Appendix A: Illustrative Cross Sections

The sample cross sections illustrate design features that would support the priority modes for the street network. These features are not intended to be used as absolute guides for street layouts at specific locations in the Plan Area. When used in future planning efforts, the cross sections should be adapted to fit the context of the street being studied. As a next step, the design features described below can be developed into a multimodal connectedness checklist of basic and enhanced design features associated with land use and transportation projects.

DESCRIPTION OF ACTIVE MODE DESIGN FEATURES

The sample cross sections in Chapter 5 include enhanced design features for active modes and transit vehicles. This section describes the most common design features suggested by the Plan.

Buffered bicycle lanes. These can include physical barriers, such as raised curbs or landscaped strips, or they may be painted markings on the road surface. In some communities the barriers are actually art pieces. The extra space enhances safety, provides width for avoiding obstacles and opening car doors, and lowers the stress of cycling on the road. There is often a choice to be made between having a buffer and devoting that extra width to the bike lane itself. This decision is typically made with consideration for the fact that wide bike lanes can be mistaken by drivers for travel lanes.

Physical barriers provide increased comfort for cyclists and are typically more effective along streets with few driveways. Painted buffered bicycle lanes are also effective buffers and require minimal additional maintenance beyond typical bicycle lane striping.

Cycle track. This is an exclusive, enhanced width bicycle lane that features a buffer (physical or marked) between the vehicle travel lane and bicycles, as well as prominent marking, such as colored pavement. These bicycle treatments can be designed for two-way bicycle traffic. The protected environment of a cycle track accommodates cyclists of all levels, including those who would be uncomfortable riding with traffic on a high volume/high speed street.

Wide bicycle lanes. The sample cross sections show bicycle lanes of between six and seven feet. Many existing bike lanes are less than five feet. Extra width provides separation from the bicyclist and motor vehicles and creates a more comfortable riding experience for bicyclists.

Wide sidewalks with landscaping. Some cross sections feature eight to twelve foot sidewalk widths. This allows room for recreational use of the sidewalk (such as on coastal streets) as well as room for street furniture and businesses to spread seating onto the sidewalk and still allow passage. There is more width for landscaping as well. In very high pedestrian volume areas, sidewalk widths of greater than 12 feet may be appropriate.

Pedestrian refuge islands. These are median areas that are

well marked and raised relative to the street surface, that shorten the crossing distance across wide intersections. They may be buffered and enhanced with landscaping where there is space.

Travel Lane Width. Benefits of narrower travel lanes on lower-speed urban streets could include a shorter pedestrian crossing distance, lower construction cost and potentially accommodate more lanes in a constrained right-of-way. On arterial streets with a target speed of less than 35 miles per hour, travel lanes are typically between 10 and 12 feet wide. On collector streets travel lanes are typically between 10 and 11 feet. The travel lane width is based on the target speed, design vehicle (largest frequently used vehicle), right-of-way constraints, and width of adjacent bicycle and parking lanes.

SOQUEL DRIVE, A MULTIMODAL CORRIDOR

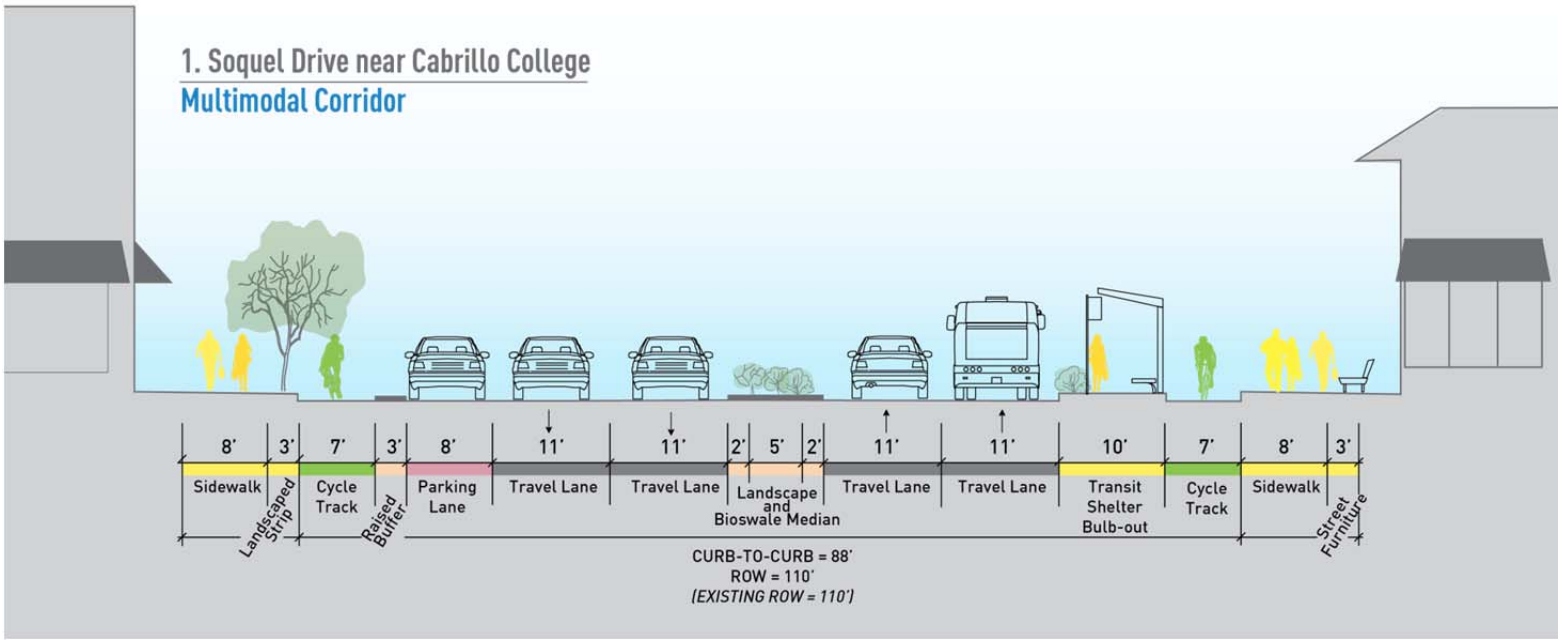
Soquel Drive, as a Multimodal Corridor, prioritizes motor vehicles along with pedestrian, bicycle, and transit buses, with transportation system management (TSM) and smart street measures to accommodate all modes of transportation. Pedestrian connectivity and safety are important along a Multimodal Corridor like Soquel Drive. Raised medians with refuge areas for pedestrians make it safer for pedestrians crossing this wider street, which has more than two lanes of vehicular traffic in each direction. Bus shelters with amenities such as benches and overhangs to protect waiting passengers from the sun or inclement weather are also recommended for high-ridership stop locations. Curb extensions (also called bulb-outs) extend the sidewalks into the parking lane to narrow the pedestrian crossing distance and provide additional pedestrian space. Curb extensions enhance pedestrian safety by increasing visibility of the street, shortening crossing distances, slowing turning vehicles, and separating bus traffic from bicycle traffic. A cycle track provides a protected facility for cyclists.

On the Multimodal Corridor, TSM measures such as adaptive signal timing and intelligent transportation systems (ITS) could be used to improve vehicle travel time reliability and help to optimize the steady, safe, and orderly flow of vehicle traffic on congested streets. These TSM measures are not typically considered capacity enhancements; rather, they are operational improvements designed to complement vehicle trip reduction strategies.

1) Soquel Drive near Cabrillo College

This sample cross section illustrates a location with sufficient right-of-way available to provide an adequate experience for each mode of transport.

For motorists and the bus, there are four travel lanes of adequate width, though narrower than the existing width, parking on one side, and space for a bus shelter. The bus would stop within the travel lane, which is positive for transit operations and contributes to decreased trip time. However, this would increase delay for vehicles during busy periods. Cyclists are accommodated by a seven foot, painted and protected lane, while pedestrians have wide sidewalks, buffers from vehicle traffic, and access to a median that can be used for landscaping and drainage mid-block, and as a mid-crossing refuge at intersections. Pedestrians would, however, have to cross the cycle lane to reach the bus shelter. There is a landscape buffer on one side and landscape/bioswale median to provide greenery, a pleasant environment, and biologic treatment of surface drainage.

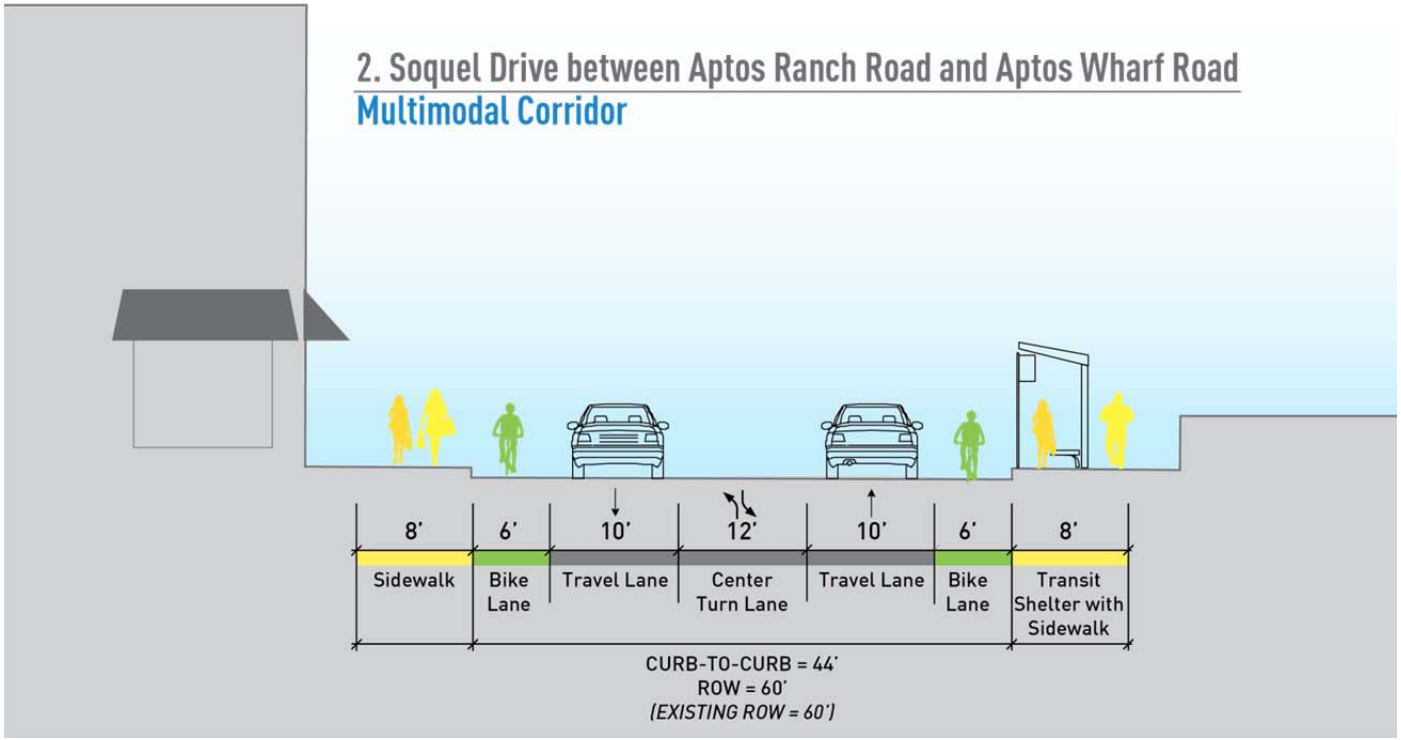


2) Soquel Drive between Aptos Rancho Road and Aptos Wharf Road

East of State Park Drive, Soquel Drive narrows to one lane in each direction, with a two-way left turn lane serving adjacent land uses. The travel lanes are narrowed, which matches the posted 25 mile per hour vehicle speed.

The Rancho Del Mar Shopping Center attracts many residents from the neighborhood who walk or bike to run errands at the various retailers. Widened sidewalks would improve the space for pedestrians accessing the shopping center from Soquel Drive. Enhanced bus shelters would make the experience of waiting for buses more comfortable for passengers and potentially encourage people to ride transit to and from this area rather than drive.

This is area that would benefit from the acquisition of additional right of way in a few areas. In area of the rail trestle and historic 2-land bridge, additional right of way is particularly needed to better accommodate pedestrians and cyclists. Bike/Ped bridges alongside the historic bridge could be considered for either the south and/or north sides of the vehicular bridge. In the area fronting the Rancho Del Mar shopping center, additional right of way could accommodate construction of a pull-through bus lane which would prevent obstruction of the travel lanes. Trees and greenery could also be added, and additional width could be considered for travel lanes and bicycle lanes. If future development or renovation projects occur at the Rancho Del Mar site or sites across the street along the north side of Soquel Drive, that



include buildings that activate the street frontages, then wider sidewalks that allow outdoor uses such as outdoor café seating should also be considered.

Currently, the bicycle lane disappears entirely where the road crosses Aptos Creek on the narrow, historic Aptos Bridge. This is a well-known "pinch point" for bicyclists. When the rail trail improvements are constructed, pedestrians and cyclists will be able to cross Highway 1 from the Seacliff Area, connecting to Aptos Wharf Road which is located right at this pinch point. This is the area where the possibility of bike/ped bridge(s) could be considered on the south and/or north sides of the historic bridge. Currently, this section of the rail trail is designated as one of the lowest priority sections for construction (Monterey Bay Sanctuary Scenic Trail Network Master Plan, 2013). If the rail trestle is ever re-built, designing more width between the abutments could be considered to better accommodate connections for cyclists and pedestrians. Given uncertainties in the timing of implementing this challenging section of the rail trail, the County could consider short-term alternatives to improve the situation for bicyclists and accessibility. These alternatives might include colored bicycle lanes, additional signage and striping.

3) Brommer Street, a Bicycle Connector

Brommer Street is designated on the network map as a

Bicycle Connector, indicating that bicycle travel is the priority mode. This section illustrates tradeoffs among the pedestrian, bicyclist and vehicle travel modes. Ideally, the existing right-of-way and configuration would allow for buffered bicycle lane on both sides. However, in this location this would compromise the relatively recently built five foot, separated sidewalk. This illustrates the types of trade-offs that will be necessary in various locations to provide a street that prioritizes bicycle travel with continuous protected bicycle lanes.

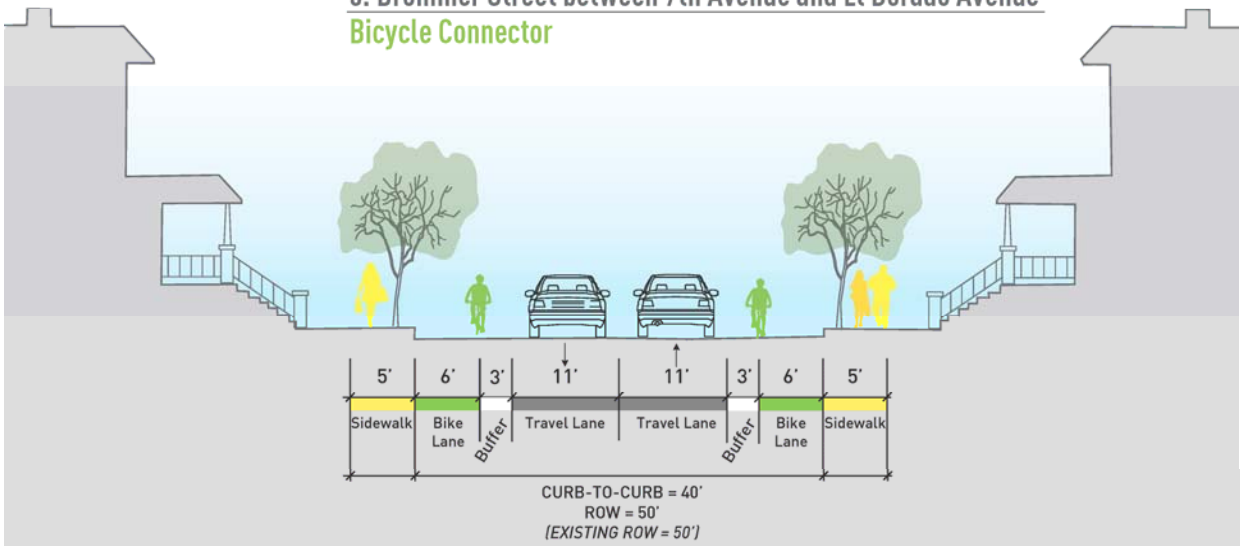
4) Soquel – San Jose Road, Rural Connector

Soquel-San Jose is a rural connector that does not have sidewalks beyond Merlin Way, and on which vehicle speeds can be high. Rural connectors would prioritize vehicles and bicycles. This sample cross section provides for vehicles in two 12-foot travel lanes. Sharrow lanes would be provided for bicycles in the downhill direction, and in the uphill direction cyclists would be provided with two feet of buffering along six feet of paved shoulder that is maintained free of vegetation. In the downhill direction bicycles would typically travel at speeds expected in the vehicle travel lane. While the Rural Connector would not be designed for pedestrians, the downhill shoulder could be accessed by pedestrians even though pedestrian traffic is not common in these rural areas.

Maintaining wide paved shoulders free of landscaping is a strategy that can be used throughout the unincorporated area where sidewalks and bike lanes do not exist. The County should ensure that private property owners do not inappropriately encroach upon public right of way in a manner that reduces area available for pedestrians and bicyclists.

3. Brommer Street between 7th Avenue and El Dorado Avenue

Bicycle Connector



4. Soquel San Jose Road between Little Creek Road and Rancho Soquel Drive

Rural Connector