

TRANSPORTATION

As walking and biking become popular modes of transportation again, our towns need streets and sidewalks that meet the needs of all users. The following guides can help cities build infrastructure with safety, efficiency, and walkable downtowns in mind, no matter their size.

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Using the Guides

This guidebook is organized into topical chapters: Water, Land and Skies, Transportation, and Zoning and Development. Each chapter contains *guides* that focus on a particular ordinance, or aspect of an ordinance, your community may be interested in adopting. Each guide introduces the ordinance topic and includes strong example ordinances, resources for further research, and a list of best practices.

EXAMPLE ORDINANCES

A selection of ordinances from the Hill Country and beyond are available for download throughout this guidebook. Strong components and necessary context are included as needed.

CITY NAMES and underlined text link to ordinances and code sections.

RESOURCES

The guides are snapshots of ordinances. Resources include relevant organizations and guiding documents that provide more in-depth information about each topic.

► *Underlined and italicized titles link to the corresponding document.*

BEST PRACTICES

A compilation of methods to undertake when crafting the ordinance. These suggestions are widely accepted as the most responsible and effective procedures for the given topic.

"ALIVE ON WATER STREET"

KERRVILLE, TX

PHOTO COURTESY OF DALE LEACH



"A good street is more than just a fantastic place to be. It's a vital building block for a strong community."

- StrongTowns

Complete Streets

Complete Streets is a flexible street design approach that promotes functional, safe, and accessible streets for all people and transportation modes. The approach encourages jurisdictions to adopt designs that respond to local conditions. While each community will have distinct needs, Complete Streets should strive to be *multi-modal* – accommodating pedestrians, bicyclists, motorists, ride share services, and public transit users, where transit is provided.

Expanding street accommodations for users other than drivers is particularly beneficial for people who don't own a car and those who are unable or choose not to drive. Streets should be hospitable to users of all ages and abilities, which includes providing seating and shade. Street redesign also presents opportunities for greening, which beautifies and ecologically benefits the area.

Complete Streets decrease pedestrian and bicyclist accidents through safer design, facilitate more active lifestyles, and increase street activity which benefits nearby businesses. The positive impact of Complete Streets on road safety can be furthered through traffic calming measures, which are also discussed in this chapter.

ELEMENTS OF A COMPLETE STREETS POLICY

VISION AND INTENT
DIVERSE USERS
COMMITMENT IN ALL PROJECTS & PHASES
CLEAR, ACCOUNTABLE EXCEPTIONS
JURISDICTION
LOW IMPACT DESIGN
LAND USE AND CONTEXT SENSITIVITY
PERFORMANCE MEASURES
PROJECT SELECTION CRITERIA
IMPLEMENTATION STEPS

*FROM THE NATIONAL
COMPLETE STREETS COALITION*

TEXAS ORDINANCES, POLICIES, AND PLANS

RECOGNIZED BY THE NATIONAL COMPLETE STREETS COALITION

ORDINANCES

- SAN MARCOS, *Complete Streets Policy*
- AUSTIN, *Complete Streets Ordinance*

POLICIES

- SAN ANTONIO, *Streetscape Improvements*

PLANS & GUIDES

- CAPITAL AREA METRO PLANNING ORGANIZATION (CAMPO)
Texas Mobility Plan 2030
- TEXAS DEPARTMENT OF TRANSPORTATION (TXDOT)
Guidelines Emphasizing Bicycle and Pedestrian Accommodations

ALSO SEE AUSTIN'S CONTEXT-SENSITIVE REGULATIONS FOR STREET DESIGN.

► *Transportation Criteria Manual: Street Cross Sections*

BEST PRACTICES

Coordinate across jurisdictions, departments, and agencies.

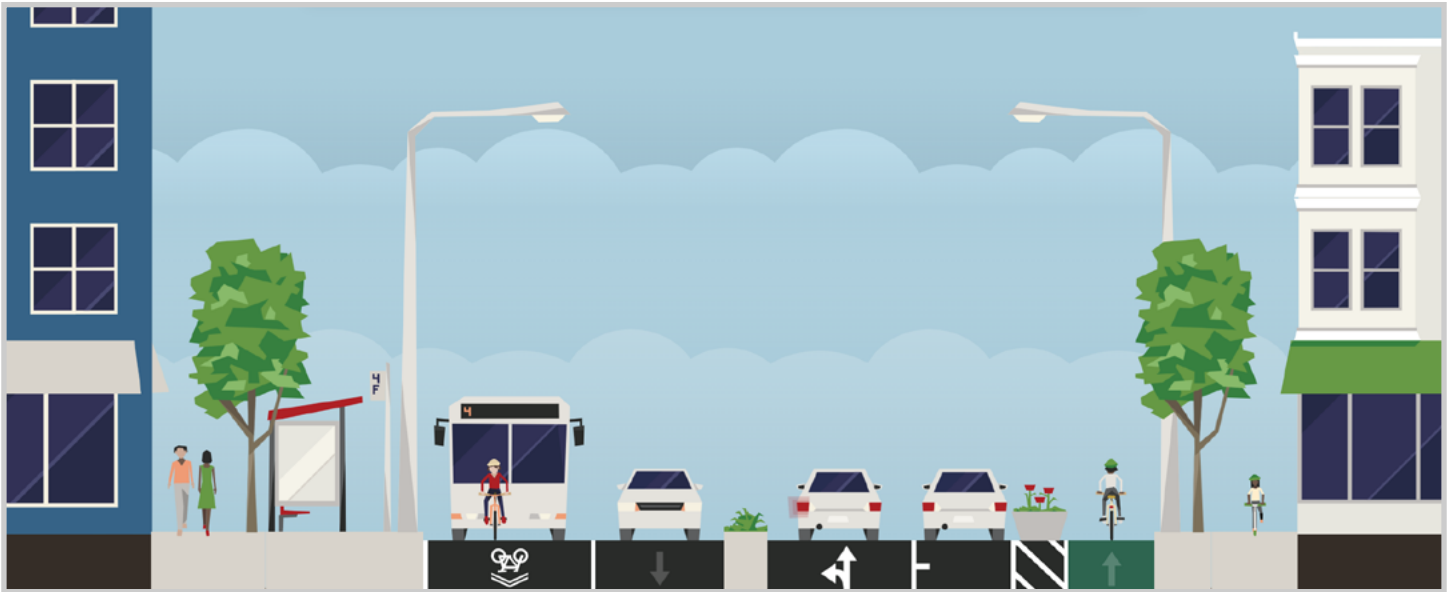
Complete Streets have many goals—economic development, environmental sustainability, social equity, and public health—and stakeholders and experts within each realm should be heard during policy development.

Allow for design flexibility. Each street has particular needs and policies should allow for creative solutions to site-specific problems. Be sure to detail exceptions to design requirements.

For example, streets surrounding schools may prioritize wider than normal sidewalks to accommodate families who walk to school. Community participation in the design process ensures the design will meet users' needs.

Use data to determine implementation barriers and to prioritize underserved and unsafe sites. Outline project selection criteria that highlights neighborhoods with vulnerable populations and sites where accidents frequently occur, users' needs are not being met, or other improvements are planned.

Accommodate many users. Complete streets should enable safe, convenient, and accessible routes for multiple modes of transportation; including, public transit, walking, biking, micro-mobility options, car and bike share services, and driving.



A POTENTIAL STREET DESIGN CREATED THROUGH [STREETMIX.NET](https://streetmix.net). STREETMIX IS AN OPEN SOURCE, ONLINE TOOL FOR VISUALIZING AND RE-IMAGINING ROADS. USERS CAN ADD EXISTING ELEMENTS AND TEST NEW DESIGNS ACCORDING TO THEIR PARTICULAR NEEDS.

RESOURCES

U.S. Department of Transportation

- [*The Small Town and Rural Multimodal Networks Guide*](#)
Interactive version at ruraldesignguide.com

Southern Georgia Regional Commission

- [*Best Practices for Complete Streets in Rural Communities*](#)

City of Tacoma, Washington

- [*Complete Streets Design Guidelines: Residential*](#)
- [*Complete Streets Design Guidelines: Mixed-Use Centers*](#)

Smart Growth America—National Complete Streets Coalition

- [*The Best Complete Streets Policies*](#)
See Appendix A: Methodology and Model Policy Language

Texas Department of Transportation (TxDOT)

- [*Bicycle Accommodation Design Guidance \(2021\)*](#)

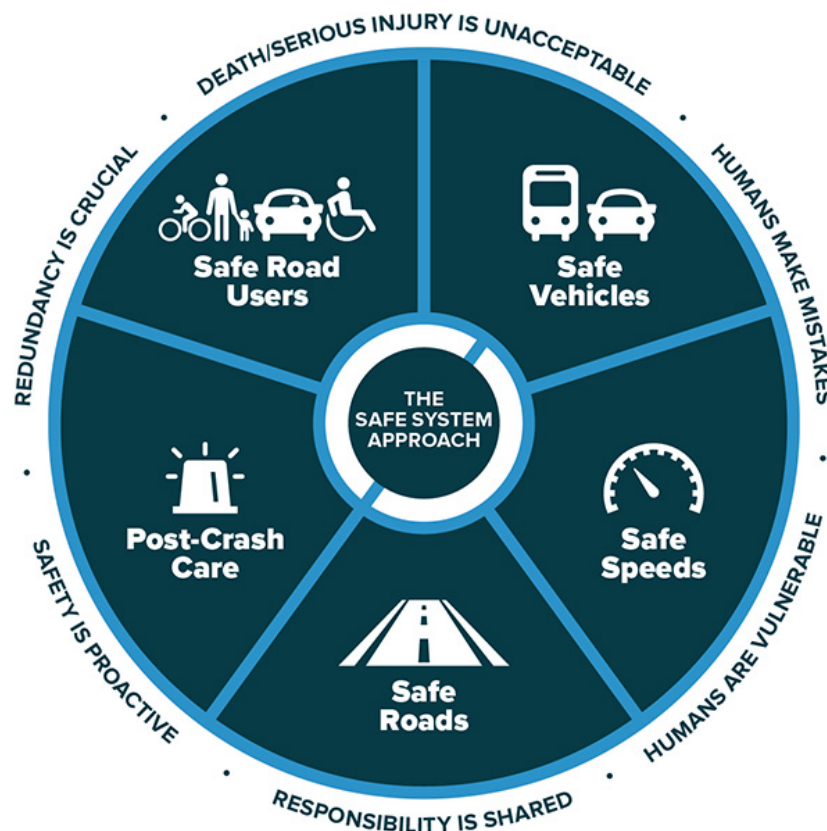
National Association of City Transportation Officials design guides for various street and community needs.

- [*Moving Together for Equitable Communities: Urban Bikeway Design*](#)
- View all the guides at nacto.org

Traffic Calming

Traffic calming solutions improve safety and mobility for pedestrians, cyclists, transit users, and motorists and easily complement Complete Streets policies. Long, wide, straight roads encourage motorists to speed, resulting in more accidents. Traffic calming efforts, including reducing lane widths and altering lane paths, reduce vehicle traffic volumes and speeds, which helps reduce collisions. These efforts manifest as physical barriers, visual cues, and pavement materials and colors that self-enforce traffic calming or call attention to non-vehicle paths.

Safe Systems is a road design approach with a vision of zero traffic deaths by 2050. The approach understands that human error is inevitable and aims to minimize the harm caused when those accidents happen.



ELEMENTS OF THE SAFE SYSTEMS APPROACH.
SOURCE: USDOT, FEDERAL HIGHWAY ADMINISTRATION

EXAMPLE ORDINANCES & MANUALS

MCKINNEY

- ▶ [Neighborhood Traffic Management Program*](#)

AUSTIN

- ▶ [Transportation Criteria Manual: Geometric Design Criteria](#)

SAN ANTONIO

- ▶ [Neighborhood Traffic Calming Handbook*](#)

GAITHERSBURG, MD

- ▶ [Street Design Standards and Traffic Calming Best Practices*](#)

* Cities should adopt traffic and street design manuals into code to ensure compliance.

BEST PRACTICES

Inventory solutions to capture suitability factors at a glance.

Include descriptions, pictures, cost estimates, maintenance needs, and pros and cons of each solution.

Combine traffic calming with water management projects.

For example, swales can accompany road diet modifications. Chicanes, curb extensions, and pedestrian refuge islands present opportunities for landscaping which reduces impervious cover and helps manage stormwater.

Ask for neighborhood constituent input. Neighbors know where drivers tend to speed and where it feels unsafe to cross the street.

Use tactical urbanism to inexpensively pilot projects. Cities can temporarily alter roads to explore possible solutions using inexpensive materials such as cones, hay rolled in burlap, potted plants, paint, wooden planks, or by holding community events.

Beautify in addition to traffic calming. Some constituents may not like traffic calming measures for the same reason others like them: they slow drivers down. Public art, seating, and landscaping, can provide added benefits non-supporters can appreciate.

TRAFFIC CALMING SOLUTIONS

HORIZONTAL DEFLECTION

Reduces vehicle speed by altering horizontal motion, requiring drivers to reduce their speed to navigate the change in the road.

- Chicane
- Roundabout
- Pedestrian Refuge Island



CHICANE. (CC) DAVID P HOWARD / WIKIMEDIA

VERTICAL DEFLECTION

Reduces vehicle speed by altering vertical motion, encouraging drivers to slow down or risk car damage..

- Speed Tables at intersections
- Speed Bumps or Tables at crosswalks



SPEED TABLE BEFORE AN INTERSECTION.
(CC) THISISBOSSI / WIKIMEDIA

NARROWING

Slows traffic volume by narrowing lanes, often to call attention to an upcoming crosswalk or intersection.

- Road Diet
- Pinch Point
- Curb Extension and Bump-Out



LANDSCAPED CURB BUMP OUT.
(CC) RICHARD DRDUL / WIKIMEDIA

VISUAL CUES

Demarcates different uses as a reminder to drivers of pedestrian or cyclist presence. Helps cyclists navigate safely.

- Colored and Textured Pavement
- Dynamic Speed Limit Sign



WORKERS PAINTING A BIKE LANE BRIGHT GREEN.
PHOTO SOURCE: SEATTLE DEPARTMENT OF TRANSPORTATION

RESOURCES

AARP geared their solutions toward small towns and organized them by short- to long-term implementation and financing timelines.

► [*Imagining Livability Design Collection*](#)

Institute for Transportation Engineers & CNU issued a series of fact sheets to accompany a report on context sensitive street planning.

► [*Design Factors to Control Speed*](#)

The **Road to Zero coalition** aims to achieve zero traffic deaths by 2050 using a 'safe systems' approach.

► [*Road to Zero: Taking a Safe Systems Approach*](#)

The **South Central Regional Council of Governments** in Connecticut detailed a toolbox of traffic calming measures that explains pros and cons of each tactic.

► [*Traffic Calming Resource Guide*](#)



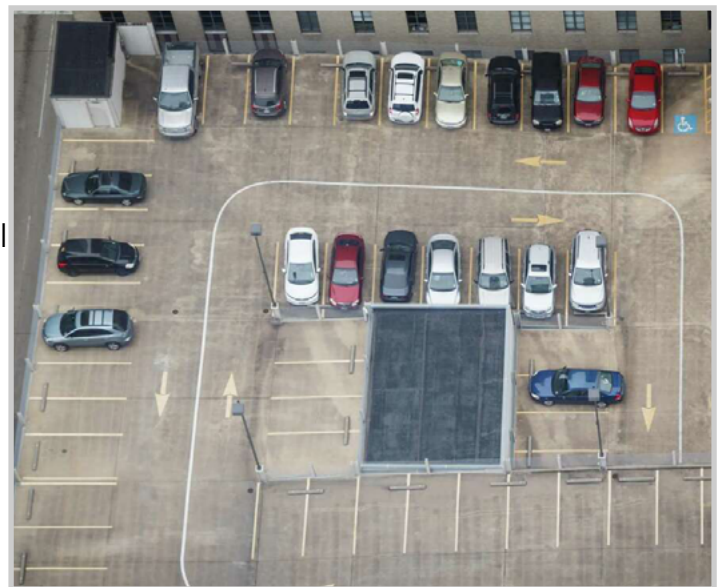
SIGNAGE, PAINTED BIKE LANES, AND CURB EXTENSIONS SUPPORT TRAFFIC CALMING IN DOWNTOWN SAN MARCOS. PHOTO COURTESY OF LEAH CUDDEBACK

Sensible Parking Requirements

Parking minimums dictate the number of parking spaces a developer must provide and often exceed the actually necessary amount of parking, leading to underused parking spaces. Cities may offer paths for developers to reduce required parking or eliminate parking minimums altogether, either at a district or city wide scale. The strongest ordinances reduce minimum parking by right, rather than making reductions conditional on nearby businesses' needs or developers' actions.

DISADVANTAGES OF SURFACE PARKING LOTS

- Surface parking lots occupy valuable space without contributing economic benefits. Underused parking lots depress property tax revenue, since they don't have taxable improvements.
- Affordability and project feasibility is compromised when developers are required to use land for parking rather than another business or residence.
- Ample parking encourages car use over active transportation modes like walking and biking, which bring foot traffic to local businesses and promote physical health.
- Impervious surface parking lots increase runoff and flooding during rain events and absorb heat which increases temperatures.



AN UNDERUSED PARKING LOT IN HOUSTON'S GROWING EAST DOWNTOWN. THE CITY RECENTLY REMOVED PARKING MINIMUMS IN THE DISTRICT. (CC) MICHAEL PAULSON / HOUSTON CHRONICLE



SIGNIFICANT SPACE IN DOWNTOWN AUSTIN IS DEDICATED TO UNDERUSED SURFACE PARKING. ONCE MINIMUMS ARE REDUCED OR ELIMINATED, LOTS MUST BE DEVELOPED INTO ACTIVE SPACES.
(CC) DIANN BAYES / FLICKR

BEST PRACTICES

Increase allowable distance to off-site parking. Parking can be offered at the edges of the urban core rather than occupying valuable downtown space.

Offer shared parking plans. Neighbors with complementary parking needs can coordinate to maximize use of parking spaces.

Offer reductions in exchange for bicycle parking. This promotes active transportation and increases street activity for businesses.

Eliminate parking minimums in downtown areas. Downtown vitality depends on visitors parking in one location and walking through the district.

Institute parking maximums instead of minimums. This prevents oversupply of spaces and caps the amount of land dedicated to parking. This also offers developers greater flexibility to meet a site's specific needs.

Think beyond single sites. Update parking policies at the district or city level, rather than for single businesses or developments.

Shift to market-based parking. Trust that developers and businesses will provide only the amount of parking they believe is necessary for their operations.

EXAMPLE ORDINANCES

REDUCTIONS

BERTRAM

- Maximum parking regulations.
- Reductions for bike facilities and carpool programs.

DRIPPING SPRINGS (SEC. 5, EXHIBIT A)

- In lieu parking payments in the downtown district.

ELIMINATIONS

CITY-WIDE

BANDERA (APPENDIX 3)

DISTRICT-WIDE

UVALDE (CHAPTER 17.32)

SAN ANGELO (SEC. 511)

AUSTIN (ARTICLE 7)

SAN ANTONIO (SEC. 35-526)

RESOURCES

The **Des Moines area MPO** guide to sustainable parking planning, management, and design.

- ▶ *[Best Practices: Parking Management and Design](#)*

The **Center for Neighborhood Technology** municipal policy solutions for providing appropriate parking.

- ▶ *[Stalled Out: How Empty Parking Spaces Diminish Neighborhood Affordability](#)*

Victoria Transport Policy Institute's set of strategies to make parking resources more efficient.

- ▶ *[Parking Management: Comprehensive Implementation Guide](#)*

The **Montgomery County Planning Commission** of Pennsylvania shared ways to green parking lots so that they serve a secondary function when and where they are necessary.

- ▶ *[Sustainable Green Parking Lots](#)*

Parking Reform Network developed an interactive map of cities that have adjusted or eliminated their minimum parking requirements.

- ▶ View at parkingreform.com

Bicycle Parking

Providing bicycle parking encourages biking as a viable transportation mode. People are more likely to bike if they know their destination has secure and reliable bicycle parking, which decreases car dependency and pollution while promoting physical health. Workplaces that provide showers and changing spaces for bike commuters can further encourage bicycling.

ELEMENTS TO CONSIDER

Weather Protection
Visibility and Security
Proximity to Destination
Number of Spaces
Form and Design

EXAMPLE ORDINANCES

BANDERA

AUSTIN

- ▶ Land Development Code (how much is required)
- ▶ Transportation Criteria Manual (where its required)
- ▶ Standard Specifications Manual (technical details)

SEATTLE, WA

- Bicycle parking guidelines were adopted as a Director's Rule, which are binding rules about Seattle's municipal codes.

RESOURCES

The **Association of Pedestrian and Bicycle Professionals'** technical guide is organized by short- and long-term bike parking needs.

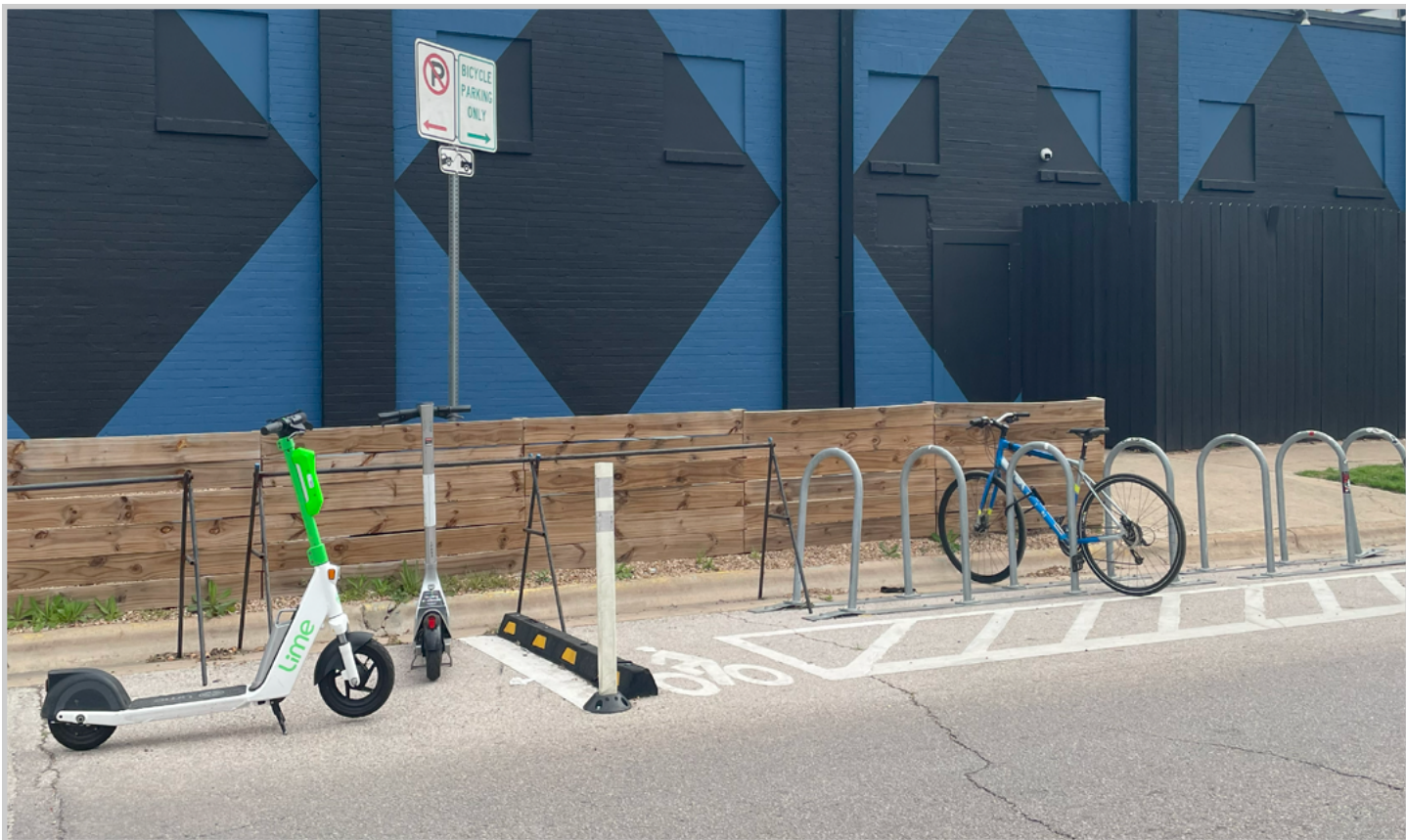
- ▶ *Essentials of Bike Parking: Selecting and Installing Bicycle Parking That Works*

Arlington County, Virginia divides their installation guide into three classes of bike parking and includes guidance on retrofitting sites.

- ▶ *Bike Parking Standards Guide*

Bike Texas is a statewide non-profit focused on bicycle access, safety, and education.

- ▶ Learn more at biketexas.org



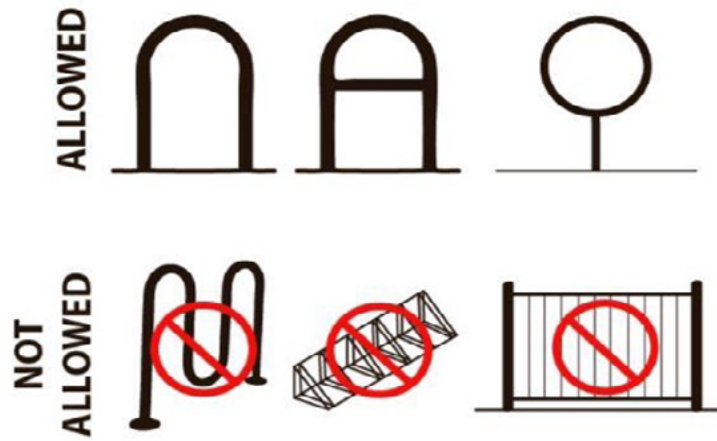
BOLLARD AND CURB PROTECTED IN-STREET BICYCLE PARKING.
PHOTO COURTESY OF MAGGIE NEMETZ

BEST PRACTICES

Ensure bike parking is visible and consistently marked. Use standard signage to direct riders and demarcate bicycle parking zones, especially when parking is not clearly visible. If within a parking garage, bike storage should be on the first floor.

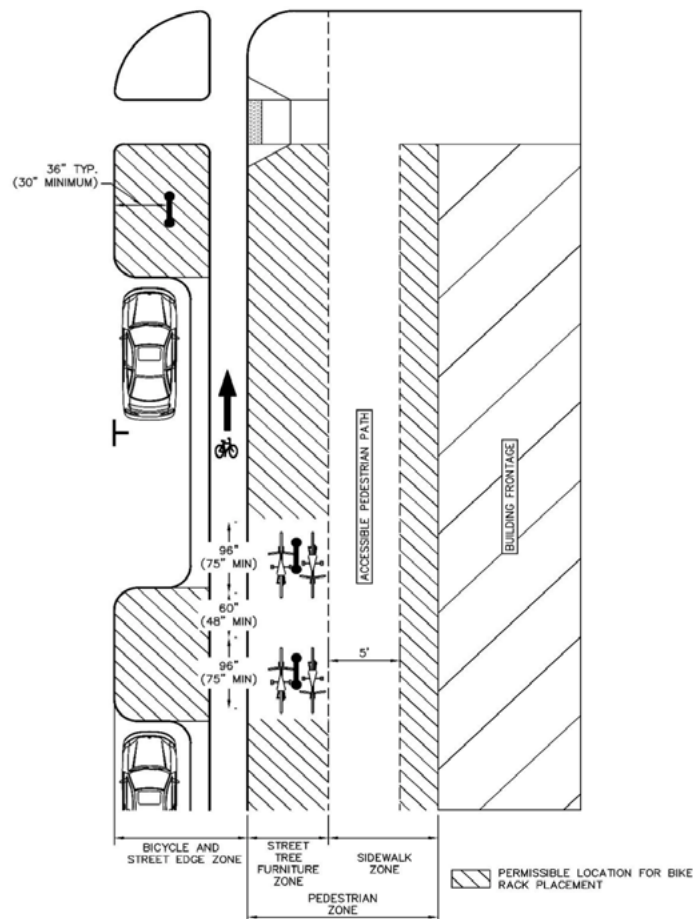
If you require vehicle parking minimums, allow them to be offset with bicycle parking. In Bertram, TX businesses can reduce their required vehicle parking by 5% if they provide covered and secure bike parking and another 5% if they provide bathrooms and lockers for employees who commute by bike. Employees are more likely to bike to work if employers provide all of these amenities.

Establish parking placement and design standards. Not all bike parking is created equal. Providing images and diagrams to assist developers and business owners in building bike facilities will yield safer, more space efficient, and consistent results.



GRAPHIC OF RECOMMENDED BICYCLE RACK DESIGNS.
SOURCE: CITY OF BANDERA CODE OF ORDINANCES SECTION 15B

Build protected parking and storage facilities. Enhance personal safety by making parking accessible, visible, and well-lit. Riders should have ample room to maneuver without damaging their bicycles.



GRAPHIC OF RECOMMENDED BICYCLE PARKING LOCATIONS AND PLACEMENT.
SOURCE: CITY OF AUSTIN TRANSPORTATION CRITERIA MANUAL SECTION 9.8

Determine minimum bike parking by establishment type.

Locations will have different needs for bike storage.

- *Short-term* bike parking should be close to entrances, in high traffic areas, and is typically offered as bike racks in front of commercial establishments where bicycles will be parked for less than 2 hours.
- *Long-term* storage should be better protected from the elements and theft and is necessary at transit hubs and residences to accommodate commuters. Designs include: bike shelters, bike lockers, and indoor bike rooms.

The *Association of Pedestrian and Bicycle Professionals* recommends the following formulas* for determining bicycle parking quantities, though each community should assess their needs according to local conditions. (*More urbanized or bike-active communities should add another 0.5 – 1 space per volume).

Hospitals/Health Care	1 space per 20,000 sq. ft. of floor area Minimum 2 spaces
Schools	1 space per 20 students of planned capacity Minimum 2 spaces
Colleges & Universities	1 space per 10 students of planned capacity Minimum 2 spaces
Businesses Offices	1 space per 20,000 sq. ft. of floor area Minimum 2 spaces
Off-street Parking Lots and Garages	1 per 20 auto spaces Minimum 6 spaces





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Learn more at HILLCOUNTRYALLIANCE.ORG/LEADINGBYEXAMPLE