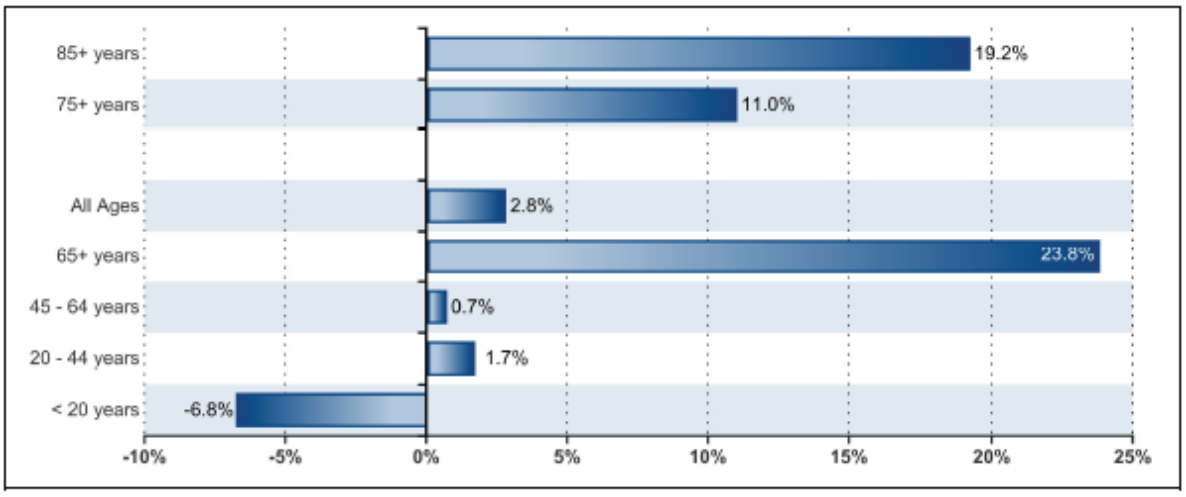
Figure 1 – Age Distribution in Nelson versus B.C., 2006[2]



Although the median age in Nelson is 40.3 years, 84 percent of the population is over 15 years, and it is apparent that the proportion of seniors (over 65 years) will rise in upcoming years. The City of Nelson may want to consider providing priority to transit to provide better access, affordability and convenience for the elderly and physically impaired demographic, or it may want to devote funding to more recreational infrastructure to attract a more youthful demographic.

The following figure from the Interior Health Authority's 2008 population projections report illustrates the anticipated five year trends (2009 to 2014) in Nelson Local Health Area, of which the City of Nelson comprises approximately 38 percent of that total population.

Figure 2 – Population Growth (Percent Change) by Age Group[3]



Notes: Growth in the 75+ age group includes growth in the 65+ age group
Growth in the 85+ age group includes growth in the 65+ and 75+ age groups

This information was used to assess suitable benchmarks for the Comprehensive Active Transportation Plan.

[2] Information obtained from 2006 Census

[3] Nelson Local Health Area 07. Interior Health Authority P.E.O.P.L.E.33 Population Projections, 2008.

1.4 Active Transportation in the Nelson Community

Historically, transportation plans for the City of Nelson have focused primarily on roadway networks and infrastructure related to the automobile; however, residents have shown a willingness to use alternative modes of transportation to commute to work. In fact, 31 percent of Nelson residents walked or cycled to work, according to the 2006 Census. This compares with only a 9 percent average for British Columbia. In Nelson, 65 percent currently commute to work using personal automobiles, as compared with 80 percent of British Columbians. The following figures illustrate the mode split for Nelson and the province of BC:

Figure 3 - Nelson Mode Split

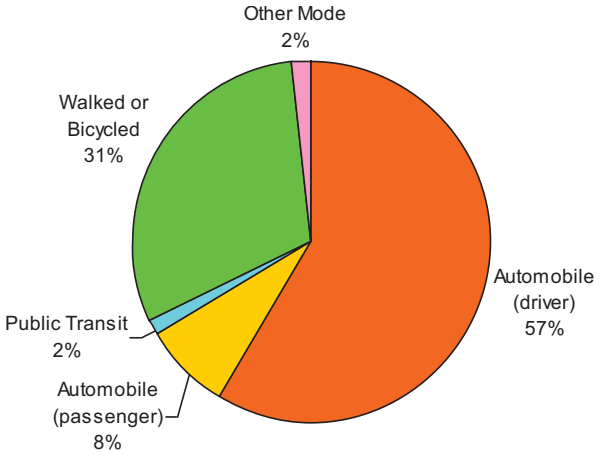
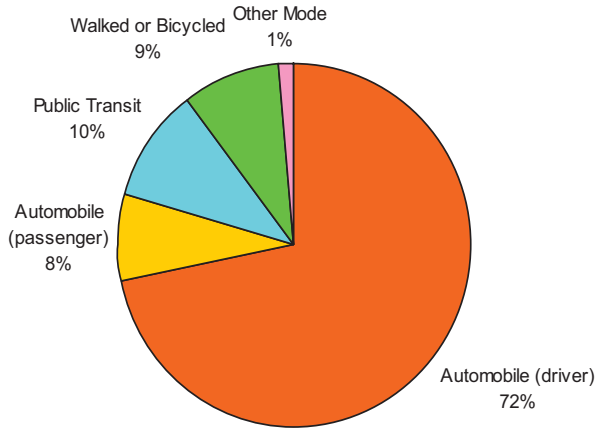


Figure 4 - Provincial Mode Split



The City of Nelson *Official Community Plan Bylaw No. 3114* (2008) entails policies promoting active and healthier forms of transportation. The Trails Network Map was developed as Schedule F to the Official Community Plan (OCP). The Active Transportation Plan demonstrates an understanding that the consolidation of existing policies and guidelines relating to Active Transportation and synergizing the plan with the vision and goals of the new OCP will ensure further progress is made towards creating a healthy, vibrant and sustainable Nelson community.

1.5 Plan Purpose and Objectives

Currently 35 percent of commuters surveyed use a mode of transportation other than personal automobiles to commute to work.[4] This statistic is impressive, and the aim of implementing an Active Transportation Plan is to further increase human-powered forms of transportation to further reduce reliance on the personal automobile.

This Active Transportation Plan identifies multi-use trails, pedestrian and cycling amenities and public transit improvements to increase options for human-powered forms of transportation within the City of Nelson. The study goal is to encourage alternative modes of transportation in an effort to reduce greenhouse gas emissions and increase accessibility for all citizens of the City.

[4] Statistics Canada 2006

1.6 Study Approach

This study was conducted using the following process:

- A review of the City of Nelson's background information including existing population demographics, transportation trends including mode split and key transportation corridors, transportation studies and plans, pertinent bylaws, and GIS data was conducted in order to determine the existing conditions.

- A city-tour was conducted to identify any major deficiencies which may discourage Active Transportation.

- Stakeholder input and public consultation was a key element in identifying real issues and concerns of Nelson residents, as well as gauging opinion on potential solutions, and understanding the particular needs and desires of Active Transportation users.

- Digital mapping was produced to assist in the identification of the Active Transportation network plan by allowing the project team to determine the viability and benefits of individual routes and incorporate known elements of the existing road network. Mapping was also used to illustrate the issues and gaps in the current network and recommended alternatives.

- Based on the results of the aforementioned tasks, existing and desirable Active Transportation infrastructure was identified and supporting measures for the development, use and encouragement of Active Transportation infrastructure and facilities were suggested.

2.0 Literature Review and Best Practice

2.1 Review of Relevant City Documents

The City of Nelson has a large number of plans and policies that provide direction regarding the design, development, and management of the Active Transportation Network. The *City of Nelson Transportation Planning Review & Project Implementation Strategy*, *Official Community Plan* (OCP), *Integrated Community Sustainability Planning Community Assessment*, and a number of local transportation and sector plans collectively provide information on Active Transportation facility goals, policies and requirements.

Despite the number of plans and bylaws that address Active Transportation planning, there has not been a comprehensive or coordinated plan to deal with all aspects of planning for the implementation of the network. The creation of an Active Transportation Plan provides an opportunity to coordinate policy direction and to provide more specific guidance for implementation activities.

Official Community Plan, Bylaw No. 3114

Nelson's Official Community Plan (adopted in 2008) contributes towards the policy direction that will frame the preparation of the Active Transportation Plan. Nelson's OCP provides a community-wide policy framework for future growth. Directives for the future include:

- City expansion that will respect the present small town character;
- Provision of cost effective municipal services;
- Desirable living conditions for all demographics;
- Build a community based upon the principles of sustainability; and
- Retain environmental quality.

Clauses relating to the City of Nelson's vision for Active Transportation are found throughout the OCP. A Trail Network Map (Schedule F Trails Network Map) was included with the update of the City of Nelson OCP and identifies existing and proposed trails, but does not differentiate between pedestrian and cyclist routes, nor does it provide priorities for future trails and pathways.

Transportation Planning Review & Project Implementation Strategy

This 2007 document calls for improvements to some parts of the Active Transportation network facilities, including the revision of road standards to incorporate bicycle facilities and implement sidewalk construction program. The report indicated some high-importance issues relating to Active Transportation such as traffic calming measures on Vernon Street.

Integrated Community Sustainability Planning Community Assessment

This report identified specific directions that the City should plan towards for long-term sustainability and funding opportunities to enable implementation.

City of Nelson Traffic By-law No.2232

Businesses are required by Section 701 of Traffic By-law No.2232 to remove snow and ice from sidewalks in front of their premises after each snowfall by 11:00 a.m. on a regular basis. It also requires all owners or occupiers of both residential and business property to ensure non-obstruction and reasonable cleanliness of abutting sidewalks.

City of Nelson Transit Strategy

This document, prepared by the Nelson Conventional and Custom Transit System, outlines the key objectives for the delivery of transit services within the Nelson area and examines the current and future markets of transit customers. Key support initiatives that are necessary to enhance the effectiveness of transit within the City were identified as follows:

- Integration of the various transit services and associated fares in the region;
- Fare strategies that may be directed toward expanding existing target markets;
- TDM measures that support the integration of transit with attractive bicycle and pedestrian facilities in terms of creating enhanced access;
- On-street facilities at high demand locations to enhance the quality of waiting areas; and
- Marketing strategies to identify and target key transit markets, including the provision of accessible transit information such as riders' guides, information signage, and the website.

City of Nelson Traffic Operations Administration Guide

This study was completed in January, 2007 by Urban Systems. It provides recommendations regarding developing policy and implementation of traffic signs, pavement markings, and traffic signals. Application of signage is limited to traffic control signage: right-of-way control, speed limit and pedestrian crossing signs. Pavement marking application guidelines is provided for directional dividing lines, stop lines, and marked pedestrian crossings. Bicycle signage and markings are not addressed. General guidelines for installation and maintenance of signage and signals are provided, as well as recommendations for the implementation of traffic calming initiatives and references the Canadian Guide for Neighbourhood Traffic Calming, Transportation Association of Canada / Institute of Transportation Engineers (1998).

2.2 Review of Guidelines, Definitions, and Policies

With Active Transportation planning being present in many communities and municipalities in North America either directly with Active Transportation Plans or indirectly in other forms and plans, a review and summary of some of the best practices was conducted of Canadian communities with similar population and/or climatic conditions to Nelson. This literature was done by Opus International as part of our Prince George Active Transportation Study in 2008, and updated for this study. Different municipalities have different needs and challenges and are not all starting with the same baseline in terms of Active Transportation mode share and Active Transportation facilities and infrastructure. This is not a list of areas that Nelson should include in their Active Transportation Plan but rather a summary for reference and consideration.

The summary of best practices and design guidelines used to formulate general considerations for Nelson, as described in Section 6.0, is documented in Appendix B.

3.0 Existing Active Transportation Network

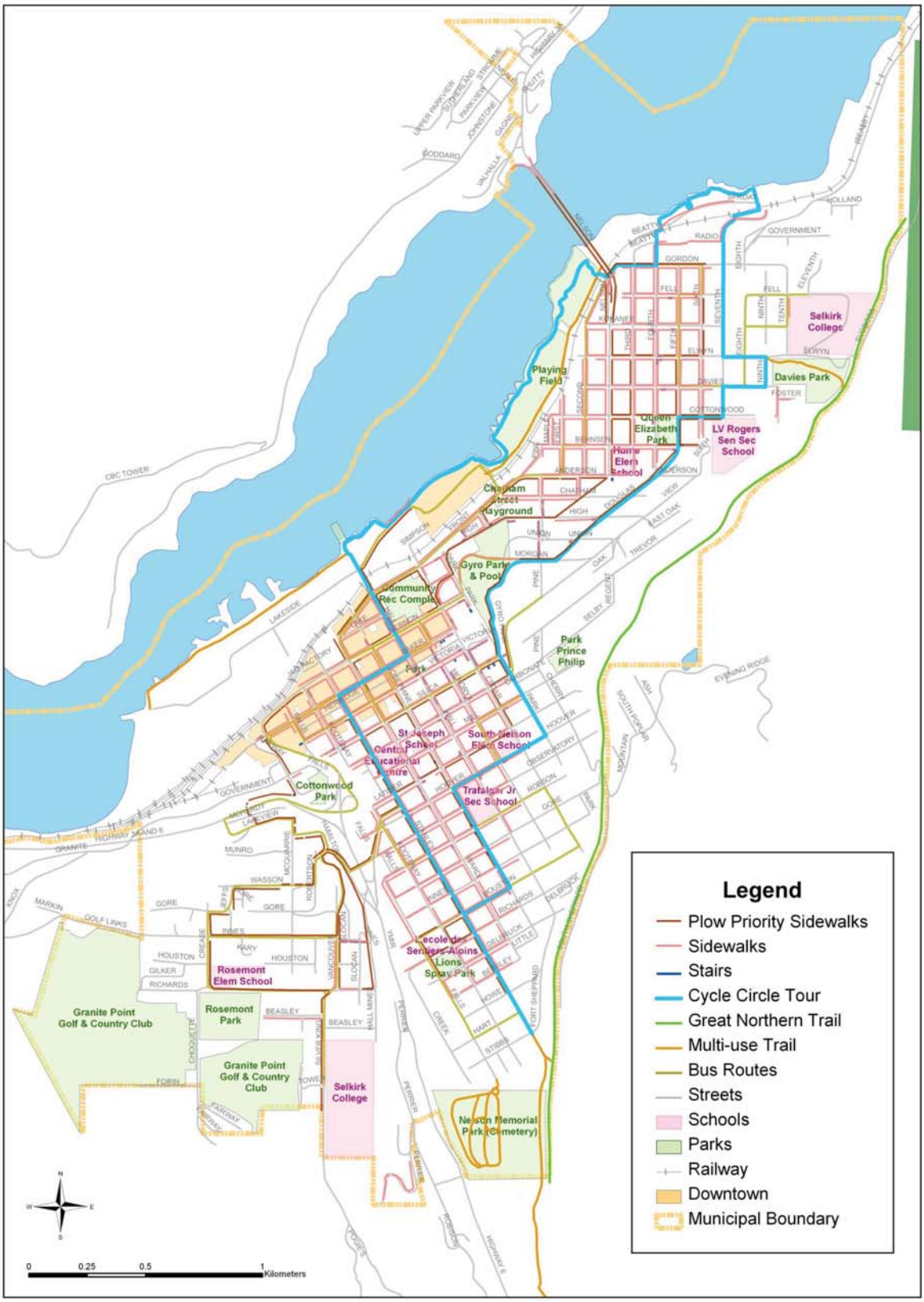
The City of Nelson is comprised of five neighbourhoods: North Shore, Downtown, Uphill, Rosemont, and Fairview. Although there are some Active Transportation facilities in place, there is no specific strategy to addressing the implementation or maintenance of Active Transportation infrastructure.

The high percentage of current pedestrians and cyclists indicates that many in Nelson are already aware of the benefits of Active Transportation. Current infrastructure must be maintained to facilitate the trend.

One of the main concerns for Nelson residents is convenient and accessible routes connecting the residential neighbourhoods to the downtown, the commercial core and a major employment area of Nelson. Other major attractions and destinations outside the downtown core consist of neighbourhood parks and schools, Selkirk College, the Kootenay Lake Hospital, and all other community centres and recreational facilities.

Map 1 – Nelson Active Transportation Plan Existing Facilities maps the community areas of Nelson and indicates the major attractions / destinations as well as the existing Active Transportation network including cycling routes, multi-user paths, sidewalks, stairs, and transit system.

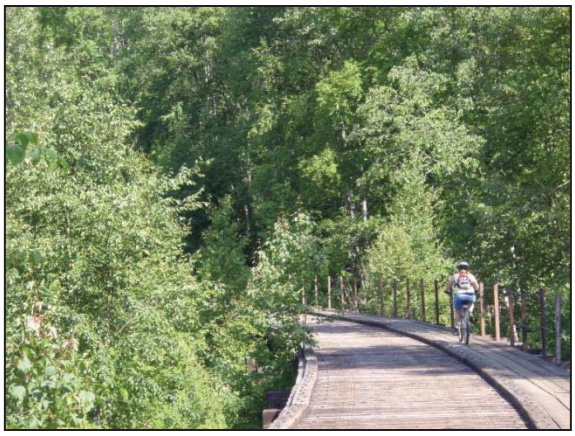
Map 1
CITY OF NELSON
Active Transportation Plan
Existing Facilities



3.1 Bicycle and Trail Network

The existing trails in Nelson offer valuable physical activity opportunities and can represent the cornerstone for expansion of other alternate transportation options.

Figure 5 - Nelson Recreational Trails[5]



There are several regional trails and recreational lands within a ten kilometre radius of Nelson, including Cottonwood Lake Regional Park, Taghum Beach Regional Park, James Johnstone Regional Park and Pulpit Rock Access Regional Trail. The Great Northern Rail Trail (GNRT) is a multi-use regional trail along the former Burlington Northern Santa Fe rail corridor extends south to the Village of Salmo and east to Troupe Junction and passes through Nelson within the municipal boundaries.

Throughout the existing City parks and the cemetery, there are multi-user paths which are well utilized. While the trails through the cemetery are actually roads, their use is primarily for walkers and joggers.

The Cycle Circle Tour is an urban trail (on-road) throughout the City of Nelson that is intended to provide commuter links. Although the current route follows direct routes, the steepness of the routes may not be the most suitable for all skill levels. All levels and ages of cyclists should feel comfortable or it is unlikely that they will engage in Active Transportation. Transportation of Canada's typical recommendation for bike paths is a maximum grade of 5 percent, with steeper grades acceptable for sections up to 150 metres.

Schedule F of the OCP indicates two proposed trails that provide a northeast and southeast connection between the Circle Tour and the Great Northern Trail. These connections are from the south end at Stanley Street (Upper Uphill Neighbourhood) and east end at Elwyn Street (Fairview Neighbourhood).

The Trans Canada Trail (TCT) is a multi-use recreational trail stretching across the country of which over 15,500 kilometres have been developed to date. Trails BC has recently asked Nelson City Councillors to provide a Trans Canada Trail route through the City of Nelson, beginning at

[5] Opus International Consultants Ltd.

Mountain Station on the Great Northern and ending at the Kootenay Lake Bridge. Options for the TCT are being explored as part of the overall Active Transportation Plan, and options are discussed in Section 5.3.

The existing bicycle facilities are summarized in Table 1.

Currently, bicycle parking requirements are not included in the City's Land Use Regulation Bylaw under Part III - Parking. Few formal bicycle parking facilities were observed during the site visit. The City does not provide bicycle racks, and it is up to individual businesses to determine whether they wish to accommodate bicycle parking outside their establishment. On-road bike routes are generally unmarked, and awareness of their existence is limited.

Figure 6 – Examples of Bike Parking in Nelson[6]

Table 1 – Existing Bike Facilities

BICYCLE FACILITY	TYPE	WIDTH	SURFACE
Cycle Circle Tour	On Street and multi-user path	Shared with automobiles, width varies	Paved
Lakeside Trail	Off-street multi-use path	3.0 m	Mixed: Paved & Un-paved
Great Northern Trail	Off-street multi-use path	3.0 m	Un-paved

[6] Scott Allen, 2009

3.2 Pedestrian Network

Key Elements for a pedestrian network plan are well-maintained sidewalks, visible crosswalks, controlled speed limits, and pedestrian right of way. Pedestrian corridors must be designed so that all members of the community can use them, including the elderly and disabled. This includes ensuring crosswalks are wheelchair accessible and adequate connections to senior centres and similar facilities.

Nelson is a compact community and is served fairly well by existing sidewalks. Most of Nelson's streets have a sidewalk on at least one side, although there are locations where sidewalks are missing. Some of these gaps were identified through the consultation process.

The City of Nelson *Sidewalk Snow Removal and Sanding Plan (2005)* provides connectivity between neighbourhoods for pedestrians:

> "This program includes plowing the approved sidewalk route and cleaning steps that are part of [Nelson's] sidewalk system. The approved sidewalk route is 20 kilometres of the total 55 kilometres of sidewalks in the City. This route is a series of sidewalks that gives pedestrians a plowed route to walk to all areas of the City."

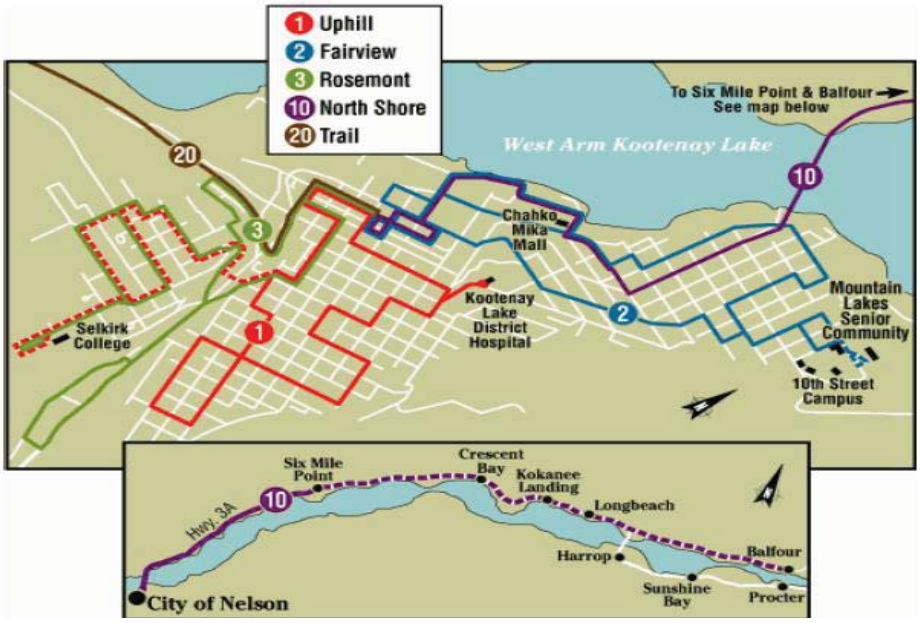
It is not clearly stated when the sidewalks have to be cleared, but current practise is to provide priority to roadways. All stairs are part of the sidewalk system and are cleaned and sanded by the day-shift crew. Generally the sidewalk route covers sidewalks on one side of a street only.

Further to the Snow Removal Plan, businesses are required by Section 701 of Traffic By-law No.2232 to remove snow and ice from sidewalks in front of their premises after each snowfall on a regular basis. It also requires all owners or occupiers of both residential and business property to ensure non-obstruction and reasonable cleanliness of abutting sidewalks.

3.3 Transit System

The City of Nelson currently has transit routes which service the North Shore, Downtown, Uphill, Rosemont, and Fairview neighbourhoods, as shown in Figure 7:

Figure 7 - City of Nelson Transit Routes[7]



Within the City, the transit system routes provide good coverage of the compact community. The routes providing service to Uphill, Fairview, and Rosemont provide service starting between 6:30 to 7:20 a.m. and ending between 8:40 to 9:10 p.m. During morning hours, bus frequency is every 30 to 40 minutes for Uphill and Rosemont, and every 40 to 60 minutes for Fairview. During midday and peak evening times, maximum frequency is every 30 minutes. Later evenings have varying frequency of service.

Accessible transit services for the region include low-floor buses on transit routes, as well as handyDART and Taxi Saver Supplement services.

Currently, service between Nelson and Trail is available three times per day. Buses to Trail leave Nelson at 6:45 a.m., 12:05 p.m., and 2:55 p.m. Similarly, buses on route to Nelson leave Trail at 7:00 a.m., 12:20 p.m., and 2:40 p.m. This system notably lacks a late afternoon/ evening connection that could accommodate those living in one city and employed or attending an educational institution in another.

The system is currently funded by a cost-share program between BC Transit and the City of Nelson, with revenue and infrastructure controlled by the City of Nelson. The current bus fare within the City of Nelson is $1.75 for adults and $1.50 for seniors and students. Between Castlegar and Nelson, the fare is $2.50, and $1.50 between Trail and Castlegar. Tax credits of 15.25% are available for monthly bus passes, which range from $31 to $75.[8]

[7] City of Nelson Transit Strategy, 2008
[8] BC Transit

In March, 2008, the Nelson Conventional and Custom Transit System completed a City of Nelson Transit Strategy. According to the report, 40 percent of typical weekday riders consisted of students, and 38 percent of adults under the age of 65 years. Only 8 percent of the total ridership was seniors, and BCPasses accounted for the remaining 14 percent.

The Transit Strategy recommended targeting youth as transit users to secure future ridership. Currently, students comprise 40 percent of Nelson's transit users on a typical weekday. The strategy is to continue servicing LV Rogers Secondary School and Selkirk College. A significant number of commuters from Balfour and Slocan attend a high school or college in Nelson. Stakeholders indicate that bus occupancy is relatively low in the mid-day period.

Given the relatively long headways between buses, and since Nelson is compact, commuters may find it just as convenient to drive or use human-powered transportation modes.

Although it may be argued that increased ridership may detract from cyclist and pedestrian activity, which have added personal health benefits, investment made into public transit would accommodate the aging population in Nelson. As transit users generally have to walk to a designated transit stop, an adequate sidewalk system and maintenance plan must also be in place in order to have an effective transit system. Furthermore, the buses in Nelson are equipped with a bike rack that can accommodate two bicycles. The transit system can also act for a support for Nelson's Active Transportation network, providing an alternative route home for those who wish to avoid steep hills, or poor weather.

3.4 Other Modes of Active Transportation

As previously defined in Section 1.2, Active Transportation modes are not limited to conventional methods of walking, cycling, and public transportation, but also includes wheelchairs, cross-country skiing, and small-wheeled transport such as skates, skateboards, push scooters, and hand carts. Taxicabs and car coops can be considered sustainable modes, as they provide support for those who do not or cannot own a car to make trips to destinations that are only accessible by car.

An auto-cooperative has been active for nearly a decade in Nelson and offers members of the community an opportunity for more affordable and sustainable means of transportation than private ownership of an automobile if the individual requires a vehicle for local trips relatively infrequently. Nelson Co-operative Carshare also has cross use agreements with Vancouver and Victoria, enabling members to sign out cars when in these cities.

Currently, there are no designated or planned facilities for most non-conventional modes of Active Transportation. Section 705 (3) of the City of Nelson Traffic By-law No.2232 stipulates the following:

> "No person shall coast or slide on any highway, sidewalk or boulevard with sleds, toboggans, skis, skates, skate boards, roller skates or other like apparatus except on highways, sidewalks or boulevards expressly closed to vehicular traffic by Council for such purposes."

3.5 Challenges to Active Transportation in Nelson

Due to the geographical location of Nelson, the primary challenges to sustainable transportation in the City of Nelson are mountainous terrain and winter conditions.

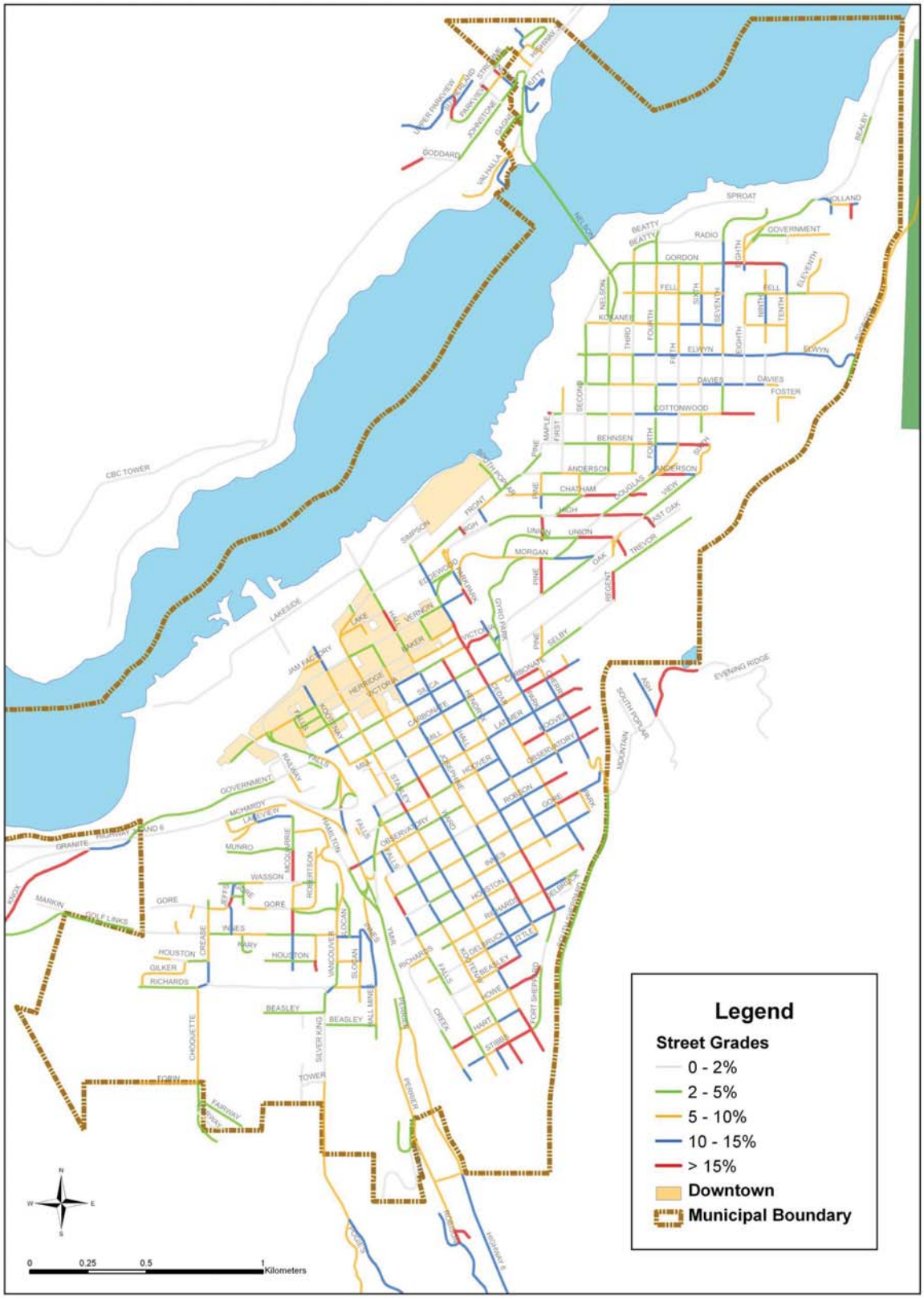
Icy conditions in the winter months aggravate the challenge of Nelson's topography to Active Transportation. Nelson receives an average snowfall of 292 centimetres, which varies throughout the City, as it is generally lower in Fairview and higher in Uphill and areas of Rosemont[9].

The rise of Nelson is approximately 180 metres, as Kootenay Lake is a little less than 540 metres in elevation and the top of the City is at an elevation of 720 metres. Downtown to Uphill is particularly challenging for daily commutes, and accessing the Great Northern Rail Trail requires traversing steep grades.

Map 2 on the following page illustrates the street grades in the most topographically challenging areas of Nelson.

[9] http://www.city.nelson.bc.ca/html/snow.html

Map 2
CITY OF NELSON
Street Grades



3.6 Active Transportation Benchmarks

Building on the significant percentage of Nelson residents who have indicated their willingness to commute actively, the City of Nelson would like to see an increase in the number of commuters using Active Transportation modes. Although the 2006 census notes that significantly more Nelson residents are already using Active Transportation than the BC average (see Section 1.4), it is important to note that Census data is collected in May, when the weather is generally good. Steep topography and the winter climate pose a considerable barrier to walking and cycling in Nelson; therefore, measurable increase in Active Transportation will need to be facilitated by a robust Active Transportation network that synergises alternative sustainable transportation modes. Residents may choose to walk or cycle in summer but take transit or carpool in the winter. Furthermore, residents may wish to commute downhill using human-powered transportation and use transit or electric bikes to return uphill. It is important to note that pedestrian and cycling facilities can contribute to transit ridership, as most transit riders must walk at least a few blocks at the beginning and end of their trip.

- *It is recommended that rather than setting a target for walking or cycling trips, the City should set a target for sustainable versus non-sustainable modes.*

Targets should be set for increasing the number of trips made collectively by sustainable modes such as public transit, walking, carpooling, motorcycles, taxis and car co-ops and cycling. Considering the aging demographic and high level of existing pedestrian and cycling activity, it is more logical to set a benchmark for decreased single occupancy vehicles, rather than targeting specific increases in each Active Transportation mode. Cyclist activity is considerable in Nelson, and in light of the decreasing young demographic, it should not be expected that this activity will increase significantly in proportion to other modes.

- *It is recommended that the City of Nelson adopt a benchmark of reducing single occupancy vehicle use to less than 50 percent in ten years.*

This is an ambitious while still realistic goal. As per the Census data illustrated in Figure 3, it can be assumed that single occupancy vehicles comprise 57 percent of Nelson's current mode split. Ten years will provide an adequate time period for completion of vital transportation links and ability to attain proper statistical information on the impact of the Active Transportation initiative, including long-term behavioural changes rather than a short term trend due to specific programs or events.

In order to achieve a robust network for Active Transportation, current obstacles to human-powered transportation must be realized and mitigated. Many of the issues and constraints were identified through the public consultation process. These include:

- Outstanding challenges to Active Transportation circulation;
- Changes that need to occur to increase transit use, walking trips and cyclist trips; and,
- Priorities for facility improvements.

By increasing the modal share of transportation options such as walking, cycling, public transit and ridesharing, Nelson will progress towards its goal of becoming one of the healthiest communities in British Columbia.

3.7 Summary of Existing Conditions

Based on the discussion of existing conditions presented in the preceding sections, a summary list of identified opportunities and challenges specific to Nelson is presented below:

Opportunities:

- Existing mode split is good
- Urban area is relatively compact
- Some multi-use trails are already developed
- Existing network of sidewalks is well-established

Challenges:

- Aging population
- Steep grades
- Narrow roadways
- Access to Great Northern Trail is steep
- Infrequent transit service
- Sidewalks are not treated as high priority for plowing

4.0 Public Consultation

In order to gain insight into the current issues related to Active Transportation within the City of Nelson, a public consultation plan involving stakeholder meetings, a community open house, and a web-based survey was conducted. All of the input was reviewed and analyzed to prioritize the expressed needs and desires.

4.1 Stakeholder Consultation

A focus group style discussion on Active Transportation in the City of Nelson was held Monday, August 31st, 2009, at Council Chambers, 2nd Floor Nelson City Hall. The aim of the consultation session was to gain an understanding on the current issues and gaps for Active Transportation in Nelson, and to gather opinions and ideas on improvements.

The session involved a brief presentation followed by discussion and was divided into two sessions - one for City staff, and the second to include individuals and organizations involved with active living, seniors, youth, recreation, Nelson Cycling Club and various transportation initiatives within the City of Nelson.

Any stakeholders unable to attend the consultation session had the option to provide their input via a telephone interview with a consultant from Opus. The stakeholder list is provided in Appendix C.

Opus prepared three options for the urban portion of the Trans-Canada Trail (TCT) to take forward to the City for discussion. Advantages and disadvantages to each alternative were observed. It was determined that public input was desired on whether the TCT should be routed through the downtown. Based on discussion with stakeholders, the option for the TCT which did not include a routing through the downtown area was not put forward for further discussion.

High level issues identified through the stakeholder consultation process include the following:

- Maintenance issues
- Lack of street lighting
- Snow removal on sidewalks and bike routes
- Lack of Signage and WayFinding, especially for bike routes
- Limited bike parking
- Connectivity to the waterfront
- Desire for routes across and along the rail corridor
- Missing sidewalks, especially around schools
- High Street being narrow for a bike route
- Steep streets making it challenging for walking and cycling
- Too many stop signs on bike routes
- Pass-by of buses when bike racks are at capacity

Identifying issues prior to public consultation enabled meaningful discussion and feedback through public consultation, as well as opportunity to gauge public support of possible remediation alternatives.

4.2 Open House

An Open House consultation session was held October 27th, 2009, at the City of Nelson Library Meeting Room to solicit feedback on Active Transportation from Nelson residents and provide the public with the opportunity to discuss ideas and opinions on how to increase Active Transportation in their community.

To gain maximum input towards the Active Transportation initiative, the event was advertised as follows:

- On the Opus host website (www.opusinternational.ca/CityOfNelson)
- On the City of Nelson website
- Nelson Daily News (three advertisements)
- Nelson Star advertisement
- Express advertisement
- Radio interviews with the Kootenay Co-op Radio and KBS
- A press release by the City of Nelson (and subsequently reported by the Nelson Daily News)
- Posters

The posters advertising the event were put up at walking/cycling trails and targeted locations throughout the City:

- trail heads along the waterfront
- each end of the BNR pathway
- cemetery (as a common location for walking dogs/hiking trail access)
- Nelson and District Community Centre
- City Hall
- the municipal library

The Open House was attended by approximately sixty people, who were presented with various poster boards available for participants to mark on their issues/ comments/ suggestions using markers, sticky dots, and post-it-notes. Participants were asked to prioritize high level issues and identify additional issues with Active Transportation in Nelson. They were also asked to identify their preferred routes, barriers and missing links within the existing Active Transportation network.

Figure 8 - Public Open House[10]

The brochure and content of the presentation boards from the Open House, along with an inventory of the comments, are available in Appendix C.

The primary concerns regarding Active Transportation in Nelson included the desire for bike paths and lanes, and improved snow and ice removal. Connectivity between neighbourhoods and the downtown and accessibility to the Great Northern Rail Trail (also referred to as BNR rail) trail were also widely noted. There was strong support towards developing the proposed trails indicated on the base maps. There was no opposition to the proposed paths.

Preferred routes varied as origins and destinations tended to be diverse; however, people did want routes signed where they currently exist as it is generally felt that there is a lack of awareness of existing routes and opportunities. Signage requests included destination signage for the downtown core and recreational attractions, as well as general route markers. Some also indicated that the steepness of the routes should be identified where alternatives to various destinations may exist.

The lack of bicycle parking in the downtown was an issue many felt should be addressed, although the lack of lighting did not seem to be a major concern for residents. Conversely, there were more comments in support of less light, or at least consideration for direct downward lighting for new installations.

There was notable support for a frequent transit system running up and down Stanley Street. Suggestions included a gondola, electric tram, or buses. This initiative would connect Uphill and the Great Northern Rail Trail with the downtown core and could be utilized for Uphill resident commutership, as well as recreation and tourism opportunity.

[10] Nelson Star

The open house provided insight regarding the current use of Active Transportation potential improvements to Active Transportation in Nelson. It is important to note that the findings of the preferred alternatives and prioritization was not a random sample, as participants had to take the initiative to attend the event, and therefore indicated interest in the future of Active Transportation in Nelson.

Following the event, the boards were posted on the Opus host webpage and the online survey was active from October 15 until November 8, 2009.

4.3 Web-Based Survey

A web-based survey containing both qualitative and quantitative questions was used to gain information, views and opinions from the general public to feed into the study. The survey was conducted from October 15 to November 8, 2009. The following options were available for survey completion:

- Paper copies distributed at the Open House;
- Online via a link from the City's website;
- Respondents could contact the City to request a hard copy of the survey; and,
- The survey was available for collection from City Hall.

127 residents utilized the survey to provide information regarding transportation in Nelson. The key finding of the survey are as follows:

- Of the respondents, the most common type of Active Transportation in Nelson is walking (51 percent)
- 25 percent of respondents selected cycling as their most frequently used mode of transportation
- 49 percent most frequently use Active Transportation to commute to school or work and 42 percent most frequently use Active Transportation for exercise or pleasure.
- 80 percent of respondents have a commute less than 5 kilometres.

Respondents were asked to rank potential improvements to Active Transportation in Nelson in order of the initiative which would most encourage them to use Active Transportation. Of the respondents, 42 percent replied that more bike lanes would most encourage them to use Active Transportation and 26 percent stated that better snow clearance would most encourage them to travel more by Active Transportation.

The survey also provided respondents with the opportunity to provide additional comments relating to Active Transportation in the City of Nelson. The most frequently made comments were in regard to the winter conditions in Nelson and called for improved snow clearance as well as the need for improved connections between residential neighbourhoods and the downtown. Improved transit system was also a common suggestion.

Participants were asked to identify and prioritize the three greatest challenges to improving Active Transportation network in Nelson. The greatest challenges as prioritized by Nelson residents are as follows:

- Steepness
- Winter conditions (snow and ice) and lack of maintenance of Active Transportation facilities in these conditions
- Lack of Active Transportation Network and Facilities
- Public Attitude/ Disinterest; Lack of incentives
- Safety concerns regarding drivers, and lack of driver education and enforcement of violations
- Lack of funding and money
- Land use planning, low density, urban sprawl
- Lack of political will and that of decision makers

A copy of the survey and general survey results can be found in Appendix C.

4.4 Summary of Results from Public Consultation

While Nelson is a particularly active community and there are many opportunities for recreational and commuter activity, there are still outstanding issues that must be addressed in order to achieve the goal of a complete and usable Active Transportation Network.

Public consultation process in the form of surveys and focus group conversations resulted in a better understanding of the methods of Active Transportation being used by residents, the reasons why (or why not) people use Active Transportation, where they actively travel, and what improvements they would like to see to the network. As the sampling of survey respondents was not random, they may represent those residents who are more interested in Active Transportation in the community.

Overall, a significant proportion of the respondents indicate that they walk and cycle. Environmental stewardship, exercise/fitness, and pleasure are the most popular reasons. The topographical and climatic challenges are not insignificant in Nelson and as such, respondents indicated a need to prioritize improvements to winter maintenance on Active Transportation facilities and provide accessible and reasonable connectivity throughout the network. Core areas of improvement included linkages from neighbourhoods to the downtown core and linkages to recreational trails and facilities.

Major missing links and gaps in the existing transportation network as identified through observable issues and by Active Transportation users through public consultation are illustrated in Map 3 - Gaps in the Current Active Transportation Network.

Most of these gaps identified through the public consultation will be addressed as part of future routes within the recommended Active Transportation Network. Not all of the gaps identified are feasible. For instance, although a connection between Uphill and Upper Fairview via an extension of Trevor Street was favoured by many attendees of the Open House, this option is not

feasible due to right-of-way constraints. The gaps are not all assessed individually, but rather are prioritized as part of the overall network plan (see Section 5).

Specific requests for bike lanes are not included as a missing link where roadways providing the link currently exist. Similarly, the location of the Trans-Canada Trail through Nelson is not a missing link, as it will, for the most part, utilize existing routes and roadways through the City. Related issues involve concerns such as signage and pavement markings rather than missing links or gaps in infrastructure. These types of identified issues and barriers to the current Active Transportation system that can be addressed at policy level or general improvement strategy are identified in Table 2.

Map 3
CITY OF NELSON
Gaps in the Current Active Transportation Network
(Based on Public Input)

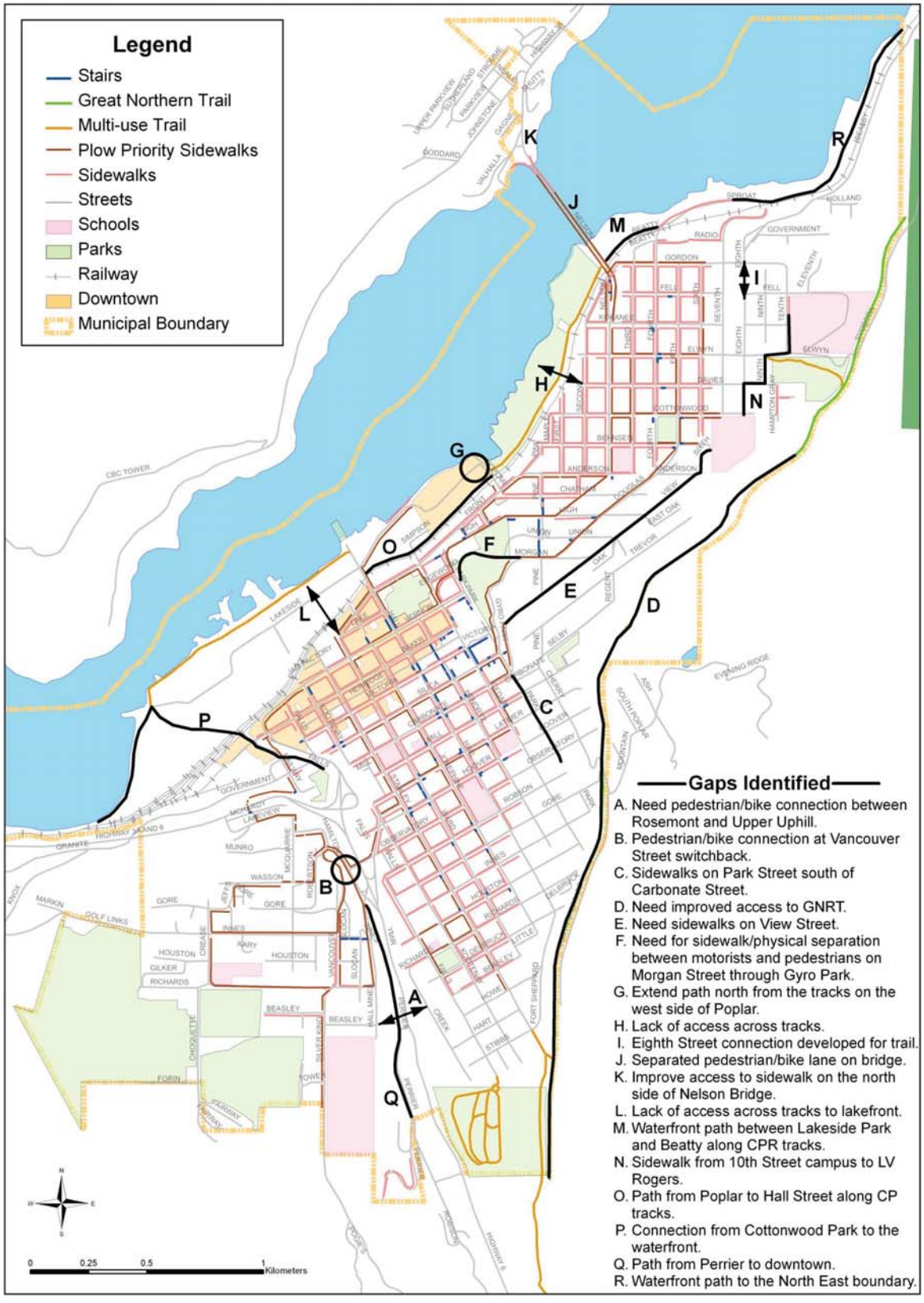


Table 2 - Active Transportation Issues and Barriers

General Issues	Specific Locations and Considerations identified through Public Consultation
Snow and ice clearance *Revisit amount and promptness of plowing practices on sidewalks.* *Bike lanes should not be utilized for snow storage* *Snow should be removed on multi-user trails and paths.*	Sidewalks: • High Street • Rosemont to Baker Street • Rosemont to downtown • Uphill to downtown • Uphill sidewalks • Rosemont sidewalks • Nelson bridge • Kootenay Street • Stanley Street • Ward Street Trails and Paths: • Lakeside Park Trails • John's Walk
Need more dedicated bike routes	• Separated pedestrian/ bike lane on Nelson bridge • Connect downtown with Northshore/ Taghum areas • Connection between Upper Rosemont and Upper Uphill • Stanley Street • Baker Street • Cottonwood Creek • Uphill to Gyro Park • Nelson to Blewett • Nelson/High/Vernon Streets • Rosemont to Gyro • Fairview to downtown (via Fifth Street) • Front Street to west end of Baker Street
Steep slopes *act as constraints to walking and cycling.*	• Uphill from downtown • Access to GNRT
Sidewalk and trail maintenance *Provide adequate maintenance and repairs to existing sidewalks and paths* *Ensure street signage is visible by trimming hedges, replacing broken signage, and placing poles so that signage is visible (not tucked away on property).* *Sweep bike routes regularly to remove gravel and debris as residual sand on roads makes cycling hazardous.*	In need of repair: • Hall Street • Downtown sidewalks • Carbonate Street (hospital to Hall Street) • Multi-use trails unmaintained and too infrequent • Pavement improvement on Waterfront trail Locations requiring vegetation/foliage control: • Fourth Street • Ward Street • Robson Street • west side of Hall Street near Latimer
Build more sidewalks and trails	• Uphill to upper Fairview • Connection between Uphill and Rosemont • Waterfront trails

	• Sidewalk on Park Street south of Carbonate Street • Sidewalks in Upper Uphill • East extension waterside path to Troop Junction
Install more bike facilities	• Downtown • Racks on all transit • Plug-ins for electric bicycles
Lighting concerns	• Refrain from light pollution • Replace broken lights • More lighting up to BNR trail • More lighting along downtown • More lighting along lower Uphill city streets • Some lights are unnecessary sources of energy waste
Not enough awareness of existing facilities	• Better signage of cyclist routes • Better signage for destinations (downtown, trails) • Educate on existing priority routes • Signage and maps for rail trail Uphill • Signage indicating least steep routes
Wheelchair accessibility	• Businesses along Baker Street
Transit	• Late afternoon service connecting Nelson and Trail • Bus route on Stanley
Not enough encouragement for sustainable transportation modes	• Remove vehicle traffic on Baker Street • Allow free parking for car co-ops
Enforcement of traffic laws	• Vehicles not stopping at crosswalks, • Speed limits exceeded, especially in school zones

Public input was assessed for determination of the proposed Active Transportation Network as discussed in the following section. Supporting measures for the development, use and encouragement of Active Transportation infrastructure and facilities are addressed in Sections 6.0 and 7.0.

5.0 Proposed Active Transportation Network

The proposed Active Transportation routes will allow for network connectivity and included consideration of the following aspects:

- Compatibility between sustainable transportation networks (transit routes, cyclist and pedestrian network)
- Existing infrastructure
- Connection of neighbourhoods to the downtown core
- Accessibility to recreational trails and facilities and integration of the Trans Canada Trail
- Opportunities for expansion of the Active Transportation network and amenities
- Route steepness (topography)
- All season conditions

Transit improvements and opportunities for unique systems (ski trails through Nelson, gondola, etc) are additional and would further add to Nelson's image and operation as a sustainable and active community.

5.1 Pedestrian Network

A review of the existing network of sidewalks and the priority routes highlights the following findings:

- All arterial roads except for those under the Jurisdiction of the Ministry of Transportation and Infrastructure have sidewalks on both sides.
- Most collector roads have sidewalks on at least one side, with exceptions shown on Map 3
- The treatment of local roads varies. Most local roads in the downtown, western Fairview and Lower Uphill have sidewalks on at least one side. Many of the local roads in Rosemont, Upper Uphill and Gyro have no sidewalks at all.
- Most major destinations are connected to the network via roads with sidewalk, except for the Tenth Street campus of Selkirk College and LV Rogers Senior Secondary School (along View Street).
- Most major destinations such as schools colleges and the Recreation complex are on the priority sidewalk plowing network, with the exception of those streets not served by sidewalks discussed in the previous bullet.

Potential improvements to the network have been grouped into short-term, medium-term, and long-term initiatives. This prioritization is used throughout the report and is based on a combination of likely user-ship and cost. User-ship was assessed primarily through public input and the potential to effect change. Cost will significantly affect the feasibility of a recommendation. It is also understood that most increases to infrastructure will result in higher maintenance costs for the City, which should also be considered prior to implementation.

Short-term recommendations have potential to effect change immediately, has a high user-likelihood (such as commuter gaps), or can be implemented easily and/or at little cost. They can generally be accomplished through existing maintenance budgets or have anticipated costs under $10,000 (e.g. signing and pavement markings and repaving).

Medium-term recommendations generally require some construction (e.g. new pavement, stairs, sidewalks within existing right-of-way), and can be completed for costs ranging from $10,000 to $100,000. Other considerations for not being a short-term prioritization may be that the recommendation does not directly mitigate an issue such as a gap in the network. Recreational linkages that do not serve commute desire line may be implemented beyond the short-term planning scope.

Long-term recommendations may have institutional or cost-prohibitive barriers and may require significant capital costs for construction or purchase of right-of-way. Other considerations are a lower potential to effect change or overall lower user likelihood.

Short-term proposals should be considered for short-term planning. For example, formalization of a short missing link on a highly used path does not have a high potential for effecting change, but can most likely be completed within existing budgets and contributes to overall usability of the existing network.

Potential improvements to the network are summarized below:

Short Term:

- Identify three priority snow removal sidewalk commuter links
- Provide dedicated pedestrian and cyclist link through Gyro Park
- Provide stairs or a ramp at the Vancouver Street switchback (multi-user)
- Provide sidewalks on Elwyn Street
- Provide a sidewalk on South Poplar Street.
- Formalize pedestrian / cyclist link on Eighth Street between Fell and Gordon (multi-user)

***Medium Term*:**

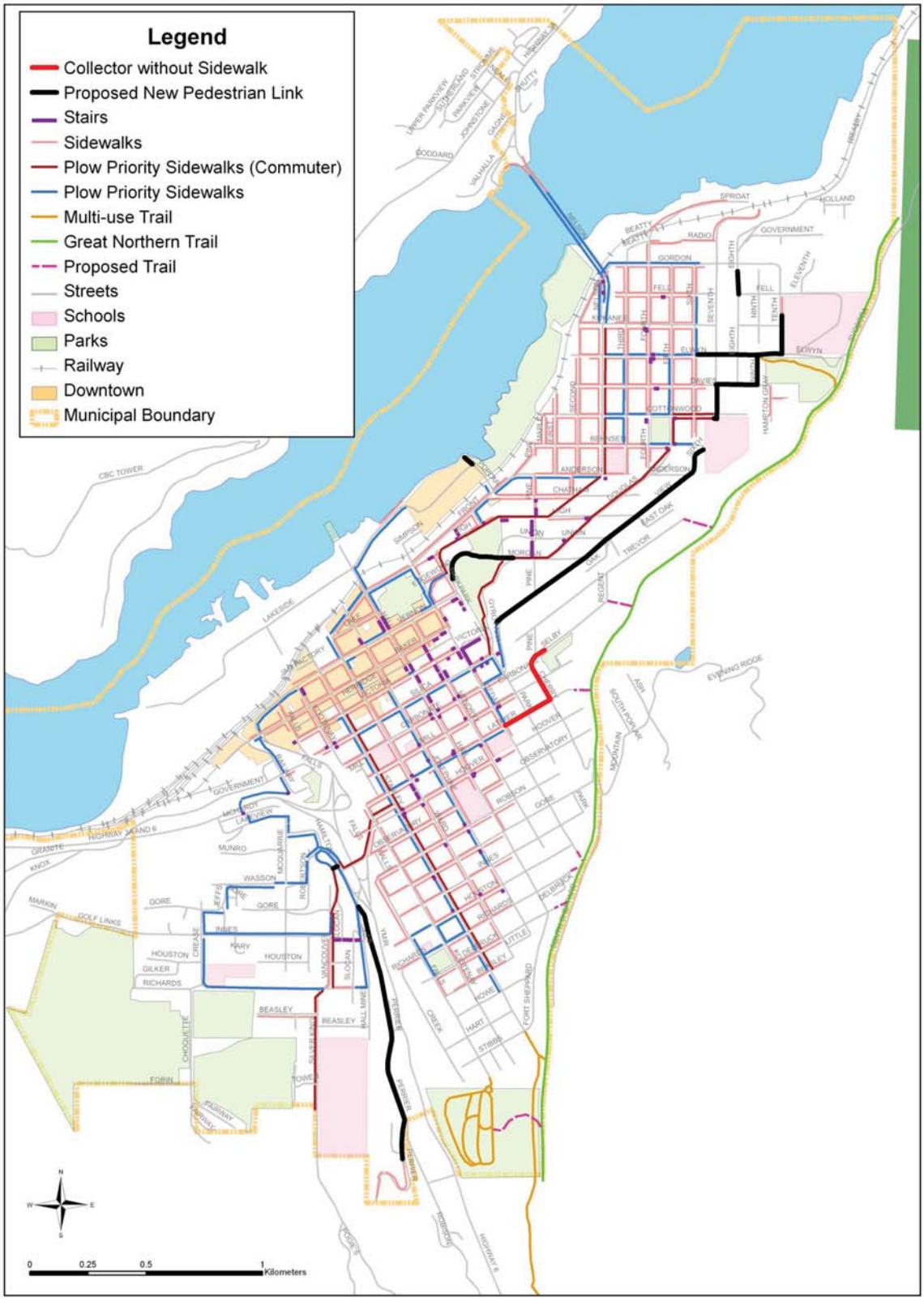
- Provide access to the Great Northern Rail Trail via the cemetery lands (multi-user)
- Provide Active Transportation facilities along View Street (multi-user)
- Improved connections to the Great Northern Rail Trail (multi-user)
- Controlled crossings of the rail to access the Lakefront trails (multi-user)
- Improve pedestrian / cyclist connection under Highway 3 (multi-user)

Long Term:

- Develop Perrier Road into a multi-user facility (multi-user)
- Provide connection between Baker Street Bridge and Lakefront (multi-user)
- Provide connection between Rosemont and Uphill (multi-user)

Following Map 4 - Pedestrian Network, which illustrates the aforementioned recommendations, is a discussion on the aforementioned improvements. System-wide guidelines for construction and maintenance of pedestrian, cyclist, and multi-use facilities are developed in Section 6.0. These guidelines address issues such as the provision of covered stairs on priority plow sidewalks and the provision of sidewalks on various classes of roadways (such as a recommendation that arterial and collector roadways have sidewalks on both sides and on one side of local roads, as well as guidelines on determining the appropriate side for placement of sidewalks when only one side is required).

Map 4
CITY OF NELSON
Pedestrian Network



- *Identify three priority snow removal sidewalk commuter links*

In order to facilitate commutership, it is proposed that three pedestrian commuter routes linking the downtown with the neighbourhoods of Rosemont, Fairview, and Uphill be identified for priority snow removal. This option may have considerable costs associated with it, but is imperative for supporting Active Transportation commutes. As described in Section 6.4, the City used only 75 percent of the annual snow clearing budget in 2009, which indicates that there may be capacity within the existing annual budget to accommodate this recommendation.

The proposed routes include:

- Uphill to downtown via one side of Stanley Street
- Selkirk College in Rosemont to downtown via Silver King Road and Vancouver Street
- LV Rogers in Fairview to downtown and the hospital via Douglas Street and Gyro Park Road

These routes serve major destinations and tie into the City bus routes, and the sidewalks should be cleared before 8:00 a.m. following a major snowfall. These pedestrian routes also correspond with Priority 1 route roadway snow clearance as the proposed pedestrian path is adjacent to roadways on emergency and / or bus routes.

An alternative for the Fairview to downtown route is to use Morgan Street through Gyro Park as an alternative to Gyro Park Road if it is developed to accommodate pedestrians, either through the addition of sidewalks or conversion to a multi-user path.

- *The priority sidewalk snow clearance initiative will require a change in the current operations at Public Works, as crews currently start at 7 a.m., and would be required to start by 5:00 a.m. to facilitate morning commutes along the priority pedestrian corridors.*

- *The only proposed change to the Plow Priority Sidewalks, other than the 8:00 a.m. clearance of the three aforementioned routes, is to consider the inclusion of Baker Street*, the major commercial street downtown, provided it can be completed within the existing snow clearance budget. Currently, business owners or occupiers of both residential and business property are required to remove snow on sidewalks abutting their premises. Residents and businesses should continue to be reminded of this policy (Section 701 of Traffic By-law No.2232), and it should be enforced in high-trafficked areas, such as the commercial core.

- *The suggested priority sidewalks should be expanded from current plans to include missing links and gaps within the priority routes if sidewalks are implemented*.

Potential changes to the policies governing the plowing of Priority Sidewalks will be discussed in Section 6.4.

- *Provide designated pedestrian and cyclist link through Gyro Park*

As indicated on Map 4, Morgan Street through Gyro Park should be evaluated as an alternative to Gyro Park Road for the Fairview to downtown Active Transportation route. This stretch of Morgan Street, approximately 465 metres between Gyro Park Road and Vernon Street, currently has no

pedestrian facilities. Providing cul-de-sacs at either end of this stretch and prohibiting vehicular traffic on the segment would create a safe and convenient paved path through the Park for pedestrians and cyclists. Vehicular traffic can use High Street or Gyro Park Road. If it is deemed unfeasible to direct traffic from Morgan Street, a more costly solution would include street widening to accommodate vehicular and cyclist traffic as well as the installation of sidewalks for pedestrian travel.

Restricting Morgan Street through Gyro Park to westbound traffic only so that vehicles and transit are not prohibited from utilizing the corridor for accessing downtown from Fairview is a reasonable compromise and should be considered as a short term solution, in addition to providing pedestrian infrastructure.

The alternative links through Gyro Park should be further evaluated to determine the most appropriate cycling and pedestrian link and appropriate measures for ensuring road safety and adequate convenience for all users. This should include consideration of traffic implications of restricting vehicle access on Morgan Street to one way or a full closure as potential suggestions. It is recommended that this be done in the short term so that any funds required for constructing or improving Active Transportation facilities, this can be considered in budget allocations and planning.

- *Provide stairs or a ramp at the Vancouver Street switchback*

There is a well-worn path at the Vancouver Street switchback, as it is currently used by foot traffic to shortcut across. As this is a relatively inexpensive initiative with high user likelihood, this short section should be formalized through either a ramp or stair connection. If stairs are implemented, they should be accompanied with grooved ramps to assist cyclists. An illustration of this concept is shown in Figure 21 in Section 6.2. As it will be a new stair location, as per the recommendation outlined Section 6.2, a roof covering and pedestrian level lighting should be included at implementation.

- *Formalize pedestrian / cyclist link on Eighth Street between Fell and Gordon*

The existing road right-of-way (shown in Figure 9) should be formalized as a multi-user link connecting Fell Street and Gordon Street along Eighth Street to provide continuity along Eighth Street. Stairs may be the preferred option to address the steep grade, and if implemented, should be equipped with grooved ramps and a covering as per Section 6.2.

Figure 9 – Undeveloped Eighth Street Right-of-Way between Fell and Gordon[11]

- *Provide sidewalks on Elwyn Street*

Sidewalks should be provided on Elwyn Street to provide continuity along the street and connect to Selkirk College and Davies Park. Sidewalk construction should follow the recommendations provided in Section 6.2 – Planning and Design of Pedestrian and Multi-User Facilities.

- *Provide a sidewalk on Poplar Street*

A sidewalk on Poplar Street will provide a missing connection to the Lakefront Trail that was identified by Nelson residents through the public consultation process. Figure 10 illustrates that the location is heavily utilized by foot traffic currently. Sidewalk construction should follow the recommendations provided in Section 6.2 – Planning and Design of Pedestrian and Multi-User Facilities.

Figure 10 – Existing Foot Path on Poplar Street[11]

[11] Opus International Consultants Ltd.

- *Provide access to the Great Northern Rail Trail via the cemetery lands*

The cemetery is a popular walking area for Nelson residents. A switchback to the GRNT via the cemetery lands was suggested by the public as a possible access that would be well-utilized and not excessively steep.

As per Section 40 of Nelson Municipal Cemetery Bylaw No. 3083 (2007), vehicles (including motorcycles, bicycles, snowmobiles, and all-terrain vehicles) may not operate in the Cemetery over speeds of 15 km per hour, and may have access through the gates between 9:00 a.m. and 3:15 p.m. November to March, and 7:00 a.m. to 8:00 p.m. April through October. Pedestrian access is allowed, provided appropriate behaviour is practised. Prohibited behaviour is described under Section 44 of the Bylaw. Using cemetery land for GNRT access would require an amendment to this bylaw if additional hours for trail access were deemed to be necessary.

- *Provide Active Transportation facilities along View Street*

Although highly utilized by pedestrians, View Street is a narrow road with no dedicated pedestrian facilities. The addition of sidewalks to LV Rogers Secondary School is likely not feasible, resulting in a higher than midrange cost. A granular path may be a suitable alternative, as is the practise for addition of pedestrian facilities to existing roadways in Queensborough, New Westminster. A further option would be to convert View Street to a one-way street and use the remaining right-of-way to develop a separated two-way multi-user path, with additional right-of-way required for a boulevard to provide a buffer and area for snow storage.

In the interim, it is proposed that View Street be restricted to local traffic only through traffic calming in order to maintain the road as low-volume and increase the safety of current pedestrian and cyclist traffic on this link to LV Rogers.

Figure 11 - Students walking along View Street[12]

[12] Opus International Consultants Ltd.

- *Improved connections to the Great Northern Rail Trail*

Dedicated pedestrian facilities to access the Great Northern Rail Trail from Nelson is generally lacking. There are many undeveloped paths that are currently used by pedestrians and cyclists, and formalizing some of these routes is an option the City should consider to encourage accessibility to the surrounding recreational opportunities. Formalizing these rough paths as multi-user trails will require infrastructure investment. Many of these accesses are steep, but are in short sections, and therefore staircases could be implemented effectively (such as on Regent Street).

Proposed multi-user trails linking to the GNRT are illustrated on the Proposed Pedestrian Network Map. Upgrading pedestrian facilities up to Mountain Station may be tied in with the development of the Trans-Canada Trail through Nelson (see Section 5.3), and other locations should be considered as resources become available.

As these trails and connections are formalized, their existence should be indicated by way-finding signage leading to and along the GNRT. This will provide the public with information on where they are in proximity to various streets and neighbourhoods within Nelson as well as the knowledge that the accesses are public right-of-ways and can be utilized as such.

- *Controlled crossings of the rail to access the Lakefront trails*

Controlled crossings of the rail to access the Lakefront trails will require additional infrastructure, and also may require collaboration with rail authorities. Cooperation from rail authorities is not always easy attainable, but these crossings should be considered to provide better connection to and from the waterfront.

Figure 12 – Path over railway, west end of Elwyn Street[13]

[13] Opus International Consultants Ltd.

- *Improve pedestrian / cyclist connection under Highway 3*

The underpass which facilitates multi-user crossing of Highway 3 and provides a link between the waterfront and Rosemont is decrepit, according to City planners. There is currently a perception that the underpass is unsafe, which is not uncommon for poorly lit tunnels as people will feel vulnerable in situations where they could be trapped in a space with a potential attacker. A CPTED (Crime Prevention Through Environmental Design) review should be undertaken to determine low-cost mitigative measures to improve the safety or the perception of safety through this underpass. Measures typically include improvement to visibility and sightlines through the tunnel by provision of adequate lighting, maintenance (removing graffiti, obstructions, etc), and improvement of aesthetics.

Figure 13 - Underpass under Highway 3 in Nelson

Figure 14 - Aesthetically Pleasing Underpass Wonderland Creek, New Zealand[14]

There may also be a lack of education as to the existence of the path under the Highway 3, and therefore, the link should be clearly indicated on Active Transportation Maps, and way-finding signage.

- *Develop Perrier Road into a multi-user path*

Based on stakeholder consultation, Nelson residents interested in Active Transportation would like Perrier Road to be developed into a route with sidewalks. Cyclists should also be included in any upgrades to this roadway. The distance along the proposed route from Vancouver Street to Cottonwood Road (situated just outside of the municipal boundary), is approximately 1.25 kilometres and would not serve to remedy a missing commuter link, as it parallels Silver King Road / Vancouver Street. Nelson City planners indicate that in spite of the danger of cycling and walking along Ymir Road, it still is utilized as a corridor by users of alternative transportation modes, and as development occurs, the potential for use will grow. In order to abate the possibility of injury or fatality, either the highway should be redeveloped to accommodate all users, or an alternative route that is convenient and safer for all users should be explored. As the

[14] Source: Opus International Consultants, Ltd.

highway is under provincial jurisdiction and favour for the former option would be required by British Columbia Ministry of Transportation and Infrastructure, pursuit of upgrades to the highway would result in a lengthy process with no guarantees for success. Therefore, development of a parallel multi-user path is the preferred solution. The portions that are currently used as a trail should be upgraded to a formal multi-user pathway. The portion that is currently paved is narrow, and provision of a multi-user path may be more feasible than the sidewalk construction for pedestrian use and pavement widening necessary to accommodate cyclists.

Figure 15 - Views along Perrier Street[15]

Connecting Perrier Road to Vancouver Street would require acquisition of approximately 30 metres of right-of-way as it would require the crossing of private property.

- *Provide pedestrian / cyclist connection between Baker Street Bridge and Lakefront*

A Local Motion grant is providing the opportunity for construction of an Active Transportation link between Cottonwood Creek and the Baker Street Bridge to be completed in 2010. Through public consultation, a multi-user path to connect Cottonwood Park and the Lakefront was deemed as a desired missing connection to the lakefront from Rosemont. A continuation of the Active Transportation corridor from Baker Street Bridge to the Lakefront should be considered as a measure to include in the overall Active Transportation network plan. As this initiative would serve for recreational purposes rather than commuter, it is proposed as a lower priority (longer-term) initiative.

- *Provide pedestrian / cyclist connection between Rosemont and Uphill*

The lack of a pedestrian/ cyclist connection between Rosemont and Uphill was indicated as a high priority gap by attendees of the Open House. Cottonwood Creek and Highway 6 are barriers to accessibility between the neighbourhoods.

A connection of these neighbourhoods would serve Selkirk College and Rosemont and has the potential to be well-utilized

[15] Opus International Consultants Ltd.

There is currently a bridge from Perrier Road that is used by some Nelson residents to cross the creek, and acquiring this bridge as City infrastructure may be an alternative for a creek crossing.

A medium to long term route that would connect Uphill to Selkirk College could be achieved by upgrading an existing informal (guerrilla) trail, although it would be a relatively high cost initiative. This proposed route would connect from the south end of the cemetery across the highway to Perrier Road and extend to Selkirk College. A stairway could be placed at the south end of cemetery to address the grade (up to 5 percent).

Figure 16 - Rough path uphill to Highway at Falls Street[16]

As per the Pedestrian Crossing Control Manual for British Columbia, relatively low traffic volumes on Highway 6 (a two lane cross-section) allow for adequate crossing opportunities. It is unlikely that pedestrian volumes warrant the expense of a separated crossing facility. This may be a long-term solution funded by private sponsors, but would not presently be feasible as a capital expenditure. In the interim, the City should work with the Ministry of Transportation and Infrastructure to address the lack of pedestrian facilities on Highway 6.

[16] Opus International Consultants Ltd.

5.2 Cycling Network

Potential improvements to the cyclist and multi-user trail were identified through the consultation process. The higher priority improvements are indicated on the cycling network map. Improvement opportunities are not limited to the cycling and multi-user network indicated. The base network meets desire line needs as the cycling routes identified provide main commuter linkages and connectivity to the recreational trails. The proposed trails provide missing links for multi-user facilities.

The proposed changes to the bicycle and multi-user network are:

Short Term:

- Identify primary commuter cyclist routes connecting the three neighbourhoods to the downtown and accommodating a more direct bike route from the Nelson bridge to Gyro park
- Formalize path shortcutting the Vancouver Street switchback (multi-user)
- Formalize pedestrian / cyclist link on Eighth Street between Fell and Gordon (multi-user)

***Medium Term*:**

- Provide Active Transportation facilities along View Street (multi-user)
- Improved connections to the Great Northern Rail Trail (multi-user)
- Controlled crossings of the rail to access the Lakefront trails (multi-user)
- Separated pedestrian and cyclist facility over the Nelson Bridge (multi-user)

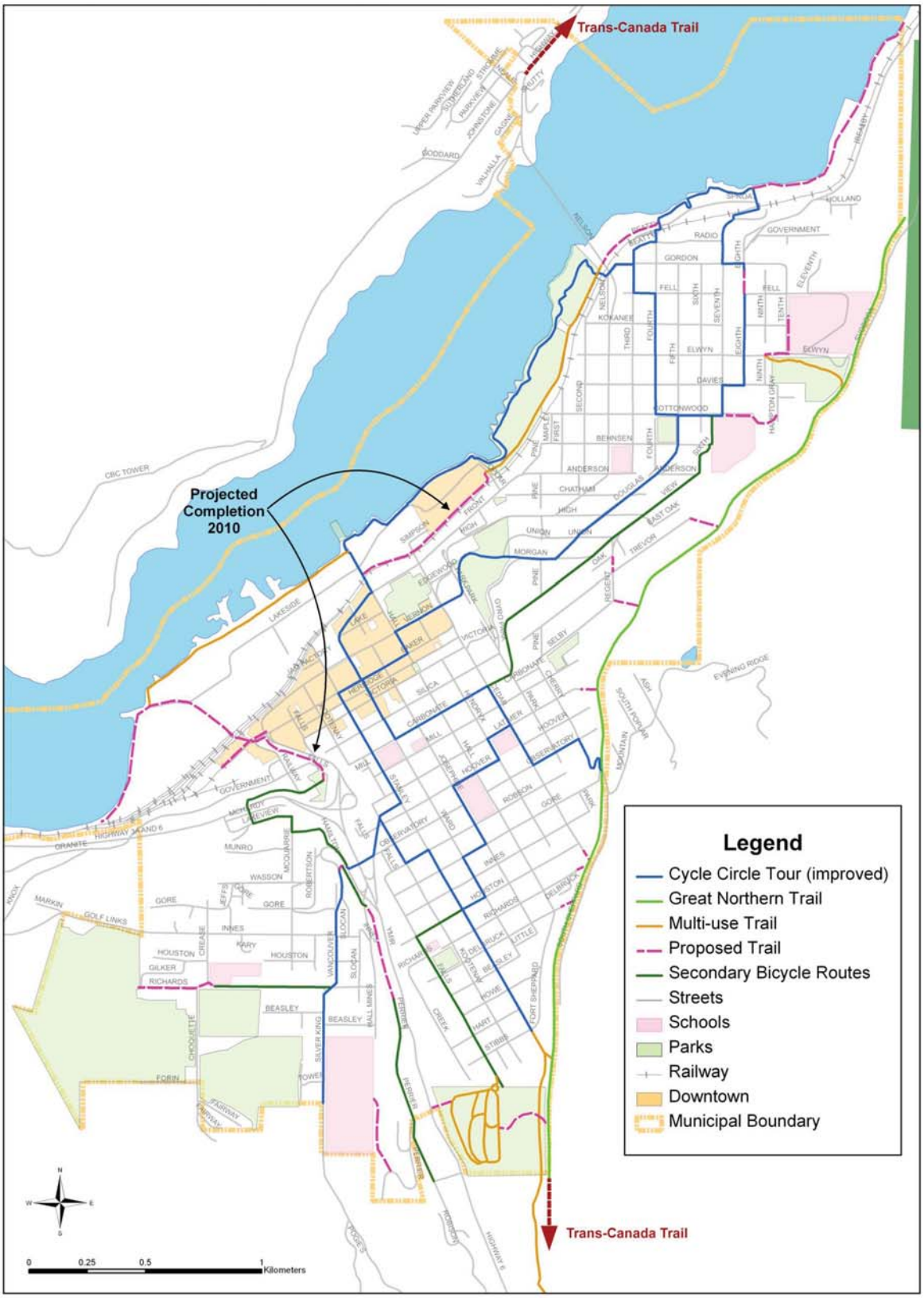
Long Term:

- Provide connection between Rosemont and Uphill (multi-user)
- Provide connection between Rosemont and Lakefront (multi-user)

Identify primary commuter cyclist routes connecting the three neighbourhoods to the downtown
It is assumed that cyclists will choose their routes based on their personal preference (i.e. a longer, easier route or a steeper, more direct route), which most likely is based on skill level and user needs (recreation versus commuter).

As discussed and mapped in Section 3.5, the rise of Nelson is approximately 180 metres. Transport Canada's Geometric Design Guidelines for Canadian Roads recommendation is a maximum grade of 5 percent on distances of over 150 metres for bike routes. As Nelson is located in the Kootenays, this minimum standard is rarely met in the steeper sections (such as Uphill from downtown); however, alternatives can provide indication of less steep routes to destinations such as Uphill and the GNRT. The following map illustrates the proposed cycling routes for Nelson.

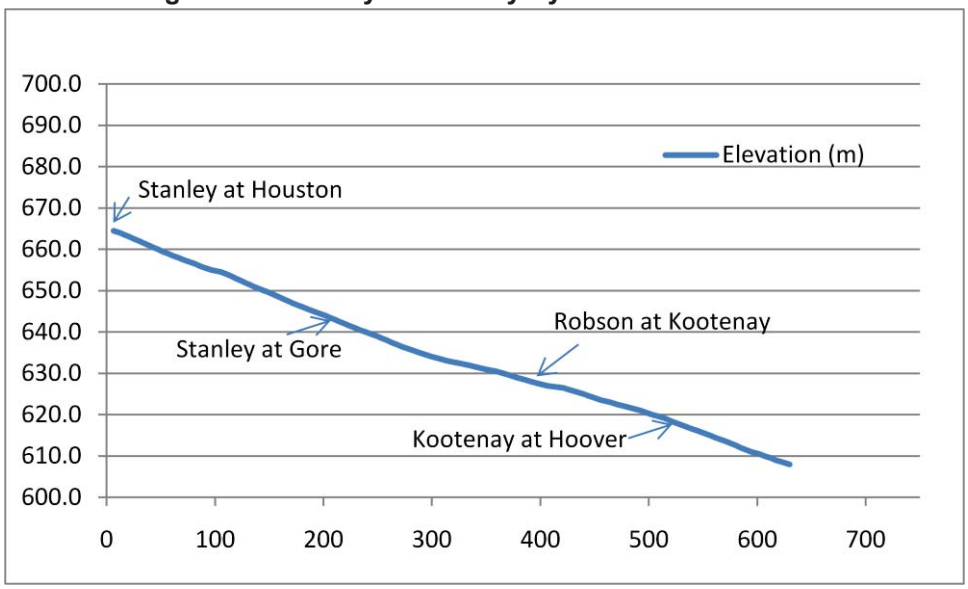
Map 5
CITY OF NELSON
Proposed Cycling Routes



The Cycle Circle Tour can be implemented immediately to provide main cycling links servicing the City. The Secondary Bicycle Routes are those which may require additional infrastructure or are redundant links but may be more preferable to cyclists. These routes should be formalized in the medium term or when the necessary gaps in the proposed routes are completed. These routes are included in Table 3.

Stanley Street should still be considered as part of the main cycling network, as some residents indicated that they typically use the street as a commuter bike route. The portion from Vernon Street to Latimer Street is classified as a collector, and is considered a local road south of Latimer Street.[17] Furthermore, snow clearance on Stanley can be easily provided as it is identified as an emergency route, and therefore a top priority as per the City's current Snow Removal Plan. The current practise is to clear identified emergency routes and bus routes before other routes are considered.[18] The average slope on Stanley Street north of Stibbs Street is 10.7 percent, which is very challenging to the average commuter cyclist. A vertical profile for Stanley Street and Kootenay Street commuter link is provided in the following figure:

Figure 17 - Stanley / Kootenay Cycle Route Elevations

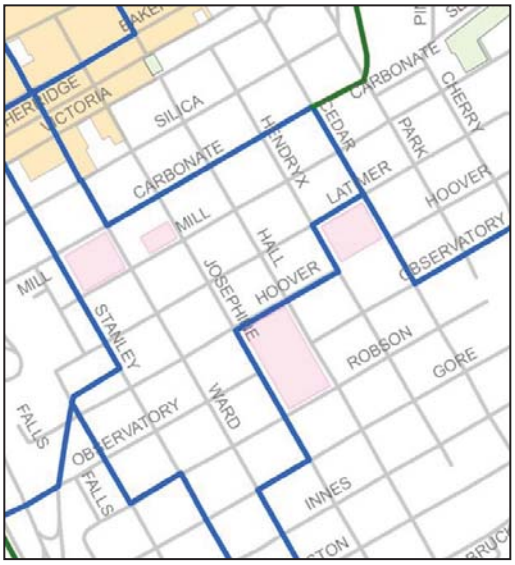


The existing Circle Cycle Tour provides an alternative route linking Uphill to the downtown and to Stanley Street. The route in the following figure indicates the proposed re-routing. The proposed alternative route through Uphill will offer a more indirect but less steep cycling route.

[17] Official Community Plan Bylaw 3114 (2008), Schedule C.

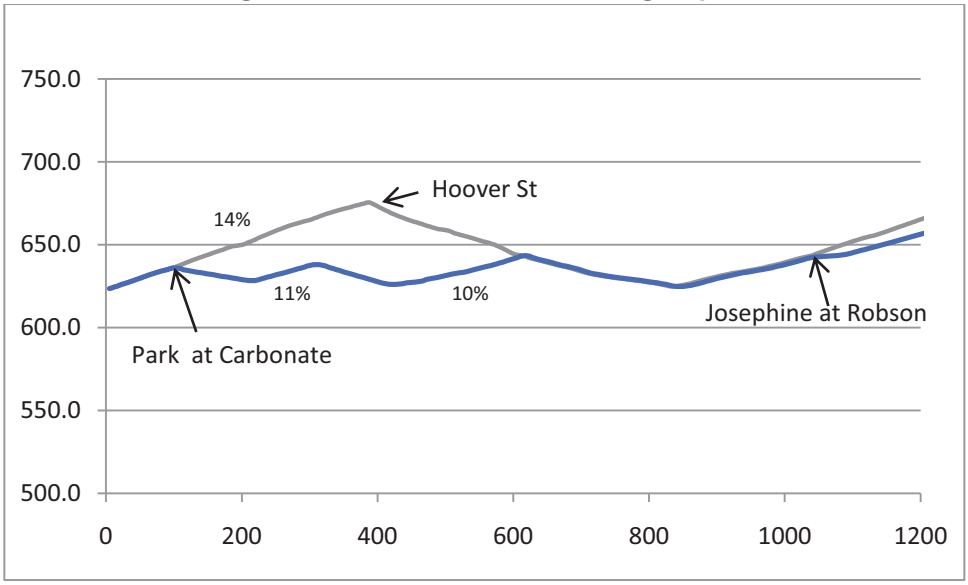
[18] http://www.city.nelson.bc.ca/html/snow.html

Figure 18 –Proposed Cycling Connection between Uphill and Downtown



The route jogs to serve the schools but also works around the existing topography to provide some relief in going straight uphill. Figure 19 shows vertical profiles from Carbonate at Park Street to Josephine and Robson for both the old (grey) and proposed (blue) routing.

Figure 19 – Vertical Profiles through Uphill



As shown in the profile, the average slope of the existing (old) Cycle Circle Tour uses longer and steeper segments. The average slope between Park and Carbonate and Hoover is 14 percent for approximately 285 metres. The proposed new routing utilizes a zigzag path through Uphill, allowing for shorter, slightly less steep segments separated by short downhill segments as indicated in the graph.

More vertical profiles for streets through Uphill are included in Appendix D.

The City Cycle route identified will provide the connectivity to the downtown and other neighbourhoods as it was a deficiency identified through the consultation process. The Vancouver Street and Silver King Road proposed Rosemont connection is part of the Priority 1 snow clearance route, and is classified as a collector street. If a future connection between Rosemont to Uphill is implemented, it should also be included in the main cycling network. The main cycling network should be well signed and marked to indicate the route.

Other cycling routes identified provide connections to recreational opportunities where access is currently lacking, and feed into the main cycling network at appropriate locations. Multi-user trails are part of the cycling network, and should be indicated on cycling maps or signs. These routes may be preferred by users of the TCT through Nelson.

There are few roads in Nelson which are wide enough to adequately accommodate cycling lanes. However, most of Nelson's roadways are low volume and local roads with speed limits of 40 km/h. The minimum road width for a shared use cycling lane is 4.0 metres.[19] For short roadway sections (less than 500 metres), with a width less than 4.0 metres and a maximum speed of 50 km/h, single file traffic of motorists and cyclists is acceptable as per Transportation Association of Canada's (TAC) *Bikeway Traffic Control Guidelines for Canada.*

As part of Portland's Bicycle Plan for 2030, the City of Portland Bureau of Transportation conducted a survey of best practices. Narrow-width shared roadways where bicycles are permitted to use the entire width of the roadway have successfully been implemented on low traffic residential streets where reduced motor speeds are feasible.

Figure 20 – Example of a Narrow-width Shared Roadway (Vancouver)[20]

The following table indicates the appropriate measures for implementing the proposed cycling routes. It should be noted that road measurements were made by using Google Earth Pro and therefore are approximate. The recommendations follow the system-wide design guideline suggestions described in Section 6.2.

[19] Transportation Association of Canada

[20] Source: Denver Igarta via Bikeway Facility Design: Survey of Best Practices. Appendix D of Portland Bicycle Plan for 2030

Table 3 – Implementation Measures for Proposed Cycling Routes

Stanley Street			
Section	**Type of Bikeway**	**Scope of Work**	**Implementation**
Stibbs to Houston	Shared Use Lanes	Restrict on-street parking Bikeway Signage, Pavement Marking	Short-term
Houston to Robson	Shared Use Lanes	Bikeway Signage, Pavement Marking Parking on one-side only	Short-term
Hoover to Silica	Shared Use Lanes	Bikeway Signage, Pavement Marking Parking on one-side only	Short-term
Silica to Baker	Shared Use Lanes	Bikeway Signage Pavement Marking	Short-term
Robson Street			
Section	**Type of Bikeway**	**Scope of Work**	**Implementation**
Stanley to Falls	Shared Use Lanes	Bikeway Signage Pavement Marking	Short-term
Falls Street			
Section	**Type of Bikeway**	**Scope of Work**	**Implementation**
Robson to Hoover	Shared Use Lanes	Bikeway Signage Pavement Marking	Short-term
Nelson Bridge to Gyro Park			
Section	**Type of Bikeway**	**Scope of Work**	**Implementation**
Third Street from Gordon to Fell	Shared Use Lanes	Bikeway Signage, Pavement Marking Parking on one-side only	Short-term
Fell Street from Third to Forth	Shared Use Lanes	Bikeway Signage, Pavement Marking Parking on one-side only	Short-term
Fourth Street from Fell to Cottonwood	Shared Use Lanes	Restrict on-street parking Bikeway Signage, Pavement Marking	Short-term
Douglas Road from Behnson to Morgan	Shared Use Lanes	Bikeway Signage, Pavement Marking	Short-term
Morgan Street from Douglas Road to Gyro Park	Shared Use Lanes (single file)	Bikeway Signage	Short-term
Morgan Street through Gyro Park	Shared Use Lanes (single file)	Bikeway Signage	Short-term
	Multi-User Path	Prohibit vehicle traffic Maintain 4.0m for multi-use pathway.	Medium-term
Cottonwood			
Section	**Type of Bikeway**	**Scope of Work**	**Implementation**
Fourth Street to Seventh Street	Shared Use Lanes	Restrict on-street parking Bikeway Signage, Pavement Marking	Short-term
Eighth Street			
Section	**Type of Bikeway**	**Scope of Work**	**Implementation**
Missing link: Fell Street to Gordon	Multi-User Path	Provide 4.0 m bi-directional multi-user pathway	Short-term to Medium-term
Fell Street to Davies	Shared Use Lanes	Restrict on-street parking Bikeway Signage, Pavement Marking	Short-term

Selkirk College (Rosemont) to Stanley Street			
Section	**Type of Bikeway**	**Scope of Work**	**Implementation**
Silver King Road to Vancouver Street switchback	Shared Use Lanes	Restrict parking to one side Bikeway Signage, Pavement Marking	Short-term
	Dedicated lanes – 1.2m	Pavement widening Bikeway Signage Pavement Marking (Line painting for cycle lanes	Long-term
Vancouver Street switchback	Multi-user connection	Stairs and groove or paved ramp	Short-term
Creek Road to Houston			
Section	**Type of Bikeway**	**Scope of Work**	**Implementation**
Falls Street from Cemetery to Houston	Shared Use Lanes (single file)	Bikeway Signage	Medium-term
Houston from Falls to Stanley			
Uphill to Downtown			
Section	**Type of Bikeway**	**Scope of Work**	**Implementation**
Josephine Street	Shared Use Lane	Restrict on-street parking Bikeway Signage Pavement Markings	Short-term
Carbonate Street			
Cedar Street			
Latimer Street			
Innes			
View Street			
Section	**Type of Bikeway**	**Scope of Work**	**Implementation**
Park Road to LV Rogers School	Shared Use Lane (single file)	Restrict on-street parking Bikeway Signage	Short-term
	Multi-User path	Convert View Street to a 4.0 m separated two-way multi-user path	Medium-term
	Shared Use or Dedicated lanes – 1.2m	Pavement widening Bikeway Signage Pavement Marking (Line painting for cycle lanes)	Long-term
Access to GNRT			
Section	**Type of Bikeway**	**Scope of Work**	**Implementation**
Robson between Josephine and Hendryx	Shared Use Lanes	Way-finding signage Restrict on-street parking Bikeway Signage, Pavement Marking	Short-term to Medium-term
Hendryx between Robson and Gore			
Gore Street between Hendryx and Mountain Station			
Robson between Josephine and Hendryx	Shared Use Lanes	Way-finding signage Restrict on-street parking Bikeway Signage, Pavement Marking	Short-term to Medium-term
Hendryx between Robson and Gore	Multi-user	Way-finding signage Provide 4.0 m bi-directional multi-user pathway	Medium term
Gore Street between Hendryx and Mountain Station			

*Note that parking restrictions are only required if the average annual daily traffic (AADT) on a roadway exceeds 1,000 vehicles per day as per Transportation Association of Canada Guidelines

For low volume roadways that are too narrow to sufficiently support a shared use lane in each direction, signage indicating that cyclists and motorists are to form one line should be utilized in the short-term. Although these signs are not currently a standard as per Canadian Manual of Uniform Traffic Control Device, studies by Transportation Association of Canada (TAC) indicate that the sign illustrated in Figure 21, along with a supplemental "Single File" tab is the sign which conveys this message clearest.

Figure 21 – Single File Preferred Signage[21]

This sign and other signs that convey the same message have been utilized in several communities in both the United States and Canada. Examples shown in the following figures are from Boston, San Diego, and Alberta. Pavement widening or development of multi-use paths may be a longer-term alternative.

Figure 22 – Single File Signage Examples[22]

It is important to note that cycling is not restricted on roads not identified in the cyclist network, and the network merely provides priority routes. Bicycle friendly design guidelines should be adopted for all roadways, regardless of whether a road is designated as part of the official cycle network. Design guidelines are outlined under Section 6.1 of this report.

The City of Nelson should adopt policies supporting consistent signage and pavement marking standards for all cycling facilities, as well as policies addressing appropriate right-of-way consideration for new roadways and upgrades to existing roadways to accommodate cyclists. This is discussed further under Section 7.2 of this report.

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[21] TAC Bikeway Traffic Control Guidelines

[22] www.urbanadventours.com/blog/?p=302; http://bikealberta.wordpress.com/category/bicycle-commuting

5.3 Trans Canada Trail

Routing options have been prepared for the Trans Canada Trail and the preferred option based on input from the public and City staff is illustrated in the following map. The following criteria were deemed as important considerations when choosing the preferred option:

- Minimizing grade as much as possible to accommodate all skill levels of cyclists
- Ease of implementation includes considerations such as the presence of existing infrastructure (i.e. sidewalks, multi-user paths)
- Exposure to the many of the key amenities of Nelson, including the lakefront and downtown (Baker Street)

The preferred option shown on Map 6 provides exposure to downtown and to Lakefront Trail, and requires minimal infrastructure. This option could be implemented immediately, with pedestrian facilities leading to Mountain Station (or alternative access to the GNRT) to be added.

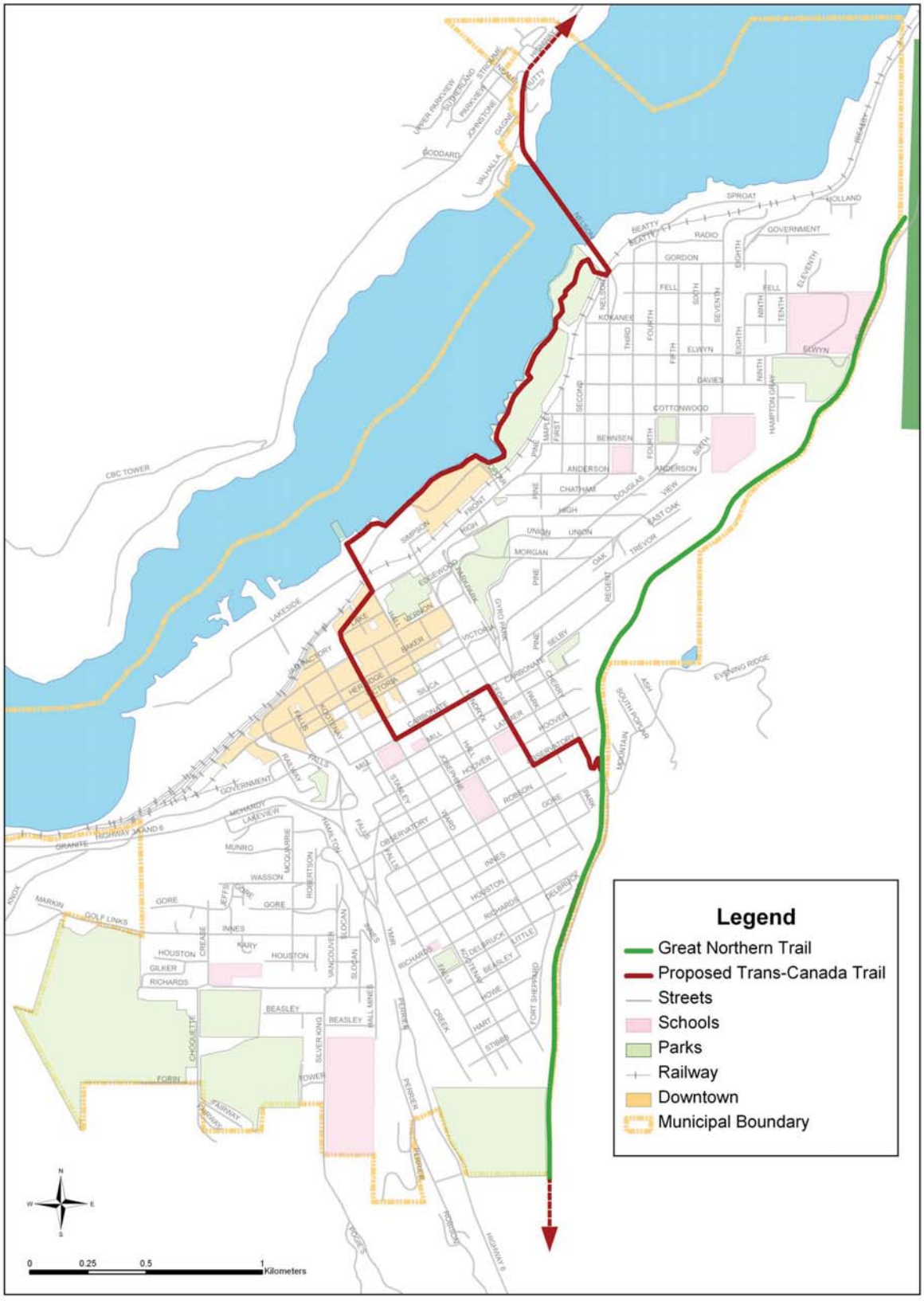
This option provides access to Baker Street without backtracking and utilizes the proposed Circle Cycle Tour through Uphill as well as tying into existing pedestrian facilities as much as possible. The result is a very steep route through Uphill to the GNRT, with a rise of over 70 metres between Josephine Street and the GNRT and consequently would pose a difficult route.

Measures to alleviate the challenging route, such as benches, should be provided. A shuttle transit system to the head of the GNRT would provide an alternative method for accessing the trail from downtown.

It is recommended that good way finding signage is places at both ends of the Trans-Canada Trail as trail users enter into Nelson indicating the alternative routes and showing that although the TCT through downtown is steep it allows more opportunities and showcases the City. The alternative options should include the existing bike routes at minimum. Providing good way-finding signage allows users to choose their preferences such as a more direct and least steep route to the GNRT through Nelson and other routes to access to the downtown and lakefront or other recreational opportunities.

Facilities and amenities for cyclists and Trans-Canada Trail users should be articulated on the way-finding maps at the trail heads and on brochures and maps of the Active Transportation and TCT. This includes public washrooms and showers, water fountains, camping facilities, bike shops, car rentals, and bike parking or lockers and therefore may direct users to such places as the Rec Centre (and hours of operation), the Lakeside Park Beach (and hours / seasons of operation), and the City Campground on High Street.

Map 6
CITY OF NELSON
Proposed Trans-Canada Trail Routing



6.0 Planning and Design

An effective Active Transportation Network must provide convenient, safe, and accessible routes to key destinations and encourage Active Transportation use and motivate non-Active Transportation users to switch to more sustainable transportation modes. A well designed Active Transportation Network would provide a well-defined and comfortable environment for users of all skill levels.

To achieve this goal, a number of guidelines can be utilized to guide the planning and development of a complete Active Transportation Network. This section provides general considerations, based on design guidelines, best-practices (referred to in Section 2.2 and documented in Appendix B), and applicable input from the consultation process in the following areas:

- Cycling Facilities
- Pedestrian and Multi-user Facilities
- Maintenance
- Snow Removal
- Signage

As presented in the Open House, design guidelines would be a long-term improvement that can be adopted at a medium cost to the City although there may only be a low potential to increase Active Transportation use. However, although development of design guidelines was not necessarily ranked as high priority by the public, it is preferable that general design guidelines for all Active Transportation infrastructure and facilities are adopted at the onset, in order to ensure consistent, efficient, and sound application. Proper design can reduce the life-cycle cost of an initiative by decreasing maintenance requirements, avoiding public backlash for inappropriate installation, and ensure that the City practise is in line with Active Transportation user needs and preference.

The City of Nelson may wish to incorporate the following considerations for the development of Active Transportation Design Guidelines.

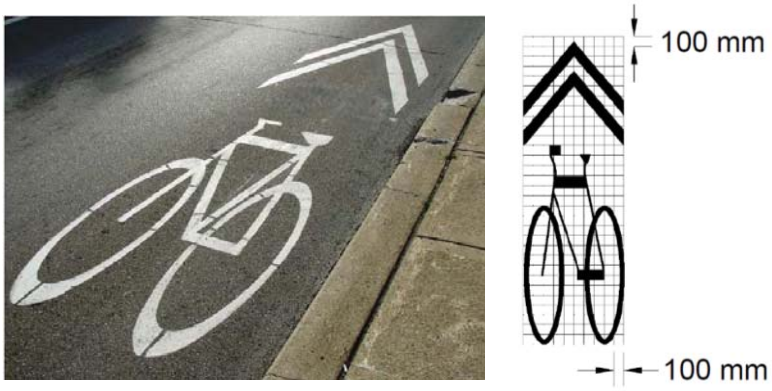
6.1 Cycling Facilities

Bicycle friendly design guidelines should be adopted for all future and existing roadways, regardless of whether a road is designated as part of the official cycle network. The cycling network should be marked and signed in accordance with the Transportation Association of Canada's (TAC) *Bikeway Traffic Control Guidelines for Canada.*

<u>Shared Use Lanes</u>

- *For roadways with speeds equal to or less than 60 km/h that are not wide enough to accommodate a bike lane, a shared use lane should be indicated through the use of the symbol shown in Figure 23:*

Figure 23 – Shared Use Lane Marking[23]



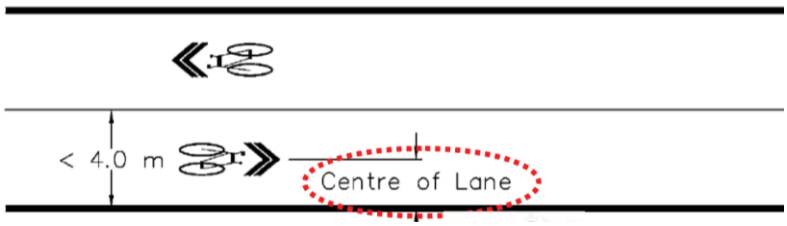
The bicycle symbol indicates where cyclists are to position themselves within a lane with two chevron symbols and is recommended for both side-by-side and single file applications.

- *For streets where the travel lane width of a wide curb lane extends beyond 4.0 metres along a designated cycling route (the preferred width is between 4.2 to 4.5 metres), the centreline distance from the curb should be a minimum 0.75 metre, and a desired distance of 1.00 metre.*

- *On roadways with full-time on-street parking, the centre of the marking should be a minimum 3.4 metres from the curb face or edge of paved shoulder so that the cyclist position is outside the door zone.*

- *For short roadway sections, with a width less than 4.0 metres and a maximum speed of 50 km/h, the symbol should be placed in the centre of the lane, indicating to both cyclists and motorists that single file traffic is expected.*

Figure 24 - Shared Use Single File



As Nelson roads are generally low volume and narrow, with a 40 km/h speed limit on local streets, shared use lanes will be generally used for routes along existing roadways.

Bike Lanes

There are few existing roadways in Nelson that can accommodate cycling lanes. Bike lanes are typically recommended where feasible on arterial and collector roads designated to have cycling facilities. In locations where a bike lane is not deemed feasible following review, consideration

[23] Source: TAC Bikeway Traffic Control Guidelines

should be given to providing a wide curb lane. If this is not possible, as a minimum, a signed-only bicycle route should be provided.

- *The minimum design width for a bike lane in an urban area without on-street parking should be 1.2 metres from the face of the curb.*

Bike Parking and other Facilities

- *The City of Nelson should modify their Land Use Regulation Bylaw (Part III – Parking), to ensure that bicycle parking is provided for all new developments.* Cities such as Vancouver, Richmond, and New Westminster have such requirements. A sample bylaw is provided at http://vancouver.ca/blStorage/7480.PDF. The City of Nelson may wish to explore a cost-sharing program where new bicycle racks are co-funded by property owners and the City.

- *Bike racks should be placed adjacent to the entrance that it serves, but should not inhibit pedestrian flow in and out of the building.*

- *Rack areas should be no more than 15 metres from an entrance and should be clearly visible along a major building approaching line.*

- *Consideration should be given to the aesthetic of bike racks, especially in the downtown core.*

Figure 25 – Examples of Aesthetically Pleasing Bike Racks[24]


- *The width of bicycle racks should be designed to provide lateral support to the parked bicycle and should be made from materials that can resist being cut by common hand tools such as bolt and pipe cutters, wrenches, and pry bars.*

- *Racks should be securely fastened to a mounting surface to prevent the theft of a bicycle attached to a rack.*

[24] Source: Opus International Consultants Ltd.

- *Bus-mounted bike racks should be included on all future and existing local public transportation buses. Demand should not exceed capacity on infrequent routes.*

- *Trip-end facilities for employers and visitors should be provided at public buildings, and encouraged in the private sector.*

As part of the design standards for cycle routes, consideration could be given to reducing the number of STOP signs on cycle routes by the following measures:

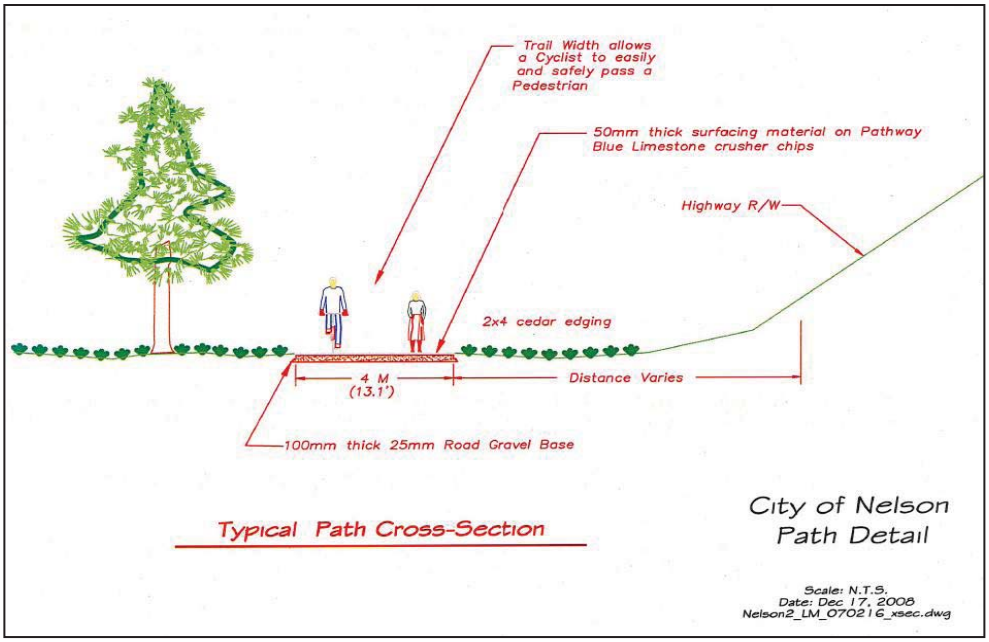
- Change the STOP priority to the cross street (if traffic volumes on both streets are relatively equal);
- Change to YIELD control (if good crossing sight distance); or,
- Provide traffic circle.

6.2 Pedestrian and Multi-User Facilities

Multi-use Trails

The City of Nelson has a Path Detail Plan (2008) showing a typical path cross-section of a multi-use path, as shown in Figure 26:

Figure 26 – City of Nelson Path Detail[25]



The plan shows ideal construction parameters for a bi-directional, multi-use path. The preferred width of 4.0 metres should be applied where width is not restricted due to established infrastructure, trees, or other constraints. The recommended minimum width for a multi-use trail of 3.0 metres should be met before obstacle removal or path re-routing is necessary. 0.9 metres is

[25] City of Nelson Local Motion Program Application

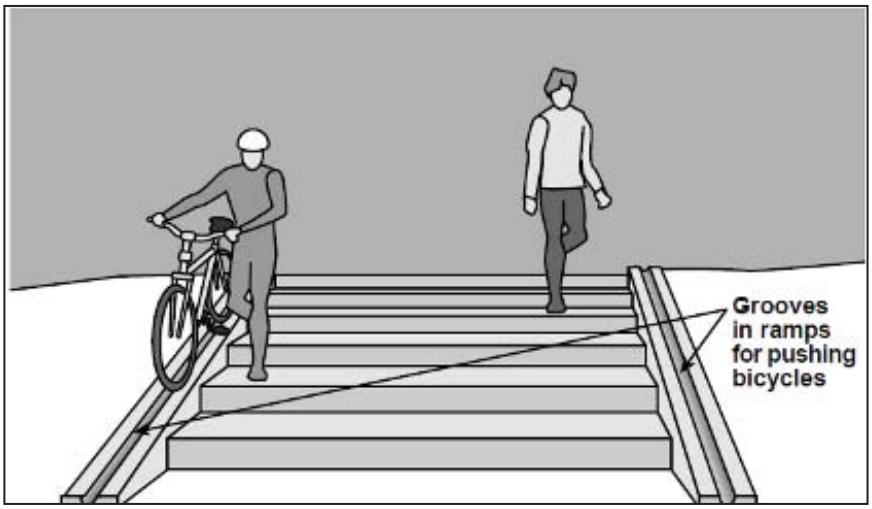
a minimum desirable clearance distance from lateral obstructions such as trees, poles, walls, guardrails, etc.[26] The recommended minimum clearance height for multi-use trail is 2.4 to 3.0 metres[27].

- *Multi-use trails accommodated within wide railway right-of-ways should have physical separation between the rail and path (e.g. a planted berm or fence).*

- *Barriers should be considered at off-road trail and walkway entrances to prevent access by unauthorized users such as motor vehicles and to caution trail users, but should not restrict those with disabilities.*

- *Grooved ramps adjacent to stairs should be applied to assist cyclists on identified bike routes, as illustrated in the following figure*:

Figure 27– Ramps on Stairs for Bikes[28]



- *Where new stairs are implemented, they should include a covering to minimize the requirement for snow removal.* Roofs should be included on existing stairs that are part of the proposed Priority Plow Commuter routes, and extended to other stairs throughout the City as funding becomes available and if they are deemed to be a popular initiative.

[26] Best practises (Appendix B) as well as AASHTO Green Book

[27] Best practises (Appendix B). Other design standards (such as Oregon DOT) also recommend 2.4 m minimum: Some sources (such as AASHTO Green Book) recommends 2.5 m minimum.

[28] Oregon Bicycle and Pedestrian Plan

Figure 28– Covered Stairs[29]

- *Where new stairs are implemented, they should include a pedestrian level lighting.* Lighting should be a consideration for all new locations and extended to other stairs throughout the City as funding becomes available. This lighting should utilize energy efficient alternatives as much as practicable.

- *Apply pedestrian-level lighting requirements on multi-use trails in commercial areas, using direct downward lighting to reduce light pollution.* Energy efficient lighting should be utilized as much as practicable.

- *Bear-proof garbage cans can be placed along multi-user facilities and trails to encourage environmental stewardship in disposing of waste.* The Bear Aware organization has funding for bear-proof garbage bins and should be supported to identify sites and install the bins in suitable locations.

- *Benches should be placed on steep routes; however, their placement should not inhibit snow removal.* Benches can be advertised as available for those who are looking to donate towards the installation of a memorial bench, as is a popular practise.

- *Proper consideration should be given to multi-user trail and roadway crossings as per TAC design guidelines.*

<u>Prioritizing Sidewalk Construction</u>

- *The City of Nelson should adopt a policy with the following requirements for new construction:*
    - Arterials should have sidewalks on both sides
    - Collector Roads should have sidewalks on both sides
    - Local roads should have sidewalks on one side, with the exception of roads proximate to a school, which should have sidewalks on both sides.

[29] City of Rossland

For existing arterial and collector roads that do not meet these guidelines, the City may wish to commit to addressing gaps over a 10 to 20 year period, and to request funding to address these gaps. Gaps on the local street network could be addressed through a Local Area Service Plan as outlined in http://www.burnaby.ca/cityhall/departments/engnrn/engnrn_lclars.html

- *The City of Nelson may wish to utilize a priority index methodology to identify and rank the need for new pedestrian facilities.* This process prioritizes proposed initiatives by utilizing a point system. Points are awarded for specific characteristics, such as whether it is required on a transit route, if a school is nearby, and if there have been pedestrian-related collisions on the street. The higher the points, the higher the need for a new sidewalk. This method has been used by Opus for communities such as Kelowna, Prince George, Victoria and the District of North Vancouver. More detail is provided in Appendix B under the District of North Vancouver pathway prioritization guidelines. Given the relatively low number of gaps in the network for collector roads, this method could be streamlined to be appropriate for conditions within Nelson, using a simplified index including traffic volumes, grade and presence of pedestrian generators.

Selection of Preferred Placement When Only One Sidewalk Required

When a new sidewalk is to be placed on one side of the street only, the following criteria could be used to help evaluate which side is the most appropriate for a sidewalk. Whichever side of the street meets more of these criteria should be the preferred location for the sidewalk. The City could also use these guidelines to determine which sidewalk on a local street should be maintained. **As the City is currently removing sidewalks in Nelson, these guidelines should be considered. Continuity of the pedestrian is a highly important factor as pedestrians are not likely to cross back and forth from one side of the street to the other to access the sidewalk but will maintain a linear path as much as possible.**

Pedestrian Demand

- Existing worn path: In existing neighbourhoods, if a path exists, this is the most important factor, as it clearly indicates the pedestrian desire lines.
- Residential density: Multi-family units will generate more trips per metre of frontage than single family dwellings, not just because of the increased density, but also because car ownership rates tend to be lower in such units. Even in single family neighbourhoods, the side of the street with more households is likely to generate more pedestrian trips.
- Presence of a school. Schools are prime attractors of pedestrian trips.
- Other pedestrian attractors/generators: parks, transit stops, hospital, street-oriented commercial, day cares, community centres, libraries, seniors housing, employment.

Cost/Constructability/Maintainability

- External funding available
- Grade less than 5 percent (where possible)
- Available right-of-way/lack of obstructions in right-of-way. Lack of right-of-way, and or obstructions in the right-of-way such as utility poles, trees or physical formation such as rock faces, watercourses, etc., can reduce the available width for sidewalks, and/or can significantly increase the cost of the project. Where possible, such locations should be avoided.

Utilities should not be located beneath the proposed sidewalk location. If utilities end up under the proposed location of the sidewalk, the sidewalk would have to be dug up every time those utilities must be accessed, increasing life-cycle maintenance costs, and therefore, this practice should be avoided where possible. Services would be considered okay to be located underneath sidewalks if they are able to be accessed by service boxes. Snow storage and snowmelt runoff are also maintenance considerations.

The following pleasant pedestrian environment criteria should be used to help evaluate which side is the most appropriate for a sidewalk. Whichever side of the street meets more of these criteria should be the preferred location for the sidewalk. Input from the Development, Maintenance and Engineering areas should be sought in conducting this evaluation:

- Connects to existing sidewalks on adjacent blocks. **Providing a linear route for pedestrians is preferable to having pedestrians cross back and forth to sidewalks**. Where possible, the sidewalk should be constructed to connect to existing sidewalks on adjacent blocks.
- Sunny side: The sunny side is warmer, and therefore more pleasant to walk on during most seasons. Additionally, the ice melts more quickly on the sunny side, which may allow pedestrians a more stable foothold.
- Existing street lighting: For personal security reasons, pedestrians generally prefer to walk on the side of the street with street lighting.
- Parking permitted: Parking provides a buffer between pedestrians and moving traffic, creating a more pleasant pedestrian environment. Additionally, people walking to access their parked cars generate more pedestrian traffic.
- Better view: Pedestrians are likely to be attracted to walk on the side with the better view.

➢ *A buffer zone should be provided where applicable to separate pedestrians from the street.* This provides a safety advantage and boulevard area between the roadway and the sidewalk provides a location for snow storage from roadway plowing operations. The City of Nelson has an existing plan for concrete sidewalk and rollover curb design, and should apply consistent design specifications where practicable for all new construction.

➢ *Different sidewalk surface materials or patterns of cross-hatching, dimpling, or scoring should be considered for application at sloped or potentially slippery areas.*

6.3 Maintenance/Rehabilitation of Active Transportation Facilities

The City has a dedicated budget for new sidewalk and multi-user path construction, maintenance and repairs. On-road cycling lanes should be accommodated within road maintenance operations.

➢ *It is recommended the following procedure be used to develop a list of maintenance and rehabilitation projects to be conducted*:

- Inventory sidewalk and multi-user trail conditions to be used in the development of a short-term rehabilitation plan (such as a five-year plan). Inventory methods can vary, although electronic registering of complaints by residents can be effectively utilized. As they are

implemented, all new Active Transportation facilities should be added to the inventory so that the annual maintenance budget may be updated to reflect the amount required to achieve an appropriate level of service. Nelson city crews currently undertake an inspection of all sidewalks annually.

- Register all major repairs such as new sidewalk construction, construction of curb ramps, and removal of obstacles, and update deficiency indexes on a continuing basis. This is particularly important for improvements included in non-sidewalk projects, such as redevelopment of adjacent properties or road widenings. This will facilitate updating Active Transportation network inventories for changed conditions.

Monitoring methods of issues such as trip and fall hazards indicated by residents or city crews can employ new technologies to maximize efficiency. One example of technology for use in monitoring is handheld GPS units.

6.4 Snow and Ice Control

Figure 29 – Active Transportation in Winter[30]

In order to support Active Transportation year-round, adequate snow and ice control must be provided on priority Active Transportation facilities. Although the City of Nelson does not have an official snow removal bylaw, the Public Works Department does remove snow consistent with a priority-based Snow Removal Plan, which includes 20 kilometres of approved sidewalk plowing and sanding routes.

➢ *It is recommended that Section 701 of the City of Nelson Traffic By-law No.2232 be amended to dictate resident responsibility for snow and ice removal along sidewalks abutting residential properties that are not included on the plow priority maps.* The bylaw currently requires all owners or occupiers of both residential and business property to ensure non-obstruction and reasonable cleanliness of abutting sidewalks and assigns responsibility of businesses for removing snow and ice from sidewalks in front of their premises after each snowfall by 11:00 a.m. on a regular basis.

➢ *It is recommended that an official Snow and Ice Control policy be implemented for the City of Nelson and specific funding be allocated to ensure reliable snow removal on the pedestrian network.* The current sidewalk plowing and sanding route provides residents with “a plowed route to walk to all areas of the city;” however, as there is no official policy on when the routes are cleared, there is no guarantee that the routes are suitable for commuting to work after a snowfall. Furthermore, Nelson’s sidewalk system includes stairs, and all stairs that are part of the sidewalk system are cleaned and sanded by the day shift crew.

➢ *Coverings for stairs should be placed on the priority snow plow routes as a minimum.* As funding becomes available, this should be extended to other stairs within the pedestrian network.

[30] Source: Opus International Consultants Ltd.

Snowfall in Nelson varies throughout the City, and is generally lower in Fairview and higher in Uphill and areas of Rosemont. The average snowfall in Nelson is 292 centimetres.[31] In 2009, the budget for snow removal in Nelson was $800,000, and as of December 23, 2009, approximately $600,000 (75 percent) was used.[32] This may imply that the existing budget may have room for increased snow clearance of sidewalks or pedestrians links.

Table 4 shows a variety of British Columbia municipalities' snow removal procedures for comparison, which was compiled for a study by Fort St. John in December, 2008.

Table 4 – Examples of Snow Clearance Practices[33]

Community	Sidewalks Cleared		Snow Accumulation Requiring Clearance	Annual Snowfall (30 Yr Avg)	Budget (3 Yr Avg)	Population (BC Stats)	Per Capita Budget for Snow Clearance
	Business	Residential					
Prince George	Yes (5 cm)	Yes (Low Priority)	7.5 cm	216.1 cm	$4,200,000	70,981	$59
Fort St. John	Yes	School Routes	5 cm	185.6 cm	$686,150	17,402	$39
Dawson Creek	Arterial Only	Arterial Only	18 cm	174.2 cm	$200,000	10,994	$18
Prince Rupert	No	No	5 cm	126.3 cm	$300,000	12,815	$23
Smithers	Yes	Yes	7.6 cm	204.0 cm	$300,000	5,217	$58
Terrace	Yes	Yes	Determined by road foreman	375.4 cm	$536,500	11,320	$47
Quesnel	No	Yes	10 cm	177.9 cm	$617,000	9,326	$66
Mackenzie	Yes	Yes	10 cm	325.5 cm	$900,000	4,539	$198
Kitimat	Yes	Yes	7.5 cm	423.9 cm	$1,200,000	8,987	$134
Williams Lake	Yes	Yes	5 cm	192.7 cm	$350,000	10,744	$33
Castlegar[34]	Yes	Yes	n/a	224.6 cm	$430,000[26]	7,259	$59
Nelson	No (unless on Priority Plow routes)	No (unless on Priority Plow routes)	n/a	292 cm (annual snowfall)	$800,000	9,258	$86

Snow removal is typically required for snow accumulation above 5 to 10 cm. Municipalities such as Castlegar do not stipulate a snow accumulation, but rather claim that snow removal on all priority routes will normally be completed within 12 hours, depending on snowfall rates and duration. There is clearly a wide range of budgets for various municipalities. Nelson spent approximately $65 per capita in 2009, but had budget for $86.

[31] http://www.city.nelson.bc.ca/html/snow.html

[32] Nelson Star

[33] http://www.energeticcity.ca/fortstjohn/files/AR263-2.pdf

[34] http://www.castlegar.ca/services_civicworks_snow.php

➢ *The City should outline, by way of council resolution, the accepted level of service for clearing, salting, and sanding for all user mode routes, including sidewalks, roadways, and multi-user paths.* This accepted level should be communicated to the public. The recommended levels of service are summarized in Table 5. The snowfall accumulation of 5 cm will provide the best level of service, and is the lowest threshold used by the municipalities listed in Table 4.

Table 5 - Snow Clearance Recommendations

ROUTE / CLASSIFICATION	FOLLOWING SNOWFALL OF:	SNOW WILL BE CLEARED BY/ WITHIN:
Plow Priority Sidewalks to facilitate commuter	5cm*	8:00am
Emergency Routes and City Bus Routes, and all main commuter cycling routes	5cm*	8:00am
All other sidewalks adjacent to arterials, downtown, bus routes, and along the Trans Canada Trail	5cm	48 hours
Collector Roadways and all on-road cyclist routes	7.5cm	48 hours
High-demand walkways including trails and multi-user pathways identified in the Active Transportation Network Map	10cm	72 hours

* Dependent on snow conditions

As the network grows, the current level of service of removing snow from priority sidewalks, cycling routes and roadways should be maintained when the accumulated depth exceeds 50 mm as per the categories indicated above.

High demand Active Transportation routes are defined as those which connect residential neighbourhoods to schools, shopping centres, or other residential neighbourhoods; and/or those routes of significant importance to residents (such as the multi-user trails within the Active Transportation Network in Nelson). However, the City will clear only those walkways where snow storage requirements can be met.

The City may wish to conduct a greenhouse gas emission evaluation of the proposed snow removal practices prior to adoption as increased use of snow plows will increase GHG emissions, but may also contribute to reduced motor vehicle use of commuters by encouraging more active and sustainable modes of tranportation.

Sanding

A common complaint with Nelson residents is that sanding is essential on sidewalks, as a cleared sidewalk can often be more slippery than one left uncleared. The City of Nelson currently has 46 sandbox locations throughout the City, located on steep and dead end streets which are low priority. The sand boxes are maintained and filled with sand throughout the winter. The locations of the sandboxes are available on the City website. If these sandboxes are available for sidewalk sanding for those sidewalks which fall under resident or commercial property owner responsibility,

this information should be made available to the public. The City of Nelson currently has a salt content in the winter sand that is applied. This should also be public information as salt typically used in ice control may have harmful environmental effects. Residents may wish to explore less toxic alternatives than utilizing the City's sand supply for the sidewalks outside their residences (which may also reduce the City costs if residents wish to supply more eco-friendly alternatives to control ice on sidewalks adjacent to their properties). The City may wish to provide a link on their website to information sources such as http://www.ecotraction.com.

Salt
Salt can be an effective method for ice control; however, environmental impacts should be assessed and minimized. Environment Canada's Implementation Guide for the Code of Practice for the Environmental Management of Road Salts (2004), is designed to aid municipalities in preparing a salt management plan. Other valuable resources for road salt management include Transportation Association of Canada's Synthesis of Best Practices for Road Salt Management (1999) and Salt SMART Learning Guide (2005).

The City may wish to develop an educational campaign to remind residents to remove snow and ice in front of residences promptly. Low cost methods to disperse this information include via the City website or through property tax invoice inserts, if the timing is appropriate. To encourage residents to clear sidewalks, a Snow and Ice Program can be developed to provide information on policy, tips for shovelling, and reminder on the need to help neighbours who may be physically incapable of removing snow. Volunteer programs in Nelson schools may involve snow clearance for less fortunate Nelsonites. The City of Saskatoon is an example of a municipality with such a program and it is described on their website via the following link: http://www.saskatoon.ca/DEPARTMENTS/Infrastructure%20Services/Public%20Works/Roadways/Snow%20and%20Ice/Pages/default.aspx)

6.5 Signage

- *A formal on and off-road Active Transportation Signage Plan should be pursued to support the Active Transportation Network with consistent signage throughout the community.*

The City of Nelson Traffic Operations Administration Guide contains recommendations on developing policy for implementation and maintenance of traffic signs, pavement markings, and traffic signals. This document should be reviewed and expanded to include application of Active Transportation signage and markings.

Figure 30 – Nelson Signage[35]

Signage should conform to BC Ministry of Transportation's Manual of Standard Signs and Pavement Markings and Transportation Association of Canada's Manual of Uniform Traffic Control Devices for Canada (MUTCD), and Bikeway Traffic Control Guidelines. Existing signage

[35] Source: Opus International Consultants Ltd.

should be replaced to meet the new standards. Uniform application of signage and markings reduces confusion and increases expectancy and understanding for all users.

Respondents at the Open House favored large, visible signage for route marking and warning sigage as opposed to small combination signage (route markers on existing street name signs) that would reduce visual clutter.

The Great Northern Trail has different seasonal uses, as mountain biking is a popular summer activity on the trail and cross-country skiing occurs through the winter months. For both community members and visitors, proper signage can increase the usage of this trail. Signage should include all formalized access points to the trail. This is especially important to novice cyclists/walkers/skiers as they may be less inclined to go far distances and the ability to exit at various access points increases the probability for usage of the trail.

7.0 Implementation of Active Transportation Plan

For any plan to be successful, forethought must be given to how the plan will become a built reality. Plans should have:

- Responsibility for implementation assigned to specific departments or staff;
- An annual budget allocated over a determined term, such as 20 years;
- Regular monitoring of targets (approximately once per year);
- Regular updates set for the plan (approximately every 5 years).

Other strategies should include education and awareness to facilitate behavioural changes in the community, and changes to City policy to not only encourage, but demand inclusion of Active Transportation infrastructure in both new developments and upgrades of existing roadways. Funding opportunities should be identified to ensure maximum progression of the Active Transportation plan.

7.1 Education and Awareness

Education and promotion initiatives should be used to raise awareness about the benefits of Active Transportation, and advise users about what Active Transportation choices are available. These initiatives would also be designed to improve attitudes, and teach the public how to use and interact with the active modes in to reduce safety concerns and frustrations.

An educational campaign must be realistic and focus on educating both the Active Transportation user groups and motorists on the rules of the road and expected interaction of user groups throughout all Active Transportation routes that include roadways, bike lanes, trails, sidewalks, and walkways.

The education of motorists was stated in the public consultation process as one of the needs to implementing a successful Active Transportation network. Conversely, cyclists and pedestrians also need to be aware of the rules of the road and road etiquette, understanding the responsibility they have for their own personal safety.

Programs and initiatives to encourage Active Transportation in the community should be considered. These, although not limited to, may include the following:

- Brochures and maps of the Active Transportation Network and integration of the ATP with recreational and tourist opportunities in the region (both printed maps and downloadable maps on the City of Nelson Website.
- Interactive electronic mapping system / trip planner to indicate least steep routes
- Active Transportation community events such as Car-Free Days or Bike to Work Week
- Active and Safer Routes to School to encourage walking to schools in the City
- Free downtown parking for car coop vehicles
- Website advertising
- Education on the presence of Priority Plow Sidewalk Routes and property owners' responsibilities for sidewalk clearing.

7.2 City Policy

City policy should support Active Transportation initiatives and ensure implementation of Active Transportation infrastructure in new developments and all future road projects, as well as consideration of facilities where there is presently a lack of pedestrian and cyclist accommodation.

This section both summarizes recommendations throughout this report and contributes additional suggestions for policy improvement.

Objectives:

- Adopt Geometric Design Standards for all roadway classifications to ensure appropriate right-of-way allocations for Active Transportation facilities
- Foster the development of facilities that enable safe and convenient pedestrian travel.
- Provide for transit needs through appropriate road design. Foster transit-friendly streets on bus routes.
- Enhance the comfort and safety of cycling trips.

To meet the aforementioned objectives, the City of Nelson should adopt a policy with the following requirements for <u>new construction</u>:

- Adopt Geometric Design Standards for all roadway classifications. These standards should be sufficient to allow for traveling and auxiliary lanes, such as on-street parking and bicycle lanes. If not constructed immediately, right of way should accommodate provisions for sidewalks as follows:
    - Arterials should have sidewalks on both sides
    - Collector Roads should have sidewalks on both sides
    - Local roads should have sidewalks on one side, with the exception of roads proximate to a school, which should have sidewalks on both sides.
- Adopt guidelines for determining which side of the street sidewalks should be constructed on Local roads (evaluation criteria suggestions provided in Section 6.2)
- Ensure that attractive and safe pedestrian facilities are provided as part of any new developments and that there are convenient walkways from the street to the building entrances of major developments

    - Ensure that the roadway network is accessible to individuals of varying ages and physical abilities, utilizing appropriate strategies and infrastructure
    - Provide transit-friendly streets on bus routes. This may include, but is not limited to, high visibility signage, benches, and bus shelters
    - Include a stipulation in the Subdivision and Development Servicing Bylaw that all new subdivisions have land dedicated for park land
    - Adopt standards for bicycle facilities (bicycle lanes, signed bike routes) to ensure consistency throughout the City (see Section 6.1 for suggestions)
    - Amend the zoning bylaw, Land Use Regulation Bylaw (Part III – Parking), to ensure that bicycle parking is provided for all new developments
- Locate end of trip facilities at major destinations, such as key employment sites, schools, and commercial areas

The City of Nelson should have supporting policies for incorporating provisions for pedestrians and cyclists along existing roadways where there is currently a lack of facilities or there is need for more guidance on maintenance, snow removal, etc. These supporting policies may include:

- Stipulate that pedestrian facilities be included with all local improvement areas. Any upgrade to existing roads should include consideration of Active Transportation infrastructure.
- Adopt guidelines to determine which sidewalk on a local street should be maintained by using evaluation criteria to determine which side is the most appropriate for a sidewalk (suggestions provided in Section 6.2)
- Adopt a systematic procedure to be used in developing a list of maintenance and rehabilitation projects (Section 6.3).
- Promote increased accessibility to public transit by cyclists through attractive connections between the cycling network and transit network. This may be achieved through the provision of bike racks on buses.
- Support the development and implementation of complementary programs to support Active Transportation. This may be achieved through awareness, encouragement, education and enforcement programs.
- *The City of Nelson Traffic Operations Administration Guide* should be expanded to include application of Active Transportation signage and markings. This includes:
    - consistent signage and pavement marking standards for all cycling facilities
    - signage for way-finding and route marking
- Adopt a Snow and Ice Control Bylaw (Section 6.4)
- Adopt policy to support energy efficient and direct downward lighting for pedestrian paths, including multi-use trails in commercial areas
- Provide amenities such as benches and garbage cans along recreational trails and multi-user paths.
- Covered stairs should be placed on the priority snow plow routes as a minimum.

7.3 Funding

The personal costs of owning and operating an automobile are increasing, as are the health impacts of a sedentary lifestyle. The societal costs to the transportation system and environment are likewise increasing, and therefore, shifting transportation to more sustainable modes may be argued to be a sound investment.

For the purposes of funding the capital costs and maintenance of developing Active Transportation Infrastructure, the City may examine funding options including but not limited to taxation, development cost charge bylaw, Provincial grants for Active Transportation and green initiatives, borrowing in accordance with the provision of the Community Charter for Municipalities, and donations.

The following sources have been identified for potential funding for Nelson Active Transportation initiatives:

Operational Budget:

- Amendments to plans and policies may be adopted with little or no cost.
- Opportunities to improve the network through modest changes in the current operational practises are feasible (e.g. maintenance improvement, signing, lane marking, etc).
- On-road cycling lanes should be accommodated within road maintenance operations.
- Continue to utilize existing funds for new sidewalk and multi-user path construction, maintenance and repairs every year.
- Covered stairs along the priority plow sidewalk routes could be funded in part with any excess funds within the snow removal budget at year-end. Maintenance should fall under the regular sidewalk maintenance funds.

Capital Budget

- Capital projects: for larger identified projects (such as pedestrian and cyclist connections and innovative transit solutions), a specific budget may be added to the City's capital expenditure program, subject to Council approval.
- For existing arterial and collector roads that do not meet new guidelines adopted by the City, the City may wish to commit to addressing gaps over a 10 to 20 year period, and to request funding to address these gaps

Developer

- The developer should be responsible for providing appropriate pedestrian and cyclist accommodation for new developments with the City of Nelson. New subdivisions should require park land dedication (which is current practise in Nelson).

Local Area Plan

- Gaps on the local street network could be addressed through a Local Area Service Plan as outlined in http://www.burnaby.ca/cityhall/departments/engnrn/engnrn_lclars.html
- The Local Area Plan can be used for funding Active Transportation facilities on existing roadways. Residents can pay for street-lighting or sidewalk upgrades on their street

through their property taxes over a fixed period, such as five or fifteen years, provided the majority of property owners agree.

Funding Partners

Figure 31– Local Motion Sign[36]

The City may be successful in sharing the costs of identified improvements with local stakeholders and/or senior government grants.

- A listing of BEAT funding opportunities for local and regional governments is provided in Appendix E.
- British Columbia Recreation and Parks Association (BCRPA) provide grants to support physical activity programming, the building of trails and walkways, and active events (http://www.bcrpa.bc.ca/recreation_parks/active_communities.htm)
- Bike BC is a $31-million Provincial program for cycling infrastructure, which may include but not limited to cycling trails, bike lanes, bike lockers, etc (http://www.th.gov.bc.ca/BikeBC/)

Funding partners may be the preferred option for more costly improvements such as an overpass connecting Rosemont to Upper Uphill or a transit system running from Baker Street to the GNRT trail head along Stanley Street. Local stakeholders may be enticed by advertising opportunities on or near the project as shown in Figure 32, which is an example from New Westminster.

Figure 32– Example of Funding for Capital Projects through Billboard Advertisement[36]

As funding opportunities become available, the various recommendations for improvements to the Active Transportation System should be implemented.

[36] Source: Opus International Ltd.

8.0 Conclusion

The development of an Active Transportation Plan acknowledges the progress made by the City of Nelson with regards to the development of sustainable transportation modes in the City. As the Active Transportation Network grows, and as locational and systematic barriers are eliminated, Nelson should experience further shift from fuel powered transportation to become an even more sustainable, healthier, and active community.

The City should develop and annually review a list of major Active Transportation projects based on opportunities identified in this study and on such considerations as ease of implementation, cost sharing with other funding sources, coordination with other projects, new development, known priorities, economic analysis, and local knowledge.

It is intended that the findings of this Nelson Active Transportation Plan be used to amend the current planning, design, regulation, and maintenance of the Active Transportation Network, and in further developing a prioritized improvement plan with identified funding sources. The prioritization is based largely on public input from the consultation process.

Table 6 – Active Transportation Plan Strategies

Issue	Improvement Measure	Description	Time Frame	Potential to Affect Change	Cost to Nelson	Priority
Winter conditions	Snow Clearing	Educational campaign to residents to remove snow and ice in front of residences promptly. Allow residents to submit complaints online	Immediate	Medium	Low	High
	Snow Clearing	Create a snow clearing policy that allows for reliable routes for Active Transportation throughout winter months. Appropriate practise regarding sanding and salting should be consistently utilized for ice control.	Immediate	High	Low	High
	Covered Stairs	Covered stairs may decrease snow accumulation and subsequently snow removal activity on stairways which may inhibit walking. Covered stairs should be considered for priority pedestrian snow plow routes	Medium	Medium	Medium to High	Medium to High
	Priority plowing of designated cycle routes	A plan should be adopted to ensure a priority for snow clearance of main cycle routes within the city.	Medium	High	Low	High

Steep Terrain	Design Guidelines	Grooved ramps adjacent to stairs to assist cyclists.	Long Term	Low	Medium	High*
	Benches	Provide Benches at regular intervals on steep sidewalks	Long Term	Medium	Medium	Medium to High
	Transit	Frequent route up and down Stanley Street connecting the trail head to the downtown.	Long Term	Medium to High	High	Medium
Additional Routes	Develop proposed pathways and links	Provide better links for recreational opportunities	Long Term	Medium to High	Medium to High (construction and maintenance costs)	High
Routes & Signage	Better signage of routes	Signing routes will provide awareness of Active Transportation network and recreational opportunities	Medium	High	Low	High
Routes & Signage	Provide bicycle routes within the existing right-of-way	Provide pavement markings and signing for bike lanes consistent with Transportation Association of Canada's Bikeway Traffic Control Guidelines for Canada mark preferred routes. Providing bicycle routes within the existing right-of-way is common practise where practicable, and is relatively easy to implement.	Medium	Medium to High	Low to Medium	High
Signage	Provide brochure and map of existing routes (hard copies and online)	Mapping routes will provide awareness of Active Transportation network and recreational opportunities	Medium	High	Medium (Low if sponsored e.g. by a business)	High
Cyclist Facilities	Include Bike Parking stipulations within the Land Use Regulation (zoning) Bylaw	Require all new developments to provide secure bicycle parking Requirements for both long term and short term storage based on the square footage of the development. Required for all land uses – residential, commercial, institutional	Long Term	High	Low	Medium
	Bicycle parking sponsored by adjacent businesses	Identify funding sources and opportunities for bike parking and similar amenities.	Immediate	Medium	Low	Medium

	Dedicated Budget for bicycle parking	Identify realistic budgets and funding sources for bike parking and similar amenities.	Immediate	Medium	Medium	Low to Medium
	Design guidelines to accommodate bicycle parking	Prepare guidelines for bike racks and other cyclist amenities within the City of Nelson for efficient and consistent application.	Long Term	Medium	Low	High*
Additional Routes	Rails with Trails	Official multi-use pathways adjacent to the rail line parallel to the waterfront.	Medium	High	High (plus requires co-ordination with railway company)	Low
Lighting	Street / Trail lighting	Prepare guidelines related to pedestrian-level lighting requirements on multi-use trails and in commercial areas.	Long Term	Medium	Medium	Low
Maintenance	Trip and Fall Hazard Prioritization	Have City's crews report new sidewalk deficiencies Allow residents to submit complaints online or via voicemail	Immediate	Medium	Low	Low
	Trip and Fall Hazard Prioritization	Monitor severe hazards on a regular basis using handheld GPS units.	Medium	Medium	Medium	Low

*Although development of design guidelines did not necessarily rank high in priority by the public, it is preferable that general design guidelines for all Active Transportation infrastructure and facilities are adopted at the onset, in order to ensure consistent, efficient, and sound application. Proper design can reduce the life-cycle cost of an initiative by decreasing maintenance requirements, avoiding public backlash for inappropriate installation, and ensure that the City practise is in line with Active Transportation user needs and preferences where practicable.

APPENDIX A – REFERENCES

REFERENCES

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APPENDIX B - BEST PRACTICES AND DESIGN GUIDELINES

BACKGROUND/ LITERATURE REVIEW

NO.	TITLE	YEAR
1	BEAT Phase 2 Application Form	2009
2	Official Community Plan, Bylaw No. 3114	2008
3	Local Motion Application 2009: City of Nelson Pedestrian Sidewalk / Pathway Extension and Bridge	2008
4	Nelson Local Health Authority 07. P.E.O.P.L.E. 33 Population Projections (2009-2024)	2008
5	City of Nelson Transit Strategy	2008
6	City of Nelson Traffic Operations Administration Guide	2007
7	City of Nelson Roadway Network Review	2007
8	City of Nelson Transportation Planning Review & Project Implementation Strategy	2007
9	Local Motion Application 2009	2007
10	City of Nelson Integrated Transportation Strategy	1995
11	City of Nelson Traffic By-law No.2232, 1987.	1987

NO.	TITLE, AUTHOR, YEAR	SUMMARY
1	BEAT Phase 2 Application Form, 2009	Provides: • overall description and vision of the Nelson ATP • summary of existing transportation and active transportation plans • inventory of existing & pending funding for ATP • list of stakeholders • detailed budget • inventory of ATP related excerpts from the OCP *Relevance: Ascertains vision and direction for the ATP* *OCP Policies relating to Active Transportation provided in summary on BEAT Ph2 Application.*
2	Official Community Plan, Bylaw No. 3114, City of Nelson, 2008	The most recent Official City Plan was adopted in 2008, and provides a framework regarding land use and development, pursuant to Part 26 of the Local Government Act. The OCP indicates principals to guide the future of the City of Nelson, including: • City expansion that will respect the present small town character; • Provision of cost effective municipal services; • Desirable living conditions for all demographics; • Build a community based upon the principles of sustainability; and • Retain environmental quality. Clauses relating to the City of Nelson's vision for Active Transportation are found throughout the OCP. These policies have been outlined for reference in Appendix A. Recommends the City complete a comprehensive transportation plan. Schedule G Area Building Design Guidelines for the commercial cores has some guidelines relating to ATP such as in Section 2.1.1 in which setbacks are encouraged to promote pedestrian activity. Schdule B Land Use shows the current land usages (ie commercial, high density low density dwelling, etc) Schedule C Transportation Map indicates the current roadways and classification (arterial, collector, local roads) It also shows rail corridor and proposed linkages between some collectors Schedule F Trail Network Map: identifies existing and proposed trails, but does not differentiate between pedestrian and cyclist routes nor does it provide priorities for future trails and pathways. • Shows the Great Northern Rail Trail in southeast BC (east to Troupe Junction, south to Salmo) • Also existing and planned trails

NO.	TITLE, AUTHOR, YEAR	SUMMARY
		• Two trail links from the GNRT to the City's 'Circle Tour' trail are shown as planned (South end at Stanley Street (Upper Uphill Neighbourhood) and east end at Elwyn Street (Fairview Neighbourhood); no existing connections are shown) *Relevance: Provides City goals and direction. Provides Transportation Map, Land Use, etc.*
3	Local Motion Application 2009: City of Nelson Pedestrian Sidewalk / Pathway Extension and Bridge Improvements, 2008	1. Construction of a sidewalk connecting L.V. Rogers Highschool to the Selkirk College 10th Street Campus 2. Construction of a pathway along Cottonwood Creek from Cottonwood Park to the Bus Transfer Station & bridge improvements over Cottonwood Creek: • Fill the need for a pedestrian commuter route by linking the highschool to the college • Link current pedestrian commuter route providing easier access to the downtown commercial core. • Improve linkages with Davies Park and the Nelson-Salmo Great Northern Trail. • Improve pedestrian safety and encourage more walkable neighbourhoods (no current sidewalk on this route) Includes GHG reduction and cost estimate to quantify benefit of proposed improvements *Relevance: Contains sidewalk and trail City standards and identifies lacking Active Transportation infrastructure.*
4	Nelson Local Health Area 07. P.E.O.P.L.E. 33 Population Projections (2009-2024), Interior Health Authority, 2008	Provides projected population and demographics for the Nelson Local Health Authority (LHA). *Relevance: Identifies aging trend in Nelson and decreasing youth demographic in the future*
6	City of Nelson Transit Strategy, Nelson Conventional and Custom Transit System March, 2008	Includes key support initiatives that are necessary to enhance the effectiveness of transit within the City: • Integration of the various transit services and associated fares in the region. • Fare strategies that may be directed toward expanding existing target markets • TDM measures that support the integration of transit with attractive bicycle and pedestrian facilities in terms of creating enhanced access • On-street facilities at high demand locations to enhance the quality of waiting areas • Marketing strategies to identify and target key transit markets, including the provision of accessible transit information such as riders' guides, information signage, and the website. *Relevance: Outlines the key objectives for the delivery of transit services within the Nelson area and examines the current and future markets of transit customers*
7	City of Nelson Traffic Operations Administration Guide, Urban Systems, 2007	• Summarizes/describes the existing Major Road Network (classification, plan, other routes) incl. function & characteristics of each roadway type • Provides guidance for implementation of traffic control devices (developing policy,

NO.	TITLE, AUTHOR, YEAR	SUMMARY
		choosing actions, legal authorization) • Describes process/application of/installation and maintenance of: traffic signs, pavement markings, traffic signals, traffic calming *Relevance: Provides guidelines regarding road classification, traffic calming as well as the application, installation, and maintenance of signage, pavement markings, traffic signals.*
8	City of Nelson – Roadway Network Review, Urban Systems, 2007	This study is a review of the existing Major Road Network in Nelson. • Through the review of the network and by talking to the City, the report identifies and summarizes existing and potential future issues and concerns relating to the Major Road Network • It **recommended updates** to the road network (i.e. eliminating unnecessary, redundant, indirect links from Major Road Network) • Updated Major Road Network map *Relevance: Provides understanding of Nelson roads and their function*
9	City of Nelson Transportation Planning Review & Project Implementation Strategy, Urban Systems, 2007	Reviews the transportation planning studies that have analysis and recommendations for system upgrades (total of 15). The report: 1) identified recommendations that have already been implemented 2) identified recommendations that still require implementation 3) rated these incomplete recommendations by priority and relevance 4) provided an implementation strategy for them Objectives of the report: • To identify what recommendations from applicable transportation studies have already been implemented, and which still require implementation, • To rate the outstanding recommendations in terms of priority and relevance, and, • To develop a phased strategy for the implementation of recommendations that the City of Nelson can adopt. Ranks the following Active Transportation issues as high importance: • Vernon Street between Baker Street and Stanley Street o Close or eliminate driveway accesses on inside of curve o Prohibit on street parking on curve or provide sidewalk on west side o Curb extensions on pedestrian crosswalks • Consider bicycle and pedestrian facilities for all new developments – provide safe and accessible facilities to encourage alternate modes of transportation

NO.	TITLE, AUTHOR, YEAR	SUMMARY
		• Remove pedestrian facilities and bench and monument from median on Vernon Street as pedestrians are currently required to jaywalk from the adjacent sidewalks to reach this park-like area. In addition, the area is located within the clearzone of the highway, which is a safety concern. Pedestrians within the median should be discouraged. Recommends further review of the following issues: • Transit improvements as per City of Nelson Integrated Transportation Strategy • Establish programs to regularly review crosswalk warrants • Consider trip reduction programs in new developments *Relevance: Improvements to some parts of the active transportation network facilities. Called for revision of road standards to incorporate bicycle facilities and implement sidewalk construction program*
10	City of Nelson Integrated Transportation Strategy, 1995	Identified major traffic and parking issues and cyclist and pedestrian transit. Resulted in the completion of the Waterfront Trail. *Note that the study is nearly 15 years old.* • Parking supply/demand • Programs and facilities for cyclists and pedestrians • Transit system improvement and ridesharing options • Implementation plan prioritizing priority areas *Relevance: Identifies issues for all modes related to transportation in Nelson.*
11	City of Nelson Traffic By-law No.2232, 1987	PART VII - USE OF HIGHWAYS REGULATIONS 701. SNOW REMOVAL (Amended By-law No. 2326, 1988 & 2903, **2000**) (1) Every owner or occupier of a business premises shall remove any accumulation of snow or ice upon any sidewalk abutting the land or premises owned or occupied by the person no later that 11:00 o'clock in the forenoon of any day except Sunday or holidays. (4) Every owner or occupier of business or residential premises shall remove any accumulation of dirt, debris or other material from any sidewalk abutting the land or the premises owned or occupied by the person in such a manner that the sidewalk is clean at all reasonable times. *Relevance: Provides policy for maintaining sidewalk in conditions suitable for pedestrian usage*

Best Practices Summary

The communities that were reviewed for best practices 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

Areas have been reviewed with regard to best practices in Active Transportation are:

- Definitions of Active Transportation
- Vision, Goals and Objectives
- Consultation
- Monitoring and Targets
- Social Marketing. Promotion and Programs
- CPTED
- Funding

Definitions of Active Transportation

How Active Transportation is defined varies greatly between municipalities both in terms of what is included in the definition as well as what the definition actually is. Areas that are included in definitions include:

- Modes – the type of activity that will be used to partake. These include cyclists, walkers, in-line skaters, skateboarding, strollers, ice-skating, snowshoeing, cross-country skiing. Some municipalities have also proactively exclude forms of motorized transportation such as ATVs and Snowmobiles in their definitions.
- Users – some municipalities consider different users e.g. recreational users, utilitarian and commuters, and their needs differently
- Purpose – the purpose of trips may also be considered

Some examples of Active Transportation definitions include:

Halifax

Any form of self-propelled (non-motorized) transportation that relies on the use of human energy such as walking, cycling, inline skating and jogging

• *Active Commuting* which involves journeys to and from work.
• *Active Workplace Travel* which includes trips during working hours such as the delivery of materials or attending meetings.
• *Active Destination Oriented Trips* which includes trips to and from school, shops, visiting friends and running errands.
• *Active Recreation* which involves the use of an AT mode for fitness or recreational pursuits, such as hiking or cycling.

Fredericton

Active Transportation is any form of self-propelled (non-motorized) transportation that relies on the use of human energy such as walking, skiing, cycling, in-line skating and jogging. These modes can utilize on-road and off-road facilities (sidewalks, bike lanes, multi-use trails) and may also be combined with public transit, especially for trips to and from work, shopping and entertainment areas, school and other community facilities like recreation centres. For the

Fredericton Master Plan, this definition is expanded to incorporate the requirements of special needs populations.

Winnipeg It is a sustainable form of transportation and is defined as any human-powered mode of transportation, such as cycling, walking, in-line skating, skateboarding, ice-skating, or cross-country skiing.

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

Vision, Goals and Objectives

Vision refers to the category of strategic intentions that are broad, all-inclusive and forward-thinking. It is the intention of the plan and of the plan's objectives and goals before it is set out how the objectives and goals are to be reached. It describes the aspiration for the future, without specifying the means that will be used to achieve those desired ends.

After knowing what the desired outcome of the plan will be based on the vision, the objectives and goals can be set. The objectives specify and guide the means in which the vision will be achieved whilst the goals are specific, realistic and often measureable.

Halifax Vision: Develop a region-wide, visible and connected Active Transportation network of on-road and off-road facilities that are convenient, accommodate the needs of existing and future users and promotes an increase in non- motorized vehicle travel, particularly for short distance trips. This network will be supported by various programs, policies and strategies that will help and encourage Active Transportation year-round, and improve the quality of life for both residents and visitors to the area and make Halifax one of the most desirable municipalities in which to live, work and visit in North America.

Goals:
1. Build upon existing and previously proposed initiatives, by connecting and expanding upon existing cycling, pedestrian and multi-use trail facilities in Halifax to establish a complete, integrated and readily accessible region wide network serving urban, suburban and rural areas.
2. Double the number of person-trips by Active Transportation modes within 20-years by encouraging more people to choose Active Transportation modes more often for both utilitarian and recreational/fitness purposes.
3. Make conditions for walking, cycling and other modes of Active Transportation safer for all users regardless of skill level and age by providing conveniently located, appropriately spaced and well-designed on-road and off-road cycling, pedestrian and multi-use trail facilities, while promoting Active Transportation as a healthy lifestyle choice and also educating all transportation modes (cyclists, motorists, etc.) on safe operating practices.

Objectives:
Develop a Connected Region-Wide Active Transportation Network Plan
Develop Planning and Design Guidelines for Active
Transportation (Pedestrian and Cycling) Routes and Facilities
Review Active Transportation Promotion, Education Programs and Supporting Facilities

Develop a Formal Set of Active Transportation Policies
Define the Priorities and Develop an Implementation
Strategy to Integrate Long-Term Road, Bikeway, Sidewalk and Trail System Planning in the Halifax Region
Develop the Financial Costs of Establishing a "Tiered" Active Transportation System

Fredericton

Vision: A sustainable, visible and connected Trails/Bikeways network of on-road and off-road facilities that are accessible to all, attractive to residents and visitors alike, and unique to the character and heritage of the City of Fredericton.

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.

Objectives:
1. To develop a city-wide AT network consistent with the overall vision of the project, the City of Fredericton Municipal Plan (2006), other local strategic plans and Provincial legislation.
2. To build upon the existing off-road network to enhance user experiences and minimize cost outlays.
3. To create conditions for network users that promotes safety of use and accessibility for all ages, skill levels and mobility types including special needs populations.
4. To develop and regularly update a long-term implementation plan for the overall network that is consistent with the City's financial priorities and resources.
5. To review existing strategies for promoting public interest in Active Transportation and recommend improvements to both content and delivery. This objective should include educating road users, including pedestrians, cyclists, inline skaters and motorists on intersection policies, right-of-way policies, signing plans, parking and end-of-trip facilities and promotion.

Whitehorse

Vision: The citizens of Whitehorse will enjoy year-round access to a network of interconnected non-motorized and motorized trails, greenway corridors and cycling routes that will support the City's commitment to creating a liveable, safe, attractive, healthy and sustainable Winter City community. Residents and visitors alike will find exciting year-round opportunities for recreation, reflection and transportation alternatives that will link people to each other, to their community and to our unique natural and cultural heritage.

Goals:
1. Use the delivery of public leisure services to further the growth and development of the community; and
2. Use the delivery of public leisure services to further the growth and development of the individual.

Minden

Vision: An active community gives conscious consideration to active transportation when making planning decisions, and makes accessibility for all modes of transportation a priority.

Goal: To raise physical activity levels through active transportation (AT) promotion & planning

Objectives:
To promote active transportation as a way to improve health

To promote opportunities for walking and cycling within the villages and surrounding areas

To create active transportation plans for the Villages of Haliburton and Minden

Consultation

In order to provide a plan that best serves the needs of the City and the end user, many municipalities undertook consultation as part of the plan process. Some municipalities took special effort to include the consultation process to special interest groups and those with special needs such as seniors, youth and those with accessibility issues. Reasons for undertaking consultation include:

- Legislated
- Understanding the needs of users
- Gaining input on what users want
- Gaining input from stakeholders
- Gaining feedback from potential users and stakeholders on options

Types of consultation include:

- Meetings – established advisory committees such as CPAC (Cyclists and Pedestrian Advisory Committee) and DAC (Disability Advisory Committee), special interest groups
- Focus Groups
- Workshops – stakeholders and interested public
- Public Meeting and Open Houses – presenting information to the public
- Surveys - web-based public opinion surveys

Some municipalities such as the City of Winnipeg have continued the consultation process by setting up dedicated Active Transportation Advisory Committees to provide on-going input and consultation. The setting up of a proposed Active Transportation Advisory Committee was a recommendation from the Halifax plan.

Monitoring and Targets

In order to understand the success of a plan it is important to understand what the base line conditions are, and monitor any changes to gain some understanding to the success. For some plans the setting of measureable targets is in conjunction with goal setting, but not all plans define how these should be measured.

Many municipalities see monitoring programs as important but are not able to conduct them due to limited resources.

Halifax

A central goal of the Active Transportation Plan is to double the number of people who use AT modes for a portion of their entire trip, particularly for utilitarian (commuting) purposes.

To achieve this goal, a hierarchy of routes and facility types is recommended to appeal to a wide range of skill levels.

Assessing the impact and costs of the AT network and programs should be based on information such as:

- Origin / destination counts;
- Tourist attitudinal surveys;
- Screenline counts on a finer scale that are appropriate to wheeling travel patterns; and
- Intersection counts to coincide with routes on which improvements are proposed, and also on parallel routes.

This information should be collected as an internal function of Halifax Regional Municipality (HRM) at least every five years and during the late spring to mid fall season. The proposed Active Transportation Advisory Committee should have a role in the collection and review of the data.

Data collected through monitoring programs along with information collected through on-going public consultation exercises, such as user surveys and public attitude surveys conducted every five years, will inform and thus assist in the preparation of the list of annual priorities. In this context, it is recommended that:
- HRM and partners should monitor the implementation and effectiveness of the Active Transportation Plan through measurements of liability exposure, priority achievements, counting programs, surveys and target modal splits.
- HRM (including Metro Transit) continue collecting data on AT modes.
- Designated HRM staff, with assistance from the proposed Active Transportation Advisory Committee, conduct AT User Surveys every two years and a statistically valid Public and Visitor Attitude Survey at least every five years.

Minden Observational surveys of the number of users were carried out in the summer of 2007 at 15 different locations throughout the town to provide baseline data, with the intention of continuing to conduct the same surveys in the future to monitor any changes in the level of usage of active transportation facilities since the 2008 plan. In addition the children of an elementary school completed surveys of their commute to school mode. This process again will be repeated to monitor any changes.

Rossland As a recommendation from Rossland's Active Transportation a monitoring function should be established to evaluate the effectiveness of initiatives, modify actions as required, and incorporate new approaches and decision-making processes if necessary. Measuring public Active Transportation patterns through periodic surveys would enable the setting of goals based on targets for increased usage.

Social Marketing, Promotions and Programs

As well as providing the infrastructure and facilities for people to participate in active transportation it is also important to market and promote both the infrastructure and facilities, and also the feasibility of active transportation modes as a viable way to travel. Many municipalities have also started special programs and events to assist with increasing the number of people using active transportation or supporting other agencies or organisations in programs that they provide.

Halifax The municipality already had a safe routes to school program prior to the Active Transportation Plan.

The plan recommended that an educational and promotional campaign is required to increase existing and potential new user awareness. It is expected that as users of the network become more comfortable using the range of expanding facilities and connections over the 20-year implementation period (coordinated with the Regional MPS), users will gain the skill, knowledge and confidence to lengthen their trips by AT modes. They will also "graduate" in their choice of routes and facilities by moving from quiet streets or corridors to walking and cycling on or along multi-lane roads, riding with traffic on urban roads or walking and cycling on paved shoulders on rural roads. The intent is that more people will choose more often to assume an Active Transportation mode of travel and reduce their current dependence on the private automobile.

Fredericton

Maggie DeWolfe is the City of Fredericton's travelling active transportation information station. Maggie travels the trails, visiting government offices and local businesses with information on active transportation. Maggie is available to discuss the City of Fredericton's Trails/Bikeways Master Plan and current initiatives being implemented by the City of Fredericton.

Recommended supporting programming may include initiatives such as public education, maintenance, signage etc.

It was recognised that social barriers should also be addressed when developing marketing, promotions and programs and should include such things as:
• Inadequate knowledge of safe and convenient walking and wheeling routes to schools and other destinations;
• Inadequate skills on the part of AT users to safely share the roads with automobiles;
• Limited awareness on the part of motorists of the needs and rights of walkers and wheelers;
• Lack of support in the workplace for users of AT;
• Lack of encouragement of youth to make regular trips by AT modes;
• Inadequate institutional support, such as inadequate shower facilities or insecure bicycle parking;
• Continued high degree of culturally reinforced dependency on the automobile; and
• Perception of walking and wheeling as a recreational activity

Winnipeg

There are many organisations that provide programs in Winnipeg that support and encourage Active Transportation such as cycling coalitions and NGOs. It is recognised by the City that there is opportunities to partners with these organisations.

Whitehorse

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. The program is intended to complement the city's numerous recent bicycle network investments and improvements with the objective of helping ensure that these investments are optimized and that the new infrastructure is well used by residents

In total, the City of Whitehorse has invested $2 million on infrastructure improvements to support active transportation. To ensure that these investments are optimized and well used by residents, the city is now working on

implementing a number of social marketing and additional public outreach and education programs. Wheel 2 Work is one of these programs.

Whitehorse has also recognized the benefits of community-based social marketing as an attractive alternative to information-based campaigns. Community-based social marketing is based upon research in the social sciences that demonstrates that behavior change is most effectively achieved through initiatives delivered at the community level which focus on removing barriers to an activity while simultaneously enhancing the activity's benefits.

In support of the Wheel 2 Work program, special bicycle maintenance workshops were offered. The free workshops covered basic bicycle maintenance and repairs, including fixing flat tires and adjusting brakes and gears. A special "Looks Who's Wheeling to Work" advertising column was also run in one of Whitehorse's weekly newspapers to generate interest in the program and to show the public the wide range of people who cycle commute.

Lessons learned

During the first year if the Wheel 2 Work program, there were some early lessons that were learned in developing and implementing it.

- Make it fun: The program's incentive prizes and positive marketing helped attract people to the program. Wheel 2 Work encouraged people to change transportation habits gradually and did not employ negative or coercive marketing and messaging.
- Longer programs can be more effective: Unlike the Commuter Challenge, a cross-Canada, one-week personal transportation challenge program, Wheel 2 Work is a four-and-a-half month program. Running the program over a longer period gives participants more flexibility in changing travel habits (i.e., they can start more gradually). Any travel changes are also more easily reinforced if participants are doing them for longer periods (i.e., the changes that are made can become permanent).
- Provide data collection options: Wheel 2 Work relied on participants monitoring their bicycle usage. By providing a variety of reporting options – on-line, by phone, using an Excel spreadsheet that was emailed in occasionally – participants provided high quality data that has allowed Whitehorse to effectively monitor both frequency of travel and distance.

Marketing must be context specific and resonate with the community: With ample free parking and no rush hour to speak of, the messages used in Wheel 2 Work are different from larger, southern Canadian communities where reducing traffic congestion is often a major concern. Instead, Whitehorse used the results of their on-trail surveys to develop messages for the program that would be more resonant for the local community. As a result, Wheel 2 Work messages focused on the fun of riding to work, the fitness value, the cost savings (versus the cost of gasoline for the trip) and the general environmental benefits

Minden

While it is felt that the rural setting has somewhat unique challenges, initiatives such as the CIA's "*Park the Car and Get Movin*" campaign promote reduced car trips in and around the village. It is felt that such initiatives will be made more effective when AT infrastructure is in place.

Rossland

The ultimate goal of the Rossland initiative was to modify individual's behaviour, such that more often than previously they choose Active Transportation modes rather than vehicular transportation. The plan recognises that the community of Rossland must be educated and encouraged to utilize the increasing opportunities as they are made available. This can be achieved by:

• Distributing a summary of the Active Transportation Plan to the community via a mail box drop, making the plan downloadable from the City's website, and providing a summary of the plan as a Press Release to local media.

• Developing an incentive education program to encourage Active Transportation by school children with the assistance from Rossland Recreation which experience and ideas for how this might be achieved.

• Establishing a protocol to encourage and facilitate volunteer initiatives to develop Active Transportation infrastructure within neighbourhoods.

• Developing an ongoing public education campaign (maps, brochures, posters etc.) to inform the community of the advantages of and opportunities for Active Transportation within Rossland.

• Participating as a community in provincial and nationwide public health campaigns such as Spirit of BC Week, Move for Health Day and Healthy Workplace Month. Grants are available for this at:
http://www.activecommunities.bc.ca/wp/

CPTED

Crime Prevention through Environmental Design (CPTED) is based on the notion that portions of the physical environment can be manipulated to produce behavioural effects in the people that use and interact within a space. Specifically, it refers to the application of a range of design initiatives and principles to an area or site in order to reduce both the incidence of prime and also an area not always considered, the fear of crime and thereby improving quality of life. This can be accomplished by reducing or eliminating aspects of the physical environment that lend themselves to supporting criminal behaviour. By reducing the perception or fear of crime, there is also the potential to increase use of a space which in turn will increase the number of legitimate users and eyes on the street to deter criminal activity.

Crime is a significant social barrier to regular, outdoor physical activity. Fear of crime can often lead to people choosing to drive over walking and biking around their community or from using parks or trail systems that remove them from the perceived safety of the automobile. This barrier becomes even more pronounced within certain groups such as women, children, the physically challenged and senior citizens.

Halifax

Tools such as community policing, neighbourhood watch organizations, group travel and public education campaigns all help to address the issue, but CPTED offers a unique approach that creates "built in" physical crime prevention elements that exist in and of themselves and are not dependant on the continued vigilance of active organizations and residents.

There are four main CPTED principles that were reviewed in selecting the AT network. They are:

1) *Natural Surveillance:* Areas that maximize the visibility of users are less likely to be targets of crime. Design features include adequate lighting, doors and windows facing onto streets and paths, and pedestrian friendly street and sidewalk design.
2) *Territorial Reinforcement:* Physical design can help define the limit of public and private spaces. By doing this, facility users develop a sense of territorial control while potential offenders, sensing this control, are deterred.
3) *Natural Access Control:* Reduces the opportunity for crime by denying access to potential targets and creating a sense of risk in potential offenders. This is gained by designing streets, sidewalks, building entrances and neighbourhood gateways to clearly indicate public routes and to discourage access to private areas.
4) *Maintenance:* Facilities that are properly maintained are more inviting to users than those that are run down. Well maintained facilities also generally provide a safer environment for users.

The Active Transportation Plan posed some challenges for implementing CPTED design principles as multi-use off-road facilities are often, through their own nature, large, linear and removed from the public eye. It is also realized that for many users of an off-road AT system, the very naturalness of the resource and sense of apartness from the urban environment it brings is something to be valued and preserved. However, there are examples of various CPTED principles that have been successfully applied to natural and urban AT systems in other municipalities across North America and Europe. In order for an AT network to be effective, users must feel safe and secure. More specifically, consideration was given to the following CPTED influenced factors in the AT network:
• Users of the network should be easily visible to people on adjacent roadways where possible.
• Because 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 sneak up on others.
• 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.
• Network facilities should be well maintained. Burned out lights, overgrown paths, or damaged sidewalks/bike routes indicate a general state of disrepair and detract from the feeling of security of the area.

While CPTED encourage the practice of designing well-lit urban spaces, lighting is not always the best solution. For example, lighting along an offroad facility can create shadows that potential offenders may hide in. A user of the trail will not be able to see the potential offender whereas if there were no lights, the user's eyes would be adjusted to the darkness and would have a better chance of detecting the potential offender. This factor should be considered by HRM and partners in the detailed design phase of new facilities.
It also should be noted that when incorporating CPTED principles into the design of the AT network, care should be taken to avoid creating sterile and un-interesting routes with little or no natural features. A balance should be struck between aesthetics and safety.

In more developed urban areas of the Halifax Region, it was recommended that the application of CPTED principles should be considered as part of a larger urban design strategy. Successful implementation will then serve to help reduce opportunities for criminal behaviour but also enhance and beautify the urban

fabric and create even more successful urban spaces. This balanced approach to weighing design options is sometimes referred to as the "Jane Jacobs Test".

Within established regional planning visioning practices, the application of CPTED should not exist in conflict with the creation of a livable, humane and "experiencially exciting city". CPTED is an important part of the urban design process but should be integrated with community goals, functionality, aesthetics and the productive operation of urban spaces on a site by site basis.

Fredericton

It was recommended that Crime Prevention through Environmental Design (CPTED) is another consideration in preparing the network and selecting facility types.

Specific and effective CPTED design guidelines can require a fairly detailed examination of criminal activity by municipal districts, building forms and design challenges to reach maximum effectiveness. Without this level of examination, it is still possible to incorporate safety principles that should be considered when designing any public space and as CPTED is an evolving system, attention should be paid to advances in the field and new research that could impact the effectiveness of design measures. By incorporating CPTED principles and/or auditing procedures into the design of the AT Network, the safety of users (both perceived and real) may be increased. If people feel secure using the network, they are likely to use it more often and in greater numbers.

CPTED principles are also most effective when combined with design decisions which help to accommodate emergency services such as police patrols and fire service responders. This tandem approach to passive security may take the form of providing access points to the network that are reasonably frequent, clearly visible and marked for ease of identification by responders. Other efforts may include providing emergency phones at strategic locations. It is recommended that emergency services be consulted during the detailed development stage of new AT network segments.

Funding

In order to implement any plan, it is important to have at least an understanding of where the necessary funding may come from or ideally have funding incorporated into how the plan will be implemented.

Halifax

Halifax defines the main two funding mechanisms as "own source" and "partner funding". The issue of funding is included within their implementation plan which recognises the need for a source of ongoing funding that is defined by HRM and not overly influenced by policy directives from the Province of Nova Scotia and the Government of Canada, and that it would be preferable to have Funding by the Regional Council and HRM's partners for the entire Plan within the recommended 20-year timeframe.

Winnipeg

It is recognised that the bulk of the funding would have to come from the City, however, there are partnership possibilities through other government programs, working with NGOs who can leverage funds from foundations and other government departments, and with businesses.

Minden

The plan is intended 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. It was acknowledged in the plan that many of the recommendations will require creative approaches to securing funding.

Potential funders were identified as:

- The Ministry of Health Promotion, Communities in Action Fund (Active 2010)
- The Haliburton County Development Corporation
- The Heart and Stroke Foundation of Ontario, Community Advocacy Fund
- Safe Kids Canada, Pedestrian Safety Program
- Health for Life
- Ontario Healthy Communities Coalition

Rossland

Appendix #5 of the plan is discusses funding resources and recognises that there are increasing funding opportunities for Active Transportation. There are funding programs dedicated for Active Transportation, cycling infrastructure, general municipal infrastructure, tourism development, job creation, and greenhouse gas emission reduction, all which should be investigated. A cursory search indentified the following opportunities:

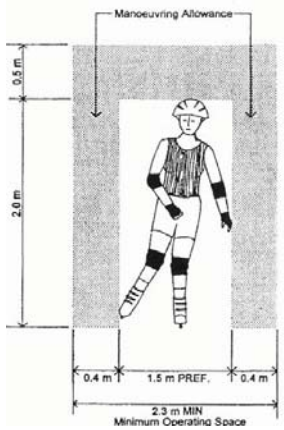
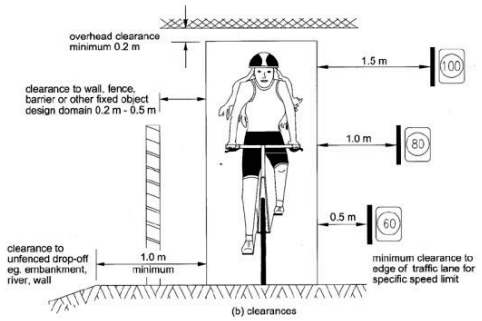
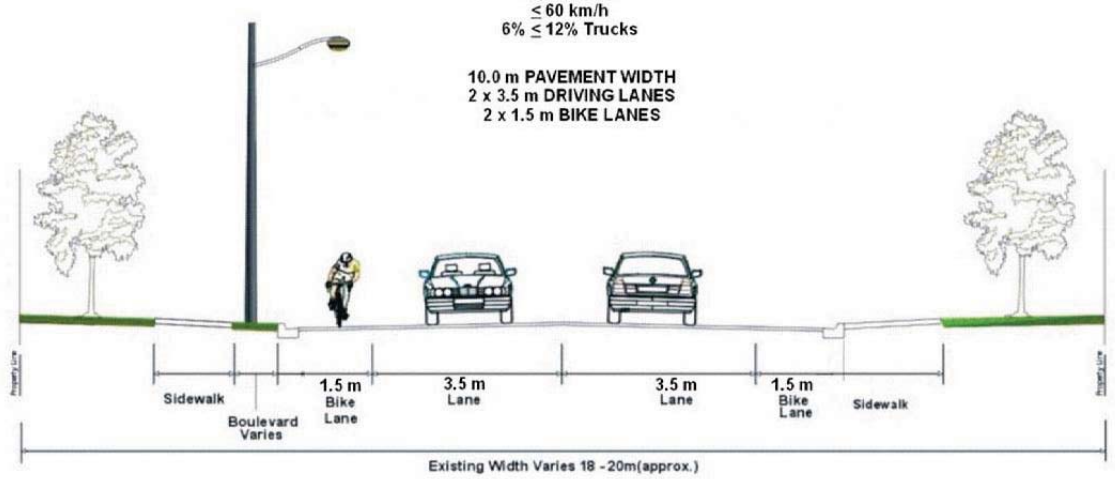
- http://www.activecommunities.bc.ca/wp/grants/activecommunities-grants/
- http://www.activecommunities.bc.ca/wp/grants/additional-funding-sources/
- http://www.th.gov.bc.ca/BikeBC/CIPP.html (Jan 30th2009 deadline)
- http://www.civicinfo.bc.ca/181.asp?grantid=106

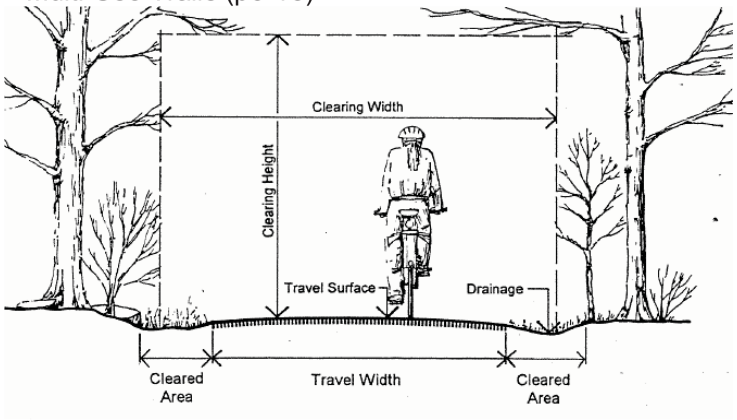
GUIDELINES, DEFINITIONS AND POLICIES

NO.	MUNICIPALITY	SOURCE
1.	Halifax Regional Municipality	Guidelines from Active Transportation Plan Technical Appendix (2006)
2.	City of Fredericton	Trails/Bikeways Master Plan (2007)
3.	City of Winnipeg	Winnipeg Active Transportation Action Plan Appendix J Sample Design Standards for Active Transportation Facilities (2005)
4.	City of Whitehorse	City of Whitehorse 2007 Trail Plan
5.	Minden	An Active Transportation Plan for Minden (2008)
6.	City of Rossland	Active Transportation Plan (2009)
7.	City of Prince George	Carrie Jane Gray Park Master Plan (2006)
8.	City of Prince George	Centennial Trails Project A Five-Year Implementation Plan (2008)
9.	City of Prince George	Prince George Active Communities Project Strategic Plan (2007)
10.	District of North Vancouver	Pedestrian Master Plan Draft Final Report Appendices (2008)

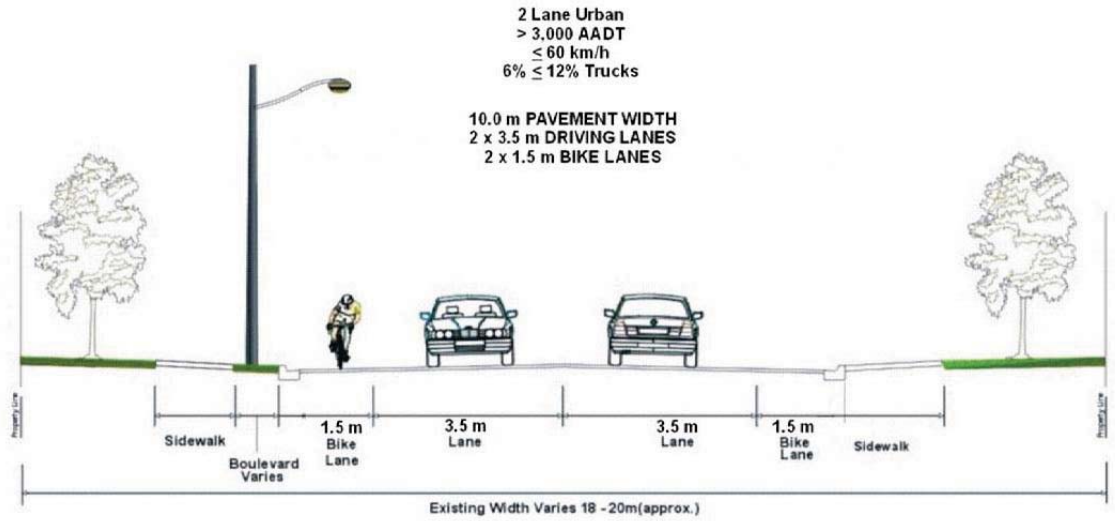
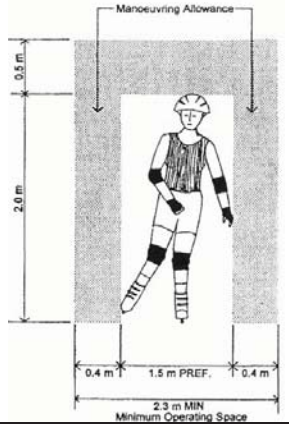
TABLE OF GUIDELINES AND STANDARDS

NO.	MUNICIPALITY	DOCUMENT TITLE / YEAR	GUIDELINES AND STANDARDS
1.	**Halifax Regional Municipality**	**Guidelines from Active Transportation Plan Technical Appendix (2006)**	**Cycle Based** (p1-1) • Bicycle Network Classification (p1-3) • Bicycle Network and Pedestrian System Facility Types (p3-1) • Various Bike Lanes (p3-1) • Intersection Treatments (p4-1) • Bike Lanes Between Two Motor Vehicle Travel Lanes (p4-19) • On-Road Cycling Facilities on Bridge Structures and Highway Interchanges (p4-20) • Bicycle Parking (p5-1) • Bicycle Friendly Catchbasin Covers (p6-1) • Rest and Staging Area (p6-2) • Gateways and Trailheads (p6-3) • Active Transportation and Transit (p6-4) • Trip-End Facilities for Commuters (p6-7) **Pedestrian Based** (p1-1) • Pedestrian System Classification (p1-5) • Sidewalks (p3-16) • Pedestrian Intersection Treatments (p4-27) • Pedestrian Mid-Block Crossing Treatments (p4-37) **General** • User Categories (p1-1) • User Characteristics (p1-7) • Cross-sections and widths (p2-1)

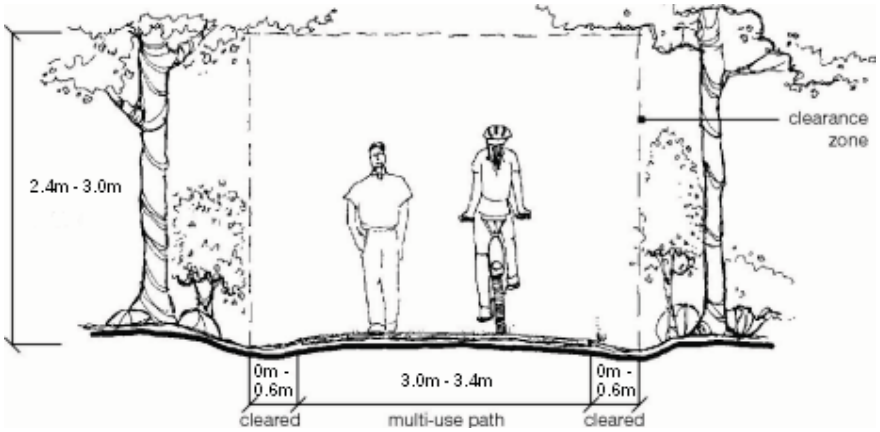
NO.	MUNICIPALITY	DOCUMENT TITLE / YEAR	GUIDELINES AND STANDARDS
			  **2 Lane Urban** **> 3,000 AADT** **≤ 60 km/h** **6% ≤ 12% Trucks** **10.0 m PAVEMENT WIDTH** **2 x 3.5 m DRIVING LANES** **2 x 1.5 m BIKE LANES**  • Gradients (p2-5) • Design Speed (p2-8) • Sight Distance (p2-10)

NO.	MUNICIPALITY	DOCUMENT TITLE / YEAR	GUIDELINES AND STANDARDS
			• Alignment (p2-13) • Shared Roadway Facilities (p3-13) • Multi-Use Trails (p3-18)  • Retrofitting Municipal Roads for AT Facilities (p3-20) • Accommodating Active Transportation Users in Construction Zones (p4-26) • Multi-Use Trail Treatments (p4-41) • Crime Prevention Through Environmental Design (p4-48) • Railway Crossings (p4-50) • Accommodating Active Transportation Users in Roundabouts (p4-52) • Transition Between Facility Types (p4-54) • Signing (p7-1) **Maintenance** (p8-1) • Trash Clean-Up and Grass Cutting: • Maintenance of Vegetation • Surface Maintenance: • Litter Removal: • Leaf Removal: • Sign Maintenance • Snow Clearing (p8-4): *8.6: In the winter months, on and off-road AT systems that serve as part of the primary cycling*

NO.	MUNICIPALITY	DOCUMENT TITLE / YEAR	GUIDELINES AND STANDARDS
			network should receive priority for snow clearing and removal. *8.7: HRM should ensure that bus stops and sidewalks, particularly those that connect to bus stops, receive a higher priority during snow clearing efforts.* *8.8: HRM should provide sidewalk snow-clearing throughout the entire municipality in order to provide a uniform standard of service.* *8.9: Consideration should be given to clearing trails during the winter that provide key connections or links to "spine" segments of the AT system.* Halifax Regional Municipality Bylaw Number S-300 Part I- Removal of Ice and Snow from Sidewalks: Owner, except where snow removal service is provided by the Municipality, shall remove all snow and ice, (a) from any sidewalk which abuts any side of their property; provided , however, that where a property containing a detached one-family dwelling unit, a duplex dwelling or a semidetached dwelling unit as defined in the Land Use Bylaws has frontage on a street at both the front and rear of the property, the owner shall not be required to remove the snow and ice from a sidewalk which is part of the street at the rear of the property, where the street at the front of the property is defined as the street on which the property has its civic address, and (b) from any pathway leading from a sidewalk abutting their property to the roadway, and (c) between any sidewalk abutting their property and a crosswalk for a minimum width of three feet or the full width of the paved sidewalk, whichever is less, within twelve hours after the end of any snowfall or, where the snow stops falling during the night, six hours after daylight, and without restricting the generality of the foregoing, owners shall render the sidewalk completely free of snow and ice to bare pavement within said times. (2) No person shall deposit snow or ice on the travelled way of any street.
2.	**City of Fredericton**	**Trails/Bikeways Master Plan (2007)**	**Bicycles**: (p5-1) • Wide curb lanes • Bicycle friendly drainage grates • Traffic control devices that allow bicycles to actuate a traffic signal • Bike lane widths for various classifications of bike lane

NO.	MUNICIPALITY	DOCUMENT TITLE / YEAR	GUIDELINES AND STANDARDS
			 **In-line Skaters**: (p5-5) • Design operating spaces: 

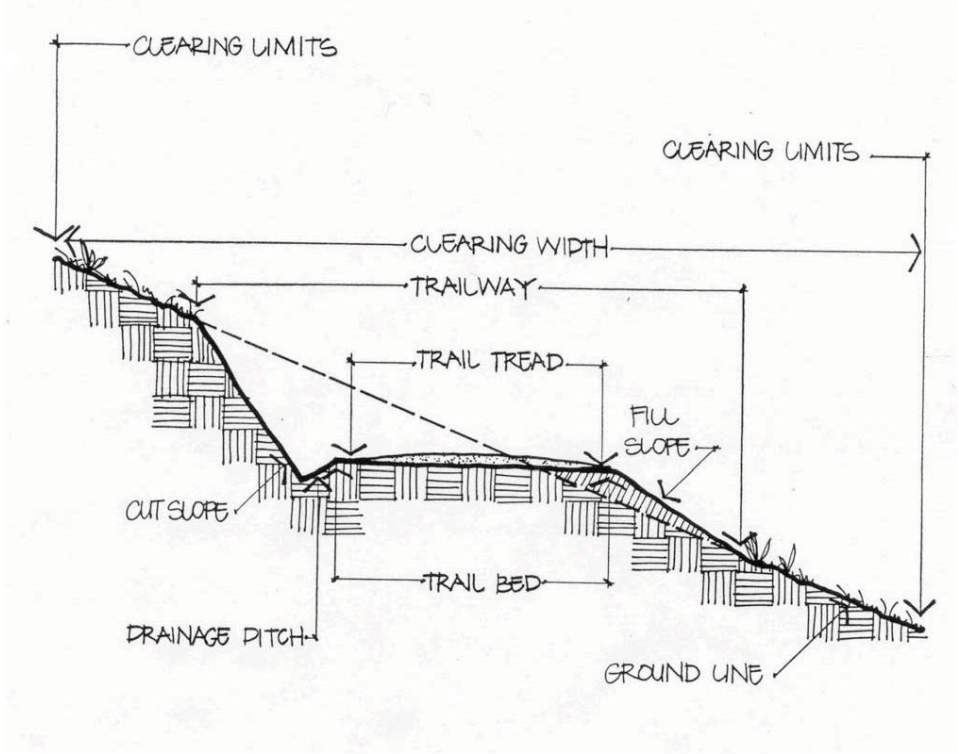
NO.	MUNICIPALITY	DOCUMENT TITLE / YEAR	GUIDELINES AND STANDARDS

			Multi-Use Trails: (p5-13)
			• Use of Surface materials:
			  ○ Paving/Asphalting: accommodates as many users as possible
			  ○ Hard Surface: better for elderly, strollers, and commuters
			  ○ Looser Surfaces
			  ○ Cross-section:
			 
			
			Bridges: (p5-15)
			• Follows Canadian Highway Bridge Code
			• Structure clearances and cross section dimensions: Ontario Ministry of Transportation's (MTO) August 2002 document, "Revision Information Sheet for Geometric Design Standards for Ontario Highways"
			
			Other Guidelines:
			• Trail Bridges (p5-18)
			• Trail Junctions
			• Lighting
			• Signage
			• Snow Clearing: Some off-road multi-use trails may receive snow clearing only when they form an essential segment of the urban network linking into sections of the on-road network for pedestrian

NO.	MUNICIPALITY	DOCUMENT TITLE / YEAR	GUIDELINES AND STANDARDS
			use, (sidewalks). In order to limit potential liability for the majority of the off-road network not designated to receive snow and ice removal services, the City should erect seasonal signs each winter advising that trails are not maintained and the public uses them at their own risk. • Bicycle Parking **Maintenance**: (p6-15) • Trash Clean-Up and Grass-Cutting • Maintenance of Vegetation • Surface Maintenance • Leaf Removal • Sign Maintenance During the winter months, the Division is responsible for all snow plowing, clearing, salting, and sanding on the City's road and sidewalk network. (http://fredericton.icreate2.esolutionsgroup.ca/cityfredericton/en/transportation/roadsandstreets.asp)

3.	**City of Winnipeg**	**Winnipeg Active Transportation Action Plan Appendix J Sample Design Standards for Active Transportation Facilities (2005)**	**Maintenance** (p1)
			• Maintain roadways and bikeways to a hazard-free standard
			• Introduce forms to encourage cyclists to report maintenance problems
			• Design and build new roadways and bikeways in such a way as to reduce the potential for maintenance problems
			• Include maintenance costs and procedures in bicycle facilities projects
			
			Bicycles
			• Widened curb lanes (p2)
			• Shoulder bike lanes (p3)
			  ○ Width
			  ○ Parking
			  ○ Signage
			  ○ Facility Ends
			• Raised Pavement Bicycle Lane (Danish Cycle Track) (p4)
			• Overpasses & Underpasses (p5)
			• Staircase ramps (p5)
			• Pavement Markings (p6)
			• Signage (p7)

NO.	MUNICIPALITY	DOCUMENT TITLE / YEAR	GUIDELINES AND STANDARDS
			• Annual Bike to Work Day (Bike to Work Day Final Report 2008) Snow Clearing Policy **Priority I Streets**: *(Plowing Standard: See Clause A-1)* Includes all Regional Streets, in addition, some streets around the Health Sciences Centre have been plowed as Priority I to facilitate ambulance access to the hospital. **Priority II Streets**: *(Plowing Standard: See Clause A-2)* These include non-regional bus routes and collector streets based on traffic counts although some streets in industrial areas are exceptions to the traffic count standard. **Priority III Streets**: *(Plowing Standard: See Clause A-3)* Residential and/or little used industrial streets. **Alleys**: *(Plowing Standard: See Clause A-4)* For reasons of accessibility for citizens and refuse collection, alleys are usually given an accelerated priority for plowing Sidewalks on Priority I & II streets shall normally be maintained to a compacted snow surface. (C-1) Sidewalks on Priority I and II streets within the Downtown shall generally be plowed to a paved surface whenever conditions allow (C-2) Sidewalks on Priority III streets shall normally be maintained to a compacted snow surface (C-3) Sidewalk plowing routes on Priority III streets shall be established so as to identify a designated access route from each senior citizen complex to the most logical Priority I or II street.) (C-4)

NO.	MUNICIPALITY	DOCUMENT TITLE / YEAR	GUIDELINES AND STANDARDS
4.	City of Whitehorse	City of Whitehorse 2007 Trail Plan	 • Fasteners • Clearing through forest, shrubs • Clearing, grubbed and graded trails • Trail with fill crowned • Trail with fill cross slope • Trail with one parallel drainage ditch • Trail with fieldstone • Asphalt walk • Raised trail • Boardwalk • Log rounds

NO.	MUNICIPALITY	DOCUMENT TITLE / YEAR	GUIDELINES AND STANDARDS
			• Trail excavations • Timber • Stone • Bridges • Hand rails • Signage (Appendix III) **Maintenance**: (Appendix II) • Inspection Process • Inspection Checklist • Surfaces • Drainage features • Landscape structures • Litter and debris control • Signage • Trees and shrubs 2008 – 2009 Snow and Ice Control Policy: The City of Whitehorse is responsible for the maintenance of public road rights-of-way within the geographical boundaries of the City, excluding the Alaska Highway. Part of this maintenance responsibility involves Snow and Ice Control which is undertaken to provide for vehicular and pedestrian access on roads and sidewalks on a priority basis

5.	**Minden**	**An Active Transportation Plan for Minden (2008)**	**Maintenance** (p25)
			• Barrier free, wheel chair accessible sidewalk retro-fits. However other areas are bumpy and broken and require maintenance
			• Appendix D provides a list of standards and guidelines resources:
			  ○ Chicago Bike Lane Design Guide
			  ○ City of Hamilton Cycling Master Plan, Design Guidelines for Bikeways
			  ○ Velo Quebec
			  ○ Institute of Transportation Engineers
			  ○ Context Sensitive Solutions in Designing Major Urban Thoroughfares for Walkable Communities, 2006. http://www.ite.org/bookstore/RP036.pdf
			  ○ Promoting Sustainable Transportation Through Site Design, 2004

NO.	MUNICIPALITY	DOCUMENT TITLE / YEAR	GUIDELINES AND STANDARDS
			County of Haliburton Winter Maintenance Policy: The County of Haliburton will provide efficient and effective winter maintenance on all roads under it's jurisdiction in accordance with Provincial Minimum Maintenance Standard O. Reg. 239/02 and the objectives stated in this policy. The County of Haliburton Road Department will provide equipment, labor and materials on a continuous basis for winter maintenance from the first of November through to the first of April the following year.
6.	**City of Rossland**	**Active Transportation Plan (2009)**	**Downtown Upgrades** (p82-83) • Widening the Sidewalk • Bump-outs and Crossings • Bike Racks • Information Kiosk • Bike Wash **Other Guidelines** (p 84-88) • Public Transportation • On-Street Parking • Status of Roads and Alleys • TheRailgrades • Planning for Le Roi Hollow • Jubilee Park Loop • Recreational Lake / Public Beach at the Star Gulch Reservoir • Winter Use • Furnishings • Signs • Lighting **Priority assessed considering:** (p12) • Estimated amount of use • Utility as a proximity connections • Utility as an experience trail • Current utilization • Legal access to land • Construction costs • Support from adjacent residents • Cycling use

NO.	MUNICIPALITY	DOCUMENT TITLE / YEAR	GUIDELINES AND STANDARDS
			• Winter use • Safety issues addressed **Guidelines for construction and width of:** (Appendix 3) • Sidewalks • Covered staircase • Type 1 Trail • Type 2 Trail • Type 3 Trail
8.	**City of Prince George**	**Centennial Trails Project A Five-Year Implementation Plan (2008)**	• Trail hierarchy • Danger trees/beetle tree removal • Environmentally sensitive trail development • Signage • Bridges, Overpasses & Underpasses for trails • Stairs • Equestrian Trails • Bridges & Railings for Multi-Use Trails 91 • Trail Support Facilities • Trail steps • Intersections • Wildlife and multi-use trails **Maintenance**: • Signs and Traffic markings • Sight Distance and Clearance • Surface Repair • Drainage • Sweeping and Cleaning • Ice and Snow Removal: Unless the trail is managed for skiing, be sure ice and snow are properly managed. For high-use trails, this may include plowing. At a minimum, the trail should be inspected after snow or ice storms for ice buildup in potentially hazardous areas (p96) • Structural Deterioration • Illumination

NO.	MUNICIPALITY	DOCUMENT TITLE / YEAR	GUIDELINES AND STANDARDS
			Also: City of Prince George Highway Bylaw No. 6114, 1994 concerning snow clearing practices exempts residents, and downtown owners pay a fee for the City to clear.

10.	**District of North Vancouver**	**Pedestrian Master Plan Draft Final Report Appendices (2008)**	• Sidewalk Priority Index
			• Development Service Bylaw:
			  ○ Road classification and cross-section
			  ○ Curbs, sidewalks and roadways
			  ○ Wheelchair ramps
			  ○ Pathways
			  ○ Handrails
			  ○ Pedestrians with disabilities
			  ○ Lighting
			• Pedestrian regulations
			• Cycle traffic
			• Other Standards and Guidelines:
			  ○ Portland Corridor Design Standards
			  ○ Kelowna Guidelines for Accessibility in Outdoor Spaces
			  ○ FHWA Designing Sidewalks and Trails for Access
			  ○ City of Richmond Proper Scooter Use Brochure

TABLE OF DEFINITIONS

NO.	MUNICIPALITY	DOCUMENT TITLE / YEAR	DEFINITIONS
1.	**Halifax Regional Municipality**	**Guidelines from Active Transportation Plan Technical Appendix (2006)**	**Bike Lane**: A facility located in the travelled portion of the street or roadway and is designed for one-way cyclist traffic. (p3-1) **Bicycle Lanes with On-Street Parking**: Located to the left of and adjacent to parked vehicles along the curb. (p3-6) **Contra-flow bike lanes**: Carry cyclists in the direction opposite motor vehicle traffic on one-way streets (p3-7) **Two-way Bikeway Boulevards/ Multi-use Trails:** Constructed within a road right-of-way, typically in place of a sidewalk, though where space permits a separate facility adjacent to a sidewalk may be considered. (p3-8) **Paved Shoulder**: Cycling route located on roads with rural sections and no curbs (p3-10) **Signed-Only Cycling Routes**: Bicycle routes designated by bicycle route signing along a street. (p3-13) **Signed-Only cycling routes within wide curb lanes**: Similar to signed-only cycling routes, with the exception that the travel lane shared by motorists and cyclists is wider than a standard motor vehicle travel lane (> 3.5 metres). (p3-14) **Sidewalk:** Located within the road right-of-way but separate from the travelled portion of the roadway.(p3-16) **Multi-Use Trails:** Accommodate a variety of users including: pedestrians, hikers, cross-country skiers, equestrians and cyclists. (p3-18)
2.	**City of Fredericton**	**Trails/Bikeways Master Plan (2007)**	**Off-road facilities**: Routes that operate on their own right-of-way, independent of the existing street network **Onroad facilities**: Routes that operate on or along existing roads and are incorporated into the present or future street system. **Bike Lane**: A facility located in the travelled portion of the street or roadway and is designed for one-way cyclist traffic. **Bicycle Lanes with On-Street Parking**: Located to the left of and adjacent to parked vehicles along the curb. **Multi-use Trails/Two-way Bikeway Boulevards:** Constructed within a road right-of-way, typically in place of a sidewalk, though where space permits a separate facility adjacent to a sidewalk may be considered. **Contra-flow bike lanes**: Carry cyclists in the direction opposite motor vehicle traffic on one-way streets (p5-8) **Paved Shoulder**: Cycling route located on roads with rural sections and no curbs

NO.	MUNICIPALITY	DOCUMENT TITLE / YEAR	DEFINITIONS
			Signed-Only Cycling Routes: Bicycle routes designated by bicycle route signing along a street. **Signed-Only cycling routes within wide curb lanes**: Similar to signed-only cycling routes, with the exception that the travel lane shared by motorists and cyclists is wider than a standard motor vehicle travel lane (> 3.5 metres). (p5-11) **Multi-Use Trails:** Accommodate a variety of users including: pedestrians, hikers, cross-country skiers, equestrians and cyclists. (p5-13)
3.	**City of Winnipeg Winnipeg**	**Winnipeg Active Transportation Action Plan**	**Pathways:** AT facilities that are physically separated from automobile traffic. They are multi-use (cyclist and pedestrian) pathways of either asphalt or limestone surfacing. **AT Corridors:** AT infrastructure where cyclists share the roadway with automobiles **Sharrows:** Sharrows are special lane markings combined with signage that encourages vehicles and cyclists to share a widened curb lane.  **Bike Boulevards:** Bike boulevards are streets that have been modified to encourage cycling and discourage automobile traffic. To achieve this, 'traffic calming' measures such as right-of-way closures and traffic circles can be installed.
		Winnipeg Active Transportation Study Appendix H Glossary of Terms	**Bicycle Commuter Route:** These include roadways that are major arterial thoroughfares, have high traffic volumes, high speeds or higher truck traffic. **Bicycle Facilities:** any facility designed to assist cyclists including any physical construction – such as parking racks, roads construction with bike lanes or signage. **Bike lanes**: lanes intended for the exclusive use of bicycles within a roadway also serving other vehicular traffic. **Delineated bicycle lane**: indicated by a painted stripe, texturing or colouring. **Protected bicycle lane**: separated from the traffic by a physical barrier.

NO.	MUNICIPALITY	DOCUMENT TITLE / YEAR	DEFINITIONS
			Unidirectional lane: follows the direction of movement of motor vehicles. **Bi-directional lane**: allows two-way travel in a lane adjacent to traffic **Contraflow bike lane**:allows bicycle travel in the opposite direction to the flow of traffic. It can be used to allow two-way bicycle travel on a one-way street. **Bicycle Path:** a separated bikeway from which all motorized traffic is always excluded **Bicycle Only Paths:** Separate paths for cyclists **Bicycle Route:** Are those shared roadways that have been designated as such by signage **Bicycle Trail:** Is an undeveloped path suitable for use by all-terrain bicycles but not necessarily suitable for use by "road bicycles. **Bikeways:** Include bicycle routes, bicycle lanes, and bicycle paths. **Indoor Walkways:** Are a type of facility that allow pedestrians to go from place to place without having to go outdoors. **Informal Trails:** Informal trails come into existence through use, turning into dirt trails, trampled grass or packed snow. **Multi-Use Paths:** Depending on the season, location and type of surfacing, these trails are used for a variety of purposes, such as cycling, walking, in-line skating, horseback riding, crosscountry skiing, snowshoeing, and snowmobiling. **Restricted Roadway:** A form of bikeway where the roadway is closed to most motor vehicle traffic but open to bicycles and other types of non-motorized use. **Shared Roadway:** All roadways must be considered shared roadways. **Shoulder Bikeways:** A smooth paved shoulder on a roadway. The shoulders provide a suitable area for cycling, with few conflicts with fast moving motor vehicle traffic. Bicycle traffic is always one-way in the same direction as the adjacent outside travel lane. **Walkway:** A pedestrian facility, whether in the public right-of-way or on private property, which is provided for the benefit and use of the public. **Widened Curb lanes:** Allow 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.
4.	**City of Whitehorse**	**City of Whitehorse 2007 Trail Plan**	**City trails (> 150 km):** Broad classification covers those trails of interest in the City-wide context, and include major multi-use trails, bicycle paths, etc. Most of the specific trails and facilities listed below fall into this category. (p4) **Neighbourhood trails (> 700 km):** Broad classification covers those trails primarily of interest to residents of adjacent neighbourhoods. The vast majority of these trails have simply evolved over the years through individual and group use, and many date from the

NO.	MUNICIPALITY	DOCUMENT TITLE / YEAR	DEFINITIONS
			early years of the City's growth beyond downtown. (p4) **Multiple-use trail:** Any trail that is used by more than one user group, or for more than one trail activity (p24) **Motorized Multiple Use Trails** - includes only those trails formally designed and designated by the City of Whitehorse to allow the use of motorized vehicles, including 4-wheel drive vehicles, motorcycles, all terrain vehicles (ATVs) and snowmobiles. (p25) **Non-motorized Multiple Use Trails** - designated non-motorized trails and all others by default – officially (but not in practice) includes all trails not officially designated by the City of Whitehorse to allow use of motorized vehicles. (p25) **Neighbourhood Trails** – majority of trails within a designated distance from established or new neighbourhoods; maximum 500m distance dictated by geography, trail conditions – trails one might use on an evening ½ hour dog walk. (p25) **City Trails (Non-motorized)** – major trails of City-wide importance, key inter-neighbourhood connectors or urban/rural interface trails (trails that lead beyond the City limits). (p25) **City Trails (Motorized)** – major trails of City-wide importance, key interneighbourhood connectors or urban/rural interface trails (trails that lead beyond the City limits); these trails are specifically designed and designated to allow motorized traffic. (p25) **Hinterland Trails** – trails beyond the designated distance from neighbourhoods, usually non-motorized but may accommodate minor motorized use. (p25) **Special Use Trails** – any trails designated for dedicated uses or other special characteristics, such as Mt. McIntyre ski trails, Trans Canada Trail, key wildlife viewing trails. (p25) **Water Trails** – trails taking advantage of water resources for all or part of their route, such as portions of the Yukon River; often traditional or historic uses. (p25) **Trails to be Abandoned** – trails and trail sections to be decommissioned & reclaimed or rerouted for safety, habitat protection or other reasons. (p25)
6.	**City of Rossland**	**Active Transportation Plan (2009)**	**Type 1 Trail**: Crusher fines surfacing as a precursor to a hard trail. 2 – 3m clear width **Type 2 Trail**: Surfaced single track trail. 1.25 m tread width. **Type 3 Trail:** Unsurfaced single track trail 0.5-0.7m tread width.
7.	**City of Prince George**	**Carrie Jane Gray Park Master Plan (2006)**	**Multi-Use Trai**l: 3.0 m wide asphalt trail **Local Trail**: 2.0 m wide granular trail
8.	**City of Prince George**	**Centennial Trails Project A Five-Year**	**Multi-Use Trail** Off Street : ~ 3m asphalt minimum

NO.	MUNICIPALITY	DOCUMENT TITLE / YEAR	DEFINITIONS
		Implementation Plan (2008)	Off-street divided: ~ 4m asphalt, middle painted line delineation On-street sidewalk/trail:~ 3m concrete Granular: ~ 3m hard packed **Local Trail:** ~ 2m granular, maintained seasonally **Equestrian Trail:** ~ 2m granular, maintained seasonally **Rustic Trail:** ~ 1m natural, maintained seasonally **Mountain Biking Trail:** ~ <1m natural with technical trail features **Highway**: All public streets, roads, ways, lanes, bridges, and any other public way designed for and regularly used by motorized vehicles licensed by the Province.(p86) **Multi-use Recreational Trail:** A trail designed for and designated by the City as a recreational trail for walking, hiking, skiing, horseback riding.(p86) **Designated Trail**: trails designated for pacific recreational uses such as Off-highway recreational vehicles and other designated uses as the City deems necessary. (p86)

TABLE OF POLICIES

NO.	MUNICIPALITY	DOCUMENT TITLE / YEAR	FINDINGS
1.	**Halifax Regional Municipality**	**Guidelines from Active Transportation Plan Technical Appendix (2006)**	• Ensure the safe and comfortable year round operation of the spine network • Recognize AT modes as important elements towards maximizing efficient operations of the transportation and land use system • Prioritze supportive and AT friendly considerations as part of the transportation and land use planning and implementation process • Promote the many benefits of AT • Provide appropriate funding and resource support to AT programs and initiatives
2.	**City of Fredericton**	**Trails/Bikeways Master Plan (2007)**	• Encourage a multi-modal system • Reduction of greenhouse gas emissions • Accommodation of disabled persons • Safety, convenience and connectivity of the cycle network • Safety, convenience and connectivity of sidewalks • Maintenance of and promotion of the use of trails • Lighting and Paving of Trails • Safety of system for Snowmobiles
3.	**City of Winnipeg**	**The City of Winnipeg Active Transportation Study Appendix G Current Policy Details**	• Prioritize downtown • Create healthy neighbourhoods • Ensure government commitment to sustainability and reduction of greenhouse gas emissions • Provide economic direction and support • Plan for growth and change • Integrating transportation network • Investing in infrastructure • Promoting safety through design
4.	**City of Whitehorse**	**Wheel 2 Work in Whitehorse**	The improvement of bicycling facilities, infrastructure and personal transportation choices
		City of Whitehorse 2007 Trail Plan	Currently, trails are managed under the broader umbrella of “parks” and do not constitute their own operational section of the department. Accordingly, trails more usually come under the jurisdiction of a number of more general policies, such as the parks maintenance policy. (p7)

NO.	MUNICIPALITY	DOCUMENT TITLE / YEAR	FINDINGS
5.	**Minden**	**An Active Transportation Plan for Minden (2008)**	• Develop a "Complete Streets" policy to outline a strategy that will ensure all road users, including the most vulnerable are accommodated on all existing and new roads. (p16) • Policy should require developers to demonstrate how they will respond to AT objectives and any planned or existing cycling and walking infrastructure as a pre-condition to approval (p16) • Review the policy for sidewalks in new developments and standards for "barrier free" accessibility, width, curb ramps, intersections, paving materials and markings, signals and road crossings. (p16) • Appendix C: revisions to policies in current Official Plan for Minden
8.	**City of Prince George**	**Centennial Trails Project A Five-Year Implementation Plan (2008)**	Support the collaboration of the Transportation, Planning and Leisure Services departments to develop, enhance and implement models of Active Transportation within Prince George. (p14)

An Active Transportation Plan for Minden (2008) Appendix C	Include a requirement that all developments, public facilities and transportation infrastructure be designed as "barrier free" (handicapped accessible). Location and design of roads: roads should be transportation infrastructure including roads, sidewalks, on-street trails, recreation trails and off road multi use trails. Commercial Core: Through traffic will be redirected or calmed by designing the right-of-way for pedestrian priority to maintain the destination function of the core area and improve the environment for pedestrians; **5.2.3 New commercial development** Access for pedestrians and cyclists should be incorporated in site design Add: "and include designated walks along street frontage connecting to main entrance, bicycle parking, trees where feasible and lighting;" Pedestrian friendly streetscapes are encouraged through the use of overhead canopies, bollards, flags, flagpoles and small 'village greens'; Add: "street trees, pedestrian scale signage, bicycle parking, lighting and where required, decorative paving." Development along Highway 35 shall take into account the need to maintain proper traffic flow through the area Add: "while maintaining safe, separated access for cyclists and pedestrians both along and across Highway 35 and from Highway 35 to the building entries". **5.2.4 Regarding Subdivision Design** Alternative development standards will be used to encourage Add: pedestrian and cycling friendly" street types, and neighbourhood character; A mix of housing types Add: "and densities" will be encouraged; Pedestrian Add: "and cycling" facilities, including sidewalks and links with schools, recreation facilities, and commercial areas, will be part of the development; **5.2.5 The main entrances to the Village** The main entrances to the Village Add: "can send a strong signal to motor vehicles that they are in a village and are to slow down. Entry features can" create an impression of the community and require specific design considerations to "ensure traffic slows down and understands how to get to the downtown commercial and cultural destinations" and to reflect the character of the Village. Streetscape An Active Transportation Plan for Minden www.**public**space**workshop**.ca **47** improvements, curb alignments, trees, sidewalks, lighting and" regulation of signs and parking areas will be important components in any strategy to improve the "effectiveness and" visual features of the entrances. **5.4 Residential Areas** 5.4.4 This Plan does not provide separate designations for low, medium and high density areas. More than one residential zone will be used in the Zoning By-law to differentiate between the densities, and to direct higher density uses to specific areas. In general, medium and high density uses should be located in the vicinity of commercial and institutional uses, near the downtown core, along major streets, and

	serviced with municipal water and sewer services Add: “ideally within a 15 minute walk or 1 km. of shopping, recreation and other everyday destinations”. **5.5 Employment Areas** Uses should be readily accessible to motorists, Add: “pedestrians, people with disabilities and cyclists” and ingress and egress points should be limited in number, readily distinguishable, “have defined access walkways for pedestrians” and be separated by landscaped boulevards wherever possible; Pedestrian access and facilities with links to existing areas should be encouraged “by providing a separated and defined bicycle and walking route along the road frontage and connecting to the building entry”; Add: ``Uses will incorporate bicycle parking (covered where possible) as a percentage of overall parking.`` **5.6 Open Space** 5.6.2 Existing open space and recreational facilities should be integrated into the overall system so they are effectively used Add: “for both recreation purposes and everyday utilitarian trips.” Significant natural features will be part of the open space network in the Village. An Active Transportation Plan for Minden www.**public**space**workshop**.ca **48** **5.9 Other Land Uses** 5.9.2.3 Pedestrian walkways, Add: “bicycle lanes and multi-use recreation trails” should link public facilities to each other and to residential areas. Special attention will be given to developing additional pedestrian and bicycle linkages to existing recreation facilities. 5.9.2.9 Access to schools will be a major consideration when reviewing subdivision applications. Schools must be easily accessible by pedestrians Add: “and cyclists” and be linked by walking paths “bicycle lanes and multi-use recreation trails” to other public facilities and services. 5.9.2.11 As the population in the Township ages, more attention will have to be given to housing for the elderly. Policies promoting home-based care will allow seniors to stay in residential units as they age. To accommodate this, the following options will generally be considered: implementing alternative development standards that allow smaller setbacks Add: “streets, lane widths, turning radii”, and yards; allowing mixed use neighbourhoods ;Note: Recommended but need to revise 5.4.6 Add: _ Provide well lit, barrier free sidewalks along adjacent streets and from the sidewalk to the main entrance(s) of the building. **5.10 Expansion of Boundaries** 5.10.3 Such expansion will be considered within the following context: an efficient road pattern will be maintained and established with proper Add: “pedestrian, bicycle and motor vehicle” access and links to any Township, County or Provincial Road; and,

PATHWAY PRIORITZING GUIDELINES

NO.	MUNICIPALITY	SOURCE
1.	Halifax Regional Municipality	Active Transportation Plan (2006)
2.	City of Fredericton	Trails/Bikeways Master Plan (2007)
3.	City of Winnipeg	Winnipeg Active Transportation Action (2005)
4.	City of Whitehorse	City of Whitehorse 2007 Trail Plan
5.	Minden	An Active Transportation Plan for Minden (2008)
6.	City of Rossland	Active Transportation Plan (2009)
7.	City of Prince George	Carrie Jane Gray Park Master Plan (2006)
8.	City of Prince George	Centennial Trails Project A Five-Year Implementation Plan (2008)
9.	City of Prince George	Prince George Active Communities Project Strategic Plan (2007)
10.	District of North Vancouver	Pedestrian Master Plan Draft Final Report (2008)

NO.	MUNICIPALITY	DOCUMENT TITLE / YEAR	FINDINGS
1.	**Halifax Regional Municipality**	**Active Transportation Plan**	Phase 1 (p5-2) • Commence developing the spine network connecting major nodes in urban and suburban areas. • Commence developing links within and between the rural group centres • Connecting existing on-road facilities to transit terminals and proposed transit hubs • Improving walking and cycling access within neighbourhoods based • All on-road routes that are designated as part of the spine network should be marked and signed in Phase 1. • All on-road routes that are designated as signed-only routes (whether approved as a capital project for 2006 to 2008 or not) should have signs posted in Phase 1. **Route Selection** (p4-10) A point scale ranking (poor to excellent) was applied to information gathered during field assessments.

NO.	MUNICIPALITY	DOCUMENT TITLE / YEAR	FINDINGS

Route Selection Evaluation Criteria

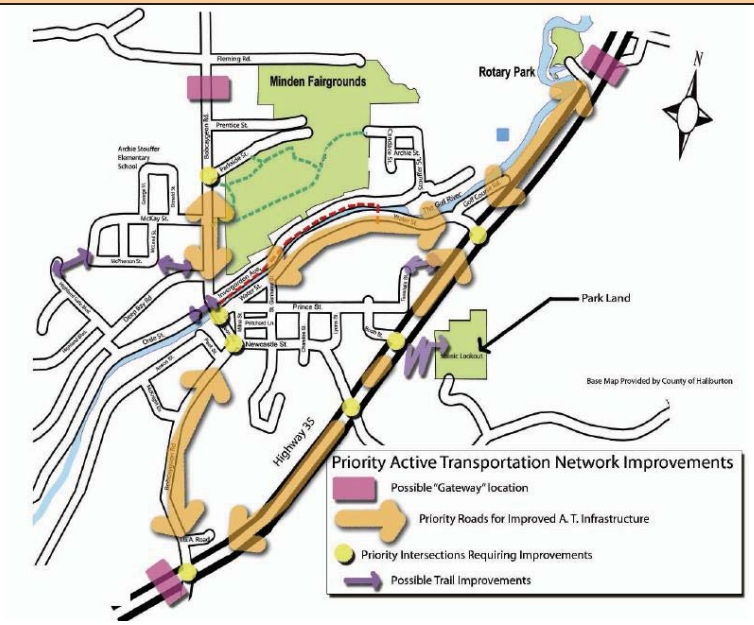
FACTOR	EVALUATION CRITERIA	ROUTE ASSESSMENT	
		Route A	Route B
Risk Assessment	◆ Are there numerous mid-block or railway track crossings? ◆ Is there a high volume of automobiles, trucks and transit vehicles? ◆ Is there sufficient right-of-way width to accommodate trail connections? ◆ Does the route provide a safe crossing of major barriers? ◆ Are there poor sight-lines? ◆ What is the posted speed limit of the route, if applicable? ◆ Can the route accommodate the preferred facility type?		
Connectivity/ Access	◆ Does the route provide a vital connection to existing routes and trails? ◆ Does the route provide direct access to major destinations and connect major nodes throughout the town? ◆ Does the route connect to municipal networks, supporting services and facilities?		
Convenience	◆ Does the route include adequate traffic control devices to cross intersecting roads? ◆ Are mid-block crossings possible where demand warrants? ◆ Is the route part of the "Spine" network? ◆ Does the route provide a direct path to the destination?		
Attractiveness	◆ Does the route provide access to HRM's scenic routes, vistas and destinations? ◆ Is the route highly visible? ◆ Does the route provide diversity of experience?		
Cost	◆ Is the route the most cost-effective solution? ◆ Is there the ability to reduce costs by combining route development with existing road works?		
Route Alignment	◆ Is the location suitable with respect to adjoining land uses and environmental considerations? ◆ Can existing barriers be overcome? ◆ Is the road right-of-way width sufficient to accommodate cycling facilities or does the roadway require widening?		
DECISION			
		Route Recommended	Route Not Recommended

Poor Adequate Good Very Good Excellent

NO.	MUNICIPALITY	DOCUMENT TITLE / YEAR	FINDINGS
2.	**City of Fredericton**	**Trails/Bikeways Master Plan (2007)** Page 3-2	**Phase 1:** • Installation of some bicycle lanes as soon as possible where adequate ROW exists. • It is recommended that a "showcase project" for the Trails/Bikeways Master Plan be rolled out as early in the process as possible. This could include the installation of a key on-road bicycle lane link(s) or even the resurfacing of a section of riverfront trail. **Phase 2:** • Completion of major strategic linkages (both on-road and off-road as needed) within the existing system to help facilitate increased use of the system and raise the profile of the Master Plan. • Connection of existing AT facilities with transit routes and major destinations such as shopping areas and schools wherever possible. **Phase 3:** • Extension of existing and recently constructed facilities to connect with each other where feasible in order to create longer, more complete routes and continuous service for as much of the network as possible. • Construction of key gateway areas that would operate in conjunction with network links completed by the end of Phase 2. **Route Selection Evaluation** A point scale ranking (poor to excellent) was applied to information gathered during field assessments. (see Halifax for diagram)

3.	**City of Winnipeg**	**The City of Winnipeg Active Transportation**
		
		P146
			• **Priority #1: Provide regular maintenance** (cleaning and repair) of curb lane and/or bike lane- Emphasis on Priority #3 & Priority #6 routes
			• **Priority #2: Include Active Transportation in new roadway construction/ Capital Works projects**
			• **Priority #3: Install 'Share the Road' signage on high traffic Bicycle Commuter Routes**
			• **Priority #4: Connectivity – Bike Routes, Parkways and Multi-use Paths**
			  ○ Sign Bicycle Route –
			  ○ Complete parkways
			  ○ New multi-use paths
			  ○ Bridges
			• **Priority #5: Innovative facilities**
			  ○ Bike lanes (bike stencil and painted line)

NO.	MUNICIPALITY	DOCUMENT TITLE / YEAR	FINDINGS
			○ Bike lock-ups ○ Cantilever bridges ○ Pedestrian bridge or underpass to Kilcona Park (Northeast) ○ Raised bike shoulder/sidewalk pilot project ○ Shoulder Bikeways ○ Staircase ramp • **Priority #6: Filling key gaps** Facility development priority determined with the aid of the Active Transportation Advisory Committee
4.	**City of Whitehorse**	**City of Whitehorse 2007 Trail Plan** P 31	To reduce trail conflicts: • **First Degree Responses (Yellow Level)** ○ Signage • **Second Degree Responses (Orange Level)** **Trail Design** ○ speed barriers; ○ switchbacks; ○ trail width; ○ trail grade; **Expanding Facilities/Trails** ○ renovate/redevelop trails & facilities; ○ new trails & facilities • **Third Degree Responses (Red Level)** ○ Use Restrictions ○ Separate Uses ○ Close Trails/Areas
5.	**Minden**	**An Active Transportation Plan for Minden (2008)** p 20	Priority projects identified through public consultation and research process. Priorities provided are site specific to Minden.

NO.	MUNICIPALITY	DOCUMENT TITLE / YEAR	FINDINGS
			
6.	City of Rossland	**Active Transportation Plan (2009)** p 12	**Scoring** Following the completion of the individual assessments, a value as to the overall priority of each route as a percentage was established using a weighted formula: (Potential Use x 3) + (Proximity Use + (Active Transportation x 3) + Experience + Land Access + Resident's support + Cycling + Winter Use + (Safety x 2). Those routes which scored over 75% were rated as high priority, over 60% as medium, and the rest as low. • **Estimated amount of Use:** Rated on a relative scale of 1-5 (5 being highest use) if developed as specified. • **Utility as a Proximity Connection** Rated on a relative scale of 1-5 (5 being highest utility) if developed as specified. It attempts to quantify the value of a route as a connection as a connection within a neighborhood. • **Utility as a Transportation Route** Rated on a relative scale of 1-5 (5 being highest utility) if developed as specified. It attempts to quantify the value of a route as a connection between a significant neighbourhood

NO.	MUNICIPALITY	DOCUMENT TITLE / YEAR	FINDINGS
			population and a significant destination (transportation driver) within the community. • **Utility as an Experience Trail** Rated on a relative scale of 1-5 (5 being highest utility) if developed as specified. It attempts to quantify the value of a route as a recreational experience in and of itself. • **Current Utilization** Rated on a relative scale of 1-5 (5 being highest use). It attempts to quantify how much use it's receiving in its' current condition • **Legal Access to Land** Rated on a relative scale of 1-5 (5 being no issues). It attempts to quantify the difficulty of obtaining dedicated legal access to the necessary land. • **Construction Costs Estimates** Detailed construction estimates have been provided for each potential route. Actual costsmay vary. The basis for the estimates is detailed in Appendix # 4. The categories classifying (Types 1, 2, and 3) the physical characteristics of the sections of each route are detailed in Appendix # 3. • **Support from Adjacent Residents** Rated on a relative scale of 1-5. (5 being no anticipated issues). Estimation based on observation and limited consultation. Actual support may vary. • **Cycling Use** Rated on a relative scale of 1-5 (5 being highest anticipated use), estimated based on the physical characteristics of the route. • **Winter Use** Rated on a relative scale of 1-5 (5 being highest anticipated use) estimated based on the physical characteristics of the route and the anticipated winter maintenance (snow-clearing etc.). • **Safety Issues Addressed** Rated on a relative scale of 1-5 (5 addressing the most significant issues). Locations which have been identified as being of concern from the standpoint of pedestrian safety are detailed in Appendix # 1..
9.	**City of Prince George**	**Prince George Active Communities Project Strategic Plan (2007)**	The following criteria be used in setting priorities: • **Network Connection / Multiple Benefits** - Routes that serve as key links in the network and have the potential to accommodate a significant number of users (both commuters and recreational users), improve air quality, and enhance tourism opportunities are assigned higher priority for implementation than those routes that would serve comparatively less

NO.	MUNICIPALITY	DOCUMENT TITLE / YEAR	FINDINGS
		p 22	users. • **Equitable Development** - Those routes that would serve parts of the City that to date have been underserved with trail development should be given a higher priority. • **Safety** - Routes that provide enhanced safety for users (alternative to conflict with vehicular traffic) should be given higher priority than routes that may only enhance convenience for users. List of priorities: • Heritage Rivers Trail • UNBC – Rivers Connector Trail • Hart Connector Trail • Blackburn Connector Trail • Community Links • Neighbourhood Trails • Multi-use trail connections from all parts of the city to the downtown and Heritage Rivers Trail; • Accessibility to the major districts of the City via trails for those physically challenged; • Designating and developing equestrian trails from Exhibition Park through Ginter's Meadow Park, UNBC and onto -the Cranbrook Hill Greenway;
10.	**District of North Vancouver**	**Pedestrian Master Plan (2008)**	Total score the result of adding Pedestrian Potential Index and Deficiency Index together. Indices are calculated as follows:

NO.	MUNICIPALITY	DOCUMENT TITLE / YEAR	FINDINGS

DATA FIELD	CONTENTS		
	Feature	Points Given (otherwise 0)	Maximum Points
Commercial Land Use	Pedestrian-Oriented Commercial Local Commercial Area Single Commercial Property	7 6 5	7
Transit	Transit Route	2	2
Existing Walkway	Existing Walkway (Can be footpath)	2	2
Elementary School Proximity	< 0.5 km 0.5 km to 0.9 km 1.0 km to 1.4 km 1.5 km to 2.0 km	4 3 2 1	4
Middle or Secondary School Proximity	< 0.5 km 0.5 km to 0.9 km 1.0 km to 1.4 km 1.5 km to 2.0 km	4 3 2 1	4
Other Destinations within 0.5 km	Pedestrian-Friendly Commercial (not on block face itself)	2	8
	Transit Stop on Block	2	
	Park	2	
	Community Centre or Library	2	
Employment within walking distance	< 0.5 km 0.5 km to 1.0 km	2 1	2
Local Interest	High Interest/ Scenic Medium Interest/ Pleasant	2 1	2
Average Parcel (Lot) Size	< 600 square metres < 10,000 square metres	2 1	2
Grade	< 2 percent Between 2 and 8 percent	2 1	2
Pedestrian Potential Index	Total Maximum Points		35

NO.	MUNICIPALITY	DOCUMENT TITLE / YEAR	FINDINGS

DATA FIELD	CONTENTS		
	Feature	Points Given (otherwise 0)	Maximum Points
Sidewalk Continuity Factor (% of sidewalk in block, one side of street for collector roads, both sides of street for arterial roads)	0% 1 to 24% 25 to 49% 50 to 74% 75 to 99% 100%	5 4 3 2 1 0	5
Pedestrian Crashes (within 250 m radius in 3-year period)	1 to 2 crashes 3 to 4 crashes > 4 crashes	4 6 10	10
Posted Traffic Speed	>= 80 kph 70 to 79 kph 60 to 69 kph 50 to 59 kph 40 to 49 kph	5 4 3 2 1	5
Traffic Volume (daily, two-way)	>= 20,000 15,000 to 19,999 10,000 to 14,999 5,000 to 9,999 2,000 to 4,999	5 4 3 2 1	5
Road Width (number of through lanes, both directions, including parking)	Number of Lanes (if > 6, use 6)	One point per lane (1-6)	6
Street Segment Length	>= 300 m 240 to 299 m 180 to 239 m 120 to 179 m 60 to 119 m	5 4 3 2 1	5
Public Concerns (Formal Requests Received)	5 + request 4 requests 3 requests 2 requests 1 request	5 4 3 2 1	5
Vulnerable road users	High proportion of vulnerable road users	5	5
Deficiency Index	Total Maximum Points		46

NO.	MUNICIPALITY	DOCUMENT TITLE / YEAR	FINDINGS

PRIORITY	INDEX SCORE RANGE	COLOUR USED
Priority 1 (Highest)	>35	red
Priority 2	31-34	blue
Priority 3	28-30	brown
Priority 4	25-27	pink
Priority 5 (Lowest)	0-24	green

APPENDIX C - CONSULTATION

External Stakeholder Attendees

ORGANIZATION	REPRESENTATIVE
ATTENDED	
Trails BC	Sue Burnham
Regional District of Central Kootenay	Joe Chirico
Nelson and District Youth Centre	Christine Schmidt
Nelson and District Seniors Coordinating Society	An available board member
Ministry of Environment - Environmental Stewardship Division	Christine Grossutti
West Kootenay EcoSociety	John Alton
Transition Towns	Mike Stolte (CIEL Exec Dir) Paula Kiss
Building Tree	Paula Kiss
City of Nelson	Dallas Johnson Dave Wahn
School District #8	Larry Brown
Nelson Sports Council	Bill McDonnell
Nelson Cycling Club	Scott Jeffery / Pat Ray
Ministry of Transportation and Infrastructure	Rajeeta Banks
CONTACTED BUT DID NOT ATTEND	
Interior Health	Diane Gagnon
Selkirk College	Barry Auliffe
GHG reduction committee	Bill McNally
Chamber of Commerce	Tom Thompson

ACTIVE TRANSPORTATION PLAN 2009

YOU ARE INVITED TO A PUBLIC OPEN HOUSE!!

The City of Nelson is seeking public input as part of its Active Transportation Plan. The goal of this plan is to identify multi-use trails, pedestrian and cycling amenities and public transit improvements to encourage human-powered forms of transportation and public transit usage.

The City of Nelson would like to invite you to a Public Open House held on Tuesday, October 27th 2009 in the Library Meeting Room. Drop by anytime between 4:00 p.m. and 8:30 p.m. to share your experiences and discuss your ideas on how to increase opportunities for Active Transportation within the City.

An online survey is also available at www.nelson.ca to further gain public input into the Active Transportation Plan and all residents are encouraged to partake in this survey.

Your input is important to us, thank-you for taking time to participate. For further information on this project and opportunities to become involved, please contact Dallas Johnson, Junior Planner, at 250-352-8202 or via email at djohnson@nelson.ca.

Newsletter Submission

COMPREHENSIVE ACTIVE TRANSPORTATION PLANNING

The City of Nelson has contracted with a Transportation Consultant to develop an Active Transportation Plan for the City. The purpose of this consultancy is to produce a Comprehensive Active Transportation Plan that identifies multi-use trails, pedestrian and cycling amenities and public transit improvements to increase options for human-powered forms of transportation within the City of Nelson. The goal is to encourage alternative modes of transportation in an effort to reduce greenhouse gas emissions and increase accessibility for all citizens of the City. Public input will be solicited through a website, public open houses/meetings and through an online questionnaire which will be available through www.nelson.ca in the near future. For further information on this project, please contact Dallas Johnson at 250-352-8202 or via email at djohnson@nelson.ca

NELSON ACTIVE TRANSPORTATION OPEN HOUSE BOARDS CONTENT

	PRESENTATION BOARD	DESCRIPTION
1.	**WELCOME BOARD**	Welcome Goal of Open House - Gather Public info and feedback - Determine ATP needs - Prioritise needs.
2.	**BACKGROUND, AIMS AND GOALS OF THE ACTIVE TRANSPORTATION PLAN**	Background: Following the award of a BEAT Grant, the City of Nelson is undertaking an Active Transportation Plan Aim: To encourage alternative modes of transportation to the personal automobile to reduce greenhouse gas emissions and increase accessibility for all transportation user groups. Goals of the ATP: Identify desired Active Transportation Infrastructure for the City to use as a tool to help increase the proportion of human powered forms of transportation.
3.	**EXISTING ACTIVE TRANSPORTATION PLAN NETWORK**	Map of Nelson showing: - Existing trail network - Existing bicycle network - Transit network - Pedestrian snow removal routes - Major Origins and Destinations - Any previously identified potential changes to the plan.
4.	**HIGH LEVEL ISSUES**	List of the identified issues: - Maintenance issues - Lack of street lighting - Snow removal on sidewalks and bike routes - Lack of Signage and WayFinding, esp for bike routes - Limited bike parking - Connectivity to waterfront - Desire for routes across and along the rail corridor - Missing sidewalks, particularly around schools - High Street is narrow for a bike route - Steep streets can make it challenging for walking and cycling - Too many stop signs on bike routes - Pass-by of buses when bike racks are at capacity Text asking people to add their comments.
5.	**OPPORTUNITIES AND STRENGTHS OF NELSON**	- High mode split - Active life style - Compact community - Local Motion and BEAT grants - Trans-Canada Trail

		Text asking people to add their comments.
6.	**PREFERRED ROUTES**	A map of Nelson for people to mark on their own preferred routes
7.	**ISSUES AND GAPS IN THE NETWORK**	A map of Nelson for people to mark on their issues and gaps in the network using markers/sticky dots/post-it-notes, and indicate a ranking (with 1 being the most important).
8.	**TRIP AND FALL HAZARDS**	A map of Nelson for people to map any trip or fall hazards and rank (with 1 being the most important).
9.	**POSSIBLE SOLUTIONS FOR CONSIDERATION** **9.1 Network** **9.2 Bike Parking** **9.3 Lighting and Steep Terrain** **9.4 Maintenance Issues**	Present mitigation measures for participants to provide comments and rank the proposed alternatives. Network Solutions: - Provide bicycle routes within the existing right-of-way - Better signage of routes - Provide brochure and map of existing routes - Rails to Trails Bike Parking Solutions: - Bike Parking Bylaw: all new developments required to provide secure bicycle parking - Bicycle parking sponsored by adjacent businesses - Dedicated budget for bicycle parking - Design guidelines to accommodate bicycle parking Lighting and Steep Terrain: - Design guidelines - Benches - Street/ Trail lighting - Local Area Plans Maintenance Issues: - Priority plowing of designated cycling routes - Snow Clearing - Covered Stairs - Trip and fall Hazard Prioritization
10.	**TRANS-CANADA TRAIL POTENTIAL OPTIONS**	A map with three options and a table describing the pro's and con's of each option.

		Participants can mark which option they prefer and provide feedback on any improvements that could be made to any option. Pose the question: Should the Trans-Canada Trail go through downtown?
11.	**NEXT STEPS**	- Collate all the information gathered at the open house, website and stake holder meetings on ideas, gaps, issues, preferred routes and priorities. - Provide link for on-line survey and closing date. - Produce the Active Transportation Plan.

PRESENTATION BOARD COMMENTS

EXISTING FACILITIES

Comments on North Nelson Map:
Continue sidewalk from mall to Front Street
Improve access and signage to the rail trail (yes, yes)
Morgan/Douglas down to High St or Chatham
Pedestrian pathway free of cars – limited crossings. Safety, pleasure, less emissions
There are many access points to the BNR. Poor signage, some with difficult access, steep terrain, need to create as many access points as possible.
Important to have multiple accesses
Dedicated, well known routes for cycling/ pedestrians that can and will be maintained
City should become a car coop member
Covered stairs on Hall Street at Vernon (Community centre)
High street too narrow for cyclists (no)
Put bumps back on High Street to reduce car traffic to local only (yes yes)
Retain speed bumps on High Street for safety
Bike lanes on Front Street (yes)
Covered stairs (pine street)
Important to have multiple accesses to rail trail
Not enough access routes to rail grade
Good access routes to BNR as proposed
View St (to LVR) needs a sidewalk (and needs to be cleared in winter)
View is main walking route to LVR, restrict traffic to local traffic only, especially during school hours/ (maybe one way traffic to allow for sidewalks)
East end of Trevor Street should link to top of Cottonwood. Currently there is only one entry/exit to Trevor
5th / Cottonwood 3-way stop confusing
Too many stops on 5th Street
There is heavy student pedestrian traffic on Trevor both ways for elem. Jr. sec/sec students who must also use rough trails en route
Walking link mountain lakes to Bealby Road / KFP site

Comments on South Nelson Map:
Sidewalk along Highway 6 from downtown to Rosemont/observatory St would be beneficial
Cycle connection between Upper Rosemont and Upper Uphill
Switchbacks up to rail trail from cemetery
Lights on Highway to walk to Perrier Rd – ped safety
Bike/pedestrian overpass over Perrier Rd & Highway 6
Connect Rosemont to Uphill another way besides the Observatory St overpass
Kootenay / Stanley / Ward – sand sidewalks for peds bc slippery
Innes St – keep sidewalk links so pedestrians don't have to cross back and forth
Trim street trees – safety, visibility, for pedestrians Ward and Robson
Crosswalk on north side of Robson – link to store
Possible Trafalgar reconfiguration/rebuild could impact entire transit system
Coordinate all transportation systems
Coordinate transportation providers
Need for low-grade access to BNR trail for bicycles or to ski - end of Delbruck Street possibility
Bike lane needed from Rosemont to Granite Road
No right turn for cars at crossings
No right turn for cars at red lights
Last bus leaves Selkirk before end of last class
Extend street car to Baker St.
Overpass over rails on proposed trail (see map)
Stay away from main vehicle routes such as Gyro Park Rd. Connect trails/sidewalks to main public buildings (eg schools)
Transit: No method for working people to get home after 5:00 pm from Castlegar and Trail. Pm regional connections between Nelson and Castlegar/Trail would improve public transit ridership. Would tremendously help Selkirk

Castlegar students too.

I cycle regularly up Stanley St and was not aware that it is part of a cycle route. Need for signage.
A plan should include how people can have dedicated and well signed routes for getting into the centre of town from the North Shore and Taghum.
Walking sidewalks in uphill are icy, snowy and dangerous (roads not safe at all)
Nelson bridge unsafe for walkers and bikes. Limits active transportation in Nelson
Dedicate one walkway to pedestrians and one for bikes (good idea)
No access to sidewalk on bridge. Need stairs like south side. Also passage through fence on boulevard.
The route around the chako mila area (on the lakeside) is grim – needs widening
Need bike lanes marked as often as possible
Pedestrian path on road going up to Morgan Street. Needs to be safer in winter
Bike/wheelchair ramps on curbs.
4way stop where youth cross hwy
Path that starts at Silica and Kootenay and goes through forest to highway could be developed to improve safety and continued around highway around cloverleaf.
Path alongside concrete barricades going up the hill on Government Street
Keep path clear and in good repair. Slippery in winter
Path needed along concrete barricades ….looks like path starts at 4-way intersection but dies out. Pedestrian hazard for those walking between parked cars & traffic esp. in winter
Circular trails are more useful/ safer for women
Route: Rosemont to Baker St. a spiral or zigzag from Upper Vancouver Street to lower Vancouver Street leading to a walking/ biking bridge below present over pass.
Keep path clear and in good repair. Slippery in winter
Path between Cottonwood park and Hwy is dead end at highway. See “homemade” trails. At park end, stairs poorly visible.

Comments on large map of Existing Facilities:
Link Perrier Rd to DT Nelson (and from other rural places)
Stairs should be covered for long term maintenance (yes, yes)
Better linkages to rural areas (ie mountain station)
Linkage downtown to YMIR RD (Perrier Rd)
Chairlift or electric tram from Uphill to downtown combined with low grade bicycle/ cross-country ski trails
Need low grade connections to BNR trail
Free parking for coop cars
More connectivity from streets to BNR trail
Longer walking routes – Lakeside and proposed trails to encourage recreational outings
Bike lanes on bridge.
Separated pedestrians and bicycle lanes on bridge
Plough sidewalk on bridge in winter
Clear downtown sidewalks of clutter (sandwich boards, etc). No longer allow patio at Outer Clove. No exceptions to policy
Regular AT events to inspire community
Create city bylaw that people must shovel sidewalks in front of home
Electric bus to shuttle uphill and back down every 15minutes
Overall lifestyle (social) marketing
Dedicated off-road bike routes throughout town
Cross country ski routes through town in winter

HIGH LEVEL ISSUES

Need bike lock up and parking (yes)
Clean up winter sand and dust on bus route early
Pedestrian safety – missing sidewalks, crosswalks, and enforcement
There should be no right turn at lights as this is very dangerous for pedestrians (especially children)
Steep streets – need to control speed
Street right of way too steep for roads. Need upgrading to proposed paths – especially school routes.
Signing rough trails as “closed” is insulting and unsatisfactory –and usage is already high
Put the speed bumps back to reduce auto traffic shortcutting from highway

A gondola to Stanley/ Rail Trail would turn gravity into an asset
Free shuttle bus up and down Stanley, bio fuel, bike racks, etc
Excessive use of STOP signs.
Stop bars are not in the right place
LVR kids who walk to school along View St often experience drivers yelling at them to get off the road – but there are no sidewalks!
Need sidewalks on View Street
We need official bike lanes (yes)
How can we create a traversing bike and walk path going uphill?
Overall societal issues: entitlement to transportation, etc. Scheduling, Lack of environmental stewardship
Snow removal needs to be improved on High Street
Please don't flood the night sky more. Use direct LED lighting.
Use lights that are direct downward lighting. No more bright light
Lights are not checked – too many burnt out
Some [lights] never go off – wasting energy
Is this [lack of street lighting] really true? Have you asked walkers? Maybe some lighting up to BNR in certain locations.
Check into new LED street lights that are more direct (focused) downwards. Much less light pollution
Consider electric bus up one street – people walk to this like the skytrain.
Funicular! See Valparaiso, Chile
Sidewalks in hazardous condition and not repaired! Not cleared / safe walking in winter.
Road repair is inadequate. Why does the city wait until a rebuild is necessary?
Residual sand on roads makes cycling hazardous. It will be difficult to eliminate (yes)

OPPORTUNITIES AND STRENGTHS OF NELSON

Moderate climate allows for active transportation 3 seasons of the year
Access routes to the BNR is too restricted
Nelson residents drive to their activities
We all need to reduce emissions further – more encouragement to bike/walk/bus

ISSUES AND GAPS IN THE NETWORK

Enforcement of traffic laws – not stopping at crosswalks, speed limits esp. in school zones, etc
Trail/path needed to connect Front Street with west end of Baker
Pedestrian/ Bike overpass between (Upper) Rosemont to Upper Uphill
Path at Vancouver Street switchback
More access points for Lakeside walkway/businesses. E.g. overpass at foot of Ward or Stanley
Better access for walkway to Cottonwood Park area from Uphill (esp. for market). Currently have to cross highway or go to Baker St
More walking/bike paths along Lakefront
Missing stairs (from stair plans and snow clearance) at west end of High Street
Continue sidewalk north from the tracks on the west side of South Poplar (Currently very poor access to the mall and waterfront for peds – esp. for those with strollers, grocery buggies)
Need bike parking downtown
Need cycling routes connecting DT with Northshore/ Tagnum areas (yes)
More access to rail Trail (John Street road allowance
Eighth Street connection developed for trail (see map)
Non-steep bicycle and pedestrian connection between Uphill and Upper Fairview (possibly an extension of Trevor Street)
Chairlift uphill
Should coordinate Active Transportation Strategy with health and fitness education
Electric tram with bike trailor – up Stanley Street down Ward Street
Clear the sidewalks of snow and debris. Rosemont to Baker Street and back is hazardous
Give the kids passes to use city buses like they do in Trail or let te kids use the school bus when they live in town, but more than 2km from school. (Secondment – good idea: creates early habits of using public transportation)
Chairlift uphill
Profiling priority sidewalks and encouraging their use might cut down on pedestrians using roadway when sidewalks are too slippery or not shovelled.

TRIP AND FALL HAZARDS

Let's make sure plowed sidewalks are also sanded
Especially considering the aging population, huge improvements need to be made to winter sidewalk clearing on

the steeper streets.
Uneven sidewalks
Ice in the mall parking lot
On Hall Street, sidewalk on west side near Latimer is very dangerous – cracked/ uneven – and is used by any school kids
For walking at times very very icy in the winter; stairs coming down can be very very icy in winter
Multiuse trails unmaintained and too infrequent
Gravel flushing onto sidewalks and streets from lanes is a problem
Sand /gravel challenging for pedestrians and cyclists and drivers (yes)
The stairs on High Street at Douglas have an unusable hand rail due to poorly placed sign – post/ signs. The stairs are mis-built. The top and bottom steps have a different rise. Code calls for an even rise and run.
Rails that cross Walmart parking lot dangerous for cyclists in wet weather. Could be better marked
Extend bus route to Blewett (Innes Rd)
Extend Uphill bus to Mtn. Stn parking lot to ease access to trail (Great Northern)

POSSIBLE SOLUTIONS FOR CONSIDERATION - NETWORK

Ranking of proposed solutions:

1. Provide bicycle routes within the existing right-of-way
2. Better signage of routes
3. Provide brochure and map of existing routes
4. Rails to Trails

General:
Larger bike route signs more favourable as opposed to small bike symbols on street signage intended to reduce visual clutter.
Road diet concept with dedicated bike lanes preferred versus simple bike sharrow markings where feasible.

Comments:
Street signs should be VISIBLE. Hedges trimmed, broken signs replaced, and poles placed more into intersection (not on tucked away property)
Dedicated pathway for ski/snowboard to downtown in winter months. Have skin track to go back up (yes)
[Bike pavement markings are a] great idea for streets not wide enough for bike lanes – makes other users aware that there may be cyclists on road
Bike routes need wider streets
What about signage for walking routes? Need maintained routes
A fine idea: a bike/golf cart/electric vehicle lane from John's walk along Douglas right into town.
Utilize wider streets. Consider widen with sidewalk removal, separate from main vehicle routes
Two electric buses: one to Rosemont and one up Stanley. With bike racks
Need more connectivity from street to BNR
Need more signs on the BNR trail to say where you are

POSSIBLE SOLUTIONS FOR CONSIDERATION – BIKE PARKING

Ranking of proposed solutions:

1. Bike Parking Bylaw: all new developments required to provide secure bicycle parking
2. Bicycle parking sponsored by adjacent businesses
3. Dedicated budget for bicycle parking
4. Design guidelines to accommodate bicycle parking

General:
Lots of favour towards all proposals.
Liked idea of creative racks such as the one presented in the poster

Comments:
Need more and accessible bike parking
What about bike exchange program i.e. pick up bike at one location and ride it to another
Plug ins for electric bikes
Downtown needs more racks

POSSIBLE SOLUTIONS FOR CONSIDERATION – LIGHTING AND STEEP TERRAIN

Ranking of proposed solutions:

1. Design guidelines
2. Benches
3. Street/ Trail lighting
4. Local Area Plans

Comments:
We need these [grooved ramps adjacent to stairs to assist cyclists] on steep streets (near Rec centre)
Bike gondola to the top of Stanley Street "gravity city!"
[Benches at regular intervals on steep sidewalks] is a good idea
Benches on steep walking routes helpful – could be partners with homeowners for upkeep and maintenance and snow removal.
Lighting should not flood the night sky. Use direct LED lighting

POSSIBLE SOLUTIONS FOR CONSIDERATION - MAINTENANCE

Ranking of proposed solutions:
1. Priority plowing of designated cycling routes
2. Snow Clearing
3. Covered Stairs
4. Trip and fall Hazard Prioritization

Comments:
Signage for road right-of-way along rail grade so you know if you are trespassing or not when accessing rail grade
Have bicycled in Nelson winter. If bike routes plowed, I would again
[Priority plowing of designated cycling routes] very important. Also clear sand and dust from routes.
Sidewalk plow and sand on Rosemont so can get "safely" to work for 8:30 a.m.!
Nelson Bridge sidewalks are impossible in winter
Covered stairs are a good idea.
Covered stairs would be a good idea on Hendryx steps
Often cleared sidewalk is more slippery than if left uncleared
Removal of snow bylaw in front of residences/ businesses needs to be reinstated – huge decline in maintenance when city removed bylaw to detriment of pedestrians
When sidewalks are plowed without sanding, it makes them worse than not being plowed at all (and comments in agreement with this statement)
City sidewalk priority maintenance plan – maintain fewer sidewalks well
Rosemont to downtown is near impossible in the winter (referring to sidewalks)
Leaves in fall can be a hazard
Nelson Uphill traffic has right of way
Snowploughs often block lanes which is where residents need access to get their cars off the streets
Consider using technology such as twitter

TRANS-CANADA TRAIL POTENTIAL OPTIONS

Divided on whether the trail should go through the downtown (options provided were yes, no, unsure).

Comments:
The route should include the water front pathway
Not enough access points and not well maintained
Mountain Station to Downtown then along waterfront
Suggest a bus that goes up to top of Stanley and backdown leaving every 15minutes to provide trail access
A lift to the top of the trail could make the backbone of bicycle travel in Nelson
Option B can already do most of it through undeveloped areas

City of Nelson Active Transportation Survey

Introduction

The City of Nelson is developing an Active Transportation Plan and would like to hear from you as a resident of our city.

Active Transportation includes human-powered forms of commuter and recreational travel such as walking, cycling, rollerblading, and wheeling e.g. wheelchairs and strollers. These modes are often used in combination, and can include the use of public transit.

In order to determine the opportunities and barriers associated with Active Transportation in Nelson, we are inviting you to participate in the following online survey.

The City will also be hosting a Open House consultation session on Tuesday October 27, from 4pm to 8.30pm at the library where you will able to discuss your ideas and opinions on how to increase active transportation in Nelson with City staff and consultants. Please contact Dallas Johnson at 250-352-8202 or via email at djohnson@nelson.ca for more details.

City of Nelson Active Transportation Survey

Active Transportation

1. What forms of active transportation do you currently use? Please tick all that apply, in the order of most frequent. (1=most frequent)

	1	2	3	4	5	6	7	8	9	10	11
Walking	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯
Jogging / running	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯
Hiking	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯
Cycling (road)	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯
Cycling (off-road / trail / mountain bike)	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯
Electric bicycle	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯
Electric scooter / wheelchair	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯
Accompanying children in strollers	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯
In-line skating	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯
Skateboarding	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯
None	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯
Other	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯

Other (please specify)

City of Nelson Active Transportation Survey

Trip Information

2. What is the approximate distance from your home to your workplace/school?

- ◯ Less than 0.5 kilometres
- ◯ Between 1 and 2 kilometres
- ◯ Between 2 and 5 kilometres
- ◯ Between 5 and 7 kilometres
- ◯ Greater than 7 kilometres

3. For what type of trips do you choose active transportation? Please tick all that apply in the order of the most frequent. (1=most frequent)

	1	2	3	4	5	6	7	8
Commute to work / school	◯	◯	◯	◯	◯	◯	◯	◯
Travel for social reasons, e.g. entertainment, visiting friends	◯	◯	◯	◯	◯	◯	◯	◯
Shopping	◯	◯	◯	◯	◯	◯	◯	◯
Appointments, e.g. medical	◯	◯	◯	◯	◯	◯	◯	◯
Exercise / pleasure	◯	◯	◯	◯	◯	◯	◯	◯
Exercising pets	◯	◯	◯	◯	◯	◯	◯	◯
Do not use active transportation	◯	◯	◯	◯	◯	◯	◯	◯
Other	◯	◯	◯	◯	◯	◯	◯	◯

Other (please specify)

City of Nelson Active Transportation Survey

Active Transportation Usage

4. When do you primarily use active transportation routes? Please select all that apply.

- [ ] Spring
- [ ] Summer
- [ ] Fall
- [ ] Winter
- [ ] Do not use active transportation

5. What time of day do you primarily use active transportation routes?

- ◯ Daylight hours only
- ◯ After dark only
- ◯ Any time of day or night
- ◯ Do not use active transportation

6. Why do you use active transportation? Please tick all that apply.

- [ ] Do not have access to a car
- [ ] To save money on travel
- [ ] Best way to travel to school or work
- [ ] Just for pleasure
- [ ] Just for exercise
- [ ] To incorporate exercise into travel
- [ ] To benefit the environment
- [ ] Do not use active transportation

City of Nelson Active Transportation Survey

Active Transportation Improvements

7. What would encourage you to travel more by active transportation? Please tick all that apply in the order of priority (1=highest priority).

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
No improvements necessary, I am happy with the level of active transportation facilities	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯
More bike lanes	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯
More trails	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯
More sidewalks	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯
Better connections to transit stops and key destinations (school, shopping, etc.)	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯
Maps of local trails, bikeways and pedestrian routes	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯
Improved signage of pedestrian and bikeways	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯
Improved lighting	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯
Dedicated routes	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯
Dedicated routes that use less steep routes	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯
More routes accessible to wheelchairs, strollers, etc	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯
Better road maintenance	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯
Better snow clearance	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯
Better maintenance of trails and pathways	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯
Better education for motorists	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯
Better education for cyclists and pedestrians	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯
Safe and/or convenient storage for equipment e.g. bike racks and lockers	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯
End-of-trip facilities such as showers at work	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯
More dedicated routes for different types of active transport, e.g. cycling only trails	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯
More mixed routes e.g. mixed use trails	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯
More training opportunities for people	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯

new to a method															
Improved Urban Design (please specify below)	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯
Other (please specify below)	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯

specify Improved Urban Design -AND/OR- Other suggestions here

8. What mode(s) would you try if Active Transportation Facilities were improved? Please tick all that apply.

- [ ] Walking
- [ ] Cycling
- [ ] Jogging / Running
- [ ] Electric bicycle
- [ ] Electric scooter / wheelchair
- [ ] In-line skate
- [ ] Skateboarding
- [ ] None
- [ ] Other (please specify)

City of Nelson Active Transportation Survey

Active Transportation Network

9. In your opinion, what are the top 3 locations or corridors in Nelson where new or better trails, sidewalks or bikeways, or improved connections should be considered? (Please enter responses in the order of importance - maximum 100 characters)

1st Location

2nd Location

3rd Location

10. What do you think are the top 3 biggest challenges, constraints or barriers to improving the active transportation network in Nelson? (Please enter responses in the order of importance - maximum 100 characters)

1st Challenge

2nd Challenge

3rd Challenge

City of Nelson Active Transportation Survey

Additional Comments

11. Please enter any other comments here. (maximum 500 words)

City of Nelson Active Transportation Survey

End

Thank you for completing this survey!

For more information, please contact Dallas Johnson, Planner at 250-352-8202.

NELSON ACTIVE TRANSPORTATION ONLINE SURVEY RESULTS

1. CURRENT ACTIVE TRANSPORTATION USE

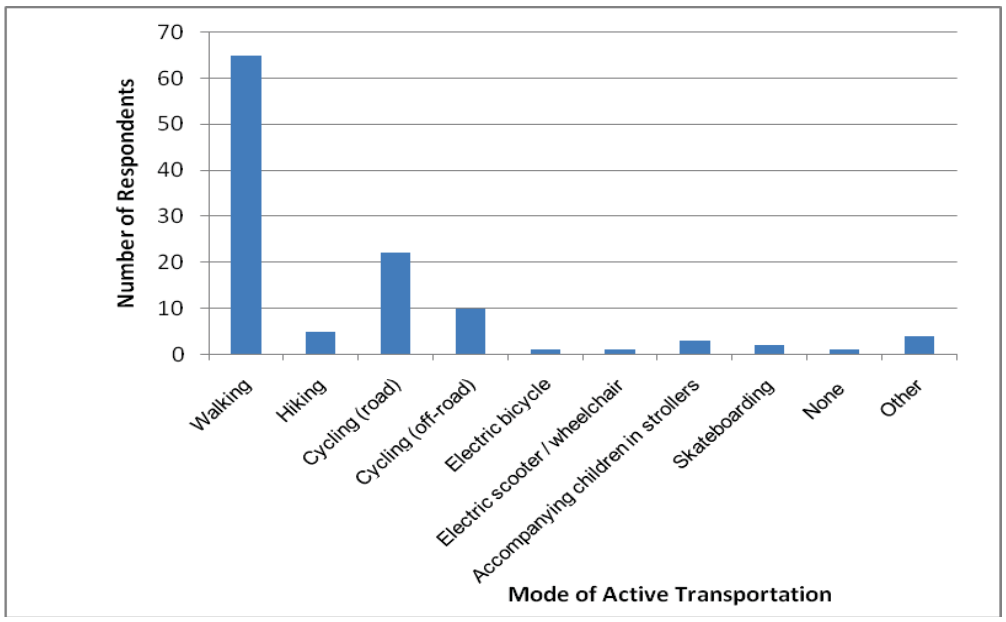


FIGURE 1 DISTRIBUTION OF RESPONDENTS BY MOST FREQUENTLY USED ACTIVE TRANSPORTATION MODE

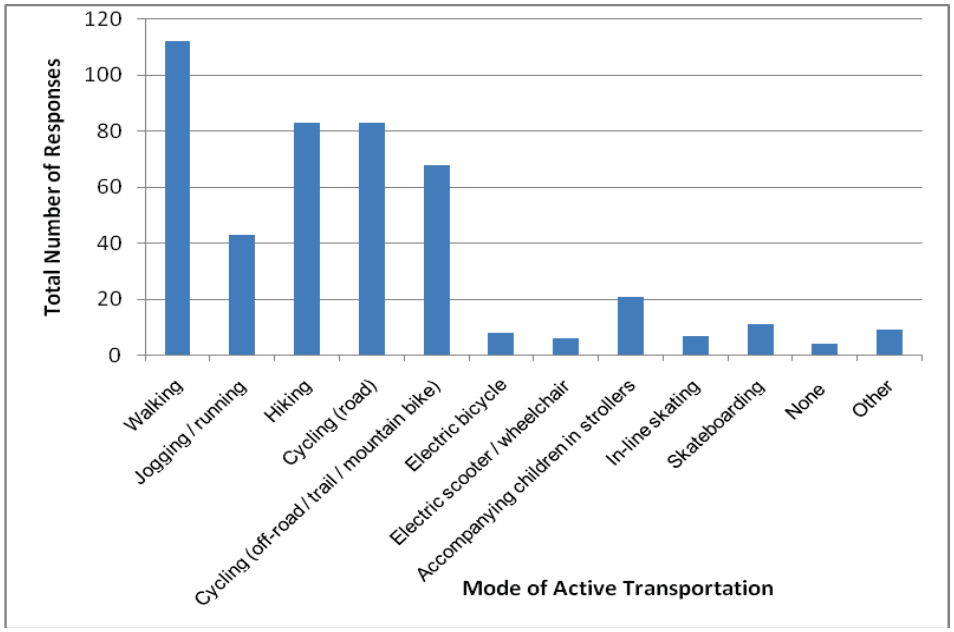


FIGURE 2 ACTIVE TRANSPORTATION MODES

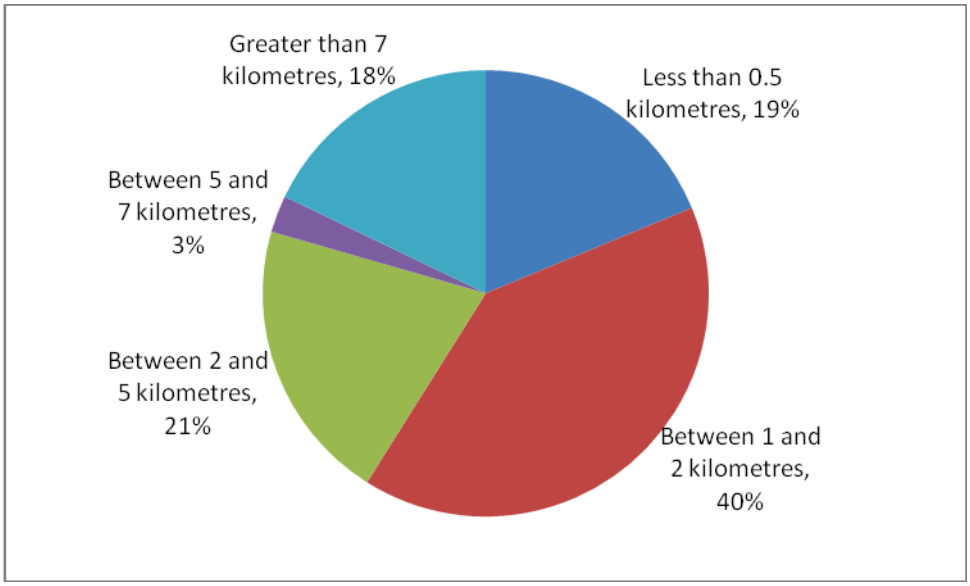


FIGURE 3 DISTANCE FROM HOME TO WORK/SCHOOL

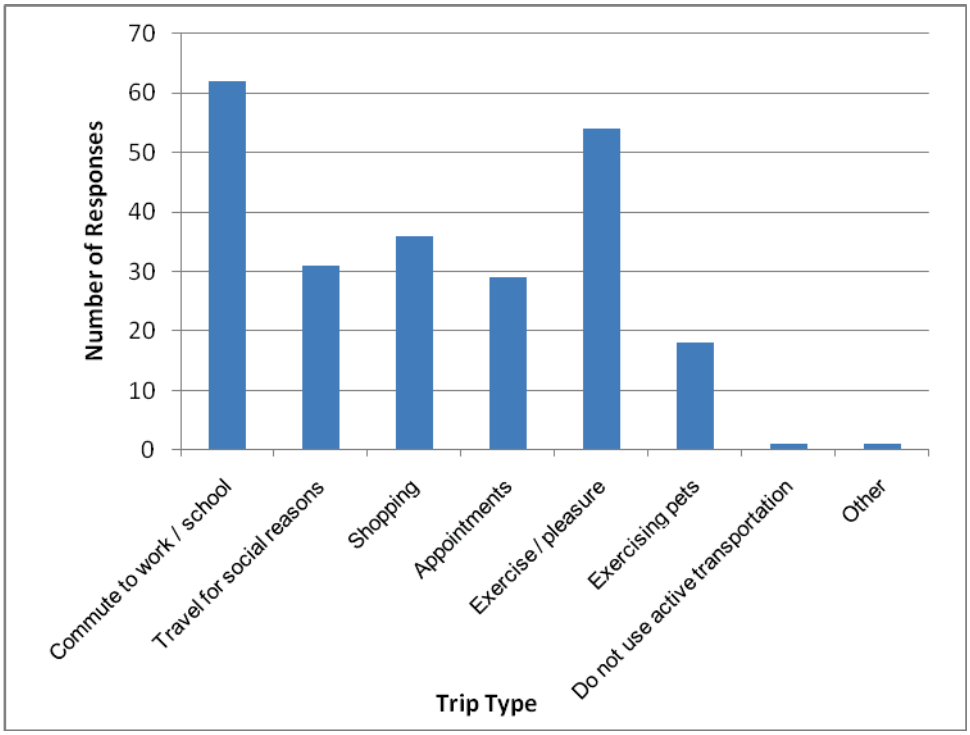


FIGURE 4 DISTRIBUTION OF RESPONSES BY MOST FREQUENT ACTIVE TRANSPORTATION TRIP TYPE

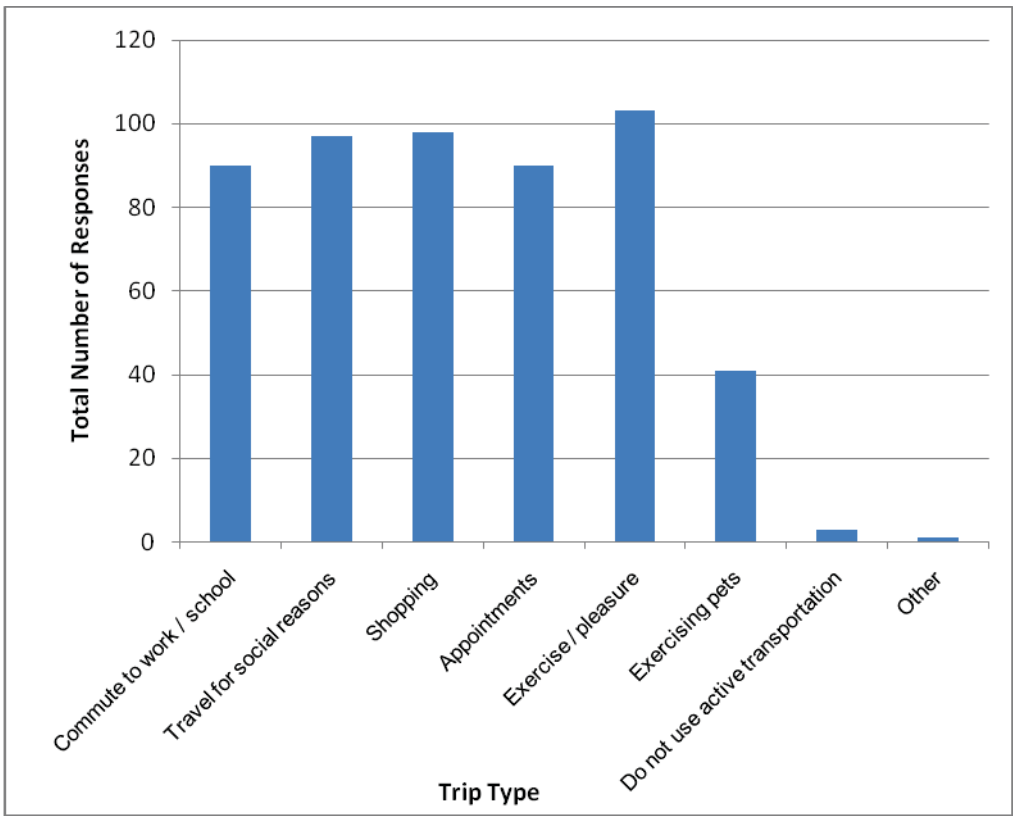


FIGURE 5 ACTIVE TRANSPORTATION TRIP TYPES

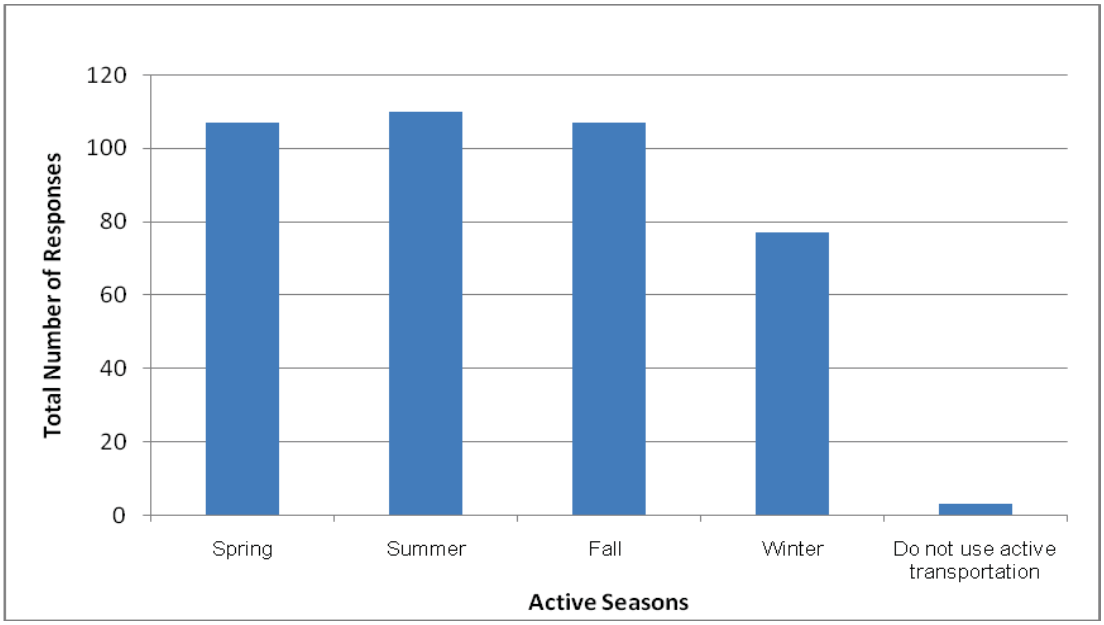


FIGURE 6 PRIMARY TIME OF YEAR FOR ACTIVE TRANSPORTATION USE

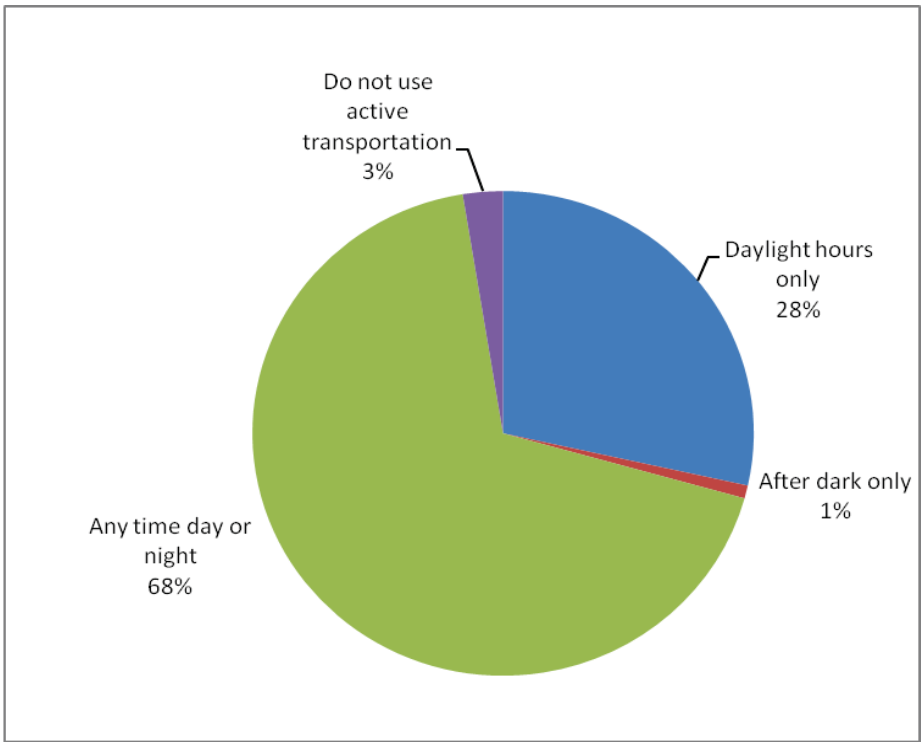


FIGURE 7 PRIMARY TIME OF DAY FOR ACTIVE TRANSPORATION USE

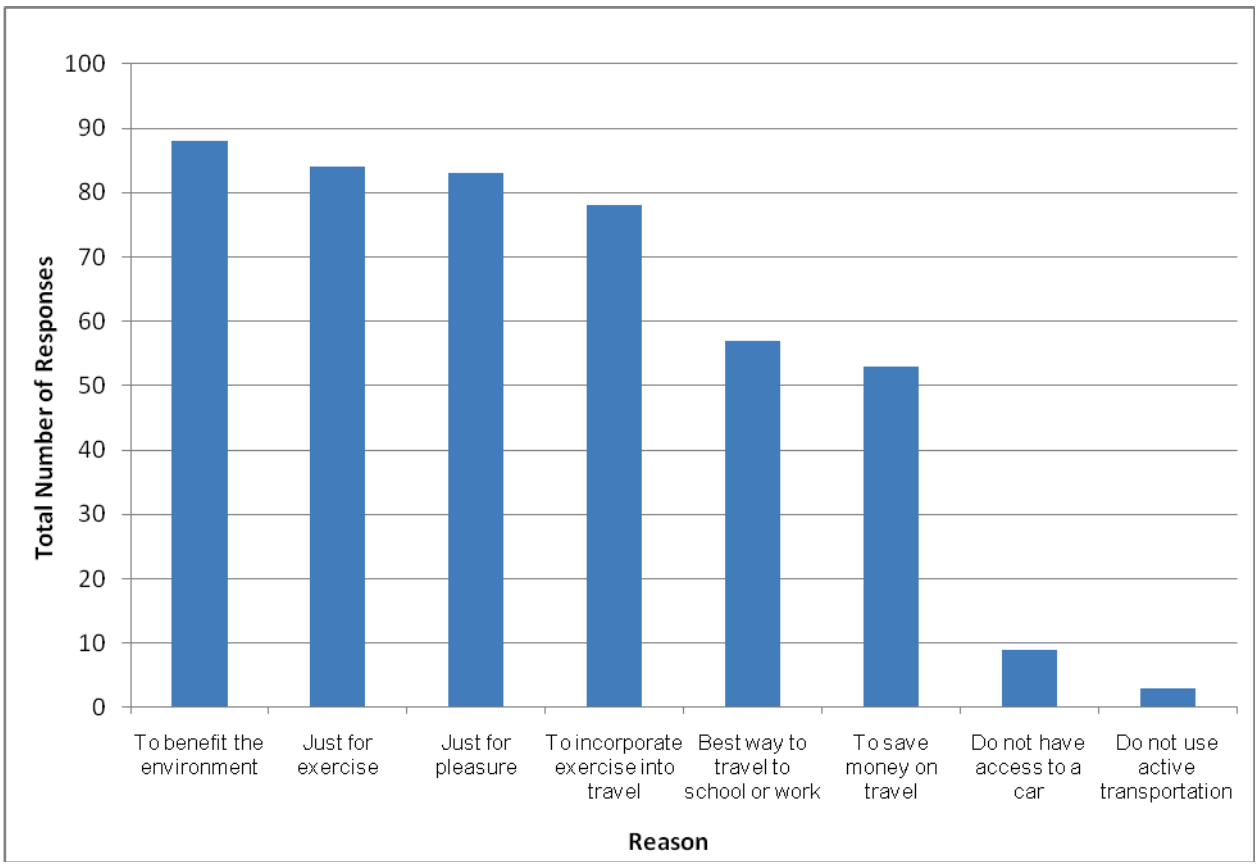


FIGURE 8 DISTRIBUTION OF RESPONSES BY ACTIVE TRANSPORTATION USE REASON

2. ACTIVE TRANSPORTATION IMPROVEMENTS

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) Dedicated routes that use less steep routes
k) More routes accessible to wheelchairs, strollers, etc
l) Better road maintenance
m) Better snow clearance
n) Better maintenance of trails and pathways
o) Better education for motorists
p) Better education for cyclists and pedestrians
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) Improved Urban Design (please specify)
w) other (please specify)

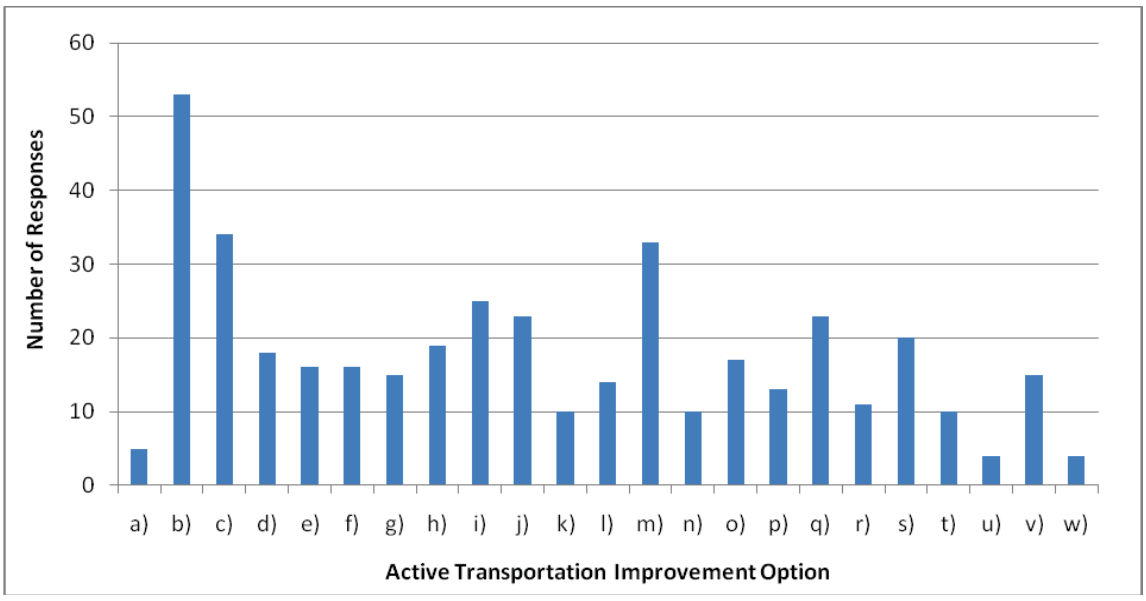


FIGURE 9 DISTRIBUTION OF PREFERRED ACTIVE TRANSPORTATION IMPROVEMENTS

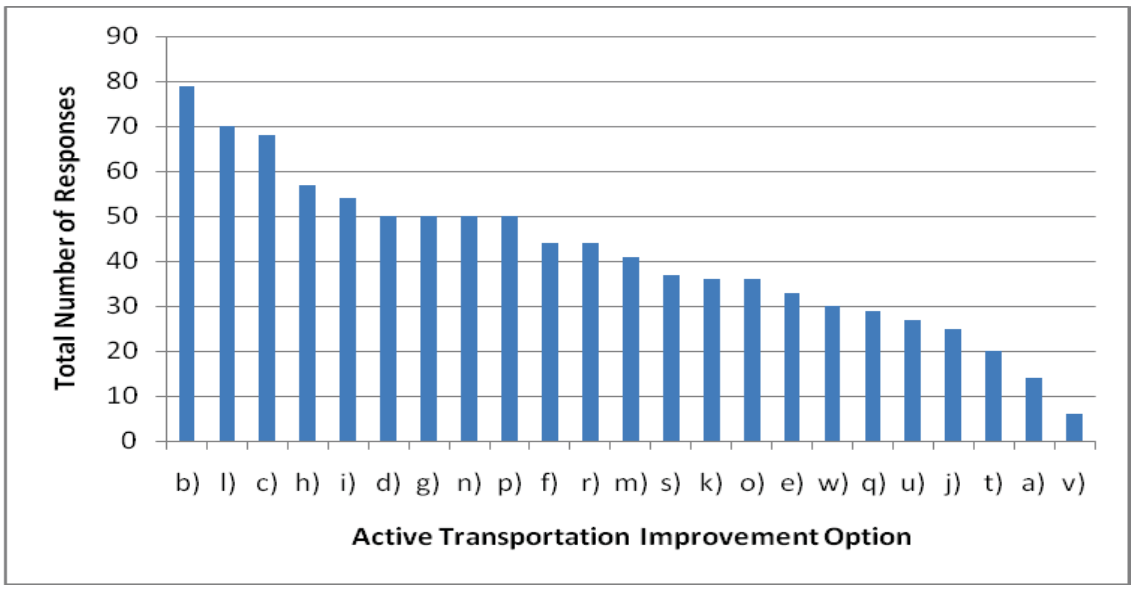


FIGURE 10 ACTIVE TRANSPORTATION IMPROVEMENTS IN NELSON

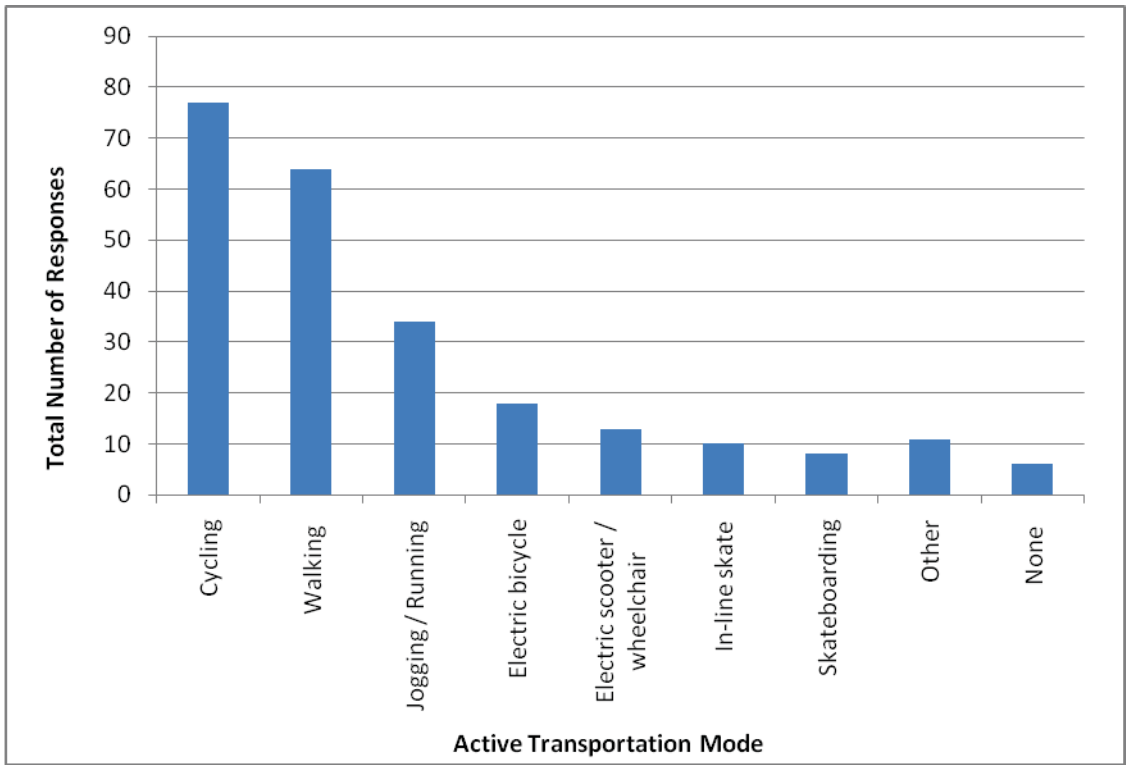


FIGURE 11 DISTRIBUTION OF RESPONDENTS BY ACTIVE TRANSPORTATION MODE THEY WOULD TRY

TABLE 1 RANKING OF LOCATIONS / CORRIDORS REQUIRING IMPROVEMENTS

LOCATION / CORRIDOR	NUMBER OF RESPONSES 1ST PRIORITY	NUMBER OF RESPONSES 2ND PRIORITY	NUMBER OF RESPONSES 3RD PRIORITY	RANKING*
Baker Street / Downtown	13	5	5	54
Lakeside Drive/ Lakeside Park	7	3	1	28
Stanley Street	7			21
Nelson Bridge	5	3	1	22
Uphill	4	4	1	21
Fairview to Downtown	2	6	1	18
Waterfront	2	4	3	17
5th Street	4			12
Connection to railway trail	4			12
Gyro Park	3	1	1	12
North Shore	2	1	3	11
Access to rail trail		4	3	11
Uphill to Rosemont	3		1	10
High Street	2	1		8
Rosemont Connector to Downtown	2		2	8
Uphill to Upper Fairview	1	2		7
Latimer (Rosemont bridge to 5th St)	1	2		7
Cottonwood Park	2			6
Downtown to hospital	2			6
Trevor Street	1	1		5
Front Street	1		2	5
Rosemont Connector to Downtown		2		4
Front Street		2		4
Nelson Avenue		2		4
Pine Street	1			3
Rosemont to Granite Point	1			3
Cherry Street	1			3
Herridge Lane	1			3
Bridge to Pulpit Rock trail		1		2
Gore Street		1		2
Ward Street		1		2
Josephine Street		1		2
Hallmines and Kootany Street		1		2
Stanley Street			1	1
Carbonate			1	1
Victoria Street			1	1

*Weighted ranking = (3 * 1st Priority) + (2 * 2nd Priority) + (1 * 3rd Priority)

TABLE 2 GREATEST CHALLENGES

CHALLENGE	NUMBER OF RESPONSES 1ST PRIORITY	NUMBER OF RESPONSES 2ND PRIORITY	NUMBER OF RESPONSES 3RD PRIORITY	RANKING*
Topography (steep hills)	32	11	5	123
Winter conditions (snow and ice) and lack of maintenance of Active Transportation facilities in these conditions	14	13	10	78
Lack of Active Transportation Network and Facilities	10	14	9	67
Public Attitude/ Disinterest; Lack of incentives	9	13	11	64
Safety concerns regarding drivers, and lack of driver education and enforcement of violations	4	6	7	31
Lack of funding and money	4	5	1	23
Land use planning, low density, urban sprawl	3	5	3	22
Lack of political will and that of decision makers	4	1	4	18

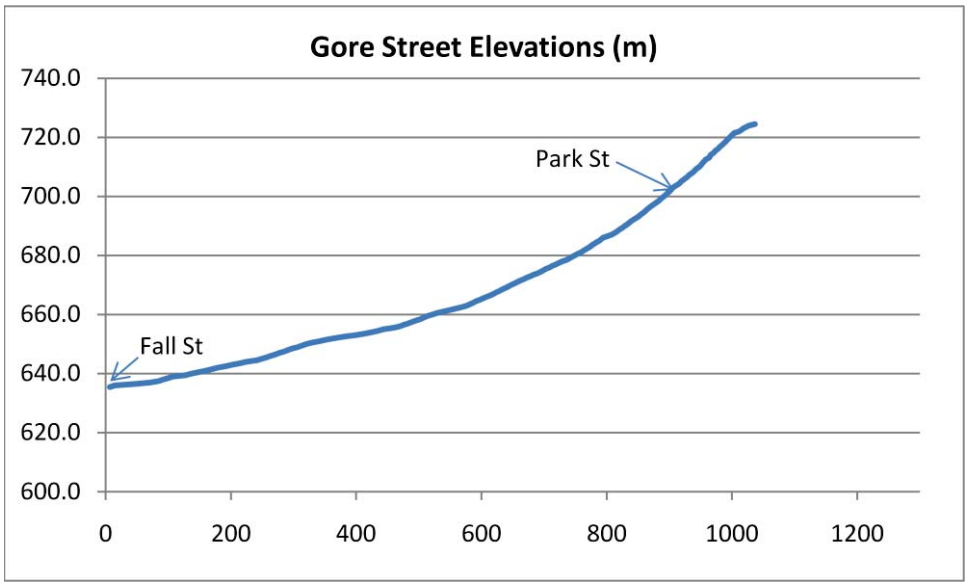
*Weighted ranking = (3 * 1st Priority) + (2 * 2nd Priority) + (1 * 3rd Priority)

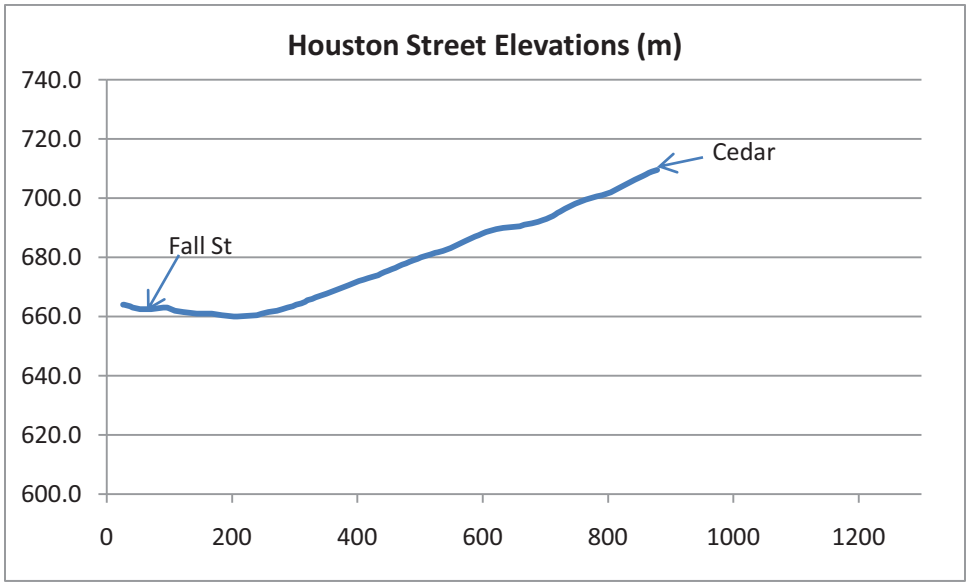
3. ADDITIONAL COMMENTS

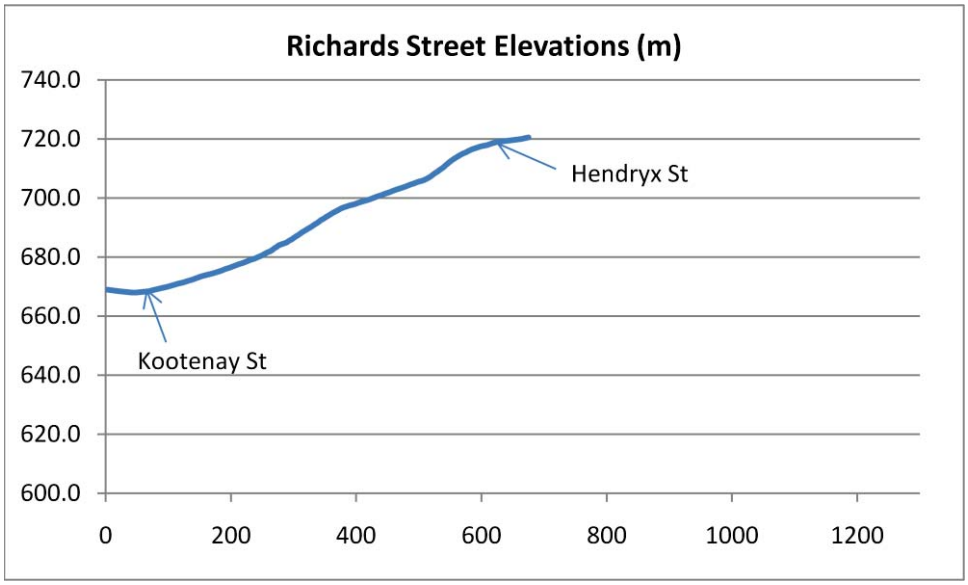
TABLE 3 TOP CONCERNS

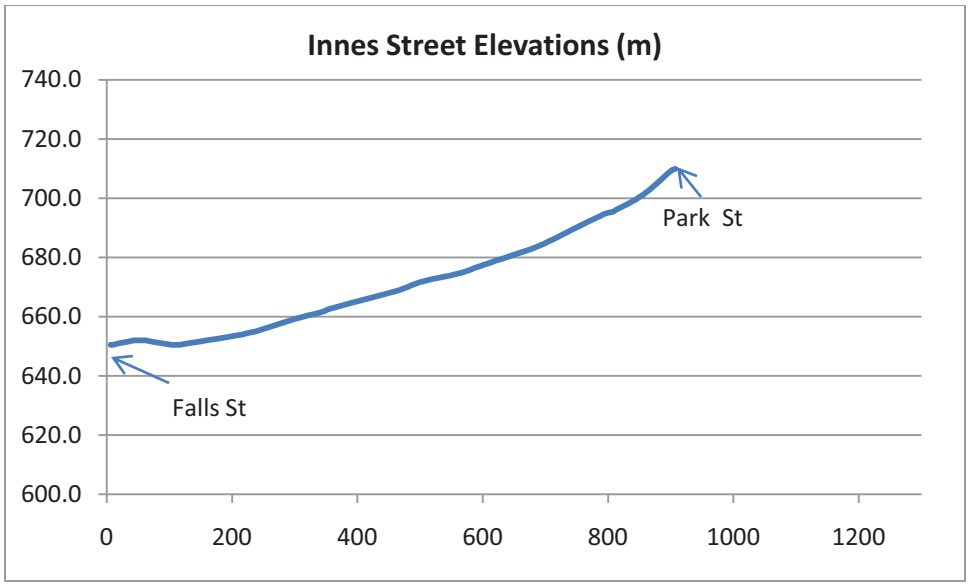
COMMENT	NUMBER OF RESPONSES
Lack of maintenance of Active Transportation facilities particularly around snow clearance	10
The Active Transportation Network and Facilities should be increased particularly connecting residential neighbourhoods to the downtown	10
Improve the transit system (longer hours, more routes, higher frequency)	9
Support Nelson Carshare Cooperative (i.e. free parking downtown for carshare vehicles)	5
Active transportation only street/ time periods downtown	5
System to transport pedestrians, cyclists and bikes from the downtown to trails (ie gondola, cable car)	4
Concerns regarding attitudes of vehicle drivers towards Active Transportation users; lack of enforcement of violations	3
Fears regarding safety and security particularly personal safety when sharing the road with vehicles	3
Maintain vehicle traffic on Baker	1

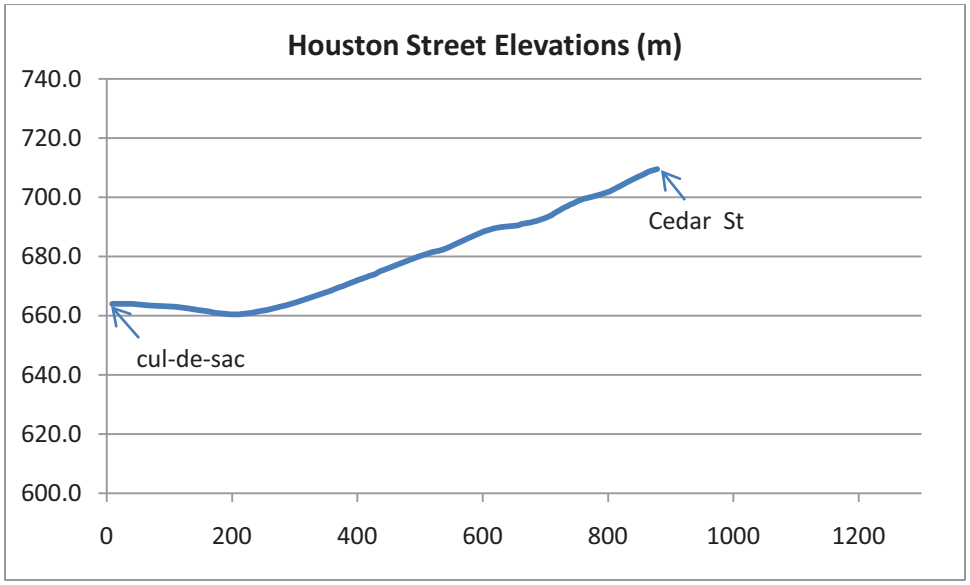
APPENDIX D – VERTICAL PROFILES

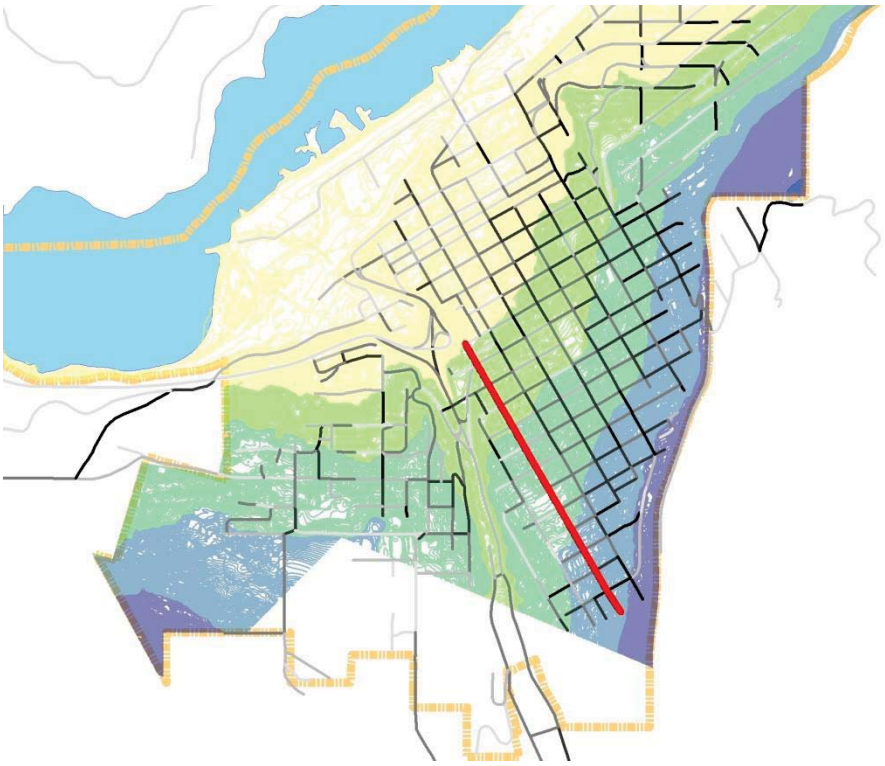

Gore Street Elevations (m)
740.0
720.0
700.0
680.0
660.0
640.0
620.0
600.0
0
200
400
600
800
1000
1200
Park St
Fall St

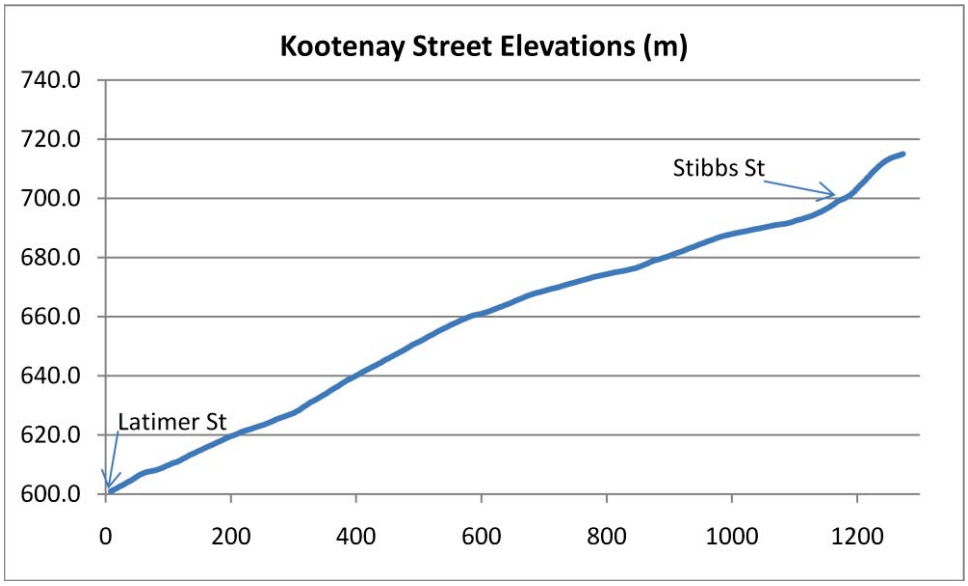

Houston Street Elevations (m)
740.0
720.0
700.0
680.0
660.0
640.0
620.0
600.0
0
200
400
600
800
1000
1200
Cedar
Fall St


Richards Street Elevations (m)
740.0
720.0
700.0
680.0
660.0
640.0
620.0
600.0
0
200
400
600
800
1000
1200
Hendryx St
Kootenay St


Innes Street Elevations (m)
740.0
720.0
700.0
680.0
660.0
640.0
620.0
600.0
0
200
400
600
800
1000
1200
Park St
Falls St


Houston Street Elevations (m)
740.0
720.0
700.0
680.0
660.0
640.0
620.0
600.0
0
200
400
600
800
1000
1200
Cedar St
cul-de-sac




Kootenay Street Elevations (m)
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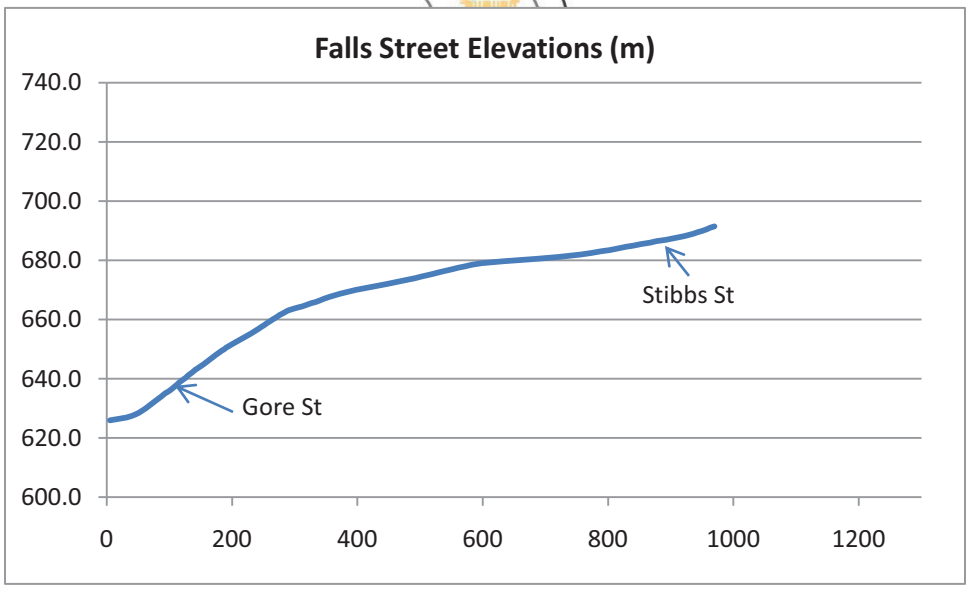
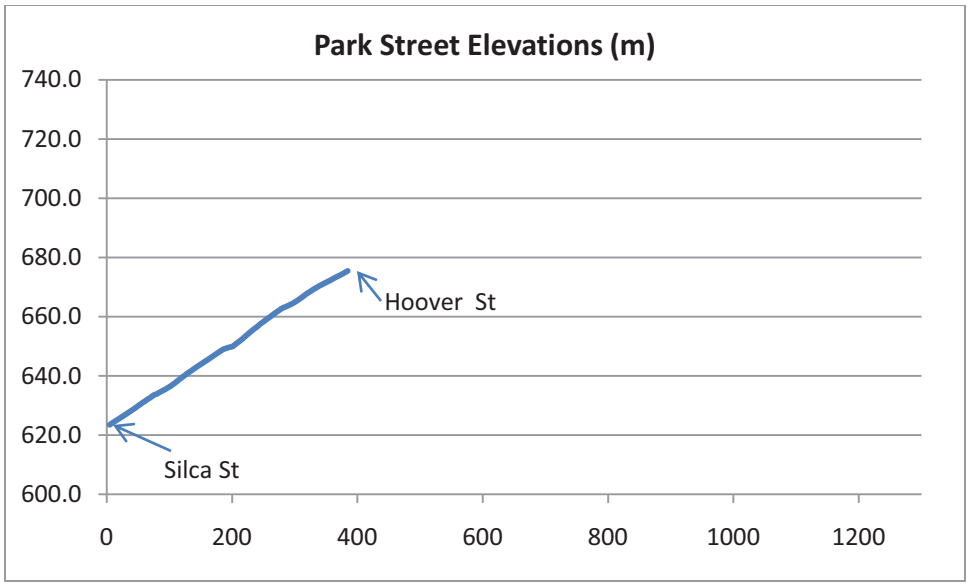
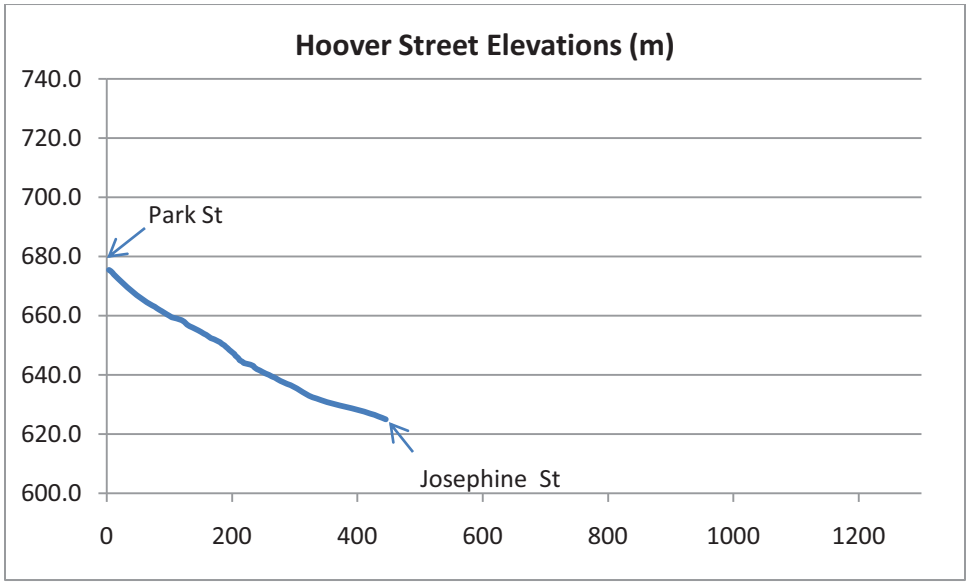
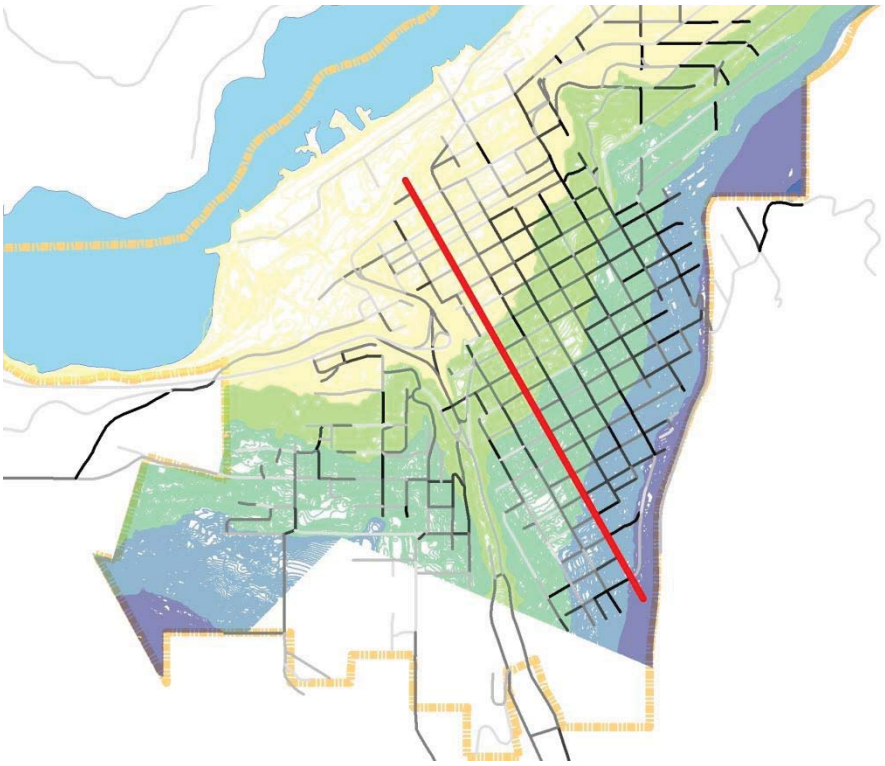
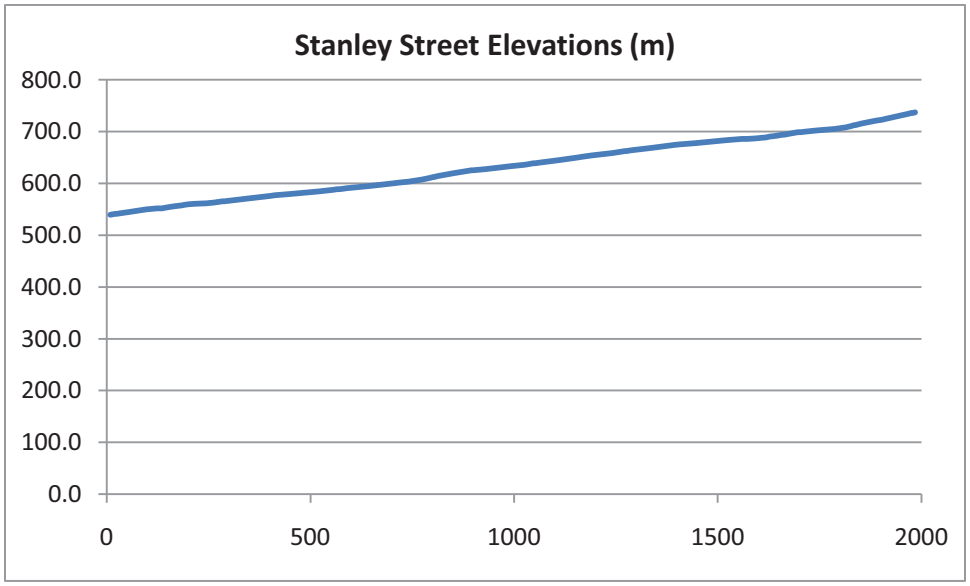
720.0
700.0
680.0
660.0
640.0
620.0
600.0
0
200
400
600
800
1000
1200
Stibbs St
Latimer St

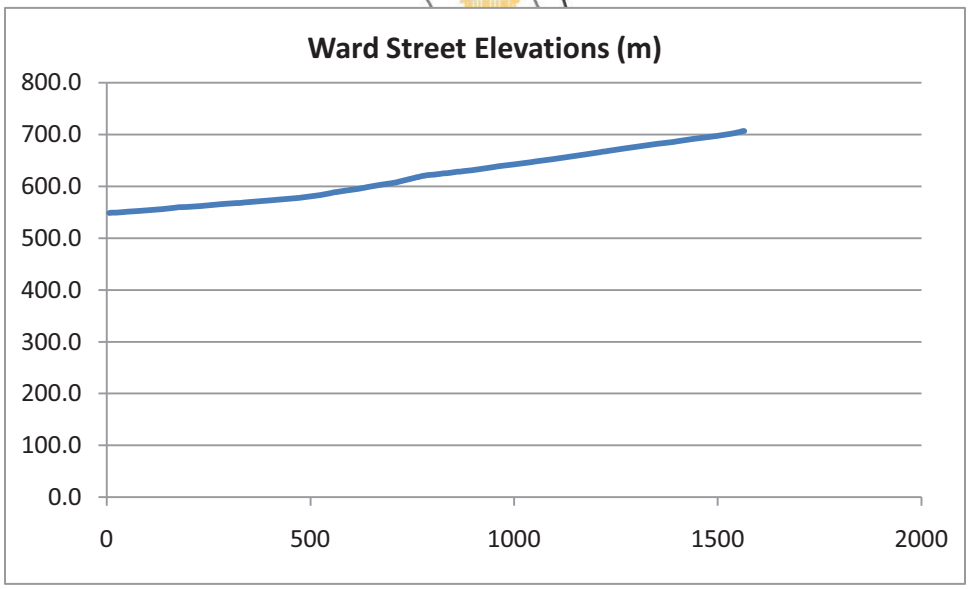

Falls Street Elevations (m)
740.0
720.0
700.0
680.0
660.0
640.0
620.0
600.0
0
200
400
600
800
1000
1200
Stibbs St
Gore St


Park Street Elevations (m)
740.0
720.0
700.0
680.0
660.0
640.0
620.0
600.0
0
200
400
600
800
1000
1200
Hoover St
Silca St


Hoover Street Elevations (m)
740.0
720.0
700.0
680.0
660.0
640.0
620.0
600.0
0
200
400
600
800
1000
1200
Park St
Josephine St




Stanley Street Elevations (m)
800.0
700.0
600.0
500.0
400.0
300.0
200.0
100.0
0.0
0
500
1000
1500
2000


Ward Street Elevations (m)
800.0
700.0
600.0
500.0
400.0
300.0
200.0
100.0
0.0
0
500
1000
1500
2000

APPENDIX E – BEAT FUNDING OPPORTUNITIES

BEAT – The Path to Health

Funding Opportunities for Local & Regional Governments

A joint initiative of BC Recreation and Parks Association and the Union of BC Municipalities.

Several funding opportunities exist to assist with financing your projects, including staff time, capital costs and implementation of initiatives.

BC Healthy Communities	BCHC seed grants are small, one-time-only funding opportunities to encourage and support efforts that improve community health and well-being and promote optimum human development. www.bchealthycommunities.ca/Content/News/Index.asp
BC Recreation & Parks Association	*Active Communities Initiative* The ACI grant program is designed to assist communities with the development and implementation of an Active Community Plan or development and maintenance of walkways, trails and/or bikeways. www.activecommunities.bc.ca *BEAT Community Planning Grants* Active transportation planning grants for local governments & First Nations. www.PhysicalActivityStrategy.ca/index.php/beat *Community Based Awareness Social Marketing Grants* Increasing awareness of the benefits of & opportunities for physical activity to low income and marginalized groups. To Be Announced 2009 *Everybody Active Seed Grants* For community mobilization activities which increase access to physical activity opportunities for people living in poverty. www.PhysicalActivityStrategy.ca/index.php/everybody-active *Healthy Food & Beverage Sales in Recreation Facilities & Local Government Buildings Grants* Implementation of healthy food & beverage policy (based on provincial guidelines). www.bcrpa.bc.ca/HealthyFoodandBeverageSales.htm
Federation of Canadian Municipalities	Green Municipal Fund www.sustainablecommunities.fcm.ca/home
Cycling Infrastructure Partnership Program (CIPP)	A cost-shared program where the Government of British Columbia partners with local governments in the construction of new cycling transportation infrastructure. www.th.gov.bc.ca/popular-topics/cycling/cipp.htm
Canada Green Building Council	A variety of sources to fund healthier, greener buildings. www.cagbc.org/resources/market_value/articles98.php

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Funding Opportunities for Local & Regional Governments

Fraser Basin Council	*Smart Planning for Communities* Assists BC local and First Nations governments with long-term sustainability challenges by providing resources and tools for planning socially, culturally, economically and environmentally sustainable communities. www.fraserbasin.bc.ca/programs/smart_planning.html *Community Action on Energy and Emissions Initiative* Financial and research support to BC local and First Nations governments for advancing energy efficiency, conservation and measures to reduce emissions through local government policy and planning tools. www.bcclimateexchange.ca/index.php?p=caee
Health Canada	Funding opportunities for healthy living. www.hc-sc.gc.ca/ahc-asc/finance/index_e.html (see Healthy Living)
Local Motion	Provides local governments funding assistance for capital projects that make communities greener, healthier and more active and accessible places in which to live. www.localmotion.gov.bc.ca/
Real Estate Foundation of BC	Funding to support sustainable real estate and land use practices. www.realestatefoundation.com/
Towns for Tomorrow	Funding for small BC communities for capital investments in infrastructure. www.townsfortomorrow.gov.bc.ca/
Transport Canada: Moving on Sustainable Transportation	MOST supports sustainable transportation studies; innovative projects; pilot projects; replication of projects in new locations; and workshops and conferences. www.tc.gc.ca/programs/environment/most/menu.htm
Union of BC Municipalities	A comprehensive database of funding opportunities available for BC municipalities. www.civicinfo.bc.ca/18.asp

An initiative of these BC Healthy Living Alliance Members

ActNowBC.ca