

BACKGROUNDER: RURAL COMPLETE STREETS



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About This Report

In summer 2016, Yvonne Verlinden, an intern at the Toronto Centre for Active Transportation (TCAT), a project of Clean Air Partnership, conducted a scan of Complete Street best practices in rural Canadian municipalities. The objective was to look at the unique challenges that rural areas face in adopting and implementing Complete Street policies, and also to share some of the success stories that have come out of these communities. We would like to thank the municipal staff from the Region of Waterloo, the City of Thunder Bay and the District of Clearwater who provided information and photographs from their Complete Street transformation projects for our case studies.

Clean Air Partnership (CAP) is a registered charity dedicated to improving air quality, minimizing greenhouse gas emissions and reducing the impacts of air pollution and climate change. The Toronto Centre for Active Transportation (TCAT), a project of CAP, advances knowledge and evidence to build support for safe and inclusive streets for walking and cycling. Complete Streets for Canada is an online portal developed by TCAT featuring national best practice on streets redesigned to benefit pedestrians and cyclists and providing research, policy and design guidance for Canadian municipalities.

For more information:

www.completestreetsforcanada.ca

www.tcat.ca

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A pedestrian walkway in Cowichan Bay, British Columbia, a popular stopping off spot for tourists



Introduction: Complete Streets in Rural Contexts

The Complete Streets approach serves as a framework for ensuring that new roads are built and old roads refurbished to safely and comfortably accommodate all users. As more and more Canadian cities adopt Complete Streets policies, small towns are also exploring how to implement this approach in rural settings. This context brings its own unique set of needs and challenges, but also offers exciting opportunities for improving safety, mobility and health.

Downtown Lunenburg, Nova Scotia



Traveling Through

Small towns are often located along country highways that carry regional traffic through sparsely populated areas quickly. Acting as linkages between larger centres, these roads can experience significant peak hour demand, with few or no alternative secondary roads to relieve some of the volume or provide a safer space for local, non-motorized travel. The road may act as a barrier for residents on foot or bicycle, and effectively separate one area of town from another.

Main Streets

Within the limits of the town, the road may become a main street, or a traditional economic centre. High volumes of motor vehicle traffic along such a route can make crossing the street, walking along it or visiting the shops by foot an unpleasant or even dangerous experience. As the road continues out of town, motor vehicle speeds often pick up and pedestrian and cycling infrastructure disappear. Due to the availability and affordability of land on the edge of town, destinations such as grocery stores and restaurants may still be located there, but are effectively only reachable by car.

Jurisdiction

Adding to the complexity of these scenarios, the major streets running through a small town or rural area often fall under the jurisdiction of a region or province. The town may be responsible for the peripheries of the right-of-way (sidewalk, street trees, paths, etc.), but responsibility for the configuration and maintenance of the asphalt can lay with another tier of government, which may have its own regulations in place (for example, no traffic-calming treatments on regional roads). Re-envisioning the street space then requires multi-level cooperation.



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Arriving by
bicycle to
fish in Grand
Bend, Ontario



The Rural Need for Complete Streets

Safety

Despite the challenges, there is a strong need for Complete Streets in rural areas in particular. Safety on rural roads is a pivotal concern, with evidence suggesting that a disproportionate number of pedestrian deaths occur in rural areas. In 2011, 25% of pedestrian fatalities in Canada were on rural roads,¹ although only 19% of the population lives in rural areas.² In Ontario, rural children are more likely to suffer a serious bicycle-related injury than urban children.³ A pedestrian hit in a rural area is also far more likely to die: 11 out of every 100 rural pedestrian collisions are fatal, as opposed to two per 100 in urban areas.⁴ In addition, motor vehicle deaths are two to three times higher in rural Canada than in urban areas and are a major factor contributing to the higher overall mortality rates in rural areas.⁵ It is important to remember that Complete Streets are intended to improve safety for motorists as well as for more vulnerable road users.

Health

Health is another motivator for Complete Street implementation, with the idea that if roads are safe and comfortable for all, more people will choose to walk and cycle to local destinations, increasing their physical activity levels and improving health outcomes. Research has shown that rural residents report lower physical activity levels, are more likely to be obese, and are at higher risk for circulatory diseases.⁶ A number of studies have focused on young people in particular, and have found that those living in rural areas are more likely to be obese than those living in urban areas,⁷ and are less likely to get to school using active means.⁸ Although distance to school undoubtedly plays a role, significant differences exist in the level of road safety features around schools. Urban schools enjoy a higher prevalence of sidewalks, crosswalks, traffic medians, and speed bumps than rural schools.⁹

Equity

While life in the country is often associated with owning a motor vehicle, a full 29% of Canadians are not licensed drivers.¹⁰ In rural areas with very little or no transit, independent mobility for people who do not drive depends on their ability to safely walk or roll where they need to go. The cost of car ownership also presents a barrier, and walking for transport is associated with lower incomes.¹¹ Extensive interviews conducted in Perth and Huron Counties (Ontario) found that people without a car faced many difficulties in their everyday life activities. Said one resident in Goderich, where both supermarkets are located on the edge of town, “In good weather, I try to walk there, but then I have to get a taxi back with my groceries. In bad weather, I have to get a taxi both ways, and that’s a big expense.”¹² Safe space on the road for travel without a motor vehicle allows a greater number of people equality of access to local destinations.



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Economy

Finally, re-designing a street to make it more complete makes sense economically. Slowing traffic, widening sidewalks, adding trees or pedestrian crossings can increase property values, improve retail sales and attract private investment.^{13,14} In the context of a small town, Complete Street improvements can enliven a historical main street by attracting locals and encouraging those passing through to stop for a visit.

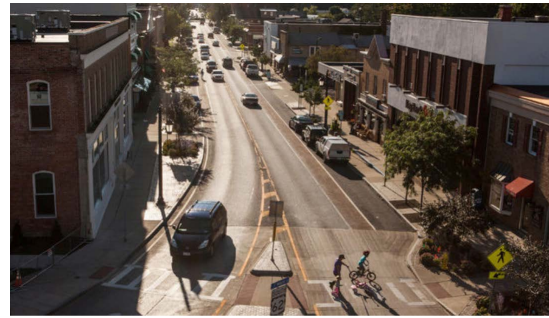
As an example, the Village of Hamburg, NY (population 9,409) introduced traffic calming measures on their main street, a busy highway and truck route. The improvements, which included four new roundabouts, pedestrian crossings, curb extensions and wider sidewalks, prompted a doubling of property values in five years, \$7 million of private investment in building projects, and a flurry of new community events, from music festivals to garden walks.¹⁵

Because the Complete Streets approach views routine road work, such as reconstruction, utility repair, and resurfacing, as its opportunity to make changes, these interventions are relatively low in cost, compared to other road projects. A routine re-surfacing in Guelph, ON, was able to implement a road diet, add bike lanes and reduce the posted speed limit for an extra cost of only \$11,000.¹⁶

Despite these arguments in favour, Complete Streets projects have met with resistance in some rural areas over concerns of increased capital and maintenance costs and loss of parking spaces in front of businesses. The long-term business case for a Complete Streets project should be well-articulated to gain the support of local businesses and elected officials.¹⁷



Downtown Stratford, Ontario, known for its theatre festival, offers a pleasant strolling experience for playgoers



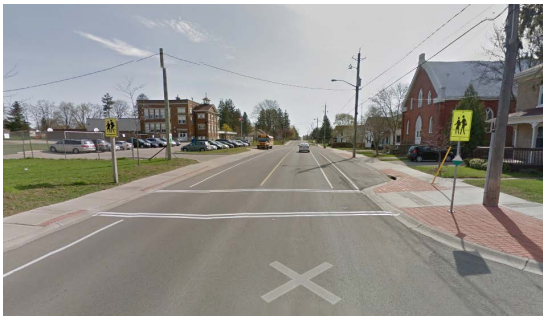
Route 62, a well-traveled highway through Hamburg, New York, after Complete Streets interventions



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A pedestrian crosswalk as Bridge Street, also known as Township Road 11A, passes a school in New Dundee, Ontario



Context

While traditionally roads have been categorized on the basis of motor vehicle speed and volume alone (as arterial, collector, local, etc), the Complete Streets approach looks at land uses as well, and incorporates the surrounding context into roadway design decisions. In rural areas, context is particularly important, as a single regional road could pass through open countryside, natural areas, industrial land, and small towns, all the while maintaining its road class of arterial. Looking at the surrounding context as well allows a road to take on multiple categorizations along its length, allowing for a finer grained understanding and a more sensitive roadway design.¹⁸ While wider sidewalks, benches and street trees may be called for on a main street, a multi-use path with a buffer may be appropriate on the outskirts of town, as motor vehicle speeds increase. Resources such as the *Ontario Traffic Manual Book 18: Cycling Facilities* can help with choosing appropriate infrastructure.

Design Considerations for Rural Contexts

Users

Traditional roadway design has prioritized fast and efficient travel for motor vehicles, and other, more vulnerable road users have often been ignored. The Complete Streets approach takes into account the needs of all users when considering a road. In the rural context, these users could include automobiles, trucks, transit, farming equipment, equestrian vehicles, cyclists and pedestrians (including children, older adults, and people with mobility devices). Careful consideration should be given to how vulnerable, slow-moving, or wide-load users will safely share the road with others. For example, a wide, paved shoulder may be needed to allow for safe passing.

Horse and buggy tied up at a main street bank in Linwood, Ontario



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*The
Cambridge-
to-Paris
Rail Trail,
in Southern
Ontario*



Building on Strengths

Many small towns and rural areas have a strong multi-use trail system already in place, and indeed the tourism and recreational opportunities these trails offer have helped put walking and cycling on the agenda for many rural municipalities. However, these trails are often not designed to connect key destinations, such as work, the library, downtown, shopping, or restaurants, and so are less useful for utilitarian travel.¹⁹ Municipalities can address this problem by focusing on completing safe on-street routes for the ‘last mile’ between trails and popular destinations, and by providing wayfinding signage along the trails to improve their usability for transportation. Improvements to the trail system can also be planned and prioritized based on each segment’s usefulness as a link between neighbourhoods and local destinations, its ability to draw tourists to the area, and its feasibility (see the District of Clearwater’s [Trails Master Plan](#) as an example).

*This paved
shoulder with
a buffer in
Cambridge,
Ontario,
provides a
link between
two off-road
recreational
trails.*



Measure and Evaluate

Because Complete Streets projects often re-allocate road space, they can be subject to, at times considerable, opposition. Establishing expected outcomes (such as an increased number of pedestrians, reduced motor vehicle speeds, a decrease in collisions, an increase in property values or retail sales), and then measuring progress in these areas can help build much-needed support. To that end, the “before” data is just as important as the “after,” and although it may appear that no cyclists or pedestrians use the road pre-project, it will be impossible to say definitively by how much usership has increased if no preliminary count is taken. Photographs should also be part of the data collection, as an important tool for demonstrating in an accessible way how a street has been changed.

The data gathered may also point to areas where the road’s performance is falling short of the anticipated outcomes, perhaps jeopardizing support for the project. In this case, adjustments may need to be made, as in the Thunder Bay case study below. Piloting an intervention with semi-permanent materials, for example by using planters and decking to widen a sidewalk and adding more patio space, can allow a municipality to test and perfect an idea, gather data, and build support before making the change more permanent.

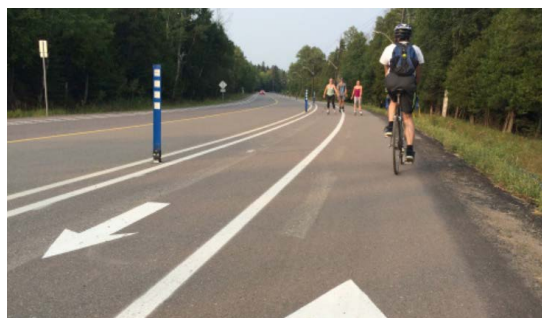


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Look to Examples

Complete Street interventions can be seen by rural residents as a solution from ‘outsiders’, the domain of urbanists, and not a part of the fabric of rural life.²⁰ Finding and sharing examples of other rural jurisdictions who have undertaken successful Complete Streets projects is an important way of beginning to address this issue. To that end, three case studies have been included here: Thunder Bay, Ontario, Elmira, Ontario, and Clearwater, British Columbia.



*Hudson Avenue,
Thunder Bay,
Ontario*



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Case Studies

Arundel Street, before Complete Street transformation



Arundel Street, south side bike lane faded, only one year after installation

Thunder Bay, Ontario

The City of Thunder Bay has a population of 108,359, but just under half of its 328 square kilometres of land area lies outside of urban centres. Arundel Street and Hudson Avenue connect two urban neighbourhoods to each other and to Thunder Bay's largest outdoor recreation area. They had typical rural cross-sections, with gravel and sometimes paved shoulders, and both have had issues with speeding.

As part of a planned reconstruction (2013), new transit shelters and trail signage were added, intersections were re-designed, and bicycles lanes were painted on both sides, with a two-way pedestrian walkway added to one side of Arundel Street. This design proved ineffective, however; after one year the painted line for the bike lane beside the pedestrian walkway had worn off due to motor vehicles driving over it. Bicycle counts actually dropped in this area, and the anticipated reductions in speeding did not materialize.

Arundel Street, with bike lanes on either side and a painted pedestrian shoulder



From this experience, the design for Hudson Avenue was modified. The bike lane on the north side was maintained, but a painted buffer was added. On the south side, instead of a separate bike lane, a multi-use, Active Living Corridor was created instead including a 0.5m-wide buffer with reflective flexi-posts. While data collection is still underway, overall public response has been very positive.



The modified design for Hudson Avenue, featuring an Active Living Corridor and painted buffers



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Elmira, Ontario



A pedestrian refuge island on Church Street, after the reconstruction

The community of Elmira (population 9,931) is located 15 minutes away from Kitchener-Waterloo, within the rural Township of Woolwich, which is part of the Regional Municipality of Waterloo, Ontario. In 2013, its main, regional road, Church St, was set to be reconstructed due to the deteriorated quality of its asphalt, insufficient storm-water drainage, aging utilities, and increased turning traffic. The road was designated a Rural Village Main Street in the Region of Waterloo's [Context-Sensitive Regional Transportation Corridor Guidelines](#), meaning that active transportation and moving motor vehicles efficiently at an appropriate speed were automatically priorities.



A Bike and Buggy Lane sign

Church Street, before the Complete Street transformation



The new design included a new sidewalk on the north side of the street where there had been none before, three landscaped pedestrian refuge islands, new street lighting, and 1.5 metre-wide on-road cycling and horse and buggy lanes. During public consultation, some residents expressed concerns that the width of the cycling and buggy lanes was too narrow to accommodate buggies, which are typically 1.54m wide, with some larger models in use. The project team decided not to expand the lanes, on the basis that a wider lane would encourage illegal parking, similar projects in other rural villages had been successful, and previous consultations with the Mennonite community had settled on this design. The number of pedestrian refuge islands was reduced, however, from seven to three, to allow adequate opportunities to safely pass buggies.



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Clearwater, British Columbia



Murtle Crescent, developed according to the Road Cross-Section Bylaw, includes a sidewalk, bike lane, multi-use trail, lighting, a crosswalk, and street trees.

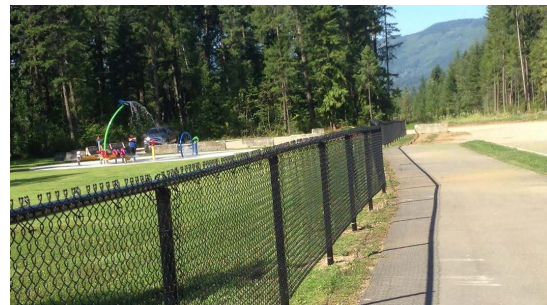
The district municipality of Clearwater (population 2,331) is located an hour and a half north of Kamloops. In 2013, it undertook a [study](#) on Road Network Rationalization and a Road Cross-Section Bylaw Framework. The community was engaged in a discussion about the connections between road design, active transportation and health outcomes, including through a mobile public open house that had residents moving from station to station on foot, by bicycle and on in-line skates. The result was a [Road Cross-Section Bylaw](#), which establishes new street types based on surrounding land uses and types of user.

An example of a road developed before the Road Cross-Section Bylaw was in effect



Murtle Crescent before the development

The Bylaw recently led to significant improvements to Murtle Crescent. Previously unpaved, the roadway was infrequently used by pedestrians and cyclists, despite providing a connection between a subdivision and a park, a library and shopping. With a new subdivision being proposed, the municipality was able to use its Road Cross-Section Bylaw to require the developer to include active transportation elements in its design and share the cost (the municipality contributed \$58,000, or 50%).



A multi-use path beside the roadway leads to a park with a new splash pad

Unlike most older streets in Clearwater, the new Murtle Crescent includes a sidewalk on one side, a multi-use path on the other, a crosswalk, street lighting, and trees, and has seen a substantial increase in users. After the project's completion, a community group raised funds to add a splash pad to the park where the road leads and Clearwater's recently completed [Trails Master Plan](#) proposes to extend the trail from the park to a home for seniors.



Conclusion

Canada's vast landscape and sparse population has for a long time made the motor vehicle appear to be the only viable option for transportation in rural areas. Yet, within these landscapes, communities exist - hamlets, villages, small towns - which invite a different mode of travel. With a Complete Streets approach, walking, cycling and rolling can become not only viable options, but pleasant, attractive, safe and healthy too. As new kinds of battery-assisted bicycles become more popular in North America, we may find that even the distance is not such a big barrier after all.



*Perth County,
Ontario*



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References

- 1 (Road Safety in Canada, Transport Canada Motor Vehicle Safety with support from the Public Health Agency of Canada TP 15145 E Cat. T46-54/1-2011E ISBN 978-1-100-18621-4 2011, Retrieved from <http://www.tc.gc.ca/eng/motorvehiclesafety/tp-tp15145-1201.htm#s38>)
- 2 Statistics Canada, 2011 Census of Population, Retrieved from <http://www.statcan.gc.ca/tables-tableaux/sum-som/l01/cst01/demo62a-eng.htm>
- 3 Macpherson, A. K., To, T. M., Parkin, P. C., Moldofsky, B., Wright, J. G., Chipman, M. L., et al. (2004). Urban/rural variation in children's bicycle-related injuries. *Accident Analysis and Prevention*, 36(4), 649-654.
- 4 Office of the Chief Coroner for Ontario. Pedestrian Death Review: A Review of All Accidental Pedestrian Deaths in Ontario From January 1st, 2010 to December 31st, 2010. Retrieved from <http://www.mcscs.jus.gov.on.ca/sites/default/files/content/mcscs/docs/ec161058.pdf>
- 5 Canadian Institute for Health Information. (2006). How Healthy Are Rural Canadians?: An Assessment of Their Health Status and Health Determinants. Retrieved from https://secure.cihi.ca/free_products/rural_canadians_2006_report_e.pdf
- 6 Ibid.
- 7 Bruner, M. W., Lawson, J., Pickett, W., Boyce, W., & Janssen, I. (2008). Rural canadian adolescents are more likely to be obese compared with urban adolescents. *International Journal of Pediatric Obesity*, 3(4), 205-211.
- 8 Robertson-Wilson, J. E., Leatherdale, S. T., & Wong, S. L. (2008). Social-Ecological correlates of active commuting to school among high school students. *Journal of Adolescent Health*, 42(5), 486-495.
- 9 Pinkerton, B., Rosu, A., Janssen, I., & Pickett, W. (2013). Active transportation safety features around schools in Canada. *International Journal of Environmental Research and Public Health*, 10(11), 5711-5725.
- 10 Transport Canada. (2011). Canadian Motor Vehicle Traffic Collision Statistics. Retrieved from https://www.tc.gc.ca/media/documents/roadsafety/TrafficCollisionStatistics_2011.pdf
- 11 Butler, G. P., Orpana, H. M., & Wiens, A. J. (2007). By your own two feet: Factors associated with active transportation in Canada. *Canadian Journal of Public Health / Revue Canadienne De Sante'e Publique*, 98(4), 259-264.
- 12 The Social Research & Planning Council. (2012). The Road Ahead: A Study of transportation needs across Huron and Perth Counties. Retrieved from: <http://perthhuron.unitedway.ca/wp-content/uploads/2013/08/Transportation-Report.pdf>
- 13 Racca, D.P., & Dhanju, A. (2006). Property value/desirability effects of bike paths adjacent to residential areas. Newark, DE: University of Delaware Centre for Applied Demography & Survey Research.
- 14 Smart Growth America, National Complete Streets Coalition. (2015). Safer Streets, Stronger Economies: Complete Streets project outcomes from across the country. Retrieved from: <http://www.smartgrowthamerica.org/documents/safer-streets-stronger-economies.pdf>
- 15 Martin, C. & Bennington, M. (2016). Portrait: Haliburton Village, Ontario. Toronto: *Active Neighbourhoods Canada, Toronto Centre for Active Transportation, Clean Air Partnership*.
- 16 Smith Lea, N., Mitra, R., Hess, P., Quigley, B., & Loewen, N. (2016). Complete Street Transformations in the Greater Golden Horseshoe Region. Toronto: *Toronto Centre for Active Transportation, Clean Air Partnership*.
- 17 Toronto Centre for Active Transportation & MMM Group Ltd. (2015). Complete Streets Policy & Implementation Guide for Grey Bruce.
- 18 See, for example, the Region of Peel's (2013) Road Characterization Study, <http://www.peelregion.ca/pw/transportation/business/pdfs/rcs-full-report.pdf>
- 19 Toronto Centre for Active Transportation & MMM Group Ltd. (2015). Complete Streets Policy & Implementation Guide for Grey Bruce.
- 20 Ibid.



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Design Considerations: Top: Google Streetview, bottom: Yvonne Verlinden

Building on Strengths: All: Yvonne Verlinden,

Look to Examples: City of Thunder Bay

Thunder Bay: All from the City of Thunder Bay, except for top left: Google Streetview

Elmira: Top left: Region of Waterloo, top right: Google Streetview, bottom right: Yvonne Verlinden

Clearwater: All from District of Clearwater, except for bottom left: Google Streetview

Conclusion: Yvonne Verlinden



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