

DESIGNING CITIES FOR CYCLING: ROUTE DESIGNS TO MOTIVATE CYCLING AND REDUCE INJURIES

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North Americans love going to Europe – we come back with memories of cafés, small shops, people in the streets. Danish architect and urban design expert Jan Gehl calls these “people places,” and says transportation modes are vital to create the atmosphere. The best places invite people to walk and cycle.

In Canada and the United States, the walking mode share is about half of that in Europe (~10% of trips versus ~20%). The difference in cycling mode share is even greater. In North America, cycling is a sub-culture dominated by young men, and 1-2% of trips are made by bike. In northern European countries such as Denmark, Finland, Germany, the Netherlands and Sweden, people of all ages and abilities cycle, and 10-40% of trips are by bike despite winters that are similar to those in most of North America. Importantly, cycling is also safer in these European countries, with fatality rates one-half to one-fifth of those in North America.

We wanted to understand these differences and see whether they might be related to the transportation infrastructure. In North America, cities tend to provide off-street paths for recreational cycling. Elsewhere, along the roads to commuting destinations, there is often no cycling infrastructure at all. Meanwhile, in countries like Denmark and the Netherlands, extensive bike facilities (especially “cycle tracks,” also known

as separated or protected bike lanes) are provided along busy city streets, serving destinations such as offices, shops and schools.

We conducted two studies as part of our Cycling in Cities research program in Canada. One asked the opinions of 1400 current and potential cyclists about what motivated or deterred cycling and what kinds of routes (illustrated with pictures) they would like to cycle on. The second study looked at almost 700 injured cyclists and determined which of 15 route types increased or decreased injury risks.

What we found is great news for transportation planners:

- On average, all types of cyclists (regular, occasional and potential) prefer the same kinds of routes: bike-specific facilities, including cycle tracks, bike routes on residential streets and off-street bike paths. These routes are preferred by men and women, young and old. This means that if cities build these bike facilities, they will appeal to existing cyclists and encourage new ones.
- The routes that people want to cycle on are also safer, so building routes that motivate cycling will also reduce injury risk. Safety concerns are a major deterrent to cycling and cycling is safer when more people do it, so building safe infrastructure is a great way to start a positive feedback loop.

Three types of bike facilities that best motivate cycling and reduce injuries:



Install cycle tracks alongside busy or high-speed streets.



Make residential streets quiet with traffic diversion and speed limits ≤ 30 km/h.



Off street, provide paved paths for bikes only and keep them obstacle-free with clear sightlines.

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Our research points to three types of bike facilities to best motivate cycling and reduce injuries (see previous page). Building a consistent network of these facilities will promote travel to destinations in busy city centres, to neighbourhood shops and schools, and through parks and scenic areas. This is exactly the approach that northern European cycling countries have taken over the last four decades.

Luckily, cities across North America are starting to change. The "complete streets" philosophy is influencing planners to provide safe and efficient transportation space for all road users. Some of the largest cities in the United States, including New York and Chicago, have set aggressive targets for increased cycling and, to meet them, have launched programs to construct extensive networks of cycle tracks. Canadian cities are also changing. Examples include Montreal with a system of cycle tracks throughout its downtown core and Victoria with old railway lines converted to off-street bike trails that lead from the suburbs to the city centre.

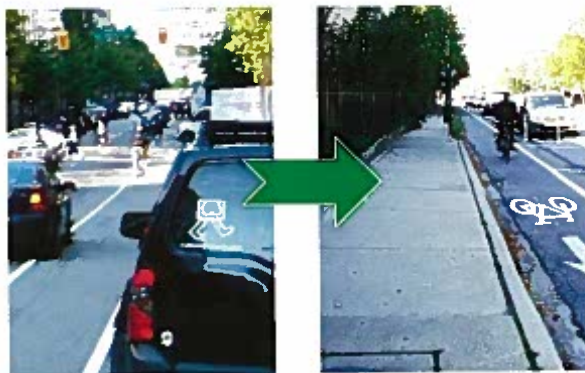
Cycling presents a huge opportunity for planners to enhance the vitality of cities; manage traffic congestion; reduce air pollution and greenhouse gases; increase the physical activity and health of citizens; and, of course, make wonderful "people places" where people interact, do business and enjoy the outdoors. Improved routes are the key to change.

For more information, including an overview of our research and links to brochures and scientific papers, please visit: <http://cycling-incities.spph.ubc.ca>

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Images: Bike Portland, Cycling in Cities Research Program and Paul Krueger

Some municipalities worry that building cycle tracks is more expensive than painted bike lanes. A few simple changes in approach can provide the much safer and preferred facilities for low cost.



Put bike lanes between the sidewalk and parked cars instead of between parked and moving cars.



Install plastic bollards along painted bike lanes to make it clear that cars are not allowed in the cycling lane.