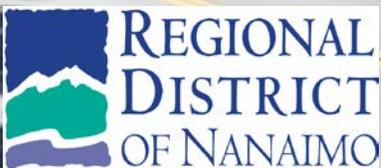




Regional District of Nanaimo Electoral Area 'H' Active Transportation Plan

March 2017



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Preparation

The preparation of the ATP for Area 'H' was led by Alta Planning + Design and guided by input from a number of staff and stakeholders including:

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The Regional District of Nanaimo would also like to acknowledge the involvement of Dr. Paul Hasselback, Medical Health Officer and Elizabeth Thomson, Environmental Health Officer and Healthy Built Environment representative for Central Island, who attended a public workshop on October 12 and made a presentation concerning the link between health, the built environment and active transportation (see Appendix E for a copy of the presentation).

EXECUTIVE SUMMARY

The Regional District of Nanaimo (RDN) wants to increase walking, cycling and other active transportation to provide real alternatives to driving, to improve community health, and to act on reducing greenhouse gas emissions. This Active Transportation Plan (ATP) will guide the planning and implementation of facilities and initiatives to enable and encourage more walking and cycling trips by more residents and visitors to Electoral Area 'H' (Area 'H').

This Plan is the result of a comprehensive planning effort by myriad parties within Area 'H'. This Plan recommends that roadway design focus on serving the most vulnerable roadway users (pedestrians and bicyclists) and support transportation alternatives, (e.g., transit), which will result in a transportation system that meets the needs of all users. Recommending bicycling and pedestrian improvements in a comprehensive and systematic manner can create a more cohesive and understandable transportation system. Working with a unified set of design guides and policy directives also provides a clear picture for planners, decision makers, and residents. Involvement of multiple internal and external stakeholders in the planning process can result in strengthened municipal partnerships, efficient resource utilization, and increased opportunities to transform Area 'H' into an increasingly safe and pleasant place to walk and bike.

For this ATP to be realistic and achievable, it was important that the Plan reflect community priorities. Using surveys and open houses, the community was invited to comment, challenge and offer alternative ideas. This process helped the ATP to:

- Address the community's safety concerns including traffic volume and speeds on Highway 19A and Horne Lake Road, as well as increased numbers of people walking and cycling on the highway without adequate facilities.
- Respond to the needs of seniors. Area 'H' has a large population of older people with a diverse range of needs and interests. Age-related conditions mean there is need for active transportation facilities that are accessible to people with reduced mobility. The ATP recommends many solutions that strive to achieve accessibility for people with reduced mobility. Support the Official Community Plan by:
 - Enabling *improved mobility* through improved walking and cycling trails or routes between neighbourhoods, schools and commercial areas;
 - Connecting the *nodal structure* mix of higher density residential and commercial uses in the three Village Centres; and
 - Stimulating a *vibrant and sustainable economy* built upon economic activities that are compatible with surrounding land uses.
- Prioritize investments that can encourage and enable people to walk or cycle more in the most cost-effective manner. This relies on the ATP building on existing assets and focusing on evidence-based proposals that are practical and affordable.

This ATP recommends a total of 42 pedestrian and bicycle improvement projects for Area 'H,' of which ten have been identified as top priorities for implementation within five years, they include:

- Reducing speed limits to 50-60 km/h on Highway 19A (Gainsberg to SunnyBeach Road)
- Implementing a pedestrian crossing of Highway 19A at Magnolia Court in Bowser
- Adding an advisory lane on Faye Road from Jamieson to Bowser Elementary
- Implementing a road diet on Highway 19A (Gainsberg to Crosley)
- Adding a pedestrian crossing of Highway 19A at Lions Way
- Implement a pedestrian crossing of Highway 19A at Coburn Road

- Add 1.5 m wide paved shoulders on both sides of Highway 19A between Crosley and Fisheries Road. As part of this project, upgrade the Big Qualicum River Bridge to include improved access by widening the paved access path and by adding a fence to protect those using the sidewalk from falling into the roadway.
- On Burne Road and Gainsberg Road in Deep Bay, widen the road to include 1.5 metre wide paved shoulders to better accommodate active transportation users
- Reduce the speed limit on Highway 19A between Seaboard Road and Driftwood Road from 70 to 80 km/h to 50 to 60 km/h
- Implement traffic calming on Jamieson Road and Thompson Clark Drive East, from Fay Road to Henry Morgan Park to improve access to Bowser Elementary

The total capital cost for the top ten projects is estimated to be just over \$2.5 million.

CHAPTER ONE: INTRODUCTION

1.1 Plan objectives

Active transportation includes walking, cycling and other self-propelled methods of travel. The Regional District of Nanaimo (RDN) wants to increase active transportation as a proportion of all travel to provide real options to driving, to improve community health, and to act on reducing greenhouse gas emissions.

The Regional District has prepared this Active Transportation Plan (ATP) to guide the planning and implementation of facilities and initiatives that will enable and encourage more walking and cycling trips by more residents and visitors to Electoral Area 'H'.

The ATP is an official policy document of the RDN and will be incorporated into the formal Area 'H' Official Community Plan that is currently under review. It has been prepared with the essential involvement of staff, stakeholders and community members from Qualicum Bay, Bowser, Deep Bay, Dunsmuir, Horne Lake, and Spider Lake, surrounding rural areas, and Qualicum First Nation.

1.2 How to Use the Plan

The ATP is intended to guide the long-term development of a transportation network that is conducive to active transportation. The Plan is organized as follows:

- [Section 2.0, titled 'Background – Electoral Area 'H''](#) provides a working definition of Active Transportation, explores its benefits, and reviews the context of Area 'H', including its current planning documents and feedback gleaned from surveys, the interactive Wikipedia map, and open house events.
- [Section 3.0, titled 'Developing the Network'](#) outlines the goals that will guide implementation and elaborates upon recommended facility types, proposed Active Transportation projects and the criteria employed for evaluation and prioritization.
- [Section 4.0, titled 'Activating the Community'](#) describes actions and initiatives that could support the use of the network, encouraging people to change behaviour towards more trips by walking or cycling rather than driving.
- [Section 5.0, titled 'Implementing the Plan'](#) prioritizes and describes recommended improvements, and potential funding sources, in addition to important lines of communication and next steps moving forward.

CHAPTER TWO: BACKGROUND ELECTORAL AREA 'H'

2.1 Community Overview

Electoral Area 'H' is an unincorporated area within the RDN, with the majority of settlement on the coastal lowlands (Figure 1). The 2011 census population of Area 'H' was 3,509 with a median age of 56.2 years. Area 'H' has a history as a summer holiday area, and approximately 30 percent of properties are owned by non-residents. Area 'H' includes the communities of Deep Bay, Bowser, Qualicum Bay, Dunsmuir, Horne Lake and Spider Lake (Figure 2).

Island Highway 19A, the Inland Island Highway 19 and the disused E&N Railway line each run through Area 'H', parallel to the coast. Both Highway 19A and the disused E&N Railway have the potential to serve as important links for active transportation users, linking key origins and destinations. Active transportation users however, are not permitted to travel along the E&N Railway where no designated trail or path is provided. Further, conditions on Highway 19A are not conducive to walking or cycling, since shoulders in many places are narrow and unpaved, and the posted speeds are between 60 and 90 km/h.

There are a significant number of trails in Area 'H' with a total of 29.75 km of formal trails throughout the Area, as well as many informal trails on Crown lands. A number of significant proposed and existing trails are shown in Figure 2, including the Lighthouse Country Regional Trail which runs parallel to Highway 19A and which will eventually provide an important link between Bowser and Qualicum Bay. Community members have said that, although there are extensive trail networks on Crown land and RDN parks in the area, these trails do not provide safe, direct routes to encourage walking or cycling journeys for work, education or to access goods and services.

Area 'H' is thus faced with a number of transportation challenges including low-density development, infrequent transit service, discontinuous trails, narrow roads and roads with uneven gravel shoulders and open drainage ditches, and large distances between residential and commercial areas. Traffic safety is an issue along many roads within Area 'H' and is likely a significant deterrent to using active forms of transportation.

Community members have indicated a particular desire for safer ways for students to travel to school and from school to Bowser Village Centre without relying on being driven. The elementary school is located some 2km away from the Village Centre however, and the road leading to it has neither sidewalks nor sufficient shoulders for walking or cycling.

In the 2011 National Household Survey, 91 percent of residents reported travelling to work by automobile¹ (Table 1).

¹ As the Census only records journey to work, the actual amount of transit, walking and biking for all journeys may be higher. Looking at the Metro Vancouver TransLink Trip Diary, which records all journeys, the rural area of the Langleys, has a similar auto mode share for work, but significant differences for other journey purposes. The implication of different mode splits by purpose suggests a higher active transportation mode share within Area "H" may be hidden by Census statistics alone.

Figure 1: Population Density of Area 'H'

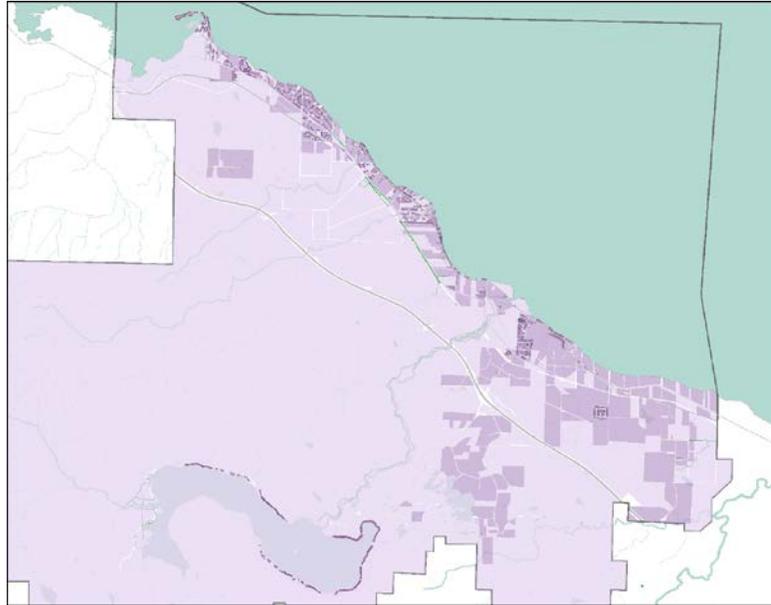


Table 1: Mode of Transportation in Area 'H'

Mode of Transportation	Number	Percent
Total employed population*	1,135	100.0%
Car, truck or van - as a driver	935	82.4%
Car, truck or van - as a passenger	95	8.4%
Public transit	0	0.0%
Walked	40	3.5%
Bicycle	0	0.0%
Other methods	30	2.6%

* Aged 15 years and over with a usual place of work or no fixed workplace address by mode of transportation.

Source: [2011 National Household Survey](#)

2.2 Active Transportation

Active transportation includes walking, cycling, and any other human-powered mode. Walking is part of nearly every journey, whether the trip is walked all the way or as part of a transit or auto journey. Cycling provides many of the same flexibilities as walking but with a much greater range for the same effort. Both walking and cycling are unenclosed modes which makes people who walk or ride more aware of the environment around them than people who drive or use transit, but also more vulnerable in the case of a collision.

Walking and bicycling are gaining new interest from communities across Canada after decades of investment and policies that have supported over-reliance on motorized transport. A recognition that we cannot simply build roads endlessly and scientific consensus on the impact of transportation emissions on our climate and health, has led to new attitudes. Efforts to develop compact, mixed-use communities with shorter journeys, changing generational attitudes towards auto ownership, as well as personal health and environmental concerns have helped raise the profile of walking and cycling.

Nevertheless, active transportation still faces many challenges to gain mainstream acceptance, particularly within the design of rural transportation networks. Many of walking and bicycling's greatest strengths – such as creating attractive, livable streetscapes and improving health outcomes – are hard to measure and so are often excluded from transportation business cases. Similarly, many of the external costs of driving, such as noise, local air pollution, social isolation, property damage, injuries and climate change, are under-evaluated in business cases. The result is a calculation that favours motorized transportation where time-saving (i.e. journey speed) is the main objective rather than the least damaging and most efficient ways to meet travel needs.

The benefits created by walking and bicycling rather than driving are significant. For example, emissions from cycling are over 10 times lower than those stemming from the passenger car², less money is spent on gas, and even short trips by walking and cycling get people a few minutes closer to healthy levels of physical activity³. When walking and bicycling become part of people's daily activity, these benefits add up to create a cleaner, healthier and more affordable community.

Walking and cycling do have practical limitations, however. Distance, gradients, load-carrying capacity, dependent passengers and weather all create conditions where active transportation may not be the easiest solution. Moreover, our choices are strongly influenced by our personal thresholds of safety and comfort, our rational and irrational beliefs and the attitudes of family and friends. While these barriers can be significant, surveys⁴ show that many more people are interested in cycling or walking than currently do so. This interest, coupled with the percentage of all trips that are short enough to be reasonably undertaken on foot or a bike, suggests real and significant potential to make active transportation a positive choice for more people in Area 'H.'

2.3 Existing Conditions

Existing conditions for walking and cycling were reviewed as part of preparing this ATP and are mapped in Figure 2. This exercise assessed the status, issues and plans for the active transportation network.

² European Cyclists' Federation, 2011. [Cycle More Often 2 Cool Down the Planet: Quantifying CO2 Savings of Cycling.](#)

³ World Health Organization, 2010. [Global Recommendations on Physical Activity for Health.](#)

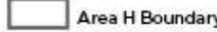
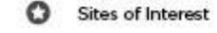
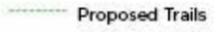
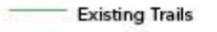
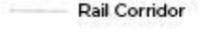
⁴ City of Nanaimo, 2013. [Nanaimo Transportation Master Plan - Phase 1 Consultation Summary Report.](#)

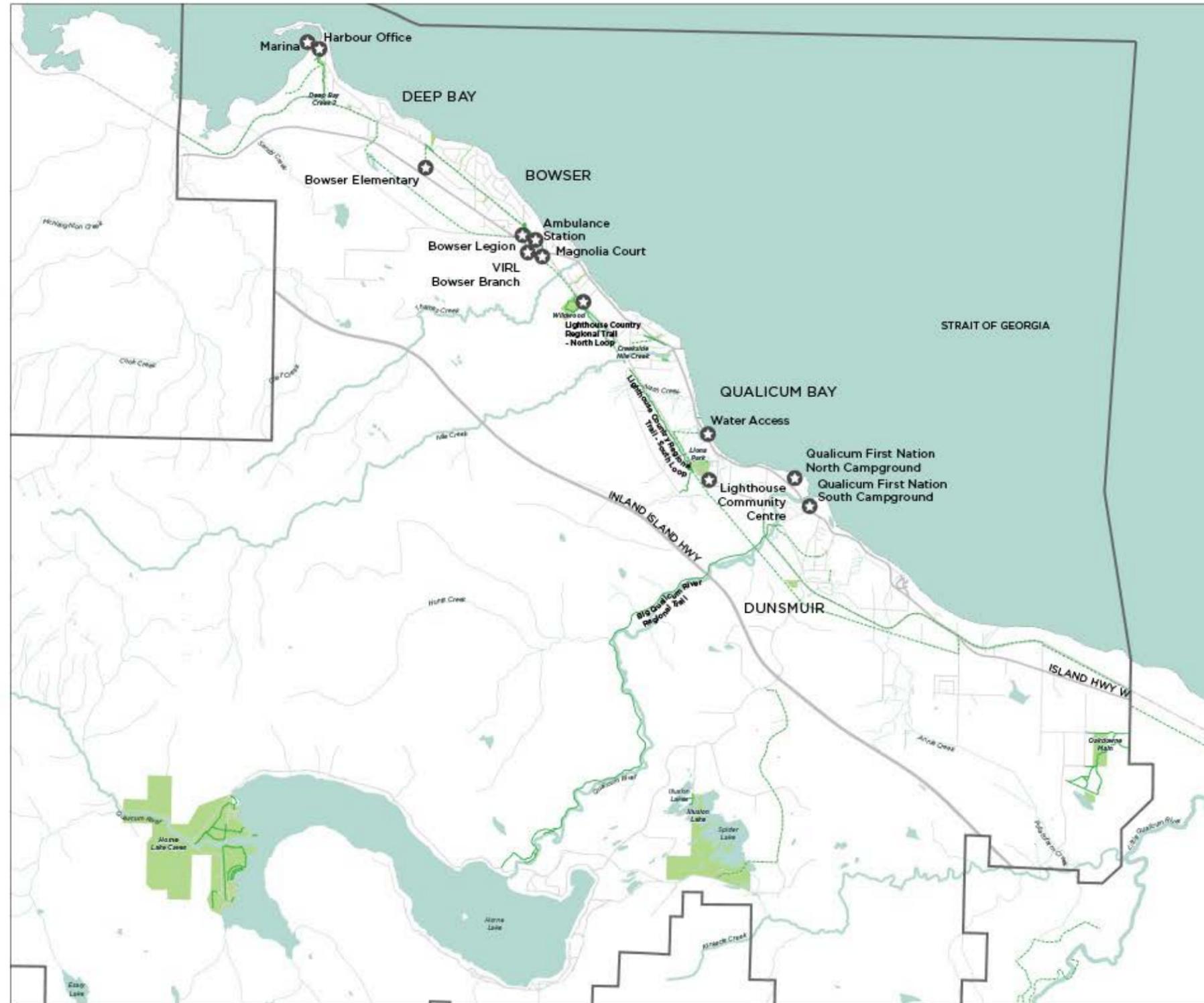
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Figure 2: Existing Conditions in Area 'H'

ELECTORAL AREA H RDN ATP 2016 EXISTING CONDITIONS

DESTINATIONS + BOUNDARIES

-  Area H Boundary
-  Sites of Interest
-  Proposed Trails
-  Existing Trails
-  Rail Corridor



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Feedback concerning existing conditions has come from a variety of sources, including through review of related background documents and community plans (see Section 2.4), a site visit by the consulting team, discussions with RDN staff, a stakeholder workshop and public open house on June 22, 2016 and through online surveys.

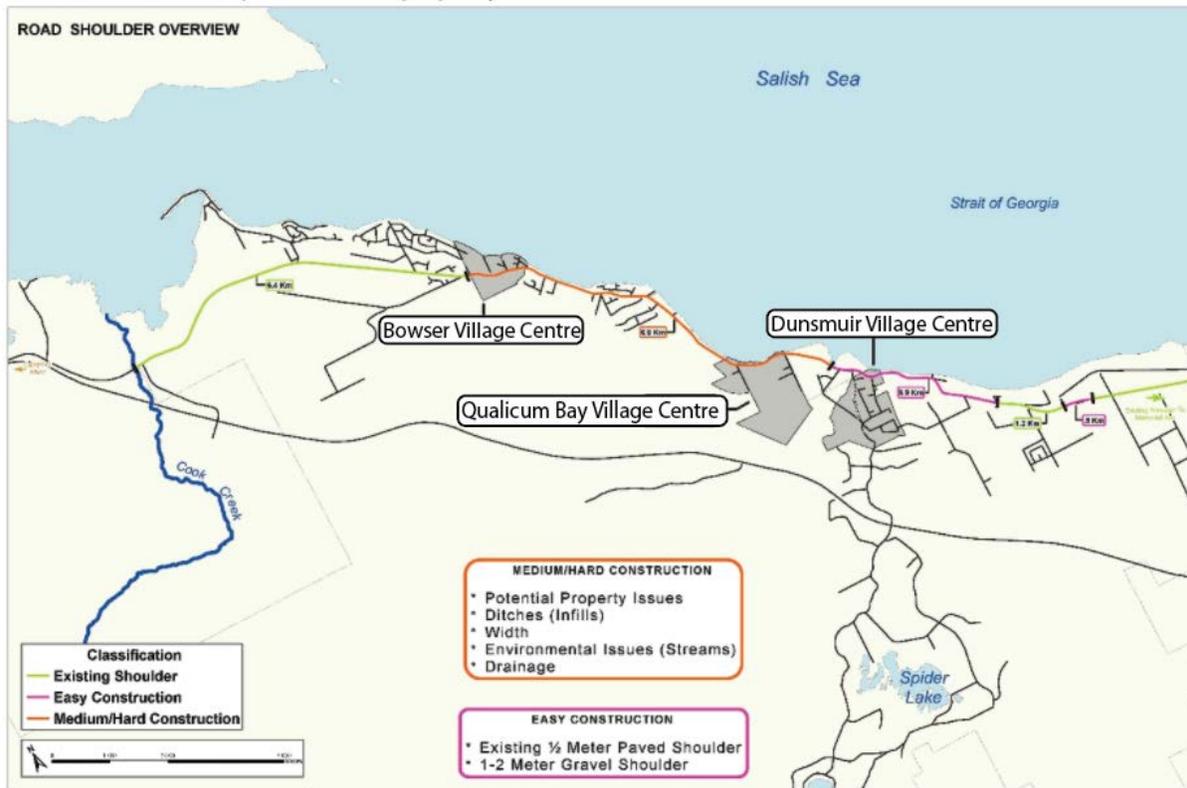
On May 5, 2016 Alta staff conducted a site visit and met with RDN staff. The site visit revealed that in Area 'H', people commonly travel by active modes on local roads, on trails and on Highway 19A. People walk and ride on Highway 19A, despite the fact that shoulders on Highway 19A are, in some instances, less than the minimum design width of 1.5m established by Ministry of Transportation and Infrastructure (MOTI) for Provincial highway shoulders intended to accommodate cyclists and pedestrians ([Pg 430-1, BC MOTI Supplement to TAC Geometric Design Guide](#)). To respond to



this deficiency and to a desire by the RDN to begin a process to improve shoulders, MOTI has produced the following map (Figure 3) in 2014 which identifies where improvements are needed to shoulders along Highway 19A in Area 'H'. The locations highlighted on the map, from west to east include:

- From Crosley Road near Bowser Village, to just north of Fisheries road, where improved shoulders are needed on each side of the road;
- From just north of Fisheries Road to Driftwood Road where shoulder improvements are needed largely on the north side; and From Polgate Road to 500 metres south of Polgate Road where shoulder improvements are needed on both sides of the roadway.

Figure 3: Road Shoulder Improvements along Highway 19A in Area 'H'



The E&N rail corridor, like Highway 19A, forms a direct route through Area 'H', providing a link to key destinations such as Deep Bay Marina, Magnolia Court Shops, Lighthouse Community Centre, Qualicum First Nation Village and Dunsmuir. Unfortunately, active transportation users are not currently permitted to travel along the E&N railway where no designated trail or path is provided. The E&N corridor is owned by Island Corridor Foundation which hopes to re-establish rail service on the line⁵. Although re-establishment of rail service is a laudable goal, it imposes constraints on other uses in the Right of Way (ROW), requiring considerable effort for design and approval of trails and crossings in the E&N ROW.

⁵ Ministry of Transportation and Infrastructure, 2009. [Evaluation of the E&N Railway Corridor: Foundation Report](#)



E&N rail corridor

There are almost 30 kilometres of designated trails throughout Area 'H', including important recreational trails such as the Big Qualicum River Regional Trail as well as trails like Lighthouse Country Regional Trail which has the potential to serve an important transportation link once the north and south loops are connected and extended to Bowser and Qualicum Bay. Yet, many of the trails in the Area 'H' are discontinuous, do not provide enough width or lighting to comfortably serve utilitarian trips, and do not provide links between places people regularly travel.

There are two bridges on Highway 19A in Area 'H' including one across Nile Creek and the Big Qualicum River. Both bridges do not provide comfortable facilities for active transportation users. As shown in the image of the approach to Nile Creek, where sidewalks exist, they are narrow and inaccessible to those using wheelchairs or scooters.

Access to Bowser Elementary School is along Faye Road from Jamieson Road. Faye is almost a kilometre long, is narrow and lacks sidewalks, or even a shoulder in some areas. Improvements to active transportation facilities are needed to address concerns regarding comfort and safety for those students who walk and cycle this route.



Bridge over Nile Creek

Little Qualicum River Estates is located outside of Area 'H'. This subdivision is accessed from Highway 19A via Baylis, Dorman and Corcan Roads. The speed and volume of traffic on these roads is relatively high for a rural setting and it appears that some form of traffic calming is needed to address speeding.



Access to Bowser Elementary School



Corcan Road leading to Little Qualicum River Estates

There are a number of locations along Highway 19A that have destinations on both sides of the roadway and which would benefit from some form of crossing treatment. The image below shows an example in Bowser Village where pedestrians commonly cross between Magnolia Court and the Lighthouse Feed and Garden shop. This and a number of other locations might be considered for crossing treatments and better lighting to serve such movements.

With construction of the Inland Island Highway in the late 1990's, the role of Highway 19A has changed. No longer does 19A need to act as a Highway serving longer trips. Instead its function is to serve local and regional connections between residents and goods and services. This role has been strengthened over the years as the local population and the number of roads and driveways accessing 19A has increased. With an increasing number of driveways and access roads comes a heightened potential for conflicts between motorists, pedestrians and cyclists. Some potential solutions to address potential conflicts include brush removal and other steps to maintain sightlines, and reductions in traffic speeds to allow for increased reaction time.



Bowser Village common pedestrian crossing

Overall, the site visit revealed that Area 'H' requires significant investment in active transportation to allow walking and cycling to become comfortable and practical options for utilitarian trips. While many local trails and roads serve walking and cycling, these routes are often disconnected from the larger network, or feed into 19A and other routes that are intimidating and uncomfortable for pedestrians and cyclists. And while 19A and the E&N rail line each offer direct connections to important destinations within Area 'H', neither of these two routes can serve people of all ages and abilities without significant investment.

As part of the public outreach for the ATP, RDN hosted a stakeholder meeting and Public Open house on June 22nd, 2016. Nine stakeholders attended the stakeholder meeting. They included an elected official, representatives from the school's Parents Advisory Council, Lighthouse Country Business Association, Greater Nanaimo Cycling Coalition,

members of the OCP working group, residents and a representative from the local walking group. A copy of the presentation delivered to the stakeholders as well as a summary of their feedback is available in the appendix. Over 50 individuals attended the Public Open House and a number of the stakeholders remained to interact and hear public feedback. The information boards that were on display as well as all the written comments received during the event can be found in Appendix D. In addition to providing written comments, Public Open House visitors were encouraged to complete an online survey and to post comments on an interactive Wikipedia map that allowed them to identify locations where improvements are needed to facilitate walking and cycling, see Appendix B.

A dedicated website was developed for the Area 'H' ATP that included an overview of the project, maps, a timeline, the online survey and the interactive Wikipedia map, both of which were available from June 21 to August 30th, 2016. A total of 116 people responded to the survey and an anonymous record of their responses is appended. Significant findings include:

- 52 percent of respondents were over 55 years of age. This is representative of the population as recorded in the 2011 Census data when 53 percent was over 55. This is reinforced by the fact that 88 percent of respondents identified themselves as residents of Electoral Area 'H'.
- The respondents were less representative of published data in respect of how they said they primarily travelled. In the survey, 39 percent of respondents said they walked as their primary mode. While Census data only records journey to work, the proportion of walkers recorded in the Census was far smaller at just 3 percent. Also in the survey, 17 percent stated cycling as their main mode. This was again significantly different to the Census data for journey to work where cycling was zero. These results indicate that respondents were weighted towards those with an existing interest in active transportation, and suggests a bias in National Journey to Work data which overemphasizes the prevalence of automobile trips while ignoring trips for other purposes such as school, errands, shopping, and recreational trips that tend to rely more heavily on active modes of transport.
- Frequency of walking or cycling varied widely, but results indicate generally that walking for recreational purposes is twice as frequent (3.3 times per week on average) compared to running errands (1.7 times per week on average) whereas cycling for recreation was almost three-times as frequent (1.7 times per week on average) than running errands (0.6 times per week on average for cycling). Walking and cycling for work or school was relatively rare at 0.5 times per week on average for walking and 0.1 times per week on average for cycling. These results suggest significant potential to build on walking and cycling for pleasure and exercise to increase active transportation for utilitarian journeys.
- The frequency of walking and cycling can be partly explained by responses to the survey questions about people's motivations. While 79 percent of respondents stated they walked or cycled for health and fitness, only 14 percent considered these modes more convenient than driving. A more general sense of wellbeing is also recognized as a strong motivator and 56 percent of respondents agreed that 'being outside' was a reason to walk or cycle. While personal benefits are important, a significant 30 percent of respondents also stated they were motivated by concern for the environment.
- Barriers to walking and cycling followed a similar profile to many other studies. Respondents were asked to identify their top five obstacles to walking and cycling:
 - 63 percent felt facilities were not well-maintained;

- 52 percent stated traffic volumes or speed as a deterrent;
- 48 percent reported that roads didn't feel safe
- 40 percent felt they lacked convenient routes to their destinations;
- 33 percent thought destinations were too far away; and a further
- 20 percent mentioned difficulties crossing streets.

These responses suggest that there is a genuine need for improved active transportation facilities and improved maintenance of those facilities as well as for structural changes in the community that would place residents in closer proximity to goods and services that they require. The responses also indicate opportunities for education and information to overcome negative perceptions and limited awareness of options.

- To overcome these barriers, respondents selected three top priorities for future transportation investment from a range of possible options. Not surprisingly, the preferred options were for investment in improved infrastructure:
 - 57 percent requested improved pedestrian facilities;
 - 55 percent selected improved on-street cycling facilities;
 - 34 percent chose more paths and trails; and
 - 20 percent sought more paved paths.
- These results suggest widespread desire for a range of on- and off-road facilities to better serve walking and cycling. Amongst other solutions, more transit facilities attracted support from 18 percent, landscaping and lighting 11 percent, wayfinding 10 percent and education of cyclists or drivers between 2 and 5 percent respectively.

The survey responses suggest that those already interested in walking and cycling in Electoral Area 'H' could be encouraged to make more utilitarian trips via active modes. To achieve this goal it is critical to overcome concerns about personal safety and that these utilitarian trips are practical and convenient. Infrastructure is clearly an important aspect of making active transportation more viable, but information and confidence-building will also be important to broadening people's willingness to see walking and cycling as more than a recreational interest.

When completing the online survey, respondents were also given the opportunity to use an interactive, online Wikipedia map of Area 'H' to identify locations where they currently walk and cycle and where they feel improvements or new active transportation routes are needed to better facilitate walking and cycling. Over 40 comments and route suggestions were drawn on the map. The map and a list of the comments and route suggestions received are appended to this report.

The feedback is varied but there are a number of common themes that emerge. Many respondents express concerns about conditions on Highway 19A including narrow shoulders, the speed of motor vehicle traffic and challenges crossing at particular locations. Responses also identify recommended improvements on Highway 19A or suggest improvements to parallel routes and connections that would provide an alternative to Highway 19A. A number of comments raise concerns about access for active transportation users across Nile Creek and Big Qualicum River bridges and suggest improved shoulders and physically separated trails or paths to better serve pedestrians and cyclists.

Throughout Area 'H' there are a number of informal trails that have been constructed by community volunteers. A number of these routes are highlighted on the Wikipedia map and provide a record of trails, particularly northwest of Bowser, that serve recreational needs and which could appeal to a broader audience if properly marked and signed.

The outreach used to inform development of ATP recommendations was extensive and relied upon a variety of strategies including site visits, stakeholder and public outreach both in person and online to serve those unable to attend stakeholder and open house events. Feedback obtained through these various sources was generally consistent and indicated strong support for a variety of actions to improve conditions for active transportation users. In addition, the consulting team examined a number of background reports and community reports that may have an influence on the ATP.

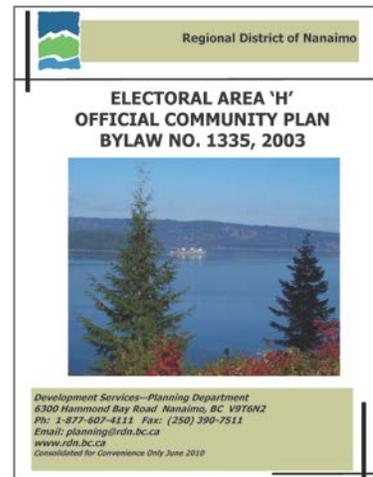
2.4 Community Plans

There are a number of RDN Plans that have a bearing on active transportation within Area 'H'. The following summary provides the foundation for the recommendations made in this ATP.

Official Community Plan (2003)

The Official Community Plan (OCP) is the overarching planning document for Electoral Area 'H.' Development of the Active Transportation Plan was undertaken concurrently with a review and update of the OCP. The following excerpts from the Community Values Statement in the current OCP are relevant to active transportation:

- Protect rural character and contain urban development to village nodes.
- Preserve and enhance green space, access to public lands, integrated trails and beaches.
- Promote a mixed community providing economic opportunities, affordable housing, and services for all residents.
- Recognize and support enhanced transportation corridors.
- Require comprehensive public consultation with respect to decisions about the future development of all lands and services within our communities.



The OCP identifies three village centres or development "nodes" in Area 'H': Bowser (see Bowser Village Centre Plan below), Qualicum Bay and Dunsmuir.

The transportation section of the OCP (Section 4.3) identifies several policies relevant to active transportation, most notably RDN encourages:

1. Improvements to the efficiency and safety of Island Highway 19A. In particular, the RDN supports improvements and shouldering of two-lane sections and the creation of linkages to village centres, rural residential neighbourhoods, and scenic coastal resources.
2. MOTI to provide opportunities for bicycle and pedestrian routes on Island Highways 19 and 19A.

Feedback obtained during consultation for the ongoing update to the OCP has further revealed:

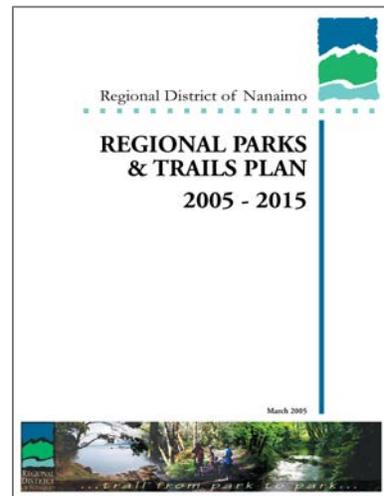
- Concerns about the volume and speed of motor vehicle traffic on Highway 19A, in particular through Bowser;
- A desire to complete the Lighthouse Country Regional Trail by connecting the north and south loops with bridges over Nile and Thames Creeks to create an off-road link between Qualicum Bay and Bowser;
- Traffic volumes and a perceived lack of maintenance on gravel roads serving Spider Lake and Horne Lake; and
- Safety concerns for pedestrians and cyclists on Highway 19A shoulders, on Faye Road between Bowser Elementary and Jamieson Road and on Gainsberg Road between Deep Bay Marina and Highway 19A.

Regional Parks and Trails Plan (2005)

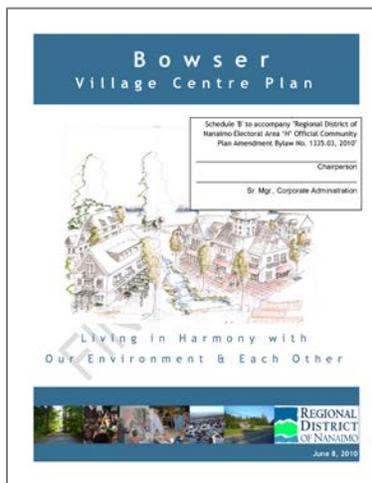
The Regional Parks and Trails Plan is a ten-year plan for the period from 2005 to 2015. Priorities identified for trails in Area 'H' include:

- Lighthouse Country Regional Trail, which comprises two loops on a gazetted ROW, where short-term actions include formalizing a railway crossing, improving signage and making various other improvements. In the longer-term, the intent is to extend the trail south to Big Qualicum Trail, and north to Rosewall Creek.

The RDN plans to review and update the Plan, beginning in 2017.



Bowser Village Centre Plan (2010)



The Bowser Village Centre Plan (June 2010) was incorporated into the OCP but reads as a separate document. It has six guiding principles:

- Build smarter, safer, healthier communities.
- Design with nature in mind.
- Protect and promote a healthy environment as it is the foundation of a resilient society, culture and economy.
- Ensure equity amongst all citizens and across generations, including future generations.
- Respect the qualities of place that foster community pride and a sense of belonging and ownership.
- Foster community participation in planning and accountability for decisions and actions.

The Bowser Village Centre Plan Goal 6 is to “connect people and places in ways that promote safe, enjoyable and healthy movement” with the following objectives:

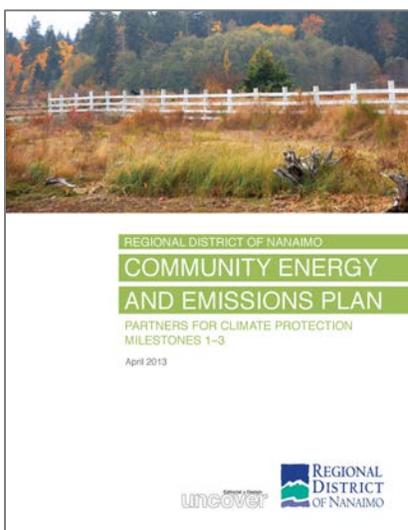
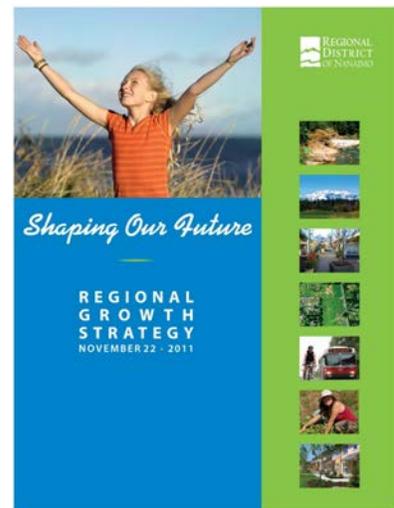
- To increase healthy, energy efficient modes of transportation and reduce private vehicle use.
- To see visible improvements in the safety, access and attractiveness of streetscapes for pedestrians and other traffic in Bowser Village Centre by 2015.

- To have safe pedestrian and cycling trails or paths that connect Bowser Village Centre to outside neighbourhoods along the road right of way along Highway 19A by 2020.
- To have a speed limit of 50 km established on Highway 19A between Crosley Road and McColl Road intersections by 2015.
- To have at least two clearly marked pedestrian crossing areas across Highway 19A near Magnolia Court and Georgia Park commercial areas in Bowser Village Centre by 2015.
- To maximize the use of existing regional trail and rail trail corridors for active transportation and recreational use.

Regional Growth Strategy (2011)

The Regional Growth Strategy includes a number of vision statements, sustainability principles, goals and policies. Those that are relevant to active transportation include:

- Policy 1.3 – Encourage, wherever possible, land use patterns and transportation systems that will improve lifestyle and behaviour choices based on sustainability principles.
- Policy 1.10 – Encourage the use of [...] alternative modes of transportation throughout the Region through effective and efficient transportation and land use policies.
- Policy 3.1 – Work together and partner with the appropriate provincial and federal authorities to prepare a mobility strategy that will contribute to achieving the goals and policies of the RGS.
- Policy 3.5 – Reduce the need for automobile travel and increase opportunities to walk, cycle or take transit.
- Policy 3.7 – Adopt OCP policies that recognize the importance of the E&N Rail corridor as a strategic transportation facility and right-of-way and ensure its protection as a transportation corridor for the long-term.



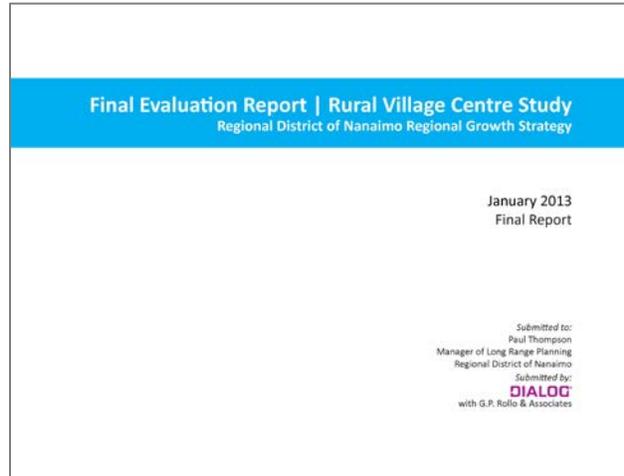
Community Energy and Emissions Plan (2013)

The Community Energy and Emissions Plan describes a range of actions that would reduce greenhouse gas emissions by 80 percent.

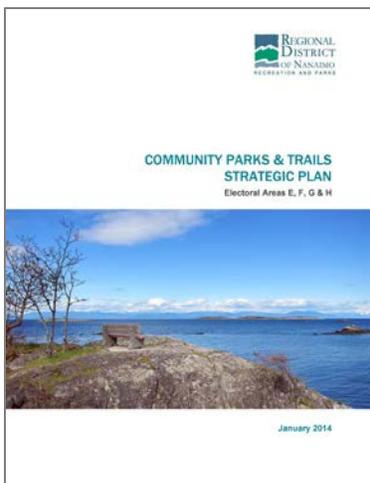
One of the goals of the plan is to reduce personal vehicle transportation emissions, with several accompanying policies. Of relevance to active transportation is a policy to establish financial incentives that encourage alternative transportation, including working with large employers to promote or implement commute trip-reduction programs.

Rural Village Centre Study (2013)

The Rural Village Centre Study identifies Rural Village Centres (RVCs) and Study Area (SAs) with potential to become compact, complete communities. The parameters of the study are based on the RDN Regional Growth Strategy’s requirements for compact, complete communities. They must be: pedestrian-oriented; supportive of regular transit service; capable of attracting and supporting local commercial development and community services and amenities; able to demonstrate how their development will contribute to Regional Growth Strategy Goals.



In Electoral Area 'H', the village centres of Dunsmuir, Qualicum Bay and Bowser were studied, as well as Deep Bay as an additional study area. Of all of the village centres in RDN electoral Areas, Bowser was among those performing second best in their potential to develop into compact, complete communities.



Community Parks and Trails Strategic Plan (2014)

The Community Parks and Trails Strategic Plan encompasses Electoral Areas E, F, G and H. The plan identifies goals for the acquisition and development of community parks, including:

- Connect people and places – Develop an inter-connected system of parks and trails that supports active transportation (travel to destinations), recreation (exercise) and nature appreciation (spiritual), and is accessible to all community residents.
- A specific action is identified for Area 'H', including to:
- Investigate the feasibility of the proposed community trail section from Deep Bay to Wildwood Park including the rail crossing at Jamieson Rd.

Transit Future Plan (2014)

The Nanaimo Region Transit Future Plan identifies actions to improve and expand transit services in the region. There is currently only one transit route in Area 'H', Route 99, which the Transit Future Plan describes as a “targeted route created to provide service to specific areas such as schools, universities, peak commuter trips as well as inter-regional connections to other communities.” Service on Route 99 currently operates one day a week.

Medium-term implementation priorities identified in the plan that are relevant to Area 'H' include:

- Expand inter-regional service to improve connections between regions, and introduce inter-regional service between downtown Nanaimo, Bowser and the Comox Valley during weekday peak periods.
- Establish Park & Ride lots in rural areas to support inter-regional transit services, including in Bowser.



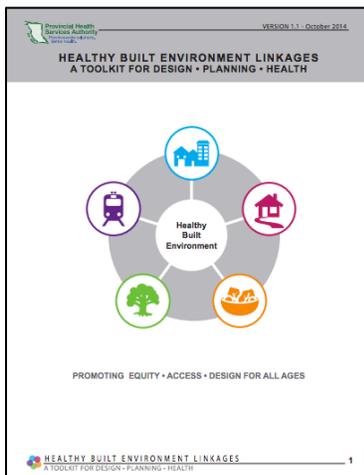
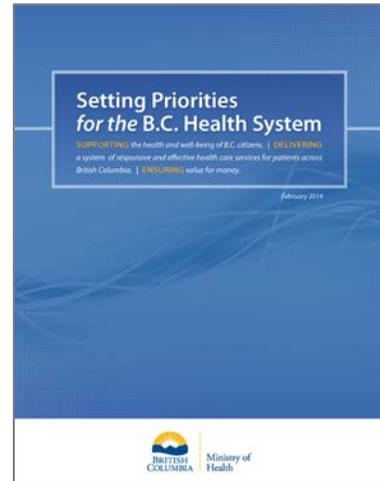
- In the longer-term, the plan indicates that inter-regional routes would be enhanced by introducing midday service on weekdays, and weekend service.

Setting Priorities for the B.C. Health System (2014)

Aligning with global clinical research, the priorities for the BC Health System have evolved from treating symptoms to recognizing the importance of effective health promotion, prevention and self-management. The *Setting Priorities* document describes the direction for BC health services including Vancouver Island Health.

Amongst the priorities attention is focused on what is known to be effective, evidence-based, accessible to people, safe and acceptable. Preventing illness is a key objective to improving health outcomes and reducing the cost of clinical care as recognized by Priority 2, 'Implement targeted and effective primary prevention and health promotion through a co-ordinated delivery system'. This priority sets out several tools including:

- Physical activity
- Healthy early childhood development
- Positive mental health promotion



BC Provincial Health Services Authority 'Healthy Built Environment Linkages' (2014)

This report identifies five features of a healthy neighbourhood including 'transport systems that incorporate a diversity of transportation modes and place priority on active transport'. Active transportation, is shown to offer accessible exercise and to improve health outcomes in children and provide benefits to mental as well as physical wellbeing.

CHAPTER THREE: DEVELOPING THE NETWORK

3.1 Network Overview

Developing an ATP for Area 'H' involved extensive and varied consultation with residents, representatives from key departments within the RDN, business leaders, OCP Working Group representatives, local and regional active transportation advocates, elected officials, the MOTI, and representatives of key destinations such as Bowser Elementary School. Through the process various challenges and opportunities emerged, some that are particular to this community and others that are common to rural areas. These considerations include:



- **Responding to the needs of an aging population.**

The average age of residents of Electoral Area 'H' is 56 years, which is well above the national and provincial averages. The Active Transportation Plan must recognize the different travel patterns and mobility needs of an older demographic, and identify appropriate solutions that will allow residents to age in place, retain mobility and access to key destinations.

- **Supporting planning objectives established in the OCP, including:**

- Improved Mobility through improved trails and pedestrian and cycling routes between neighbourhoods, schools and commercial areas,
- Nodal structure including a mix of higher density residential and commercial uses into the three Village Centres
- A Vibrant and Sustainable Economy built upon economic activities that are compatible with surrounding land uses.

As an eventual component of the OCP, the Active Transportation Plan can directly support each of the above objectives by providing infrastructure and programs that allow reduced reliance on the private auto, enable increased density, minimize the growth in traffic volumes and noise, and enhance mobility while reducing the need for costly roadway infrastructure.

- **Building upon existing assets and resources.** In Electoral Area 'H' there exist a number of informal and formal trails such as the Lighthouse Country Regional Trail, and the Big Qualicum River Regional Trail as well as local rural roads that are comfortable for walking and cycling. Building upon these assets, as well as previous planning efforts such as the Community Parks and Trails Strategy (2014), this plan proposes to construct a continuous network of routes that link important destinations along the coast and provide links to inland communities and parks. Focused construction of key improvements within this network can serve popular utilitarian and recreational trips, inspiring residents, attracting tourists and leveraging further investment.
- **Supporting economic development.** Investments in active transportation that are safe and convenient can attract and support economic development by improving access to businesses and by providing more transportation choices for residents. Recent and future development including Magnolia Court and Vancouver Island University's Deep Bay Marine Field Station, and future development opportunities such as lands to the west of the developed area of Deep Bay create opportunities for synergy between economic development and active transportation that can be identified and leveraged through the ATP.

- **Accommodating persons with physical, visual, hearing and cognitive disabilities.** A higher proportion of seniors have some form of disability than among the general population, and many seniors use mobility aids such as wheelchairs, walkers, canes and crutches. For this reason, the ATP is proposing solutions that strive to achieve universal accessibility for people with disabilities.

To achieve these aspirations, the ATP for Electoral Area 'H' recommends build out of a continuous network of active transportation facilities along Highway 19A and a parallel network of routes along trails and local streets in order to serve those that are uncomfortable walking or cycling in close proximity to higher speed motor vehicles. These networks of active transportation routes will extend from east to west throughout Area 'H', providing links to key destinations along the coast. Where practical, links will also be constructed to serve other destinations that lie inland from the coast. Key destinations include:

- Local and neighbouring communities
- Schools
- Commercial Areas
- Parks
- Civic Buildings.

This strategy will allow the RDN to achieve key goals of increasing the number of trips in Area 'H' made using active modes of transportation and increasing the perception that walking and cycling are comfortable and safe modes of transportation, suitable for people of all ages and abilities. As a part of the implementation process, RDN is encouraged to regularly monitor and report progress toward achieving these goals.

Key Goals

1. Increase the number of trips made by active modes
2. Increase the perception that walking and cycling are comfortable and safe for people of all ages and abilities

3.2 Facility Design

Facilities for active transportation may be divided into three areas:

- **Off-road routes** – such as trails, and pedestrian or bike paths. These facilities may be paved or unpaved.
- **On-road routes** – involve adding and widening paved shoulders on collectors, arterials and highways. On local streets signage and pavement marking are often adequate to calm traffic and to provide a roadway that can be comfortably shared by active transportation users and motor vehicle traffic. If such measures prove inadequate or as traffic increases, then further means can be considered to achieve comfort and safety to vulnerable users, such as sidewalks and separated cycling facilities.
- **Road safety** – facilities to allow people walking or biking to safely cross or navigate with other traffic including traffic calming and pedestrian crosswalks.

Table 2 contains examples of different active transportation facility design approaches selected for Area 'H'. The facility descriptions provided in the following section are consistent with the rural character of Area 'H'.

Table 2: Recommended Facilities to Support Active Transportation

Facility Description	Example
<p>Paved Shoulders</p> <p>Are roadways that include a paved area outside of the general purpose travel lanes that is delineated by a continuous painted line between the travel lane and shoulder area. Located on streets without curb and gutters, shoulders suitable for active transportation include signing and striping, but do not always include bicycle stencils. To serve the needs of pedestrians and cyclists, paved shoulders should be at least 1.5 m wide and should also include an unpaved portion of at least the same width so that the shoulder may serve as a break down lane for motor vehicles. Regular motor vehicle parking should be discouraged to allow unimpeded bicycle and pedestrian use.</p>	
<p>Road Diets</p> <p>Road diets involve reducing the number of motor vehicle travel lanes on a roadway and reallocating the space to better accommodate active transportation. For example, by reducing lanes from 2 in each direction to 1 in each direction with a centre turn lane, allows space to add bike lanes, wider shoulders or physically separated paths to better accommodate walking and cycling.</p>	<p style="text-align: center;">Adding Bicycle Lanes</p> 

Facility Description	Example
<p>Traffic Calming in a Rural Community</p> <p>Traffic calming includes a range of tools that can be used to influence the speed and volume of motor vehicle traffic. Roadways with traffic calming are often safer and more attractive for cyclists and pedestrians. Traffic calming features appropriate for a rural community are described below and in Appendix G.</p>	
<p>Signed Routes/Local Street Greenways</p> <p>Neighbourhood greenways include a range of treatments to improve conditions for cyclists and pedestrians on local streets, including for example, signage and pavement markings to varying degrees of traffic calming implemented to reduce traffic speeds and improve safety for cyclists and other road users.</p>	
<p>Multi-use Trails and Paths</p> <p>Multi-use trails are physically separated from motor vehicles and provide sufficient width and supporting facilities to be used by cyclists, pedestrians, and other non-motorized users. Trails are generally gravel, while paths are paved. Both are ideally 3 metres wide and should offer adequate visibility to reduce potential for conflicts at crossings or curves. The Lighthouse Country Regional Trail, portions of the Big Qualicum River Regional Trail, and E&N Rail Trail, are examples of multi-use gravel trails.</p>	<div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p>Unpaved Trail</p>  </div> <div style="text-align: center;"> <p>Paved Path</p>  </div> </div>

Facility Description	Example
<p>Advisory Lanes</p> <p>Advisory lanes include a single bi-directional travel lane for motor vehicles bordered by shoulders or bike lanes. The shoulders are separated from the vehicle travel lanes by dashed lane lines. This facility type better accommodates active transportation users within constrained roadways. This facility type was recently approved for inclusion in the Transportation Association of Canada's Geometric Design Guide. Examples of such facilities exist in Ottawa and elsewhere in North America and were recently approved for implementation in Gibsons, BC.</p>	
<p>Pedestrian Crosswalks</p> <p>Pedestrian crosswalks are marked and signed facilities that provide a designated location for pedestrians and other active transportation users to cross roadways that serve motor vehicle traffic travelling at speeds and volumes that may be intimidating for those attempting to cross. Pedestrian crosswalks may also include lights, medians and other measures that help to facilitate a crossing and to increase the frequency with which drivers yield. There are a number of locations on Highway 19A that might be appropriate for a pedestrian crosswalk.</p>	

Traffic Calming

The RDN and residents of Area 'H' have indicated a desire to maintain the rural character of their roads by retaining narrow traffic lanes, and by allowing island roadways to meander. Yet, some motor vehicles tend to travel faster than the posted speed limit, and even those that travel at or below the posted speed can intimidate, particularly if those vehicles are trucks and other large motor vehicles.

Traffic calming measures that reduce the speed and volume of motor vehicle traffic can result in a substantial reduction in collisions. The highest reductions recorded have been those involving motorists and vulnerable road users⁶. Traffic calming measures are thus justified in order to make roads safer and more attractive to cyclists and pedestrians. Descriptions of traffic calming devices that are appropriate in a rural setting are appended to this report.

Goals of Speed Transition in Rural Areas

Over time, development with the RDN has grown around Highway 19A. As a result, the "main street" of communities like Bowser forms part of the highway network. Within these developed areas, the road needs to accommodate local

⁶ 2009 US Federal Highway Administration (FHWA) publication *Traffic Calming on Main Roads Through Rural Communities*

circulation and access in addition to higher volumes of through traffic. These competing needs present potential conflicts between motorists and active transportation users.

High speed travel creates conditions incompatible with the demands of communities and developed areas. As speeds increase, a driver's area of focus is significantly decreased, resulting in a smaller area of awareness and reduced ability to react to the surrounding environment.

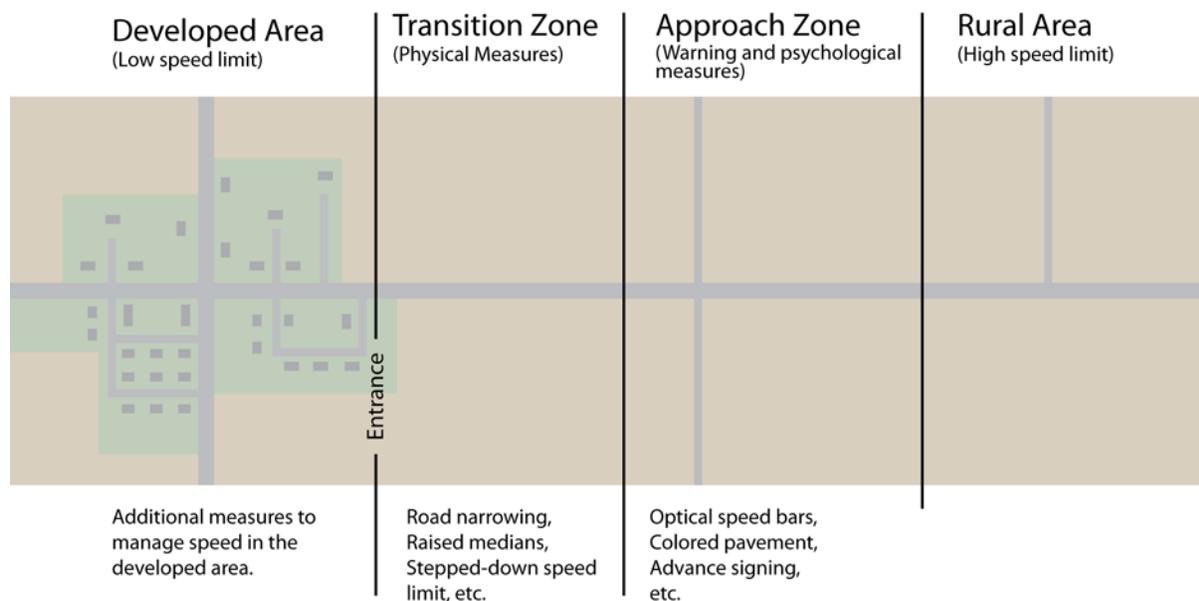
High-to-low speed transition tools exist to help roadway users adjust their travel speed and attention in advance of a developed area. Slower travel speeds are typically more appropriate within the small communities where pedestrian and bicycle activity is expected. These tools have been applied and evaluated extensively in the United States and Canada in urban areas, particularly on low-speed local streets, although their application is still relatively new in some areas. Rural roads serve higher-volume, higher speed traffic, and guidelines on appropriate traffic calming tools and speed reduction is an emerging area of research and practice. Much of the content here is guided by the 1998 *Canadian Guide to Neighbourhood Traffic Calming*, the 2009 *U.S. Federal Highway Administration (FHWA) publication Traffic Calming on Main Roads Through Rural Communities*, and the 2011 NCHRP Synthesis 412 *Speed Reduction Techniques for Rural High-to-Low Speed Transitions*.

High-to-Low Speed Transition Tools

The toolkit of techniques and tools to calm traffic in Appendix F discusses the general considerations for appropriate implementation in RDN Area 'H'. The selection of appropriate techniques and tools should be accomplished in consultation with MOTI and the community, and installation will require additional engineering study.

Appendix F describes the expected speed, volume, and maintenance impacts of various tools, as determined by use in other communities. Tools are also classified as appropriate for use in one or more of the transition areas, illustrated in Figure 4 – the approach zone, the transition zone, the entrance, or the developed area within the community.

Figure 4: Transition Area Concepts



Speed Limit Reduction in Transition Zones

In order to allow motorists to successfully slow down when entering a developed area, consider measures that are appropriate to the Approach and Transition zones. Speed limit signs should not abruptly jump from highway speed to village speed, but should be reduced gradually, potentially in combination with other speed transition tools. Consider the use of speed reduction warning signs to alert users of upcoming changes. Do not transition too early, however, or drivers may not recognize the need to slow down. Upon leaving the developed area, speed limits and design details should gradually transition back to higher speed conditions.

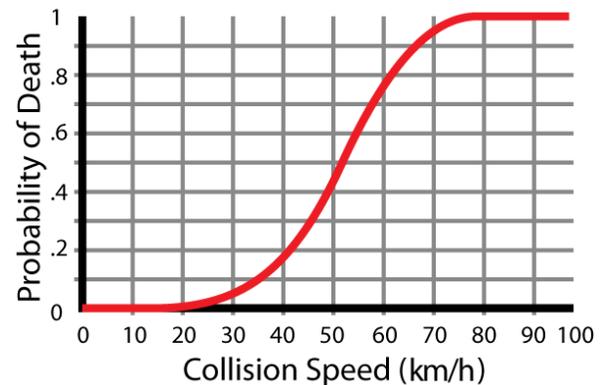
Speed reduction on Rural Roadways

Speed is a significant factor in determining whether a pedestrian or cyclist will survive a crash. As illustrated in Figure 5, studies show that cyclist and pedestrian crash fatalities increase with speed.⁷ Reductions in speed limits are thus justified as a means to save lives, and reduce serious injuries. A number of projects recommend speed reductions from 80 km/h to speeds between 50 and 60 km/h.

If roadway speed limits are reduced and traffic speeds remain at above the posted limit, traffic calming should be considered as a means to encourage motorists to drive at the posted speed.

A reduced speed limit is often not enough to influence driver behaviour, and is not adequate to address speeding. Horizontal and vertical deflection, such as speed humps, median islands, or curb extensions, as well as highly visible signage and pavement markings are effective at speed reduction and may be necessary to achieve the speed environment that rural communities often desire.

Figure 5: Increased Probability of Pedestrian Fatality with



3.3 Proposed Projects

The following Proposed Projects map (Figure 6) shows all of the active transportation improvements that are proposed as part of the Area 'H' ATP. The map identifies locations where pedestrian crosswalks, road diets, paved shoulders, local street greenways, multi-use trails, traffic calming and reduced speed limits are proposed to better serve active transportation. The total cost for these improvements is estimated at \$26.4 million. All of the proposed projects are intended to meet applicable Transportation Association of Canada and BC Ministry of Transportation and Infrastructure design guidelines and have been costed with this assumption in mind. However, all projects are subject to further detailed engineering design.

The proposed projects provide a comprehensive package of improvements that are designed to guide investment within Electoral Area 'H' for the next 20 years. The projects are consistent with the goals and objectives of existing community planning documents, in particular the Official Community Plan, as well as those within the following:

⁷ SafetyNet (2009) Pedestrians & Cyclists. Originally in Pasanen, E. (1991) Alonopeudet ja jalankulkijan turvallisuus [Driving speeds and pedestrian safety]. Dissertation, Helsinki University of Technology, Teknillinen Korkeakoulu, 752.

- The Regional Parks and Trails Plan (2005)
- The Bowser Village Centre Plan (2010)
- The Regional Growth Strategy (2011)
- The Community Energy and Emissions Plan (2013)
- The Community Parks and Trails Strategy Plan (2014)
- The Transit Future Plan (2014)

The intention of this approach is to build, where possible, momentum and consensus around initiatives that will encourage and support increased use of active transportation.

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Figure 6: Proposed Projects – Overview

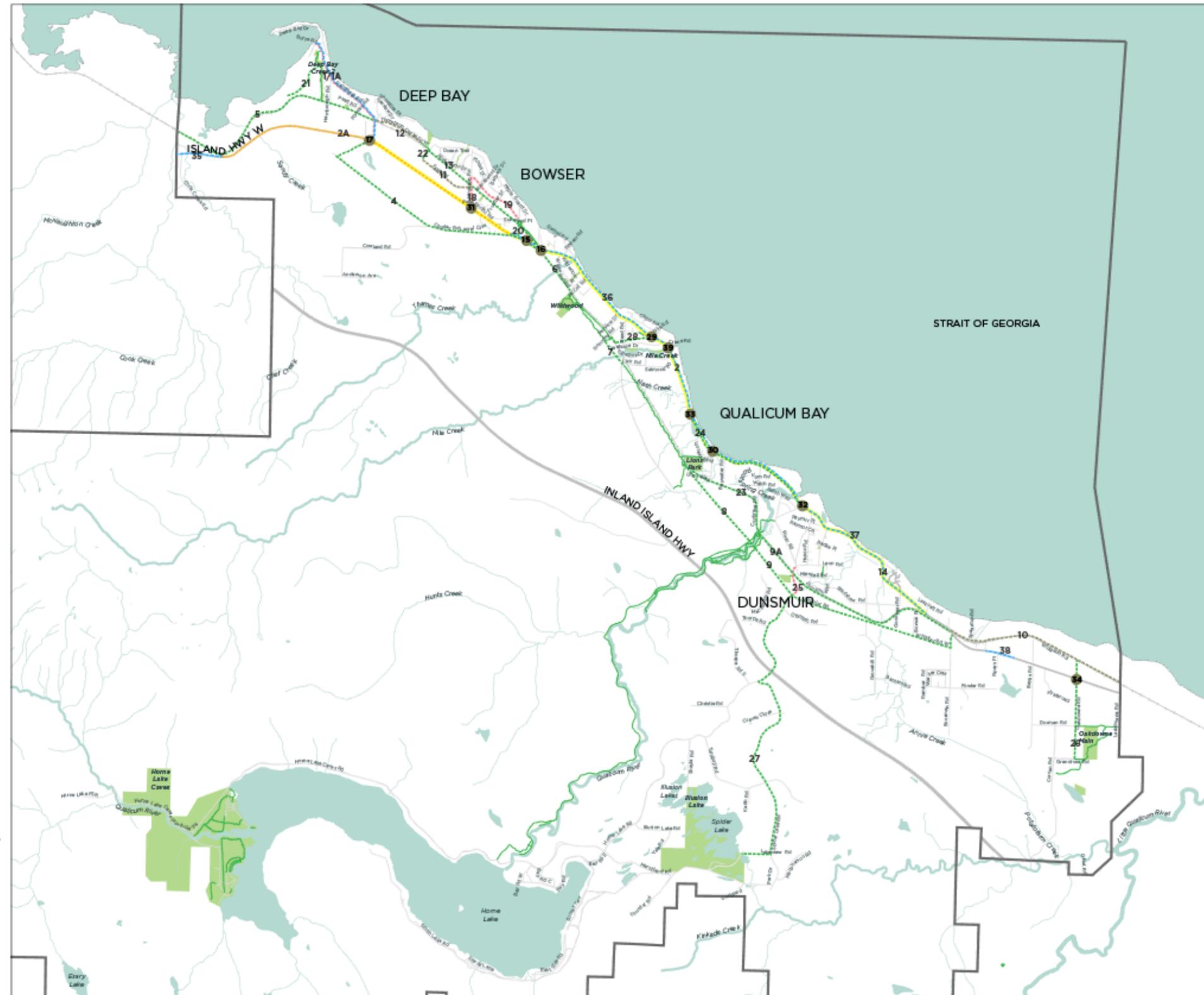
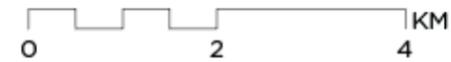
ELECTORAL AREA H RDN ATP 2016

PROPOSED NETWORK IMPROVEMENTS

- Improved Pedestrian Crossing
- Road Diet
- On Street Facility
- Add/Improve Local Street Greenway
- Add/Improve Multi-Use Trail
- Traffic Calming
- Reduced Speed

BACKGROUND

- Area H Boundary
- Existing Trails
- Roads
- Rail Corridor
- Water Bodies
- Parks



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Table 3 lists each of the 42 projects proposed for implementation and identified in Figure 6. Columns in the table are named as follows and describe the following:

- *Project Number* – Identifies the project and has no bearing on project ranking
- *On, From and To* – Indicates the location of the project.
 - *On* – Identifies the roadway, park or trail alignment where the project is found
 - *From* – Indicates the project start point
 - *To* – Indicates the project end point
- *Description* – provides details concerning the proposed improvement
- *Assumptions/Notes* - clarify the design of the proposed facility and considerations to be taken into account during evaluation and implementation
- *Length* – Provides the length of the project in metres
- *Cost* – Provides a planning cost estimate of capital costs for each project.

Projects that include a letter (e.g. 1A, 2A and 9A) have considerable overlap with another project and may replace, or if warranted, complement the other. Note that Project numbers that include a roman numeral superscript number i, ii, iii, and iv are also identified in the RDN Community Parks and Trails Strategy (CPTS), which may influence their priority for implementation. The roman numerals have the following meaning:

- i – A project numbered “i” would be part of the CPTS action to “investigate the feasibility of the proposed Community Trail Section from Deep Bay to Wildwood Park”
- ii – A project numbered “ii” would be part of an existing or potential regional trail
- iii – Refers only to Project Number 27. For the portion of that project on Spider Lake Road only, the CPTS would investigate the feasibility of the proposed Community Trail system.

Table 3: Proposed Projects - Overview

Project Number	On	From	To	Description	Assumptions/ Notes	Length (m)	Cost (\$K in thousands)
1 ⁱ	Burne Road and Gainsberg Road	Hwy 19A	Deep Bay Harbour	Remove centre lane line and implement traffic calming (speed humps and chicanes) to reduce the speed of motor vehicle traffic	Traffic calming involving 3 devices per km	2,068	\$99K
1A	Burne Road and Gainsberg Road	Hwy 19A	Deep Bay Harbour	Widen shoulders	1.7 m of widening per side. Includes adding a culvert on one side and widening shoulders but not, property acquisition	2,068	\$6,762K
2	Hwy 19A	Gainsberg Road	Sunnybeach Road (6161 Hwy 19A)	Reduce Speed Limits Gainsberg to Northdowne to (60km/h) Northdowne to McColl Rd (6828 Hwy 19A) (50km/h) McColl to Sunnybeach Rd (6161 Hwy 19A) (60km/h)	Replacement of 2 signs per km and addition of pavement marking to reinforce signage.	7,600	\$25K
2A	Hwy 19A	Gainsberg Road	Crosley Road	Increase width of shoulders by eliminating the painted median and/or reducing the number of traffic lanes	Remove 6 lane lines and replace with 5 lane lines.	5,490	\$362K
3	Hwy 19A (south side)	Crosley Road	Coburn Road	Add/Improve Unpaved Multi-use Trail	Standard unpaved 3m trail	599	\$269K

Project Number	On	From	To	Description	Assumptions/Notes	Length (m)	Cost (\$K in thousands)
4 ⁱⁱ	Alignment parallel Crosley Road and on Crosley Road	Gainsberg Road @ Hwy 19A	Crosley @ Hwy 19A	Add/Improve Unpaved Multi-use Trail and Traffic Calming at the southeast end of Crosley	Standard unpaved 3m trail and traffic calming	3,159	\$1,451K
5 ⁱⁱ	Rail ROW	Gainsberg Road	North to Area H Boundary	Add/Improve Unpaved Multi-use Trail	Standard unpaved 3m trail	3,891	\$1,751K
6	Rail ROW	Coburn Road @ Hwy 19A	McColl Road (following rail alignment)	Add/Improve Unpaved Multi-use Trail and bridge crossing of Thames Creek	Standard unpaved 3m trail and bridge crossing	831	\$745K
7 ⁱⁱ	Lighthouse Country Regional Trail Alignment	LCRT North Loop	LCRT South Loop	Add/Improve Unpaved Multi-use Trail and bridge over Nile Creek	Standard unpaved 3m trail and bridge	537	\$401K
8 ⁱⁱ	Whistler Road Alignment	LCRT South Loop	Big Qualicum River Regional Trail	Add/Improve Unpaved Multi-use Trail	Standard unpaved 3m trail (property costs not included)	1,631	\$734K
9 ⁱⁱ	Whistler/Boorman Road Alignment	Big Qualicum River Trail	Widgeon Road	Add/Improve Unpaved Multi-use Trail	Standard unpaved 3m trail (property costs not included)	4,195	\$1,888K
9A ⁱⁱ	Rail ROW	Big Qualicum River Trail	Boorman @ Widgeon Road	Add/Improve Unpaved Multi-use Trail	Standard unpaved 3m trail	3,981	\$1,792K
10 ⁱⁱ	Widgeon Road	Larkdown Road	Boorman Road	Add/Improve Local Street Greenway by adding traffic calming measures	Traffic calming involving 3 devices per km	3,078	\$121K

Project Number	On	From	To	Description	Assumptions/ Notes	Length (m)	Cost (\$K in thousands)
11 ⁱ	Faye Road	Jamieson Road	Bowser Elementary/ North Extent of Faye Road	Add advisory lane	Remove centre lane line and add dashed shoulders	968	\$12K
12 ⁱ	Thompson Clark Drive	Gainsberg Road	Thompson Clark Ocean Community Trail (North End)	Add/Improve Local Street Greenway by adding traffic calming measures	Traffic calming involving 3 devices per km	890	\$35K
13 ⁱ	Rail ROW	Thompson Clark Ocean Community Trail South End	Hwy 19A @ Coburn Road	Add/Improve Unpaved Multi-use Trail	Standard unpaved 3m trail	2,497	\$1,124K
14	Hwy 19A	Sunnybeach Road at 6161 Hwy 19A	Driftwood Road	Reduced Speed Limits. Hwy 19A (Sunnybeach Rd) to Cochrane Rd (5941 Hwy 19A) (50km/h) Cochrane Rd (5941 Hwy 19A) to Driftwood Rd (60 km/h)	Replacement of 2 signs per km and addition of pavement marking to reinforce signage	5,400	\$18K
15	Magnolia Court @ Hwy 19A			Add Improved Pedestrian Crossing and Transit Stop	Xwalk, signage x2, beacons x2, refuge islands x2	--	\$50K
16	Coburn Road @ Hwy 19A			Add Improved Pedestrian Crossing	Xwalk, signage x2, beacons x2, refuge islands x2	--	\$45K
17	Gainsberg Road @ Hwy 19A			Add Improved Pedestrian Crossing	Xwalk, signage x2, beacons x2, refuge islands x2	--	\$45K

Project Number	On	From	To	Description	Assumptions/Notes	Length (m)	Cost (\$K in thousands)
18 ⁱ	Jamieson Road	Faye Road	Jamieson Road @ Hwy 19A	Implement Traffic Calming Measures	Traffic calming involving 3 devices per km	342	\$13K
19	Jamieson Road/Thompson Clark Drive East	Henry Morgan Community Park	Faye Road	Implement Traffic Calming Measures	Traffic calming involving 3 devices per km	1,245	\$49K
20 ⁱ	Sundry Road Alignment	Henry Morgan Community Park	19A	Add Trail/Local Street Calming/Level Rail Crossing	Involves 50% traffic calming, 50% trail, and a rail crossing	302	\$83K
21 ⁱ	Crome Point Road	Gainsberg Road	VIA Shellfish Research Centre	Add/Improve Unpaved Multi-use Trail	Standard unpaved 3m trail	879	\$396K
22 ⁱ	Jackrabbit Road alignment	Bowser Elementary	Thompson Clark Ocean Community Trail	Add/Improve Unpaved Multi-use Trail, Bridge and Level Rail crossing	Standard unpaved 3m trail, Rail and Bridge crossings	206	\$474K
23 ⁱⁱ	Rail ROW	Big Qualicum River Trail	Lions Park	Add/Improve Unpaved Multi-use Trail	Standard unpaved 3m trail	1,794	\$807K
24	Hwy 19A	Fisheries Road	Sunnybeach Road	Add/Improve Unpaved Multi-use Trail	Standard unpaved 3m trail	2,606	\$1,172K
25	Horne Lake Road	Berkshire Road	Whistler Road	Implement Traffic Calming Measures and shoulder widening	W. traffic calming @ 3 devices per km	561	\$134K
26	Corcan Road	Grand Rose Road	Dorman Road	Add shoulders and traffic calming	Add Shoulders and Traffic Calming	550	\$77K

Project Number	On	From	To	Description	Assumptions/ Notes	Length (m)	Cost (\$K in thousands)
27 ⁱⁱⁱ	Spider Lake Road/Horne Lake Road	Spider Lake	Whistler Road	Add/Improve Unpaved Multi-use Trail	Standard unpaved 3m trail	5,649	\$2,542K
28 ⁱ	Hydro ROW ⁸	Nile Road	Lighthouse Country Regional Trail South Loop	Add/Improve Unpaved Multi-use Trail and Rail Crossing	Standard unpaved 3m trail	1,093	\$492K
29	19A @ Nile Road			Add Improved Pedestrian Crossing	Xwalk, signage x2, beacons x2, refuge islands x2	--	\$45,000
30	Lions Way @ 19A			Add Improved Pedestrian Crossing ⁹	Xwalk, signage x2, beacons x2, refuge islands x2	--	\$45,000
31	Jamieson Road @ 19A			Add Improved Pedestrian Crossing	Xwalk, signage x2, beacons x2, refuge islands x2	--	\$45,000
32	Fisheries Road @ 19A			Add Improved Pedestrian Crossing	Xwalk, signage x2, beacons x2, refuge islands x2	--	\$45,000
33	Sunnybeach @ 19A			Add Improved Pedestrian Crossing	Xwalk, signage x2, beacons x2, refuge islands x2	--	\$45,000
34	Baylis Road @ 19A			Add Improved Pedestrian Crossing	Xwalk, signage x2, beacons x2, refuge islands x2	--	\$45,000

⁸ Stead Road is a possible alternative to the Hydro ROW and may allow NVD to avoid the need for a rail crossing.

⁹ The pedestrian crossing at Lions Way would serve a BC Transit Bus stop at the Lighthouse Community Centre

Project Number	On	From	To	Description	Assumptions/ Notes	Length (m)	Cost (\$K in thousands)
35	Hwy 19A	400m east of Cook Creek Road	Transition to 4 lane cross section at 700 m east of Cook Road	Widen road to include shoulders to better accommodate pedestrians and bikes	2 m of widening (1 m per side). Includes minor shoulder buildup, but not grading, wall works, property acquisition and utility relocation	300	\$60,000
36	Hwy 19A	Crosley Road	Just north of Fisheries Road	Shoulders, both sides (including minor upgrades to Big Qualicum River Bridge through improved access by paving around barriers at each end (4 X 1.5m wide X 4m long) and by adding a fence to protect those on the sidewalk from falling into the roadway.	2 m of widening (1 m per side). Includes minor shoulder buildup, but not grading, wall works, property acquisition and utility relocation	6,900	\$1,428,000
37	Hwy 19A	Just north of Fisheries Road	Driftwood Road	Shoulders, 1 side	1m of widening (1 side only). Includes minor shoulder buildup, but not grading, wall works, property acquisition and utility relocation	3,000	\$300,000

Project Number	On	From	To	Description	Assumptions/ Notes	Length (m)	Cost (\$K in thousands)
38	Hwy 19A	Polgate Rd	500 m south of Polgate Road	Shoulders, 1 side	1m of widening (1 side only). Includes minor shoulder buildup, but not grading, wall works, property acquisition and utility relocation	500	\$50,000
39	Nile Bridge (east of Crane Road on Hwy 19A)			Add sidewalk on east side (2m wide), widen sidewalk on west side (.5m) and improve access by paving around barriers (2 X 1.5m wide X 4m long)	widen sidewalk by .5m and add a 2m sidewalk	28	\$254,000

The following maps break the projects down into groups in order to clarify the location and extent of each project.

Paved Shoulders and Local Street Greenways

Figure 7 identifies opportunities to establish Local Street Greenways on local streets and to add or widen paved shoulders on collectors, arterials or highways in order to create more comfortable and safer conditions for walking and cycling.

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Figure 7: Proposed Projects – Paved Shoulders and Local Street Greenways

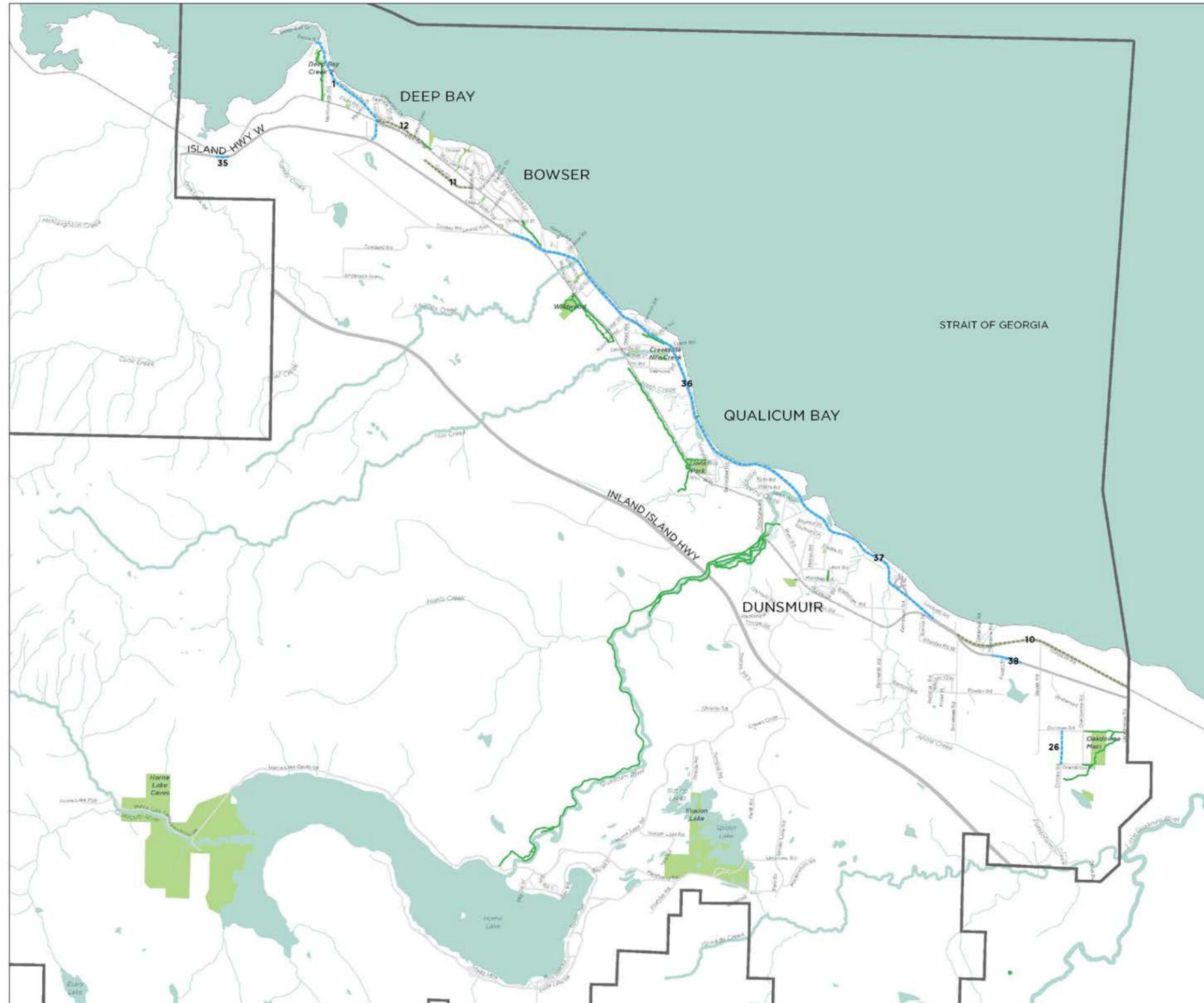
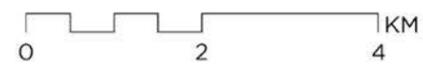
ELECTORAL AREA H RDN ATP 2016

PROPOSED NETWORK IMPROVEMENTS

- Add/Improve Paved Shoulders
- Add/Improve Local Street Greenway

BACKGROUND

- Area H Boundary
- Existing Trails
- Roads
- Rail Corridor
- Water Bodies
- Parks



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Improved Pedestrian Crossings and Reduced Speed Limits

Figure 8 identifies segments of Highway 19A that are proposed for lower speed limits as well as locations along the highway where it might be suitable to establish designated pedestrian crosswalks.

Several of the pedestrian crosswalks are located in close proximity to locations that are proposed for designated public transit bus stops as part of the service that operates between Area 'H', Qualicum Beach and Parksville. Such crosswalks would facilitate access to the transit stops. Public transit in this area currently operates with a flag stop system, with timing stops in the following locations that are proposed for development into more formalized stops:

- Deep Bay Harbour parking lot;
- The intersection of Henry Morgan Drive and Maple Guard Drive;
- Lighthouse Community Centre on Lions Way;
- The parking lot located at Magnolia Court shopping area;
- Leon Road at Horne Lake Road.

Both the parking lot on at Magnolia Court and the Lighthouse Community Centre on Lions Way are located in close proximity to proposed pedestrian crosswalks on Highway 19A. The other three transit stops are not located in close proximity to Highway 19A and as such are unlikely to benefit from pedestrian crossings on Highway 19A.

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Figure 8: Proposed Projects – Improved Pedestrian Crossings and Reduced Speed Limits

ELECTORAL AREA H RDN ATP 2016

PROPOSED NETWORK IMPROVEMENTS

 Improved Pedestrian Crossing

 Reduced Speed

BACKGROUND

 Area H Boundary

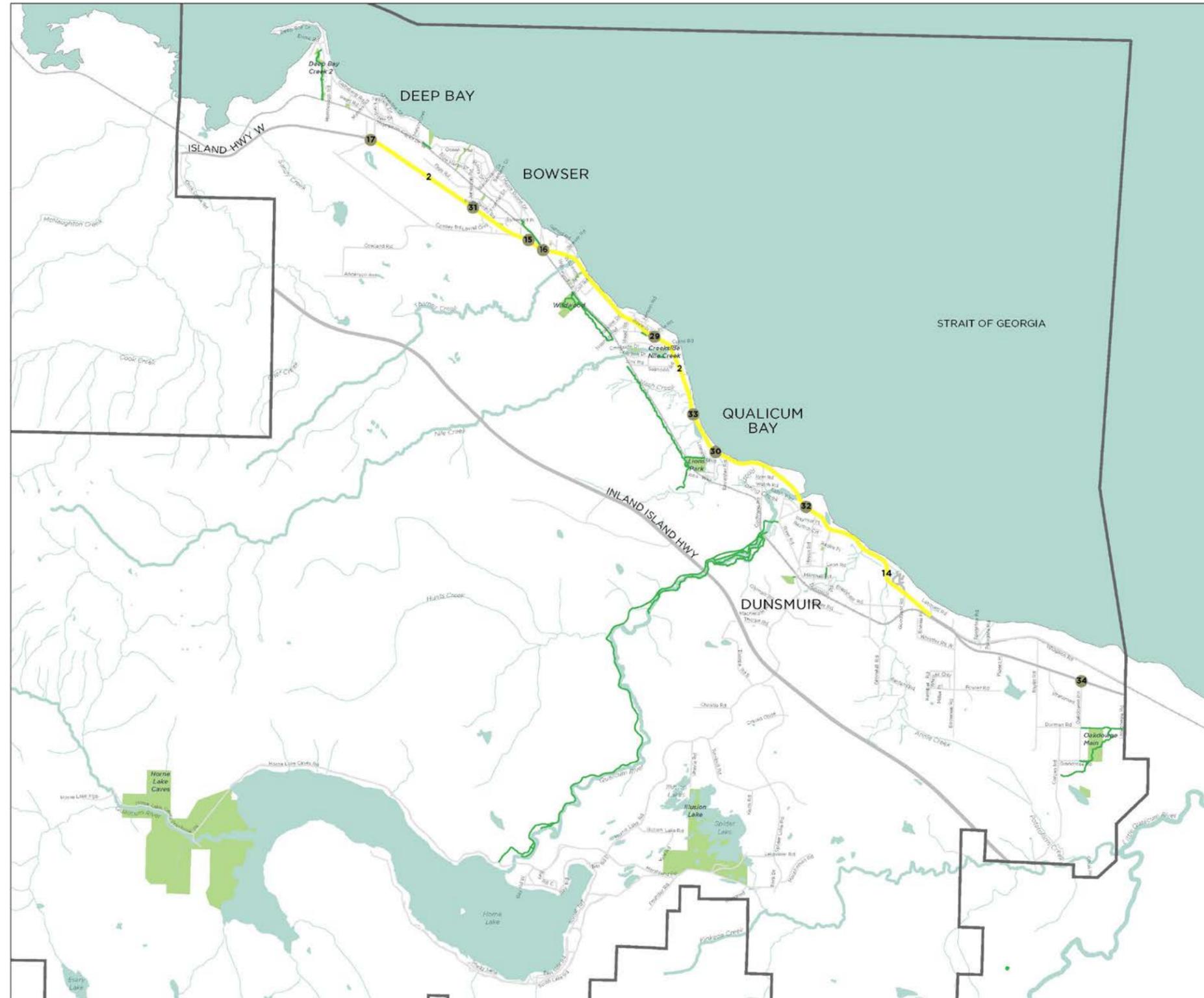
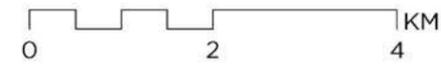
 Existing Trails

 Roads

 Rail Corridor

 Water Bodies

 Parks



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Road Diets and Traffic Calming

Figure 9 identifies opportunities to establish a road diet on Highway 19A as well as traffic calming to discourage speeding on segments of collector roads throughout the community.

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Figure 9: Proposed Projects - Road Diets and Traffic Calming

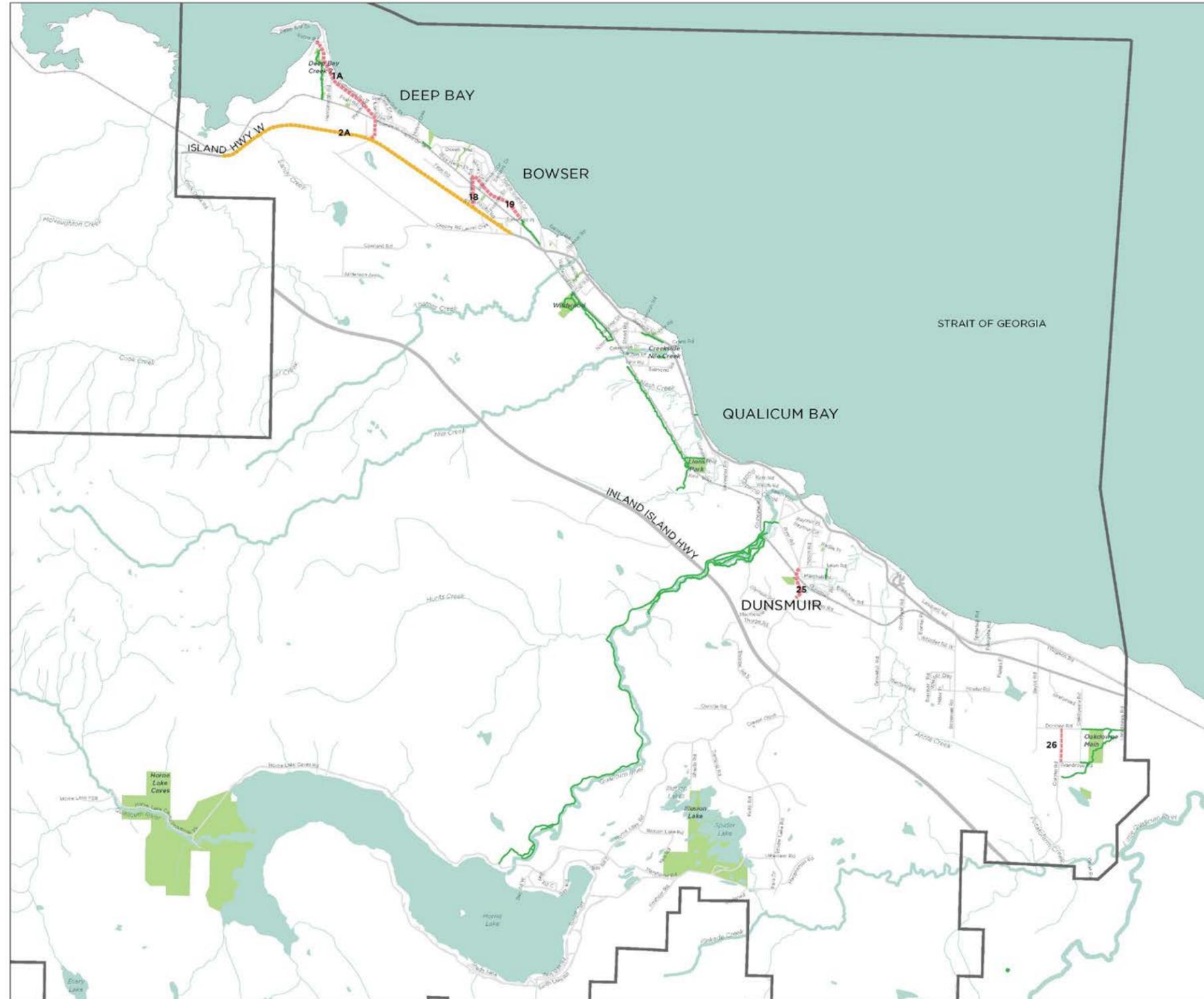
ELECTORAL AREA H RDN ATP 2016

PROPOSED NETWORK IMPROVEMENTS

- Road Diet
- Traffic Calming

BACKGROUND

- Area H Boundary
- Existing Trails
- Roads
- Rail Corridor
- Water Bodies
- Parks



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Multi-Use Trails

Figure 10 identifies opportunities to establish or improve unpaved, multi-use trails on the E&N Railway as well as undeveloped road right of ways, and separate from road right of ways that would likely be uncomfortable or unsafe for those walking and cycling.

Although each of the projects identified are discrete projects, a number of them have the potential to be synergistic. For example, reduced speed limits proposed for Highway 19A will tend to complement projects that increase the width of shoulders, improving their comfort and safety. It is also important that the projects identified be revisited over time and adjusted as needed in order to respond to changing conditions within the community.

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Figure 10: Proposed Projects – Multi-Use Trails

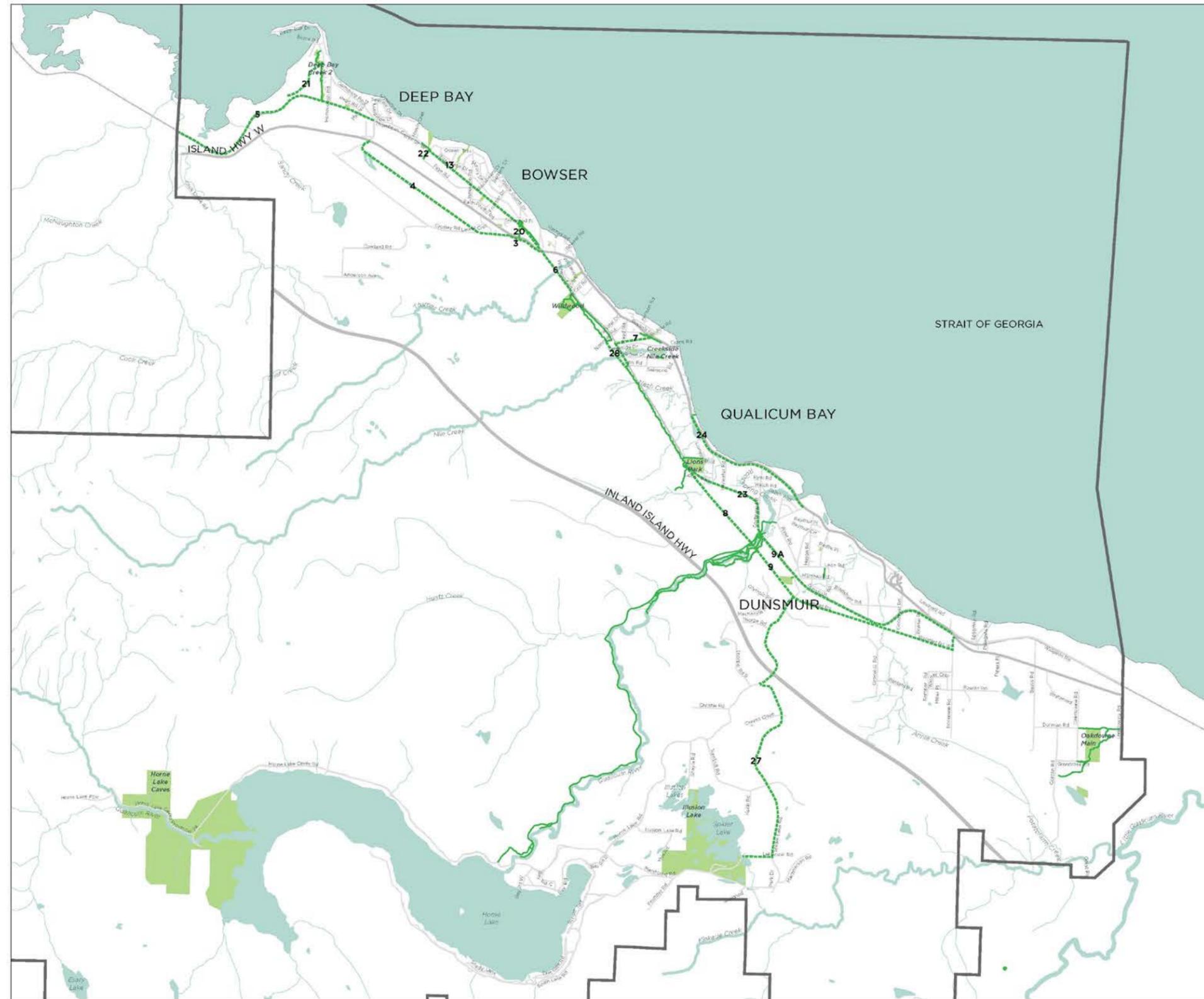
ELECTORAL AREA H RDN ATP 2016

PROPOSED NETWORK IMPROVEMENTS

--- Add/Improve Multi-Use Trail

BACKGROUND

-  Area H Boundary
-  Existing Trails
-  Roads
-  Rail Corridor
-  Water Bodies
-  Parks



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3.4 Project Prioritization

There are many contextual factors that impact the experience of walking and cycling and which influence selection of the type of active transportation facility appropriate for a given situation. For off-road facilities, factors to consider include the width of the right of way, adjacent land use, landscaping, topography, lighting, and the types and volumes of anticipated users. For on-road facilities considerations include motor vehicle traffic speeds and volumes, presence of heavy vehicles, trucks, or transit vehicles, roadway width, visibility, and adjacent land uses. In addition, urban or rural context affects engineering treatments appropriate on a particular roadway. Roadway classification, from local to arterial, indicates many of these context issues and provides guidance for what types of pedestrian and bikeway facilities are appropriate.

The following project prioritization criteria have been selected in consultation with RDN staff in order to provide an objective and transparent method for assessing each project. Although these criteria may be readily understood, they are also able to satisfy the rigorous demands of a technical audience, and be repeatable over time, even as new projects are identified for comparison against existing projects.

Table 4: Project Prioritization Criteria

Criterion	Description	Scoring Definition
Provides Active and Safe Routes to School	Score each project based on its proximity to a school or popular route to and from a school. Projects receive a higher score if they are located closer to a school or route.	Projects within a half-kilometre of a school or popular route receive 3 points, projects within one-quarter of a kilometre of a school or route receive 5 points.
Provides Access to Community Destinations	Score each project based on its proximity to commercial areas, parks, and civic areas. Projects receive a higher score if they are located closer to community destinations.	Projects within a half-kilometre of a community destination receive 3 points, projects within one-quarter of a kilometre receive 5 points.
Roadway Type	Score each project based on roadway type. Projects receive a higher score if they are located on an arterial, lower if they are located on a residential roadway.	Projects will receive 5 points if they are located on a highway, 3 points if they are located on arterials/collectors, and 1 point if they involve trails or local roads.
Ease of Implementation	Score each project based on the complexity of the project. Projects with significant feasibility analysis, design, or environmental requirements receive a lower score. Projects that require completion of another project before they can be implemented receive lower scores.	Hwy 19A engineering projects score "1" due to ownership/ coordination challenges. Rail/Hydro ROW projects score "1" due to ownership/ coordination challenges. Road diets and traffic calming score "1". Trails or paths not on Hwy 19A or rail/hydro ROWs score "3" due to some grading/landscaping challenges. Pedestrian crossings score 3 (on a 2-lane road) or 1 (on a 4+ lane road) regardless of where. Local street bikeways score "5 " as do changes in speed limits.
Improves Regional/Local Connectivity	Score each project based on connectivity to local and regional routes. Projects that connect to an existing trail project in a neighbouring community or which are identified as part of an RDN regional route receive a higher score.	Forms part of an RDN route = 5 Connects to an RDN route = 4 Only connects to local trails = 3 Only connects to other proposed (future) routes = 2 Does not connect to anything = 1
Community Support	Projects receive points if they were selected as a preferred project by stakeholders or members of the public.	Projects receive 5 points if they were selected as priority projects by 19 or more respondents, 4 = 10-18, 3=7-9, 2=4-6, 1=2-3 and 0= less than 2.
Cost	This criterion reflects the anticipated costs (initial and operational) associated with each action. Ratings are based on an estimate of order-of-magnitude costs, and include the potential for funding from other agencies to reduce costs (for example, ICBC provides cost sharing funding for safety improvements that benefit vulnerable road users).	\$1,000,000+ = 1 \$500,000 to \$999,999 = 2 \$200,000 to \$499,999 = 3 \$50,000 to \$199,999 = 4 < \$50,000 = 5

Table 5 ranks each of the proposed projects on a score of 1 to 35. Projects that scored well are those that tend to be inexpensive, relatively easy to implement and maintain, improve regional connectivity, offer the ability to improve conditions on Highway 19A and other roadways that carry higher volumes and speeds of motor vehicle traffic, provide improved connections to important local destinations and which have strong community support. For an assessment of public support for each project, reference Appendix F. For details concerning cost estimates, see Appendix H.

Columns in the table are named as follows and describe the following:

- *Project Number* – Identifies the project and has no bearing on project ranking
- *On, From and To* – Indicates the location of the project.
 - *On* – Identifies the roadway, park or trail alignment where the project is found
 - *From* – Indicates the project start point
 - *To* – Indicates the project end point
- Each of the following named columns include scoring for each project prioritization criteria as follows:
 - *Provides Active and Safe Routes to School*
 - *Provides Access to Community Destinations*
 - *Roadway Type*
 - *Ease of Implementation*
 - *Improves Regional/Local Connectivity*
 - *Community Support*
- *Cost*
- *Total Score* – Is the sum of the scores for each criteria. Those projects with higher Total Scores are considered higher priority projects.

Table 5: Proposed Projects - Prioritized

Project Number	On	From	To	Description	Provides Active / Safe Routes to School	Provides Access to Community Destinations	Roadway Type	Ease of Implementing	Improves Regional / Local Connectivity	Community Support	Cost	Total Score
2	Hwy 19A	Gainsberg Road	6161 Hwy 19A	Reduce Speed Limits Gainsberg to Northdowne to (60km/h) Northdowne to McColl Rd (6828 Hwy 19A) (50km/h) McColl to Sunnybeach Rd (6161 Hwy 19A) (60km/h)	3	5	5	5	5	5	5	33
15	Magnolia Court @ Hwy 19A	--	--	Add Improved Pedestrian Crossing and Transit Stop	3	5	5	3	5	5	4	30
11	Faye Road	Jamieson Road	Bowser Elementary/ North Extent of Faye Road	Add advisory lane	5	5	3	5	2	3	5	28
2A	Hwy 19A	Gainsberg Road	Crosley Road	Increase width of shoulders by eliminating the painted median and/or reducing the number of traffic lanes	3	5	5	1	4	5	3	26
30	Lions Way @ 19A	--	--	Add Improved Pedestrian Crossing	0	5	5	3	5	2	5	25
16	Coburn Road @ Hwy 19A	--	--	Add Improved Pedestrian Crossing	0	5	5	3	3	4	5	25
36	Hwy 19A	Crosley Road	Just north of Fisheries Road	Shoulders, both sides (including minor upgrades to Big Qualicum River Bridge through improved access by paving around barriers at each end (4 X 1.5m wide X 4m long) and by adding a fence to protect those on the sidewalk from falling into the roadway.)	3	5	5	1	4	5	1	24

Project Number	On	From	To	Description	Provides Active / Safe Routes to School	Provides Access to Community Destinations	Roadway Type	Ease of Implementing	Improves Regional / Local Connectivity	Community Support	Cost	Total Score
22	Jackrabbit Road alignment	Bowser Elementary	Thompson Clark Ocean Community Trail	Add/Improve Unpaved Multi-use Trail, Bridge and Level Rail crossing	5	5	1	3	4	3	3	24
14	Hwy 19A	Sunnybeach Rd (6161 Hwy 19A)	Driftwood Road	Reduce Speed Limits. Hwy 19A (Sunnybeach Rd) to Cochrane Rd (5941 Hwy 19A) (50km/h) Cochrane Rd (5941 Hwy 19A) to Driftwood Rd (60 km/h)	0	0	5	5	4	4	5	23
19	Jamieson Road/Thompson Clark Drive East	Henry Morgan Community Park	Faye Road	Implement Traffic Calming Measures	5	5	3	1	2	2	5	23
39	Nile Creek Bridge – Hwy 19A			Add sidewalk on north side (2m wide), widen sidewalk on south side (.5m) and improve access by paving around barriers (2 X 1.5m wide X 4m long)	3	1	5	1	5	5	3	23
1A	Burne Road and Gainsberg Road	Hwy 19A	Deep Bay Harbour	Widen shoulders	0	5	3	3	5	5	1	22
3	Hwy 19A (south side)	Crosley Road	Coburn Road	Add/Improve Unpaved Multi-use Trail	0	5	5	1	4	4	3	22
12	Thompson Clark Drive	Gainsberg Road	Thompson Clark Ocean Community Trail North End	Add/Improve Local Street Greenway by adding traffic calming measures	3	5	1	5	3	0	5	22

Project Number	On	From	To	Description	Provides Active / Safe Routes to School	Provides Access to Community Destinations	Roadway Type	Ease of Implementing	Improves Regional / Local Connectivity	Community Support	Cost	Total Score
26	Corcan Road	Grand Rose Road	Dorman Road	Add shoulders and traffic calming	3	5	3	3	1	3	4	22
7	Lighthouse Country Regional Trail Alignment	LCRT North Loop	LCRT South Loop	Add/Improve Unpaved Multi-use Trail and bridge over Nile Creek	0	5	1	3	5	4	3	21
29	Hwy 19A @ Nile Road	--	--	Add Improved Pedestrian Crossing	0	2	5	3	2	4	5	21
1	Burne Road and Gainsberg Road	Hwy 19A	Deep Bay Harbour	Remove centre lane line and implement traffic calming (speed humps and chicanes) to reduce the speed of motor vehicle traffic	0	5	3	1	5	2	4	20
13	Rail ROW	Thompson Clark Ocean Community Trail South End	Hwy 19A @ Coburn Road	Add/Improve Unpaved Multi-use Trail	5	5	1	1	4	3	1	20
25	Horne Lake Road	Berkshire Road	Whistler Road	Implement Traffic Calming Measures and shoulder widening	0	5	3	1	4	3	4	20
10	Widgeon Road	Larkdown Road	Boorman Road	Add/Improve Local Street Greenway by adding traffic calming measures	0	0	3	5	5	2	4	19
17	Gainsberg Road @ Hwy 19A	--	--	Add Improved Pedestrian Crossing	0	2	5	1	3	3	5	19

Project Number	On	From	To	Description	Provides Active / Safe Routes to School	Provides Access to Community Destinations	Roadway Type	Ease of Implementing	Improves Regional / Local Connectivity	Community Support	Cost	Total Score
27	Spider Lake Road/Horne Lake Road	Spider Lake	Whistler Road	Add/Improve Unpaved Multi-use Trail	0	5	3	3	4	3	1	19
32	Fisheries Road @ Hwy 19A	--	--	Add Improved Pedestrian Crossing	0	4	5	3	2	0	5	19
20	Sundry Road Alignment	Henry Morgan Community Park	Hwy 19A	Add Trail/Local Street Calming/Level Rail Crossing	0	5	1	3	2	3	4	18
18	Jamieson Road	Faye Road	Jamieson Road @ Hwy 19A	Implement Traffic Calming Measures	5	0	3	1	2	2	5	18
33	Sunnybeach @ Hwy 19A	--	--	Add Improved Pedestrian Crossing	0	2	5	3	1	2	5	18
9A	Rail ROW	Big Qualicum River Trail	Boorman @ Widgeon Road	Add/Improve Unpaved Multi-use Trail	0	5	1	3	5	2	1	17
31	Jamieson Road @ Hwy 19A	--	--	Add Improved Pedestrian Crossing	3	0	5	1	2	1	5	17
4	Alignment parallel Gainsberg/Crosley Road	Gainsberg Road @ Hwy 19A	Crosley @ Hwy 19A	Add/Improve Unpaved Multi-use Trail and Traffic Calming at the southeast end of Crosley	0	5	1	3	5	1	1	16
8	Whistler Road Alignment	LCRT South Loop	Big Qualicum River Trail	Add/Improve Unpaved Multi-use Trail	0	3	1	3	5	2	2	16

Project Number	On	From	To	Description	Provides Active / Safe Routes to School	Provides Access to Community Destinations	Roadway Type	Ease of Implementing	Improves Regional / Local Connectivity	Community Support	Cost	Total Score
23	Rail ROW	Big Qualicum River Trail	Lions Park	Add/Improve Unpaved Multi-use Trail	0	5	1	1	5	2	2	16
34	Baylis Road @ Hwy 19A	--	--	Add Improved Pedestrian Crossing	0	0	5	3	2	1	5	16
35	Hwy 19A	Four lane transition to two lane on Hwy 19A	Area H west boundary at Hwy 19A	Widen road to include shoulders to better accommodate pedestrians and bikes	0	0	5	1	2	4	4	16
5	Rail ROW	Gainsberg Road	North to Area H Boundary	Add/Improve Unpaved Multi-use Trail	0	5	1	1	5	2	1	15
6	Rail ROW	Coburn Road @ Hwy 19A	McColl Road (following rail alignment)	Add/Improve Unpaved Multi-use Trail and bridge crossing of Thames Creek	0	5	1	1	4	2	2	15
9	Whistler/Boorman Road Alignment	Big Qualicum River Trail	Widgeon Road	Add/Improve Unpaved Multi-use Trail	0	3	1	3	5	2	1	15
21	Crome Point Road	Gainsberg Road	VIA Shellfish Research Centre	Add/Improve Unpaved Multi-use Trail	0	3	1	3	3	2	3	15
24	Hwy 19A	Fisheries Road	Sunnybeach Road	Add/Improve Unpaved Multi-use Trail	0	5	5	1	2	1	1	15

Project Number	On	From	To	Description	Provides Active / Safe Routes to School	Provides Access to Community Destinations	Roadway Type	Ease of Implementing	Improves Regional / Local Connectivity	Community Support	Cost	Total Score
28	Hydro ROW	Nile Road	Lighthouse Country Regional Trail South Loop	Add/Improve Unpaved Multi-use Trail and Rail Crossing	0	3	1	1	4	4	2	15
37	Hwy 19A	Just north of Fisheries Road	Driftwood Road	Shoulders, 1 side	0	0	5	1	4	2	3	15
38	Hwy 19A	Polgate Rd	500 m south of Polgate Road	Shoulders, 1 side	0	0	5	1	4	1	4	15
5	Rail ROW	Gainsberg Road	North to Area H Boundary	Add/Improve Unpaved Multi-use Trail	0	5	1	1	5	2	1	15

CHAPTER FOUR: ACTIVATING THE COMMUNITY

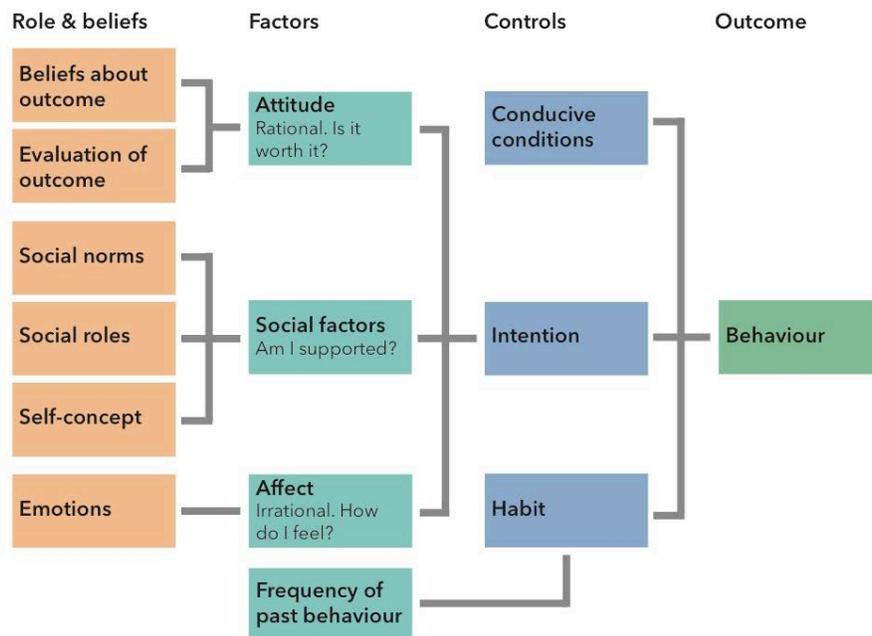
4.1 Understanding Behaviour

Classic economics suggests people tend to act in their own and society’s best interest. This model predicts that if we provide people with transport choices they will select the most efficient and socially beneficial options. Unfortunately, practical experience tells us that we often drive when we could take transit, take less exercise than we should, and place our own needs ahead of others when we are in a rush. This shows what we all intrinsically know, that humans aren’t always rational and instead, a range of beliefs and attitudes influence our decisions, or we simply unconsciously default to habit.

There are many behavioural science theories that investigate the role of our beliefs, peers, environment, habits and emotions on how we decide what to do. These theories have been widely used in health care to treat addictions and in advertising to sell us new products but are rarely used to affect transportation behaviour. It is only in recent times that we have begun to see our transportation system as a finite resource requiring management rather than an asset that can be continuously expanded.

While infrastructure is needed to enable people to consider walking and cycling, experience elsewhere suggests that encouraging them to use these modes for utility journeys requires more than just awareness of a network. Figure 11 shows that to address the barriers to increased walking and cycling, it is necessary both to create conducive conditions (infrastructure) and to influence beliefs, emotions, social factors and habit.

Figure 11: Triandis Model of Behavior



A field of planning called transportation demand management (TDM) has evolved from marketing to more sophisticated use of behavioural science. This ATP includes some of these emerging ideas so we can ‘nudge’ people to make better personal and societal decisions about transportation. This leads to a complementary program of TDM

behavioural change measures to leverage investment in an active transportation network and so improve value for money.

The following sections describe three types of transportation behaviour change programs that would work together. These programs all fit within the definition of Policy 3.6 of the Regional Growth Strategy - Promoting Transportation Demand Management strategies.

4.2 Programs for Individuals

People may be broadly grouped into four segments:

- Loyal users – people with limited capacity to increase active transportation
- Near market – people who see the benefits and intend to walk or cycle more but default to other options for utility trips
- Potential or marginal market – people who see positives in walking and cycling but have significant barriers (such as safety concerns) preventing them intending to change in the near-term
- Rejectors - people who are not interested in walking or cycling for any reason

Survey questions in the community engagement exercise did not specifically evaluate market segments. For the purposes of the ATP however, the focus of attention will be on the near and potential markets where there is a reasonable prospect of change from behavioural programs in combination with infrastructure. This means a greater emphasis on addressing smaller, more manageable barriers to increase use or try active modes for new journey purposes, rather than trying to convince people with no initial interest to consider walking and cycling.

A number of programs have the potential to be impactful in Area 'H.' Many of these programs already exist on Vancouver Island and could be extended to, or enhanced within, Area 'H.' These potential programs are summarized below

Walking for health clubs

The [Nanaimo Integrated Health Network](#) (IHN) delivers programs and courses for enrolled patients that include walking groups and related services such as physical assessments and nutrition and weight management. Although Area 'H' is not part of the Nanaimo IHN, similar programs could be introduced within the [Port Alberni IHN](#) to serve Area 'H' and nearby communities.

Urban cycling courses

The [Greater Nanaimo Cycling Coalition](#) (GNCC) offers urban cycling courses focused on traffic rules, bicycle skills, route planning and more. The full day course is offered on Saturdays and Sundays at a current (2016) cost of \$35. The RDN should consider partnering with the GNCC to bring these services to Area 'H' residents.

Bicycle club rides

There are several bicycle clubs near Area 'H,' including the [Mid Island Velo Association](#), based out of Nanaimo. Bicycle clubs tend to offer several types of group rides that cater to bicyclists with a range of skills levels, from development rides to training rides oriented towards enthusiasts and professionals. RDN could help these groups to advertise and promote rides within Area 'H'.

Pledge rewards and incentives

The RDN offers a series of [rebates](#) designed to incentivize use of green technology on residential properties. The RDN could extend this effort to transportation demand management by offering incentives to regular walkers, cyclists and transit users. Potential partnerships in this effort could include business associations, such as the [Lighthouse Country Business Association](#), and non-profit groups like the [Greater Nanaimo Cycling Coalition](#).

4.3 Programs for Organizations

Bike-friendly businesses

The Greater Nanaimo Cycling Coalition's (GNCC's) Bike Friendly Business Program assists businesses in becoming more accessible to cyclists, providing customers and employees with increased choices for their shopping and/or work trips. In addition to on-site cycling education courses, the GNCC assesses workplaces for bike-friendliness and offers recommendations for both physical improvements and programmatic strategies. Businesses benefit not only by expanding mode choice for visitors, but through participation in the branded Bike Friendly Business Program.

Workplace transportation demand management

Workplace transportation demand management (TDM) programs encourage employees to commute by foot, bicycle or transit. Walking and bicycling can be promoted through a combination of incentives (such as discounts or gift cards) and services (such as secure bicycle parking and lockers), and can indirectly be promoted through programs that discourage single-occupant vehicle trips, such as carpool programs.

School travel plans

School travel plans focus on school catchment areas and identify the safest walking and bicycling routes for students and families. School travel plans may also incorporate proposed infrastructure improvements. This report recommends that the RDN work with School District 69 to create a school travel plan for Bowser Elementary School, potentially as part of the revised Transit Future Plan.

4.4 Programs for the Community

Driver education and Share the Road campaigns

Programs focusing on motorist education and behaviour can help improve conditions for active travelers, particularly bicyclists. Driver education can take the form of media campaigns (e.g. radio ads, street banners and bus stop ads) and targeted enforcement (e.g. speed and stop sign enforcement). Education can also be provided formally – for instance, bicycle safety classes in lieu of tickets for specified traffic violations. The Royal Canadian Mounted Police should consider implementing these types of programs in collaboration with the RDN.

Bike and hike tourism

Bicycling and hiking can play an important role in sustainable tourism, particularly for rural communities. Tourism Nanaimo currently publicizes trails and other bicycling and hiking attractions and integrates these routes with other service sectors (e.g. the Nanaimo Bar Trail). Bicycling and hiking tourism in Area 'H' could be promoted through similar strategies that emphasize publicizing routes and making connections to other local destinations, such as restaurants or hotels.

Route information and wayfinding

Regional districts are uniquely equipped to provide route information and wayfinding services across jurisdictions. The RDN could consider implementing a wayfinding program that would provide consistently-branded signage throughout the Regional District to guide residents and visitors to and from key destinations, such as employment centers, historic areas, parks, trailheads, schools and transit.

CHAPTER FIVE: IMPLEMENTING THE PLAN

5.1 Priority Projects

This section describes priorities for implementation over the short to medium term (1 to 5 years), long term (6-10 years) and for future consideration (greater than 10 years). Unless otherwise stated, it is assumed that implementation is the responsibility of the RDN in cooperation with MOTI. All of the projects have been costed and designed to meet applicable design guidance published by Transportation Association of Canada transportation and BC's Ministry of Transportation and Infrastructure.

Projects for Implementation over the Short to Medium Term

Table 6 provides details regarding the top 10 ranked projects. These projects are recommended for implementation in years 1 to 5 after the Plan receives approval by the RDN Board. The projects include:

- Reduce speed limits to 50-60 km/h on Highway 19A (Gainsberg to Seaboard Road)
- Implement a pedestrian crossing of Highway 19A at Magnolia Court in Bowser
- Add an advisory lane on Faye Road from Jameison to Bowser Elementary
- Implement a road diet on Highway 19A (Gainsberg to Crosley)
- Add a pedestrian crossing of Highway 19A at Lions Way
- Implement a pedestrian crossing of Highway 19A at Coburn Road
- Add 1.5 m wide paved shoulders on both sides of Highway 19A between Crosley and Fisheries Road. As part of this project, upgrade the Big Qualicum River Bridge to include improved access by widening the paved access path and by adding a fence to protect those using the sidewalk from falling into the roadway.
- On Burne Road and Gainsberg Road in Deep Bay, widen the road to include 1.5 metre wide paved shoulders to better accommodate active transportation users
- Reduce the speed limit on Highway 19A between Sunnybeach Road and Driftwood Road from 70 to 80 km/h to 50 to 60 km/h
- Implement traffic calming on Jamieson Road and Thompson Clark Drive East, from Fay Road to Henry Morgan Park to improve access to Bowser Elementary

The total capital cost for these five projects is just over \$2.5 million. These projects offer significant benefit in terms of improved comfort and safety, particularly on Highway 19A between Deep Bay and Dunsmuir, on Faye Road for those travelling to Bowser Elementary, and at key locations on Highway 19A where there is strong demand for pedestrian crosswalks, specifically at Lions Way and at Magnolia Court in Bowser.

Table 6: Short – Medium Term Projects

Project Number	On	From	To	Facility Type	Score	Rank
2	Hwy 19A	Gainsberg Road	6161 Hwy 19A	Reduced speed limit from 70-90 km/h to 50-60kmh	33	1
15	Magnolia Court @ Hwy 19A	--	--	Add Improved Pedestrian Crossing	30	2
11	Faye Road	Jamieson Road	Bowser Elementary/North Extent of Faye Road	Add Advisory Lane	28	3
2A	Hwy 19A	Gainsberg Road	Crosley Road	Increase width of shoulders by eliminating the painted median and/or reducing the number of traffic lanes	26	4
30	Lions Way @ Hwy 19A	--	--	Add Improved Pedestrian Crossing	25	5
16	Coburn Road @ Hwy 19A	--	--	Add Improved Pedestrian Crossing	25	5
36	Hwy 19A	Crosley Road	Just north of Fisheries Road	Shoulders, both sides (including minor upgrades to Big Qualicum River Bridge through improved access by paving around barriers at each end (4X1.5m wideX4 m long) and by adding a fence to protect those on the sidewalk from falling into the roadway.	24	7
22	Jackrabbit Road alignment	Bowser Elementary	Thompson Clark Ocean Community Trail	Add/Improve Unpaved Multi-use Trail, level Rail crossing and Bridge over Creek	24	8
14	Hwy 19A	Sunnybeach Road (6161 Hwy 19A)	Driftwood Road	Reduced speed limit from 70-80 km/h to 50-60kmh	23	9
19	Jamieson Road/Thompson Clark Drive East	Henry Morgan Community Park	Faye Road	Implement Traffic Calming Measures	23	9

Projects for Implementation over the Long Term

Table 7 provides details regarding the projects ranked 11-20 and recommended for implementation in years 6 to 10 after the Plan receives approval by the RDN Board. The projects include:

- Add an unpaved multi-use trail connecting Bowser Elementary to Thompson Clark Community Trail
- Improve Nile Creek Bridge by adding a sidewalk on the north side, widening the sidewalk on the south side and by increasing the width of paving around the barriers at each end to improve access
- Add an unpaved multi-use trail from Crosley to Coburn Road on the south side of Highway 19A
- Implement a local street greenway on Thompson Clark Drive between Gainsberg Road and Thompson Clark Ocean Community Trail
- Add traffic calming and wider shoulders on Corcan Road from Dorman to Grand Rose
- Extend the Lighthouse Country Regional Trail to bridge the gap between the North and South Loops
- Build a pedestrian crossing of Highway 19A at Nile Road
- Implement traffic calming on Burne and Gainsberg Roads from Highway 19A to Deep Bay Harbour to reduce the speed of motor vehicle traffic
- Build an unpaved multi-use trail on the E&N Rail ROW from the south end of Thompson Clark Ocean Community Trail to Highway 19A at Coburn Road
- Implement traffic calming on Horne Lake Road between Berkshire Road and Whistler Road

The total capital cost for these 10 projects is \$9.2 million.

Table 7: Long Term Projects

Project Number	On	From	To	Facility Type	Score	Rank
39	Nile Creek Bridge – Hwy 19A			Add sidewalk on the north side (2m wide), widen sidewalk on south side (.5 m) and improve access by paving around barriers (2 X 1.5m wide X 4 m long)	23	11
1A	Burne Road and Gainsberg Road	Hwy 19A	Deep Bay Harbour	Widen road to include shoulders to better accommodate pedestrian and bikes	22	12
3	Hwy 19A (south side)	Crosley Road	Coburn Road	Add/Improve Unpaved Multi-use Trail	22	13
12	Thompson Clark Drive	Gainsberg Road	Thompson Clark Ocean Community Trail North End	Add/Improve Local Street Greenway	22	13
26	Corcan Road	Grand Rose Road	Dorman Road	Add shoulders and traffic calming	22	13
7	Lighthouse Country Regional Trail Alignment	LCRT North Loop	LCRT South Loop	Add/Improve Unpaved Multi-use Trail	21	16
29	Hwy 19A @ Nile Road	--	--	Add Improved Pedestrian Crossing	21	16
1	Burne Road and Gainsberg Road	Hwy 19A	Deep Bay Harbour	Remove centre lane line and implement traffic calming (speed humps and chicanes) to reduce the speed of motor vehicle traffic	20	18
13	Rail ROW	Thompson Clark Ocean Community Trail South End	Hwy 19A @ Coburn Road	Add/Improve Unpaved Multi-use Trail	20	18
25	Horne Lake Road	Berkshire Road	Whistler Road	Implement Traffic Calming Measures and shoulder widening	20	18

Projects for Future Consideration

Table 8 provides details regarding the projects ranked 21-41 and recommended for implementation in years 11 to 20. Note that a number of these projects are also part of the RDN Community Parks and Trails Strategy and may be expedited through that process, due to their value as recreational routes. Those projects include Project Numbers: 10, 27, 20, 18, 9A, 4, 8, 23, 9, 21, 28, and 5. The projects have a total capital cost of \$ 14.6 million and include:

Table 8: Projects for Future Consideration

Project Numbers	On	From	To	Facility Type	Score	Rank
10	Widgeon Road	Larkdown Road	Boorman Road	Local Neighbourhood Street Bikeway	19	21
17	Gainsberg Road @ Hwy 19A	--	--	Add Improved Pedestrian Crossing	19	21
27	Spider Lake Road/Horne Lake Road	Spider Lake	Whistler Road	Add/Improve Unpaved Multi-use Trail	19	21
32	Fisheries Road @ 19A	--	--	Add Improved Pedestrian Crossing	19	21
20	Sundry Road Alignment	Henry Morgan Community Park	Hwy 19A	Add Trail/Local Street Calming/Level Rail Crossing	18	25
18	Jamieson Road	Faye Road	Jamieson Road @ Hwy 19A	Implement Traffic Calming Measures	18	25
33	Sunnybeach @ Hwy 19A	--	--	Add Improved Pedestrian Crossing	18	25
9A	Rail ROW	Big Qualicum River Trail	Boorman @ Widgeon Road	Add/Improve Unpaved Multi-use Trail	17	28
31	Jamieson Road @ Hwy 19A	--	--	Add Improved Pedestrian Crossing	17	29
4	Alignment parallel Gainsberg/Crosley Road	Gainsberg Road @ Hwy 19A	Crosley @ Hwy 19A	Add/Improve Unpaved Multi-use Trail and Traffic Calming at the southeast end of Crosley	16	30
8	Whistler Road Alignment	LCRT South Loop	Big Qualicum River Trail	Add/Improve Unpaved Multi-use Trail	16	30

Project Numbers	On	From	To	Facility Type	Score	Rank
23	Rail ROW	Big Qualicum River Trail	Lions Park	Add/Improve Unpaved Multi-use Trail	16	30
34	Baylis Road @ Hwy 19A	--	--	Add Improved Pedestrian Crossing	16	30
35	Hwy 19A	Four lane transition to two lane on Hwy 19A	Area H west boundary at Hwy 19A	Widen road to include shoulders to better accommodate pedestrians and bikes	16	30
6	Rail ROW	Coburn Road @ Hwy 19A	McColl Road (following rail alignment)	Add/Improve Unpaved Multi-use Trail and bridge crossing of Thames Creek	15	35
9	Whistler/Boorman Road Alignment	Big Qualicum River Trail	Widgeon Road	Add/Improve Unpaved Multi-use Trail	15	35
21	Crome Point Road	Gainsberg Road	VIA Shellfish Research Centre	Add/Improve Unpaved Multi-use Trail	15	35
24	Hwy 19A	Fisheries Road	Sunnybeach Road	Add/Improve Unpaved Multi-use Trail	15	35
28	Hydro ROW	Nile Road	Lighthouse Country Regional Trail South Loop	Add/Improve Unpaved Multi-use Trail and Rail Crossing	15	35
37	Hwy 19A	Just north of Fisheries Road	Driftwood Road	Shoulders, 1 side	15	35
38	Hwy 19A	Polgate Rd	500 m south of Polgate Road	Shoulders, 1 side	15	35
5	Rail ROW	Gainsberg Road	North to Area H Boundary	Add/Improve Unpaved Multi-use Trail	15	35

5.2 Priority Project Descriptions

The following summaries provide descriptions of the top five priority projects in order to support the RDN in seeking funding and promoting projects that are recommended for construction within the first three years of approval.

Priority 1 (Project #2): Speed limit reductions on Highway 19A from Gainsberg Road to Sunnybeach Road (6161 Hwy 19A)

Figure 12 : Priority 1 (Project #2)



Description

Currently the speed limit on Highway 19A between Gainsberg Road and Crosley road, just west of Bowser is 90 km/h. At Bowser the speed limit drops to 60 km/h but then rises again to 80 km/h just east of Bowser. With the introduction of the Inland Island Highway in the late 1990's, Highway 19A serves less inter-regional travel and more intra-regional and local travel. Further, over time there has been a gradual increase in the number of driveways and local streets that intersect with Highway 19A as well as an increase in the number of people who walk and cycle and who would like to walk and cycle on Highway 19A, despite the fact that paved shoulders on this section of highway are, in many cases, less than the minimum width of 1.5 m recommended by MOTI.

Project Recommendations

This project recommends that speed limits on Highway 19A between Gainsberg and Crosley be reduced to 60 km/h, to 50 km/h through Bowser, and to 60 km/h between Bowser and Sunnybeach Road (at 6161 Highway 19A). This simple change, involving replacement of signage and addition of pavement markings, has the potential to improve traffic safety for all road users and to improve comfort and perception of safety for pedestrians and cyclists who wish to walk along this segment of Highway 19A.

Following introduction of reduced speed limits, it is recommended that MOTI and RDN monitor compliance. If traffic speeds are higher than posted speed limits, it is recommended that MOTI consider additional measures to encourage compliance including enforcement, added signage and pavement markings and reduced number and width of general purpose traffic lanes.

Project Details

Reduced speed limits from:

- 90 km/h to 60 km/h between Gainsberg and Crosley;
- 60 km/h to 50 km/h between Crosley and 6826 Highway 19A (100 m west of Charlton Drive); and
- 80 km/h to 60km/h between 6826 Highway 19A and Sunnybeach Road (6161 Highway 19A).

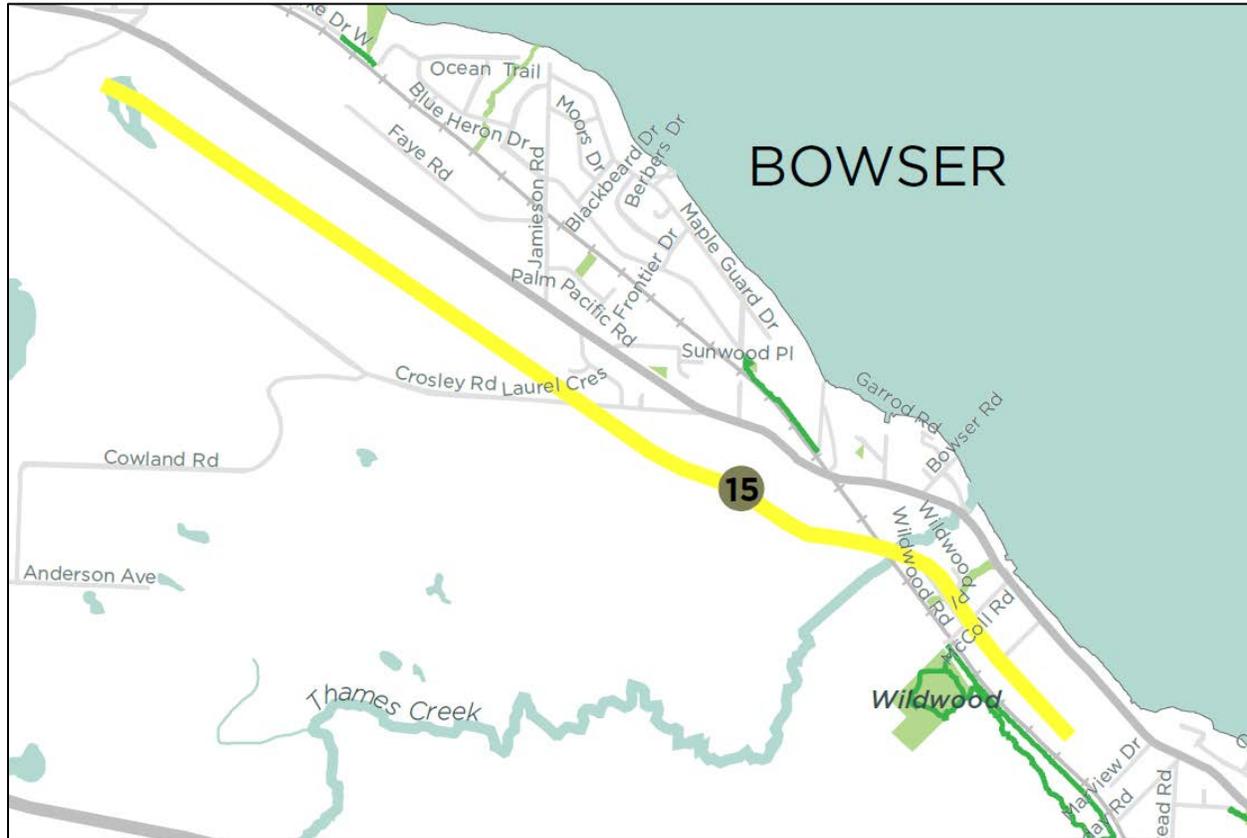
Length: 7.6 km

Cost: \$25,480

Precedent Image

Priority 2 (Project #15): Pedestrian Crossing of Highway 19A at Magnolia Court

Figure 13: Priority 2 (Project #15)



Description

Highway 19A runs through the village of Bowser, separating Tomm’s Grocery store, a gas station and shops and services in Magnolia Court on the south side of the road, from Lighthouse Feed and Garden Shop, Bowser Builder’s, and the Legion on the north side. Although a footpath from Magnolia Court leads one to the edge of 19A, there is no designated crosswalk. Pedestrians have difficulty crossing at this location since motor vehicles do not often yield, and the speed and volume of motor vehicle traffic can be intimidating to those who are young, elderly or mobility challenged.



Project Recommendations

Provide a marked and signed pedestrian crosswalk of Highway 19A at Magnolia Court. If yielding continues to be an issue at this location, then consider further actions such as addition of a protected median and rapid response flashing beacons, such as those shown in the images below. Bus stops are also planned for this location in the future and those stops should be placed far side of the pedestrian crossing in each direction so that sight lines between drivers and those crossing the Highway are not impeded.

Project Details

The costing for this project assumes the following infrastructure:

2 crosswalk signs, 2 rapid flash beacons, 2 refuge islands on each side of the Highway, as well as the cost to provide a bus stop far side of the crosswalk in each direction.

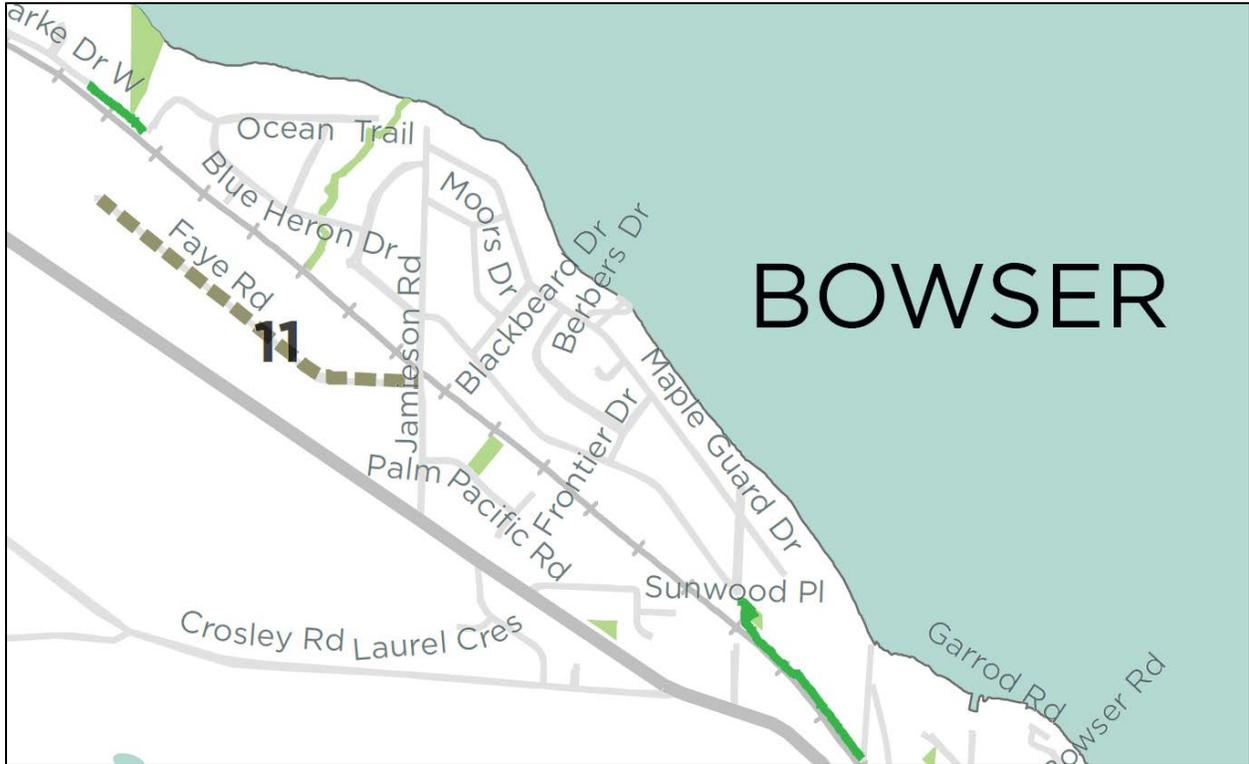
Cost: \$50,000

Precedent Images

Photos: Richard Drdul

Priority 3 (Project #11): Advisory Lane, Faye Road from Bowser Elementary to Jamieson Road

Figure 14: Priority 3 (Project #11)



Description

Faye Road is the main route for staff and students to access Bowser Elementary School from Jamieson Road, a distance of almost a kilometre. As shown in the image below, the roadway is narrow, with one lane in each direction and a directional dividing line in the middle. Where they exist, shoulders on the roadway are gravel. The speed limit on the roadway is 50 km/h, except for a 250 m stretch of the road for those westbound approaching the school, which is reduced to 30 km/h from 8AM to 5PM on days when school is in session.



Faye Road, looking west. Bowser Elementary is on the left.

Project Recommendations

Remove the directional dividing line and add advisory lanes on each side of the street to accommodate pedestrians and cyclists. Include signage as shown in the precedent image below and reduce the speed limit to 30 km/h along the entire length of the roadway. Communication and education is recommended in advance of implementation to inform residents, parents and guardians of the change.

Project Details

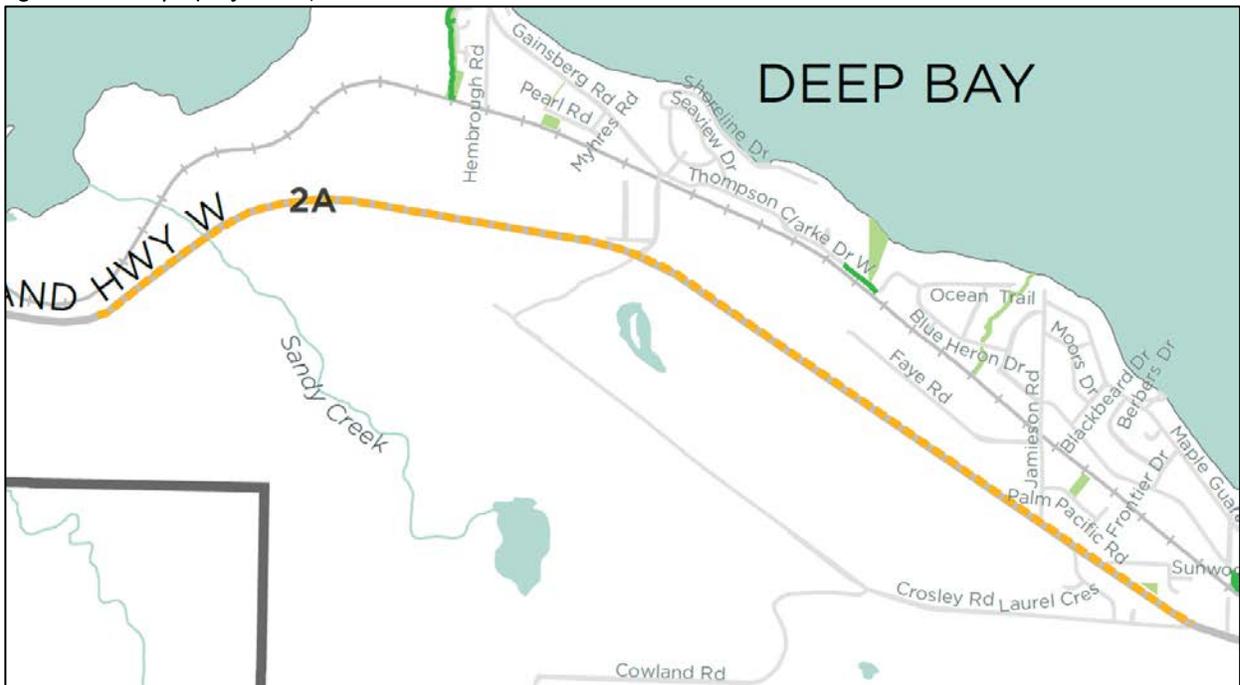
Remove the centre lane line and add dashed lane lines to delineate each shoulder.

Cost for signage and removal of the lane line and to add dashed lane lines to demark shoulders: \$28,560

Precedent Image

Priority 4 (Project #2A): Increase the width of shoulders by eliminating the painted median and/or travel lanes on Highway 19A from Gainsberg Road to Crosley Road

Figure 15: Priority 4 (Project #2A)



Description

Highway 19A from Gainsberg to Crosley Road is a 4 lane roadway with a centre median which provides space for left hand turn bays. The volume of motor vehicle traffic using this stretch of the highway is not sufficient to warrant two lanes in each direction. Moreover, this design encourages motor vehicles to travel at speeds above the speed limit of 90 km/h.

Project Recommendations

The recommendation is to undertake a road diet along this 5.4 km stretch of roadway that would reduce the number of travel lanes to three lanes, while retaining a median along this entire stretch of roadway. This would permit the addition of wide shoulders on each side of the roadway of over 3 m wide in each direction. This change would allow MOTI to retain passing lanes along segments of the roadway in each direction, while dramatically improving conditions for active transportation users.

Project Details

Remove a general purpose travel lane in each direction and reallocate the space to wider shoulders. Costs include those to remove lane lines and to restripe the roadway. RDN and MOTI should consider further investment, above that assumed here, to protect the shoulders with jersey barriers where there is evidence that active transportation users are travelling in both directions on one side of the road, or where vehicle speeds continue to exceed 50 km/h, the speed at which TAC recommends that physical protection be included for bikeways¹⁰.

Precedent Image

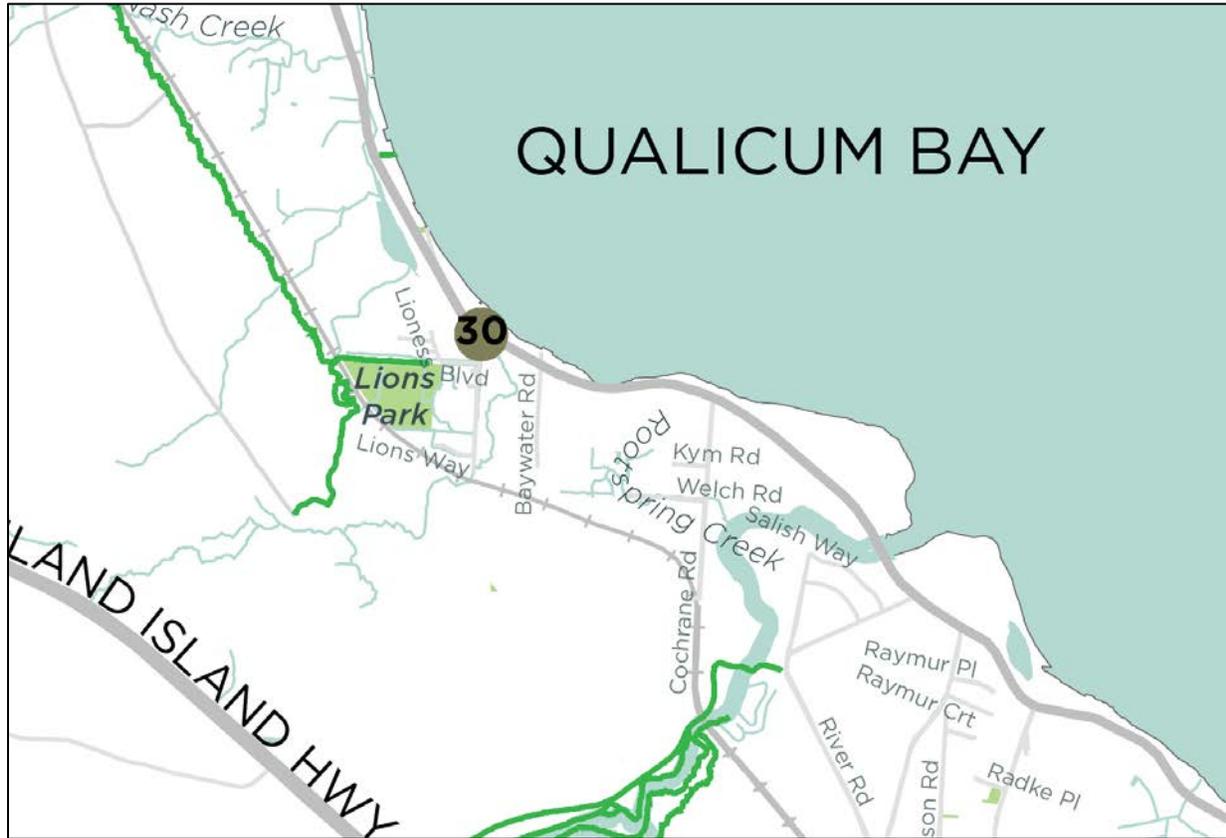
Adding Bicycle Lanes



¹⁰ This facility design guidance is forthcoming in Transportation Association of Canada's Geometric Design Guide, approved by TAC Chief Engineers in November, 2016

Priority 5 (Project #30): Pedestrian crossing of Highway 19A at Lions Way

Figure 16: Priority 5 (Project #30)



Description

Just west of Qualicum Bay there is a collection of roadside shops, restaurants, pubs, motels and resorts as well as a number of local streets leading to residential development. One of these streets, Lions Way also leads to Lighthouse Community Centre, to Bow Horn Bay Volunteer Fire Department, to Lions Seniors Housing, and provides access to a trailhead and parking lot for those accessing Lighthouse Country Regional Trail as well as to a regional transit stop in front of the Lighthouse Community Hall.



Highway 19A at Lions Way

Project Recommendations

Given the importance of Lions Way as the primary access to a public transit stop, community centre, fire department and regional trail access, this Plan recommends adding a pedestrian crosswalk of Highway 19A, at Lions Way.

Project Details

The costing for this project assumes the following infrastructure:

2 crosswalk signs, 2 rapid flash beacons and 2 refuge islands on each side of the Highway.

Cost: \$45,000

Precedent Images



Photos: Richard Drdul

5.3 Funding Opportunities

This plan explored potential funding sources that could be used to fund active transportation improvements in Area 'H'. This section identifies a number of potential different funding sources the RDN could use to fund active transportation improvements in Area 'H'. Funding sources include:

1. Community Contribution Fees and Taxes:
 - a. General Funds/Taxation
 - b. Hotel Sales Tax
2. User Fees and Project Related Revenue Sources:
 - a. Development Cost Charges
 - b. Cash-in-lieu
3. Grants:
 - a. BikeBC Program
 - b. New Building Canada Fund – Small Communities Fund
 - c. Climate Action Revenue Incentive Program
 - d. Federal Gas Tax Fund
 - e. Infrastructure Canada
 - f. Green Municipal Funds
 - g. ICBC
4. Volunteer and Private Sectors:
 - a. Deeds, donations, dedications and volunteer labour
 - b. Service Clubs
 - c. Advertising

The RDN currently manages 70 kilometres of trail throughout the region. Further, through its Parks department, RDN has recently completed the construction of a section of the E&N Rail Trail that will link Springhill Park in Parksville with Coombs. Funding for the E&N Rail Trail and other active transportation infrastructure projects has come through a number of sources including the Federal Gas Tax Program (described below).

1. Fees and Taxes

A number of broad community based funding sources and strategies can be used to implement pedestrian and bicycle facilities, as follows:

1.a. General Funds/Taxation

The Province of British Columbia collects property taxes on a regional districts' behalf and remits the revenue to the regional district. These General Funds can be used to fund transportation projects and programs, including regional transit, regional parks and trails. To accelerate the delivery of the priority projects, it may be necessary to consider increased contributions from General Taxation to match funding from Federal and Provincial Grants to achieve the funding targets recommended in this report.

1.b. Hotel Sales Tax

Hotel/motel taxes are a common revenue generating mechanism employed by local or provincial governments. BC already charges a rate of 8 per cent per night on rooms in BC. Municipalities and Regional Districts are permitted to

charge an additional 2 per cent to promote their tourism industry and for financing new tourist facilities or programs. RDN Area 'H' benefits from a hotel area tax of 2 per cent, which is applied to sales of short-term accommodation. These funds are used to market local tourism through the Oceanside Tourism Association and could potentially be directed towards active transportation projects and programs through amendment of the establishment bylaw for this service.

2. User Fees and Project Related Revenue Sources

2.a. Development Cost Charges

The Local Government Act (Sec 933) allows local governments to impose development cost charges (DCC's) to assist a local government in funding capital improvements including, but not limited to regional parks, trails or roadway improvements that serve the development subject to the charge. The RDN has used DCC's in the past to fund a variety of capital improvements as outlined in Bylaw # 1442. While DCC's in RDN have been used largely to fund the Northern Community Sewer Service Area, it is feasible that such funding could also be used to fund active transportation improvements.

2.b. Cash-in-lieu

Recent changes to the Local Government Act allow municipalities and regional districts to request developers to provide cash-in-lieu of providing off-street parking spaces to fund alternative transportation such as active transportation network upgrades as per Section 525 of the Local Government Act. According to Section 525, if money is received by a municipality or regional district under this provision, that the municipality or regional district must invest the funds in new and existing off-street parking spaces, or according to subsection 7(a)(ii) in transportation infrastructure that supports walking, bicycling, public transit or other alternative forms of transportation.

3. Grants

As funding opportunities change regularly, the information in this section is subject to change. The RDN should regularly check with all levels of government to keep up to date on funding opportunities.

3.a. BikeBC Program

The Province of BC currently provides approximately \$6 million annually for municipal cost-sharing toward cycling infrastructure projects through the BikeBC program. Cost sharing favours projects that improve safety for cyclists. As such, bike paths that allow physical separation between cyclists and other road users are preferred. BikeBC will also fund a variety of other projects, listed as follows, in order from most to least preferable:

- Cyclist/pedestrian bridges and overpasses
- Buffered bike lanes (for example, those that can be separated by barriers such as parked vehicles or painted medians with increased width)
- Bike lanes
- Shoulder bikeways
- Shared roadways

It should be noted too that funding is directed toward projects that are part of an approved bicycle network plan and which facilitate cycling to work, school or errands. Cycling infrastructure can also generate tourism-related traffic based on proximity to amenities and points of interest for tourists, and through linkages to other communities,

however, serving tourist related traffic should not be the primary objective of the project. BikeBC will provide up to 50 percent of the capital cost. Once approved by the RDN Board, the Area 'H' Active Transportation Plan will form an approved bicycle network plan, allowing RDN to apply for BikeBC funding for projects in Area 'H'.

3.b. New Building Canada Fund – Small Communities Fund

The Province of BC and Federal government have allocated \$109 million annually until 2024 to fund infrastructure projects in communities with a population of less than 100,000. There are 13 categories of eligible projects including, for example, disaster mitigation, innovation, public transit and highways and major roads, all of which might include active transportation related components. Further First Nations projects, located partially or entirely on reserve, that are aligned with the parameters of the program are eligible if they can demonstrate benefits extending beyond the reserve community, in addition to meeting the conditions of the grant.

3.c. Climate Action Revenue Incentive Program

The Climate Action Revenue Incentive Program is a conditional grant program that provides funding to BC Climate Action Charter (Charter) signatories equivalent to one hundred per cent of the carbon taxes they pay directly. This funding supports local governments in their efforts to reduce greenhouse gas emissions and move forward on achieving their Charter goals. Governments must take action towards carbon neutrality and measuring GHG emissions to be eligible. A number of local agencies such as Vernon, Penticton and Cowichan Regional District have applied these funds toward pedestrian and cycling infrastructure.

3.d. Federal Gas Tax Program

Gas tax is collected annually by the federal government. Jurisdictions receive a proportion of the federal dollars based on their populations through the Community Works Fund (Federal Gas Tax Program). The Gas Tax Program supports environmentally sustainable municipal infrastructure. The intent of the Program is to fund projects that reduce reliance on the private automobile. As mentioned in the introduction, the RDN Parks Department is currently undertaking a number of active transportation infrastructure projects through the assistance of the Federal Gas Tax Program. These include the Village Way Trail on Gabriola Island and final design for the Morden Colliery Regional Trail and Nanaimo River bridge crossing. The RDN is encouraged to continue to source funding from the Federal Gas Tax program to fund projects that help to reduce reliance on the private automobile.

3.e. Infrastructure Canada

The programs of Infrastructure Canada are the Active Transportation Fund, New Building Canada Fund (NBCF) and the Gas Tax Fund named above. Typically, the federal government contributes one-third of the cost of municipal infrastructure projects. Provincial and municipal governments contribute the remaining funds and, in some instances, there may be private sector investment as well. The NBCF supports projects of national, regional and local significance that promote economic growth, job creation and productivity. A number of active transportation projects and roadway and transit projects with active transportation elements have been funded through this program.

3.f. Green Municipal Funds

The Federation of Canadian Municipalities (FCM) manages the Green Municipal Fund (GMF). Eligible capital projects include transportation that must demonstrate the potential to reduce vehicle kilometres travelled in a single occupancy vehicle by encouraging active transportation. Matched funds are a requirement to apply for the Green Municipal Fund.

3.g. ICBC

Since 1990 ICBC has contributed more than \$138 million toward road improvement projects and studies across the province that have helped to reduce death and injury on BC roads. Through this program ICBC partners with municipal, regional and provincial agencies to construct improvements that improve road safety. ICBC contributions have been used to fund a number of road safety projects on Vancouver Island that improve conditions for cyclists and pedestrians. The City of Nanaimo, for example, has been awarded over \$250K in recent years to support a range of projects, including but not limited to:

- Sidewalks and bikelanes on Bowen Road
- Curb extensions on Fitzwilliam Street
- A new sidewalk on Wakesiah Avenue
- New traffic signal, pavement markings and advance warning flashers on Highway 1
- Signal operation and pedestrian flashing signals on Bowen Road.

ICBC works with MoTI, municipal and regional staff to review studies, crash data and other information to decide which projects the agency should invest in. ICBC contributes funds to projects that are likely to improve safety and reduce collision claims on roadways throughout BC.

4. Volunteer and Private Sectors

Many residents and private sector businesses may wish to contribute toward construction of active transportation facilities. Active transportation facilities are well-suited to sponsorship and volunteer support. Many trails throughout the province and locally in Area 'H' have been constructed entirely through volunteer efforts.

4.a. Deeds, Donations, Dedications and Volunteer Labour

In many communities, multi-use pathways have been constructed in part through contributions from local residents and businesses that donated their time or money toward construction. Examples in B.C. of sponsorship from local businesses include:

- Construction Aggregates in Sechelt, which constructed an overpass over a gravel conveyor to provide a link for pedestrians and cyclists;
- 7-Eleven and Molson Breweries, which sponsored the BC Parkway path in Vancouver, Burnaby and New Westminster.

BC residents and visitors have also contributed funding. The Trans Canada Trail, for example, is funded partially by sales of one-metre sections for \$40. Volunteer efforts have also been significant. The RDN's Lighthouse Country Regional Trail, for example, was constructed through the efforts of a group of local residents called the Lighthouse trail volunteers who helped blaze over 5 kilometres of trail along an undeveloped road allowance. A dedication program can be set up for residents and corporations to donate. In many cases, deeds, donations and dedications are tax deductible where administered by a not-for-profit agency.

4.b. Service clubs

Efforts to provide new bicycle facilities can be coordinated with service clubs, such as the Lions Club, the Rotary Clubs and Kiwanis. The Courtenay Rotary Club for example contributed to the construction of the Rail Trail that runs from Fifth Street down to 26th Street.

4.c. Advertising

There may be several options for obtaining funding for bicycle projects from advertising revenues. The costs of producing and distributing an active transportation route map could be partially or fully offset by selling advertising space on the map. Advertising on bicycle racks could reduce the costs of providing bicycle parking and in some cases infrastructure projects have been funded directly through revenues from advertising. For example, McBride pedestrian/bicycle overpass in New Westminster, B.C. was paid for by Mediacom in return for a 20-year advertising deal involving seven billboards throughout the community.

5.4 Next steps

The following are initial steps that the RDN should take in order to implement the Area 'H' ATP in an effective and efficient manner.

1. Obtain approval of the RDN Board for the ATP and associated bicycle and pedestrian network plans, thus allowing eligibility for Provincial capital funding
2. Integrate the findings of the ATP in the on-going OCP review process.
3. Investigate grants to support RDN and MOTI toward implementing priority projects listed in Section 5.1.
4. Pursue a range of strategies to realize the funding, access to land, community support and other resources required to implement each project.
5. Implement supportive education and promotional programs as a means to complement and leverage capital investment.
6. Maintain ongoing communications with important stakeholder groups including but not limited to:
 - a. Ministry of Transportation and Infrastructure;
 - b. The Lighthouse Country Business Association
 - c. Bowser Elementary School and Parents Advisory Council
 - d. The OCP Working Group
 - e. Greater Nanaimo Cycling Coalition
 - f. Resident Associations
 - g. Fisheries and Oceans Canada
 - h. The Island Corridor Foundation