Fruits, Veggies and Mass Cycling

By Kevin J. Krizek

Consider the average costs of two signature bike-only highways built within the past decade in the U.S.: the San Fernando Road Bike Path in Los Angeles at $2.3 million/mile and the Minneapolis Greenway at $1.6 million/mile. Also consider that planners in suburban Seattle are currently analyzing a bike path in the BNSF eastside corridor that would cost about $7 million/mile. Such costs are staggering for bicycle facilities. Yes, these are the expensive ones and their costs do pale in comparison to roadway counterparts, however, their expense, combined with the fact that they are extremely difficult to plan for, make them analogous to high hanging fruit.

There are good reasons why this high hanging fruit is attractive. Sometimes bike-only highways help close critical gaps in the system. Cities like to exhibit them to show their commitment to sustainable transportation. And they are tremendously appreciated by cyclists—I am no exception to this crowd—but to what degree have we considered that this high hanging fruit is distracting bicycle planners from picking low hanging fruit? Vehicular cycling—having cyclists fully mixed with cars—is not a viable strategy for increasing cycling since so many people dislike it. However, rather than wait for a fully off-road network, even if it were possible given space constraints, it is critically important to further develop the on-street networks in cities and build cyclists' confidence in mixed traffic conditions. This is part of a multifaceted approach to increasing cycling that looks beyond big ticket facilities to a more comprehensive strategy of promoting mass cycling.

Kevin Krizek (www.kevinjkrizek.org) is professor of design and planning and director of the Ph.D. program in design and planning at the University of Colorado, as well as academic coordinator of sustainability at the university. He is currently authoring a book on bicycle planning in cities.

(*Thanks to Brian Taylor of UCLA, who shared the broccoli metaphor in a transportation planning class at the University of North Carolina-Chapel Hill.*)

Over the past decade it has been uplifting to see a bicycling renaissance clearly in full swing across the globe. Most communities have overcome key hurdles in making their places more cycling-friendly, including:

- the the need to convince most other planners, government officials, city council members and residents that bicycling is valuable (for the environment, for their health, for their pocketbooks, etc.);
- an sn understanding that a key factor suppressing rates of cycling is resident's concern about safety vis-à-vis automobiles; and
- the need to do more, overall, to provide infrastructure facilities for cycling.

There remains an outstanding question, however: What exactly should cities prioritize to enable mass cycling among their residents? Available options include bike infrastructure (on-street and off-street), driver education, bike share systems, bike route signage and preferred intersection treatments. The list goes on. The prevailing wisdom suggests that cities should do it all. But moving forward on any one of these matters requires addressing issues of limited financial resources or space (i.e., right-of-way), opportunity costs and, of course, politics.

It is easy for policymakers to be confused about ways to proceed and how they will likely get the most return on their investment. This article takes on one theme of such efforts by focusing on bike-only high-

ways. It suggests instead that it is key to prioritize a network of low hanging fruit of identified on-street corridors and intersection treatments that allow cyclists to more harmoniously co-mingle with auto traffic. Two tenets inform this argument: safety concerns and knowledge of where cyclists travel.

Cycling, more than any other travel mode, is an activity with extreme variation in the experience of its users. Bureaucratic guidebooks describe different classes/groups of cyclists: A (experienced riders who can operate under most traffic conditions); B (casual or new adult and teenage riders who are less confident about their ability to operate in traffic without special provisions for bicycles); and C (pre-teen riders whose roadway use is initially monitored by parents).

Such a taxonomy endures, but it unfortunately is dated and fails to help policymakers constructively plan. It may, in fact, impede planning because it implies that different users map to different facilities: Group C users to a Class A facility (e.g., pre-teen cyclists should be provided for by clearly delineated off-street facilities). The articulation of facility classes has recently fallen out of favor—replaced with labels and a fuller array and description of alternatives—but the legacy of separate facilities and who they are intended to serve lives on. Some guidelines still imply that mixing users and facilities might be problematic (e.g., pre-teen cyclist on a city street).

In reality, there is wider range of users than what is articulated above. The variation in experience and comfort level between cyclists is immense, however, the wealth of research on cyclists consistently boils down to the fact that cyclists, regardless of experience, are concerned about conflict with autos. This point is prominently referenced in user surveys and studies of all kinds. The natural remedy to address this concern is to separate cycles from autos. There remain holdouts from the vehicular cycling movement—these holdouts suggest that bicyclists should travel on roads in a manner that is visible, predictable and in accordance with the principles of driving in auto traffic—however, I think we have enough evidence now to suggest that full-on vehicular cycling is *not* the path that will lead to mass cycling. More attention needs to provide for the safety concerns of cyclists and the idea of cyclists *always* mixing with cars, regardless of their speed, will *not* satisfy this.

Following the remedy of separation, some cities have sought to do all they can to provide for shelter from the car. Across the globe, these efforts have ranged from painted stripes on busy roadways to cycle tracks (physically separated paths adjacent to autos) to elaborate new bike-only highways. The latter, often built on abandoned railway lines or along streambeds, are clearly regarded as the crown jewels. Cities devote ribbon cutting ceremonies to them, residents love them and the press is quick to report the "if you build it, they will come" phenomena.

However, we tend not to realize that there are often unintended outcomes of bike-only highways.

- They are extremely expensive as highlighted at the outset. The sheer costs of these facilities prevent their widespread application, they may take funds or efforts from other projects and they require countless staff or lobbyist hours to procure funds.
- Unless these facilities are grade-separated, they tend to create conflict points with vehicular crossings. Repeated studies suggest that cyclists obtain a degree of inattentiveness while traveling along these facilities, which stop them from paying attention to auto traffic that may be present at crossings.
- The corridors they traverse rarely connect to key destinations for utilitarian cycling, such as workplaces or commercial centers.
- Even if they do connect key corridors, they still require users to negotiate city streets. Most trips—vehicle or bicycle—are analogous to two heads of broccoli with the butt ends (trunks) stacked together. The trunk portion of the trip may be along an arterial or some central facility. On either end of the trunk portion the traveler usually navigates city streets to arrive at their specific destination. These city streets likely involve mixing with traffic, crossing intersections and mingling with parked cars. These interactions could further serve as an impenetrable barrier to cycling if cyclists fail to gain experience in or attain skills for such riding. Bike-only highways may actually further an expectation among some users about the nature of urban cycling. Some cyclists may appreciate them so

much that they are considerably less content with other types of provisions—possibly to the point of being dissatisfied with anything less than bike-only highways.

Where on the continuum of bicycle infrastructure—ranging from bike-only highways, separate off-street paths, cycle tracks, bicycle lanes, shared streets and bicycle boulevards—should policymakers strike? To achieve "mass cycling" it is essential that communities nourish their system from both the roots and the leaves. Bike-only highways, taken to the extreme, are the leaves. They look good for cities (are ornamental in a way), help enhance the overall experience of cycling and spur timid users into cycling. Given the physical nature and constraints of most communities, however, off-street facilities are unable to effectively serve a truly citywide system. We are misguided to think that all citizens will be able to get where they want using such facilities all the time.

The roots, referring to the overall network, stressing on-street facilities, and the culture that ensues, are critically important and require cultivation. To develop their roots, cities need to prioritize identified routes (pun intended) and intersections that provide for safe environs where bicycles can mix with autos. I am not suggesting a strategy analogous to full-on vehicular cycling—which has shown to be too difficult to sell and is unsuccessful in garnering political support in most places. Rather, in key corridors and plenty of intersections throughout a city, cyclists and autos need to strive for harmonious co-mingling. For this to happen, at least two initiatives are necessary.

First, cyclists need to eat more spinach. It may not taste good at first, but there are benefits for most cyclists to get more comfortable riding near slow moving vehicles. This is heresy for many parents, I realize—but we are not referring to New York City bike messenger riding here. Cyclists need to learn to safely and confidently negotiate environs with low speed/low volume traffic. Complex situations demand complex solutions and developing cyclists' confidence to negotiate these areas is key to transforming cities (at least in the U.S.) to encourage mass cycling. Adjusting user expectations is a big part of that. Ensuring that mixed traffic situations are right from an engineering perspective is an essential building block. We know that people are dissuaded from cycling owing to pinch points along the network. These pinch points might be problematic intersections, sections of a missing bike lane or other similar problems. They may comprise a mere fraction of one's commute but can be the deal breakers in terms of the decision to ride.

Second, in low auto speed environments, auto users have a responsibility to be aware of, tolerate and respect cyclists. I am not suggesting this is the case on all roads—that is too extreme! However, cities need to increase the overall presence of cyclists on strategically selected low speed/low volume traffic corridors where cyclists could be more effectively funneled. These latter initiatives invariably require strong doses of driver education and police enforcement (e.g., enforcing parking restrictions), however, those are topics for separate essays altogether.

The path towards mass cycling needs to better play to its roots—identifying and building on-street bicycle-auto corridors that allow cyclists to break through and generate comfort near cars. Bicycle-only highways are sweet nectar and high hanging fruit, and though we all like them, they are difficult to reach and there is the possibility they might even make riders less willing to use other environments. P²

Additional Reading

American Association for State Highway Transportation Officials (1999). *Guide for the Development of Bicycle Facilities.* Washington, DC.

American Association for State Highway Transportation Officials (2010 DRAFT). *Guide for the Planning, Design, and Operation of Bicycle Facilities.* Washington, DC.

CROW (2006). *Design Manual for Bicycle Traffic,* Netherlands: National Information and Technology Platform for Infrastructure, Traffic, Transport, and Public Space.

Forester, J. (1994). *Bicycle Transportation: A Handbook for Cycling Transportation Engineers.* Cambridge, Massachusetts, The MIT Press.

Krizek, K., A. Forsyth, et al. (2009). *Walking and Cycling International Literature Review: Final Report.* Melbourne, Department of Transport, Walking and Cycling Branch.

Krizek, K. J., A. El-Geneidy, et al. (2007). "A Detailed Analysis of How an Urban Trail System Affects Cyclists' Travel." *Transportation* 34(5): 611-624.

Pucher, J., J. Dill, et al. (2010). "Infrastructure, Programs and Policies to Increase Bicycling: An International Review." *Preventive Medicine* 50: S106-S125.