

Mid Vancouver Island Cycling Feasibility Study



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 THE **BRITISH COLUMBIA CYCLING** COALITION

June 2018 - R1

Project Team

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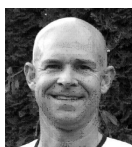
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Thank You

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About this Study

The goals of this study were to identify specific barriers to cycling and walking and to identify opportunities to improve cycling and walking for transportation, recreation and tourism in the Comox Valley area. While this study focuses on cycling, walking and wheelchair use was also considered as most projects, facilities and plans also include these forms of active transportation.

Individuals were engaged through an online survey promoted through email lists and Facebook with 368 people responding, the vast majority from the Comox Valley.

Studies and plans reviewed include the Comox Valley Regional Growth Strategy, Comox Valley Cycling Plan, Vancouver Island Rail Corridor - Rail-with-Trail Design Guidelines, E & N Railway Corridor: Development Strategies, Rail Trail Feasibility Study - Comox Valley, Transit Future Plan Comox Valley and Connecting Courtenay - Master Transportation Plan (results so far).

Organizations, local governments, and First Nations consulted include the Island Corridor Foundation, the Comox Valley Cycling Coalition, Rails to Trails Vancouver Island, the United Riders of Cumberland, the Comox Valley Road Runners, the Comox Valley Chamber of Commerce, the Town of Comox, the Village of Cumberland, the City of Courtenay, the Comox Valley Regional District and local bicycle shops. The project team endeavored to engage with the K'omok's, the Qualicum, Snaw-naw As (Nanoose), and the Snuneymuxw First Nations.

Executive Summary

Cycling and walking are popular activities. Around 12 million Canadians and 1.9 million British Columbians cycle at least once a year. Riding a bike is particularly popular among young people, with 81% of Canadians aged 12-14 cycling at least once a year. Many people want to cycle more with 2.6 million B.C. residents indicating they would ride more if there were separated bike lanes or paths that protected them from traffic. While most people cycle for recreation, a growing number are cycle commuting to work. This is especially the case in smaller B.C. communities with six having cycling mode shares greater than 10%. This number of cyclists will likely increase significantly with proper and safer cycling infrastructure.

Cycling in the Comox Valley

The project survey results indicate that cycling in the Comox Valley is just as, or even more popular than, the rest of B.C. with over 90% of respondents cycling at least once a year.

According to the 2016 Census, 5.7% of commuters walk and 3.6% bike to work in the Comox Valley. The level of cycling commuting in the Comox Valley is almost 3 times the Canadian average and significantly higher than the B.C. average. However, riding a bike to work has basically stayed the same with only small increases and decreases for Comox Valley communities. This lack of increase in cycling is not that surprising as few improvements have been made to regional cycling connections between 2006 and 2016.

Most survey respondents cycled frequently with 65% riding a bike at least 2 times a week while 91% rode at least once a year. Mountain bikes are the most popular with 45% owning one

followed closely by road, hybrid and touring bicycles, and with only 4% saying they did not have access to a bicycle.

First Nations

Trails have always played an integral role in the social and economic foundations of Indigenous communities including those in Comox Valley. Many First Nation communities continue to view trails as an important part of their culture and heritage, as well as critical infrastructure for ensuring the health and well-being of their people, and a way to continue asserting and protecting their Rights and Title to the land.

According to the BC Trails Strategy, successful trail planning must engage First Nation communities on a government-to-government basis at the earliest stages. In addition to concerns about impacts to asserted Rights and Title, First Nations may have interests in trail creation / maintenance and trail use from a variety of perspectives including:

- Educational and interpretive opportunities with trails related to First Nations traditional use and ecology,
- Concerns that some trails could open areas of First Nations cultural and spiritual significance to outside trail users
- Concerns about the potential impacts to the environment
- Potential tourism opportunities and economic benefits for First Nations

The project team endeavored to engage with the First Nations on whose territories the scope of this project was undertaken including the K'omok's, the Qualicum, Snaw-naw As (Nanoose), and the Snuneymuxw First Nations. The engagement undertaken as part of this initiative was very preliminary and only included informal conversations and should not be considered sufficient as consultation for any future development projects. Each of the communities have multiple priorities and were only able to provide very limited engagement for this study. Further engagement and consultation will be required. The team was able to discern some key issues and priorities. There is some interest among some of the First Nations communities to enhance opportunities for recreation and active living for their members that will improve their health, well-being, and their ability to commute and engage in the local economy in a sustainable manner.

A primary priority for these communities is asserting their Indigenous Rights and Title throughout their territories, ensuring all development projects protect these rights, and that their members have the opportunity to benefit from these economic and social development outcomes. With regard to the E&N Railway there is some interest in tourism and recreational opportunities, however historical and ongoing issues related to land expropriation, and the associated impacts on their communities, will need to be addressed before any decisions regarding the recreational or active transportation use of the corridor can be made. Any decision will require the full consent and accommodation of the First Nations on whose territories the rail line has been built. At least one of the Nations is currently engaged in a legal suite involving the the railway that must be settled before any new developments can occur.

Benefits of Cycling and Walking

Active transportation, trails and sustainable recreation, and tourism are central for enhancing community sustainability and resilience. Cycling and walking facilities provide essential mobility needed to access employment opportunities and services. Trails and paths provide critical opportunities for alternative and active transportation, increasing greater transportation choices and adaptability. The construction of paths, sidewalks and cycling facilities also tends to create more jobs than road projects.

By encouraging outdoor recreation and healthy active living, trails and other cycling routes are an important part of fostering health and well-being. Recreational cycling can encourage people to try using cycling for transportation. Communities with high levels of cycling and walking tend to have significantly lower traffic fatality rates than communities with low levels of active transportation use.

Climate

Transportation accounts for 55% of GHG emissions in the Comox Valley. With transit only expected to account for 3% of trips by 2038, active transportation needs to account for a substantial portion of emissions reductions. The Comox Valley Regional Growth Strategy set the active transportation (cycling and walking) commuting mode share targets for 2015 at 10% and 2030 at 20%. With cycling and walking commuting only marginally increasing, the 2015 target of 10% was missed. However, given the success of other communities in B.C., along with the survey results and other related factors, the 2030 target seems achievable.

With the potential of electric bikes to further increase the number and distance of cycling trips, the cycling targets could be increased further. With the new B.C. government targets of a 40% reduction in GHG emissions by 2030 and 60% by 2040, regional plans could be revisited to ensure regional targets and plans are consistent with provincial targets.

Cycling Tourism

There is significant potential for cycling tourism in the Comox Valley especially due to its relatively close proximity to communities where there is already high interest in cycling. These communities include Vancouver, Victoria, and Whistler. The area is also relatively close to the Vancouver International Airport, allowing for an increase in national and international tourism with the proper infrastructure in place. Almost 80% of survey respondents agreed that improved cycling infrastructure and paths were good for tourism and the economy.

Already, Cumberland, with its excellent network of mountain biking trails, has become a popular destination. Hornby and Denman Islands are popular cycling destinations for residents and visitors alike. A key opportunity is a destination rail trail along the E&N corridor. Other cycling tourism opportunities include rides, events, festivals, wilderness tours on gravel back roads, and multi-day loop tours including the Sunshine Coast, the Gulf Islands and Metro Vancouver.

The cycling tourism potential of the Comox Valley could be similar to that of the Capital Regional District (CRD) where the 150,000 annual visitors who cycle, spend an average of \$990 per trip. The Capital Regional District has 85 km of regional multi-use trails as well as mountain

biking, cycling events, bicycle racing, and pleasure riding.

Areas in B.C. that are attracting cycling tourists including Vancouver, Victoria, and Cumberland have typically focused on developing high-quality cycling facilities for residents first. This strategy makes sense as these facilities are built and maintained in part with local tax revenue. Combining the health, safety, environmental, and social benefits for local residents with the economic benefits of cycling tourism helps build the business case for investing in higher quality more comprehensive networks. There are also more potential funding sources for facilities that benefit local residents.

Low Carbon Tourism

An emerging opportunity is low carbon tourism and weekend getaways via bicycle from Metro Vancouver and Victoria. To realize the full potential, passenger ferries from downtown Vancouver to Nanaimo and improved cycling connections from Vancouver to the Horseshoe Bay ferry terminal are needed. As well, a high quality efficient cycling route would be required Northwards from Nanaimo. The E&N rail corridor is probably the best possibility. Restored rail service on the E&N from Victoria to Nanaimo would also help enable more people to access the E&N rail-trail in the Comox Valley.

Access to Recreation and Nature

In addition to being a popular form of recreation, cycling infrastructure can also provide low costs equitable access to recreation for people of all ages including children. With a network of cycling facilities separated from traffic, people can access mountain biking and hiking trails without a motor vehicle.

89% of survey respondents supported paved routes connecting to nature trails.

General Barriers, Issues and Challenges

The survey, the review of government plans, and our engagement with other organizations identified several general issues and barriers that discouraged people from cycling and walking which include:

- A lack of cycling and walking infrastructure separated from traffic
- Traffic passing at high speeds, aggressively and/or too closely
- Narrow or non-existent shoulders
- Debris on shoulders or bike lanes
- A lack of lighting on paths and sidewalks
- Varying shoulder widths, pavement ridges and other physical impediments
- A lack of separation between sidewalks and traffic
- A lack of crosswalks on busy roads
- Concerns about theft and lack of suitable facilities for bike security

Equity

While cycling and walking are generally affordable forms of transportation and recreation, there are equity issues including access to safe infrastructure and access to bicycles.

Cycling facilities separated from traffic are the key to gender and age equity. Without

separation, the majority of cyclists will be young to middle aged males, as appears to be the case in the Comox Valley where 4.8% of male and 2.3% of female commuters bike to work.

In the survey, 45% said financial assistance for purchasing bicycles may increase the likelihood that they start cycling. As bicycles suitable for riding on unpaved trails are typically more expensive than other bicycles, paved trails help make cycling more affordable. Bike theft also has a larger impact on those with lower incomes.

Paved and Natural Paths Preferred Over Gravel

According to the survey, gravel paths are not popular for cycling, walking, running or using a wheelchair. People walking and running preferred paths with natural surfaces (grass, earth, etc). People cycling and using wheelchairs prefer paved paths. In addition, paved paths were much more likely to increase the amount people indicated they would ride a bike.

Regionally Significant Barriers

Past plans, other organizations, and the survey confirmed several regionally significant barriers to cycling including lack of safe cycling routes connecting Comox Valley communities. As Courtenay is the main regional hub, connections through it are key for cycling transportation, recreation, and tourism.

Comox to Courtenay

Key barriers include lack of separated cycling facilities on:

- Courtenay River Crossings - 5th and 17th Avenue Bridges
- Ryan Road
- Dyke Road /Comox Road

83% of survey respondents said that they would cycle more frequently if there were protected bike lanes connecting Courtenay and Comox.

Cumberland to Courtenay

Cumberland Road, the most direct route connecting Cumberland and Courtenay, provides no facilities for active transportation outside of urban areas.

73% of survey respondents said that they would cycle more frequently if there were protected bike lanes connecting Cumberland and Courtenay.

Buckley Bay, Union Bay, Royston, Courtenay

The Old Island Highway (19a) connecting Buckley and Courtenay is viewed by many as unsafe for cycling due to high motor vehicle speeds, sections with narrow shoulders, and debris on the shoulders. Improvements to 19a are essential for enabling safe cycling access to many destinations. Also, improvements along it would complement a trail within the E&N corridor.

74% of survey respondents said that they would cycle more frequently if there were protected bike lanes connecting Buckley Bay and Courtenay.

E & N Rail-Trail

In the group consultations a destination rail trail on the E&N corridor emerged as a key priority,

especially for tourism. In the survey, 73% said they would cycle more frequently if there were a paved path along the E&N. A significant portion of survey respondents wanted rail service with a trail where possible, while around an equal number preferred a trail without rail service.

While a trail with rail is possible throughout much of the corridor in the Comox Valley, there are several sections where building a trail next to the rail bed would be very costly or perhaps impossible, and thus detours off the corridor would be required. Depending on the impact of these detours on cycling effort, time, and quality of experience, the detours could result in a significant decrease in the number of visitors and residents cycling, compared to a route without detours.

The Cost of Cycling and Walking Facilities

While a few people expressed concern regarding the cost of cycling and walking facilities, 78% of survey respondents strongly agreed with local governments investing in improvements to walking and cycling infrastructure, while only less than 3% disagreed.

Still, investing in high quality facilities like destination trails, improvements to bridges and networks of sidewalks, and protected bike lanes can be a challenge for local governments. There are several sources of funding including the Rural Dividend Fund, Bike BC, and Federal Gas Tax funding that have been already used on other projects in the Comox Valley and could be a source of funding for future projects.

Investing in Canada Infrastructure Plan (ICIP)

The federal and B.C. governments recently signed the Investing in Canada Infrastructure Plan (ICIP). While the program details are still being finalized, it appears as if the Community, Culture and Recreation stream can be used to fund cycling and walking paths that are used for recreation and that these paths could also be used for transportation. We have also received indication that funding will be available at least for active transportation facilities that connect to transit hubs.

Climate Funding

An emerging opportunity is the potential for using funding targeted for reducing carbon emissions and green infrastructure for active transportation facilities. The B.C. government is also developing a new climate plan with sector targets and a higher total reduction target. There is no longer a requirement for the carbon tax to be revenue neutral so there is the potential of funding for active transportation.

Recommendations

First Nations

- Continue to engage with each of the First Nations identified through this study
- Ensure the needs and priorities of each of the First Nations is given careful consideration and centered in all future planning and developments
- Ensure the acknowledgement and respect for Indigenous Rights and Title
- Seek opportunities to support recreation and active transportation in a manner that the economic and social benefits flow to the First Nation communities

Equity and Affordability

- Ensure that those with lower incomes are effectively engaged in the planning processes
- Build all ages and abilities cycling facilities that are separated from traffic
- Ensure that cycling and walking facilities are built in all areas of the community and include safe routes to schools
- Include income level on surveys and polls
- Pave trails and paths that can be used for transportation to enable use of lower cost bicycles
- Require secure bicycle parking in new apartments and incentivize the building of secure bicycle parking in existing apartments to reduce bike theft
- Rebates or other financial assistance for bicycles
- Support community bike shops that offer low cost bicycles and repairs

Improving Recreation & Active Transportation

- Undertake a regional travel survey for all trips including current mode used and mode choice if desired cycling, walking, and transit improvements were made
- Develop active transportation implementation and investment plans consistent with regional climate and target mode shares
- Focus on building paved paths for cycling and wheelchair use and natural paths for walking and running
- Improved maintenance and debris removal from shoulders and bike lanes
- Build paved routes to nature trails

Cycling Tourism

- Improve regional cycling connections
- Develop the E&N rail-trail
- Prioritize facilities that benefit local residents in addition to attracting cycling tourists
- Ensure that connections and signage to tourists attractions are included in plans
- Improve and expand multimodal connections to the Comox Valley that conveniently accommodate bicycles including buses, E&N rail service and passenger ferries

Specific Infrastructure

- **Highway 19a** - Consider options for improving cycling conditions including wider shoulders, protected bike lanes, or paved paths
- **Cumberland to Courtenay** - Consider options including separated bike lanes consistent with the design on Cumberland Road in Cumberland
- **Comox to Courtenay** - Consider options including separated Bike lanes on Dyke/Comox Road
- **Courtenay River Crossings** - Upgrade 17th Ave Bridge and either upgrade 5th Ave Bridge or build a cycling and walking bridge at 6th Ave. We understand that the City of Courtenay will be examining options as part of its new transportation plan.

E&N Rail-Trail

- Continue planning and design work for paved a trail along the E&N while preserving the option of rail service

- Focus on key sections to address network gaps and create significant sections of high quality cycling routes heading south from Courtenay to create significant complete segments
- Completing sections south to Royston Road would create an initial segment that would provide a good cycling connection for transportation and recreation for residents and visitors
- Pursue funding options including the Rural Dividend Fund, Federal Gas Tax, Bike BC, ICIP and funding through service clubs and individuals
- Update trail guidelines to reflect the strong preference for paved paths among cyclists and wheelchair users, and natural surfaces for those walking and running
- Improve road crossings for cycling along the completed section in Courtenay
- Consider paving the completed section in Courtenay
- Conduct cost benefit analysis of route options on challenging segments, including options on or near the rail right-of-way and those involving detours
- Produce an economic, social and environmental impact assessment of an E&N trail with various alignment options. The assessment should take into account the potential of electric bicycles and cycling mode share targets consistent with those experienced on similar facilities elsewhere in B.C.

Lowering the Cost of Network Completion

- Accelerate cycling and walking network completion using low-cost interim measures
- Further integration of cycling in asset management and capital plans to help insure that the incremental additional funding is available
- Update development bylaws so that street cross sections include protected bike lanes and sidewalks

Climate Funding

- Investigate the possibility of using climate related infrastructure funding for active transportation infrastructure
- Move forward with planning and design work on key regional active transportation connections in anticipation of climate and other funding sources

Electric Bicycles

- Require new apartment buildings and businesses to include electrical plugs in secure bicycle parking areas
- Encourage the installation of electrical plug-ins to charge electric bikes at campgrounds, restaurants and other facilities frequented by cycling residents and visitors
- Develop programs to loan or otherwise let people try electric bikes
- Consider financial incentives to lower the cost of electric bicycles especially for those with lower incomes

Bicycle Parking

- Help expand the Comox Valley Cycling Coalition valet bicycle parking program
- Install more bike racks in high demand locations

Future Studies

The survey had several limitations that should be addressed in future studies or regional transportation plans.

- A regional trip diary such as the ones done by MoTI and TransLink in Metro Vancouver or the City of Vancouver
- A public opinion poll on active transportation barriers and opportunities
- Engagement with groups representing and individuals with mobility challenges
- Engagement with groups representing and individuals with lower incomes
- Engagement with youth, children and parents

1 - Community Engagement

Local Government

Local governments were open to both informal meetings and council delegations. We had multiple forms of engagement with all three municipalities and the regional district.

Comox Valley Regional District - Informal meeting with RD Chairperson, correspondence with staff

Town of Comox - Delegation to Council, correspondence with Mayor

Village of Cumberland - Informal meeting with Mayor, delegation to Council

City of Courtenay - Informal meeting with Councillor, attendance at Transportation forum, delegation to Council

First Nations

Trails have always played an integral role in the social and economic foundations of Indigenous communities. Trails, whether water or land based, were how communities moved across the land and asserted their presence and authority as the caretakers and stewards of their territories. The existence of trails and their use are often cited by First Nation communities as evidence of their use and occupation of the land, and have played a critical role in treaty and land claims negotiations. Many First Nation communities continue to view trails as an important part of their culture and heritage, as well as critical infrastructure for ensuring the health and well-being of their people, as well as their ability to assert and protect their Rights and Title.

First Nations have used trails for travel and acquiring sustenance since time immemorial. Early European explorers and settlers to British Columbia relied on these already established trails. Many of these historical trail systems have been designated as Heritage trails, including the well-known 350 km Nuxalk-Carrier Grease trail. Now, some First Nations are actively involved in protecting trails, and in managing and promoting responsible trail use that respects cultural values.

According to the BC Trails Strategy, successful trail planning must engage First Nation communities on a government-to-government basis at the earliest stages. In addition to concerns about impacts to asserted Rights and Title, First Nations may have interests in trail creation / maintenance and trail use from a variety of perspectives including:

- Educational and interpretive opportunities with trails related to First Nations traditional

- use and ecology, either provided by First Nations or in a partnership with First Nations
- Concerns that some trails could open areas of First Nations cultural and spiritual significance to outside trail users
- Concerns about the potential impacts to the environment
- Potential tourism opportunities and economic benefits for First Nations

As part of this study, the project team endeavored to reach out to the First Nations on whose territories the scope of this study has focused. This includes the K'omok's, the Qualicum, Snaw-naw As (Nanoose), and the Snuneymuxw First Nations. The objective was to initiate dialogue and gain some insights into the priorities and issues of concern for the First Nation communities in the area.

The engagement included reaching out to each of the communities and providing information about the project and to solicit opportunities for meetings and discussion. This was only a preliminary attempt and further engagement and discussions will be required.

K'omok's First Nation

The K'omok's First Nation territories extend from Kelsey Bay, South to Hornby and Denman Island, and include the watershed and estuary of the Puntledge River. The project team was able to make limited connections with the community speaking informally with several staff members. These individuals felt there may be an interest in exploring options for enhancing opportunities for the membership to engage in active transportation, particularly regarding the further development of the One Spot Trail, a local multi-purpose trail. There were concerns however with the trail running through the community and issues of people entering the community. Further extensive engagement will be required.

Qualicum First Nation

The Qualicum First Nation are a small community located near the town of Qualicum. Though there were no formal discussions with the community, there was some interest by staff and leadership towards developing more opportunities for recreation and active transportation, particularly in terms of attracting visitors to the Nation's campground.

Snaw-na-as (Nanoose) First Nation

Located near Nanoose, approximately 30 minutes north of Nanaimo, the Nanoose First Nation is a Coast Salish Community. Currently the Nation is involved in a lawsuit against the E & N Railway and as such, the few contacts made with the community indicated a strong hesitation to engage in this initiative until all legal issues are resolved.

Snuneymuxw First Nation

The Snuneymuxw First Nation, located adjacent to the City of Nanaimo is one of the largest Nations in B.C. with a population of 1700 people. The project team was unable to make any connections or engagement with the community during this project.

Organizations

Island Corridor Foundation (ICF)

The Island Corridor Foundation is the owner of the E&N Railway.

Andy Telfer had a phone conversation with ICF CEO Graham Bruce who stated that their current position is to encourage and support the development of trails with rails where possible along the corridor. Several sections have already been completed with more planned.

Richard Campbell had a phone conversation with Mr. Bruce in early June to further discuss options for advancing the E&N rail trail. Immediate opportunities include exploring further Rural Dividend Fund grants to plan and develop a significant section of trail within the Comox Valley in partnership with the CVRD.

Comox Valley Chamber of Commerce

On March 7, 2018, Andy Telfer, Richard Campbell, and Marg Harris (CVCC) met with Diane Hawkins, the Chamber CEO, and Andrew Gower, a Chamber Director, and the Chairperson of their Transportation Committee.



We discussed the Chamber's priorities and this project. In short, the Chamber was very supportive of improvements that facilitate active transportation. They also emphasized their view that the E & N rail line should be maintained for future rail use to support commerce.

Comox Valley Road Runners

On February 28, Andy Telfer met with members of the Comox Valley Road Runners: Ron Crowther (organizer), Lois and Gord, Cathy Clarke, John Ingram, and 3 others (8 members). In this informal discussion they discussed the club's local priorities and this project.



Priorities:

1. Complete the Royston to Cumberland trail. (The CVRD is currently planning an overpass of the Inland Highway, and from there a route is planned into the Village of Cumberland.)
2. 17th Street Bridge is horrible: badly needs a solution
3. Courtenay to Cumberland: Walmart to Royston, then along #1 above

Issue Areas:

- Connect East Courtenay to Courtenay downtown (perhaps along Superstore property)
- Cliffe Rd is bad for cycling and walking
- Comox Rd / Dyke Road not amenable for walkers/cyclists
- Ryan Road: Terrible for active transportation of any kind

Tourism Potential:

Number one by far: E&N route

Also:

- Connect Rotary Trail to Waterfront Trail (Courtenay)
- Connect Rotary Trail to Royston along the same trajectory
- Connect Courtenay Waterfront Trail to Royston waterfront trail
- Crossings on 19A

Comox Valley Cycling Coalition

On February 16, 2018, Andy Telfer met with members of the Comox Valley Cycling Coalition for a tour and an informal discussion with Marg Harris, Lawrence Vea, Sue Vince and Angela Dawson (4 members). They identified areas of priority for cycling, and issue areas that are impediments to cycling.



Margaret Harris and Lawrence Vea took Andy on a tour of the good spots and the issue areas for cycling in the Comox Valley.

Areas of Priority:

Number one by far: Comox Road / Dyke Road

#2 Fitzgerald – join existing sections with bike lanes

#3 Courtenay to Cumberland

Issue Areas:

- 17th St. bridge: Very difficult to cross due to virtually no provision for cyclists in the approaches. Typically, only very confident cyclists navigate the bridge.
- Ryan Road is practically impossible to cycle on. It is a long, steeply sloped road that is very busy. There is no shoulder and the sidewalks have steep drop offs on both sides.
- Little River (BC Ferries terminal) to Courtenay: Uneven paving makes ridges between road and shoulder, or in the shoulder itself.

Marg and Lawrence beside the uneven pavement on Ellenor Road and Anderton Road that poses a hazard to cyclists. This is the most direct connection between the Little River ferry (to Powell River) terminal and Courtenay/Comox, and a popular recreational road riding route. Unfortunately, when the road was repaved the new pavement did not extend across the previous width of the shoulder, resulting in a ridge in the centre of the shoulder. Note the differences in the levels of moisture and debris caused by the ridge where old and new pavement meet, creating a crash hazard for cyclists.



United Riders of Cumberland (UROC)

On February 19, 2018 Andy Telfer, BC Cycling Coalition attended the UROC Annual General Meeting. Prior to the AGM, Andy met with Kit Carson, UROC Program Manager and two Directors of UROC. They discussed the BCCC project, and UROC priorities were presented at the AGM.



Friends of Rails to Trails Vancouver Island

The Friends of Rails to Trails Vancouver Island (FORT-VI) actively promoted the link to the project's online survey to their membership.

FORT-VI is very supportive of converting all or part of the E&N corridor to a multi use trail. They have collected over 3000 signatures on paper and on-line petitions to convert the E&N corridor to a trail. They've also done preliminary cost analysis and met with supportive First Nations groups and the Nanaimo Regional District. With a number of volunteers who have extensive political, technical, and rail related operational experience, they feel that they could contribute significantly to the success and cost effective conversion if undertaken by the Island Corridor Foundation, member regional districts, and/or by the Province.

Much of their information is based on the IBI Consulting Group study undertaken by the Province in 2010, the ICF financial statements, and technical data obtained from archived

documents. In addition, volunteers have walked the length of the rail corridor and have photos that indicate the state of rail deterioration. They have found that many people who initially support rail service change their positions when given more information about its capital and operating cost estimates.

Local bike shop owners

April 3, 2018, Andy Telfer and Richard Campbell met with owners of local bicycle shops to discuss their priorities and to explain the project.

Simon's Cycles

In Comox, we visited Simon's Cycles and met with Simon Brampton and Patti Fletcher. Patti was a Comox Councillor for 12 years. They strongly support an E&N rail trail.



The Broken Spoke

In Courtenay, we discussed local priorities with Mike Collins, the owner of The Broken Spoke bike shop.

The Broken Spoke <http://www.thebrokenspoke.ca/>



Also Contacted

- Comox Valley Tourism (no response)
- Comox Valley Regional District staff (discussions)
- Rotary Clubs (the club that sponsored the Rotary Trail in Courtenay)

Survey

The project team conducted an online survey through Survey Monkey. 368 people responded to the survey. The detailed survey results are included in appropriate sections in the report and Appendix A - Survey and Results.

Survey Promotion

The survey was promoted as follows:

- Emails to the 199 people on the BC Cycling Coalition email list in the Comox Valley Area
- An announcement to participants at the Comox Valley Cycling Coalition AGM
- Facebook ads targeted to Comox Valley Area reaching almost 9,000 people, 350 of them who clicked on the survey link
- Emails to Comox Valley Cycling Coalition members
- BC Cycling Coalition homepage when viewed from the Comox Valley area

Survey Respondents

- 63% of respondents were women. Rather encouraging as only 33% of cycling commuters in the Comox Valley are female
- Very few of respondents were under 30 years old
- While people from anywhere could have responded, the vast majority were from the Comox Valley area
- Motor vehicle use was high with almost 40% using daily and 21% using one “quite often”
- Walking was also quite popular with 27% walking daily and 17% walking “quite often”
- Cycling was fairly popular with 10% cycling daily, 9% cycling very often and 38% cycling several times a week. This was to be expected given that the survey was heavily distributed to cycling groups. Only 8% reported never cycling
- Transit use was very low with no one using it daily and one person using it quite often. 63% reported never using transit
- Only one respondent used a wheelchair daily indicating that we did not do a good job of reaching people who use wheelchairs

Highlights

- People really want to cycle and walk more with 80% saying they are interested in engaging in active transportation more frequently
- Hardly anyone likes using gravel paths. By a large margin, people cycling and using wheelchairs prefer paved paths while those walking and running prefer natural surfaces over gravel
- People indicated that new paved paths would increase their amount of cycling significantly more than gravel trails
- Long distances, lack of infrastructure and lack of time were the main barriers to walking for transportation or recreation

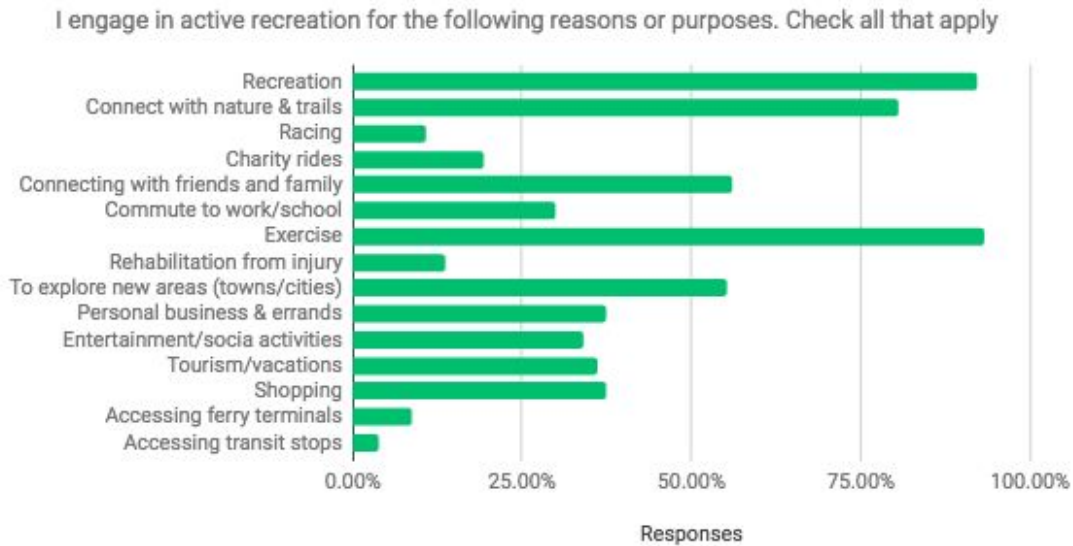
Recommendations for Future Studies

The survey had several limitations that should be addressed in future studies or regional transportation plans.

- A regional trip diary such as the ones done by MoTI and TransLink in Metro Vancouver or the City of Vancouver
- A public opinion poll on active transportation barriers and opportunities
- Engagement with groups representing and individuals with mobility challenges
- Engagement with groups representing and individuals with lower incomes
- Engagement with youth, children and parents

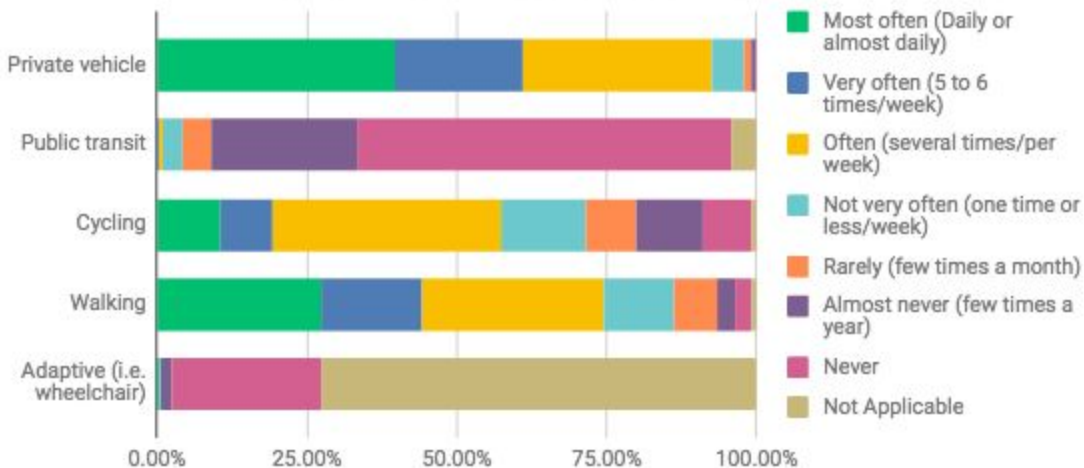
2 – Active Transportation and Recreation in the Comox Valley

The survey indicated that walking and cycling are particularly popular for recreation, exercise and connecting with nature.

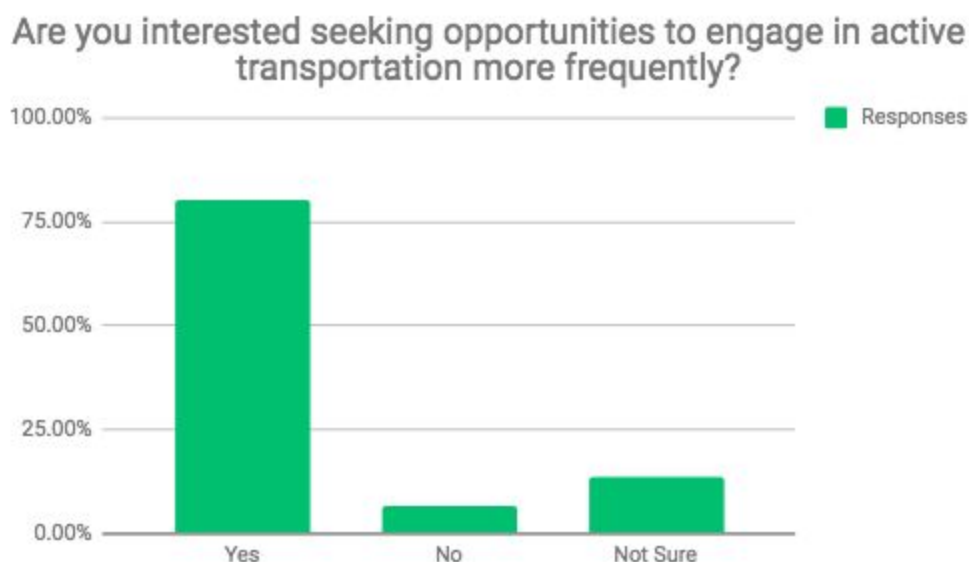


A majority of respondents also commonly use active transportation with 75% walking and 57% cycling several times per week.

What is your most common mode of transportation? Please indicate below from Most Often to Never.



A large majority of respondents said they are interested in engaging in active transportation more frequently.



Cycling Commuting

Cycling commuting levels in the Comox Valley (3.6%¹) are generally somewhat higher than that of B.C. (2.5%) and significantly higher than that of Canada (1.2%). Cycling commuting levels in the Comox Valley have changed little in the past ten years with communities showing modest increases or decreases. This could reflect the lack of major network improvements in that period in the Comox Valley.

Cycling Commuting²

Community	2006	2016	Change
Comox 1 (IRI)	NA	10.50%	NA
Comox, Town	4.90%	5.40%	10%
Comox Valley A	3.00%	3.50%	17%
Courtenay, City	4.50%	3.60%	-20%
Comox Valley B (Lazo North)	2.60%	2.60%	0%
Cumberland	3.60%	2.30%	-36%
Comox Valley C (Puntledge - Black Creek)	1.20%	2.60%	117%

¹ Statistics Canada via Census Mapper, <https://censusmapper.ca/maps/34#6/49.675/-124.915>. The cycling mode share for the Comox Valley was 3.4% in 2011. In 2006, the census district included Strathcona RD so it is not directly comparable with 2011 or 2016.

² Statistics Canada. *- Very small communities so there is likely a high margin of error.

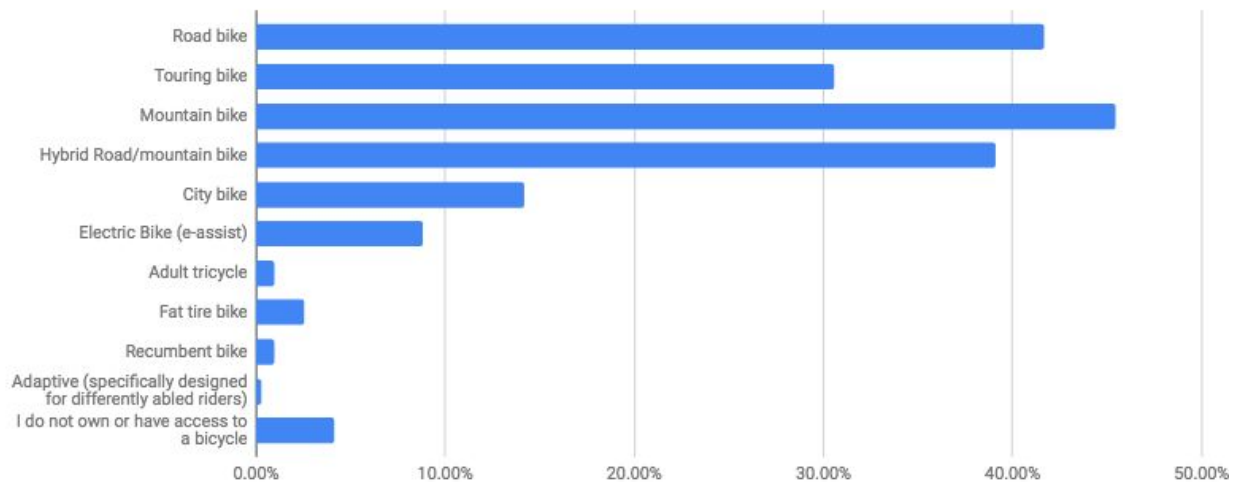
During this period, several B.C. comparable communities have experienced significant increases in cycling commuting thus showing the potential for the Comox Valley.

	2006	2016	Change
Ashnola 10 (IRI)*	NA	33.30%	NA
Qualicum (IRI)*	NA	28.60%	NA
Thompson-Nicola B (Thompson Headwaters) (RDA) (CSD)*	NA	21.40%	NA
Revelstoke (CY)	5.30%	14.50%	174%
Stewart (DM)	3.02%	10.50%	247%
Whistler, District	6.10%	10.20%	67%
Fernie	6.83%	8.80%	29%

Access to Bicycles

The vast majority of survey respondents said they have access to a bicycle. Mountain bikes were the most popular followed by road, hybrid and touring bikes.

Do you own or have access to any of the following? Check all that apply



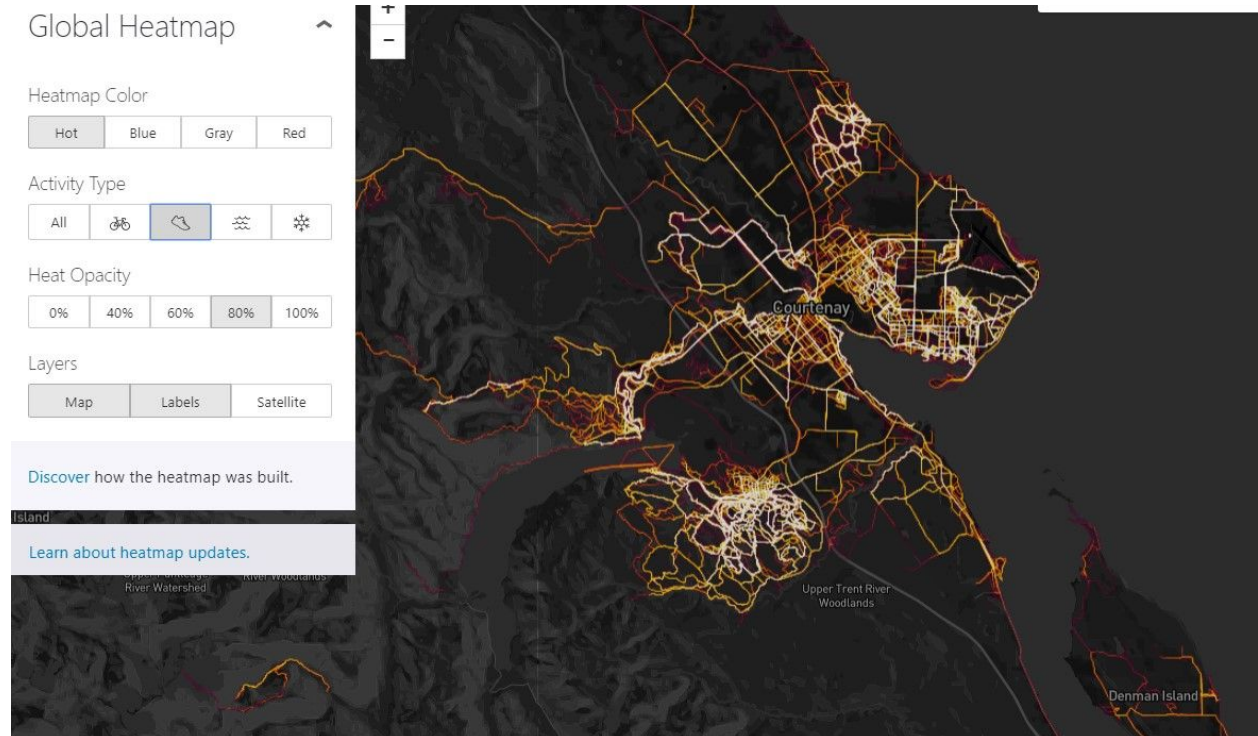
Other bicycles respondents mentioned include:

- Folding bikes - 4 respondents
- Cyclocross - 3 respondents
- Cruiser bike with trailer - 1 respondent
- Cruiser bike with trailer for children - 1 respondent

Popular Active Transportation and Recreation Routes

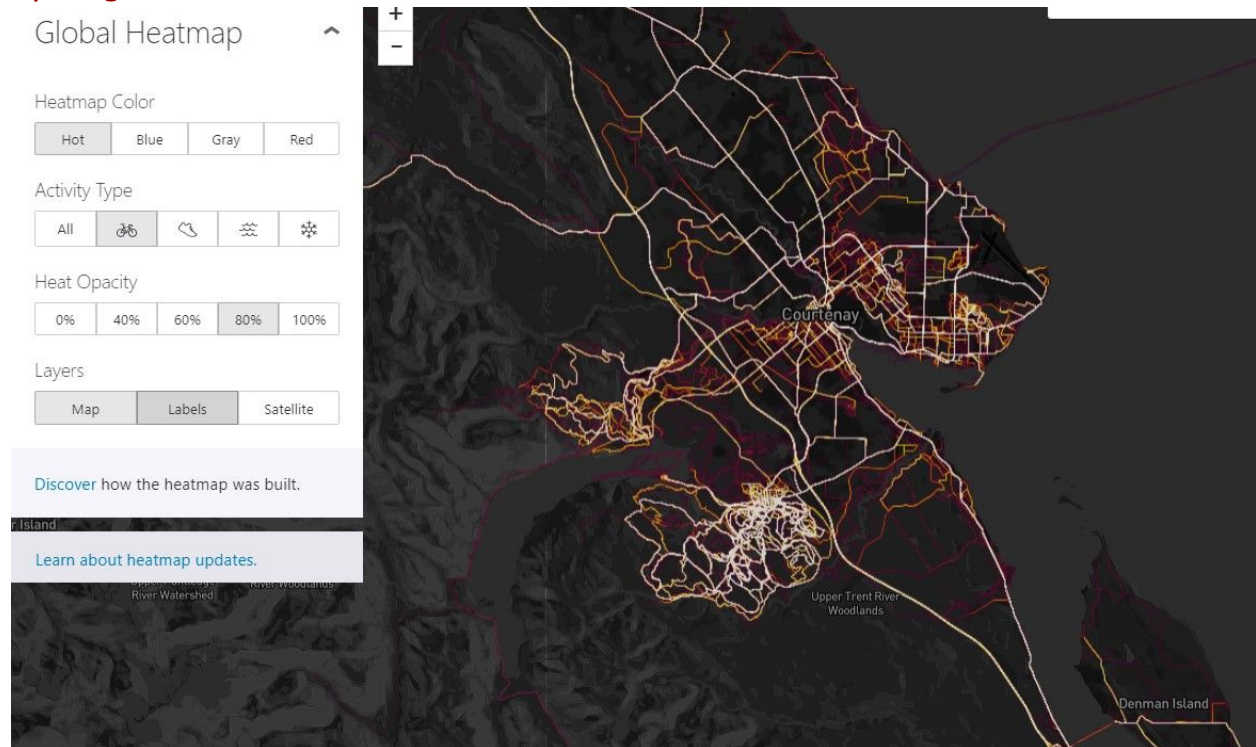
A local cyclist contacted us to offer data collected by Strava, a GPS app designed specifically for modes of active transportation. Strava has enough local data to indicate typical routes for cycling and for walking/running in the Comox Valley. Following are these two “heatmaps” from the Strava Heatmap web site in April, 2018.

Walking / Running



This map indicates the popularity of the three rural areas (two in the south and one in the north) for running and walking. Also popular are the Courtenay and Comox waterfronts, and surprisingly, urban areas of Comox. Unfortunately, the inter-community routes are not popular. Between Courtenay and Cumberland this is understandable given the greater distance. However, even with their closer proximity, the shortest route between Comox and Courtenay seems to be almost as unpopular.

Cycling



Most notable in this map is the mountain-biking area south of and adjacent to Cumberland. We might assume that there is a higher amount of data from mountain bikers than from commuters and other types of riders. Despite this, the two most direct inter-community routes are understandably well used, as are several rural routes for road and/or recreational riders.

Cycling Potential

Cycling and walking are popular activities. Around 12 million Canadians and 1.9 million British Columbians cycle at least once a year³. Riding a bike is particularly popular among young people with 81% of Canadians aged 12-14 cycling at least once a year⁴. Cycling and walking are especially popular with young people, 18-35, with 8% cycling & 10% walking to work⁵. Many people want to cycle more, with 2.6 million B.C. residents indicating they would ride more if there were separated bike lanes or paths that protected them from traffic with 1,325,000 B.C. residents say walking (23%) or cycling (11%) would be their ideal commute.⁶

A Global High Shift Cycling Scenario (HSC) by the Institute for Transportation & Development Policy and the University of California, Davis⁷, confirms the significant potential for cycling and electric bicycle use to significantly reduce GHG emissions while providing significant cost

³ Cycling in Canada, Statistics Canada, <https://www150.statcan.gc.ca/n1/pub/82-003-x/2017004/article/14788/tbl/tbl01-eng.htm>

⁴ Ibid.

⁵ Insights West, Survey on Commuting in British Columbia, May 24, 2016, http://www.insightswest.com/wp-content/uploads/2016/05/CommutingBC_Tables.pdf

⁶ Ibid.

⁷ <https://www.itdp.org/2015/11/12/a-global-high-shift-cycling-scenario/>

savings to individuals and government. The results show that a world with a dramatic increase in cycling could save society US \$24 trillion cumulatively between 2015 and 2050 in urban passenger transport costs, and cut CO2 emissions from urban passenger transport by nearly 11% by 2050 compared to a High Shift scenario without a strong cycling emphasis.

For Canada, the report projects a HSC cycling mode share of 12% for 2030 and 16% for 2050.⁸ As Comox Valley Regional District's cycling commute mode share of 3.6%⁹ in 2016 was almost three times higher than Canada's 1.4%, we would expect the potential HSC cycling mode share of the Comox Valley to be significantly greater than that of Canada as a whole.

Cycle Highways

Cycle Highways (also known as Bicycle Superhighways) are high standard and continuous paved bicycle routes designed to reduce travel times and thus facilitate long distance (5-20 km) cycling trips. They connect communities and major destinations including residential areas, concentrations of jobs, schools and public transit. Especially when combined with the use of electric bicycles, Cycle Highways can dramatically increase the distances people are willing to ride thus significantly reducing the use of motor vehicles.

Features include:

- Separate, high standard paths reserved for cycling separated from pedestrians and motor vehicles
- Two-way cycleway, separate lanes, 3.0 to 4.0m wide depending on volumes
- Design speeds of up to 40km/h on flat sections, higher on downhill
- Requirements for maximum grades and minimum curve radii.
- High operating and maintenance standards including frequent snow, ice and debris removal
- Grade separated crossings (overpasses or underpasses) of major roads and highways
- Few stops
- Lighting
- Greenwaves - Traffic signals synchronized to average cycling speeds

Cycle highways can significantly increase the share of people cycling by increasing the travel speed by bicycle from 15 km/h to 18 km/h. Cycle highways reach their full potential when combined with electric bicycles by increasing the average speed from 18 km/h to 24 km/h. This increase in speed means that the journey time decreases and/or the travelled distances increase.¹⁰

Electric Bicycles

New transportation plans in the Comox Valley should take the potential for electric bikes to significantly increase bicycle usage into account. Electric bicycle use is already significant in the Comox Valley with almost 9% of survey respondents owning or having access to one. This

⁸ Page 25,

<https://www.itdp.org/wp-content/uploads/2015/11/A-Global-High-Shift-Cycling-Scenario--Nov-12-2015.pdf>

⁹ Statistics Canada via Census Mapper, <https://censusmapper.ca/maps/972#6/49.673/-124.928>

¹⁰ Page http://h2020-flow.eu/uploads/tx_news/FLOW_REPORT_-_Portfolio_of_Measures_v_06_web.pdf

would likely increase further as long distance cycling routes are improved. In the Netherlands, which has been building an extensive networks of long distance bicycle routes connecting communities, electric bicycles accounted for 31% of bicycle sales in 2017.¹¹

A recent Norwegian study¹² found electric bicycles increased cycling trips from 0.9 to 1.4 per day, distance from 4.8 km to 10.3 km and, as a share of all transport, from 28% to 48%, whereas with the control group there was no increase in cycling.

Recommendations

- Ensure that new apartment buildings have electrical plugs in their bicycle parking facilities
- Encourage the installation of electrical plug-ins to charge electric bikes at campgrounds, restaurants and other facilities frequented by cycling residents and visitors

¹¹

<http://www.bike-eu.com/sales-trends/nieuws/2018/03/e-bike-puts-dutch-market-back-on-growth-track-10133083>

¹² A Fyhri, N Fearnley, Effects of e-bikes on bicycle use and mode share, Transportation Research Part D: Transport and Environment, Volume 36, May 2015, Pages 45–52

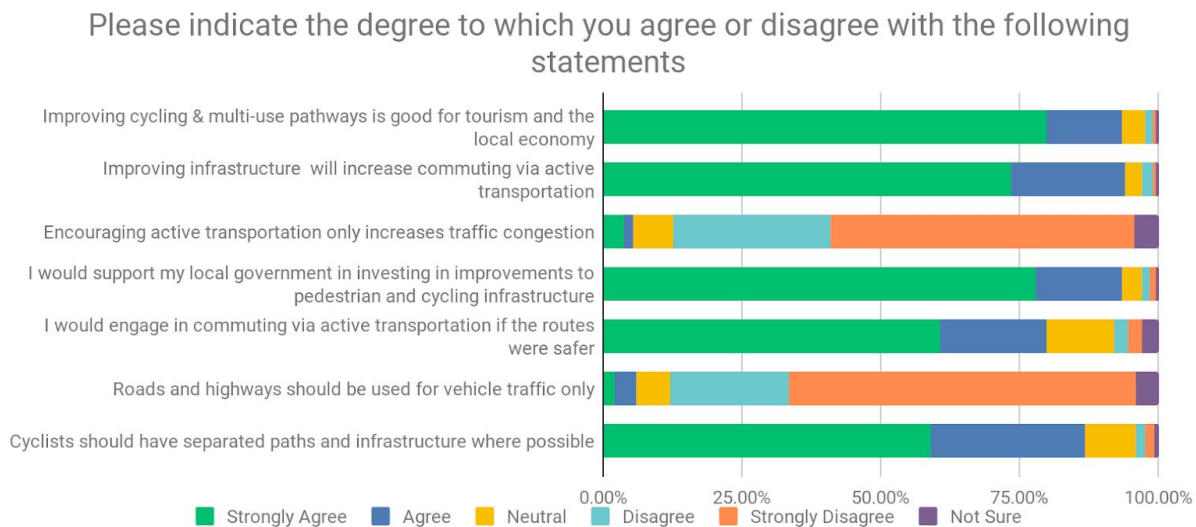
<http://www.sciencedirect.com/science/article/pii/S1361920915000140>

3 - Social and Economic Benefits of Active Transportation, Recreation and Tourism

Active transportation, trails and sustainable recreation and tourism are central for enhancing community sustainability and resilience. Cycling and walking facilities provide essential mobility needed to access employment opportunities and services. Equal opportunities of mobility also offers a just distribution of cultural and social services to all citizens. Trails and paths provide critical opportunities for alternative and active transportation, increasing greater transportation choices and adaptability. The construction of paths, sidewalks and cycling facilities also tends to creates more jobs than road projects.

By encouraging outdoor recreation and healthy active living, trails and other cycling routes are an important part of fostering health and well-being. Communities with high levels of cycling and walking tend to be safer for people walking, cycling and driving with significantly lower traffic fatality rates.

There was very strong agreement among survey respondents that improving cycling and paths would be good for tourism and the local economy and that improving infrastructure would increase commuting via active transportation.



Recreational Cycling Can Encourage Utilitarian Cycling

Recreational cycling can help enable and encourage cycling for transportation. Research from Korea and UK has found that many of those making utilitarian trips by bike had been recreational cyclists first. The studies also found that recreational cycling likely increased the chances that they would try transportational cycling.¹³

¹³ Exploring the relationship between leisure and commuter cycling - Policy Analysis Research Summary, October 2011, Transport for London, page 3, <http://content.tfl.gov.uk/leisure-cyclists-report.pdf>

There also seem to be positive link between recreational cycling and utilitarian cycling in BC although more research is needed. Communities with high cycling commuting mode shares typically have popular recreational trails including the Galloping Goose and Lochside Trails in the CRD; the Valley Trail in Whistler; and the Seaside Greenway in Vancouver. The top mountain biking destinations in B.C. have an average cycling mode share over two times that of B.C. as a whole.

Top Mountain Biking Destinations¹⁴	Cycling Commuting Mode Share (2016)
Fernie	8.80%
Nelson	5.40%
Rosland	2.40%
Kelowna	3.70%
Vernon	1.50%
Whistler	10.20%
Nanaimo	1.60%
Hornby Island (Comox Valley A)	3.50%
Revelstoke	14.50%
Comox Valley	3.60%
Pemberton	4.30%
Average	5.41%
BC	2.50%

Low Carbon Transportation, Recreation and Tourism

High quality paths can help enable area residents and tourists to access area walking and cycling trails and other attractions via bicycle without requiring them to use a motor vehicle, reducing both cost and GHG emissions. With the Carbon Tax scheduled to increase over the next five years, it is critical to provide people with low carbon transportation options.

The GHG emissions of tourism have been significantly underestimated. It is now estimated that tourism accounts for 8% of global emissions.¹⁵ As a significant portion of these emissions are due to air travel, providing high quality cycling tourism experiences in places like the Comox Valley will encourage residents to stay in B.C. for their vacation.

¹⁴ Planning a Mountain Bike Trip to British Columbia: Must-see, Must-do, Sacred Rides, <https://sacredrides.com/blog/mountain-biking-trip-british-columbia/2016/07>

¹⁵ M Lenzen et al, The carbon footprint of global tourism, Nature Climate Change, May 2018, <https://www.nature.com/articles/s41558-018-0141-x>

Road Safety

With an average of 45 fatalities per year, the per capita traffic fatality rate for Vancouver Island is 3.2 times that of Metro Vancouver¹⁶.

The BC Road Safety states¹⁷:

Motor vehicle crash injuries can have long-term impacts on income earnings. There is a significant relationship between the effects of injuries and the productivity, income potential, lost earnings, and socio-economic status of injured victims. This can place severe social and emotional burdens on individuals.

Calculations of the social cost of motor vehicle crashes include health care costs, property damage, the loss of human potential as measured by years of life lost, and the loss of potential productivity and earnings in the labour market.

British Columbia's estimated social cost of motor vehicle collisions in 2010 was between 2-3% of the provincial annual Gross Domestic Product. The heavy economic cost of collisions means that in addition to minimizing the physical and emotional suffering of road users, there is a case to be made that increasing road safety measures makes economic and financial sense.

In addition to improving the safety and comfort of people cycling and walking, by enabling more people to use active transportation instead of driving, investing in cycling and walking facilities can also decrease the number of traffic crashes, injuries and fatalities. The BC Road Safety Strategy states:¹⁸

These smart modes of transportation include walking, cycling and public transport. By reducing private car use, these other travel modes reduce the motor vehicle crash rate, encourage healthy physical activity, and reduce greenhouse gas emissions and our carbon footprint.

Specifically:¹⁹

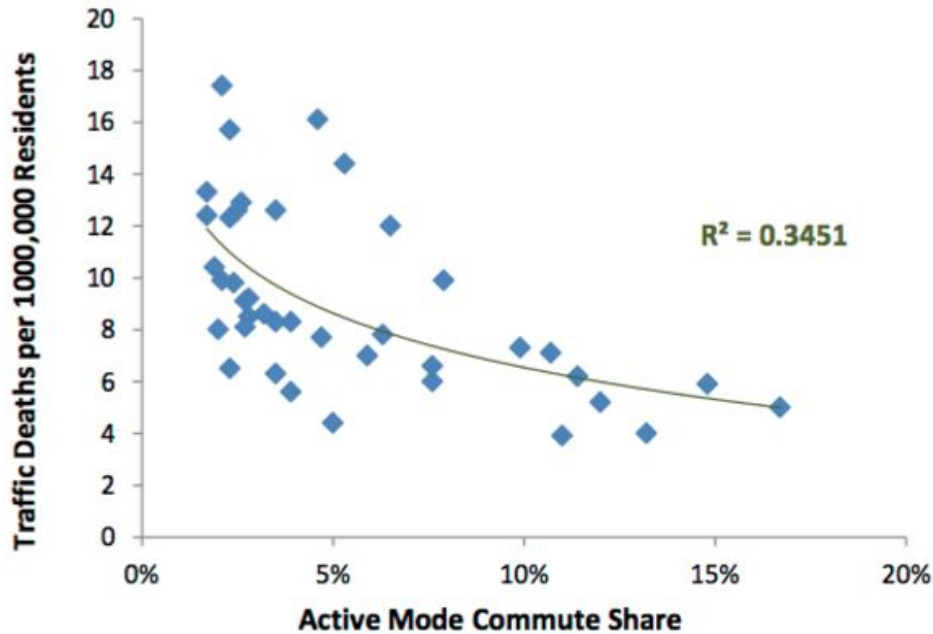
Cities with active mode shares over 10% average about half the traffic fatality rates as those with active mode shares under 5%.

¹⁶ Motor Vehicle Related Fatalities, 10-year Statistics for British Columbia, 2007-2016, RoadSafetyBC, Ministry of Public Safety and Solicitor General, Page 5, <https://www2.gov.bc.ca/assets/gov/driving-and-transportation/driving/publications/mv-fatal-victims2007-2016.pdf>

¹⁷ Moving to Vision Zero, RoadSafetyBC, Ministry of Public Safety and Solicitor General, page 38, <https://www2.gov.bc.ca/assets/gov/driving-and-transportation/driving/publications/road-safety-strategy-update-vision-zero.pdf>

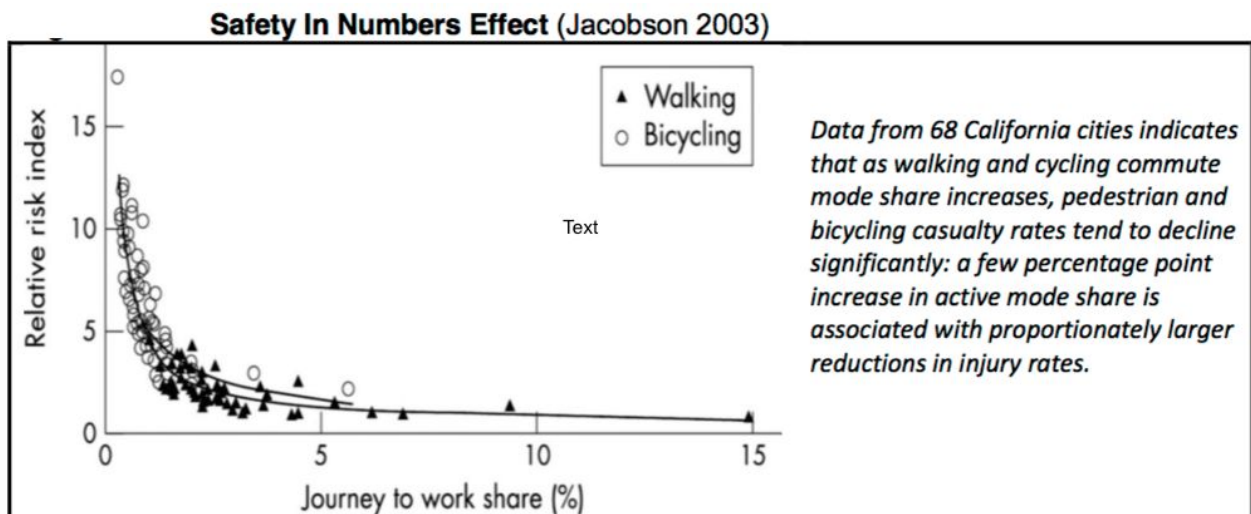
¹⁸ BC Road Safety Strategy 2015, , RoadSafetyBC, Ministry of Public Safety and Solicitor General, page 35, <https://www2.gov.bc.ca/assets/gov/driving-and-transportation/driving/publications/road-safety-strategy.pdf>

¹⁹ T Litman, A New Traffic Safety Paradigm, Victoria Transport Policy Institute, page 14, <http://www.vtpi.org/ntsp>



Relatively modest investments can increase active mode travel and safety. For example, the U.S. Federal Highway Administration’s Nonmotorized Transportation Pilot Program invested about \$100 per capita in pedestrian and cycling improvements in four typical U.S. communities, which caused walking trips to increase 23% and cycling trips to increase 48%, mostly for utilitarian purposes (FHWA 2014). Despite this increase in their exposure, pedestrian fatalities declined 20% and bicycle fatalities 29%, causing per-mile fatality rates to decline 36% for pedestrians and 52% for bicyclists.²⁰

Cycling and walking safety also tends to dramatically increase as more people use active transportation as shown in the graph below.²¹

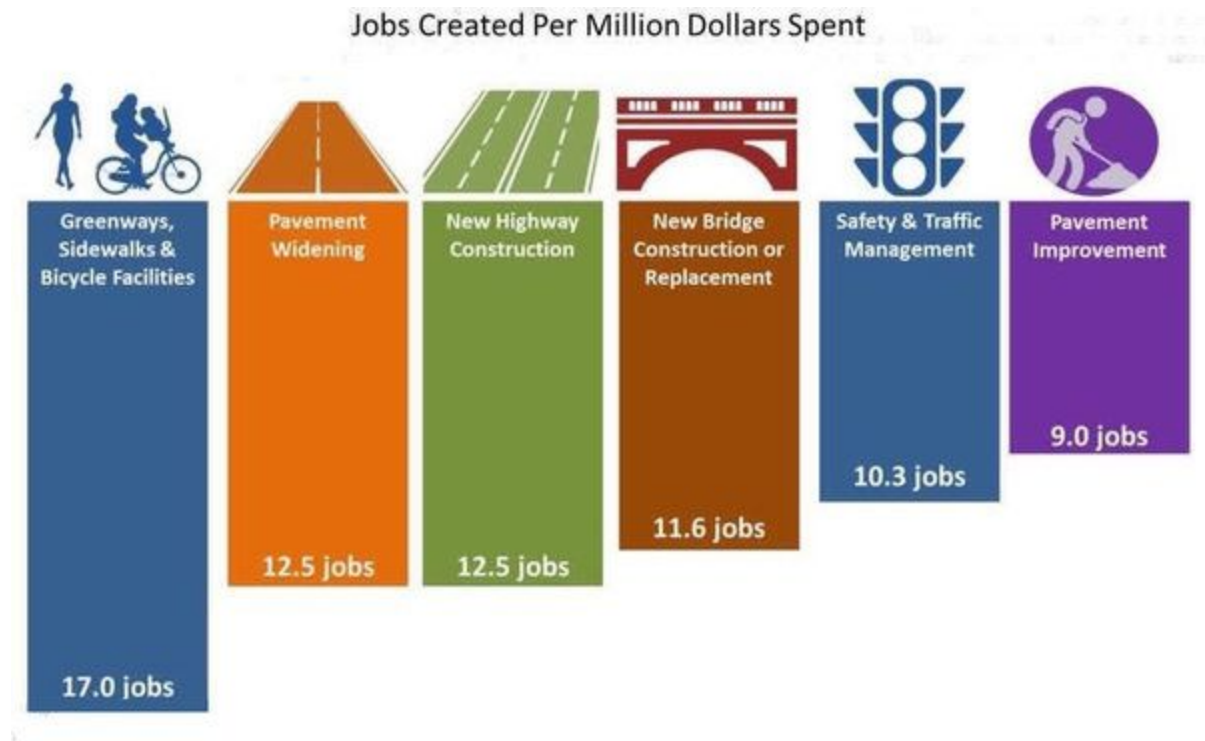


²⁰ Ibid.

²¹ Ibid.

Jobs

Greenway, bicycle and sidewalk projects create more jobs per million dollars invested than bridge and highway projects.²²



²² P Dowell, Mining Recovery Act Jobs Data for Opportunities to Improve the State of the Practice for Overall Economic Impact and Performance Analysis of Transportation Investments, American Association of State Highway and Transportation Officials (AATHO), page 42, http://onlinepubs.trb.org/onlinepubs/nchrp/docs/NCHRP08-36%28103%29_FR.pdf

4 – Cycling Tourism Market Opportunities Assessment

The recreation and tourism market in British Columbia is a robust and dynamic industry generating up to \$14.6 billion in revenues in 2014; outpacing forestry, agriculture and fishing as a leading industry for the province. Communities throughout British Columbia are investing heavily in recreation, and trails in particular, in order to diversify their economic foundations.

The Comox Valley has unique and captivating natural landscapes in close proximity to mountains and water, numerous cycling routes and trails, a mild climate and diverse terrains conducive to a variety of cycling activities. This competitive edge over other destinations has the potential to offer tourists an array of cycling experiences including cycling on tracks and trails, road cycling and events in both urban and rural settings.

The BC Cycling Coalition surveyed its supporters from across B.C. in late 2016 regarding cycling tourism. Almost 220 people replied from around B.C.. Northern Vancouver Island was the 5th most popular destination with 57% of respondents indicating they were interested in travelling to or exploring there by bike. Southern Vancouver Island was the top location with 68%.

The Yukon, B.C. and the nearby states of Oregon, Montana, Idaho, Colorado, California, Alaska, and Washington lead North America in cycling to work.²³ West coast cities including Victoria, Whistler, Portland, Vancouver, San Francisco, Seattle, and Oakland are among the top ten in North America in cycling to work.²⁴

Already, Cumberland is a popular mountain biking destination typically ranked among the top in B.C. and Canada. Key to further advancing the Comox Valley as a cycling touring destination is the development of the E & N Rail Trail as a high quality destination trail.

Economic Impacts

The tourism sector is growing both domestically and internationally. Research in other jurisdictions finds the range and extent of benefits derived from the investments in cyclo-tourism are many. Prominent among these are:

- increased **revenue for local businesses** including hotels, restaurants, entertainment venues attractions and retailers (particularly in rural communities);
- higher **retention of economic benefits** in local communities compared to other tourism activities;
- **higher average spending** and **length** of stays compared to non-cycling tourists;
- the creation and preservation of **local jobs**; and

²³ Where We Ride: Analysis of Bicycle Commuting in American Cities, page 6, http://bikeleague.org/sites/default/files/LAB_Where_We_Ride_2016.pdfhttp://bikeleague.org/sites/default/files/LAB_Where_We_Ride_2016.pdf

²⁴ Ibid.

- revenues that contribute significantly to **federal and provincial taxes**.

In many jurisdictions, the value of cyclo-tourism is in the hundreds of millions of dollars per year. Overnight bicycle trips contribute over \$300 million annually to the Oregon economy. In New Zealand, cyclo-tourism creates around \$200 million per year in economic activity. In Scotland, the yearly total is estimated to range from £117.2 million to £239 million. Cycling tourism and recreation in Wisconsin is worth over \$900 million annually. Overall spending of cycling tourists in Ontario was \$278 million in 2008.

In addition to the direct economic impact, collateral benefits accrue due to the nature of the sector. For example, destination awareness, community infrastructure, encouragement of healthy and active lifestyles, and support of low carbon policies are all advanced through cyclo-tourism.

Economic Impact of Destination Trails

High quality rail and other similar trails, especially those with paved surfaces are attractive to a broad range of cycling tourists both as the primary activity or as access to trails, roads and other experiences. They can be used by any type of bicycle.

Economic Impact of Trails²⁵

Trail	Location	Length (km)	Year	Direct Expenditures (million)	Direct Expenditures per km	Annual Visitors
Heritage Rail Trail	Pennsylvania	34.6	2012	\$4.48	\$129,480	394,823
NCR Trail	Maryland	32.2	2005	\$5.26	\$163,354	800,000
Washington & Old Dominion Trail	Virginia	72.4	2004	\$7.00	\$96,685	1,707,353
Oil Heritage Regional Trail System	Pennsylvania	100	2006	\$4.30	\$43,000	160,792
Trans Canada Trail - Ontario	Ontario	4061	2004	\$1,970.00	\$485,102	8,440,000
Okanagan Trail Trail (Estimated)	Okanagan	49.5	2029	\$7.49	\$151,307	42,484
Okanagan Trail Trail - Paved & Supportive businesses (Estimated)	Okanagan	49.5	2029	\$9.74	\$196,699	55,229

Canadian Cycle Tourists Visiting BC

Socio economic characteristics

Cycling appeals to all ages, however, it is more concentrated at the older end of the age spectrum. More than half of cyclo-tourists are 45 years and older.

- Cyclists tend to be professionals and university graduates The majority of Canadian

²⁵ Okanagan Rail Trail Impact Assessment, page 5, <https://okanaganrailtrail.ca/uploads/files/ORT-Impact-Assessment.pdf>

cyclists visiting B.C. have above average income level (they fall within over \$60,000 bracket with 25.7% above \$100,000)

- Men are more likely to cycle than women

Other Activities

Canadian cyclists are multi-dimensional travelers but tend to be outdoor tourists. They are more likely to participate in activities such as hiking, camping, self-guided touring, and nordic and alpine skiing. These tourists also tend to look for Aboriginal cultural experiences (history or heritage).

While on the trip Canadian cyclists who visited B.C. were motivated by engaging in outdoor activities such as:

- Taking a trip to National or Provincial Parks, alpine skiing, or hiking.
- Sunbathing or sitting on a beach, swimming in a lake and/or ocean, and/or fishing.
- Culture, culinary and retail infrastructure are considered things to do in the destination rather than motivation behind travel.
- Other experiences include dining out at restaurants which offer local ingredients and cuisine, dining in high-end restaurants (not with an international reputation) and visiting local outdoor cafes

American Cyclists Visiting B.C.

On the international level, British Columbia attracts American cyclists. Over a 2 year period (2004/05) approximately 221,000 U.S. cyclists cycled in B.C.. Overall, B.C. attracts 9.9% of the US cycling market.

The majority of U.S. cyclists, who have been to B.C., tend to be on the higher end of the age spectrum (45+), highly educated (completed post-secondary education), and affluent (one-third of each group fall within the \$100,000+ bracket).

Cycle Touring Products & Experiences

Roads and Paved Trails: Touring via roads and paved trails range from day trips to multi-day tours. Typically, these tourists use road or hybrid bicycles to maximize the distance they can cycle per day. Like local residents, cycling tourists tend to prefer paved trails, low traffic scenic country, streets with protected bike lanes and at a minimum, roads with well maintained painted bike lanes or wide shoulders. Regardless of other cycling routes, good road and path connections to shops, restaurants, accommodations, parks, beaches, tourist attractions and other amenities are key to both the user experience and maximizing the economic potential of cycling tourism.

Rails to Trails Networks: These networks are growing rapidly in B.C.. They typically occur when abandoned railways, and other low grade trails and roads, link communities together. This makes them ideal for multi-day touring.

Single track trails: Trails with a broad range of types that appeal to riders of all ages and capabilities

Signature trails: These are trails of iconic significance that define a community or region's mountain bike culture. Signature trails offer unique backcountry experiences, with stunning scenery and a strong sense of physical accomplishment that generally appeal to more advanced riders. These trails are typically 20 to 50 km in length and provide significant opportunities for experiencing high alpine environments with high quality views.

Community Bike Parks: Community bike parks are very popular among youth and act as safe venues for skills development and camps.

Bike/Skills Camps and Tour Operators: There are a growing number of bike camps and tour operators in B.C. offering a variety of tourism packages. Bike camps are used to provide training and instruction on mountain biking and to build skills. Women's only camps are in particular demand, for example in 2014, TREK dirt series is offering 19 women only camps across 2 provinces and 5 U.S. states. Tour operators take tourists out on mountain bike tours from half-days to multi-day tours in urban to rural and remote areas that may include guides, food and accommodation. Examples include 14 day rides in the Italian Alps and fly in day trips in B.C..

Rides, Festivals and Events: Rides, festivals, and events are popular because they combine the social and competitive aspects of mountain biking and cater to families and riders of all abilities. These events bring in large numbers of riders and spectators from around the world providing tourism dollars as well as servicing additional tourism opportunities. Potential economic benefits gained from these events are largely dependent on their size and scope. For example, in 2011, the GranFondo Whistler generated \$8.2 million in economic activity in B.C.

Research has shown that the growth of regional events in the Cariboo have increased interest in mountain biking and more people are entering the sport as a result (Cariboo Mountain Bike Consortium, 2012). Mountain bike events, races and festivals can be an important means for generating awareness about trail networks and destinations as well as attracting new visitors. They can also be significant generators for economic activity within the communities.

According to the mountain bike travellers survey conducted by the MBTA in 2014, 20% of mountain biking travellers indicate a festival/event would absolutely induce them to visit a destination, while a further 50% indicate it might. Further analysis showed that U.S. residents are the most likely to fall into the 'absolutely' category, while Canadians, particularly Albertans, are less enthusiastic about festivals and events. Since festivals and events tend to attract a local and regional crowd, destinations must be realistic about their ability to attract tourists.

Gravel wilderness roads and trails: There are many gravel roads and trails that are suitable for exploring the wilderness on Vancouver Island. Cycle Touring Vancouver Island has a website, <https://www.backroadsbiketouring.com>, with resources, maps and other information.

Mountain Biking

The recreation and tourism market in British Columbia is a robust and dynamic industry with revenues and employment rates that have remained relatively stable over the past several years and is projected to continue.

The trails and mountain bike recreation sector has grown significantly over the same time frame and is becoming an increasingly important element of the B.C. tourism market. Trails are an important travel motivator that will attract visitors to a destination, entice them to stay longer and patronize local businesses.

The following section provides an overview of the mountain bike tourism market, the economic trends and historical performance as well as the mountain bike tourist and visitor profiles and the implications for the mid-Vancouver Island Area.

Adventure Tourism Continues to Grow

It is widely acknowledged that activity and adventure tourism, including mountain biking, is one of the fastest growing segments of niche/special interest tourism. In Canada, for example, 'eco-adventure' trips are generally categorized as the most popular type of travel behaviour after visiting friends and relatives, noting growth of 15% per year (Canadian Tourism Commission 2008). One aspect in the evolution of mountain biking is the shift from being a localized recreational activity to a tourism product (Koepeke, 2005; Tourism BC, 2011).

Mountain Bike Recreation & Tourism Continues to Grow

Mountain bike recreation and tourism is a significant and growing market around the world. Participation rates in the sport are increasing with the United States, Canada and Australia/New Zealand showing the highest participation rates globally.

According to a study completed on Mountain Biking Tourism in the Yukon, participation levels grew worldwide by over 400% between 1987 and 2000. With respect to Canada, it is estimated that the mountain biking market size is about 3-4% of the population (Koepeke, 2005).

Recent studies from across B.C. highlight participation rates of riders. From October 2008 – September 2009, 21% of British Columbians participated in trail mountain biking (Tourism BC). In the US, for example, cycling – which includes road biking, mountain biking and bmx – is the 3rd most popular outdoor activity with 15% of the population or 42.3 million people participating (Outdoor Foundation, 2013). These studies confirm that mountain biking is indeed becoming a popular sport globally, nationally and locally.

High Awareness of BC's Reputation for Mountain Biking

B.C. has an excellent reputation within the mountain biking community as a top destination and across the province, mountain biking is now being recognized for its tourism potential. Of all

trail-based activities mountain biking tourism is the activity that has the most significant contribution to economic growth and diversification (Harkies, 2011).

Mountain Bike Recreation & Tourism as an Economic Generator

The economic impacts and benefits of mountain bike tourism have been well established through a substantial number of studies from around North America and the United Kingdom.

The following section provides a summary of the key highlights of the research that was reviewed as part of this project. These studies indicated that mountain bike tourism is a strong economic performer that can generate significant economic activity, tax revenues and employment opportunities for communities. The economic activity generated comes from attracting visitors to experience the trail networks as well as to participate in mountain bike events and festivals.

Mountain Bike Tourism Generates Significant Economic Activity

The 2006 MBTA Economic Impact Study estimated that the trail systems of the North Shore, Squamish and Whistler generated \$10.3 million in spending from riders that live outside the area resulting in \$9.3 million in new economic activity. It was also calculated that this economic activity directly supports nearly 200 jobs in the region. Mountain bike tourism is estimated to generate \$4.6 million in tax revenues for all levels of government throughout the corridor

In the region mountain bike events are a large economic driver. In 2006, the non-resident expenditures at the Whistler Crankworx Mountain Bike Festival was in excess of \$11.5 million. The total expenditure of non-residents at the Test of Metal Event held in Squamish was estimated at nearly \$600,000 (MBTA, 2006).

In 2016, the MBTA undertook an Economic Impact Study of the Sea to Sky Region to assess and evaluate any changes or growth in the ten years since the 2006 study. The study found that the mountain bike tourism industry had grown significantly along with the economic value. They ascertained that the total value of mountain bike tourism in the corridor had grown to an approximate total of \$70 million annually, of which the trails accounted for \$43 million in economic activity supporting 545 jobs and \$17 million in tax revenues across all levels of government. (MBTA, 2016)

Mountain Bike Travellers Spend

Riding party expenditures in the Sea to Sky area varied from \$48.32 per person per day for an overnight trip to the North Shore to \$113.13 for visitors to the Whistler Bike Park. Visitors to

Squamish spent \$53.94 per person per day while visitors to the Whistler Valley had expenditures of \$93.48 per person per day (MBTA, 2006).

A 2006 Travel Activities and Motivations Study (TAMS) indicated that up to 135,000 U.S. visitors came to BC for the purpose of mountain bike recreation

International Market

There are a substantial number of international visitors who visit BC each year for mountain bike recreation

- Germany has the greatest interest in Northern BC among international visitors albeit only 2% share of visits to the region (source: Destination BC)
- German visitors are drawn to BC primarily for its beautiful natural scenery (source: Global Tourism Watch 2012 Germany Summary Report – CTC).
- Germany is also a thriving mountain bike nation with some of Europe's top mountain bike manufacturers and athletes and leads all European countries in terms of bicycle sales (European Bicycle Market & Industry Profile - 2013 Edition).
- Opportunities with European adventure travel or cycling media may be one way to develop the allure of adventure and new riding opportunities that may be highly attractive to this market.

Who are Riders? Participant Profiles

Gender & Age

The prevalent demographic group among riders is undoubtedly men. The travel and Motivation Study (TAMS) from BC, undertaken in 2007 showed that 76% of riders were men. However, there has been a significant increase in women entering the sport. Between 2002 and 2003 in the US, women's participation increased 34% as compared to 5.6% growth overall (Mountain Bikers of Santa Cruz, 2007). Other indicators of women's increased participation are the number of bike manufacturers offering women specific bikes and the emergence of bike clinics, camps and tours catering to women (Harkies, 2011).

With respect to age, mountain bikers tend to be older than one may think. For example, the TAMS BC study from 2007 found that 1 in 5 of riders are young adults between the ages of 18 to 24, while 50% are between the ages of 25 and 44.

Income & Education

It has been well established through numerous studies that mountain bikers tend to be affluent and well educated. A 2009 Destination BC study completed on mountain biking and cycling found that roughly 34% of BC residents who participated in mountain biking had a household income of \$100,000 or more. Mountain bike travelers to BC are also very affluent with

one-third of Americans and almost half of Canadians having a household income in excess of \$100,000 (TAMS, 2006).

A survey completed on mountain bike events in Oregon found similar results: 43% of the respondents reported an annual household income between \$100,000 and \$199,000 and 29% an annual household income greater than \$200,000. (McNamee, Main and Hashimoto, 2013).

Additionally, riders tend to be highly educated with as many as two-thirds having at least a college education (Koepke, 2005; Reiter and Blahna, 2002).

Ultimately, these findings suggest that two prevalent groups can be distinguished: fairly affluent young to middle age professionals and university/college students.

What is the Mountain Biking Product?

There are a number of mountain biking disciplines and mountain biking products offered on the market. It is critical for destinations to understand the disciplines and products that are available to riders to help identify their potential strengths and weaknesses. A common mistake made by destinations when developing mountain biking tourism, is they focus on trying to attract all types of riders. It would be beneficial for destinations to focus their resources on a few mountain biking products of the highest quality (Alliance Action Sports Experts, 2013).

The following highlights mountain biking disciplines and products that are on the market:

Mountain Biking Disciplines

Cross-country: In this discipline riders bike along long stretches of unpaved paths. Cross-country has the highest rates of participation, both recreationally and competitively with an emphasis on endurance and skill (Corporate Research Associates, 2010; Gajda, 2008). In this style of riding, bikes are lightweight designed for different types of terrain and the rides, lasting a few hours or longer, include climbs, downhill parts, technically challenging sections and a range of landscape (Gajda, 2008).

A variety of studies support that this is one of the most popular styles of riding. The City of Kelowna and BC Parks determined that older riders prefer this type as it is less rigorous (2007) while a 2014 study completed by the Whatcom Mountain Bike Coalition found that 54% of non-local riders on Galbraith Mountain preferred this style of riding. The 2006 MBTA study of riders in Squamish found that 94% of riders preferred cross-country riding in Squamish.

These studies indicate that developing opportunities and riding experiences for the mountain bike traveller market, a strong focus should be placed on developing beginner to intermediate trails that allow for a broad diversity and progression of technical difficulty and challenge.

Downhill: Downhill mountain biking is similar to alpine skiing. Riders start at the peak of a hill or mountain, transported by ski lifts, motor vehicles or helicopter, and descend steep and rough terrain at high speed using bikes with long haul suspensions. (Gajda, 2008). It is widely regarded

as the most dangerous form of mountain biking, and is also the most high-profile category of competition biking (Corporate Research Associates, 2010). Most downhill courses take anywhere from 2 – 5 min to complete. Many ski hills allow this discipline of riding and often allow the use of ski-lifts to get to the top of the run (Corporate Research Associates, 2010). A study completed by the City of Kelowna and BC Parks determined that younger riders prefer this style of riding (2007). It is evident that this style of riding is increasing in popularity. For example, in 1991, 12% of BC ski areas had summer lifts, while in 2000, this had increased to 65% (Corporate Research Associates, 2010).

Freeriding: a relatively new form of mountain biking that originated in the North Shore Mountains of Vancouver. It incorporates elements of traditional trail riding, big jumps, and technical maneuvers. Riders are forced to negotiate steep descents, while facing obstacles such as jumps, steps, and drop-offs. The terrain in freeriding is quite unique. Bikers are often not satisfied with natural trails, so they build man-made obstacles, including bridges, teeter-totters, and drop-offs. Freeride parks are a good fit for urban and suburban settings, since freeriding depends less on natural trails compared with other mountain biking disciplines (Corporate Research Associates, 2010).

'All mountain' riding: A recent genre that refers to the merging of freeride and cross-country. For this discipline, long travel bikes that are lighter with full suspension that will pedal well uphill and handle the rough technical descents are used (Harkies, 2011).

Dirt Jumping: Dirt jumping is the practice of riding bikes over shaped mounds of dirt or soil, in an attempt to become airborne for a long period of time. Dirt jumping riders are primarily focused on performing airborne stunts and tricks. The bikes used have small frames, front suspension, fast-rolling and slick tires, low seat posts, oversized handlebars, and are commonly single-speed (Corporate Research Associates, 2010; Gajda, 2008).

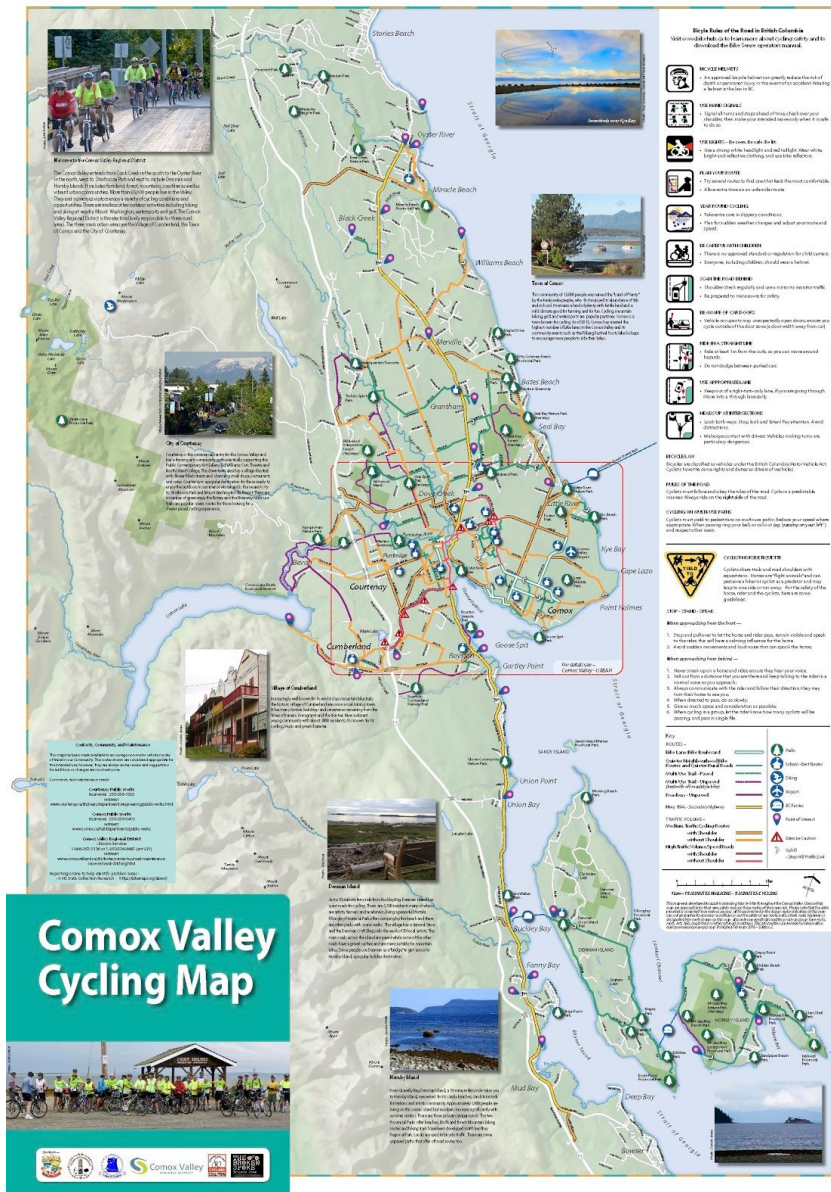
Bike Skills Parks: A bike skills park is an area that provides riders in a community the opportunity to hone their bike riding skills in a managed, progressive, and safe environment before tackling the real trails. Parks can include dirt jumps, wooden bridges, wall rides, pump tracks, and teeter-totters and are frequently targeted at new and younger riders. Parks are often built based on co-operation between public and private interests and they can be managed by a local mountain biking association in partnership with a city, or by a Parks and Recreation department (Corporate Research Associates, 2010). Bike parks can be a huge tourist draw as evidenced by the Whistler Bike Park being the most heavily visited bike park in North America wherein visitors to the park during the summer of 2006 spent an estimated \$16.2 million dollars in Whistler alone.

As the figure below illustrates, mountain bikers tend to participate in a variety of riding types, with All Mountain (82%) predominating, followed closely by downhill (77% of respondents). As further evidence of participation in multiple disciplines, the bulk of respondents (61%) own 2-3 bikes. This finding suggests destinations offering different types of riding opportunities will hold greater appeal to mountain bike travellers.

5 – Cycling Infrastructure, Plans & Connections

Existing Infrastructure & Facilities

As shown in the following map, the cycling network within the City of Comox is generally good. Cumberland has a network of popular mountain biking trails close by. The main challenges in the Comox Valley are the connections between communities with cyclists often forced to share busy roads with little or no shoulders as well as the bridges over the Courtenay River.



E&N Trail

A section of trail along the E&N has been completed in Courtenay from 5th to 26th Street²⁶. This was completed by the City of Courtenay, in partnership with the Island Corridor Foundation and the Courtenay Rotary Club, with additional funding from the Government of Canada through the Gas Tax Fund.²⁷ Given the survey results showing a strong preference for paved surfaces over gravel, we encourage the paving of this trail to encourage more ridership.



Cumberland's Mountain Biking Trail Network

The hub of Cumberland's mountain biking community is the United Riders of Cumberland (UROC). Most of Cumberland's vast trail network is located on private land in a working forest, and UROC has played a key role in ensuring non-motorized public access. A land-use agreement signed in December 2015 formalized trail access and allowed for the expansion and improved maintenance of the trail network.²⁸



Photo: Village of Cumberland

²⁶ <http://www.islandrail.ca/trails-within-the-comox-valley-regional-district/>

²⁷ <http://www.courtenay.ca/EN/main/community/parks/parks-and-greenways/rotary-trail.html>

²⁸ Where the Mountain Biking is Legendary: Cumberland, BC, The Village of Cumberland, <https://cumberland.ca/mountain-biking/>

The mountain biking trails are easily accessible from Cumberland's walkable downtown enabling visitors and residents to bike instead of drive to the trails. This both decreases GHG emissions and likely encourages visitors to support local businesses.

Each year, Cumberland hosts a variety of mountain bike races and events, including the BC Bike Race, Mind Over Mountain Adventure Race (MOMAR) and annual UROC-hosted enduro, cross-country, downhill and marathon races.

Government plans

Comox Valley Regional Growth Strategy

https://www.comoxvalleyrd.ca/sites/default/files/uploads/bylaws/bylaw-120_comox_valley_regional_district_regional_growth_strategy.pdf

Goal 4: Transportation:

Develop an accessible, efficient and affordable multi-modal transportation network that connects Core Settlement Areas and designated Town Centres, and links the Comox Valley to neighbouring communities and regions.

The strategy states:

6. A concerted effort is required to increase transportation choices. There are few transportation choices in the Comox Valley. The overwhelming majority of trips are made by private automobile. While this is typical of a rural area, the public transit modal share of less than 1 percent is half that of similar regions in British Columbia. This presents a major obstacle to achieving serious reductions in greenhouse gas emissions as transportation accounts for 55 percent of all emission in the valley. Working with BC Transit, significant investments will need to be made in public transit and coordination of land-use patterns that supports transit use. Similarly, strategies that facilitate walking and cycling as options (especially for non-work trips which are an increasing majority of trips) are required.

10. Improve and plan for long-term public health and safety. Land use patterns and activities have a variety of impacts on public health and safety – ranging from decreased levels of physical activity and higher incidences of obesity, limited means of accessing health care and emergency services, fire and police services, and ensuring safe drinking water. This broad range of public health and safety issues should be addressed through consideration of how services are accessed and provided and active transportation strategies (such as walking and cycling with associated infrastructure and connections) that will facilitate more active lifestyles and improve the long-term health of people in the Comox Valley.

The regional targets for cycling and walking are on Page 49:

Measures	Baseline (2006)	Short-term (2015)	Medium- term (2020)	Long-term (2030)
% Bicycle & pedestrian commuters	Walk/Cycle=9%	Walk/Cycle=10%	Walk/Cycle=11%	Walk/Cycle=20%

Comox Valley Cycling Plan - 2007

<http://www.courtenay.ca/assets/Community/Transportation/final%20cycling%20plan%20dec%2007.pdf>

The Comox Valley cycling plan identified the major regional barriers highlighted in this report.

Comox Transportation Study 2011

<http://comox.ca/modx/assets/pdfs/public%20works/Transportation%20section/Comox%20Transportation%20Study%202011.pdf>

Vancouver Island Rail Corridor - Rail-with-Trail Design Guidelines

The guidelines are generally acceptable but do need to be updated to reflect recent advancements in best practices including the possibility of building the E&N to a cycle highway standard to facilitate efficient safe longer distance cycling via pedal powered or electric bicycles.

Bollards should be used only where absolutely essential to keep motor vehicles off the trail. One option would be to initially not include them but ensure they can be added later should they be needed.

While the illustration of bollard installation appears correct, the bollard photo shown in figure 22 on page 33 has been incorrectly installed. The sleeve should be level with the trail surface so when the bollard is removed, it is not a hazard to people cycling or walking.

Baffle gates are highly problematic for both bicycles and wheelchair users and should not be used.

Especially with the increasing use of electric bicycles, near areas with high levels of pedestrian use including town centres, schools, parks and other destinations, separate cycling and walking paths should be considered. At a minimum, the trail should be designed so another path can easily be added without having to move posts, poles or cut down trees. As walkers and runners prefer natural surfaces, a path with a natural surface adjacent to the pave path should be including in urban and suburban areas. As the E & N trail will be used by both long distance commuters and cycling tourists, even rural areas should be paved to maximize usage and to provide a safe alternative to busy roads for those riding touring bikes. This will also make it more accessible to those with wheelchairs and those who cannot afford more expensive mountain bikes.

E & N Railway Corridor: Development Strategies | Government of BC

https://www2.gov.bc.ca/assets/gov/driving-and-transportation/reports-and-reference/reports-and-studies/vancouver-island-south-coast/en-railway/en_evaluation_development_strategies_island_corridor_foundation

This study contains a section on a Rails with Trails Tourism Potential and Development Strategy which contained recommendations including:

- That the ICF work with regional districts, first nations and community partners to develop of E & N Trail System Master Plan
- Identify project proponents and funding sources for trail segments identified as gaps
- Ensure that the trails route links with major tourist attractions along corridor

Rail Trail Feasibility Study - Comox Valley Regional District and City of Courtenay

The Rail-Trail Feasibility Study conducted -Comox Valley Regional District / City of Courtenay assessed 20.4 km of the E & N right of way also found that there were several sections of approximately 1.5 km or less where it would very difficult/not be possible to build the trail and alternate routes would need to be specified. In total approximately 86% of the corridor was rated Easy to Moderate, 6% rated Difficult or Very Difficult with 8% rated Not Practical.²⁹ Bypass routes around these sections are typically to nearby Highway 19A using various existing roads.

Transit Future Plan Comox Valley

<https://bctransit.com/servlet/documents/1403643019673>

The Transit Future Plan sets a transit mode share target of three per cent (3%) for all trips by 2038, which will require the Comox Valley transit ridership to grow from 626,043 to 2.7 million trips per year.

Under Goal 3: Integrate with Other Modes of Transportation, it includes:

Active Modes of Transportation	<ul style="list-style-type: none"> ● Facilitate significant growth of Active Transportation by integrating the transit network with facilities, services and operations providing capacity for combined mobility of transit with cycling, walking (over 400 meters) and driving, or any combination of these ● Integrate the transit network with regional and local cycling and pedestrian networks ● Provide sufficient secure bicycle storage at appropriate stops and exchanges ● Explore the ability to increase bicycle capacity on transit vehicles
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²⁹ Vancouver Island Rail Corridor - Rail-with-Trail Design Guidelines, page 22.

Multi-Modal Corridors	<ul style="list-style-type: none"> ● Maximize the use of existing key transportation corridors (e.g. Fitzgerald Ave, Ryan Rd & Lerwick Rd) as multi-modal facilities including integrating safe pedestrian sidewalks and separated bike lanes as well as bus priority measures and exchange facilities along those corridors ● Encourage and create high quality and safe pedestrian and cycling links to transit exchanges
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Connecting Courtenay - Master Transportation Plan

<http://www.courtenay.ca/connectingcourtenay>

The City of Courtenay is developing the “Connecting Courtenay” Transportation Master Plan which will include long-term plans for all modes of transportation including cycling and walking over the next 20 years, as well as investments within the next five to 10 years. It is anticipated that the plan will be completed by fall 2018.

So far, the results of the plan’s public input closely mirrors this project’s survey³⁰.

Cycling

- The number one factor preventing residents from cycling more is feeling unsafe in traffic.
- More trails and pathways and bike lanes physically separated from traffic were the highest rated ways of making it easier to bike in Courtenay.
- A technical review of the cycling network identified limited network of designated routes and no comfortable river crossing for cyclists.
- Many popular off-street pathways currently act as “spine” bike network
- Courtenay currently lacks any designated on-street facilities that would be considered comfortable for people of “all ages and abilities”. The 5th Street Complete Street Pilot will be the first “all ages and abilities” facility.
- Many neighbourhood routes that are comfortable for cycling are unsigned.
- A number of strategies to support increased cycling could be considered, including facility design guidelines, a connected network of bike routes, increased bike parking and improved education and information related to cycling.
- Draft recommended directions within 20 years:
 - Creating a “spine” cycling network that connects key destinations and focuses on safety and comfort.
 - Supplement the spine routes with a network of neighbourhood bikeways on local streets and existing and planned trails to broader areas of the city. Timed with the parallel development of the Parks and Recreation Master Plan, synergies between commuter and recreational routes will be considered

³⁰

<http://www.courtenay.ca/EN/meta/news/news-archives/2018-archives/strong-themes-emerge-for-improving-courtenay-s-transportation-network.html>

- Ensure all new roadways provide for all modes, including cycling and walking.

Walking

- When asked what could be done to make walking easier in Courtenay, building more trails and pathways was most preferred improvement that could be made.
- Issues identified in the walking network were lack of connectivity in particular in commercial areas, on key corridors (Ryan Road, Lerwick Road) and around schools.
- Low lighting, uncontrolled crossings and lack of separation from vehicle traffic are felt to impact safety and comfort walking.
- Sidewalk maintenance, push button locations and “let-downs” to the street were seen as current barriers to accessibility.
- Draft recommended directions within 20 years:
 - An expanded network of sidewalks, improved sidewalk treatments, improved lighting and directional signage, are recommended to address connectivity and safety.

Getting there - Connections to surrounding areas

Cycling

Communities in the Comox Valley are between 100 km and 115 km from the Departure Bay Ferry Terminal. That is between 5 and 6 hours of cycling for most people. However, to make it within this time, currently a significant portion of the distance would have to be ridden along the Island Highway, which due to the high speed of traffic, is route that typically most people don't enjoy cycling on. Taking quieter roads and trails where available, can significantly increase cycling time. Completing a paved trail along the E & N Rail line would make this section a much safer and enjoyable ride for all cyclists and would certainly increase cycling and tourism in this area.

Taking the time required to cycle to either ferry terminal in Metro Vancouver, the ferry travel time and breaks, a whole day is basically required to get to the Comox Valley by bike from Metro Vancouver.

Comox is 224 km from Victoria, a 1 and half to 2 day ride using the Island Highway for all but the strongest cyclists. The Brentwood Bay - Mill Bay Ferry and a recently trail connection both provide a much more pleasant cycling experience but would further increase cycling time.

Multimodal

Metro Vancouver

Access to the Horseshoe Bay and Tsawwassen ferry terminals are not particularly convenient from most of Metro Vancouver including YVR requiring from one to two hours of cycling or placing bicycles on busses. During busy periods, the two bike racks on busses are often full requiring one to wait or ride instead.

Island Ferry Services is planning on operating walk on service connecting Vancouver and Nanaimo starting sometime in 2018. This could decrease bicycle access time the ferry by 1 to 2 hours on the Vancouver side making weekend cycling trips from Vancouver to the Comox Valley

more practical

Victoria, Nanaimo

IslandLinkBus offers 5 daily trips between Victoria, Nanaimo and the Comox Valley. There is a limit of 2 bicycles per trip and they must be boxed.³¹

Rail service on the E & N at least to Nanaimo would enable carfree weekend trips via train and bicycle to the Comox Valley.

BC Transit

All BC Transit buses have two bicycle racks that can accommodate most bicycles. The main challenge is that the low frequency of service especially on weekends and that the racks may be occupied by other bicycles.

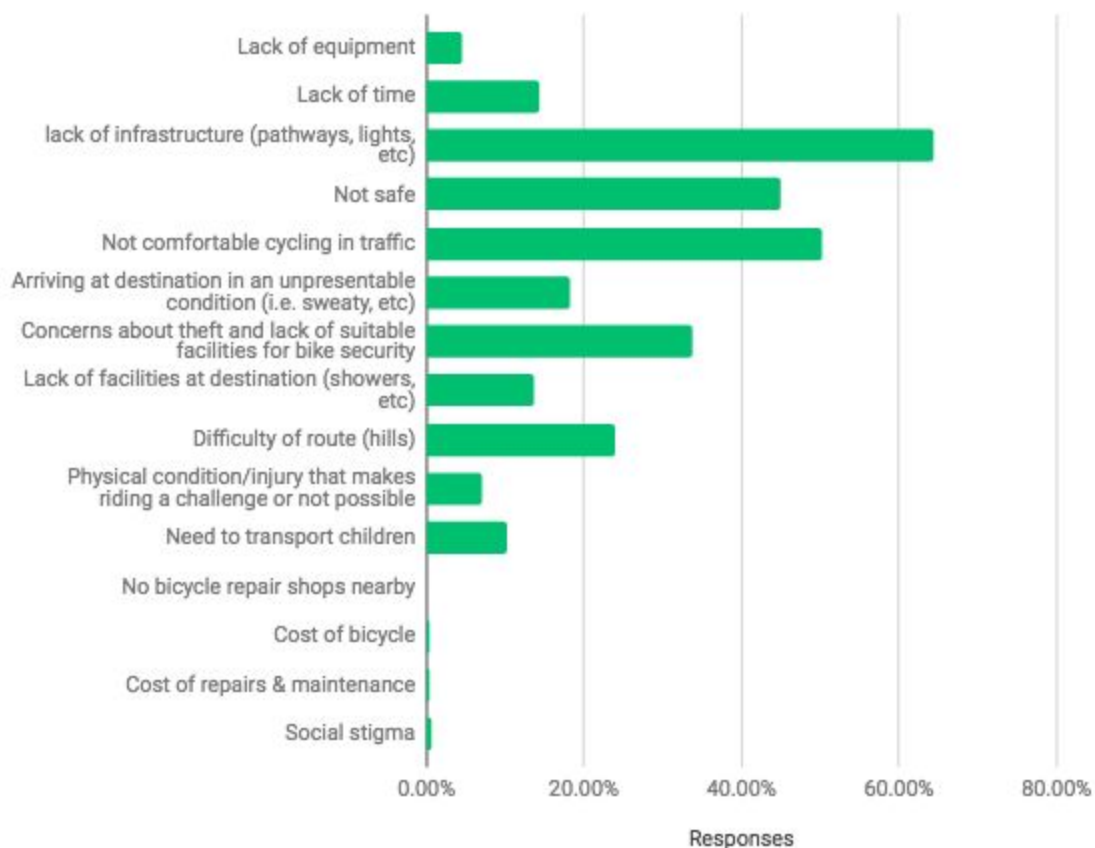
³¹ https://www.islandlinkbus.com/policies_procedures.asp

6 - Challenges to Active Transportation, Cycling Tourism And Recreation

Barriers to Cycling

The survey and our meetings with other organization identified multiple barriers to cycling including safety, a lack of infrastructure and people not being comfortable riding in traffic. Bicycle theft is also an issue with 34% identifying it as a challenge.

What are the barriers or challenges for you to engage in cycling?
Check all that apply.



309 respondents left details relating to the question, “What are some of the factors that contribute to a negative cycling experience?”

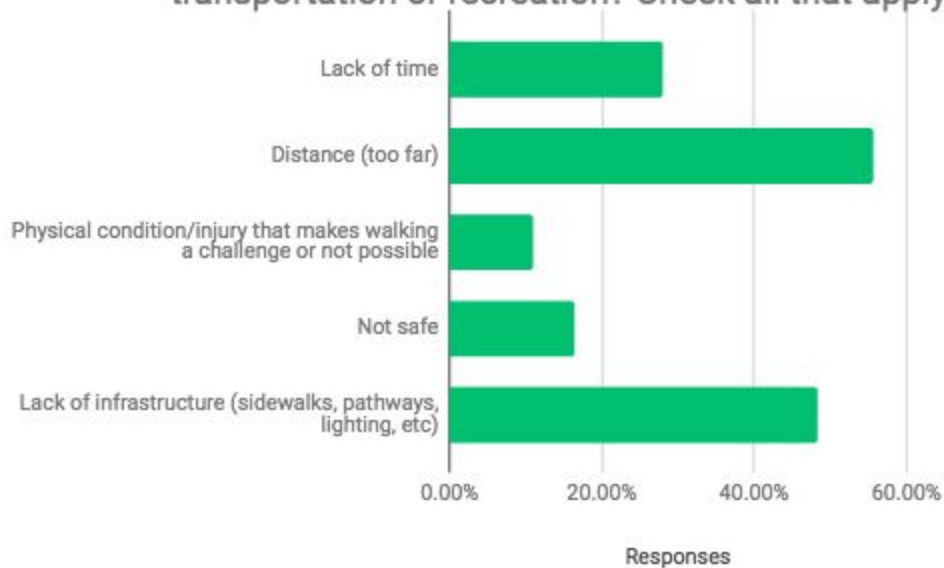
Highlights of these comments include:

- Narrow shoulders covered with debris - Several respondents
- Narrow shoulders on the Old Island Highway - Several respondents
- Narrow road out of Cumberland.

- Fifth street bridge and Ryan road, lack of bike lane Ryan road is so dark in the morning!
- The 17th st bridge... almost being hit by vehicles on several occasions.
- Narrow shoulders on some routes make it dangerous for cycling with young children. Crossing the 17th St. bridge with children is dangerous.
- Number of hills, non-separation of cyclists from higher-speed traffic (ex: Ryan road, island highway, 17th street, Cliffe)
- Lack of shoulders/bike lanes. Particularly on Anderton and Dyke Rd (I bike commute from Comox to Courtenay 1-4 times a week). More bike lanes for kids to bike to school safely would be great too.
- Intersections where I need to make a left turn by entering into multi-lanes of traffic - any intersection on Ryan road.
- Narrow, rough road shoulders like on Anderton Ave. in Comox
- Gigantic hill on Ryan Road - not enough room to ride safely.
- The connector from Cumberland to Courtenay.
- The narrow bicycle lane going down Comox hill.
- The route along Lazo-Knight Rd is too narrow and is a “shared road” but often vehicles crowd cyclists and pass when unsafe to do so.
- Off-leash dogs an issue on trails - Two respondents

Barriers to Walking

What are the barriers or challenges for you in walking as a means of transportation or recreation? Check all that apply.



General barriers mentioned in the survey include:

- Lack of lighting - Several respondents
- Fear of wildlife
- Illegally parked cars reducing sightlines at crosswalks
- Poor public transit options once off the ferry

- Too much to carry
- Rainy weather - Several respondents
- Traffic speed - Several respondents
- Lack of separation between sidewalk and high speed traffic

Specific barriers mentioned in the survey include:

- Dark section of Piercy walkway between 8th and 10th St beside city works yard. It's very dark and there's a cedar hedge, where someone could be hiding. So I walk or cycle along Willemar or McPhee to 5th St, which is a long way around at night.
- Lots of sidewalks need to be replaced in the downtown area and some are overgrown by resident and commercial planting's. I.e: hedge along Grieve on the Clouthier Mathers Accountants property
- Walking on highway 19A is the only choice to get to Courtenay from Royston and Royston Road is the only Road choice to Cumberland. Both roads are not that pleasant to walk on. I prefer to bike as it reduces my exposure to the traffic compared to walking. I like walking and use the nearby trails, most of which are on private logging property. It is not feasible to walk for transportation from where I live but walking for recreation would be great if there were connections between trails/subdivisions along the 19A corridor between Fanny Bay and Courtenay. Rainy dark days I do not walk nor cycle on these busy roads as I do not feel it is safe.
- Knight road has no shoulder, Anderton has loose gravel and speeding cars. Our street, Hudson Road (and others around it), have no shoulder and deep ditches. Not safe, especially with young children learning to ride.
- Not enough crosswalks across Cliffe.

Equity and Affordability

Cycling and walking can be equitable and affordable forms of transportation and recreation. For people without or limited access to a motor vehicle, cycling and walking often be their only transportation choices for many trips. However in Canada there is significant cycling disparity with 32% of those in the lowest household income quintile and 50% in the highest quintile riding a bicycle at least once a year.³² This likely is due to several factors including access to cycling facilities and access to bicycles.

Access to Appropriate Cycling Facilities

Cycling facilities separated from traffic are the key to gender and age equity³³. Without separation, the majority of cyclists will be young or middle aged males. This appears to be the case in the Comox Valley where 4.8% of male and 2.3% of female commuters bike to work.³⁴

With incomplete networks, there can be a lack of access to high quality cycling and walking

³² Cycling in Canada, Statistics Canada,

<https://www150.statcan.gc.ca/n1/pub/82-003-x/2017004/article/14788/tbl/tbl01-eng.htm>

³³ K Teschke, Motivators and deterrents of bicycling: comparing influences on decisions to ride

³⁴ Census Profile, 2016 Census - Comox Valley, Regional district [Census division], Statistics Canada,

<http://www12.statcan.gc.ca/census-recensement/2016/dp-pd/prof/details/page.cfm?Lang=E&Geo1=CD&Code1=5926&Geo2=PR&Code2=01&Data=Count&SearchText=Comox%20Valley&SearchType=Begins&SearchPR=01&B1=A11&GeoLevel=PR&GeoCode=5926&TABID=2&wbdisable=true>

facilities for those with lower incomes. This is especially of concern for children where getting sufficient exercise is key to health and learning outcomes. In the US, the benefits of active transportation have often been unequally distributed.³⁵ We did not collect income information as part of the survey so were not able to determine if there was equal access regardless of income.

This desirability of living near trails and in areas with good cycling facilities can somewhat increase the cost of housing³⁶ leading to the potential exclusion of those with lower incomes from those areas and thus convenient access to bike paths. This is likely the case in Canadian communities as well. With high quality cycling facilities not standard on all roads, another probable cause of equity is the capacity of higher income communities to more effectively advocate for active transportation improvements due to more access to resources and more influence with decision makers.

A solution is to build complete cycling and walking networks so everyone, regardless of where they live, is able to cycle and walk for transportation and recreation.

Recommendations

- Ensure that those with lower incomes are effectively engaged in the planning processes
- Build all ages and abilities cycling facilities that are separated from traffic
- Ensure that cycling and walking facilities are built in all areas of the community and include safe routes to schools
- Include income level on surveys and polls

Access to Bicycles and Bicycle Maintenance

While only one survey respondent said that the cost of a bicycle was a barrier, 45% said rebates/financial assistance for purchasing bicycles and 49% said access to low cost/free bicycle maintenance and repairs may increase the likelihood that they would engage in cycling.

Recommendations

- Pave trails and paths that can be used for transportation to enable use of lower cost bicycles
- Rebates or other financial assistance for bicycles
- Support community bike shops that offer low cost bicycles and repairs

Bicycle Theft

While bicycle theft impacts people of all income levels, it has a more severe impact on those with low incomes. Especially those who live in apartments may not have access to secure bicycle parking as landlords and stratas can ban bicycles from units or only provide secure

³⁵ Lee RJ, Sener IN, Jones SN. Understanding the role of equity in active transportation planning in the United States. *Transp Rev* 2017;37:211–26, <http://dx.doi.org/10.1080/01441647.2016.1239660>

³⁶ D Racca A Dhanju, Property Values and Bicycle Paths, Center for Applied Demography and Research University of Delaware, Nov 2006, page 23, http://headwaterseconomics.org/wp-content/uploads/Trail_Study_51-property-value-bike-paths-residential-areas.pdf

storage for a small number of bicycles.

- Require secure bicycle parking in new apartments and incentivize the building of secure bicycle parking in existing apartments to reduce bike theft

7 - Strategic Options for Enhancing Cycling & Walking for Transportation Recreation & Tourism

Cycling Tourism

Areas in B.C. that are attracting cycling tourists including Vancouver, Victoria, and Cumberland have typically focused on developing high-quality cycling facilities for residents first. This strategy makes sense as these facilities are built and maintained in part with local tax revenue. Combining the health, safety, environmental, and social benefits for local residents with the economic benefits of cycling tourism helps build the business case for investing in higher quality more comprehensive networks. There are also more potential funding sources for facilities that benefit local residents.

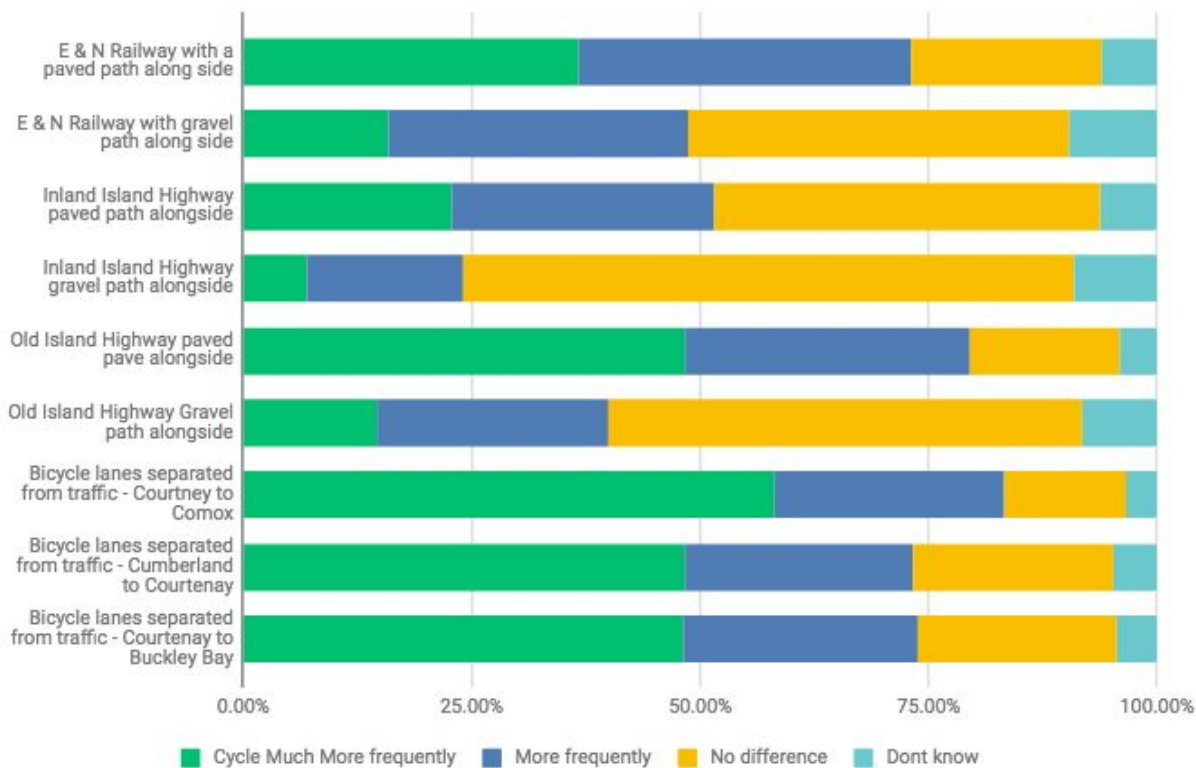
Recommendations

- Improve regional cycling connections
- Develop the E&N rail-trail
- Prioritize facilities that benefit local residents in addition to attracting cycling tourists
- Ensure that connections and signage to tourists attractions are included in plans
- Improve and expand multimodal connections to the Comox Valley that conveniently accommodate bicycles including buses, E&N rail service and passenger ferries

Potential Options for Infrastructure Development

There was significant interest in all the regional routes presented. For all the options that included a paved surface, at least 50% of respondents said they would cycle more often.

What impact, if any, would the following facilities have on your riding habits or behaviour?

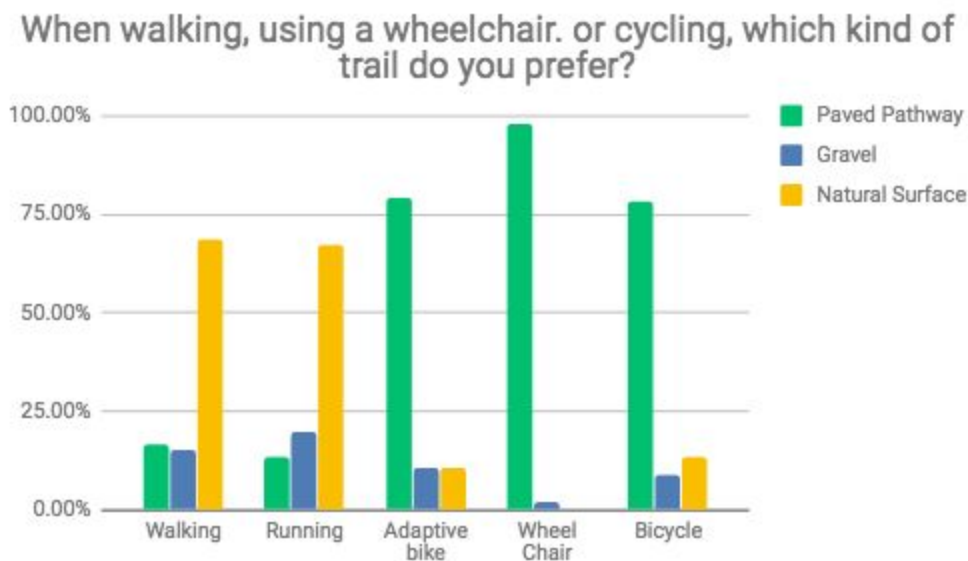


Trail or Path Surface

For trails and paths that connect communities or are used to access popular destinations (Active Transportation Trails), paved surfaces are recommended over gravel paved surfaces were overwhelming favoured over gravel by those who ride a bike. As well, 55% of respondents did not have a mountain bike which are often needed on gravel trails. Mountain bikes due to the larger tires with rougher tread and shocks are less efficient than road, touring or hybrid bicycles. Gravel trails are also less efficient for cycling on than smooth paved paths. Gravel paths on which many people will use mountain bikes increases cycling effort and time thus discouraging bike use for many longer trips. Especially for cycling tourists trying to cover longer distances, paved paths and roads will provide a better experience and thus attract more use.

For the Okanagan Rail Trail, it was estimated that higher proportion of paved sections along with progressive economic development policies and a supportive business community would

increase trail use and economic benefits by 30%.³⁷ Studies from Portland and Calgary indicate that actual bicycle use on paved trails was significantly greater than predicted by demand models.³⁸



Buckley Bay, Union Bay, Royston, Courtenay

Old Island Highway - 19a

The Old Island Highway, 19a connects communities along the coast. Regardless of other improvements, upgrading the cycling facilities on it will be essential for accessing services, businesses, homes and accommodations. It is closer to the ocean in many sections than the E&N so it will be of greater interest to those who want more scenic ocean views.

Several bridges are narrow and need to be either need to be widened or have parallel bridges built to safely accommodate cycling and walking. Several survey respondents mentioned the narrow shoulders and debris on the shoulders being problematic.

Island Highway

With 52% of respondents saying a paved path along the Island Highway would encourage them to cycle more, it was the lowest rated of all paved options. Still, this is a significant number of people. Especially with the high motor vehicle speeds along the highway, a separated path would make it significantly safer than the current shoulders. However, this would be a lower priority for local cyclists than other improvements.

E&N Rail-Trail

In conversations with several groups, a destination trail on the E&N corridor emerged as a key priority for especially tourism. Support for a multi-use trail along the E&N right-of-way was high

³⁷Okanagan Rail Trail - Impact Assessment, Westcoast CED Consulting Ltd., May 2014, Page 37, <https://okanaganrailtrail.ca/uploads/files/ORT-Impact-Assessment.pdf>

³⁸ Ibid. Page 33.

and 73% indicated that a paved path would increase their likelihood of cycling. There are strong positions regarding rail service the E&N right-of-way. Some strongly support rail service while others don't and would prefer that the corridor be used as a multi-use trail. In our survey, approximate an equal percentage supported each position.

The *Rail-Trail Feasibility Study - Comox Valley Regional District / City of Courtenay* indicates that in the Comox Valley segment, while a trail with rail is reasonably simple to built for much of the corridor, there several sections where building a trail next to rail would be very costly or impossible thus detours off the corridor would be required. Depending on the impact of these detours on cycling effort, time and quality of experience, the detours could have a significant impact on the number of visitors and residents cycling.

E&N Rail-Trail Feasibility - Comox Valley Sections³⁹

Section	Start	Difficulty	Cost (2009)	Length (m)	Status
CV-VIC-27	Royston Road	Easy	\$232,791	798	Uncompleted
CV-VIC-28	Comox Logging Road	Easy	\$585,865	2,011	Uncompleted
CV-VIC-29	Fraser Street	Medium	\$388,448	996	Uncompleted
CV-VIC-30	29th Street	Medium	\$184,709	507	Uncompleted
Total Uncompleted			\$1,391,813	4,312	
CV-VIC-31	26th Street	Medium	\$327,854	1,057	Gravel Path
CV-VIC-32	17th Street	Medium	\$175,220	515	Gravel Path
CV-VIC-33	Cumberland Road	Easy	\$172,082	663	Gravel Path
CV-VIC-34	5th Street	Medium	\$62,180	161	Gravel Path
Total Completed			\$737,336	2,396	
Total				6,708	

The *Feasibility Study* ranked the sections from 5th Street to Royston Road as easy or medium difficulty to complete. With the sections from 5th Street to 29th Street already completed as a gravel path, prioritizing the completion of the sections from 29th Street to Royston Road would create a finished segment of almost 7 km connecting Royston to Downtown Courtenay. With the 5th Street Complete Street scheduled to be finished in fall 2018, this would create a useful transportation connection as well as good recreational experience for residents and visitors. The cost of 29th Street to Royston Road segment was estimated to be \$1.4 million in 2009.

Crossings including those Cumberland Road, 17th Street and 26th Street need to be improved to ensure that people can safely, conveniently and legally cycle across these roads without

³⁹ Rail-Trail Feasibility Study - Comox Valley Regional District / City of Courtenay, HB Lanarc, May 2009, page 5

dismounting.

Head south, *Feasibility Study* ranked the sections crossing Trent River and Washer Creek as not possible. However, the alternative routes may also be difficult and expensive to complete as the current crossings on Highway 19a are narrow with no shoulders or bike lanes. The Tsable River crossing is also rated as not possible. However, the parallel section of Highway 19a is relatively close and has a crossing of the Tsable with wide shoulders. At first glance, it appears to be relatively easy to add wider shoulders or protected bike lanes on this section of 19a.

While survey respondents indicated the E&N path was a bit less likely to encourage them to cycle more as compared to a separated path along Highway 19a, it may be much more difficult to build a comparable path along 19a. If this is indeed the case, it is likely that a high quality E&N rail trail would also be more popular with area residents for transportation and recreation than 19a. That said, 19a will remain essential for access to many destinations making improvements along it complementary to an E&N trail.

For the 49.5 km Okanagan Rail Trail (ORT), an estimated 42,484 new visitors or those extending their stay would spend \$7,489,709 generating 73 person years of employment and economic annually in 15 years.⁴⁰ A further 30% increase in trail use and economic impacts is possible if a high proportion of the trail is paved, progressive economic policies are implemented and businesses move quickly on tour and service development. This would increase visitor spending to \$9.7 million per year generating 95 person years of employment.

If a trail on the entire 234 km E&N corridor performed at the same rate per kilometre, the result would be around \$45 million per year generating over 300 person years of employment. We expect that due to closer proximity population centres including Vancouver and Victoria and to the Vancouver Airport, visitors to an E&N rail trail and their spending could be significantly higher on a per kilometer basis.

Recommendations

- Continue planning and design work for paved a trail along the E&N while preserving the option of rail service
- Focus on key sections to address network gaps and create significant sections of high quality cycling routes heading south from Courtenay to create significant complete segments.
- Completing sections south to Royston Road would create an initial segment that would provide a good cycling connection for transportation and recreation for residents and visitors.
- Pursue funding options including the Rural Dividend Fund, Federal Gas Tax, Bike BC, ICIP and funding through service clubs and individuals
- Update trail guidelines to reflect the strong preference for paved paths among cyclists and wheelchair users, and natural surfaces for those walking and running
- Improve road crossings for cycling along the completed section in Courtenay
- Consider paving the completed section in Courtenay

⁴⁰ ORT Impact Assessment, page 36, <https://okanaganrailtrail.ca/uploads/files/ORT-Impact-Assessment.pdf>

- Conduct cost benefit analysis of route options on challenging segments, including options on or near the rail right-of-way and those involving detours
- Produce an economic, social and environmental impact assessment of an E&N trail with various alignment options. The assessment should take into account the potential of electric bicycles and cycling mode share targets consistent with those experienced on similar facilities elsewhere in B.C.

Comox to Courtenay

There are several barriers to cycling between Comox and Courtenay.

Courtenay River Crossings

The bridges crossing the Courtenay River are not very suitable for cycling.

6th Avenue/5th Avenue Crossings

Two solutions have been identified. Either a new walking and cycling bridge inline with 6th Avenue or cantilevering a cycling and walking path off one or both sides of the 5th Avenue Bridge. There has been extensive design work done on the 5th Avenue Bridge.

The City of Courtenay is currently developing a new multimodal transportation plan that will examine these options further.

17th Street Bridge

Regarding cycling and other forms of active transportation, approaches to this bridge from the Southwest (Courtenay) side of the river are present. Approaches from the Northeast side of the river are noticeably poor. This photo shows the approach from Comox - notice the cyclist (far left) pushing their bike on the grassy sloped side of the barrier.



Comox/Dyke Road

This road, between the 17th Street Bridge and the centre of the Town of Comox, presents issues with varying shoulder widths and shoulder surface materials, and an unprotected very steep slope approaching the Town of Comox.

Cumberland to Courtenay

With the Inland Island Highway (19) between Cumberland and Courtenay, routes are limited with significant barriers.

Comox Valley Road

This road, between Highway 19 and 19A on the SouthEast side of Courtenay, is the most direct link between these two communities. Comox Valley Road is deterrent due to relatively high traffic speeds and only little protection from a paved shoulder. The most direct route also includes Cumberland Road, which on the Courtenay side, provides no consideration for active transportation modes outside of urban Courtenay.

Bevan and Lake Trail Roads

Without using Comox Valley Road, the next fastest route between these communities is via Bevan and Lake Trail Roads, and adds ~30% to cycling time (Google Maps). In addition, these roads provide no accommodation for active transportation outside of the urban areas.

Cost and Space Saving Measures

There are a variety of cost saving measures that can enable more safety improvements to be implemented sooner. In addition to improving safety, many of these measures also have other community benefits.

These measures are broadly covered by one or more of the following policies:

- Space saving through road diets, lane diets and shared parking/moving lanes
- Interim Designs
- Routine Accommodation - Integration (“Piggybacking”) with other projects including road and bridge expansion, upgrades and maintenance; utility work; and transit projects
- Developer Requirements and Incentives
- Land use policies that encourage compact, walkable, mixed use communities

It is important that the above policies be implemented in an integrated manner. Relying only on Routine Accommodation, Developer Requirements and land use policies could delay needed safety improvements and cycling and walking network connections by many years. For critical safety improvements, Interim Designs can enable improvements to be implemented sooner and if that is not possible, communities should use capital funding and funding from senior governments for safety improvements.

To ensure issues and opportunities are not missed, policy development and planning should involve Engineering, Planning, Finance and Operations staff with expertise in Road Safety, Urban Planning, Traffic, Active Transportation, Utilities, Development, Public Realm, Stormwater Management and Landscaping and consider full life cycle capital and operational costs.

Some communities may include some of these measures in Complete Street policies. Many Complete Street policies have not yet included measures such as cycle tracks and protected intersections.

Space Saving Measures

On existing roads, space saving measures including Road Diets, Lane Diets and Parking Reductions can enable safety improvements including turn lanes, Protected Bike Lanes and Sidewalks without the expense of rebuilding the road, moving curbs and land acquisition. On new roads, space saving measures reduce the cost of construction, land acquisition and stormwater management.

Routine Accommodation - Integration into Utility, Maintenance and Upgrade Projects

Safety improvements including sidewalks, cycle tracks and traffic calming can be integrated into all utility, maintenance, and upgrade projects that involve road work. It is important to adopt policies to ensure that this strategy is integrated with longer range planning and budget

processes to ensure that staff resources and funding is available to make these improvements without delaying roadwork projects.

- Contact all provincial and regional agencies, and local public and private utilities that do work in public rights-of-way. Secure their five-year project plans as well as their long-range plans. Then, work with them to make sure that the streets are restored in the way that works for your city.
- Look internally at all capital projects. Make sure that every opportunity to make improvements is taken advantage of at the time of construction.
- Consider combining small projects with larger capital projects as a way of saving money. Generally, bid prices drop as quantities increase.

More Information

http://www.pedbikesafe.org/BIKESAFE/guide_implementation.cfm

<https://peopleforbikes.org/blog/protected-bike-lanes-do-not-cost-1-million-per-mile/>

<http://www.makingspaceforcycling.org/>

Interim Design Strategies

With limited funding streams, complex approval and regulatory processes, and lengthy construction timetables, cities are often challenged to deliver the results that communities demand as quickly as they would like. Interim design strategies are a set of tools and tactics that cities can use to improve their roadways and public spaces in the near-term. They include low-cost, interim materials, new public amenities, and creative partnerships with local stakeholders, which together enable faster project delivery, and more flexible and responsive design.

Whether setting a parklet along a curb, pedestrianizing a narrow corridor, adding a protected bike lane, implementing street closures, traffic diversion or redesigning a complex intersection, interim design strategies can be a cost-effective solution. An interim design can also serve as a bridge to the community, helping to build support for a project and test its functionality before going into construction.

Interim Protected Bike Lanes or Sidewalks

Protected bike lanes (cycle tracks) or sidewalks can be added to existing streets in the absence of major renovations. They can be buffered from traffic using a combination of paint, planters, parked cars, jersey barriers, temporary curbing and plastic posts (bollards). In suburban and rural areas with little potential cycling and walking traffic, separated paths can be shared by cyclists and pedestrians.

More Information

<http://nacto.org/publication/urban-street-design-guide/interim-design-strategies/>

Typical Implementation Considerations

- As many interim measures are not as durable as longer term measures, ongoing monitoring and maintenance is required to ensure they remain effective and do not become hazards.

- Posts often break leaving only the base which can be a tripping hazard or a hazard to cyclists. Bases should be white or yellow to increase their visibility at night.
- Planters or jersey barriers can be accidentally moved into the bike lane, sidewalk or traffic lanes. They should be white or yellow and or have high visibility markings on them.
- Note that interim measures reduce near term capital costs, design, maintenance and monitoring costs may be greater and some of this costs will also be incurred when the permanent solution is implemented.
- On streets where motor vehicle speeds are higher than 50km/h, sturdier measures such as jersey barriers and curbing should be considered to provide more protection for people walking and cycling.

New Roads/Development

New roads should be built as Complete Streets with sidewalks, protected bike lanes and protected intersections. To reduce costs, don't build more lanes than are needed, make the lanes narrow and eliminate street parking if possible.

Developers can be required to install safety improvements including sidewalks, paths, protected bike lanes, crosswalks and protected intersections, or pay an in-lieu fee. In addition, zoning requirements can be written to allow for, or require narrower streets.

Narrow Traffic Lanes - New Roads

Narrow traffic lanes (3m) on new roads not only decreases the construction cost of building the roadway, but also the cost of managing runoff and associated land costs while increasing the space available for sidewalks and cycle tracks. "Lane widths of 10 feet (3.05m) are appropriate in urban areas and have a positive impact on a street's safety without impacting traffic operations."⁴¹ The City of Surrey successfully reduced motor vehicle collision rates along several segments of its high-volume arterials by reducing the width of travel lanes from 4.3 metres, to between 3.3 and 3.0 metres.⁴²

Cycle Tracks - New Construction

Cycle tracks or protected bike lanes separated from the roadway surface can be less expensive to build than painted or buffered bike lanes. They reduce the total roadway surface area and thus the amount of stormwater generated. Runoff from the lanes can be treated via rain gardens. As a cycle track separate from the roadway surface does not have to support the weight of motor vehicles, the cost may be less than painted and buffered bike lanes that increase the total width of the roadway.

Technical Resources

<http://blog.mackaysposito.com/separated-bike-lanes-what-are-the-stormwater-implications>

⁴¹ <http://nacto.org/publication/urban-street-design-guide/street-design-elements/lane-width/>

⁴² Moving to Vision Zero: Road Safety Strategy Update and Showcase of Innovation in British Columbia, Road Safety BC, page 71, <https://www2.gov.bc.ca/assets/gov/driving-and-transportation/driving/publications/road-safety-strategy-update-vision-zero.pdf>

Public Realm Design Standards for Town Centre Streets, City of Burnaby

<https://www.burnaby.ca/Assets/city+services/policies+projects+and+initiatives/community+development/Town+Centre+Standards/A+Great+Public+Realm.pdf>

<https://burnaby.civicweb.net/document/15313>

Intersections

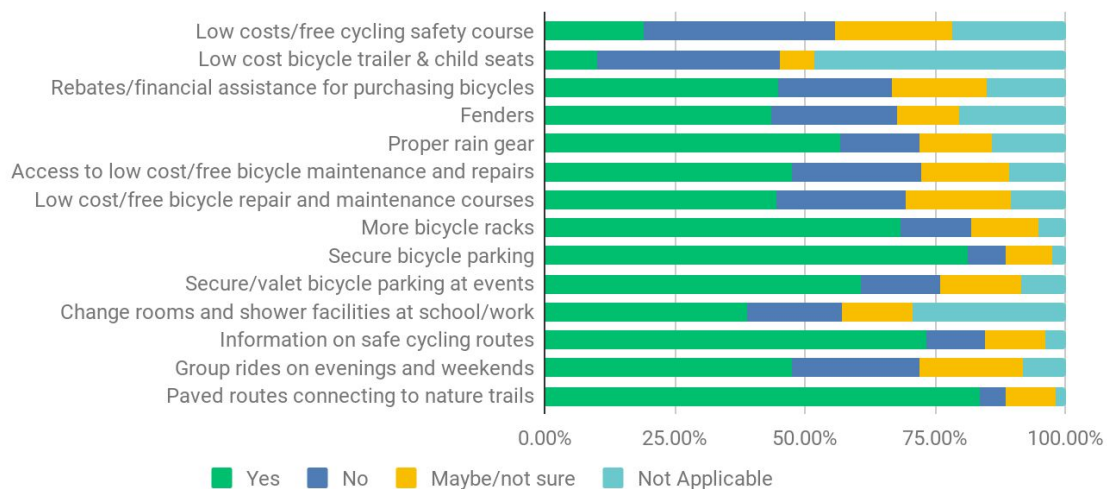
While some intersections will require expensive reconstruction and signal work to improve safety through conversion to protected intersections or roundabouts, in many cases, lower cost improvements can be made.

Road and Lane Diets can create space for left and right turn lanes as well as as protected bike lanes and sidewalks. If turn volumes are low or if access can be provided by turning at other intersections, right and or left turns can be banned to improve safety and create space for protected bike lanes and sidewalks. Banning Right on Red can also be another low cost measure to improve walking and cycling safety.

Potential Options for Complimentary Programs and Facilities

In addition to infrastructure issues and improvements, the survey identified other issues and opportunities to improve and promote cycling and walking.

Please indicate if the following measures may increase the likelihood that you would engage in cycling



More Bike Racks

Following safety and infrastructure concerns, bike theft was identified as a significant problem. There was really high support for more bicycle racks.

Consultation is recommended on bike parking and theft to identify:

- The impact of bike theft on frequency of cycling
- High theft locations
- Locations where more and more secure bike parking is needed

Valet Bike Parking at Events

The survey identified high support for valet bicycle parking.

- Work with local events and organizations to enable valet bike parking at more events
- Help expand the Comox Valley Cycling Coalition valet's bicycle parking program

Affordability and Equity Programs

While the cost of a bicycle and service was not identified as a major barrier to cycling in the survey, close to 50% respondents did say that financial assistance for purchasing a bike, access to low cost/free repairs and low cost/free maintenance and repair courses may increase the amount they cycle.

- A community bike shop offering low cost bicycles, repairs and maintenance courses
- Rebates or other financial assistance for purchasing bicycles, rain gear and safety equipment. This could be means tested.

Electric Bikes

Nearly 30% of respondents identified issues that can be addressed by using an electric including hills, lack of time, a physical condition that makes cycling challenging, getting sweaty and a lack of showers as barriers. While separately, only a relatively small percentage of people said they were barriers, combined they total over 50% indicating that programs to increase the use of electric bikes could have a significant impact on bicycle usage.

Recommendations

- Require new apartment buildings and businesses to include electrical plugs in secure bicycle parking areas
- Develop programs to loan or otherwise let people try electric bikes
- Consider financial incentives to lower the cost of electric bicycles especially for those with lower incomes

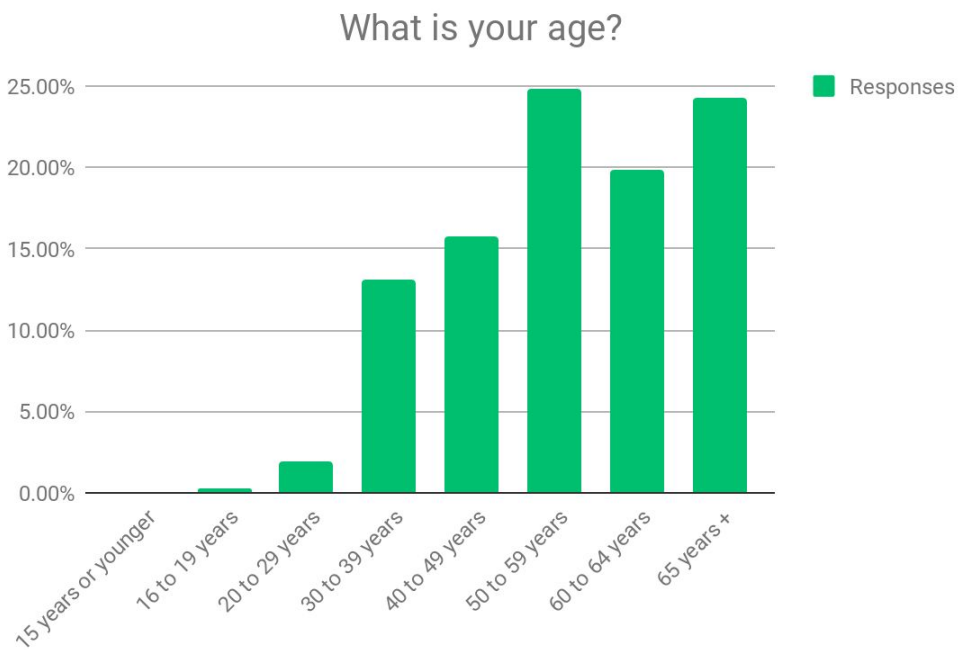
Appendix

A - Survey and Results

The majority of the survey results are in the appropriate sections of the report.

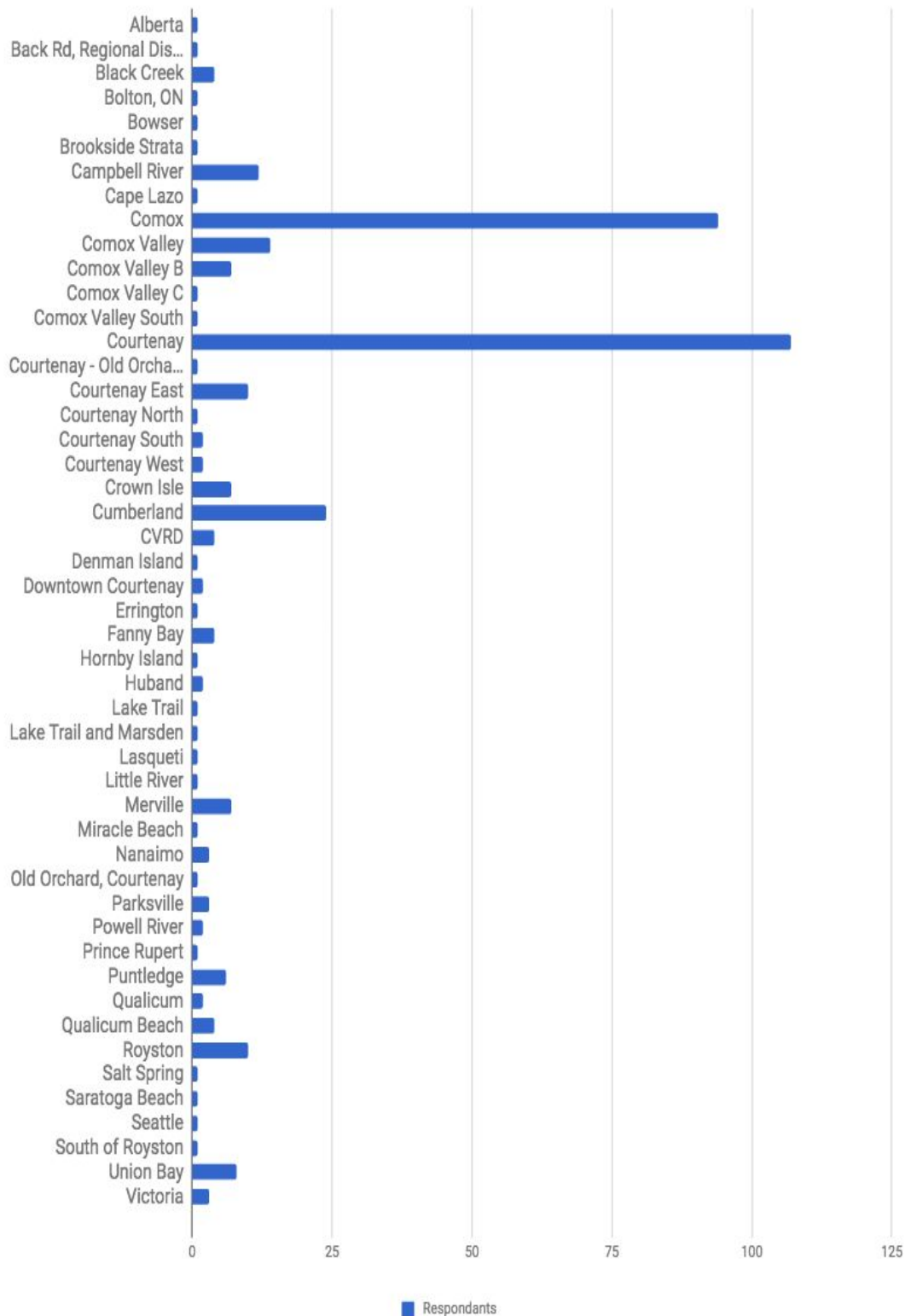
Respondent Age

Table 1: Respondents Age



Respondent Community

Where do you live? Please tell us the name of the community



B - Organizational Engagement

List of organizations engaged

Broken Spoke Bike Shop
City of Courtenay
Comox Valley Chamber of Commerce
Comox Valley Cycling Coalition
Comox Valley Regional District
Comox Valley Road Runners
Island Corridor Foundation
Rails to Trails Vancouver Island
Simon's Bike Shop
Town of Comox
Town of Qualicum Beach
United Riders of Cumberland (UROC)
Village of Cumberland

Comox Valley Regional District

On February 28, 2018, Andy Telfer met informally with Comox Valley Regional District Chairperson Bruce Joliffe to discuss local priorities and to describe the BCCC project. Bruce suggesting not presenting to the CVRD Board, but rather to work with their staff. Also, Russell Dyson, the RD's Chief Administrative Officer, heard our presentation at two municipal council meetings. We also correspond via email with CVRD staff.



Cumberland Mayor Leslie Baird and Courtenay Councilor David Frisch

On February 28, 2018 Andy Telfer met with Cumberland Mayor Leslie Baird and Courtenay Councilor David Frisch at the Mayor's office to discuss local priorities and to describe the BCCC project. Both were very interested in us presenting this project to their councils, and subsequently we registered as delegations to their respective regularly-scheduled Council meetings.



Town of Comox

On Mar. 7, 2018, Andy Telfer and Richard Campbell presented to the Town of Comox Mayor and Council as a delegation to a regular council meeting outlining the goals and objectives of the project.

Mayor Ives and eight councilors, Town staff, members of the news media and a small audience were present. The presentation was well received, and some members of council suggested we examine the integrated transportation strategy being coordinated by the Regional District. We subsequently received a letter of support from the Town of Comox (see appendix).



Village of Cumberland

As a delegation to a regular council meeting, On March 23, 2018, Andy Telfer and Marg Harris (CVCC) presented this project's parameters to the Town of Cumberland Mayor and Council. Present were Mayor Baird and five councilors, Village staff, members of the news media and a small audience. The presentation was well received with engagement from some members of council.



City of Courtenay

On April 3, 2018, Andy Telfer BCCC, Richard Campbell, BCCC and Marg Harris, CVCC presented to the City of Courtenay Mayor and Council as a delegation to a regular council meeting. Mayor Jangula and six councilors, City staff, members of the news media and a small audience were present. The presentation was well received with engagement from some members of council.



City of Courtenay Transportation Forum

During the period of our consultations, the City of Courtenay was conducting public consultations regarding its transportation plan. On March 23, Andy Telfer, Richard Campbell, and Marg Harris (CVCC) took advantage of this by attending the City's open house, viewing displays and having discussions with counsellors, engineers and other City staff members. The City's consultations included cycling and walking.

