The Climate is Right for Cycling and Walking

Clean Transportation Submission - August 2018

Executive Summary

We are encouraged by the BC Government's commitment to produce a Clean Transportation Systems intention paper in 2019 that includes cycling, walking, transit and community design that supports these efficient transportation choices.

In conjunction with this effort, we strongly encourage the BC Government to develop and implement a comprehensive Active Transportation Strategy as recommended by the Select Standing Committee on Finance and Government Services. It should include mode share & GHG emission reduction targets, dramatically increased infrastructure investment, improved standards, increased maintenance, education, promotion, motor vehicle speed reductions and changes to the Motor Vehicle Act. This will enable cycling and walking to be central components of a complete multi-modal transportation system for people of all ages and abilities.

Cycling and walking are popular activities that have the potential to grow substantially and thus provide B.C. communities with more affordable, safer transportation choices and economic opportunities.

- ➔ 1,900,000 British Columbians ride a bicycle at least once a year
- ➔ 250,000 children walk or cycle to school; 130,000 children ride a bicycle at least once a year
- ➔ 2,300,000 adults indicate they would ride more if there were separated bike lanes that protected them from traffic.
- ➔ 1,325,000 BC residents say walking (23%) or cycling (11%) would be their ideal commute.
- ➔ 14% of adults 18-35 years old say cycling and 20% say walking would be their ideal commute.
- ➔ Cycling and walking are especially popular with young people, 18-35, with 8% cycling & 10% walking to work.

To meet this demand, we urge the government to prioritize investments in active transportation to help meet government physical activity, safety, affordability and equity objectives. Based on plans by B.C. regions and municipalities, it is estimated that building out active transportation networks in B.C., to at least an interim standard, will cost at least $2 billion. To address this deficit in a reasonable amount of time, we encourage the B.C. government to invest $100 million per year in active transportation. This is a similar amount to New Zealand, which has almost the same number of people as B.C.

Specific to the Clean Transportation intention paper, we encourage the BC Government to support the use of electric bicycles, cargo bikes and low speed electric vehicles through lower motor vehicle speeds; higher taxes on unsafe high GHG emissions vehicles including full size SUVs and pickups; and financial incentives for cargo bicycles, bicycles and low speed electric vehicles for personal use delivery and goods transport in communities.

Electric bicycles, cargo bikes and other lightweight low speed electric and human powered vehicles have the potential to significantly decrease motor vehicles trips for both personal trips and deliveries within communities. This potential needs to be included in the Clean Transportation Systems plan as well as municipal and regional plans. Accelerated investment in bike networks is needed to safely accommodate this demand. As cost is a barrier especially to those with lower income, financial assistance including rebates, low cost loans and the elimination of the PST will enable more people to use electric and cargo bikes.

Lightweight Lower Speed Transportation Innovations

Shared bicycles, electric bicycles and small lightweight electric vehicles like stand-up scooters operated by companies including Lime, Bird, Uber and U-bicycle can be deployed rapidly at much lower cost than full size EVs. The scooters and electric bikes in particular are showing significant potential to displace motor vehicle trips and reduce GHG emissions in the short term. As such, a priority should be placed on implementing supportive policies and investing in supportive infrastructure including protected bike lanes and paths that support these, and other, green transportation innovations.

Generally, streets designed for lower speeds with features including protected bike lanes, wide sidewalks and loading zones will position communities well for current and future innovative transportation opportunities including bike sharing, ride hailing and autonomous vehicles. As such, they are a critical part of a clean growth future.

Lyft

We also find it curious that options to reduce emissions from ride hailing were not included in the intention paper. Our recommendations include allowing tandem bicycles, pedi-cabs and

electric Low Speed Vehicles (LSVs) to be used for ride hailing and banning the use of high GHG emission vehicles full sized SUVs and pickups for ride hailing.

To enable the use of LSVs and to increase the safety of those walking and cycling, we also encourage the government to enable municipalities to set blanket speed limits of 40 km/h or below.

Road Safety and Climate

We are concerned that road safety was not mentioned at all in the intention paper. The British Columbia Road Safety Strategy 2015 states:

> *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.*

In addition to mode choice, lower motor vehicle speeds and smaller vehicles are both safer and lower GHG emissions.

Prioritize Investments in Safe Equitable Transportation Choices

In the rapidly growing urban areas of B.C., where the majority of the population already lives, a high percentage of people will have to travel by transit, cycling and walking as expanding road capacity is not practical or affordable. While currently only around 30% of commuters ride transit, cycle or walk to work, almost 70% indicate that using sustainable modes would be their ideal commute indicating significant room for growth. There continues to be underinvestment in safe equitable transportation choices including transit and cycling. This underinvestment should be addressed before considering the use of general or carbon tax revenue for personal full sized EV incentives. Reallocation of funding from road and bridge expansion for transit, cycling and walking is also recommended.

Financial Assistance for Electric and Cargo Bicycles

We strongly recommend that rebates, low cost financing and PST elimination be offered for electric and cargo bicycles for personal use and fleets including those used for bike sharing. As the assistance required is lower, a given amount of funding will go much further and, as the cost of such bicycles is much less, they will be much more accessible to a much larger percentage of the population including those with lower incomes.

Fund EV Rebates Through a Climate Tax on New Vehicle Purchases

We fully support the proposed electric vehicle mandates and incentives for fleet, transit, buses and government vehicles. Focusing on replacing diesel vehicles including trucks and buses will result in better air quality for those cycle, walk and drive. Rebates should also be extended to Low Speed Electric Vehicles (LSVs).

However, we are concerned regarding the cost of continuing the rebate program and eliminating PST for personal electric vehicles. With a target of 5% of the vehicle fleet, only a small percentage of British Columbians will be able to take advantage of these incentives, likely only those with higher incomes. Investing this funding in transit, cycling and walking would able most, if not all British Columbians to benefit from this investment especially those with lower incomes. As well, while range and charging options are improving, electric cars, especially less expensive ones, may still not be practical for British Columbians living in some rural communities.

One option would be to increase taxes and fees on new fossil fuel powered vehicles based on GHG emissions. This would also incentivize the purchase of fossil fuel powered vehicles with lower emissions. Norway, which the intention paper notes has the highest levels of EV use, also has very high taxes on motor vehicles including a CO2 tax. Light truck vehicles (LTV), which includes vans, pickup trucks and SUVs, pose a significantly greater risk to pedestrians and cyclists than smaller vehicles. Higher taxes on such vehicles could help reduce injuries and fatalities in addition to reducing GHG emissions and providing funding for EV rebates.

Lower Motor Vehicle Speeds

Lower speed limits in combination with automated speed enforcement can significantly decrease GHG emissions while improving traffic safety, especially for those cycling and walking. Electric vehicle range is also significantly greater at 80 km/h when compared to higher speeds. Given the charging time, there may likely be little or no travel time advantage of higher speeds. In communities, speed limits of 30 km/h or 40 km/h enable the use of lower cost Low Speed Electric Vehicles (LSV)s for personal and commercial use.

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Our Member Organizations

Our 27 member organizations represent over 58,000 people passionate about cycling across BC.

AMS Bike Co-op
Comox Valley Cycling Coalition
Canada Bikes
HUB - Metro Vancouver
Kelowna Area Cycling Coalition
Penticton and Area Cycling Association
Pedal Society
North Okanagan Coalition for Active Transportation
Women's Everyday Bicycling (WeBike) Association
BC Randonneurs Cycling Club
Cross Canada Cycle Tour Society
Greater Nanaimo Cycling Coalition
Island Pathways
Mission Community Cycling Coalition
North Shore Safety Council
Trails BC
Mission Community Cycling Coalition
Powell River Cycling Association
Whistler Cycling Club
Bike to Work BC
Bike Abbotsford
Greater Victoria Cycling Coalition
Juan De Fuca Cycling Coalition
Oceanside Cycling Coalition
Cycle Alberni
Fernie Mountain Bike Club
Streets for Everyone
Trac Sunshine Coast

Thanks to the **Real Estate Foundation of BC** for supporting our Moving Active Transportation Forward in BC initiative.

Cycling Demand and Mode Share Targets

Cycling and walking are popular activities. Around 12 million Canadians and 1.9 million British Columbians cycle at least once a year[1]. Riding a bike is particularly popular among young people with 81% of Canadians aged 12-14 cycling at least once a year[2].

Cycling and walking are especially popular with young people, 18-35, with 8% cycling & 10% walking to work[3] and 14% saying cycling and 20% saying walking would be their ideal commute. Already, as shown in the table below, 9 communities have 10% or more of commuters cycling to work and at least 24 having 5% or more of commuters cycling to work. Nine of these communities have seen cycling mode shares increase by over 50% in five years proving that rapid increases in cycling are possible.

	2006	2016	Change
Ashnola 10 (IRI)	-	33.30%	-
Qualicum (IRI)	-	28.60%	-
Thompson-Nicola B (Thompson Headwaters) (RDA) (CSD)	-	21.40%	-
Revelstoke (CY)	5.30%	14.50%	174%
Oak Bay, District	10.40%	11.90%	14%
Victoria, City	9.50%	11.10%	17%
Comox 1 (IRI)	-	10.50%	-
Stewart (DM)	3.02%	10.50%	247%
Whistler,District	6.10%	10.20%	67%
Tofino	6.04%	9.90%	64%
Golden (T)	4.07%	9.70%	138%
Fernie	6.83%	8.80%	29%
UBC/UEL	9.40%	8.71%	-7%
Esquimalt, District	5.40%	8.70%	61%
Skeena-Queen Charlotte E	5.40%	8.70%	61%
Strathcona B (RDA)	-	8.50%	-
Saanich, District	5.20%	6.30%	21%
Vancouver, City	3.70%	6.10%	65%
Okanagan-Similkameen B (RDA)	-	5.90%	-
Lax Kw'alaams 1 (IRI)	-	5.60%	-
Mount Waddington A (RDA)	3.20%	5.60%	75%
Bella Coola 1 (IRI)	-	5.60%	-
Nelson	3.58%	5.40%	51%
Comox, Town	4.90%	5.40%	10%

[1] Cycling in Canada, Statistics Canada, https://www150.statcan.gc.ca/n1/pub/82-003-x/2017004/article/14788/tbl/tbl01-eng.htm
[2] Ibid.
[3] Insights West, Survey on Commuting in British Columbia, May 24, 2016, http://www.insightswest.com/wp-content/uploads/2016/05/CommutingBC_Tables.pdf

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.

Many Trips are Within Cycling Distance

According to the 2011 National Household Survey, 42% of commutes are under 5 km, a reasonable cycling distance. Electric bicycles have the potential to increase the average cycling commute distance significantly. For example, in the Netherlands, the average bicycle commute is 6.3 km while the average electric bicycle commute is 9.8 km.[4] In B.C., 65% of all commutes are under 10 km making them practical using an electric bike.

High Shift Cycling Scenario

A Global High Shift Cycling Scenario (HSC) by the Institute for Transportation & Development Policy and the University of California, Davis, confirms the significant potential for cycling and electric bicycle use to significantly reduce GHG emissions while providing significant cost 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.[5] As B.C's cycling commute mode share of 2.5%[6] in 2016 was almost 80% higher than Canada's 1.4%, we would expect the potential HSC cycling mode share of B.C. to be significantly greater than that of Canada as a whole.

Note that cycling mode share growth in Metro Vancouver has likely been limited by lack of sufficient investment due to the transportation financing challenges faced by TransLink. As well, none of the Federal Gas Tax Funding is available for cycling infrastructure in Metro Vancouver. This has been a significant source of funding for cycling facilities outside of Metro Vancouver.

> The fact of the matter is that not enough is being invested in cycling to achieve TransLink's targets. Between 1996 and 2008, the region did not see any significant mode share increase. Only in the past few years has mode share increased slightly on a region-wide basis, and the increase has been primarily in the City of Vancouver, where significant network investments have been made.[7]

Existing Mode Share Targets

As shown in the table below, both Metro Vancouver and the Capital Regional District have estimated mode share targets for their planned cycling networks. While we feel that these are reasonable targets, we recommend that the Province develop more robust targets as part of a

[4] Electric Bicycle Report, Mobycon | The Region of Copenhagen, January, 2014, page 15.
[5] Page 25, https://www.itdp.org/wp-content/uploads/2015/11/A-Global-High-Shift-Cycling-Scenario-_-Nov-12-2015.pdf
[6] Statistics Canada via Census Mapper, https://censusmapper.ca/maps/972#6/49.673/-124.928
[7] Cycling for Everyone – A Regional Cycling Strategy for Metro Vancouver, TransLink, page 9, http://www.translink.ca/-/media/Documents/cycling/regional_cycling_strategy/Cycling%20for%20Everyone.pdf

Provincial Active Transportation Strategy.

		Census	Target
	2011	2016	
Metro Vancouver	1.8%	2.3%	10.0%[8]
CRD	5.9%	6.6%	15.0%[9]
B.C.	**2.3%**	**2.5%**	

Recommendations

We strongly encourage the Province to develop ambitious yet achievable targets for cycling as part of the Climate Leadership plan that include the potential of electric bikes, Cycling Highways and a High Shift Cycling Scenario. All of these can both increase the number of and the length of cycling trips and thus significantly provide a greater reduction in GHG emissions.

Cycling For Everyone and the CRD plan did not consider the potential for electric bikes to encourage cycling by addressing barriers including time, distance and hills. We encourage the Province and the regions to work together in developing new targets that include the potential of electric bike use.

In addition, Cycling Highways (also known as Bicycle Superhighways and Super Cycleways) can encourage people to cycle more often and for longer distances by providing direct routes with few stops and higher design speeds. Again, targets should be updated to include the potential of Cycling Highways.

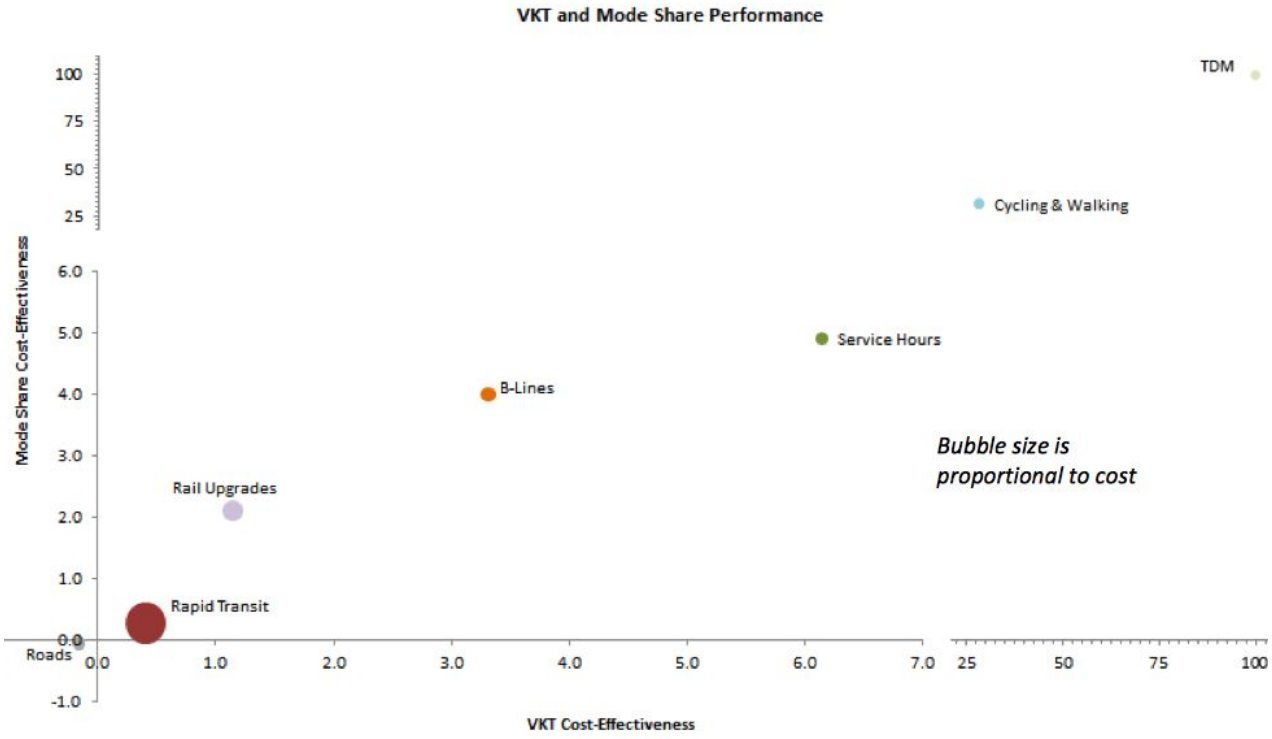
- ➔ Ask people through trip diaries or public opinion polls if they would be more likely to ride a bicycle if there were complete networks of cycling facilities protected from traffic and if affordable access to electric bicycles would increase the amount they cycle
- ➔ Develop ambitious yet achievable cycling targets that include the potential of electric bikes and cycle highways

[8] Regional Cycling Strategy Implementation Plan, TransLink, http://www.translink.ca/~/media/Documents/cycling/regional_cycling_strategy/rcs_implementation_plan_june_2013.ashx

[9] Regional Pedestrian and Cycling Master Plan, Capital Regional District, https://www.crd.bc.ca/docs/default-source/regional-planning-pdf/Pedestrian-Cycling-Master-Plan/appendix_h_funding_and_implementation.pdf?sfvrsn=2

Cost Effectiveness

Cycling and walking investments are among the most cost-effective measures to reduce motor vehicle kilometres travelled and mode share as shown in the chart below.[10]



The Economic Benefits of Cycling

Cycle Tourism

Oregon estimated that in 2012, cycling tourists contributed $400 million to their economy[11] while cycle tourism in Europe is worth almost $60 billion per year. Québec's Route Verte, a province-wide network of cycling routes, has proven to be very effective in attracting tourists from around the world and nearby states and provinces. In 2006 it is estimated that Route Verte users spent $134 million supporting over 2,800 jobs. This economic activity is estimated to generate more than $36 million per year in tax revenue for the provincial and federal governments[12].

[10] Regional Transportation Investments - A Vision for Metro Vancouver - APPENDICES, p C-9, http://mayorscouncil.ca/wp-content/uploads/2015/02/Mayors-Council_Appendices_June-12-2014.pdf

[11] Dean Runyan Associates, *The Economic Significance of Bicycle-Related Travel in Oregon: Detailed State and Travel Region Estimates, 2012*, April 2013, http://www.deanrunyan.com/doc_library/bicycletravel.pdf

[12] Route Verte (no date) *Economic spin-offs*. www.routeverte.com/rv/index_e.php?page=retombees_e http://www.routeverte.com/ang/facts.lasso?page=retombees

Attracting Talent and Jobs

Cities around North America are improving their bicycle networks to attract talent, companies and jobs.[13]

"Biking is definitely part of our strategy to attract and retain businesses in order to compete in a mobile world," says Minneapolis Mayor R.T. Rybak, as we glide across the Mississippi River on one of two bike-and-pedestrian bridges that connect downtown to the University of Minnesota. "We want young talent to come here and stay. **And good biking is one of the least expensive ways to send that message**."

Young people today are driving significantly less than previous generations, according to a flurry of reports. These young people represent the "creative class" talent pool that many companies covet. That's why civic, business, and political leaders around the country are paying attention to the next generation's wishes for lively, liveable places to work and play. This means ample transportation options like biking—not only for commuting to work, but also for recreation after work and, in some cases, over the lunch hour.

Chicago Mayor Rahm Emanuel was elected on an aggressive platform of bringing new tech and creative businesses to the city. He scored a major coup with Google-Motorola Mobility's announcement that it was moving more than 2,000 jobs from a suburban campus to the heart of the city. "One of the things that employees look [at] today is the quality of life and quality of transportation because of the ease that comes with it"

Workplace Productivity

There are significant benefits to employers of having staff that are physically active. Employees who participate in physical activities report fewer days off due to illness (by 6-32%), lower turnover rates, lower healthcare costs (by 20-55%) and increased productivity (by 2-52%) than non-physically active employees.[14]

Commuting by bicycle allows the employee to build physical activity into their daily routine. With people's many responsibilities and daily time commitments, using active transportation may indeed be the only way they can get the daily physical activity they require. Commuting by active transportation may prove to be more acceptable and more cost-efficient than programs that focus on activities at the work site during the day.[15]

The ability of a physically active executive group to make complex decisions increases dramatically compared to non-exercisers. Studies suggest that those who exercise work at full efficiency all day, amounting to a 12.5% increase in productivity over those who do not exercise.[16] In companies with

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[13] http://www.yesmagazine.org/happiness/how-bicycling-is-transforming-business
[14] World Health Organization, Economic Benefits of Physical Activity, (http://www.who.int/hpr/physactiv/economic.benefits.shtml), 2003.
[15] Shephard, "A critical analysis of work-site fitness programmes and their postulated economic benefits", Medicine and Science in Sports and Exercise, 24(3) , 1992.
[16] Health Canada, The Business Case for Active Living, (http://www.hc-sc.gc.ca/hppb/fitness/work/impact_e.html), 2004.

employee physical activity initiatives, the improvements in productivity and reductions in absenteeism, turnover and injury can result in a benefit of $571 per worker per year.[17]

Recommendations

1. Encouraging the Use of Electric Bicycles

Electric bicycles have the potential both to increase the number of cycling trips that people make as well as increase the average length of those trips. Electric bicycles also help decrease the effort required to climb hills and carry heavy loads.

Electric bicycles also can increase the amount people cycle as they grow older. In 2013, a survey reported that 5% of the total population in The Netherland owned an e-bike. Among those 60+, the ownerships level was 10%.[18] And that part of the population really use their pedal assisted models as they ride twice as many kilometers compared to the 60+ cyclists with a regular bike. The increase is greater among women 60+ with electric bicycles accounting for 24% of their bicycle kilometres.[19]

In 2017, 31% of all bicycles sold in the Netherlands were electrically assisted.[20] The Dutch ride a total of 14.5 billion kilometers on their bikes annually. That number is growing every year mainly because of the use of e-bikes. 12% of all travelled kilometers by bikes are on electric ones.[21] Dutch, who have e-bikes, ride 22% more kilometres per week, leading to the average commuting distance on electric bikes to being 9.8 km.

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[17] World Health Organization, Economic Benefits of Physical Activity, 2003. $513 in 2003 dollars adjusted by CPI to $571 in 2010 dollars.

[18] http://www.bike-eu.com/sales-trends/nieuws/2014/1/e-bikes-boosts-bike-usage-among-elderly-1019868

[19] page 10, http://supercykelstier.dk/sites/default/files/El-cykelrapport_høj_opløsning.compressed.pdf Accessed Aug 11, 2015.

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

[21] EU's Leading E-Bike Market Sees Sales Grow by 16%, Bike Europe, March 3, 2015, http://www.bike-eu.com/sales-trends/nieuws/2015/3/eus-leading-e-bike-market-sees-sales-grow-by-16-10119267 Accessed Aug 11, 2015.

A recent Norwegian study[22] 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. The effect of the electric bicycles increased with time, indicating a learning effect among users, and was greater for female than for male cyclists.

The Norwegian study also found that before trying electric bicycles, participants were willing to pay an average of $200 more than a regular bicycle. That increased to $300 after they had used electric bicycle. As a result Norway, politicians are debating removing the sales tax on electric bicycles.[23]

Recommendations

A. Rebates (consider means testing)
B. Low cost financing options that allow the purchase, lease or use of electric bicycles by those of limited financial means
C. Eliminate the PST on electric bikes
D. Include electric and pedal powered bicycles on the list of medical equipment and devices eligible for subsidies for those using electric and pedal powered bicycles for essential basic mobility
E. Rebates or funding could also be provided for higher-cost pedal-powered mobility devices including cargo bikes, adult tricycles, tandems, custom bicycles, and hand cycles, especially for persons with disabilities. Programs should also be considered to increase access to bicycles for lower income individuals and families
F. Grants for municipalities, non-profits and universities for fleets and programs to enable people to try and use electric bicycles
G. Policies to encourage or mandate recharging outlets in bicycle parking
H. Develop a network of Cycling Highways and other routes that enable the safe use of electric bicycles
I. Work with electric bicycle manufacturers and retailers to develop programs and events that allow people to experience electric bicycles

2. Cyclogistics - Delivery of Goods via Bicycle

Cyclogostics is the delivery of goods by pedal powered or electric assist bicycle, cargo bicycle or cargo tricycle. Service models include on-demand courier services, business to business delivery and last mile deliveries. Benefits include significantly reduced GHG emissions, lower costs, more convenient loading and unloading and improved safety for people walking and cycling.

Cyclogistics is gaining traction in Europe, with UPS, DHL and TNT using cargo bikes for deliveries.[24] Several cities including Vienna and Sevilla are using cargo bikes for lower cost delivery of services including street cleaning and park maintenance. As part of its climate strategy, the UK Government has

[22] 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

[23] http://www.bike-eu.com/sales-trends/nieuws/2015/1/e-bikes-are-most-important-trend-10110346 Accessed July 24, 2015.

[24] https://www.pembina.org/reports/cyclogistics-final.pdf

issued a call for evidence for last mile deliveries that includes electrically powered e-vans, micro vehicles and e-cargo bikes[25] .

Businesses offering delivery by bicycle in B.C. include Shift Delivery, Foodora, Domino's Pizza and Uber Eats. Various companies have offered bicycle courier services for decades. UPS has started deliveries via cargo tricycle in downtown Toronto.

Recommendations

A. Offer rebates and other incentives to municipalities, businesses and nonprofits for cargo bicycles, electric bicycles, low speed electric vehicles and other electric/pedal powered vehicles used for goods delivery;
B. Enable municipalities to create low speed zones (40 km/h or below);
C. Help ensure that cycling facilities can safely accommodate cargo bicycles;
D. Ensure the Motor Vehicle Act continues to allow heavier cargo bicycles on the road;
E. Facilitate and encourage cargo bicycles on BC Ferries;
F. Work with municipalities to fund cyclogistics pilots ; and
G. Develop a standardized information system for packages so that all barcodes contain the same information and can be read by any company.

3. Lower Motor Vehicle Speeds

Lower speed limits, traffic calming and enhanced enforcement can reduce GHG emissions by making cycling more attractive and reducing vehicle emissions per kilometre while also reducing the cost of motor vehicle injuries.

> Lowering speed limits can be very effective in reducing GHG emissions, without generating this rebound effect of increasing transport volume. Enhanced speed limit enforcement can have a comparable effect as has been illustrated where concerted efforts have been made in this respect.[26]

According to Transport Canada, B.C. has higher traffic fatality rates than the Canadian average[27]. Transport Canada also states “Research indicates that a 1% reduction in speed results in reducing the likelihood of a fatal collision by 5% (OECD, 2008). Therefore, a downward shift in the distribution of driving speeds for all drivers would be beneficial not just for those speeding on highways.”

Research shows that pedestrian and cyclist fatalities increase dramatically in collisions where the speed of the motor vehicle is greater than 30 km/h[28].

[25] https://www.gov.uk/government/consultations/the-last-mile-a-call-for-evidence
[26] Page 29, http://www.eutransportghg2050.eu/cms/assets/EU-Transport-GHG-2050-Final-Report-22-06-10.pdf

[27] Transport Canada, 2011
[28] J. Acher et al, The Impact of Lowered Speed Limits in Urban and Metropolitan Areas, Monash University Accident Research Centre, January 2008, http://www.monash.edu.au/miri/research/reports/muarc276.pdf

From the British Columbia Casebook for Injury Prevention[29]

> Speed-cameras, speed calming such as lowered speed limits, and environmental modifications such as road bumps are effective at reducing speed-related injury and death.
>
> It is forecasted that speed calming efforts will result in 30% fewer transport-related deaths and 50% fewer injuries. Speed cameras result in a forecasted reduction of 15% of speed-related injury and death. These reductions rely on an investment in environmental modifications and enforcement of road safety laws, however the benefit of lives saved and injuries avoided is more than four times the cost of enforcement. Over 5 years, over $61 million will be saved with these investments. **Over 20 years, well over $266 million will be saved**.

3.a Blanket Speed Limits Below 50 km/h

Currently, the Motor Vehicle Act sets a blanket speed limit for municipalities (i.e. the default speed limit when no speed limit signs are present) of 50 km/h. Thus, municipalities must place a sign on every block where the speed limit is less than 50 km/h. This can be rather unwieldy and expensive.

Municipalities should be able to set blanket speed limits less than 50 km/h within their boundaries. This change, in combination with traffic calming, would make residential streets safer for children, seniors, pedestrians, cyclists and motorists.

In 2009, the Union of BC Municipalities endorsed resolution B19 ENABLING LEGISLATION TO ALLOW MUNICIPALITIES TO CREATE BLANKET SPEED ZONES.[30]

3.b Default 30 km/h Speed Limit on Residential Streets

In addition to allowing blanket speed limits below 50 km/h, the Motor Vehicle Act should be updated to make default speed limit on residential streets 30 km/h. This would save municipalities the expense of adding speed limit signs and would enable cost-effective educational programs.

3.c Enforcement Policies Focused on Reducing Walking and Cycling Injuries and Fatalities

Prioritizing Safety with Strict Speed Limit Enforcement

In many other jurisdictions (e.g. NSW and Victoria, Australia), prioritizing safety has led to strong enforcement of speed limits resulting in drivers complying with designated speeds, saving lives and reducing accidents and property damage. The speed review process is an opportunity to similarly prioritize safety and compliance with laws.

Strict Enforcement at Night and When Visibility is Poor

Cyclist and pedestrian fatality rates increase significantly at night and during the fall and winter when weather limits visibility. Speed limits and other traffic laws should be enforced more strictly in areas where there are people walking and cycling. Campaigns should emphasize that drivers should go slower than posted speed limits when conditions and visibility are poor.

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[29] S Piedt et al, The British Columbia Casebook for Injury Prevention, BC Injury Research and Prevention Unit, August 2015, Page 19, http://www.injuryresearch.bc.ca/wp-content/uploads/2015/08/BCIRPU-Casebook-2015.pdf

[30] http://www.ubcm.ca/assets/Resolutions~and~Policy/Resolutions/Resolutions%20Excerpted%20from%20Convention%20Minutes%202009.pdf

Strict Speed Limit Enforcement When Cyclists and Pedestrians Present
Another option would be a policy of strict speed limit enforcement when cyclists are present on a highway. This could also apply when there are stopped or parked vehicles on the shoulder or pedestrians walking on the shoulder or roadway.

Strict Speed Limit Enforcement In Rightmost Travel Lane
Strict speed limit enforcement in the rightmost travel lane would improve cyclists' safety while allowing higher speeds for motor vehicle in the left lane(s), where present. This may make passing slower vehicles easier for motorists as well.

Speed Enforcement Cameras
The targeted use of fixed and mobile speed enforcement cameras that do not impede cyclists or other road users should be considered on dangerous sections of road with cycling facilities that are inadequate for actual motor vehicle speeds and where other means of enforcement are problematic. As these sections of road likely have missing or substandard shoulders, pulling vehicles over can be dangerous both for the occupants of the vehicles and for the police officers. The vehicles may also block the shoulders, requiring cyclists to enter travel lanes. In any case, speed enforcement cameras should not be seen as a substitute for the upgrading of inadequate and unsafe cycling facilities.

Speed cameras have been found effective in reducing crashes, injuries and fatalities[31]. Transport Canada (Transport Canada 2011) states that "... greater speed enforcement is key. Speed cameras and red light cameras could be implemented more widely across the country and their usage publicized."

3.d Funding for Enhanced Traffic Calming

While in some cases, lower speed limits and increased enforcement will be sufficient to decrease motor vehicle spaces, in many cases, traffic calming and enhanced road design will be required to ensure lower speeds. Given all the health, safety, environmental and community benefits of lower speeds, the Provincial Government should help fund enhanced traffic calming.

3.e Encourage the Creation of Low Speed Communities

In addition to making cycling and walking more attractive, safe and comfortable, small lightweight Neighbourhood Electric Vehicles[32] can be used when motor vehicle speeds are 40 km/h or less. With their lower weights and speeds, these vehicles are much more fuel efficient than motor vehicles that must protect their occupants from high speed collisions. These devices enhance low-cost mobility for those who are unable or choose not to cycle or walk.

Low Speed Communities could also be ideal for piloting fleets of low-speed lightweight shared automated vehicles. This would encourage the development of such technology in B.C. helping to place B.C. as a leader in this industry of the future.

In B.C. on the Move, the Province committed to[33]:

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[31] Wilson, C; Willis, Hendrikz, Le Brocque, Bellamy (2010)."Speed cameras for the prevention of road traffic injuries and deaths.". The Cochrane Library (10). Retrieved 23 January 2014.
[32] https://en.wikipedia.org/wiki/Neighborhood_Electric_Vehicle
[33] B.C. on the Move | A 10-Year Transportation Plan,The Province of British Columbia, March 2015, Page 19, http://www2.gov.bc.ca/assets/gov/government/about-the-bc-government/transportation/bconthemove.pdf

Work with ICBC to explore choices to use slow-moving vehicles and other mobility devices in smaller communities

While focusing on our aging population in B.C. on the Move, in many cases, the appeal of such communities will be of interest to people of all ages.

Opportunities include:

- ➔ Island communities
- ➔ University and College Campuses
- ➔ Small towns
- ➔ Neighbourhoods within larger cities
- ➔ Resort communities
- ➔ Retirement communities
- ➔ Innovation zones
- ➔ Large new developments
- ➔ Airports

Such areas can also be very attractive to tourists.

Mackinac Island is a popular resort area and tourist destination in Michigan. Motorized vehicles have been prohibited on the island since 1898, with the exception of snowmobiles during winter, emergency vehicles, and service vehicles. Travel on the island is either by foot, bicycle, rollerblade, inline skate or horse-drawn carriage.[34]

4. Discouraging the Use of Unsafe High GHG Emission Vehicles

In Norway, electric cars are exempt from acquisition tax, representing around NOK 100 000 (USD 11 600). BEVs are exempt from the 25% value-added tax (VAT) on car purchases. The Netherlands have a differentiated CO2-based taxation scheme for which taxation rates are gradually evolving through 2020 (the rates for each year to 2020 have already been announced). The changes primarily affect PHEVs, which will be subject to tax rates that will keep increasing compared with the rates in 2015. Zero emission cars are exempt from registration tax, while cars with CO2 emissions per km corresponding to a PHEV were subject to a EUR 6 per g CO2/km tax rate in 2016 – this will increase to EUR 20 per g CO2/km in 2017.[35]

[34] https://en.wikipedia.org/wiki/Mackinac_Island
[35] https://www.iea.org/publications/freepublications/publication/GlobalEVOutlook2017.pdf

In addition to producing high levels of GHG emissions, Light Truck Vehicles (LTV), which includes vans, pickup trucks and SUVs, pose a significantly greater risk to pedestrians and cyclists.

The Provincial Health Officer's Annual Report *Where the Rubber Meets the Road: Reducing the Impact of Motor Vehicle Crashes on Health and Well-being in BC* states "Research also suggests that the large weight and size of SUVs and light trucks increases the risk of injury to other road users involved in MVCs."[36]

Researchers at the University of Michigan's Transportation Research Institute have concluded that a pedestrian hit by an LTV is more than three times more likely to be killed than one hit by a car – less due to the vehicle's greater mass than due to its height and the design of its front end. A pedestrian hit by a passenger car will, with luck (a relative term), be struck in the legs and sent over the hood. An LTV will probably strike a pedestrian with its blunt hood – for adults, at the level of the torso, home of the vital organs; for kids, the level of the head. The LTV will then knock 65% of adults and 93% of children to the ground, where they have a good chance of being run over.[37] As well, headlights are higher on an LTV and more likely to blind other drivers and only 2 out of 38 SUV models tested had a rating of good or better[38].

Large SUVs and pickups also can make it hard for drivers to see children and even short adults

Recommendations

A. Add a tax based on GHG emissions to fossil fuel powered vehicles
B. Ban full sized SUVs and pickups from being used as ride-hailing vehicles

[36] Page 144 https://www2.gov.bc.ca/assets/gov/health/about-bc-s-health-care-system/office-of-the-provincial-health-officer/reports-publications/annual-reports/reducing-motor-vehicle-crashes-bc.pdf

[37] http://www.theglobeandmail.com/opinion/why-the-suv-mentality-needs-to-change/article27172486/

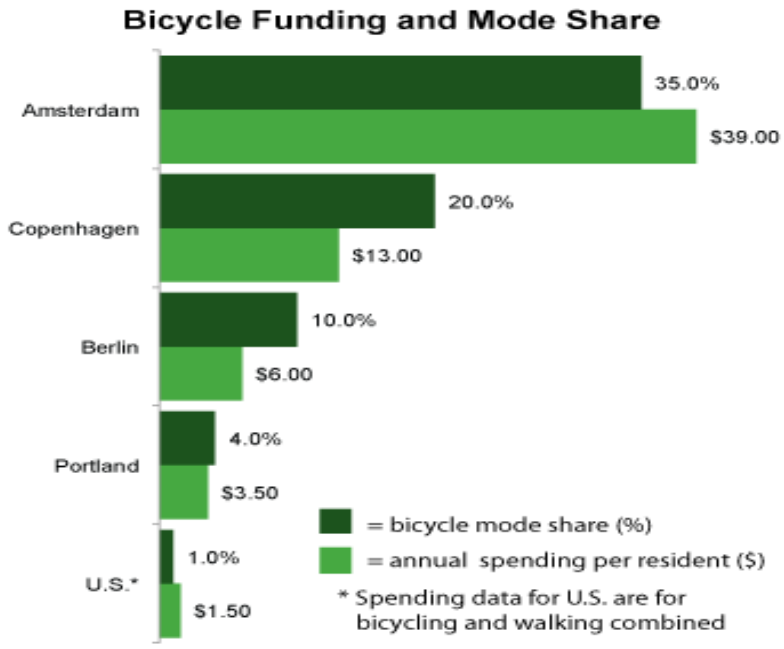
[38] http://www.iihs.org/iihs/news/desktopnews/more-than-half-of-midsize-suv-headlights-tested-rate-marginal-or-poor

5. Accelerated Provincial Investment in Cycling and Walking

The investment required to improve walking and cycling facilities on Provincial roads and bridges; the significant unrealized economic potential of cycle tourism; the high societal cost of cycling and walking injuries and fatalities; and the benefits of investments in cycling facilities for pedestrian safety have prompted us to include pedestrian facilities within our funding recommendations bringing the yearly amount to **$100 million per year** for ten years.

With additional funds of $85 million per year from local, regional and federal governments for a total of $180 million per year, this will bring the level of funding to near the **$40 per person per year** seen in countries such as the Netherlands that have high levels of cycling and walking and low fatality rates. The UK government realizes that this is the level of funding required and has been increasing funding towards that level.

As summarized in the following table, jurisdictions around the world are investing significant amounts in cycling infrastructure. Some, such as the Netherlands, already have high cycling mode shares and require investment to address capacity and safety issues. Most of the others, having cycling mode shares lower than many B.C. communities, have committed to dramatically increasing cycling in a short period of time.



Cycling Investment Levels

	Investment (millions)	Start	End	Years	**Per Person per Year**
Netherlands	$652			On going	**$41**
Delaware	$38	2016	2019	4	**$11**
Maryland	$237	2015	2020	6	**$7**
Winnipeg	$334	2015	2035	20	**$25**
Minneapolis	$18	2010	2010	1	**$48**
Vancouver	$25	2010	2011	2	**$20**
Surrey	$13	2010	2011	2	**$20**
London	$619	2013	2015	3	**$27**

New Zealand

The New Zealand government is investing $390 million ($339 million CAN) in cycling and walking over 3 years, $96 million increase over the previous three years.[39] New Zealand's population is almost the same as British Columbia's.

Acting Associate Transport Minister James Shaw said the $390 million National Land Transport Fund package would be the largest investment ever in walking and cycling infrastructure for New Zealand. "More and more Kiwis want the freedom to cycle safely around their towns and cities, and this investment in safe cycle infrastructure is needed to making that possible," said Mr Shaw.[40]

The Netherlands

Dutch government expenditure on cycling has now reached an annual level of €487 million per year.[41] More money is now being spent on improving regional routes, for longer distance commuters, which leads to higher rates of cycling to work.

Munster, Germany

Munster, Germany (population 270,000) increased cycling trips up from 29% in 1981 to 43% in 1992 with an investment in cycling facilities of $112 million in today's dollars.[42]

Winnipeg, Canada

Winnipeg's Active Transportation Strategy approved in 2015, estimated network buildout will cost $334 million.[43] The Strategy highlighted the importance of staff resources:

> Evidence from cities across North America clearly demonstrate that having several staff members dedicated exclusively to walking and cycling is critical to enabling walking and cycling. An analysis of the 40 largest U.S. cities shows that cities with larger staff, both in count and per capita, have higher levels of bicycling than cities with smaller staffs.

In 2010, Winnipeg invested $20.4 million in capital funding to build an extensive active transportation network throughout the city.[44] The funding came from the three levels of government (the city, province and federal governments each contributing one-third, or $6.8 million). This active transportation program involves the creation of 35 projects that range from multi-use pathways to bike boulevards. Almost all of these projects are bicycle routes.

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[39] https://www.newsroom.co.nz/2018/08/23/205051/government-will-fully-fund-skypath#

[40] https://www.radionz.co.nz/news/national/364754/skypath-across-auckland-harbour-bridge-to-get-67m-in-funding

[41] http://hembrow.blogspot.com/2010/05/487-million-euros-for-cycling.html

[42] Ibid, p i.

[43] http://www.winnipeg.ca/publicworks/MajorProjects/ActiveTransportation/WalkBikeWinnipeg/pdf/strategy_summary.pdf

[44] http://www.winnipeg.ca/publicworks/MajorProjects/ActiveTransportation/HikeItBikeItLikeIt.asp

Copenhagen, Denmark

Already Copenhagen stands out among other cities for its cycling infrastructure, counting more than 390 kilometres of bike paths. Between 2006 and 2010, it spent DKK 250 million in bike infrastructure and an extra 75 million kroner were allotted for 2011. Within the city, 55% of all commuters already travel by bike. Their goal is to hike the percentage of suburban commuters cycling to and from the city from the 37% it is today to over 50 percent by 2015.[45]

5a B.C. Provincial Roads and Bridges

In consultation with our members, HUB Cycling and through working with MoTI staff on issues including access to the Ironworkers Memorial Bridge and the Stanley Park Causeway, we have come to realize that an ongoing program to audit, prioritize, plan and fund upgrades to cycling and walking facilities on Provincial roads and bridges is needed. This will help streamline safety improvements, create efficiencies for Ministry staff, and result in consistently high quality infrastructure. The Province should provide resources to municipalities and regional districts to do the same on their facilities.

These improvements will require significant investment over the next ten years. Improvements to the Causeway have cost around $7 million and further investment will be required to improve the connections to Vancouver cycling routes. Access improvements on the south side of the IWMB alone are estimated to cost in the order of $15 million. The cost to improve access to the Alex Fraser Bridge will likely be even more. These bridges and their connections are key components of regional cycling routes that need safety improvements to serve their users.

Cycling and Walking Audits

We strongly recommend that audits of cycling and walking facilities, maintenance procedures and cycling and walking collisions on Provincial Roads and Bridges be undertaken as part of the implementation of the BC Transportation Plan. The audits should include:

- ➔ cycling and walking counts;
- ➔ the width and condition of cycling facilities;
- ➔ hazard identification;
- ➔ identification of areas where debris collects;
- ➔ identification of destinations popular with locals and visitors;
- ➔ maintenance procedures; and
- ➔ details of all cycling and walking collisions, fatalities and injuries including those not involving motor vehicles.

Our members have identified some Provincial facilities that require cycling and walking improvements including the:

- ➔ Ironworkers Memorial Bridge Access
- ➔ Alex Fraser Bridge and Access
- ➔ Sea to Sky Highway Shoulder Widening and Hazard removal

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45 http://www.expatica.com/nl/news/news_focus/Copenhagen-plans-super-highways--for-cyclists_116307.html?ppager=0

- ➔ Lougheed Hwy - Coquitlam, Maple Ridge, Mission, Deroche to Harrison Mills
- ➔ Highway 4 to Tofino - Sutton Pass to the Visitor Centre at the T junction
- ➔ Kamloops - a paved path between Valleyview and Barnhartvale that parallels Hwy 1
- ➔ North Shuswap - a trail paralleling the highway from Squilax to Anglemont
- ➔ Roads connecting the University of British Columbia and the City of Vancouver
- ➔ A safe and convenient cycling connection between the Port Mann Bridge and the Central Valley Greenway.
- ➔ Highway 99 between the US border and the north end of Oak Street Bridge.

We will continue to identify such facilities and bring them to the attention of MoTI. We expect there are many more across the Province and thus encourage the Ministry to actively audit its infrastructure.

5.b Increased Bike BC Funding and New Complete Streets Funding

Inadequate Funding for Communities
Communities across the province have produced extensive cycling network plans. Unfortunately, due to lack of funding, these cycling networks may not be complete for 30 to 50 years. For instance:

- ➔ **Kelowna's** cycling and walking Plan is estimated to cost **$276 million**. While the city is currently putting money aside for the program, staff have warned at the current level of funding, the city will only have about **$90 million** of the total needed to fund the entire plan.[46]
- ➔ **Surrey**'s cycling plan that includes over 400 km of additional bike lanes and paths. With current funding, it plans on completing around 12 km per year, but has indicated that additional funding from senior levels of government would speed implementation of the plan.[47]
- ➔ The *Pedestrian & Cycling Master Plan* - ***Capital Regional District*** estimated the cost of upgrading the bicycle network to attract people of all ages and abilities is around **$275 million**.
- ➔ In order to meet its 2040 targets, **TransLink** has estimated that completing all-ages cycling networks around the region is at least **$850 million**.

Increased Bike BC funding and a new funding for Complete Streets would enable communities across B.C. to complete their cycling networks and improve cycling and walking safety.

Along with the increased funding, we also recommend:

5.b.i Increase Bike BC funding allowed per project
Especially with the increased cost of facilities designed to attract people of all ages and abilities, the per project amount provided by Bike BC and other cost sharing programs needs to be increased to enable these projects to be built and make it worthwhile for communities to submit funding applications. As well, for regionally significant projects, Bike BC funding should be available for up to 100% of project costs.

5.b.ii Helping Communities With Active Transportation Planning and Design

[46] http://www.kelownacapnews.com/news/366130081.html
[47] http://www.thenownewspaper.com/travel/Ambitious+strategy+aims+cycling+lanes/6991514/story.html

Many communities in B.C. could use resources and funding to assist with the development of cycling network plans and with the design of cycling facilities. Many existing plans need to be updated as they were completed before it was widely recognized that cycling facilities separated from traffic attract more people of all ages and abilities to cycling and can be safer than unseparated facilities. As well, existing network plans often do not include implementation plans with cost estimates making it less likely that they will be implemented in a reasonable period of time.

The BEAT (Built Environment for Active Transportation) program is a good example of a program which assisted communities both with funding and expertise to develop active transportation plans.

➔ We recommend an updated and expanded BEAT or similar program to help plan cycling and walking networks and design facilities in communities.

5.c Funding for Safe and Healthy Routes to School

We strongly support the recommendation of the Select Standing Committee on Health in *A Strategy for Combating Childhood Obesity and Physical Inactivity in British Columbia Report* that:

➔ "the government provide resources to local governments and school boards to develop and promote safe routes to school programs and provide additional resources to assist municipalities to address existing walking and cycling infrastructure deficiencies relating to the safe routes to school program."[48]

5.d Cycle Tourism

Building on the success of Spirit of 2010 Trails and the Trans Canada Trail, a network of cycling and walking routes linking communities and attractions throughout the province will also offer visitors and residences wonderful low carbon experiences. The Rural Dividend Destination Trails program is a good start but it needs to be expanded. The dramatic increase in tourism will have significant economic benefits to rural and urban BC communities. We are encouraged by recent Provincial investment in the Okanagan Rail Trail and other cycle tourism initiatives in the Okanagan.

Recommendations

1. A comprehensive, province-wide, paved BC cyclotouring network of on-road and off-road cycling facilities designed to appeal globally to cyclists, non-cyclists, families, seniors, and non-risk takers to tour BC with their bicycles.
2. Widening of highway shoulders to exceed BC's April 2000 Cycling Guide
    a. Width conducive to entice non-cyclists, families and risk-averse cyclists to tour on bicycle
    b. Relocation of rumble strips to underneath the outside lane's white line
    c. Shoulder sweeping every 6 weeks between April and October
    d. Wider shoulders on ascents and descents exceeding 4%

[48]A Strategy for Combatting Childhood Obesity and Physical Inactivity in British Columbia Report, The Legislative Assembly of British Columbia - Select Standing Committee on Health, 2nd Session, 38th Parliament – November 29, 2006, https://www.leg.bc.ca/cmt/38thparl/session-2/health/reports/Rpt-Health-38-2-29Nov2006/Rpt-Health-38-2-29Nov2006-Recommendations.htm

    e. Maintaining quality shoulder pavement surfaces at a level that attract people to cyclotouring
3. Development program for rail trails and off-road trails between cities, including acquiring rail corridors
4. Banning of motorized vehicles from rail trails
5. Support and grow multi-modal cyclotouring in BC
    a. 24-hour, on call George Massey Tunnel shuttle service
    b. 3 bike racks on buses and allowing bicycles in buses when not fully loaded and rack is full
    c. Expand bike racks on ferries
    d. Cycling access facilities to airports and at airport facilities and services for shipping bicycles by air.

6. Developing Cycle Highways

Cycle Highways (also known as Bicycle Highways and Super Cycleways) 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.[49]

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 sections
- ➔ Requirements for maximum grades and minimum curve radii.
- ➔ High operating and maintenance standards including frequent snow, ice and debris removal
- ➔ Grade separated crossings of major roads and highways
- ➔ Few stops
- ➔ Lighting
- ➔ Greenwaves - Traffic signals synchronized to average cycling speeds

Keys to success are cost-sharing funding from senior levels of government and a coordinating body that can help ensure that routes are of a consistent high quality across jurisdictions.

While even with Cycling Highways, the mode share of longer trips by bicycle will be lower than that of shorter trips, the benefits of longer trips by bike are much greater both from a transportation and an environmental point of view. For example, one 15km bike trip replacing a car trip has 5 times the GHG emissions reductions as a 3 km trip. Basically getting 1% of 15 km trips by bike will have pretty much the same benefits as 5% of 3 km trips by bike.

Super Cycleways have been implemented or are being planning in countries including:

- ➔ Netherlands:15 implemented, 20 planned
- ➔ London: 12 planned
- ➔ Australia: planned in Perth, Adelaide and Brisbane

[49] http://www.citylab.com/cityfixer/2016/03/norway-bike-highways-billion-dollars/472059/

- ➔ Munich: 14 planned[50]
- ➔ Norway: Plans to invest $1.25 billion[51]

Norway

Norway will spend a massive $1.25 billion creating 10 broad, two-lane, cross-country bike tracks in and near Norway's nine largest cities, allowing longer-distance cyclists to travel with a speed and safety hitherto impossible.[52] These new paths will create bike commuter links between inner cities and outer suburbs, extending the protected cycle network out from urban cores through the commuter belt and into the countryside. They will allow people to cycle faster safely, riding at up to 40 kilometers per hour making longer commutes feasible. If they succeed, they should take pressure off roads and public transit and help to cut Norway's fossil fuel use.

In Norway, the cycling mode share was just 5% in 2014. The Norwegian government wants to increase this share of journeys to between 10% and 20% by 2030. The government is also aiming to have zero-growth in car use between now and 2030. Herein lies one of their more surprising plans. Norway already has the highest market share in the world for zero-emissions cars, partly induced by far lower taxes for green vehicles. This is good news, but as the government notes, even zero-emissions cars create noise, traffic, and some pollution, be it from brake pads or by swirling up dust. Taxes for green vehicles taxes will thus now be raised, though costs will still be lower than for a conventional car.

Copenhagen[53]

A total of 28 routes with 467 km of cycle paths are planned in the Copenhagen region. Eleven of these will be ready by the end of 2018. It's a remarkable story of regional cooperation, forged by one big city and 21 of its smaller suburban neighbors, who came together around a common vision for moving commuters from using their cars to riding their bicycles.

Ironically, this regional success started with a failure. Back in 2007, city leaders in Copenhagen began looking for a way to reduce automobile congestion in the city center. They aimed to do what London and Stockholm did around the same time: create a "congestion charge" on cars entering the city.

Protests kicked up from the municipalities around Copenhagen. Their citizens would be particularly burdened by the extra cost to go to work or do other errands in the city. The project was dumped. With no congestion toll in sight, Copenhagen decided to tackle the problem from a completely different angle. Instead of deterring driving, why not encourage biking?

In some ways, the bike plan benefited from the failed attempt at the congestion charge. For one thing, it was more of a "carrot" than a "stick" so the suburban communities were more open to it. One result of all this participation is that the cycling network includes a number of suburb-to-suburb routes. It's not all hub-and-spoke routes radiating out from Copenhagen.

[50] http://www.citylab.com/commute/2015/07/bike-autobahns-could-be-coming-to-munich/399410/
[51] http://www.citylab.com/cityfixer/2016/03/norway-bike-highways-billion-dollars/472059/
[52] Ibid.
[53] http://www.citylab.com/commute/2014/11/how-the-danish-cooperated-to-build-a-bicycle-superhighway/382982/

If inclusiveness was one goal, another was to dream big. This freed the planners to develop innovative ideas like timing stop lights at road crossings to favor bikes rather than cars. Another idea was to include "conversation lanes" wide enough for two people to ride side-by-side and talk.

To encourage municipal participation, a cost-sharing structure was set up. Municipalities only pay half of the construction costs. Most of the other half is covered by a subsidy from a national fund for supporting bicycling.

A six-person secretariat was also set up as a neutral body to administer the project. Policy is set by a steering committee made up of executive-level civil servants from all participating municipalities. A project group consisting of traffic planners and other more technical people meets four times a year.

Possible Cycling Highways for British Columbia include upgraded:

- ➔ BC Parkway
- ➔ Central Valley Greenway
- ➔ Portside Greenway
- ➔ North Shore Spirit Trail
- ➔ Lochside Trail
- ➔ Galloping Goose
- ➔ E and N Trail

Recommendations

A. Develop guidelines and best practices for Cycling Highways
B. Work with regions and municipalities to plan and implement Cycling Highways
C. Provide regions and municipalities with assistance to design Cycling Highways
D. Provide cost-shared funding for Cycling Highways

Cycling and Walking Cost Estimates

To the best of our knowledge, the Government of B.C. has not produced estimates of the cost of building out cycling and walking networks in communities or upgrading walking and cycling facilities on provincial roads and bridges.

We have attempted to estimate the cost of building out cycling networks based on regional and community plans covering around 60% of the population of B.C. assuming the cost per capita is the same for the remainder of the the province. Note that many of these plans may do not include the cost of higher quality all ages and abilities cycling facilities so the cost may be higher if such facilities are built. We encourage municipalities to update their plans to include ages and abilities cycling facilities. This year, our estimate for cycling networks is **$1.89 billion**. This does not include many provincial roads and bridges. If these were included, we expect the cost to easily exceed **$2 billion**.

This year, we have found these estimates for four communities with the average per capita being $530. If this average holds for other communities, the cost of building out cycling networks would be around **$2.4 billion**. Added to the $2 billion we have estimated for walking, the total cost of building out cycling and walking networks would be **$4.4 billion**.

In 2016, the City of Kelowna and the District of Squamish approved new active transportation plans with implementation costs of around $2,000 per capita. If the cost of new active transportation plans in other communities around the Province proves to be similar, the total cost for all of B.C. would be over $9 billion. Note that the Kelowna plan includes active transportation corridors that often involves the rebuilding of streets with high-quality materials in addition to greatly improving them for cycling and walking. While more costly than required for simply making walking and cycling safer and more comfortable, these street improvements also have multiple other community, social and business benefits.

Recommendation

We encourage the Government of B.C. to work with municipalities and regional districts to produce more refined estimates of the cost of building out cycling and walking networks in communities and upgrading walking and cycling facilities on provincial roads and bridges.

Cycling Network Estimates			
Jurisdiction	Population	Cost (millions)	Total $/capita
Metro Vancouver	2,300,000	$850	$370
CRD	360,000	$275	$764
City of Chilliwack	78,000	$27	$346
City of Kamloops	86,000	$13	$153
City of Mission	36,426	$5	$140
Salt Spring Island	10,234	$9	$908
Total	2,870,660	$1,180	$411
Rest of Province Estimate	1,729,340	$711	$411
Total for BC	4,600,000	**$1,890**	$411

Active Transportation Network Estimates

Jurisdiction	Population	Cost (millions)	Total $/capita
City of Kelowna	123,500	$267	$2,162
District of Squamish	19,000	$36	$1,909
Total	142,500	$303	$2,128
Rest of Province Estimate	4,457,500	$9,486	$2,128
Total for BC	4,600,000	**$9,790**	$2,128

Walking Network Estimates[54]

Jurisdiction	Population	Cost (millions)	Total $/capita
City of Castlegar	7,259	$2	$272
City of Mission	36,426	$36	$988
District of North Vancouver	84,412	$37	$438
District of Squamish	19000	$8	$421
Total	147,097	$83	$564
Rest of Province Estimate	4,452,903	$2,511	$564
Total for BC	4,600,000	**$2,594**	$564

Sources

	Page	URL
Metro Vancouver	4	http://www.translink.ca/~/media/Documents/cycling/regional_cycling_strategy/rcs_implementation_plan_june_2013.ashx
CRD	9	https://www.crd.bc.ca/docs/default-source/regional-planning-pdf/Pedestrian-Cycling-Master-Plan/appendix_h_funding_and_implementation.pdf?sfvrsn=2
City of Kelowna	43	http://apps.kelowna.ca/CityPage/Docs/PDFs//Policy%20and%20Planning/PBMP%20Final%20Draft.pdf?t=020717692
City of Castlegar	ES 5	http://www.castlegar.ca/pdfs/Pedestrian_Bicycling_Master_Plan.pdf
City of Chilliwack	34	http://www.chilliwack.ca/main/attachments/Files/2192/Bicycle_Transportation_Plan_March_21_2014.pdf
City of Kamloops		http://www.kamloops.ca/transportation/pdfs/bikeplan/10-05-31-BMP.pdf
City of Mission	7-10	http://www.mission.ca/wp-content/uploads/Transportation-Master-Plan.pdf
Salt Spring Island	41	https://www.crd.bc.ca/docs/default-source/regional-planning-pdf/Pedestrian-Cycling-Master-Plan/pcmp-ssi-edition.pdf?sfvrsn=0
District of North Vancouver	ES 10	https://www.dnv.org/sites/default/files/edocs/pedestrian-master-plan.pdf
District of Squamish	85-86	http://squamish.ca/assets/Active-transportation-plan/2016-09-19-Squamish-ATP-FINAL.pdf

[54] As we could only find a few communities who have estimated the cost of their walking network, we encourage the BC Government to work with municipalities on walking network cost estimates.