

Designing safer streets: Pedestrian walkway clear zone separated from cyclists and vehicles.
Photo: City of Hamilton

Designing safer streets puts people first

Vision Zero was launched in Sweden in 1997 to achieve a highway system with no fatalities or serious injuries. Since then, many municipalities around the world have followed Sweden's direction. This year, municipal elections across Canada will provide an opportunity to look at ways that campaigns can encourage candidates to examine broader issues. Road safety should be a key issue.

The Ontario-based Share the Road Cycling Coalition created The Bicycle Friendly Communities (BFC) Award Program in 2010 in partnership with the League of American Bicyclists. The program helps communities evaluate how bicycle-friendly they are based on four categories, often referred to as the four "E's": Engineering, Education, Encouragement, and Evaluation and Planning.

Despite the progress, in 2018, more than 330 pedestrians were killed in road traffic collisions in Canada. In addition, on average, there are 74 cyclist fatalities per year in Canada. These statistics are alarming. We need to address these statistics and we need safer streets. Streets are not just for motorists, they are a place where vehicles, pedestrians, and cyclists must safely co-exist. Unfortunately, there have been far too many fatalities that could have been prevented with safer, more engaging streets that put people first.

Times have changed along with people's needs. We now have the knowledge to design safer streets and there is no reason to delay.

The Problem with Traditional Street Design

For decades, street design has primarily focused on traffic congestion, accommodating vehicles, and infrastructure, while the requirements for pedestrians and cyclists were given limited consideration. Streets are much more than corridors for transportation and infrastructure. They are great public spaces that link our communities, homes, parks, businesses, and institutions together, providing places for social gathering, entertainment, and business. However, as streets became more developed and engaging, they also became more congested.

The migration of people to urban centres has increased this problem. Urban areas are projected to house 60 percent of the global population by 2030, as one in every three people will live in cities. This means more pedestrians and cyclists will be on the streets. And as urban areas continue to grow, the number of vehicle lanes will rise to meet demand. Higher traffic volumes and speeds, together with wider intersections, poor pedestrian lighting, narrow sidewalks, and limited bike lanes, have

resulted in challenging environments for pedestrians and cyclists.

Traditionally, the design started at the centre line of the road and moved outward to the periphery property lines, or the road right of way, ensuring adequate space for vehicular movement and infrastructure first. People's needs were accommodated, where possible, at the edges of streets by applying uniform sidewalk, cycling, and crosswalk standards to the remaining leftover space. Conventional wisdom suggested vehicular lane widths were absolute and whatever width remained could be allocated for other users. This must change.

Urban intensification and the COVID-19 pandemic work-from-home requirements have increased our desire



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Complete streets: Safe places for walking, cycling, vehicles, and public transit.
 Photo: PUBLIC WORK and CSLA Award Atlas

for access to quality public spaces, which demands more inclusive and safer mobility solutions. Threats of urban terrorism and extreme weather events have also influenced how we must design and build our streets, incorporating enhanced safety measures, increased shade from tree canopies, and innovative stormwater management solutions to help address these growing issues.

More than ever, streets in our urban areas are becoming increasingly complex. Greater demands are being placed on them to accommodate a wider range of users and uses, including outdoor cafés and increased seating. Competing demands within the road right of way must be carefully balanced to ensure that the needs and priorities of all users are achieved safely and efficiently.

How to Make Canadian Streets Safer and More Inclusive

We must identify and allocate the appropriate amount of space to ensure vehicles, cyclists, and pedestrians can move smoothly and safely along the street. However, trade-offs and compromises may be required to suit the available right of way, which can be resolved through strategic design.

For example, pedestrians need enhanced lighting along streets and at intersections, as well as improved street crossings. Trees and planting beds are necessary to address climate change mitigation and stormwater management, in addition to creating a more attractive and inviting space. The placement of light poles, utility poles, and roadway signage can be designed to avoid encroaching into a walkway clear zone. Site furniture and other site-sensitive treatments can make a space more inclusive to the public. With the increasing instances of urban terrorism, sidewalks should be reassessed to

determine the need for, and design of, appropriate barriers.

Streets in our urban areas are planned on a comprehensive system basis. Each has a predetermined service level within a network hierarchy based on their intended level of use, function, size, and types of users. Some streets are planned to accommodate all users, including vehicles, pedestrians, cyclists, and public transit. These are referred to as “complete streets.” While this term has a range of definitions across the country, Complete Streets for Canada defines them as:

... streets that are designed to be safe for everyone: people who walk, bicycle, take transit, or drive and people of all ages and abilities. A Complete Streets policy ensures that transportation planners and engineers consistently design and operate the entire street network for all road users, not only motorists. Complete Streets offer wide-ranging benefits. They are cost-effective, sustainable, and safe.

Not all streets within our urban areas are planned – or are required – to be “complete streets” that provide public transit. However, all streets, whether they have public transit or not, can and must be made safer.

All streets are planned to provide a predetermined level of service within the broader network for a specific range of required users and must be planned for long-term flexibility. Streets that are safer and more engaging accommodate a broad range of uses and users that support and enhance the neighbourhood context, character, and local businesses. They should be context-sensitive to their local neighbourhood. The character, width, and function of a street may change as it passes through different neighbourhoods and as it provides distinct functions. Some may include public transit depending on the

scale, location, and function within the overall network.

For example, a recent initiative in New York City will convert six blocks of Broadway to become Manhattan’s largest shared street as part of their open space plan. The streets will be fully dedicated to pedestrians, or they will be modified so vehicles share the streets with pedestrians and cyclists. In the end, the Broadway Street designs will be safer, more accessible, and be tailored to the pedestrian experience.

Designing safer streets requires a paradigm shift in thinking from traditional street design. To address the solutions, actions include:

- placing the requirements for pedestrians and cyclists on par with those of vehicles, with greater emphasis on safety within the overall streetscape network;
- using an evidence-based approach to create safe and engaging streets by applying public health science and transportation research to the built environment;
- recognizing and building on individual site and neighbourhood characteristics to generate an increased number of pedestrian trips for shopping, work, play, and civic life;
- offering safe zones and traffic-calming measures designed to promote walking and cycling, including areas designated for vehicle pick-up and drop-off;
- providing traffic signs and road markings that warn drivers when they are entering a special zone;
- increasing shade canopies;
- supplying innovative stormwater management solutions; and
- utilizing landscape architects skilled at designing and rebalancing competing and complex requirements to create safer streets and great public spaces.

As we apply these solutions toward our vision of making Canadian streets safer, more engaging, and inclusive for pedestrians, cyclists, transit services, and vehicles, we can expect achieve the following outcomes:

- creating a culture of walking, improved personal safety, accessibility, and sustainable communities while reducing collisions and fatalities;
- generating a local context-sensitive design that balances the needs of pedestrians, cyclists, and vehicles,



Inclusive street design: Site furniture and other site-sensitive treatments can make a space more inclusive to the public. *Photo: Halifax Regional Municipality*

- creating a sense of place, pride, and ownership;
- achieving universal accessibility and mobility with safer clear travel zones;
- reducing crime, or the fear of crime, through the provision of street and pedestrian lighting that is well lit and energy-efficient;
- mitigating the impacts of attacks from vehicles on enhanced sidewalk zones;
- building an attractive, more comfortable walking environment that increases pedestrian activity, personal safety, and tree canopies;
- creating effective alternative transportation modes, providing amenities within the right of way for public transit, pedestrian, and cycling movement;
- becoming inclusive to all economic categories, encouraging active living through walking and cycling as modes of transportation;

- producing enhanced walkability scores, thereby attracting new residents; and
- supporting new development with improved environments for people.

How can Elected Officials and Landscape Architects Help?

The US government recognized the need to invest in their roads and infrastructure and has approved significant funding to make their streets safer. The Canadian federal, provincial, and municipal governments must make similar commitments in both policy and funding. With upcoming elections, candidates and political parties should be positioning themselves as champions of creating safer, inclusive, and more engaging streets.

Municipal staff, together with their planning/design teams and consultants, provide brilliant design solutions for our streets. Their role is to provide a

range of options for experts to consider and decide upon. However, they can be leaders by supporting policies, planning, designs, and operations that promote safety through enhanced legislation coupled with the allocation of appropriate funding.

Landscape architects have a key role in the design of safer streets. They often lead multi-disciplinary teams to provide comprehensive planning and design solutions to address and balance the competing needs of pedestrians, cyclists, vehicles, and transit. Utilizing their public consultation skills, landscape architects can engage local citizens and special interest groups to propose appropriate community-based solutions that create safer streets where people choose to live and work.

Landscape architects design streets that can assist with the mitigation of weather-related impacts, providing solutions to increase shade, improve human comfort and safety, and implement innovative stormwater management solutions. They can provide design solutions that are inclusive for all users.

Times have changed, and the way we plan and design our streets must change to reflect our new uses and increasing demands. The time to reduce pedestrian and cyclist collisions and fatalities is now. By collaborating with elected officials and the public, landscape architects can lead the way in making Canadian streets safer, more engaging, and inclusive for pedestrians, cyclists, vehicles, and transit services. **MW**

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