

CITY OF PRINCE GEORGE

TRANSPORTATION STUDY, CYCLE NETWORK PLAN

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1. INTRODUCTION

The Cycling Network Plan is intended to facilitate and encourage cycling within the larger scope of a general transportation system. This document is intended to be flexible and implemented over the long term. It is also designed to be updated on a regular basis, allowing staff to incorporate new standards, new issues, and new developments

The key features and the process involved in the development of the Cycling Network Plan include:

- Input from City and Ministry staff at several stages, including face-to-face meetings as well as feedback on initial drafts of the report and the map;
- Input from the public through an open house, a questionnaire, and individual communications;
- Benefit to the community by providing new transportation opportunities which will enhance the liveability of the community and the quality of life in Prince George;
- Improved accessibility to major employment centres, and existing and developing residential areas;
- Improved mobility for people who cannot or choose not to drive motor vehicles;
- A reduction in the rate of growth of motorized traffic by encouraging and enabling people to bicycle or take transit with their bicycles rather than drive motor vehicles;
- Designated north-south and east-west cycling corridors to encourage increased bicycle use;
- The introduction of new bicycle facilities and bicycle-friendly infrastructure;
- Utilization of existing bicycle facilities;
- Compatibility with the City Wide Trail System Master Plan;
- The combination of on-road and off-road facilities;
- Cost-effective recommendations for a priority-based implementation process;
- Field research and an in-depth review of municipal and provincial policies;
- A variety of options depending on demand forecasting and an assessment of growth potential;
- Easily administered options; and
- The encouragement of programs to promote cycling.

2. BASIC PRINCIPLES

Planners and designers should work to fully integrate the bicycle into the existing transportation system, and to encourage the acceptance of the use of the bicycle as a safe and convenient mode of transportation. This implies that all roads are potential bicycle routes. Once this concept is accepted, facility selection becomes a matter of matching the site with the need and selecting specific sites for upgrading.

The following basic principles constitute the base upon which all cycling projects should be built in order to realize a comprehensive network:

- Assume that every street or trail will be used by bicyclists;
- Treat bicycle facilities as part of the whole picture and consider those facilities as an integral component of any planning decision; thus, the basis and ideas formerly developed in separate "Bicycle Plans" should be fully integrated and incorporated into existing policy documents;
- Overcome existing barriers to bicycle travel;
- Allow for options in the planning and design phase, and afterwards when monitoring the success of the project;
- Plan ahead for any changes to the system;
- Ensure that cycling implications in upcoming projects are considered as part of the design and planning;
- Encourage links between routes in order to make use of routes more effective and attractive to the cyclist;
- Ensure that facilities are designed to allow cyclists to ride with traffic by providing identical facilities on both sides of a roadway;
- Consult with the general public to ensure their needs and concerns are being addressed; and
- Provide cycle route information to the cycling community (e.g., distance to destination signing, cycle route maps, etc.) as required.

It is recommended that the City of Prince George adopt these principles as an integral part of their transportation planning and engineering.

2.1 WHY PLAN FOR BICYCLES?

Facilities must be carefully planned, designed, and maintained to accommodate the bicycle as a vehicle and to enable the cyclist to use the facilities in relative safety and comfort. Properly engineered facilities encourage the cyclist to use them because it is easy, convenient, and demonstrates that cycling has a place in the transportation network. The challenge in the future is to engineer bicycling infrastructure which actively

encourages the general public to effect a transportation modal shift resulting in more cyclists, more alternative transportation, and less single occupancy vehicle drivers, less congestion, and less pollution.

One of the cornerstones of a healthy community is a community in which active living and active transportation is encouraged. The proven health benefits of a lifestyle centred on physical activity contribute greatly to the richness of a community and over the long-term serve to reduce certain costs, such as health care. Active living involves ensuring that physical activity is an integral part of every day's activities, and active transportation requires individuals to use a transportation mode based on personal physical exertion, such as walking and cycling.

To ensure that the Cycling Network Plan will accomplish the goal of increasing cycling, the Plan must include:

- Continuity of cycling travel;
- Easy access to destination points;
- End of trip facilities;
- Road and trail surfaces (i.e. sewer grates, railway crossings, etc.) which accommodate bicycles and provide for safe bicycle travel;
- Integration with the city-wide trails system;
- Accommodation for different ages, and skill levels of cyclists;
- Sufficient lane width (bicycle route, lane or path) so that other vehicles can pass safely; and
- Smooth, clean road surfaces unobstructed by debris.

It is recommended that for all road infrastructure projects, bicyclists' needs be considered.

The Cycling Network Plan must be comprehensive to be effective. A comprehensive plan not only includes recommendations for infrastructure and facilities design and a time line for their implementation, but it also links with other existing Plans, such as the Transportation Plan, the Official Community Plan, and the City Wide Trail System Master Plan. Also, a comprehensive Cycling Network Plan addresses the following areas:

- Education programs;
- Enforcement programs;
- Encouragement programs and activities; and
- Transportation demand management

Each of these is explored below.

2.1.1 Education Programs

The public, both the cyclist and the motorist, needs to be educated to use the transportation facilities properly and legally. Well-engineered facilities assist and encourage the cyclist to use those facilities appropriately. Well-advertised facilities acknowledge and confirm the cyclist's right to share the road and place within the transportation network.

Public education programs should:

- Emphasize to motor vehicle drivers and to cyclists that roadways are to be shared by all road users;
- Emphasize to motor vehicle drivers and to cyclists that each has responsibilities and rights to the road; and,
- Emphasize to motor vehicle drivers and to cyclists that each must follow the rules of the road and respect each other's right to use the road.

It is recommended that all City programs and printed material adhere to the principle of equitable, shared use of the roads, wherever feasible.

In addition to public education, bicycle skills training is needed to educate the general public on how to become better cyclists. Training programs, for all age groups, have been developed by the Canadian Cycling Association. These programs focus on bicycle handling skills, comprehension of the rules of the road, and understanding of how cyclists interact with other road users. Effective bicycle training programs use certified instructors and incorporate on-road instruction in addition to classroom sessions. Other training programs, designed to introduce a specific skill set (e.g., off-road riding), build on or assume a pre-requisite of basic riding skills. Education programs are discussed further in Appendix A.

It is recommended that the City should encourage bicycle skills training programs be conducted by certified instructors, using recognized curriculum, and for all age groups.

It is recommended that bicycle skills training programs be conducted for on- and off-road skills training.

Many of the larger private driver education programs now include some instruction on how to interact with cyclists on the road. In British Columbia, modifications to the provincial Driver Education Handbook to bring attention to specific situations where extra caution must be taken have been suggested and approved by the Insurance Corporation of B.C.

It is recommended that the City should encourage local driver instruction programs to include instruction on how motor vehicle drivers should interact with cyclists.

2.1.2 Enforcement Programs

Without proper enforcement, the long-term goals of education and encouragement cannot be met fully. By ignoring the law, cyclists not only risk their own safety, they also antagonize other road users. By not enforcing the cycling laws, enforcement agencies may contribute to irresponsible cyclist behaviour, and minimize the cyclist's place in the transportation network. Enforcement programs, therefore, should be aimed at cyclists, as well as motorists. See Appendix B for more details.

Enforcement should have as its objectives:

- Reduction of the number of crashes and degree of injuries sustained in those crashes;
- Compliance with the rules of the road;
- Reduction of bicycle theft; and,
- Development of public relations programs to encourage all of the above.

It is recommended that the municipality encourage the local enforcement agency to undertake an annual Selective Traffic Enforcement Program (STEP) aimed at cyclists which focuses on cycling without lights at night, failing to stop or yield, failing to indicate the intention to turn or alter course, and cycling the wrong way.

It is recommended that the municipality encourage the local enforcement agency to undertake an annual program aimed at motorists, focusing on failure to yield right-of-way at intersections and improper overtaking.

2.1.3 Encouragement Programs and Activities

The development of promotional programs is recommended to encourage and increase the use of bicycles for transportation, fitness, and recreation. Many people are simply not aware of designated bicycle facilities, education programs, and opportunities to cycle. And many people have rejected cycling as an option because of a perceived safety problem and perceived hostility towards cyclists on the road.

Encouragement programs and activities should:

- Promote public awareness and acceptance of bicycling;
- Develop incentives for the use of bicycles for commuting and utilitarian purposes;
- Work to overcome specific barriers to cycling;

- Work towards a safer environment for all types of cyclists; and,
- Provide assistance to established bicycle advocacy organizations.

And to ensure the Cycling Network Plan meets its goal of enhancing the environment for cyclists and increasing the number of cyclists, the Plan should be linked with the active discouragement of single occupancy vehicle use.

It is recommended that Prince George undertake an annual Bike Week to encourage the use of the bicycle as a legitimate transportation mode.

It is recommended that Prince George develop a commuter cycling map suitable for distribution to the general public (i.e., a route-finding map rather than the planning map included in this report), illustrating: existing and proposed bicycle facilities, road names, landmarks, popular destinations, etc.

It is recommended that Prince George initiate discussions with BC Transit to install bicycle racks on buses.

See Appendix C for a discussion of Bike Week.

2.1.4 Transportation Demand Management

Transportation Demand Management (TDM) involves active intervention to change the travel behaviour of a constituency. At the planning level, effective TDM includes a variety of strategies to make more efficient use of the existing transportation network. These strategies include increasing alternatives to the single occupancy vehicle, discouraging automobile use, removal of subsidies for automobile use, reducing the need for travel, and establishing support systems to allow for alternative transportation use.

Transportation demand management planning is a relatively new concept, though many of the strategies have been in use in other aspects of planning. Effective TDM planning involves a large range of strategies with a number of different partners at various levels of government and industry. This report focuses on those strategies involving cycling as the means to effect the strategy. Additional details are provided in Appendix D.

Transportation demand management strategies should:

- Encourage alternative forms of transportation, particularly cycling;
- Reduce municipal costs by reducing new road construction and using a transportation priority system of walking, cycling, transit, goods movement, and single occupancy vehicle when considering new projects;
- Encourage more efficient land use patterns by integrating commercial and residential land use, thus reducing the need to drive and encouraging more people to walk or cycle;

- Reduce user travel time and user costs; and
- Reduce traffic congestion, air pollution, and parking problems

It is recommended that the City of Prince George consider the principles of Transportation Demand Management in all city programs, with the objective to improve bicycle use as a transportation mode.

2.2 WHY PLAN FOR BICYCLES IN PRINCE GEORGE?

Prince George is currently experiencing increased traffic volumes and has identified the need for the development of a stronger city transportation network. To ensure that this planning proceeds in a manner which will have a minimal impact on the environment and quality of life, factors which attract residents to Prince George, the City is reviewing its land use policies and transportation plans. One of the focuses of the review is to provide for alternative modes of transportation.

Planning for non-motorized travel can address a number of objectives, including increasing safety and comfort for pedestrians and cyclists, improving travel options for non-drivers, reducing conflicts between motorists and other road users, reducing automobile traffic, increasing recreational activity which leads to a healthier population, encouraging non-motorized tourism activities, more equitable transportation, and creating more liveable communities. Many of these objectives can benefit everyone regardless of how much they use non-motorized modes.

With over 120 parks within the city limits, the newest free-standing university in Canada, a multiplex centre at Exhibition Park, an art gallery and aquatic centre, numerous schools and a compact city centre, Prince George offers great potential for the development of an alternative transportation network which combines existing roadways and trails systems to service both commuters and recreational cyclists. The newly developed City-Wide Trail System Master Plan commissioned by Leisure Services contributes greatly to a comprehensive transportation plan. The Cycling Network Plan presented here is building on existing plans and proposed routes and expanding these current plans to include a suitable road network.

A cycling network plan is not just a map with lines showing routes, lanes, paths and trails. It also addresses the issues of bicycle facility planning, traffic management and traffic calming, non-motorized safety education programs, improving enforcement of traffic laws relating to non-motorized travel, encouraging non-motorized transport for transportation and recreation, the co-ordination of non-motorized transportation improvements with other community plans, and the integration of non-motorized travel with other forms of transportation.

As the largest city in the north, with a population of over 81,000, a city that already has a strong cycling community who take an active interest in cycling instruction and

development, Prince George already has many advantages for cyclists. There are also many barriers, such as terrain and weather, low density residential developments at a distance from employment centres, and a road network designed almost exclusively for automobile use. At the same time, the population is anxious to develop active lifestyles and increased recreational access to park and wilderness areas.

With the development of a Transportation System Planning Study for Prince George, it is cost-effective and economically justifiable to incorporate bicycling into the network. Such an all-inclusive approach to transportation planning will identify opportunities for non-motorized road users as land-use planning is harmonized with transportation planning, and that good use is being made of existing infrastructure.

3. INVENTORY OF EXISTING FACILITIES

The following analysis is based on field observation and discussion with municipal and provincial planners and engineers, and selected local cyclists.

3.1 DESIGNATED CYCLING FACILITIES

1. **Foothills Boulevard.** This Bicycle Route along Foothills Boulevard consists of a reasonable shoulder on the road and is identified by limited signage. This route is under-utilized due in large part to a lack of residential development on the west side of Foothills Boulevard, and the grades of the boulevard up to the Hart Highlands area. Despite the greater traffic volumes, most cyclists prefer the easier grades and the more direct route on the parallel Highway 97 north of the river. Foothills Boulevard does offer direct access to the University of Northern British Columbia and the Cranbrook Hill Recreation Area.
2. **Shoulder bicycle lanes on Tabor and Ospika Boulevard.** Tabor and Ospika Boulevards both have good curb widths and in most sections, a reasonable shoulder width. However, the shoulders are neither continuous nor consistent in width. Despite the inconsistency of facilities on these routes, cyclists favour them because of the width of the lanes.
3. **Shoulder bicycle lanes on University Way and Tyner Boulevard.** The shoulder on University Way and on Tyner Boulevards serves as a de facto bicycle lane. Both these routes are well used as access roads into the University of Northern British Columbia.
4. **Taylor Drive bicycle route.** Taylor Drive is an on-road scenic route along the Fraser River which links with the off-road Heritage River Trail and provides a good transportation link into the downtown core. Taylor Drive is cut off from through motor vehicle traffic by the park, but is continuous for cyclists.
5. **North Nechako Road bicycle route.** This road is designated as a bicycle route and is gradually being upgraded as the road is scheduled for upgrading. There is already a shoulder on both sides of this road between Preston and Churchill. The road has a gentle grade and runs between the John Hart Bridge to beyond Foothills Boulevard. Although the bicycle route is currently only to Foothills Boulevard, future demand could allow for the extension of this route to the city limits.
6. **8th Avenue recommended alternative.** 8th Avenue is the recommended alternative to the 5th Avenue section which prohibits cycling. Other than directing cyclists to use this route as an alternate, no street enhancements have been undertaken to encourage cyclists to use this route. 8th Avenue is uninterrupted by stop signs for all traffic in the east-west direction. 8th Avenue does not provide a

direct route into the downtown core as it terminates at Laurier Crescent and is not well used by cyclists.

7. **Patricia Boulevard.** A short section of Patricia Boulevard is designated as a cycling route. This section extends from Victoria Street east along Patricia to Queensway.

3.2 BRIDGES

Some of the bridges are not under City jurisdiction, and therefore are not directly covered under this Plan. The Ministry of Transportation and Highways is governed by a Provincial Cycling Policy (see Appendix K) which it uses as a guideline and standard for all up-grade and new construction projects.

1. **Foothills Bridge.** This bridge is the newest one, until the twinning of the John Hart Bridge is completed, and it consists of four lanes (two in each direction) with a shoulder for bicycles and a sidewalk for pedestrians. The Foothills Bridge was built by the Ministry and then divested to the City. Cyclist find this bridge easy to use as there is no difference in road positioning between the Foothills Boulevard and the bridge deck.
2. **John Hart Bridge.** This bridge is currently being twinned by the Ministry, and the problems described below will no longer exist once cyclists have access to the 2.3 metre wide multi-use sidewalk on the deck of the new bridge. The existing bridge is two-lane connecting the North and South parts of Highway 97 which is four lanes on either side of the bridge. The two lanes on the bridge deck are narrow and the sidewalks are narrow. To traverse this bridge, cyclists are currently using both the sidewalks and the roadway. Neither the shoulders nor the sidewalks provide adequate width for cyclists. The sidewalks are too narrow to share with pedestrians, so cyclists using the sidewalks are impeded when there are also pedestrians crossing the bridge. Except at very high volumes, most cyclists using the roadway and the shoulders impede motor vehicle traffic.
3. **Cameron Street Bridge.** This is a single-lane City bridge with alternating traffic controlled by timed signals. The sidewalk is too narrow to share with pedestrians and cyclists using the sidewalks are often required to dismount and walk when there are pedestrians present. Many cyclists resort to using the roadway. Because of the controlled access, and the short length of the bridge span, cyclists are often able to maintain the same speed as the motor vehicle traffic when using the roadway.
4. **Grand Trunk Pacific Bridge.** Currently, this CN Rail bridge is only used for train traffic. There is a wide sidewalk on both sides of the bridge linked to right of

way access at both the north and south ends. Currently there is no road or trail continuity.

5. **Yellowhead Bridge.** The Yellowhead Bridge, like the Foothills Bridge allows cyclists to remain on the shoulder of the roadway when crossing the bridge deck. The shoulder is sufficiently wide to make this bridge crossing very comfortable for cyclists. It also has wide sidewalks for those cyclists who prefer to use the sidewalks. The Yellowhead is a Ministry bridge.
6. **Simon Fraser Bridge.** Most cyclists use the sidewalks, despite their narrow width, to get across this bridge as the shoulder on roadway narrows significantly as it crosses the bridge. The high volume of large trucks using Highway 97 and the Simon Fraser Bridge to access the downtown core combined with limited space make this bridge uncomfortable for most cyclists. This is also a Ministry bridge.

3.3 HIGHWAYS

The highways are not under City jurisdiction, and therefore are not directly covered under this Plan. The Ministry of Transportation and Highways is governed by a Provincial Cycling Policy (see Appendix K) which it uses as a guideline and standard for all up-grade and new construction projects.

1. **Highway 97 North of Highway 16.** Highway 97 North provides direct access for a large number of people from the residential areas of Valleyview and Hart Highlands to the employment centres to the east of the Highway and in the downtown core. There is a good shoulder on the Highway going north and there are few motor vehicle-bicycle conflicts. There is also a sidewalk which runs along the highway for part of the distance. Cyclists are currently using both the highway shoulder and the sidewalk to travel north from the downtown core and from the east.

A significant issue with the Highway is for southbound traffic, north of the river. The shoulder narrows significantly towards the bottom of the hill at a point where the speed of traffic, including cyclists on the downhill, creates a very uncomfortable situation for all road users. This has resulted in some cyclists resorting to wrong-way riding on the shoulder of the highway south of Perrin Road.

2. **Highway 97 South of Highway 16.** Highway 97 South is not well used as a cycling route. Those cyclists who do use it tend to be cyclists travelling long distance for recreational purposes or on fitness training rides. Once across the Simon Fraser Bridge, there are adequate and consistent shoulders.

3. **Highway 16.** Highway 16 offers good access to College Heights, the downtown core, the university and the Cranbrook Hill recreation area for cyclists. Cyclo-tourists and other longer distance cyclists use Highway 16 to enter and exit the City. There are substantial traffic volumes on the designated Highway 16 alignment through the city. Some through traffic going west diverts onto Queensway and Ferry Avenue, whereas eastbound traffic tends to divert onto Ferry or onto Patricia Boulevard to join Queensway making both these routes heavy volume routes. The adequate shoulder widths allow cyclists to use Highway 16, Queensway, Ferry, and Patricia without any significant conflicts.

3.4 OTHER EXISTING ROUTES

1. **15th Avenue frontage road.** 15th Avenue is the other avenue where cyclists are restricted to the frontage section between West Central and Nation. Not many cyclists were cognizant of, or compliant with, the ban probably because of the short distance involved and the availability of space on 15th Avenue. 15th Avenue turns into University Way and provides direct access to the University of Northern British Columbia. 15th Avenue is also one of the main routes for cyclists accessing the College of New Caledonia.
2. **Domano Boulevard.** Domano Boulevard is currently used by cyclists as a link from the College Heights development area to access the University and the Cranbrook Hill Recreation Area. The Boulevard provides sufficient lane width to accommodate cyclists comfortably.

4. RECOMMENDED UPGRADES TO EXISTING FACILITIES

This chapter indicates recommended changes to existing bicycle routes, and is divided into: designated cycling facilities, bridges, highways, and other existing routes. The following chapter identifies new routes to be designated. Recommendations from both chapters are presented on Map 1.

On all facilities, the recommendations are for uni-directional facilities on both sides of the road with cyclists travelling in the same direction as other road users. The design standards referenced in this document are recommendations only and should be reviewed at the time of implementation to consider traffic volumes, cyclist volumes, safety, current Transportation Association of Canada (TAC) guidelines, and costs. All recommendations are subject to revision at the final design stage. See Appendix E for specific design guidelines and Appendix G for samples of signs that are referenced in this document.

In several locations, it is intended to have both on-street and off-street facilities available for cyclists. This allows cyclists to choose which option they prefer. This choice may be influenced by destination, age, skill, or preference. In order to provide both on- and off-road facilities, it will be necessary for a current City By-Law, which requires cyclists to use an adjacent path rather than the roadway, to be repealed (By-Law 52.3).

4.1 DESIGNATED CYCLING FACILITIES

4.1.1 Foothills Boulevard

The Foothills Boulevard bicycle route should extend from Chief Lake Road in the north to 18th Avenue and eventually Ferry Avenue (proposed extension) to the south.

- 1. It is recommended that this route be signed as a bicycle route using TAC's Guide and Information Sign, Bicycle Route Marker Sign (example is TAC sign IB-23). These signs should be placed at intervals frequent enough to remind motorists of the presence of cyclists. Signage serves many purposes – it informs cyclists of preferred routes; it alerts motor vehicle drivers to expect more cyclists on these routes; and it provides legitimacy for the bicyclist as a user of the road network.**
- 2. It is also recommended that the route be given a name and be linked to a bicycle route network map.**

Insert Map 1

In this situation, it is preferable to provide a Bicycle Route sign rather than bicycle symbol pavement marking. When Bicycle Symbols are applied to an existing shoulder, emergency parking is limited or interferes with the continuity of the shoulder bicycle lane. Pavement markings will be obscured by sand and snow for several months of the year.

4.1.2 Bicycle Lanes on Tabor and Ospika Boulevards

The bicycle lanes on Tabor should extend from the junction with Otway Road in the north to 15th Avenue in the south. On Ospika, the bicycle lanes should extend from the extension with Otway and continue west to Foothills and at some later date further west to the city boundaries. There is a future road alignment planned to extend Ospika Boulevard to Marleau Road and south to a proposed Parkridge Boulevard. At that time, the bicycle lanes should be included in the development design.

- 1. It is recommended that Tabor, and Ospika Boulevards be signed as bicycle routes (TAC IB-23) and form part of a comprehensive North-South bicycle route system. The routes should be named and linked to a bicycle route network map.**
- 2. It is further recommended that the curb lane width along the entire length of both of these boulevards be gradually upgraded to meet the minimum standard of 4.0 m, excluding gutter.**
- 3. It is recommended that these boulevards be designated as hybrid bicycle lanes. A hybrid bicycle lane has no white line to differentiate the bicycle lane from the rest of the roadway. Effecting a hybrid bicycle lane will require the removal of the existing occasional white lines, and installing a bicycle stencil applied as a pavement marking in accordance with TAC Bikeway Traffic Control Guidelines for Canada. These markers are 1.0 m wide with an elongated length of 2.0 m and are placed at 200 m intervals.**
- 4. It is recommended that when the future road link to extend Ospika Boulevard to Marleau Road and Parkridge Boulevard is developed 4.0 metre wide curb lanes be included in the development plans.**
- 5. It is recommended that the bicycle lanes be extended to Otway to Foothills and west to the city boundaries.**

Where on-street parking is allowed, the pavement marking should be located at least 2.4 m from the gutter. This will serve to direct cyclists as to where they should be riding on the road in order to avoid the parked cars.

In addition, at all major intersections where right turns are allowed, the bicycle stencil should be placed at the white stop line, 2.4 m. from the gutter to indicate where cyclists should be stopping.

4.1.3 Shoulder Bicycle Lanes on University Way and Tyner Boulevard

The Shoulder bicycle lanes on University Way and Tyner Boulevard extend from 15th Avenue in the north to Highway 16 in the south. Domano Boulevard is suggested as an extension to this route.

- 1. It is recommended that the bicycle lanes on University Way and Tyner Boulevard be signed as a bicycle route, using the TAC IB-23 signs.**
- 2. It is also recommended that the bicycle route be given a name linked to a bicycle route network map.**
- 3. It is a recommended that a consistent minimum curb lane width of 4.0 m be maintained along the length of University Way and Tyner Boulevard. In addition, it is recommended that a bicycle lane be installed. A bicycle lane delineates the edge of a travelled lane dedicated for bicycle use. The bicycle lane is defined by lane lines and should not be less than 1.5 m. Bicycle lanes lines are solid, white in colour, with a width of 100 mm, except at intersection where the line becomes dashed to allow right-turning traffic to merge to the right. The dashed section should commence 15 m before the stop line with a 1.0 m segment and 1.0 m gap.**

It is recognized that the Manual for Uniform Traffic Control Devices for Canada identifies wide solid white lines for the full-time with-flow reserved lanes (200 mm to 300 mm), however, the broad width of this line may present hazardous situations for cyclists in wet conditions.

4.1.4 Taylor Drive Bicycle Route

The existing Taylor Drive bicycle route is unofficial at this time and parallels the Heritage River Trail. The suggestion is to provide an on-road option linking with the Heritage River Trail from the south entrance to Fort George Park, through the Park and continuing along Taylor Drive to the junction with (Upper) Patricia Boulevard

- 1. It is recommended that the Taylor Drive bicycle route be signed as a bicycle route, using the TAC IB-23 signs.**
- 2. It is also recommended that the bicycle route be given a name, and that the links with the Heritage River Trail be well indicated.**

The Heritage River Trail offers other links to on-road routes. At these access points, the same type of signage should be used to direct cyclists and indicate the on-road, and off-road choices.

4.1.5 North Nechako Road Bicycle Route

The North Nechako Road bicycle route runs between Foothills Boulevard to the west and Highway 97 to the east. It is suggested that this route be extended to Cameron Street.

- 1. It is recommended that the North Nechako Road bicycle route be signed as a bicycle route, using the TAC IB-23 signs, and that signing be extended westward to the City boundary.**
- 2. It is also recommended that the bicycle route be given a name.**

It is felt that bicycle routes signs on this road will be adequate as the road lane widths appear to be sufficient to allow sharing of the lane. The recommended lane width for “comfortable” sharing of motor vehicles and bicycles is a minimum of 4.0 m.

4.1.6 5th Avenue Recommended Alternative

Currently, the route on 8th Avenue (as the recommended alternative to the bike-prohibited sections of 5th Avenue) extends from Highway 97 to Laurier Crescent.

- 1. It is recommended that 10th Avenue be designated as the alternative to 5th Avenue rather than 8th Avenue. This is a signage change only. Road improvements are not required.**

4.2 BRIDGES

It should be noted that most of the bridges fall under the jurisdiction of the Ministry of Transportation and Highways. The Ministry has a provincial Cycling Policy in place (see Appendix K) which provides guidelines for how to accommodate cyclists on provincial facilities. The Ministry follows its policies during up-grading and during new construction.

In order to minimize the hazard to all bridge users:

- 1. It is recommended that the City winter maintenance standards be reviewed and, where warranted, increase the frequency of snow removal and sweeping on all the bridge surfaces and their sidewalks.**
- 2. It is recommended that the City request the Ministry to do the same for their bridges.**

4.2.1 Foothills Bridge

The only enhancement necessary for this City bridge would be to add a Share the Road sign to warn motorists that they are to provide adequate driving space for cyclists and other vehicles on the road. The sign also serves to advise motorists and cyclists to use extra caution on the upcoming section of the road. The Share the Road tab can also be added.

- 1. It is recommended that the City install a Share the Road sign (TAC WC-47) before the Foothills Bridge on both the north and south sides.**
- 2. It is further recommended that the Share the Road tab (TAC WC-47S) be installed below the sign.**

4.2.2 John Hart Bridge

When the twinning of the John Hart Bridge is completed, there will be a 2.0 metre shoulder/bicycle lane on either side, in addition to the existing sidewalk on the northbound bridge and a new 2.3 metre wide multi-use sidewalk on the new southbound bridge. This will provide adequate space for bicyclists to use the bridge, provided there is regular maintenance and sweeping.

- 1. It is recommended that the City request that the Ministry install a Share the Road sign (TAC WC-47) before both the John Hart bridges (i.e. northbound and southbound).**
- 2. It is further recommended that the Share the Road tab (TAC WC-47S) be installed below the sign.**
- 3. It is recommended that when the northbound bridge is slated for upgrading, that the City encourage the Ministry to investigate the possibility that provision be made for cyclists on the road and on the sidewalk, similar to the southbound bridge.**
- 4. It is recommended that the City request that the Ministry install signage indicating that cyclists should use the sidewalks and give way to pedestrians (TAC RA-8).**

4.2.3 Cameron Street Bridge

There is an opportunity to convert the City's Cameron Street Bridge to a pedestrian- and cyclist-only bridge once an alternative crossing has been provided. This would also provide a link to the Heritage River Trail. Installation of a barrier for motor vehicle traffic and some resurfacing may be required to upgrade the bridge surface for bicycle use, but

otherwise very little would have to be done to this bridge. However, implementation will depend on other issues such as structural integrity, on-going maintenance costs, etc.

- 1. It is recommended that consideration be given to reserving the existing Cameron Street Bridge for non-motorized traffic only, once a replacement structure has been built.**
- 2. Should the new bridge use the same alignment as the old bridge, it is recommended that the new bridge accommodate cyclists on the roadway in a designated bicycle lane, and that the sidewalks be sufficiently wide (4 metres) to accommodate cyclists who prefer to use the sidewalk.**

It should be recognized that no recommendations have been included in the Plan to address the access of cyclists to/from the existing Cameron Street Bridge. It is more appropriate that this issue be addressed once a decision has been made on the alignment of a new bridge and the resulting action to be taken with the old bridge.

4.2.4 Yellowhead Bridge

The only enhancement necessary for this bridge would be to add a Share the Road sign to warn motorists that they are to provide adequate driving space for cyclists and other vehicles on the road. The sign also serves to advise motorists and cyclists to use extra caution on the upcoming section of the road. The Share the Road tab can also be added.

- 1. It is recommended that the City request that the Ministry install a Share the Road sign (TAC WC-47) before the Yellowhead Bridge on both the north and south sides.**
- 2. It is further recommended that the Share the Road tab (TAC WC-47S) be installed below the sign.**

4.2.5 Simon Fraser Bridge

When this bridge is slated for upgrading, the City should pursue the idea with the Ministry of providing adequate bicycle space on the roadway, following provincial policy, similar to the provision on the new John Hart Bridge.

- 1. It is recommended that the City request that the Ministry install a sign that indicates that cyclists should use the sidewalks and give way to pedestrians (TAC RA-8)**
- 2. It is further recommended that at a time in the future when the bridge is slated for upgrading, that a minimum 2.0 m shoulder, as per provincial policy, be added to accommodate cyclists on the roadway.**

4.3 HIGHWAYS

As stated previously, the highways are not a City jurisdiction and therefore are not directly covered under this Plan. The Ministry of Transportation and Highways is governed by a provincial Cycling Policy (see Appendix K) which it uses as a guideline and standard for all up-grade and new construction projects.

4.3.1 Highway 97

There are sections of Highway 97 which have a sub-standard (less than 2.0 m) shoulder width, which creates a problem for cyclists.

In addition, consideration should be given to providing paved access through McMillan Regional Park from Hoferkamp Road to Prince George Pulp Mill Road for cyclists who wish to access the Cameron Street Bridge. This would require the construction of a 4 metre wide paved connection with signage for both northbound and southbound cyclists. It may also require improved access to Hoferkamp by southbound traffic. The maximum grade for this connector should be no more than 8 percent.

This connector will be particularly useful if the Cameron Street Bridge is converted to cyclist and pedestrian use only and would discourage the current practice of wrong-way riding on the northbound highway merge lane from Cameron Street.

1. **It is recommended that the City request that the Ministry upgrade the shoulder of Highway 97 to a minimum 2.0 m width on both the east and west sides.**
2. **It is recommended that an off-road paved bicycle path be constructed between Hoferkamp Road and Prince George Pulp Mill Road, through McMillan Regional Park. This bicycle path should be 4.0 m wide and be graded to not more than 8 %.**
3. **It is recommended that the off-road paved bicycle path be signed as a southbound connection with bicycle route signs. Other signs which should be erected are at Hoferkamp, alerting drivers to crossing pedestrians and cyclists (TAC WC-46 & TAC WC-7S).**
4. **It is recommended that the 4.0 m sidewalk be extended as a connector to Cameron Street.**
5. **It is recommended that signs be developed to direct southbound cyclists on Highway 97 to use the sidewalk connector to access the Cameron Street bridge.**

It should be noted that the Ministry encourages the City to establish a separate parallel bicycle route along Highway 97 north of the Nechako River.

4.3.2 Highway 16

The Heritage River Trail crosses Highway 16, connecting Strathcona Park and Carrie Jane Grey Park. Despite being the continuation of the Trail, this is a poor crossing location due to grades, vehicle speeds, volume of traffic, and poor sight lines.

An underpass has been recommended in the Trails Network Plan and is supported by both the City and the Ministry as a safe crossing solution.

1. **It is recommended that the planned underpass at this location be lit, well maintained to eliminate the build-up of debris, of sufficient height to accommodate cyclists, and with approach grades which do not exceed 4%.**

4.4 OTHER EXISTING ROUTES

4.4.1 15th Avenue Frontage Road

1. **It is recommended that cyclists be allowed to travel directly along 15th Avenue without having to divert onto the frontage road.**
2. **It is also recommended that the curb lane on 15th Avenue westbound be widened to accommodate better lane sharing with cyclists.**
3. **It is recommended that a pedestrian/cyclists controlled traffic signal be added at 15th Avenue and Jarvis to allow cyclists who have been following the trails network to the south to cross and to access 15th Avenue.**

4.4.2 Domano Boulevard

Domano Boulevard forms an extension of the University Way/Tyner Boulevard bicycle route and carries significant cycling traffic up into the residential area of College Heights.

1. **It is recommended that Domano Boulevard be signed as an extension of the University Way/Tyner Boulevard bicycle route, using the TAC IB-23 signs.**
2. **It is also recommended that the bicycle route be given the same name as the University Way/Tyner Boulevard bicycle route and this be linked to a network map.**
3. **It is recommended that a consistent minimum curb lane width of 4.0 m be maintained along the length of Domano Boulevard. In addition, it is recommended that a bicycle lane be installed.**

5. NEW ROUTES AND OTHER ISSUES

This chapter provides recommendations for the implementation of new bicycle routes, which are shown on Map 1. It concludes by addressing non-network issues such as by-laws, consultation, etc. Design guidelines are provided in Appendix E.

On all facilities, the recommendations are for uni-directional facilities on both sides of the road with cyclists travelling in the same direction as other road users.

In several locations, it is intended to have both on-street and off-street facilities available for cyclists. This allows cyclists to choose which option they prefer. This choice may be influenced by destination, age, skill, or preference. In order to provide both on- and off-road facilities, it will be necessary for a current City By-Law, which requires cyclists to use an adjacent path rather than the roadway, to be repealed (By-Law 52.3).

5.1 NEW EAST-WEST CYCLING ROUTES

5.1.1 Chief Lake Road

Chief Lake Road forms an ideal connector between Foothills to the west and Highway 97 to the east. It will also eventually link with Kelly Road North via Peters Road and Killy Avenue.

1. **It is recommended that Chief Lake Road be signed as a bicycle route (TAC IB-23) and form part of a comprehensive East-West bicycle route system. The routes should be named and linked to a bicycle route network map.**
2. **It is further recommended that the curb lane width along the entire length of this road be upgraded to meet the minimum standard of 4.0 m excluding the gutter.**

5.1.2 Austin Road West and East

Austin Road West and East forms an ideal connector between the Foothills Boulevard, the Glengarry Road Extension, Highway 97 and Old Summit Lake Road. The current road does not extend as far east as Old Summit Lake Road, however, there are plans to open up this area for new subdivisions and to put the road through when the development plans have been approved.

Austin Road is a bus route and it provides access to the Elk Centre in Heather Road Park and to the Hart Shopping Mall.

1. **It is recommended that Austin Road West and East be signed as bicycle routes (TAC IB-23) and form part of a comprehensive**

East-West bicycle route system. The routes should be named and linked to a bicycle route network map.

2. **It is further recommended that the curb lane width along the entire length of this road be upgraded to meet the minimum standard of 4.0 m, excluding gutter.**

5.1.3 Noranda Road–Noranda Road West–Sloan Road–Shamrock Road–Silvercrest Road–Glengarry Connector–Glengarry Road–Highland Drive

This on-road, off-road east-west connector will provide links between residential areas (Hart Highlands) to employment centres (Northwood Pulp Mill), plus access to Foothills Boulevard via Austin Road and Highway 97. A small connector is required between Noranda Road West and Sloan Road

1. **It is recommended that Noranda Road – Noranda Road West – Sloan Road – Shamrock Road – Silvercrest Road – Glengarry Connector – Glengarry Road – Highland Drive (both north and south) be signed as bicycle routes (TAC IB-23) and form part of a comprehensive East-West bicycle route system. The routes should be named and linked to a bicycle route network map. It may not be necessary to install signs along the off-road portion of the route, but access to the off-road sections from the road should be signed.**
2. **It is recommended that a bicycle lane be installed along the Noranda, and Highland Road portions of this route. The continuation on Glengarry would not be differentiated by a lane, but by bicycle route markers.**

5.1.4 Northwood Pulpmill and Prince George Pulpmill Roads

Both of these roads are key connectors to the large employment centres for the region. The characteristics of these two roads are very similar, heavy truck volumes, heavy traffic volumes at certain times of the day, similar lane widths, and limited shoulders.

1. **It is recommended that Northwood Pulpmill and Prince George Pulpmill Roads be signed as bicycle routes (TAC IB-23) and form part of a comprehensive East-West bicycle route system. The routes should be named and linked to a bicycle route network map.**
2. **It is further recommended that the shoulder width along the entire length of both of these roads be upgraded to meet the minimum standard of 2.0 m. A shoulder bicycle lane could then be installed along both of these routes.**

5.1.5 1st Avenue – Ospika Boulevard – 2nd Avenue

1st and 2nd Avenues could provide an important cross-town link between Foothills Boulevard and the downtown core. This link would require the construction of a cyclists/pedestrian overpass over the Highway where it cuts down to cross the river. 1st Avenue links with the Foothills Boulevard and Tabor Boulevard. 2nd Avenue links with Ospika and the downtown core, plus it links to some of the trails.

- 1. It is recommended that 1st and 2nd Avenue be signed as bicycle routes (TAC IB-23) between Foothills Boulevard to the west and Victoria Street to the east and form part of a comprehensive East-West bicycle route system. The routes should be named and linked to a bicycle route network map.**
- 2. On 1st and 2nd Avenues between Foothills Boulevard and Carney Street it is recommended that traffic calming devices be considered to discourage non-local motorized traffic from using the route.**
- 3. It is recommended that the crossing over Highway 97 be limited to pedestrians and cyclists to further discourage through motor vehicle traffic and to reduce the costs of construction of this overpass.**

See Appendix F for a discussion of traffic calming.

5.1.6 Cameron Street – 1st Avenue – Victoria Street

To provide a direct link between the Cameron Street Bridge and the downtown core, for those cyclists coming from or going to the north, 1st Avenue should be designated as a cycling route.

- 1. It is recommended that 1st Avenue be signed as bicycle routes (TAC IB-23) between the Cameron Street Bridge to the west and Victoria Street to the east and form part of a comprehensive East-West bicycle route system. The routes should be named and linked to a bicycle route network map.**

5.1.7 5th Avenue – Ospika Blvd – Rainbow Avenue – 10th Avenue - McBride Crescent – 10th Avenue

5th Avenue from Foothills to Ospika could provide the start of an east-west connector into the downtown core. Currently, there is sufficient road width on this part of 5th to allow for road sharing. The only enhancement would be to sign the route.

Already, cyclists travelling east towards the downtown core tend to use 10th Avenue instead of 8th Avenue carrying on south on McBride, onto Winnipeg and into the

downtown area. This is the route of choice because of its continuity and directness. Some traffic calming enhancements would reduce motor vehicle traffic on this route and alleviate some of the difficulties with crossing major arterials.

- 1. It is recommended that 5th Avenue – Ospika Blvd – Rainbow Avenue – 10th Avenue - McBride Crescent – 10th Avenue be signed as bicycle routes (TAC IB-23) between Foothills Boulevard to the west and Patricia Boulevard to the east and form part of a comprehensive East-West bicycle route system. The routes should be named and linked to a bicycle route network map.**
- 2. On 5th Avenue between Foothills Boulevard and Ospika Boulevard and on Rainbow Drive, it is recommended the occasional road sharing sign be erected (TAC WC-47).**
- 3. It is recommended that on 10th Avenue between Rainbow Drive and McBride Crescent traffic calming devices be considered to discourage non-local motorized traffic from using the route.**

5.1.8 15th Avenue – Patricia Boulevard

15th Avenue provides an ideal east-west connector to the University Way/Tyner Boulevard/Domano Boulevard north-south bicycle route. 15th Avenue is a high volume road with sufficient curb width bicycle and motor vehicle traffic to share the lane. 15th Avenue provides direct access to the Exhibition Grounds and Parkwood Mall and indirect access to the College of New Caledonia. 15th Avenue turns into Patricia Boulevard. There is an opportunity to link (Upper) Patricia Boulevard with the Heritage River Trail.

- 1. It is recommended that 15th Avenue – Patricia Boulevard be signed as bicycle routes (TAC IB-23) between University Way to the west and Taylor Drive to the east and form part of a comprehensive East-West bicycle route system. The routes should be named and linked to a bicycle route network map.**
- 2. On 15th Avenue between University Way and Heritage River Trail, it is recommended the occasional road sharing sign be erected (TAC WC-47).**

5.1.9 22nd Avenue – Griffiths – Winnipeg Street

22nd Avenue will eventually link directly with the Foothills Boulevard north-south route. It also provides direct access to the Exhibition Grounds and the College of New Caledonia on a quieter route than 15th Avenue.

After 22nd Avenue crosses Highway 97, it links to Winnipeg via Griffiths to continue into the downtown core. Once an extension of the Heritage River Trail is completed in this area, this route will provide a link with the City-Wide Trails Network.

This route will also be linked with the north-south Carney Street route to the Cameron Street bridge.

- 1. It is recommended that 22nd Avenue – Griffiths – Winnipeg Street be signed as bicycle routes (TAC IB-23) between University Way to the west and Highway 16 to the east and form part of a comprehensive East-West bicycle route system. The routes should be named and linked to a bicycle route network map.**

5.1.10 Ferry Avenue – Uplands Street – Heritage River Trail – Spruce Street (alternate Milburn to Spruce, Heritage to Queensway)

There is a planned extension of Foothills Boulevard south of 18th Avenue to Ferry Avenue. This extension will link well with Ferry Avenue to Uplands Street allowing for a connection to the Heritage River Trail and Spruce Street or Queensway. An on-road alternative would be Milburn to Spruce. The commuter cyclist may also want to take Ferry Avenue directly to Queensway. Although this is a truck route for trucks travelling on Highway 16 to be able to by-pass much of the downtown core, both Ferry Avenue and Queensway have sufficiently wide lanes for cyclists to share the road with the heavy traffic.

- 1. It is recommended that Ferry Avenue – Uplands Street – Milburn Avenue – Spruce Street be signed as bicycle routes (TAC IB-23) between Ospika Boulevard to the west and 15th Avenue to the north and form part of a comprehensive East-West bicycle route system. The routes should be named and linked to a bicycle route network map.**
- 2. It is also recommended that when the Foothills Boulevard is extended to Ferry Avenue, that the curb lane widths and shoulder widths be consistent with those on both the Foothills Boulevard and Ferry Avenue and that this extension be signed as part of the bicycle route.**
- 3. On Ferry Avenue between Ospika Boulevard, Uplands Street and Queensway, it is recommended the occasional road sharing sign be erected (TAC WC-47).**
- 4. It is recommended that Uplands Street curb lane be standardized to meet the 4.0 m minimum width requirement for a shared lane.**

5. **As with all links to the Trails Network, it is recommended that curb cuts allow easy access from Uplands to the Heritage River Trail and from the Trail to Spruce Street and Queensway.**
6. **As Queensway is an alternate, it should also be signed with the occasional road sharing sign (TAC WC-47).**

5.1.11 Simon Fraser – Eton – McGill – O’Grady Road – Marleau Road – Bear Road – Henry Road – Park Drive – Parkridge Boulevard – Boundary Extension – Industrial Way – Pacific Street

The College Heights area is expanding rapidly. This primarily residential area will experience exponential growth and the resulting traffic congestion. The timing is good to influence the travel behaviour of residents by providing viable alternatives. An extensive trails network exists and is planned for this area. The proposed bicycle route would link with the Cranbrook Hill Trail Network via Gauthier Road to Kimball, and a road link from Park Road to Bunce Road.

There is another Fraser River crossing planned in the College Heights area. Once this is in place there will be access to the southern portion of Highway 97 and the BC Rail yards, a large employer.

1. **It is recommended that Simon Fraser – Eton – McGill – O’Grady Road – Marleau Road – Bear Road – Henry Road – Park Drive be signed as bicycle routes (TAC IB-23) from Domano Boulevard to the north to Bunce Rd in the south and form part of a comprehensive bicycle route system. The routes should be named and linked to a bicycle route network map.**
2. **It is recommended that a bicycle lane be installed along the Simon Fraser – Eton – McGill – O’Grady Road – Marleau Road – Bear Road – Henry Road – Park Drive portion of this route. This lane would then link with the recommended bicycle lane on Domano. A minimum bicycle lane width of 1.2 m should be maintained along this route.**
3. **It is also recommended that a bike lane connector be developed along the proposed road link between Park Drive and Domano Boulevard to form a loop for this bicycle route.**
4. **It is further proposed that another off-road link be established between Park Drive, across Highway 16 via Gauthier to the Kimball Road access to the Cranbrook Hill Trails.**
5. **When the additional crossing of the Fraser River is being planned, it is recommended that accommodation be provided for cyclist on the**

road with a 2.0 metre shoulder, and on the sidewalk by having 2.3 metres of width.

6. **When the access roads are being upgraded for this planned extension, cyclists should be accommodated on the road with a painted bicycle lane or shoulder with a minimum width of 2.0 metres.**
7. **Along the existing Industrial Way and Pacific Street, it is recommended that this road be signed as a bicycle route (TAC IB-23) between Boundary and Highway 97. This route should be named and linked to a bicycle route network map.**

5.1.12 Southridge Avenue – St. Lawrence Avenue – St. Lawrence Extension

Currently, Southridge and St. Lawrence Avenues link with Domano Boulevard and Marleau Road to form a loop through the College Heights area. Both Avenues have wide curb lanes and current traffic volumes are not excessive. There is a future plan to extend St. Lawrence to Henry Rd. to the west. This would link nicely with other on-road and off-road planned bicycle routes

1. **It is recommended that Southridge Avenue – St. Lawrence Avenue be signed as bicycle routes (TAC IB-23) from Domano Boulevard to the east to Marleau Road on the north west to form part of a comprehensive bicycle route system in the College Heights area. When the future extension of St. Lawrence Avenue is completed to Henry Road, this should also be signed as a bicycle route. The routes should be named and linked to a bicycle route network map.**
2. **It is recommended that a bicycle lane be installed along Southridge Avenue and St. Lawrence Avenue. This lane would then link with the recommended bicycle lane on Domano Boulevard and on Marleau Road. A minimum bicycle lane width of 1.2 m should be maintained along this route.**

5.1.13 Ospika Extension

There is a road extension of Ospika planned between Marleau and the planned Parkridge Boulevard. This extension will be an integral link to the bicycle network planned for the College Heights area.

1. **It is recommended that the extension of Ospika is constructed with 4.0 metre wide curb lanes in order to accommodate cyclists and motorists in the same lane. This route should then be signed a bicycle route using TAC 1B-23 signs.**

5.1.14 20th Avenue between Carney St. and Queensway

20th Avenue can provide an important cross-town link between Carney St. and Queensway Street. This link would require little in the way of improvement, except to erect some informational signs. The road width should be a consistent 4.0 metres in the curb lane to allow for adequate sharing on this sub-arterial route.

- 1. It is recommended that 20th Avenue between Carney Street and Queensway Street be signed as a bicycle route (TAC IB-23) and form part of a comprehensive East-West bicycle route system. The route should be named and linked to a bicycle route network map.**
- 2. It is recommended that the curb width in this section be no less than 4.0 metres wide to accommodate bicycles and motor vehicle traffic in the same lane.**

5.1.15 Massey Drive

Massey Drive will be extended to connect with the planned Foothills extension. Currently Massey is a much-used, but wide transportation corridor which links the western part of the city with downtown core. The trail network will provide off-road links with Massey for part of the route.

- 1. It is recommended that Massey Drive be signed as a bicycle route (TAC IB-23) east along from Foothills to Highway 16 to link with Winnipeg to form part of a comprehensive bicycle route system. The routes should be named and linked to a bicycle route network map.**

5.1.16 Old Cariboo Highway – Giscome

This route will link between Highway 16 and the residential area to the east of the city. Currently, most of the cycling activity in this area is undertaken by fitness-oriented cyclists out on training rides.

- 1. It is recommended that Old Cariboo Highway and Giscome Road be signed as a bicycle route (TAC IB-23) south from Highway 16 and east along Giscome to form part of a comprehensive bicycle route system. The routes should be named and linked to a bicycle route network map.**

5.2 NEW NORTH-SOUTH CYCLING ROUTES

5.2.1 Blueberry Road – Glengarry Road Connector to Glengarry Road and Highland Drive – Kelly Road South

Currently, a gravel road provides access into some industrial areas west of Blueberry Road. In the future it is expected that this area will be developed with subdivisions and a road network will be established. This road network will link with the Foothills Boulevard and with Glengarry Road along the gas line right of way. Glengarry Road, Highland Drive, and Kelly Road South provide a good north-south link to Austin Road West. Highland Drive also provides a good link with Foothills Boulevard.

In the meantime, there are several trails proposed for this area. Once these trails are in place, they will link with the bicycle route network.

1. **It is recommended that the Prince George Cycling Network Plan link with the proposed Blueberry Road trails to complete a north-south connector between Blueberry Road in the south and Glengarry Road in the north.**
2. **It is recommended that the future Blueberry Road, the future Glengarry Road extension, the existing Glengarry Road, Highland Drive, and Kelly Road South be signed as bicycle routes (TAC IB-23) south from Austin Road to form part of a comprehensive bicycle route system in the Hart Highlands area. The routes should be named and linked to a bicycle route network map.**

5.2.2 Old Summit Lake Road

Old Summit Lake Road will form a link with Austin Road East to the north and Northwood Pulpmill Road to the south. This link will serve mostly as a recreational link until the connector between Austin Road East and Old Summit Lake Road is completed and because of the grades on this route.

1. **It is recommended that Old Summit Lake Road be signed as bicycle routes (TAC IB-23) south from Austin Road to form part of a comprehensive bicycle route system. The routes should be named and linked to a bicycle route network map.**

5.2.3 Carney Street

South of the Cameron Street Bridge, Carney Street is the major north-south transportation link between the bridge and Winnipeg Street.

1. **It is recommended that Carney Street be signed as bicycle routes (TAC IB-23) between the Cameron Street Bridge to the north and**

Winnipeg Avenue to the south and form part of a comprehensive North-South bicycle route system. The routes should be named and linked to a bicycle route network map.

5.2.4 Simon Fraser – Cowart Road – Vance Road – Westwood Drive

This north-south route links the rapidly expanding College Heights area with many recreational and educational facilities. It provides direct access to Prince George’s Golf and Curling Club, Recreation Place Park, Rotary Stadium, Prince George Playhouse, Pine Valley Golf Centre and the Pine Centre Mall as well as the College of New Caledonia.

This route links with the 22nd Avenue East-West route and the Ferry Avenue East-West route. It also links with Domano Boulevard/Tyner Boulevard/University Way via Trent Drive.

- 1. It is recommended that Simon Fraser - Cowart Road – Vance Road – Westwood Drive be signed as bicycle routes (TAC IB-23) between the Gladstone Drive to the south and 22nd Avenue to the north and form part of a comprehensive North-South bicycle route system. The routes should be named and linked to a bicycle route network map.**

5.2.5 Lansdowne Road – Williams Road

Stemming off of Cowart Road, a proposed link through the Cemetery would allow Cowart Road to link with Lansdowne Road, Williams Road, and Ferry Road to create another north-south route to the east of Highway 16.

- 1. It is recommended that non-motorized access be permitted through the Prince George Cemetery.**
- 2. It is recommended that the Cemetery access connector, Lansdowne Road and Williams Road be signed as bicycle routes (TAC IB-23) between the Ferry Avenue to the north and Cowart Road the south and form part of a comprehensive North-South bicycle route system. The routes should be named and linked to a bicycle route network map.**

5.2.6 North and South Blackburn

This route will link between Highway 16 (via Graves Street) and the residential area to the east of the city. Currently, most of the cycling activity in this area is undertaken by fitness-oriented cyclists out on training rides.

- 1. It is recommended that North and South Blackburn Road, and Graves Road, be signed as a bicycle route (TAC IB-23) south from**

Highway 16 to form part of a comprehensive bicycle route system. The routes should be named and linked to a bicycle route network map.

5.3 OTHER ISSUES

This section discuss other issues related to the Cycle Network Plan. In addition, a discussion of liability is presented in Appendix H.

5.3.1 Loop Detectors

Many traffic signals in urban areas are activated by detector loops embedded in the roadway. These traffic loops respond to the magnetic field induced by the metal in a vehicle in the detector loop. As a general principle, all loop detectors should be designed and the sensitivity ratings adjusted to detect bicycles as well as other motor vehicle traffic.

This can be facilitated by using a quadropole loop which minimizes the sensitivity outside the loop while increasing it within.

Detector loops are not generally installed across the entire lane and it is quite possible that a bicycle on the far right of the roadway will not be detected. Pavement markings, either stencils or dots, should be used on the right edge of the loop. This will allow cyclists to line up on the loop and activate the signal.

It is recommended that the City investigate the need to improve the sensitivity of all loop detectors at locations where no curb-side push button is provided for cyclists.

5.3.2 Pedestrian-Controlled Signals

At any pedestrian-controlled intersections, access to the push button should be made available to cyclists. This is often done by placing an additional push button at the right hand side of the road in the direction of travel of the cyclists. These buttons should be located at approximately the same height as pedestrian buttons and be identified with a cyclist motif.

It is recommended that the City should investigate the need for installation of curb-side push buttons for cyclists at all pedestrian-controlled lights.

5.3.3 Bridge Railing Heights

Currently there are not standards which relate to the height of bridge railings where the sidewalk is being used by cyclists. It can very disconcerting for a cyclist to feel that if

they were to fall from the bicycle, they could go over the railing. At the same time, it is not the intention to restrict the view of pedestrians and cyclists.

As a general rule, bridge railings should be at least 1.0 to 1.5 metres in height. This allows for adequate sight lines, while maintaining a sense of security.

It is recommend that all bridge railings be at least 1.0 – 1.5 metres in height.

5.3.4 By-Law Change

This report is designed to link with the Trail System Master Plan. In several places both on-road and off-road facilities have been recommended for the same road segment.

Currently, Prince George has a By-Law (No. 52.3) referring to the requirement of cyclists to be on an adjacent pathway where one exists. This by-law was written to correspond with the Motor Vehicle Act. The act has since been changed and this section has been repealed.

To allow for many of the recommendations to be incorporated, this by-law must be repealed or altered to allow cyclists the choice of using either an off-road pathway or the on-street bicycle route.

It is recommended that By-Law 52.3 be repealed to allow for on-street and off-road facilities to run along the same route.

5.3.5 Underpasses and Overpasses

Two significant structures have been recommended in this report – a new overpass connecting 2nd Avenue across the cut for Highway 97, and a new underpass to allow cyclists to continue along the Heritage River Trail under Highway 16.

It is recommended that the over- and underpasses be lit, particularly if covered, and of sufficient height to accommodate cyclists, well maintained to eliminate the build-up of debris, and with approach grades which do not exceed 4%.

5.3.6 End of Trip Facilities

Providing a means for cyclists to get to their destinations is only one link in the chain. Well-designed routes combined with education is key to encouraging cycling in a community.

People will not consider cycling if secure and convenient end of trip facilities are not available. Bicycle parking is perhaps the most important link in a comprehensive bicycle-

facilities design. If bicycle parking at destinations is not available, the incentive to use bicycles as a means of transportation is seriously undermined.

Where adequate parking is not provided, cyclists are forced to resort to locking their bicycles to the best available object, whether it is a post, a parking meter, or a staircase railing. This haphazard bicycle parking is undesirable as it produces bicycle clutter at building entrances and on streets and can be potentially dangerous to pedestrians.

A cyclist's prime concern is the security of the bicycle. Parking should, therefore, be close to the destination point whether it is an office, store, or recreation facility. Ideally, the bicycles should be in clear view of either the owner or a building security officer, or at very least, in open view of passers-by. Bicycle parking should not be hidden as this gives thieves the opportunity and the cover they require.

Bicycle parking may be considered under the same categories as those applied to motor vehicle parking facilities: controlled and uncontrolled access. Controlled-access bicycle parking includes bicycle lockers, and key-access underground parking (e.g. apartments, automated parking garages, and locked compounds). Uncontrolled-access parking is any situation where cyclists must leave their bicycle unattended or out of their view (e.g. bicycle racks). The selection of both location and type of parking facility is critical to ensuring that the needs of the cyclists are met.

It is recommended that end-of-trip facilities for cyclists be included as part of all development permits.

5.3.7 Links with the Trails Network

Prince George has a well-developed and well-documented plan for the development of off-road trails. Many of these trails, existing and proposed, will serve to complement an on-road cycling network plan while forming part of the overall network.

In all cases, where an off-road trail links with a roadway, curb cuts should be provided to facilitate the use of the trail and the transition between the two facilities. Where off-road and on-street routes exist in the same transportation corridor, it is important that the access and egress points are well-designed to facilitate the transitions. The design of these should occur at the detailed design phase.

It is recommended that wherever possible, off-road facilities be linked with on-road facilities.

It is further recommended that curb cuts and other design features be employed where off-road trails link with on-street cycling routes.

5.3.8 Municipal By-laws

Unlike zoning by-laws, municipal by-laws do not regulate the use of land but rather, regulate the actions of residents of the municipality. Such things as parking restrictions, traffic control or permitting bicycles on sidewalks would be covered by municipal by-laws. These tools can be very useful in reinforcing general policies regarding bicycles and bicycle facilities more through positive statements than through prohibitive statements. (e.g. do not restrict attaching bicycles to lampposts if there are no bicycle parking facilities provided).

There was very little evidence of bicycle parking facilities except at very new facilities. Development permits frequently include a requirement to include bicycle access and bicycle parking facilities. A city by-law for developments should go further than that. New developments should not only accommodate visitor parking through the provision of bicycle racks, but should also provide secure indoor parking for employees with change rooms and shower facilities.

Municipal zoning by-laws are the method of implementing the policies laid down in the Official Plan. Zoning by-laws control the use of land and are enforceable while policies on their own are not. They are key to implementing standards and specific facilities in certain locations or in association with certain uses as defined in the by-law. Many municipal bicycle plans reflect the implementation of zoning by-laws. For example, the "Vancouver Comprehensive Bicycle Plan" produced by the Bicycle Advisory Committee for the City of Vancouver in 1988, is very specific about the number and type of bicycle parking facilities to be provided for each class of residential dwelling, institutional use, cultural and recreational use, commercial and industrial use (see Appendix E). Examples such as this establish the increasing recognition of the bicycle as an accepted means of transport.

It is recommended that the minimum standards imposed by the City of Prince George should include bicycle standards.

5.3.9 Public Consultation

The involvement of the community – residents, merchants, institutions, employees and elected officials – should be viewed as an opportunity to design a better facility at all stages in the development of a plan. The importance of involving the community cannot be over-stressed. Inviting the public to become involved in the project at a very early stage has the following advantages:

- Information can be presented that will assist the planners, designers and decision makers to develop a system responsive to local needs; and
- The public will support and become a part of the project.

It is crucial that, during the planning stages, any changes to the project, and their causes, are communicated to those who have expressed interest so that their co-operation is not lost.

Public consultation can take many forms (see Appendix J), from open houses to surveys to public meetings. The size of the community and the extent of the problem will determine which form(s) are most appropriate to use. The importance of contacting local bicycle groups should also not be overlooked. Often these are the people with the resources, first-hand experience, and expertise that will greatly assist planners and designers.

A well-organized public consultation process reaches and involves the entire community and minimizes the influence of special interest groups. A wide consultation process results in a self-policing procedure which is a very effective method of ensuring that the transportation facilities and solutions which are being implemented are what the public and community wants and will accept.

The public consultation which has occurred for the Cycling Network Plan has determined community support for the Plan and has provided the public with an opportunity to provide feedback and suggestions on specific features of the plan.

Since the Cycling Network Plan is designed to attract new cyclists as well as improve the environment for existing cyclists, it is recommended that additional public consultation be conducted with the general public as well as established cycling groups. Perception of safety is a huge barrier to overcome for the casual cyclist. Input from the general public about their perceptions of the existing situation will allow for the further development and implementation of the Plan to address those concerns.

Public consultation can start with the formation of a Cycling Advisory Committee, which works with staff on specific projects. See Appendix I for a description of a Cycling Advisory Committee.

It is recommended that additional public consultation be conducted with the general public, as well as established cycling groups, when sections of the Plan are implemented or revised.

5.3.10 BC Transit

Based on feedback received during meetings with staff and the public, BC Transit does not play a significant role in the transportation mix. The present level of service is considered sparse and hence ridership is low. There is an opportunity to increase ridership on BC Transit and at the same time change travel behaviour from private automobile to a bicycle/transit combination.

By providing bicycle racks on selected routes, BC Transit can enhance their service and two of the barriers to cyclists – terrain and weather – can be overcome.

It is recommended that the City request BC Transit to install front-mounted bicycle racks on bus routes which service the University, Hart Highlands, and College Heights.

It is also recommended that on cycling routes where bicycle lanes have been recommended and where these routes are also transit routes, that the bicycle lane line be dashed 15 m before and 15 m after the bus stop. The dashed line should consist of a 1.0 m segment and a 1.0 m gap.

6. SUMMARY OF RECOMMENDATIONS

This section provides a condensed summary of the report's recommendations. With regards to basic principles, it is recommended that:

- The City of Prince George adopt the basic principles from Chapter 2 as an integral part of their transportation planning and engineering;
- For all road infrastructure projects, bicyclists' needs be considered;
- All City programs and printed material adhere to the principle of equitable, shared use of the roads, wherever feasible;
- The City should encourage bicycle skills training programs be conducted by certified instructors using recognized curriculum, and for all age groups;
- Bicycle skills training programs be conducted for on- and off-road skills training;
- The City should encourage local driver instruction programs to include instruction on how motor vehicle drivers should interact with cyclists;
- The municipality encourage the local enforcement agency to undertake an annual Selective Traffic Enforcement Program (STEP) aimed at cyclists which focuses on cycling without lights at night, failing to stop or yield, failing to indicate the intention to turn or alter course, and cycling the wrong way;
- The municipality encourage the local enforcement agency to undertake an annual program aimed at motorists, focusing on failure to yield right-of-way at intersections and improper overtaking;
- Prince George undertake an annual Bike Week to encourage the use of the bicycle as a legitimate transportation mode;
- Prince George develop a commuter cycling map suitable for distribution to the general public (i.e., a route-finding map rather than the planning map included in this report), illustrating: existing and proposed bicycle facilities, road names, landmarks, popular destinations, etc.;
- Prince George initiate discussions with BC Transit to install bicycle racks on buses; and
- The City of Prince George consider the principles of Transportation Demand Management in all city programs, with the objective to improve bicycle use as a transportation mode.

With regards to the use of existing facilities, it is recommended that:

- The City winter maintenance standards be reviewed and, where warranted, increase the frequency of snow removal and sweeping on all the bridge surfaces and their sidewalks;
- The City request the Ministry to do the same for their bridges; and

- Consideration be given to reserving the existing Cameron Street Bridge for non motorized traffic only, once a replacement structure has been built.

With regards to other issues, it is recommended that:

- The City investigate the need to improve the sensitivity of all loop detectors at locations where no curb-side push button is provided for cyclists;
- The City should investigate the need for installation of curb-side push buttons for cyclists at all pedestrian-controlled lights;
- All bridge railings be at least 1.0 – 1.5 metres in height;
- By-Law 52.3 be repealed to allow for on-street and off-road facilities to run along the same route;
- Over- and underpasses be lit, particularly if covered, and of sufficient height to accommodate cyclists, well maintained to eliminate the build-up of debris, and with approach grades which do not exceed 4%;
- End-of-trip facilities for cyclists be included as part of all development permits;
- Wherever possible, off-road facilities be linked with on-street facilities;
- Curb cuts and other design features be employed where off-road trails link with on-street cycling routes;
- Minimum standards imposed by the City of Prince George should include bicycle standards;
- Additional public consultation be conducted with the general public, as well as established cycling groups, when sections of the Plan are implemented or revised;
- The City request BC Transit to install front-mounted bicycle racks on bus routes which service the University, Hart Highlands, and College Heights; and
- On cycling routes where bicycle lanes have been recommended and where these routes are also transit routes, the bicycle lane should be dashed 15 m before and 15 m after the bus stop, and the dashed line should consist of a 1.0 m segment and a 1.0 m gap.

Route-specific recommendations are summarized in Table 1 and shown on Map 1.

Insert Table 1.

APPENDICES

Appendices:

A – Education Programs

B – STEP Program

C – Bike Week

D – Transportation Demand Management

E – Design Guidelines

F – Traffic Calming

G – Samples of Transportation Association of Canada Signs

H – Liability Issues Related to Bicycle Facilities

I – Example Terms of Reference for Community Involvement

J – Public Consultation Program

K – Provincial Cycling Policy

APPENDIX A – EDUCATION PROGRAMS

The following is a list of nationally certified programs available through the Canadian Cycling Association. There are other provincial and local programs available. To judge the effectiveness of a local program, consider whether these four topics are covered:

- Rules of the road;
- Bicycle handling skills;
- Safety and protection; and
- Bicycle maintenance.

All cycling education programs should be taught by certified instructors, and should include an on-road section to be truly effective.

All courses listed below are part of the Can-Bike program.

Programs for Children

Kids Can-Bike Festival

The Kids Can-Bike Festival is a playground based event that introduces to children key bike handling skills they will need to ride safely on the road. It does not focus on traffic situations. The Festival is designed for children between ages 8 and 13.

Smart Cycling

Smart Cycling is an educational kit designed to introduce the fundamentals of cycling safety elementary school students. The materials encourage students to treat their bicycle as a vehicle, illustrate to them how to care for their bikes and teach basic traffic concepts and cycling skills. The kit consists of three components: An instructor's manual, a 15-minute videotape, and an optional student activity funbook.

While Smart Cycling is an introductory course designed for classroom use, teachers and students are encouraged to follow it up with on-bike lessons. On-road lessons can provide the ultimate learning experience for young cyclists.

Cycle Right

Cycle Right is a basic cycling course for young beginners at the Grade 5 to 8 level. This course teaches basic bicycle handling skills, basic traffic skills, and basic safety maintenance requirements for safe and proper use of bicycle on two-lane, two-way roads. It teaches use of the bicycle both for riding alone and for riding in groups.

The basic goals of the course are to prepare children to ride independently or in groups from home to school recreational facilities and to prepare children to participate in school or recreational organized cycling activities.

Programs for Adults

Skills I

Course content is basic and designed for beginners and occasional cyclists. While touching on many aspects of cycling from maintenance to touring to Effective Cycling techniques, it does not cover any of these topics in depth. Upon completion of the course, participants should feel confident enough to ride regularly and safely for utilitarian and recreational purposes. They will also have information on organized cycling activities in their area and be encouraged to continue with their cycling education and enjoyment.

Skills II

The objective of Skills II is to teach those cycling skills that enable cyclist to use their bikes more safely, efficiently, and with greater enjoyment. Upon completion of the course, the student should be able to ride with competence and confidence in varied conditions of traffic, weather, and terrain.

The following subject areas are covered in Skills II:

- Riding skills;
- Traffic cycling proficiency;
- Bicycle maintenance;
- Health and fitness;
- Equipment; and
- Consumerism.

Contact your local bicycle club, provincial association or the Canadian Cycling Association for more information on cycling courses.

APPENDIX B – SELECTIVE TRAFFIC ENFORCEMENT PROGRAM (STEP)

It is recognized that cyclists' traffic infractions are not a high priority with many of the enforcement agencies. When it comes to cyclists, many police forces concentrate their resources on selective enforcement of specific violations. This selective enforcement generally occurs for a limited period of time, usually two to three weeks, and at a specific time of the year. The most effective times are spring when the majority of people are getting out on their bicycles after the winter weather and fall when students are going back to school. A selective traffic enforcement program of less than two weeks will generally not have a significant impact. Concentrating on cyclists' traffic violations is an excellent way of letting cyclists know they are not outside of the law and that a certain type of behaviour is expected from them. Riding a bicycle, consistent with the operation of a motor vehicle, is the best way to decrease collisions between bicyclists and motor vehicle drivers. Cyclists fare best when they behave like motor vehicle drivers.

There are four areas of common cycling infractions. They are:

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

These four have been shown in the Cross/Fisher study to be the major cause of bike/car collisions and should be targeted for safety reasons.

Violations for riding without lights should be enforced 1/2 hour after dusk when there still is enough light to see the cyclist. Unlike motor vehicles, bicycles are not sold with lights and many cyclists do not think that they will be cycling after dark. In early spring and late fall, it is very easy to be caught unprepared. Also, most bicycle lights rely on batteries and it is easy to forget to replace them. However, with the introduction of "Vista" style lights, the cost of effective lighting has been dramatically reduced. An effective headlamp and rear light can now be purchased and easily installed very economically. In addition to enforcement, bicycle stores and outdoor equipment stores should be encouraged to promote the purchase of lights when bicycles are purchased.

Because bicycles require human powered energy to maintain motion, it is very tempting for a cyclist to continue momentum at a stop or yield sign, rather than come to a complete stop or to slow significantly. Other road users have the expectation that cyclists will be obeying the traffic signs. It is important to enforce the need for cyclists to obey stop and yield signs, particularly at intersections where a large number of collisions have occurred. Intersection violations should be enforced on heavily travelled bicycle routes. Rush hour is an appropriate time to enforce traffic laws as this is when the risk is the greatest.

Bicycles do not come equipped with indicators and it is up to the cyclist to ensure that other road users are aware of their intentions through the use of hand signals. It is sometimes tricky to maintain control of the bike while signalling as this requires one hand to be removed from the handlebars. Cyclists need to be made aware of the importance of communication with other road users for their own safety.

Unfortunately, some educators relate riding a bicycle to walking and promote riding against traffic, particularly in rural areas. And in some jurisdictions, bicycle facilities have been engineered and designed to put cyclists in a position where they are riding against traffic. This is a very dangerous design, puts cyclists in positions where they are not looked for or expected by other road users and therefore, this type of design should never be considered. Where it is necessary to relegate cyclists to one side of a bridge or overpass, the access and egress designs must be very carefully implemented in order to eliminate the possibility of collision. For cyclists who cycle against traffic, enforcement is very important as the types of injuries sustained in head-on collisions are severe and often fatal.

When cyclists are issued a ticket, like any other road users, they should be issued a standard moving violation ticket or by-law infraction ticket.

APPENDIX C – BIKE WEEK

Bike To Work, Promoting Bicycling & Bicycle Encouragement Ideas

Everyday is a good day for encouraging and promoting bicycling, but often the most organized efforts are done in conjunction with a Bike To Work Day, Bike Week or Bike Month.

Such events happen in countries and communities around the world, but they are not coordinated and there is no international "bike day." That leaves every bicyclist free to do exactly what will be most successful in their community, exactly when it will have the greatest chance for success. Here are some ideas that have been employed in the past:

Rest Stops or Energizer Stations

Collecting some give-aways is always a good strategy for generating additional interest in the event: beverages, food energy bars, reflective stickers, canvas bike bags, sun block samples, water bottles, patch kits, safety literature, local bike maps, etc.

Bike Pool

Announce pooling location(s) and time(s) so people can ride to the employment centre(s) as a group for one day.

Celebrity Bike to Work Ride

Invite city, county and state officials, media, entertainment and sports celebrities to bike to work.

Bike-Buddy Program

Sort of a mentoring program which pairs experienced bicycle commuters with people who are just getting started.

Bicycle Lecture Series

- Fitting and Purchasing A Bike
- Bicycle Safety
- Bicycle Repair & Maintenance
- Bike Commuting
- Cycle Touring
- Bicycle Travelogues
- Etc.

Newspaper Biking Column

Bicycle Film Festivals

The same films can be shown year after year and still get a draw.

All Seasons Bicycle Fashion Show

Get some target group like local high school student involved as the models.

Curate An Exhibit of Old, New and Exotic Bikes

You might be surprised with what lurks in the garages of your community.

Grade School Bicycle Poster Contest

Use one of the winning posters to publicize next years event (it need to be clear that all entries are the property of the organizers.)

Commuter Race

A cyclist, transit rider and motorist, with the same origin and destination, see who can get through rush-hour traffic fastest.

Bike Commuter Fair

Provide displays of commuter information, give out maps, coordinate a "bike buddies" program.

Organize A Bike Commuter Competitions

The company or agency with the most and highest percentage of bike commuters should at least get tons of recognition.

Stage A Commuting Race

A bicyclist, transit user and single occupancy vehicle start from an outlying neighbourhood and head for a final destination in the central business district at rush hour to see who is fastest.

Children's Bicycle Safety Class or Rodeo

Charity Fundraising Bike Ride

These tend to have higher profiles and you can plug into the resources of the charity.

Schedule A Series of Theme Rides

Public Art; Bakeries; Moonlight or Midnight; Historic Sites; Architectural (i.e. solar homes); New Riders Ride; Romantic Spots For Bicyclist, etc.

Ride with Your Elected Officials (Parade of Politicos)

Organize a fun ride for politician, (possible on a tandem if they aren't comfortable riding by themselves)

Stage An Event To Highlight A High Priority Project

Ride through an important project area. This can be done in conjunction with the "Parade of Politicos".

Recognition Lunch (in a visible place)

Bike Rally or Festival

Quite likely would involve a combination of several of the above elements and might include entertainment.

Bicycle Swap Meet

Bike-To-Work Week Sale at Bike Shops

Suggest that they also do window display and promote Bike-to-Work Week to their customers.

Collective Bike-To-Work Newspaper Ad

Fitness Club Shower Promotion

Fitness Clubs can let non-members in from 7:00 to 9:00 AM for showers.

Organizing A Bike to Work Event

- Choose a Bike to Work Week coordinator
- Get a Bike to Work team together
- Call a meeting
- Decide on an event(s)/activity(s)
- Set up a planning schedule / work plan
- Recruit volunteers for pre-event and day-of-the-event task
- Choose a location(s)
- Arrange for facilities
- Arrange for incentives
- Coordinate with other organizations
- Promote your event (at least half the work)
- Have a fun time.

Taken from the website: <http://www.ibike.org>

APPENDIX D – TRANSPORTATION DEMAND MANAGEMENT

Transportation demand management involves the implementation of specific strategies to influence the driving behaviour of the general public. These strategies will not require everyone to give up driving their private automobile, but they will encourage people to consider their transportation options - including walking, cycling, and transit use. Transportation demand management is designed to effect small, incremental changes in driving behaviour, and is expected to affect only a small portion of total travel. However, the cumulative influence can be significant, perhaps as much as a 30% reduction in private automobile use.

The multiple benefits of traffic demand management strategies will include reducing collisions, pollution, noise, and congestion as well as reducing infrastructure costs and user costs. The result will include an increase in non-driver travel choices, a transportation network which is more socially equitable, and regional economic efficiencies.

Transportation demand management strategies include:

- An understanding and consideration of access and mobility concerns of the general public;
- The development of programs which enable people to make cycling a realistic transportation option;
- The development of programs which discourage people from using the private automobile; and
- The establishment of programs which make more effective use of the transportation network through co-operative or shared use and through the modification of fee structures.

Transportation plans tend to focus on traffic volumes and speeds because they are easily quantified whereas mobility and access are often ignored. The purpose of transportation demand management strategies is to ensure that land use policies which promote alternative transportation options addressing mobility and access are successful.

TDM involves active intervention to change the travel behaviour of a constituency. At the planning level, effective TDM includes a variety of strategies to make more efficient use of the existing transportation network.

TDM planning is a relatively new concept, though many of the strategies have been in use in other aspects of planning. Effective TDM planning involves a large range of strategies with a number of different partners at various levels of government and

industry. This part of the manual focuses on those strategies which involve cycling as the means to effect the strategy.

Transportation allowances

Transportation allowances have become the strategy of choice in transportation demand management mainly because it is an add-on strategy rather than a take-away one. Transportation allowances are employment based allowances which give employees financial benefits for utilizing alternative transportation modes, either directly or indirectly. The allowances can be in the form of a transit pass, subsidized vanpool program, and free membership for cyclists/walkers in a company (or other) fitness centre, etc. Although planners do not have control over employee benefits, the planned facilities will often dictate the necessity of encouraging alternative transportation.

Employers can be given encouraged to eliminate "free" parking spots for employees by having the number of motor vehicle parking stalls limited. In their place, a standard transportation subsidy should be encouraged which can be used as the employee wishes. This amount of the subsidy should be aimed to cover the cost of using transit or the use of shower facilities but not cover driving and parking expenses.

Park-and-ride facilities

Park-and-ride facilities are designed to allow suburban commuters to drive to a central location, park their vehicle, and ride share or take transit from that point. The benefits of park-and-ride facilities are that they reduce the demand for downtown parking space and they reduce traffic congestion in the urban centres. The drawback to park-and-ride facilities is that they encourage urban sprawl by reducing the cost of long distance commuting.

Free shuttle services

To encourage people to use alternative forms of transportation, free shuttle services can be offered in the central business districts of urban centres and also in other areas of heavy demand. This services can be paid for through a partnership arrangement of businesses, transit and the municipality. Employers can also offer a shuttle service between the place of employment and a convenient transit exchange.

Carpool/Vanpool

Carpooling and vanpooling work best when the employer takes an active role in coordinating partners and facilitating the purchase of the vehicles. Pooling transportation resources in this way reduces the amount of infrastructure required by the employer and ultimately by the municipality.

From a planning perspective, carpooling and vanpooling can be encouraged through the provision of HOV lanes, and priority parking spaces. Carpooling and vanpooling reduce the need for parking and reduce urban centre congestion at peak times.

Telecommuting

Telecommuting allows employees to work from home on a regular basis. The advantage of telecommuting is that it reduces the number of times a person is commuting to the office in a given week. Telecommuting is often the first initiation people have to not using an automobile as often and considering other transportation options. It also tends to encourage people to live in areas where shopping and other facilities are close at hand and to which they can travel by bicycle.

In order to telecommute effectively, and depending on the type of employment, the employee must be able to re-create the office resources at home, often requiring cable hook-up for computers, cell phone coverage, and the ability to create or re-design the house to include a dedicated office space.

Alternative work hours

Alternative work hours are often arranged to accommodate lifestyles as well as to reduce traffic congestion. The most common alternative work hour strategy is a compressed work week which allows the employee to work 4 days out of 5 or often 9 days out of 10. This strategy reduces the number of commutes and overall demand for parking.

Alternative work hours can also refer to flex-time which alters the start and finish time of the workforce in order to relieve demand on office resources. It also relieves peak-time traffic congestion allowing for more efficient use of the transit system.

Guaranteed ride home

For those who do choose to use an alternative form of transportation, employers are encouraged to implement a "guaranteed ride home" program in case of an emergency. By providing a contingency plan, employees are more inclined to consider different transportation options. Typical ways to manage this are to provide taxi cab vouchers or access to a company vehicle.

Bicycle purchase/lease program

Employers are also encouraged to extend financial support to employees to allow them to purchase or lease bicycles for the purposes of commuting, just as they might extend such an offer to purchase a home computer. Often this incentive is the motivation to try bicycle commuting.

Emergency breakdown support system

One of the biggest stumbling blocks, particularly for women is what to do if the bicycle breaks down or has a flat tire. Similar to the guaranteed ride home, employers can provide an emergency pick-up service which overcomes that barrier. Studies have shown that this back-up is hardly ever used, but it provides a sense of security for the person who is hesitating about using a bicycle to commute to work.

Bicycle fleet

Employers who have adjacent buildings or branches within 3-4 km of each other, or a reason for their employees to travel within 3-4 km of a home base can think about providing a fleet of bicycles rather than company vehicles. This fleet requires less parking space and depending on the circumstances is as efficient as a motorized vehicle. Providing such a fleet may actually increase efficiency in some cases. It is also recommended that helmets be provided with the bicycles. Many municipalities have been the leaders in the provision of this strategy.

Bike-buddy system

To build confidence, a useful system for implementing a successful bicycle commuter program is to establish a "bike-buddy" system. The bike-buddy system allows a more experienced cyclist to mentor a new cyclist, helping them with the selection of gear, choosing routes and negotiating in traffic. If such mentors are not available at a worksite, then liaising with nearby worksites, or local clubs can also provide this link. Often municipal recreation departments can assist with this co-ordination in conjunction with the provision of bicycle skills training.

End-of-trip facilities

Key to the success of transportation demand management strategies is the provision of suitable end-of-trip facilities. End-of-trip facilities design is discussed in Section 21. To change the travel behaviour of employees and the general public, there must be secure bicycle parking at the destination. The type of parking provided will differ for employees and for short-term visitors to the facility.

In addition, employees will require shower, change, and storage facilities. By-laws can make the provision of such facilities mandatory in all new construction. Retro-fitting such facilities can be facilitated when there is supporting policy at the municipal level.

Tolls and Fees

Many municipalities and provincial governments are imposing fees on bridges and roads which have been newly constructed to help defer the costs of these new facilities directly

from the taxpayer to the taxpayer and the user. Such tolls and fees can also be assigned to existing roadways which require additional maintenance and reconstruction because of high usage. These tolls and fees can be collected electronically and need not impede traffic. These measure encourage ridesharing.

HOV facilities

High occupancy vehicles (HOVs) refer to cars, including commercial vehicles such as taxis with 2 or more passengers, vanpools, all types of buses, motorcycles and bicycles. When special facilities are offered for HOVs to give priority to these types of vehicles, the facilities serve as an incentive for people to consider using these options. Special facilities usually refers to a separate lane restricted to the use of HOVs but may also refer to a bus queue jumper lane, and advanced signalling for HOVs.

Multi-modal links

Transit is most effective when travelling longer distances along busy arterials. By accommodating bicycles on all types of transit (buses, trains, ferries), the catchment area of transit is enhanced. Bicycles can be accommodated by providing racks or providing secure storage at the transit exchange. Multi-modal links are discussed in Section 23.

Car co-operatives

Car co-operatives provide a more optimal private automobile usage by offering use of a motor vehicle without sole ownership of it. The advantages are reduced costs of ownership, such as insurance and maintenance, and the convenience of easy access to a car when it is needed. At the same time, not having a motor vehicle at your exclusive disposal means that transportation options are examined before the decision is made to use the car. Early research has shown that households participating in shared vehicle programs have reduced their driving by approximately 50%.

To be workable, car co-operatives are often organized by an outside agency. Planning departments can be instrumental in assisting neighbourhood groups with the logistics and administrative details of creating a neighbourhood car co-operative.

APPENDIX E – DESIGN GUIDELINES

The following design guidelines are based on material from a number of sources, including:

- Canadian Guide to Neighbourhood Traffic Calming, published by the Transportation Association of Canada (TAC) and the Institute of Transportation Engineers (ITE), Draft, December 1998.
- Bikeway Traffic Control Guidelines, published by the Transportation Association of Canada (TAC), December 1998.
- Geometric Design Guide for Canadian Roads, published by the Transportation Association of Canada (TAC), September 1999.
- The Community Cycling Manual, published by the Canadian Institute of Planners and endorsed by the Canadian Cycling Association and Cycling B.C.
- The Technical Handbook of Bikeway Design, published by Velo Quebec in co-operation with the Quebec Ministry of Transport, the national Capital Commission and the City of Toronto.
- The City of Surrey's Bicycle Blueprint. This is one of the most comprehensive bicycle plans developed in North America, and includes considerable information regarding design guidelines and practices.
- The City of Vancouver's Bicycle Facilities Design Guidelines. These are the first set of comprehensive end-of-trip facility guidelines developed in North America.
- Guide for the Development of Bicycle Facilities, American Association of State Highway and Transportation Officials (AASHTO), August 1991.
- Cycling Policy, Ministry of Transportation and Highways, September 1996.
- Greater Vancouver Regional Bicycle Task Force Policy Recommendations, Strategic Planning Department, GVRD, November 1993.
- Bicycle Parking (brochure) and other materials available from Cycling B.C., the provincial cycling organization. Cycling B.C. maintains an extensive library of literature, video aids, and other materials, including many of the documents identified above.

Signed Bicycle Routes

Signed Bicycle Routes are one of the most cost effective ways of encouraging cycling. In addition to signing, other traffic calming measures should be considered for these routes to ensure that motor vehicle traffic is not increased, and where possible, reduced along these routes.

Share the Road signs can be installed along signed bicycle routes, in addition to Bicycle Route signs. At higher volume intersections and locations with reduced visibility, Bicycle Crossing Ahead signs should be installed on the cross streets. Sign names are from the *Bikeway Traffic Control Guidelines for Canada*.

Wide Curb Lanes

Wide curb lanes tend to be favoured by experienced cyclists. Wide curb lanes offer one of the most cost effective bicycle facilities if planned during the construction phase of a project. Often combining Bicycle Route markings with wide curb lanes is the best possible and most effective bicycle facility. Encouraging use of the facility requires a combination of education and cycling promotion.

Wide curb lanes should be at least 4.0 m wide and no greater than 4.5 m wide. It is important to note that this dimension *excludes* the width of the gutter pan. This means that on a road with a 30 cm gutter, for example, the width of the curb lane measured from the curb face would be 4.3 m.

Wide curb lanes should be provided on all arterial and collector roads where on-street parking is provided. The parking lane should be 2.5 m wide.

As an interim measure on four-lane and six-lane roads, prior to re-paving, lanes can be re-stripped to increase the width of the curb lanes and reduce the width of the centre lanes. It is often difficult to totally remove the evidence of the previous markings, particularly in wet weather. Any re-striping should be accompanied by signs indicating new lane markings.

Lane widths should not be reduced to less than 3.3 m. For example, on a four-lane road with 3.7 m wide lanes, it would be possible to re-stripe the roadway to provide 4.0 m wide curb lanes and 3.3 m wide centre lanes.

Paved Shoulders

On roads with rural cross-sections, where there are no curbs or gutters, cyclists may travel on paved shoulders. Paved shoulders provide cyclists with an asphalt facility to cycle on adjacent to motor vehicle travel lanes.

Current road design standards apply for the construction of paved shoulders, as well as the following specific guidelines:

- Shoulders should be a minimum of 1.5 m in width;
- Shoulders should be paved and free of obstructions, such as drainage aprons;
- Non-emergency parking or stopping should be prohibited on the shoulder at all times;
- Where possible, shoulders should be continuous between intersections; and

- Where a paved shoulder ends and cyclists must ride within the traffic lane, a warning sign should be posted in advance to advise cyclists that the shoulder ends, and to advise motorists that cyclists will be returning to the travelled portion of the roadway.

Bicycle Lanes

There is some controversy amongst bicycle advocates and planners over the use of bicycle lanes. Bicycle advocates tend to favour wide curb lanes over bicycle lanes using the argument that bicycle lanes reinforce the “subsidiary” attitude which prevails in transportation planning as it refers to bicycling. Also, bike lanes pose problems for left-turning cyclists and right-turning motor vehicle drivers at intersections.

There is significant agreement, however, that a designated space on the road encourages cycling and promotes a “sharing of the road” attitude amongst cyclists and motorists. Although a designated space may give the perception of safety to the inexperienced and lesser-skilled cyclists, there is no design feature which can match good education.

At a minimum, bicycle lanes should be 1.2 m in width and 1.5 m is recommended. Bicycle lanes should not be wider than 1.8 m, as this encourages two-way bicycle travel. It is important to note that, as with wide curb lanes, this dimension *excludes* the width of the gutter pan.

Bicycle lanes should be marked with a white line, solid between intersections and dashed 15 m in advance of an intersection. The dashed segment should consist of 1.0 m dash and 1.0 m space. Bicycle lanes may also be identified with a painted bicycle symbol and an arrow indicating the direction of travel.

Bicycle lanes should be continuous on both sides of the street and should be designated for one-way travel only.

Bicycle lanes should be provided only on roads where most or all of the following conditions are met:

- Urban cross-section (curb and gutter);
- High volume traffic;
- Posted speed limit of 60 km/h or more;
- Low numbers of turning vehicles; and
- Roadways through school zones

Bicycle lanes are not appropriate on local or collector streets, and should be avoided in commercial areas where on-street parking is provided.

On roads with rural cross-sections (no curb and gutter), paved shoulders 1.5 m wide should be provided rather than bicycle lanes.

Hybrid Bicycle Lanes

Hybrid bicycle lane markings of the standard bicycle symbol can be used wherever a 4.0 m wide curb lane is provided. If the curb lane dimensions are less than 4.0 m, pavement markings should not be used, unless the curb lane is adjacent to 24-hour on-street parking. The bicycle symbol is 1m wide and 2 m in length.

Stencils should be located at intervals of no more than 200 m, and within 15 m in advance of any intersection. The words “shared use” or “shared lane” may accompany a the bicycle symbol.

Trails

All trails must be considered as multi-use trails unless a stringent enforcement plan or physical barriers are in place. On high-use sections, signage can be installed directing bicyclists to one side of the trail and other users to the other side. Signage advising cyclists to “yield to pedestrians” is also advisable.

Multi-use trails are typically at least 4.0 m wide (particularly where vegetation obscures sight-lines), though the City standard is 3.0 m. (Graphical details of the City’s “Multi-Use” Trail Standard, from the 1998 City Wide Trail System Master Plan, are illustrated at the end of this appendix. However, all applicable details relating to this and other trail standards should be referred to in the Master Plan.) The preferred surface material for trails is asphalt, except in areas where high speeds will be promoted by asphalt or where the natural environment promotes a natural surface. In such areas, hard-packed gravel or limestone is preferred.

Where appropriate, the edges of trails should be marked with a solid line to improve visibility during non-daylight hours.

Where a trail is located close to trees and large shrubs, a 12-inch metal root barrier should be placed in the ground between the tree and the path, to prevent roots from heaving and cracking the trail.

In corridors which serve a utility function, such as for commuting to and from work or school or travelling to a commercial centre, lighting should be provided to improve the safety of bicyclists during non-daylight hours. A minimum of 6 lux should be provided, increasing to 20 lux at intersections with roadways.

Where cyclists would be required to climb or descend stairs to reach a trail, an office building, a shopping centre or a bicycle parking facility, a ramp should be provided on

one side of the stairs to enable cyclists to roll their bicycles up and down the stairs. The ramp should not be placed closer than 0.5 m to any hand-rail, to avoid handlebars catching on the hand-rail.

Bicycle Parking

A bicycle parking stall is defined as a space measuring 1.8 m in length by 0.6 m in width. Vertical parking is allowable up to 40% of the total required number of stalls and should be 1.1 m in length by 0.6 m in width.

Aisles between parked bicycles should be 1.2 m wide.

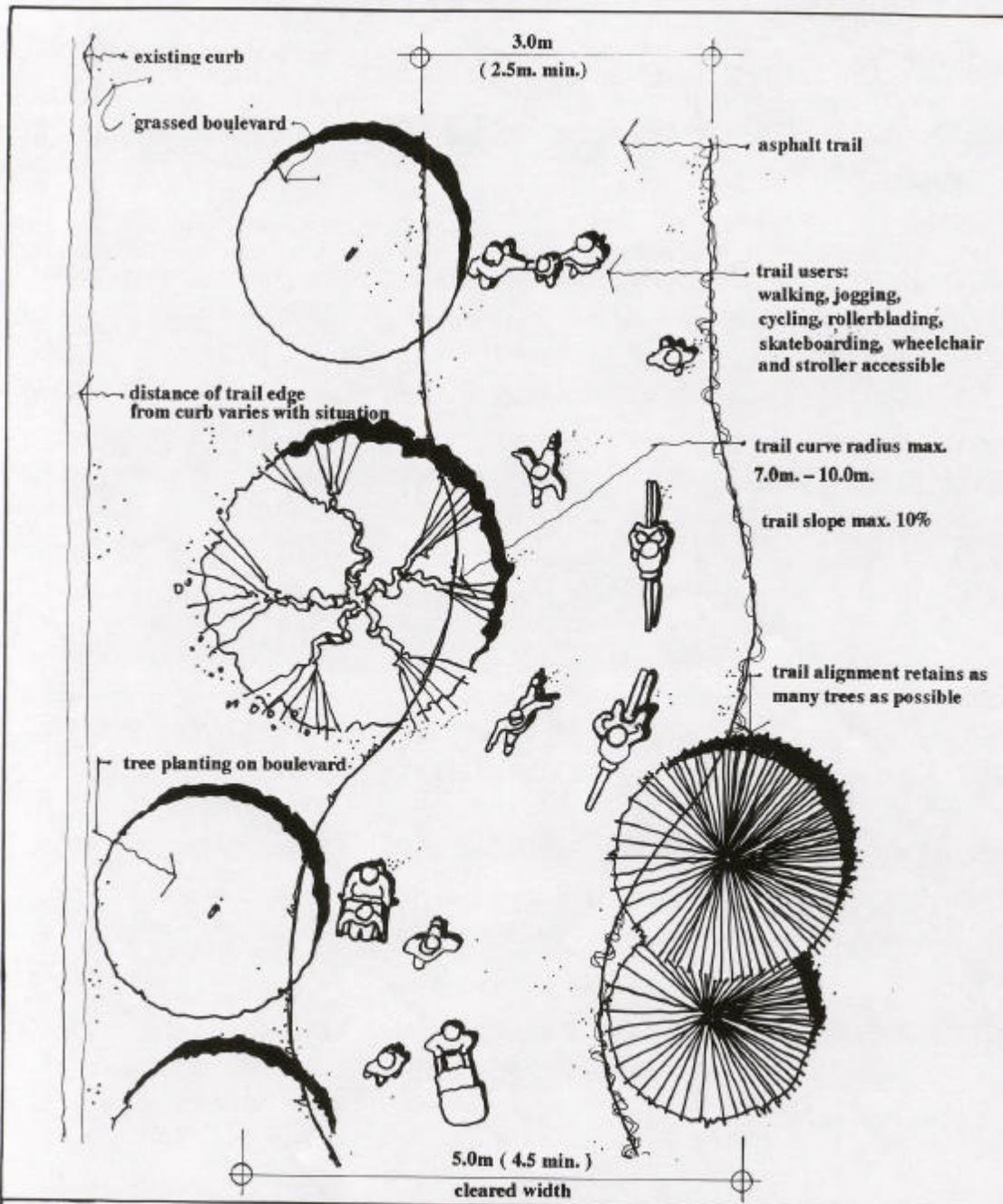
Vertical clearance should be a minimum of 1.9 m.

Each bicycle stall must be accompanied by a secure bicycle parking device which enables the use to lock the frame and at least one wheel with a “U” style locking device without having to remove a bicycle wheel.

Avoid bicycle racks that support the bicycle by a wheel rather than the frame, or support the bicycle below its centre of gravity. These designs are difficult to use, provide inadequate protection against theft, and are commonly known as “wheel-benders”.

Number of Bicycle Spaces Required for:

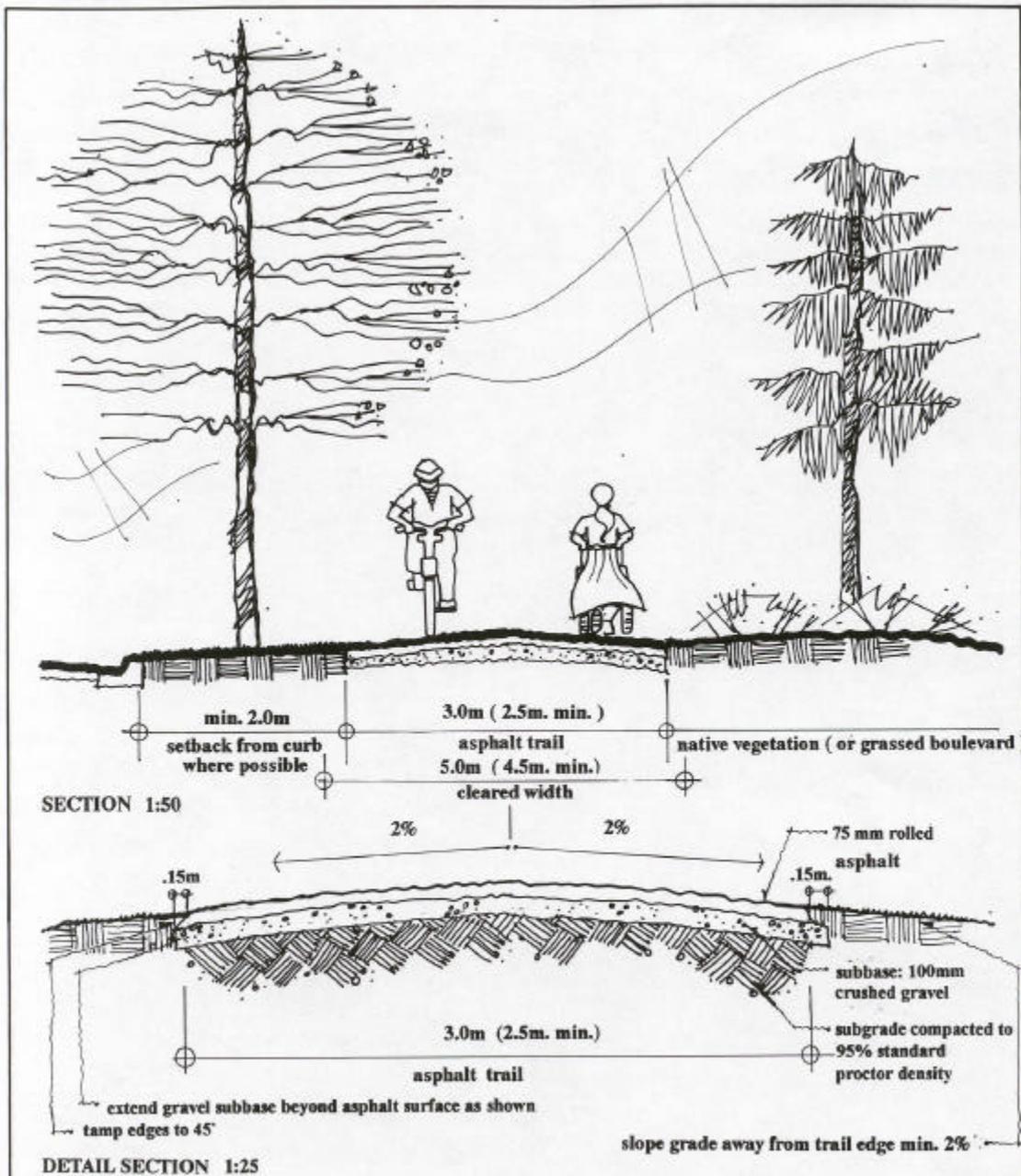
<u>Use</u>	Class I	Class II
	<u>Residents/Employees</u>	<u>Patrons/Visitors</u>
Multiple Unit Dwelling	1.5/unit	6/building
Office	1/750 sq m GFA	6/building
Hotel	1/20 rooms	6/building
Retail/Restaurant	1/500 sq m GFA or 1/10 employees	6/building
Industrial	1/10 employees	6/building
Institutional	As this depends greatly on the location, the number should be determined by the Planning Department at the time of the permit application.	



CITY TRAIL

PLAN 1:50

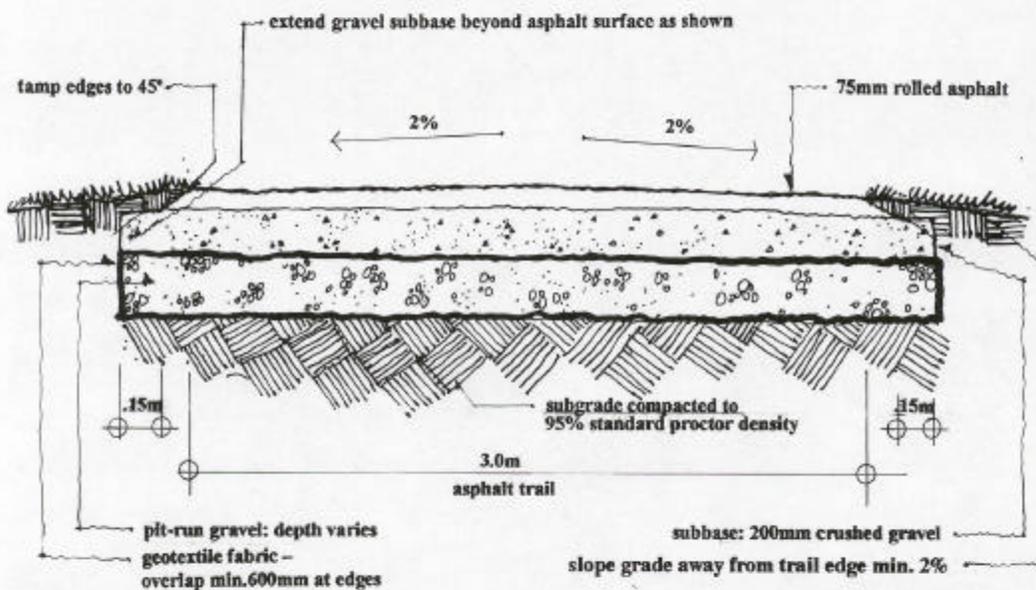
City of Prince George
City Wide Trail Master Plan
Leisure Services Department - Parks Division
Figure 1



CITY TRAIL

SECTIONS scale as shown

City of Prince George
 City Wide Trail Master Plan
 Leisure Services Department - Parks Division
 Figure 1A



Note: where appropriate for local topography the crown shown in this detail shall be replaced with a 2% crossfall

CITY TRAIL : Trail with Reinforced Subgrade

SECTION 1:25

City of Prince George
City Wide Trail Master Plan
Leisure Services Department - Parks Division
Figure 1A.1

APPENDIX F – TRAFFIC CALMING

As defined by the Institute of Transportation Engineers, "traffic calming is the combination of mainly physical measures that reduce the negative effects of motor vehicle use, alter driver behaviour, and improve conditions for non-motorized street users". Traffic calming devices are not bicycle facilities per se, but are devised to reduce the speed and volume of motor vehicle traffic. Areas which have been traffic calmed then become more attractive for cycling as the speed differentials are reduced. At the same time, providing for a safe mix of cyclists and motor vehicles often serves to further reduce motor vehicle speeds and ultimately volumes, as more people are encouraged to cycle.

Residential streets are multi-use facilities which are shared by pedestrians, cyclists, transit, trucks, service vehicles, and automobiles. On occasion, road geometry, traffic volumes, traffic operations, traffic speeds or some combination of these will create a problem resulting in negative impacts to residential streets, perceived or real. When these negative impacts occur, the result is often an increase in motor vehicle traffic which is perceived to be the only "safe" method of transportation in the area and is certainly the most comfortable for road users.

The implementation of traffic calming strategies is appropriate where residents and street users consider traffic volumes and speeds to be inappropriate for the neighbourhood or to prevent a neighbourhood from developing inappropriate traffic operations. It is common for traffic calming to be introduced in large urban areas, however, these facilities are also appropriate for small urban centres. The traffic calming devices described in this manual in Section 20.5 are applicable on local and collector residential streets. There are fewer situations where these traffic calming measures could be applied to arterial or rural roads.

It is recommended that where a traffic problem is generated from a regional issue that these broader issues are addressed prior to implementing a local traffic calming fix. The likely result of not dealing with the larger issue is that the transportation problem will simply shift to another neighbourhood.

Traffic calming is generally associated with existing neighbourhoods to address problems which have gradually increased in magnitude. Thus, many of the devices are being retrofitted into an existing street design and will require some modification. Traffic calming is also appropriate for the development of new neighbourhoods to enhance the street environment.

The goal of traffic calming is to maintain accessibility and mobility while restoring residential streets to their original purpose. The objectives of traffic calming are:

- To improve the neighbourhood environment by reducing the speed and volume of traffic and by landscaping design features which aesthetically enhance the environment;
- To discourage non-local through traffic thereby reducing the volume and noise of traffic;
- To reduce vehicular speeds to increase the safety of non-motorized street users; and
- To minimize conflicts between street users using physical features rather than physical barriers.

A traffic calmed community will be a safer community if the planning, design and implementation of traffic calming measures recognizes the limitations of all road users. Consistency of design of features, signage, traffic control devices, pavement markings, and landscaping combined with good visibility of those features will achieve a safer community.

There are two types of traffic calming devices: those which divert traffic, and those which slow traffic. Physical traffic calming measures include vertical and horizontal deflections in the road as well as obstructions and traffic regulations. Community demand, planning intervention, and engineering options will determine which devices are appropriate for a specific area.

Despite the obvious benefits of enhancing the liveability of areas, decreasing traffic noise and speed, and reducing conflicts between motor vehicle traffic and other road users, there are some potential negative effects of traffic calming. Diverting devices may negatively impact the mobility of residents and emergency vehicle response times. Some measures can increase costs and be considered visually unattractive or incompatible with adjacent buildings and land uses.

The following is a list of devices:

- Traffic circles
- Raised median island and raised median through intersection
- Curb radius reduction and curb extension
- Chicane
- On-street parking
- Speed Humps and raised crosswalks
- Raised intersections and sidewalk extensions
- Right-in/right-out diverter and intersection channelization
- Full closure
- Diverter

- Directional closure
- Signage
- Rumble strips and speed bumps

For explicit engineering designs for the traffic calming devices discussed here, please consult Transportation Association of Canada and Institute of Transportation Engineers (District 7) Canadian Guide to Neighbourhood Traffic Calming, December 1998.

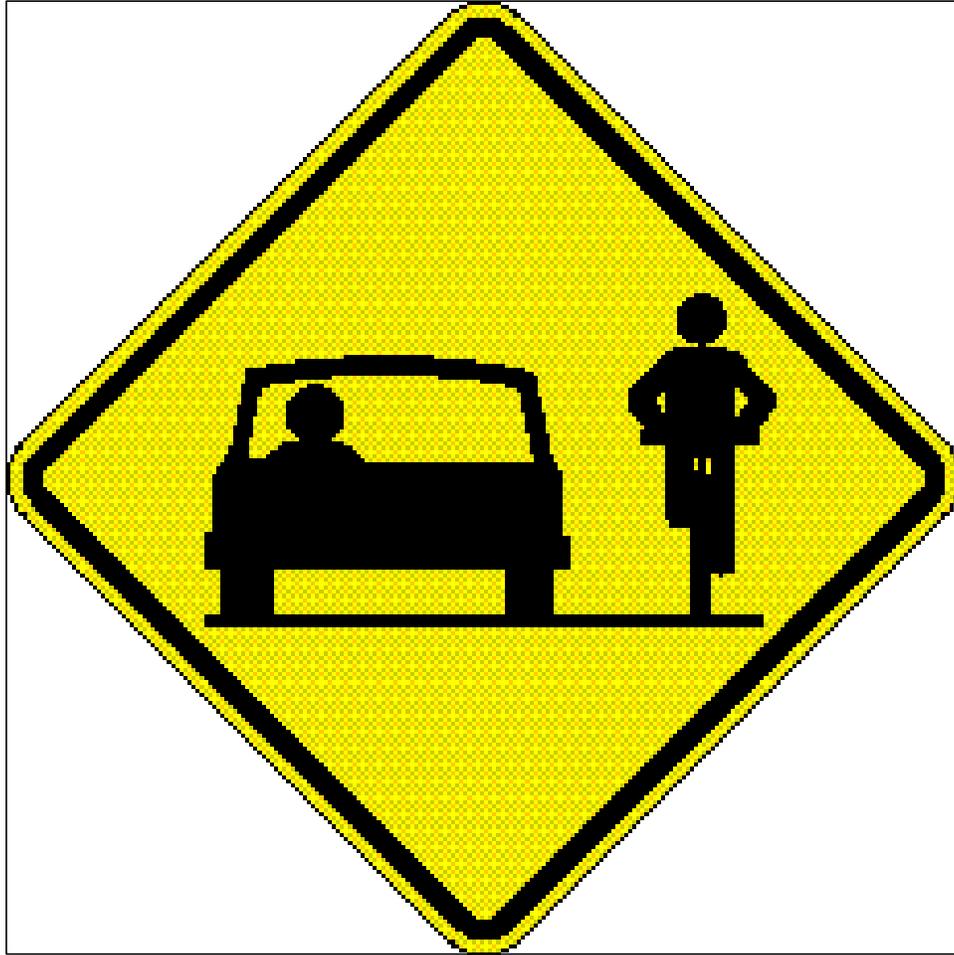
APPENDIX G - SAMPLES OF TRANSPORTATION ASSOCIATION OF CANADA SIGNS

Taken from Bikeway Traffic Control Guidelines for Canada, December 1998

Transportation Association of Canada,
2323 St. Laurent Boulevard,
Ottawa, Ontario, K1G 4J8
Tel: (613) 736-1350
Fax: (613) 736-1395
Website: <http://www.tac-atc.ca>



TAC IB-23
450 mm x 450 mm



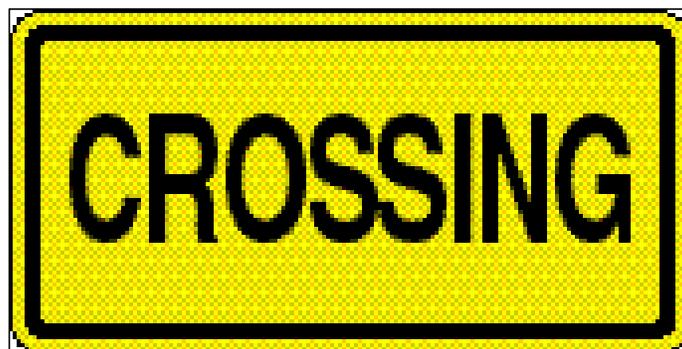
TAC WC-47
600 mm x 600 mm



TAC WC-47S
600 mm x 300 mm



TAC WC-7
600 mm x 600 mm



TAC WC-7S
600 mm x 300 mm

APPENDIX H – LIABILITY ISSUES RELATED TO BICYCLE FACILITIES

This appendix provides an overview of issues to consider that are related to liability.

Did a potentially dangerous defect exist?

The absolute safety of any facility is not guaranteed. What must be determined is - Is the facility reasonably safe for ordinary use?

Drivers and cyclists are not expected to anticipate extraordinary dangers without warning. The municipality has a duty to warn drivers and cyclists of any hazards. A warning is not enough, however – the municipality must correct extraordinary situations.

Was the condition a defect? Refer to published accepted standards, practices in other municipalities and experts. Mere compliance with standards is not sufficient in all cases, however – extraordinary conditions must be accounted for.

What if the standards or practices change since a facility was constructed? The law generally considers that the standards and practices which prevailed at the time of implementation apply.

Could the municipality have reasonably foreseen the hazard?

Did damages occur?

What is the value of injuries or deaths?

Was the defect a proximate cause of the damages?

The presence of a defect is not enough to create liability. The defect must be a causal factor.

There may be several causes – use the “but for” test.

Was there contributory negligence?

Did negligent behaviour by the plaintiff contribute to the occurrence or severity of the accident? For example:

- No lights at night;
- Violate traffic laws (i.e., Failure to stop);
- Inattention;
- Drunk; or
- High speed.

Old concept – contributory negligence bars recovery – if the plaintiff’s negligent behaviour contributed to the accident, then the plaintiff cannot recover.

Current concept – comparative negligence – there are relative degrees of negligence, and parties can be held to be jointly and severally liable (shared liability – municipality would be liable for a portion of the damages).

Did the agency have knowledge of the defect?

Negligence is predicted on knowledge of the defect – actual knowledge through inspection or reporting, or construction knowledge of design.

Was the action discretionary or ministerial?

Discretionary functions are generally immune from liability:

- Involve a higher level decision;
- Courts should not substitute their judgement;
- No immunity from liability for abuse or failure to exercise discretion; and
- Discretionary immunity not perpetual.

Ministerial functions are not immune from liability:

- Not policy level decision; and
- Construction or maintenance is carried out at an operational level.

Personal liability of engineers:

- Distinction between discretionary and ministerial functions;
- Most cases involve lack of ordinary care;
- Acting under orders is a legitimate defence; and
- Engineers are not liable for actions of subordinate, unless the subordinate was ordered to participate.

Adapted from material presented by Alex Sorton at ProBike '94, Portland, OR, September 1994.

APPENDIX I - EXAMPLE TERMS OF REFERENCE FOR COMMUNITY INVOLVEMENT

A Bicycle Advisory Committee can provide a means for the general public to have input into the implementation of the Bicycle Transportation Strategy. A Bicycle Advisory Committee, as a working committee of devoted volunteers, can also complement the work of City staff.

In order for the Bicycle Advisory Committee to be truly effective, their input must be meaningful and respected.

Mandate

The role of the Bicycle Advisory Committee is to review, advise, and make recommendations to City Departments and other agencies regarding:

- The development of bicycle routes, capital improvement projects, spot improvement projects, and other projects as they relate to bicycling;
- The integration of bicycling into significant development proposals: for example, roadway design and end-of-trip bicycle parking facilities (showers and change rooms where appropriate);
- The form, content, and distribution of public information, awareness, and encouragement material, information, and programs;
- Appropriate community involvement activities and processes regarding bicycling issues and municipal involvement in these issues;
- The promotion of operator awareness and competence through education and enforcement programs for both cyclists and motorists;
- The varying interests of adjacent municipalities, to ensure that the bicycle plans of White Rock are compatible with the plans of Surrey and other regional plans, and to facilitate and encourage inter-regional bicycle travel;
- Inter-modal bicycling initiatives, Ministerial highway cycling enhancement projects, etc., by providing assistance and/or direction to other transportation agencies, where required;
- Cycling issues as they affect the Official Community Plan, Local Area Plans, and other plans, as well as policy initiatives which are intended to promote cycling;
- Funding strategies which should be pursued to finance bicycle facilities and program development;
- The implementation of the Bicycle Transportation Strategy and any future revisions required to meet the needs of the City's residents and employees as the plan evolves and conditions change; and

- Budget requirements needed to successfully implement capital improvement projects, programs, and other initiatives for the coming year. Budget requirements should be prepared by City staff and reviewed by the Bicycle Advisory Committee.

Membership

The Bicycle Advisory Committee should be composed of 11 voting members as listed below:

General Members

Up to six members of the community (people who live or work in White Rock), who should include:

- Bicyclists, including commuters, utilitarian cyclists, and recreational cyclists;
- A bicycle dealer representative;
- A representative of a bicycle organization or club; and
- Two of the following:
 - a registered architect;
 - a landscape architect;
 - a professional engineer;
 - a lawyer;
 - a teacher; and
 - a (bicycle) police squad representative.

The majority of the general members should be active cyclists. In order to provide objectivity, however, it is desirable to have one or two of the members who are non-cyclists or casual cyclists.

City Representatives

Up to four representatives of various City Departments and School Board, including:

- A councillor;
- Leisure services;
- School board; and
- Engineering.

All the members are required to serve a two-year term. The exception is when the Bicycle Advisory Committee is first established – during the first year, one half of the

membership should serve one-year terms. One half of the membership would therefore be replaced each year thereafter.

A member must wait a minimum of one year after leaving the Bicycle Advisory Committee before re-applying for appointment.

Membership may be extended for up to two additional terms at the discretion of the Bicycle Advisory Committee, if:

- The standing member is a major and enthusiastic contributor whose contributions and influence would be a loss at the given point in time; or
- There are no prospective members to fill vacated seats.

Any member who absents themselves from the Bicycle Advisory Committee for more than three consecutive meetings without contacting the Chair shall be deemed to have resigned.

Candidates for membership in the Bicycle Advisory Committee should be nominated by a city representative or general members of the Bicycle Advisory Committee. Candidates should submit an expression of interest to the Bicycle Advisory Committee, which describes their reasons for seeking membership on the Bicycle Advisory Committee, and includes a summary of their relevant experience and qualifications. The Bicycle Advisory Committee members select candidates by voting, and may interview some or all of the candidates prior to voting.

Structure

The Chair of the Bicycle Advisory Committee should be selected annually, and should function as Chair for one year. The Chair should be one of the general members. The Co-Chair may be a general member or a City representative. During the first year of the Bicycle Advisory Committee, if there are no general members who feel qualified or capable of acting as the Chair, a City representative should be Chair and one of the general members the Co-Chair.

As consensus is the goal of the Bicycle Advisory Committee, it can function without a quorum. If no consensus can be achieved, and the Bicycle Advisory Committee determines that voting is required to reach a decision, then a quorum shall be required and be comprised of one-half of the general members plus one.

The Bicycle Advisory Committee meetings should be held monthly or as requested by the Chair.

The Bicycle Advisory Committee has the authority to establish sub-committees to address specific issues and carry out specific tasks. These sub-committees should be

comprised of between two and five people. Membership on a sub-committee is not limited to the Bicycle Advisory Committee members – the input and involvement of other cyclists, community members, and governmental representatives should be encouraged. This is an ideal way to identify potential new members and to allow persons with specific expertise to participate on an ad hoc basis. Sub-committees are to be chaired by a member of the Bicycle Advisory Committee.

Reporting

The Engineering Department should provide leadership for the Bicycle Advisory Committee and act as its liaison between the Committee and Council. The Bicycle Advisory Committee should report directly to the Engineering Department who in turn should prepare all reports to Council as required.

The Bicycle Advisory Committee should also report regularly, through distribution of “adopted” minutes to other City departments, which have major responsibilities for cycling issues – i.e., Parks and Recreation and other interested persons or groups which request meeting minutes.

Procedures

Responsibilities of the Bicycle Advisory Committee group members – general members and City representatives – are clearly described below. These descriptions of responsibilities will not only provide direction for the Bicycle Advisory Committee members, but will also assist the Bicycle Advisory Committee in determining whether or not a members is adequately carry out his or her responsibilities.

Bicycle Advisory Committee responsibilities include:

- The Bicycle Advisory Committee should make every attempt to advise on basic project and program elements early enough to allow for modifications with a minimum of delay and expense. To this end, the Bicycle Advisory Committee should devote special attention to the beginning phases of projects and programs. Subsequent phases should be reviewed in light of their adherence to specific recommendations made at earlier reviews. The Bicycle Advisory Committee should endeavour to make its recommendations on any matter submitted to it within 45 days from the presentation to the Bicycle Advisory Committee;
- To inform municipal departments and/or Council regarding matters pertaining to those outlined in their mandate;
- Any member of the Bicycle Advisory Committee who may have a financial interest in any matter before the Bicycle Advisory Committee should so indicate, should leave the meeting during the period of discussions and action, and refrain from any prior or subsequent discussions of such matter until it is resolved; and

- To inform the City Clerk with regard to agenda, Council communications, and other circulars required by the Bicycle Advisory Committee.

Departmental responsibilities include:

- At the beginning of each year's budget cycle, municipal staff should provide the Bicycle Advisory Committee with a list of all capital improvement projects and other programs that are being proposed for the following year's budget. Staff will then, upon being contacted by the Bicycle Advisory Committee, work with the Bicycle Advisory Committee to identify those projects and program elements that are appropriate for the Bicycle Advisory Committee to review;
- It should be the responsibility of each departmental representative on the Bicycle Advisory Committee to ensure that all departmental matters, initiatives, and developments are brought forth to the Bicycle Advisory Committee which relate to or could have an impact on bicycling;
- City staff are responsible to make their best effort to co-ordinate project activities, so that the Bicycle Advisory Committee's schedule will not compromise project progress; and
- City staff should be prepared to provide the Bicycle Advisory Committee with information, plans, maps, and data appropriate to a project's or program's given phase, as are necessary for review.

City Clerk's responsibilities include:

- To circulate a meeting agenda at least one week prior to a scheduled meeting (the agenda content to be determined by the Bicycle Advisory Committee);
- To record minutes of all the Bicycle Advisory Committee meeting proceedings, and to distribute the minutes to all Bicycle Advisory Committee members, municipal departments, and other interested parties;
- To bring forth comments, letters, inter-departmental matters and developments to the Bicycle Advisory Committee through circulation of minutes or agendas where appropriate;
- To circulate a letter of receipt to members of the public or community who forward letters to the City regarding bicycling matters and to inform these people that the matter has been forwarded to the Bicycle Advisory Committee for comment. The City Clerk should also advise those interested of scheduled meetings and/or the date, where appropriate, on which the matter will be discussed so that these person(s) may attend and participate in the Bicycle Advisory Committee's discussion on the matter; and
- To prepare Council communications as required by the Bicycle Advisory Committee as part of the mandate.

APPENDIX J – PUBLIC CONSULTATION PROGRAM

Public consultation is crucial to the success of any planning exercise. It should not be the last component to be considered. It is integral to the overall process. Any changes occurring during the planning phases must be communicated to those who have expressed interest in the project. Reasons for the changes should also be clearly explained so that the co-operation between the different groups is not lost.

The following mechanisms are suggested to involve the public, interest groups, and staff in a productive team effort:

- Preliminary meetings with key groups and individuals so that opportunities for advisory assistance, issues and constraints, and the perceived needs of the various users can be identified;
- Open house to involve the general public, to publicize the process and allow staff and elected officials a chance to appreciate the concerns which the community has regarding the provision of bicycle facilities in their area;
- Properly administered surveys and questionnaires, along with an information hot-line and website to solicit reaction to and suggestions for a proposed project and as a follow-up after a facility has been built;
- An advisory committee to communicate the process to the public and to present issues for consideration; such a committee can consist of staff and elected officials or, in larger municipalities, it can include staff, elected officials and members of the public, such as representatives of local cycling or safety organizations;
- Workshops and focus groups are useful forums to address sensitive issues, and provide a platform for open debate and focussed discussion on the issues without involving the entire community;
- Public meetings to convey information to the community at a point in the process where substantial feedback is not expected;
- On-going publicity through press releases, local newspaper articles, door-to-door flyers, a telephone information hot-line and an internet website; and
- Ongoing liaison with interested groups or individuals. This can be a key source of information regarding the project's success.

The effectiveness of the planning process will ultimately depend upon the following:

- Ensuring the integration of the final product into local policy documents by following a clearly defined process involving local elected officials and planners, engineers and the public;

- Identifying the size and nature of the area (urban centre or rural locale) being considered for the provision of bicycle facilities or programs and tailoring the process to meet the area's needs; and
- Identifying the available resources (human, financial, and time).

APPENDIX K: PROVINCIAL CYCLING POLICY

The following overview of the Ministry's Cycling Policy was taken from their web site. Additional information is at: <http://www.th.gov.bc.ca/bchighways/cycling/policy.htm>

Cycling Policy in British Columbia

Cycling benefits the Province's environment, its economy, the health of its people and society at large. It is the goal of the Ministry to integrate bicycling by providing safe, accessible and convenient bicycle facilities on the Province's highways and to support and encourage cycling. Cycling supports the Ministry's mandate to provide British Columbians with an integrated multi-modal transportation system.

1. Provisions for cyclists are made on all new and upgraded provincial highways. All exceptions to this Policy will be subject to an evaluation procedure, as described in the reference material.
2. Route evaluations that impact cyclists will include consultations with cycling stakeholders. An evaluation can be applied on existing routes to identify measures that will improve cycling conditions.
3. The Ministry will involve cycling interests and local government officials responsible for cycling in all highway planning consultations. Municipal bicycle advisory committees, the Provincial Cycling Advisory Committee, and/or recognized cycling advocacy organizations can be utilized to provide advice on cycling needs, facilitate issues and to monitor the effectiveness of the Cycling Policy.
4. To accommodate the safety and travel requirements for different types of cyclists, the Ministry will plan, design and build for the appropriate type of cyclist based on the type of facility.
5. The cost of meeting the Cycling Policy will be managed within normal business practices and annual budgets. The Ministry encourages the use of alternative funding.
6. Uniform signing and marking will be provided for cyclists on all provincial highways. (see reference material)
7. The Cycling Policy and reference material will be monitored on a regular basis. The first review will be conducted no later than three years from the effective date. The process will include consultation with stakeholders.

NOTE: Reference material is subject to updating & change without formally changing the Ministry Cycling Policy.