

5

Mobility

DUARTE TOWN CENTER SPECIFIC PLAN

CITY OF DUARTE

5

Mobility

Duarte's streets have evolved over a century of growth and have been adapted to meet changing transportation needs. Well-designed streets improve residents' quality of life by creating a circulation network that is **accessible, people-oriented, multi-modal, and interconnected**. This chapter outlines the strategy for creating an enhanced circulation network in the Town Center, where pedestrians, bicyclists, and transit users do not have to compete with motor vehicle users.

With targeted roadway improvements on key streets; expansion of bicycle, pedestrian, and transit facilities; and the addition of new streetscape design elements, the strategies presented in this chapter will help transform Duarte's Town Center into a place that bustles with life and activity.

5.1 OVERARCHING MOBILITY OBJECTIVES

The following overarching objectives define the long-term mobility direction to support anticipated local and regional growth. The recommendations are broad policy statements intended to guide public agency decisions related to mobility and street design within the Town Center.

- Improve pedestrian facilities to create comfortable walking environments that promote pedestrian activity.
- Optimize the street right-of-way to accommodate multimodal services and amenities.
- Shorten distances for pedestrian crossings along Huntington Drive to improve walkability in the Town Center.
- Incorporate curb extensions ("bulbouts") to increase pedestrian visibility and safety at crosswalks, calm traffic speeds, and provide space for rain gardens, tree planting, street furnishings, and other amenities.



- Explore sidewalk widening strategies that include land dedication or easements to create unobstructed accessible pedestrian pathways.
- Improve connectivity to the Duarte Metro Gold Line Station, City of Hope, and the Duarte Bike Trail.
- Enhance transit stops with shade structures, seating, bus information, and other amenities.

5.2 STREET NETWORK

Huntington Drive, Buena Vista Street, and Highland Avenue form the primary street network in the Town Center. These streets each serve related but distinctly different purposes. Huntington Drive provides east/west regional connectivity to the surrounding communities of Arcadia, Monrovia, Azusa, and Glendora. Buena Vista Street provides north/south connectivity to neighborhoods within Duarte and access to the I-210 freeway. Highland Avenue provides north/south connectivity to the City of Hope and Duarte Metro Gold Line Station on Duarte Road, south of I-210 (see Figure 5-1: Street Network) and north to residential neighborhoods.

5.2.1 STREET NETWORK

Street types are defined by the primary mode or modes of transportation, traffic speed, and overall character of the street. Street types in the Town Center, as identified in the General Plan, include arterials, collector streets, local

streets, and the regional freeway, I-210. The street network connects Duarte regionally but can pose a significant physical barrier to pedestrians and bicyclists locally if not planned to sensitively accommodate a range of travel modes.

5.3 COMPLETE STREETS

The term “complete streets” describes a comprehensive approach to the practice of mobility planning. Complete streets principles recognize that transportation corridors have multiple users with different abilities and mode preferences (driving, biking, walking, and taking transit). Adjacent land uses influence the functionality and character of the street environment. A well-integrated street system considers the complementary relationship between land use, local and regional travel needs, and the greater community context. Complete streets consider the broadest range of users, including children, seniors, and people with special needs. Such specially designed streets can accommodate expected traffic demand while also providing additional facilities to support travel by

other modes. In addition, complete streets can contribute to the creation of vibrant public spaces by incorporating distinctive placemaking and programming elements.

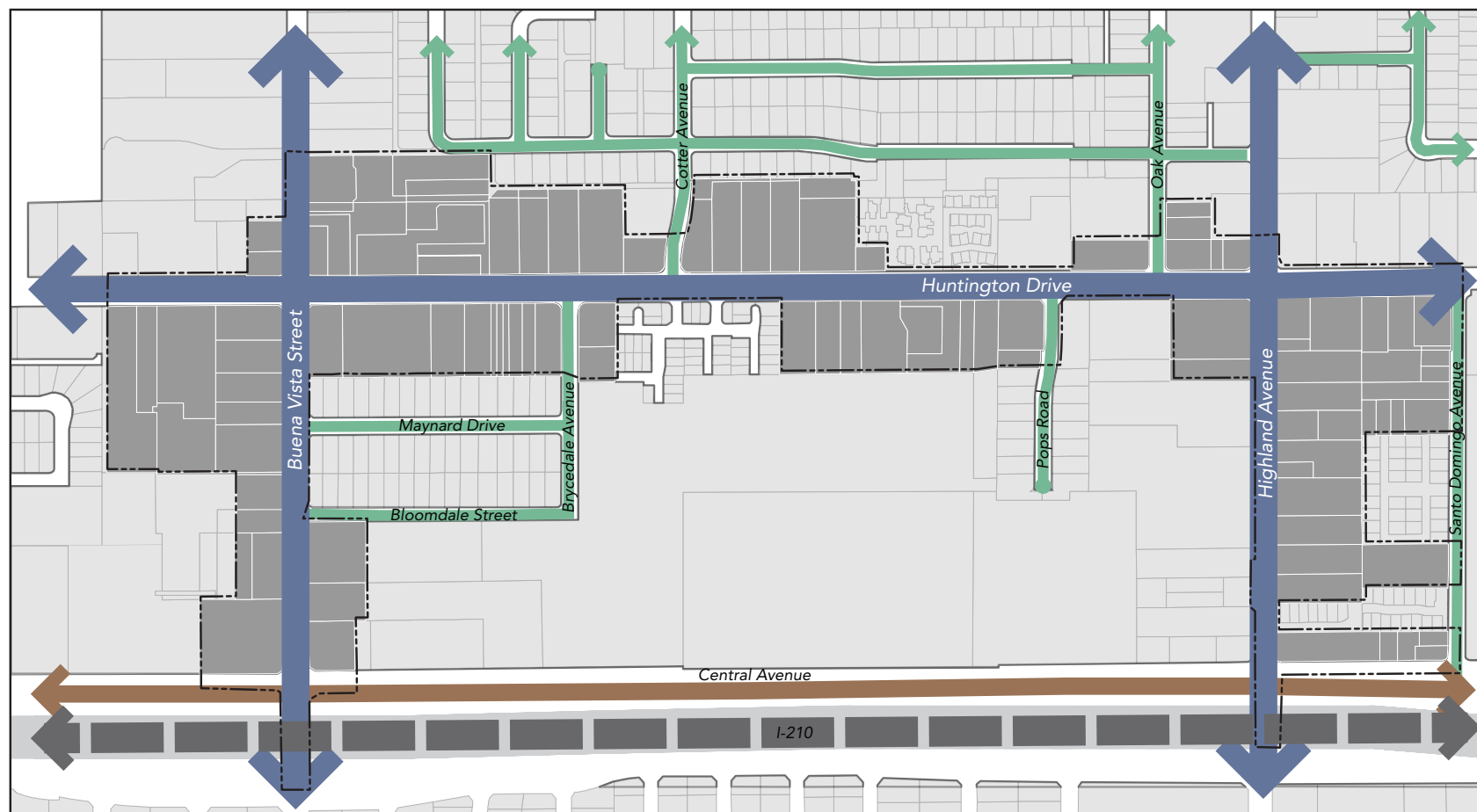
The principles of complete streets are an integral part of the Duarte Town Center Specific Plan and work with land use policies that encourage economic development. The following recommendations, categorized by key street section, provide for a transportation network that successfully integrates bicyclists, walkers, and transit users with people in cars.

5.3.1 HUNTINGTON DRIVE CONCEPT PLAN

Huntington Drive is the key arterial through the Town Center. Streetscape improvements along this primary street are critical to the success of the district. While continuing to serve the function of moving traffic through the district, the streetscape will be enhanced to encourage pedestrian activity and allow activities such as outdoor dining (see Figure 5-2: Huntington Drive Existing and Proposed Sections).

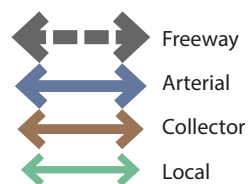
ARTERIAL ROADWAYS facilitate higher vehicle speeds and longer trips, and accommodate the greatest number of trips for all modes of travel. Collector streets are characterized by a balance between access and mobility, and are often connectors between residential neighborhoods, commercial, industrial, and civic districts. Local streets allow for easy access to individual residences at slower speeds.

Figure 5-1: Street Network



[---] Specific Plan Area

Street Hierarchy



Date: February 2016
Source: City of Duarte
Base Map Prepared by: MIG, Inc.



Bulbouts narrow street crossings for pedestrians.



Complete streets recognize multiple users and mode types.

CURB EXTENSIONS extend the sidewalk into the parking lane, calming traffic by visually and physically narrowing the roadway and reducing the distance a pedestrian has to cross the street. They also create more space for landscaping, benches, and even outdoor dining, providing a place to experience and build the Town Center identity. Curb extensions should be placed at as many intersections and driveways as possible along the Huntington Drive corridor within the Town Center, and may also be located mid-block.

The City will narrow travel lanes within the existing roadway to encourage drivers to keep within the speed limit. There is a strong correlation between lane width and speed (narrower lanes encourage lower vehicle speeds), although it varies based on factors such as time of day, amount of traffic, and even the character of adjacent land uses. Lane widths should not exceed 12 feet in width to avoid unintended speeding. As lane widths are narrowed, the parking lane width is increased, allowing additional space for bicycles and parklets. (Parklets are defined and described in more detail in Chapter 4: Design Guidelines and Standards.) The parking lane will be striped parallel to the curb to indicate the lane division and ensure the narrowing of the driving lane.

In tandem with the narrowing of travel lanes, curb extensions (or “bulbouts”) will be added in the parking lane at key locations to narrow the roadway, calm traffic, and in certain cases shorten distances for pedestrians crossing the street. Curb extensions will be provided where feasible at intersection corners (called “neckdowns”) to serve as gateways to minor streets along

Huntington Drive, as well as at midblock locations (called “pinchpoints”). At intersection corners, curb extensions reduce and tighten turning curb radii and thus encourage slower turning speeds. Mid-block curb extensions will help slow speeds on Huntington Drive and provide more area for pedestrians, street trees, and other amenities. Underutilized portions of the parking lane adjacent to bulbouts may be designed for storm water planters to provide opportunities for green infrastructure, as discussed in more detail in Chapter 6: Infrastructure, or to allow for parklets or even outdoor dining space. See Figures 5-3 through 5-8, which provide illustrative examples of where curb extensions could be installed along Huntington Drive.

Key issues to consider in the design of all curb extensions include drainage, bus access, parking, u-turn movements, fire hydrants, and other special access points required for mailboxes or handicapped spaces. Curb extensions at intersections have no minimum length, but should be designed to cover at a minimum the width of the crosswalk (where present) and generally be no



less than 100 square feet in size. At the Huntington Drive intersections with Buena Vista Street and Highland Avenue, curb extensions will not be feasible at the intersection corners due to the need for right-turn-only lanes, which must be maintained to provide capacity at the intersection and prevent significant congestion and vehicle queues on Huntington Drive. However, curb extensions are feasible at many of the other smaller intersections along Huntington Drive that do not have exclusive right-turn lanes.

Another critical improvement within the Town Center will be the addition of a controlled crosswalk at Brycedale Avenue to provide another location for pedestrians to cross Huntington Drive. The only controlled crosswalks, as of 2016, are located at Buena Vista Street, Highland Avenue, and Pops Drive, resulting in a distance of nearly one-half mile between controlled crossings. Such long distances discourage walking in general and encourage unsafe crossings at uncontrolled intersections. The addition of a controlled pedestrian crossing at Brycedale Avenue will provide for approximately one-quarter-mile spacing between controlled crossings along Huntington Drive. Advanced pavement markings of the crosswalk in accordance with the Manual on Uniform Traffic Control Devices (MUTCD) are highly recommended to alert motorists to the approaching crossing.

Bulbouts and additional crossings along Huntington Drive would provide more direct pathways for pedestrians.

Figure 5-2A: 2016 Huntington Drive Street Section (Eastbound View)

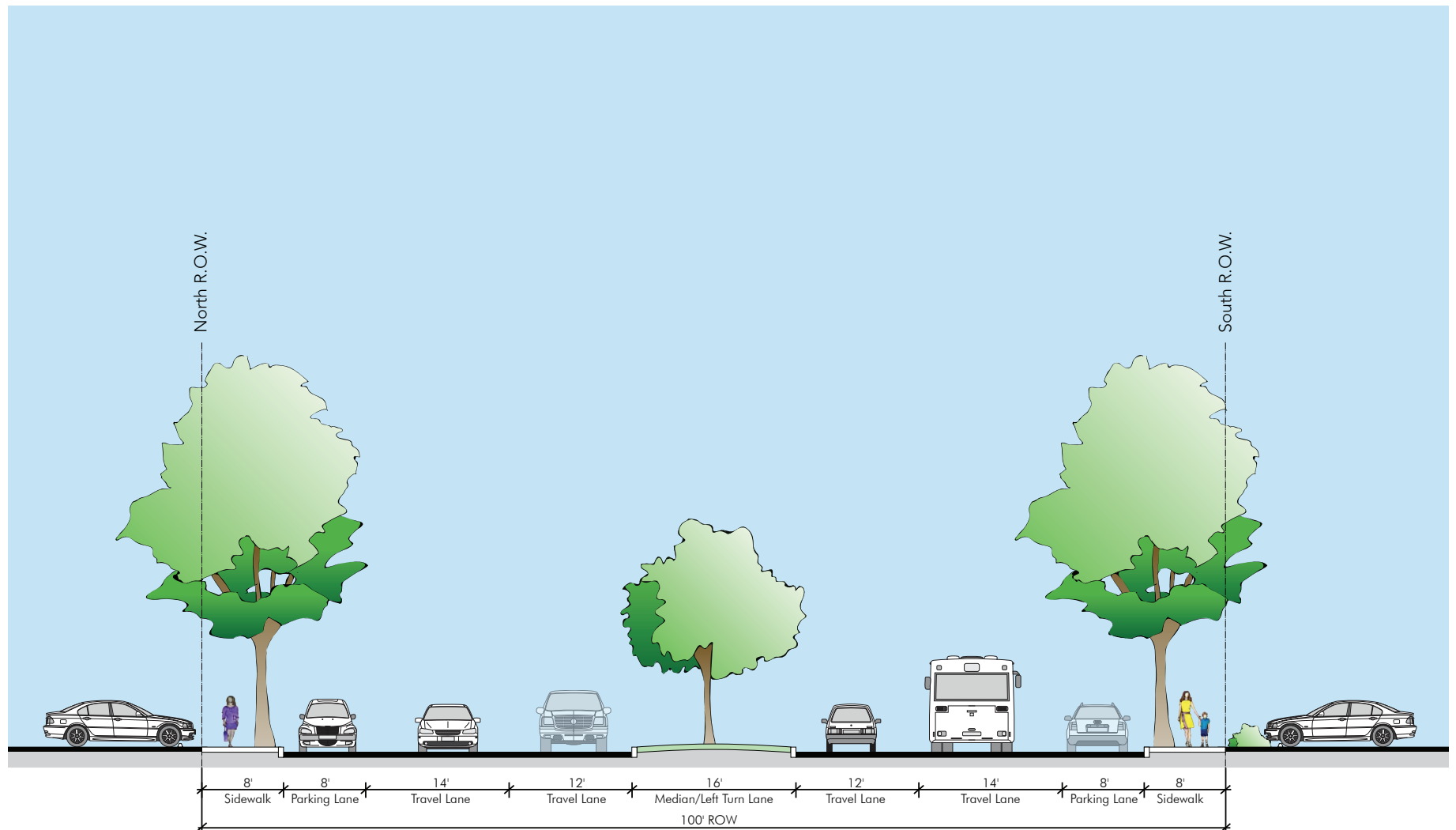


Figure 5-2B: Huntington Drive Proposed Street Section (Eastbound View)

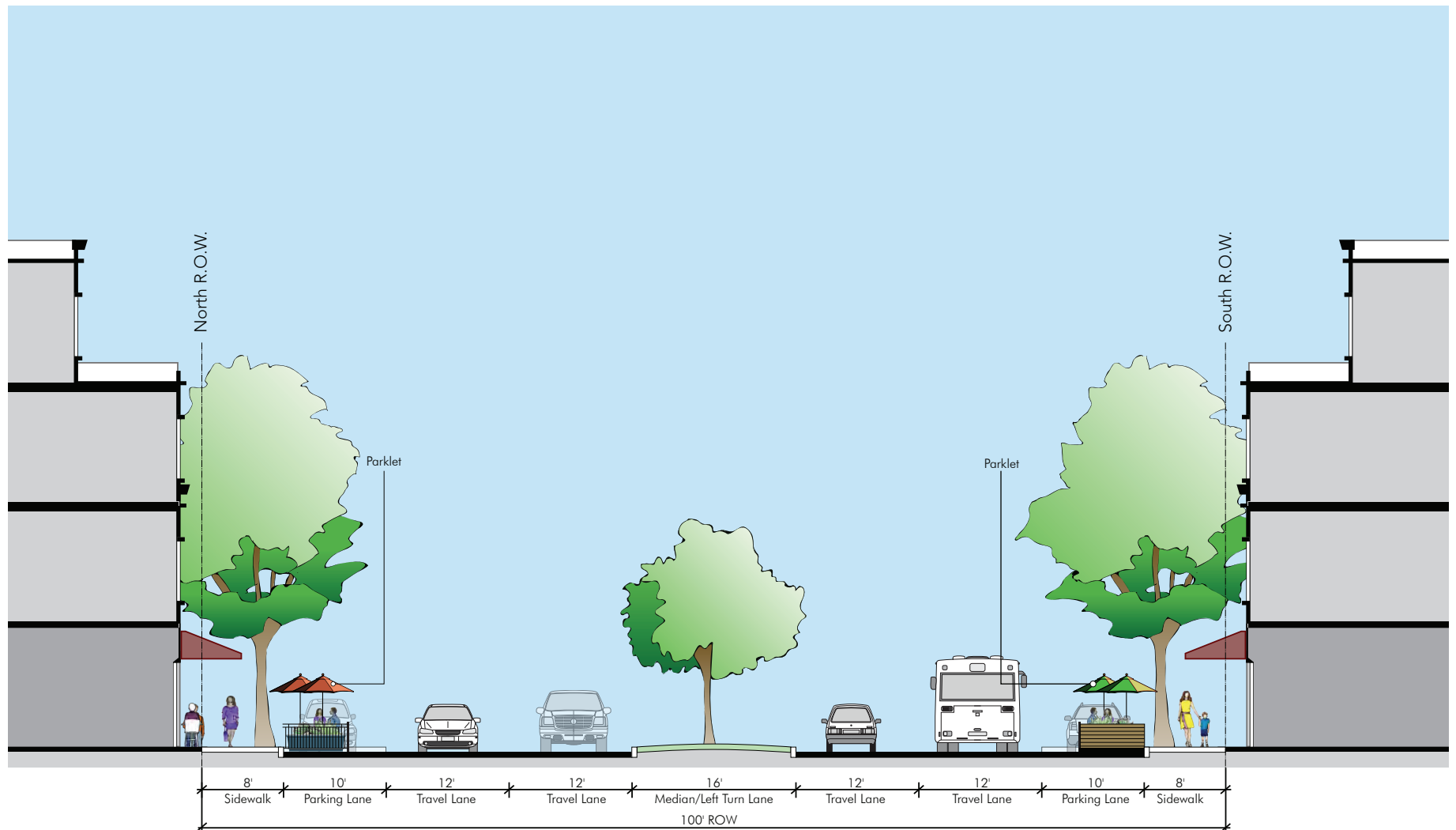


Figure 5-3: Huntington Drive Illustrative Plan View - A

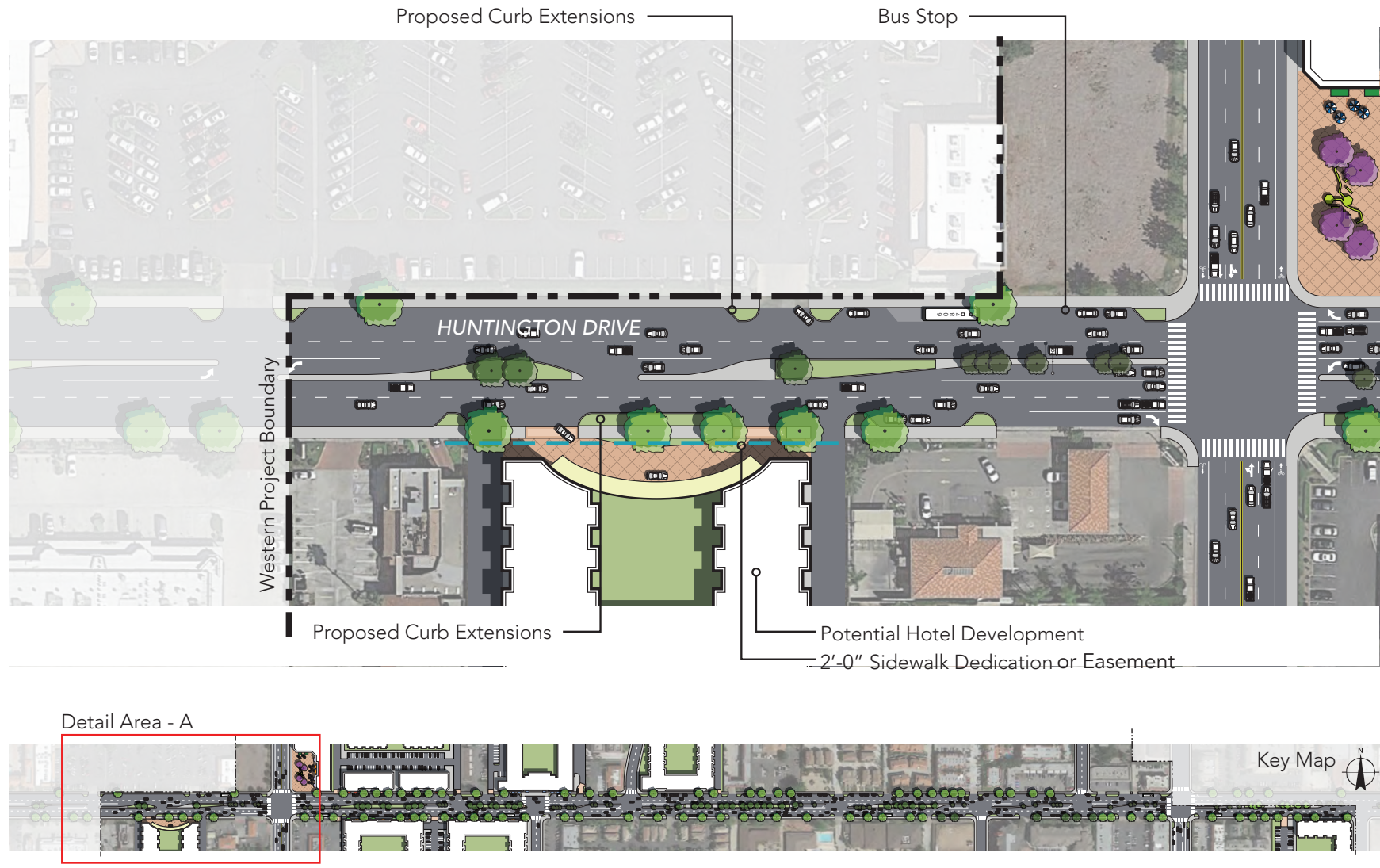


Figure 5-4: Huntington Drive Illustrative Plan View - B

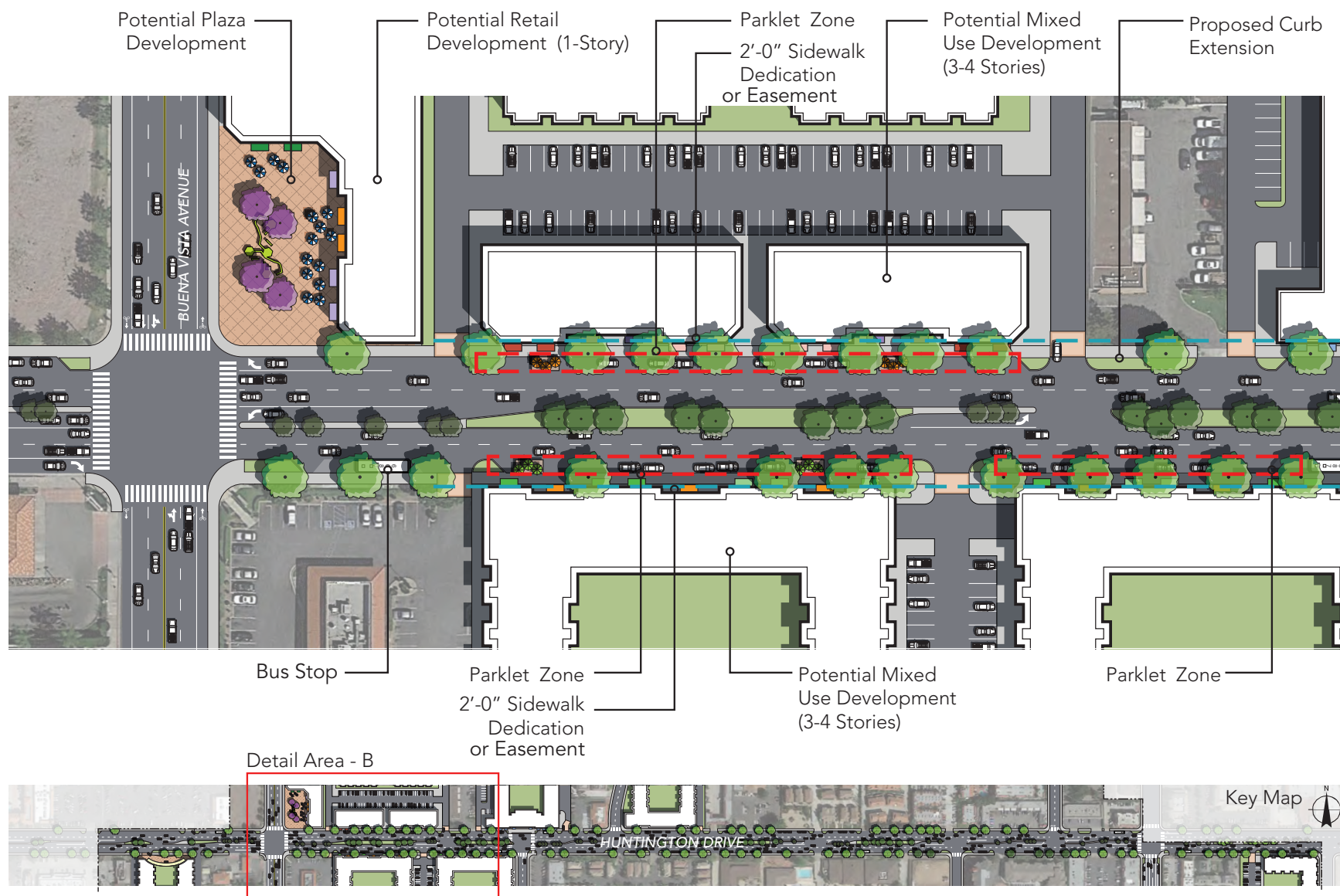


Figure 5-5: Huntington Drive Illustrative Plan View - C



Figure 5-6: Huntington Drive Illustrative Plan View - D

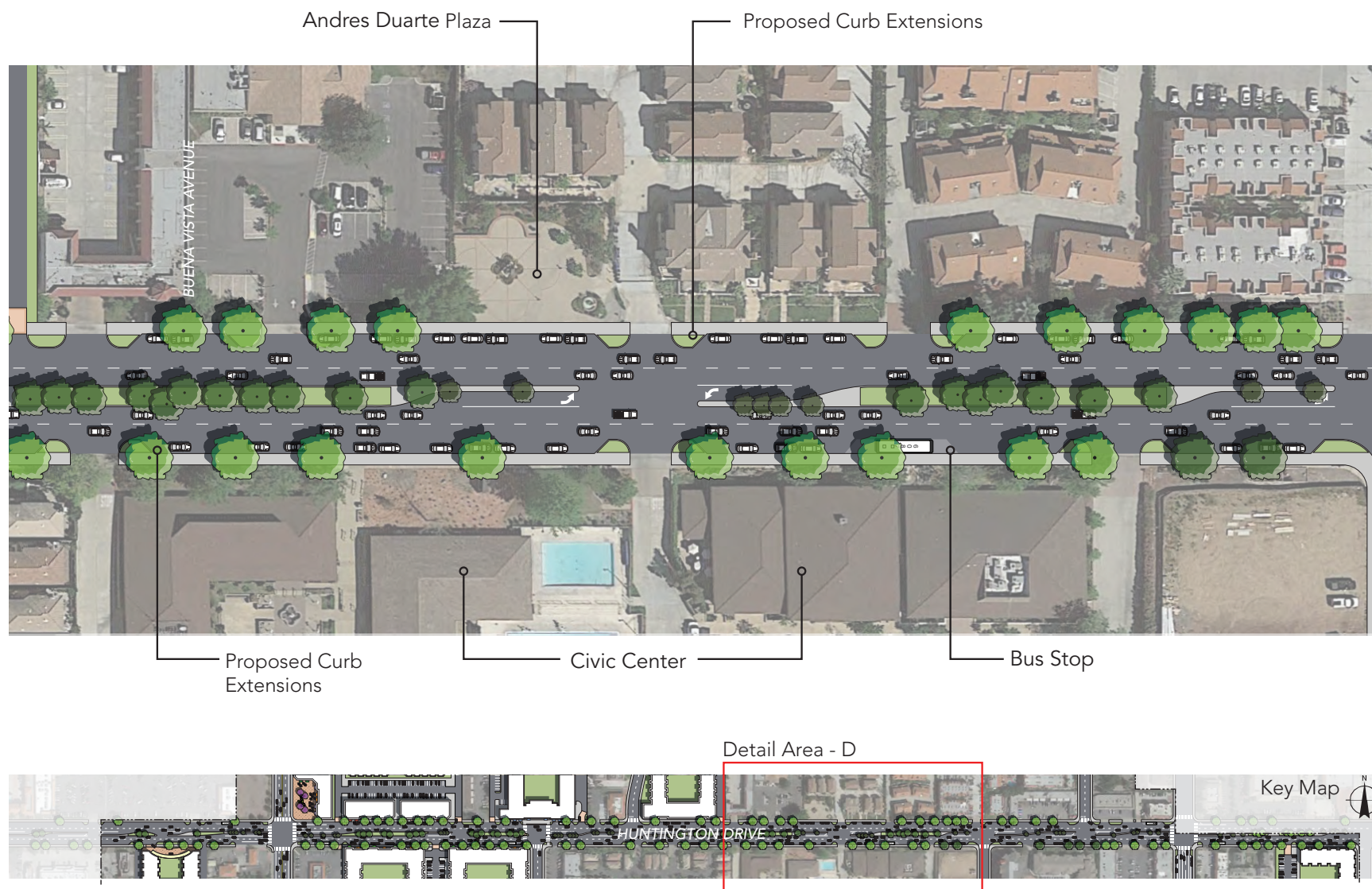


Figure 5-7: Huntington Drive Illustrative Plan View - E



Figure 5-8: Huntington Drive Illustrative Plan View-F





Pedestrian-scale lighting and public art will enhance the freeway underpasses.

As new development brings more pedestrian activity along Huntington Drive, it will be important to provide an enhanced pedestrian environment. The following improvements are inherent components of the Specific Plan and will be required to facilitate the vision:

- Maximize opportunities for activating the pedestrian zone along the ground-floor edge of development by widening the sidewalk along Huntington Drive. New development projects along designated portions of Huntington Drive will be required to provide a two-foot dedication or easement to increase sidewalk widths to 10 feet (see Section 3.6.8 Required Sidewalk Width on Huntington Drive as depicted in Figure 3-8: Increased Sidewalk Width Requirement).
- Enhance the sense of place and improve to pedestrian experience through the installation of pedestrian-scale lighting along the sidewalk. For the installation of new lighting, the City will review existing lighting conditions and focus new lighting especially at pedestrian concentration areas, such as bus stops and crosswalks.
- Encourage walking throughout the district with maintenance and installation of additional shade trees and ornamental trees (where gaps exist) in the median, bulbouts, and storm water planters. In addition to enhancing the walking experience, street trees help define the area and contribute to the overall character of the Town Center.

- Facilitate the installation of parklets within the public right-of-way. These small green spaces can often fit within the public right-of-way, replacing underutilized parking spaces or parts of the sidewalk with planted and other passive spaces for people to sit, linger, and watch passersby.

5.3.3 BUENA VISTA STREET AND HIGHLAND AVENUE CONCEPT PLAN

Traffic volumes along Buena Vista Street reflect its role as a connector to the regional freeway system. The street's configuration (four lanes for traffic flow and on-street parking) facilitates this street's function. To enhance access from land uses south of I-210 a proposed Class II bike lane north of Central Avenue, transitioning to a Class III bike route to the south, will provide greater multi-modal connectivity to the Town Center via Buena Vista Street. To facilitate these bike lanes, existing travel lanes within the existing roadway will be narrowed (see Figure 5-9: Buena Vista Street Existing and Proposed Sections). Parking is permitted on the northbound (east) side of the street only.

Highland Avenue connects the Duarte Metro Gold Line Station with the Town Center. To facilitate improved pedestrian and bicycle travel and encourage transit use, travel lanes within the existing roadway will be narrowed and a parking lane removed to allow for bike lanes on both sides of the street. In the longer term, the City will pursue the configuration of Highland Avenue

through the Town Center (and beyond to connect with the Gold Line Station and bicycle facilities on Royal Oaks Drive) from the four lanes for moving traffic to three traffic lanes, with one lane in each direction and one center two-way turn lane (see Figure 5-10: Highland Avenue Existing and Proposed Street Sections). The reduction in lanes is an arterial traffic-calming measure (sometimes called a “road diet”) that would help to slow traffic speeds and facilitate bicycle and pedestrian travel while still accommodating vehicular traffic. Given traffic 2016 volumes of approximately 11,000 vehicles per day, this configuration is expected to allow Highland Avenue to continue to operate with an acceptable level of service, not create significant delay for motorists, and improve transit ridership by creating a bicycle- and pedestrian-friendly street that connects to the Gold Line Station.

Pedestrian-scale lighting along the sidewalk will be installed on both Buena Vista Street and Highland Avenue to improve safety for all users. In the installation of new lighting, the City will review existing lighting conditions and focus new lighting especially at pedestrian concentration areas, such as bus stops and crosswalks. To enhance the pedestrian experience on Buena Vista Street and Highland Avenue, the City will work with Caltrans to improve the I-210 freeway underpass. Pedestrians currently experience the underpasses as an empty zone and barrier along each street. The installation of pedestrian-scaled lighting is

essential to enhancing safety and comfort. Public art is also recommended to invite users. The City will coordinate with Caltrans officials to receive required approval for any improvements associated with the underpasses.



Traffic-calming measures will encourage bicycle and pedestrian travel while maintaining traffic volumes.

“LEVEL OF SERVICE” (LOS) is a quantitative measure used to describe levels of congestion and delay experienced by motor vehicles. Level of Service ranges from LOS A (excellent conditions) to LOS F (extreme congestion), with LOS A through D generally considered to represent acceptable conditions in an urban/suburban area. Since level of service is focused solely on motor vehicle movement, it may neglect the needs of other users, such as pedestrians, bicyclists, and transit users. In Duarte’s Town Center, vehicle movement needs should be weighed against the desire to create a place that is inviting to pedestrians and encourages people to stop and visit local businesses, rather than simply pass through the community.

Recent State legislation places reduced emphasis on LOS and encourages the use of other metrics such as vehicle miles traveled, which may provide a more holistic assessment of traffic impacts.

Figure 5-9A: Buena Vista Street Existing Street Section (Northbound View)

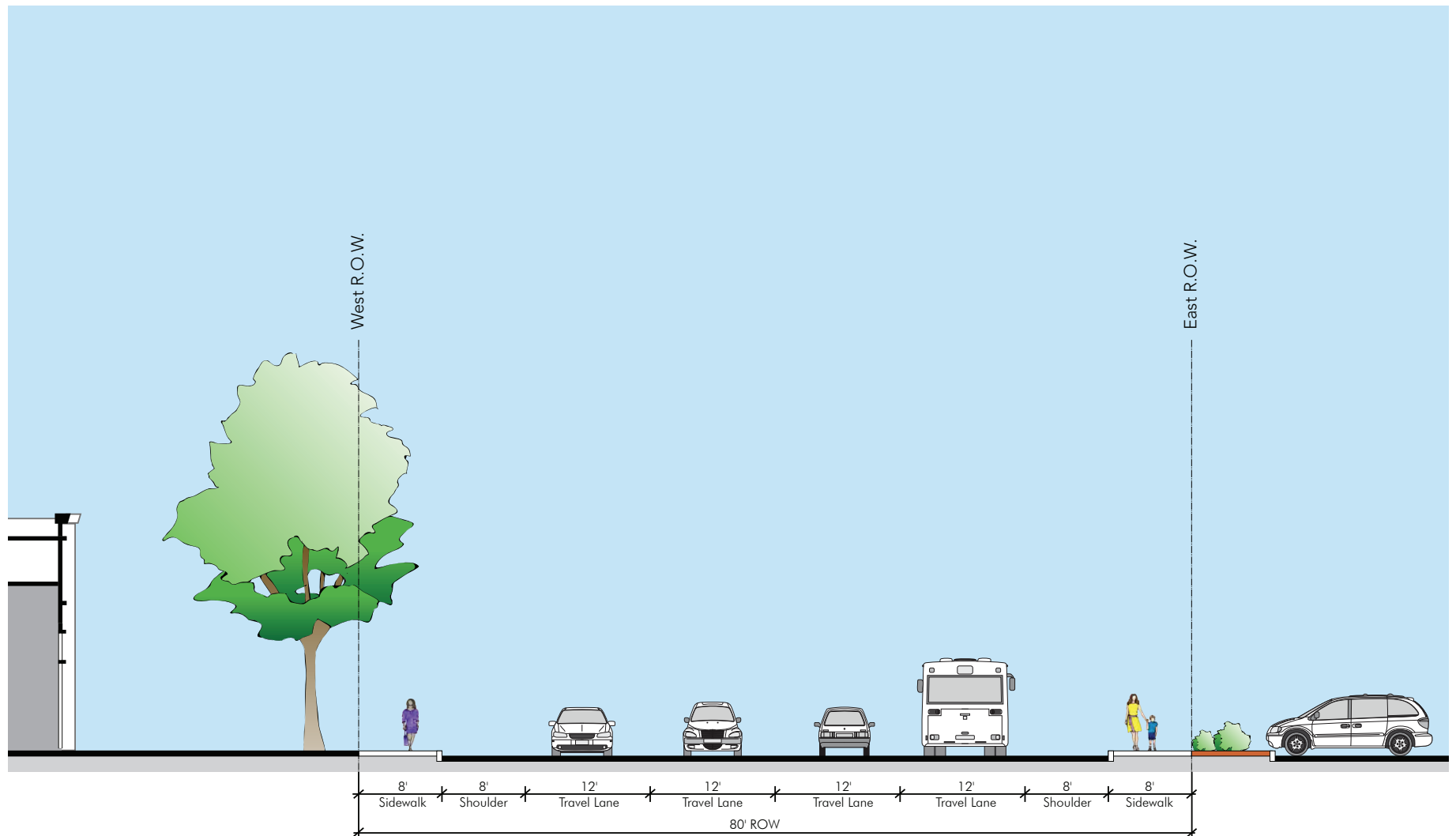


Figure 5-9B: Buena Vista Street Proposed Street Section (Northbound View)

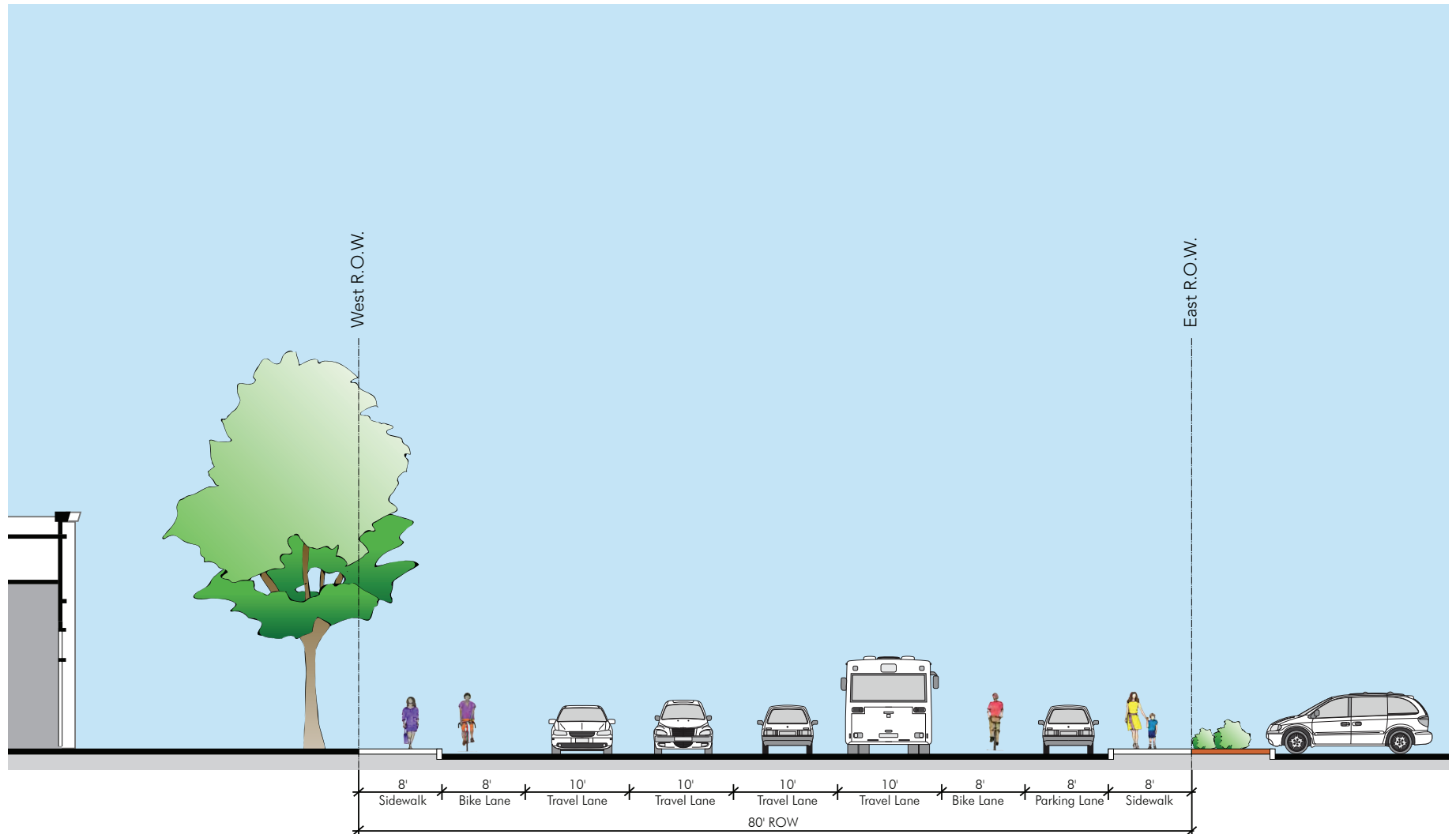


Figure 5-10A: 2016 Highland Avenue Existing Street Section (Northbound View)

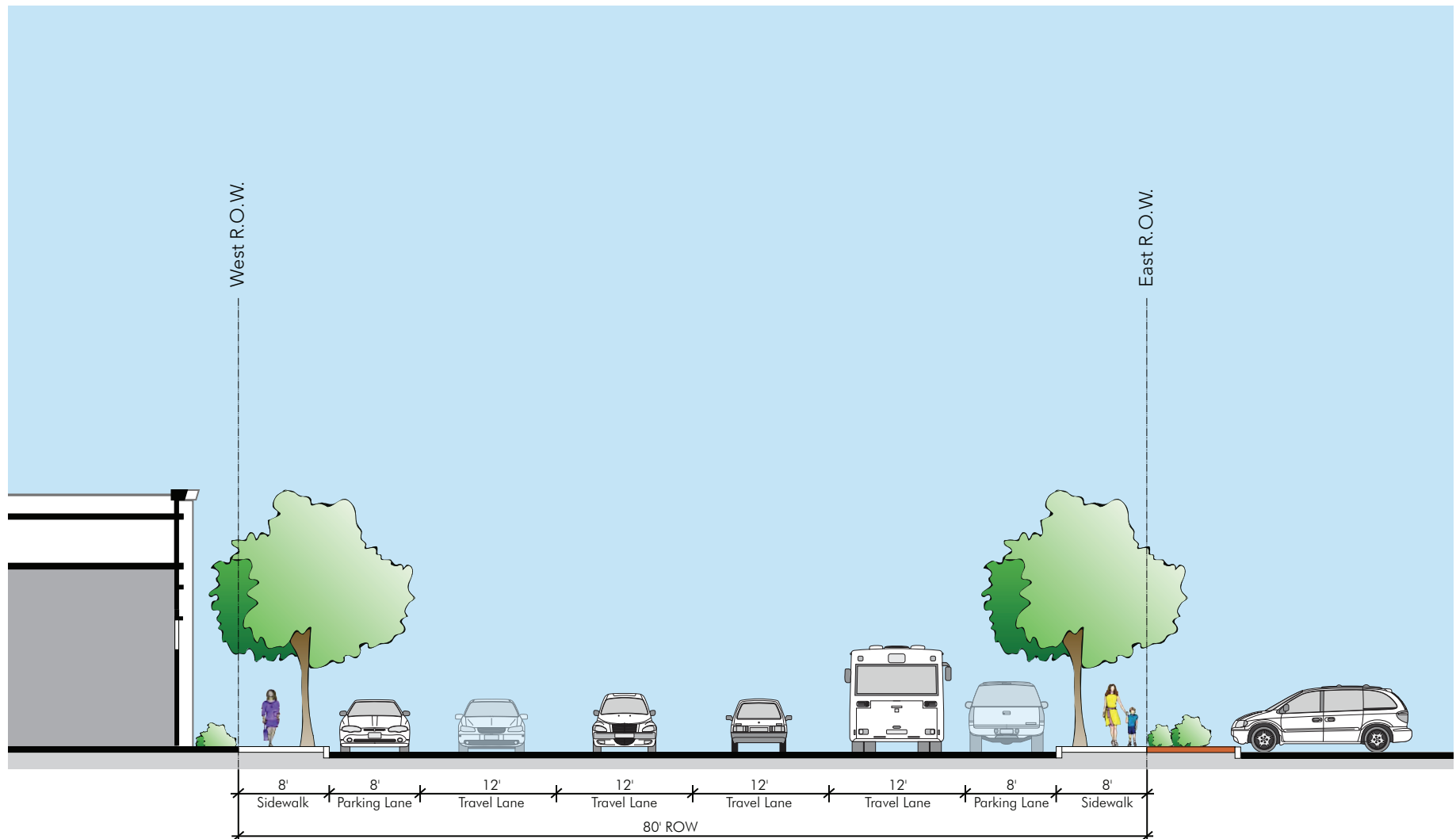


Figure 5-10B: Highland Avenue Proposed Near Term Street Section (Northbound View)

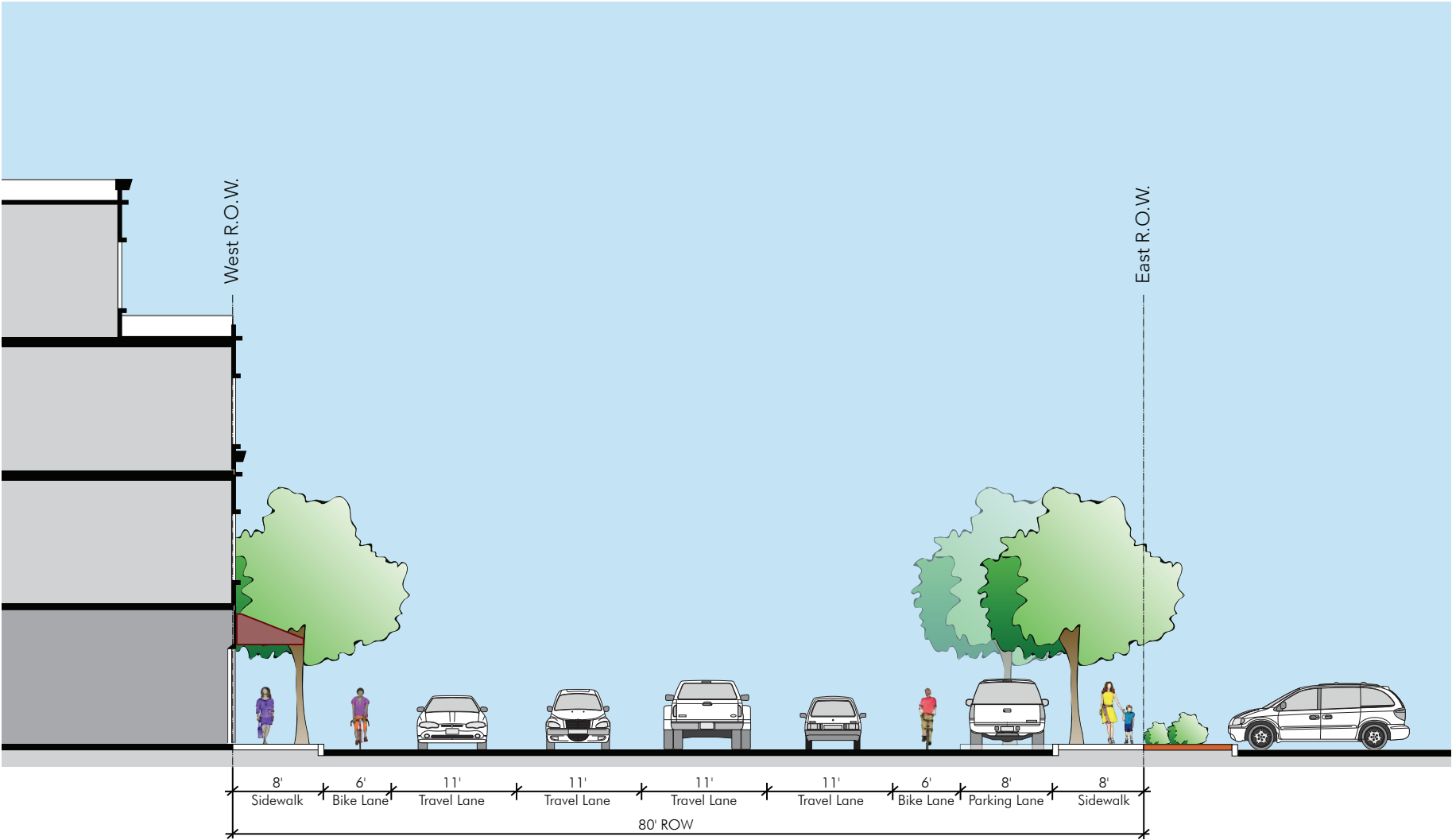
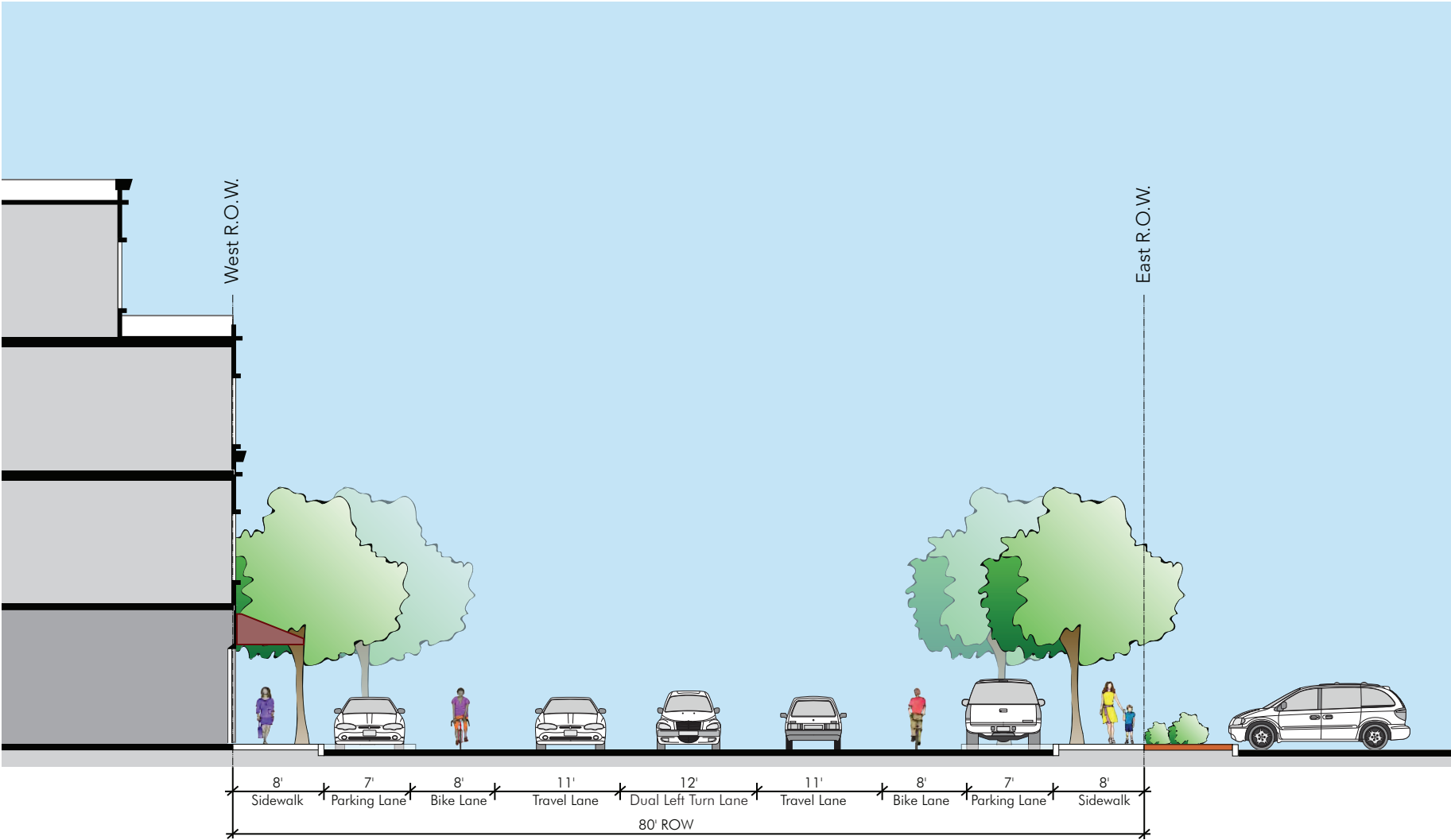


Figure 5-10C: Highland Avenue Proposed Long-Term Street Section (Northbound View)



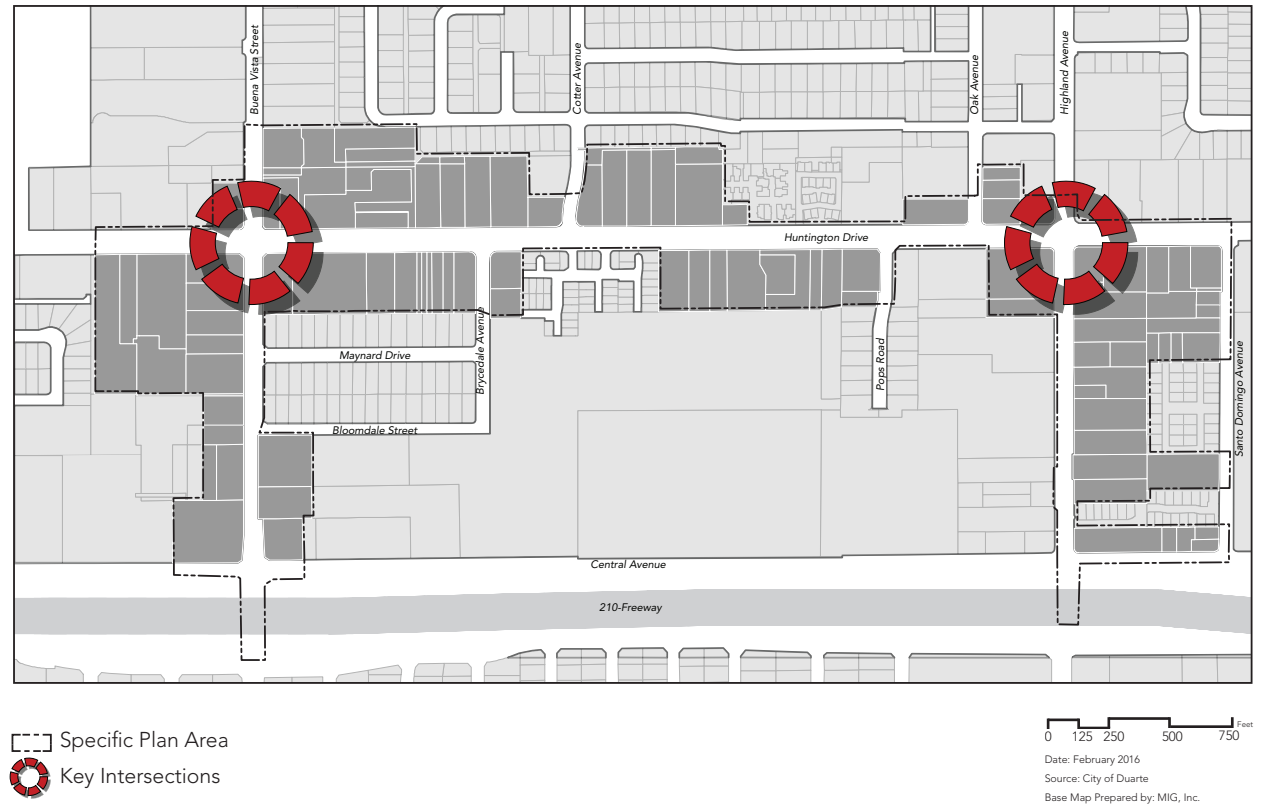
5.3.3 KEY INTERSECTIONS

Key intersections in the Town Center include Huntington Drive at Buena Vista Street and Huntington Drive at Highland Avenue (see Figure 5-11). These intersections should receive the highest attention, as they form the gateways and set the tone for the entire district. The Huntington Drive/Buena Vista Street intersection is the main entry point into the west end of the Town Center, but it is not obvious to drivers that this is a main entry into the core of Duarte. The City looks to create a highly visible gateway to the Town Center through signage and an outdoor plaza.

To enhance walkability on Huntington Drive, ornamental paving material will be used to identify crosswalks at the key intersections (Buena Vista Street and Highland Avenue). Contrasting and high-visibility crosswalks are more visible to motorists and have been shown to improve safety behavior of motorists as compared to the standard parallel or dashed markings.

Crosswalk design is further outlined in Chapter 4: Design Guidelines and Standards. In addition, all signalized crosswalks within the Town Center shall be enhanced with countdown timers.

Figure 5-11: Key Intersections



5.3.4 VEHICLE TRANSPORTATION

In general, the roadways and intersections within the Town Center operate at “good” to “very good” service levels during the morning and afternoon peak hours (with relatively free-flow movement). While the intersections along Huntington Drive currently operate at acceptable service levels, they can experience very high peak-hour direction traffic flow. That is, during peak hours, the flow of traffic is highly unbalanced and much higher in one direction than the other due to the flow of commuter traffic. Much of this traffic is “pass-through” traffic using Huntington Drive as an alternative to the I-210 freeway and not stopping to spend time at local businesses. Pass-through traffic on Huntington Drive provides little benefit to the community while creating impacts of congestion and traffic delays. As the Town Center is re-defined with new mixed-use developments and expanded local businesses, some of this pass-through traffic will find destinations within the Town Center. At

the same time, modified lane widths, additional controlled crosswalks, enhanced transit stops, and other measures will improve pedestrian flow and bicycle travel. These measures will preserve roadway capacity while helping to slow speeds to stay within the speed limit and make the overall environment more conducive to all modes of travel, and more enticing for people to stop and enjoy at local businesses.

5.3.5 BICYCLE FACILITIES

Bicycle facilities will be enhanced throughout the Town Center as follows.

- Buena Vista Street – Implement Class II on-street bike lanes on Buena Vista Street from north of Central Avenue to Huntington Drive and a Class II or Class III bike lane north of Huntington Drive to the Royal Oaks Bike Trail. These lanes should be implemented within the current roadway curb-to-curb travelled way.
- Highland Avenue – Implement Class II

on-street bike lanes from Evergreen Street north to Huntington Drive and a Class II or Class III bike lane south of Central Avenue to the Duarte Gold Line Station. These lanes should be implemented within the current roadway curb-to-curb travelled way.

- Central Avenue – Implement a Class III bike route from Buena Vista Street to Highland Avenue.

These bike lanes and routes will provide multi-modal connectivity from the Town Center area to the Duarte Bike Trail to the north and the Duarte Gold Line Station to the south. These routes will also provide connectivity to bike routes in adjacent jurisdictions. There are no proposals to add bicycle facilities along Huntington Drive within the Town Center area. However, to the east, a Class III bike route would begin at Crestfield Drive and continue to Las Lomas Road where it would transition to Class II on-street bike lanes from that point to Encanto Parkway.

5.3.6 TRANSIT FACILITIES

Foothill Transit operates several bus routes through Duarte. In addition, the City has operated a free, fixed-route bus system since 1984. Duarte Transit buses operate Monday through Saturday and have a ridership of more than 24,400 people per month. The Metro Gold Line light rail station, is easily accessible from the Town Center. The Duarte Station located just west of Highland Avenue, south of the I-210 freeway. Highland Avenue is the

TYPES OF BIKEWAYS

“Class I Bike Path” is a completely separated right-of-way for bicycles and pedestrians, with minimal cross traffic from motorists.

“Class II Bike Lane” is a striped lane for one-way bike travel on a street.

“Class III Bike Route” is a shared use route, marked with signs or on-street symbols, but no dedicated lane.

primary connection from the transit station to the Town Center. Enhancements to sidewalks, bike lanes, and pedestrian enhancements (as described above) will be important to make rail transit more accessible.

Within the Town Center, enhancements to bus stops and shelter facilities, especially along Huntington Drive, will occur. Improvements may include, more modern shelters, information cases with detailed schedule information, system maps, and real-time Next Bus travel information. In addition, bus bulbouts should be considered and discussed with Foothill Transit. Bus bulbouts are similar to curb extensions, but are placed at the location of the bus stop. The bus stops adjacent to the bus bulbout and is not required to merge back into traffic, as it remains in the traffic lane. There are tradeoffs for bus bulbouts. This design provides more room for pedestrians on the sidewalk and allows the bus to move more quickly by eliminating time waiting to merge back into traffic. However, this type of improvement also blocks moving traffic during the time required to stop and load passengers.

Cumulatively, the complete streets improvements identified in this chapter will foster a sense of place, drawing residents and visitors to the Town Center.



Duarte is served by the Metro Gold Line, Foothill Transit bus routes, and the Duarte Transit fixed-route bus system.

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