The Climate is Right for Cycling
Climate Leadership Plan Submission - August 2015

Executive Summary

Cycling and walking are popular activities that have the potential to grow substantially and thus provide B.C. communities with more affordable transportation choices and economic opportunities. With sufficient investment and policy support, cycling and walking can become practical options for many more people, leading to significantly improved fitness and reduced greenhouse gas (GHG) emissions, congestion, and traffic fatalities. Investing in cycling and walking will benefit the economy by increasing tourism, reducing healthcare costs, increasing workplace productivity, attracting talented workers, and reducing the societal costs of traffic fatalities and injuries.

There is broad public support for cycling improvements. In the B.C. on the Move Engagement Survey, 72% of respondents supported enhancing cycling infrastructure. Cycling is popular. Almost 70% of adults in BC ride a bicycle at least once a year, 42% at least once a month and 25% at least once a week. Many want to cycle more, with almost 70% indicating they would ride more if there were separated bike lanes that protected them from traffic.

According to the 2011 National Household Survey, 42% of commutes are under 5 km, a reasonable cycling distance. In the Netherlands, electrically assisted bicycles cover an average distance of 9.8 km, while regular bicycles average 6.3 km. In B.C. 65% of commutes are under 10 km, making them practical using an electric bicycle.

Where significant investments have been made, cycling has increased dramatically. Between 2008 and 2014, daily cycling trips by City of Vancouver residents almost doubled, increasing from 50,000 to 100,000. In the Central Okanagan, daily cycling trips increased by 43% from 2007 to 15,400 in 2013.

Paris, the host city of COP21, The United Nations Conference on Climate Change, is planning on increasing cycling from 5% to 15% of all trips by 2020 through investing in bicycle paths and other measures to encourage cycling.

Comprehensive Active Transportation Strategy

As part of Climate Leadership Plan implementation, we strongly encourage the Province to develop a comprehensive Active Transportation Strategy, including infrastructure funding, improved

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2 [http://bccc.bc.ca/reports(bc-cycling-poll.pdf](http://bccc.bc.ca/reports(bc-cycling-poll.pdf)
4 [Realizing the Benefits of Cycling and Walking - The Case for a Comprehensive Active Transportation Strategy for B.C. BC Cycling Coalition, April 2015](https://d3n8a8pro7vhmx.cloudfront.net/bccyclingcoalition/pages/231/attachments/original/1431035326/BC-Active-Transportation-Strategy-April-2015.pdf?1431035326)
standards, increased maintenance, education, promotion and changes to the Motor Vehicle Act, as a key component of a complete multi-modal transportation system for people of all ages and abilities.

The Provincial Active Transportation Strategy should build upon and complement ambitious local and regional cycling and walking plans. The Metro Vancouver Regional Cycling Strategy predicts that upon buildout, the cycling network in Metro Vancouver is expected to increase cycling from 1.8% of trips to 10% of trips at a cost of $850 million. The Capital Regional District Regional Pedestrian and Cycling Master Plan predicts cycling network buildout will increase cycling from 5.9% of trips to 15% of trips at a cost of $275 million.

**2020 targets**

Given the significant benefits of cycling and walking, we recommend the Province to work with regions, municipalities, cycling groups and other stakeholders to develop ambitious targets for cycling and walking based on a 10 year buildout. We recommend the 2020 targets comprise half the projected buildout increases. Based on the projected increases by TransLink and the CRD, we estimate a reasonable target for B.C. would be to increase trips by cycling to 7% by 2020.

**2050 targets**

As we are proposing current network plans be built out by 2025, we recommend that the Province work with regional districts and municipalities to develop new long-term active transportation plans. This plans should include 2050 targets with the further network enhancements and other measures including education and promotion that will be required to meet those targets.

**Recommended Actions**

1. **Accelerated provincial investment in walking and cycling, totalling $100 million per year**

   Based on figures from several regions and cities around the Province, we estimate that at least $1.8 billion is required to complete cycling networks in B.C. communities. Much of this investment will also benefit those walking as well. At current investment rates, network buildout will take 30 to 50 years.

   We recommend that the Provincial Government accelerate its cycling and walking investment to $100 million per year for the next 10 years. This, along with investment from the communities and the Federal Government will enable communities to build out their cycling networks by 2025.

   This investment would enable realizing the benefits of cycling sooner including significantly greater cumulative reductions in GHG emissions. By providing people with great alternatives to driving, this investment will help reduce the level of Carbon Tax needed to meet Provincial targets and thus lower the cost to individuals and businesses while providing other economic, environmental and social benefits.

   This investment could be funded through various means including an increase in the Carbon Tax, a new gas tax focused on decreasing GHG emissions, reallocation of transportation funds, a cancelling of the tax cuts for those earning over $150,000, road pricing or general revenue.

   a. **Provincial Roads and Bridges** - Dedicated funding for upgrading cycling and walking facilities;
   b. **Bike BC and Complete Streets** - Increased Bike BC cost sharing funding to complete cycling networks in communities and new cost sharing funding for complete streets with all-ages cycling facilities that are also safer and more comfortable for walking;
   c. Funding for **Safe and Healthy Routes to School**; and
   d. **Cycling Tourism** - Funding for trails and paths used by cycling and walking tourists.
2. **Cycling and Walking Facility Planning and Built Environment**
   a. The adoption of evidence-based standards for cycling facilities that are both appropriate for all ages and abilities and higher-speed cycling;
   b. Policies and procedures to ensure these standards are followed on new projects; and
   c. Resources to enable communities to plan for and design high quality cycling and walking facilities;
   d. Incentives and policies to encourage high quality cycling and walking networks in new developments;
   e. Policies and procedures to encourage Complete Streets on Provincial roads in communities.

3. **Education and Marketing**
   Cycling education and promotion compliment investments in cycling facilities increasing their use, improving safety and decreasing conflicts between road users.
   a. Universally available **cycling safety skills training for children** and adults with provincial funding;
   b. Improved and integrated **cycling and driver education**;
   c. Update and increase the distribution of cycling education material including Bike Sense;
   d. Educate people cycling and driving on new types of cycling facilities; and
   e. Increase funding for cycling marketing programs including Bike to Work Week;

4. **Developing Super Cycleways**
   Super Cycleways are high quality bicycle routes designed to reduce travel times and thus facilitate long distance (5-20 km) cycling trips. They would connect communities and major destinations including residential areas, concentrations of jobs, schools and public transit.
   a. Develop guidelines and best practices for Super Cycleways
   b. Work with regions and municipalities to plan and implement Super Cycleways
   c. Provide regions and municipalities with assistance to design Super Cycleways
   d. Provide cost-shared funding for Super Cycleways

5. **Encouraging the Use of Electric Bicycles**
   Electric bicycles can increase the number and length of cycling trips people make.
   a. Eliminate the PST on Electric Assist Bicycles
   b. A rebate on Electric bicycles
   c. Policies to encourage or mandate recharging outlets in bicycle parking; and
   d. Conduct research to determine the potential of electric bicycles to reduce motor vehicle trips and kilometres.

6. **Transit Integration**
   Cycling and walking compliment transit by providing low-cost pollution free access to stations and stops. Replacing short transit trips with walking and cycling can free up funding for services to enable people to replace longer motor vehicle trips with transit.
   a. Secure bicycle parking areas at all major transit hubs
   b. Improved cycling and walking access to transit hubs and stops

The BC Cycling Coalition's member organizations represent thousands of people across the Province.

AMS Bike Co-op  
Comox Valley Cycling Coalition  
Trails BC  
HUB Cycling (Metro Vancouver)  
Kelowna Area Cycling Coalition  
Penticton and Area Cycling Association  
BC Randonneurs Cycling Club  
Cross Canada Cycle Tour Society  
Greater Nanaimo Cycling Coalition  
Island Pathways  
North Shore Safety Council  
Powell River Cycling Association  
Bike to Work BC  
Cycling Abbotsford  
Greater Victoria Cycling Coalition  
Juan De Fuca Cycling Coalition  
Oceanside Cycling Coalition

Provincial Transportation Plan - Cycling and Walking Recommendations 3/30
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   Copenhagen

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Cycling is Popular

Cycling is a popular activity with the potential for substantial growth. Around 70% of B.C. residents ride a bicycle at least once a year, 42% ride at least once a month and 25% ride at least once a week. People would like to cycle more: 65% saying they would ride more often if there were more bicycle paths separated from traffic.5

As shown in the chart to the right, the vast majority of people cycle for recreation, sport and exercise. This reflects the reality that most communities in B.C. do not have cycling networks that facilitate safe, comfortable and convenient cycling for trips that have a specific destination. For recreation trips, however, people can simply pick a pleasant route without having to be concerned about finding a high quality bicycle route to a specific destination.

Typically, recreation cycling is around 6.6 times higher than commuting cycling. However, as shown in the following table, in areas that have better cycling networks, cycling commuting is up to 7 times the B.C. average essentially meaning as many people cycle to work in those communities as cycle for recreation B.C. wide.

Significant progress has been made in the communities that have invested in cycling. For example, in some areas of Vancouver, cycling commuting mode share has risen to nearly 15%. However, overall, little progress has been made in most of B.C., with commuting by bicycle only increasing from 1.98% in 2001 to 2.13% in 2011 reflecting a lack of improvements in many communities.

In 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.6

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6 RCS, page 9
## Cycling Commuting Mode Share

<table>
<thead>
<tr>
<th>Location</th>
<th>2006</th>
<th>2011</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grandview Woodlands, Vancouver</td>
<td>11.30%</td>
<td>14.70%</td>
</tr>
<tr>
<td>Strathcona, Vancouver</td>
<td>9.20%</td>
<td>14.10%</td>
</tr>
<tr>
<td>South Cambie, Vancouver</td>
<td>9.80%</td>
<td>12.70%</td>
</tr>
<tr>
<td>West Point Grey, Vancouver</td>
<td>9.60%</td>
<td>11.80%</td>
</tr>
<tr>
<td>Victoria, City</td>
<td>9.50%</td>
<td>10.60%</td>
</tr>
<tr>
<td>Oak Bay, District</td>
<td>10.40%</td>
<td>10.20%</td>
</tr>
<tr>
<td>Esquimalt, District</td>
<td>5.40%</td>
<td>6.40%</td>
</tr>
<tr>
<td>Saanich, District</td>
<td>5.20%</td>
<td>5.40%</td>
</tr>
<tr>
<td>Vancouver, City</td>
<td>3.70%</td>
<td>4.40%</td>
</tr>
<tr>
<td>Sidney, Town</td>
<td>4.60%</td>
<td>3.70%</td>
</tr>
<tr>
<td>Penticton, City</td>
<td>3.50%</td>
<td>3.50%</td>
</tr>
<tr>
<td>Kelowna, City</td>
<td>3.00%</td>
<td>3.50%</td>
</tr>
<tr>
<td>Courtenay, City</td>
<td>4.60%</td>
<td>2.40%</td>
</tr>
<tr>
<td>BC</td>
<td>2.00%</td>
<td>2.10%</td>
</tr>
<tr>
<td>Vernon, City</td>
<td>2.30%</td>
<td>1.80%</td>
</tr>
<tr>
<td>Metro Vancouver</td>
<td>1.70%</td>
<td>1.80%</td>
</tr>
<tr>
<td>Powell River, City</td>
<td>2.10%</td>
<td>1.30%</td>
</tr>
<tr>
<td>Canada</td>
<td>1.30%</td>
<td>1.30%</td>
</tr>
</tbody>
</table>

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Cycling Potential

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. In B.C., 65% of commutes are under 10 km making them practical using an electric bike.

Almost 65% of British Columbians, around 3 million people, say they would cycle more on improved cycling infrastructure including bicycle paths separated from traffic.

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The chart to the right illustrates the importance of cycling and walking in providing people with an alternative to driving. Transit use in British Columbia is only slightly below the European average. However, both cycling and walking in British Columbia are far below European levels indicating that there is much room to grow.

**Mode Share Targets**

As shown in the table below, both Metro Vancouver and the Capital Regional District have ambitious mode share targets for their planned cycling networks. We recommend the 2020 targets be half the projected buildout increases.

For British Columbia, we expect the cycling potential is somewhat larger than Metro Vancouver as trip distances tend to be smaller and transit options are not as well developed. We simply scaled the targets for Metro Vancouver by ratio of the 2011 census mode shares (2.1%/1.8% * 10.0%) to arrive at the targets for B.C. While we feel that these are reasonable targets, we recommend that the Province develop more robust targets as part of a Provincial Active Transportation Strategy.

<table>
<thead>
<tr>
<th></th>
<th>Census 2011</th>
<th>Planned Buildout 2040</th>
<th>10 Year Buildout 2020</th>
<th>10 Year Buildout 2025</th>
</tr>
</thead>
<tbody>
<tr>
<td>Metro Vancouver</td>
<td>1.8%</td>
<td>10.0%</td>
<td>5.9%</td>
<td>10.0%</td>
</tr>
<tr>
<td>CRD</td>
<td>5.9%</td>
<td>15.0%</td>
<td>10.5%</td>
<td>15.0%</td>
</tr>
<tr>
<td>B.C.</td>
<td>2.1%</td>
<td>6.9%</td>
<td>11.7%</td>
<td></td>
</tr>
</tbody>
</table>

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10 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.\(^\text{11}\)

Addressing the Barriers to Cycling

The barriers to cycling below have been confirmed in research including Cycling in Cities studies\(^\text{12}\) and polling commissioned by the BC Cycling Coalition\(^\text{13}\).

| Safety and Comfort | - Protected bike lanes along busy streets  
| | - Bike routes on quiet residential streets  
| | - Bike paths through parks and along lakes, rivers and the ocean  
| | - Wayfinding, maps and education to help people find routes they find safe and comfortable  
| | - Reduced motor vehicle speeds  
| | - Training that builds people’s confidence and skills  
| Time, Effort and Distance | - A fine grained network serving all destinations  
| | - Routes along rail lines, highways or natural features with few intersections  
| | - Grade separation over or under highways and other barriers  
| | - Electric bicycles  
| | - Cycling and transit integration  
| Hills | - Electric bicycles  
| | - Routes with good grade management  
| | - Routes that avoid hills where possible  
| Weather | - The above measures that reduce the Time, Effort and Distance also reduce exposure to weather  
| | - Properly graded surfaces that prevent puddling  
| | - Cycling and transit integration  
| | - Prompt ice and snow removal  
| | - Indoor or covered bike parking  
| | - Educating people on how to ride in the rain, ice and snow  

The Benefits of Cycling and Walking

We recommend the all the environmental, health, economic and social benefits of measures to reduce GHG emissions be considered.

Various models exist to determine these benefits. We recommend that a variety of tools and methods be evaluated to determine what would be most accurate for British Columbia.

**System Dynamics Modeling (SDM)**

System dynamics modeling (SDM) incorporated the best available evidence to simulate five policy scenarios over the next 40 years in Auckland, New Zealand., Injury, physical activity, fuel costs, air

\(^{12}\) M Winters, A Cooper, What Makes a Neighbourhood Bikeable - Reporting on the Results of Focus Group Sessions, TransLink and the University of British Columbia, November, 2008.  
\(^{13}\) [http://bccc.bc.ca/reports/bc-cycling-poll.pdf](http://bccc.bc.ca/reports/bc-cycling-poll.pdf)
pollution, and carbon emissions outcomes were compared using realistic policies, incorporating feedback effects, nonlinear relationships, and time delays between variables. The simulation model demonstrated the kinds of policies that would likely be needed to change a historical pattern of decline in cycling into a pattern of growth that would meet policy goals. The model projections suggested that transforming urban roads over the next 40 years, using best practice physical separation on main roads and bicycle-friendly speed reduction on local streets, would yield benefits 10–25 times greater than costs.\textsuperscript{14}

**Health Economic Assessment Tool (HEAT)**

The WHO/Europe Health Economic Assessment Tool (HEAT)\textsuperscript{15} is designed to help conduct an economic assessment of the health benefits of walking or cycling by estimating the value of reduced mortality that results from specified amounts of walking or cycling.

**Calculating Distance Travelled**

When calculating potential GHG emissions reductions due to people switching trips to walking and cycling, total distance driven for those trips should be used, not the distance from the origin to the destination.

People drive further to:

- access parking, as parking is not always available right at the destination and accessing a parking space often requires driving around a parking structure or lot
- find on-street parking closer to the destination
- find less expensive parking
- avoid construction areas
- avoid congestion
- to use a road or highway that allows faster driving
- travel around traffic calming

Compilation studies found that drivers spend an average of 8 minutes “cruising” to find either less expensive or more convenient parking and that drivers looking for parking accounted for 30% of traffic.\textsuperscript{16} These studies were in large cities around the world so local research is required to determine the impact of cruising in B.C. communities.

People walking and cycling can also access shortcuts not available to those driving.

Cycling and walking trips may also replace longer driving trips. For example, when people walk and cycle, they may choose go to a shop, restaurant or cafe that is closer than if they chose to drive.

**Combatting Childhood Obesity and Physical Inactivity**

\textsuperscript{15} http://www.heatwalkingcycling.org
A Strategy for Combatting Childhood Obesity and Physical Inactivity in British Columbia[1], by the Select Standing Committee on Health of the Legislative Assembly of BC, estimated that the direct and indirect cost of obesity and inactivity combined in British Columbia is likely in the range of one billion dollars a year and two to three times larger when including reduced productivity and increased susceptibility to illness and disease. This situation may become even worse if action is not taken to enable and encourage physical activity among children. The Committee stated "We also believe that schools, municipalities, and the Province must work together to ensure that every student in British Columbia has access to safe walking or cycling routes." The Strategy recommended the Government provide additional resources to promote cycling and to improve walking and cycling routes to schools and throughout communities.

The Economic Benefits of Cycling

Cycling Tourism
Building on the success of Spirit of 2010 Trails and the Trans Canada Trail, a network of cycling routes linking communities and attractions throughout the province will also offer visitors and residents wonderful cycle touring experiences. A dramatic increase in cycle tourism could have significant economic benefits to rural and urban BC communities.

For example, Oregon estimated that in 2012, cycling tourists contributed $400 million to their economy 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 in tax revenue for the provincial and federal governments.

Attracting Talent and Jobs
Cities around North America are improving their bicycle networks to attract talent, companies and jobs.

“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

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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.  

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.

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. In companies with 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.

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Cycling and Walking Safety

The British Columbia Road Safety Strategy 2015 and Beyond states that while motor vehicle occupant fatalities have decreased significantly, “Since 2002, there has been virtually no progress in achieving better injury and fatality outcomes for pedestrians and cyclists, who are among the most vulnerable and least protected types of road users.”25 As shown in the table below, B.C. has significantly higher rates of cycling fatalities than several European countries.

Table 1. Comparison of cycling fatality rates by jurisdictions26

<table>
<thead>
<tr>
<th>Jurisdiction</th>
<th>Rate per 100 million km</th>
</tr>
</thead>
<tbody>
<tr>
<td>B.C.</td>
<td>2.6</td>
</tr>
<tr>
<td>Germany</td>
<td>1.7</td>
</tr>
<tr>
<td>Denmark</td>
<td>1.5</td>
</tr>
<tr>
<td>Netherlands</td>
<td>1.1</td>
</tr>
</tbody>
</table>

The Cost of Fatalities and Injuries

Based on research by Transport Canada, the societal cost of a traffic fatality is estimated to be around $15 million dollars while that of an injury is around $50,000.27 Thus the average of 60 walking and cycling fatalities have a societal cost of around $900 million per year. The motor vehicle collisions injuring 1,500 cyclists and 2,400 pedestrians cost around $185 million per year. While numbers are not tracked on cyclists injured in incidents not involving motor vehicles, a study of emergency room visits in Vancouver and Toronto indicates around the same number of cyclists are injured due to falls and collisions with hazards, cyclists and pedestrians.28 As well, the ICBC statistics above do not include collisions with the open doors of parked cars which the above study indicates amount to around 20% of injuries involving moving motor vehicles. Thus, likely around an additional 1,800 cyclists are injured in BC at a cost of around $90 million per year.

The total cost to BC society of pedestrian and cycling injuries and fatalities amounts to around $1,175 million per year

Congestion

In addition to the really high human costs, serious injuries and fatalities to people walking and cycling can block busy roads and bridges for hours, significantly interrupting the flow of goods and causing frustration to all road users. It is estimated that up to 25% of congestion is caused by collisions.

Protected Bike Lanes and Bikeways Improve Pedestrian Safety

26 K Teschke et al, 2013
Research has confirmed that the separated bike lanes and bicycle paths that encourage more people to cycle are also the safest facilities for cycling. Separated bike lanes can reduce sidewalk cycling, which is dangerous for both people walking and cycling, by up to 80%. Many of the measures taken in conjunction with protected bike lanes result in fewer injuries to pedestrians and motor vehicle occupants as well by:\(^{29}\):

- Reducing crossing distances;
- Making it easier to know which direction cars are coming from - by reducing the number of mixed traffic lanes, protected bike lane projects effectively break each pedestrian street crossing into manageable stages, all of which include tightly defined vehicle movements;
- Adding dedicated turning phases, preventing conflicts with turning vehicles; and
- Reducing traffic weaving - By removing excess traffic lanes, drivers are less likely to be able to swerve around a vehicle stopped for a pedestrian.

Investments in traffic calming and signals as part of bikeway projects also improve pedestrian safety.

\(^{29}\) Michael Andersen, IT TURNS OUT THAT PROTECTED BIKE LANES ARE FANTASTIC FOR WALKING SAFETY, TOO, People for Bikes, Nov. 14, 2014, http://www.peopleforbikes.org/blog/entry/it-turns-out-that-protected-bike-lanes-are-fantastic-for-walking-safety-too
Detailed Recommendations

1. 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 cycling 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 $75 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 shown in the table below, we have found cost estimates for cycling networks in Metro Vancouver, the Capital Regional District, the Central Okanagan and a few other communities totalling $1.132 billion. Assuming the cost per person will be similar in other communities, we estimate the cost for cycling networks in all B.C communities to be on the order of **$1.8 billion**. Over ten years, this amounts to around $40 per person per year. While formal estimates are recommended for the other communities, as the known estimates cover 63% population of the Province, there is a strong case for increased investment immediately.

<table>
<thead>
<tr>
<th>Jurisdiction</th>
<th>Capital Cost (millions)</th>
<th>Population</th>
<th>Cost per person</th>
</tr>
</thead>
<tbody>
<tr>
<td>Metro Vancouver</td>
<td>$850(^{31})</td>
<td>2,300,000</td>
<td>$370</td>
</tr>
<tr>
<td>CRD</td>
<td>$275</td>
<td>360,000</td>
<td>$764</td>
</tr>
<tr>
<td>Central Okanagan(^{32})</td>
<td>$83</td>
<td>180,000</td>
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<tr>
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<tr>
<td>City of Chilliwack</td>
<td>$27</td>
<td>78,000</td>
<td>$346</td>
</tr>
<tr>
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<td>86,000</td>
<td>$153</td>
</tr>
<tr>
<td>City of Kelowna</td>
<td>$38</td>
<td>117,000</td>
<td>$325</td>
</tr>
<tr>
<td>Sub Total</td>
<td>$1,132</td>
<td>2,907,098</td>
<td>$389</td>
</tr>
<tr>
<td>Rest of Province</td>
<td>$659</td>
<td>1,692,902</td>
<td>$389</td>
</tr>
<tr>
<td><strong>Total for BC</strong></td>
<td><strong>$1,791</strong></td>
<td><strong>4,600,000</strong></td>
<td><strong>$389</strong></td>
</tr>
<tr>
<td><strong>Total for BC</strong></td>
<td><strong>$1,880</strong></td>
<td><strong>4,600,000</strong></td>
<td><strong>$409</strong></td>
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\(^{30}\) The cycling plans have not been evaluated for their completeness nor for the quality of the proposed networks. Several of these plans likely need updating to include all ages and abilities cycling facilities. This will likely result in somewhat increased costs. More details including links to the plans at: [https://docs.google.com/spreadsheets/d/1cbdDX0_zPApdk7mVUWrOrR-W-GzSYubXj0b-907EYo5E/edit?usp=sharing](https://docs.google.com/spreadsheets/d/1cbdDX0_zPApdk7mVUWrOrR-W-GzSYubXj0b-907EYo5E/edit?usp=sharing)

\(^{31}\) Does not include the cost of upgrades to Ministry of Transportation and Infrastructure facilities.

\(^{32}\) Only includes the cost of regionally significant connections in communities and the Central Okanagan is currently updating its Active Transportation Plan. Thus it is expected that the cost could increase significantly.
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 BC communities, have committed to dramatically increase cycling in a short period of time.

<table>
<thead>
<tr>
<th>Country</th>
<th>Investment (millions)</th>
<th>Start</th>
<th>End</th>
<th>Years</th>
<th>Per Person per Year</th>
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<tr>
<td>Netherlands</td>
<td>$652</td>
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<td></td>
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<td>2019</td>
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<td>2015</td>
<td>2020</td>
<td>6</td>
<td>$7</td>
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<td>2010</td>
<td>2010</td>
<td>1</td>
<td>$32</td>
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<tr>
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<td>$18</td>
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<td>2010</td>
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<td>2010</td>
<td>2011</td>
<td>2</td>
<td>$20</td>
</tr>
<tr>
<td>Surrey</td>
<td>$13</td>
<td>2010</td>
<td>2011</td>
<td>2</td>
<td>$20</td>
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<tr>
<td>London</td>
<td>$619</td>
<td>2013</td>
<td>2015</td>
<td>3</td>
<td>$27</td>
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</table>

Netherlands = 27% cycling mode share.

1.a Existing Provincial Roads and Bridges
In consultation with our members and through working with Ministry staff on issues including access to the Ironworkers Memorial Bridge and the Stanley Park Causeway, we have come to realize 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 will 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 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:

➔ Agassiz-Rosedale Bridge
➔ Ironworkers Memorial Bridge Access
➔ Alex Fraser Bridge and Access
➔ Sea to Sky Highway Shoulder Widening and Hazard removal
➔ Southern End of Stanley Park Causeway
➔ 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

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.

1.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 20 to 30 years. For instance:

- **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.

- 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:

1.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 75% of project costs.

1.b.ii **Helping Communities With Active Transportation Planning and Design**

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.

1.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 Combatting 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

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municipalities to address existing walking and cycling infrastructure deficiencies relating to the safe routes to school program.”

2. Cycling and Walking Facility Planning and Built Environment

We recommend that the design of the facilities build upon the experience from Europe, where designs encourage people of all ages and abilities to cycle or to combine cycling with transit instead of driving.

2.a Adoption of Evidence Based Standards

The best North American design standards for bicycling are those of the National Association of City Transportation Officials (NACTO). To encourage people to cycle, and to minimize the need for reconstruction of facilities to better standards at a later date, these standards should be adopted in B.C. Designs should also incorporate the experience of cycling countries. For example, there are many excellent bridge and underpass examples in the Netherlands. Standards and guidelines should be updated as needed to reflect the latest research and experience gained in the implementation and operation of other facilities.

New and upgraded cycling and walking facilities will likely be in place for at least the next 50 years. As such, these facilities need to be designed for future demand assuming a significant increase in cycling and accounting for expected population growth.

Facilities should be designed to:

➔ Attract people of all ages and abilities including children and seniors;
➔ Safely accommodate inexperienced cyclists;
➔ Safely enable the higher-speed cycling required for cycle touring, long-distance commuting, exercise and training on bridges, approaches, connections between communities, and other essential links;
➔ Safely accommodate a range of human powered and light-weight electric devices including wheelchairs, mobility scooters, skateboards, in-line skates, cargo bikes, bicycles with trailers; and tandem bicycles;
➔ Minimize conflicts between all users including cyclists, pedestrians and drivers;
➔ Separate cyclists and pedestrians especially where cycling speeds or user volumes are high;
➔ Provide sufficient shy distance from hazards based on cyclist speed;
➔ Eliminate exposed fencing and barriers poles that could cause a crash or severely injure a cyclist;
➔ Minimize collection of water or debris;
➔ Accommodate anticipated cyclist speeds and volumes;
➔ Have grades of 3% or less to minimize effort and reduce downhill speeds; and
➔ Provide ample sightlines to allow users to see each other in time to avoid collisions.

34A 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,
Provide physical separation where possible
On roads and highways with high traffic volumes or speeds, it is highly desirable to physically separate the cycling facilities from motor vehicle traffic.

The preferred cycling facilities from highest to lowest are:
1. High quality bike paths set apart from a highway right-of-way, particularly if they involved a substantive decrease in distance or grade;
2. High quality bike paths within highway rights-of-way, with safe and efficient crossings at intersecting roads;
3. Physically separated bike lanes, preferably directional and properly integrated into intersection design;
4. Bike lanes separated from traffic with posts;
5. Bike lanes separated from traffic with a painted buffer;
6. Sufficiently wide paved shoulders or painted bike lanes that are well maintained and kept free of road debris, ideally only where traffic speeds are low (<60 km/h), realizing that in rural areas separation may not be always possible.

That said, it is realized that separation is not always possible or may take time to plan, design and fund. We encourage the Ministry to take advantage of road rehabilitation and upgrade projects to improve shoulder width and surface to provide immediate cycling improvements, even if the long-term vision is to provide separation.

In sections of highway with numerous high volume intersections, one-way facilities on both sides of the road are preferred. In sections with few intersections, two-way cycling facilities on one side are acceptable. Ideally the facility should be continuous on one side of the highway as much as possible to minimize at-grade crossings of the highway.

Safely accommodate higher speed cycling
Paths and and protected bike lanes should be designed to safely accommodate expected cycling speeds. On bridges, approaches and long downhill sections, paths and protected bike lanes should accommodate high speed cycling through:

➔ A design speed of 60 km/h;
➔ One-way paths on both sides with convenient access from all directions to encourage one-way cycling to avoid head-on collisions;
➔ Ideally a 1.5m or at least a minimum 1m shy distance separating the travel surface of paths and shoulders from hazards including signposts, fence poles, light standards; utility boxes, trees and street furniture;
➔ Ensuring adequate sightlines; and
➔ Designing the facility to not pool water and collect debris;

Provide sufficient shoulder width
Sufficient shoulder width should account for the following factors:

➔ Speed of traffic on the adjacent roadway;
The volume of buses, large trucks and RV’s, considering wind turbulence and off-tracking on corners;

Significant cross-winds and grades (cyclists need more space when climbing or negotiating cross-winds and avoiding obstacles when descending);

The presence and condition of rumble strips, drainage grates and road-side barriers, all of which can reduce useable space, introduce hazards and collect debris; and

How frequently debris accumulates and how quickly it is cleared.

**Intersections**

- At high volume intersections, cyclists and pedestrians should be signal-protected from right and left turning vehicles;
- Markings and colourised surfaces should be used to indicate conflict areas;
- On cycling routes, people should be allowed to ride through intersections without dismounting.

![The Burrard Cornwall intersection features protected bike lanes and signal phases protecting people walking and cycling from turning vehicles.](image)

**Roundabouts**

- For higher volume and speed roundabouts, grade-separation for cyclists and pedestrians is preferred. In the Netherlands, cycling underpasses are common;
- Where there is no grade separation, roundabouts should contain protected outer lanes for cyclists and sidewalks for pedestrians.

![Assen, Netherlands roundabout with excellent safety record - Only 4 minor car crashes in 5 years. No crashes involving people walking or cycling.](image)

**2.b New Provincial Projects**

Over the past two decades, the majority of Provincial infrastructure projects have accommodated cycling. These project have resulted in significant network improvements around the Province.

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However, projects implemented as design-build Public Private Partnerships (P3) have proven to be challenging with the results often being less than ideal for cycling. Typically, MoTI has done a good job consulting with the cycling community during the initial phase of the project producing reference designs that provide good cycling accommodation.

The problems have occurred during the design-build phase where the actual design bears little resemblance to the reference design, often resulting in significantly worse accommodation of cycling. As well, the accommodation of cycling during the construction period has often been inadequate.

**Sea to Sky Highway**
- Shoulders as narrow as 0.9 metres when the standard for 80 kph road is 2.2m and the promised width was 1.5m;
- Hazards, including drain grates not level with the shoulder surface;
- Improperly installed rumble strips reducing the effective width of the shoulder to 1.3m, increasing the risk to cyclists

**The William R. Bennett Bridge (Kelowna)**
- The reference design included pedestrian/bike paths on both sides of the bridge. This would have allowed easier access to the bridge by both pedestrians and cyclists. After the P3 partner redesigned the bridge, only a two way pedestrian/cycling facility on one side of the bridge remained;
- The surface is unacceptably rough, causing health impacts for some cyclists;
- The slopes on the elevated section of the bridge are steep, discouraging potential cyclists.

**Pitt River Bridge**
- Cycling access is much more circuitous than the old bridge and the reference design;
- Hairpin turns, increasing the risk of cycling falls;
- Poor construction management, including unmarked drop-offs of at least 0.2m in the cycling detours that could have resulted in serious injury.

**Port Mann Bridge/ Highway 1 Expansion**
- The path on the new Port Mann Bridge is only 3m wide, when the standard for a two-way shared path is 4m plus 0.5m shy distance on both sides. The result will be increased risk of head-on cycling collisions, which could result in serious injuries or fatalities due to high speeds on the long downhill sections;
- An opportunity to provide a direct traffic-free connection as part of the project to the Central Valley Greenway was missed. The current route involves a detour of almost 1 km on a truck route through an industrial area requiring crossing busy United Blvd twice and also currently requires travelling along United Blvd for a kilometre.

**Recommendations**
- Ensure a high standard of cycling facilities are written into project requirements that meet or exceed the reference design;
- Provide sufficient financial incentives to ensure that cycling facilities meet or exceed that of the reference design;

Both the private partner and the overseeing authority should have cycling and pedestrian facilities experts on their teams that are intimately involved in the design and implementation of the project;

Feedback should be sought from the cycling community up to and including the final project design;

There should be a complete audit of the final construction to ensure that all standards have been met and that the cycling facilities are safe to use; and

Avoid design-build projects until and unless these issues are resolved.

3.c Provincial Roads Through Communities

From 2007 to 2010 the BC Healthy Living Alliance (BCHLA) worked with 24 local governments and 15 Aboriginal communities on the ‘Built Environment and Active Transportation (BEAT)’ initiative. From that experience, they know that Provincial highways act as real barriers to walking and cycling. It can be very challenging for local communities and to implement measures that would enhance the pedestrian and cycling environment but more responsiveness, flexibility and overall support from the Ministry of Transportation and Infrastructure (MoTI) would make a measurable difference.

Recommendations

Adopt all ages and abilities cycling facilities as the default standard for MoTI roads through communities;

Improve MoTI’s processes for working with local governments to lower speeds, place safety-related signage and improve cycling and pedestrian environments and crossings on highways within communities;

Allocate funding to plan and implement cycling and walking improvements on MoTI roads through communities.

3. Education and Marketing

It is critical that cycling become a part of more people’s everyday transport choice if we are to meet Provincial transportation and GHG emissions reduction goals. Facilitating adult cyclists who will commute, undertake short shopping trips, or visit friends by bike will in turn normalize cycling – supporting an environment where their children continue to cycle into adulthood. There is strong support for cycling safety education for children and adults in B.C. with 58% saying that it is important with only 17% saying that it is not important.

Enabling travel choice is a complex interrelated process requiring awareness, recognition, trial, confidence-building and habitualisation. Education and marketing are intrinsically linked to developing the demand to maximize the use and benefit of investments in infrastructure. There are many examples from around the world such as Safe Routes to School, workplace travel plans, and smarter travel towns, where targeted promotion, skills, and infrastructure improvements combine to create sustained and dramatic changes in local travel choice and public attitudes.

3.1 Cycling Skills Training
Efforts are underway to encourage the adoption of coordinated bike skills training framework, unifying a variety of initiatives including Streetwise Cycling Courses, Ride the Road high school cycling curriculum, Workplace Cycling Education, CAN-Bike and RideLife, into a single, comprehensive BC standard. Provincial funding would be very instrumental in helping this initiative move forward and making cycling education universally available.

This would be a first for North America but experience from the UK 'Bikeability' initiative shows that coordinated training led to 22% of trainees in London stating they cycled a lot more afterwards. While initially focused at schools, a certification process for cycle training to a single BC standard could also provide a service to businesses and individuals. Coordinated action on cycle skills would also help address public concerns about cyclist behaviour.

Ride the Road is HUB’s complete cycling educational program to empower and enable students to commute to school safely and confidently while learning the value and benefits of biking as a reliable and practical mode of transportation. The program shows encouraging results. Post course surveys indicate a significant increase in cycling levels and confidence with cycling in traffic.

Streetwise Cycling Courses provide adult education in community centres around Metro Vancouver, resulting in a 142% increase in cycling post-course and an additional significant increase in cycling in poor weather.

Kids on Wheels is the BC Cycling Coalition’s new initiative to introduce preschool children to cycling through hands on experience with balance bicycles and cycling related toys and books.

3.2 Motorist Training and Education
The responsibilities of motorists and cyclists and safety tips for sharing the road should be enhanced in driver education programs, courses and remedial programs.

3.3 Bike Sense
The British Columbia Cycling Coalition assumed responsibility for Bike Sense (http://bikesense.bc.ca), the British Columbia Bicycle Operator’s Manual from the Greater Victoria Cycling Coalition in late 2014. The Bike Sense Workshop, also in late 2014, brought fifty cycling education experts together from around the Province to discuss and plan the future of Bike Sense. We are currently developing plans to update the material to reflect the latest safety research and broaden the distribution of Bike Sense and other cycling educational material.

3.4 Awareness of New Types of Facilities
As new types of facilities such as separated bike lanes, crossbikes, bicycle traffic signals, traffic circles and roundabouts are introduced, efforts should be undertaken to ensure motorists, cyclists and pedestrians know how to safely use these facilities and interact with each other.

3.5 Marketing
A $5 million per year program of targeted promotion and awareness activities would broaden and consolidate current projects including; Bike to Work Week, Bike to School Week, Bike Month, and the Commuter Challenge. Increased investment would allow development of publicity campaigns and
specific projects such as toolkits for schools and employers to encourage cycle commuting, specific projects aimed at groups where cycling is below average and a ‘share the road’ initiative to increase mutual respect and awareness. Establishing a promotional program for cycling as transport will also generate aggregated impacts by strategic cooperation with other agencies around the co-benefits of cycling as an activity including for preventative health care, green tourism, and sports.

4. Developing Super Cycleways

Super Cycleways (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. 39

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 of major roads and highways
➔ Few stops
➔ Lighting

Greenwaves - Traffic signals synchronized to average cycling speeds

Keys to success is 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 Super Cycleways, 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 3km. Basically getting 1% of 15km trips by bike will have pretty much the same benefits as 5% of 3km trips by bike.

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

➔ Netherlands: 15 implemented, 20 planned
➔ London: 12 planned
➔ Australia: planned in Perth, Adelaide and Brisbane
➔ Munich: 14 planned 40

Copenhagen

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 benefitted 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.

If inclusiveness was one goal, another was to dream big. Streuli didn’t want the original vision to be hampered by worries about cost. 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 Super Cycleways 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 Super Cycleways
B. Work with regions and municipalities to plan and implement Super Cycleways
C. Provide regions and municipalities with assistance to design Super Cycleways
D. Provide cost-shared funding for Super Cycleways

5. 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 percent of the total population in The Netherlands owned an e-bike. Among those 60+, the ownership level was 10 percent. And that part of the population really use their pedal assisted models as they ride twice as much 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.

In 2014, 21% of all bicycles sold in the Netherlands were electrically assisted. 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. Dutch who have an e-bike ride 22% more kilometres per week and the average commuting distance rose from 6.3 to 9.8 kilometres for people who use the e-bike.

A recent Norwegian study 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.

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This indicates that rebates and a PST exemption would be useful in encouraging electric bicycle use in British Columbia.

**Recommendations**

A. Eliminate the PST on Electric Assist Bicycles  
B. A rebate on electric bicycles similar to the rebate on electric cars  
C. Policies to encourage or mandate recharging outlets in bicycle parking  
D. Develop a network of Super Cycleways and other routes that enable the safe use of electric bicycles  
E. Work with electric bicycle manufacturers and retailers to develop programs and events that allow people to experience electric bicycles

### 6. Cycling and Transit

Cycling compliment transit enabling more people to access transit hubs and stations at a lower cost than providing bus service and park and rides.

From the Metro Vancouver Regional Cycling Strategy Implementation Plan:

> While transit will continue to be the best investment for longer distance travel within the region, many short-distance trips can be more cost-efficiently accommodated with cycling investments. In fact, nearly two-thirds of all trips within the region are less than 8km—a comfortable cycling distance for many— but currently only 2.2% of these trips are made by bicycle. By increasing cycling mode share, TransLink can free up capacity on the transit system to accommodate the growing shift from automobiles to transit – and do so at far less expense than major transit capacity investments.  

**Recommendations**

A. Secure bicycle parking areas at all major transit hubs  
B. Improved cycling and walking access to transit hubs and stops

47 [http://www.translink.ca/~/media/Documents/cycling/regional_cycling_strategy/rcs_implementation_plan_june_2013.ashx](http://www.translink.ca/~/media/Documents/cycling/regional_cycling_strategy/rcs_implementation_plan_june_2013.ashx), page 8