



# SHIFTING



Laurier cycle track, Ottawa

# GEARS

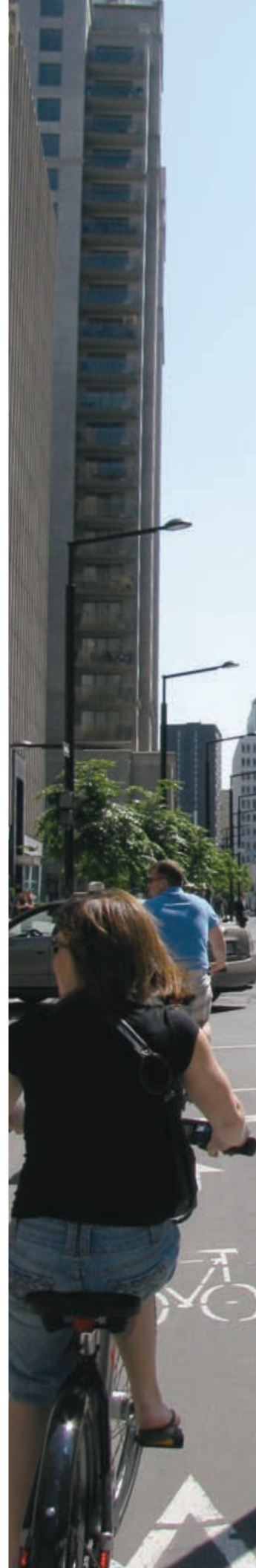
## The Emergence of Cycle Tracks in the Canadian Urban Landscape

BY BRIAN PATTERSON, MCIP, RPP  
AND HAILEY STEIGER



**SUMMARY** *Cities across North America are shifting gears when it comes to promoting cycling. This shift has been the rapid emergence of cycle tracks, a new type of bicycle facility appearing in cities across Canada and the United States. This emerging focus on cycle tracks has occurred as cities have increasingly recognized the benefits of cycling in addressing a range of complex challenges facing urban areas, and the potential of cycle tracks to attract more cyclists. Though cycle tracks have been commonplace in many European countries for decades, they are relative newcomers to the North American urban landscape. While they have consistently shown significant benefits, including increasing bicycle use, improved cyclist safety, and reduced sidewalk cycling, they are often accompanied by a firestorm of controversy in many cities, with concerns about on-street parking reductions, business impacts, and increased congestion. Planners can play an important role in facilitating the planning and design process to help address such concerns. This article summarizes the benefits and challenges associated with cycle tracks and how a sound understanding of these issues can serve to allow planners to better inform decision makers who may be considering introducing cycle tracks into local bicycle networks.*

**RÉSUMÉ** *D'un bout à l'autre de l'Amérique du Nord, les villes ne se font plus prier pour promouvoir le transport en vélo. Et cette tendance se traduit par l'émergence rapide de pistes cyclables—un nouveau type d'aménagement qui fait son apparition dans les centres urbains du Canada et des États-Unis. Cette attention accrue accordée aux pistes cyclables s'explique par le fait que les villes reconnaissent de plus en plus les bienfaits de la bicyclette pour résoudre les défis de taille auxquels elles font face, ainsi que son potentiel attractif auprès d'autres cyclistes. Monnaie courante dans bon nombre de pays européens depuis des décennies, les pistes cyclables ont fait leur apparition dans le paysage urbain nord-américain relativement récemment. Et malgré les nombreux avantages qu'on leur reconnaît systématiquement, y compris la hausse de l'utilisation du vélo, l'amélioration de la sécurité des cyclistes et la réduction du nombre de cyclistes qui roulent sur les trottoirs, les pistes cyclables sont souvent au centre d'innombrables controverses dans bien des villes, les préoccupations touchant notamment la réduction des espaces de stationnement sur rue, les répercussions sur les activités commerciales et l'accroissement de la congestion du trafic. Les urbanistes peuvent jouer un rôle important dans la facilitation du processus d'aménagement et d'élaboration des pistes cyclables afin d'aider à dissiper ces inquiétudes. Cet article offre un résumé des avantages et des inconvénients liés aux pistes cyclables et suggère qu'une bonne compréhension des problèmes signalés peut permettre aux urbanistes de mieux informer les décideurs qui envisageraient l'intégration de nouvelles pistes aux réseaux cyclables existants.*





Cities across North America are shifting gears when it comes to promoting cycling. Over the past few years, a new approach to encouraging cycling has been emerging in cities across the continent, including those in Canada. This shift is the rapid emergence of a new type of bicycle facility, cycle tracks, appearing in cities across Canada and the United States.

This emerging focus on cycle tracks has occurred as cities have increasingly recognized the significant benefits of cycling and how cycling can be an important tool in addressing the range of complex challenges facing many urban areas. Promoting cycling as an attractive, comfortable and convenient transportation choice can help reduce automobile dependence, increase physical activity levels, improve public health, reduce greenhouse gas emissions and air pollution, reduce infrastructure demands, and create more livable and vibrant communities. Bicycle infrastructure is also cost effective for local governments, which is particularly important as municipalities across the country face increasing financial pressures. In fact, a roadway can carry seven to 12 times as many people per metre of lane per hour by bicycle as it can by automobile,<sup>1</sup> and shifts from driving to walking or cycling are estimated to provide roadway facility and traffic service cost savings of 5 cents per mile for urban driving.<sup>2</sup>

### THE MARKET FOR CYCLE TRACKS

A significant body of research has emerged in recent years to understand the different markets for cycling, the barriers that prevent people from cycling more often, and people's preferences for cycling facilities. Research from Portland, Oregon suggests that people can be grouped into one of four categories:<sup>3</sup> the first group, "Strong and Fearless", includes a small group of very regular cyclists, representing less than 1% of the population, who would cycle regardless of road conditions. The "Enthusied and Confident" group is made up of 7% of the population in Portland and is comfortable on most cycling facilities, such as bicycle lanes on arterial streets. The "No Way, No How" group makes up roughly a third of the population in Portland and includes a wide cross-section of individuals who are unlikely to cycle and are not interested in cycling for a variety of reasons including age, health, disability, or other circumstances.

What remains is the key untapped market for cycling, the "Interested but Concerned" group, which is the largest market segment, representing 60% of the population in Portland (and similar proportions in other cities). This group includes a wide cross-section of individuals who have an interest in cycling as part of their regular travel needs, but have significant concerns that limits their desire and commitment to cycling. Studies across North America have consistently shown that the primary barrier to cycling for this group is motor vehicle traffic volumes and speeds. Cycle tracks address this barrier by providing a physical barrier between motor vehicle traffic and cyclists, and creating an environment that is comfortable and attractive for all types of cyclists.

### WHAT IS A CYCLE TRACK?

A cycle track is an exclusive facility for a cyclist that is physically separated from both motor vehicles and pedestrians. Cycle tracks have different forms and go by different names (such as protected bicycle lanes, separated bicycle lanes, or segregated bicycle lanes), but they all share common elements—they provide space that is intended to be used exclusively for bicycles, and they are physically separated from motor vehicle travel lanes, parking lanes, and sidewalks.

far left: Hornby cycle track, Vancouver

left: De Maisonneuve cycle track, Montreal





Cycle tracks offer a high level of comfort and appeal to a broad range of people—and particularly the “Interested but Concerned” group—and are far more attractive to most people than painted bicycle lanes because of the extra separation provided between automobiles. In fact, the increased comfort offered by cycle tracks plays a significant role in increasing bicycle ridership. Research has shown that cycle tracks can increase bicycle ridership on a specific stretch by up to 50%, with the average increase in bicycle ridership approximately 20%, compared to a 2 to 7% increase found resulting from painted bicycle lanes.<sup>4</sup>

### KEY FEATURES OF CYCLE TRACKS

Cycle tracks can be either one-way or two-way, on one or both sides of a street, and are physically separated from motor vehicles and pedestrians using a range of possible treatments, such as bollards, delineators, curbs, medians, barriers, planters, or a combination of these features. The choice of the type of separation used is based on a variety of factors, including traffic volumes and speeds, road safety, costs, ease of passage, perceived risk, comfort, and experience of the route. Careful selection of the type of separation is important because:

- > the type of separation is often the main cost determinant when constructing a cycle track;
- > the separation, if done right, is what provides the perceived safety that is crucial to attract the “Interested but Concerned” group; and
- > the separation is often the defining visual aspect of a cycle track.

### THE EVOLUTION OF CYCLE TRACKS

Cycle tracks are a common feature in many Northern European cities, where they have been in place in cities such as Copenhagen and Amsterdam since the 1980s. They have also been common in Montreal for decades, but are relatively new to the North American landscape.

far left: Assiniboine cycle track, Winnipeg

left: Hornby cycle track, Vancouver

They are a new infrastructure type to most cities in Canada and there is little North American design guidance for bicycle planners and engineers on how to successfully design cycle tracks.

Over the past three years in particular, cycle tracks have been implemented in cities across Canada, including Montreal, Vancouver, Winnipeg, Ottawa and Toronto, with many more planned in other Canadian cities, including Calgary. Table 1 shows the key characteristics of current and planned cycle tracks in Canada. This shows that cycle tracks in Canada are predominantly bidirectional, and separated from motor vehicle traffic through barrier curbs, concrete barriers, planters, and parking. By and large, many of these cycle tracks have been implemented in dense, urban, downtown environments on corridors with moderate to high traffic volumes. It also indicates that costs per kilometre can vary widely based on the type of separation chosen.

### WHAT ARE THE BENEFITS OF CYCLE TRACKS?

Following the implementation of cycle tracks, several studies have evaluated the impacts and outcomes of cycle tracks in the Canadian context. These studies have shown that cycle tracks in the cities of Vancouver, Ottawa, and Montreal have generally resulted in increased ridership, improved safety, and minimal impacts on transit, motorists, and pedestrians.

Cities who have constructed cycle tracks have consistently shown significant increases in bicycle use. In its first year, the City



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CITY	Montreal	Vancouver	Vancouver	Winnipeg	Ottawa	Toronto
STREET	De Maisonneuve	Dunsmuir	Hornby	Assiniboine	Laurier	Sherbourne
YEAR BUILT	2007	2010	2010	2010	2011	2012
DIRECTION	Bidirectional	Bidirectional	Bidirectional	Bidirectional	Unidirectional	Unidirectional
DAILY TRAFFIC VOLUMES	15,000	15,000	13,000	2000-8000	6,000	12,500
TYPE OF SEPARATION	Curbs	Curbs, planters, bike parking	Curb, planters, bike parking	Median	Median	Curb
DISTANCE	3.5 km	0.8 km	1.8 km	0.8 km	1.35 km	2.5 km
COST/KM	\$1 mil/km	\$1.6 mil/km	\$1.6 mil/km	\$156,000/km	\$890,000/km	\$1 mil/km

**TABLE 1: KEY FEATURES OF CANADIAN CYCLE TRACKS**

of Vancouver's Burrard Bridge cycle track saw a 24% increase in bicycle trips over the bridge.<sup>5</sup> Two years later, count data reported sustained growth in bicycle use on the bridge, with a 2011–2012 increase of 5% in cyclist volumes. Vancouver's Dunsmuir Street also experienced significant growth in bicycle usage after installing a cycle track in 2010, and two years later this growth continues with a 28% reported increase in 2011–2012 cyclist volumes.<sup>6</sup> In Ottawa, bicycle counts along the Laurier Avenue cycle track indicate that the number of cycling trips along the corridor has more than tripled. Before and after data on Laurier Avenue West indicates an annual increase of 26% in total cyclist volumes.<sup>7</sup> Further, a 2010 Montreal study by Lusk *et al* determined that 2.5 times as many cyclists rode on the City's cycle tracks, compared to streets without cycle tracks.<sup>8</sup>

Cycle tracks have also been found to have associated safety benefits. The City of Vancouver found that collisions of all types (involving vehicles, bicycles and pedestrians) decreased on Dunsmuir and Hornby streets, both streets with cycle tracks, with a 19% and 18% decrease in collisions, respectively on

these corridors. The City of Ottawa has seen fewer reported cycling collisions per year since opening the cycle track on Laurier Avenue West, however several more years of collision data is still required to further validate these findings. A Montreal-based study also found a general risk reduction for cyclists using the City's cycle tracks,<sup>8</sup> while a study of bicycle facilities in Toronto and Vancouver found that cycle tracks had the lowest injury risk (approximately nine times lower collision risk than other routes), and that sidewalks and multi-use paths presented higher risks than bike-only paths and cycle tracks.

The impact of cycle tracks on other road users has also been generally positive. The City of Vancouver reported an 80% decrease in cyclists riding on sidewalks on both Hornby and Dunsmuir Streets. Some pedestrians on these streets also noted a more pleasant walking environment, as the cycle tracks have created a buffer between vehicle traffic and the sidewalk. The City of Vancouver has reported no change in motor vehicle volumes, and minimal to no changes in vehicle travel times on streets with cycle tracks. Transit operations in downtown Vancouver were also

largely unaffected by the implementation of cycle tracks. The City of Ottawa reported a slight decrease in vehicle volumes along Laurier Avenue West in both the morning and afternoon peak hours, with vehicle volumes on parallel streets remaining constant.

The City of Vancouver has reported a broader demographic range of cyclists in downtown Vancouver, following the implementation of cycle tracks. The proportion of women cycling on Hornby Street increased from 28% to 32%, with 35% women cyclists on Dunsmuir Street, and children accounting for 2.5% of cyclists on the Burrard Bridge in the summer. These statistics indicate a diversifying cyclist profile, diverging from the typical profile of young male cyclists. The City plans to conduct more follow-up demographic studies to continually categorize the types of cyclists using cycle tracks.

### CONCLUSION

Cycle tracks are a relatively new feature in Canadian cities, but the experience to date shows that these facilities can help create attractive, comfortable and convenient conditions for cyclists to help attract the large group of “Interested but Concerned” cyclists. Cycle tracks can be an effective strategy for cities of all sizes to reduce automobile dependence, improve physical activity, and reduce greenhouse gas emissions and air pollution. They also benefit other road users like pedestrians and help to create more livable and sustainable communities. ■

**BRIAN PATTERSON, MCIP, RPP** and **HAILEY STEIGER** are Active Transportation Planners with Urban Systems and recently developed bicycle planning and design guidelines for the City of Vancouver, including cycle track design guidelines. They will be hosting a workshop on cycle track planning and design in conjunction with the City of Vancouver and staff from several other Canadian cities at the upcoming 2013 Canadian Institute of Planners conference in Vancouver. They can be reached at [bpatterson@urbansystems.ca](mailto:bpatterson@urbansystems.ca) and [hsteiger@urbansystems.ca](mailto:hsteiger@urbansystems.ca), respectively.

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