

- Livability: vehicles stop less on one-way streets, which is hard for bikers and pedestrians.
- Navigation: one-way street networks are confusing for drivers, which leads to more vehicle-miles traveled; they also make it tough for bus riders to locate stops for a return trip.
- Safety: speeds tend to be higher on one-way streets, and some studies suggest drivers pay less attention on them because there's no conflicting traffic flow.
- Economics: local businesses believe that two-way streets increase visibility.

Since they encourage higher speeds, one-ways have consistently been found to be hot spots for pedestrian fatalities. In a 2000 paper examining pedestrian safety on one-ways, researchers analyzed traffic statistics in Hamilton from 1978 to 1994 and concluded that a child was 2.5 times more likely to be hit by a car on a one-way street.

Lets look at one aspect of this issue. The safety of our most vunerabe residents. Our small children. With the Normal School on Elmwood slated to become a major daycare provider and the numerous elementary school within a block of these two streets many many children use these streets daily.

One-way street networks can result in more pedestrian accidents, particularly among children. This effect has been noted in a number of transportation studies published in respected academic journals.

First, from a 2003 study published in the *American Journal of Public Health*: "Children 5-9 have the highest population-based injury rate in pedestrian-motor vehicle accidents." Why? As the report goes on, "because in many pedestrian crashes the driver reportedly does not see the pedestrian before the accident. Higher vehicle speeds are strongly associated with a greater likelihood of crashes involving pedestrians as well as more serious pedestrian injuries.... **In residential settings with large numbers of children, speed management appears to offer the greatest potential for injury prevention.**"

By way of explaining this effect, I'll refer to two other reports. First from a 2004 report published in the [*Journal of the Institute of Engineers*](#) regarding one-way streets:

"Superficially, it would seem that crossing traffic on a one-way street is preferable to crossing a two-way street. As is often the case, the conventional wisdom is wrong. **In fact, crossing a one-way street presents greater difficulties to the pedestrian than crossing two-way streets....** One of the inherent disadvantages with one-way streets is that they force additional turning movements at the intersections...[and] increase the occurrences of vehicle-pedestrian conflicts at any given intersection."

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Well, from the [*Canadian Journal of Public Health*](#), a 2000 study conducted in Hamilton, Ontario, found that

"Children's injury rate was 2.5 times higher on one-way streets than on two-way streets" in Hamilton. Conclusion: **"One-way streets have higher rates of child pedestrian injuries than two-way streets in this community."**

. The system often forces drivers to follow out-of-direction routes to their destinations, causing an increase in both the number of turning movements required and vehicle miles of travel (VMT). The direct result of this recirculation is an increase in traffic volumes on a given segment or intersection within a one-way system, with a corresponding degradation in air quality.

In a one-way network, stops on the same route for opposite directions are forced to be located on two different streets. Again, the most affected users are the occasional downtown visitors, who are not familiar with the system. For instance, a visitor who is dropped off at a stop downtown on a one-way street may not realize that the transit stop for his return trip is actually located one block away on a different street. Regular transit users can even become victims of this system in sections of downtown with which they are not familiar. In a two-way system, transit stops for a particular route can be located across the street from each other, eliminating this confusing situation.

It is also important to remember that a one-way street system always has a greater magnitude of vehicle turning movements compared to a two-way system. Any turning movement, regardless of street configuration as one- or two-way, creates exactly the same potential for vehicle/pedestrian conflict, namely, one legally turning vehicle crossing the path of one legally crossing pedestrian. Thus, aside from the complexity of conflict sequences, there are simply more (typically 30–40%) vehicle/pedestrian conflicts within a one-way street network than in a comparable two-way system

St. Catharines was only following the example of hundreds of cities in the United States and Canada that have been shutting down their one-way streets since the 1990s. In Ottawa last week, planners announced they are considering the two-way conversion of several streets in the shadow of Parliament Hill. Two-way roads would help to “normalize’ the streets, by slowing traffic, creating a greater choice of routes, improving wayfinding, creating a more inviting address for residential and commercial investment and improving safety for pedestrians and cyclists,”

The problem with high-speed roads in residential neighborhoods is that cars become exponentially more deadly when they begin to exceed 40 kph per hour, and by the time they're moving at 64 or higher, traffic accidents are almost always fatal. These streets create atmospheres of "everyday violence" along houses and neighborhoods through which they run. Parents don't let their children play in the yard, people shut their windows, shops stay vacant, fewer people walk or bike to get around.

One-way pairs force deadly traffic speeds through neighborhoods filled with people, yards, bicycles, homes, and otherwise calm residential streets. Any time you have 64 kph traffic ten feet from someone's yard, it's a recipe for disaster. These streets trade a minute or two of travel time for degraded safety and quality of life city neighborhoods. Is it worth it?

Speed in neighborhoods is especially important because it is the number one contributor to the severity of a crash related injury. Studies have shown even the difference between 29 kph and 56 kph can mean the difference between crash avoidance or minor injury, and severe injury or death. While 10 kph over the limit is accepted and often expected by other motorists and police, this auto-centric view fails to accept or realize impacts on neighborhoods. The driving mind seems so easily detached from the residential mind; people commonly speed in their own neighborhoods as much as they do others.

We need to accept responsibility behind the wheel in our own neighborhoods and others, and pressure our governments and road authorities to create facilities that promote livability. Through proper facilities for cyclists and pedestrians, and road designs that help to elicit better behavior from every motorist, all neighborhoods can be made more livable.

Eliminating one-way orientations is a step in the right direction, and should be a priority for both neighborhood residents and the city.

1. ["A Review of Evidence-Based Traffic Engineering Measures Designed to Reduce Pedestrian-Motor Vehicle Crashes,"](#) Richard Retting MS, Susan Ferguson, PhD, and Anne T. McCartt, PhD, *American Journal of Public Health*, September 2003, Vol. 93, No. 9
2. ["A Microscopic Simulation Study of Two-Way Street Network Versus One-Way Street Network,"](#) Lum Kit Meng and Soe Thu, *Journal of The Institute of Engineers*, Singapore, Vol. 44 Issue 2 2004

3. "[Downtown Streets: Are We Strangling Ourselves on One-Way Networks?](#)" G. Wade Walker, Walter M. Kulash, and Brian T. McHugh, Transportation Research E-Circular, Number E-C019, December 2000, Urban Street Symposium Conference Proceedings, Dallas, Texas, June 28-30, 1999

4. "[Are Child Pedestrians at Increased Risk of Injury on One-Way Compared to Two-Way Streets?](#)" A. Wazana, VL Rynard, P Raina, P Krueger, and LW Chambers, McGill University, *Canadian Journal of Public Health*, May-June 2000

5. "Are We Strangling Ourselves on One-Way Networks?" G. WADEWALKER, WALTER M. KULASH, BRIAN T. MCHUGH, Glattig Jackson Kercher Anglin Lopez Rinehart, Inc. 33 East Pine Street, Orlando, FL 32801 TRB Circular E-C019: Urban Street Symposium