









Wonktastic chart rates 15 different ways to protect bike lanes

<http://www.peopleforbikes.org/blog/entry/wonktastic-chart-rates-15-different-ways-to-protect-bike-lanes>

March 13, 2014

Michael Andersen, Green Lane Project staff writer

| Cycle Track Barrier Selection Matrix | | | | | | | | |
|--|---|---|---|---|--|---|---|---|
| | Striped Buffer | Flexible Bollards | Turtle Bumps | Large Bumps | Oblong Low Bumps | Parking Stops | Linear Barrier | 6" Curb Barrier |
| DRAFT |  |  |  |  |  |  |  |  |
| Cost/Benefit | | | | | | | | |
| Cost per Foot of Barrier (per side of street) <small>*Costs double for barriers on both sides</small> | \$150-200/ \$50-150/mi. | \$2-6/ft. \$150-300/mi. | \$4-7/ft. \$100-200/mi. | \$4-8/ft. \$120-300/mi. | \$6-7/ft. \$100-200/mi. | \$0-0/ft. \$200-400/mi. | \$4-0/ft. \$200-400/mi. | \$5-15/ \$250-750 |
| Cost | ★★★★ | ★★★★ | ★★★★ | ★★★★ | ★★★★ | ★★★★ | ★★★★ | ★★★ |
| Cyclist Perceived Safety | ★ | ★★★★ | ★★★★ | ★★★★★ | ★★ | ★★★★ | ★★★★ | ★★★★ |
| Other Considerations | | | | | | | | |
| Durability / Maintenance | ★★ | ★ | ★★★★ | ★★★★ | ★★★★ | ★★★★ | ★★★★ | ★★★★ |
| Sweeping | ★★★★ | Depends on Width | Depends on Width | Depends on Width | Depends on Width | Depends on Width | Depends on Width | Depends on |
| Trash Collection | ★★★★ | ★ | ★★★★ | ★ | ★★★★ | ★★★★ | ★★★★ | ★★★★ |
| Storm Water | ★★★★ | ★★★★ | ★★★★ | ★★★★ | ★★★★ | ★★ | ★★★★ | ★★★★ |
| Traffic Compatibility (Motor vehicle / barrier interactions) | ★★★★ | ★★★★ | ★★ | ★★ | ★★★★ | ★★★★ | ★★★★ | ★★★★ |
| Aesthetics | ★★ | ★ | ★★★★ | ★★★★★ | ★★ | ★★ | ★★ | ★★ |
| Construction Impacts | ★★★★ | ★★★★ | ★★★★ | ★★★★ | ★★★★ | ★★★★ | ★★★★ | ★★ |
| Width Required | 1.5' | 1.5' | 1.5' | 1.5' | 1.5' | 1.0' | 1.0' | 1.5' |

Click image to download the file.

Posts, [curbs](#), [flower beds](#), parked cars, [armadillos](#), parking stops — there are [so many beautiful ways to separate bike and auto traffic](#). But which is best?

It depends on the street, of course. Which is why we're so excited about a recent exercise by Austin engineer Nathan Wilkes.

Wilkes has rated 15 different sorts of bike lane barriers on a color-coded scale of 1 to 4 stars to create a "[cycle track barrier selection matrix](#)" (Excel file) that roughly captures the ups, downs and costs of just about every method currently being used in North American cities.

Each barrier type received a rating based on its cost, perceived safety, durability, traffic compatibility, aesthetics, construction impacts and the ease of sweeping, trash collection and stormwater friendliness.

He also worked out the rough cost of installing several of the categories, ranging from \$19,152 per mile for flexible bollard posts to \$17.6 million per mile to rebuild the street with a raised sidewalk-style track for biking.



Column E on Wilkes's matrix: "large bumps." Great for aesthetics, terrible on garbage day.

"For someone who has been thinking daily about these tradeoffs for several years, the content should be fairly intuitive and even common sense," Wilkes writes in an email. "For someone who is for the first time grappling with the tradeoffs between barrier types, I thought it would be a good tool and framework to get off to a good start, understanding that there is a lot of nuance beyond the 4 star rating."

One nuance: Safety. Two [recent studies](#) from Canadian cities show that modern, well-marked protected bike lanes substantially reduce crash rates, and [the Federal Highway Administration is now preparing its own analysis, too](#). Meanwhile, the two countries that use protected bike lanes most, Denmark and the Netherlands, are [the world's safest countries to bike in](#), in large part because biking is so convenient, comfortable and therefore popular in Dutch and Danish cities.

That said, there's no rigorous research comparing the different barrier types to one another. So Wilkes instead rated [perceived safety](#), the sense by users that cars and trucks are not bearing down on them.

"The cyclist's perceived safety rating is based on my professional experience, basically following a rule that the more substantial the barrier, the more substantial the protection and thus perceived safety," Wilkes wrote.

Wilkes has been tweaking his [first draft of the matrix for months](#). Here on the Green Lane Project team, we're sketching up a simplified version to share with non-engineers. Got any advice? Drop a thought in the comments below and we'll see that Wilkes gets it.

***[The Green Lane Project](#)** is a PeopleForBikes program that helps U.S. cities build better bike lanes to create low-stress streets. You can follow us on [Twitter](#) or [Facebook](#) or sign up for our [weekly news digest](#) about protected bike lanes. Story tip? Write michael@peopleforbikes.org. Wilkes photo by City of Austin Public Works.*