



# BRITISH COLUMBIA ACTIVE TRANSPORTATION DESIGN GUIDE

2020 TRANSPORTATION ASSOCIATION OF CANADA  
SUSTAINABLE URBAN TRANSPORTATION AWARD APPLICATION

**URBAN**  
systems



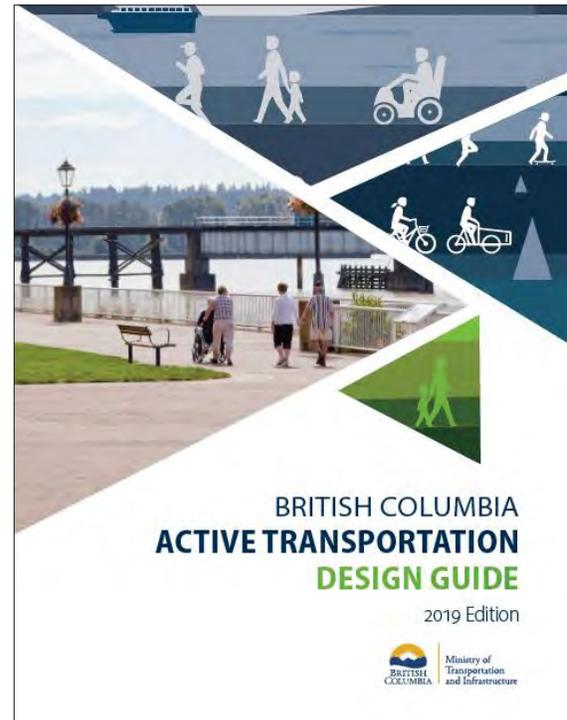
Ministry of  
Transportation  
and Infrastructure

# 1: INTRODUCTION

The Province of British Columbia recognizes the importance of taking bold, meaningful action in order to meet the goals of the Paris Agreement on Climate Change and ensure a more prosperous, balanced, and sustainable future for all British Columbians. In 2018, the [CleanBC](#) plan was developed as a pathway to achieve the Province's legislated climate targets of reducing greenhouse gas (GHG) emissions by 40% by the year 2030, 60% by 2040, and 80% by 2050, based on 2007 levels. CleanBC includes a suite of actions across a number of sectors, aiming to reduce GHG emissions from industry, technology, buildings, energy, waste, and transportation while supporting green job creation and training.

A key component of the CleanBC action to reduce GHG emissions from the transportation sector is to prioritize cleaner and more active forms of transportation. CleanBC set the foundation for the Province to develop [Move Commute Connect: BC's Active Transportation Strategy](#). This innovative and action-oriented strategy aims to double the percentage of trips taken with active transportation by 2030. The strategy was developed through engagement with residents across the province and supports the provincial government's three key commitments to British Columbians: to make life more affordable, to deliver the services people count on, and to build a strong, sustainable economy. The Province is ensuring that this commitment is realized by providing incentives that encourage active transportation, helping communities build integrated and accessible transportation networks, and delivering universal design principles for active transportation infrastructure.

In order to ensure consistent active transportation facility design across the province that is safe, comfortable, and accessible for people of all ages and abilities, the BC Ministry of Transportation and Infrastructure (MOTI), in partnership with Urban Systems, took the additional step of developing



the [British Columbia Active Transportation Design Guide](#) in conjunction with the Active Transportation Strategy. The Design Guide is a comprehensive set of planning and engineering guidelines offering recommendations for the planning, selection, design, implementation, and maintenance of active transportation infrastructure across the province. The Design Guide was developed based on national and international best practices and is one of the most comprehensive and innovative active transportation planning and design documents that has been developed to date anywhere in North America.

To proactively ensure its content is accessible and well understood by practitioners, an on-going series of instructional Design Guide training workshops has also been provided across British Columbia. Between November 2019 and February 2020, 16 training workshops will have been held in all corners of the province, providing training to nearly 500 professionals. The Design Guide has also become a valuable and transferable resource for communities beyond British Columbia, as the Design Guide has been downloaded over 8,000 times from communities across Canada and internationally.



The Ministry of Transportation and Infrastructure has also recently launched an [Active Transportation Infrastructure Grants Program](#) to provide cost-sharing opportunities to communities of all sizes across the province. The Ministry intends that grant applications will be developed based on the recommendations of the Design Guide to ensure communities are providing high quality active transportation facilities in a consistent manner across the province.

The BC Ministry of Transportation and Infrastructure and Urban Systems are extremely excited to submit this application for the Transportation Association of Canada's 2020 Sustainable Urban Transportation Award for the BC Active Transportation Design Guide. The following sections explain how this project satisfies the criteria for this award application, including this project's commitment to developing and enhancing sustainable transportation as well as the innovative and transferable elements that will help promote sustainable transportation across Canada. In addition to this full application, we are pleased to provide letters of support from design guide users and workshop participants in [Appendix A](#).

## 2: DEVELOPMENT AND ENHANCEMENT OF SUSTAINABLE URBAN TRANSPORTATION

The Design Guide is one of the most comprehensive active transportation infrastructure resources developed to date and will play a critical role in promoting sustainable transportation, including active transportation as well as integration with public transportation and new forms of mobility. With a total of 39 chapters covering a broad range of topics, the Design Guide provides an unmatched level of breadth while still delivering the technical depth that practitioners require.

The Design Guide brings together engineering principles and current best practices from the municipal, provincial, national, and international levels, serving as a 'one stop shop' for all active transportation needs. It was developed with input from a diverse range of stakeholders from across British Columbia, including staff from the provincial government, local and regional



FIGURE 1 - PROTECTED INTERSECTION DESIGN RENDERING



governments, Indigenous communities, advocacy groups, professional associations, and academics (see **Appendix B** for a full list of stakeholders that participated in the process).

The Design Guide can be downloaded for free, in full or section by section, on the BC Ministry of Transportation and Infrastructure website, making it accessible to all who have an interest in sustainable transportation. The primary audience for the Design Guide is design professionals in the engineering, planning, landscape architecture, and architecture fields, but it also serves as a valuable resource for elected officials, community groups, and the general public.

The goals that the BC Ministry of Transportation and Infrastructure set for the Design Guide were:

- To provide a reference that is useful for communities of all types, sizes, and contexts;
- To create consistency in the design of active transportation facilities throughout the province;
- To provide a widely available resource to increase the quality of the design of active transportation facilities throughout B.C. and beyond; and
- To support provincial grant programs with design guidance specific to B.C. to clarify the provincial government's expectations for the design of active transportation facilities.

In terms of scope, the Design Guide addresses all human-powered modes of transportation, focusing primarily on walking, cycling, and rolling. The Design Guide also discusses other innovative emerging modes of transportation, including electric bicycles and other small, one-person electric vehicles (e.g. e-scooters, segways, electric skateboards, and hoverboards). Furthermore, the Design Guide considers winter-based active modes (such as skiing, skating, kicksledding, and snowshoeing), water-based active modes (such as paddling, kayaking, and canoeing), and horseback riding.

“As an advocacy organization, good design guides are crucial to our work to helping cities build the best bikeways. The BC AT Design Guide is among the best available and forms a core part of our advocacy efforts for years to come. The GVCC was involved through the drafting process as a stakeholder and was pleased with how responsive both the Ministry of Transportation & Infrastructure and Urban Systems were to taking feedback from a wide range of stakeholders, including non-governmental stakeholders like ourselves and research groups.”

– **Corey Burger**, Policy & Infrastructure Chair, Greater Victoria Cycling Coalition

The Design Guide also goes beyond these forms of active transportation and considers safety and connectivity for all modes. Designing high-quality end-of-trip facilities and seamless connections to transit, ferries, airports, and other forms of transportation is a key focus of the Design Guide, enabling an integrated, multi-modal transportation system serving the diverse needs of all road users. Furthermore, the Design Guide covers universal accessibility, wayfinding, lighting, maintenance, monitoring, reporting, and how to celebrate and launch new transportation facilities.

The Design Guide is a critical component of creating a sustainable transportation system across British Columbia, and it influences all the social, economic, and environmental components of sustainability. Investments in active transportation can result in a more balanced transportation system that is accessible, environmentally friendly, cost-effective, and more equitable in terms of a community's infrastructure investments.

## SOCIAL

The Province of British Columbia is committed to Vision Zero in which no deaths or serious injuries occur involving road traffic and the Design Guide is a key contributor to this goal. When properly planned and implemented, active



transportation facilities can provide safe and accessible transportation choices for people of all ages and abilities. The Design Guide focused on incorporating Universal Design throughout all designs and recommendations. This focus on inclusion for all helps to ensure that all people have access to their community. The Design Guide was also developed using the Gender Based Analysis Plus (GBA+) framework, an analytical process that considers many identity factors, such as sex, gender, race, ethnicity, religion, age, and mental or physical disability. Applying the GBA+ lens will help to ensure that active transportation facilities will be safe, welcoming, and comfortable for all.

High levels of active transportation in a community are a strong indicator of sustainability and livability. Active transportation encourages social interaction, creating opportunities for face-to-face interactions

with members of the community and building trust, respect, understanding, and a sense of co-operation among members of the community. Studies have shown that social interactions diminish when motor vehicle volumes increase and walking infrastructure decreases. These social connections are found to be particularly important for youth, as they can develop sustainable travel patterns at an early age that can continue later in life. Social connections are also important for older adults, enabling them to stay active for longer and maintain physical and mental health.

## ECONOMIC

Active transportation, as part of a balanced, efficient, and accessible transportation system, is one of the drivers of success for economic diversity and prosperity. Neighbourhoods and destinations

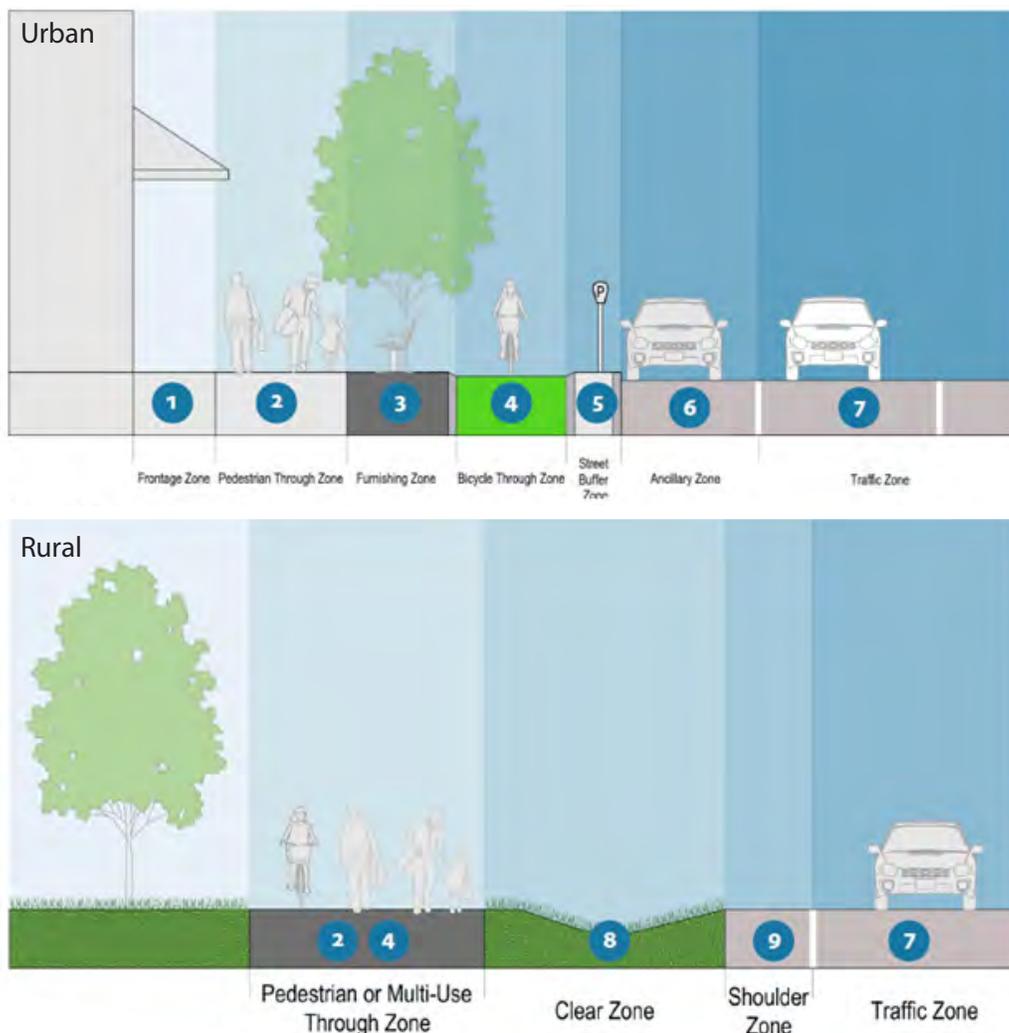


FIGURE 2 - URBAN STREET AND RURAL ROAD ZONES



that are accessible and attractive for people using active transportation can attract more visitors, who can in turn be patrons of local services and amenities. Active transportation also provides more choices for people travelling to work, school, services, and other daily destinations, which is essential for British Columbians who would prefer to spend less on transportation or who do not have access to motor vehicles or transit. B.C. is also positioning itself as a destination of choice for those who prefer active transportation as a lifestyle and as tourism location that provides safe and accessible infrastructure.

## ENVIRONMENT

Transportation is one of the largest contributors to GHG emissions in British Columbia. Creating complete networks of high-quality active transportation facilities can help to reduce motor vehicle trips, congestion, air pollution, and GHG emissions. The Design Guide provides insight for creating multi-modal transportation networks that make it easier to integrate active transportation and transit, thus reducing the need for motor vehicle travel. The Design Guide also provides guidance on launching, promoting, and celebrating new facilities through pop-up events, education, and on-going programming, ensuring that the community is aware of and excited about new transportation options. The intent is that this guidance will assist the province in achieving its strategic goal to double the percentage of trips taken with active transportation by 2030.

“ Overall, the ATDG represents an impressive piece of work, and more importantly, a valuable resource for transportation professionals in BC and throughout Canada. I expect it will go a long way toward harmonizing active transport infrastructure in the province and the nation, which will be beneficial to those using the infrastructure and other road users as well. ”

– **Alexander Bigazzi**, Assistant Professor, Dept. of Civil Engineering and School of Community and Regional Planning, University of British Columbia

The Design Guide also considers the environmental impact of transportation facilities themselves and considers how to incorporate vegetation and stormwater management features into pedestrian and cycling facilities. This includes consideration of drainage, maintenance, and even the space and soil structure required to maintain a healthy street tree in an urban environment. Active transportation facilities bring people outside and into nature and ensuring integration between the facilities and the environment helps to create pleasant environments that will help to encourage an even stronger environmental ethic among British Columbians. To further assist local governments in achieving the environmental benefits of active transportation infrastructure, trees are now an eligible expense for cost-sharing through the B.C. Active Transportation Infrastructure Grants Program.





### 3: INNOVATION

Active transportation elements and practices are constantly evolving, and practitioners across Canada are challenged to be innovative in order to adapt to a changing landscape as societal needs and preferences change. The Design Guide was developed based on a comprehensive scan of current national and international best practices as well as a comprehensive international literature review. The Design Guide also contains many innovative features that ensure that practitioners are up to date with the latest global best practices in active transportation planning and design, including emerging technologies.

For example, Chapter H.5: New Mobility Integration, provides guidance related to electric bicycles (e-bikes), electric kick scooters (e-scooters), and other small, one-person electric vehicles, specifically with regards to where they should be operated, where shared mobility systems should be stored, and whether emerging small, one-person electric vehicles require specific design modifications in relation to cycling facilities, sidewalks, and end-of-trip facilities. This content is key for B.C. communities, as BC Ministry of Transportation and Infrastructure has recently begun accepting proposals to pilot e-scooters, and is examining other ways to update regulations and encourage alternate mobility technologies.

The Ministry released the Design Guide as the 2019 edition and committed to applying continuous

improvements as both required and beneficial. The intent is that communities and practitioners will apply the document and take note of what works best and what needs to be further innovated to provide the best guidance. To date, BC Ministry of Transportation and Infrastructure has received helpful input that is under consideration for future integration into the Design Guide. Performance monitoring is being conducted at a project level to determine the effectiveness of the suggested infrastructure treatments with primary metrics being safety and accessibility. Consultation and engagement continue on the Design Guide. The BC Ministry of Transportation and Infrastructure monitors feedback through its on-line portal that is open to the public for their feedback.

Beyond the Design Guide's content, the extensive rollout and education associated with this project has been hugely innovative and underline's the provincial government's commitment to improving sustainable transportation. The Design Guide has been presented at a number of conferences as well as a number of individual sessions for universities, advocacy groups, and non-profits. BC Ministry of Transportation and Infrastructure and Urban Systems also recognized the need to proactively provide formal training and skills related to the implementation of the Design Guide and developed and delivered a series of comprehensive, one-day Design Guide workshops in communities across the province.



These training workshops are open to design professionals, community groups, and elected officials, with an additional series of workshops targeted directly at internal BC Ministry of Transportation and Infrastructure staff to ensure comprehension and buy-in across all key staff members. Nearly 500 participants attended the 16 sessions that have been held between November 2019 and February 2020, with additional workshops anticipated in the future. See **Appendix C** for a list of presentations and training workshops delivered to date.

The Design Guide training workshop description and agenda can be found in **Appendix D**, with workshop materials provided in **Appendix E**. The training workshop materials were developed based on best practices in adult learning and curriculum development. The workshops consist of a range of learning tools and techniques to ensure effective adult learning. This includes lecture-style presentations in addition to a number of small group discussions, large group conversations and interactive elements, such as videos, pop quizzes, a hands-on interactive case study, and a lunch time site tour to observe local infrastructure in real life. The training workshop was designed to equip participants to:

- Apply the Design Guide effectively to plan, design, implement and manage active transportation facilities;
- Promote active transportation and the role of active transportation in the broader transportation system; and
- Use GBA+ principles to consider the unique needs and issues of various types of people walking and cycling when designing.

Post-workshop feedback was gathered via online survey from participants, with the vast majority of attendees expressing high satisfaction, as shown below:

- 99% of respondents felt instructors delivered the workshop effectively or somewhat effectively.
- 98% of respondents felt the workshop offered good or somewhat good value for money.



The following quotes from survey respondents outline workshop participants' positive experiences:

- *This was a great introductory workshop and was very professionally delivered by people who clearly know the subject matter and communicate well. No complaints.*
- *It was a great workshop. The facilitators were completely knowledgeable about the topic and very helpful when questions were asked. They were also enthusiastic about the guide and the topic and were very well prepared for the workshop.*
- *I thought the presentation was very well organized and the presenters were very knowledgeable about the topic. I liked the interactive polling which was a fun way to learn.*
- *Very engaging, well presented, easy to understand, great visuals.*
- *I appreciated that accessibility and the GBA+ lens were covered. It was also good to hear that a few attendees were surprised by what was being suggested as safe infrastructure. This suggests that the information is potentially reaching new people.*
- *I enjoyed the opportunity to do a deep dive into a wide variety of active transportation topics and the facilitator and audience were highly knowledgeable. This shared knowledge meant that our limited time could be spent on in-depth professional discussion.*
- *Great work putting this together. A huge step for AT in BC. I hope this continues to evolve with a dedicated research team with a push on progressing new best practices across the province.*



How equipped did you feel applying the Design Guide **before** and **after** the course

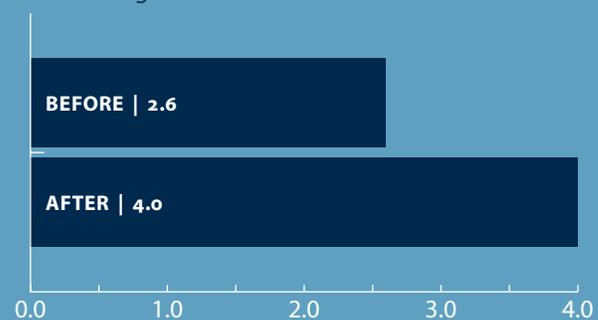


FIGURE 3 - DESIGN GUIDE WORKSHOP PARTICIPANT FEEDBACK



- 95% of respondents would recommend this workshop to others.
- 89% of respondents were satisfied or very satisfied with the workshop.

Additionally, respondents felt significantly more equipped to apply the Design Guide after the workshop, with a rating of 2.6 out of 5 before the course compared to 4 out of 5 after the course – an increase of 56%. This underlines the value of providing the workshop directly to practitioners across the province and will help to ensure consistency in application – and, ultimately, infrastructure.

## 4: TRANSFERABILITY

The Design Guide has been developed to provide suggested guidance for local and regional governments, Indigenous communities, transit agencies, private developers and consultants, and anyone else who is involved in the planning, design, and/or implementation of active transportation infrastructure. Providing design guidance for an entire province requires a broad spectrum of design solutions, as B.C. is a vast province with a wide range of community types, geographies, and climate conditions. The Design

Guide considered the unique B.C. context – for example, BC Ferries was consulted to ensure coastal communities are well-served by multi-modal transportation; a number of approaches for mitigating B.C.'s mountainous topography are provided in the pedestrian and cycling sections; winter maintenance guidance is provided for northern and interior communities; and three separate chapters are devoted to considerations for active transportation in rural and highway contexts.

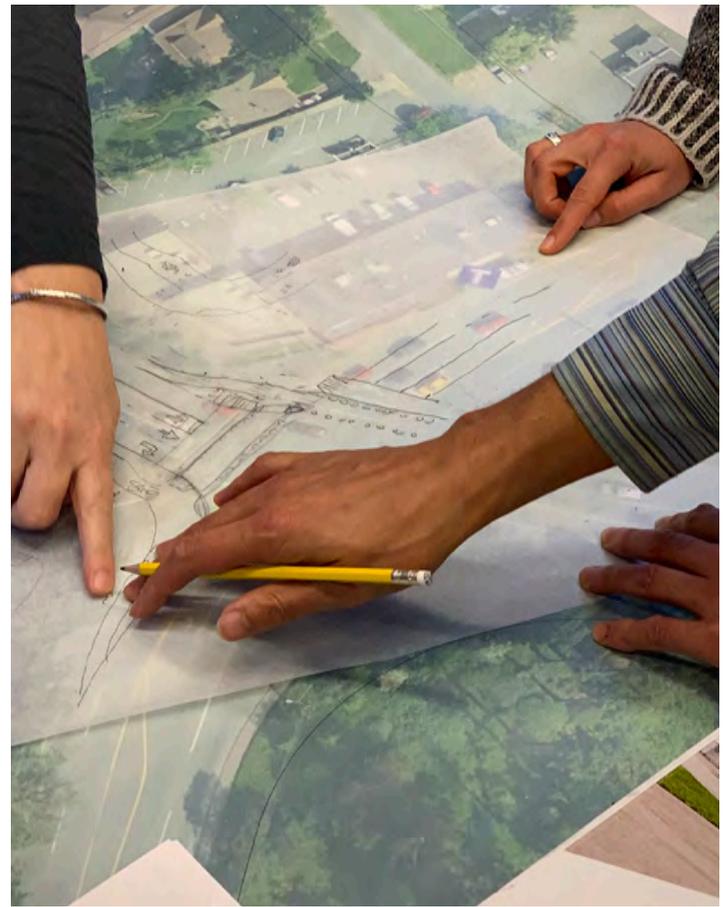
The planning and design of active transportation facilities can also differ substantially between urban, suburban, and rural contexts. The Design Guide set out to ensure that its contents would be applicable in all sorts of communities, with many flexible approaches to facility design.

The broad spectrum of design solutions in this guide could be applied easily within other Canadian and North American jurisdictions. This guide provides design flexibility and includes specific, targeted language to describe where, and the extent to which, desirable design parameters may be varied to reflect site-specific challenges. It can provide guidance for the planning, selection, design, implementation, and maintenance of active transportation facilities on roadways in



FIGURE 4 - DESIGN GUIDE GLOBAL DOWNLOAD DISBURSEMENT MAP





any community that are interested in active transportation facilities.

The transferability of the Design Guide is demonstrated by its use to date around the world. According to online analytics, the Design Guide has been downloaded over 8,000 times by interested parties across BC, Canada, and even internationally as far as away as Australia, Israel, and Denmark, since it was released in June 2019, as shown below.

## 5: ADDED VALUE

The training workshops delivered across the province provide significant added value for communities and practitioners by providing proactive and targeted training in all corners of the province. Professionals who attend these training workshops are also eligible for continued professional learning credits through the relevant professional associations (Planning Institute of BC, BC Society of Landscape Architects, and Engineers and Geoscientists BC). In addition to the innovative Design Guide training workshops described above,

the Design Guide project supports the newly updated [B.C. Active Transportation Infrastructure Grants Program](#), which provides cost-sharing opportunities for active transportation network planning and infrastructure. This program is designed to enable local governments and Indigenous communities to make a meaningful difference with active transportation in their communities. The Design Guide will be used to clarify the provincial government’s expectations for the design of active transportation facilities. The application of the Design Guide will create consistency across jurisdictions resulting in a seamless and connected active transportation experience.

Funding from the grant program supports the development of active transportation infrastructure for all ages and abilities, including:

- Multi-use protected travel lanes;
- Pedestrian and cycling safety improvements;
- End-of-trip facilities and other amenities; and
- Lighting and wayfinding.



## CLOSING

The Ministry of Transportation & Infrastructure and Urban Systems would like to thank the Transportation Association of Canada for short-listing the BC Active Transportation Design Guide for the 2020 Sustainable Urban Transportation Award.

We are thrilled to have this opportunity to showcase this project trust that we have demonstrated how we feel this innovative project contributes to the development and enhancement of sustainable transportation profession across Canada and beyond.



“ [T]his guide does set a new bar for legibility and utility as it places thresholds of separation by speed and volume to frame the options before the engineers. We may have greater security that the options chosen have a defensible rationale for ‘all ages and abilities’ travelling by modes which now may be designed to be safe, healthy and social. In achieving this, we approach a more sustainable city.

– **Dr Cole Hendrigan**, Research Fellow, UOW,  
Wollongong, NSW, Australia ”



# APPENDIX A | LETTERS OF SUPPORT





a place of mind  
THE UNIVERSITY OF BRITISH COLUMBIA

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Vancouver, B.C. Canada V6T 1Z4  
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January 23, 2020

Transportation Association of Canada

Re: 2019 Sustainable Transportation award

I am writing this letter in support of consideration of the British Columbia Active Transportation Design Guide for TAC's 2019 Sustainable Transportation award. I first became familiar with the BC ATDG in early 2019, as an external stakeholder invited to provide comments on early drafts of the guide. I recall thinking at the time that it was not only an ambitious undertaking, but an ambitious timeline as well. It was targeted for release that summer, but I expected it to take until at least the winter to finalize. I was wrong. The guide was released on time, and covered an impressive breadth of design issues in detail and with an accessible format. It addresses issues in active transportation design at the forefront of not just the state of practice, but the state of research as well.

In early 2019 I happened to also be developing a new graduate course at UBC for transportation engineering and planning students on Pedestrian and Bicycle Facility Design, to commence in September 2019. I was developing the course from scratch in early summer, since there was not a convenient textbook to use aligned with the course scope. When the ATDG was released, after reviewing the contents in detail, I was so impressed I decided to use it as a quasi-textbook for the course. I adopted the chapter framework (which is quite comprehensive) for the course outline, and used many of the excellent diagrams and illustrations in class. I also had students reading the guide throughout the term, and invited the authors to guest lecture. I supplemented the ATDG with more detailed readings/studies on specific topics, as well as some of the international guidance (particularly from the U.S. and Europe). But it was an invaluable resource in developing and teaching the course.

At the end of the class, I asked the students (a class of 25) specifically how they felt about using the ATDG as the primary reference for the course, and heard very positive reviews. They commented that it was "huge", but well organized and highly digestible. Another appreciated aspect of the guide is how it addresses multiple scopes from broad issues of context/land use to details about striping widths. That helped to keep a variety of students engaged (both engineers and planners). The guide also provides very useful information about the unique considerations on BC Provincial (vs municipal) rights of way.

Overall, the ATDG represents an impressive piece of work, and more importantly, a valuable resource for transportation professionals in BC and throughout Canada. I expect it will go a long way toward harmonizing active transport infrastructure in the province and the nation, which will be beneficial to those using the infrastructure and other road users as well. The guide presents some innovative infrastructure options that I hope will be more widely considered in the future (such as advisory bike lanes). It also represents a step forward in terms of facility standards (e.g.,

bike lanes should not be adjacent to on-street parking without a buffer). I expect the guide will continue to evolve in the years ahead, and look forward to using it in class again next year.

Sincerely,

A handwritten signature in black ink, appearing to read "Alexander Bigazzi". The signature is written in a cursive, flowing style.

Alexander Bigazzi

Assistant Professor, Dept. of Civil Engineering and School of Community and Regional Planning, University of British Columbia

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<http://reactlab.civil.ubc.ca>

604-822-4426



2020-Jan-30

FILE: 5210.01

Transportation Association of Canada  
401-111 Prince of Wales Drive  
Ottawa, ON, K2C 3T2

Dear Sir/Madam:

**Re: 2019 Sustainable Transportation Award**

We are very pleased to submit this letter of support for the nomination of BC's Active Transportation Design Guide for the 2019 TAC Sustainable Transportation Award.

The City of Nanaimo places active transportation as its first priority for modal choices and the BC ATDG helps us achieve this aim. We have found the document to be well organized with clear graphics showing good design practise and understandable descriptions for the design rationale. The design guidance within the BC ATDG is leading edge and promotes a safer form of urban infrastructure which encourages active transportation while protecting its users.

We hosted a workshop offered by Urban Systems Ltd in November 2019 and invited our neighbouring communities to join because we believe our transportation network is strengthened when we partner as a seamless entity. The workshop was well received by participants, both City employees and its guests. The workshop gave us the basis to springboard forward with our neighbouring communities using our collective understanding of active transportation infrastructure design standards.

The BC ATDG represents an impressive piece of work and is a valuable tool for transportation and road safety professionals in BC and across Canada. We look forward to seeing its influence on the public realm.

Respectfully submitted,

*for*   
for Jamie Rose, ASCT  
Manager of Transportation

Email: [jamie.rose@nanaimo.ca](mailto:jamie.rose@nanaimo.ca)

Ph: 250-754-4251, ext. 4384

JR\*jw

g/Transportation/Transportation Planning/Sustainability/2019 Sustainable Transportation Letter of Support City of Nanaimo



Transportation Association of Canada

Re: 2019 Sustainable Transportation Award

It is my pleasure to provide this letter in support for British Columbia Active Transportation Design Guides consideration for TAC's 2019 Sustainable Transportation Award.

Active transportation provides more healthy, affordable, equitable and environmentally friendly ways to get around and to support the local economy. Many British Columbians want to use active transportation but are held back by inadequate infrastructure, education, awareness, and regulation to protect their safety and to facilitate convenient and viable trips on foot, bike and other human-powered modes.

HUB Cycling believes that a range of transportation options should be available to all British Columbians – including those who live in smaller communities, and vulnerable groups such as children, older adults and those with disabilities or low incomes, as well as non-drivers. This ensures everyone can have access to education, employment, shopping, healthcare, recreation, cultural events and social connections. Safe biking and walking routes, good street design and regular transit should be available to all British Columbians so that it is easy to be active and healthy. These can also make it easier for people to be socially connected, which is important for mental health.

HUB Cycling has been advocating for a Provincial Active Transportation Strategy for a long time. The introduction of the British Columbia Active Transportation Design Guide will be instrumental in ensuring the Provincial Government's mandate to build a stronger, brighter future for our province. It will also help make active transportation safer for people of all ages and abilities.

The Design Guide provides fulsome coverage of a wide range of topics related to active transportation including accessible design, cycling facilities, pedestrian facilities, new mobility, multi-use facilities, implementation, multi-modal integration and wayfinding. This well-rounded approach will help ensure that the Guide is relevant and helpful on a range of active transportation topics.

Urban Systems put in a tremendous amount of effort to produce a comprehensive 500-plus page guide in a very short time frame of just four months! This guide will be a valuable reference for the public, municipal staff, professionals, academics and many others. Urban Systems also ensured that stakeholders like HUB Cycling were involved throughout the Guide development process in order to ensure that this guide included BC specific design and maintenance references.

The unveiling of the Guide in June of 2019 wasn't the end of the process. Urban Systems and the Ministry of Transportation and Infrastructure (MOTI) have continued to accept and collate feedback and suggestions on the guide to be incorporated in the next updated version.

In order to introduce the Design Guide to practitioners, Urban Systems has hosted a series of day-long workshops around the province. These workshops were expertly organized and facilitated, distilling down a massive amount of information in an interactive and engaging way. The workshops were also designed to minimize barriers, offering to waive the fees for individuals such as students and not for profits to ensure equitable access to the training.

The Active Transportation Design Guide is a very helpful tool for HUB Cycling. This comprehensive document is a useful reference for our work in promoting cycling in Metro Vancouver and beyond. This is evidenced by our 10 local volunteer committees who reference examples of infrastructure in the Guide when meeting with municipalities, and the Guide gives them a wealth of knowledge to draw upon in advocating for improved cycling facilities.

Previously the best Canadian reference for bike infrastructure was the Transportation Association of Canada's Geometric Design Guide for Canadian Roads. The B.C. Active Transportation Design Guide builds on this, giving practitioners in BC a guide tailored to our unique circumstances.

The format of the Guide adds to its accessibility. The Guide is available in PDF form for free online, making it easily much more accessible for the public and a not-for-profit like HUB Cycling.

HUB Cycling, including our 10 Local Committees across Metro Vancouver, are looking forward to using the Active Transportation Design Guide as one of our key advocacy tools in removing barriers to cycling in Metro Vancouver, while cultivating the health, environmental, and economic benefits that active transportation can bring.

Sincerely,



Navdeep Chhina  
Acting Executive Director, HUB Cycling  
O: 604.558.2002 | C: 604.376.7941  
E: navdeep@bikehub.ca



January 28, 2020

Re: 2019 Sustainable Transportation Award

I am writing this letter in support of the British Columbia Active Transportation Design Guide for TAC's 2019 Sustainable Transportation Award. The BC ATDG has quickly become a key resource for planning for active transportation on UBC's Vancouver campus. Retrofitting infrastructure to include space for pedestrians and cyclists of all ages and abilities can be a messy process that requires us to navigate complexities from tree roots to bus stops to truck turning radii. The Guide has been essential reading. It provides detailed road-ready guidance, points to a variety of examples and resources for follow-up research, and details a rich variety of facility types and accessibility considerations that have helped us raise our standard of design.

We benefited from the guide for three projects at UBC Campus + Community Planning:

- We are reimagining West Mall, a narrow local street on campus, as a great cycling route with cycling facilities. The Guide helped us scope out and narrow into preferred options for the roadway. It proved to be an excellent companion to the TAC Geometric Design Guide, adding detail and BC examples for innovative facility types like advisory lanes. We were especially impressed with the comprehensive information about traffic calming measures, pavement marking, and bike-related road signs.
- We are modernizing UBC's secure indoor bike parking requirements for multifamily residential developments. The Guide provided ideas on end-of-trip amenities, rack types, and bike room measurements.
- We are retrofitting Wesbrook Mall, a major transit corridor bordering campus, to be a street that works for cyclists, pedestrians, transit riders, and general traffic. In this context, that means separated facilities for each. Landing a separated bike lane in this relatively narrow corridor was challenging. The Guide provided measurements, drawings, and pavement markings for floating transit stops. These provided the rationale to narrow the roadway's central median, which, while more costly than alternatives, provided space to ensure the road was safe with dedicated space for all users.

The Guide is comprehensive, ambitious in scope, and implementable as a practitioner. It will continue to be a valuable resource at UBC. I expect that other communities across the country will look to the Guide as they plan for active transportation. I strongly recommend it for TAC's 2019 Sustainable Transportation Award.

Sincerely,



Alex Taciuk

**Alex Taciuk**

Bike Share & Active Transportation Coordinator | Campus + Community Planning

The University of British Columbia | Musqueam Traditional Territory

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January 23, 2020

**TAC's 2019 Sustainable Transportation award**

The Greater Victoria Cycling Coalition is excited to support the BC Active Transportation Guide for TAC's 2019 Sustainable Transportation award. As an advocacy organization, good design guides are crucial to our work to helping cities build the best bikeways. The BC AT Design Guide is among the best available and forms a core part of our advocacy efforts for years to come.

The GVCC was involved through the drafting process as a stakeholder and was pleased with how responsive both the Ministry of Transportation & Infrastructure and Urban Systems were to taking feedback from a wide range of stakeholders, including non-governmental stakeholders like ourselves and research groups.

We hope TAC will award the BC AT Design Guide the 2019 Sustainable Transportation Award.

Yours,

Corey Burger  
Policy & Infrastructure Chair  
Greater Victoria Cycling Coalition

January 29, 2020

Transportation Association of Canada  
401 - 1111 Prince of Wales Drive  
Ottawa, ON K2C 3T2  
[secretariat@tac-atc.ca](mailto:secretariat@tac-atc.ca)

To Whom It May Concern:

Re: Letter of support for the *BC Active Transportation Design Guide*

I want to commend the BC Ministry of Transportation and Infrastructure on the completion of the *BC Active Transportation Design Guide* (the "*Guide*") which was made available in June 2019.

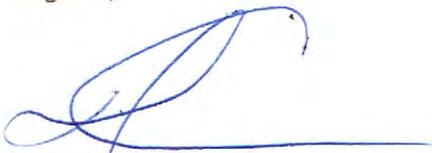
The *Guide* has quickly become a major reference work in transportation engineering and urban planning. At almost six hundred pages in length, it is the most current and modern guide available that reflects the need to design communities of all sizes with active transportation at the forefront. Such thinking is essential for improving safety, mitigating climate change and ensuring mobility is available to all persons no matter their socioeconomic status.

Equally impressive is that the *Guide* aligns with vision zero thinking and contains a comprehensive section on Universal Design which is essential in order to ensure that all persons, regardless of disability, are provided access to transportation modes in a manner that is universal and consistent across BC communities.

As a Sessional Instructor of Civil Engineering 360 (CIVE 360), Sustainable Transportation Systems, in fall 2019, I can attest first-hand to just some of the *Guide's* value and application. Students in my class worked on a group design project in partnership with the City of Victoria and used the *Guide* throughout the term for their bike-lane design project proposals. A member of Urban Systems, Mr. Dan Casey, took the time to attend class and provide an overview of the *Guide* to students. Because most students are on a limited budget, it was hugely appreciated that the *Guide* is available at no cost.

Ultimately, I want to acknowledge the Ministry of Transportation and Infrastructure for their leadership and work on the *BC Active Transportation Design Guide* and the value it has already created. Should it be nominated for a TAC award, please feel free to use this letter as further support of its value.

Regards,



Neil Arason  
Sessional Instructor  
CIVE 360

January 28, 2020

# Letter of Support

Re: Transportation Association of Canada 2019 Sustainable Transportation award

For: British Columbia Active Transportation Design Guide

From: Dr Cole Hendrigan, Research Fellow, University of Wollongong, Wollongong, New South Wales, Australia

To the Jury,

It has been a pleasure to share with my professional contacts the outstanding work of the Active Transport Guide the British Columbia Ministry of Transportation and Infrastructure has created with Urban Systems as consultants. I use it myself in classes as an example of 'applied sustainability by design'.

The guide it is written with a specific audience - engineers – in mind. It is tailored to guide engineers in designing streets and roads as a part of implementing a budget based in urban planning policies. It is this, but not exclusively so; it also appropriate for anyone interested in the topics of active modes transportation. The comprehensive information is never overwhelming despite all the possible sections and conditions which may be designed for. The Guide has been carefully laid-out, lending itself to reading in its entirety as an educational tool, or in chapters and sub chapters for reference. Finding this balance reveals the skills evident and care placed in crafting a readable and useful guide.

In speaking with several transportation planners in the City of Sydney and transportation engineering academics in New South Wales (USyd, UNSW, UOW) it was noticed that this guide does set a new bar for legibility and utility as it places thresholds of separation by speed and volume to frame the options before the engineers. We may have greater security that the options chosen have a defensible rational for 'all ages and abilities' travelling by modes which now may be designed to be safe, healthy and social. In achieving this, we approach a more sustainable city.

I strongly recommend the BC Active Transportation Design Guide for the Sustainable Transport Award. The work achieved is not just nationally important, it is internationally important. Recognition of its place as the new benchmark will encourage other provinces and territories (and countries) to improve their standards.

All the best,



Dr Cole Hendrigan  
Research Fellow, UOW, Wollongong, NSW, Australia  
M#: 0061 40 126 561 E: [coleh@uow.edu.au](mailto:coleh@uow.edu.au)

## APPENDIX B: STAKEHOLDERS WHO PARTICIPATED IN THE DEVELOPMENT OF THE DESIGN GUIDE

- BC Cycling Coalition
- BC Ferries
- BC Randonneurs Cycling Club
- BC Recreation and Parks Association
- Bikemaps.org
- Capital Regional District
- City of Coquitlam
- City of Courtenay
- City of Delta
- City of Kamloops
- City of Kelowna
- City of Maple Ridge
- City of Nelson
- City of New Westminster
- City of North Vancouver
- City of Penticton
- City of Powell River
- City of Richmond
- City of Surrey
- City of Vancouver
- City of Vernon
- City of Victoria
- Columbia Shuswap Regional District
- Comox Valley Regional District
- Cowichan Valley Regional District
- District of Central Saanich
- District of Kitimat
- District of New Hazelton
- District of North Saanich
- District of North Vancouver
- District of Oak Bay
- District of Saanich
- District of Sooke
- District of Sparwood
- District of Squamish
- District of Summerland
- District of West Vancouver
- Engineers and Geoscientists BC
- Greater Nanaimo Cycling Coalition
- Greater Victoria Cycling Coalition
- HUB Cycling
- Islands Trust
- Municipality of North Cowichan
- New Westminster & Burnaby Walkers' Caucus
- Regional District of Central Kootenay
- Regional District of Central Okanagan
- Regional District of Nanaimo
- Resort Municipality of Whistler
- Shuswap Trail Alliance
- Spinal Cord Injury BC
- Strathcona Regional District
- Town of Comox
- Town of Sidney
- TransLink
- Township of Spallumcheen
- University of British Columbia
- Village of Pemberton
- Walk Metro Vancouver
- Walk On Victoria
- Whistler Cycling Club
- Wolverine Nordic and Mountain Society



## APPENDIX C: TRAINING WORKSHOP SUMMARY OF DATES AND ATTENDEES

Date	Location	Attendees
		Total
November 6, 2019	Terrace	22
November 14/15, 2019	New Westminster (Two Days)	65
November 25, 2019	Abbotsford	21
November 26, 2019	Nanaimo	18
December 4, 2019	Saanich	35
December 5, 2019	Prince George	22
December 9, 2019	Courtenay	33
December 10, 2019	Nanaimo	9
December 13, 2019	Kelowna	42
January 9, 2020	Kamloops	36
January 14, 2020	Coquitlam	37
January 17, 2020	Whitehorse	20
January 27, 2020	North Vancouver	35
February 3, 2020	Coquitlam	20*
February 4, 2020	Victoria	40*
February 13, 2020	Nelson	20*
<b>Total</b>		<b>460</b>

\* estimate only

### Other Events

June 17, 2019	BC Active Transportation Summit
October 4, 2019	UBC Presentation
November 6, 2019	UVic Presentation
October 28, 2019	Livable Cities Conference
November 13, 2019	GVITE Lunch and Learn
November 28, 2019	HUB All Committee Meeting
January 28, 2020	ACEC Conference



# APPENDIX D: TRAINING WORKSHOP DESCRIPTION AND AGENDA



## BRITISH COLUMBIA ACTIVE TRANSPORTATION DESIGN GUIDE



### FALL/WINTER 2019/2020 PROVINCIAL TRAINING WORKSHOPS

#### Course Description

Over the past several years, there has been a growing recognition of the need for formal training and skills related to the planning, design, and implementation of active transportation facilities. This growing need reflects the increasingly important role that active transportation is playing as a way of reducing automobile dependency and greenhouse gas emissions, improving public health outcomes, and creating more livable and sustainable communities. Design professionals require an understanding of the unique issues and needs of pedestrians and cyclists and a solid set of skills regarding the selection, design, and implementation of active transportation infrastructure.

In June 2019, the Province of British Columbia released the *BC Active Transportation Design Guide* as part of *Move Commute Connect – BC's New Active Transportation Strategy*. The Design Guide is a comprehensive set of planning and engineering guidelines offering recommendations for the planning, selection, design, implementation, and maintenance of active transportation facilities across the province. The Design Guide brings together engineering principles and best practices from the municipal, provincial, national, and international levels. This includes congruency with Transportation Association of Canada (TAC) and B.C. Ministry of Transportation & Infrastructure (MOTI) design standards, as well as integration of new and emerging best practices in active transportation infrastructure design offered by international agencies such as NACTO, AASHTO and CROW.

The Design Guide was created for design professionals across British Columbia in the engineering, planning, landscape architecture and architecture fields, and is a valuable resource for elected officials, community groups, and the general public. Further, MOTI has recently revised their provincial active transportation grant criteria to include congruency with the Design Guide.

To help provide training regarding the Design Guide to design professionals across the province and to support applications for the provincial active transportation grant program, MOTI is delivering a series of one-day training workshops across the Province starting November 2020 and continuing through February 2020:

- Metro Vancouver (New Westminster, Coquitlam, North Vancouver)
- Fraser Valley (Abbotsford)
- South Island (Saanich, Victoria)
- Mid Island (Courtenay, Nanaimo)
- Okanagan (Kelowna, Kamloops)
- Kootenay Rockies (Nelson)
- Northern BC (Terrace, Prince George)
- Yukon (Whitehorse)

#### Target Audience

This course is intended for professionals involved in the design of the public realm – such as engineers, designers, planners, and landscape architects – in both the public and private sectors throughout British Columbia.



# BRITISH COLUMBIA ACTIVE TRANSPORTATION DESIGN GUIDE

## FALL/WINTER 2019/2020 PROVINCIAL TRAINING WORKSHOPS

### Course Objectives

The objectives of this course are to equip participants to:

- Promote active transportation and the role of active transportation in the broader transportation system;
- Consider the unique needs and issues of various types of people walking and cycling when designing transportation infrastructure; and
- Effectively plan, design, implement and manage active transportation facilities.

### Course Format

The course has been designed to use a variety of different learning techniques, including presentations, small group discussions, case study activities, on-site work, and videos.

### Topics

This course has been divided into six distinct parts, each of which contains a series of specific lessons as described below.

#### A. OVERVIEW + CONTEXT

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#### B. SETTING THE CONTEXT

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#### C. PEDESTRIAN FACILITIES

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#### D. CYCLING FACILITIES

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#### E. MULTI-USE FACILITIES

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#### F. CONTEXT SPECIFIC APPLICATIONS

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#### G. INTERSECTIONS + CROSSINGS

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#### H. AMENITIES + INTEGRATION

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#### I. POST IMPLEMENTATION

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# BRITISH COLUMBIA ACTIVE TRANSPORTATION DESIGN GUIDE

## FALL/WINTER 2019/2020 PROVINCIAL TRAINING WORKSHOPS

### Sample Agenda

#### PART 1: INTRODUCTION & CONTEXT

- 8:00 – 8:30 Mix and Mingle
- 8:30 – 8:45 Introductions and Workshop Overview
- 8:45 – 8:55 Alignment with Provincial Initiatives
- 8:55 – 9:15 Setting the Context

- 11:15 – 11:30 Protected Bike Lanes
- 11:30 – 12:00 Painted and Buffered Bicycle Lanes
- 12:00 – 12:45 LUNCH (including optional site visit)**
- 12:45 – 1:15 Advisory Bicycle Lanes and Rural Cycling Design Considerations
- 1:15 – 1:45 Multi-Use Facilities

#### PART 2: GBA+, UNIVERSAL DESIGN, & ALL AGES AND ABILITIES

- 9:15 – 9:20 GBA+
- 9:20 – 9:30 Universal Design

#### PART 5: CROSSING TREATMENTS

- 1:45 – 2:00 General Design Guidance
- 2:00 – 2:15 Signals and Other Traffic Devices
- 2:15 – 2:30 Pedestrian Crossings
- 2:30 – 3:30 On-Street Bikeway Crossings
- 3:30 – 3:45 BREAK**
- 3:45 – 4:15 Off-Street Pathway Crossings

#### PART 3: PEDESTRIAN FACILITIES

- 9:30 – 9:45 Pedestrian Through Zone
- 9:45 – 10:00 Other Zones and Rural Design Considerations
- 10:00 – 10:15 BREAK**

#### PART 4: CYCLING FACILITIES

- 10:15 – 10:30 Cyclists Needs & Issues
- 10:30 – 10:45 Bicycle Facility Selection
- 10:45 – 11:15 Neighbourhood Bikeways

#### PART 6: AMENITIES, INTEGRATION + POST-IMPLEMENTATION

- 4:15 – 4:30 Multi-Modal Integration
- 4:30 – 4:45 Celebrating and Launching
- 4:45 – 5:00 Maintenance



# APPENDIX E: TRAINING WORKSHOP MATERIALS

See separate attachment.

