TREC

DESIGN GUIDANCE FOR ON-STREET BICYCLE FACILITIES

Many cities around the country share the related goals of increasing bike use, improving safety, expanding access and connectivity, and promoting equity. More and more, agencies and communities understand that meeting these goals requires building bike networks that work for people of all ages and abilities, with routes that feel safe and comfortable for everyone.

"On-Street Bicycle Facility Design Features" is a data-driven guidebook created to assist practitioners in selecting appropriate design elements for bicycle infrastructure, depending on the surrounding context. The report is especially valuable for state and local agencies wishing to enhance safety and expand bicycle ridership, as it provides a framework for choosing the safest, most effective bicycle facility designs for different settings.

DEVELOPING SAFETY GUIDANCE

The guidebook was developed through a comprehensive literature review and safety analysis of bikeway types, including detailed crash data and roadway analysis of midblock (non-intersection) bicycle crashes.

It includes before-and-after evaluations of new infrastructure installations, to assess the effectiveness of the different infrastructure types.

The locations chosen for study were Seattle, WA; Arlington County, VA; Austin, TX; Dallas-Fort Worth, TX; Philadelphia, PA and Minneapolis, MN.

Sites were selected partly on the basis of what kind of bicycle data were available: The researchers needed crash data as well as bicycle counts and volumes to calculate cyclists' exposure to risk.

The safety analysis identified several factors that either improved or reduced safety. However, because of data limitations, the analysis did not account for specific design details or local conditions that likely influenced safety outcomes. To fill this gap, the research team also conducted a visual review of separated bike lane segments where crashes were concentrated, to better understand possible contributing factors.

The visual review focused on separated bike lanes because they generally offer better safety than other bikeway types and shared lanes. This is largely because they limit interactions between drivers and bicyclists to specific crossing points like streets, alleys, and driveways.

Separated bike lanes are of particular interest to planners and engineers since they vary widely in design, and best practices for their construction are still evolving.

The guidebook concludes with a general discussion of policies and planning strategies that agencies could have in place to address common challenges with midblock bikeway design. Learn more by downloading the guide or reading it online: "On-Street Bicycle Facility Design Features: A Guide."

THE RESEARCH TEAM

The study was led by Texas A&M Transportation Institute, (TTI) with partners Toole Design Group, Safe Streets Research & Consulting and Portland State University (PSU). The PSU research team included Sirisha Kothuri, Chris Monsere and Nathan McNeil.

FUNDING

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FIND THE DOCUMENTS

On-Street Bikeway Design Features: A Guide: https://nap.nationalacademies.org/catalog/28853/on-street-bicycle-facility-design-features-a-guide

Safety Evaluation of On-Street Bicycle Facility Design Features: https://nap.nationalacademies.org/catalog/28854/safety-evaluation-of-on-street-bicycle-facility-design-features