



# The Great Bike Infrastructure Project

## Supplemental Guide for Complete Streets Mandates

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**Complete Streets ensure that all road users, including people walking, rolling, biking, and using transit, have safe and accessible ways to get where they want to go.**

Complete Streets mandates help efficiently fund bike infrastructure by requiring state and local governments to plan ahead and integrate improvements for people walking, rolling, biking, and using transit as streets are built, rebuilt, or repaved. Without effective Complete Streets mandates, state and local governments may miss critical opportunities to build infrastructure that will transform communities.

The Great Bike Infrastructure Project [Legislative Strategies Guide](#) includes the best examples of legislative changes communities across the U.S. have made to mandate Complete Streets. This supplemental guide is intended to help you implement these changes in your community.

### What are Complete Streets?

Complete Streets meet all road users' needs, including people walking, biking, and riding transit. [Complete Streets infrastructure](#) includes, but is not limited to:

- Sidewalks
- Frequent and safe street crossings
- Bicycle lanes or paths that are [appropriate for their context](#) (such as protected bike lanes on busy streets)
- Dedicated transit lanes (where appropriate) and comfortable transit stops
- Traffic calming measures to reduce speeding
- Curb extensions
- Street trees, landscaping, and stormwater absorption measures

## What are Complete Streets Mandates?

More than a mere policy, a Complete Streets mandate requires the construction of infrastructure for people walking, biking, and using public transportation whenever existing streets are updated or when new streets are constructed.

### ***What makes a great Complete Streets mandate?***

Effective Complete Streets mandates include strong and specific requirements, limited exceptions, good public processes to consider those exceptions, clear roles and responsibilities, and strict annual reporting requirements. Without effective Complete Streets mandates, key opportunities can be missed to build infrastructure that will transform communities.

According to Smart Growth America, [strong Complete Streets mandates include](#):

- Clear project selection criteria
- Clear and limited exceptions to improve equitable project implementation
- Strong and specific requirements for creating Complete Streets that include [design best practices](#)
- Clear definitions of the unique community context, needs, goals, street types, and street functions to help prioritize and make necessary compromises in the planning and design process
- A project implementation plan that clearly delineates roles and responsibilities for effective coordination
- Prioritization of underrepresented communities to improve transportation equity
- Clear measurement standards to evaluate progress and provide transparency and accountability to the public

**See page 9 for specific examples of states and local communities that passed successful Complete Streets mandates.**

### ***What is the difference between a Complete Streets policy and a Complete Streets mandate, and why is a mandate important?***

- Most Complete Streets policies are legally ambiguous. A [2019 review by Gregg and Hess](#) found that only 13% of policies are legally binding legislation.
- Complete Streets mandates provide a legal foundation for policy implementation that applies to all projects and facilitates coordination and cooperation between

agencies responsible for implementation, particularly if multiple jurisdictions or agencies are involved.

## Why Mandate Complete Streets?

### ***Complete Streets mandates help create more bike infrastructure.***

- Complete Streets mandates close gaps in transportation and recreation networks by creating safe on-street and street-adjacent infrastructure to form safe and comfortable bike networks that connect people to important destinations like neighborhoods, schools, grocery stores, jobs, parks, trails, and local businesses.
- Complete Streets mandates ensure the transformation of outdated streets to accommodate safe and comfortable travel for all road users. This includes the integration of protected bike lanes for people biking, providing ADA-accessible sidewalks for people walking and rolling, and allocating appropriate lanes and stops for people using public transit.

### ***Complete Streets improve safety.***

- Complete Streets mandates prioritize **safety over speed** and dedicate space to different travel modes to mitigate conflicts between road users and reduce crashes and fatalities.
- Complete Streets are needed to address America's growing road safety crisis and reduce risks.
  - According to the [National Highway Traffic Safety Administration \(NHTSA\)](#), between 2012 and 2021, fatalities for people walking and biking increased by 49% and 40%, respectively. In 2021, 41,615 cyclists were injured, a 7% increase from 38,886 in 2020.
  - Statistics from [NHTSA](#) indicate that only 9% of cyclist fatalities occurred on bicycle lanes, sidewalks, or shared-use paths in 2021, whereas an alarming 91% of cyclist fatalities occurred on the road or in intersections where there is closer proximity to vehicles. This underscores the dire need for safer on-road cycling infrastructure.

- Fifty-three percent of people express concerns about being struck by a vehicle while biking, according to the [2022 PeopleForBikes Participation Study](#).
- Sixty percent of individuals want to bike more but are held back by concerns about safety, as highlighted by [Dill and McNeill's 2016 research](#).
- Complete Streets reduce vehicle speeds, increasing safety.
  - Smart Growth America found that [vehicle speed is the most influential factor](#) in determining if a crash will be fatal, and that street design is more effective in lowering vehicle speeds than speed limits alone.
  - A 2017 National Transportation Safety Board [study](#) found that an individual struck by a car traveling 20 mph has a 95% chance of survival. If the vehicle speed increases to 35 mph, the chance of survival falls to 55%. If vehicle speeds are 40 mph, there is only a 15% chance of survival.
- The presence of Complete Streets and protected bike lanes, in particular, have a significant impact on road safety.
  - Research conducted by [Marshall and Ferencsak in 2019](#) revealed that cities with protected bike lanes experienced 44% fewer fatalities for all road users and 50% fewer serious injuries compared to average cities, meaning protected bike lanes make roads safer for everyone, regardless of transportation mode.
    - In both international and U.S. contexts, transit-oriented communities had a significantly lower fatality rate than car-centric communities. Specifically, in the U.S. the fatality rate was 5 times lower in transit-oriented communities. This results from a combination of lower vehicle speeds due to urban design as well as a reduced volume of cars from increased utilization of alternate modes of transportation.
  - Streets equipped with protected bike lanes also demonstrate remarkable safety improvements, with a 90% reduction in cyclist injuries per mile, as [found by Teschke and colleagues in 2012](#).
  - A National Complete Streets Coalition [analysis](#) found that nearly 70% of projects experienced a significant reduction in crashes after Complete Streets updates, and 56% of projects experienced a decline in injuries. These

reductions occurred as vehicle volumes remained unchanged or increased while pedestrian and bicycle traffic rose.

- In Cambridge, Massachusetts, [Complete Streets changes](#) saw crashes involving bicyclists decrease from 2.5 to 0.6 crashes per 100 bicycle trips.
- In Seattle, [Complete Streets improvements](#) led to a 23% reduction in total crashes and a 66% decrease in speeding on one street alone. On a different project, crashes decreased by 14% and speeding drivers declined by 75%.
- A 2020 U.S. Department of Transportation Federal Highway Administration [report](#) found that adding bicycle lanes can reduce the total number of crashes by as much as 49%.

### ***Complete Streets mandates reduce vehicle miles traveled (VMTs) and greenhouse gas (GHG) emissions by expanding transportation options.***

- Complete Streets provide a full menu of safe and connected transportation options, allowing people to move however they need to. Whether they want to walk, bike, take the bus, or drive, all people have safe and comfortable options to get to their destination.
- [The transportation sector emits 29%](#) of all GHG emissions, which is the single largest contributor to GHG emissions in America.
- [Fifty-three percent](#) of all car trips taken in the U.S. are 3 miles or less and 28% are 1 mile or less. Three miles is equivalent to a 20-minute bike ride for an average person, indicating that shifting close-to-home trips from cars to bicycles is possible and can significantly reduce the number of miles driven in cars.
- Shifting short car trips to walking or biking trips and using walking and biking to access public transit [saves 13 million tons of CO<sub>2</sub> emissions annually](#), with the potential to save more than 54 million tons with improved active transportation infrastructure.

### ***Complete Streets improve transportation equity.***

- Complete Streets mandates are an essential strategy to improve equity in the transportation planning process and increase public spending on infrastructure for underserved and underrepresented communities who cannot or choose not to drive. This includes low-income communities, communities of color, children, older adults, and individuals with disabilities. Notably, [30%](#) of the [U.S. population](#) does not have a driver's license.
- Improving bike access to recreational amenities from surrounding communities helps make places more equitable. An [analysis](#) of trail connections in Milwaukee, Wisconsin, indicated unequal trail access across the city: 24% of all residents lived within biking distance of a trail, whereas only 8% of people in underserved and underrepresented neighborhoods lived within biking distance. Adding just two strategically placed trail access facilities would increase biking access by 59% generally and by 66% in the underserved and underrepresented neighborhoods.
- [A disproportionate number](#) of fatal crashes occur in low-income communities and communities of color. Deaths of Black Americans are double the rate of white non-Hispanic deaths, and Native Americans are killed at more than 2.5 times the rate of white non-Hispanics. These disparities exist because low-income communities and communities of color experience less access to safe recreational spaces and are less likely to have sidewalks, crosswalks, slower speed limits, and streets designed to reduce traffic volumes.
- Low-income communities and communities of color experience less access to health-promoting recreational areas, educational and employment opportunities, and goods and services, as found by [Ingram and colleagues in 2020](#).
- A U.S. Department of Transportation Federal Highway Administration [report](#) found that only 13% of local public agencies have an Americans with Disabilities Act (ADA) transition plan to ensure compliance with ADA requirements.
- [People living with disabilities rely more heavily on active transportation](#): 13% of workers with a disability rely on active transportation compared to only 9% of workers who do not have a disability.

***Complete Streets have a high economic return on investment and contribute to economic vitality.***

- Complete Streets projects increase employment opportunities.

- [The American Association of State Highway and Transportation Officials found](#) that building greenways, sidewalks, and bicycle infrastructure contributes 17 jobs per \$1 million spent compared to other road and highway projects that only range from 9 to 12.5 jobs created per \$1 million.
- In an [analysis of Complete Streets projects](#) conducted by the National Complete Streets Coalition (NCSC):
  - One project in Lancaster, California, saw employment grow along the targeted corridor by 64% over three years. Comparatively, employment only increased by 3% citywide, and a similar corridor that did not receive Complete Streets upgrades saw a decrease in employment during that same time.
  - Complete Streets upgrades in West Jefferson, North Carolina, led to 10 new businesses opening, adding 55 jobs in the small mountain town.
  - In Orlando, Florida, streets with Complete Streets updates saw 77 new businesses open, creating 560 jobs over seven years.
- Well-designed Complete Streets projects lead to higher spending and investment in local communities.
  - A Lancaster, California, Complete Streets project saw retail sales increase by 96%. Similarly, many other cities [analyzed by the National Complete Streets Coalition](#) saw retail sales growth between 20 and 46% after Complete Streets upgrades.
  - Revenue generated by tourism in areas with active transportation opportunities is [eight to nine times](#) more than the original investment in infrastructure upgrades.
  - A 2019 [Rails to Trails Conservancy analysis](#) found that active transportation infrastructure contributes \$34.1 billion annually to the U.S. economy. More connected infrastructure could potentially add more than \$138.5 billion annually to the economy, more than seven times the cumulative investment of \$20 billion for trails, and walking and biking projects made over the last three decades from federal programs.
- Complete Streets construction is not more expensive than traditional road construction and, in many cases, is cheaper.

- According to an [analysis](#) by the National Complete Streets Coalition, the average cost of a Complete Streets project in the U.S. is \$2.1 million, far below the \$9 million average cost of projects in state transportation improvement plans. This is because many Complete Streets projects rely on inexpensive upgrades within the existing right-of-way, such as paint, concrete barriers, and bollards.
- Inexpensive Complete Streets updates can have significant impacts. In 2010, Washington, D.C., installed a two-way, protected bike lane which increased levels of cycling, decreased riding on the sidewalk, and diminished the number of vehicles per day. At its full [2.1-mile length, the bike lane cost an estimated \\$250,000](#).
- In 2011, Portland, Oregon, invested [\\$60 million to connect the city's bicycle network with 300 new miles of bicycle infrastructure](#). The same investment would have been equivalent to only building one mile of a four-lane urban freeway.
- Between 2015 and 2025, Southern California plans to spend [\\$6.7 billion on active transportation projects](#). This investment will build 5,800 miles of bikeways, improve access to schools and parks, and allow millions of people to cycle safely and efficiently for only 1% of the total transportation budget over this period.

### ***Complete Streets lead to positive public health outcomes.***

- Complete Streets mandates promote physical activity, improve overall health, and reduce the burden on our healthcare system.
  - Engaging in physical activity can positively combat cardiovascular disease, diabetes, certain types of cancer, arthritis, asthma, and mental health issues.
    - People living in walkable and bikeable neighborhoods get an average of [35-45 more minutes](#) of moderate physical activity each week compared to their peers.
    - A study of the American Tobacco Trail in Durham, North Carolina, showed that [building infrastructure to connect trail segments](#) increased trail use by 133% and physical activity from 138 to 162 minutes per person per week.



- [Proximity to trails is associated](#) with people being 50% more likely to meet the recommended physical activity guidelines and 80% more likely to ride a bicycle.
- Two-thirds of adults and nearly half of children are either overweight or obese, which incurs significant healthcare costs estimated at almost [\\$173 billion](#) annually.
- Obesity, many chronic diseases, and mental health conditions also [reduce economic productivity through absenteeism and presenteeism](#).
- A [Rails to Trails Conservancy analysis](#) found that the health cost savings of active transportation is currently \$20 billion annually, with the potential to grow to nearly \$92 billion annually with increased opportunities to engage in active transportation.
- Every [\\$1 invested into active transportation routes saves \\$24](#) in averted medical costs.
- Complete Streets improvements avert significant costs and healthcare burdens from crashes and crash-related injuries.
  - A National Complete Streets Coalition [analysis](#) found that 37 communities collectively averted \$18.1 million in crash and injury costs in just one year by implementing Complete Streets improvements.
  - Additionally, the cost savings from averting crashes and related injuries typically far exceed the original investment in Complete Streets upgrades. A National Complete Streets Coalition [analysis](#) found that West Jefferson, North Carolina, invested \$300,000 in a Complete Streets project that saved more than \$2.7 million in just the first year.

## How to Create a Complete Streets Mandate

### State Level:

- In 2022, the Washington State Legislature passed [Senate Bill 5974](#), which revised the [Public Highways and Transportation Code](#) to include a Complete Streets requirement for all state-funded transportation projects with a budget of \$500,000 or more. Notably, it also includes the ability to lower speed limits. [Read about its implementation](#) by the Washington State Department of Transportation.

- In [2020](#), the Massachusetts Department of Transportation adopted another type of Complete Streets mandate, which took the form of three new "controlling criteria." This criteria requires ADA-accessible pedestrian facilities and high-quality bikeways in state-run road reconstruction projects, plus bus shelters, crosswalks, and transit-priority infrastructure on road projects that affect major transit routes.

### *City/County Level:*

- In 2018, Des Moines, Iowa, passed [Complete Streets legislation](#) with strong language around design requirements. The Transportation Safety Committee established through the policy also controls which projects get approved per specific criteria. Exceptions must meet a clearly defined burden of proof.
- In 2019, Cambridge, Massachusetts, passed its [Cycling Safety Ordinance](#), becoming the first city in the country to mandate the inclusion of separated bike lanes when streets are rebuilt if such lanes are part of the city's bicycle master plan.
- In 2019, Tucson, Arizona, passed a [Complete Streets ordinance](#), the highest-ranked plan in Smart Growth America's "[Best Complete Streets Policies](#)" 2023 report. Not only does it mandate Complete Streets design standards for all new projects, but it also resulted in new staff and a robust implementation plan that stewarded resident engagement through a Complete Streets Coordinating Council. [Read more](#) about Tucson's Complete Streets program.

**Take Action: Contact your state and local elected officials to request that they sponsor legislation to create a Complete Streets mandate for your state's department of transportation and in your city/town. You can reference our [legislative guide](#) for examples of how leading communities enacted Complete Streets mandates.**