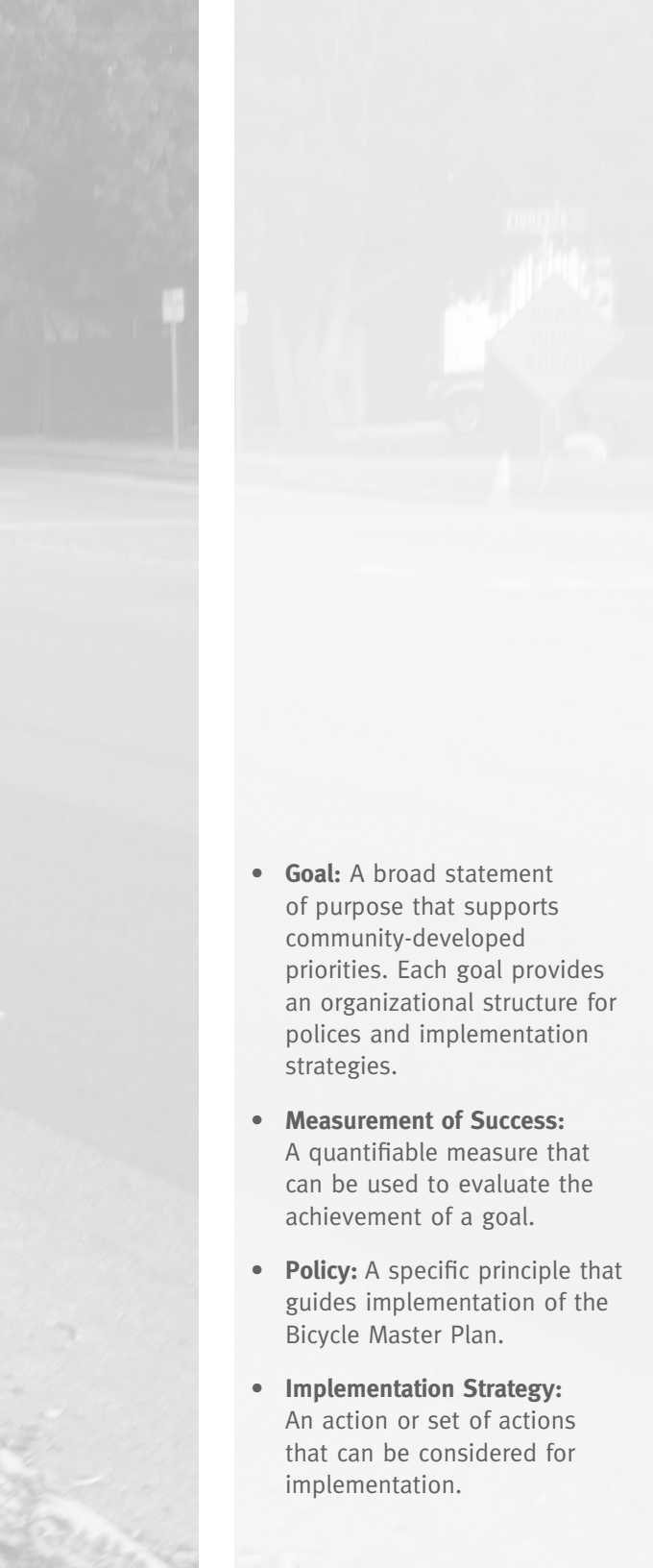




6

GOAL 4:

**SANTA
BARBARA STYLE
INFRASTRUCTURE**



- **Goal:** A broad statement of purpose that supports community-developed priorities. Each goal provides an organizational structure for policies and implementation strategies.
- **Measurement of Success:** A quantifiable measure that can be used to evaluate the achievement of a goal.
- **Policy:** A specific principle that guides implementation of the Bicycle Master Plan.
- **Implementation Strategy:** An action or set of actions that can be considered for implementation.

GOAL 4: SANTA BARBARA STYLE INFRASTRUCTURE

Make Santa Barbara a model for innovative roadway and bikeway design that is both leading-edge and responsive to the local community.

Santa Barbara residents are more likely to choose bicycling for travel if they feel safe and comfortable bicycling on City streets. In addition to the convenience of a safe, complete bicycle network (Chapter 4) and streets that are designed using Complete Streets principles (Chapter 5), decisions to ride or not to ride are heavily influenced by what is “on the ground”, namely bicycle facilities and street infrastructure. A safe bicycle network is composed of high-quality bicycle and roadway infrastructure that emphasizes the safety and comfort of *all* users of the street, including cyclists. The infrastructural components of the bicycle network (e.g. bike lanes, intersection enhancements, and traffic-calming treatments), as well as proper maintenance of bicycle facilities, are integral to achieving this goal. Infrastructural components such as such as pavement materials, pavement markings, street signage, and wayfinding signage should relate to the unique identity of the city.

Goal 4: Key Measurements of Success

- 1 By the end of 2018, to address key safety issues, complete projects that create Class II lanes, road diets, Bath/Castillo couplet extensions, and conflict green lane striping along the spine network (Lower State, Haley/Cota).
- 2 Construct up to five Santa Barbara BMP Bicycle Improvements by 2020.
- 3 Ensure that a variety of Santa Barbara style infrastructure improvements are implemented by 2025 (e.g. green lanes, green-backed sharrows, road diets, bicycle boulevards).



POLICY 4.1

DESIGNING BICYCLE FACILITIES



The City shall use leading-edge practices in Bikeway Facility Design, while also considering context-sensitive design appropriate for Santa Barbara.

Implementation Strategies

- 4.1.1: Complete Streets.** Incorporate Complete Streets design principles into all street improvement projects.
- 4.1.2: Roadway Projects.** Continue to ensure that the City addresses the operational and safety needs of bicyclists by implementing contemporary bikeway design in all road construction, repair, and reconfiguration projects (e.g. repaving, lane configuration, turning movements, removing peak-hour curbside parking, and signal timing).
- 4.1.3: Facility Design.** Design all bicycle facilities to meet or exceed the latest federal, state and local guidelines, and use existing resources such as the NACTO Bikeway Design Guide, AASHTO Guide for the Development of Bicycle Facilities, and the FHWA Separated Bike Lane Planning and Design Guide.
- 4.1.4: “Best Practices” and Innovation.** Incorporate the latest “best practices” that are both leading-edge and appropriate for bicycle facility design, when and where they are relevant contextually and operationally. Current best practices for bicycle facilities (see illustrations on pages 54-58) include:
 - a) Buffered bicycle lanes
 - b) Colored bicycle lanes
 - c) Cycle tracks
 - d) Green-backed bicycle shared lane markings (sharrows)
 - e) Green cat-track conflict zone markings at and approaching intersections, and where bicycle lanes pass mid-block driveways or alley entrances
 - f) Turning enhancements such as bicycle boxes and two-stage turn queue boxes
 - g) Median refuge islands and diverters
 - h) Multi-use off-street esplanades and trails
 - i) Bicycle Boulevards and Neighborhood Greenways
 - j) Bicycle signals and signal detection
 - k) Street lights on high priority and spine corridors
- 4.1.5: Interim Treatments.** Consider less-costly interim treatments (such as painted buffers or plastic delineators to provide vertical bicycle lane buffers) as a step before permanent installation, and for use in pilot/temporary projects.



4.1.6: Signalization. Enhance bicycle detection (e.g. camera detection) at all actuated traffic signals along the bicycle network. Where loop detectors are used, install pavement markings to show bicyclists where to stop to ensure detection. Continue to improve the sensitivity of signals to bicyclists. (Expanded BMP 2.3.8; CE1997 4.2.8)



4.1.7: Intersection Control. Promote the installation of leading-edge intersection controls that do not require a complete stop for bicyclists, allowing them to maintain momentum through the intersection. Intersection control types may include, but not be limited to roundabouts, mini traffic circles, bike boulevard passage, and enhanced signalization prioritized for bicyclists (e.g. synchronization, phasing and timing).



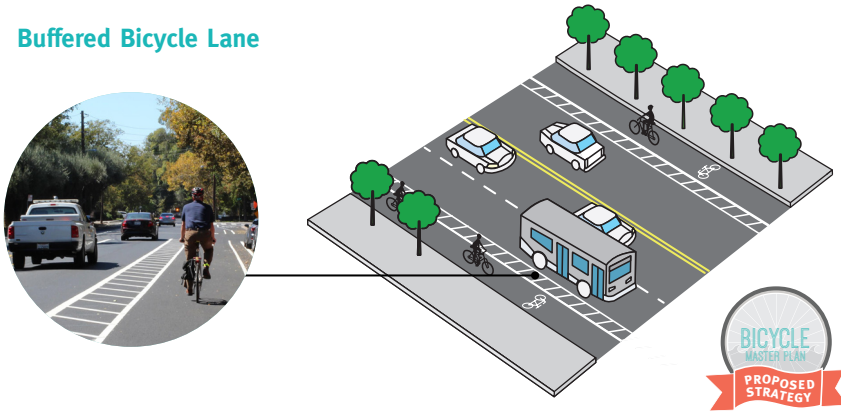
4.1.8. Plan Monitoring. Evaluate safety, ridership, and network improvements in five (5) year increments, and review changes in collision data. In the years 2020 and 2025, the City shall revisit and amend (if deemed necessary) the Santa Barbara BMP goals and network needs.



4.1.9. Peak Hour Lane Conversion. Consider conversion of peak hour bike lanes into either full time bike lanes, full time parking, or a bike friendly street.

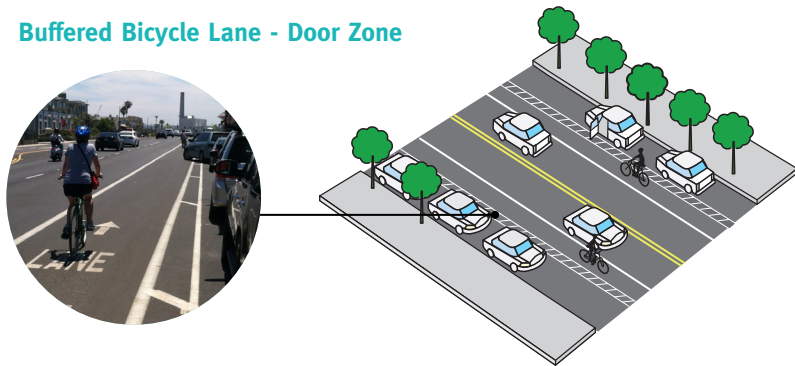
4.1.5: Best Practices Defined: Bicycle Lanes

Buffered Bicycle Lane



Buffered bicycle lanes are separated from adjacent vehicle travel lanes by a painted buffer. By providing space between the bicyclist and vehicular traffic, buffered lanes may improve cyclists' comfort and their perception of safety. They are especially valuable on streets where vehicle speeds and/or volumes are high. (Example: Las Positas Rd)

Buffered Bicycle Lane - Door Zone

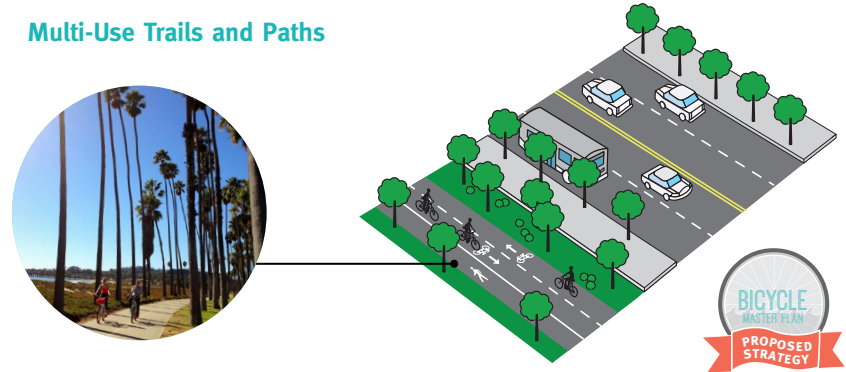


Although not currently proposed for Santa Barbara, a painted buffer between the bicycle pathway and parked vehicles guides cyclists to ride outside of the “door zone”, which is the area roughly 3' away from parked vehicles where an open (or opening) vehicle door can lead to a dangerous collision. Door zone buffers can be used in conjunction with painted buffers on the travel lane side to form a dual-buffered bicycle lane. (Examples: Cliff Drive, Las Positas Road, Castillo/Bath Streets)



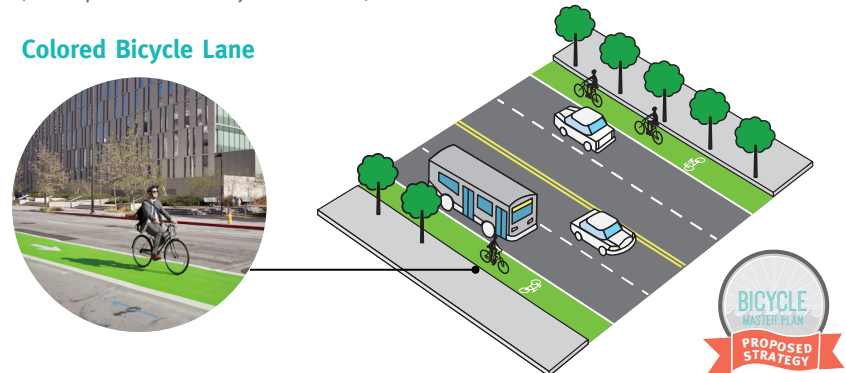
This icon indicates design strategies proposed in one or more of the recommended bicycle projects presented in Chapter 7. Strategies without this icon – although not specifically proposed in this Plan – are examples of other best practices to consider in developing leading-edge facilities in Santa Barbara.

Multi-Use Trails and Paths



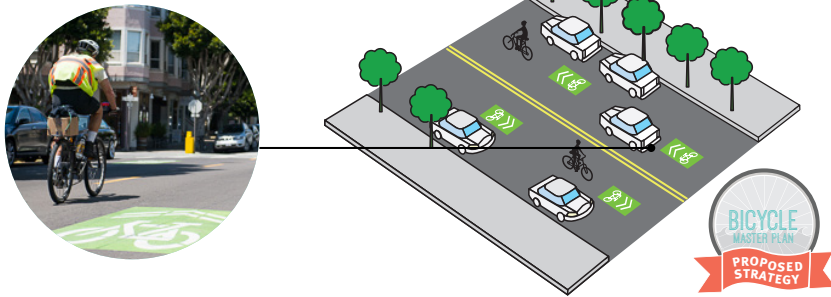
Multi-Use Trails and Paths provide dedicated right-of-way for non-vehicular uses including bicycling, walking, jogging, skating, etc. Multi-use trails and paths are often integrated into a natural environment, and may be considered in locations where there is sufficient land next to a roadway, especially where on-street bicycle facilities are less desirable. (Example: Beachway extension)

Colored Bicycle Lane



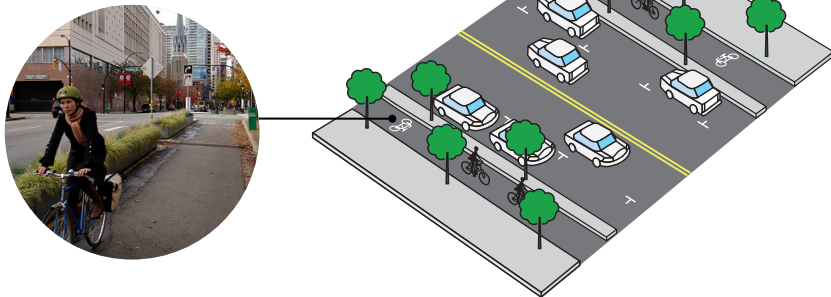
A colored bicycle lane is a conventional bicycle lane that is visually demarcated by painted pavement, colored paving materials, or highlighted conflict striping. Coloration provides motorists with enhanced visual recognition compared to standard bicycle lanes demarcated only by striping, and deters motorists from blocking the bicycle lane. While green is becoming the standard color choice, a color that harmonizes with Santa Barbara's unique style could be selected. (Example: State Street)

Green-Backed Sharrows



Green-backed sharrows provide a visual cue for motorists and bicyclists to “share the road”, supporting the rights of bicyclists to use the travel lane. Green-backed sharrows provide a recommended travel path for bicyclists that is separated from parked cars, limiting instances of “dooring”. The green background provides an enhanced visual compared to standard sharrows with no green backing. All sharrows proposed in this Plan are green-backed. This Plan also recommends removing centerlines on green-backed sharrowed streets where appropriate. (Examples: Pedregosa, Canon Perdido)

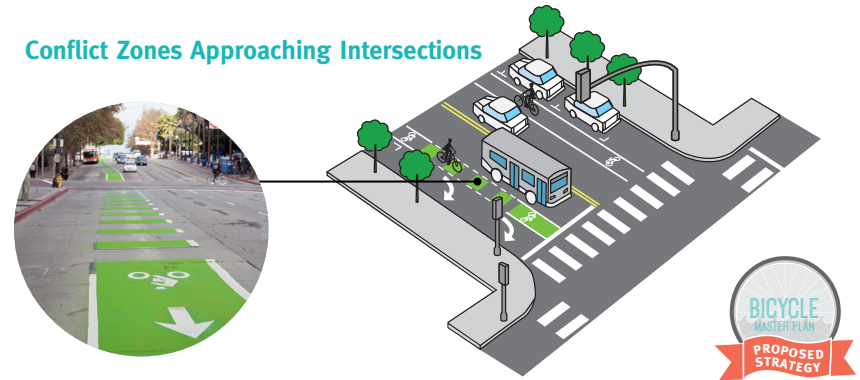
Cycle Track



A cycle track is a dedicated bicycle facility separated from vehicle lanes by a physical barrier, typically a raised median or bollards. A cycle track can be additionally protected from moving vehicles by a vehicle parking lane. Cycle tracks can be at roadway level, sidewalk level, or somewhere in between, and they may be one-way or two-way, depending on street characteristics and context. They work best on streets with sufficient road width and limited mid-block conflict areas (e.g. alleys, driveways, and commercial loading areas). The design of a physically-separated bicycle facility requires special considerations at intersections, mid-block crossings/driveways, and transit stops. (Example: Long-term improvement on Cliff Drive between Hendry’s Beach and Castillo Street)

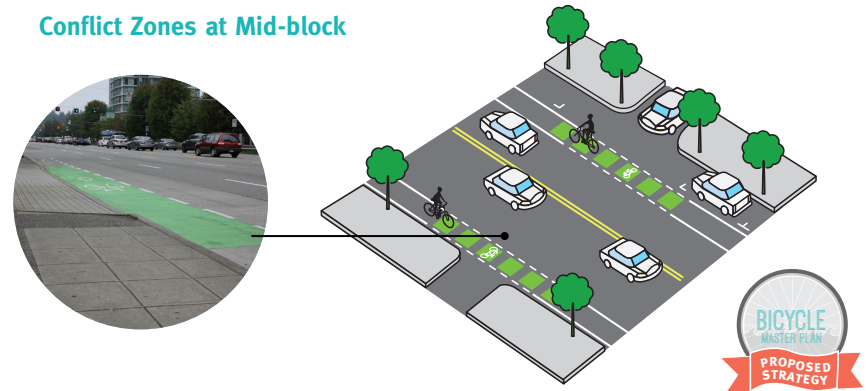
4.1.5: Best Practices Defined: Conflict Zone Treatments

Conflict Zones Approaching Intersections



Approaches to intersections are hot-spots for conflict between motorists and bicyclists traveling through the “mixing zone”, where vehicles may cross or merge into the bicycle lane to make a right turn. Pavement striping, with or without colored paint, signifies an appropriate location for motorists to safely merge across the bicycle lane into the right-turn lane. This treatment heightens visibility and awareness between motorists and bicyclists, and designates the continuation of the bicycle lane, safely guiding bicyclists through the conflict zone. (Example: State Street, Haley Street, Cota Street)

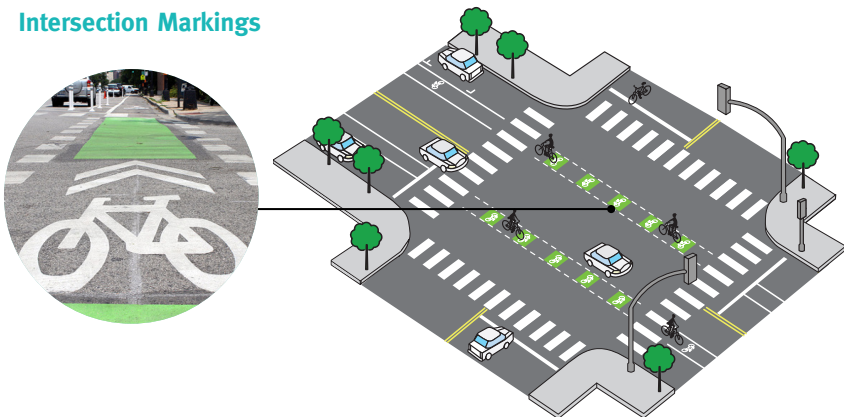
Conflict Zones at Mid-block



Vehicles entering and exiting mid-block alleyways and driveways create another conflict for people bicycling. Striping and colored pavement can highlight the conflict zone for both motorists and bicyclists, and alert motorists to the presence of bicyclists. (Examples: Lower State Street, Cota, and Haley)

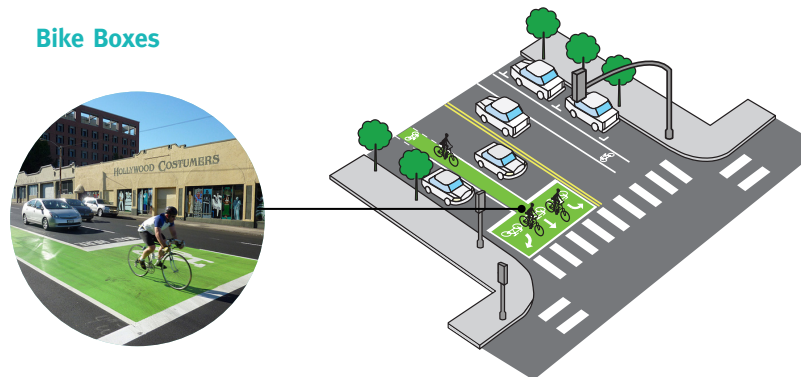
4.1.5: Best Practices Defined: Conflict Zone Treatments (Continued)

Intersection Markings



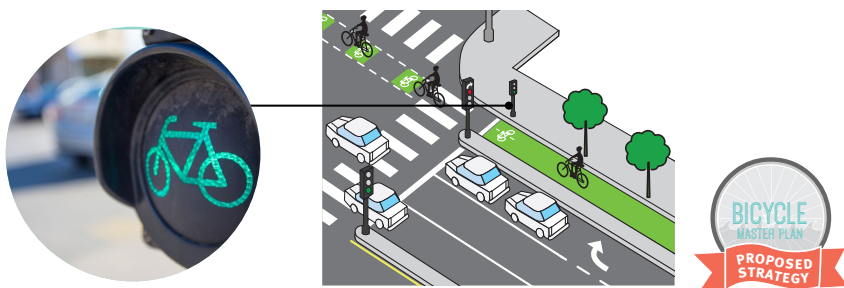
Markings through intersections guide bicyclists to safely and directly pass through intersections. They also provide a visual cue alerting motorists entering the intersection from either direction to the presence of people bicycling. (Examples: Lower State Street, Castillo/Montecito intersection)

Bike Boxes



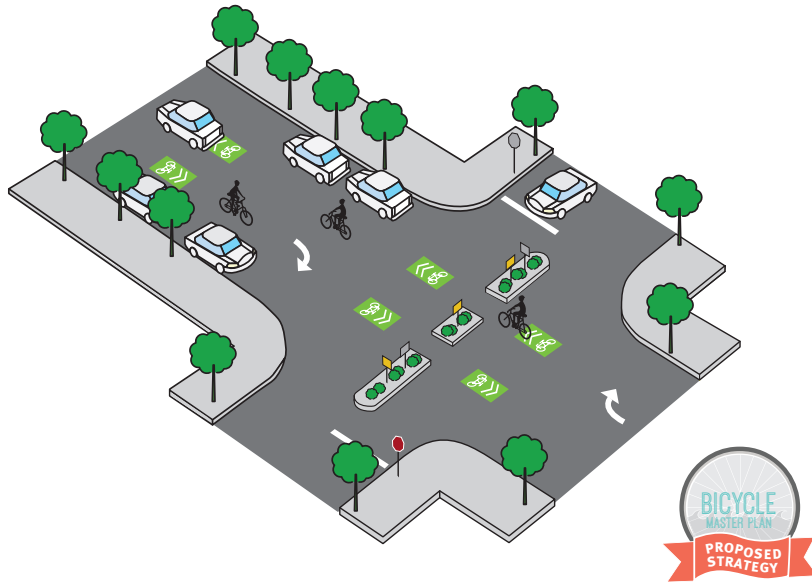
A bike box is a designated space in front of the vehicle stop line that allows a platoon of bicyclists to situate themselves safely in front of vehicular traffic (and out of the merge zone) during a red signal phase. Bicyclists can get a “head start” at the beginning of the green signal phase. When extending to the center line of the street (as shown above), bike boxes also help facilitate left turns by bicyclists. (Examples: Cabrillo Boulevard, State Street)

Bicycle Signals & Detection



Bicycle signals direct bicyclists to cross safely. As shown above, they can be an integral part of a cycle track by providing a dedicated bicycle phase, used in conjunction with vehicle traffic signals that restrict right turns. Bicycles are often not detected by existing vehicle detectors embedded in the pavement. As shown above, a bicycle loop detector, marked by pavement markings and signage, can trigger a green light for a bicyclist. (Example: Former State Route 225)

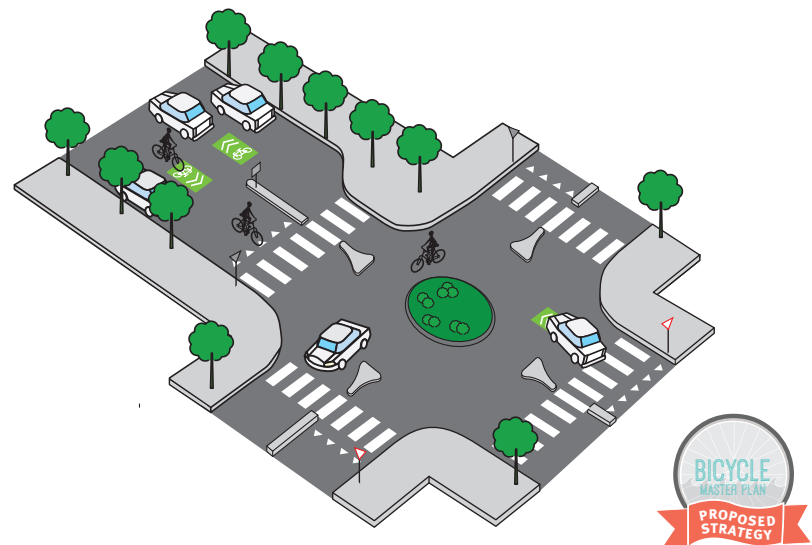
4.1.5: Best Practices Defined: Street Design and Configuration



Bicycle Boulevard



A bicycle boulevard improves safety for all road users and enhances neighborhoods by calming vehicular traffic. A bicycle boulevard gives priority to bicyclists and pedestrians over vehicular traffic by employing a variety of tools to discourage through trips by vehicles. Bicycle Boulevards are typically planned for residential streets with low existing vehicular traffic speeds and volumes. In the figure to the left, median diverters prevent vehicular through traffic at the intersection, while bicyclists are able to move through the intersection without coming to a stop. Pedestrian improvements are also included, such as narrowed crossings, new stop signs, and traffic circles. (Examples: Alisos, Chino)

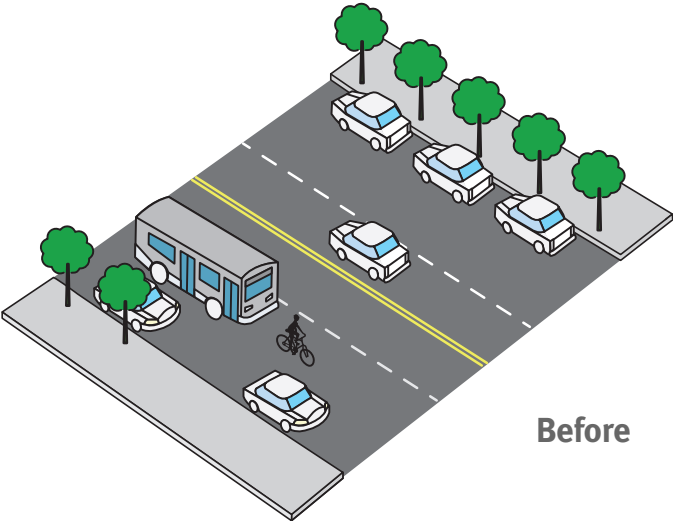


Bicycle-Friendly Street

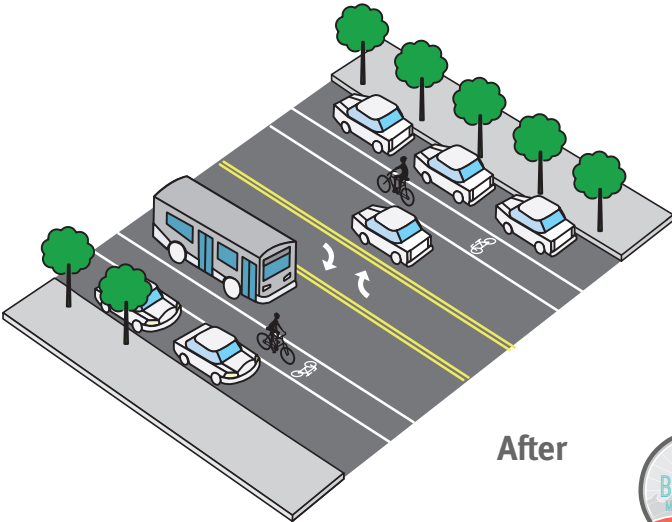


A bicycle-friendly street uses a variety of strategies to establish quieter, safer streets. Elements of neighborhood-friendly streets include curb extensions, speed bumps, traffic circles, enhanced crosswalks, and bicycle facilities. (Examples: Sola, Pedregosa)

4.1.5: Best Practices Defined: Street Design and Configuration



Before



After



Road Diet



A road diet reconfigures vehicle travel lanes to ensure safe driving speeds and to provide room for bicycle and pedestrian infrastructure on low volume streets, while retaining sufficient vehicular flow. A road diet configuration often incorporates a center turn lane, which promotes safer mid-block turning movements and smoother traffic flow compared to directional travel lanes which are often blocked by vehicles waiting to turn. (Examples: Cabrillo, Cliff, and De la Vina)

The City shall ensure that bicycle facilities are properly maintained for safety. (Expanded BMP 2.2 and 2015 ATP Plan).

POLICY 4.2

MAINTAINING BICYCLE FACILITIES



Implementation Strategies

4.2.1: Maintenance Standards. Adopt bicycle-oriented standards and maintenance schedules (when applicable) for:

- Maintaining a smooth roadway surface, including filling potholes and ruts, resurfacing, and repairing pavement joints when needed (giving priority to the right-hand portion of the roadway).
- Sweeping streets with bike lanes regularly.
- Providing anti-skid treatment on pavement markings, green lanes, and exposed metal surfaces.
- Removing weeds from shoulders and bike lanes, and trimming overhanging and encroaching vegetation. (Revised BMP 2.2.1)



4.2.2: Restriping and Restenciling. Create a regular schedule for restriping bicycle lanes, restenciling shared-lane markings, and repainting green-backed sharrows and green lanes.



4.2.3: Maintenance Funding. Increase funding for bike lane maintenance to encourage use and maximize safety.