



COMPLETE STREET PLAN

Final - June 20, 2023



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Made Possible Through Sustainable Communities Transportation
 Planning Grant Program (Caltrans)



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Executive Summary

Local and State transportation policy has progressed from planning and designing almost solely for the movement of motorized vehicles, to a collective focus on the movement of people and goods. Complete streets policy and design exemplifies this paradigm shift by recognizing that not all people travel by car, and that land use affects how the street is used and how the street should function as a whole.

The objective of the Halcyon Road Complete Streets Plan is to provide for safe mobility and accessibility, throughout the Halcyon Road corridor, connecting people, schools, the hospital, and businesses by enhancing the built environment for all modes of travel including pedestrians, bicyclists, transit vehicles, trucks, and motorists. This objective is parallel to the mission of the California Department of Transportation (Caltrans):

Provide a safe, sustainable, integrated and efficient transportation system to enhance California's economy and livability.

The Plan proposes multimodal transportation enhancements so that all travel modes are accommodated, and will promote safe and convenient walking and bicycling for residents and visitors alike. The multimodal transportation enhancements can also help to reach the State's greenhouse gas emission reduction goals. This Plan provides the framework and tools needed to further develop specific designs and provide a complete street along Halcyon Road. Table ES-1 describes the issues that are currently present and the proposed multimodal improvements detailed in this Plan, for each of the three Context Zones.

In addition to filling in the sidewalk gaps, installing buffered bike lanes or separated bikeways where feasible, and implementing a road diet, the Plan evaluates two alternative improvements at Halcyon Road and Fair Oaks Avenue: an upgraded traffic signal with enhanced bicycle facilities, or a roundabout. These enhancements are projected to provide safer travel for all travel modes at both the intersections and the adjacent roadway segments. The roundabout will provide adequate capacity for the diverse travel needs of the corridor, and improve intersection efficiency, which will in turn discourage cut-through traffic on Todd and Olive Streets. The upgraded traffic signal will also greatly enhance pedestrian and bicycle access and safety through the intersection. Either the upgraded traffic signal or the roundabout will significantly enhance safety and improve multimodal connectivity for all roadway users while maintaining the urban/suburban interface.

Table ES-1: Summary of Issues and Improvements by Context Zone

Context Zone (see page 9 Figure)	Existing Conditions and Issues	Proposed Multimodal Improvements
1: Urban (El Camino Real to East Grand Avenue)	<ul style="list-style-type: none"> Lack of continuous and adequate sidewalks, Difficulty in effectively accessing transit and park and ride facilities, Proximity to US 101, Inconsistent lane configurations through intersections, and Poor traffic signal timing. 	<ul style="list-style-type: none"> Class II Buffered Bike Lanes on both sides (except southbound approaching E. Grand Avenue will be a Bike Route), Bike Box for left turning cyclists at El Camino Real, Green Pavement treatment in conflict zones, Complete sidewalk connectivity on northbound side, and Install curb ramps at Bennett Avenue.
2: Urban Transition (East Grand Avenue to Fair Oaks Avenue)	<ul style="list-style-type: none"> Poor traffic signal timings, Speeding, Lack of accessible curb ramps, Poor crosswalk visibility, Narrow and degraded sidewalks, Limited visibility caused by on-street parking, and Inconsistent or confusing lane configurations No bicycle facilities are available 	<ul style="list-style-type: none"> A brief four-lane section with striped Class II Bike Lanes between E. Grand Avenue and 150' south of Park Way, Transitions to a three-lane segment with two travel lanes and a center turn lane, A Class II Buffered Bike Lane northbound, a striped Class II Bike Lane southbound, and on-street parking southbound, Four on-street parking spaces are provided southbound in front of the Arroyo Grande Optometry building at Dodson Way, Class IV Separated Bikeway is provided from Dodson Way to approximately 130' feet south, in between the sidewalk and the parking zone, via a separated landscaped median, Class IV Separated Bikeway is provided northbound, with a separated landscaped median, from the main hospital driveway to approximately 120' north, Green pavement treatment provided in the conflict zones, Marked Crosswalk on north side of intersection at Dodson Way, and Curb extensions are proposed at all corners of the Dodson Way intersection, and Additional improvements to Farroll Avenue and Halcyon Road
3: Neighborhood (Fair Oaks Avenue to The Pike)	<ul style="list-style-type: none"> Speeding, especially during school hours, Lack of continuous sidewalk and accessible curb ramps, Limited visibility caused by on-street parking, inconsistent or confusing lane configurations, and Poor crosswalk visibility No bicycle facilities are available 	<ul style="list-style-type: none"> At Halcyon Road and Fair Oaks Avenue, either upgrade the traffic signal with enhanced bike facilities, a leading pedestrian interval, and signal timing and lane configuration adjustments, <u>or</u> install a single-lane modern roundabout with a dedicated right turn lane westbound. The proposed roundabout will provide bike ramps for all approaches leading to a multi-use path, for both pedestrians and bicyclists to navigate the roundabout, as well as shared lane markings for cyclists within the roundabout, improving safety for all. Three-lane cross-section with two travel lanes, a center turn lane, On-street parking is provided along Halcyon Road northbound between Cameron Court and 130' north of Sandalwood Avenue, Install all-way stop control at Halcyon Road and The Pike, Class II Buffered Bike Lanes are proposed for both sides of Halcyon Road between Fair Oaks Avenue and Olive Street, and between Sandalwood Avenue and The Pike, Northbound, a Class IV Separated Bikeway from Farroll Avenue to 130 feet north, Southbound, a dedicated Bike Lane between the through lane and the right turn lane at Farroll Avenue. Green pavement treatment provided in the conflict zones, A new two-stage crossing on the north side of Sycamore Drive, with a refuge island, A continuous 6-foot wide sidewalk on the east side of Halcyon Road from The Pike to Willow Lane, and a 7-foot wide sidewalk from Willow Lane to Cameron Court, and Curb Extensions and new curb ramps at various locations.



1. INTRODUCTION

The City of Arroyo Grande has initiated a project to produce a "Complete Streets Plan" (Plan) for Halcyon Road. Halcyon Road serves as a major urban arterial for the City providing access between US Route 101 (US 101) and State Route (SR) 1. Halcyon Road connects the urbanized City of Arroyo Grande to the unincorporated rural Nipomo Mesa. The Halcyon Road corridor runs generally north-south and is approximately 1.7 miles long. The character of Halcyon Road changes as it passes through three (3) distinct Context Zones, from a primarily urban area at the north end, past a hospital and an elementary school, and finally through a neighborhood area, to the City limits. This project is funded in large part by the Caltrans Sustainable Communities Transportation Planning Grant Program.

The purpose of the Plan is to develop an improved transportation corridor that provides for safe mobility and accessibility for all users, including bicyclists, pedestrians, transit vehicles, trucks, and motorists.

Presently, the Halcyon Road corridor does not provide necessary bicycle accommodations and lacks adequate pedestrian accommodations. Unsignalized crossings and intersections with poor visibility, lack of sidewalk connectivity, the absence of bike lanes, unclear or poorly marked lane markings, and high vehicle speeds present challenges to overall corridor safety.



The Plan proposes transportation enhancements so that all travel modes are accommodated, and will promote safe and convenient walking and bicycling for residents and visitors alike.

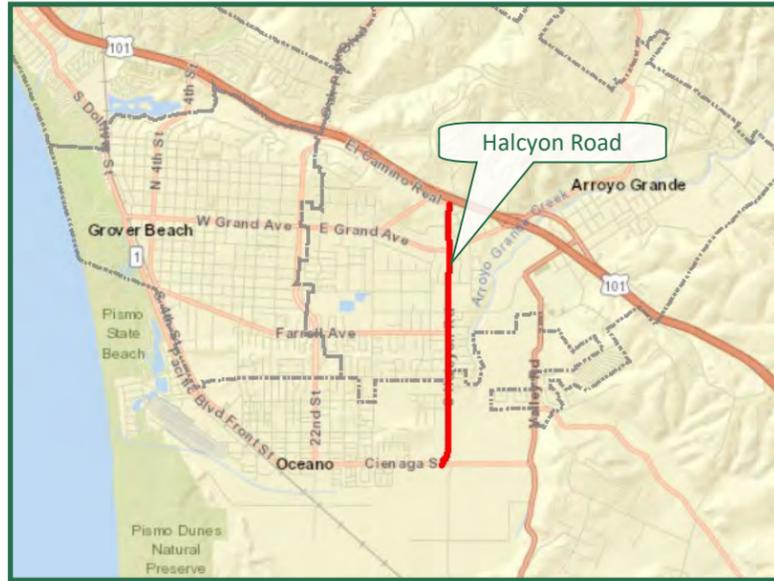
The concepts and recommendations within the Plan are based on community input obtained from multiple workshops, extensive in-person and online surveys, comprehensive meetings with stakeholders, as well as from the review of existing plans, policies and programs that support walking, biking, driving, and overall community livability and sustainability.

This Complete Streets Plan provides a framework within which to further develop specific designs. This document is intended to guide future improvements along the corridor as funds become available.

The Plan:

- ◆ Evaluates existing and forecasted vehicular and multimodal operations,
- ◆ Uses available Geographic Information System (GIS) data, right of way data and aerial imagery mapping, and
- ◆ May require comprehensive topographic, boundary surveys, and operational analysis to implement specific improvements.





Project Location

Project Setting

Halcyon Road is located in the southern part of the City of Arroyo Grande, which is approximately 15 miles south of the City of San Luis Obispo. The Halcyon Road corridor is a direct regional connector with a varied user base of local and through traffic. The Halcyon Road corridor provides access to some very significant resources within the City of Arroyo Grande and the adjacent unincorporated areas. It serves as primary access to the South County's only hospital, the Arroyo Grande Community Hospital, that averages over 2,000 patients monthly. In addition to providing patient care, the hospital is the major job center for the community. Halcyon Road provides primary access to Harloe Elementary School, and by extension, the high school located on Fair Oaks Avenue near US 101. In addition to these major traffic generators, there are numerous commercial, industrial, and residential uses along the corridor. Halcyon Road is also a key facility for transporting a vast array of agricultural products and farm workers between US 101 and SR 1, serving regional traffic between the Nipomo Mesa and destinations north. The corridor has evolved over several decades in an attempt to perform many functions. Based on US Census Bureau data, population within Arroyo Grande has increased from 17,252 in 2010, to 18,441 in 2020 (0.69% per year). This growth is consistent with San Luis Obispo County's population growth of 0.53% per year between 2010 and 2019.

Project Challenges

Given its importance to the City and region, Halcyon Road remains disjointed and dated in terms of the transportation utility it provides. Halcyon Road currently has an assortment of travel lane and on-street parking configurations. There are no dedicated bike lanes within the corridor and cyclists compete with motorists for the traveled way. With only three signalized intersections in the corridor, pedestrians have a difficult time navigating safely across the facility, and the public has expressed concerns about the excessive speeds of the motorized vehicles using the corridor. In addition to the crossing difficulties, an incomplete sidewalk system makes walking along the corridor an uncomfortable and unattractive alternative.

It is critical to bring the Halcyon Road corridor up to a standard that will encourage Harloe Elementary school children, Arroyo Grande High School students, hospital employees, and residents to walk, ride their bikes, or take transit; ultimately improving the local economy and the overall livability of the corridor while maintaining the special rural town site of old Halcyon. Distinctive transitions will remain between the adjacent land uses along Halcyon Road, and "Gateway" treatments could be utilized to give all users a sense of entering a special place regardless of the direction they are traveling on Halcyon Road.

Project Goals

Recognizing the unique and diverse character and needs of the Halcyon Road corridor, the following specific Project Goals have been identified as follows:

- ◆ Enhance Safety for All Modes of Travel - Identify circulation improvements that enhance safety for pedestrians, cyclists, and motor vehicles to travel along and across Halcyon Road.
- ◆ Improve Multimodal Connectivity - For all age groups, improve multimodal connectivity by closing gaps to complete continuous walkways and bicycle facilities between residences, Harloe Elementary School, Arroyo Grande Community Hospital, parks and retail destinations.
- ◆ Provide Adequate Roadway Capacity for Diverse Travel Needs - Adequate capacity on Halcyon Road needs to be provided for both local and inter-regional travel with intersection controls that promote both safe and efficient travel.
- ◆ Promote Economic Vitality and Visual Character - Plan Halcyon Road in a way that promotes multimodal travel options, local visual character, vibrant civic space, social interaction and public health that fosters the local economy and creates a place one wants to be.
- ◆ Recognize and Address the Urban and Rural Interface - Embrace the



Halcyon Road provides access to schools, the hospital, and commercial uses

1. INTRODUCTION



diverse urban and rural communities Halcyon Road serves by recognizing the interface with a notable gateway between the two areas this road serves.

- ◆ Recognize Greenhouse Gas Reduction and Air Quality Benefits- Metrics of the Plan need to include environmental benefits including, but not limited to, reduced use of motor vehicles, reduced traffic congestion and reduced greenhouse gases.
- ◆ Engage the Community – Community involvement is essential so that the findings and recommendations in the Plan are drawn from public consensus and reflect the desires of the community.

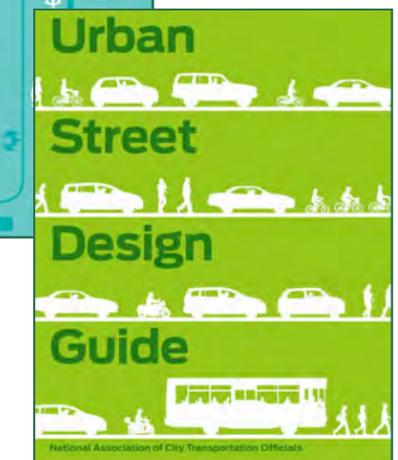
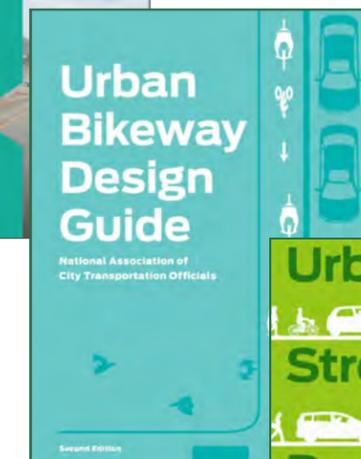
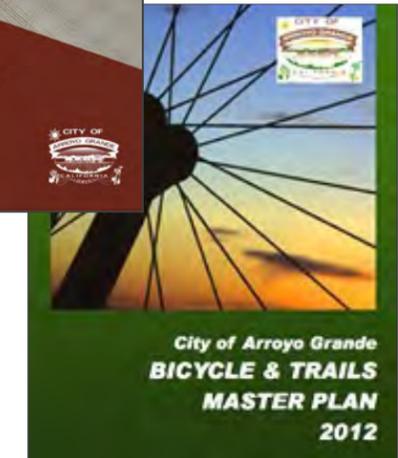
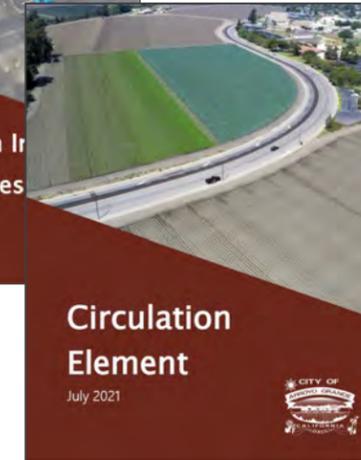
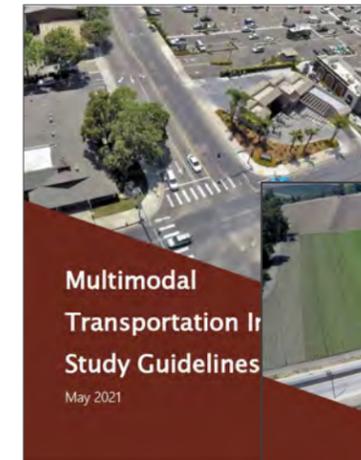
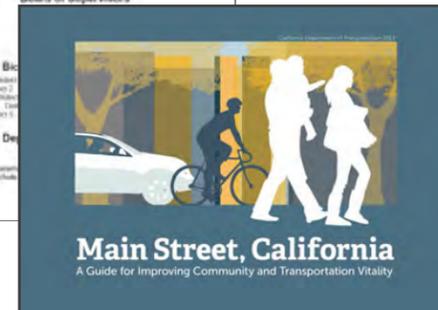
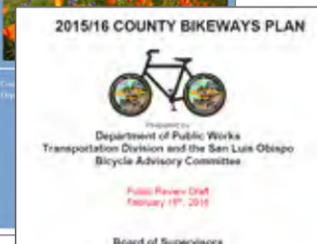
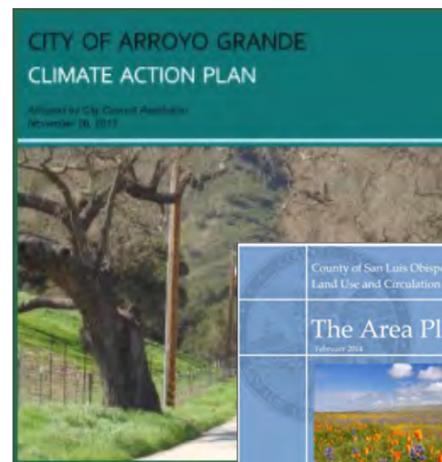
In addition to these project specific goals, this effort also recognizes and strives to achieve both the State Transportation Planning Goals and the Federal Transportation Planning Goals as required by the Caltrans Sustainable Transportation Planning Grant Program, which has been a large funding source for this effort.

Current Policy and Planning Documents

This section lists current policies and planning documents that guide or regulate transportation planning decisions related to Complete Streets. The Plan aims to align its recommendations with these available documents. Descriptions for each of the documents are provided in [Appendix A](#). To the extent feasible, the following documents were referenced for this study:

- ◆ South Halcyon Road Corridor Study
- ◆ City of Arroyo Grande Circulation Element (updated 2021)
- ◆ City of Arroyo Grande Multimodal Traffic Impact Study Guidelines (updated 2021)
- ◆ County of San Luis Obispo General Plan
- ◆ 2015/16 County Bikeways Plan
- ◆ SLOCOG Regional Transportation Plan (RTP)/Sustainable Communities Strategy (SCS): Connecting Communities

- ◆ City of Arroyo Grande Climate Action Plan
- ◆ California AB 1358 - Complete Streets Act
- ◆ City of Arroyo Grande Bicycle and Trails Master Plan
- ◆ Urban Bikeways Design Guide, 2nd Edition, NACTO
- ◆ Urban Streets Design Guide, NACTO
- ◆ California AB 32
- ◆ Main Street, California: A Guide for Improving Community and Transportation Vitality, 2003
- ◆ Complete Streets Implementation Action Plan 2.0 (CSIAP 2.0), June 2014 - June 2017
- ◆ Safe Routes to School
- ◆ City of Arroyo Grande 2018 Citywide Engineering and Traffic Survey





2. EXISTING CONDITIONS

This section summarizes the existing multimodal transportation conditions for the Halcyon Road corridor and identifies deficiencies in relation to Complete Streets and multimodal circulation priorities. Multimodal refers to all modes of transportation including vehicular, pedestrian, bicycle, and transit.

Speeds

At the junction of US 101/El Camino Real, the speed limit on Halcyon Road is 35 mph. It increases to 40 mph south of Dodson Way with a school zone speed limit of 25 mph beginning just north of Fair Oaks Avenue and ending just north of Sandalwood Avenue.

Context Zones

For the purposes of this Plan, the study corridor is divided into three (3) distinct Context Zones to illustrate the changes in adjacent land uses and roadway characteristics along the corridor.

This Plan will evaluate the Halcyon Road corridor relative to each segment’s context. The three distinct Context Zones of the study corridor are discussed in detail.

Halcyon Road Context Zones

- ◆ **Context Zone 1: Urban**
 - ◆ US 101/El Camino Real to East Grand Avenue
- ◆ **Context Zone 2: Urban Transition**
 - ◆ East Grand Avenue to Fair Oaks Avenue
- ◆ **Context Zone 3: Neighborhood**
 - ◆ Fair Oaks Avenue to The Pike



2. EXISTING CONDITIONS



Context Zone 1: El Camino Real to East Grand Avenue

Halcyon Road through Context Zone 1 is approximately 0.3 miles long and passes through a primarily urban area. This urban Context Zone is predominantly developed with urban uses oriented toward El Camino Real and East Grand Avenue, both of which provide critical access to important commercial and retail areas of the City of Arroyo Grande. City of Arroyo Grande (City) land use and zoning designations within this zone include:

- ◆ General Plan Land Use Designations
 - ◆ Community Facilities
 - ◆ Mixed Use
 - ◆ Single-Family Residential - Medium Density
- ◆ Zoning Designations
 - ◆ Public Facility
 - ◆ Highway Mixed Use
 - ◆ Fair Oaks Mixed Use
 - ◆ Single-Family

Existing uses include commercial, residential, retail, and notable public facilities, including churches, the Arroyo Grande Cemetery, and the Arroyo Grande Police Department. The urban Context Zone also includes mature

trees and landscaping adjacent to the existing roadway, as well as existing overhead utility lines, signage, street lighting, fencing, and other infrastructure.

The City and Caltrans are currently considering modifications to the Brisco -Halcyon Road/US 101 Interchange within this Context Zone to provide congestion relief, alleviate queuing, and improve the traffic operations of the regional and local street system in the vicinity of US 101 in Arroyo Grande. Modifications proposed within the urban Context Zone boundary include re-striping and lane reconfiguration at the Brisco Road/US 101 undercrossing, the Brisco Road/El Camino Real intersection, and along the eastbound and westbound El Camino Real approaches to the Brisco Road/El Camino Real intersection. There is also an existing Park and Ride lot immediately adjacent to the urban Context Zone, approximately 200 feet east of the Halcyon Road/El Camino Real/US 101 southbound ramps intersection.

Speeds and Right-of-Way

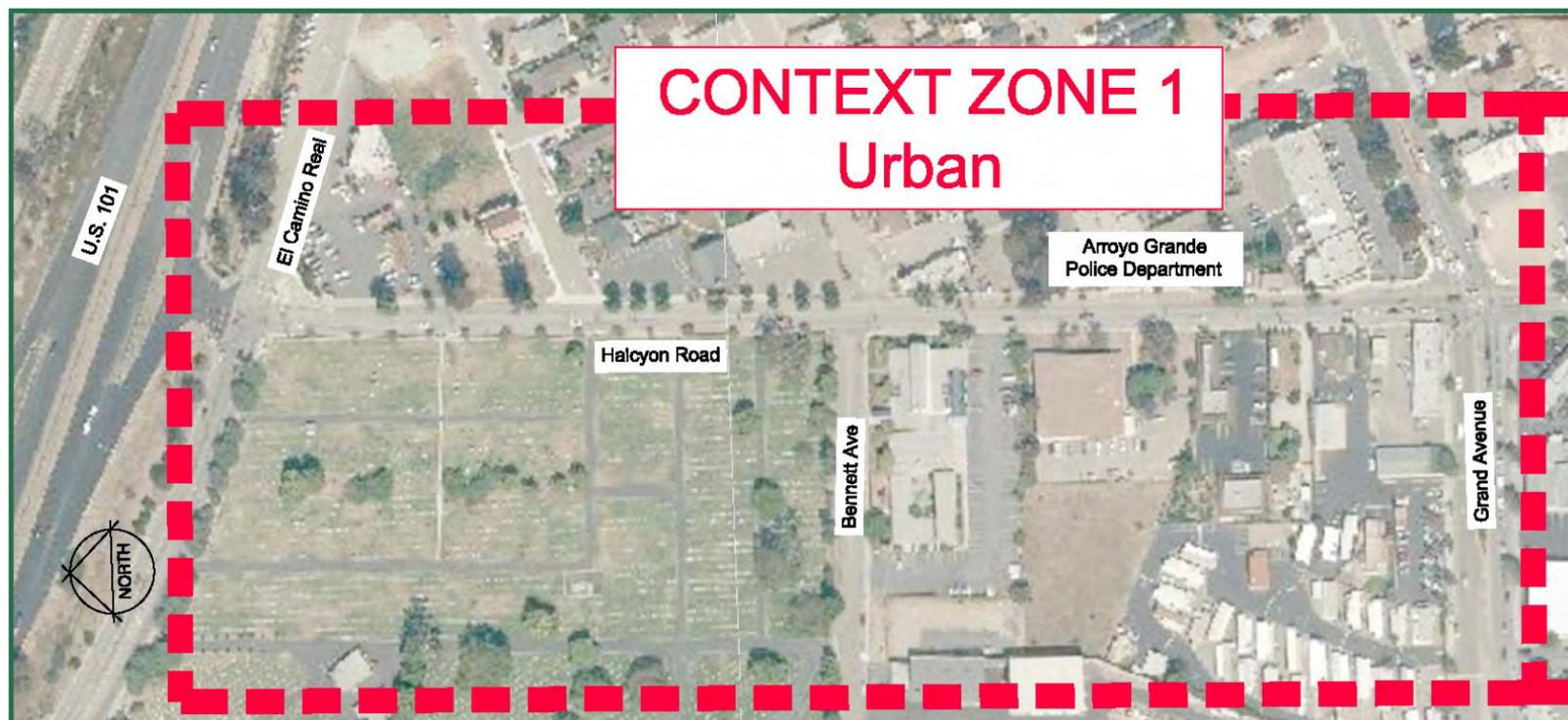
The posted speed limit is 35 miles per hour (mph). The right of way in this zone is approximately 60 feet with a street width varying from 38 to 48.5 feet. There is one travel lane in each direction with on-street parking allowed on approximately 25% of the curb face, and 20 access points.



Context Zone 1: No Bicycle Facility Designations



Context Zone 1: Gaps in Continuous Sidewalks



No designated bike lanes are provided. Sidewalk varying from 5 to 10 feet in width exists on both sides of the street; sidewalk is continuous southbound, however, there are gaps in the connectivity in the northbound direction.

Issues in Context Zone 1 include:

- ◆ Lack of continuous and adequate sidewalks,
- ◆ Difficulty in effectively accessing transit and park and ride facilities,
- ◆ Proximity to US 101,
- ◆ Inconsistent lane configurations through intersections, and
- ◆ Poor traffic signal timing.

Due to the adjacent Arroyo Grande Cemetery along much of the northern part of the street in this Context Zone, expansion of the right of way to accommodate additional modal improvements is limited.



2. EXISTING CONDITIONS

Context Zone 2: East Grand Avenue to Fair Oaks Avenue

Halcyon Road through Context Zone 2 is approximately 0.4 miles long and transitions from an urban area to a residential area. This urban transition Context Zone is predominantly developed with urban uses with few residential driveways having direct access to Halcyon Road, with direct access to parking lots for local commercial, office, and medical businesses. City land use and zoning designations within this zone include:

- ◆ General Plan Land Use Designations
 - ◆ Mixed Use
 - ◆ Office Professional
 - ◆ Single-Family Residential - Medium Density
 - ◆ Multi-Family Residential - High Density
 - ◆ Multi-Family Residential - Very High Density
- ◆ Zoning Designations
 - ◆ Fair Oaks Mixed Use
 - ◆ Office Mixed Use
 - ◆ Single-Family
 - ◆ Multi-Family

Existing uses include commercial, residential, retail, and public facilities, and notable land uses within this zone include the Arroyo Grande

Community Hospital and other medical offices. The urban transition Context Zone also includes mature trees and landscaping adjacent to the existing roadway, as well as existing overhead utility lines, signage, street lighting, fencing, and other infrastructure.

A marked pedestrian crossing is located at the side-street stop-controlled intersection of Halcyon Road and Dodson Way.

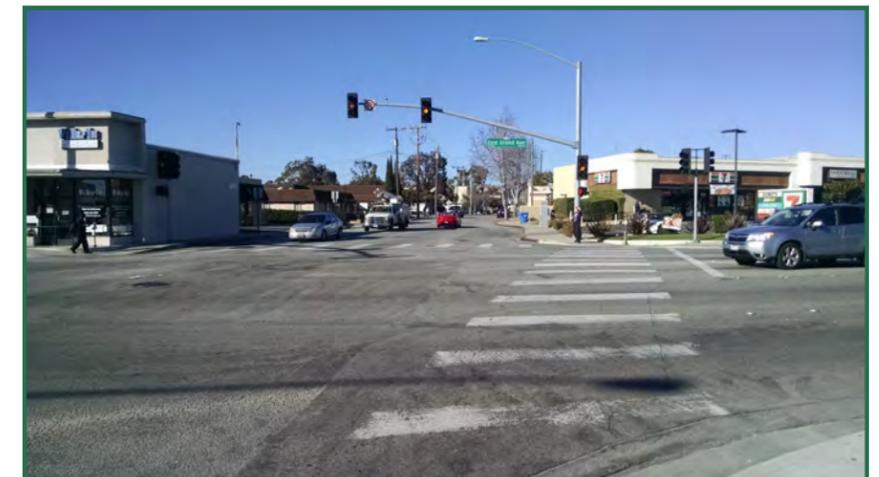
Speeds and Right-of-Way

Consistent with the recommended speed noted in the 2018 Citywide Engineering and Traffic Survey, the posted speed limit is 35 mph south of East Grand Avenue and transitions to 40 mph south of Dodson Way, with a school zone speed limit of 25 mph in the vicinity of Harloe Elementary School, which extends north of Fair Oaks Avenue.

The right of way in this zone is approximately 80 feet with a street width varying from 63 to 64.5 feet. Two lanes in each direction are provided, with a center Two-Way Left-Turn Lane (TWLTL) from approximately 350 feet south of Dodson Way to Fair Oaks Avenue where it becomes an exclusive southbound left-turn lane. On-street parking is allowed on the west side of Halcyon Road north of the end of the TWLTL to Dodson Way, and then on both sides of the street north of Dodson Way. North of Park Way, on-street parking is allowed on the west side of the street only.



Context Zone 2: No Current Room for Bicycles

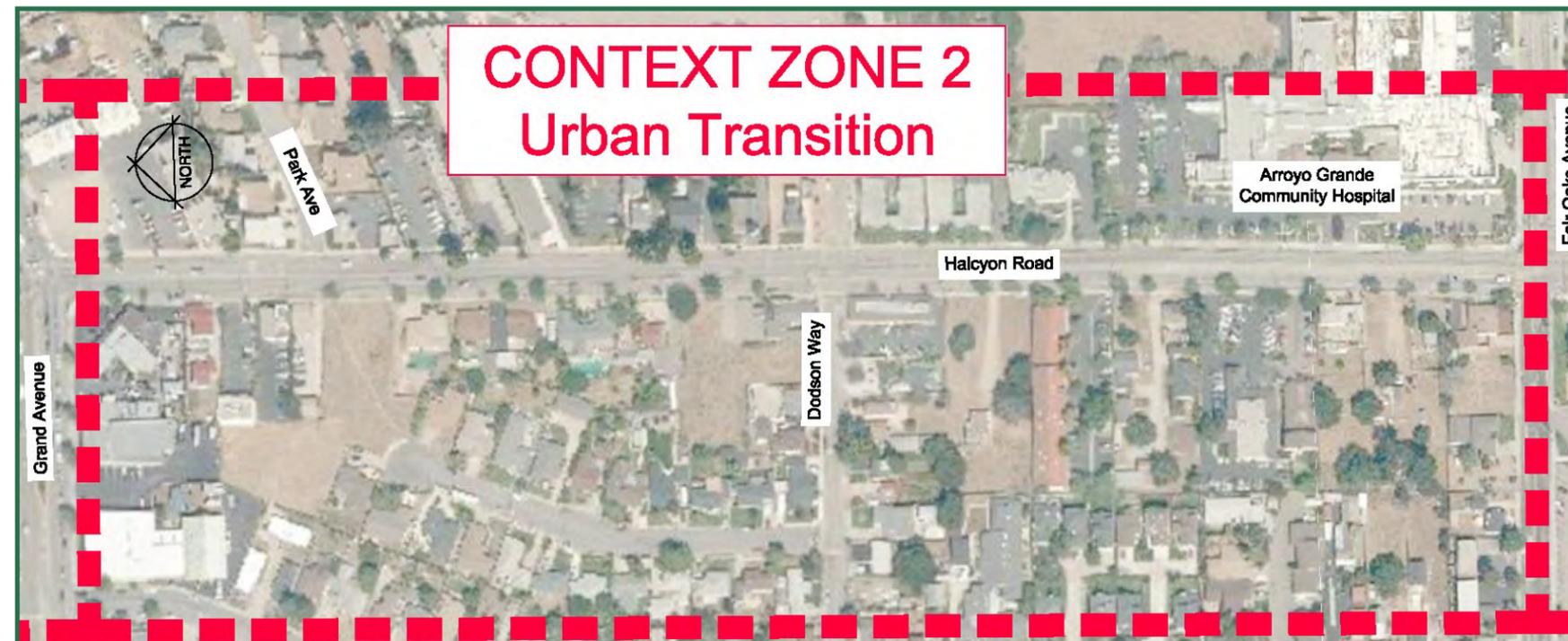


Context Zone 2: Crosswalk at East Grand Avenue

No bike lanes are provided. Continuous sidewalks exist on both sides of the street, which vary in width from 5 to 7 feet.

Issues in Context Zone 2 include:

- ◆ Poor traffic signal timings,
- ◆ Speeding,
- ◆ Lack of accessible curb ramps,
- ◆ Poor crosswalk visibility,
- ◆ Narrow and degraded sidewalks,
- ◆ Limited visibility caused by on-street parking, and
- ◆ Inconsistent or confusing lane configurations



2. EXISTING CONDITIONS



Context Zone 3: Fair Oaks Avenue to The Pike

Halcyon Road in Context Zone 3 is approximately 0.44 miles long and passes through a neighborhood area. This neighborhood Context Zone is predominantly developed with single-family residences between Fair Oaks Drive and the southern City limits. This Context Zone also includes a small area of existing mobile homes within a portion of unincorporated San Luis Obispo County, at the northeast corner of Halcyon Road and the southern City limits of Arroyo Grande (i.e., The Pike). City and County of San Luis Obispo (County) land use designations and City zoning designations within this zone are listed below.

- ◆ General Plan Land Use Designations
 - ◆ Community Facilities
 - ◆ Single-Family Residential - Medium Density
- ◆ Zoning Designations
 - ◆ Public Facility
 - ◆ Single-Family
- ◆ San Luis Obispo County Land Use Designations
 - ◆ Residential Multi-Family

Notable land uses within this zone include Harloe Elementary School and the school fields at the northern end of the zone. The neighborhood Context Zone also includes mature trees and landscaping adjacent to the existing roadway, as well as existing utility lines, signage, street lighting, fencing, and other infrastructure.

Speeds and Right-of-Way

Consistent with the recommended speed noted in the 2018 Citywide Engineering and Traffic Survey, the posted speed limit is 40 mph with a school zone speed limit of 25 mph in the vicinity of Harloe Elementary School. A marked yellow pedestrian crossing with rectangular rapid flashing beacons is located at the side-street stop-controlled intersection of Halcyon Road and Sandalwood Avenue, south of the elementary school.

The right of way in this zone is approximately 80 feet with a street width varying from 52 (South of Cameron Court) to 64 feet (North of Cameron Court). There are two travel lanes in each direction with a TWLTL until just south of Olive Street and then the street transitions to one travel lane in each direction with a TWLTL. No designated bike lanes are provided. A continuous sidewalk of width varying from 5 to 7 feet is provided on both sides of the street except between The Pike and Cameron Court where no sidewalk exists on the east side of the street.

Issues in Context Zone 3 include:

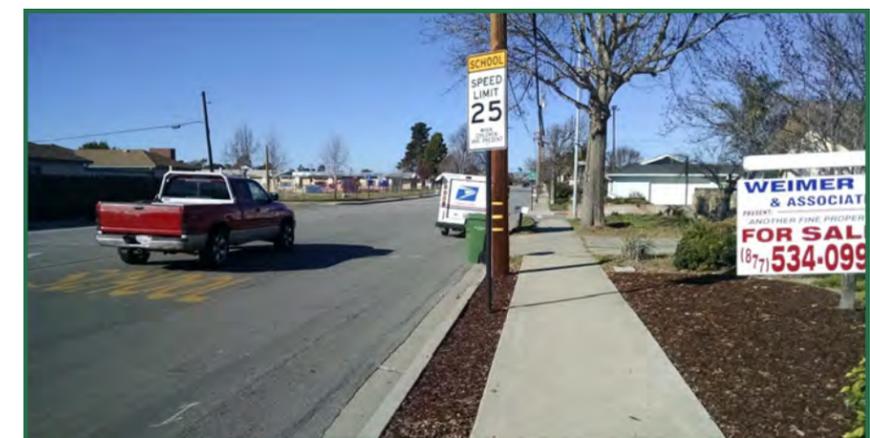
- ◆ Speeding, especially during school hours,
- ◆ Lack of continuous sidewalk and accessible curb ramps,
- ◆ Limited visibility caused by on-street parking, inconsistent or confusing lane configurations, and
- ◆ Poor crosswalk visibility



Context Zone 3: No Current Room for Bicycles



Context Zone 3: Wide Road with Long School Crosswalk



Context Zone 3: Speeding is a Concern





Environmental Conditions and Potential Constraints

Potential environmental constraints associated with project development are summarized in [Appendix B](#) based on a memorandum by SWCA Environmental Consultants dated September 7, 2016 and updated on [CITY TO PROVIDE DATE] (provided in [Appendix C](#)).

Existing Traffic Characteristics

Table 1 presents the existing mode of travel split, based on the 2015-2019 American Community Survey five-year estimates for Means of Transportation to Work by Selected Characteristics, and compares the commuting patterns of Arroyo Grande to the adjacent cities of Grover Beach and Oceano, San Luis Obispo County, California statewide, and nationwide. The commuting patterns within Arroyo Grande present how residents currently travel to work. Although commute patterns may also be correlated to commute times and distances to work, travel between non-work related trips will vary by mode.

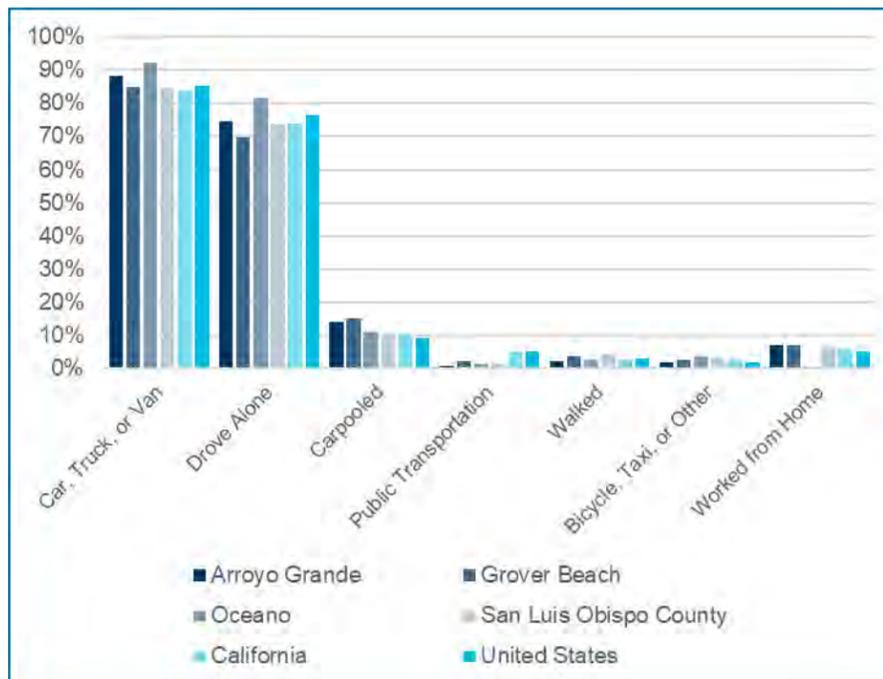
As shown in Table 1 and the Chart to the right, the City of Arroyo Grande’s commute patterns reflect similar commute patterns to the adjacent cities and San Luis Obispo County, but with a lower amount of people carpooling to work or using public transportation. Statistics for the bicycle mode were grouped with taxicab, motorcycle, or other means of travel. Overall, these statistics indicate a consistent trend of a large percentage of commuters driving alone and more people working at home than using other modes of transportation besides car, truck, or van. The average travel time to work is also relatively consistent with the adjacent cities and San Luis Obispo County. The travel times between Arroyo Grande and the City of San Luis Obispo are typically 20-30 minutes in the PM peak period during the weekday via US 101. This same route would take approximately one hour via public transit (San Luis Obispo Regional Transit Authority).

Table 1: Existing Modal Split

2019 Means of Transportation to Work	Arroyo Grande	Grover Beach	Oceano	San Luis Obispo County	California	United States
Car, Truck, or Van	88.4%	85.0%	92.4%	84.7%	84.0%	85.5%
Drove Alone	74.5%	69.9%	81.5%	74.0%	73.7%	76.4%
Carpooled	14.0%	15.1%	10.9%	10.7%	10.3%	9.1%
Public Transportation	0.7%	2.0%	1.3%	1.2%	5.1%	5.0%
Walked	2.1%	3.7%	2.4%	4.3%	2.7%	2.7%
Bicycle, Taxicab, Motorcycle, or Other	1.8%	2.5%	3.7%	3.0%	2.6%	1.8%
Worked from Home	7.1%	6.7%	0.3%	6.7%	5.7%	4.9%
Total Workers 16 years+:	8,529	6,768	3,458	128,339	17,904,213	150,571,044
Travel time to work (minutes):	22.7	20.5	23.4	22.2	29.3	26.6

Source: U.S. Census American Community Survey 5-year estimates 2015-2019

Existing Mode of Travel Split



Existing Traffic Conditions & Analysis

An analysis of the existing traffic conditions was performed for the corridor to evaluate traffic volumes, existing capacity and deficiencies, LOS, and collision history. Along the Halcyon Road corridor, 11 key intersections, three of which are signalized intersections, and eight roadway segments were selected for the analysis. The technical parameters, methodologies, and results detailing existing multimodal intersection analysis including LOS tables are contained in the *Existing Conditions Analysis Memorandum*, included in [Appendix D](#). An updated analysis is also provided separately, in the *Existing Conditions Background Report* (November 2020, GHD), prepared during the update of the City Circulation Element.

Existing weekday AM and PM peak hour traffic volume counts were collected for the corridor in September 2014, September 2016, and November 2019. The AM peak hour is defined between 7:00 am and 9:00 am while the PM peak hour is defined between 4:00 pm and 6:00 pm on a typical weekday with school in session. The following eight intersections were analyzed under existing weekday AM and PM peak hour conditions:

- ◆ Halcyon Road/El Camino Real
- ◆ Halcyon Road/Bennett Avenue
- ◆ Halcyon Road/East Grand Avenue
- ◆ Halcyon Road/Dodson Way
- ◆ Halcyon Road/Farroll Avenue
- ◆ Halcyon Road/Fair Oaks Avenue
- ◆ Halcyon Road/Sycamore Drive
- ◆ Halcyon Road/The Pike

In addition, Average Daily Traffic (ADT) volumes were collected for the eight study segments along the corridor. The following eight study roadway segments were analyzed under existing daily conditions:

- ◆ Between El Camino Real and Bennett Avenue
- ◆ Between Bennett Avenue and East Grand Avenue
- ◆ Between East Grand Avenue and Dodson Way
- ◆ Between Dodson Way and Fair Oaks Avenue
- ◆ Between Fair Oaks Avenue and Farroll Avenue
- ◆ Between Farroll Avenue and Sycamore Drive

2. EXISTING CONDITIONS



Level of Service Analysis

Level of Service, or LOS, is a qualitative measure of traffic operating conditions, whereby a letter grade A through F is assigned to an intersection or roadway segment representing progressively worsening traffic conditions. LOS is a measure of actual traffic conditions and the perception of such conditions by motorists.

The peak hour traffic volumes were analyzed at the study intersections to quantify operations for vehicular, pedestrian, and bicycle modes. The daily traffic counts were analyzed along the study roadway segments to quantify vehicular operations. The analysis was conducted using LOS based on the methodologies within the Transportation Research Board's publication *Highway Capacity Manual, Sixth Edition*, (HCM 6).

Additionally, Alta Planning & Design analyzed the existing bicycle conditions for the roadway segments (detailed in a memorandum provided in [Appendix E](#)) utilizing a standardized Bicycle Level of Traffic Stress (LTS) Analysis. The analysis methodology used for the LTS analysis was adapted from the 2016 Oregon Department of Transportation (ODOT) *Analysis Procedure Manual*.

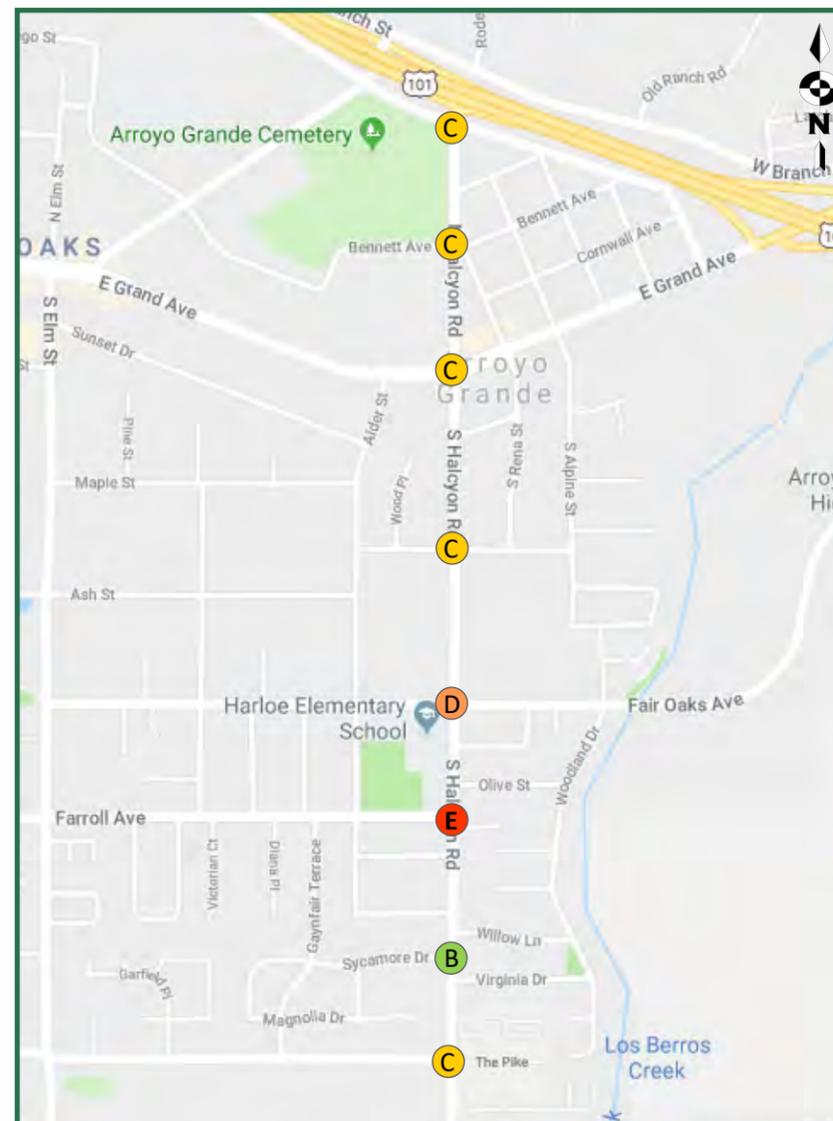
The approach outlined in the ODOT report uses roadway network data, including the posted speed limit, the number of travel lanes, and the presence and character of bicycle lanes as a proxy for bicyclist comfort level in urban context, and ADT and shoulder or bike lane width in rural settings. The analysis uses these roadway characteristics to rate the roadway on a scale of 1 being most comfortable, or least stressful, to 4 being least comfortable, or most stressful.

Level of Service Policies

Consistent with City General Plan Circulation Element policy, **LOS D** is the threshold for acceptable operations for roadways and intersections within the City. Consistent with County General Plan policy, **LOS C** is the threshold for roadways and intersections within County and Caltrans jurisdictions for acceptable operations.

The City has developed the following policy regarding multimodal analysis. The County of San Luis Obispo has not developed bicycle and pedestrian LOS/LTS policies or modal priority policies.

Figure 1: Existing Vehicular Level of Service at Intersections



Bicycle Level of Traffic Stress (LTS) Policy:

CT9 Strive to attain and maintain bicycle Level of Traffic Stress (LTS) 3 or better on all bicycle facilities. Strive to attain and maintain designated low-stress networks.

Existing Conditions Multimodal Analysis Results

Figure 1 to the left presents the existing vehicular intersection LOS (worse of AM or PM peak). Overall, most intersections within the corridor currently operate at an acceptable LOS (D within City limits, otherwise C or better) with the exception of one intersection: Halcyon Road & Farroll Avenue (LOS E). For the three signalized intersections (El Camino Real, East Grand Avenue, and Fair Oaks Avenue), pedestrian LOS was determined to be at LOS B on all approaches, while bicycle mode operated at LOS C or better on all approaches with the exception of LOS D northbound at Grand Avenue in the AM peak hour. All roadway segments along Halcyon Road are currently operating at acceptable LOS D or better for vehicular traffic on a daily basis, with existing volumes ranging from 8,500-14,000 vehicles per day along the corridor.

Pedestrian Facilities

In addition to the signalized intersection analysis, a thorough field assessment of the existing pedestrian facilities, including sidewalks and crosswalks was conducted for each Context Zone along Halcyon Road. Along the study corridor, there are three signalized intersections with crosswalks, two unsignalized marked crossings at Dodson Way and at Sandalwood Avenue near the elementary school.

The following Figures (Figures 2 through 5) present the existing pedestrian and bicycle facilities, including gaps in sidewalk connectivity (shown in red) and depictions of current cross-sections for each Context Zone.

Overall, gaps in the connectivity of the sidewalk along Halcyon Road are located on the east side, in Context Zone 1 north of Bennett Avenue, and in Context Zone 3 north of The Pike to Cameron Court. However, some of the sidewalk gaps in Context Zone 3 have recently been constructed.



Figure 2 - Existing Conditions for Context Zone 1

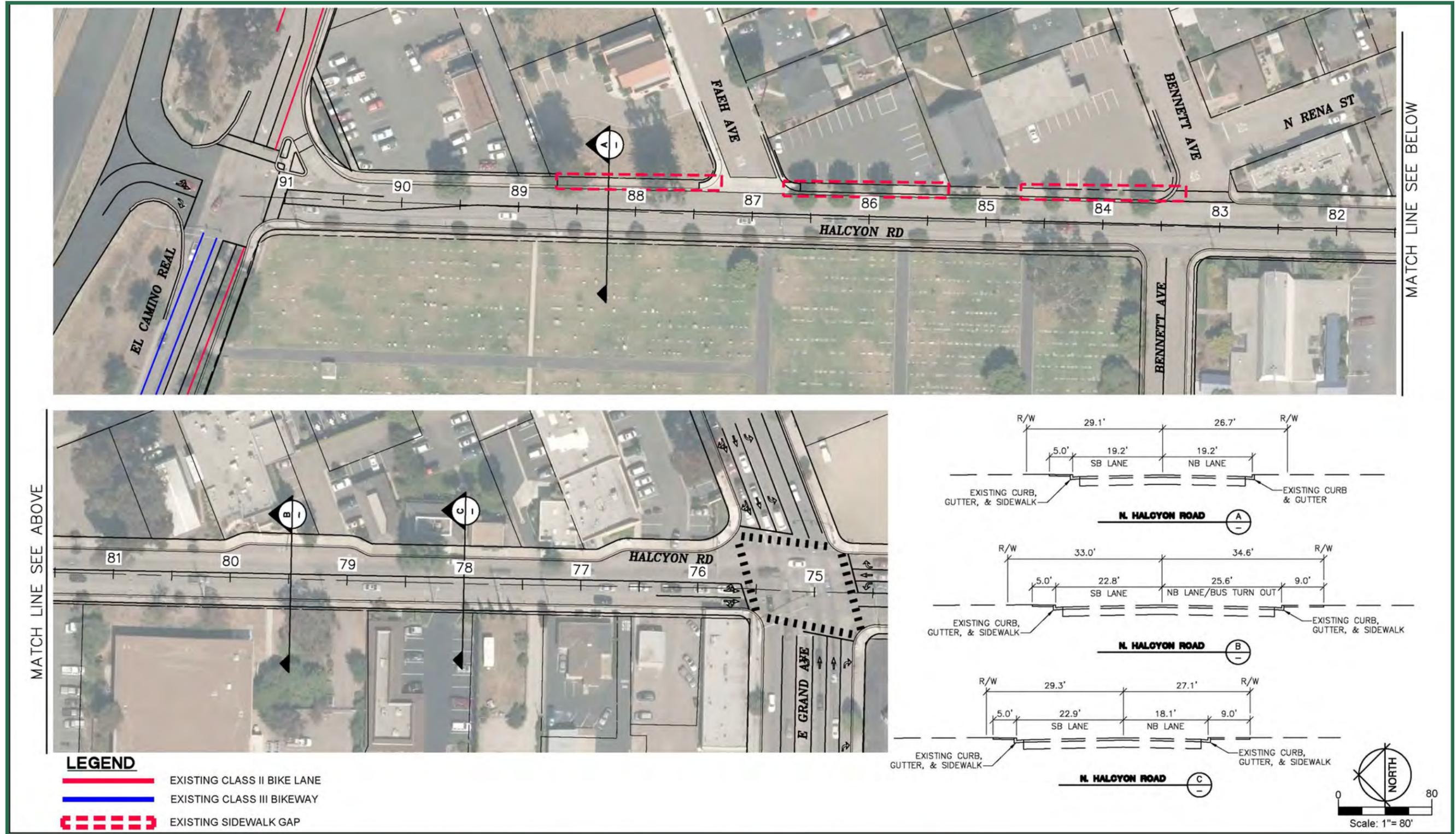




Figure 3 - Existing Conditions for Context Zone 2

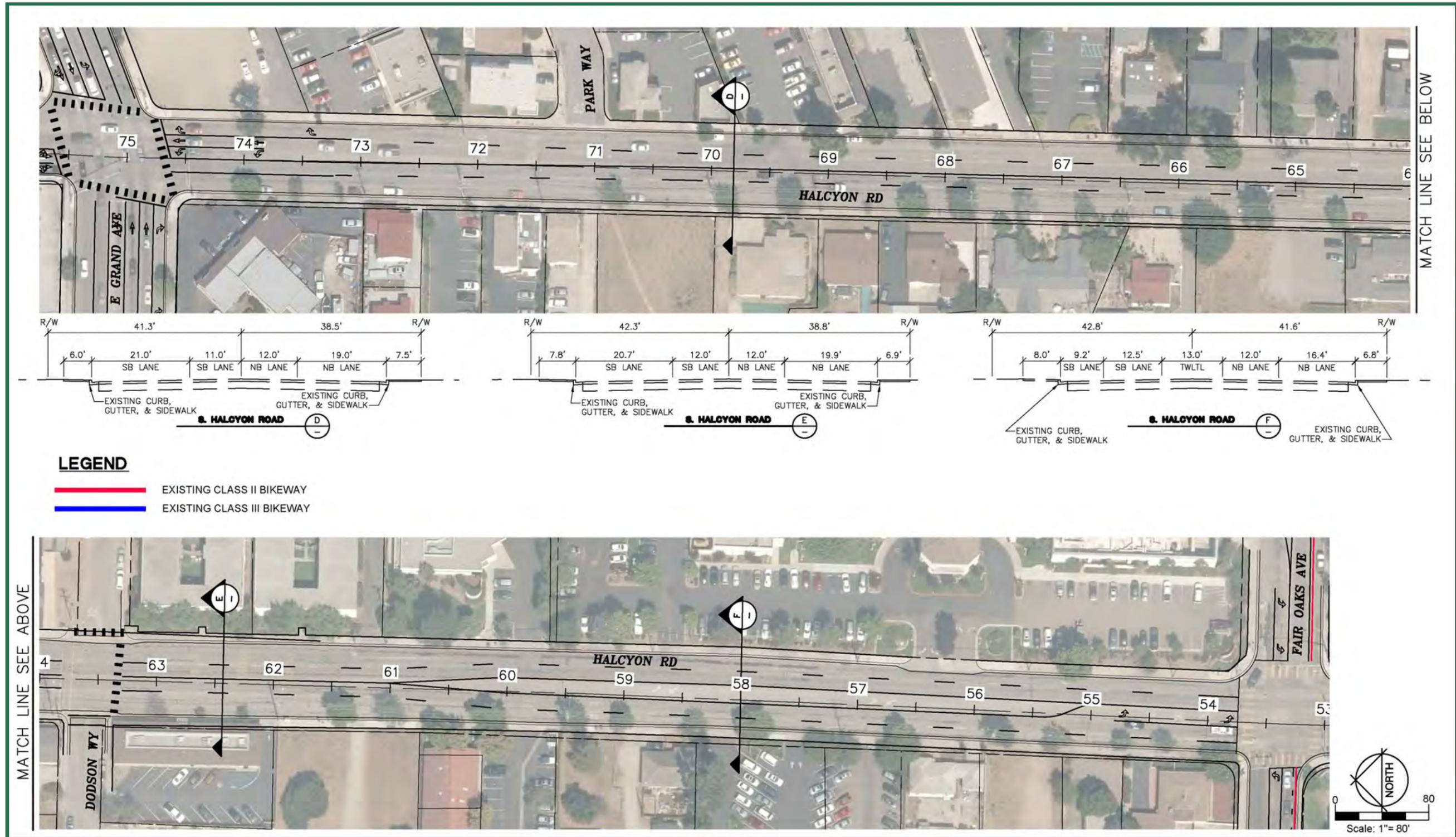
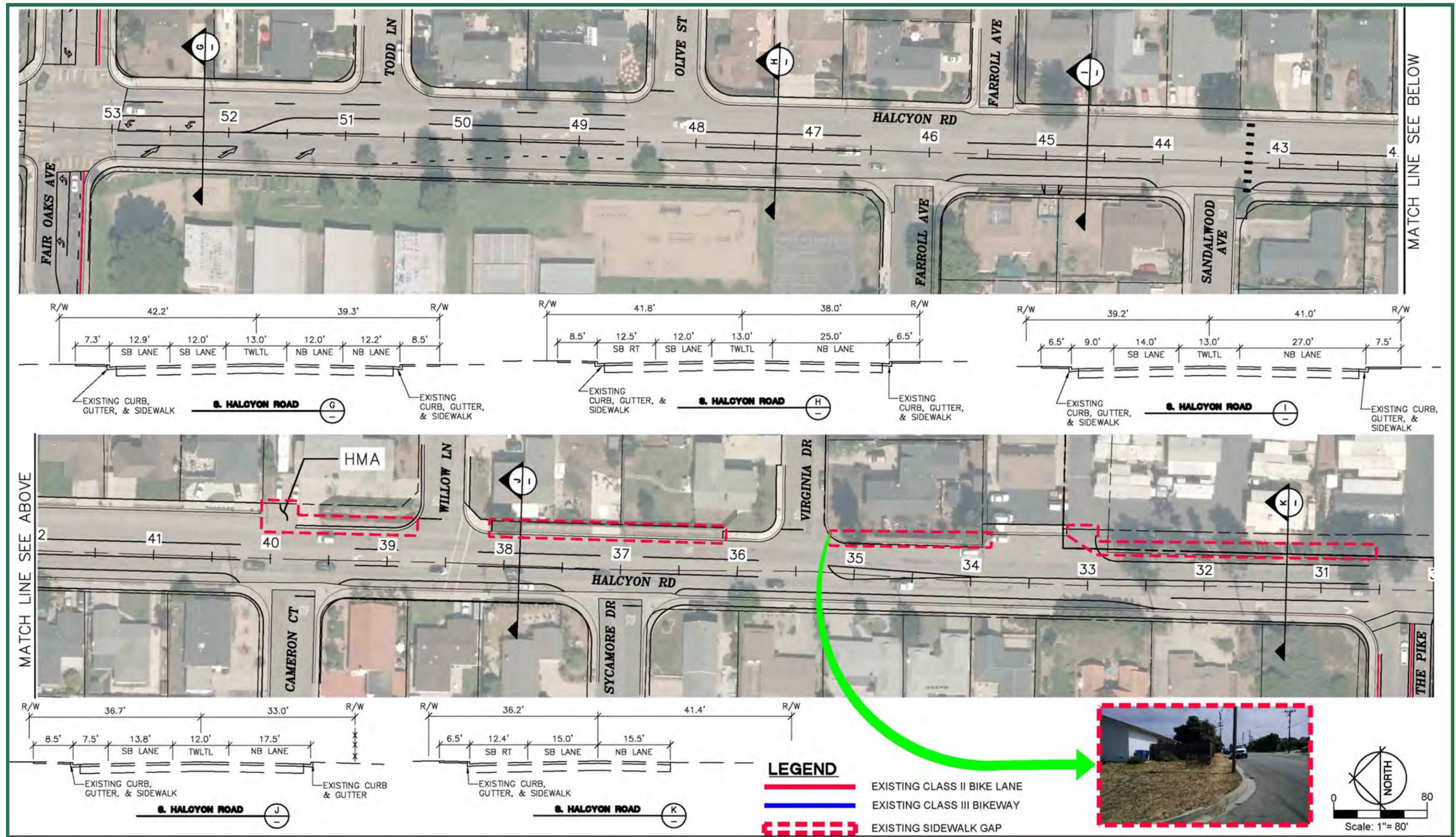




Figure 4 - Existing Conditions for Context Zone 3



Note: As part of the 2022 Pedestrian Crossing Improvements, several ADA ramps and sidewalk gap closures were constructed on the east side of Halcyon Rd between Cameron Ct and Virginia Dr.

2. EXISTING CONDITIONS



Bicycle Facilities

In addition to the signalized intersection analysis, Alta Planning & Design analyzed the existing bicycle conditions for the roadway segments (detailed in [Appendix E](#)) utilizing a standardized Bicycle Level of Traffic Stress (LTS) Analysis. The analysis methodology used for the LTS analysis, as previously stated, was adapted from the 2016 Oregon Department of Transportation (ODOT) *Analysis Procedure Manual*. The approach outlined in the ODOT report uses roadway network data, including the posted speed limit, the number of travel lanes, and the presence and character of bicycle lanes as a proxy for bicyclist comfort level in urban context, and ADT and shoulder or bike lane width in rural settings. The analysis uses these roadway characteristics to rate the roadway on a scale, with 1 being most comfortable or least stressful, to 4 being least comfortable or most stressful.

LTS 1 is assigned to roads that would be suitable for most children to ride, and to multi-use paths that are separated from motorized traffic. LTS 2 is assigned to roads that could be comfortably ridden by the average adult population. LTS 3 is the level assigned to roads that would be acceptable

to current “enthusied and confident” cyclists while LTS 4 is assigned to segments that are only acceptable to “strong and fearless” bicyclists, who will tolerate riding on roadways with higher motor traffic volumes and speeds. Examples for each level of traffic stress are shown in the graphic below using streets found in Rochester, New York.

For the analysis, the roadway links received up to three scores based on its characteristics. The first score was based on its segment (along), the space of roadway between intersecting streets. The second score was based on its approach, the area of the segment with turn lanes approaching an intersection, where present. A third score was based on its intersection, where one segment crosses another. Signalized intersections do not receive an LTS score. All roadways received a segment score. However, not all roadways received an intersection or an approach score (across). For example, a midblock portion of a street link received a segment score, but because it does not intersect another street, nor does it have turn lanes, neither an intersection nor approach score was assigned. These three scores, (when all were assigned), determined the overall LTS score, and is based on a “weakest link” methodology.

The resulting analysis performed and detailed in Alta Planning & Design’s Memorandum helps highlight locations where potential improvements are expected to have the biggest effect on the experience of bicycle users along Halcyon Road. The analysis found that the existing conditions of Halcyon Road do not provide adequate comfort for bicyclists. The corridor consistently scored an LTS 4 along Halcyon Road in all Context Zones. Context Zone 1 scored an LTS 2 at intersection approaches and crossings. Context Zones 2 and 4 scored an LTS 3 at intersection approaches and crossings. Context Zone 3 scored an LTS 3 at most intersection approaches and crossings, except near Harloe Elementary school where an LTS 4 is present at intersection approaches and crossings along Halcyon Road. Figure 6 on the following page depicts the LTS scores for each zone along the roadway and across or approaching intersections.

While the LTS completed focuses on bicycle travel, improvements for bicyclists generally translate into improved conditions for pedestrians, as well. This is particularly true for crossing conditions, as improvements are measured in terms of reduced exposure to motor vehicle travel speed and the number of travel lanes crossed.



LTS 1

- ◆ Comfortable for all ages and abilities
- ◆ Traffic speeds are low and intersections easy to cross
- ◆ Can include residential streets, and separated bike paths/cycle tracks



LTS 2

- ◆ Comfortable for teenagers and most adults
- ◆ Traffic speeds are slightly higher, low speed differentials
- ◆ Can include collector-level streets with Bike Lanes or a central business district



LTS 3

- ◆ Comfortable for confident adult bicyclists
- ◆ Traffic speeds are moderate, roadways can be five lanes wide
- ◆ Can include low speed arterials with Bike Lanes or moderate speed non-multilane roadways

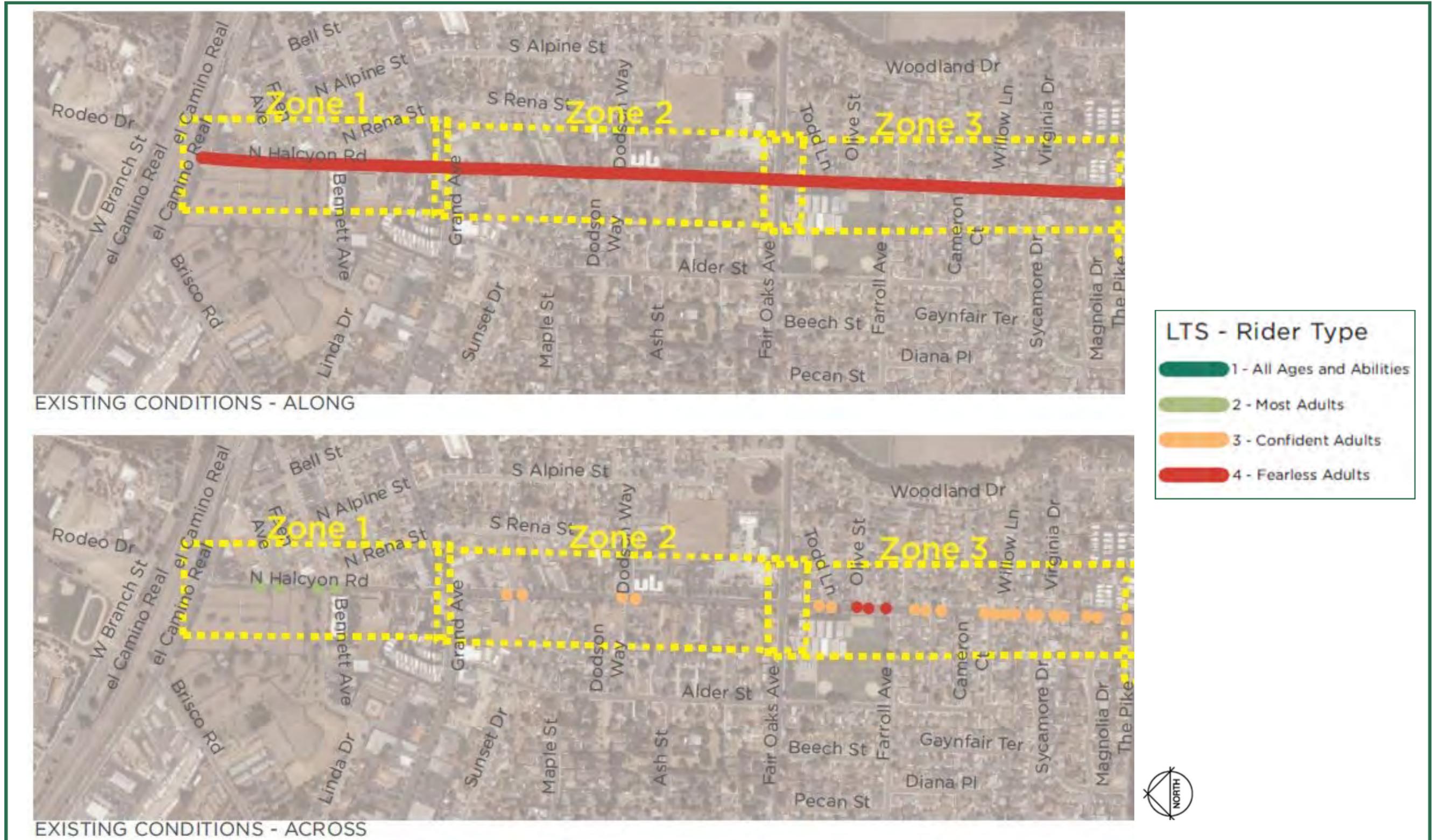


LTS 4

- ◆ Uncomfortable for most, suitable for experienced and skilled cyclists
- ◆ Higher traffic volumes and speeds, wider streets
- ◆ Can be perceived as unsafe and are difficult to cross
- ◆ Narrow or no Bike Lanes provided



Figure 6 - Existing Bicycle LTS



2. EXISTING CONDITIONS



Transit Services

The San Luis Obispo Regional Transit Authority (SLORTA) provides public transit fixed-route bus service in the City of Arroyo Grande. SLORTA also provides regional connection to South County with Regional Transit Authority (RTA) Route 10, which stops at a transfer hub on El Camino Real just east of Halcyon Road. SLORTA South County Transit (SCT) Routes 21, 24, 27, and 28, provide local routes. Routes 21 and 24 provide service between Arroyo Grande, Grover Beach, and Pismo Beach with stops near Halcyon Road at East Grand Avenue and El Camino Real (park and ride lot/transfer hub). Routes 27 and 28 provide service between Arroyo Grande, Grover Beach, and Oceano with stops near Halcyon Road on El Camino Real (park and ride/transfer hub) and Fair Oaks Avenue (Hospital). The routes cross Halcyon Road without providing direct service along the Halcyon Road corridor.



SCT crosses Halcyon Road, but there is no transit on Halcyon Road.

Park and Ride Facilities

The Halcyon Park and Ride Lot located on the north side of El Camino Real just east of Halcyon Road is one of 15 formal park & ride lots in San Luis Obispo County. The lot has 85 parking spaces and includes eight bike lockers. RTA Route 10 and SCAT Route 23 serve a bus stop at the facility.



Park & Ride Lot at the north end of Halcyon Road





Traffic Collisions

Collision Data within the Halcyon Road study corridor area was obtained from California Highway Patrol's Statewide Integrated Traffic Records Systems (SWITRS) and from the Traffic Accident Surveillance and Analysis System (TASAS) database (Caltrans) for a 5-year period between January 1, 2011 and December 31, 2015. Subsequently, A review of the data shows that approximately 120 total collisions occurred along the Halcyon Road study corridor during this 5-year period, however, there were no fatalities. Approximately 92 of the collisions occurred at intersections or within 100 feet of an intersection along the corridor. The majority of these collisions occurred at East Grand Avenue (14 collisions), Fair Oaks Avenue (14 collisions), Farroll Avenue (8 collisions), and The Pike (14 collisions). Collision rates and fatality plus injury percentages for each Context Zone segment, and detailed collision history at Halcyon Road and The Pike are contained in the *Existing Conditions Analysis Memorandum*, included in [Appendix D](#).

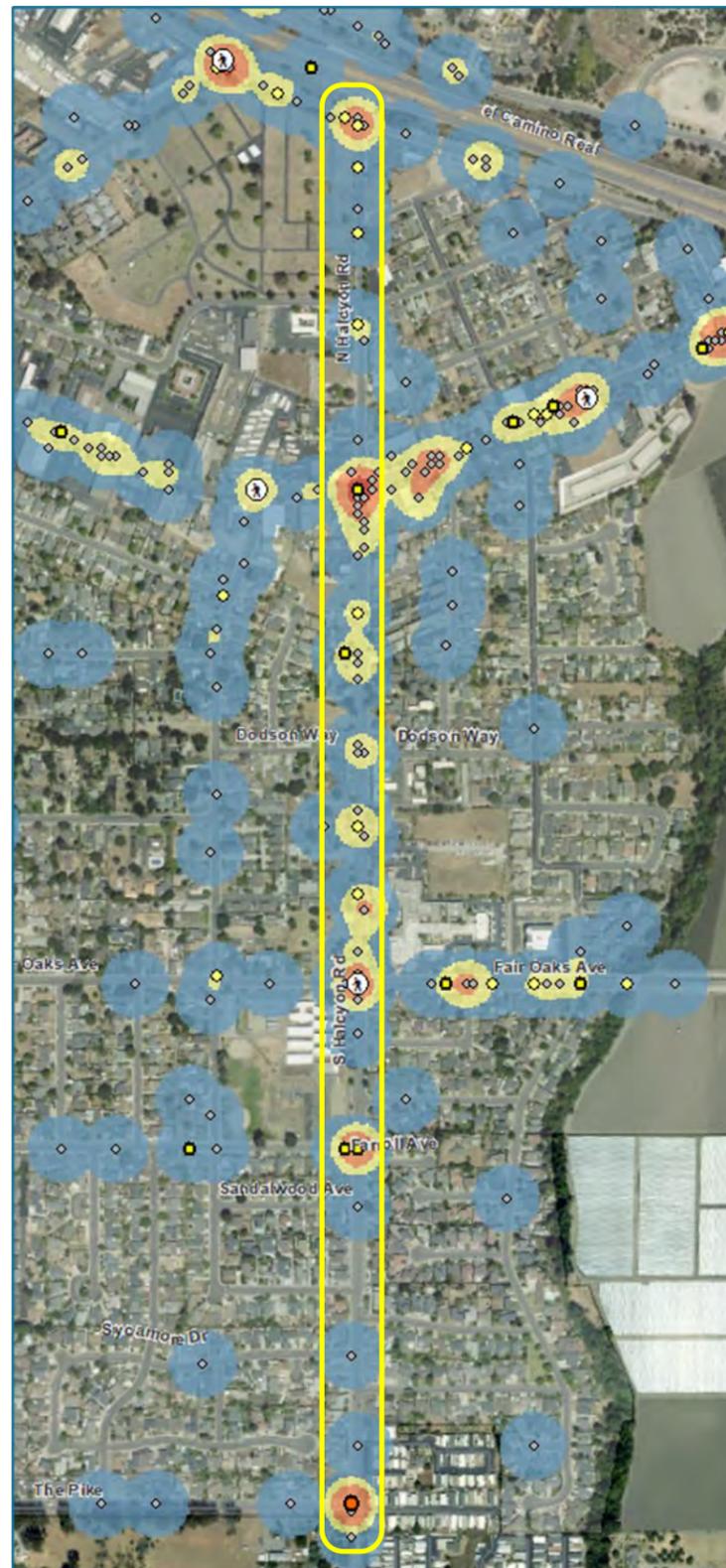
Collisions Involving Bicyclists or Pedestrians

Of those collisions that occurred at intersections along the Halcyon Road study corridor, one collision at East Grand Avenue involved a bicycle being struck by a westbound vehicle making a right-turn while the bicyclist was travelling eastbound on the wrong side of the road. One collision at Halcyon Road and The Pike involved a pedestrian being struck by a vehicle traveling southbound on Halcyon Road. The pedestrian was reported to be in the road/shoulder.

Collision rates were calculated for the three Context Zones in terms of "accidents per million vehicle miles traveled", and are based on the number of collisions per year, and the vehicle miles traveled per year (equal to the ADT volumes multiplied by the length of the segment). The calculated collision rates were then compared with statewide average rates compiled by Caltrans as published in their most recent 2014 Collision Data on California State Highways¹ document. The document provides basic average accident rates for various types of roadways and intersections categorized by number of lanes, travel speed, terrain, and area type, and are derived from the California SWITRS data. Fatality and injury (F+I) rates were also calculated as a percentage of total recorded collisions.

1. California Department of Transportation 2014 Collision Data on California State Highways (road miles, travel, collisions, collision rates), Division of Traffic Operations, Sacramento, CA.

Halcyon Road Corridor Collision Locations



In summary, Context Zone 2 exceeds both the statewide F+I percentage and the statewide collision rate for similar roadway facilities, and Context Zone 4 exceeds the statewide average F+I percentage for similar roadway facilities.

Additionally, the City has completed a Systemic Safety Analysis Report (SSAR, GHD 2021) and a Local Road Safety Plan (LRSP, GHD 2021) which evaluated collisions citywide between 2014 and 2018, and F+I collisions also through 2020. These collisions along Halcyon Road are presented in the image to the left. The SSAR identified Halcyon Road at The Pike and at Farroll Avenue as within the top 10 highest ranked intersections for equivalent property damage only (EPDO) collisions, where higher severity has higher weight. Halcyon Road segment from E. Grand Avenue to Fair Oaks Avenue was ranked third highest EDPO. The SSAR identifies installing a pedestrian hybrid beacon at Farroll Avenue. At Halcyon Road/ E. Grand Avenue, the SSAR identifies improving signal hardware, crossings, and implementing a Leading Pedestrian Interval (LPI).

Halcyon Road at The Pike

The intersection of Halcyon Road and The Pike was improved to an all-way stop control in 2019, from the prior two-way stop control on The Pike, based on the multi-way stop control warrant analysis conducted as part of this study in 2018 and the collision data (see [Appendix D](#)). Based on the collision history between 2011 and 2015, there were at least five collisions susceptible to correction by a multi-way stop control, which therefore supported the installation of a multi-way stop control measure.

This intersection presents the transition between the City and the County, where the speed limit goes from 45 mph to 40 mph as you approach the intersection from the south. Additionally, visibility to oncoming traffic from The Pike is limited due to the existing hill approaching the intersection.

Speed Surveys

Recent speed surveys have been conducted within the City and County for the following segments of Halcyon Road:

- ◆ Context Zone 1 between East Grand Avenue and Bennett Avenue (2018);
- ◆ Context Zone 2 between Park Way and Dodson Way (2018);
- ◆ Context Zone 2 between Dodson Way and Fair Oaks Avenue (2018); and
- ◆ Context Zone 3 between Fair Oaks Avenue and The Pike (2018)



The 85th percentile speed is the speed at or below which 85 percent of vehicles are traveling. The posted speed limit on Halcyon Road from East Grand Avenue to Bennett Avenue is 35 mph, and the 85th percentile directional speeds were measured at 35.6 mph (northbound) and 35.1 mph (southbound). The posted speed limit on Halcyon Road between Park Way and Dodson Way is 35 mph and the 85th percentile speed was measured at 37.0 mph in both northbound and southbound directions. The posted speed limit on Halcyon Road between Dodson Way and Fair Oaks Avenue is 40 mph and the 85th percentile speed was measured at 38.0 mph in both northbound and southbound directions. The posted speed limit on Halcyon Road from The Pike to SR 1 is 45 mph based on the most recent speed survey conducted by the County. The County does not currently have 85th percentile speed data on Halcyon Road between The Pike and SR 1. The posted speed limits are in conformance with the California Vehicle Code whereby the posted speed is the nearest 5 mph increment from the measured 85th percentile speed. Note that a slight reduction (1 mph or more) in the 85th percentile speed on Halcyon Road between Dodson Way and Fair Oaks Avenue would result in a reduction in a 5 mph reduction in the posted speed limit, from 40 mph to 35 mph.



Existing Conditions Analysis Summary

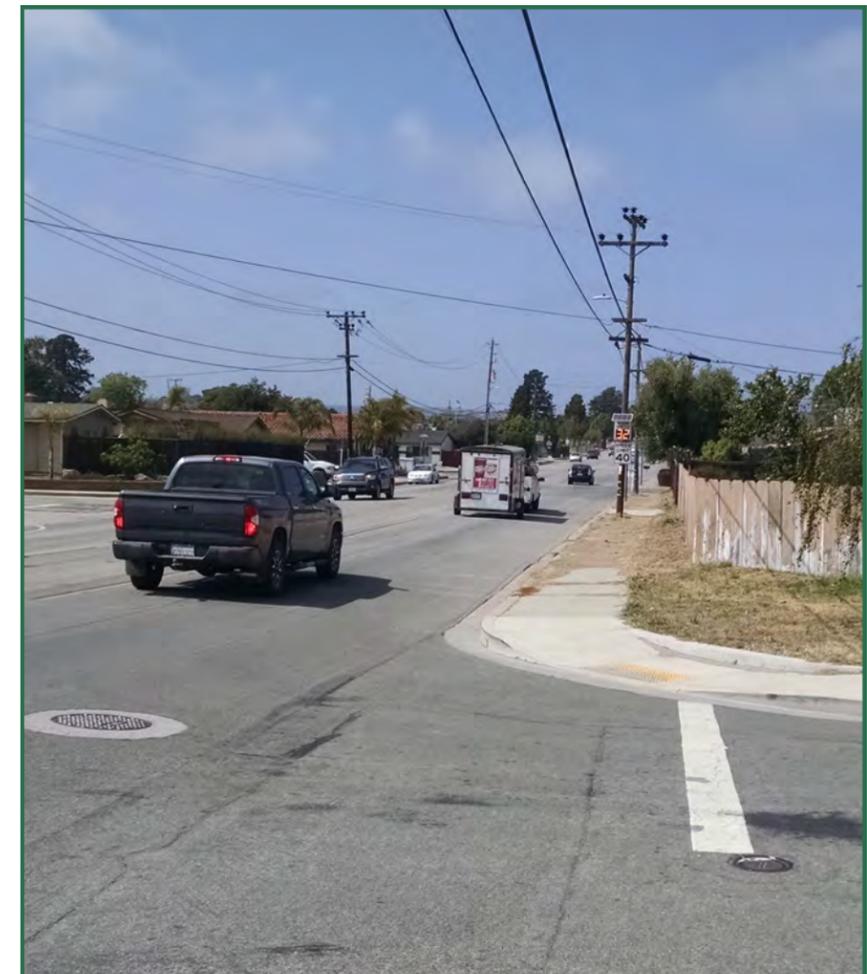
Although the existing vehicular traffic conditions operate at acceptable service levels along most of the Halcyon Road corridor, pedestrian and bicycle conditions are inadequate at several locations with lack of connectivity between residential, retail, recreational, and employment areas, as well as access to transit services. The key findings of this existing conditions analysis of Halcyon Road between El Camino Real and The Pike in the City of Arroyo Grande are as follow:

- ◆ Although pedestrian LOS is adequate at signalized intersections, unsignalized crossings are long and do not provide median refuge;
- ◆ Bicycle LOS at the signalized intersection of Halcyon Road and East Grand Avenue is calculated to be LOS D in the AM and PM peak hours;
- ◆ No dedicated bicycle facilities currently exist on Halcyon Road in the City of Arroyo Grande;
- ◆ Bicycle Level of Traffic Stress (LTS) is level 4 (uncomfortable for most riders) along the entire length of the Halcyon Road corridor. In addition to the lack of dedicated bike lanes north of The Pike, the speed and volumes of vehicles traveling along Halcyon Road, the presence of on-street parking, and the wide roadway width present difficulties for cyclists attempting to travel along and across Halcyon Road;
- ◆ Within the City of Arroyo Grande, the sidewalk network has numerous gaps and does not provide continuous pedestrian access along the Halcyon Road corridor;
- ◆ Continuous pedestrian access is also key for transit accessibility. Currently, pedestrian access is provided on Halcyon Road near the East Grand Avenue and Fair Oaks Avenue bus stops. However, continuous pedestrian facilities are not provided further south in the residential areas of the City (Context Zone 3). However, as part of the 2022 Pedestrian Crossing Improvements Project, several ADA ramps and sidewalk gap closures were constructed on the east side of Halcyon Rod between Cameron Ct and Virginia Dr. Sidewalk gaps still remain on the east side of Halcyon Rd between The Pike and Virginia Dr. In Context Zone 1, there are several gaps in the sidewalk for access to the Park & Ride lot on El Camino Real.
- ◆ Pedestrians have made evident pathways adjacent to the roadway

where there are gaps in the sidewalk.

- ◆ Harloe Elementary schoolchildren and parents, Arroyo Grande High School students, hospital employees, and residents have expressed concerns for safely crossing Halcyon Road; and
- ◆ The collision rate in Context Zone 2 exceeds the statewide average for similar facilities, and the rate of fatality and injury collisions in Context Zone 2 exceeds the statewide average.

Presently, the Halcyon Road corridor does not provide necessary bicycle accommodations and lacks adequate pedestrian accommodations. Unsignalized crossings and intersections with poor visibility, lack of sidewalk connectivity, the absence of bike lanes, unclear or poorly marked lane markings, and high vehicle speeds present challenges to overall corridor safety.





3. COMMUNITY PARTICIPATION

As part of the Halcyon Road Plan, Alta Planning & Design led the Public Participation Plan during the initial planning stages in 2016 and 2017, with assistance from Chuck Anders of Strategic Initiatives, through the use of various types of outreach and opportunities for community input. These included social media, printed media, pop-up workshops, community charrettes, and stakeholder meetings. This public outreach process was inclusive, interactive, and productive in order to build support and momentum for Complete Streets while conveying technical issues in a clear and easy-to-understand manner. Alta Planning & Design also provided Spanish translation services at community outreach events, for written materials, and for websites. [Appendix F](#) provides the memorandum by Alta Planning & Design, dated March 13, 2017, which details the outreach and results.

Public Outreach Participation Plan

The Public Participation Plan (PPP) engaged citizens by providing a straightforward communication style through direct outreach and the use of the latest technology. The public outreach methods included the following various opportunities for community input:

- ◆ Pop-Up Outreach & Surveys (August 12-14, 2016)
- ◆ Community Charrettes 1&2 (September 14 & 15, 2016)
 - ◆ Map & Facility Boards
 - ◆ Breakout Groups
 - ◆ Instant Voting
 - ◆ Comment Cards
- ◆ Community Charrettes 3&4 (April 12 & 13, 2017)
 - ◆ Recommended Plan
 - ◆ Polling and Discussion
- ◆ Online: Interactive Map, Online Survey, and Text Messages
- ◆ Stakeholder Advisory Group Meetings

Public Participation Program Goals

- ◆ Solicit feedback to understand the needs and expectations of residents, business owners, and other community members.
- ◆ Convey technical designs, limitations, and opportunities in a clear and concise manner.
- ◆ Provide options and opportunities for alternate plans and facilitate the means to provide the community the opportunity to determine which trade-offs they are comfortable with.
- ◆ Use exciting and engaging forms of community collaboration, including new technology, to ensure broad participation throughout the planning process.

Stakeholder Participation

The City formed a Stakeholder Advisory Group (33 members) to discuss the corridor and provide input on key areas of concern and potential improvements. Invitations were sent out to various key members in the community asking for representatives from the Planning Commission, Traffic Commission, and a wide-range of community stakeholder groups. The advisory group also assisted in relaying information about the planning process to their respective constituents, as well as advising on the development of conceptual design alternatives.



Project Team Meeting



Pop-Up Outreach Survey

A Pop-Up Outreach Survey was conducted between August 12th and 14th at three community events:

- ◆ Arroyo Grande Summer Carnival at Elm Street Park (Friday, August 12th);
- ◆ Olohan Alley Farmers' Market (Saturday August 13th); and
- ◆ Summer Concert at the Heritage Square Park (Sunday, August 14th)

This 14-question survey asked respondents, including members of the Stakeholders Advisory Group, for their familiarity with the project area, to rate the conditions of the facility, and their desire for changes.



Citizen going over the questionnaire at one of the pop-up events

The majority of respondents stated that they did not stop on Halcyon Road, but used it primarily to get to destinations in other places, while stakeholder group members stated that work and shopping were their most frequent destinations along Halcyon Road. Drivers mostly rated the street as good or fair while walking/bicycling conditions were mostly rated fair or poor. Overall, the majority of people responded that it was very important or important to improve conditions for all modes.

Community Charrettes

Four interactive charrette-style meetings were held at Harloe Elementary School on Halcyon Road in order to engage the community to learn about the project and provide input on the vision and objectives for the corridor. At the beginning of all four meetings, attendees reviewed and

provided insightful comments on aerial maps and street cross-sections along the corridor. The meetings also consisted of presentations to explain the challenges and opportunities along Halcyon Road and gather feedback on each of the four "Context Zones" along the corridor. At the first round of meetings, the presentation and discussion focused around community priorities and potential locations in need of improvement. At the second round of meetings, the presentation and discussion focused around proposed designs and improvements that addressed the initial input.

The presentations were followed by an interactive question-and-answer session with the project team. Strategic Initiatives, the public meeting facilitator, provided polling key pads (clickers) for attendees to anonymously answer questions about their interaction with Halcyon Road. After opinions were collected, Strategic Initiatives opened the floor up for discussion where attendees shared their specific concerns and brought attention to problem areas along the corridor. The primary purpose was to listen to the community and gain an understanding of their current concerns and desires for the future of the corridor moving forward. Interactive polling technology was utilized to collect information regarding the charrette participant's preferences in real time. The participants were able to prioritize the importance of issues relating to Complete Streets along the corridor and then the results were

immediately presented back to the group for a focused discussion.

Comment cards were also utilized for participants to voice their opinions and suggest potential improvements. People favored increasing safety for pedestrians by installing more traffic calming devices like warning lights, traffic signals, and stop signs. Several participants specifically called for stop signs in all directions at The Pike, and a road diet along Halcyon Road. One comment emphasized the need for better sidewalks connecting Harloe Elementary School to housing in Zone 3. Comments around congestion relief on Halcyon Road focused on stacking lanes on Grand Avenue, eliminating parking between Sandalwood Avenue and Farroll Avenue, and installing additional access points to Arroyo Grande High School to avoid Halcyon Road altogether. Participants were also concerned with aggressive drivers running red lights and not yielding at crosswalks.

Charrettes 1 & 2 (September 14 and 15, 2016)

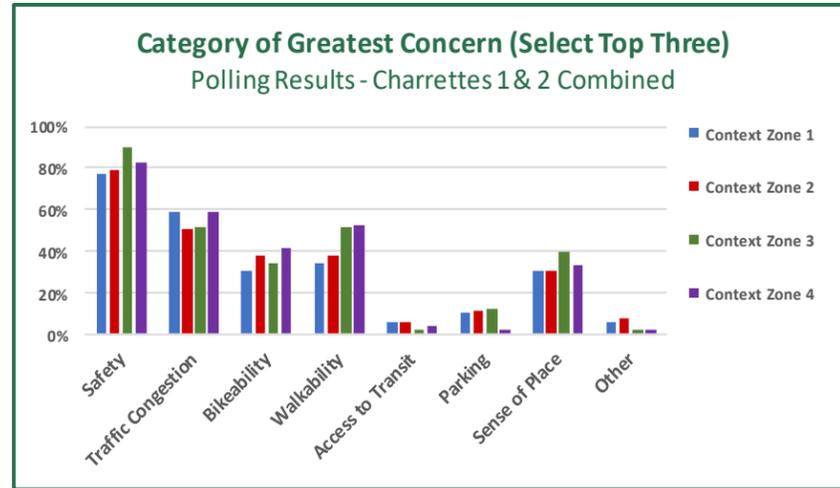
In order to gauge the community's desire for changes to Halcyon Road and determine what issues or areas are most important to the community and stakeholders, two community charrettes were held at Harloe Elementary School in the Fall of 2016. Forty-one people signed in on the September 14th charrette and 25 people signed in on the 15th.



Residents in attendance at one of the Community Charrettes



3. COMMUNITY PARTICIPATION



Polling results for Community Charrettes 1 & 2

Based on the survey conducted, safety was the number one concern for attendees and most attendees (53%) lived or worked in Context Zone 3.

Additionally, a storyboard was utilized in order to tally which design elements would be most favored. Attendees were given three stickers and were asked to place them next to their preferred examples of typical Complete Streets engineering treatments on a "What is a Complete Street" board. The stickers were used to show their support for one or more treatments they would like to see along Halcyon Road. Overall, the most preferred were high visibility crosswalks (12 dots) and on-street separated bikeways (11 dots).

What is a Complete Street?
A complete street improves safety, mobility, and accessibility along a street for everyone. Below are examples of typical Complete Streets 'tools' in a designer's toolbox.

Halcyon Road

Number of Votes in Meetings: 12

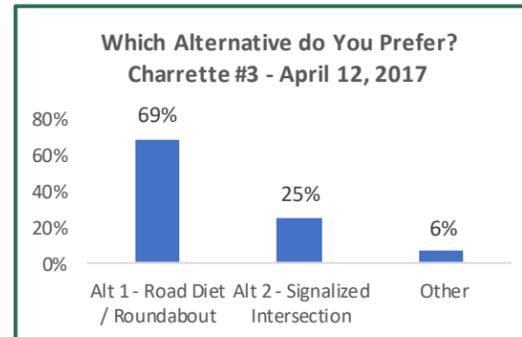
www.HalcyonCompleteStreets.com

The storyboard used to show the preferred treatments

Charrettes 3 & 4 (April 12 and 13, 2017)

Once proposed changes and alternative designs were developed, two additional community charrettes at Harloe Elementary School were hosted in the spring of 2017. Twenty three people signed in on the September 12th charrette and twenty two people signed in on the 13th. The interactive voting system showed that roughly half of the participants had attended the previous meetings.

Overall, there was support for many of the proposed changes, with roughly 50-60% supporting the changes and another 10-20% remaining neutral. There was near unanimous support for safety improvements to The Pike - and a clear desire for these improvements to move forward quickly regardless of the rest of the project. There was also frustration regarding the confusion caused by the transition from two southbound lanes to one lane south of Fair Oaks Avenue. Many participants expressed support for removing parking between El Camino Real and East Grand Avenue for continuity. When asked if individuals supported a roundabout or a traffic signal at Fair Oaks Avenue, 11 of the 16 respondents supported the roundabout.



Strong support for Roundabouts



Residents providing feedback at one of the pop-up events



Residents provided comments with sticky notes on the large aerial of the proposed improvements

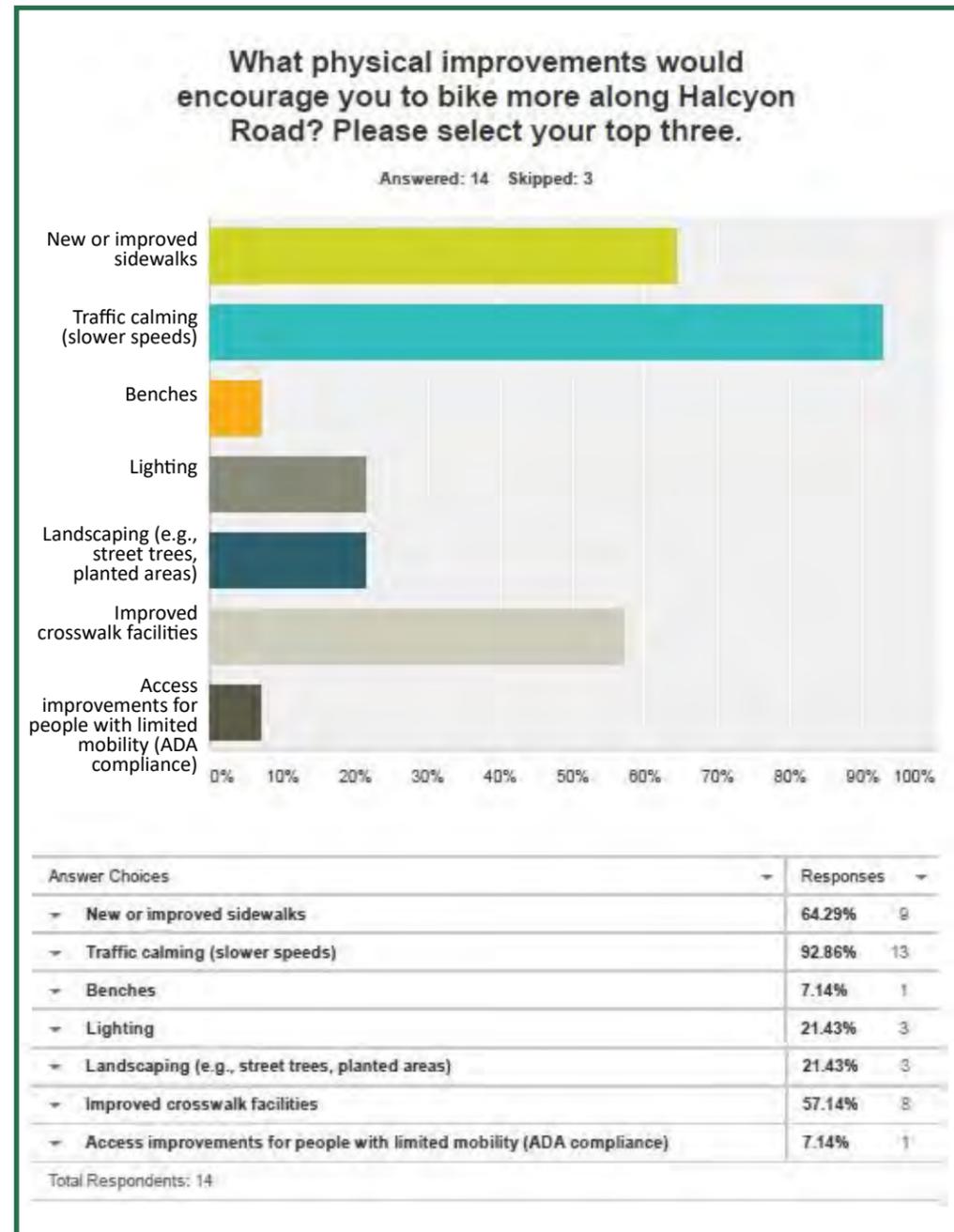


Social Media and Online Engagement

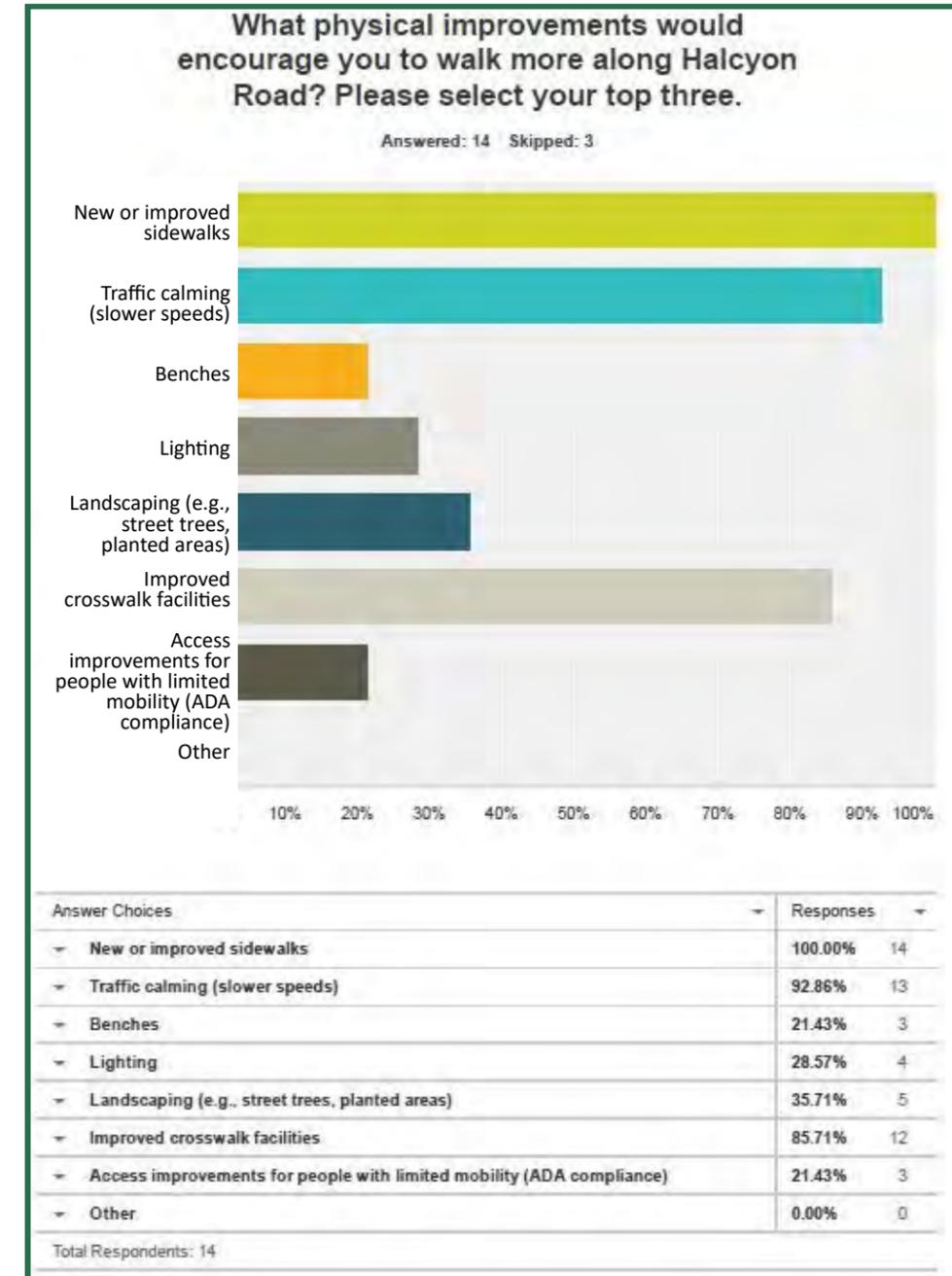
A project specific website was created for posting project information and allowing the public to provide further input in addition to the pop-up outreach and community charrettes. The website provided information on the project and Complete Streets in general, proposed plans for the Context Zones and simulation videos, past public workshop presentations, related links to local and regional planning and policy documents, community meeting information and flyers, and links to the online survey and interactive map.

Online Survey

A five-page, 59-question online survey was posted in both English and Spanish in order to better understand the key issues that are discouraging people from walking and bicycling, and improvements that would encourage greater use of existing or new multimodal facilities. Seventeen people completed the survey, and of those, 15 live less than one mile from Halcyon Road. Overall respondents felt it is important or very important to improve bicycling/walking conditions along Halcyon Road and were in favor or building more sidewalk and traffic calming/crosswalk measures.



Online Survey Results for Bicycle Improvements



Online Survey Results for Walking Improvements



Online Interactive Map

An interactive map was also provided to post comments at specific locations as another method utilized for public outreach and to view others' comments. The map appeared to have attracted a more technical crowd, who provided detailed design recommendations. Of the few comments posted on the website's interactive map, users' comments called for:

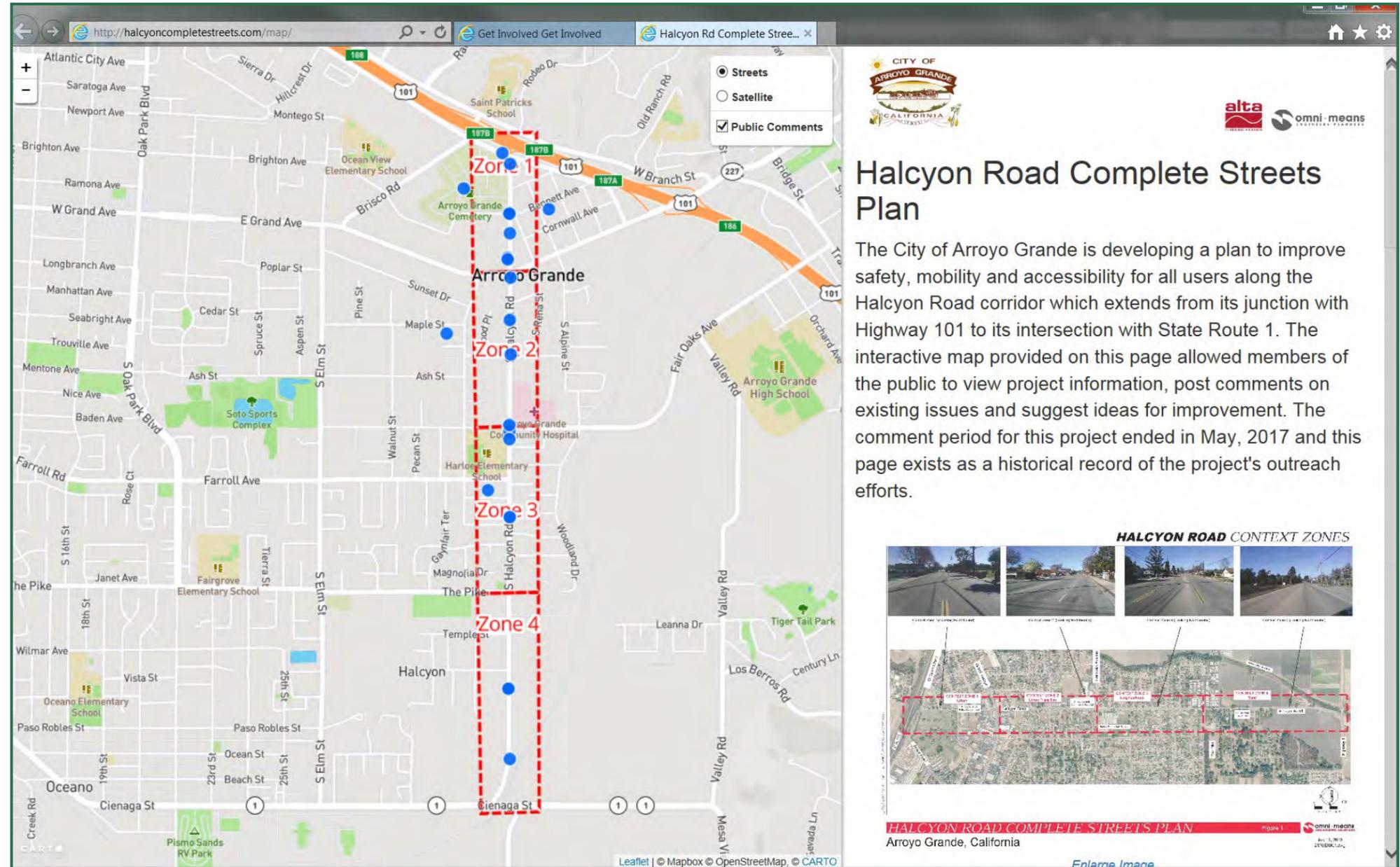
- ◆ Removing on-street parking in Context Zones 1, 2 and 3,
- ◆ Improving intersection efficiency at Halcyon Road/ East Grand Avenue,
- ◆ Improving intersection efficiency at Halcyon Road/ Fair Oaks Avenue,
- ◆ Providing bike lanes,
- ◆ Providing a two-way center left-turn lane,
- ◆ Concern for congestion and safety with the proposed roundabout at Halcyon Road and Fair Oaks Avenue.

Social Media

The Alta Planning & Design team collaborated with City staff to develop an effective social media campaign to reach a broad audience. Alta Planning & Design created Facebook and Twitter accounts (English and Spanish language posts) to educate, promote, and document the project's process for stakeholders and community members.

E-Mail Updates

Alta Planning & Design maintained a mailing list of people interested in the project via sign-up forms at meetings and events. E-mails were also provided in English and Spanish languages and sent to promote upcoming opportunities for community engagement including public workshops.



The City has provided an Online Interactive Map for the project



2023 Outreach: Stakeholder & Neighborhood Group Meetings

The City held a public meeting to present the Draft Plan on Wednesday, April 26th and a Stakeholder meeting on Thursday, April 27th at Harloe Elementary School. A history of the project and Draft Plan was presented including highlighting key components of the Plan such as enhanced pedestrian crossings, buffered bike lanes, protected bike lanes, and the two alternatives at the Fair Oaks Avenue intersection.

A presentation was given at the community meeting that also provided educational information on roundabouts including how to navigate roundabouts, safety aspects, mobility, and value as compared to traffic signals. Additionally, video simulations of both the traffic signal option and roundabout option at the Fair Oaks Avenue intersection were shown, including showing the vehicular operations and queueing, and how vehicles interact with pedestrians and schoolchildren. There were 32 people in attendance from the community, including representatives from the school district and the hospital.

During the presentation, questions and comments were addressed regarding the options and components presented in the Plan.

Attendees expressed concern for signage location and visibility, cut-



thru traffic on Todd Lane and in the adjacent Woodland neighborhood, and younger drivers (high school students) being able to navigate the roundabout. Additionally, there was discussion of the desire for an overhead flashing beacon for the pedestrian crossings south of Fair Oaks Avenue, and concern for crossing guard safety with the signal alternative.

After the presentation, attendees were instructed to place colored “dots” on the boards presenting the alternatives and Plan components where green colored dots represented opinions of approval, yellow colored dots represented some question of unsure, and red colored dots represented opinions of concern. Each attendee were given three dots of each color, nine total.

The results of the “dot” exercise is shown in the image above. As shown, the majority of attendees were in favor or leaving Farroll Avenue access unrestricted and providing a crossing on the south side. Attendees were more in favor of the proposed roundabout (16 green, 8 red, 1 yellow) than the traffic signal at Fair Oaks Avenue. Concerns regarding the traffic signals at both E. Grand Avenue and Fair Oaks Avenue were centered around pedestrian and bicycle improvements and safety including the long crosswalks and the desire for bike lanes on E. Grand Avenue.

The stakeholder meeting included representatives from the City of Arroyo Grande, Bike SLO County, Lucia Mar Unified School District, and a resident from the Woodland neighborhood. There was a strong desire to implement protected intersection designs, with either roundabout or traffic signals. There were concerns for bicyclists with the roundabout option, as cyclists would need to choose to ride with traffic or take the shared pathway and walk their bike alongside pedestrians, especially since there will be a mix of ages (high school vs. elementary school students, etc.) travelling through the Fair Oaks intersection. There was a comment regarding speed reduction and that the ultimate design should have narrower, 11-foot travel lanes. There was a desire to add another marked crosswalk at the intersection of Bennett Avenue. Additionally mentioned was the possibility to have raised crosswalks, specifically at the intersection with Farroll Avenue to increase visibility.

There was a consensus with the roundabout option at Fair Oaks Avenue/Halcyon Road being the preferred option.

Why Roundabouts?

Roundabouts provide many benefits to pedestrians and drivers

SAFETY
The US Department of Transportation Federal Highway Administration reported that **roundabouts reduce fatal and injury crashes by 78%** compared to signalized intersections.

Roundabouts create safety near schools because traffic is moving more slowly through the intersection. They create fewer, less severe conflict points and reduce number of crashes.

PEDESTRIAN MOBILITY
Increase mobility and comfort for pedestrians crossing the street. They provide more crossing opportunities and pedestrian refuge between directions of traffic.

VALUE
Longer service life, are less expensive, and can be constructed more quickly than traffic signals.

BETTER PERFORMANCE
Continuous movement for decreased delays and queues which reduce greenhouse gas emissions.

LANDSCAPING
Provide opportunities for low-maintenance landscaping and beautification.

East Grand Avenue Intersection

Farroll Avenue Improvement Options

CONTEXT ZONE 1: EL CAMINO REAL TO GRAND AVENUE CONTEXT ZONE 2: GRAND AVENUE TO FAIR OAKS AVENUE CONTEXT ZONE 3: FAIR OAKS AVENUE TO THE PIKE

Halcyon Bikeway : Dodson to Fair Oaks

Halcyon Road and Fair Oaks Avenue Intersection



4. COMPLETE STREETS ELEMENTS

A Complete Street is planned, designed, operated, and maintained to provide safe mobility for all users, including bicyclists, pedestrians, transit vehicles, truckers, and motorists, appropriate to the street's function and context. Every Complete Street looks different, according to its context, community preferences, the types of road users, and their needs. These streetscape components can be used to unify the Halcyon Road corridor, as well as distinguish the different Context Zones.

The proposed improvements to Halcyon Road include some elements of Complete Streets, which were selected based on feedback from the public and stakeholders, and given the context and constraints of the project area. For many projects across the United States, transportation engineers prioritized the fast movement of motor vehicles over the safety of neighbors and users of the road. Complete streets work to create streets that continue to efficiently convey vehicular traffic, but are also welcoming and pleasant for everyone and, most importantly, safe for everyone.

Like any large-scale project, the proposed designs of Halcyon Road are made of a cumulative impact of smaller elements. These elements are founded on local and national guidelines and apply standard traffic engineering tools and designs. Key street features recommended in these guidelines are described below.

For more specific details about the tools, facilities and design elements referred within, refer to *Caltrans Complete Streets Resources and Complete Streets Elements Toolbox (Version 2.0)*, the *2012 AASHTO Guide for the Development of Bicycle Facilities*, the *2004 AASHTO Guide for the Planning, Design, and Operation of Pedestrian Facilities*, the *NACTO Urban Bikeway*

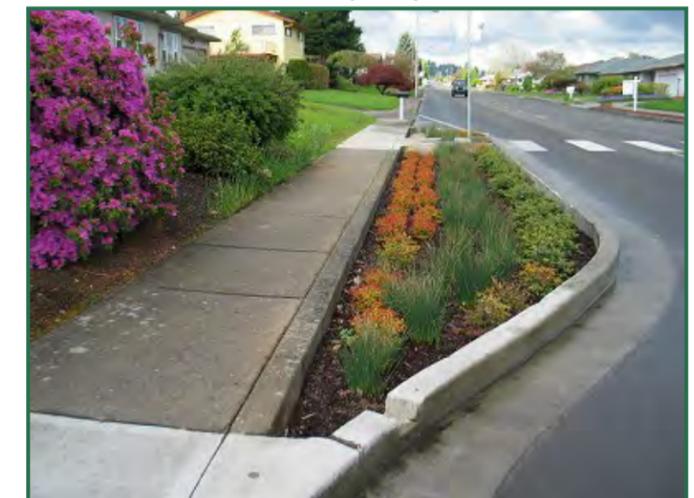
Design Guide, Second Edition, the *NACTO Urban Street Design Guide*, and the *NACTO Urban Street Stormwater Guide*.

Types of Complete Streets Elements

The following are types of street treatments and streetscape components that have become defining elements of Complete Streets.

Planted Medians, Landscaping, & Street Trees can reduce head-on and turning collisions and provide refuge for pedestrian crossings, all while beautifying the area (pictured on the left). Street trees and medians also work to visually narrow the roadway and calm traffic. Sidewalk plantings can provide shade and a pleasant street experience for people walking and create a buffer between pedestrians and vehicle traffic (pictured below). Landscaping elements can provide for stormwater management opportunities, including treatment and infiltration to reduce runoff and flooding. Drought tolerant plants can be used to help conserve water and reduce irrigation requirements.

Landscape Buffer



4. COMPLETE STREET ELEMENTS



Curb Extensions and Median Refuge Areas improve visibility for pedestrians crossing and reduce pedestrian crossing distances. Curb Extensions also reduce vehicle speeds by reducing turning radius, which increase the chance of survival for a pedestrian in the event of a collision.

Curb Extensions

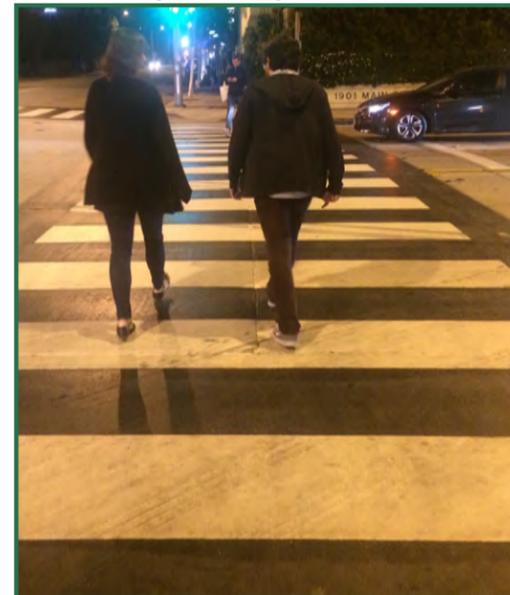


Pedestrian Median Refuge



High Visibility Crosswalks include additional paint, often in a zebra stripe pattern, that can enhance a motorist's awareness of a crosswalk. Near schools, crosswalks are painted yellow for additional visibility, and in accordance with the MUTCD. In-roadway lighting can further enhance crosswalk visibility.

High Visibility Crosswalk



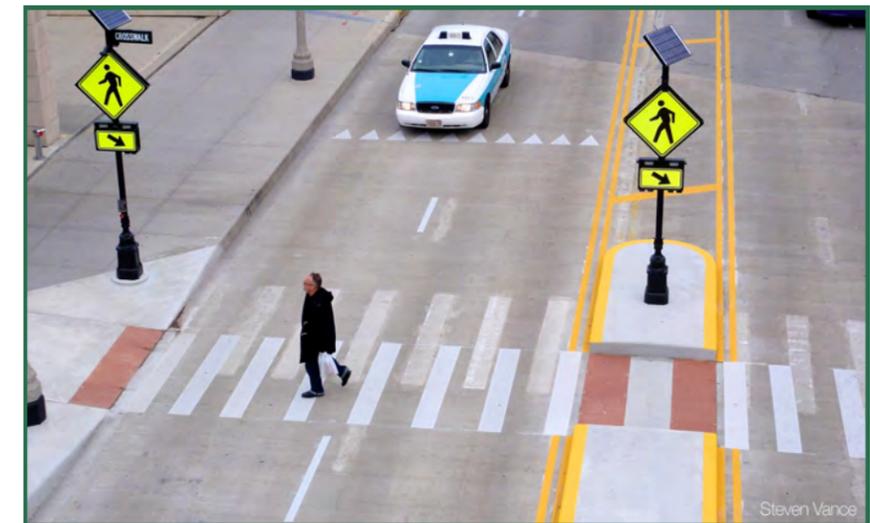
Leading Pedestrian Intervals (LPIS) give pedestrians the opportunity to enter the crosswalk at an intersection 3-7 seconds before vehicles are given a green indication. Pedestrians can better establish their presence in the crosswalk before vehicles have priority to turn right or left. LPIS increase the likelihood of motorists yielding to pedestrians, enhance safety by increasing visibility of crossing pedestrians, and reduce conflicts between pedestrians and vehicles.

Leading Pedestrian Interval (LPI)



Flashing Crossing Beacons like the Rectangular Rapid Flashing Beacon (RRFB) enhance the visibility of crosswalks marked by just paint. Flashing lights and additional signage alert motorists to the presence of crosswalks and pedestrian traffic. These are used for unsignalized or mid-block crossings. They can be activated by pedestrians manually by a push button or passively by a pedestrian detection system.

Flashing Crossing Beacons



Flashing School Zone Signs enhance the visibility of school zones by adding flashing beacons to the speed limit signs. Flashing lights alert motorists to the presence of the school zone and schoolchildren.

School Zone Speed Limit Sign with Flashing Beacons





4. COMPLETE STREETS ELEMENTS

Shared-Use/Multi-Use Paths (Class I Bikeway) provide exclusive right-of-way for bicyclists and pedestrians outside of the roadway, and with cross flows by motor traffic minimized. Class I facilities provide for both recreational and commuting opportunities. In this Plan, a 10-foot wide Class I facility is proposed at the roundabout at Halcyon Road at Fair Oaks Avenue and connects to the adjacent on-street facilities.

Shared-Use Path



On-Street Separated or Protected Bikeways (Class IV) provide full physical separation between bicyclists and motor vehicles, but are part of the roadway network. Class IV bicycle facilities can also be two-way Cycle Tracks. On-Street Separated Bikeways, or Protected Bike Lanes, are increasingly common across California and provide additional protection and space via a raised median or curb, or a painted buffer with bollards, planters, signs or other physical protection or barrier.

Protected Bikeway



Bike Lanes (Class II) provide a designated space for bicyclists to ride, helping to define where each mode of traffic can travel easily. Bike lanes can be installed along a curb or between parked cars and traffic. Bike lanes may be distinguished using color, lane markings, signage, and intersection treatments. Bike lanes should be 5 feet wide, at a minimum with gutter (refer to *MUTCD Figure 9C-102(CA)* for further guidance).

Bike Lane



Buffered Bike Lanes are conventional bike lanes paired with a designed buffer space separating the bike lane from the vehicular lane and/or parking lane. The buffer area should be marked with diagonal or chevron hatching if 4 feet or wider. The buffer shall be a minimum of 18 inches (*MUTCD Figure 9C-104(CA)*).

Buffered Bike Lane



Shared Lane Markings (“Sharrows”) help remind motorists that bicyclists are allowed to use the full lane and remind bicyclists to avoid riding too close to parked cars for safety. The shared lane markings help bicyclists with lateral positioning in lanes that are too narrow for a motor vehicle and a bicycle to travel side by side within the same traffic lane. These markings are primarily recommended on low-speed streets. Due to Halcyon Road’s posted speed limits and heavy vehicle volumes, this feature is only included as an option to share the roadway when navigating the roundabout, and approaching E. Grand Avenue southbound where the roadway width is constrained.

Shared Lane Marking



Green Colored Pavement for Bikeways may be installed within bicycle lanes or the extension of the bicycle lane through an intersection or transition through a conflict area as a supplement to bike lane markings.

Green Colored Pavement for Bike Lane in Merge Area



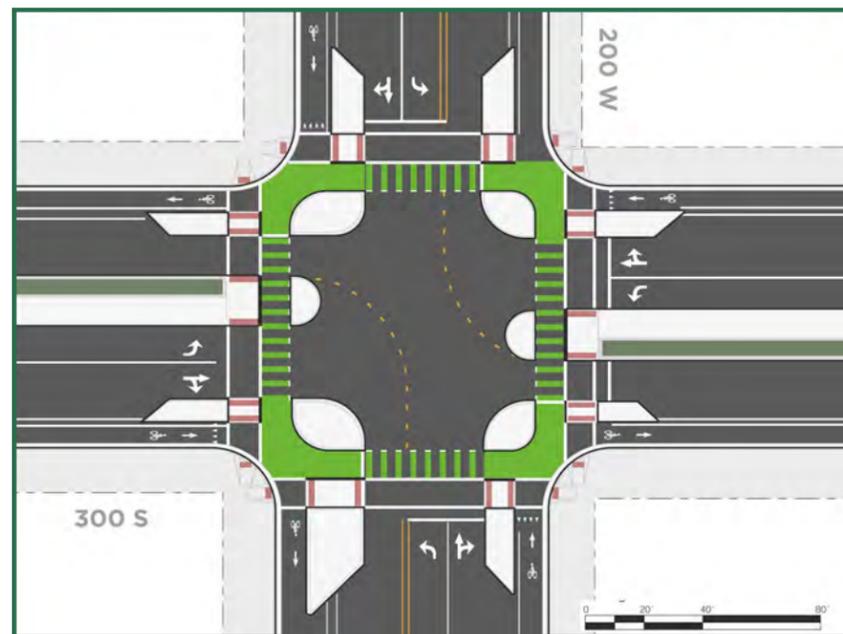
5. ALTERNATIVES ANALYSIS & RECOMMENDATIONS



The contrasting color makes the bike lane more conspicuous to all travelers, increasing awareness that bicyclists may be present. Green colored pavement is proposed in this Plan in the Bike Box, Bike Lanes approaching signalized intersections, and in conflict areas such as where traffic crosses the Bike Lane to enter a right turn lane, and across commercial driveways such as the Arroyo Grande Hospital. The pattern of the green colored pavement may be dotted/dashed in a manner that matches the pattern of the dotted lines per MUTCD.

Protected Intersections reduce turning conflicts between drivers and bicyclists by providing clear and protected paths for each user. These are relatively new to the United States and have been shown to reduce collisions. In conjunction with separated bikeways, the design provides corner islands that keep cyclists to the right and adjacent to the crosswalk, and also facilitates left turns. A similar, less intensive version can include Bike Boxes.

Protected Intersection



Bike Boxes designate an area for bicyclists to queue in front of automobiles, but behind the crosswalk at signalized intersections. Bike boxes provide cyclists a safe way to be visible to motorists by getting ahead of the queue during the red signal phase, and they reduce vehicle incursion into crosswalks. Bike Boxes also improve safety for conflicts with right-turning vehicles when the traffic signal turns green. Bike boxes can be utilized to facilitate left turn positioning and gives priority to cyclists.

Bike Box in City of San Luis Obispo



Road Diets reduce the number of vehicular lanes; the most typical type of road diet converts street with four-lanes to two-lanes with center turn lane and bike lanes. Separating the left-turning vehicles from through traffic can reduce the chance of both rear end and left turning collisions. The extra space can also be used for planted medians, pedestrian refuges, or curb extensions.

Road Diet



Roundabouts have been proven to reduce collisions, as well as the severity of collisions. Roundabouts also provide safer, two-stage crossings for pedestrians. Roundabouts have been proven to allow for a greater capacity of vehicle traffic, improving traffic flow without widening roadways. Trucks are also accommodated through the design and implementation of the truck apron. Speeding through the intersection is controlled throughout the design. Roundabouts improve safety overall.

Modern Roundabout



Bike Ramps at Roundabouts provide entry and exit between the Bike Lanes on the roadways and the Class I path off-street. The design of the bike ramps are not subject to ADA requirements, but are designed per the guidelines outlined in NCHRP Report 672: *Roundabouts an Informational Guide*.

Bike Ramp to Shared-Use Path



The Halcyon Road Complete Streets Plan proposes to utilize many of these standard elements of Complete Streets to create a street that will help to improve the safety, convenience, and beauty of Arroyo Grande, while maintaining the character and nature of the public realm. While it may be possible to implement some of these elements in an ad hoc manner, the cumulative improvements of the entire proposal will have the largest impact on the area and stakeholders.



Roundabout Concept at Halcyon Road and Fair Oaks Avenue

5. ALTERNATIVES ANALYSIS & PLAN RECOMMENDATIONS

This section discusses the proposed multimodal Plan for each Context Zone, addressing the circulation needs for pedestrians, bicycles, transit users, and automobiles. While not every street can be designed to serve all users equally, there are opportunities to enhance service for all users while maintaining its principal transportation function. The Complete Street Plan for Halcyon Road incorporates community values and retains the distinctive transitions between the adjacent land uses while ensuring safety and mobility for all users.

Throughout the Halcyon Road corridor, pedestrian and bicycle facility conditions are inadequate at several locations with lack of connectivity between residential, retail, recreational, school, and employment areas, as well as access to transit services. Implementation of various Complete Streets improvements along Halcyon Road corridor were initially compared to find the best possible outcome for all modes of travel based on the project goals and current policies.

Overall, this Complete Street Plan includes buffered bike lanes where achievable, a road diet with a center turn lane south of East Grand Avenue, improved pedestrian crossings and signage, including some curb extensions, and installing sidewalks where there are gaps in connectivity. Design concepts, alignments, and improvements presented in this Plan should be considered conceptual in nature and may be adjusted during future processes to respond to additional site-specific information, community concerns, or environmental factors.

Multiple alternatives were evaluated for the intersection of Fair Oaks Avenue at Halcyon Road. Ultimately, two alternatives for the intersection of

Halcyon Road at Fair Oaks Avenue were identified, as well as an option for implementation of a Class IV protected bikeway between East Grand Avenue and Fair Oaks Avenue (Context Zone 2), which are the only variations between the alternatives of the entire corridor. The alternatives analyzed have the same vehicular lane geometrics at all intersections, except at the intersection of Fair Oaks Avenue and Halcyon Road. The operational analysis of the two alternatives for the Fair Oaks Avenue intersection improvements are detailed in this Chapter.

Halcyon Road at Fair Oaks Avenue

- ♦ **Alternative 1: Traffic Signal with Road Diet**
- ♦ **Alternative 2: Single-lane Compact Roundabout**

Alternative 1 proposes improving the traffic signal at Fair Oaks Avenue with enhanced bicycle facilities, improved signal timings, and to limit the impact on existing rights-of-way via continuation of the proposed road diet and single through lanes. **Alternative 1** is shown in **Figure 13**. **Alternative 2** proposes installing a single-lane compact roundabout at Fair Oaks Avenue/Halcyon Road, presented in **Figure 14**.

This Chapter first presents and describes in detail the proposed multimodal improvements for each Context Zone, outside of the two selected alternatives for the Fair Oaks Avenue intersection. Then, a comparative analysis of the two alternatives is presented. The Plan also supports sustainable growth and livability, while preserving the community values.



Figure 7 - Recommended Context Zone 1: Sections 1—3 Plan

Context Zone 1: Urban (El Camino Real to East Grand Avenue)

Context Zone 1 is predominantly developed with urban uses oriented toward El Camino Real and East Grand Avenue; two arterial streets which provide critical access to important commercial and retail areas of the City, including downtown. The proposed typical roadway cross-sections for this segment generally include one travel lane in each direction and Class II Buffered Bike Lanes. On-street parking (1-hour) will only be available in front of the Arroyo Grande Police Department.

Bicycle Facilities

Class II Buffered Bike Lanes are proposed for both sides of North Halcyon Road throughout the majority of Context Zone 1, apart from areas near the El Camino Real and East Grand Avenue intersections, where space is limited. At the intersection of North Halcyon Road and El Camino Real, the northbound approach will utilize a Bike Box to better accommodate left turning bicycle traffic and provide safe and adequate visibility of cyclists to motorists. The Bike Box will provide priority to cyclists and connectivity to the Class III Bike Route on El Camino Real. Green pavement treatment will also be provided for the conflict zone of left-turning bicycle traffic and motorists making a right at El Camino Real, (i.e., the transition where there is a dedicated right-turn lane). This color treatment will make bicyclists more visible and provide a clearly defined route for bicycles to access the Bike Box. Just north of the intersection of N. Halcyon Road and East Grand Avenue, the southbound approach lane configurations are proposed to be modified with a left turn pocket and a shared through and right turn lane in order to accommodate the Bike Lane. This improved configuration also addresses the existing issue with the lane alignments through the intersection and includes traffic signal timing improvements.

Pedestrian Facilities

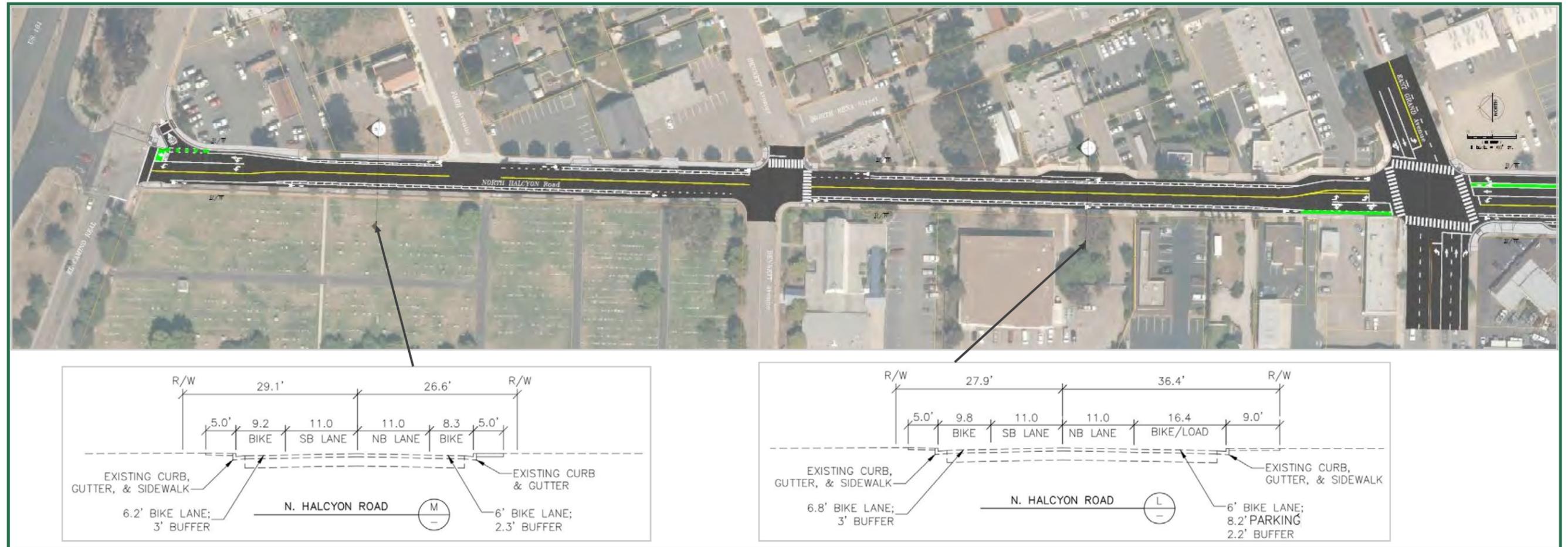
Existing sidewalk gaps will be filled to provide complete sidewalk infrastructure on the east side of Halcyon Road. New marked crossings and curb ramps are also proposed at Bennett Avenue and Halcyon Road.

Figure 7 presents closer views of each section of the context zone. Figure 8 on the following page presents the proposed multimodal improvements for the entire Context Zone 1 and the proposed cross-sections.





Figure 8 - Context Zone 1: Recommended Complete Streets Plan & Cross-Sections





Context Zone 2: Urban Transition (East Grand Avenue to Fair Oaks Avenue)

Context Zone 2 is a mix of multi-family, single-family, medical professional buildings, and the Arroyo Grande Community Hospital. There are generally three proposed typical roadway cross-sections for this segment:

- ◆ A three-lane section with two travel lanes, a center turn lane, and buffered Class II Bike Lanes with on-street parking southbound between Grand Avenue and Dodson Way. In this section, the southbound bike lane has a buffer area on both sides between the parking for the door zone, and between the travel lane.
- ◆ A brief section south of Dodson Way has a three-lane segment with a Bike Lane northbound, and a Class IV parking-protected Bike Lane southbound. Four on-street parking spaces are provided southbound in front of the Arroyo Grande Optometry building at Dodson Way.
- ◆ The third typical cross-section is between Dodson Way and Fair Oaks Boulevard. This is also a three-lane segment with two travel lanes, a center turn lane, and Class II Buffered Bike Lanes northbound and southbound where achievable.

Figures 9A, 9B, and 9C present closer views of each section of the context zone.

Figure 9 on the following page presents the proposed multimodal improvements for Context Zone 2 and the proposed cross-sections.

Bicycle Facilities

Class II Buffered Bike Lanes are proposed for the majority of both sides of Halcyon Road from Grand Avenue to Fair Oaks Avenue, with two small portions of protected bike lane. Where a buffered bike lane is not achievable, a striped Bike Lane is proposed without the striped buffer. A Class IV Separated Bikeway is provided from Dodson Way to approximately 130' feet south, in between the sidewalk and the parking zone, via a separated landscaped median. The transition to this area through the intersection at Dodson Way is depicted in Figure 9B. Additionally, a Class IV Separated Bikeway is provided northbound, with a separated landscaped median, from the main hospital driveway to approximately 120' north to avoid any conflicts with bicyclists and right-turning vehicular traffic and provide a safe area for bicyclists between the two driveways. At the intersection of Halcyon Road/Grand Avenue, the conflict zone between northbound bicycle traffic and right turning motorists should be separated and treated with green pavement markings. Green pavement markings should also be placed in the Bike Lane at all conflict zones and driveways.

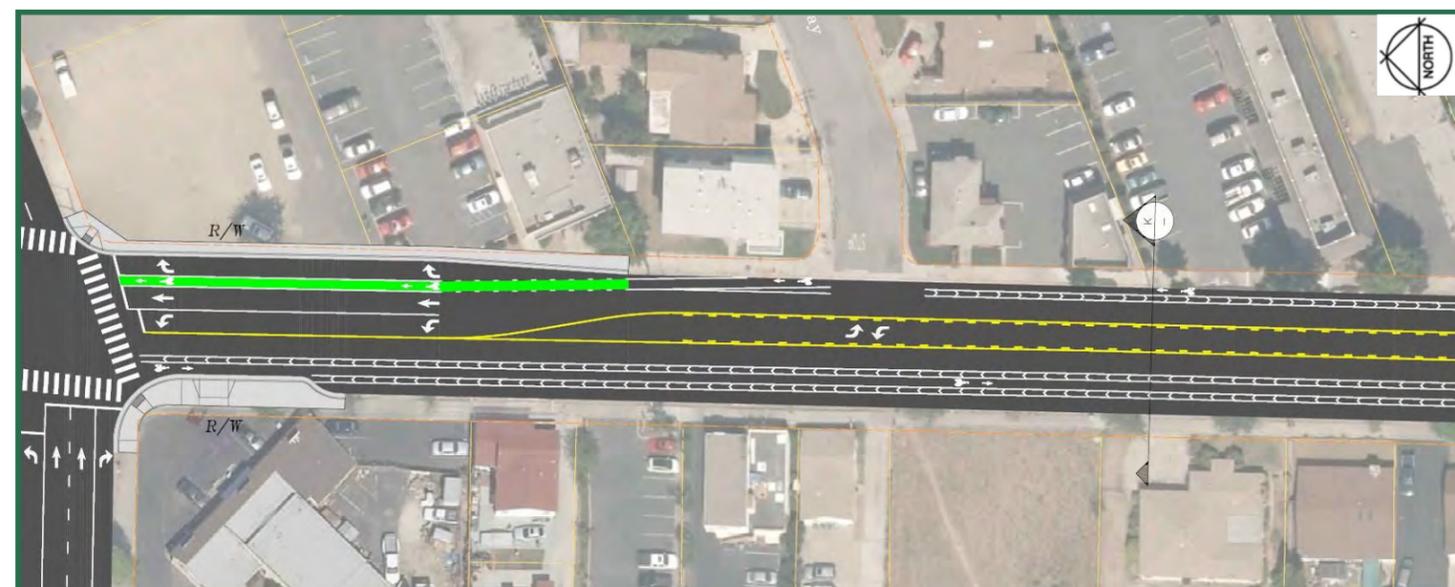


Buffered Bike Lanes and Curb Extensions at Halcyon Road and Dodson Way

Pedestrian Facilities

The existing marked pedestrian crossing located at Halcyon Road/Dodson Way will remain, but with the addition of a marked crossing on the north side of the intersection. Curb extensions are proposed at all corners of the Dodson Way intersection. The curb extension in the southwest corner of Dodson Way will accommodate pedestrian access and initiate the Class IV Separated Bikeway.

Figure 9A - Recommended Context Zone 2: Section 1 Plan





5. ALTERNATIVES ANALYSIS & RECOMMENDATIONS

Figure 9 - Context Zone 2: Recommended Complete Streets Plan & Cross-Sections

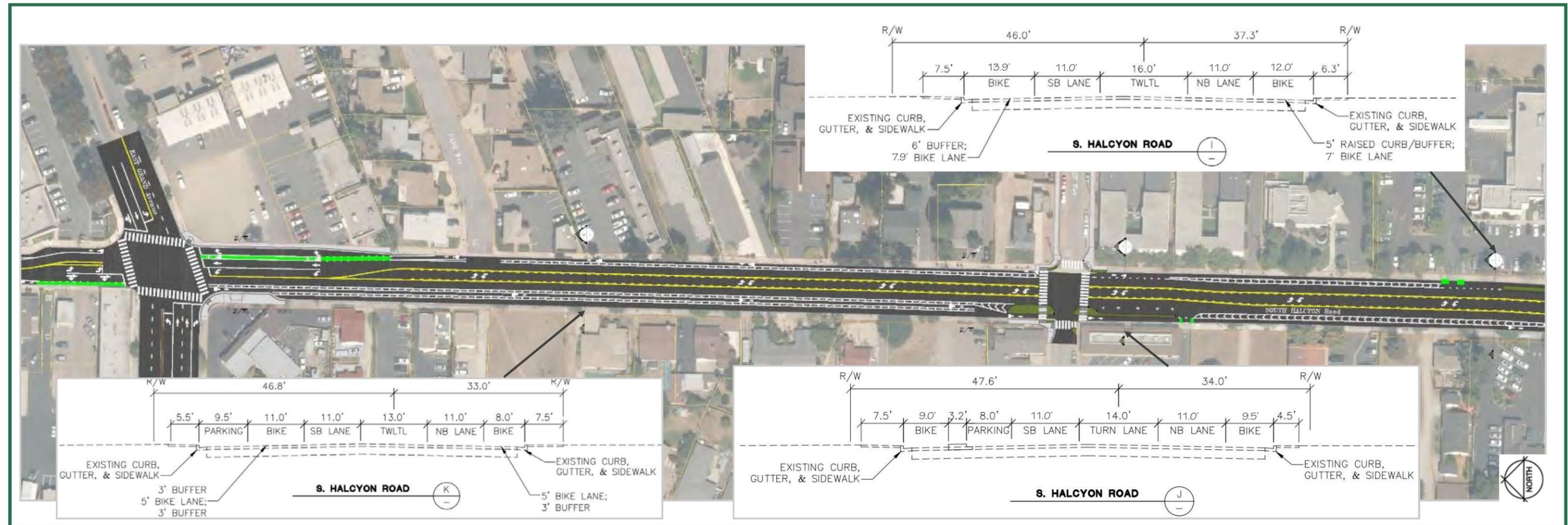


Figure 9B - Recommended Context Zone 2: Section 2 Plan



Figure 9C - Recommended Context Zone 2: Section 3 Plan





Context Zone 3: Neighborhood (Fair Oaks Avenue to The Pike)

Context Zone 3 serves primarily single-family residential areas and provides access to Harloe Elementary School. The proposed typical cross-section for this segment is generally three lanes, with two travel lanes, a center turn lane, and Class II Buffered Bike lanes where achievable. On-street parking is proposed along Halcyon Road northbound between Cameron Court and 130' north of Sandalwood Avenue. Additionally, the Plan proposes to retain the right turn lane at Farroll and improve lane delineation. Figure 10A and 10B to the right present closer views of each section of the context zone. Figure 11 on the next page presents the proposed multimodal improvements for the entirety of Context Zone 3 and the proposed cross-sections.

Bicycle Facilities

Class IV Protected Bike Lanes are proposed southbound, between Olive Street and Farroll Avenue. Class II Buffered Bike Lanes are proposed for both sides of Halcyon Road south Fair Oaks to Olive Street, and south of Sandalwood Avenue to The Pike. Northbound, a Class IV Protected Bikeway, is proposed from Farroll Avenue to the first driveway downstream, approximately 130 feet. For the intersections of Halcyon Road/Farroll Avenue and Halcyon Road/The Pike, the conflict zones between southbound bicycle traffic and right turning motorists will be treated with green pavement markings, (i.e., the transition where there is a dedicated right-turn lane, and through the intersection). This color treatment will make bicyclists more visible and provide a clearly defined route.

Pedestrian Facilities

There are 3 uncontrolled pedestrian crossings identified in this section, at Farroll Avenue (new), Sandalwood Avenue, and Sycamore Avenue (new). These improved pedestrian crossings will have high visibility markings and a flashing beacon (RRFB) is proposed at the crossing at Sycamore Drive. A new marked crosswalk, RRFB, and curb-extensions have recently been installed for the crossing at Sandalwood Avenue, as it is currently the first uncontrolled crossing north of The Pike. The new crossing at Farroll Avenue will have a curb extension on the west side so that the crossing distance is shorter. The new pedestrian crossing at Farroll Avenue will provide additional access for schoolchildren and others to safely cross Halcyon Road. The proposed improvements to the crossing at Sycamore Drive will have a refuge island in the center lane so that pedestrians can cross one lane of traffic at a time. New curb ramps are also proposed at various corners where crossing or sidewalk

Figure 10A - Recommended Context Zone 3: Section 1 Plan

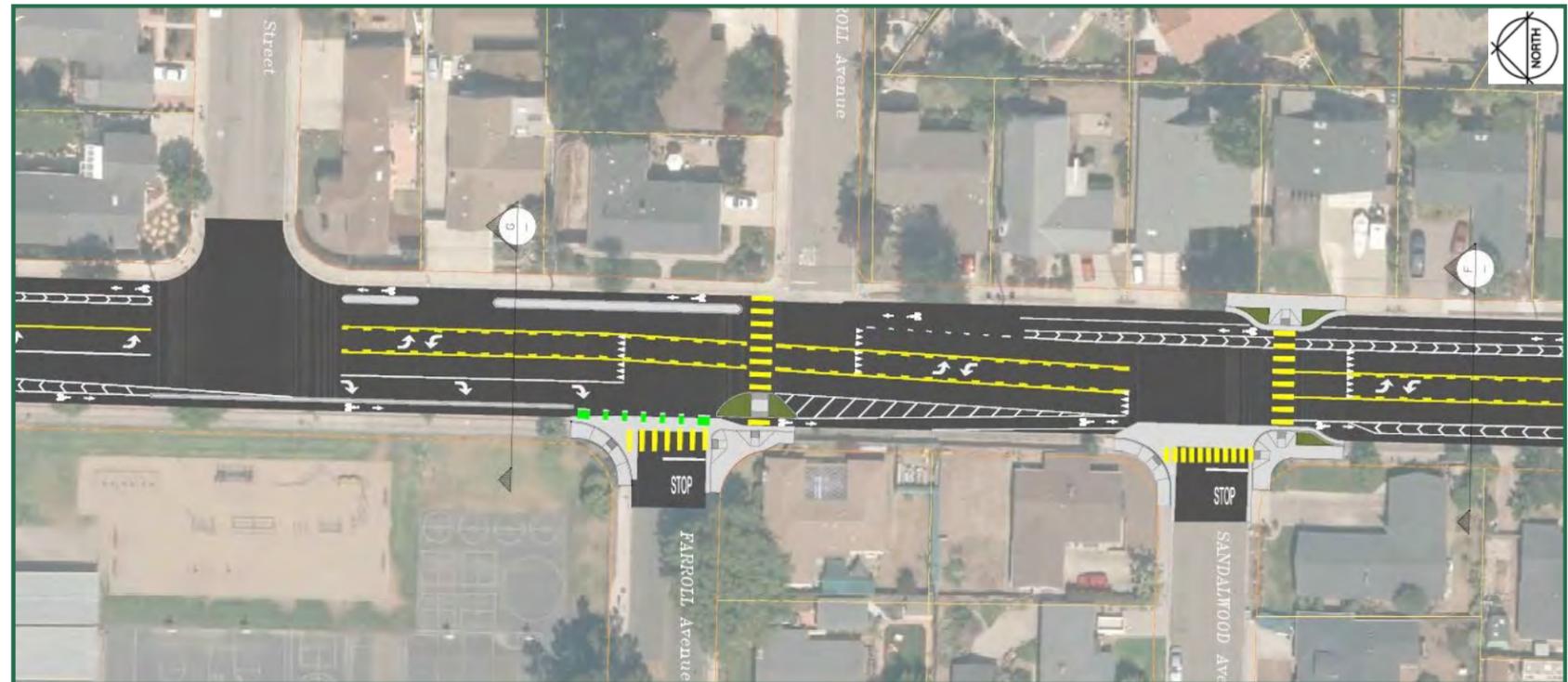
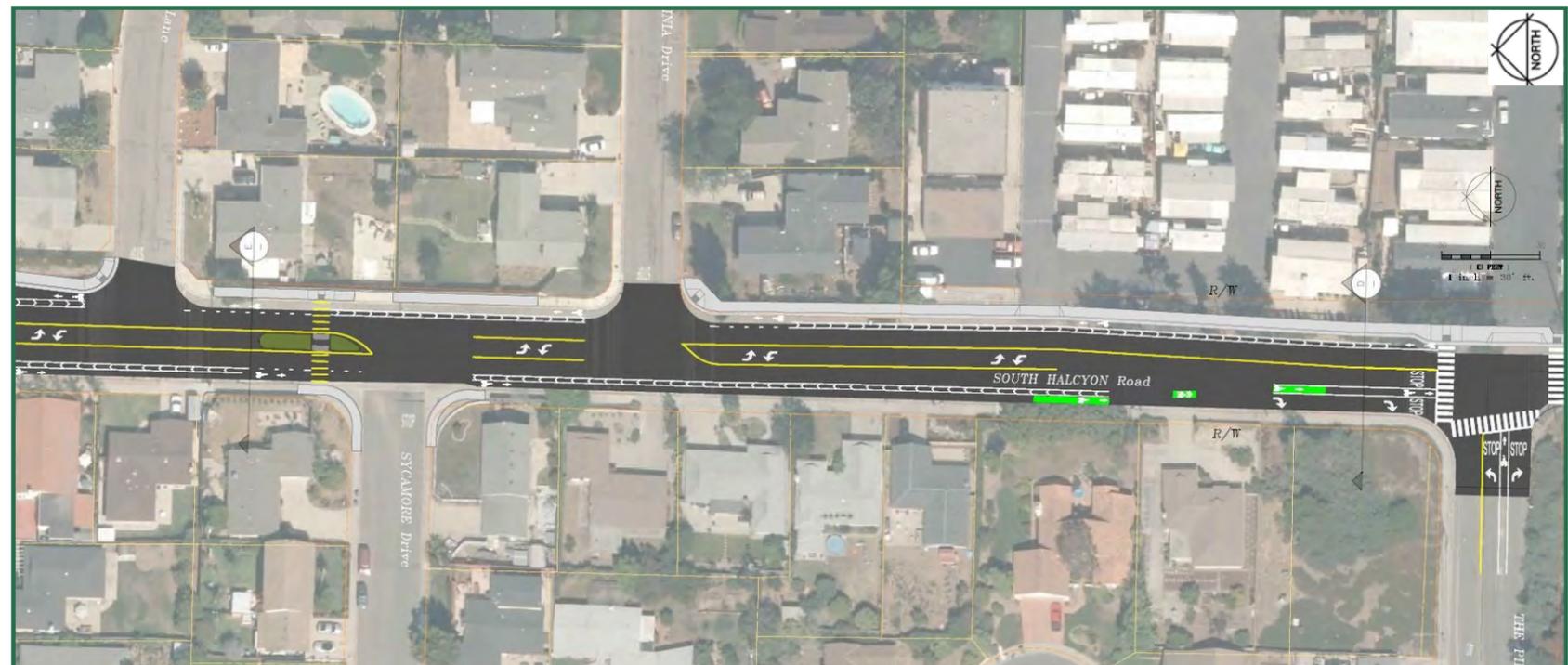


Figure 10B - Recommended Context Zone 3: Section 2 Plan

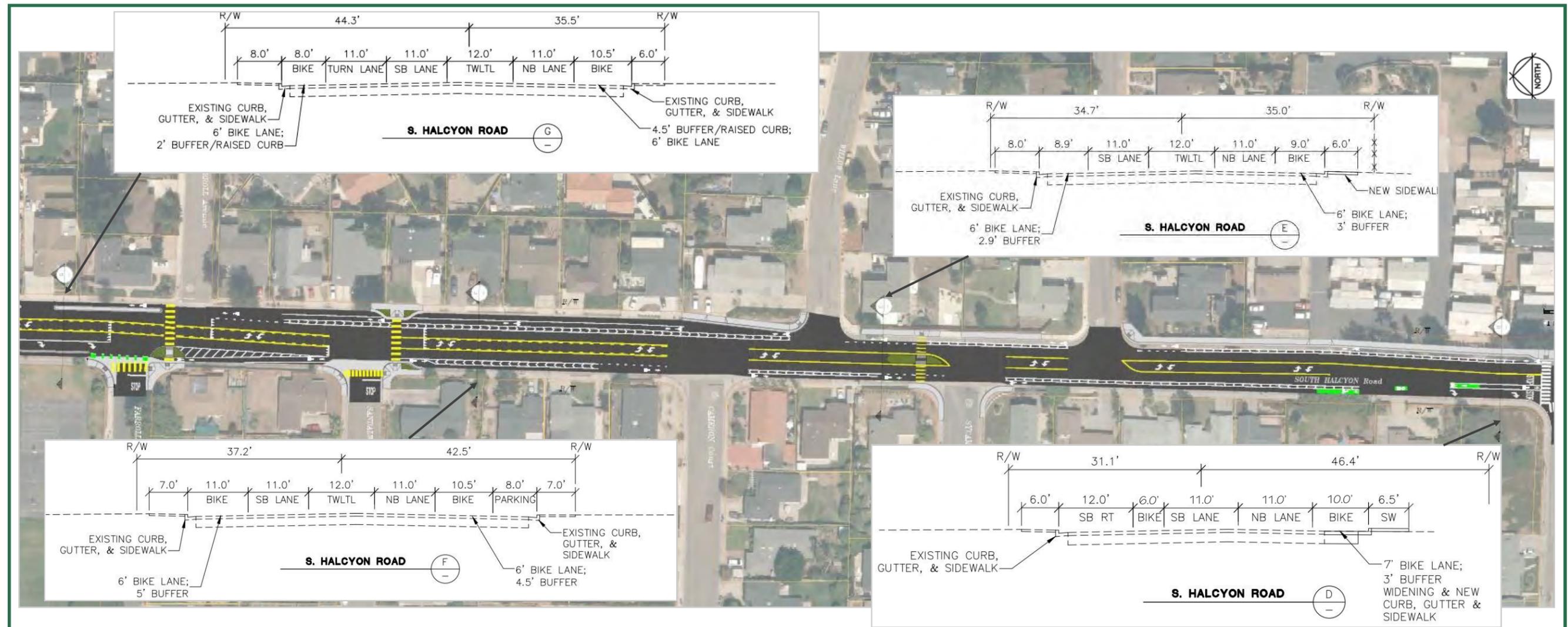




5. ALTERNATIVES ANALYSIS & RECOMMENDATIONS

improvements are proposed. Improvements to the intersection of Halcyon Road at The Pike include additional pedestrian crossings and curb ramps. A continuous 6-foot wide sidewalk is proposed on the east side of Halcyon Road from The Pike to Willow Lane, and a 7-foot wide sidewalk is proposed from Willow Lane to Cameron Court. For the sidewalk to be implemented just north of The Pike, a retaining wall will be required. As part of the 2022 Pedestrian Crossing Improvements several ADA ramps and sidewalk gap closures were constructed along the east side of Halcyon approximately 140' north of Willow Lane to Virginia Dr.

Figure 11 - Context Zone 3: Recommended Complete Streets Plan & Cross-Sections





Parking

As described for each Context Zone, a limited number of on-street parking will remain available, where feasible. Table 14 presents the number of standard on-street parking spaces available under the proposed plan for each direction of travel and each Context Zone, compared to the existing available spaces and the total amount of spaces being removed.

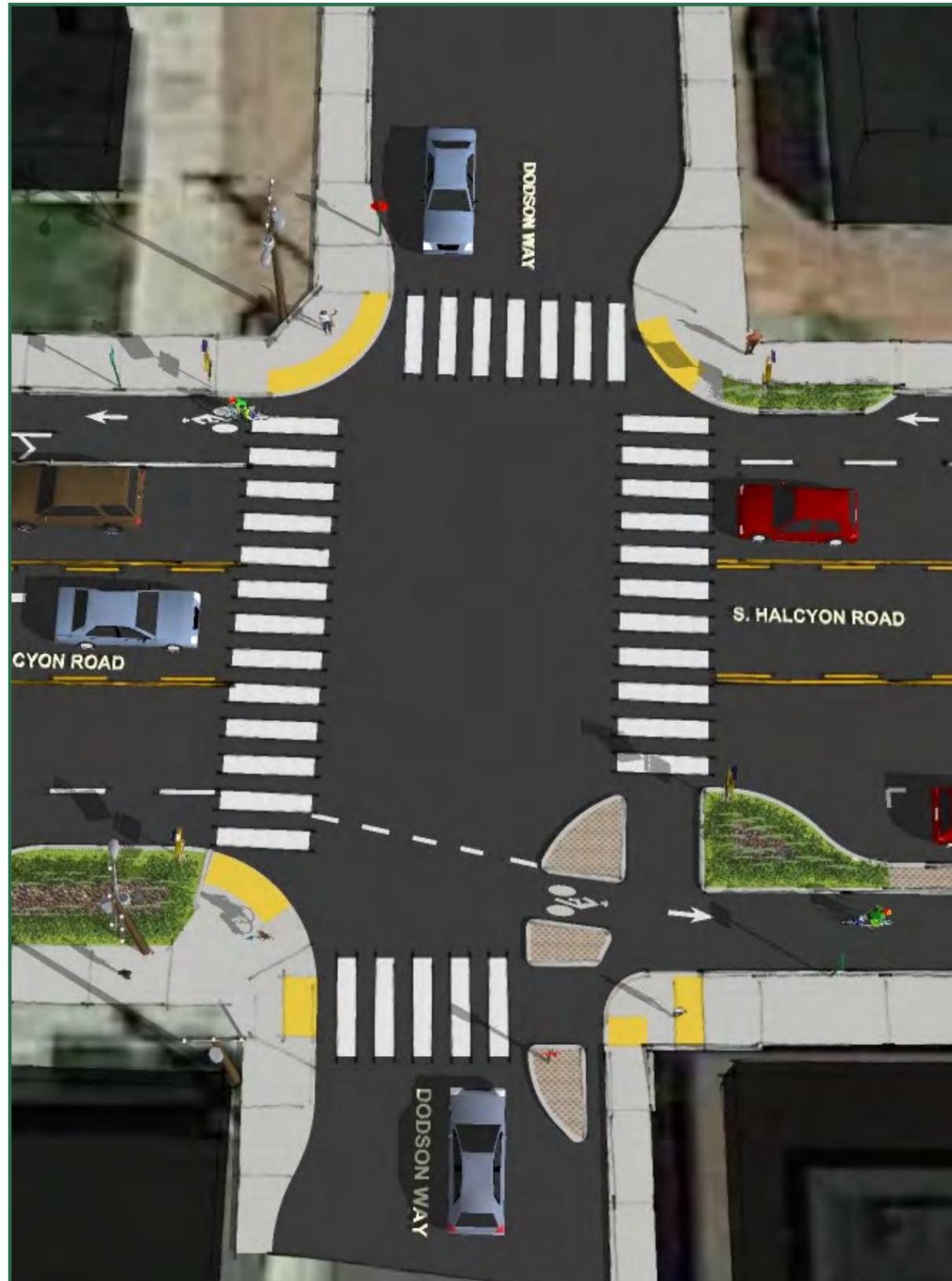
As shown in Table 2, currently there are an estimated 161 available parking spaces, with the majority in Context Zone 1. The plan proposes to keep the one-hour parking zone in front of the police station in Context Zone 1. The Plan also proposes to keep 21 spaces on Halcyon Road southbound between Park Way and Dodson Way, and another four spaces south of Dodson Way in Context Zone 2 for the local adjacent businesses. The Plan proposes to provide 11 parking spaces northbound and 1 space southbound between Farroll Avenue and Willow Lane south of the school in Context Zone 3. Currently, there are no on-street parking spaces designated in Context Zone 4 and the plan does not propose any new spaces for this segment. Overall, 39 on-street parking spaces (24%) are proposed to be retained, with the majority located in Context Zone 2. This could potentially present impacts to the adjacent residential streets, and a parking utilization survey should be conducted by the City for each Context Zone along the Halcyon Road corridor to further determine any impact. On-street parking utilization throughout the day and at peak times can be analyzed to determine when and where on-street parking is being used and the relationship to the adjacent land uses.

Table 2: On-Street Parking

Segment		Existing		Proposed Road Diet		Spaces Lost	
		SB	NB	SB	NB	SB	NB
Start	End	Spaces	Spaces	Spaces	Spaces	Spaces	Spaces
El Camino Real	Faeh	9	5	0	0	9	5
Faeh	Bennett	10	9	0	0	10	9
Bennett	Grand Avenue	16	13	0	2	16	11
Subtotal Context Zone 1		35	27	0	2	35	25
Grand Avenue	Park	6	2	0	0	6	2
Park	Dodson	21	14	21	0	0	14
Dodson	Fair Oaks	8	0	4	0	4	0
Subtotal Context Zone 2		35	16	25	0	10	16
Fair Oaks	Farroll	0	7	0	0	0	7
Farroll	Sandalwood	5	4	1	4	4	0
Sandalwood	Willow	10	7	0	7	10	0
Willow	Virginia	6	0	0	0	6	0
Virginia	The Pike	7	2	0	0	7	2
Subtotal Context Zone 3		28	20	1	11	27	9
Total		98	63	26	13	72	50
Grand Total		161	Existing	39	Retained	122	Lost

Notes: EB = Eastbound, WB = Westbound, NB = Northbound, SB = Southbound





Buffered Bike Lanes and Curb Extensions at Halcyon Road and Dodson Way (Both Alternatives)

Future Traffic Operations Analysis & Alternatives Comparison

With future development in Arroyo Grande, the surrounding Five-Cities area, and regional growth on SR 1 and US 101, traffic volumes are projected to increase on Halcyon Road. For planning purposes, traffic forecasts and operations were evaluated approximately 20 years out. The traffic is a mix of local, regional, and interregional users throughout the Halcyon Road corridor.

Forecast Year 2040 Traffic Volume Projections

Caltrans and other agencies typically require 20 years or more of design life span for improvements to their transportation facilities. Recognizing these concerns, Year 2040 was determined to be the cumulative or long-term future conditions. Year 2040 is also consistent with the SLOCOG Regional Transportation Plan (RTP), the Arroyo Grande General Plan Circulation Element, and the County's General Plan. The SLOCOG regional travel demand model was utilized in developing the Year 2040 forecast traffic volumes for this analysis, given that the study area serves regional traffic in addition to local traffic. The model was modified to consider any planned or approved developments within the City that were not already considered in the model.

Projected ADT volumes on Halcyon Road under Year 2040 conditions are estimated at 10,000 - 16,000 vehicles per day along the corridor. The proposed Road Diet along Halcyon Road is projected to operate at LOS C/D, which is under the City's LOS threshold and within the capacity of the roadway as a two-lane arterial with a center turn lane (south of East Grand Avenue).

As new roadway connections are planned and constructed in the southeastern area of the City, traffic patterns on Halcyon Road may shift. Under existing lane geometrics and control, some of the study intersections

are projected to operate acceptably; however, Halcyon Road at Fair Oaks Avenue is projected to worsen to LOS E during the AM peak hour, and Farroll Avenue is projected to worsen to LOS F conditions during both AM and PM peak hours.

Fair Oaks Avenue Intersection Alternatives

This Plan presents conceptual alternatives that would need to be further refined for ultimate design of a preferred concept. The preliminary concepts in this Plan and alternatives analysis are based on the long-term traffic projections. Another alternative to improve the signalized intersection with added lanes to accommodate future traffic operations was considered but ultimately deemed infeasible due to the impacts to adjacent properties. Additionally, a modern roundabout with a larger central island and larger inscribed circle diameter was considered, however the modern roundabout footprint would encroach into the property in the southeast corner. Therefore, a smaller, compact roundabout concept with a mountable center island was developed as the proposed Alternative 2.

Alternative 1: Traffic Signal Upgrade with Road Diet

Alternative 1 maximizes the lane usage of the intersection with the proposed road diet while providing enhanced bicycle and pedestrian facilities and minimizing impacts to existing rights-of-way. The proposed improvements to the intersection include installing green-colored Class II Bike Lanes on all approaches and delineating the bike lane through the intersection with green paint markings. Where right turn lanes are proposed, the Bike Lane would be located to the left of the right turn lane. This type of improvement reduces the risk of collisions between right-turning vehicles and bicyclists.

All approaches propose Bike Boxes behind the crosswalks, in front of where vehicles would stop, which



provide cyclists a safe way to be visible to motorists by getting ahead of the queue during the red signal phase. Additionally, two-stage left-turn boxes for bicycles are proposed on all approaches to facilitate left turns for bicyclists when they have the green indication.

Both types of bicycle boxes provide a designated space for turning cyclists. Cyclists would use either the bike box (when the light is red) or the two-stage bicycle turn box (when the light is green) to safely turn left and reduce conflicts with vehicles.

In addition, this alternative proposes to improve the signal timings to improve vehicle throughput and efficiency to reduce traffic delays. The signal timings will be upgraded to have a Leading Pedestrian Interval (LPI), which allows pedestrians to enter the crosswalk before vehicles have the green indication. Upgrading the traffic signal will require new signal poles, heads, and mast arms. This alternative prioritizes bicycle and pedestrian safety and access through the intersection, and minimizes right-of-way acquisition needs. As such, a single through lane on each approach is proposed, with turn lanes where feasible, that will result in additional delays and queues during peak times (as presented subsequently).

Pedestrian crossing distances across vehicular lanes will also be reduced with Alternative 1 compared to existing conditions, which has a single through lane in each direction, turn lanes on the northbound, southbound, and westbound approaches, and buffered bike lanes on all of the receiving lanes. Alternative 1 proposes to have the left turn lanes set back to accommodate truck turning radii for large trucks making left turns.

Bicycle Box



Two-stage Bicycle Turn Box



Two-stage turn queue boxes offer bicyclists a safe way make left turns at multi-lane signalized intersections from a right side bike lane or cycle track. They improve bicyclist ability to safely and comfortably make left turns, provide a formal queuing space for bicyclists making a two-stage turn, and reduce turning conflicts between bicyclists and motor vehicles. (Urban Bikeway Design Guide, 2nd Ed., NACTO)

However, this alternative does not propose to modify the corners to accommodate turning radii of large trucks, and proposes to retain the curb lines as they are today. The only exception is the northeast corner, by the hospital, where Alternative 1 proposes to widen the approach to accommodate a Class II Bike Lane and a right turn lane. The northeast corner is the only corner that would require right-of-way acquisition, for Alternative 1. **Figure 13** presents the layout concept of Alternative 1.

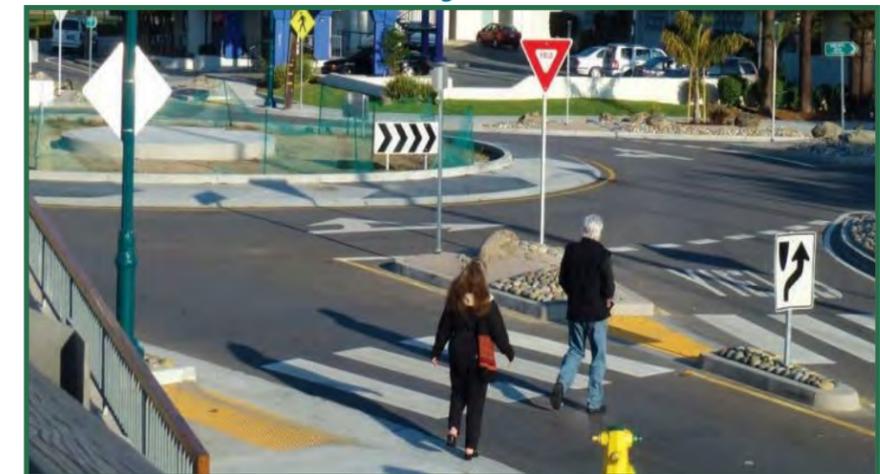
Alternative 2: Compact Roundabout

Alternative 2 would replace the existing traffic signal at Halcyon Road/Fair Oaks Avenue with a modern compact roundabout with single entry and exit lanes, except for the westbound approach which proposes a right turn lane and a shared thru/left lane. There would be a single circulating lane around the roundabout. Motorists at the roundabout would be required to yield the right-of-way to pedestrians and bicyclists. The single-lane roundabout would provide adequate capacity for the diverse travel needs

of the corridor, and improve intersection efficiency, without the need for multiple lanes on each approach. The roundabout will provide a continuous flow of traffic, which will in turn discourage cut-through traffic on Todd and Olive Streets.

The crosswalks at Halcyon Road/Fair Oaks Avenue would be improved with the Roundabout to become two-stage crossings by allowing pedestrians to focus on one traffic stream at a time while crossing and taking refuge in the splitter islands of the roundabout, as opposed to crossing the entire road at once as presented in the signal alternative. Pedestrian crossings at roundabouts can also have signage with rectangular rapid flashing beacons. The crosswalks are set back from the vehicle yield line at the intersection so that pedestrians have a safe space to cross and vehicles have space to yield before entering the roundabout. The proposed roundabout will also provide a 10-foot wide multi-use path for both pedestrians and bicyclists to safely navigate around the perimeter of the roundabout. The multi-use path is separated from the roadway by a landscaped buffer.

Pedestrian Crossings at Roundabouts



The proposed roundabout at Halcyon Road/Fair Oaks Avenue will provide bike ramps at all approaches leading to the multi-use path, for cyclists to easily maneuver their way to the shared-use path. For more confident cyclists who wish to remain on the road, shared lane markings are present through the roundabout. The implementation of both bike ramps and shared lane markings will accommodate all levels of cyclists.

The roundabout is designed to accommodate the turning radii of large vehicles. Large trucks, including emergency vehicles like fire trucks, will be



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able to easily navigate the roundabout. The roundabout's center island will have be fully mountable that large trucks can comfortably use when navigating through the roundabout. The truck apron is designed for large vehicles to use, and would not be comfortable for passenger vehicles, as it is slightly raised from the pavement. The roundabout will allow all vehicle types to easily perform turns and U-turn maneuvers.

While the northeast and southwest corners of the roundabout would require more right-of-way acquisition needs than the signalized intersection (Alternative 1), the signal design would result in long traffic delays, and the roundabout would provide acceptable traffic operations with continuous traffic flow. The roundabout alternative would not encroach into any existing building structures (i.e., residences), and most of the acquisition needs being to the northeast corner where the hospital is. **Figure 14** presents the layout concept of Alternative 2.

Roundabouts can have a traffic calming effect because they reduce vehicle speeds through and approaching the intersection as a result of the geometric design. Roundabouts may be an optimal choice for intersection control in the vicinity of schools because of the reduced speeds and the significantly reduced number of conflict points (as shown in the below image) as compared to a traffic signal. Roundabouts also provide substantial cost savings to society due to the reduction in crashes, particularly fatal and injury crashes.

A four-leg single-lane roundabout has 75% fewer vehicle conflict points and no crossing conflict points compared to a conventional intersection.

(NCHRP Report 672 Roundabouts: An Informational Guide, 2nd Ed. 2010.)

Number of Conflict Points by Control Type

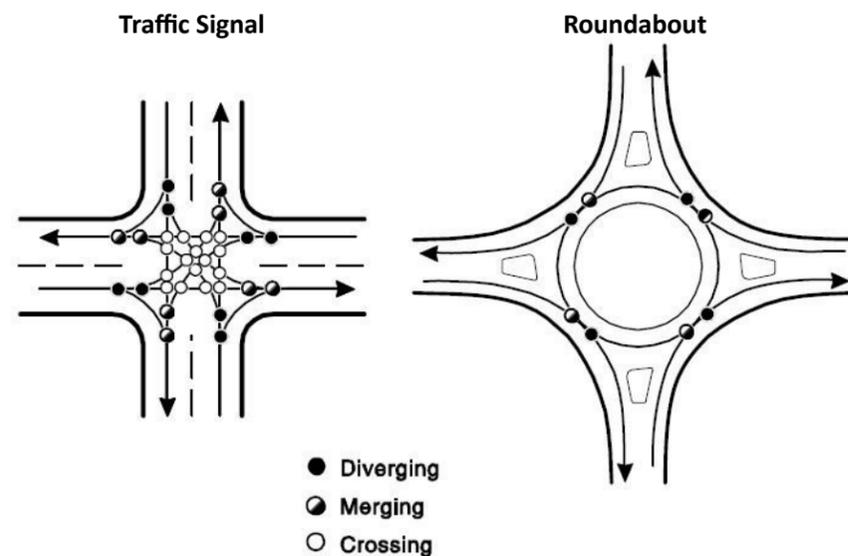


Figure 12 - Alternative 2 Potential Right of Way Impacts

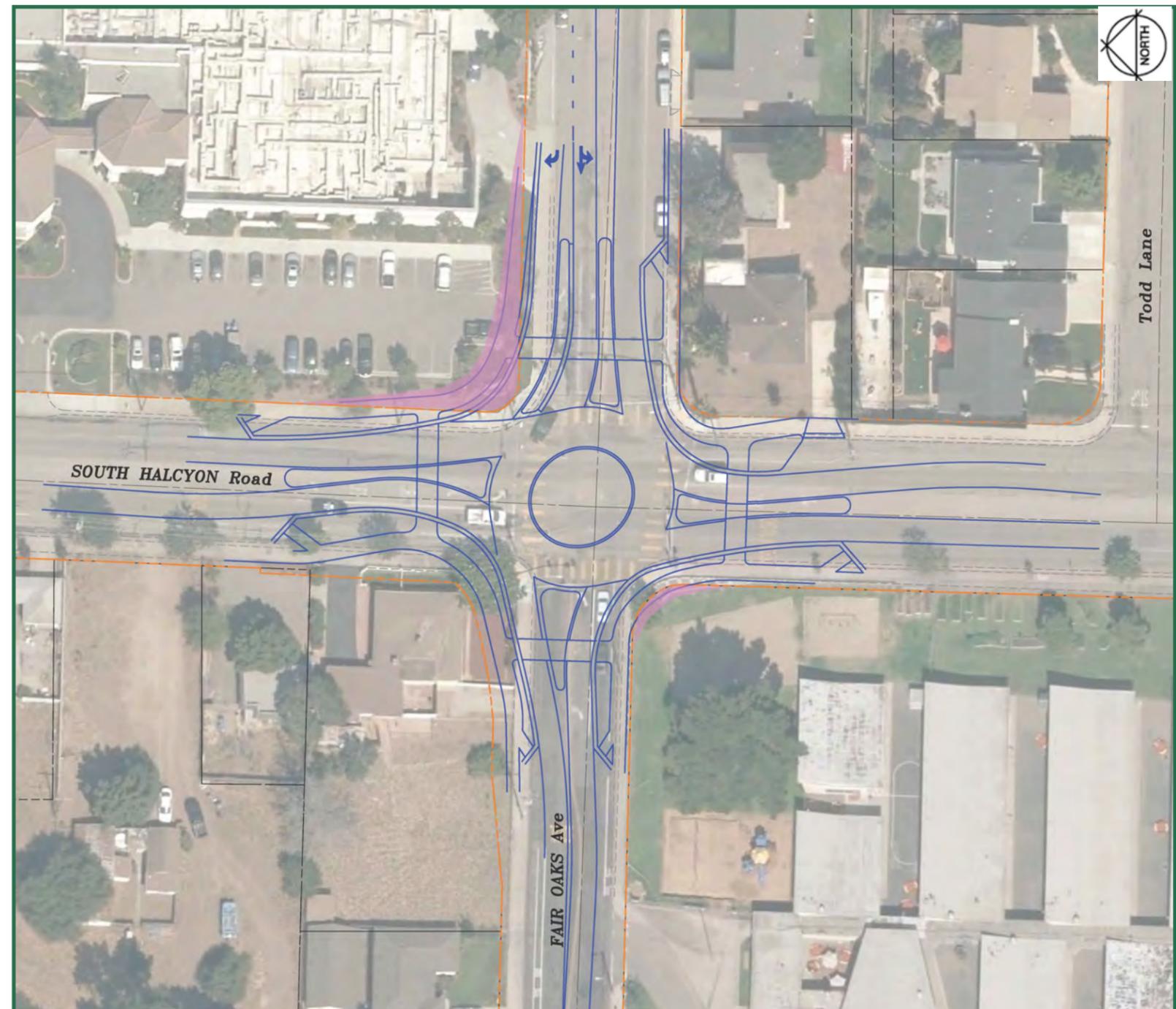


Figure 12 above presents the potential right-of-way impacts at the intersection and along Halcyon Road and Fair Oaks Avenue for Alternative 2. As shown, the proposed roundabout would encroach into the right-of-way at the northeast and southwest corners of the intersection, and would not affect existing building structures. The right of way dedication required for the northwest corner was provided with the recordation of Tract Map 3101 in April 2022. The proposed concept would be further refined in its design in the future if selected.



Figure 13 — Alternative 1 Lane Geometrics (Traffic Signal with Road Diet at Halcyon Road and Fair Oaks Avenue)

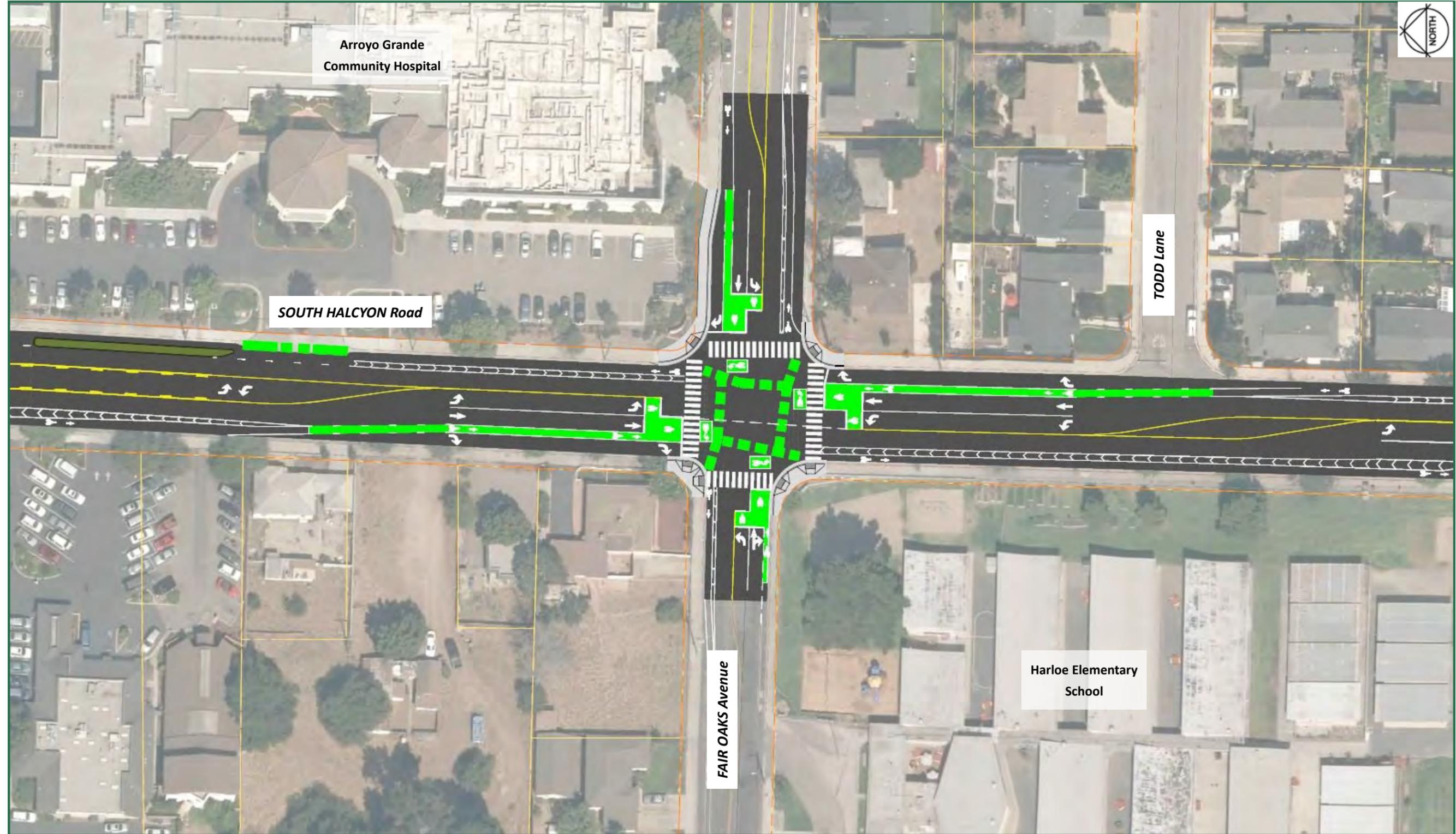
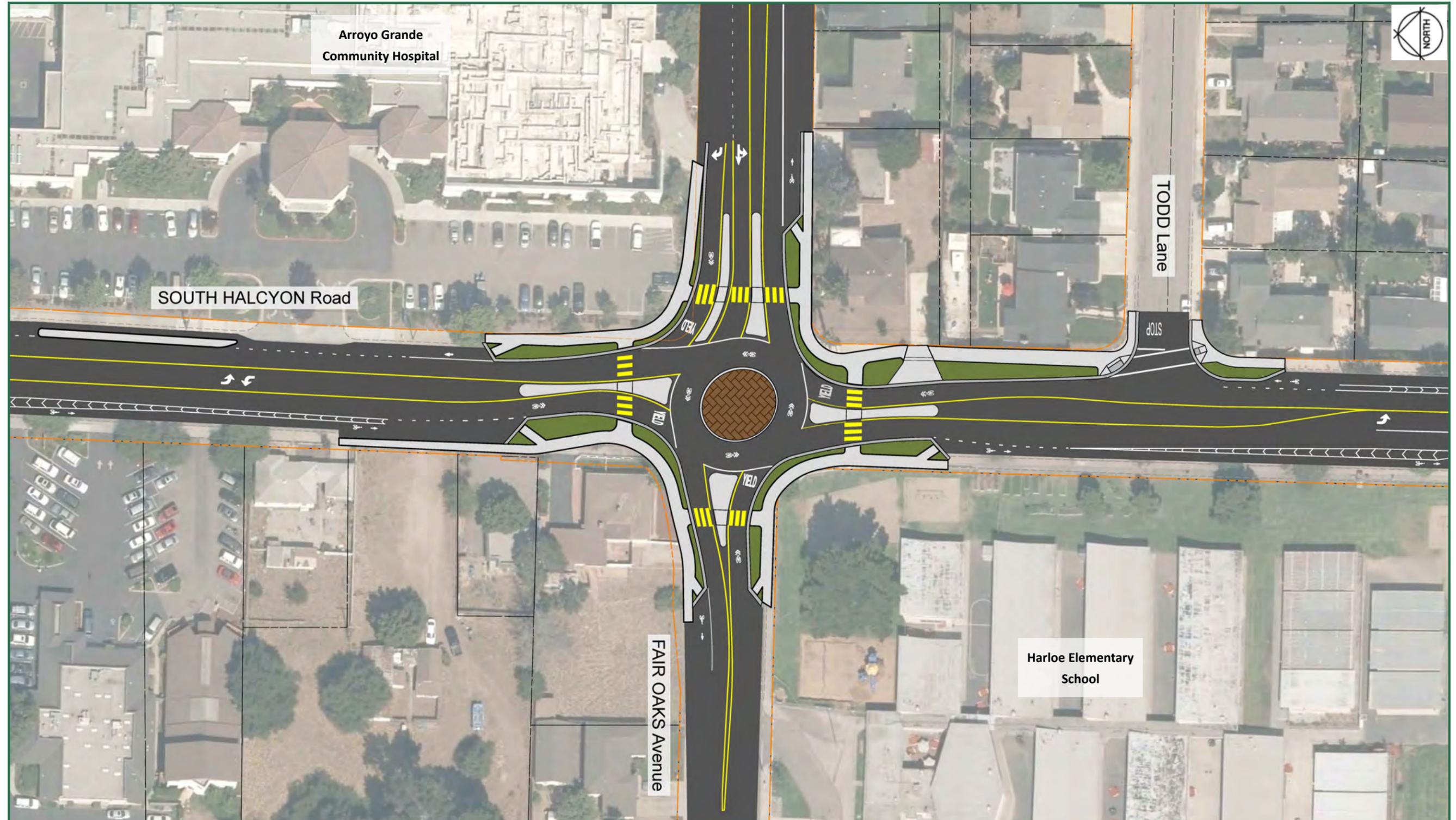




Figure 14 — Alternative 2 Lane Geometrics (Compact Roundabout at Halcyon Road and Fair Oaks Avenue)





Traffic Operations Analysis

Table 3 presents the forecasted daily traffic volumes along the roadway segments for each Context Zone for Alternative 1 with the traffic signal.

Table 4 presents the forecasted daily traffic volumes along the roadway segments for each Context Zone for Alternative 2 with the roundabout.

As shown, construction of the roundabout at Fair Oaks Avenue would provide additional capacity for the two-lane roadway, and all segments are projected to operate at LOS C or better, which is an improvement compared to the traffic signal alternatives.

Tables 5, 6, 7 and 8 on the following page present projected intersection Level of Service (LOS) for vehicular, pedestrian, and bicycle modes, under Forecast Year 2040 conditions for both Alternatives, based on HCM 6 methodologies.

Overall, all intersections are projected to operate at an acceptable LOS C or better for Caltrans facilities (El Camino Real), and LOS D or better for roadway segments or intersections within City of Arroyo Grande.

For Alternative 1, the proposed signal at Fair Oaks Avenue is projected to operate at LOS D in the AM peak hour and LOS C in the PM peak hour. For Alternative 2, the proposed roundabout at Fair Oaks Avenue is projected to operate at LOS B in the AM and PM peak hours.

For the other two signalized intersections along Halcyon Road (El Camino Real and East Grand Avenue), pedestrian and bicycle LOS are projected to be at LOS C or better. Northbound and southbound Halcyon Road Bike LOS scores with the proposed Bike Lanes are at LOS A/B. Without the complete street improvements along Halcyon in place, the Bike LOS would be at LOS C/D.

Although methodologies have not yet been developed to address the effect of all-way stop control or yield control on intersection performance from a pedestrian or bicycle perspective, it is reasoned that this type of control has negligible influence on pedestrian service at the unsignalized intersections.

In addition to the intersection operations in terms of LOS, queuing analysis was performed for the intersection of Halcyon Road/Fair Oaks Avenue for both alternatives. **Table 9** presents the comparison of the 95th percentile queue lengths for the two alternatives.

Table 3 - Alternative 1: Forecast Year 2040 Roadway Segment Conditions with Traffic Signal

Context Zone	Segment on Halcyon Road	No. of Lanes	Target LOS	ADT		Classification
				Volume	LOS	
1	El Camino Real to E. Grand Avenue	2	C	10,740	C	2-Lane Arterial (no left-turn lane)
2	E. Grand Avenue to Fair Oaks Avenue	2	C	16,130	D	2-Lane Arterial (with left-turn lane)
3	Fair Oaks Avenue to The Pike	2	C	14,490	C	2-Lane Arterial (with left-turn lane)

Table 4 - Alternative 2: Forecast Year 2040 Roadway Segment Conditions with Roundabout

Context Zone	Segment on Halcyon Road	No. of Lanes	Target LOS	ADT		Classification
				Volume	LOS	
1	El Camino Real to Bennett Avenue	2	C	10,740	C	2-Lane Arterial (no left-turn lane)
2	E. Grand Avenue to Fair Oaks Avenue	2	C	16,130	B	2-Lane Arterial with Roundabout
3	Fair Oaks Avenue to The Pike	2	C	14,490	B	2-Lane Arterial with Roundabout

Table 5 - Forecast Year 2040 Intersection Conditions: Vehicular LOS

Intx. #	Intersection	Control Type ¹	Target LOS ²	AM Peak Hour		PM Peak Hour	
				Delay	LOS	Delay	LOS
1	N. Halcyon Road & El Camino Real ³	SIGNAL	C	20.1	C	24.3	C
2	N. Halcyon Road & Bennett Avenue	TWSC	D	20.7	C	30.0	D
3	Halcyon Road & E. Grand Avenue	SIGNAL	D	19.7	B	23.7	C
4	S. Halcyon Road & Dodson Way	TWSC	D	20.7	C	19.8	C
5	S. Halcyon Road & Fair Oaks Avenue	See Table 6 for Alternatives					
6	S. Halcyon Road & Farroll Avenue	TWSC	D	10.9	B	10.9	B
7	S. Halcyon Road & Sycamore Drive	TWSC	D	11.0	B	14.1	B
8	S. Halcyon Road & The Pike	AWSC	D	31.4	D	13.7	B

Notes: 1. AWSC = All Way Stop Control; TWSC = Two Way Stop Control; RNDBT = Roundabout
 2. LOS = Delay based on worst minor street approach for TWSC intersections, Average of all approaches for AWSC, Signal, RNDBT
 3. Operations calculated using Synchro and HCM 2000 methodology for signalized intersections due to non-standard NEMA phasing

Table 6 - Alternatives Analysis Forecast Year 2040 Intersection Conditions: Vehicular LOS

Intx. #	Intersection	Control Type	Target LOS ¹	AM Peak Hour		PM Peak Hour	
				Delay	LOS	Delay	LOS
5	S. Halcyon Road & Fair Oaks Avenue	SIGNAL	D	53.2	D	22.7	C
5	S. Halcyon Road & Fair Oaks Avenue	RNDBT	D	13.7	B	10.7	B

Notes:
 1. LOS = Delay based on average of all approaches for Signal and RNDBT. Operations calculated using Synchro HCM 6 methodology for the traffic signal. Operations calculated using SIDRA standard methodology which considers geometric delays for the roundabout.



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Table 7 - Forecast Year 2040 Intersection Conditions: Pedestrian LOS

Intersection	Approach	AM Peak Hour		PM Peak Hour	
		Ped. Cross-walk Score	LOS	Ped. Cross-walk Score	LOS
N. Halcyon Road/El Camino Real	EB	NP ¹	-	NP ¹	-
	WB	2.01	B	2.06	B
	NB	2.39	B	2.38	B
	SB	NP ¹	-	NP ¹	-
Halcyon Road/E. Grand Avenue	EB	2.79	C	2.84	C
	WB	3.01	C	2.88	C
	NB	2.69	B	2.69	B
	SB	2.29	B	2.31	B

Notes: 1. NP = Pedestrian crossing not permitted.

Table 8 - Forecast Year 2040 Intersection Conditions Bicycle LOS

Intersection	Approach	AM Peak Hour		PM Peak Hour	
		Bicycle LOS Score	LOS	Bicycle LOS Score	LOS
N. Halcyon Road/El Camino Real	EB	1.62	A	2.25	B
	WB	1.36	A	1.39	A
	NB	1.75	A	1.50	A
	SB	NP ¹	-	NP ¹	-
Halcyon Road/E. Grand Avenue	EB	2.96	C	3.19	C
	WB	2.85	C	2.77	C
	NB	2.75	B	2.28	B
	SB	1.91	A	2.19	B

Notes: 1. NP = Pedestrian crossing not permitted.

Table 9 - Forecast Year 2040 Conditions Queuing Analysis for Halcyon Road & Fair Oaks Avenue Alternatives

Intersection	Available Storage	#of Lanes	AM Peak Hour	PM Peak Hour
			Queue (ft) ¹	Queue (ft) ¹
Alternative 1: Traffic Signal with a Road Diet				
Eastbound Left	120	1	195	135
Eastbound Thru/Right	560	1	375	180
Westbound Left	150	1	255	230
Westbound Thru	900	1	355	190
Westbound Right	65	1	145	120
Northbound Left	200	1	125	50
Northbound Thru	650	2	625	215
Northbound Right	200	1	225	130
Southbound Left	150	1	240	155
Southbound Thru	950	1	220	280
Southbound Right	150	1	75	120
Intersection	Available Storage	#of Lanes	AM Peak Hour	PM Peak Hour
Alternative 2: Single-lane Roundabout				
Eastbound Left/Thru/Right	570	1	180	140
Westbound Left/Thru	900	1	110	65
Westbound Right	200	1	75	20
Northbound Thru/Left/Right	650	1	385	90
Southbound Left/Thru/Right	560	1	135	235

1. 95th Percentile Queue per Lane; outputs calculated using Sim-Traffic for Signals, and Sidra for the Roundabout.

As shown, Alternative 1 would have a 95th percentile queue length of approximately 625 feet on the northbound through lane during the AM peak hour that would exceed or block turn lanes, and would extend back to Farroll Avenue. The 95th percentile queues estimated for Alternative 1 (traffic signal with road diet) are projected to exceed available storage lengths for most turn lanes, and have excessive queues during both the AM and PM peak hours. The queue on the westbound approach would potentially effect access for the Arroyo Grande Hospital. Emergency vehicles will be able to continue to access the Arroyo Grande Hospital on both Halcyon Road and Fair Oaks Avenue via the center turn lane provided. However, "Keep Clear" pavement markings should be installed on westbound Fair Oaks Avenue at the full-access driveway nearest to the intersection to maintain ingress and egress of emergency vehicles. The roundabout (Alternative 2) presents queue lengths that are significantly lower than the Signal Alternative 1 on all approaches of the intersection.



Protected Bikeway Option

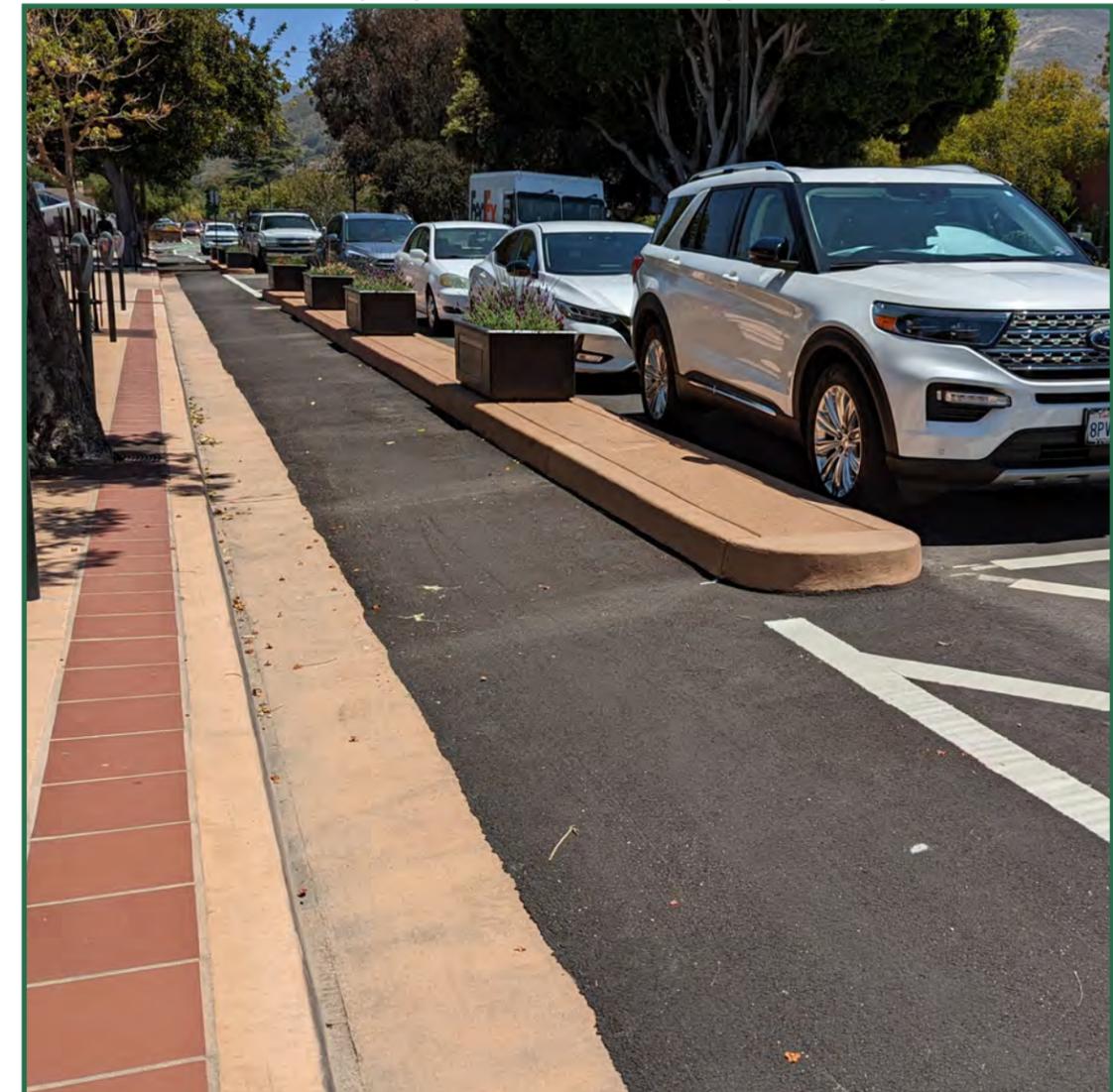
Protected bikeways are also known as Class IV bikeways, Separated Bike Lanes, or Cycle Tracks. They are at street level and use a variety of methods for physical protection from passing traffic including combinations of horizontal separation (e.g., buffer distance) and vertical separation (e.g., curb, parking, flexible posts, or planters). The physical separation and barrier from traffic provides an area on the street exclusively for bicyclists to ride separated from moving traffic and eliminates the risk of over-taking vehicles or vehicles parking, stopping, or loading in the bike lane. Protected bikeways improve comfort and safety and make riding a bike a pleasant and practical way for many more people.

A protected bikeway could be implemented along portions of Halcyon Road, if desired. This Complete Street Plan identifies a protected bikeway as an Optional Alternative for Context Zone 2. Implementing a protected bikeway along Halcyon Road would provide a more attractive bicycle facility for bicyclist of all ages and abilities.

Example of Class IV Protected Bikeway



Example of Class IV Protected Bikeway with Parking



Implementation of protected bikeways are generally low-cost by making use of existing pavement and drainage and by using a parking lane as a barrier. More information regarding design guidance and standards can be found in the *Urban Bikeway Design Guide*, National Association of City Transportation Officials, 2nd Edition, (NACTO 2014).

Figure 15 on the next page presents the proposed layout of the Class IV Protected Bikeway option in Context Zone 2 with parking on southbound Halcyon Road, and without parking northbound. As shown, the protected bikeway would be 6 to 9.5 feet wide, have a 3- to 6-foot curb between the bikeway and the travel lane or parking lane, and would have intermittent breaks where driveways exist to allow vehicles access. The bikeway would be marked and signed accordingly, so that the bikeway and travel lanes are clearly assigned. The implementation of the protected bikeway could also use a painted buffer with flexible posts as well, if desired.



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Figure 15 – Class IV Protected Bikeway Option (with and without on-street parking)

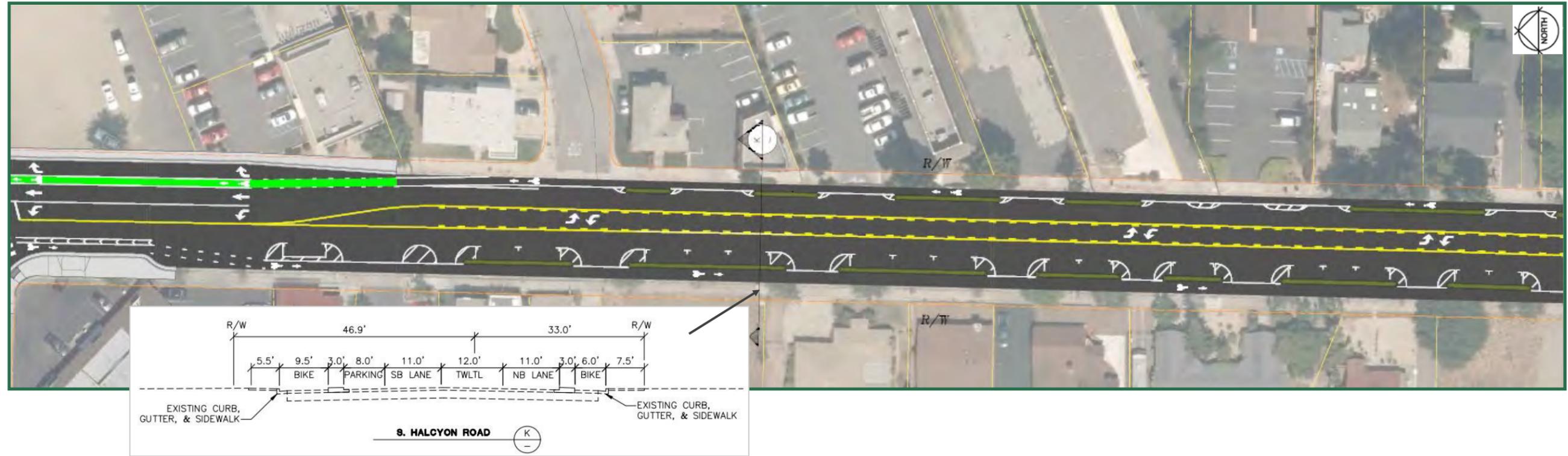
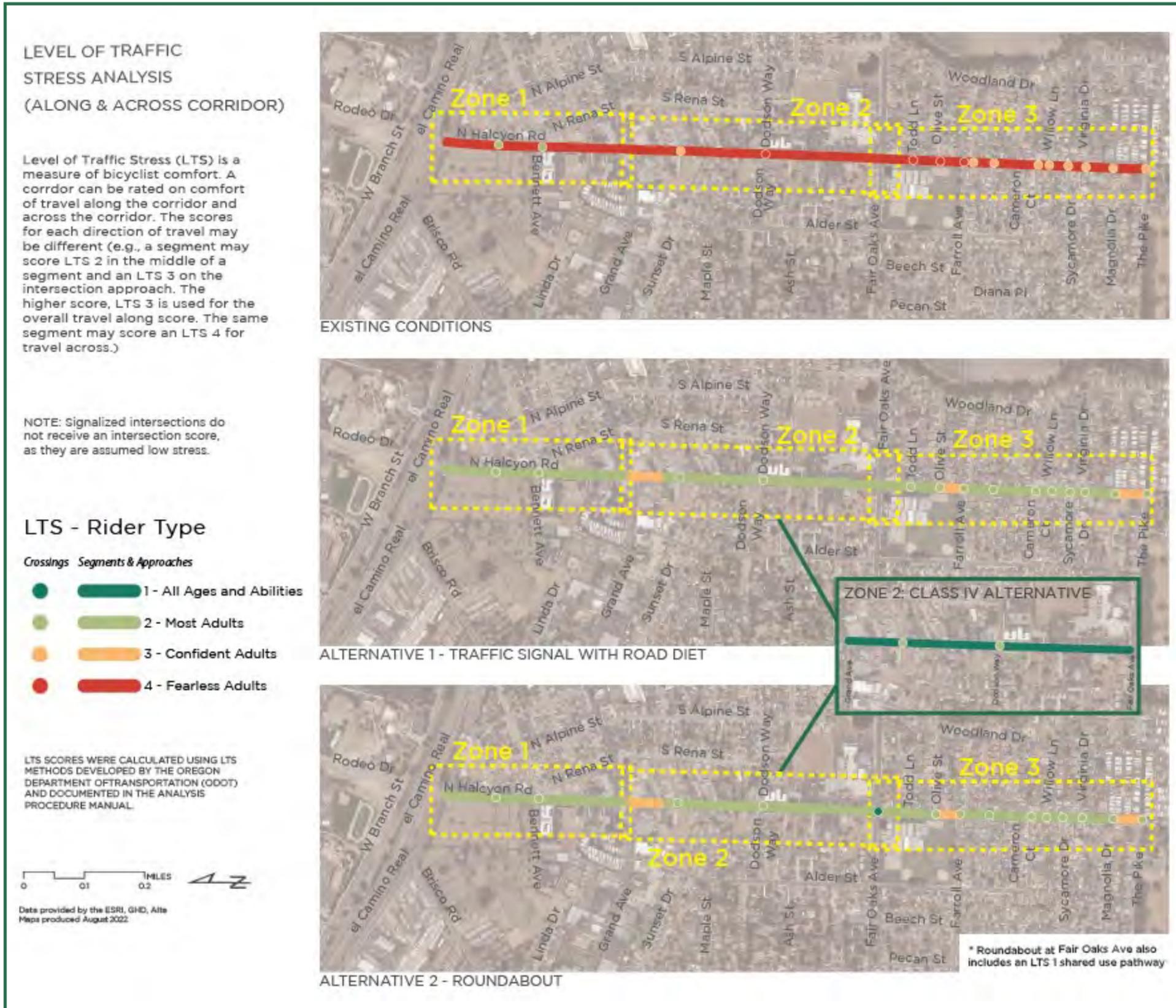




Figure 16 - Bicycle Level of Traffic Stress Comparison



Bicycle LTS Analysis

In addition to the vehicular traffic operations analysis, the bicycle Level of Traffic Stress (LTS) was evaluated along the roadway and at unsignalized intersections. Alta Planning & Design performed a bicycle LTS analysis for the Halcyon Road corridor evaluating existing conditions, and two bicycle alternatives that were being considered, with and without Buffered Bike Lanes. Alta’s detailed analysis is provided in Appendix E. The analysis demonstrates that Buffered Bike Lanes are preferred, but would not result in lower LTS where higher speeds exist without additional implementation of traffic calming measures or providing a physical separation for the bikeway.

GHD has updated the analysis to evaluate the proposed alternatives in this study. Figure 16 presents the Bicycle LTS analysis results for Existing Conditions, Alternative 1 (Traffic Signal with Road Diet), Alternative 2 (Roundabout), and the Class IV Option for Zone 2. LTS scores are shown for each zone along the roadway and at intersection crossings. Both alternatives propose the installation of Buffered Bike Lanes throughout the corridor, and a ‘Road Diet’ in Context Zone 2 south to Farroll Avenue.

While both alternatives improve the comfort of bicyclists over the existing conditions, Alternative 2 provides the greatest benefit to people who walk and bike, both in terms of travel along and across Halcyon Road.

The Class IV Protected Bikeway option in Zone 2 would provide a LTS 1 as it is separated from vehicular traffic with both a horizontal buffer and a vertical barrier.

While the LTS analysis focuses on bicycle travel, improvements for bicyclists generally translate into improved conditions for pedestrians, as well. This is particularly true for crossing conditions, as improvements are measured in terms of reduced exposure to motor vehicle travel speed and the number of travel lanes crossed.



Life-Cycle Benefit/Cost Analysis

This section briefly discusses the parameters used to assess and monetize the life-cycle benefits and costs for the two proposed alternatives at the intersection of Halcyon Road at Fair Oaks Avenue. The benefits are evaluated against a “No Build” scenario which would not improve the existing intersection configuration or traffic signal over a 20-year period. The analysis of the roundabout was based on a preliminary alternative considered without the westbound right turn lane and presents a conservative analysis, because the concept was modified per City direction after the analysis was completed.

Safety Benefit

To calculate the safety benefit, the cost of collisions is evaluated based on the existing collision rate, forecasted traffic volumes, and collision reduction factors for the proposed improvements. To compute the existing collision rate, existing collision data over a five year period was utilized. The intersection ADT was converted to a Million Vehicle Entering (MVE) per year. The number of collisions were then divided by the total number of vehicles to obtain a collision rate (collision/MVE). This determines the base cost of collisions for existing conditions.

In the future as traffic volumes increase, more collisions may occur without any improvements, therefore improving the intersection would result in a larger safety benefit over the 20-year life-cycle. Costs associated with collisions anticipated for each proposed intersection alternative were quantified using the Caltrans Intersection Control Evaluation Collision Cost Analysis spreadsheet.

As previously mentioned, the benefits of converting to a roundabout includes reducing the number of conflict points for vehicles. Additionally, roundabouts reduce the entry speed of vehicles which in turn reduce the severity of collisions. Signal improvements aim to reduce congestion, which would in turn reduce potential collisions, however higher speeds and right-angle collisions are not reduced.

Vehicular Delay Reduction Benefit

To calculate the delay reduction benefit, the value of travel time was quantified for each proposed alternative. Costs associated with vehicular delay were computed using the delay for the AM and PM peak hour periods of all the alternatives. In assessing the delay costs, the weighted

average for costing the value of time for automobiles and trucks was used. An average delay cost of \$18.65/person/hour was used—a value escalated from the original value in the published data by Caltrans for Vehicle Operation Costs Parameters for 2016 (<https://dot.ca.gov/programs/transportationplanning/economics-datamanagement/transportation-economics/vehicle-operation-cost-parameters>). The rate was grown by 12% from the 2016 values, based on 2% per year, and was weighted based on heavy vehicle percentages. The delay reduction benefit, therefore, includes the reduction in delay in dollar amounts compared to No Build conditions.

Fuel Benefit

To calculate the fuel cost for the alternatives, the vehicle operating costs were quantified. The fuel costs (vehicle operating costs) were computed using the delay for the AM and PM peak hour periods of all alternatives. An average fuel price for regular unleaded automobile fuel of \$4.09 was used based on the last year’s average price at the pump adjusted to rates.

Environmental Benefit

To calculate the environmental cost, the greenhouse gas emissions costs were quantified for the project. The health cost of Carbon Monoxide (CO) in a rural/suburban California town is \$84/ton. The health cost of Nitrogen Oxide is \$15,568/ton. The methodology for using the environmental costs comes from the Caltrans Intersection Control Evaluation (ICE) guidelines.

Construction Cost

Based on the concept-level preliminary project costs estimates, the total estimated project construction costs (including design, environmental, right of way, construction, and construction management costs) for each alternative are presented in the Life Cycle Benefit/Cost Analysis results tables below.

Other Costs

Operation and maintenance costs are other important components of the cost associated within the various alternatives. The operation and maintenance costs for a traffic signal include providing power service to the signal and street lighting (\$750/year), signal retiming (\$1,000/year), and signal maintenance for power outages/new detector loops/etc. (\$1,500/year).

The roundabout alternative would have lower operation and maintenance costs limited to power service for street lighting (\$750/year). These values are typical industry averages.

Life Cycle Benefit/Cost Analysis

Table 9 presents a summary of the life cycle benefits and costs for the two proposed intersection alternatives at Halcyon Road and Fair Oaks Avenue, and Table 10, on the following page, presents the summary of the benefit/cost analysis.

Table 9 - Life-Cycle Costs Comparison Summary

Life Cycle Costs (20 year design)	No Build	Traffic Signal Alternative 1	Roundabout Alternative 2
Collision and Mobility Costs			
Collision Costs of predicted crashes	\$6,535,000	\$6,318,000	\$307,000
Delay Costs	\$1,650,000	\$2,210,000	\$1,230,000
Fuel and GHG Costs	\$2,122,000	\$2,253,000	\$2,143,000
Project Costs Including Design, Construction and Maintenance			
Operations and Maintenance Costs	\$55,000	\$55,000	\$31,000
Construction Costs	\$0	\$1,843,700	\$3,908,900
Total Life Cycle Costs	\$10,362,000	\$12,679,700	\$7,619,900

Notes:

- Existing geometry is analyzed for Ultimate Design Year traffic volumes.
- The collision costs presented within this table were derived using the Caltrans tool for Intersection Control Evaluation Collision Cost Analysis and B/C

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As shown, the Roundabout Alternative has a B/C of 2.2 while the Traffic Signal has a B/C of -0.3. Generally, B/C ratios less than 1.0 are unfavorable, and a negative value is anticipated with Alternative 1 as the increase in delays and GHGs are anticipated to not be beneficial. Other potential benefits of roundabouts, which are not quantified here, include particulate matter/pollutants for air quality considerations. The B/C analysis is presented for comparison of the two alternatives at the Fair Oaks Avenue intersection, and does not present the benefit of the corridor as a whole.

Alternatives Analysis Summary

If the existing intersection at Halcyon and Fair Oaks Avenue is not improved to either an improved traffic signal with signal timing adjustments or improved with installation of a roundabout, then traffic operations will deteriorate with severe delays and queuing.

With implementation of a road diet and either improving the traffic signal or installing a roundabout at Halcyon Road/Fair Oaks Avenue, the multimodal improvements identified in this Complete Street Plan will enhance pedestrian and bicycle safety, providing a continuous multimodal corridor along Halcyon Road.

However, improving the traffic signal at Fair Oaks Avenue with the proposed road diet while remaining within existing rights-of-way has limitations on the capacity and throughput during the peak hours. Constructing a roundabout at Halcyon Road/Fair Oaks Avenue will

Roundabouts:

- ◆ Improve safety
- ◆ Promote lower speeds and traffic calming
- ◆ Reduce conflict points
- ◆ Lead to improved operational performance
- ◆ Meet a wide range of traffic conditions because they are versatile in size, shape, and design

[Roundabouts | Intersection Safety - Safety | Federal Highway Administration \(dot.gov\)](#)

Table 10 - Benefit/Cost Analysis Results

Life-Cycle Benefit/Cost Ratio		
	No Build VS Improved Signal Alt. 1	No Build VS Roundabout Alt. 2
<i>Safety Benefit</i>	\$ 217,000	\$ 6,228,000
<i>Delay Reduction Benefit</i>	\$ (560,000)	\$ 1,550,000
<i>Fuel and GHG Benefit</i>	\$ (131,000)	\$ 590,000
Total Benefits	\$ (474,000)	\$ 8,368,000
<i>Added Operations & Maintenance Costs</i>	\$ -	\$ (24,000)
<i>Construction Costs</i>	\$ 1,843,700	\$ 3,908,900
Total Costs	\$ 1,843,700	\$ 3,884,900
Life Cycle Benefit/Cost Ratio	(0.3)	2.2

provide a safer and more comfortable environment for vulnerable road users including schoolchildren, pedestrians, and bicyclists alike, as well as provide a safer and more efficient intersection for motorists. Retaining a traffic signal at Fair Oaks Avenue will operate less effectively when compared to the roundabout with excessive queues during peak hours.

Constructing a roundabout at Halcyon Road/Fair Oaks Avenue in conjunction with the proposed road diet between East Grand Avenue and Farroll Avenue is projected to provide acceptable traffic operations at both the intersection and adjacent roadway segments due to the added capacity and improved operations that the roundabout provides.

Although Alternative 1 improves the traffic signal to enhance and provide safer pedestrian and bicycle access through the intersection, it does not address the operational issues anticipated and the potential for more severe right-angle collisions remains.





5. ALTERNATIVES ANALYSIS & RECOMMENDATIONS

The planning-level conceptual alternatives presented in this Plan do not represent the ultimate designs. Additional details (i.e., surveying, utilities) will be needed and evaluated to refine the preferred concept. Roundabouts are a **Proven Safety Countermeasure**, per the Federal Highway Administration, and are an effective alternative to the conventional intersection. Both the road diet and the roundabout will significantly enhance safety and improve multimodal connectivity for all roadway users while maintaining the urban/suburban interface.

Table 10 presents a summary comparison of the two alternatives.

Table 10 - Alternatives Analysis Summary

Metric	Alternative 1: Traffic Signal	Alternative 2: Compact Roundabout
Traffic Operations	<ul style="list-style-type: none"> ✗ Significant improvements would be needed to provide efficient operations for future travel demand, including widening the intersection approaches to provide additional turn lanes and turn lane extensions. ✓ Forecasted operations are LOS D in AM peak hour, and LOS C in PM peak hour. 	<ul style="list-style-type: none"> ✓ Would provide a continuous flow of traffic, where entering vehicles yield to circulating traffic, bicyclists, and pedestrians. ✓ Forecasted operations are LOS B in AM and PM peak hours.
95th Percentile Queue Lengths	<ul style="list-style-type: none"> ✗ Northbound traffic in the AM peak is heaviest and results in the longest projected queue length at 625 feet. 	<ul style="list-style-type: none"> ✓ Shorter queue lengths compared to the traffic signal alternative. Longest projected queue length is in the AM peak northbound at 385 feet.
Pedestrian and Bicycle Accessibility	<ul style="list-style-type: none"> ✓ Dedicated bike lanes on all approaches with Bike Boxes two-stage turn boxes, and green paint through the intersection. ✗ Long crossings without median refuges. Pedestrians and cyclists wait for signal. ✗ Priority is given to vehicles, but must yield to pedestrians and bicyclists when turning. Increased risk for right-turn collisions with pedestrians during green light. 	<ul style="list-style-type: none"> ✓ 10-foot wide shared-use path along the perimeter of the roundabout for both walking and biking. ✓ Shorter, safer pedestrian crossings with median refuges. Pedestrians cross one direction of travel at a time. ✓ Priority is given to pedestrians and bicyclists. Vehicles yield to pedestrians before entering and after leaving the roundabout.
Safety	<ul style="list-style-type: none"> ✗ Higher speeds during green light and off-peak periods. Does not calm traffic. ✗ Potential for high-severity collisions with more conflict points and multiple travel lanes. ✓ Would provide a leading pedestrian interval (LPI) for all crossings. 	<ul style="list-style-type: none"> ✓ Slower speeds approaching and circulating due to geometric design. Single lane of travel. ✓ Fewer conflict points and low-risk for severe collisions. ✓ Would provide options for bicyclists to traverse the roundabout either via the shared-use path or via the roundabout's circulating lane
Right-of-Way Impact	<ul style="list-style-type: none"> ✓ Both alternatives would encroach on the northeast corner. Retains existing ROW as much as possible. 	<ul style="list-style-type: none"> ✓ Impacts to intersection corners, but would not affect any existing building structures.
Construction Cost (preliminary/conceptual)	<ul style="list-style-type: none"> ✗ \$1.8 Million— funding not identified 	<ul style="list-style-type: none"> ✓ \$3.9 Million with State funding awarded
Life-Cycle Benefit/Cost	<ul style="list-style-type: none"> ✗ Lower Construction Cost but increased delays and GHGs. Low safety benefit. ✗ B/C is -0.3 	<ul style="list-style-type: none"> ✓ Very high safety benefit. Lower delays and GHGs. Lower Operations & Maintenance costs. ✗ B/C is 2.2.



6. FUNDING OPPORTUNITIES & IMPLEMENTATION

This chapter provides potential phasing for implementation of the Complete Streets Plan as well as a listing of available funding sources with a brief description of each source, and the processes for obtaining the funds. Some funding sources are designed for planning and preliminary engineering level studies while other sources are intended for design and construction of improvements.

Phasing Potential

The key elements of the Plan as presented in Chapter 5 consists of a road diet in Context Zone 2, and buffered bike lanes throughout. The road diet reduces the number of through lanes in Context Zone 2 and provides width to stripe buffered bicycle lanes and construct curb extensions at the Dodson Way crosswalks. Should a phased approach to implementing the plan be considered, intersection improvements at Fair Oaks Avenue would need to be constructed prior to the installation of buffered bike lanes and crosswalk enhancements in Context Zone 2. Assuming funding for the largest projects will take the longest to secure, a phased approach with the lesser cost items that could be constructed with or without the roundabout/road diet could follow the following sequence:

- ◆ Construct sidewalk gap closure projects in all Context Zones
- ◆ Construct crosswalk enhancements in Zone 3
- ◆ Slurry seal and restripe with Buffered Bike Lanes in Context Zones 1 and 3
- ◆ Construct signalized intersection improvements
- ◆ Construct roundabout at Fair Oaks Avenue; construct crosswalk enhancements at Dodson

Way; slurry seal and restripe with Buffered Bike Lanes in Context Zone 2

Communities Betterment Grant

This grant is administered by SLOCOG and is for community-level infrastructure improvements that support sustainable transportation goals. The City of Arroyo Grande was awarded \$750,000 for a majority of the Zone 3 improvements, as part of the phased implementation, including installing buffered bike lanes and pedestrian improvements from Fair Oaks Avenue to The Pike.

Funding Opportunities

Funding for the construction of bike and pedestrian improvement projects is available through various State & Federal Programs (i.e. Active Transportation Program). The road diet concept between E. Grand Avenue and Fair Oaks Avenue is made possible by the conversion of the signalized intersection at Fair Oaks Avenue to a roundabout. Funding for the construction of the roundabout could possibly come from the federal Congestion Mitigation and Air Quality (CMAQ) Program or the Regional Surface Transportation Program (RSTP).

Federal Funding Programs

Congestion Mitigation and Air Quality

The Congestion Mitigation and Air Quality (CMAQ) program was implemented to support surface transportation projects and other related efforts that contribute air quality improvements and provide congestion relief. Funds are directed to transportation projects and programs, which contribute to the attainment and maintenance of National Ambient Air Quality Standards in non-attainment or air quality maintenance areas for ozone, carbon monoxide, or



particulate matter under provisions in the Federal Clean Air Act.

Eligible CMAQ projects include public transit improvements; high occupancy vehicle lanes; Intelligent Transportation System Infrastructure; traffic management and traveler information systems (i.e., electric toll collection systems); employer-based transportation management plans and incentives; traffic flow improvement programs (signal coordination); fringe parking facilities serving multiple occupancy vehicles; shared ride services; bicycle and pedestrian facilities; flexible work-hour programs; outreach activities establishing Transportation Management Associations; fare/fee subsidy programs; and under certain conditions, Particulate Matter improvement projects.

Surface Transportation Block Grant Program (STBG)

The STBG is a program under the Bipartisan Infrastructure Law (BIL) and has the most flexible eligibilities among all Federal-Aid highway programs. The STBG promotes flexibility in State and local transportation decisions and provides flexible funding to best address State and local transportation needs. (See *RSTP*)

Highway Safety Improvement Program (HSIP)

The intent of this program is to significantly reduce public roadway fatalities and serious injuries. The emphasis will be at locations that are data and strategically driven. The HSIP has several major program features; separate fact sheets are available on each of these:

- ♦ Strategic Highway Safety Plan (SHSP)
- ♦ High Risk Rural Roads (HRRR)
- ♦ Reporting Requirements (HSIP Reports)

The project must be on any public road or publicly owned bicycle, pedestrian pathway, or trail. Projects must identify a specific safety problem that can be corrected or improved substantially. City or County transportation planning agencies can apply for these funds. The maximum funding amount for a project is \$1 million, and the federal reimbursement rate is 90 percent. Caltrans district staff will solicit candidate projects from eligible public agencies. Interested agencies must submit an application by the due date to compete for funding. Caltrans staff will evaluate

applications based on a Safety Index (calculated based on traffic safety data). A notice is made once a year to local agencies to submit applications for candidate HSIP projects.

Improvements to Halcyon Road at Sandalwood and sidewalk improvements along the east side of Halcyon Road between Cameron Court and Virginia Street have been partially funding through the 2018 Safe Routes to School Capital Program (Cycle 2), for a \$100,000 grant and \$23,900 from the City Sidewalk Repair Fund. HSIP Cycle 10 set-aside funding was recently awarded for pedestrian crossing enhancements at the intersections of Halcyon Road at Sandalwood Avenue and at Farroll Avenue to completely fund these projects. A total of \$250,000 was awarded to be divided between 3 intersections (another crossing on Grand Avenue not apart of this study). \$100,000 Safe Routes to School Grant.

State Funding Programs

State Transportation Improvement Program (STIP) and Interregional Transportation Improvement Program (ITIP)

At the State level, these funds are divided into two programs: (1) the Regional Improvement Program (RIP) funded from a local share of the 75 percent of State Highway Account (SHA) funds set aside for regional transportation agency programming, and the Interregional Improvement Program (IIP), funded from the remaining 25 percent available for State programming. SLOCOG has authority to decide how to program the San Luis Obispo County regional share of RIP funds, subject to STIP eligibility guidelines. To be eligible, projects must be nominated by the regional agency in their Regional Transportation Improvement Program (RTIP). Caltrans has the authority to program the Interregional Transportation Improvement Funds. Similar to the RTIP, Caltrans must nominate projects within the ITIP.

STIP funds are primarily intended for capital projects. Eligible projects include constructing and widening state highways, local roads, public transit (including buses), pedestrian and bicycle facilities, grade separations, intermodal facilities, and safety projects. While these funds may also be used for local road rehabilitation, the California

Transportation Commission (CTC), which has authority over the STIP, has not supported the programming of STIP funds for road rehabilitation projects in recent STIP cycles.

State Highway Operations and Protection Program (SHOPP)

The State Highway Operating and Protection Plan (SHOPP) is a four-year program of projects that have the purpose of collision reduction, major damage restoration, bridge preservation, roadway preservation, roadside preservation, mobility enhancement, and preservation of other transportation facilities related to the state highway system. Non-capital projects are programmed through the SHOPP. The SHOPP is adopted simultaneously with the STIP every two years. While SLOCOG is allowed input to the SHOPP, the State has sole discretionary authority over the use of SHOPP funds.

The SHOPP program includes projects designed to maintain the safety and operational integrity of the state highway system. Most of the projects are for pavement rehabilitation, bridge rehabilitation, and traffic safety improvements. Other projects may include such things as operational improvements (e.g. traffic signalization) and roadside rest areas. It does not include projects to add through lanes to increase capacity.

Active Transportation Program (ATP)

On September 26, 2013, Governor Brown signed legislation creating the Active Transportation Program (ATP) in the Department of Transportation (Senate Bill 99, Chapter 359 and Assembly Bill 101, Chapter 354). The ATP consolidates existing federal and state transportation programs, including the Transportation Alternatives Program (TAP), Bicycle Transportation Account (BTA), and State Safe Routes to School (SR2S), into a single program with a focus to make California a national leader in active transportation. The ATP is administered by the Division of Local Assistance, Office of Active Transportation and Special Programs. The purpose of ATP is to encourage increased use of active modes of transportation by achieving the following goals:

- ♦ Increase the proportion of trips accomplished by biking and walking
- ♦ Increase safety and mobility for non-motorized users
- ♦ Advance the active transportation efforts of regional agencies to



- achieve greenhouse gas reduction goals
- ◆ Enhance public health
- ◆ Ensure that disadvantaged communities fully share in the benefits of the program
- ◆ Provide a broad spectrum of projects to benefit many types of active transportation users.

The City of Arroyo Grande was awarded funding for implementation of this Plan for ATP Cycle 6.

Regional Surface Transportation Program (RSTP)

Surface Transportation Block Grant Program funds are apportioned to States to provide flexible funding that may be used by States and localities for projects to preserve or improve conditions and performance on any Federal-Aid highway, bridge projects on any public road, facilities for active transportation, transit capital projects and public bus terminals and facilities. Fifty percent of a State's funds are to be distributed to areas based on population, known as Regional Surface Transportation Program (RSTP) funds. In addition, a portion of its RSTP funds is to be set aside for bridges not on Federal-Aid highways. Furthermore, a special rule is provided to allow a portion of funds reserved for rural areas to be spent on rural minor collectors.

Examples of projects eligible for RSTP include highway projects; bridges (including construction, reconstruction, seismic retrofit, and painting); transit capital improvements; carpool, parking, bicycle, and pedestrian facilities; safety improvements and hazard elimination; research; traffic management systems; surface transportation planning; transportation enhancement activities and control measures; and wetland and other environmental mitigation.

Safe Routes To School

Safe Routes to School (SRTS) is an approach that promotes walking and bicycling to school through infrastructure improvements, enforcement, tools, safety education, and incentives to encourage walking and bicycling to school. Separate state and federal Safe Routes to School programs serve California. Caltrans distributes Safe Routes funding from the Federal Highway Administration.

Local Streets and Roads (LSR) Program

The purpose of the program is to provide approximately \$1.5 billion per year to cities and counties for basic road maintenance, rehabilitation, and critical safety projects on the local streets and roads system.

Developer In-Kind Contributions

Infrastructure frontage improvements in correlation with land development are typically the responsibility of the developer, unless other funding sources can be identified. This cost would be included within the project budget. Developer-responsibility for improvements within the Halcyon Road corridor would include frontage roads providing access to commercial and/or residential development east and west of Halcyon Road.

City Traffic Impact Fee (TIF) and County Road Impact Fee (RIF) Programs

The City of Arroyo Grande and San Luis Obispo County each have their own transportation impact fee programs consistent with Government Code 66000, which was created by AB 1600. Recognizing the arterial function of Halcyon Road, this roadway and its intersections have been and will continue to be in their respective impact fee programs, for the segments of this roadway that are contained in each jurisdiction. Therefore, transportation impact fees could be a resource for at least a portion of the costs for the identified improvements in this Plan.

The transportation impact fee programs fund the expansion of existing traffic facilities and the construction of new facilities that will be needed to provide and maintain adequate traffic circulation within the fee area to support new development. Currently, improvements to State Route 1 at Halcyon Road intersections are programmed in the South County planning area Capital Improvements Program and RIF.

Additional Grant Programs

Additional grant programs that may fund active transportation improvements like those included in this Plan include:

- ◆ Clean Mobility Options
- ◆ Local Partnership Program
- ◆ Office of Traffic Safety Grant Program
- ◆ Safe Streets and Roads for All (SS4A)
- ◆ Solutions for Congested Corridors
- ◆ Sustainable Transportation Equity Project
- ◆ Transformative Climate Communities
- ◆ Transportation Development Act Funding



Appendix A - Current Policy & Planning Documents

This section summarizes current policies and planning documents that guide or regulate transportation planning decisions related to Complete Streets. The Complete Streets Plan aims to align its recommendations with these available documents. To the extent feasible, the following documents were referenced for this study:

South Halcyon Road Corridor Study

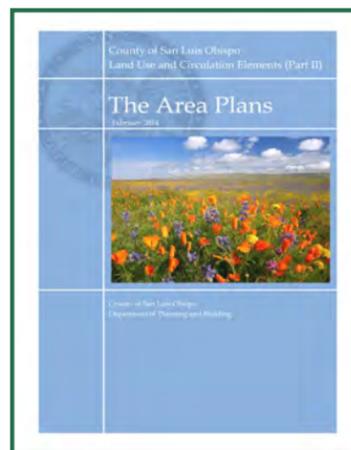
The South Halcyon Road Corridor Study was conducted in 2014 and reviews and addresses safety and mobility concerns for pedestrian and bicyclists. The study assesses existing and future multimodal conditions of Halcyon Road between Fair Oaks Avenue and The Pike, and recommends Complete Street improvements including Class II Bike Lanes, and pedestrian crosswalk enhancements.

City of Arroyo Grande General Plan

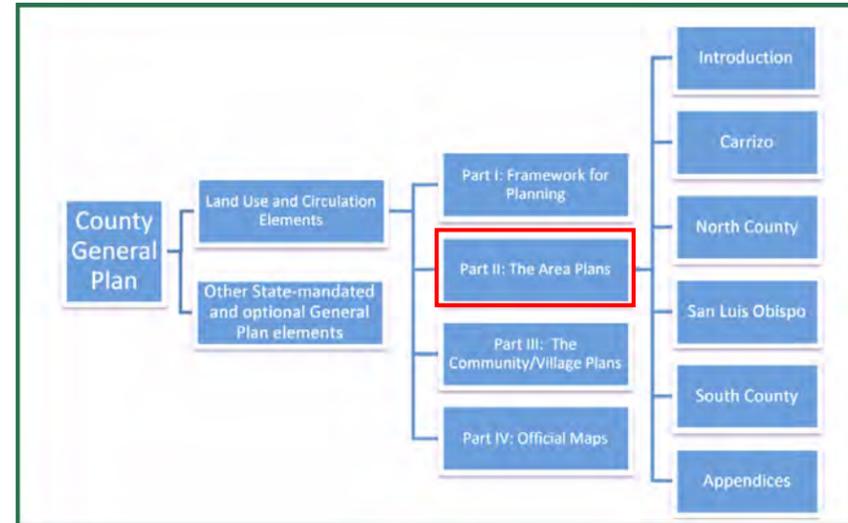
The City of Arroyo Grande General Plan was adopted in 2007 and presents a set of policies and programs that form a plan for long-term development within the City. The General Plan aims to meet local and regional planning requirements, and guides City development. It is a basis for decision-making on land use, housing, city services, public works, conservation, safety, and economic development. The Circulation Element, updated in 2021, provides objectives and policies related to roadway standards, Level of Service (LOS), Bicycle Level of Traffic Stress (LTS), alternative circulation and transportation systems, and coordination with the Land Use Element.

County of San Luis Obispo General Plan

Similar to the City's General Plan, the County General Plan provides the framework for long-term development within the County, first adopted in 1988. Since it is such a large county, there are multiple planning areas and community plans. The Land Use and Circulation Element (LUCE) of the General Plan is split into two areas: Inland and Coastal. The



southern section of the Halcyon Road corridor, Context Zone 4, is located within the South County Planning Area. Policies and objectives related to this section can be found in Chapter V of the LUCE (Part II) "The Area Plans" (2014).



San Luis Obispo County General Plan Organization

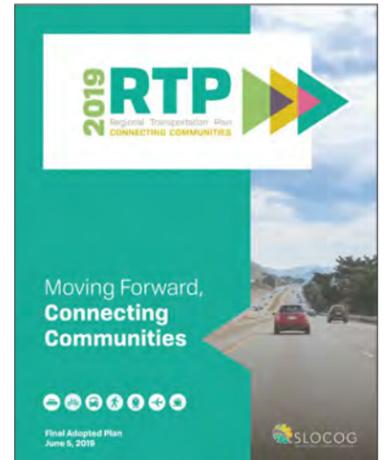
2015/16 County Bikeways Plan

The County Board of Supervisors, Department of Public Works, and the Bicycle Advisory Committee prepared the County's Bikeways Plan. It promotes the increased use of bicycles as a transportation mode. The plan considers policies and programs related to bicycling from the Regional Transportation Plan and General Plan. The plan provides recommendations for goals and implementations to close gaps in existing bikeways, to provide connections between communities, and to provide multimodal access to transit. The plan serves to identify and prioritize bikeway facilities within the unincorporated areas of San Luis Obispo County over the next 20 years.



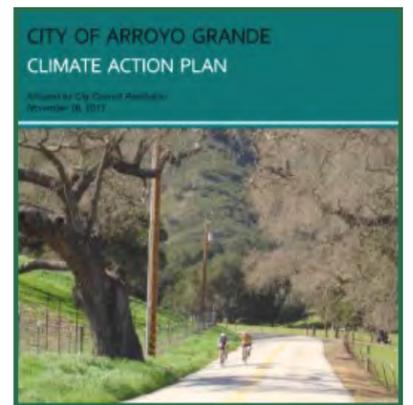
SLOCOG Regional Transportation Plan (RTP)/Sustainable Communities Strategy (SCS): Connecting Communities

The San Luis Obispo Council of Governments (SLOCOG) is responsible for preparing the RTP, a major transportation planning document for the entire region. The Plan supports the policies of the RTP's Motorized and Non-motorized Transportation Program.



City Climate Action Plan

The City of Arroyo Grande Climate Action Plan (CAP) was adopted in November 2013. The CAP is a long-range plan to reduce greenhouse gas (GHG) emissions from City government operations and community activities within Arroyo Grande and prepare for the anticipated effects of climate change. The CAP establishes the baseline 2005 GHG emissions, identifies the quantity of GHG emissions reduction required to meet the emissions target of 15 percent below 2005 levels by year 2020 (consistent with AB 32), and identifies strategies and implementation measures to achieve the emissions reduction target. The CAP also provides procedures to implement, monitor, and verify the effectiveness of the CAP measures in order to adapt efforts as necessary. The CAP helps achieve multiple community goals including lowering energy costs, reducing air pollution, supporting economic growth, and improving quality of life.



California AB 1358 - Complete Streets Act

The California Assembly Bill (AB) 1358 of 2008 is known as the Complete Streets Bill/Act. Effective January 1, 2011, AB 1358 requires revisions to a County's or City's Circulation Element to include provisions for the accommodation of all roadway users including bicyclists, pedestrians,

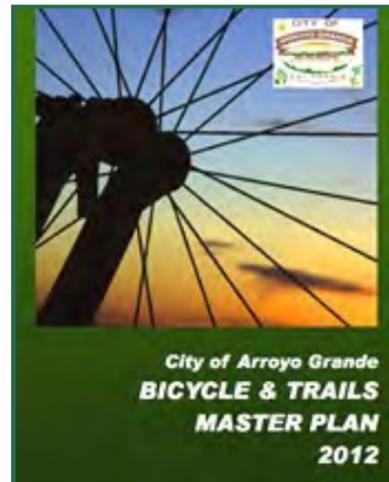


and transit vehicles. The legislation impacts local general plans by adding the following language to Government Code section 65302(b)(2)(A) and (b)(2)(B):

“(A) Commencing January 1, 2011, upon any substantial revision of the circulation element, the legislative body shall modify the circulation element to plan for a balanced, multi-modal transportation network that meets the needs of all users of the streets, roads, and highways for safe and convenient travel in a manner that is suitable to the rural, suburban, or urban context of the general plan;

(B) For the purposes of this paragraph, - users of streets, roads, and highways|| means bicyclists, children, persons with disabilities, motorists, movers of commercial goods, pedestrians, users of public transportation, and seniors.”

City of Arroyo Grande Bicycle and Trails Master Plan



The City’s Bicycle & Trails Master Plan was adopted in 2012 and builds upon the recommendations from the first adopted bicycle plan in 2006. The current Bicycle & Trails Master Plan identifies existing and proposed bicycle and pedestrian infrastructure, which encourage improvements that enhance safety for active transportation modes. The plan serves as a guide for active transportation improvements within the City and prioritizes improvements

in order to guide federal, state, and local funding and planning mechanisms.

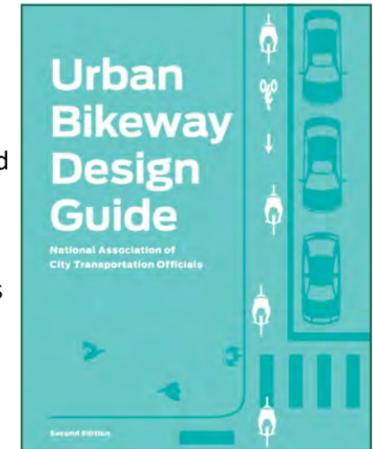
As shown in the graphic to the right, Class II Bike Lanes are designated for Halcyon Road within the Bicycle and Trails Master Plan. The Complete Streets Plan proposes to accommodate Class II Bike Lanes as a minimum requirement along Halcyon Road.

Bicycle Facilities Map near Halcyon Road



Urban Bikeway Design Guide, 2nd Edition, NACTO

The National Association of City Transportation Officials (NACTO) published this guide in 2014. This guide provides innovative design solutions for bicycle related treatments within urbanized areas and conforms with policy and guidance of the Manual on Uniform Traffic Control Devices (MUTCD). For each treatment identified, this guide provides required, recommended, and optional features.

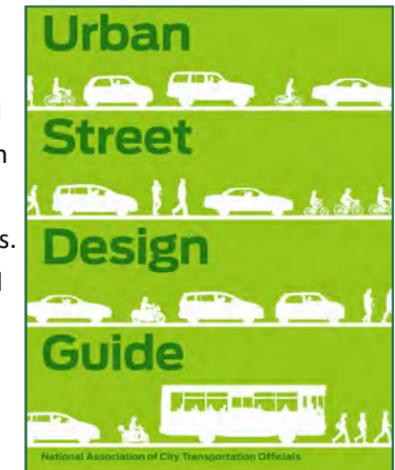


California AB 32

The Global Warming Solutions Act of 2006, Assembly Bill 32, sets the 2020 greenhouse gas emissions reduction goal into law. It directs the California Air Resources Board to begin developing discrete early actions to reduce greenhouse gases while also preparing a scoping plan to identify how best to reach the 2020 limit.

Urban Street Design Guide, NACTO

NACTO published this guide in 2013 and it provides innovative multimodal design solutions for urban environments, focusing on city streets and public places. The guide also conforms with policy and guidance of the Manual on Uniform Traffic Control Devices (MUTCD).



Road Diet Informational Guide, FHWA

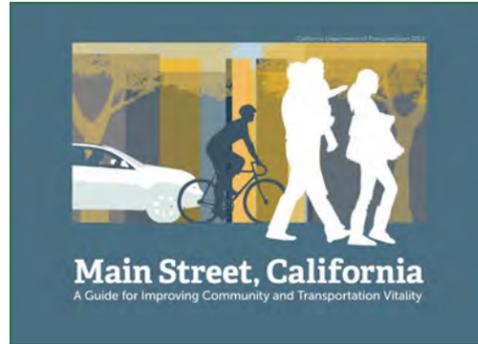
The Federal Highway Administration (FHWA) published this guide in November 2014. It provides the definition of a road diet and the supporting documentation that road diets improve safety for both motorists and pedestrians while improving multimodal accessibility and mobility. This guide also presents factors that determine feasibility of a road diet, and how road diets are implemented as a Complete Street solution, including design considerations, as utilized within this plan.



Main Street, California: A Guide for Improving Community and Transportation Vitality, 2003

The report, published by Caltrans, provides planning, design, maintenance, and operational concepts for main

street projects and serves as a guide to Complete Streets and active transportation planning along State Highways.



Complete Streets Implementation Action Plan 2.0 (CSIAP 2.0), June 2014 - June 2017

The CSIAP was prepared by Caltrans to describe the Complete Streets policy framework currently held by Caltrans for planning and implementation of Complete Streets on the state highway system. The CSIAP 2.0 is required by the *Deputy Directive 64-Revision 2: Complete Streets - Integrating the Transportation System (DD-64-R2)*, which is an update of the State's Complete Streets policy signed in October 2014. DD-64-R2 provides the following Caltrans policy on Complete Streets:

"The California Department of Transportation (Caltrans) provides for the needs of travelers of all ages and abilities in all planning, programming, design, construction, operations, and maintenance activities and products on the State highway system [and] recognizes bicycles, pedestrian, and transit modes as integral elements of the transportation system."

DD-64-R1 is limited to state owned and maintained streets, roads, and highways and focuses on the planning, construction, and maintenance of Complete Streets and, when possible given the Caltrans's limited jurisdiction, on the creation of multimodal networks. Nonetheless, the goals of DD-64-R1 provide important guidance for the design of the streets that make up a local integrated multimodal transportation network.

Safe Routes to School

In 2005, the United States Congress passed the Safe, Accountable, Flexible, Efficient, Transportation Equity Act: A Legacy for Users Act (SAFETEA-LU). This transportation reauthorization bill included funding for the Federal Safe Routes to School (SRTS) program. The objective of the SRTS program is to support the use of safe, active transportation modes (i.e. walking and bicycling) for children to and from schools. The availability of active transportation modes can increase children's activity levels and decrease the likelihood of childhood diseases. This is especially important as childhood obesity rates and other illnesses related to inactivity are rapidly increasing both nationally and in California. The SRTS program is administered by the Federal Highway Administration (FHWA), which distributes program funds to individual State Departments of Transportation.

Local multimodal transportation networks should address the needs of parents and children by providing safe alternate transportation options (i.e. walking and bicycling) to and from schools. Doing so can reduce vehicle trips, reduce congestion, and improve road safety near schools, and increase children's activity levels. While the general plan itself is not eligible for funding, SRTS programs can help implement part of a connected, safe multimodal transportation network. Schools are an important node to include in the development of a local multimodal transportation network.

Appendix B - Potential Environmental Constraints

Potential environmental constraints associated with project development are summarized in this section, based on a memorandum by SWCA Environmental Consultants dated September 7, 2016 (Appendix C) and updated on [CITY TO PROVIDE DATE].

Context Zones 1, 2, and 3: Urban, Urban Transition, and Neighborhood

Potential Construction Impacts:

Environmental constraints within these Context Zones are anticipated to be predominantly limited to construction-related impacts. These zones contain a high number of sensitive receptors, including residences, schools, and the Arroyo Grande Community Hospital.

Construction-related impacts could include:

- ◆ Construction noise and traffic,
- ◆ Dust generated from grading and demolition activities,
- ◆ Vehicle emissions from heavy equipment,
- ◆ Increased congestion and bicycle/pedestrian and traffic detours,
- ◆ Temporary loss of access and/or parking, and
- ◆ Temporary degradation of visual setting.

Each of these effects could temporarily adversely impact proximate residences and businesses within these zones. Construction-related congestion and loss of access could also affect emergency access to and from the Arroyo Grande Police Station and Arroyo Grande Hospital. Improvements within the existing road shoulder areas could require removal of mature street trees and utility relocations. Each of these potential impacts are mitigated by measures in the Mitigation Monitoring and Reporting Program (Appendix J of the Environmental Document).

Consistency with Other Plans

The Halcyon Road Plan is intended to improve circulation along Halcyon Road for all modes of travel, including connectivity of pedestrian and bicycle facilities throughout. The Plan should consider and be consistent with improvements associated with the proposed Brisco-Halcyon Road/ US 101 Interchange Modification Project and the existing El Camino Real



Park and Ride lot.

The urban, urban transition, and neighborhood Context Zones (Context Zones 1, 2, and 3) would be subject to the plans and policies of the Arroyo Grande General Plan. The small portion of the neighborhood Context Zone in unincorporated County areas would also be subject to the South County Area Plan, County of San Luis Obispo Land Use Ordinance, and County of San Luis Obispo General Plan.

Vehicle Miles Traveled (VMT)

In addition to the environmental constraints analysis, the project's potential impacts on transportation have also been evaluated. Per SB 743, VMT is the measure to determine transportation impacts under CEQA. Per the City's VMT guidance, which are consistent with the Governor's Office of Planning and Research *Technical Advisory on Evaluating Transportation Impacts in CEQA* (OPR, 2018), a Road Diet, or reduction of number of through lanes, would not likely lead to a substantial increase in VMT, and therefore should not require an induced travel analysis. This applies to the Halcyon Road Complete Streets Plan. Additionally, this Plan proposes to improve and enhance pedestrian and bicycle facilities along the corridor, and install a roundabout, which are all identified as transportation projects which would not likely lead to an increase in VMT. Therefore, the proposed Halcyon Road Complete Streets Plan does not have a significant impact on VMT.