



Can Bikeways Help Solve the Post-COVID-19 Commuter Quandary?

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Authors:

Sasha Page
Arthur Gleijm

Place:

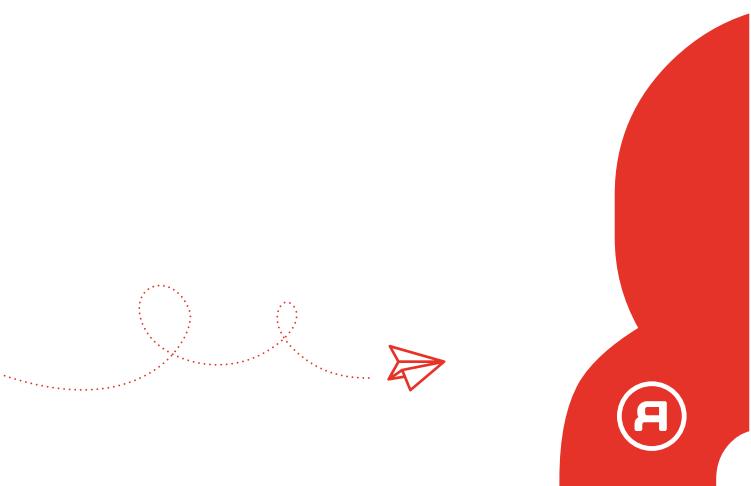
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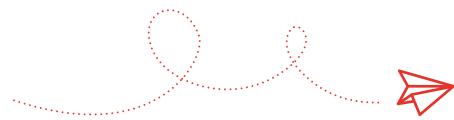
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1015 15th St. NW
Suite 600
Washington, DC 20005

www.imgurbel.com





Transit agencies and transportation departments are grappling with how to provide appropriate commuter transportation facilities when lockdown orders recede and employees return to their offices, factories, stores, and schools, among other places of work. Anticipating that social distancing guidelines will continue until a vaccine is found, many transit operators expect that their post-COVID-19 capacity may be inadequate, assuming pre-COVID-19 ridership demand levels. If every other seat or space on a transit bus or rail vehicle is reserved for social distancing, this could cripple transit capacity. Even if demand is lower due to an economic downturn, many would-be riders may remain uneasy about taking transit. How will these commuters get to work, if not by car?



Hovenring Cyclist and Pedestrian Bridge, Eindhoven, the Netherlands¹

¹ IPV Delft, <https://ipvdelft.com/portfolio-item/hovenring/>.

More Bike Commuting

One option is for local and regional governments to foster increased bicycle commuting. There is anecdotal evidence that a greater proportion of commuters who have to leave their homes for work are biking instead of taking transit.² Bike shops are reporting strong demand.³ Cities like Boston, Minneapolis, and Oakland are repurposing streets into bike/ped zones⁴ to provide more space for recreational walking, jogging, and biking but also for some commuting.

To encourage this option, should local, state, and federal governments build more infrastructure to make bike commuting easier, including for longer distances? Is this perhaps a golden opportunity for "bike highways," continuous lanes with little or no interaction with roads or traffic intersections, just as our interstates and state highways bypass local streets?

Dutch Bike Highways

The term bike highway is not common in the U.S., but it is in the Netherlands ("Fietssnelweg"). Since 2006, Dutch national and local governments have developed a network of over 300 miles of bike highways on more than 30 routes, often built alongside vehicular highways, railways, and canals. These are generally protected lanes that link suburbs to cities and cities to cities. They are built wider than traditional bike lanes, often painted red so that they are clearly differentiated from roads and sometimes sidewalks. While pedelecs (low-powered e-bikes) are allowed, motorbikes and mopeds are not.

Eindhoven Hovenring bridge in the photo above is one of many bike crossings that protect bikes from cars—and in many cases have become iconic urban landmarks.

Approximately a quarter of Dutch employees commute by bike, half of them cycling three miles or less each way on a variety of bike routes, including increasingly on bike highways. Since these highways allow commuters to bike further and at faster speeds, of the bikers that use bike highways, 75% of them cycle more than three miles and 15% of them bike more than nine miles each way.⁵ Biking is a serious option for many Dutch and bike highways make biking even more attractive. Even in bad weather, bike commuters are hearty; only two percent of bike commuters stop biking under normal rainfall conditions.⁶

² Winnie Hu, "A Surge in Biking to Avoid Crowded Trains in N.Y.C.," New York Times, March 14, 2020, <https://nyti.ms/2wVdSWB>. Adele Peters, "Coronavirus is causing a biking surge—can it last when cities open up again?" April 2, 2020, Fast Company, <https://www.fastcompany.com/90484691/coronavirus-is-causing-a-biking-surge-can-it-last-when-cities-open-up-again>.

³ Timothy Aeppel, "Wary of public transport, coronavirus-hit Americans turn to bikes," Reuters, April, 17, 2020, <https://www.reuters.com/article/us-health-coronavirus-usa-bikes/wary-of-public-transport-coronavirus-hit-americans-turn-to-bikes-idUSKBN21Z1BX>.

⁴ Johnny Diaz, "Cities Close Streets to Cars, Opening Space for Social Distancing," New York Times, April 11, 2020, <https://nyti.ms/2RvSDIq>.

⁵ Fietserbond, "Snelfietsroutes," <https://www.fietserbond.nl/ons-werk/mobiliteit/snelfietsroutes/>.

⁶ Piet Rietveld, et al., "Fietsen door weer en wind: Een analyse van de invloed van weer en klimaat op fietsgebruik," Tijdschrift Vervoerwetenschap, 48(4), december 2012, pp. 46-59.



U.S. Bike Highways?

What can we learn from the Netherlands and other northern European countries with high rates of bicycle commuting? The Netherlands has over ten times the population density of the U.S., begging the question of whether its travel patterns can be applied to U.S. conditions? Yet the population densities of major U.S. cities, like New York, Los Angeles, and Miami, are similar to the Netherlands' Amsterdam and Rotterdam.⁷

In the U.S., the average commute is about 30 minutes and 16 miles. Given that the average bicyclist rides 10 to 12 miles an hour, a 16-mile commute would take one and a half hours each way. That is why fewer than one percent of Americans bike to work and many would-be-bikers do not feel safe with the options available (see below). In bike-oriented San Francisco and Washington, D.C. 4% to 5% of commuters biked to work in 2018.⁸ In New York City, which has experienced a 55% growth in biking commuters, only one percent of its commuters are bikers.⁹

So bikeways are unlikely to address the needs of most commuters—at least for now. But what about commuters who travel fewer than nine miles a day each way—or less than 45 minutes by bike? Can we serve them better, as the Dutch have?

In the last three decades, the U.S. has made major strides to increase bike lanes. Since the 1992 federal ISTEA legislation, federal-aid monies could be used to pay for bike/ped lanes, if they reduced congestion. Those monies have been used to build such projects as the US 36 Bikeway, an 18-mile protected lane connecting Boulder to outer Denver.¹⁰ And municipalities throughout the U.S. have taken biking seriously, increasing the number of bike lanes in various forms, from painted sharrows on streets, to lanes demarcated with plastic bollards, to dedicated routes separated from roads by concrete barriers or curbs. New York City has managed to squeeze in several protected lanes along Manhattan avenues. Washington, D.C. and Minneapolis have built a variety of new bike facilities throughout their regions.

Bicycle Trust Fund?

So the measures cities are now taking in response to COVID-19 build upon the urban and urban-suburban networks that have been in development for years. For now, there is little cost for them to continue experimenting with these additional “temporary” dedicated lanes. With fewer people driving to work,

⁷ World Population Review, “2020 World Population by Country,” <https://worldpopulationreview.com>.

⁸ Andrew Small, “How Washington, D.C., Built a Bike Boom,” Citylab, December 26, 2017, <https://www.citylab.com/transportation/2017/12/how-washington-dc-built-a-bike-boom/548903/>.

⁹ New York City Department of Transportation, “Cycling In The City: Cycling Trends in NYC, May 2019,” p. 11, <http://www.nyc.gov/html/dot/downloads/pdf/cycling-in-the-city.pdf>.

¹⁰ Commuting Solutions, “Us 36 Bikeway: A Highway For Cyclists,” <https://commutingsolutions.org/bike/us-36-bikeway/>.



these temporary bikeways create fewer congestion hardships for the 90% of the workforce who would normally be driving to work.¹¹

Can towns, cities, and states be more ambitious and make some of these dedicated lanes permanent? And can the lanes be more efficient with more bridges and tunnels, like the Hovenring, to reduce if not eliminate intersections with cars? Portland Oregon's \$135 million Tilikum Crossing, a bridge exclusively for transit, cyclists, and pedestrians, is a U.S. trailblazer in this category.¹² The U.S. spent \$2.36 per person on bike/ped projects in 2018, whereas England spent \$5.28 and the Netherlands \$29.48.¹³ Why can't the U.S. at least raise investments to English levels now and aim to be at half of the Netherland's by 2030?

Multi-purpose trails, like the Underline in Miami and the Atlanta Beltline are transformative for major sections of those cities. For commuters who live or work near these routes, bike commuting will be measurably more attractive. Yet until most neighborhoods have access to such facilities, these lanes will be "one-trick ponies," wonderful weekend attractions and tourist magnets, but not facilities that most commuters can access.

Is now the time to institute more formal bike highway programs, as we have for federal and state highways? A bicycle trust fund? These would be programs that provide more generous and permanent funding for bikeways as the Baltimore coalition is trying do to with a 35-mile greenway.¹⁴ They would help realize the 22-mile Atlanta Beltline (including transit) before 2030. And they would fund many more less visible, but nevertheless effective projects in a variety of urban, suburban, and rural settings.

Safety, Safety, Safety

Besides building straighter and more efficient bike lanes, a formal bike funding program needs dollars to improve safety. This requires the physical separation that protects bicyclists and makes them *feel* protected. As a recent National Cooperative Highway Research Program study concludes, current and potential bicyclists "rate bike facilities with a higher degree of separation from drivers more positively, with protected/separated bike lanes and multi-use paths being the best perceived risk from moving vehicle collisions and adjacent parked cars was a major factor in potential cyclists' willingness to use facilities."¹⁵

¹¹ U.S. Census, American Community Survey, "Means Of Transportation To Work By Travel Time To Work," 2018, <https://data.census.gov/cedsci/table?q=B08&d=ACS%201-Year%20Estimates%20Detailed%20Tables&tid=ACSDT1Y2018.B08101&vintage=2018>.

¹² Tim Newcomb, "Portland Is Set To Open a Beautiful \$135 Million Bridge You Can't Drive Across," Popular Mechanics, August 20, 2015, <https://www.popularmechanics.com/technology/infrastructure/g2136/portland-tillikum-crossing-bridge-no-cars/>.

¹³ League of American Bicyclists, "Bicycling & Walking in the United States, 2018 Benchmarking Report," p. 141, https://bikeleague.org/sites/default/files/Benchmarking_Report_Sept_03_2019_Web.pdf.

¹⁴ Baltimore Greenway Trails Network, <https://www.bikemore.net/greenwaytrailsnetwork>.

¹⁵ National Academies of Sciences, Engineering, and Medicine 2020, "Bicyclist Facility Preferences and Effects on Increasing Bicycle Trips," Washington, DC: The National Academies Press, p. 2, <https://doi.org/10.17226/25792>.



While this sounds obvious, it is an important reason why bikers make up less than 10% of commuters in the most bike-crazy places, like college towns.¹⁶

Covering Costs

The current temporary solutions require little capital investment. They do require enforcement, however, at least in the beginning, to ensure that cars and other motorized vehicles do not take advantage of these new corridors. The cost of dedicated urban bikeways can vary considerably, from several hundred thousand to two million dollars per mile. So maybe a ten-mile project could cost \$5 million to \$15 million? Compare that to \$8 million to \$10 million *per lane* for an urban highway.¹⁷

Some projects may be eligible for federal funding, yet federal monies, and state ones often funded by gas taxes, are not growing so that other sources may be necessary. (A CARES 2 stimulus package could help, though.) Real estate developers have realized that bike paths are an important amenity. In pre-COVID-19 times, "value capture" might be one source of funding, using joint development, special assessment districts, tax increment financing, and naming rights to capture some of the premium locational value of being near a bikeway to help pay for them. In addition, some foundations have begun to sponsor "social impact bonds" for multi-use trails, recognizing the safety, environmental, and health benefits of such facilities.

Dutch economists have estimated an investment of EUR 100 million in bicycle highways generates EUR 144 million in social benefits, i.e. reduced traffic congestion, positive health effects, and reduced CO₂ emissions. If the bicycle range is increased by electric bicycle, the benefits can even amount to EUR 358.¹⁸ These ratios could help municipalities justify filling the gap between federal, state, and private sources.

Bikeways and Transit

When we have a broadly-available vaccine and transit commuters return to in numbers similar to pre-COVID-19 times, the bikeways that have been or are under development still can be of use. As we have increasingly seen for decades, a well-designed multi-modal transportation system that links bike and other infrastructure to bus and rail transit has been increasingly effective. Biking has been part of the "last mile" solution and now can be part of the "last nine mile (or more)" solution. Furthermore, it serves as another commuting option in urban areas when traditional highways and transit get congested or come to a standstill. As shown in the photo below, the new Utrecht Central Station bike parking facility, which opened up last year, has over 12,000 spaces for bikes and more is planned as demand outstrips capacity.

¹⁶ Richard Florida, "The Great Divide in How Americans Commute to Work," Citylab, January 22, 2019, <https://www.citylab.com/transportation/2019/01/commuting-to-work-data-car-public-transit-bike/580507/>.

¹⁷ American Road and Transportation Builders Association, "FAQ," <https://www.artba.org/about/faq/>.

¹⁸ Goudappel Coffeng, "Baten-berekeningen fietssnelwegen bij investering," 2011.





Utrecht Central Station Bike Parking Facility, Utrecht, the Netherlands ¹⁹

One of Several Solutions

Bike highways can be one of several solutions to our upcoming commuting crisis. It's likely that employers will experiment with a variety of telecommuting options, including a "one-day-office/one-day-at home" work policy similar to Colorado's 50% telecommuting goal (as it opens up that state).²⁰ In that case, an hour and a half to two hour bike trip *every other day* does not seem as daunting, especially with a little push from pedelacs for those who have an uphill commute or not yet in shape. And since many

¹⁹ Luc Joris, "Utrecht opens largest bicycle parking facility in the world," New Mobility News, August 19, 2019, <https://newmobility.news/2019/08/19/utrechts-opens-largest-bicycle-parking-facility-in-the-world/>.

²⁰ Francie Swidler and Jim Hill, "Colorado Will Shift From Stay-At-Home To Safe-At-Home. Here's What That Looks Like As The State Slowly Reopens," Colorado Public Radio, <https://www.cpr.org/2020/04/21/colorado-will-shift-from-stay-at-home-to-safe-at-home-heres-what-that-looks-like-as-the-state-slowly-reopens/>.

people may not return to gyms soon, regardless of how often they are cleaned, these rides can provide an excellent form of aerobic exercise.

Of course, more walking is an option, as is carpooling with people you know, or trust are healthy. Some employers may have to resort to shift work to stagger the number of employees working at any one time.

The default, of course, is even more commuting by car. That may address social distancing issues, but if everyone chooses this option in our already congested regions, we may have gridlock. Let more of us ride bikes, instead.



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Sasha Page

sasha.page@imgrebel.com

Arthur Gleijm

arthur.gleijm@rebelgroup.com



1015 15th St. NW
Suite 600
Washington, DC 20005

www.imgur.com