

5 | CIRCULATION NETWORK

To create high-quality neighborhoods in the Community Districts described in Chapter 4, it is crucial to provide a street network that helps establish each neighborhood's form and facilitates walking, biking and driving around the city.

In keeping with smart growth principles for community development, each street's design needs to do more than efficiently move vehicles. City-owned streets are public spaces that need to provide comfortable and enjoyable environments for people who use them, whether they are commuting to work, buying groceries, meeting up with friends or simply taking an after-dinner stroll. This chapter explains the principles that will guide street design in the Vision Plan Area and describes a hierarchy of streets that can be applied in new neighborhoods.



Street Design Principles

The following basic principles will ensure that streets in the Vision Plan Area provide a strong framework for new neighborhoods and create a high-quality transportation network for Coachella.

Hierarchy of Streets

Streets should be designed using appropriate standards for the neighborhoods they serve in order to provide a safe environment for pedestrians while also facilitating the flow of traffic. The street widths shown in this chapter of the Vision Plan are somewhat narrower than those shown in Figure 20 of the General Plan. On streets that are intended to carry large amounts of through-traffic or support large numbers of visitors, higher-capacity roadways are appropriate. In residen-

tial neighborhoods, where traffic is light and only local access is required, street widths should be reduced accordingly; narrower streets slow traffic, making the streets safer.

Highly-Connected Street Network

A street network should provide many alternative paths for vehicular and pedestrian traffic and create straightforward routes to nearby destinations. Cars should be dispersed throughout a neighborhood so that people can be comfortable walking on any street, rather than concentrating cars on a few streets that become so busy that they are unpleasant for pedestrians. People should be able to get to a nearby store or a neighbor's house by taking a short, direct route rather than detouring on long, looping streets with few connections between them. The streets and trails in the new development will also provide good connectivity to the existing Coachella community.

Well-Defined Pedestrian Realm

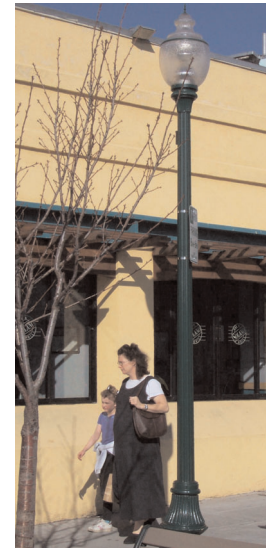
All streets—even large, busy streets—should include places where people can walk in safety and comfort. Sidewalks should be wide enough to accommodate the people who use them, and they should provide street trees to create shade and help separate people from traffic. Street lights should be scaled to the pedestrian. Buildings should be located at or near the sidewalk to help define the edge of the street’s pedestrian space.

Narrow Streets

If a street includes more lanes than it needs, or if the lanes are excessively wide, drivers tend to go faster than the street’s speed limit. Also, pedestrians on one side of a wide street are cut off from activity on the other side, which discourages them from crossing the street. To reduce traffic speeds and improve pedestrian comfort, lane and roadway widths should be made as narrow as possible.



Public amenities and well-detailed building façades help to create good pedestrian spaces.



Street lamps can be scaled to pedestrians and still provide adequate illumination for vehicular traffic

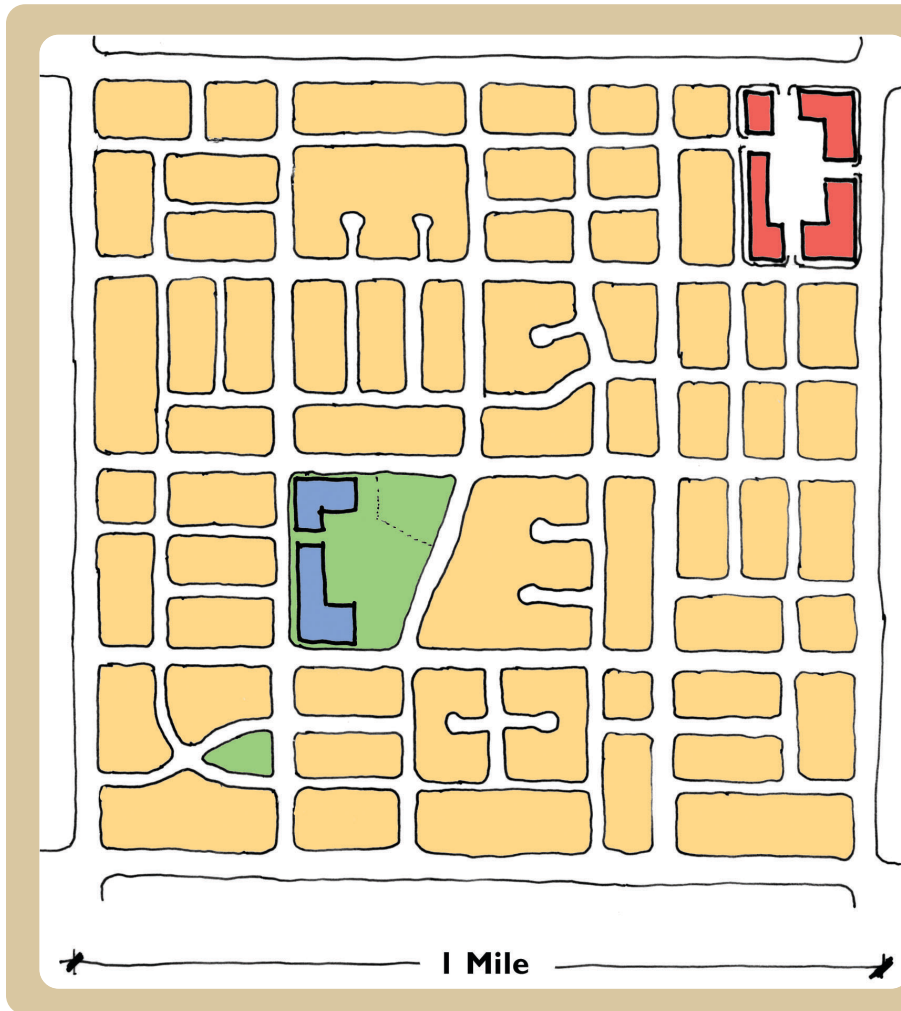


A narrow residential street

STREET CONNECTIVITY AND TRAFFIC CONGESTION

Conventional suburban development provides few connections to arterial streets, which focuses all neighborhood traffic through a small number of intersections. These limited entry points carry the burden of all traffic entering and leaving neighborhoods, which causes congestion on arterial streets that are overly wide and difficult for pedestrians to cross. Neighborhood retail centers are accessed only from the arterials, often with little or no opportunity for connections to adjacent neighborhoods. The interior portions of these residential developments employ a lot pattern in which houses back onto the arterials and collector streets that are lined with sound walls. Parks are created on detention areas and other leftover space. The streets are abandoned to automobile traffic, which leads to vehicular speeds that are not conducive to safe streets and neighborhoods.



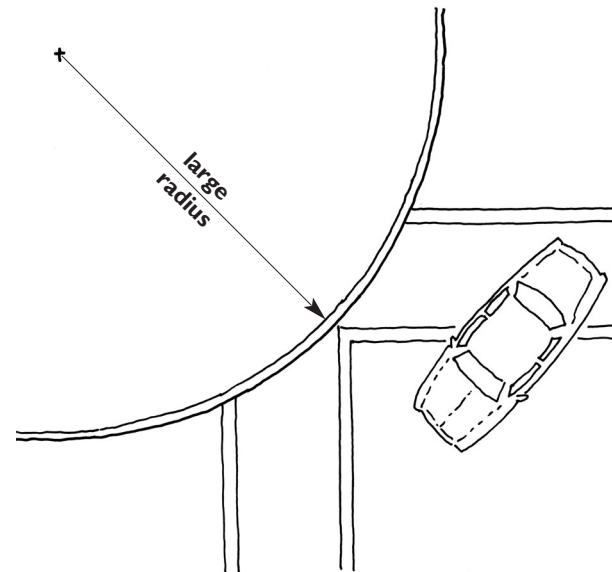


**THROUGH-STREETS
AND MULTIPLE ROUTES**

Neighborhoods that are designed with multiple routes provide an abundance of choice for accessing the arterial street network, thereby dispersing traffic and reducing congestion. Alley-loaded residential development can front onto the arterials, which reduces curb cuts on those higher-volume streets. Connector streets, residential streets and narrow, slow-speed, residential lanes connect through the neighborhood, providing multiple routes to neighborhood parks or schools, which can be developed in tandem and provide recognizable neighborhood focal points. Cul-de-sac development is also possible in a highly-connected neighborhood, which can add to a diversity of neighborhood streets and residential development types. Many streets connect to retail areas so that residents can access these services on foot, by bike or by vehicle.

Safe Bicycle Routes

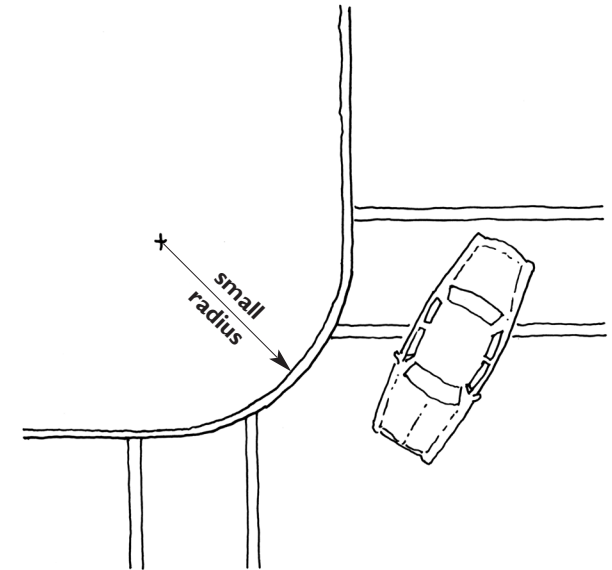
Bicyclists should have safe places to ride on every street. On streets with heavy or fast-moving traffic, where it would be unsafe for bicyclists to share a lane with drivers, the street should include bike lanes that are wide enough for bicyclists to avoid traffic and parked cars. On quiet, local streets, where there are fewer cars, bicyclists and vehicles can share the traffic lane.



Wide curb radius allows cars to turn at unsafe speeds.

Small Curb Radii

A curb radius indicates how sharply the curb of a street curves at an intersection. When a street has a large curb radius, vehicles are able to turn without reducing their speed, which makes it more dangerous for pedestrians to cross the street. To improve safety, a street's curb radius should be small, so that drivers slow down before turning.



Narrow curb radius slows cars, improving safety.

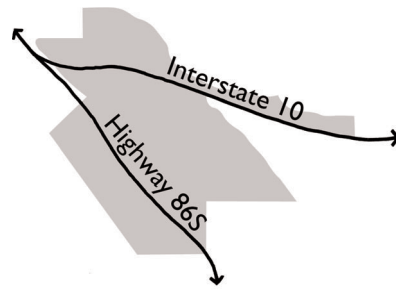
Street Hierarchy

This section explains the proposed hierarchy of streets for the Vision Plan Area and describes the network that these streets would form. The proposed network provides many streets with the potential for high capacity in areas that will attract the most visitors, and it includes fewer of these larger streets in primarily residential areas. Small, local streets would create connections within and between neighborhoods.

Freeways and Highways

Highways and freeways are roads devoted entirely to moving cars and trucks between Coachella and other parts of the region. They are either elevated above ground level or walled off along their edges, and they do not provide access for pedestrians or bicyclists.

The Vision Plan acknowledges that Interstate 10 and Highway 86S, which are shown in the key diagram to the right, are automobile-only routes, and it assumes that Caltrans will implement its near- to mid-term plans for new interchanges on these routes.

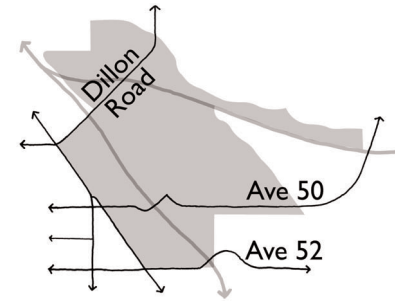


Freeways and Highways

Other streets in Coachella that are designated as State highways, including Grapefruit Boulevard and Harrison Street, should become parkways, which are described in the following section.

Parkways

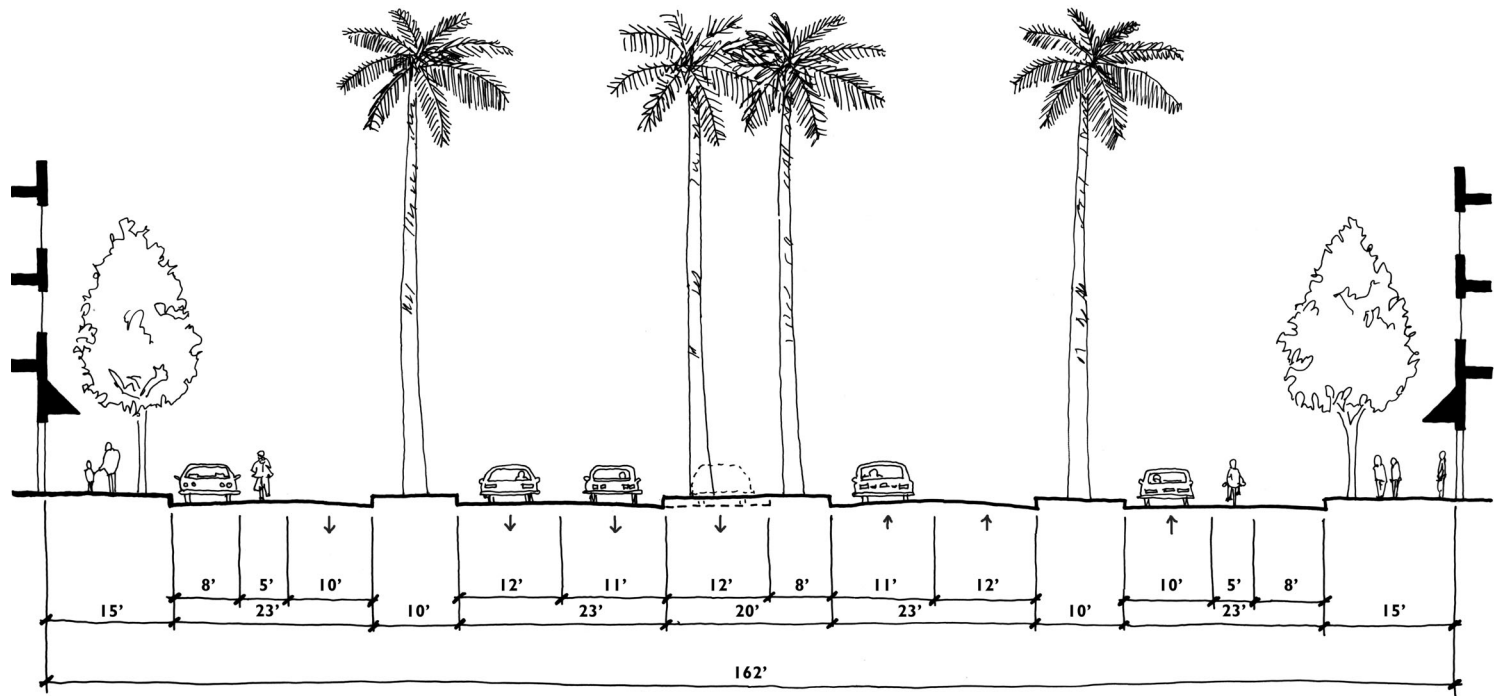
Parkways are wide streets that accommodate large traffic volumes while providing a high-quality pedestrian environment and buildings that frame the public realm. In the middle of the roadway, several through-lanes provide for faster-moving traffic



Proposed Parkway

headed elsewhere. The roadway also includes two access roads for local traffic; drivers on these roads must make frequent stops at intersections, resulting in lower traffic volumes and slower speeds. The access roads create a buffer between sidewalks and through-traffic, improving safety for pedestrians.

The land along a parkway is separated from fast-moving cars, so



Typical Parkway cross-section

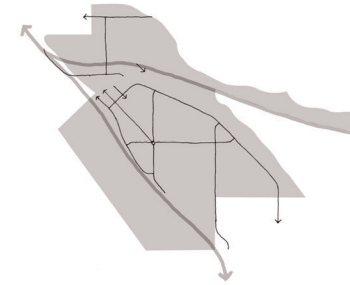
it can support many different types of development, including residential dwelling units, pedestrian-oriented retail stores and offices. Because parkways can carry more traffic than other streets, development along a parkway should be higher-intensity and include taller buildings that attract more people,

including multi-story apartments and offices above ground-floor retail. Taller buildings also help define the edges of the parkway and prevent the street from seeming overly wide. However, if necessary, single-family homes can also be built along a parkway, particularly with larger setbacks from the street.

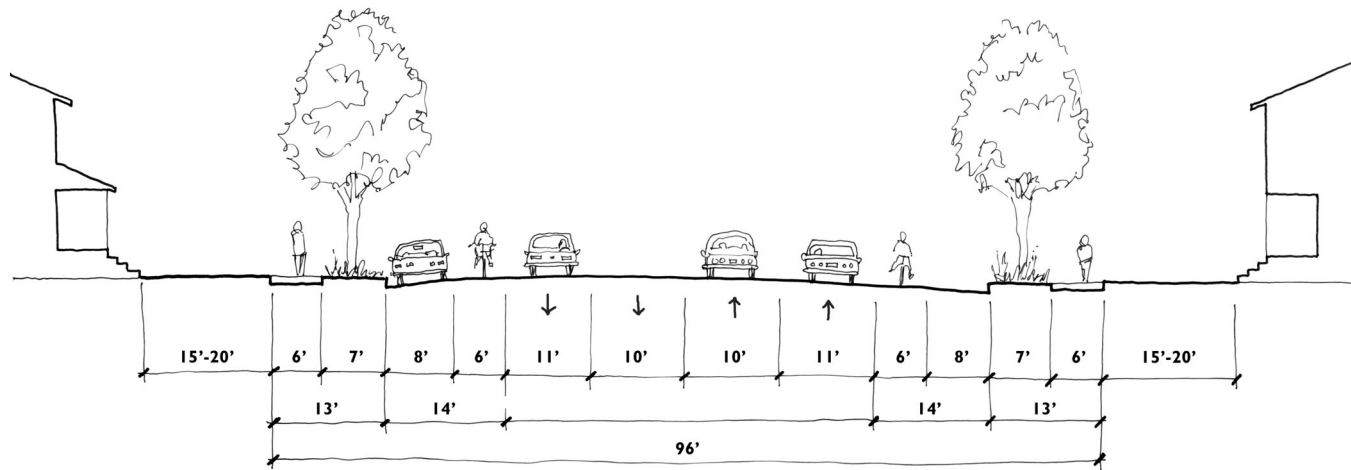
Some of the existing streets that run near and through the Vision Plan Area, including parts of Grapefruit Boulevard and Dillon Road, should become parkways, so that they can better serve the needs of pedestrians and facilitate higher intensities of development. A few additional parkways should define the edges of the Vision Plan Area and provide connections to Interstate 10 and Highway 86S. In some cases, development constraints or lower predicted traffic volumes will require elimination of the access lane.

Avenues

Avenues are the arterial connections between highways and parkways, which provide access to the region, and local streets, which provide access to individual neighborhoods. Generally, they are laid out on the existing one-mile grid that is present in much of the Plan Area, as shown in the key diagram to the left.



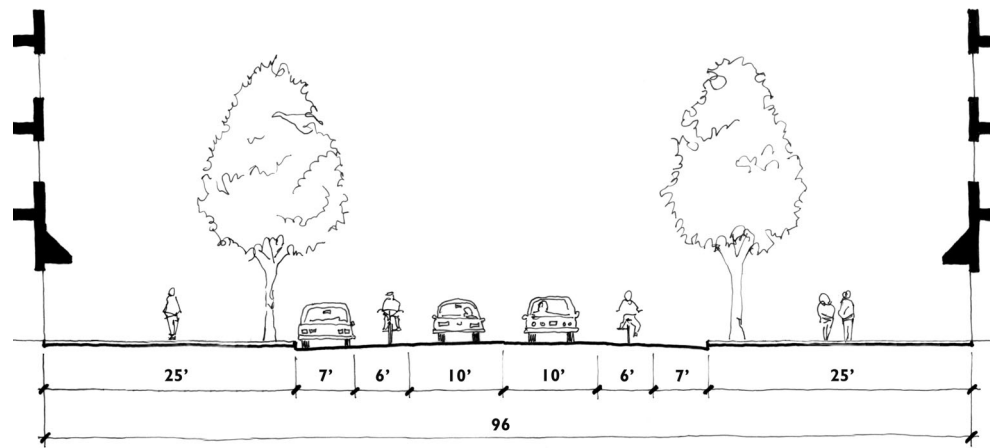
Avenues on a 1-mile grid



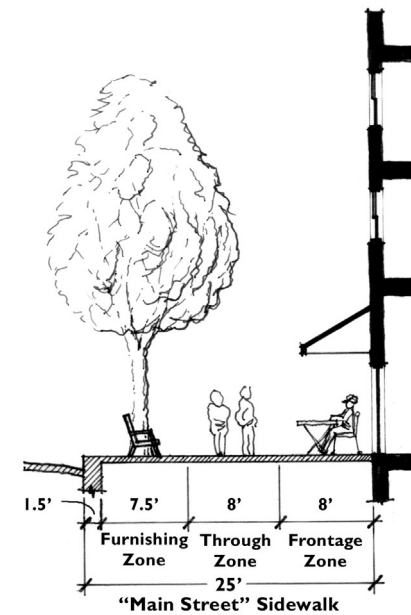
Typical Avenue cross-section

Main Streets form the core of pedestrian-oriented retail areas. Stores, restaurants, civic uses and cultural venues should have doors that open onto the sidewalks. Generally, commercial establishments should be of a scale that concentrates a significant number of places on each block so window shoppers can stroll to many places within a short walk. Pedestrians have

priority on Main Streets so vehicle traffic is calmed. Streets are narrow so people can cross easily. Crossings should be frequent and designed to emphasize safety and convenience. Main Streets also accommodate people arriving by car with shared parking behind buildings, cyclists with scattered bicycle parking, and transit users with bus stops containing shelters with benches, maps and schedules.



Typical Avenue cross-section in a “Main Street” or neighborhood-serving retail context.



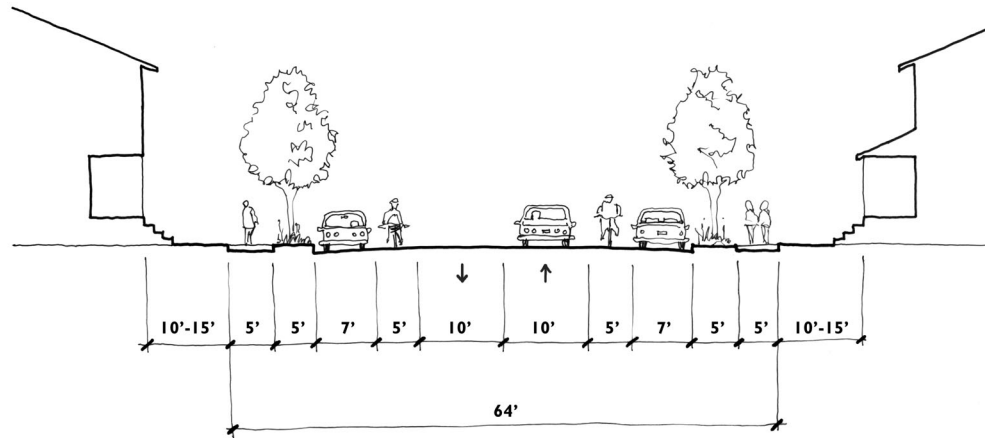
A “Main Street” sidewalk includes room for through-circulation while also providing a zone for street furniture and bicycle parking as well as space for businesses to spill onto the sidewalk



Neighborhood-serving retail fronting onto a “Main Street”

Connector Streets

Connector streets provide a fine-grained network of local streets within a neighborhood. Because each neighborhood would include a grid of connector streets, automobile traffic is dispersed throughout the neighborhood, making multiple connections to the avenues. This will divide traffic among multiple intersections rather than concentrating traffic on a single, high-volume neighborhood access point, as is typical of conventional suburban development.

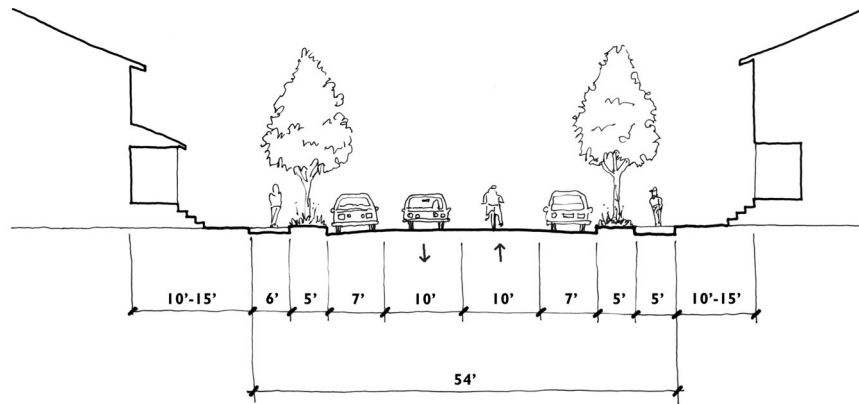


Typical Connector Street cross-section

Residential Streets

Residential streets provide local access to residents' homes. Because these streets carry only small amounts of slow-moving traffic, they do not include separate bicycle lanes; bicyclists can share the road safely with drivers. As a result, the roadway becomes more narrow and creates a more intimate scale for residential neighborhoods.

Although most residential streets are lined with houses or apartments, a residential street could also serve a small neighborhood or "pocket" park, school or other public space.

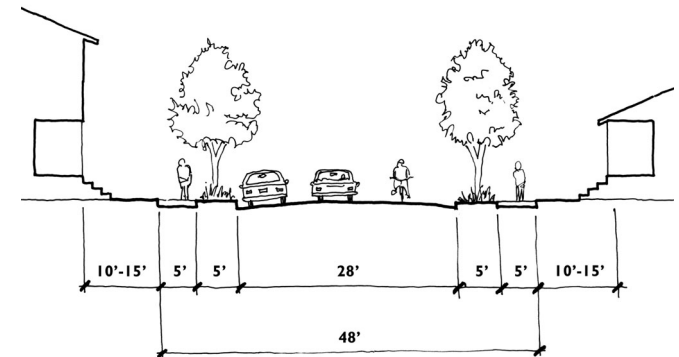


Typical Residential Street cross-section

Residential Lanes

Residential lanes are narrower, more pedestrian-friendly residential streets. A residential lane accommodates two-way traffic, but the roadway is not wide enough for cars traveling in opposite directions to pass each other; drivers must yield for oncoming cars before they proceed. The narrowness of the road slows traffic, improving pedestrian safety.

Residential lanes are especially suitable for serving lower-density development that generates relatively little traffic, such as single-family houses.



Typical Residential Lane cross-section

Alleys

Alleys are narrow roads that run behind a row of parcels, along their rear lot lines. When alleys are provided, garages can be moved to the back of the lot, and drivers can reach their off-street parking spaces from an alley instead of from a street. By making it possible to place garages at the rear of parcels, the presence of an alley eliminates the need for curb cuts in front of homes and avoids wide, street-facing garages that cause a home to be dominated by a blank garage door. Also, when alleys are provided, people can walk along a sidewalk without being interrupted by cars pulling out of driveways.



An alley allows garages at the back of the lot.

Trail Network

In addition to the grid of streets and sidewalks in the Vision Plan Area, a network of bike lanes and multi-use paths would connect open spaces to one another and provide links between neighborhoods and open spaces. Stormwater drainage channels can be integrated into the design of multi-use paths, allowing detention facilities to function as both necessary infrastructure and as a public amenity. The trails should include both paved and earthen trails to accommodate different types of users.

Regional Trails

The irrigation channel along the northwest side of the Plan Area and the Coachella Valley Stormwater Channel, which is to the southwest and generally follows the historic alignment of the Whitewater River, provide opportunities for connecting the Plan Area to the wider region. These two linear pieces of existing infrastructure could be utilized as recreational corridors that connect with a continuous network of bicycling and hiking opportunities. The trail net-

works would provide readily accessed exercise and recreational opportunities for hikers, bicyclists and joggers. Each of these types of users will use the trail network in differing ways, so it may be appropriate at specific locations to provide parallel trails to separate pedestrian paths from bicycle trails and avoid overly intensive use of particularly sensitive habitat areas.



Bicyclists on a neighborhood trail

Neighborhood Networks

Most of the street cross-sections shown earlier in this chapter provide bike lanes in order to facilitate use of the street network by bicyclists. The narrower streets are envisioned as being streets with lower vehicular speeds and smaller amounts of vehicular through-traffic. Therefore, these narrower residential streets do not include dedicated bicycle lanes.

In addition to the street grid infrastructure and its provision of bicycle facilities, there may be opportunities as neighborhoods develop to provide separate paths for bicyclists. These would allow for longer path segments for cyclists, so they do not have to make frequent stops at intersections. The bicycle paths could be designed into a neighborhood's open space network as a bicycle-only or multi-use path that is separated from vehicular traffic. Especially where such a path network could be integrated into the design of a neighborhood and street system, the network would provide a greater level of safety for cyclists by creating a physical separation that eliminates the conflict between vehicles and path users.