



District of Tofino Cycling Network Plan

DRAFT

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EXECUTIVE SUMMARY

The District of Tofino is a dynamic community with a growing visitor base and significant roots in fishing, logging, nature and environmental tourism. In the summer months the population of Tofino swells from 1,800 to approximately 22,000.

Relatively flat topography, a mild climate, and the need to adapt to burgeoning growth patterns have brought about the need for Tofino to enhance cycling opportunities within the District.

The enormous success and popular support for the existing Multi Use Path, or “MUP,” confirms that Tofino residents and tourists alike support the growth of the bicycle system. While the existing MUP stops short of downtown, virtually all public input received by the consultant team supports extending the MUP into town on the existing routing along Campbell Street.

The Multi Use Path is essentially the “spine” of the Cycling Network and should remain a high priority until a safe route is established into downtown Tofino.

The District of Tofino initiated the process of developing a comprehensive Cycling Network Plan to enable the municipality to take immediate and effective action on building a safe, convenient and aesthetic cycling network which encourages cycling. While responding to citizens’ calls for expanded and improved cycling options, the District is also positioning itself as a healthy recreational community. Switching to active transportation from motorized transportation results in increased physical activity, reduced greenhouse gas emissions, reduced traffic congestion and increased road safety. The completion of a bicycle network cannot be underestimated in its value to both the resident community and visitors to Tofino.

More than two in five Canadian adults strongly agree that a well-linked network of trails would help them become more physically active.

(Go for Green, 2004)

This Plan provides guidance and direction for future development of bicycle infrastructure and programs. The Plan includes:

- Recommendations for improvements to the existing Multi Use Path;
- Recommendation for an extension of the path into the downtown core;
- Recommendations for the bicycle routes within the village;
- A long term vision for future bicycle routes in the District;
- Recommendations for the location of bicycle parking;
- Recommendations to amend the District’s Official Community Plan;
- Design standards for bicycle infrastructure;
- A strategy to minimize the District’s potential liability;
- An overview of programs to promote cycling and to educate cyclists and motorists to safely share the road;

- A strategy to involve the community in the implementation of the Cycling Network Plan, and
- Alternative sources of funding.

The main body of this document is deliberately brief – it is intended to provide a condensed overview of the various components of the Cycling Network Plan. Public consultation results, the MUP survey, lots requiring right-of-way acquisition, design guidelines, proposed trail maps, and the Campbell Street redesign are described in detail in the Appendices, and are referenced accordingly in the main body of the document.

CHAPTER 1: INTRODUCTION

1.1 Plan Background

This report proposes a comprehensive network of bicycle paths, routes and trails integrated with Tofino's roadway system, existing bicycle routes and park system to accommodate resident and visitor cycling needs.

The Plan draws on state-of-the-art bicycle planning and design, and on the experience of other local governments.

The report chapters include:

- Chapter 1: an overview of the plan background; goals and objectives for the development of bicycle infrastructure;
- Chapter 2: bicycle network recommendations that will meet the needs of multiple users;
- Chapter 3: a summary of education, encouragement and enforcement strategies;
- Chapter 4: a description of strategies for implementation including proposed phasing and alternative funding sources.

References cited follow Chapter 4.

The Appendices include:

- Appendix A: Public consultation results.
- Appendix B: Survey of Multi Use Path
- Appendix C: MUP extension draft workplan.
- Appendix D: Design guidelines for bicycle infrastructure.
- Appendix E: Signage schedule.
- Appendix F: Map of the proposed Lighthouse Trail.
- Appendix G: Map of the proposed utility corridor.
- Appendix H: Option for integrating a bicycle route with the Campbell Street redesign.

1.2 Goals and Objectives

The District of Tofino recognizes that bicycling is a popular form of recreation and a legitimate form of transportation. To encourage more people in Tofino to bicycle and to improve conditions for those who already cycle, the District initiated a Cycling Network Plan.

The main objective of the plan is to develop a strategy to:

- Build on the existing cycling infrastructure;
- Develop a long term plan for the development and maintenance of cycling routes, and
- Facilitate and encourage cycling transportation through engineering design, low cost improvements, public awareness and education, and community promotion.

Secondary objectives include:

- Identifying links from the multi use path to neighbourhoods;
- Identifying locations for bicycle parking within the District;
- Enhancing the transportation system in the District by providing a signed bicycle route, and
- Improving accessibility to the beach areas and other important destinations such as the school and daycare, the Community Hall, and commercial centre.

CHAPTER 2: BICYCLE ROUTE NETWORK

This chapter presents a summary of the inventory and analysis undertaken for existing conditions within the District, with a focus on the multi use path.

Following the analysis, recommendations are provided for development of a comprehensive cycling network within the District.

2.1 Inventory of Existing Infrastructure

The existing 5 km Multi Use Pathway (or “MUP”) is the primary existing bicycle route in the District. It is used regularly by a wide variety of users, and is cited as being the most popular recreation facility in the District (Tofino Parks and Recreation Master Plan, 2007). The MUP is used year-round, even during periods of snow, inclement weather, and limited daylight. While deemed an overwhelming success, some existing safety issues on the path were brought forth that need to be addressed. In addition, opportunities for creating an appropriate “made-in-Tofino” cycling network were identified. The following tables and maps summarize the outcomes of the inventory and analysis. The maps include:

- Opportunities and constraints for cycling;
- Key destinations points within the District;
- Village neighbourhoods, and
- Circulation routes including bicycle routes, trails and streets.

Figure 1: Existing Multi Use Path



Table 1: Summary of Opportunities

Key Opportunities







<i>Buffering</i>	<p>- Native plantings can provide a pleasant buffer between the MUP and the highway.</p>	
<i>Pavement markings</i>	<p>- Iridescent paint increases visibility without contributing to light pollution.</p>	
<i>MUP extension</i>	<p>- Extending the multi use path into the downtown is a priority for the community.</p>	
<i>Trail names</i>	<p>- Adopting trail names proposed by community members is a way of “branding” new and existing trails.</p>	
<i>Materials</i>	<p>- The use of natural materials reflects the character of Tofino.</p>	
<i>Bicycle Parking</i>	<p>- Providing secure and convenient end of trip facilities is key to encouraging cycling in the District.</p>	

Table 2: Summary of constraints

Key Constraints / Safety Concerns








<i>Low visibility curve</i>	<i>- Poor visibility cited at the 'S' curve on MUP.</i>	
<i>Highway crossings</i>	<i>- Highway crossing to Chesterman Beach Road and other beach access roads are unsigned.</i>	
<i>Driveway crossings</i>	<i>- Private driveway crossings along the MUP are a safety concern for users.</i>	
<i>Pavement overlays</i>	<i>- Lack of reflective stripes in repaired area.</i>	
<i>Path degradation</i>	<i>- Tree roots cause upheaval and cracking of pavement.</i>	
<i>Busy intersections</i>	<i>- Conflicts have occurred at busy Intersections along the MUP.</i>	
<i>Narrow path width</i>	<i>- The multi use path narrows to 1.2 m as it approaches town.</i>	

Figure 2: Summary Map of Opportunities and Constraints

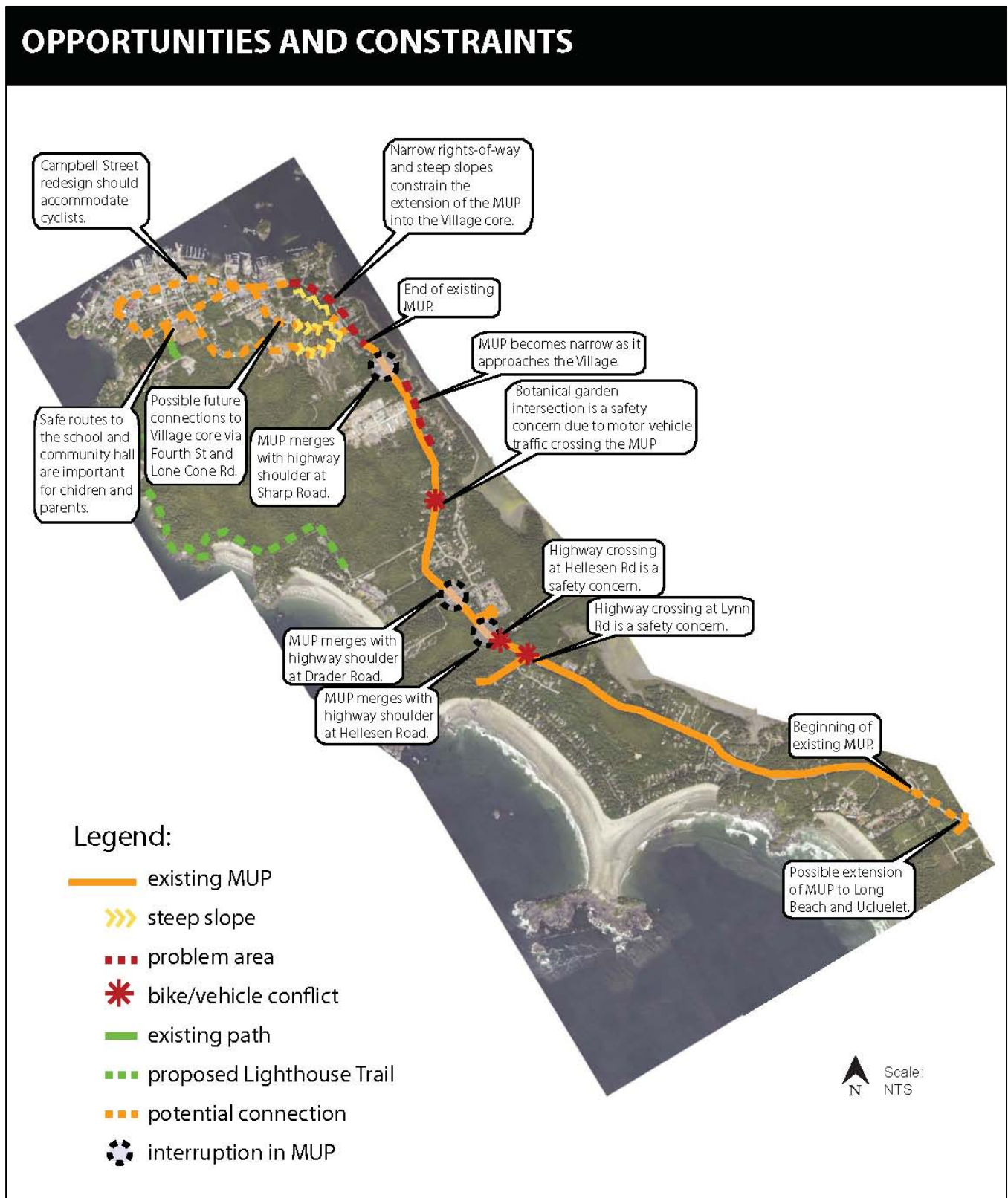


Figure 3: Map of Key Destination Points

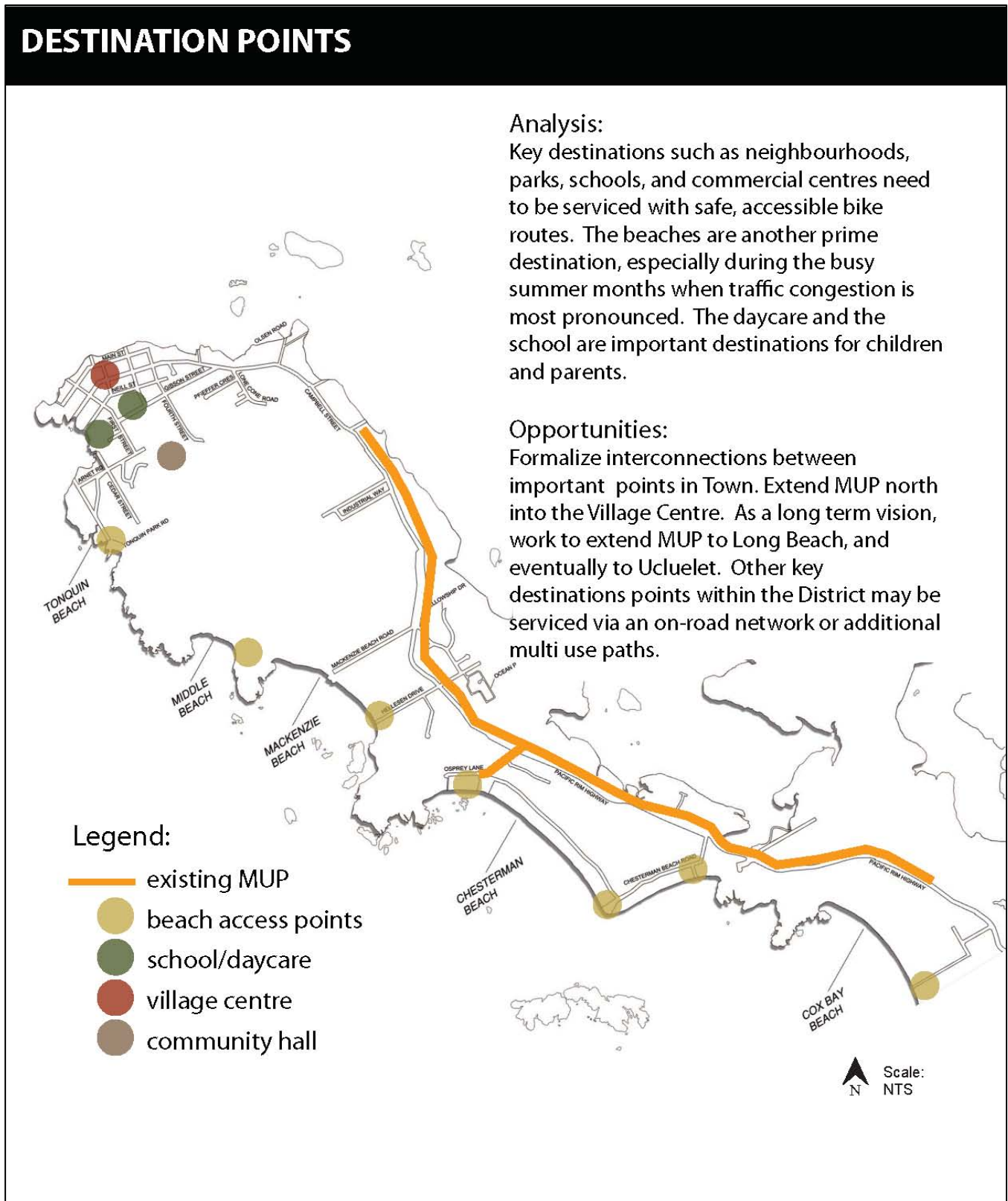


Figure 4: Map of District Neighbourhoods

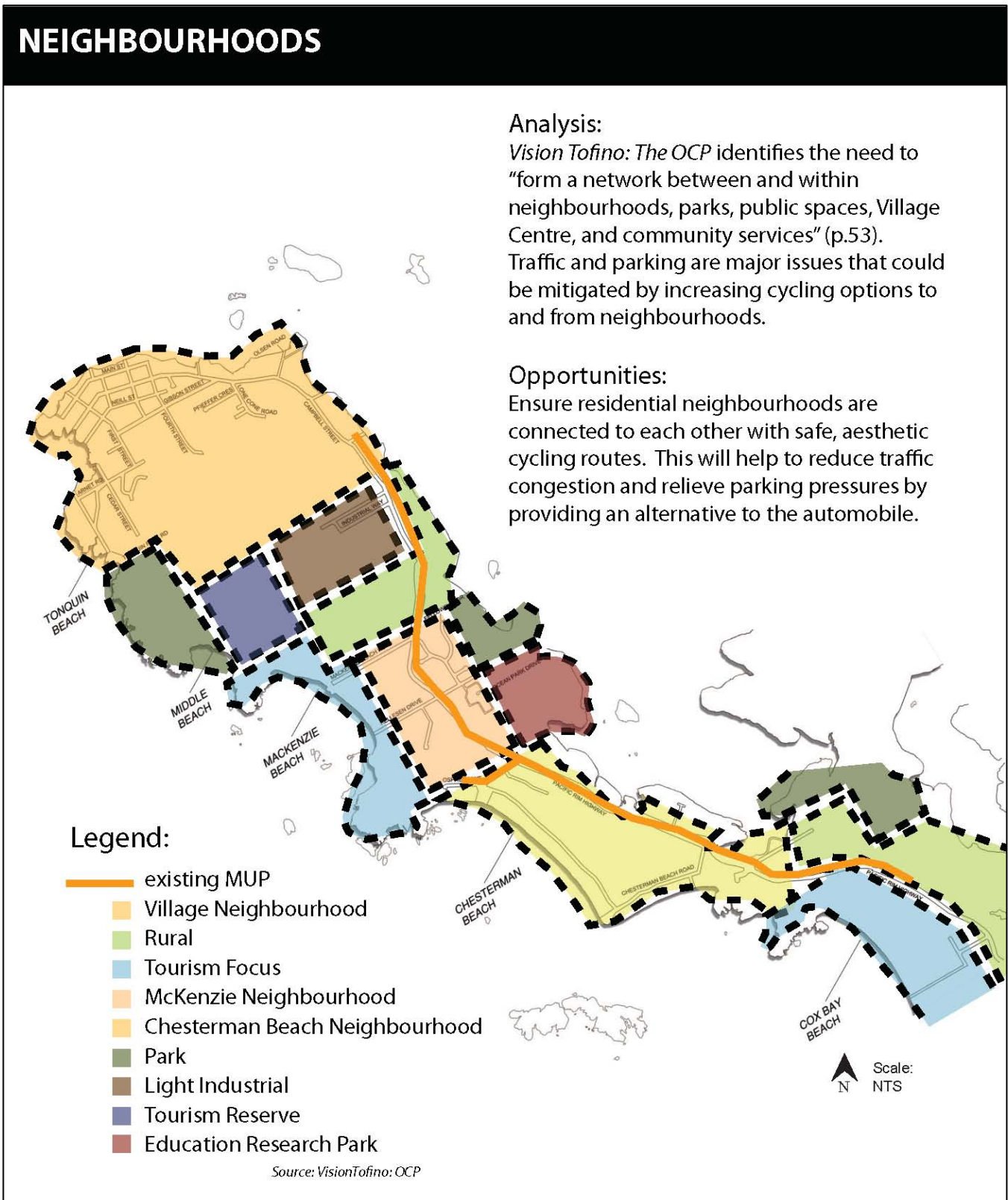
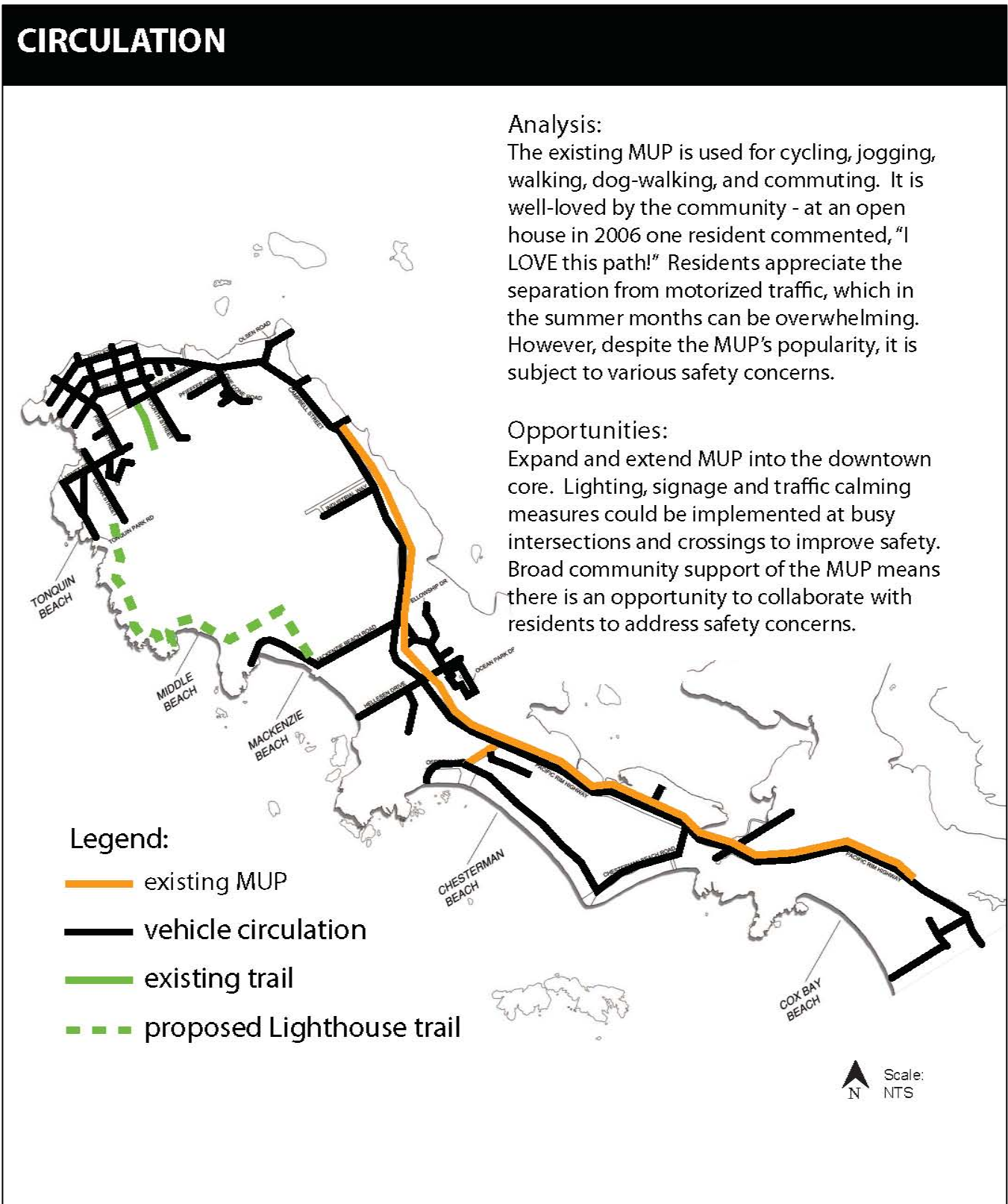


Figure 5: Map of Circulation



2.2 Bicycle Network Recommendations

In order to meet the goals and objectives identified in this report, the following actions are recommended. Note that these recommendations include upgrades to the existing multi use pathway, as well as new routes to be designated. In several locations trails are recommended as a supplement to the on-street routes and paved multi use pathways, which will form the core of the overall cycling system. See Appendix D for design standards and Appendix E for information regarding Transportation Association of Canada (TAC) signage referenced in this report.

Recommendations are grouped under the following themes:

- Improvements to the existing Multi Use Pathway;
- Extension of the MUP into the Village Centre;
- Development of bicycle routes within the Village;
- Development of additional bicycle routes within the network;
- Locations for bicycle parking, and
- Amendments to the Official Community Plan.

An overall Cycling Network Map is presented in Figure 7.

Theme 1: Recommended improvements to the existing Multi Use Pathway

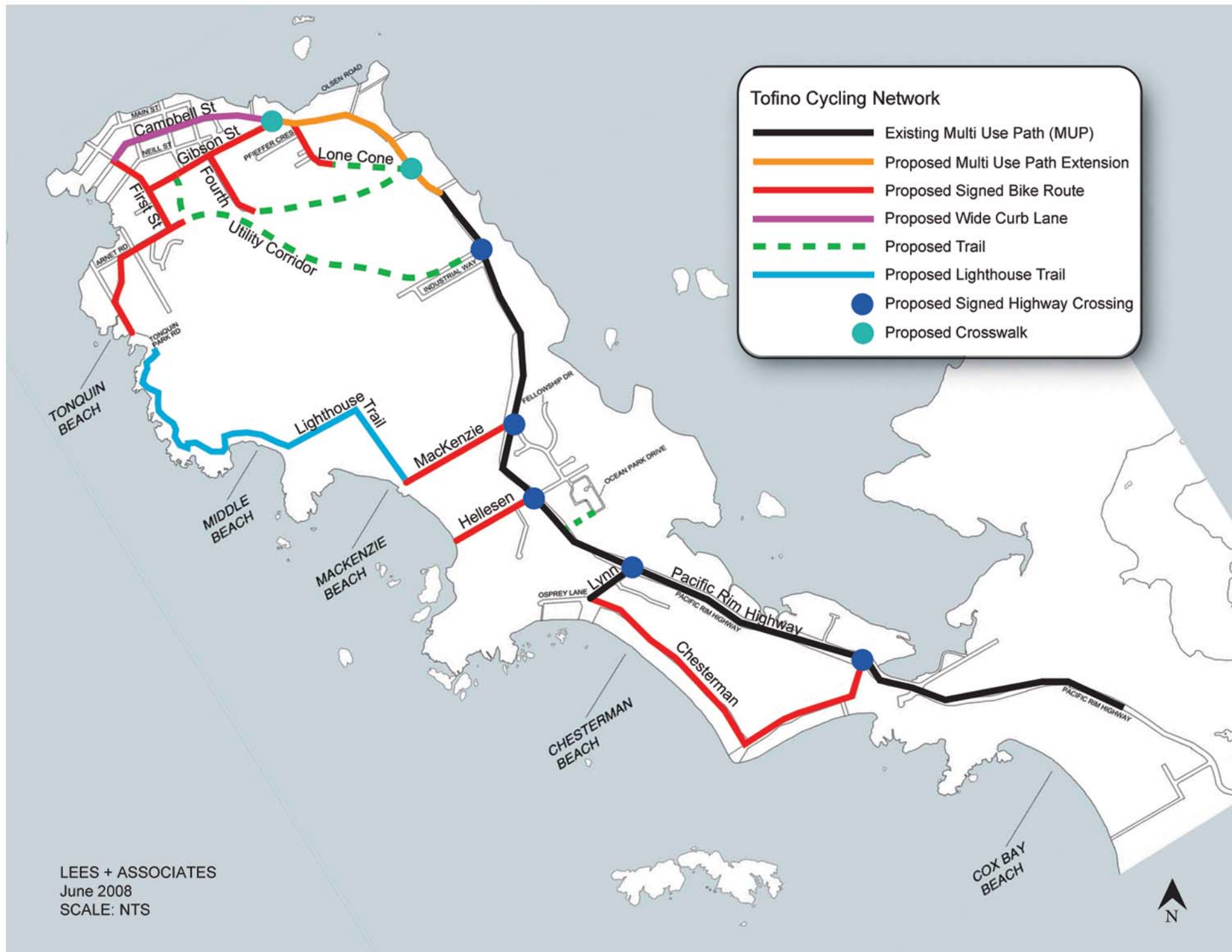
1. Stripe all multi use pathway edges on both sides with reflective white paint to increase visibility.
2. Re-position cautionary diamonds to either side of driveways. This will increase the life of the paint and prevent the diamonds being obscured by gravel from driveways.
3. Re-paint cautionary diamonds in yellow reflective paint (see Figure 6).

Figure 6: Cautionary diamonds (visualization)



4. Provide low level lighting along MUP at the Botanical Gardens intersection (see Appendix D Design Guidelines section 3.9).

Figure 7: Cycling Network Map



5. Install signage on Pacific Rim Highway to indicate northbound traffic must yield to bicycles and pedestrians when turning right across the multi use path. Use TAC RA-7 signage at 200 m intervals (see Appendix E Signage Schedule).
6. Install signage along the MUP to indicate the pathway is shared by cyclists and pedestrians using TAC RB-93 at 200 m intervals (see Appendix E Signage Schedule).
7. In the section where the MUP curves (“S” curve) north of Chesterman Beach Road, erect a TAC WA-8R (L) to provide a warning (see Figure 8 and Appendix E Signage Schedule). Install a painted centerline to separate traffic for this section only (see Appendix D Design Guidelines section 2.1).

Figure 8: “S” curve on MUP north of Chesterman Beach Road



8. Repair pavement on sections of MUP that have root damage that exceeds 2 cm by removing roots, installing root barriers, and repaving (see Appendix D Design Guidelines section 2.1).

9. During reconstruction or repairs, make every possible effort to widen existing MUP to a standard of 3.0 metres (see Appendix D Design Guidelines section 2.1).
10. Provide signage on Pacific Rim Highway to indicate highway crossings at Mackenzie Beach Road, Hellesen Drive, Lynn Road and Chesterman Beach Road. Install signage on the highway to alert motorists of these crossing points using TAC WC-46 Pedestrian and Bicycle Crossing Ahead Sign with the TAC WC-7S tab (see Appendix E Signage Schedule). Install signage to indicate a highway crossing at Industrial Way when the Utility Corridor trail is developed.
11. Upgrade the three sections where the existing MUP merges with the highway shoulder at Hellesen Drive, Drader Road and Sharp Road. Upgrade these sections by providing a 3.0 m wide paved surface separated from the highway by a minimum of 1.0 m. Stripe both pathway edges with reflective paint (see Figure 9; see Appendix D section 2.1 for Design Guidelines).

Figure 9: Three areas where MUP merges with highway shoulder require upgrading



12. Provide caution signs (yellow diamond) to each homeowner along the MUP, to be erected by the homeowner, which state – “Caution, Crossing Pedestrian and Cycling Route” (see Appendix E Signage Schedule).
13. Develop a “MUP Etiquette” sign, similar to the existing Surf Etiquette signs located at the beaches. Include the following cautions:
 - MUP users keep to the right.
 - Cyclists use bell or voice to pass.
 - Cyclists to use light when riding at night.
14. It is recommended to install “MUP Etiquette” signs at the beginning and end of the MUP, and at the crossing to Chesterman Beach Road which was identified as an important crossing point by the community (see Appendix A Summary of Comments, and Appendix E Signage Schedule).

Theme 2: Recommendations for extending the MUP into the Village Centre

Extending the existing MUP along the eastern side of the highway from Bay Street to Fourth Street is the best solution for future connection of the MUP to the Village Centre. Limitations still exist as the highway infringes on existing property lines between Bay Street and Olsen Road (see Appendix B MUP Survey). This leaves insufficient highway right-of-way (ROW) to accommodate a 3.0 metre MUP at this time.

It is understood that a precedent of property acquisition has been established with the re-development of District lots (L1 PL 10798) and (L1 PL13244) just west of Olsen Road. Acquiring public rights-of-way is recommended as the preferred solution for resolving the existing property issues.

The following priority actions are recommended for extension of the MUP into the Village core:

15. Acquire public rights-of-way between Bay Street and Olsen Road on a case by case basis (see Appendix C for a list of District Lots requiring ROW acquisition). Alternative options include purchase, subdivision, or donation of a strip of land by a current owner, possibly in exchange for property enhancements or other benefit.
16. It is recommended that the District work with the Ministry of Transportation to create a formal crossing of Campbell Street (Highway 4) just north of the Co-op Gas Station. This crossing should either be a crosswalk, or a 2-way stop. This would allow cyclists and other users to access a future trail via Lone Cone Road to the Village when this area is developed (see Figure 12).

Theme 3: Recommendations for the development of bicycle routes within the Village

The following recommendations provide guidance for cycling routes within the existing District road network. As roadways are upgraded or repaved, or new development permits are issued, there is an opportunity to make cycling traffic a priority by considering bicycles in all roadway planning, design and construction.

- 17. Designate Gibson Street as a signed bicycle route from Campbell Street to Wickaninnish Community School using TAC IB-23 route marker signs at 200 m intervals. At such time as the street undergoes upgrading and paving, install painted bicycle lanes and traffic calming (see Appendix D Design Guidelines sections 1.4 and 3.12).
- 18. Create a pathway connection from Gibson Street through Wickaninnish schoolyard to the Community Hall. This requires directional signage from Gibson St, through the schoolyard, to link with an existing trail leading to the Community Hall. It also requires design analysis in the schoolyard to account for circulation, and car and bicycle parking (see Figure 10).

Figure 10: Connection through Wickaninnish Community Schoolyard



19. Sign the gravel trail connection from Gibson Street to First Street as a bicycle route using TAC IB-23 until such time as this becomes a paved roadway. When developing this roadway, pedestrian and cycling traffic should be a priority (see Figure 10).
20. Dedicate the following village roads as signed bicycle routes using TAC IB-23 route marker signs: First Street (from Campbell St to Arnet Rd), Tonquin Park Road, Fourth Street (north of Campbell St), Lone Cone Road, and Chesterman Beach Road. When these streets undergo upgrading install painted bicycle symbols and traffic calming.
21. Integrate wide curb lanes and traffic calming with the proposed Campbell Street re-design from Gibson Street to First Street to ensure this gateway area is a “complete street” that accommodates pedestrians, bicycles and motor vehicles (see Appendix H Campbell Street Section). Sign as a bicycle route using TAC IB-23 route marker signs.
22. Work with the Ministry of Transportation to create a formal crossing of Campbell Street at Gibson Street as development at this intersection occurs. This should be either a crosswalk, raised crossing or median refuge (see Appendix D Design Guidelines section 3.8). This would allow cyclists and pedestrians to either turn on Gibson Street or to continue on bicycle lanes through the Village Centre.
23. Erect wayfinding signs along bicycle routes that indicate distance and cycling time to key destinations within the District (see Figure 11). Suggested locations include Campbell Street at the Co-op, Arnet Road at the Community Hall, along the MUP at the Botanical Garden, at MacKenzie Beach, and at Chesterman Beach (see Appendix D Design Guidelines section 3.6).

Figure 11: Wayfinding signage (visualization)



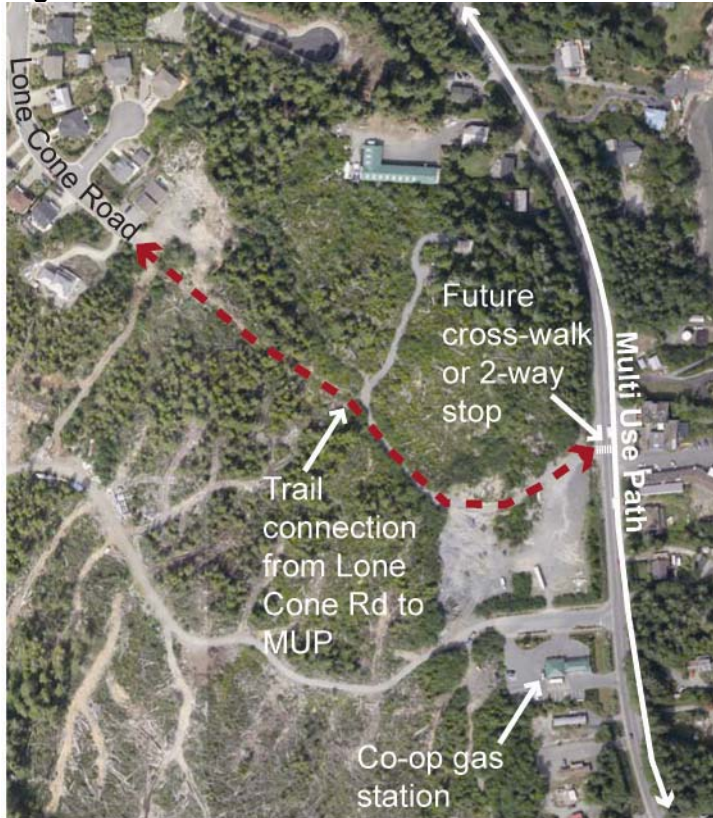
24. Use miniature TAC IB-23 symbols on road name signs for all roads designated as bicycle routes (see Appendix D Design Guidelines section 1.1).
25. Establish a maintenance plan and policy for the cycling network as described in Appendix D section 3.11 Maintenance.

Theme 4: Recommendations for additional bicycle routes within the network

26. Establish the Lighthouse Trail from Tonquin Park to MacKenzie Beach. If at all possible, this trail should be multi use (see Appendix F Proposed Lighthouse Trail Map).

27. Build a trail from Lone Cone Road to Pacific Rim Highway when development of this property occurs (see Appendix D Design Guidelines section 2.2).

Figure 12: Trail from Lone Cone Road to MUP



28. Work with the Public Works Department to install a trail from Industrial Way to Arnet Road along the proposed Utility Corridor alignment when this corridor is developed (see Appendix G Proposed Utility Corridor Map).
29. Dedicate parkland to accommodate a trail via Fourth Street to Campbell Street just north of the Co-op Gas Station when development of this property occurs (see Appendix D Design Guidelines section 2.2).
30. Build a trail from the MUP to Ocean Park Drive (south of Groovy Movies) as development of this property occurs. Design work will be necessary to identify an alignment for the trail through the gravel parking area.

Figure 13: New trail connection from MUP to Ocean Park Drive



31. Establish a “Joint Working Committee” with representatives from the Alberni-Clayoquot Regional District, District of Tofino, District of Ucluelet, Parks Canada, First Nations, and the Ministry of Transportation to collaborate on connecting the Multi Use Path to Long Beach and Ucluelet.

Theme 5: Recommendations for the location of bicycle parking

It is important for cyclists who are using their bicycle for transportation or utilitarian purposes to feel there is a safe place to lock and leave their bicycles. The responsibility to provide bicycle racks should not only rest with the municipality, but also with merchants, hotel owners and other levels of government.

32. Multiple unit dwellings, and places of employment such as offices, hotels, retail should provide Class I parking (i.e. bicycle lockers, locked bicycle rooms) (see Appendix D Design Guidelines section 3.1).
33. All public and institutional buildings should provide Class II parking (bicycle racks) including District offices, Library, Elementary School, Community Hall, Day care, and the Hospital.

34. The District should encourage all existing commercial establishments to provide bicycle racks. The District should adopt a bylaw requiring new commercial developments to provide bicycle racks.

Theme 6: Recommended amendments to the Official Community Plan

In order for the Cycling Network Plan to be effective, it must first receive the support of District Council and staff. Once accepted as policy, the Plan should be used as a guideline to guide annual budgets and to accomplish the tasks laid out in the Plan. The Plan should also be reviewed on a regular basis to identify accomplishments, and to revise the goals and the implementation strategy.

The best way to accomplish the recommendations in this study is to “institutionalize” the policies herein. This means that the recommendations need to be seen as benefiting the entire transportation network, not just bicycles.

Currently, the Official Community Plan contains limited mentions of cycling. The following OCP amendments are recommended to ensure that cycling is:

- Clearly identified as a viable transportation alternative and an integral part of the transportation network;
- Accommodated during all roadway planning, design and construction undertakings, and
- Not compromised in order to enhance facilities for other motorized vehicular transportation modes, excluding transit.

Although the District regards its mobility system as an integrated, multi-modal system, the relationship between each mode and the relative priority of each mode is not clearly defined in the OCP. In order to identify the specific relationship between various modes of transportation, it is suggested that policies be added to section **3.2.3.11 Mobility Policies** of the OCP.

Recommended additions to this section include:

1. “The transportation system in Tofino is intended to provide for the efficient movement of people and goods, by all modes of transportation including bicycles, pedestrians, trucks, delivery vehicles, and the private automobile.”
2. “The integrated transportation system will place priority on non-single occupancy vehicle and non-motorized modes.”
3. “Emphasis will be placed on increasing opportunities for non-automobile transportation modes, reducing the number of single occupancy automobile trips in the District of Tofino, and by supporting and encouraging bicycle use and pedestrian travel.”
4. “Mobility planning initiatives should reflect the following priorities:
 - Pedestrian
 - Bicycle

- Transit
 - Multiple-occupant vehicles
 - Goods movement
 - Single-occupant vehicles”
5. “All new developments and amenities in the District of Tofino must provide facilities to accommodate pedestrian and bicycle access.”
6. “The District shall adopt the District of Tofino Cycling Network Plan.”

2.3 Minimizing the District’s potential liability

Note: This section of the report was prepared without the advice of, or review by, a qualified legal professional and legal counsel was not retained. Conclusions and recommendations are drawn from the experience of other municipalities which have liability concerns related to bicycle infrastructure.

Liability is one of the concerns most frequently identified by municipalities regarding bicycle infrastructure. Similar concerns have been successfully addressed for motorized vehicles by developing appropriate design and signage standards, and implementing maintenance programs and public reporting processes. In doing so, municipalities have minimized the numbers and amounts of claims which might be attributed to negligence on the part of the municipality.

The same approach should be followed for bicycle infrastructure. Bicycles should simply be treated as another vehicle which has specific design and maintenance needs. It is recommended that the following measures be adopted to address possible liability concerns:

- Adopt design guidelines which accommodate cyclists on all roads (as described in Appendix D);
- Install appropriate signage, including warning signs, where appropriate and ensure that they remain visible at all times;
- Establish a regular maintenance schedule for bicycle infrastructure (as described in Appendix D section 3.11). Maintenance of bicycle routes is particularly important, as bicycles are more susceptible to poor road conditions;
- Designate responsibilities for maintenance of specific bicycle infrastructure. Maintenance of on-street routes could be the responsibility of the Public Works department, for example, whereas maintenance of off-street routes could be the responsibility of the Parks and Recreation department;
- Establish a reporting mechanism so that cyclists are able to notify the appropriate department or contact person regarding maintenance needs;

- Respond quickly to public maintenance requests. Prompt follow-up minimizes potential liability, and enhances the credibility of the entire Cycling Network Plan, and
- Consider cyclists during road construction (as described in Appendix D section 3.10). Often road construction projects eliminate the travel portion at the side of roads, which is the travel space used by cyclists. Additional night-time hazard warnings may be necessary during road construction to ensure cyclists are aware of the hazard after dusk.

It is important that the District not attempt to limit cyclists to using only designated bicycle routes. It is also important that District staff and Councilors present the Cycling Network Plan to the community as being intended to improve safety for cyclists rather than making statements or claims that the Plan will ensure the safety of cyclists. Although safety is a fundamental objective of the Cycling Network Plan, the District cannot predict nor control the behaviour of cyclists and other road users.

CHAPTER 3: ENCOURAGEMENT AND EDUCATION

It is important that the Plan be viewed as more than just changes to the physical environment. Engineering a bicycle-friendly environment, and providing infrastructure will encourage more people to consider cycling as a viable form of transportation. However, without adequate promotion, education, encouragement, and enforcement the goal of increased ridership will not be fully realized. Programs to promote cycling and to educate cyclists and motorists as to how to safely share the road are needed.

The Cycling Network Plan presented in Chapter 2 are infrastructure-oriented components which will be designed, constructed, or installed. In this Chapter, the discussion addresses programs rather than infrastructure – the “soft” rather than the “hard” aspects of a Cycling Network Plan.

3.1 Awareness and Encouragement Programs

Awareness and encouragement programs are intended to improve the perception and acceptance of bicycling in the community, by making people more aware of the presence and opportunities for cycling, and by motivating people to ride their bicycles. Examples of these programs include:

- Share the Road signage helps encourage motorists and cyclists to safely share the roads;
- Bicycle Route signs indicate to motorists that specific routes have been identified and upgraded to better accommodate cyclists;
- A community bike map identifying the location of bicycle routes, bicycle parking, bicycle shops and rental outfits should be developed and distributed to residents and businesses, and made available at the Visitor Information Centre, Community Hall, District Hall and local shops throughout the District. The cost of producing the map can be partially or fully off-set by revenues from advertising included on the map;
- Community naming of bicycle trails and routes should be encouraged to promote the community’s sense of ownership.
- A bike festival could be planned annually during the month of May (bicycle month), or to coincide with Transportation Week (early June). Many types of activities could be planned such as the opening of one of the designated bike routes or the Multi Use Path extension, a bike to the beach day, a commuter challenge, a pancake breakfast, transportation fair, or a positive enforcement day. These are several examples of successful promotional programs generally co-ordinated, at least in part, by volunteers.

3.2 Education Programs

Education programs are designed to inform and educate cyclists and motorists about “sharing the road” and how to co-exist in a safe and mutually respectful manner.

Many types of cyclist skills educational programs and materials have already been developed and are provided in communities across Canada, and would require little or no modification to be used in Tofino. Possible examples include the national CAN-BIKE education program which offers programs for both children and adults. In Tofino, the *Bike Smarts* program for children in Grades 4 through 7 is already in place.

The Greater Victoria Cycling Coalition has produced the *BikeSense Manual* available at on-line www.bikesense.bc.ca which contains detailed information on CAN-BIKE and One-Day Commuter Skills courses, as well as other cycling safety and skills workshops available in British Columbia.

Health statistics show that physically active people live five years longer and have four fewer years of lengthy illness than those who are non-active.

Cycling for four hours a week – 10 km a day – makes a person physically active.

(Guy Dauncey, Victoria Times Colonist, June 3 2008)

3.3 Enforcement Programs

Enforcement programs are designed to enforce the rules of the road and emphasize the rights and responsibilities of all road users. It is important that enforcement is preceded by education. In Tofino, enforcement would be the responsibility of the RCMP and the District’s by-law enforcement agents.

3.4 Involving the Community in Implementation

As the Cycling Network Plan is implemented, it will be important to ensure that it continues to meet the needs of residents, employees and visitors. This is best accomplished by involving the community in the process of implementing and “fine-tuning” the plan.

Another important reason for involving the community is to draw on the specialized expertise and volunteer effort available in the community. Many local governments are hampered by limited human and financial resources, particularly in implementing programs such as awareness, encouragement, and education. In addition, staff in many municipalities lack specialized expertise in bicycle planning and design.

In Tofino, a Bicycle Advisory Committee has been established as a primary means of involving the active community in the process of implementing the Cycling Network Plan. This committee, called the “MUP Sub-Committee” provides the community – residents and visitors, cyclists, and non-cyclists – with a means of bringing forth their ideas, concerns, and comments regarding bicycle initiatives in Tofino. It also provides input directly to District departments and to Council.

This committee could form the core of a future “Joint Working Committee” including representatives from the Alberni-Clayoquot Regional District, District of Ucluelet, Parks Canada, First Nations, and the Ministry of Transportation to collaborate on extending the Multi Use Path to Long Beach and Ucluelet.

CHAPTER 4: IMPLEMENTATION

4.1 Implementation Strategies

The Cycling Network Plan cannot be implemented all at once. Availability of funds and staff resources, the lead time required for design and construction, and co-ordination with other plans means that it may take several years for some of the programs and infrastructure to be implemented. The important question is – what should be implemented first?

Although many of the improvements required to implement the recommended routes require significant capital investment and considerable staff effort, there are several steps which can be taken which will give immediate credence to the Cycling Network Plan.

It is recommended that short-term items be targeted quickly as a means of increasing awareness of the bicycle network, and encouraging more people to cycle.

4.2 Implementation Schedule and Phasing

PHASE 1 Recommended short-term priorities for implementation:

- Develop Lighthouse Trail from Tonquin Park to MacKenzie Beach;
- Repair root damage that creates ridges greater than 2 cm on the existing MUP by removing roots, installing root barriers, and repaving;
- Reposition cautionary diamonds on MUP to either side of driveways and repaint in yellow reflective paint;
- Stripe all pathway edges on both sides of the MUP with reflective white paint;
- Initiate discussions with landowners affected by extension of the MUP into the Village to acquire rights-of-way between Bay Street and Olsen Road;
- Complete detail design for MUP extension into Village core;
- Launch additional CAN-BIKE cycling education and encouragement programs (see www.bikesense.bc.ca/courses.htm for availability in BC);
- Design and produce a community bike map indentifying the location of bicycle routes, bicycle parking, and bicycle rental shops and make available to residents, visitors and local businesses;
- Plan for an annual bike festival during May (bicycle month) or early June (transportation week);
- Erect signage as outlined on the Signage Schedule;
- Prepare and distribute caution signs for homeowners;

- Develop and install a “MUP Etiquette” sign to indicate code of conduct for users on the Multi Use Path;
- Adopt a bylaw requiring new commercial establishments to provide bicycle racks.
- Designate all recommended on-street “signed” bicycle routes with Route marker signage and miniature (TAC IB-23) symbols on road name signs.
- Establish a Joint Working Committee with representatives of local stakeholder groups to collaborate on extending the Multi Use Path to Long Beach and Ucluelet.

PHASE 2 Recommended medium-term priorities for implementation:

- Establish a pathway connection through elementary school property to the Community Hall;
- Provide lighting in identified trouble spots on MUP (S-curve, Botanical Garden intersection);
- Erect wayfinding signage indicating distance and time to key destinations within the District.
- Upgrade the existing MUP where it merges with the highway shoulder at Sharp Road, Hellesen Drive, and Drader Road;
- Continue property negotiations with landowners between Bay Street and Olsen Road to effect the extension of the MUP into the village;
- Co-ordinate the re-development of Campbell Street to include wide curb lanes from Fourth Street to First Street;
- Establish trails from the MUP to Fourth Street, Lone Cone Road, and Ocean Park Drive in conjunction with developments in these areas, and
- Build the trail along proposed Utility Corridor alignment when this corridor is developed;
- Work with the Ministry of Transportation to create a formal crossing of Campbell Street just north of Co-op gas station when Lone Cone Road is developed.
- During reconstruction or repairs, make every possible effort to widen existing MUP to the bi-directional multi use pathway standard of 3.0 metres.

PHASE 3 Recommended long-term priorities for implementation:

- Continue coordinating with local stakeholders to extend MUP to Ucluelet through a Joint Working Committee;
- As new areas are developed ensure pedestrian and cycling traffic are a priority during all stages of planning and design.

4.3 Accessing Alternative Funding Sources

In today's political climate, funding for alternative transportation infrastructure and improvements is increasing, thanks to increased awareness of cycling as a means of reducing traffic congestion and green house gas emissions, and of the benefits of active living. Implementation of the Cycling Network Plan can be expedited by seeking alternative sources of funding other than traditional tax-base funding. This section provides examples of alternative funding sources, as well as variations on tax-base funding, which can be used to finance the various components of the plan.

Funding through the Development Process

One of the most effective means of funding bicycle infrastructure is to incorporate these into the development process, much as roadways, sewers, parking facilities, parks and other utilities currently are. Specific development related funding strategies include:

- Developer Incentives and Requirements
By instituting bylaws which require bicycle parking and other infrastructure, the District can encourage developers to provide bicycle infrastructure through density bonuses, floor space ratio (FSR) exemptions, parking reductions, and other incentives, which often result in higher quality infrastructure.
- Development Cost Charges (DCC's)
Development cost charges require developers to pay for a portion of off-site improvements to roads, utilities, and community facilities attributable to their development. The costs of some bicycle infrastructure (including land acquisition costs) can also be recovered through Roads and Open Space DCC's.
- Payment-in-lieu Funds
These funds can be used to finance the development of other bicycle infrastructure which might not be required as a direct result of development. For example, a payment-in-lieu can be collected from a developer in exchange for a parking requirement relaxation. This payment can then be used to provide bicycle routes in the adjacent neighbourhood.

There are more cyclists now than ever before in Canada and the fastest-growing segments of the cycling community are teens and adults. More than 45 percent of the Canadian population rides bicycles.

(Canadian Cycling Association)

Service Clubs

Efforts to accommodate bicycle travel can be co-ordinated with service clubs, such as Lions Clubs, Kiwanis, etc. which provide labour and/or funding. There are several examples around the province where a service club has provided funding for bicycle lanes and bicycle education programs such as CAN-BIKE. Service clubs are often eligible for grants which the District is not entitled to. By working through the service clubs, additional funds for the Cycling Network Plan can be leveraged from other government agencies.

Donations

One means of soliciting donations is with a bicycle rack program where residents and corporations donate racks.

Volunteers

At times bicycle infrastructure and programs are partially developed and run by using community labour and in-kind services. Volunteers have formed bicycle patrols in several communities and form the basis of most Bicycle Advisory Committees. There are many examples of volunteer run bicycle education programs.

Advertising Revenue

Advertising revenue can be used to fund bicycle racks and maps. In the case of bicycle racks, the racks are provided free to the District and they are manufactured and/or installed by a business that collects advertising revenue. Depending on the volume and location of racks, there may also be a portion of advertising revenue donated to the District's bicycle programs. In the case of maps, it is preferable to provide maps free of charge to ensure the widest possible distribution. Advertising can offset the cost of producing the map with production and distribution being covered by the District and the Chamber of Commerce.

Partnerships

Partnerships can be formed with organizations, particularly non-governmental organizations, such as service clubs. By forming partnerships with groups such as these, the District may be able to effectively access grants and other funding for programs.

Provincial Revenue Sharing

Under the Roads section of the Revenue Share Act, grants are awarded to assist in the development of major municipal roads. Bicycle infrastructure is eligible under this program, and may soon include cost sharing for upgrades to existing routes.

Provincial grant programs

- The Cycling Infrastructure Partnerships Program (CIPP)
The CIPP is a cost-shared program where the Government of British Columbia will partner with local governments in the construction of new transportation cycling infrastructure. The goal of the program is to promote transportation cycling (cycling to work, school, or errands) as a means of reducing traffic congestion and green house gas (GHG) emissions.
- LocalMotion
The objective of the LocalMotion Fund is to accelerate the development of capital projects that encourage citizens to be active outdoors. LocalMotion provides \$40 million over four years for capital projects including bike paths, walkways, greenways, and projects to improve accessibility for people with disabilities.

- Towns for Tomorrow
Local governments with populations of 5,000 or less can apply for Towns for Tomorrow grants. A total of \$7 million is available each year for the next three years.

Tax-Base Funding Sources

Although alternative sources may provide significant funding for bicycle infrastructure and programs, funding from these sources will not be constant nor consistent. Consequently, the District should not rely solely on funding from alternative sources. The District should plan to finance the Cycling Network Plan through tax-base sources, and any additional funds secured from alternative sources can then be used to accelerate specific components of the plan.

A large majority of Canadians (82%) support government spending to create dedicated bicycle routes and paths.

(Go for Green, 2004)

REFERENCES

Information and Documents Reviewed for the Cycling Network Plan:

- VisionTofino: the OCP Official Community Plan(2002)
- District of Tofino Parks and Recreation Master Plan (2007)
- Parks and Recreation Master Plan Open House Comments (2006)
- Chesterman Beach Local Area Plan (2005)
- Campbell Street Functional Design Option C2 (2005)
- District of Tofino Aerial Photo (2008)

Maps:

- District of Tofino 2m Contour Map (2004)
- District of Tofino Cadastral Map (2007)
- Map of Proposed Lighthouse Trail
- Map of Proposed Utility Corridor

APPENDIX A: PUBLIC CONSULTATION RESULTS

The involvement of Tofino residents and locally based organizations was central to the creation of this plan, and will be critical to ensuring the successful realization of the bicycle network. Public consultation took the form of a telephone survey undertaken from December 2007 – January 2008 and a public Open House held at the Community Hall on February 27th, 2008 from 6:30 - 8:30 p.m. Approximately forty people attended the Open House. Information boards and a slideshow were presented and the consultant team solicited feedback on existing conditions and proposed network concepts.

Telephone Survey Results – January 2008

As part of the Public Consultation Process, stakeholders identified by District staff at an early meeting were called for preliminary input to the plan and process including employers, stakeholder groups and cycling related businesses. Each person contacted was asked to recommend other interested parties if possible to expand the circle of early input.

The feedback and input collected from these calls is summarized below.

- MUP is too slow for daily commuting out of town - uses road - too busy in summer.
- Highway roadbed out of town needs to be expanded - shoulder has a one foot drop off in spots. There is a good shoulder in the park.
- Botanical garden has heavy traffic issues/accidents and near misses. Partly caused by downhill grade to their driveway. Locals tend to know about it (cars exiting hazard) but not tourists & visitors.
- Make same signs for all B&B's and businesses, town should supply stickers for signs such as stop on the way out of the driveway, watch out for cyclists and pedestrians.
- Wider is better where possible.
- Centre line on MUP to split pedestrians/cyclists.
- One bicycle rental outfit puts bells on all bikes. Education needed?
- Root heaving on MUP.
- Need cycle path to Long Beach.
- Lighting needed. Add buffer – shoulder – near S-curves.
- Sign Chesterman highway crossings North & South; Cox Bay lot.
- In Town people can cross the road at the four-way stop sign in Town.
- Maintenance of MUP is a bit of an issue.
- Issues near Coop gas bar.
- Opening up sight lines and smoothing the path could increase rates of travel perhaps dangerously.
- People need to be educated to go slow – and watch out.
- People often ride beyond their ability to react.
- Feels (cycling) improvements to the highway are important.

February 27

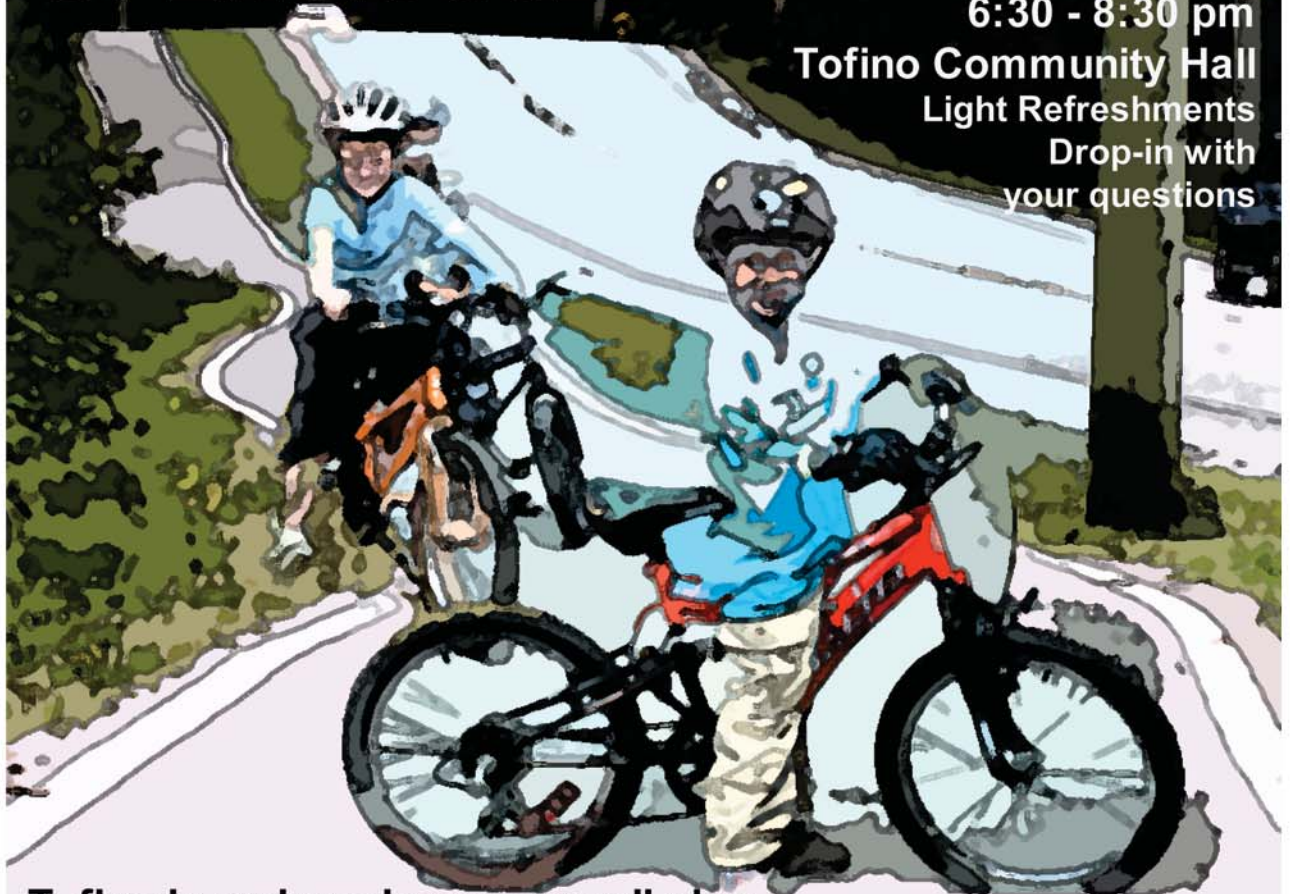
Tofino Cycling Network Plan OPEN HOUSE



6:30 - 8:30 pm

Tofino Community Hall
Light Refreshments

Drop-in with
your questions



Tofino is undergoing an overall plan for cycling in Tofino. Come out and give us your input. We want to know what you think!



Tofino Parks & Recreation

OPPORTUNITIES AND CONSTRAINTS

OPPORTUNITIES



Buffering. Native plantings can provide a pleasant buffer between the MUP and the highway.



Reflective pathway markings. Iridescent paint increases visibility without contributing to light pollution.



MUP extension. Extending the multi use path into the downtown is a priority for the community.



Trail names. Adopting trail names proposed by community members is a way of "branding" new and existing trails.



Vehicle prohibiters. The use of natural materials reflects the character of Tofino.



CONSTRAINTS/ SAFETY CONCERNS



Poor visibility around the 'S' curve.



Highway crossing to Chesterman Beach is unsigned.



Private driveway crossings are a safety concern for MUP users.



No reflective stripes in repaired area.



Path degradation - tree root damage.

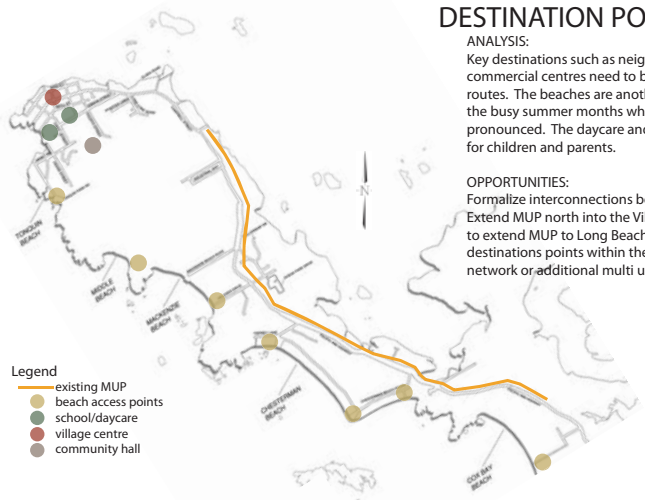


ANALYSIS

DESTINATION POINTS

ANALYSIS:
Key destinations such as neighbourhoods, parks, schools, and commercial centres need to be serviced with safe, accessible bike routes. The beaches are another prime destination, especially during the busy summer months when traffic congestion is most pronounced. The daycare and the school are important destinations for children and parents.

OPPORTUNITIES:
Formalize interconnections between important points in Town. Extend MUP north into the Village Centre. As a long term vision, work to extend MUP to Long Beach, and eventually to Ucluelet. Other key destinations points within the District may be serviced via an on-road network or additional multi use paths.

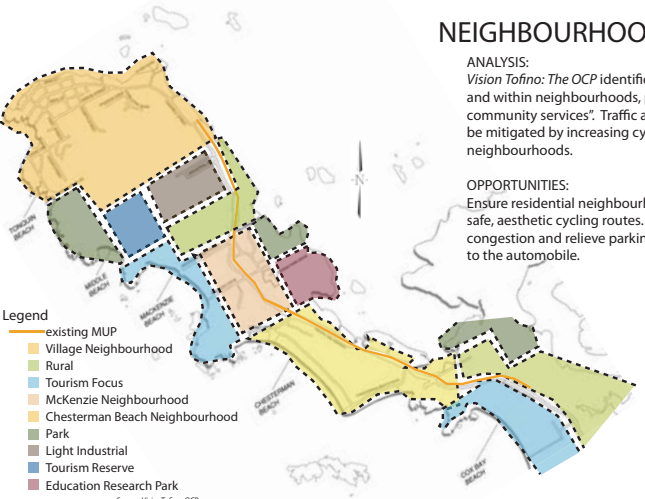


- Legend**
- existing MUP
 - beach access points
 - school/daycare
 - village centre
 - community hall

NEIGHBOURHOODS

ANALYSIS:
Vision Tofino: The OCP identifies the need "to form a network between and within neighbourhoods, parks, public spaces, Village Centre, and community services". Traffic and parking are major issues that could be mitigated by increasing cycling options to and from neighbourhoods.

OPPORTUNITIES:
Ensure residential neighbourhoods are connected to each other with safe, aesthetic cycling routes. This will help to reduce traffic congestion and relieve parking pressures by providing an alternative to the automobile.



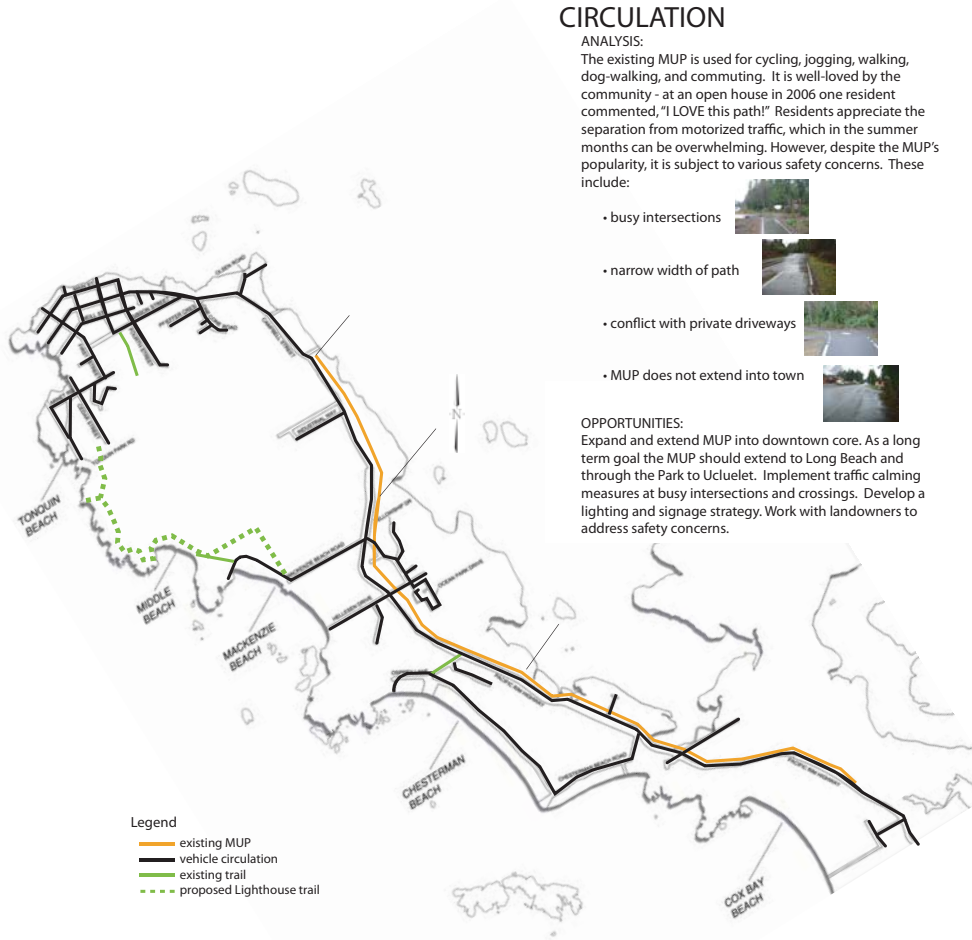
- Legend**
- existing MUP
 - Village Neighbourhood
 - Rural
 - Tourism Focus
 - McKenzie Neighbourhood
 - Chesterman Beach Neighbourhood
 - Park
 - Light Industrial
 - Tourism Reserve
 - Education Research Park
- Source: Vision Tofino OCP

CIRCULATION

ANALYSIS:
The existing MUP is used for cycling, jogging, walking, dog-walking, and commuting. It is well-loved by the community - at an open house in 2006 one resident commented, "I LOVE this path!" Residents appreciate the separation from motorized traffic, which in the summer months can be overwhelming. However, despite the MUP's popularity, it is subject to various safety concerns. These include:

- busy intersections
- narrow width of path
- conflict with private driveways
- MUP does not extend into town

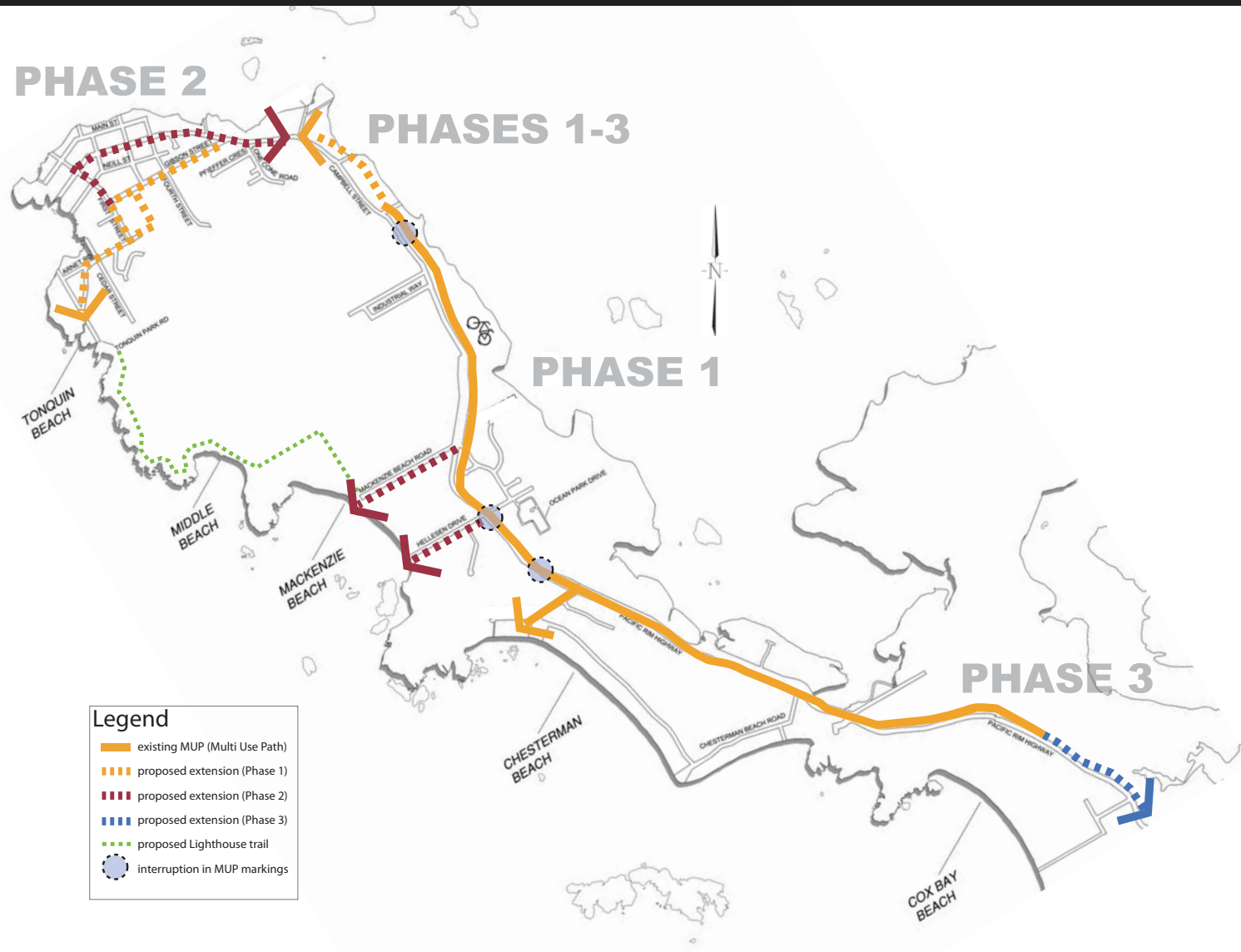
OPPORTUNITIES:
Expand and extend MUP into downtown core. As a long term goal the MUP should extend to Long Beach and through the Park to Ucluelet. Implement traffic calming measures at busy intersections and crossings. Develop a lighting and signage strategy. Work with landowners to address safety concerns.



- Legend**
- existing MUP
 - vehicle circulation
 - existing trail
 - - - proposed Lighthouse trail



CYCLING NETWORK VISION



Legend

- existing MUP (Multi Use Path)
- - - proposed extension (Phase 1)
- - - proposed extension (Phase 2)
- - - proposed extension (Phase 3)
- - - proposed Lighthouse trail
- interruption in MUP markings

PHASE 1

NEAR TERM SUGGESTIONS

- Improvements and upgrades to the existing MUP:
 - Improve safety signage, highway crossing at beach access points.
 - Creating a vegetative buffer of native plant material between the MUP and the highway.
 - Locate diamond symbols to each side of private driveways along MUP and re-paint yellow.
 - Upgrade three sections where existing MUP disappears at Hellesen Road, at Sharp Road, and at Drader Road.
- MUP extension to Village Centre: where the highway infringes on private properties between Bay St and Olson Road, acquiring public rights-of-way (R.O.W.) is one solution. Other options include purchase, subdivision, resale, or donation of a strip of land by a current owner. Property acquisition is a long term solution that may need to be addressed on a case by case basis.
- Upgrade onstreet bicycle facilities on Gibson St from Campbell St to Wickannish Community School.
- Formalize trail bypass from Gibson St to First St.
- Formalize trail connection from Gibson St through Wickannish schoolyard to the Community Hall.
- Naming of trails: there is an interpretive opportunity to use historical names or names proposed by community members to foster ownership and add an interpretive dimension to the network.
- Establish bike festival. Promote community crews for activities such as litter pick-up and off-road trail installation. Establish rewards programs for those doing things right.
- Create a foldable community bike map .



PHASE 2

MEDIUM TERM SUGGESTIONS

- District to continue property acquisition for extension of MUP to the Village Centre, as needed.
- Integrate MUP with the proposed Campbell Street redesign by providing a multi use path through the Village Centre.



PHASE 3

LONG TERM SUGGESTIONS

- District to continue property acquisition for extension of MUP to the Village Centre, as needed.
- Establish a "joint working committee" with representatives from the Regional District, Tofino, Ucluelet, Provincial Parks, and the Ministry of Transportation to collaborate on extending the multi use path to Ucluelet.



DISTRICT OF TOFINO Cycling Network Plan



Feedback Form

Open House – Tofino Community Hall

February 27th, 2008 6:30-8:30pm

WELCOME! This is an open house to gather feedback on the issues and strategies that will be incorporated into a Cycling Network Plan for Tofino. Your input is important! Please take a few minutes to review the information displayed on the walls and complete this form. It will inform the final report and help set priorities for the plan.

Note: Please feel free to mark up the map on page 3 with additional feedback about cycling in Tofino.

1. Do you ride a bike? Yes No

2. Do you use the Multi Use Path (MUP)? Yes No
If yes, how would you characterize your use of the MUP?
 Cycling Walking Jogging Other:

3. Do you live on a property adjacent to the MUP? Yes No

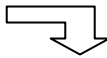
4. What cycling-related improvements could be made:
 - on the existing MUP? _____

 - on the route to the school? _____

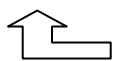
 - on the route to your work/errands? _____

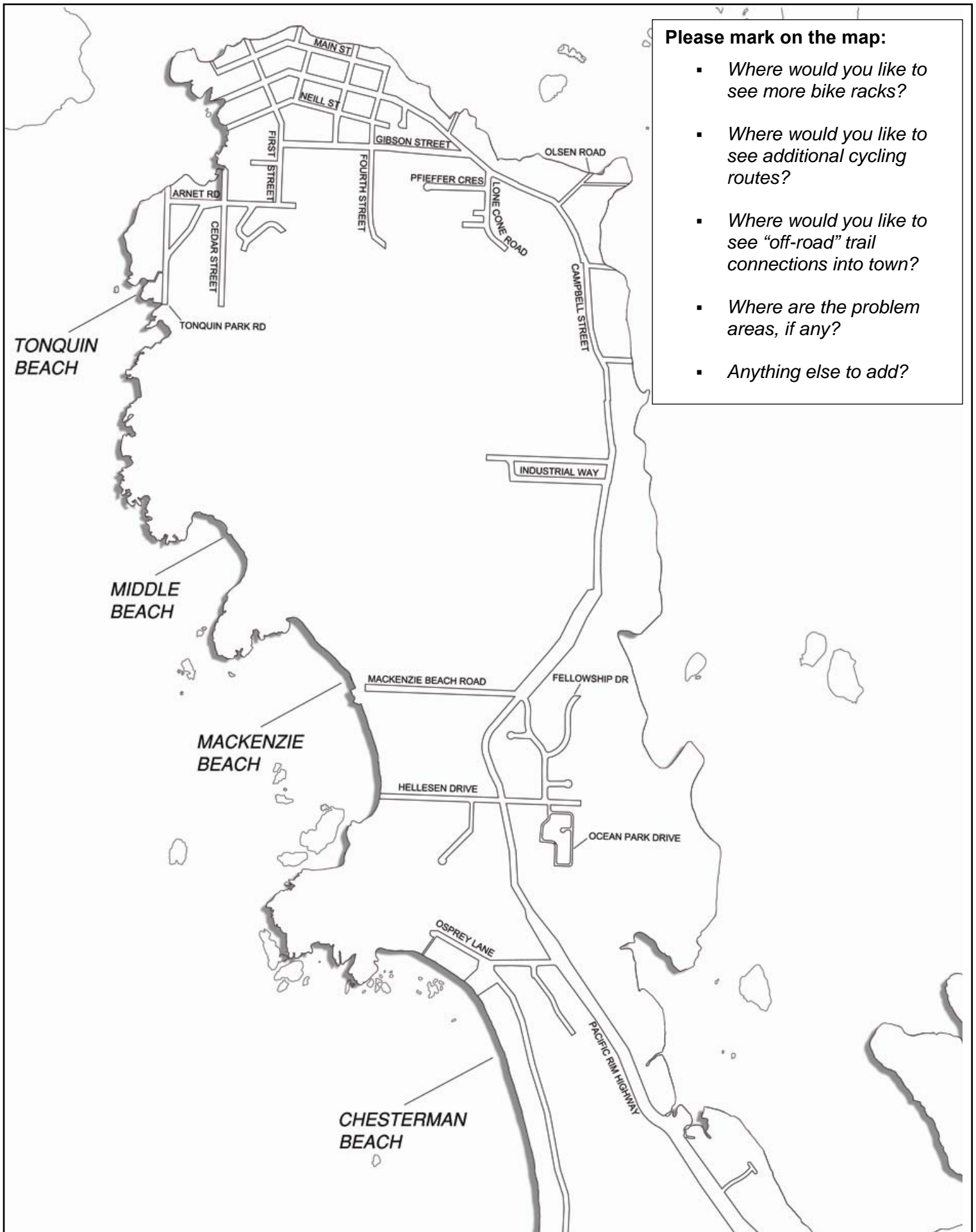
 - on the route to the beaches? _____

5. Would you like to see some designated crossings of the highway? If so, where?

6. What cycling-related elements would you **support**? 

	Benches/ rest points along MUP	Don't Support <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> Strongly Support
	Low level (possibly solar) path lighting at intervals along MUP	Don't Support <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> Strongly Support
	A vegetative buffer of native species, where feasible, to separate the MUP from the highway	Don't Support <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> Strongly Support
	Additional bike racks	Don't Support <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> Strongly Support
	Community bike map	Don't Support <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> Strongly Support
	Naming of trails by the community	Don't Support <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> Strongly Support
	Bike festival	Don't Support <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> Strongly Support
	Improved safety signage and markings	Don't Support <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> Strongly Support
	Widening of existing MUP	Don't Support <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> Strongly Support
	Improved paint markings where MUP crosses private driveways	Don't Support <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> Strongly Support
	Signed highway crossings at beach access points	Don't Support <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> Strongly Support
	Extension of MUP to Village Centre	Don't Support <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> Strongly Support
	Cycling upgrades on Gibson St to school	Don't Support <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> Strongly Support
	Cycling upgrades on Campbell Street	Don't Support <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> Strongly Support
	Extension of MUP to Long Beach	Don't Support <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> Strongly Support
	Extension of MUP to Ucluelet	Don't Support <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> Strongly Support
	Other:	Don't Support <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> Strongly Support
	Other:	Don't Support <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> Strongly Support

 Next, what cycling-related elements would you **most** like to see in Tofino? In the left hand column, please give us a sense of your order of priority for these actions. Starting with 1 as your highest priority, then 2, 3, and so on, please rate the items with your sense of their priority.



7. Tofino volunteers often participate in parks and recreation. Would you like to contribute as a volunteer? _____

8. If you have any additional comments please let us know on the lines below:

9. How did you hear about this event? _____

10. Would you like to be contacted in the future about Tofino cycling network planning? Yes No

If so, please provide contact information:

Name: _____

Address: _____

E-mail: _____

Thank-you for your feedback!

Please leave this form in the box provided or forward your comments by Feb 29th to:

Sally Mole, Director of Parks and Recreation, District of Tofino
Fax: (250) 725-3229 Tel: (250) 725-3775
Address: 121 Third Street, Tofino BC, V0R 2Z0
E-mail: parks-rec@tofino.ca

DISTRICT OF TOFINO Cycling Network Plan

Summary of Comments

Open House – Tofino Community Hall

February 27th, 2008 6:30-8:30pm

1. Do you ride a bike? Yes 25 No 1

2. Do you use the Multi Use Path (MUP)? Yes 26 No 0
If yes, how would you characterize your use of the MUP?
 Cycling 24 Walking 20 Jogging 6 Other: 2

3. Do you live on a property adjacent to the MUP? Yes 6 No 20

4. What cycling-related improvements could be made:
 - on the existing MUP?
 - Better paint upkeep on path, and painting the shoulders of the road and markings for cars to inform them of path (i.e. Sharp Rd where there is a break in the path).
 - Speed moderating effects.
 - Repair root damage.
 - I love the white lines, they are very helpful.
 - Night lights and reflective strips.
 - Driveway signage (2).
 - Pets on leash.
 - Repaint lines.
 - Etiquette signing.
 - Keep up the maintenance – inevitably needs repairs on a regular basis.
 - Lighting, mirrors.
 - Surfacing, increased width.
 - In general I think the main area of concern is the one section of the MUP along Pacific Hwy/ Campbell St that is not separated from the road in any way – it is quite dangerous when large trucks go by.
 - Widen, lengthen, deal with driveway issues.
 - Lighting or reflective strips and wider coming into town.
 - Delineate space between vehicles/ MUP.
 - Southern bump at driveway across from industrial way (asphalt?). This is where a bike collision recently occurred – and other such asphalt bumps – there aren't many.
 - 2 sections of MUP are shouldered Hwy. First portion near Ocean Village Resort and second just after Beaches need more delineation (separation from Highway)

- 700 Block on Campbell Street!!! Fix Road (drops off and dangerous); 1200 Block by Dolphin Motel (Blind Corner) and big puddle forms forcing people into mud or highway.

- **on the route to the school?**

- Signage for people and cars on the road.
- Gibson St gravel path used by cars/ trucks on occasion.
- Well-marked, safe route would be ideal.
- Either maintaining Gibson or paving the section between RPM 4th St.
- Need to create one while we pave Gibson.
- Avoid putting MUP directly adjacent to highway. Lengthen – go up to Gibson.
- Is there a route to the school?
- Extend shoulder Co-op Gas Station to Olsen Rd – very unsafe and no room for bike trailer attached to adult bike; Crosswalks at school by Shelter Restaurant.

- **on the route to your work/errands?**

- Upgrade Campbell St. (2)
- Fix the section by the Orca, Co-op Gas to town, and the section by Ocean Park.
- Extend path into town.
- The Dolphin, beaches, Groovy Movies, Botanical Garden.
- Cross walk from neighbour across from Weigh West Resort.

- **on the route to the beaches?**

- Lynn Rd and Hellesen Rd crossings, maybe slow the traffic.
- In front of the info centre towards Cox Bay.
- Crosswalk or alternate at South Chesterman Beach.
- Very dangerous in front of Dolphin Hotel and Sharp Rd.
- I would love to see the path extended to the Park and Ucluelet!
- The corner at the Dolphin Motel with the big puddle needs better visibility crossing markings on highway.
- Extend to Cox Beach and Long Beach.
- Need bicycle parking/ lock units at destinations like beaches.
- All highway crossings.
- Improve access.
- Crosswalks from bike path to Lynn Road for Chesterman Beach or across Hwy to Mackenzie Beach.

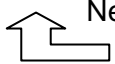
5. Would you like to see some designated crossings of the highway? If so, where?

- Chesterman Beach Road (17)
- Lynn Road (11)
- Mackenzie Beach Rd (7)
- Hellesen Rd (6)
- Gibson St (5)
- Cox Bay (2)
- Ocean Village (2)

- Crystal Cove
- Lone Cone Road
- None.

6. What cycling-related elements would you support? 

1	Extension of MUP to Village Centre	Don't Support <input type="checkbox"/> 0 <input type="checkbox"/> 0 <input type="checkbox"/> 0 <input type="checkbox"/> 3 <input type="checkbox"/> 22 Strongly Support
2	Cycling upgrades on Campbell Street	Don't Support <input type="checkbox"/> 0 <input type="checkbox"/> 1 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 16 Strongly Support
3	Improved safety signage and markings	Don't Support <input type="checkbox"/> 1 <input type="checkbox"/> 0 <input type="checkbox"/> 2 <input type="checkbox"/> 4 <input type="checkbox"/> 18 Strongly Support
4	Extension of MUP to Long Beach	Don't Support <input type="checkbox"/> 0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 19 Strongly Support
5	Cycling upgrades on Gibson St to school	Don't Support <input type="checkbox"/> 0 <input type="checkbox"/> 1 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <input type="checkbox"/> 12 Strongly Support
6	Signed highway crossings at beach access points	Don't Support <input type="checkbox"/> 0 <input type="checkbox"/> 0 <input type="checkbox"/> 1 <input type="checkbox"/> 4 <input type="checkbox"/> 17 Strongly Support
7	Improved paint markings where MUP crosses private driveways	Don't Support <input type="checkbox"/> 1 <input type="checkbox"/> 1 <input type="checkbox"/> 3 <input type="checkbox"/> 2 <input type="checkbox"/> 16 Strongly Support
8	Extension of MUP to Ucluelet	Don't Support <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 3 <input type="checkbox"/> 14 Strongly Support
9	A vegetative buffer of native species, where feasible, to separate the MUP from the highway	Don't Support <input type="checkbox"/> 0 <input type="checkbox"/> 2 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 20 Strongly Support
10	Low level (possibly solar) path lighting at intervals along MUP	Don't Support <input type="checkbox"/> 7 <input type="checkbox"/> 5 <input type="checkbox"/> 4 <input type="checkbox"/> 2 <input type="checkbox"/> 6 Strongly Support
11	Benches/ rest points along MUP	Don't Support <input type="checkbox"/> 4 <input type="checkbox"/> 6 <input type="checkbox"/> 6 <input type="checkbox"/> 3 <input type="checkbox"/> 6 Strongly Support
12	Widening of existing MUP	Don't Support <input type="checkbox"/> 7 <input type="checkbox"/> 3 <input type="checkbox"/> 6 <input type="checkbox"/> 2 <input type="checkbox"/> 6 Strongly Support
13	Additional bike racks	Don't Support <input type="checkbox"/> 0 <input type="checkbox"/> 2 <input type="checkbox"/> 1 <input type="checkbox"/> 6 <input type="checkbox"/> 14 Strongly Support
14	Bike festival	Don't Support <input type="checkbox"/> 2 <input type="checkbox"/> 0 <input type="checkbox"/> 8 <input type="checkbox"/> 6 <input type="checkbox"/> 6 Strongly Support
15	Community bike map	Don't Support <input type="checkbox"/> 1 <input type="checkbox"/> 1 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <input type="checkbox"/> 9 Strongly Support
16	Naming of trails by the community	Don't Support <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 9 <input type="checkbox"/> 2 <input type="checkbox"/> 5 Strongly Support

 Next, what cycling-related elements would you **most** like to see in Tofino? In the left hand column, give us a sense of your order of priority for these actions. Starting with 1 as your highest priority please rate the items you would like to see occur.

Other Comments:

Industrial Way to Community Hall extension (2).

Bike lane on highway.

No highway passing lanes by Lynn Rd.

Sight triangles and contain vegetative buffer.

Painting on road for safety.

Extension of recreational trails i.e. bike park.

Second path on opposite side of highway.

Tasteful looking signage. Signage regarding safety at night: i.e. don't walk/ride without a light!

Provide benches only at scenic places.

Community Bike Map not necessary – too small and direct.

Where are the existing bike racks?

7. Tofino volunteers often participate in parks and recreation. Would you like to contribute as a volunteer?

- *I would volunteer on a bike committee or for a cycling awareness/ safety day.*
- *Yes. (7)*
- *I already do. (5)*
- *No.*

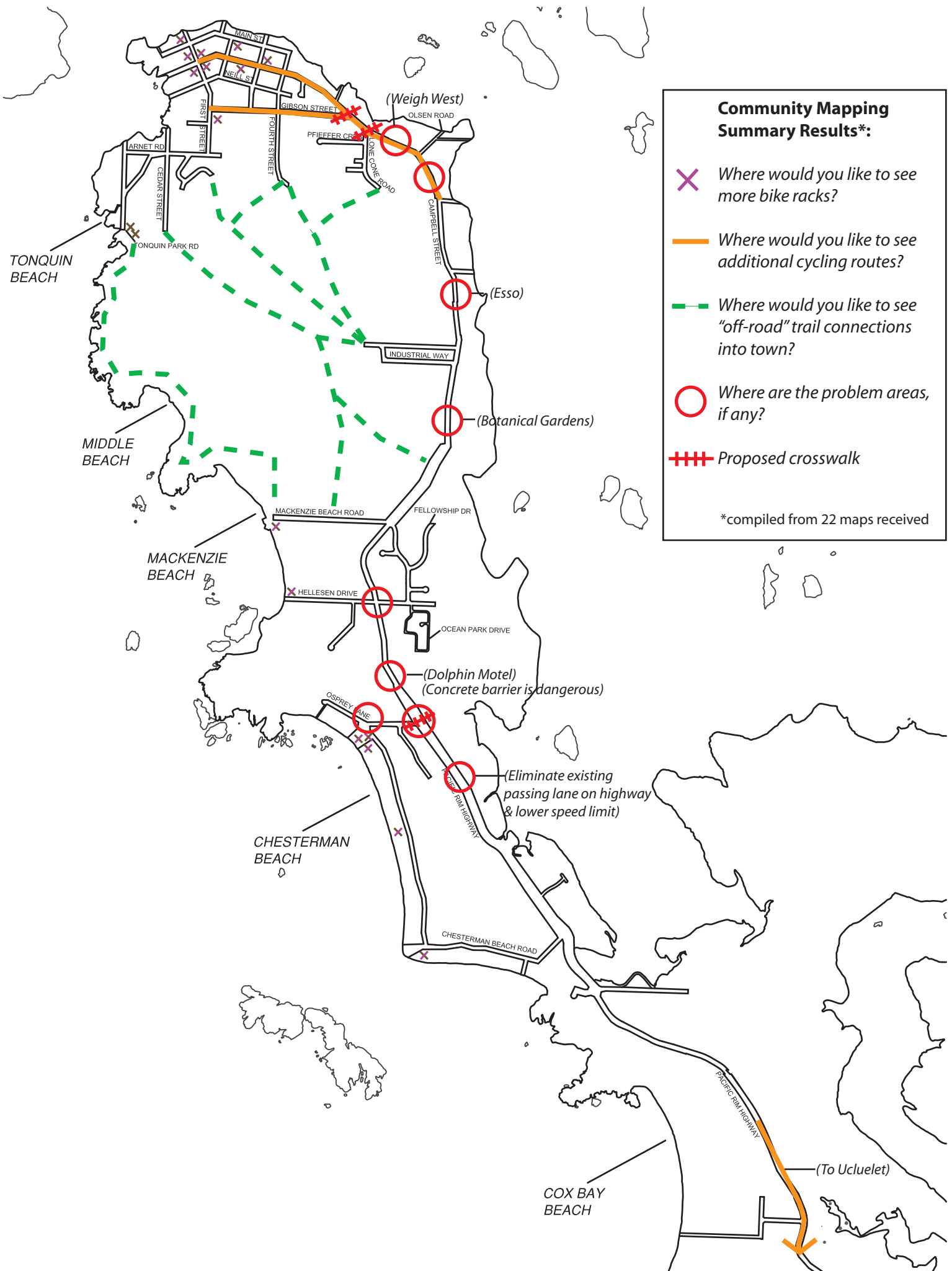
8. If you have any additional comments please let us know on the lines below:

- *Better education for all levels and types of cyclists.*
- *Signage might be a good idea – like the surf etiquette signs – bike, blade, pedestrian etiquette such as right-of-way, watching for bikes if a pedestrian, dogs on leashes, etc.*
- *I know many people who have been unable to attend this meeting but would like the problem areas from orca into town where there is no path to be fixed. More bike trails! Paths would be nice. Connections through the Park to Ukee!*
- *I believe biking is a great recreational sport on all levels. I am in full support! I feel it is a great addition to a community. Now we just need a bike shop.*
- *I haven't been in Tofino long so my knowledge of what Tofino needs in concern with MUP is limited but I do a lot of mountain biking and would be happy to assist in any type of mtn. bike trail building or designing.*
- *It would be nice to co-ordinate MUP bench areas with bus drop-off locations and provide sense of destination.*
- *Botanical Gardens have too much foliage and signs.*
- *I think the existing path should be improved and completed before the town starts any new trail projects. There may be the risk of them having 2 paths unfinished.*
- *I am just wondering why BC Highways cannot chip in to fund upgrades or buy needed land from owners to increase the shoulder along roadway?*






9. How did you hear about this event?

- *Posters (3) Posters at the post office (2)*
- *Through Parks & Rec (1) Sally Mole (2)*
- *West Coaster/ Westerly (3)*
- *I am on the Rec Commission (3)*
- *Word of mouth (3)*

10. Would you like to be contacted in the future about Tofino cycling network planning? Yes 15 No 2



Community Mapping Summary Results*:

-  Where would you like to see more bike racks?
 -  Where would you like to see additional cycling routes?
 -  Where would you like to see "off-road" trail connections into town?
 -  Where are the problem areas, if any?
 -  Proposed crosswalk
- *compiled from 22 maps received

TONQUIN BEACH

MIDDLE BEACH

MACKENZIE BEACH

CHESTERMAN BEACH

COX BAY BEACH

(Weigh West)

(Esso)

(Botanical Gardens)

(Dolphin Motel)
(Concrete barrier is dangerous)

(Eliminate existing passing lane on highway & lower speed limit)

(To Ucluelet)

MAIN ST
NEIL ST
FIRST STREET
CEDAR STREET
GIBSON STREET
FOURTH STREET
PIFFER CR
OLSEN ROAD
ONE CORNER ROAD
CAMPBELL STREET

TONQUIN PARK RD

INDUSTRIAL WAY

MACKENZIE BEACH ROAD

HELLESEN DRIVE

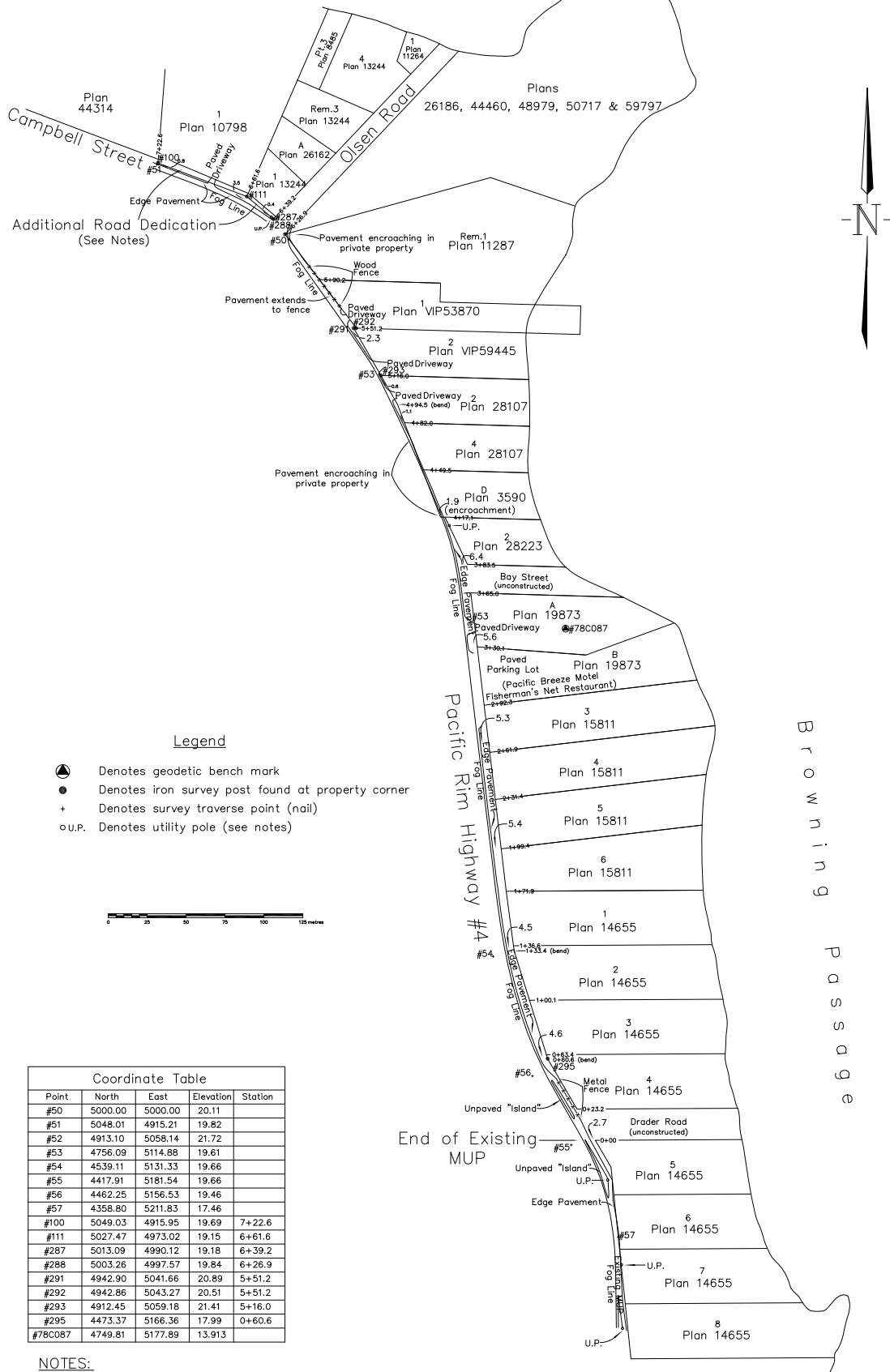
OCEAN PARK DRIVE

OSPREY LANE

CHESTERMAN BEACH ROAD

PACIFIC RIM HIGHWAY

APPENDIX B: MULTI USE PATH SURVEY



Legend

- ⊙ Denotes geodetic bench mark
- Denotes iron survey post found at property corner
- + Denotes survey traverse point (nail)
- o.u.p. Denotes utility pole (see notes)



Coordinate Table				
Point	North	East	Elevation	Station
#50	5000.00	5000.00	20.11	
#51	5048.01	4915.21	19.82	
#52	4913.10	5058.14	21.72	
#53	4756.09	5114.88	19.61	
#54	4539.11	5131.33	19.66	
#55	4417.91	5181.54	19.66	
#56	4462.25	5156.53	19.46	
#57	4358.80	5211.83	17.46	
#100	5049.03	4915.95	19.69	7+22.6
#111	5027.47	4973.02	19.15	6+61.6
#287	5013.09	4990.12	19.18	6+39.2
#288	5003.26	4997.57	19.84	6+26.9
#291	4942.90	5041.66	20.89	5+51.2
#292	4942.86	5043.27	20.51	5+51.2
#293	4912.45	5059.18	21.41	5+16.0
#295	4473.37	5166.36	17.99	0+60.6
#78C087	4749.81	5177.89	13.913	

NOTES:

- 1) Horizontal coordinates are derived from a local datum assumed for the survey.
- 2) Elevations are relative to the 1928 Canadian Vertical Datum and are derived from geodetic bench mark #78C087
- 3) Stationing is in metres commencing from the south boundary of Drader Road.
- 4) Offsets are in metres and indicate the distance from the edge of pavement to the property line.
- 5) Bearing orientation of the survey is derived from Plan IP81864.
- 6) The driveways and utility poles shown are a non-comprehensive sample of those existing in the field and are intended to facilitate the integration of this survey with existing aerial photography.
- 7) Additional road dedication in conjunction with impending subdivision of Plans 10798 & 13244

PROJECT	Tofino MUP	DATUM	7088 Massey Drive, Burnaby, BC - V5E4W2
DATE	2007.12.31	UTM ZONE	
DRAWN	JRB	SCS REF.	92F.011
CHECKED			
SCALE		DRAWING NO.	Tofino MUP.lix

B r o w n i n g P a s s a g e

End of Existing MUP

APPENDIX C: LOTS REQUIRING RIGHT-OF-WAY ACQUISITION

<i>District Lot and Plan # or Address</i>	<i>Right-of-Way Acquisition Needed (Preliminary)</i>
Olsen Road	
L1 PL 10798	NO
L1 PL13244	NO
Rem1 PL 11287	YES (approximately 3 m)
L1 PLVIP53870	NO
VIP 59455 #680 Campbell Storm Bay B&B	YES (approximately 1-2 m at east edge)
#690	YES (approximately 1-2 m)
#700	YES (approximately 3-4 m)
3590 #710	YES
L2 PL28223	Possible Acquisition
Bay Street	

Notes:

- 1) Covers area from Olsen Road south to Bay Street (unconstructed).
- 2) Refer to Appendix B Multi Use Path Survey for exact lot locations.

APPENDIX D: DESIGN GUIDELINES

The following design guidelines are based on material from:

Canadian Guide to Neighbourhood Traffic Calming, published by the Transportation Association of Canada (TAC) and the Institute of Transportation Engineers (ITE), Draft April 1998.

Bikeway Traffic Control Guidelines, published by the Transportation Association of Canada (TAC), March 1998. To purchase copies, contact TAC.

The Community Cycling Manual, published by the Canadian Institute of Planners and endorsed by the Canadian Cycling Association and Cycling BC. To purchase copies, contact the Canadian Institute of Planners.

The Technical Handbook of Bikeway Design, published by Vélo Quebec in co-operation with the Quebec Ministry of Transport, the national Capital Commission and the City of Toronto. To purchase copies, contact Vélo Quebec.

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. To purchase copies, contact City of Surrey, Engineering Department.

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. To purchase copies, contact the City of Vancouver Engineering Department.

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.

Langley Master Transportation Plan, City of Langley, May 2004.

Pedestrian and Bicycle Planning; A Guide to Best Practices. By T. Litman, R. Blair, B. Demopoulos, N. Eddy, A. Fritzel, D. Laidlaw, H. Maddox, K. Forster. Victoria Transport Policy Institute. October 2002.

Bicycle Parking (brochure) and other materials available from Cycling BC. Cycling BC maintains an extensive library of literature, video aids, and other materials, including many of the documents identified above.

1 On-Street Routes

On-street bicycle routes described in this section include:

- 1.1 Signed Bicycle Routes;
- 1.2 Marked Wide Curb Lanes, and
- 1.3 Bicycle Lanes.

On-street bicycle routes are designed to establish direct and convenient bicycle access to the major destinations within a city, town or regional centre. These guidelines identify minimum width, signage and pavement marking requirements for each of the above-mentioned bicycle route types. Each condition is illustrated with an example photo, cross section, and plan view, as appropriate.

1.1 Signed Bicycle Routes

Signed bike routes are simply streets which are designated as bicycle routes. Typically, routes are selected on residential streets which are more attractive than other roads, because of lower traffic volumes and speeds which create a more pleasant cycling environment. Signed bicycle routes are also chosen because they provide expedient routes for cycling. Signed bicycle routes may incorporate different facilities, such as a roadway and a connecting off-road segment.

In many cases, no enhancements are required beyond signage, which makes these routes one of the most cost effective ways of encouraging cycling. However, traffic calming devices should be considered to slow existing traffic or to ensure that motor vehicle traffic is not increased, and where possible, reduced along these routes.

Bicycle Route signs TAC IB-23 should be installed at intervals frequent enough to keep cyclists aware of route changes, and to remind motorists of the presence of cyclists. A minimum of 200 m intervals is recommended. In addition, install miniature TAC IB-23 symbols on applicable road name signs (see Figure 14). At high volume intersections and locations with reduced visibility, Bicycle Crossing Ahead signs should be installed on the cross streets.

Traffic Calming is a combination of mainly physical features that reduce motor vehicle speeds, alter driver behaviour, and improve conditions for all road users including cyclists and pedestrians.

Figure 14: Road name sign using miniature TAC IB-23 bicycle symbol



1.2 Wide Curb Lanes

Wide curb lanes tend to be favoured by experienced cyclists. Wide curb lanes are effective, especially if planned during the construction phase of a project. Often combining Bicycle Route markings with wide curb lanes is the most effective option for bicycle routes. Encouraging use of the wide curb lane requires a combination of education and cycling promotion.

Wide curb lanes should be at least 4.3m wide and no greater than 4.5m 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 4.6m.

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

Figure 15: Wide Curb Lane example



Figure 16: Typical wide curb lane section

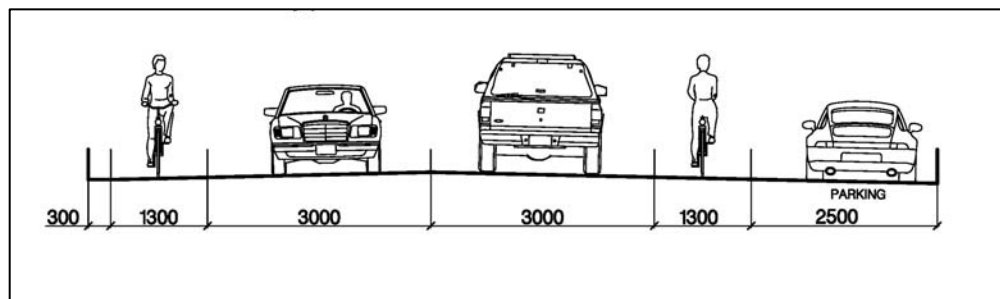
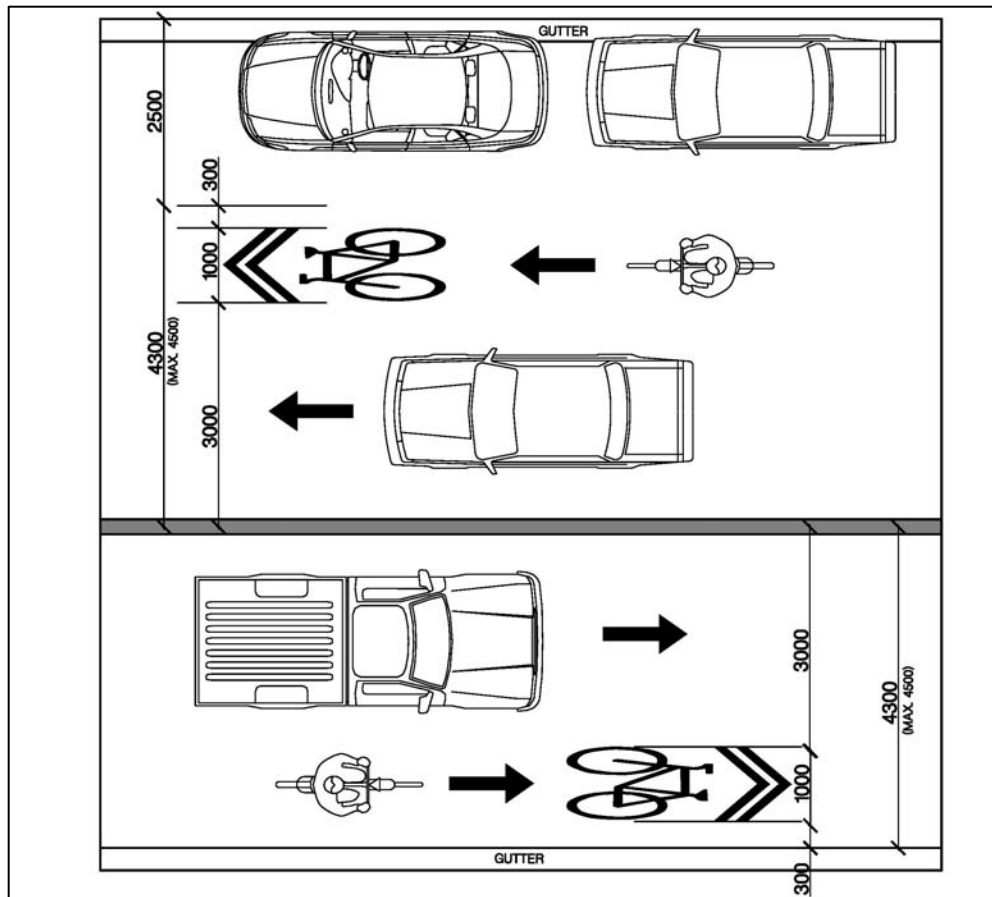


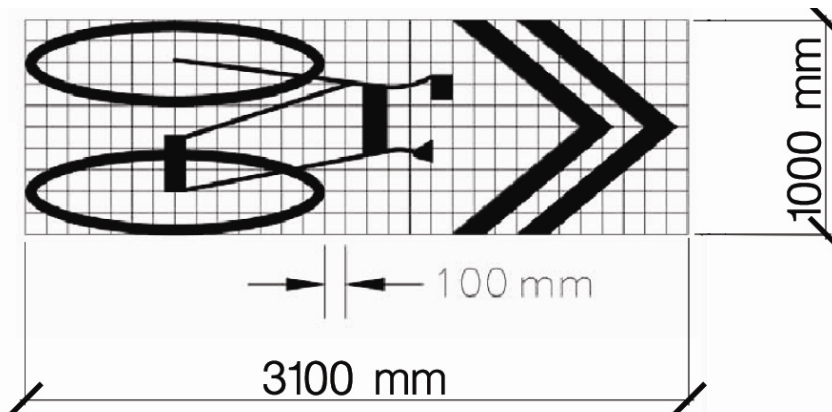
Figure 17: Typical wide curb lane plan view



The Transportation Association of Canada recommends a wide curb lane pavement marking symbol as illustrated below. Stencils should be located at intervals of no more than 200m, and within 20m in advance of an intersection. Bicycle symbols should only be used where the width of the total lane is a minimum of 4.3m.

Figure 18: Wide curb lane pavement marking symbol

Source: Transportation Association of Canada, 1998



1.3 Bicycle Lanes

Having a designated space on the road for bicycles encourages cycling and promotes a “sharing of the road” attitude amongst cyclists and motorists.

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

Bicycle lanes should also be identified with a painted bicycle symbol and an arrow indicating the direction of travel. Bicycle lanes should be marked with a white line, solid between intersections and dashed 20m in advance of an intersection (see diagram in section 3.2 Intersection Configuration and Laning).

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 1.5m wide should be provided rather than bicycle lanes.

Figure 19: Bicycle Lane example



All bicycle lanes should be identified with the standard bicycle symbol. This symbol is 1m wide and 2m in length. Stencils should be located at intervals of no more than 200m, and within 20m in advance of any intersection.

Figure 20: Standard bicycle symbol for bicycle lanes

Source: Transportation Association of Canada, 1998

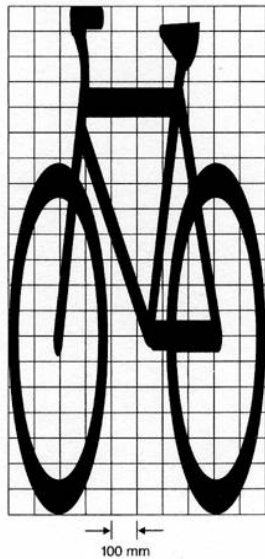


Figure 21: Typical bicycle lane section

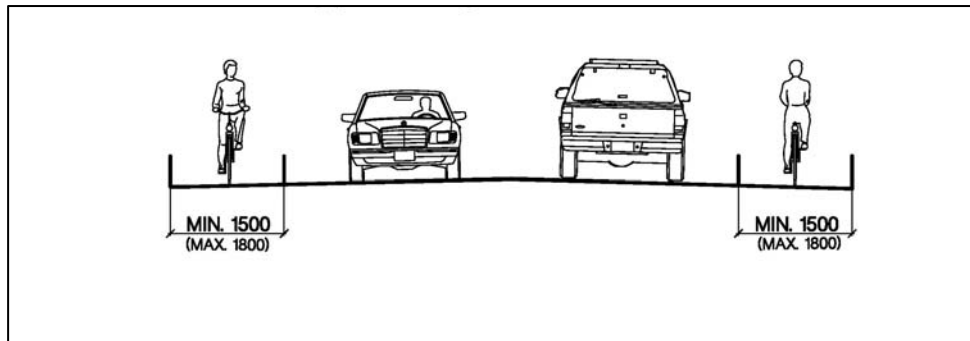


Figure 22: Typical bicycle lane plan view

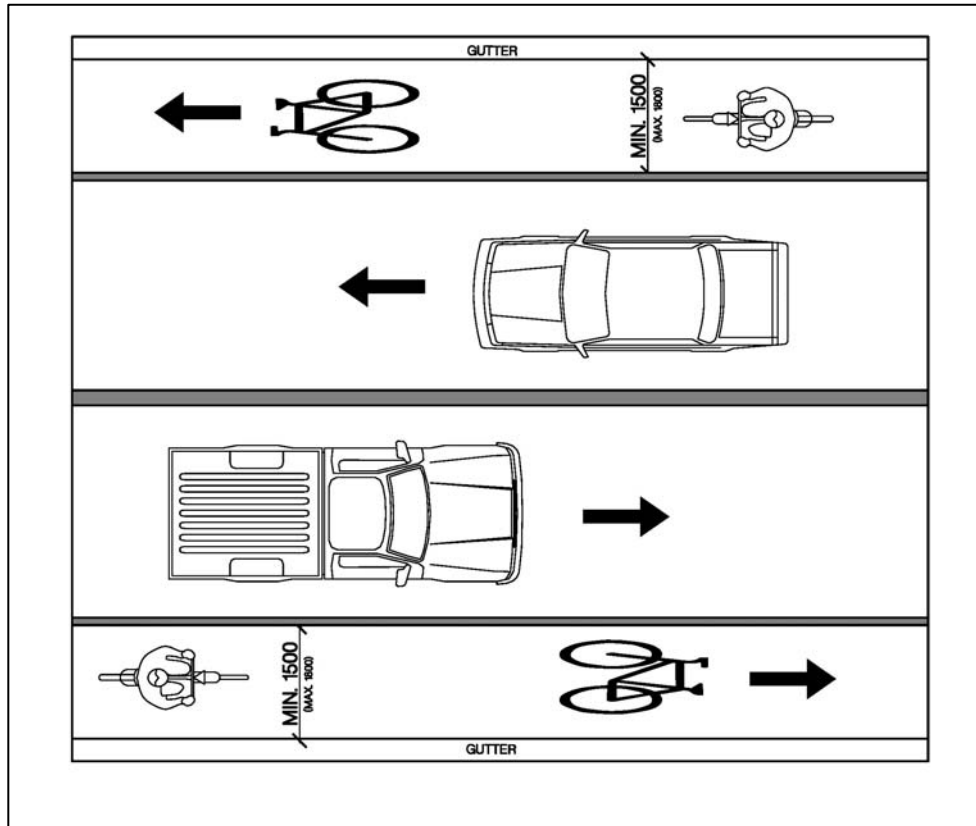


Table 3: Summary of recommended on-street bicycle route designations for District roadways

	Signed bike route	Wide curb lane	Bicycle Lane
Campbell Street from Gibson to First St		√	
Tonquin Park Road	√		
Arnet Road from Tonquin Park Rd to Community Hall	√		
First St from Arnet Road to Campbell St	√		
Gibson Street	X		√
Fourth St north to Campbell St	√		
Lone Cone Road	√		
Hellesen Drive	√		
Lynn Road	√		
Chesterman Beach Road	√		

√ – recommended designation

X – indicates temporary designation until roadway is paved and upgraded

2 Off-Street Routes

Off-street bicycle routes described in this section include:

- 2.1 Multi Use Pathways, and
- 2.2 Trails.

Each typology is illustrated with an example photo, cross section, and plan view, as appropriate. Off-street paths are generally designed to accommodate a range of uses including bicycling, walking and other non-motorized uses. Off-street pathways are most often used in corridors not served by the street system. They can create short-cuts between urban destination points, or provide continuous access along a river, forest or other unique amenity.

2.1 Multi Use Pathways

Multi use pathways are off-street routes, segregated from automobile traffic and with a surface treatment of some kind (typically asphalt, hard packed gravel or crushed limestone). All pathways must be considered as multi use pathways unless a stringent enforcement plan or physical barriers are in place. Multi use pathways will typically attract a range of users including pedestrians, cyclists, runners, in-line skaters, skateboarders, and wheelchair users (depending on the grades). These are most often used as two-way pathways.

Signage indicating a shared pathway is advisable.

Painted centre lines should not be used to separate travel on multi use pathways as conflicts can occur when faster users overtake slower pathway users. On pathways a centre line should be used only on sections where a horizontal curve limits sight distances, such as the “s curve” on the MUP north of Chesterman Beach Road.

The provincial standard for a bi-directional multi use pathway is 4.0m, however a width of 3.0 m is acceptable for pathways with less than 200 persons per hour during peak periods, and is the recommended width for Tofino. For short sections where there are physical barriers such as trees, boulders, or other objects, a width of 2.4 m is acceptable (see Table 4). Where the path is adjacent to a roadway (such as Pacific Rim Highway) there should be a minimum of 1.0 m separating the path from the edge of the roadway.

Table 4: Pavement widths for multi use pathways

	Pavement width for multi use path
Bi-directional Provincial standard	4.0 m
Recommended standard for Tofino	3.0 m
Minimum standard for short sections with physical barriers	2.4 m

The preferred surface material for multi use pathways 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.

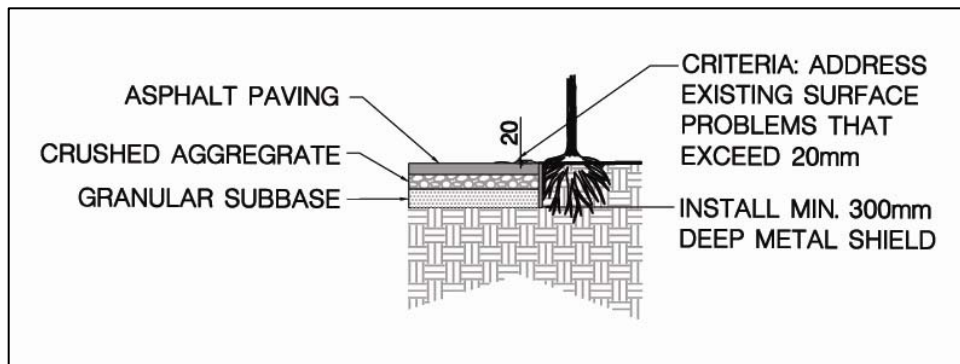
Both edges of the pathway should be marked with a solid line using reflective white paint to improve visibility during non-daylight hours.

Where a pathway is located close to trees and large shrubs, a 30cm metal root barrier should be placed in the ground between the tree and the path, to prevent roots from heaving and cracking the pathway. Where pavement damage caused by roots on the existing MUP exceeds 2 cm in height it is recommended to remove roots, install a root barrier, and repave (see Figure 24).

Figure 23: Tree root damage on the multi use path



Figure 24: Root barrier, for multi use path adjacent to trees



Where cyclists would be required to climb or descend stairs to reach a pathway, an office building, or bicycle parking, 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.

Figure 25: Stairs with bicycle ramp

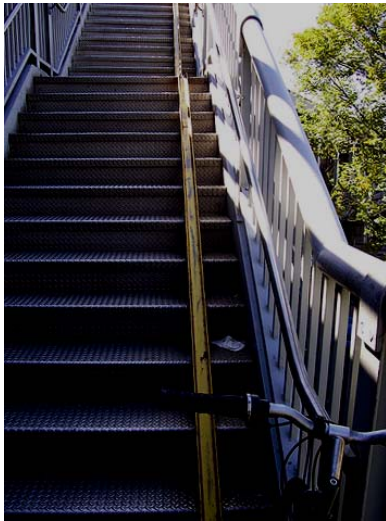


Figure 26: Typical multi use path plan view

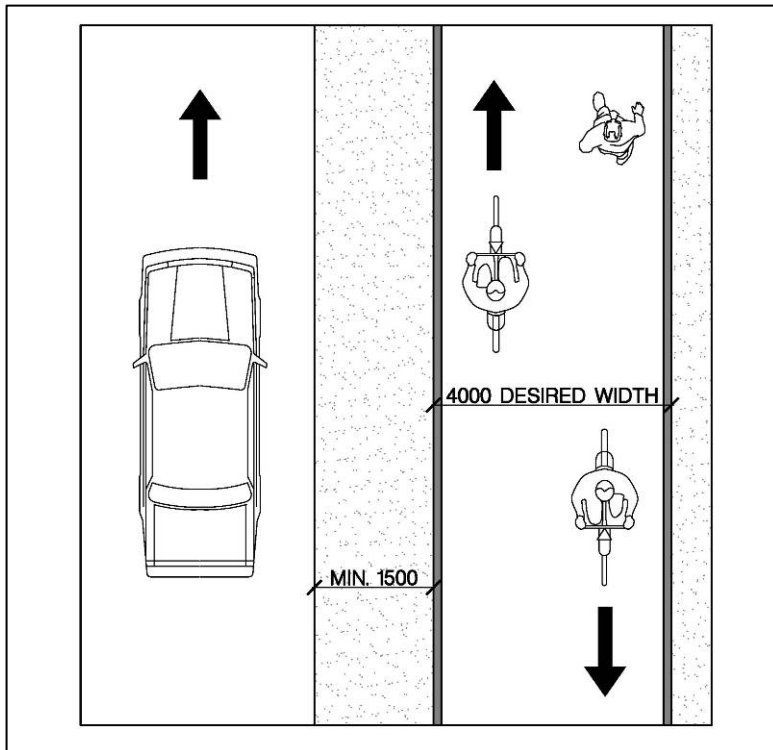
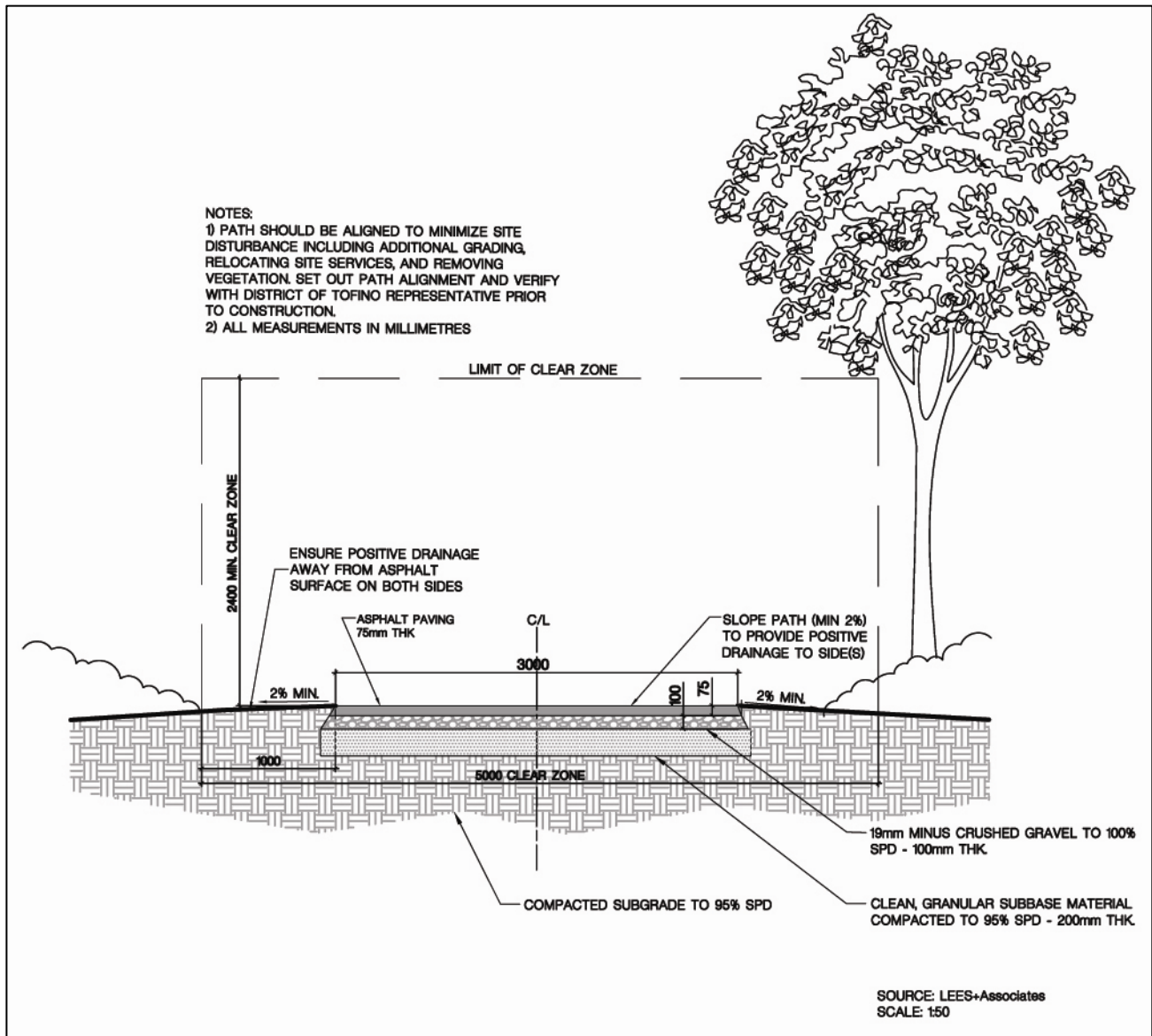


Figure 27: Typical multi use path section



2.2 Trails

Trails differ from pathways in that they are not paved or treated and are often steeper. Trails are typically narrow and winding, with natural surfaces, and are used primarily for recreational purposes including mountain biking, hiking or walking. Trails can serve as a complement to on-road cycling routes while forming part of an overall network.

Where a trail links with a roadway, curb cuts should be provided to facilitate transition between the two routes.

Figure 28: Trail example



Table 5: Summary of recommended off-street bicycle routes for the District

	Multi Use Path	Trail
MUP to Ocean Park Drive		√
Extension of existing MUP to Gibson St	√	
Utility Corridor from Industrial Way to Arnet Rd		√
MUP to Fourth Street		√
MUP to Lone Cone Road		√
Through Wikaninnish schoolyard from Gibson Street to trail to Community Hall		√
Lighthouse Trail from Tonquin Park to Mackenzie Beach Road		√

√ – recommended designation

3 Other Design Considerations

Guidelines described in this section include:

- 3.1 Bicycle Parking;
- 3.2 Intersection Configuration and Laning;
- 3.3 Clearances;
- 3.4 Surface Materials;
- 3.5 Grades;
- 3.6 Signage;
- 3.7 Pavement Markings;
- 3.8 Bicycle Crossing;
- 3.9 Illumination;
- 3.10 Temporary Construction Routes;
- 3.11 Maintenance, and
- 3.12 Traffic Calming Measures.

3.1 Bicycle Parking

Bicycle parking is often overlooked. Cyclists need bike parking at the end of their trip, just as motorists need parking lots and other facilities. Bicycle parking may include Class I secure parking (such as bicycle lockers, locked bicycle rooms) and Class II racks.

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

Aisles between parked bicycles should be 1.2m wide.

Vertical clearance should be a minimum of 1.9m.

Each bicycle stall must be accompanied by a secure bicycle parking device which enables the user 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”.

Table 6: Standard bicycle parking requirements

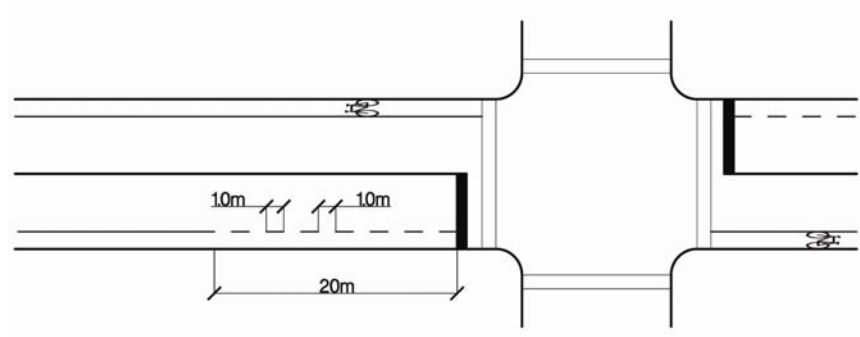
USE	Number of Bicycle Spaces Required for	
	CLASS I Residents/Employees (Secure parking i.e. bicycle lockers, locked bicycle rooms)	CLASS II Patrons/Visitors (Bicycle racks)
Multiple Unit Dwelling	1.5/ unit	6/ building
Office	1/750 sq m Ground Floor Area (GFA)	6/ building
Hotel	1/20 rooms	6/ building
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 of spaces should be determined by the local Planning Department at the time of the permit application.	

3.2 Intersection Configuration and Laning

The following are key components to consider for intersections:

- Adequate sight distance is an important element in designing intersections. Consider placement of items such as utility poles, vegetation, shelters and signage poles that may block sightlines between vehicles, cyclists and pedestrians.
- On-street parking should be set back from intersections to allow cyclists adequate sight distance to see oncoming traffic.
- Intersections that meet at 90-degree angles minimize conflicts between roadway users. If possible, avoid taking designated bicycle routes through complicated or skewed intersections.
- For busy intersections, crossing elements and traffic calming devices can help improve safety for cyclists (see sections 3.8 Bicycle Crossings and 3.12 Traffic Calming Measures).
- As a bicycle lane approaches an intersection, dash the bicycle lane lines 20 m in advance to allow motorists to merge.

Figure 29: Typical intersection laning for bicycle lane



3.3 Clearances

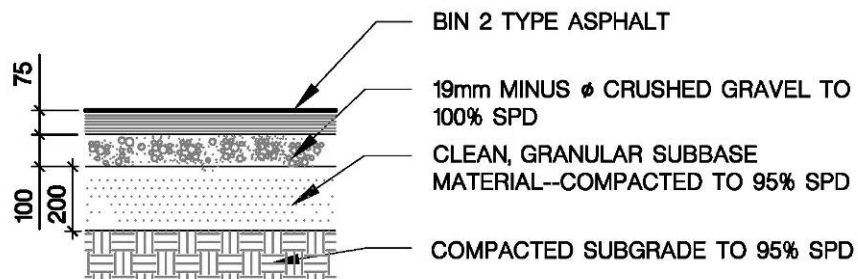
For multi use paths the following clearances should be provided

- *Lateral clearance* – 0.5 m minimum clearance on both sides of the pathway is recommended. Where fixed objects such as a tree or signpost are adjacent to the path allow 1.0 m clearance to the edge of the pathway.
- *Horizontal clearance* – ensure a clearance of overhead obstructions to 2.4 m.

3.4 Surface Materials

Generally, a hard-surfacing, such as asphalt or concrete, is preferred for multi use paths in order to accommodate all users including wheelchairs, in-line skaters and others.

Figure 30: Typical asphalt paving detail



Trails in rural settings can be constructed of natural materials that blend with the setting. Unpaved trails are best suited to lower intensity use areas, with more limited uses.

3.5 Grades

If a multi use path is to be an accessible route of travel it should not exceed a grade of 1:20 or 5%. For unpaved surfaces (i.e. gravel), a maximum grade of 3% is recommended. On grades exceeding 5%, additional pathway width of 1 m should be provided.

On a multi use path or road shoulder, a minimum 2% cross slope will ensure positive drainage.




Curves control the distance a cyclist can see ahead. The minimum length required to ensure clearance for sight stopping distance can be calculated with an algebraic function. See Geometric Design Manual, Urban Supplement, Chapter U.M. Bikeway Design, TAC, 1995 for more information. Where the minimum radius for curves cannot be achieved, the path should be widened to allow cyclists extra room to maneuver.

3.6 Signage

There are three types of standard bikeway signs recommended for Tofino – warning, guidance and education.

- **Warning signs** advise motorists and cyclists of potential hazards or changes in roadway or pathway conditions.
- **Guidance signs** indicate bicycle routes and crossing locations.
- **Education signs** provide information regarding appropriate use of bicycle routes. (City of Langley, 2004)

Table 7: Signage types recommended for Tofino

Warning	Guidance	Education
		

Due to the year-round use of the bicycle routes in Tofino, even during periods of snow, inclement weather, and limited daylight, it is important to have signage in place in addition to the bicycle stencils so that information is discernable when the pavement markings are obscured. See Appendix E for a schedule of signage recommended for the District of Tofino.

In addition to the TAC signs indicated in the Signage Schedule, the District should erect wayfinding signs that indicate distance in kilometers and cycling time to key destinations. This can be calculated using an average cycling speed of 20 km/hr for bicycle travel. This type of signage can encourage recognition of the bicycle as an efficient means of transportation - it is often surprising how little time it actually takes to get around by bicycle. A sample chart with approximate distances to key destinations within the District of Tofino is provided below.

Table 8: Sample distances and times to key destinations within the District


	Distance	Time by 
Village Centre to Community Hall	1.2 km	4 min
Village Centre to Botanical Garden	2.4 km	8 min
Village Centre to MacKenzie Beach	3.3 km	10 min
Village Centre to Chesterman Beach	4.5 km	14 min
Village Centre to Long Beach (Pacific Rim National Park) <i>(proposed)</i>	16 km	48 min
Village Centre to Ucluelet <i>(proposed)</i>	42 km	2 hrs 6 min

Figure 31: Sign indicating destination and distance



Source: Alta Planning & Design

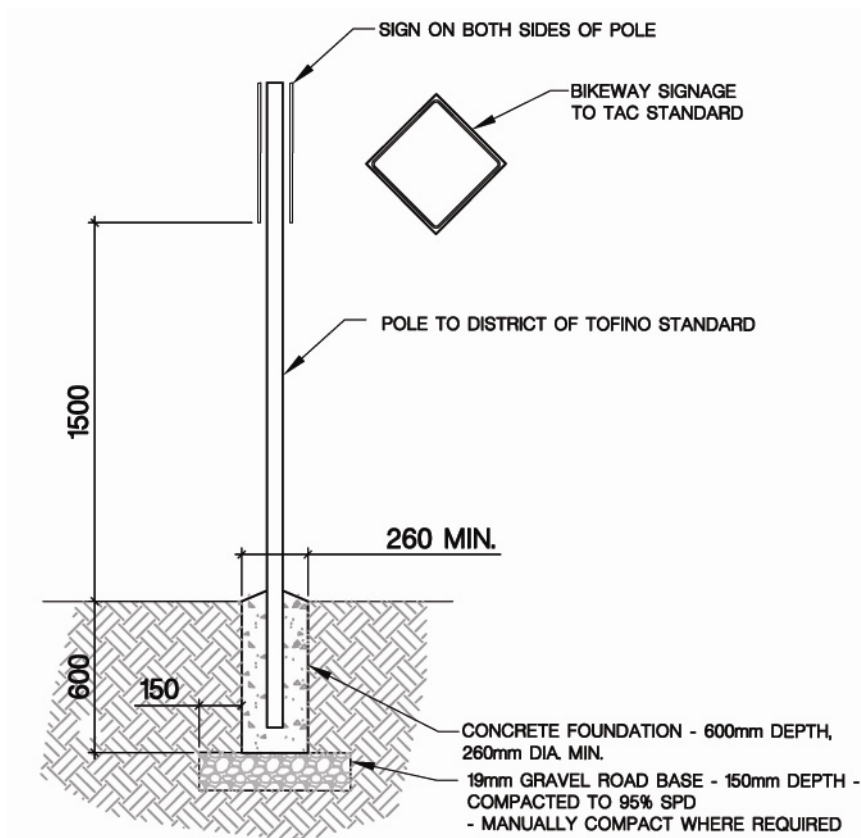
Figure 32: Sign indicating destination, distance and time



In terms of signage height, off-street pathways signage are generally lower than on-street signage to account for pedestrians' and cyclists' lower line of sight (see Figure 33). All signs should be placed so they are facing approaching cyclists and pedestrians at right angles. If the sign is reflectorized, angle the sign slightly away from approaching traffic (City of Langley 2004).

Signage used for on-street routes should conform to District standards or as specified in the *Manual of Uniform Traffic Control Devices for Canada* (MUTCDC).

Figure 33: Typical signage and post section for multi use path



SOURCE: LEES+Associates
SCALE: 1:30

NOTE: Signage detail for off-street pathways. On-street signage should conform to District or MUTCDC standards.

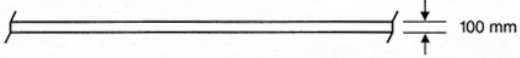
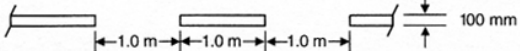
3.7 Pavement Markings

Symbols and words used on the pavement may be a supplement to signage or used independently to provide information, warning or guidance. All symbols and words should be painted in white, using reflective paint to increase visibility. (Note: yellow diamonds on private driveways crossing the MUP have been recommended as a special case to indicate a warning or caution.)

Bicycle lane lines are striped with a solid white line, 100mm in width. Standard widths and patterns are provided in the table below.

Table 9: Widths and patterns for pavement markings

Source: Transportation Association of Canada, 1998

NAME OF LINE	DIMENSIONS
LANE (SOLID)	
LANE (BROKEN)	

A standard TAC bicycle symbol is used to identify bicycle lanes and wide curb lanes (see section 1.4 Bicycle Lanes). The bicycle symbol is 1m wide and 2m in length, and has been elongated to improve legibility. Stencils should be located at intervals of no more than 200m, and within 20m in advance of any intersection.

3.8 Bicycle Crossings

Where bicycles must cross major roads, special crossings are preferred to assist cyclists and others in crossing the road. Possible crossing treatments include:

- *Signed crossing* – signed crossings are used when there is a need to identify the crossing to motorists. On lower volume roadways signage may be all that is required to indicate the presence of bicycles. Crossing signage may be supplemented with pavement markings or with a raised crossing.

Figure 34: Raised crossing



- *Median refuge* – if interrupting traffic is not a possibility, a median refuge can be provided to increase the safety of crossing cyclists. The median island allows cyclists to cross one direction of traffic at a time, instead of waiting for gaps in traffic from both directions.

Figure 8: Median refuge



3.9 Illumination

In corridors which serve a utility function, such as for commuting to and from work or school or travelling to a commercial centre, or in areas where potential obstacles need to be avoided, 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 where a pathway intersects with a roadway. Illumination is recommended along the MUP at the intersection with the Botanical Garden.

3.10 Temporary Construction Routes

Roadway and sidewalk construction projects can disrupt traffic flow and create special hazards for pedestrians and cyclists. The following recommendations should be incorporated into project plans to minimize these problems:

- On highways, enough space should be left at the edge of the construction site to allow a vehicle to pass a cyclist.
- Barricades and pylons can be used to create a temporary passageway for pedestrians. This is particularly important in urban areas. Sidewalk closures should be avoided or minimized as much as possible. Passageway should be wide enough to accommodate a wheel chair, and should have ramps where there are height changes.
- In more urban areas, cyclists may share the lane with lower speed traffic, or a temporary bike lane may be installed. Avoid routing bicycles onto sidewalks or onto unpaved shoulders.
- Construction signs should not obstruct bicycle and pedestrian paths. Where this is unavoidable, do not block more than half the path or sidewalk.
- Bus stops must remain accessible to pedestrians. Where necessary, bus stops may be relocated provided clear and noticeable signs are provided.
- Additional lighting may be required at night to identify hazards.

(Pedestrian and Bicycle Planning 2002)

3.11 Maintenance

Maintenance is an important part of accommodating a cycling network. A lack of maintenance can discourage bicycling and pedestrian activity, and as mentioned in Chapter 2, routine maintenance can minimize the municipality's risk of liability. Below are some types of targeted maintenance activities:

- *Establish a maintenance policy and plan* – establish written procedures that specify maintenance standards, schedule, quality control, and follow-up that will be used for cycling infrastructure, based on current best practices.
- *Repairs* – inspect paths and bikeways regularly for surface irregularities, such as potholes and cracks, and damage to signage and lighting. Repair potentially hazardous conditions quickly.
- *Establish a citizen reporting system* – encourage citizens to report bicycle infrastructure maintenance needs or other problems. Publicize a particular telephone number and e-mail address for submitting information.
- *Sweeping* – establish a seasonal sweeping schedule. In curbed areas, sweepings should be picked up; on open shoulders, debris can be swept onto gravel shoulders. In the fall, provide extra sweepings to pick up fallen leaves.
- *Vegetation* – vegetation may impede sight lines, or roots may break up the travel surface. Vegetation should be cut back to ensure adequate sight lines, and intrusive tree roots may be cut back, or root barriers installed, to keep the pathway surface smooth and level.
- *Drainage* – malfunctioning drainage systems may cause accumulations of water at bicycle and pedestrian crossings.
- *Snow removal* – snow and ice can make bicycle travel slow and hazardous. Road plowing should extend into the lane space used by cyclists. Spot salting intersections often creates a hazardous icy patch just past the melted intersection.
- *Pavement markings* – bikeway markings and symbols may become difficult to see over time, and may wear out faster on higher use routes. It is important that these be inspected regularly and retraced when necessary, especially following pavement overlays.
- *Pavement overlays* – where new pavement is installed, extend the overlay to the edge of the road or pathway. If this is not possible, ensure that no ridge remains within the bike travel area. Drain grates should be within 6 mm of the pavement height to create a smooth travel surface. Special attention should

Figure 36: Where new pavement is installed ensure pavement markings are retraced



be given to ensure that utility covers and other road hardware are flush with new pavement. Often, pavement overlay projects offer the opportunity to widen a roadway for cyclists, or to restripe a roadway with a shoulder or bike lane.

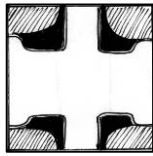

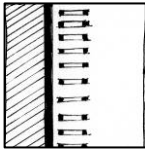
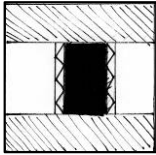
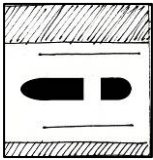
- *Utility cuts* – poorly performed cuts for utilities may leave an interrupted surface for cyclists. Cuts in on- and off-street routes should be back filled with concrete to the surrounding grade to achieve as smooth a result as possible.

(Pedestrian and Bicycle Planning 2002)





3.12 Traffic Calming Measures

Traffic calming features can be incorporated into streets in order to reduce traffic speeds and enhance conditions for non-motorized road users including cyclists and pedestrians. Traffic calming is often associated with existing residential neighbourhoods to address specific problems, but traffic calming features can also be applied to new development areas or to other roads depending on their classification and use. Although traffic calming features are not bicycle infrastructure per se, traffic calming directly benefits cyclists by slowing traffic and increasing the feeling of security among vulnerable road users. Selected traffic calming measures are discussed below with regard to bicycle travel. For more information and specific engineering design standards for traffic calming see the [Canadian Guide to Neighbourhood Traffic Calming](#), 1998.



Table 10: Selected Traffic Calming Measures

Traffic calming device	Notes
<p><i>Curb extensions</i></p> 	<p>Curb extensions can be designed in a variety of ways. When used at an intersection they make the crossing area more prominent and reduce the crossing width for pedestrians. To avoid a “squeeze” as motor vehicles pass cyclists at a curb extension, curb extensions should not extend past the width of the parking lane.</p>
<p><i>Speed humps</i></p> 	<p>Speed humps are wider and smoother than speed bumps and are effective in slowing down motor vehicles as they approach a pedestrian zone. They should be wide enough to slow motor vehicles but still allow bicycles to pass smoothly by. Speed humps are most appropriate on residential streets.</p>
<p><i>Rumble strips</i></p> 	<p>Rumble strips are most often used on paved shoulders. If rumble strips are used, they should not be placed inside a bicycle lane. Instead, they should be placed immediately adjacent to the fog line and be a maximum of 30 cm wide.</p>
<p><i>Raised crossings</i></p> 	<p>Raised crossings are essentially wide speed humps that are marked as crossings. Raised crossings are typically marked with a high visibility crosswalk design. A change in pavement colour or texture (such as paint, coloured concrete, non-slip bricks or unit pavers) on the crossing can also help delineate the pedestrian crossing area and raise motorists’ awareness.</p>
<p><i>Refuge islands</i></p> 	<p>Refuge islands can benefit pedestrians and cyclists by reducing crossing distances and reducing jaywalking. They protect pedestrians and cyclists in cases where there is high volume traffic or confusing flow patterns. Where appropriate, it is important to provide adequate ramping or cuts to accommodate bicycles and wheelchairs.</p>



APPENDIX E: SIGNAGE SCHEDULE

TAC SIGN	NOTES	SAMPLE	LOCATION	# REQ'D
TAC IB-23 450mm x 450mm	The Bicycle Route Marker sign provides route guidance for cyclists and indicates those roads and pathways which are part of the bicycle system. Place the sign at frequent enough intervals to keep cyclists aware of the changes in route direction, and to remind motorists of the presence of cyclists.		Along all designated bicycle routes.	60*
TAC RA-7 600mm x 750mm	The Yield to Bicycles sign may be used where motorists are required to cross a route used by cyclists and/or pedestrians, and are required to yield. The sign is most applicable in configurations that require motorists to undertake a right turn from within the motor vehicle lane, rather than immediately adjacent to the curb.		On highway adjacent to MUP for northbound traffic.	25*
TAC RB-93 300mm x 450mm	The Shared Pathway sign indicates that both cyclists and pedestrians are permitted to use the path.		Along the MUP.	25*
TAC WA-8R 750mm x 750mm	This checkerboard sign indicates an abrupt change of alignment at a turn or curve. The arrow indicates the direction taken by the curve. Install the sign at the curve, directly in line with the path of the approaching cyclist. Use left or right version, as appropriate.		On MUP, at "s" curve North of Chesterman Beach Road (left version).	1

*based on signage interval of 200 metres

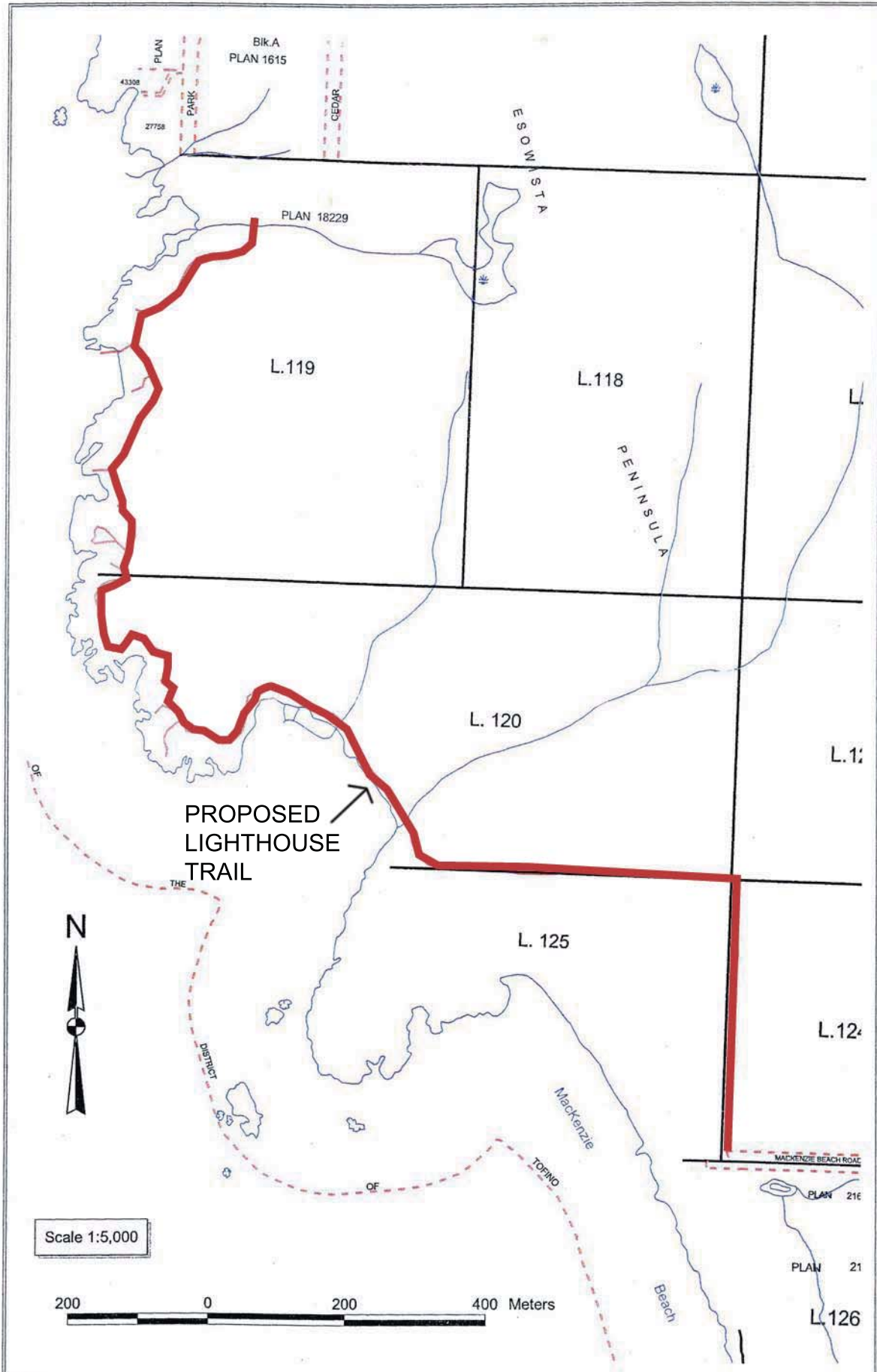
<p>TAC WC-46 600mm x 600mm</p>	<p>The Pedestrian and Bicycle Crossing Ahead sign indicates to motorists that they are approaching a location where pedestrians and cyclists cross the road.</p>		<p>On both side of highway at Chesterman Beach Rd, Lynn Road, Hellesen Dr, MacKenzie Beach Rd and Industrial Way.</p>	<p>10</p>
<p>TAC WC-7S 600mm x 300mm</p>	<p>This “Crossing” tab <i>must</i> be used to support the above sign.</p>		<p>As above.</p>	<p>10</p>

TAC signage information is taken from Bikeway Traffic Control Guidelines for Canada, December 1998. This manual is the recommended source for bikeway signage in Canada, and provides guidance on the design and application of signage and pavement markings for bicycles and bikeways. Copies may be purchased at www.tac-atc.ca.

OTHER SIGN	NOTES	SAMPLE	LOCATION	# REQ'D
<p>Homeowner Caution Sign</p>	<p>Provide a caution sign to each homeowner along the MUP which states - “Crossing Pedestrian and Cycling Route.”</p>	 <p>(visualization)</p>	<p>To be erected by homeowners at private driveways along MUP.</p>	<p>Will vary</p>
<p>MUP Etiquette Sign</p>	<p>Include the following cautions:</p> <ul style="list-style-type: none"> ○ MUP users keep to right. ○ Cyclists use bell or voice to pass. ○ Cyclists use light when riding at night. 	<p>(To be developed)</p>	<p>At beginning and end of MUP, and at crossing point to Chesterman Beach Road.</p>	<p>3</p>
<p>Wayfinding Signs</p>	<p>Wayfinding signs should indicate distance in kilometers and cycling time to key destinations. This can be calculated using an average cycling speed of 20 km/hr for bicycle travel.</p>	 <p>(visualization)</p>	<p>Campbell St, Arnet Rd at the Community Hall, along the MUP at the Botanical Garden, at MacKenzie Beach, and at Chesterman Beach.</p>	<p>Min. 5</p>

APPENDIX F: PROPOSED LIGHTHOUSE TRAIL MAP

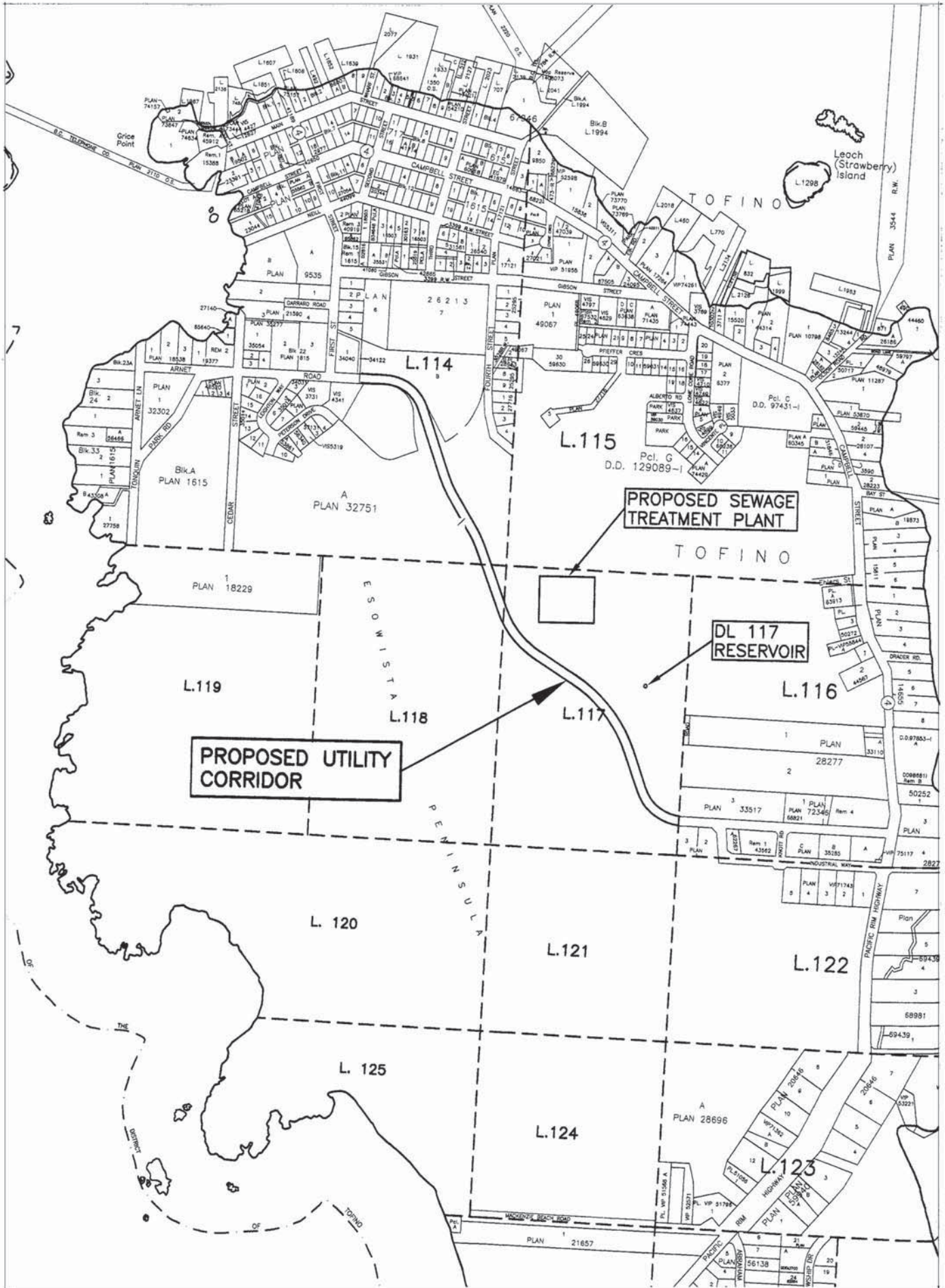
Map of proposed Lighthouse Trail



Source: District of Tofino, 2008

APPENDIX G: PROPOSED UTILITY CORRIDOR MAP

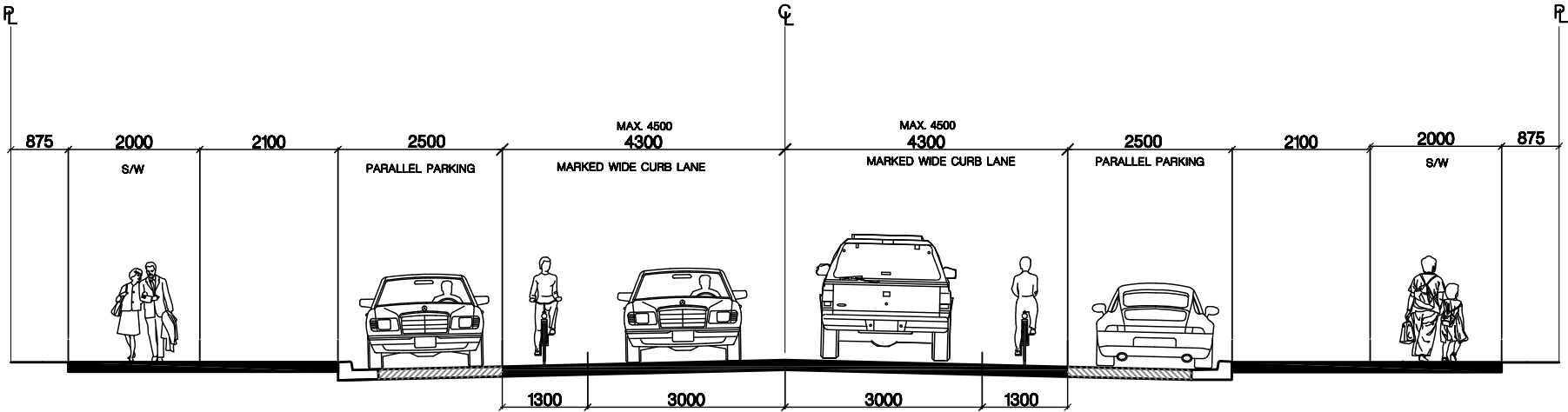
Map of proposed Utility Corridor



Source: District of Tofino, 2008

APPENDIX H: CAMPBELL STREET SECTION

Option for integrating a wide curb lane with Campbell Street redesign



Campbell Street Section with Wide Curb Lanes

SOURCE: LEES+ASSOCIATES
 (modified from Section C-2,
 from District of Tofino)

SCALE: 1:100

NOTE: Wide curb lanes should be a minimum of 4.3 m wide and no wider than 4.5 m. This dimension excludes the width of the gutter pan. Wide curb lanes are suited to collector or arterial roads with on-street parking. Wide curb lanes do not have a lane line separating bicycles from traffic, but rather are marked by bicycle symbol stencils that identify the right area of the lane as that used by bicycles. Stencils should be provided every 200 m and 20m in advance of an intersection.

