

Mar 19 AFD 263 Bus and Bike Lanes

- Dedicated Bus Lanes

- https://www.ctps.org/data/pdf/studies/transit/Prioritization_of_Dedicated_Bus_Lanes_20180626.pdf
- <https://www.mapc.org/planning101/how-can-we-fix-this-how-mapcs-data-helped-boston-make-a-bus-line-faster/>

At rush hour, 60 percent of the total people on the road are riding in buses, but on a typical day, they are trapped behind a procession of mostly single-occupant personal vehicles. It's not unheard of for it to take as long as 30 minutes to travel one mile on the bus.

But during the pilots in December and May, MBTA buses, school buses, and bicycles could glide right by single-passenger vehicles, cutting the travel time for buses by 20 to 25 percent during the worst hour of congestion. As a result, 94 percent of surveyed bus riders and cyclists wanted the bus lane to become permanent.

"I can usually walk the one mile from my house just off Washington Street to Forest Hills faster than when I take the bus during the morning rush hour," said Roslindale resident Steven Gag. "I was really pleased when I took the bus during the pilot that I made it to Forest Hills in less than 10 minutes. What a difference." The Washington Street parking study wasn't the first time MAPC's efforts helped inform a dedicated bus lane pilot. A year earlier, MAPC conducted a similar analysis north of Boston, in Everett. The review of Everett's downtown area, focused on the major bus corridor along Broadway, revealed that a minimal amount of parking spaces were being used during the early morning rush hour. As a result, commutes shortened by up to 30 percent for 10,000 bus riders every day.

- <https://www.wbur.org/news/2018/10/26/cambridge-watertown-bus-rapid-transit>
 - 12,000 daily riders on the Mt Auburn bus route through Cambridge & Watertown
 - $\frac{3}{4}$ mile pilot: *The dedicated bus lane is a first for Cambridge and Watertown. It stretches about three-quarters of a mile and is painted red in some sections. And it's not just MBTA buses that can use it. The bus lane will also be open to cyclists, school buses, emergency vehicles and company shuttles.*
- <https://nacto.org/publication/urban-street-design-guide/street-design-elements/transit-streets/dedicated-curb-side-offset-bus-lanes/>
 - *Dedicated bus lanes are typically applied on major routes with frequent headways (10 minutes at peak) or where traffic congestion may significantly affect reliability. As on-time performance degrades, consider more aggressive treatments to speed transit service.*
 - *Lanes may be located immediately at the curb or in an offset configuration, replacing the rightmost travel lane on a street where parking is permitted.*

- “Dynamic bus lanes” are bus-only for just rush hour, not all day
- https://www.researchgate.net/publication/299370372_Dynamic_bus_lanes_in_Sweden_-_a_pre-study *Effectiveness and reliability have been identified as two key factors to increase the attractiveness of public transport (Ipsos, 2013, Johansson et al., 2010). Thus, to not be impeded by adjacent traffic along bus routes is critical for bus services’ performance. In mixed traffic, buses cannot perform better than what the traffic situation allows them to, and traffic queues frequently delay buses, especially during rush hour. This undermines the bus services’ reliability and effectiveness and thereby the attractiveness of the transport mode. Dedicated bus lanes and dedicated bus streets have as a consequence become common measures for separating buses from adjacent traffic. They have proven to be effective in ensuring free path for buses and thus increasing both their average speed (Andersson and Gibrand, 2008) and their reliability (Trafikverket, 2014b). A major drawback is however that the total traffic capacity significantly decreases when dedicating one lane for the public transport. Hence, these priority measures can only be used where and when the traffic flow is low enough to allow for a reduction of normal lanes; if it is possible to reroute adjacent traffic; or if it is possible to extend the road with additional lanes.*
- Dedicated and Protected Bike Lanes
 - <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3708009/>
Segregated bike lanes are safest for cyclists, but lack of familiarity makes cyclists perceive them as more dangerous. Mixed-use paths are more dangerous than perceived, due to more interaction between cyclists and pedestrians.
 - <https://www.vox.com/2014/9/8/6121129/bike-lanes-traffic-new-york>
On 8th Ave., on average, it took cars 14 percent less time to cover the 11 blocks after the bike lanes were installed. On Columbus, average travel times during rush hour dropped 35 percent
Better traffic flow wasn’t just due to fewer cars: a [pocket lane](#) for left-hand turns: a devoted turning lane at most intersections that takes the place of the parking lane, which gets cars out of the way of moving traffic when they’re making a left. Interestingly, the pocket lanes aren’t primarily designed to speed up the flow of traffic — they’re designed to let bikes and cars coexist more safely. Intersections with them include specialized turn signals that alternate between letting bikes ride straight or cars turn left, so there’s little chance of a car turning into a bike. Data in the new report confirm that this design — along with the construction of the protected bike lanes as a whole — did achieve another primary objective. In general, biking on these streets has become much safer.
The total number of accidents that caused injuries — whether between multiple bikers, or between bikers and cars or pedestrians — declined by 17 percent, and injuries to car occupants and pedestrians declined even more significantly.

Injuries to cyclists have stayed pretty much constant, but keep in mind that this is the raw number of injuries, not the injury rate — and during the same period, biking has become significantly more popular.

- <https://www.pewtrusts.org/en/research-and-analysis/blogs/stateline/2014/06/in-bid-for-millennials-cities-and-states-promote-cycling>

Nationwide, less than 1 percent of workers commute by bike. Bike commuters are mostly 16-44 years old, and male cyclists outnumber women by almost 3-1, according to the *Stateline* analysis.

But the rates are significantly higher in cities such as Washington, D.C (4.1 percent of all commutes) and Brooklyn (1.5 percent), where residential areas are close to workplaces. People between the ages of 16 and 34, a significant portion of the population in those cities, have shown the greatest interest in alternatives to cars, driving 23 percent less on average than they did at the turn of the century, according to a [study](#) published last year.

The biggest single reason for a low ranking, Nesper said, is a lack of bike “infrastructure,” including dedicated bike lanes, signs and protective barriers. “In order to be a really great, high-performing bike-friendly community like Portland, Seattle or Minneapolis, you have to make bicycle trips easier but you also need to give bicyclists a place to ride that is their own. That’s what’s going to attract those people who are still on the sidelines,” he said.

In the recent book *City Cycling*, transportation experts Jan Garrard of Deakin University, Susan Handy of the University of California at Davis, and Jennifer Dill of Portland State University assert that women are “a bellwether of biking safety.” “In cities and countries where a high percentage of bike trips are by women, rates of cycling are high, and cycling conditions are safe, convenient and comfortable,” they write. Where relatively few women cycle, rates of cycling are low and cycling conditions are unsafe.”

- <http://www.accessmagazine.org/fall-2011/davis-bicycle-studies-bicycle-neighbor-doesnt/>

Today, Davis has over 50 miles of on-street bike lanes and over 50 miles of off-street bike paths in an area of less than ten square miles, with 25 dedicated bike bridges and tunnels.

So what else, besides distance, explains why some Davis residents bicycle but others don’t?

For adults, the answer has much to do with individual attitudes. In analyzing the data from our 2006 survey, we found that comfort with bicycling was one of the most important factors differentiating residents who regularly bicycle for transportation from those who don’t. Another one of the most important factors was agreement with the statement “I like riding a bike. Those who “strongly agreed with this statement were far more likely to bicycle regularly even than those who just “agreed.

Many cities in Europe have combined such programs with infrastructure investments—and with disincentives for driving—to good effect. My favorite

example is Odense, Denmark, a city about three times the size of Davis where one quarter of all trips are by bicycle. Densities and distances are similar to Davis, but the quality of the bicycle infrastructure puts Davis to shame. On my stay there several years ago, I was particularly impressed with the bicycle signage, parking facilities, and “green wave signals (a sequence of traffic signals timed for the speed of bicycles rather than cars). The live bicycle counts publicly displayed on an electronic sign in the city center were especially fun. The city has implemented many creative programs in its efforts to increase bicycling, including giving bicycles to domestic workers, taking senior citizens on guided bicycle rides, and lending bicycle trailers to parents of young children. The city’s efforts produced an 80 percent increase in bicycle trips between 1984 and 2002.

- <https://www.aarp.org/livable-communities/getting-around/info-2016/why-bicycling-infrastructure-is-good-for-people-who-dont-ride-bikes.html>

1. Safer Streets Are Safer For Everyone
2. Safer Sidewalks
3. Smoother Trips
4. Less Congestion
5. Increasingly Livable Communities
6. Economic Vitality
7. More Opportunity [for communities that can’t afford to drive]
8. Saves Money for Taxpayers
9. Health Care Savings
10. A Greener Environment