



Linking SJB ↔ Hollister

SR-156 MULTIMODAL ENHANCEMENT STUDY

Final Report
June 13, 2022





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I. INTRODUCTION

The Council of San Benito County Governments (COG) was awarded a Caltrans Transportation Planning Grant to prepare a transportation study focused on the SR-156 corridor near San Juan Bautista. The purpose of the study is to:

- Address traffic circulation issues at the only two access points into the City of San Juan Bautista from SR-156: The Alameda, and Monterey Street.
- Optimize and connect the non-motorized system by providing safe connections for bicyclists and pedestrians traveling across SR-156 via The Alameda, including Safe Routes to the only primary school in the City of San Juan Bautista (i.e., San Juan School).
- Provide access to Juan Bautista de Anza National Historic Trail from The Alameda to encourage active, healthy, and environmentally sound transportation choices.
- Improve cycling connectivity on the existing SR-156 between Hollister to San Juan Bautista (once this segment of the highway is relinquished to the County of San Benito).

I.1 STUDY AREA / CONTEXT

SR-156 is a major east-west highway that carries traffic between Highway 1 in Castroville and SR 152 in southern Santa Clara County. In San Benito County, SR-156 is the primary route connecting the City of San Juan Bautista to the City of Hollister. The highway is a major commuter route for the residents of San Juan Bautista. Additionally, SR-156 is a key trucking route used to transport goods between the Monterey Peninsula, San Benito County, and the Central Valley. **Figure 1** shows the study area.

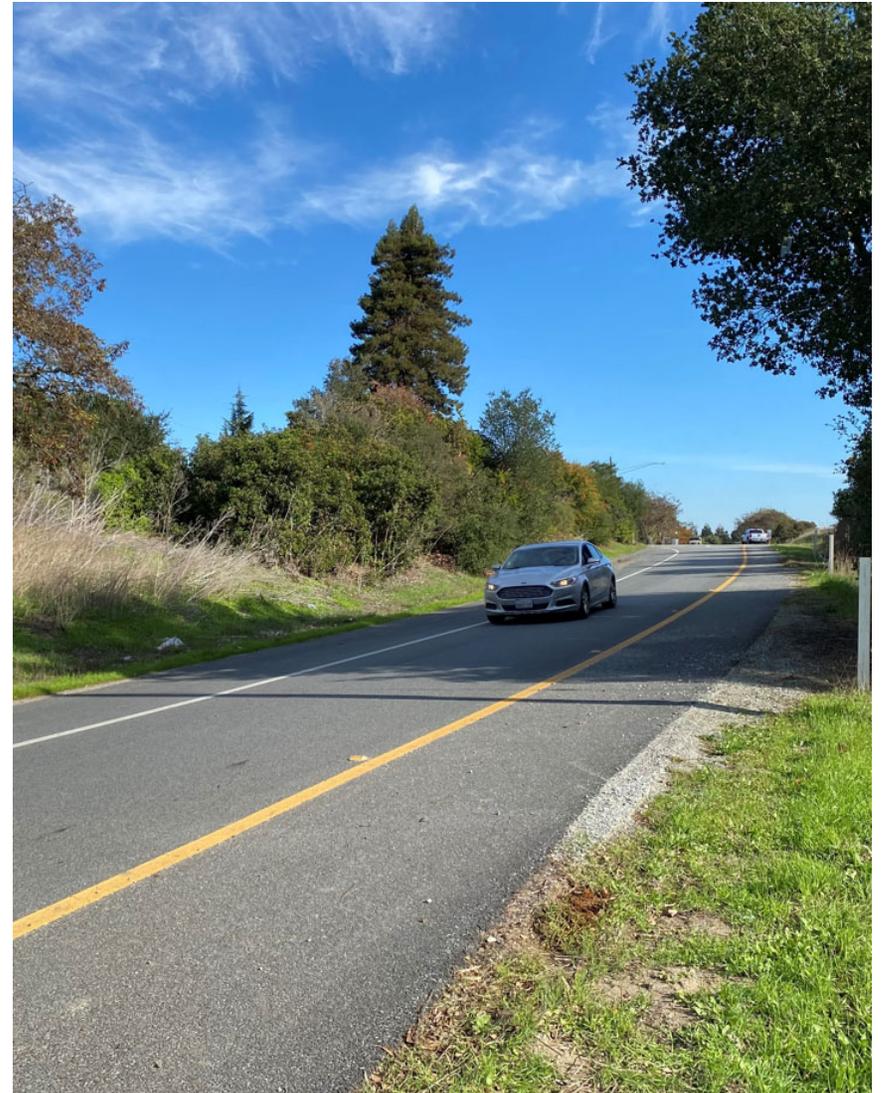
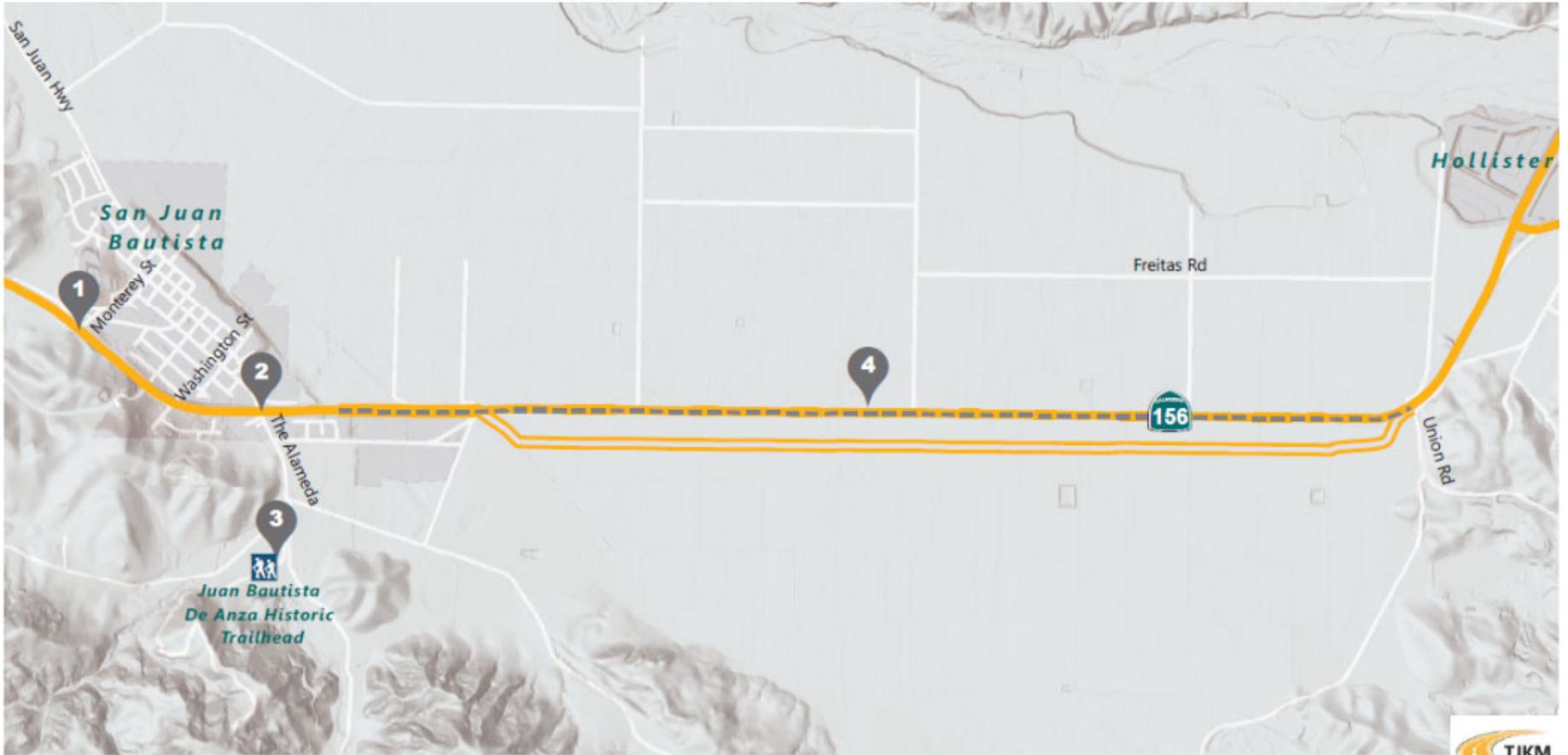


Figure I. Study Area



LEGEND

- SR 156
- Proposed SR 156
- SR 156 Frontage (County) Rd

- 1 SR 156 and Monterey St
- 2 SR 156 and The Alameda
- 3 The Alameda between Downtown and De Anza Trailhead
- 4 Future SR 156 Frontage Road





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1.2 VISION, GOALS, POLICIES AND PRINCIPLES

The vision for the SR-156 Multimodal Enhancement Study is informed by several adopted regional plans.

Association of Monterey Bay Area Governments 2045 Plan

Goals & Policies

AMBAG began developing the 2045 MTP/SCS when the Board of Directors adopted the following goals and policy objectives:

- Access and Mobility – Provide convenient, accessible, and reliable travel options while maximizing productivity for all people and goods in the region.
- Economic Vitality – Raise the region’s standard of living by enhancing the performance of the transportation system.
- Environment – Promote environmental sustainability and protect the natural environment.
- Healthy Communities – Protect the health of our residents; foster efficient development patterns that optimize travel, housing, and employment choices and encourage active transportation.
- Social Equity – Provide an equitable level of transportation services to all segments of the population.
- System Preservation and Safety – Preserve and ensure a sustainable and safe regional transportation system.

(From *Moving Forward: 2045 Metropolitan Transportation Plan and Sustainable Communities Strategy*, AMBAG, p. 1-10)

2045 San Benito Regional Transportation Plan

The 2045 San Benito Regional Transportation Plan is guided by several key principles.

1. Accessibility & Mobility – Provide convenient, accessible, and reliable travel options for local residents and visitors alike;
2. System Preservation and Safety – Preserve the existing system with ongoing maintenance and rehabilitation;
3. Economic Vitality – Support Investments in transportation that have a direct impact on retail spending and job growth;
4. Social Equity – Provide an equitable level of transportation services to all segments of the population;
5. Healthy Communities – Encourage active transportation projects and programs; and
6. Environment- Promote environmental sustainability and protect the natural environment of the region.

(From *San Benito Regional Transportation Plan 2020 - 2045*, p. 2-1)

2035 San Benito County General Plan

2035 Vision for San Benito County

At pace with the changing world, but still rural in nature, our vision of San Benito County in 2035 is of a positive and prosperous future, in which balance has been attained between business and residential growth without surrendering our rich natural resources, valuable agricultural assets, active country character, or our historic heritage. To this end, the General Plan policies are flexible to enable San Benito County to maintain this important balance to foster a positive and prosperous future.

Neighborhoods, parks and public lands, business districts, and job centers are linked to one another by a sensibly-sized, well-maintained transportation network, suitable for foot, bicycle, auto, bus, or sometimes



horse. Connection to distant destinations is readily available by auto, bus, train, or plane, or by way of enhanced virtual telecommunications.

Established local businesses, not just the buildings they inhabit, are understood to be important foundations to thriving prosperous downtowns. To ensure continued relevance of the downtowns, infill development containing compatible enterprises is supported. Visitors find ample retail and dining prospects, welcoming accommodations, and unmatched outdoor recreational opportunities.

The county continues to widen the spectrum of business and industry, enhanced educational opportunities, and broadened leisure time activities available for a population that is diverse in age, culture, education, and lifestyle. People are afforded the facilities needed for healthy lives. Environmentally-sustainable technologies are embraced, and businesses of any size are encouraged to put down roots here, hire local talent, and grow in the rich soil, clean water, beautiful climate, and rural atmosphere of San Benito County.

(From *San Benito 2035 General Plan*, p. 2-2)

City of San Juan Bautista 2035 General Plan

Element Goals

Land Use

1. A city surrounded by a thriving agricultural setting.
2. A city with a balanced and diversified set of land uses.
3. A compact city with distinctive architecture.
4. A walkable, pedestrian friendly, and visually rich city.

Circulation

1. Safe and convenient travel options for all means of travel.

2. Convenient access in and around San Juan Bautista.

Health

1. Awareness of the importance of healthy living.
2. Accessible healthcare services and programs.
3. A safe community.
4. An active transportation and recreation network for all users.

(From *San Juan Bautista 2035 General Plan*, pp. 12-14)

City of Hollister 2005 General Plan

Presently, the City of Hollister is updating its general plan. However, the stated goals from the 2005 general plan are still applicable.

Hollister General Plan Goals

- Encourage Pedestrian-Friendly Mixed-Use Development Downtown
- Provide Core Services in Every Neighborhood
- Encourage Multiple Modes of Transportation
- Provide a Range of Housing Styles and Affordability Levels
- Provide For an Environment That Encourages Healthy Living
- Promote Economic and Environmental Sustainability

(From *City of Hollister 2005 General Plan*, p. 1.7)



SR-156 Multimodal Enhancement Study Goals

The SR-156 Multimodal Enhancement Study seeks to investigate and provide alternatives that meet these goals:

- Support the economic vitality of San Bautista County, the City of San Juan Bautista and the City of Hollister.
- Increase the safety of the transportation system for motorized and non-motorized users.
- Increase accessibility and mobility of people.
- Protect and enhance the environment, promote energy conservation, improve the quality of life, and promote consistency between transportation improvements and State and local planned growth and economic development patterns.
- Incorporate equity into the planning and design of the transportation system.
- Enhance the integration and connectivity of the transportation system, across and between modes, for people.
- Promote efficient system management and operation.
- Emphasize the preservation of the existing transportation system.
- Improve the resiliency and reliability of the transportation system and reduce or mitigate storm water impacts of surface transportation.
- Enhance travel and tourism.





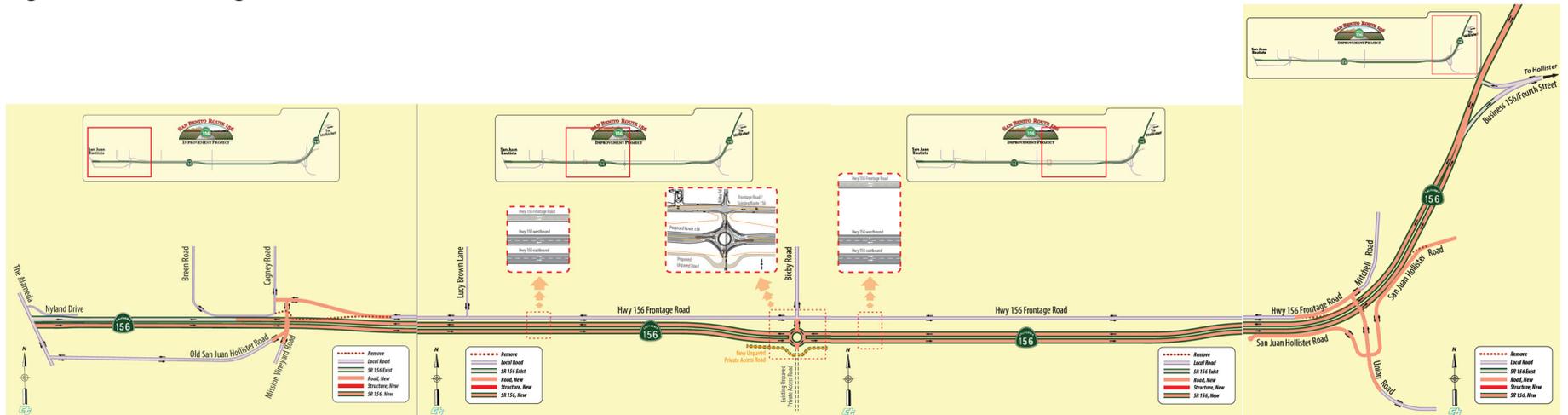
2. LITERATURE REVIEW

San Benito 2040 Regional Transportation Plan

The San Benito Regional Transportation Plan (RTP), adopted in June 2018, outlines a plan for system delivery inclusive of all transportation modes to meet the growing needs of the region. The RTP estimate of traffic volume on SR-156 between The Alameda and Union Road in 2014 was 29,344 average daily vehicles; by 2034, that number is expected to jump as high as 37,531 (increase by 28%). The RTP further states that the existing two-lane conventional highway segment will not be sufficient to accommodate the anticipated traffic volume.

Caltrans plans to construct about five miles of 4-lane at-grade expressway between Union Road and The Alameda. Once constructed, Caltrans will relinquish the existing SR-156 to the County. The Plan mentions that a bicycle and pedestrian multi-use path is also proposed, connecting bicyclists traveling between Hollister and San Juan Bautista. SR-156 from the Monterey County line to the Santa Clara County line is eligible for inclusion in the California Scenic Highway Program.

Figure 2. SR-156 Frontage Road

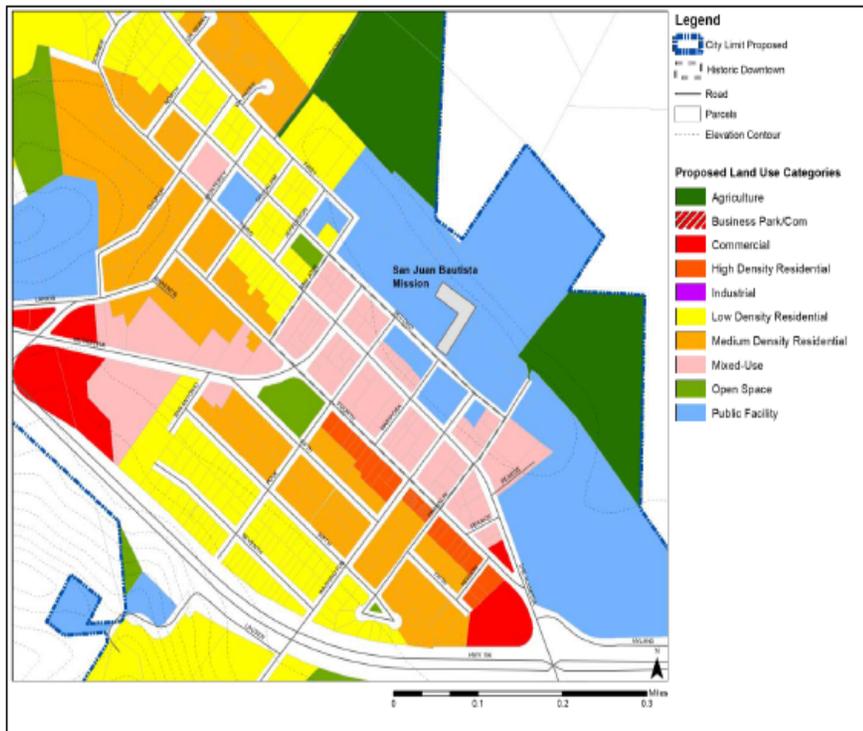


Source: Caltrans, 2021

San Juan Bautista 2035 General Plan

Prepared by the 2013 Community and Regional Planning Studio class of the Master of City and Regional Planning Program at the California Polytechnic State University, San Luis Obispo, California, the City of San Juan Bautista 2035 General Plan was adopted in November 2015. The plan identifies SR-156 as an important route, delivering tourists and providing regional connectivity for residents and service deliveries. It recognizes that SR-156 is a barrier to pedestrian movement, as it can only be crossed safely at Washington Street.

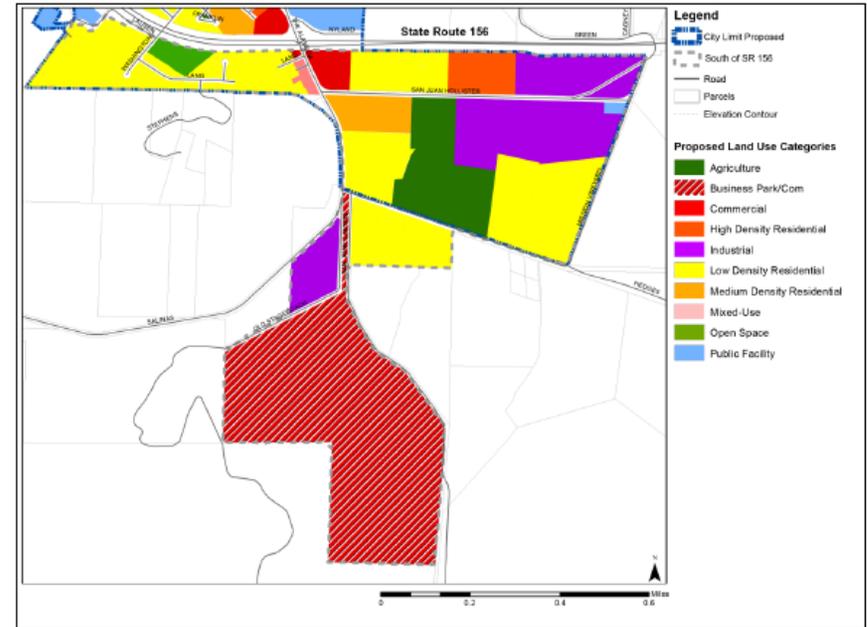
Figure 3. Muckelemi Street Corridor Conceptual Map



Rene Anchieta, San Benito County GIS, 2015

Source: San Juan Bautista 2035 General Plan

Figure 4. South of SR-156 Conceptual Map



Rene Anchieta, San Benito County GIS, 2015

Source: San Juan Bautista 2035 General Plan

The plan identifies concerns related to noise, widening, and pedestrian/cyclist safety at the intersection of The Alameda and SR-156. The plan recommends mixed-use commercial and retail development for the Muckelemi Street Corridor, and light-industrial and commercial development south of SR-156. The following is a list of adopted goals and policies that are relevant to this study.

Land Use

- A walkable, pedestrian friendly, and visually rich city.

Circulation

- Safe and convenient travel options for all means of travel.



- Convenient access in and around San Juan Bautista.

Economic Development

- A supportive and nurturing business climate.
- A premier tourist destination.

Public Facilities and Services

- A community that provides high quality infrastructure and services with minimal financial burden on residents and businesses.

Health

- An active transportation and recreation network for all users.

The plan also recommends following programs to address the noise on SR-156:

- Work with Caltrans to limit noise and traffic impacts to maximize benefits of the State Route 156 widening project to serve the community's commercial sector and local mobility.
- Implement traffic calming devices on SR-156 and City streets to slow traffic speeds.

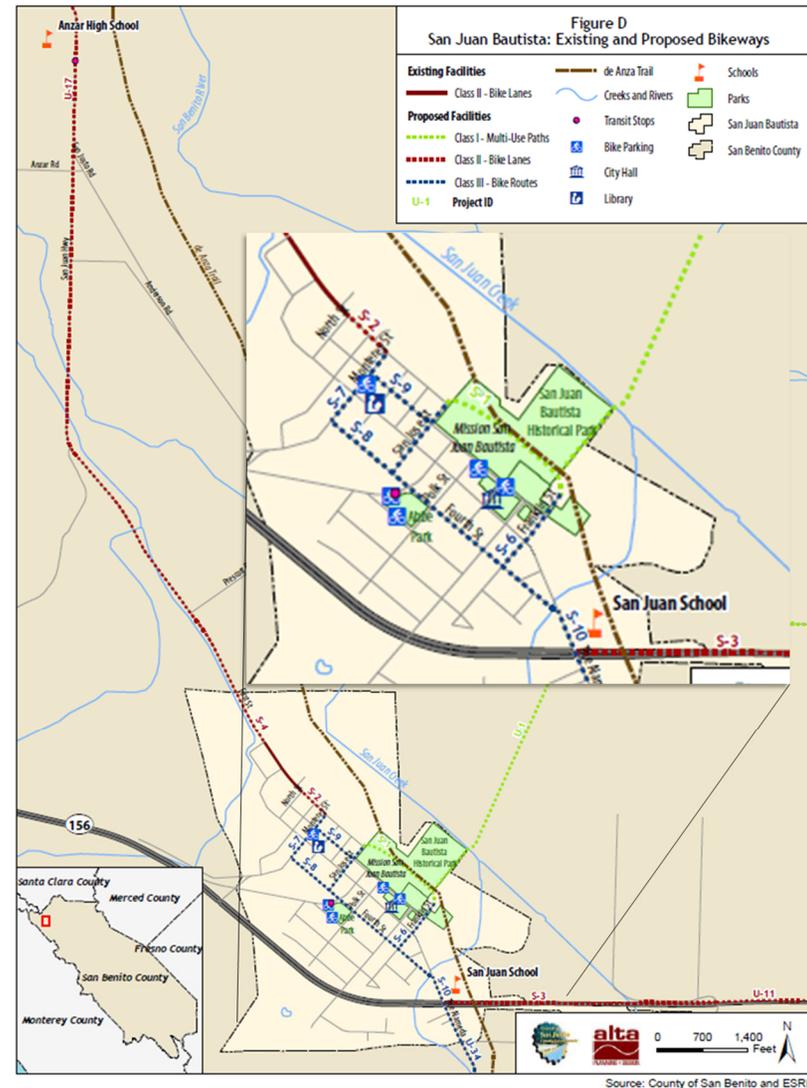
SR-156 at Monterey Street is a two-way stop-controlled intersection with many points of turning movement conflict. As per the City of San Juan Bautista 2035 General Plan Environmental Impact Report (EIR), the intersection operates at level of service (LOS) D under existing conditions (2014). SR-156 at The Alameda is a signalized intersection located near San Juan Elementary School. As per the EIR, the intersection operates at acceptable LOS B under existing conditions (2011).

San Benito County Bikeway and Pedestrian Master Plan, 2009

The Plan proposes a Class III bike route along The Alameda, and a Class II bike lane along SR-156 between San Juan Bautista and Hollister (as shown

in **Figure 5**). Additionally, high visibility crosswalks were proposed at the intersection of SR-156 and The Alameda.

Figure 5. Existing and Proposed Bikeways near San Juan Bautista





San Benito County 2035 General Plan

The San Benito County 2035 General Plan was adopted in July 2015. The Plan identifies SR-156 as a high-speed expressway maintained by Caltrans and The Alameda as an arterial road between Monterey St and San Juan Canyon Road. The Plan has adopted following goals relevant to the study:

- To provide an adequate road system that is safe, efficient, reliable, and within the County’s ability to finance and maintain.
- To provide a safe, continuous, and accessible system of facilities for cyclist and pedestrian travel in appropriate areas of the county.
- To encourage alternative transportation modes to reduce the demand for vehicular trips, especially during congested commute times.
- To provide for the safe and efficient movement of goods to support commerce while maintaining safety and quality of life in the county.

Moving Forward 2040 Metropolitan Transportation Plan

The Plan addresses the transportation system in the Counties of San Benito, Santa Cruz and Monterey. The Plan identifies SR-156 improvements as regionally significant highway projects. The Plan has earmarked \$50,000 for pedestrian improvements such as installation of meters, screens, and striping on the east side at the intersection of The Alameda and SR-156.

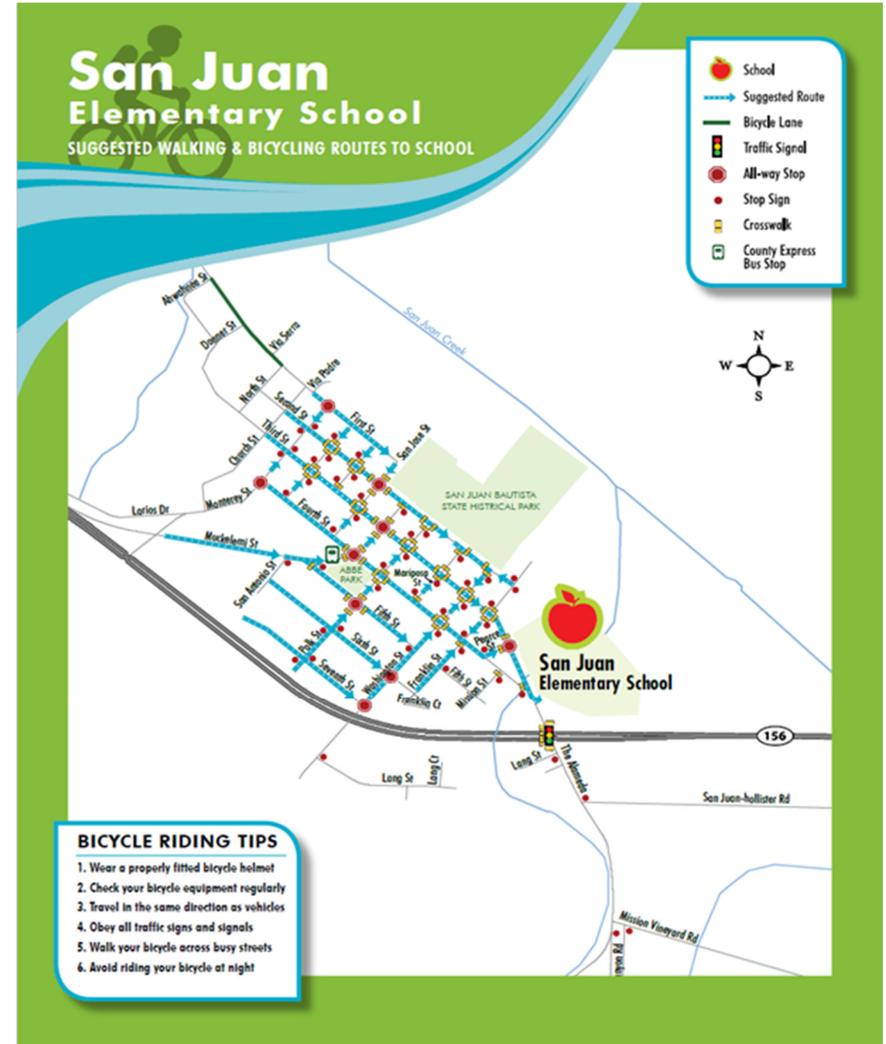
San Benito Route 156 Improvement Project

The San Benito Route 156 Improvement Project will construct roughly 5 miles of new 4-lane at-grade expressway running from The Alameda in San Juan Bautista to Business Route 156 near Hollister. The project will reduce peak hour traffic congestion and save millions in vehicle operating and accident costs.

Safe Routes to School Plan – San Juan Elementary School

The Safe Routes to School Plan suggests the addition of a walking and bicycling route to the school as shown in **Figure 6**.

Figure 6. Safe Routes to School – San Juan School





3. EXISTING CONDITIONS

3.1 DEMOGRAPHICS AND SOCIO ECONOMICS

Demographic analysis will help us in understanding the type of investments and services that are suitable for the Study Area. The demographic data has been collected from the 2016-2020 American Community Survey (ACS) 5-year estimates in the Cities of San Juan Bautista and Hollister.

Population

According to the 2016-2020 ACS 5-year estimate data, the population of San Juan Bautista is 2,089 and of Hollister is 41,678. The population grew by 12% and 19%, respectively, between 2010 and 2020.

Household Size and Median Household Income

The 2016-2020 ACS 5-year estimates reports that 548 households in San Juan Bautista and 10,586 households in Hollister. Of these, approximately 42% of the households are owner-occupied in San Juan Bautista and 60% are owner-occupied in Hollister. The average household size is computed around 3.42 and 3.64 for San Juan Bautista and Hollister respectively. The median household income in San Juan Bautista is \$53,077 and for Hollister is \$63,289.

Age

Age is an important factor while determining various corridor improvement elements such as way-finding, walkability, and roadway safety. Additionally, such improvements are a form of public health infrastructure, enabling active transportation for people of all ages. According to the 2016-2020 ACS 5-Year Estimates data, approximately 30% of the population in San Juan Bautista is 19-years of age and younger, and 23% are 55-years of age or older, and the median age is 38.1. In Hollister, about 35% of the population is 19-years of age or younger, and 16% are 55-years of age or older, and the median age is 30.9.

Commute to Work

Approximately 92% of San Juan Bautista residents travel by cars or vans to work, of which 73% drive alone and 20% carpool. About 1% residents use transit, 4% residents walk and 1% residents bike to work. In Hollister, about 93% residents travel by cars or vans to work, of which 76% drive alone and 17% carpool. Less than 3% residents use public transportation, walk or bike to work.

3.2 PEDESTRIAN AND CYCLIST NETWORK

Pedestrian facilities are comprised of sidewalk networks, crosswalks, and pedestrian signals. These facilities determine the ability to walk comfortably within the study area independent of automobiles or other motorized travel means.

There are intermittent sidewalks present along The Alameda with widths ranging from 5 to 6 feet. SR-156 and The Alameda intersection has a marked school crosswalk with pedestrian countdown signals. Washington Street and Muckelemi Street also has an intermittent sidewalk. Existing pedestrian facilities within the study area are shown in **Figure 7**.

Pedestrian Level of Service (PLOS) at the SR-156 and The Alameda study intersection was evaluated to examine the baseline conditions. PLOS is a quantitative measure that predicts travel perceptions of quality of service and performance indicators. This performance indicator is expressed as a letter grade A-F, with “A” representing exceptional performance and “F” representing degraded performance. The Highway Capacity Manual (HCM) 6th edition details the method used to calculate PLOS for road segments and intersections. While the full PLOS method published in the HCM 6th edition offers a robust quantitative analysis, the following analysis uses a modified version developed by the Oregon Department of Transportation (ODOT). This simplified version of the HCM method eliminates the onerous and data-intensive parts of the calculations while still providing a comprehensive quantitative analysis that supports comparison of alternatives.



The results of the PLOS (2021) for the signalized intersection (SR-156 and the Alameda) is LOS C. PLOS for signalized intersections takes many factors into account to estimate pedestrian perception, such as: crossing distance, presence of a median refuge island, left turn and right turn conflicts, corner radius, and estimated pedestrian delay. To score each intersection, characteristics of each pedestrian leg are computed and averaged.

There are no dedicated cycling facilities within the study area.

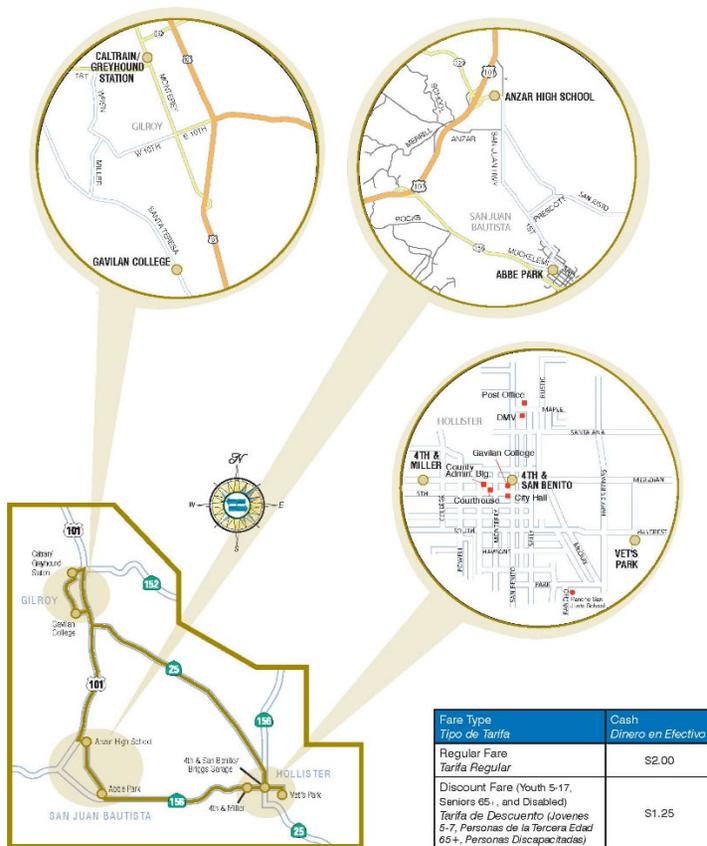
Figure 7. Pedestrian Facilities



3.3 TRANSIT FACILITIES

There are two local bus routes currently operated by VTA, Caltrain and Greyhound that run through the SR-156 study corridor. These routes include Intercounty Services and Dial-A-Ride that operates along the study area corridors. These routes operate between the City of Gilroy (Santa Clara County) and the City of Hollister (San Benito County). Currently, there are no transit stops in the study corridor. **Figure 8** below shows the route map of the services.

Figure 8. Route Map of Intercounty Services



3.4 ROADWAY NETWORK

SR-156

Existing SR-156 is 40 feet wide with two travel lanes that are 12 feet wide each and two shoulders which are eight feet wide. Widening to about 48 feet occurs to create a dedicated left-turn lane at the intersection of Breen Road, Lucy Brown Road, Bixby Road, and Union/Mitchell Road. Open ditch drainage occurs along both sides. The existing right of way is approximately 60 feet wide. Overhead utilities are visible along the north side of the right of way. The posted speed limit is 55 MPH.

Approximately a quarter mile east of The Alameda and extending westward, SR-156 transitions into an access controlled four lane divided highway with shoulders. The speed limit remains 55 MPH until west of San Juan Bautista, where it increases to 65 MPH.

Bixby Road

Bixby Road extends north from its tee intersection with SR-156. It is approximately 22 feet wide with soil shoulders and overland drainage. The existing right of way is approximately 40 feet wide.

San Juan Hollister Road

San Juan Hollister Road is a discontinuous roadway that provides eastward connectivity from SR-156 at Union Road to downtown Hollister. Westward connectivity begins at SR-156 and Breen Road to The Alameda. San Juan Hollister Road is a two lane asphalt concrete roadway approximately 24 feet wide with soil shoulders and open ditch drainage.

The Alameda

The Alameda extends south of SR-156 approximately one third of a mile, terminating at the intersection of San Juan Canyon Road, Mission Vineyard Road, and Salinas Highway. This southern end provides connectivity to the popular Juan Bautista de Anza Historic Trail. South of San Juan Hollister

Road, The Alameda is a 24 feet wide two lane roadway with open ditch drainage. Between San Juan Hollister Road and SR-156, The Alameda has curb and gutter drainage and is about 46 feet wide with two lanes and on-street parallel parking. Sidewalks are present along both sides of the roadway. The speed limit within this segment is 25 MPH.

The existing intersection of The Alameda and SR-156 is signalized with auxiliary turn lanes. School crosswalks are present across the north, south, and west legs of the intersection. Figure 9 shows pedestrians crossing at SR-156 at The Alameda.

Figure 9. Pedestrians crossing SR-156 at The Alameda



The Alameda extends north from SR-156 approximately a quarter of a mile, intersecting at the all-way stop controlled intersection of Franklin Street and Third Street. Along this segment, The Alameda has curb and gutter drainage and is about 46 feet wide with two lanes with a two-way left turn lane from SR-156 to 4th Street, but then is two lanes with on-street parking to the Franklin Street intersection. Sidewalks are present along both sides of the roadway.

The regular speed limit along this segment is 25 MPH. A school speed zone exists along the entirety of this segment and is 20 MPH when children are present.

3.5 TRAFFIC DATA

Figure 10 illustrates the existing AM and PM peak hour vehicle turning movement volumes at the study intersections. Table I summarizes the level of service results as provided in the General Plan EIR.

Figure 10. Existing Conditions Peak Hour Traffic Volumes

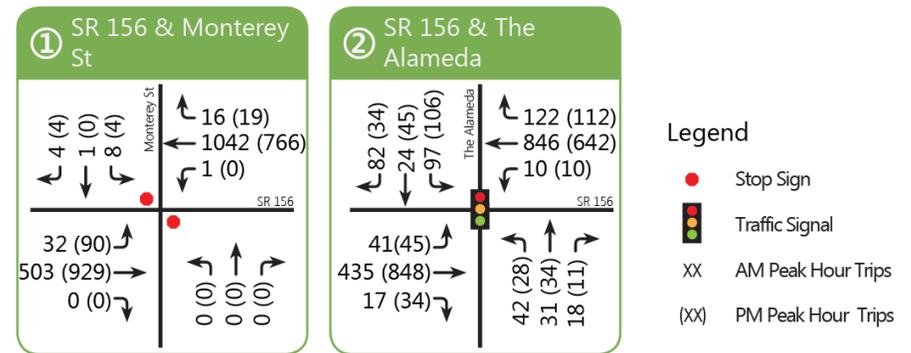


Table I. Level of Service – Existing Conditions

Intersection Name	Analysis Year	Existing Control	Peak Hour	Existing Conditions	
				Delay	LOS
SR-156 and Monterey Street	2014	TWSC	AM	27.9	D
			PM	28.5	D
SR-156 and the Alameda	2011	Signalized	AM	13.7	B
			PM	15.9	B

Source: City of San Juan Bautista 2035 General Plan Final EIR



The EIR states that under future conditions (2035), the Plan will result in potentially significant impacts to the two study intersections. **Figure 11** illustrates the projected AM and PM peak hour vehicle turning movement volumes at the study intersections. **Table 2** shows projected levels of service for the two study intersections. The Plan anticipates that a combination of geometric improvements and shift in transportation mode will mitigate potential impacts.

Figure 11. Future 2035 Conditions Traffic Volumes

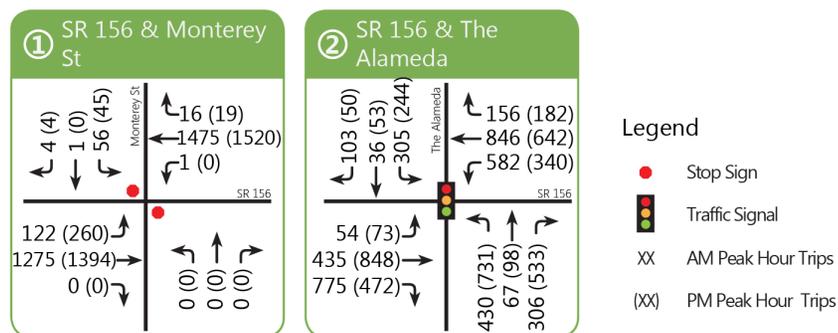


Table 2: Level of Service - Future 2035 Conditions

Intersection Name	Existing Control	Peak Hour	Future Conditions without Mitigations		Future Conditions with Mitigations	
			Delay	LOS	Delay	LOS
SR-156 and Monterey Street	TWSC	AM	89.1	F	18.4	B
		PM	144.4	F	19.2	B
SR-156 and the Alameda	Signalized	AM	77.3	E	35	C
		PM	125.9	F	34	C

Source: City of San Juan Bautista 2035 General Plan Final EIR

3.6 SAFETY

The traffic safety analysis, or collision analysis, evaluates collision trends within the study area. A five-year collision dataset, from 2015 to 2019, was retrieved from the Statewide Integrated Traffic Records System (SWITRS) to evaluate the two study intersections. For this study, an intersection collision is defined as a collision that occurred within a 200-foot radius of an intersection. The number of collision that occurred each year by intersection is shown in **Table 3**.

Table 3. Collisions by Year

Intersection Name	2015	2016	2017	2018	2019	Total
SR-156 and The Alameda	1	5	3	2	4	15
SR-156 and Monterey Street	1	1	3	1	4	10

Collision Severity

Collision severity is defined as the magnitude of consequences from a collision to the involved parties. Roughly 20% of intersection collisions on The Alameda resulted in Killed or Severely Injured (KSI) collisions. At the Monterey Street intersection, 10% of intersection collisions resulted in KSI collisions. **Table 4** summarizes the collisions by severity at the two study intersections.

Table 4. Collision Severity

Intersection Name	K	SI	OVI	CP	PDO	Total
SR-156 and The Alameda	1	0	2	2	10	15
SR-156 and Monterey Street	0	1	1	4	4	10



Collision Type

Table 5 summarizes the types of collisions for the two study intersections. 67% of collisions on The Alameda were rear-end collisions, suggesting drivers are speeding to cross the intersection. One vehicle-pedestrian collision at the intersection resulted in the fatality of a pedestrian. The most common types of collisions at the Monterey Street intersection are Broadside (40%) and Sideswipe (30%).

Table 5. Collision Type

Intersection Name	Head-On	Side-swipe	Rear End	Broad-side	Hit Object	Veh/Ped	Total
SR-156 and The Alameda	1	2	10	0	0	1	15
SR-156 and Monterey Street	0	3	2	4	1	0	10

Violation Category

Table 6 summarizes the distribution of primary violation factors. As predicted, unsafe speeds resulted in 60% of the total collisions at The Alameda intersection. The one-way stop-controlled Monterey St has 50% Automobile Right of Way violations, resulting from failure to yield to other motorists.

Table 6. Violation Category

Intersection Name	Unsafe Speed	Improper Turning	Improper Passing	Pedestrian Violation	Traffic Signals and Signs	Unsafe Starting or Backing	Driving Under the Influence	Unsafe Lane Change	Automobile Right of Way
SR-156 and The Alameda	9	2	1	1	1	1	0	0	0
SR-156 and Monterey Street	0	3	0	0	0	0	1	1	5

Collision on state route 156 near Hollister Friday night

Share   



Updated: 1:11 AM PDT Apr 16, 2022

Infinite Scroll Enabled 

 Chris Hagel 



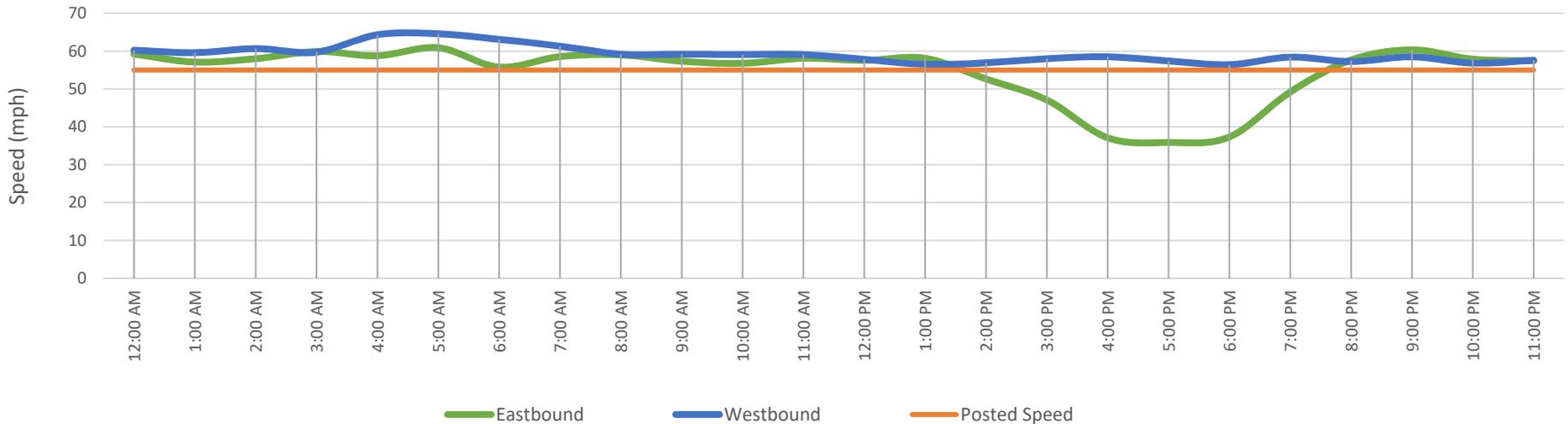


3.7 AVERAGE SPEED

SR-156 serves slow-moving farm and truck traffic as well as faster-moving local and commuter traffic in congested conditions. To better understand the traffic congestion near the study intersections, the SR-156 segment between Monterey Street and The Alameda is analyzed using travel speed data from INRIX. INRIX provides an archive of traffic flow and recorded speeds at the street segment level. INRIX speed data for vehicle travel occurring on mid-week days in October of 2019 was reviewed and summarized in **Figure 12**. The figure represents the average directional speed on the segment between Monterey Street and The Alameda throughout the day.

Review of the eastbound segment reveals lower speeds indicative of congestion from 3 pm to 7 pm, whereas the westbound segment has low to moderate congestion throughout the day that has a nominal impact on travel speeds.

Figure 12. Average Speed





4. NEEDS ASSESSMENT

San Benito County is a rural, agricultural, 1,389 square mile bedroom community south of Silicon Valley with a population of 55,269 and density of 39.8 persons per square mile according to the 2010 U.S. Census. There are two incorporated cities (City of Hollister and San Juan Bautista) and six unincorporated communities (Aromas, Tres Pinos, Panoche, Ridgemark, Bitterwater, and Paicines). The County is surrounded by the Counties of Santa Clara, Santa Cruz, Monterey, Fresno, and Merced.

Due in part to its rural nature, San Benito County residents tend to contribute significantly to the amount of vehicle miles traveled in the region: 48.9% of the workforce travels to other counties for their employment, 78.1% drive alone as their preferred travel mode, and 60.3% travel more than 20 minutes to work (U.S. Census 2011-2018 American Community Survey).

SR-156 is one of few east west routes connecting the central valley to the Monterey Bay region which bisects the City of San Juan Bautista into north and south, which has led to several access and safety issues.

The SR-156 Multimodal Enhancement Study seeks to identify alternatives that can reduce the barrier effect of the SR-156 corridor for cyclists and pedestrians regardless of age or ability or mode of travel while also considering the needs of all users.

The study provides an equitable and comprehensive approach to encourage active healthy lifestyles and active transportation choices. In addition to the health and environmental impacts, the improvements considered have the capacity to improve the economic vitality of the community as it has been shown that complete streets increase social capital by fostering vibrant social interactions and creating a heightened sense of community.

4.1 SR-156 AND THE ALAMEDA, SR-156 AND MONTEREY ROAD

SR-156 serves slow-moving farm and truck traffic as well as faster-moving local and commuter traffic, in congested conditions. Traffic circulation issues at these intersections will likely worsen due to projected growth in the County to 51.5%* by 2020, projected ADT ranging up to 40,828 by 2020, peak hour traffic operating at Level of Service F and future development. The community has identified this area of high concern as traffic around and through San Juan Bautista is a particular problem in the downtown core.

4.2 SAFER CROSSING OF SR-156 AT THE ALAMEDA

The community desires safer connections for cyclists and pedestrians to cross SR-156 at The Alameda in support of San Juan Elementary School's Safe Routes to Schools plan. SR-156 at The Alameda consists of several cycling and pedestrian travel network deficiencies as the highway divides the City into north and south. San Juan Bautista's northern portion consists of the City's retailers, schools, and medical services- leaving residents to the south at a disadvantage as multimodal facilities are not present for residents to safely access these services. Specifically, the eastern part of the intersection lacks a crosswalk, which would otherwise provide a direct and safer route for San Juan School students. Another factor discouraging pedestrian travel in the area is the inadequacy of sidewalks leading into the core of the City. These deficiencies have led residents to drive short distances to obtain basic services.

4.3 ACCESS TO THE JUAN BAUTISTA DE ANZA NATIONAL HISTORIC TRAIL

A stated community desire is to provide better access to Juan Bautista de Anza National Historic Trail from The Alameda, which encourages active, healthy, and environmentally sound transportation choices. The National Historic De Anza Trail directly traverses north and south at SR 165 and



The Alameda on to the historic San Juan Bautista. There is a need to connect cyclists and pedestrians with the trail head. This connection is significant as it provides an opportunity to increase not only utilitarian trips, but also recreational travel. Security issues (i.e., vehicle theft, vandalism) afflict this area.

4.4 CONNECTION BETWEEN HOLLISTER AND SAN JUAN BAUTISTA

In 2011, renowned planner Dan Burden visited San Benito County and highly recommended a bicycle and pedestrian connection between Hollister and San Juan Bautista. This opportunity presents itself only after the construction of SR-156 bypass by Caltrans is completed and ownership of the existing SR-156 roadway is relinquished by Caltrans to the County of San Benito. Once the expressway is constructed, the existing SR156 will serve as the northern frontage road, which would entail less disruption of traffic, and would provide a safer route for any pedestrians, bicyclists, and possible school bus routes. A cycling connection has been identified in San Benito County's Bikeway and Pedestrian Master Plan. However, there still needs to be appropriate connectivity into San Juan Bautista and into neighboring Hollister.

4.5 ACTIVE TRANSPORTATION FACILITIES

The consideration of improved pedestrian and cycling infrastructure should be considered along The Alameda from downtown San Juan Bautista to the Juan Bautista de Anza National Historic Trail. Through context-sensitive design principles, both on-street and off-street facilities will be considered.

Activating the existing SR-156 corridor to provide separated cycling and pedestrian facilities is an important link to connecting San Juan Bautista and Hollister. Of particular importance is identifying the “first mile/last mile” connectivity needs and issues so there is a seamless, safer and more efficient linkage between the two cities for cyclists and pedestrians.



5. COMMUNITY OUTREACH

5.1 PROJECT WEBSITE

At the project's onset, an interactive project website (www.linkingsjb-hollister.com) was developed to provide ongoing project updates and information. The website's purpose was to solicit the community's input on facility priorities and preferences. The website had 451 unique visits and 558 site session in total (as of May 10, 2022). Website information was distributed using social media outlets, postcards, and San Juan Bautista's and SBCOG's official websites. The website featured an introduction of the initiative, forthcoming events, a survey, and feedback forms. A total of 87 residents signed up to receive ongoing project information. A screenshot of the website's homepage is shown in **Figure 13**.

Figure 13. Project Website



Linking SJB - Hollister Study

The Council of San Benito County Governments (COG) was awarded a Caltrans grant to prepare the study that focuses on the SR 156 corridor and surrounding areas near San Juan Bautista.

The purpose of the study is to:

- Address traffic issues at the only two access points into the City of San Juan Bautista from SR 156 to The Alameda and Monterey Street.
- Provide safe connections for bicyclists and pedestrians traveling across SR 156 at

5.2 ONLINE SURVEY

An online survey was conducted to gather feedback on the needs and concerns for prioritizing improvements in project development. The survey was hosted for three months (from November 2021 to January 2022) on the project website. The survey was concluded on February 1, 2022, and project website subscribers and others were notified via email blasts and social media channels. A total of 159 responses were received. The survey findings are summarized from **Figures 14 to 21**.

Figure 14. Respondent Description

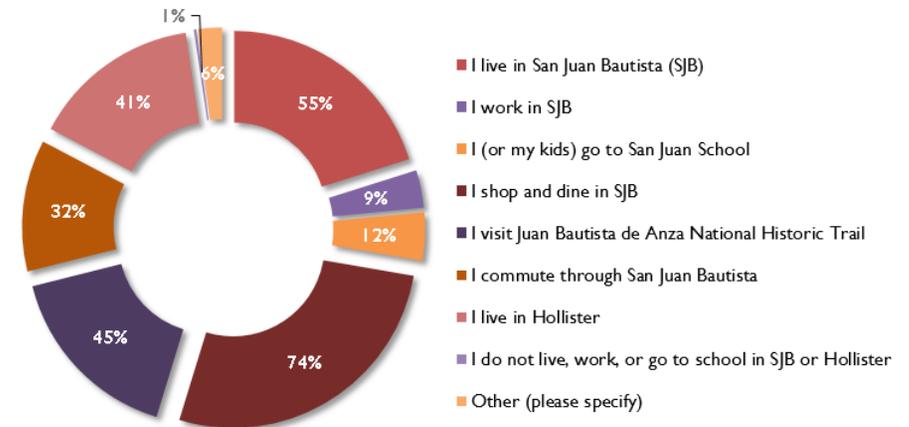




Figure 15. Modes Currently Used

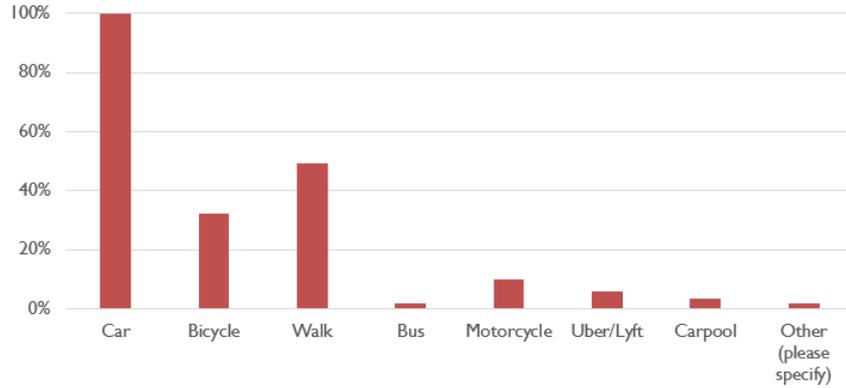


Figure 16. Most Used Location

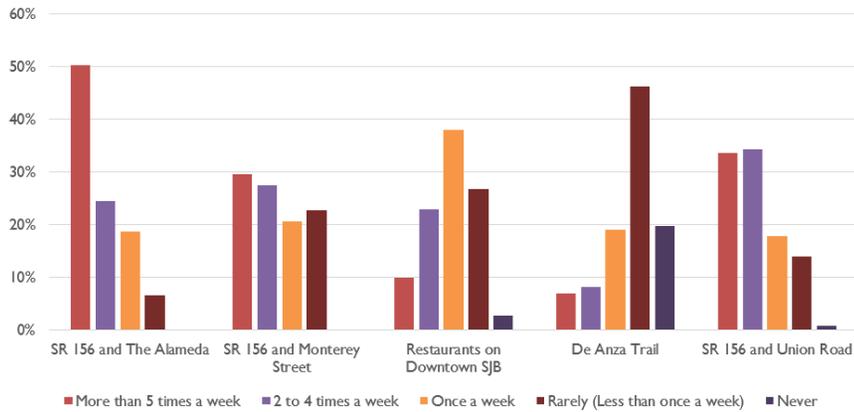


Figure 17. Concerns at SR-156 and The Alameda Intersection

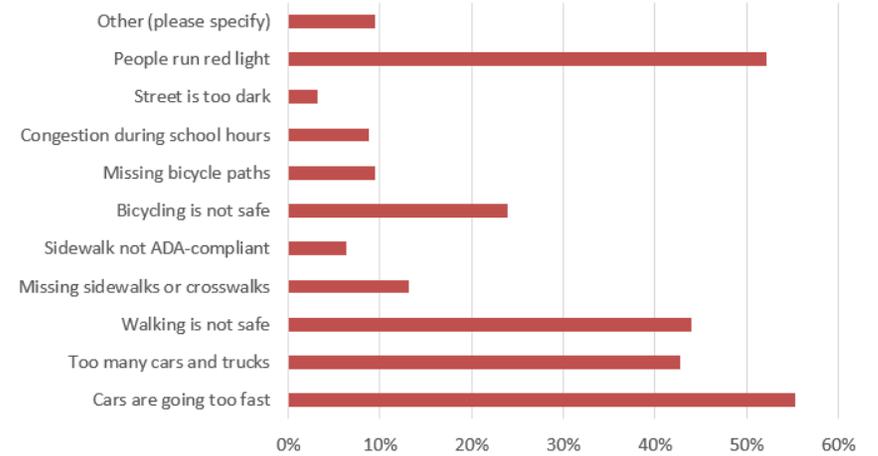


Figure 18. Concerns at SR-156 and Monterey Street Intersection

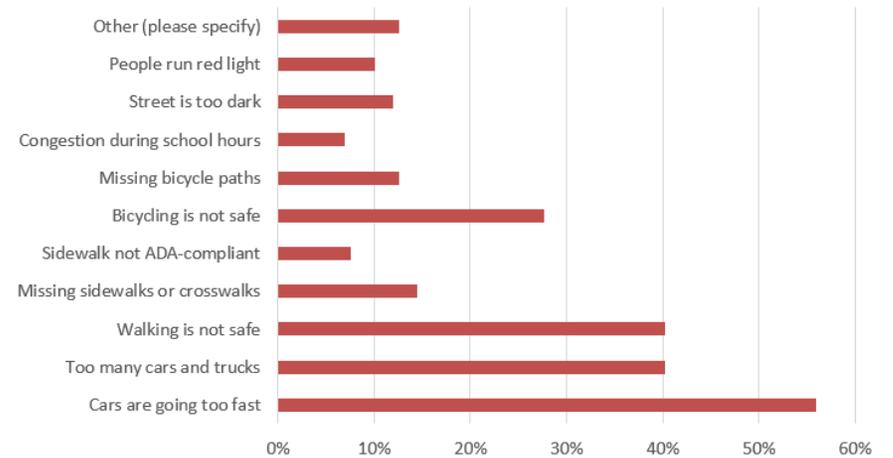




Figure 19. Factor for Route Choice

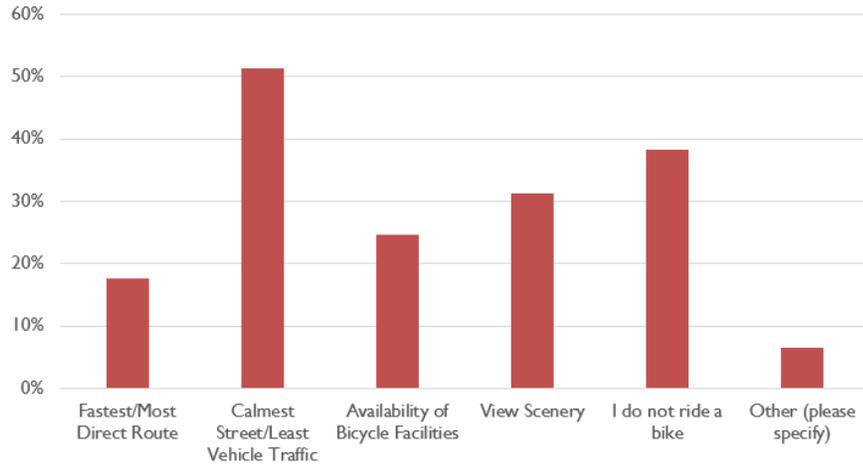


Figure 20. Improvements to Encourage Walking and Biking

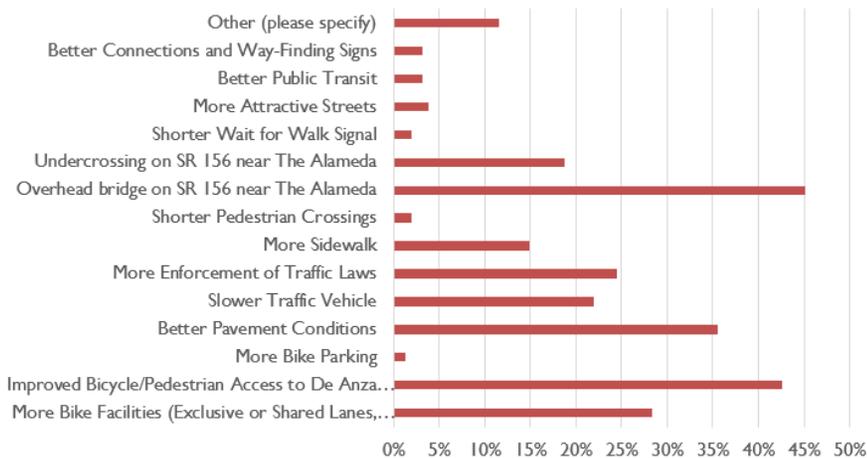
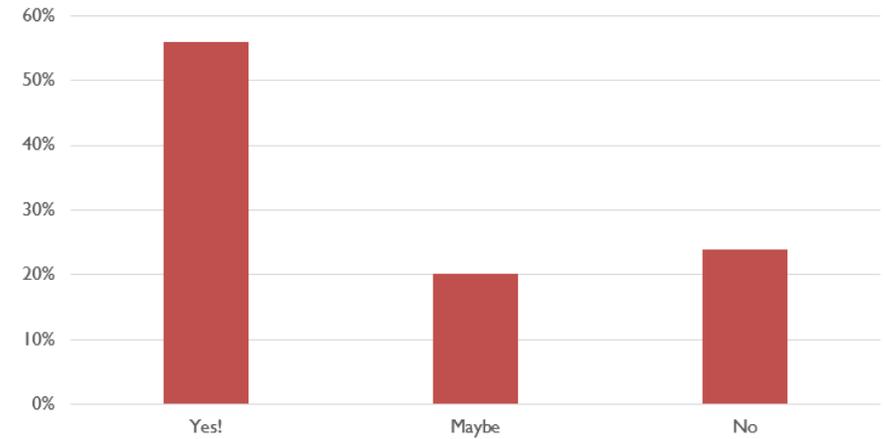


Figure 21. Vote on Biking to Hollister if Separated Bike Lanes or Trails are provided



5.3 PROJECT DEVELOPMENT TEAM MEETINGS

The Project Development Team (PDT) members were represented by SBCOG, SJB City Council, SBC Public Works, REACH San Benito Parks Foundations, Aromas-San Juan Unified School District, CHP Hollister-Gilroy, and Caltrans. The PDT members were responsible for reviewing the project deliverables and study alternatives and providing feedback. Other responsibilities included assisting with the formulation of study objectives, providing recommendations and essential data, and confirming support for the draft plan. The three PDT meetings were held on October 19, 2021, March 23, 2022, and April 25, 2022.

Additionally, the PDT members conducted a walking audit on SR-156 on October 19, 2022.



5.4 COMMUNITY OUTREACH MEETINGS

On February 8, 2022, the first community workshop was organized virtually using the Zoom videoconferencing application. The workshop event details were disseminated via the social media channels of the City and County, local news, and the project website. The workshop was attended by 19 residents. The objective of the first community workshop was to introduce the project and its scope to the community, present survey results, and solicit community feedback.

The second community workshop was held on April 6, 2022 virtually via the Zoom videoconferencing application. The workshop was attended by 11 residents. The purpose of the second community workshop was to solicit community member feedback on the three alternative concept drafts developed to date based on technical analysis and community input.

6. CONCEPTUAL DESIGN DEVELOPMENT

6.1 DESIGN CONSIDERATIONS

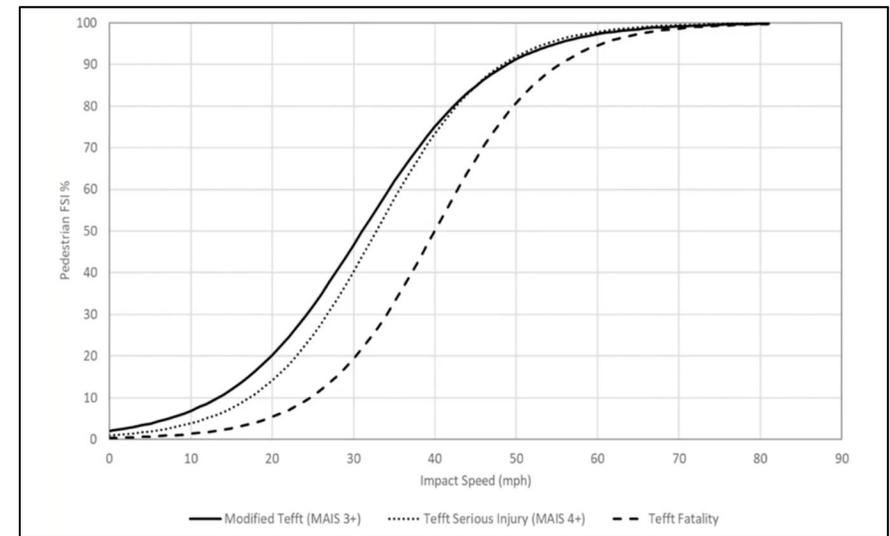
Desired Operating Speeds

Vehicular operating speeds as shown in **Figure 12** exceed the posted 55 MPH speed limit and are mostly in the 55 to 65 MPH range. Only during the evening peak period do speeds drop to about 35 MPH, an indicator of the level of congestion and delay. Once the SR-156 Bypass is constructed, the existing roadway corridor becomes a people-centric place. Yet it is reasonable to anticipate that vehicular travel speeds will not decrease but in all likelihood increase due to reduced vehicle volumes. The roadway is straight and relatively flat with open fields to either side. Nothing about the context would indicate to a driver that slower speeds are now necessary, even with adjacent walkways and cycling facilities.

Figure 22 shows the probability of an auto-pedestrian crash being fatal or imparting serious or severe injuries to the pedestrian. The values for children and the elderly are higher. The term “Tefft” refers to the 2011 technical report “Impact Speed and a Pedestrian’s Risk of Severe Injury or Death” authored by Brian C. Tefft for the AAA Foundation for Traffic Safety. The term MAIS refers to Maximum Abbreviated Injury Scale, a globally accepted and widely used trauma scale used by medical professionals. It provides an objective and reliable basis for data collection and international comparisons. The injury score is determined at the hospital with the help of a detailed classification key. A MAIS score of 1 is considered minor injuries treatable by first aid or a minor emergency clinic. A MAIS score of 2 is considered moderate injuries requiring emergency room treatment but not requiring hospitalization for full recovery. A MAIS of 3 is considered serious and described as reversible injuries with hospitalization required. A MAIS of 4 is considered severe and life threatening and not fully recoverable without care. A MAIS of 5 is

critical and described as non-reversible injuries and not fully recoverable even with medical care. A MAIS score of 6 is considered virtually unsurvivable and fatal.

Figure 22. Auto-Pedestrian Crash: Probability of Pedestrian Suffering Serious Injury or Death (FHWA)



Given the vehicular speed trends previously mentioned, the probability of an auto-pedestrian crash being fatal is 90% or greater, and the probability that a pedestrian would suffer injuries that would produce a MAIS score of 4+ is 95% or greater. Thus a desired operating speed significantly less than current operating speeds is warranted. Travel speeds can be reduced through traffic calming by implementing certain geometric street features. But there is a direct relationship between the speed mitigation strategy and the resulting speeds: achieving ever-lower speeds requires more devices and/or more assertive or aggressive devices. There is also a unique aspect of traffic calming that is borne out by experience: the greater the intensity of mitigation the harder it is to reach community consent for support. So there is a balance point for the lowest operating speeds that can be achieved that the community will support given the context. For



this context, a suggested desired operating speed could be in the 10-20 MPH range at critical nodes (e.g. pedestrian crosswalks), and in the 20-30 MPH range along the links between those nodes.

Farm Implements and Equipment

A tradeoff for the ultimate design of the SR-156 frontage road is that it must allow travel by farm implements and equipment. While most vehicular traffic will be able to safely navigate possibly narrower lanes and traffic calming devices, without accommodation larger vehicles including 18-wheelers and farm equipment will not be able to travel along the roadway. Or, if they do, when they encounter an oncoming vehicle, neither may be able to pass beyond the other. Strategies that allow for mountable curbing and raised traffic islands without landscaping can provide the needed accommodation while continuing to result in the desired operating speeds by passenger vehicles. Also, an open section without curbing may need to be considered to allow for farm vehicles and implements to drive off the roadway to the right to allow oncoming traffic to continue travel.

Storm Water Management

Presently, storm water is conveyed by open ditches along both sides of the roadway. Flow lines are relatively flat, so water is likely conveyed by head relative to its depth. Any proposed cross section must provide for storm water conveyance. The inclusion of rain gardens and bioswales will be beneficial to storm water quality. Alternative cross slopes such as asymmetric to one side or inverted should be considered. Roadway conveyance via curb and gutter may be an option provided consideration is given for farm equipment and implements as discussed in the previous section.

Utilities

Presently, overhead utilities exist along the north side of the corridor. There do not appear to be any underground utilities; however, any design

efforts will require the determination of any parallel or crossing utilities and any associated easements or right-of-ways. Should features such as roadway and pathway lighting be considered, sources of power must also be determined unless solar-powered lighting options are being considered.

Constructability

This aspect should be considered in project planning ahead of project design. In this instance, the degree of ease of constructability will be determined by the preferred cross sections and geometric street features considered. Where existing traffic can be maintained, parallel construction off-roadway can progress relatively quickly. However, complex traffic handling strategies may increase construction times and project costs. Tying back to storm water management, even under construction the project must have positive drainage provided at all times, including having an effective and well-executed and maintained storm water quality management plan.

Connectivity

The intent of the project is to ultimately provide multimodal connectivity between San Juan Bautista and Hollister. Caltrans is providing a transition on the east end for the frontage road to tie into Mitchell Road at Union Road. The transition on the west end of the project ties the frontage road into Breen Road. Yet, for both of these termini safe and efficient connectivity for cyclists and pedestrians from those points onward needs to be considered as part of future planning efforts.

Community Resiliency and Sustainability

One of the largest and most visible assets a community possesses is its public right of ways and the roadways within them that form the roadway transportation network. This network not only provides for the movement of people and goods, it also sets the tone for how a community is perceived which can translate into worth and quality of place.



Community resiliency means an ability of a community or its constituent parts to bounce back from the harmful impacts of disaster. While “disaster” usually refers to fires, earthquakes, floods, or storms, it can also refer to the generational slow disasters of systemic discrimination, lack of access to transportation, lack of affordable housing and workforce housing, lack of access to quality education, climate change, and aging infrastructure such as public buildings, streets and highways, and water and wastewater systems. While the concept of resiliency is couched in terms of being explicitly human or social, resiliency also includes the built environment created by social systems.

Related to resiliency is sustainability. Sustainability is planning and designing communities such that present needs are met without compromising the ability to meet future needs. Communities are places where people live, work, play, learn, and heal. Community planning and design based on a desire to be sustainable follows from societal values of environment, economy, equity, and livability. Livability includes creating places that meet the needs and aspirations of a community’s members. Streets that are planned and designed so that they feel safe and comfortable, so that they are interesting, and so that they are attractive, will be places where people want to be. Such streets, which can be termed as “livable” or “walkable” or “people-centric”, become desirable, which translates into economic benefits for the community. There is economic value in quality place making as the design of streets directly influences the character of the surrounding community. Thus, to plan, design, and construct streets and intersections to be people-centric places contributes to sustainability, which can enhance community resiliency.

Equity

There is a critical need for equity in our transportation systems. Streets are for people, and people will use a street based on their needs, their means, and the context of the street. Planning and designing streets for people means creating places where people feel safe and are safe, and they feel comfortable being there. Streets are a billboard advertising the values



of a community. The message should be, “All are welcome here”, but it is commonly not the case.

Historically, streets have been designed for cars and those who can afford them, and the design of our streets and land use plans has created the social engineering of a system where people have no other transportation choice than to drive a car. Streets and highways have been used as instruments to further discriminatory thoughts, programs, and processes. The practice of “red lining” from the 1930s and 1940s still exerts an oppressive hold on vulnerable populations.

Promoting equity in our transportation systems starts with the ethical belief that everyone has the right to move safely in their communities, and that system designers and policy makers share the responsibility to ensure safe systems for travel. FHWA defines equity as, “The consistent and systematic fair, just, and impartial treatment of all individuals, including individuals who belong to underserved communities that have been denied such treatment, such as Black, Latino, Indigenous and Native Americans, Asian Americans and Pacific Islanders, and other persons of color; members of religious minorities; lesbian, gay, bisexual, transgender, and queer (LGBTQ+) persons; persons with disabilities; persons who live in rural areas; and persons otherwise adversely affected by persistent poverty or inequality.”

Equity is also illustrated in how we engage with the community and stakeholders. Projects such as this move at the speed of trust, and trust is earned through inclusive, transparent, consistent, and authentic community engagement. This includes “meeting people where they are” and communicating with them in their own language, such as providing Spanish translations, ADA accessible venues and documents, and American Sign Language (ASL) interpreters.

Climate Change

Motor vehicle emissions exacerbate climate change. Congestion and delay results in tons of pollutants and particulates being added to the environment annually. By creating people-centric streets, other modes of transportation, particularly walking and cycling, become viable options. Going back to the concepts of resiliency, sustainability, and equity, it is possible to create multimodal transportation systems that encourage active living and travel options that do not require a motor vehicle. Introducing opportunities for landscaping and shade in our street designs allows for reduction of the heat island effect and levels of carbon dioxide. Implementing rain gardens and bioswales allows for in situ treatment of storm water and capture of particulates and chemicals before they can reach streams, rivers, ponds, lakes, and the ocean. Designs can also be developed that promote slower travel speeds, resulting in reduced fuel consumption and vehicle emissions. Finally, by considering intersection control strategies such as modern roundabouts that do not require vehicles to stop when not necessary further ameliorates environmental impacts.



slower travel speeds, resulting in reduced fuel consumption and vehicle emissions. Finally, by considering intersection control strategies such as modern roundabouts that do not require vehicles to stop when not necessary further ameliorates environmental impacts.

Modern Roundabouts

Generally, communities rely on traffic signals to manage most primary intersections, which are an important but vulnerable community asset. For smaller or rural communities, effective management and maintenance of traffic signals may be challenging due to limited funding and availability of qualified staff. An alternative to traffic signals can be modern roundabouts.

A modern roundabout is a generally circular intersection with specific geometric design parameters and operating characteristics. The three most notable operating conditions are:

- Yield on entry – Vehicular traffic entering a roundabout must yield to traffic already present in the roundabout.
- Low operating speeds – Depending on context, roundabouts are designed to operate in the 10-15 MPH range. Some larger capacity roundabouts may be designed to operate in the 25-30 MPH range.
- The pedestrian crossing points are specifically designed to reduce conflicts with vehicular traffic. Crossings by pedestrian are safer as the crossing can be made in two stages with the splitter island being used as a pedestrian refuge. Special accommodations for cyclists and people with disabilities can be readily implemented.

Modern roundabouts offer many advantages over traditional stop- and signal-controlled intersections. They are safer, they better serve all roadway users regardless of age or ability, they are more efficient, their design is flexible to context, and they can serve as gateways or community focal points. As such, they also add to community resiliency and sustainability. The Federal Highway Administration (FHWA) considers modern roundabouts a “proven safety countermeasure”, meaning they are demonstrably effective in reducing roadway fatalities and serious injuries. Additional information regarding modern roundabouts can be found at <https://safety.fhwa.dot.gov/provencountermeasures/roundabouts.cfm>.



6.2 PRELIMINARY ALTERNATIVES, ISSUES, AND TRADE-OFFS

Overview

This report investigates four primary focus areas:

1. The presently unsignalized intersection of Monterey Street and SR-156 including Muckelemi Street and its connection to SR-156.
2. The signalized intersection of The Alameda and SR-156 and the immediately adjacent segments of The Alameda.
3. The Alameda from south of SR-156 to Juan Bautista de Anza National Historic Trail.
4. The future SR-156 frontage road from Breen Road to Union Road and its interaction with the proposed realignment of SR-156 by Caltrans.

Monterey Street and SR-156

Presently, the intersection of Monterey Street and SR-156 is unsignalized. The community voiced concern regarding the speed of traffic and the risk of crashes occurring. The intersection of Monterey Street and Muckelemi Street is being considered for conversion to a roundabout as part of a planned adjacent development. The community also expressed concern regarding merging onto SR-156 from the Muckelemi Street ramp, stating that they felt there was limited sight distances and the speed of mainline traffic was excessive. From a systems perspective, SR-156 acts as a barrier to cyclists and pedestrians wishing to cross at Monterey Street.

Three possible alternatives were identified. The first is to develop immediate short term improvements which could enhance traffic operations, specifically right turn access from Monterey Street to SR-156. The second option is to signalize the intersection similarly to SR-156 and The Alameda. The third option is to consider converting the intersection into a modern roundabout.

Immediate short-term improvements could include modifying existing signing and striping and extending acceleration and merge areas and right turn lanes. Sight lines can be improved by select trimming of existing vegetation.

While signalizing the intersection assigns right-of-way to conflicting traffic, it does not address the stated community concerns of red light running, speeding, crash risk, or discomfort felt by cyclists and pedestrians desiring to cross SR-156. Signalization requires additional study, community engagement, and coordination with and approvals from Caltrans. The timeframe for implementation could be within five years depending on availability of funding for analysis, design, and construction.

Converting the intersection to a modern roundabout addresses the community's concerns about safety, speed, crash risk, and accessibility for cyclists and pedestrians. This improvement would also create a gateway entry for the corridor. Landscaping or public art could be considered for inclusion in the central island. Coupled with the roundabout being considered at the intersection of Monterey Street and Muckelemi Street, the on-ramp could be removed. An example of a multilane modern roundabout is shown in **Figure 23**.

Figure 23. Example of a Roundabout



This concept builds on the fact that Caltrans is constructing a multilane roundabout at the intersection of the new alignment of SR-156 and Bixby Road (discussed later in this report). Roundabouts built in series along a corridor are shown to provide synergistic safety and operational benefits.

Considering a roundabout requires additional study, community engagement, and coordination with and approvals from Caltrans. Additional right of way will likely be required. Finding and programming monies for analysis and conceptual design, environmental clearance, right of way acquisition and utility relocation, and construction will be challenging. The overall timeframe could be from five to ten years.

The Alameda and SR-156

Presently, the intersection of The Alameda and SR-156 is signalized. The community voiced concern regarding the speed of traffic, the risk of crashes occurring, red light running, and the level of discomfort experienced from crossing SR-156 as a cyclist or pedestrian. The intersection is an identified safety node in San Juan Elementary School's Safe Routes to Schools Plan. The Alameda north and south of SR-156 has sidewalks on both sides of the street but no cycling facilities. Even with signalization, SR-156 is considered a barrier to travel by cyclists and pedestrians along The Alameda.

A new gas station with convenience store is soon to be constructed within the southeast quadrant of the intersection. As part of this development, a new right turn only lane for eastbound to southbound vehicular traffic will be constructed along SR-156. This added lane increases the pedestrian crossing distance of SR-156 on the west side of the intersection. This will necessitate modification to the traffic signal timing and phasing to provide additional crossing time. Along with likely increasing vehicular delays, the crossing of SR-156 will be more uncomfortable for pedestrians because of increased exposure time and distance within the intersection.

Four alternatives of increasing effort were considered for improving safety and connectivity from downtown San Juan Bautista to the Juan Bautista de Anza Historic Trail.

Alternative 1

The strategy of this alternative is to provide short term low-cost initial investments to improve the cycling and walking environment approaching and crossing SR-156. **Figure 24** illustrates the first alternative.

Figure 24. Proposed Alternative I at SR-156 and The Alameda



- Add shared lane markings called “sharrows” (depicted to the right) within the existing through lanes to indicate that cyclists and motorists are to share those lanes when crossing SR-156.
- Add an additional crosswalk across SR-156 on the east side of the intersection to better align with pedestrian desire lines for origins and destinations that are along the east side of The Alameda. Restripe the existing three crosswalks to have higher visibility.
- Modify the existing traffic signals to add pedestrian signal heads and accessible pedestrian push buttons in the northeast and southeast corners of the intersection to serve the new crosswalk.



The tradeoffs for this strategy are:

- A lower stress environment for cyclists is not created as they must continue to mix with vehicular traffic.
- Signal retiming to accommodate pedestrians using the new crosswalk may increase vehicular delays.
- Community concerns about speeding, red-light running, crash risk, and pedestrian discomfort within the intersection are not addressed.



Linking SJB ↔ Hollister

Alternative 2

The strategy of this alternative builds on Alternative 1 to increase cyclist comfort and safety.

- Add an additional crosswalk across SR-156 on the east side of the intersection to better align with pedestrian desire lines for origins and destinations that are along the east side of The Alameda. Restripe the existing three crosswalks to have higher visibility.
- Modify the existing traffic signals to add pedestrian signal heads and accessible pedestrian push buttons in the northeast and southeast corners of the intersection to serve the new crosswalk.
- Restripe The Alameda to provide dedicated bike lanes by narrowing the existing vehicular lanes, prohibiting parking, and widening the roadway. An example of a dedicated bike lane is shown at right.

The tradeoffs for this strategy are:

- The removal of on-street parking may be undesirable for adjacent residents and business owners.
- The widening of The Alameda may require additional right of way or public access easements, which can be relatively expensive and time consuming to acquire, and may adversely impact existing and future development.
- Signal retiming to accommodate pedestrians using the new crosswalk may increase vehicular delays.
- Community concerns about speeding, red-light running, crash risk, and pedestrian discomfort within the intersection are not addressed.
- Narrower vehicular travel lanes may feel uncomfortable to drivers and increase the perception of congestion and delays.
- The width of the bike lane may not serve all types of pedaled vehicles such as recumbent three wheeled cycles, cargo bikes, and adult tricycles.

Alternative 3

The intent of this strategy is to create a separated shared use facility along the east side of The Alameda. **Figure 25** illustrates the second alternative.

- Restripe the existing three crosswalks to have higher visibility.
- Add an additional pedestrian crosswalk paired with a separate cyclist crosswalk across SR-156 on the east side of the intersection.
- Modify the existing traffic signals to add pedestrian signal heads and accessible pedestrian push buttons in the northeast and southeast corners of the intersection to serve the new crosswalk.
- Consider implementing an exclusive cyclist/pedestrian crossing phase so that no vehicular traffic movements occur while cyclists and pedestrians are crossing either The Alameda or SR-156. Consider including a NO TURN ON RED prohibition for right turns that conflict with pedestrian WALK/flashing DON'T WALK phases.
- Widen the existing sidewalks on the east side of The Alameda to be a shared use path for cyclists and pedestrians. The width of the shared use path should be in the range of eight to twelve (8 – 12) feet.
- Extend the shared use path from The Alameda eastward along Nyland Drive to enhance the functionality of the Safe Routes to Schools plan for San Juan Elementary School.
- Extend the shared use path from SR-156 southward along the west edge of The Alameda approximately 100 feet.

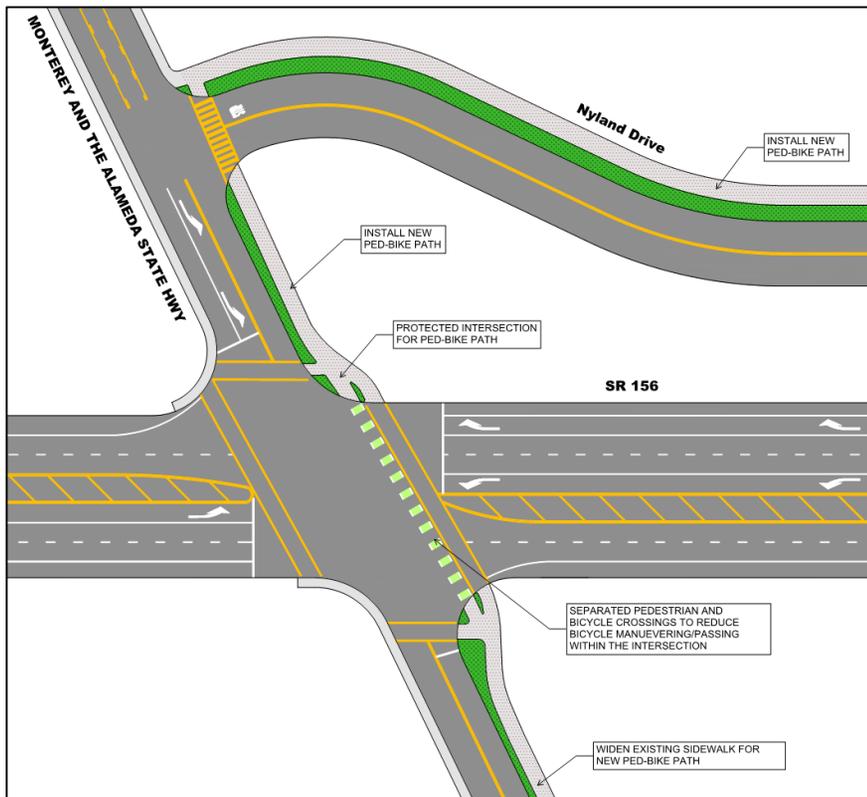
The tradeoffs for this strategy are:

- This alternative requires a greater level of funding than previous alternatives.
- The construction of the shared use path may require additional right of way or public access easements, which can be relatively expensive and time consuming to acquire, and may adversely impact existing and future development.
- As an alternative to right of way acquisition, narrowing of The Alameda could be considered, which would require the narrowing of

the vehicular travel lanes and the removal of on-street parking. The removal of on-street parking may be undesirable for adjacent residents and business owners. Narrower vehicular travel lanes may feel uncomfortable to drivers and increase the perception of congestion and delays.

- Signal retiming to accommodate pedestrians and cyclists using the new crosswalks, especially during an exclusive cyclist/pedestrian phase may increase vehicular delays.
- Community concerns about speeding, red-light running, and crash risk are not addressed.

Figure 25. Proposed Alternative 2 at SR156 and The Alameda



Alternative 4

This alternative considers the conversion of the existing signalized intersection into a multilane modern roundabout. An example is shown previously in **Figure 23**.

As discussed previously, modern roundabouts provide significant benefits in terms of safety and efficiency. They better accommodate all roadway users regardless of age or ability or mode of travel, they create opportunities for gateways and community focal points, and they enhance community resiliency and sustainability. This option effectively addresses the community's concerns regarding speeding, red-light running, crash risk, and pedestrian and cyclist levels of comfort.

This concept builds on the fact that Caltrans is constructing a multilane roundabout at the intersection of the new alignment of SR-156 and Bixby Road (discussed later in this report). It also ties to the concept of implementing a roundabout at Monterey Street and SR-156. Roundabouts built in series along a corridor are shown to provide synergistic safety and operational benefits.

The tradeoffs for this strategy are:

- Reaching community consent for supporting (or, at least not opposing) the concept of a roundabout can be challenging. Typically, proposed roundabouts face about two to one level of opposition; however, once successfully implemented they enjoy a four to one or better level of support.
- This alternative is the most impactful and budget intensive of all the alternatives. It would also take the longest to plan and implement, perhaps as long as five to ten years.
- Right of way acquisition and utility relocation would be required. Some parcels may require a full taking, which would be relatively costly and time consuming.
- Any consideration would require additional study, community engagement, and review and approval by Caltrans.

- Construction would require significant traffic management. Travel through the construction work zone would be impacted, especially for cyclists and pedestrians.

Juan Bautista de Anza National Historic Trail Connection

The concept of a connection to Juan Bautista de Anza National Historic Trail builds on the concept of Alternative 3 by constructing a shared use trail along the eastern edge of The Alameda. This concept is shown in **Figure 26**.

By providing a separated share use trail, the community concerns of cyclist and pedestrian safety are addressed. This alternative requires additional study and preliminary design along with environmental clearance and community engagement. The construction of the shared use path may require additional right of way or public access easements, which can be relatively expensive and time consuming to acquire.

Figure 26. Concept of Connection to Juan Bautista de Anza National Historic Trail from SR-156



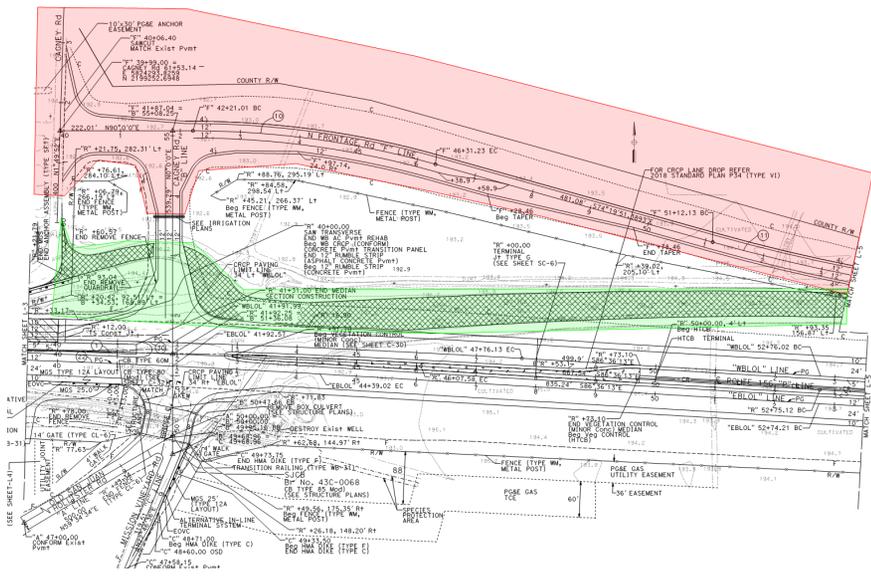


SR-156 Frontage Road

The realignment of SR-156 south of its existing alignment by Caltrans creates the opportunity to reimagine what is referred to as the SR-156 Frontage Road as a multimodal corridor.

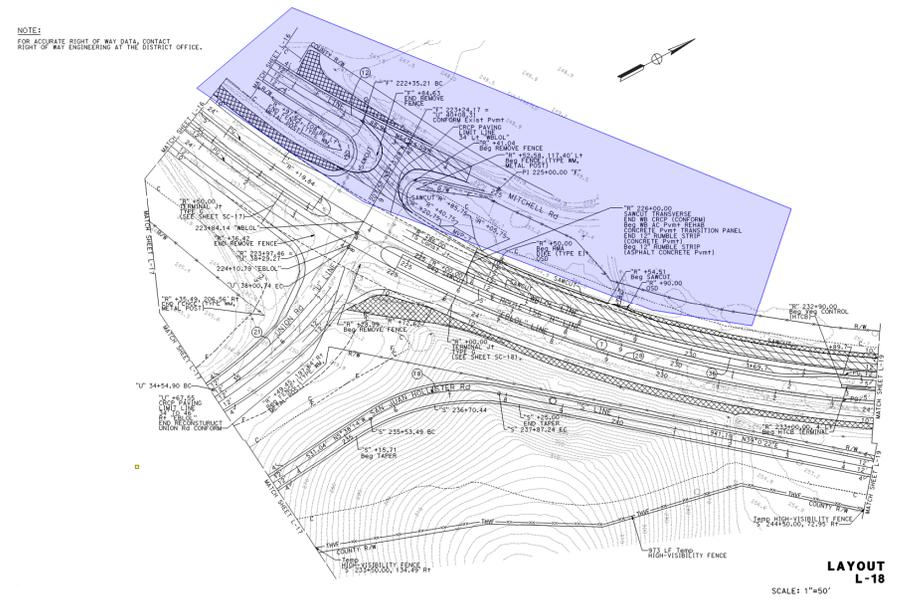
On the west end, the existing roadway is realigned to tie into Breen Road just west of Cagney Road, and San Juan Hollister Road is realigned to intersect SR-156 perpendicularly. The intersection of SR-156 and San Juan Hollister Road is not planned to be signalized as part of the project but will remain stop controlled for north/south traffic. An annotated excerpt from Caltrans' plans appears below in **Figure 27**. The new alignment of the SR-156 Frontage Road is shaded in red while the existing alignment proposed for removal is in green.

Figure 27. Existing and Proposed Alignment of SR-156 (Image from Caltrans)



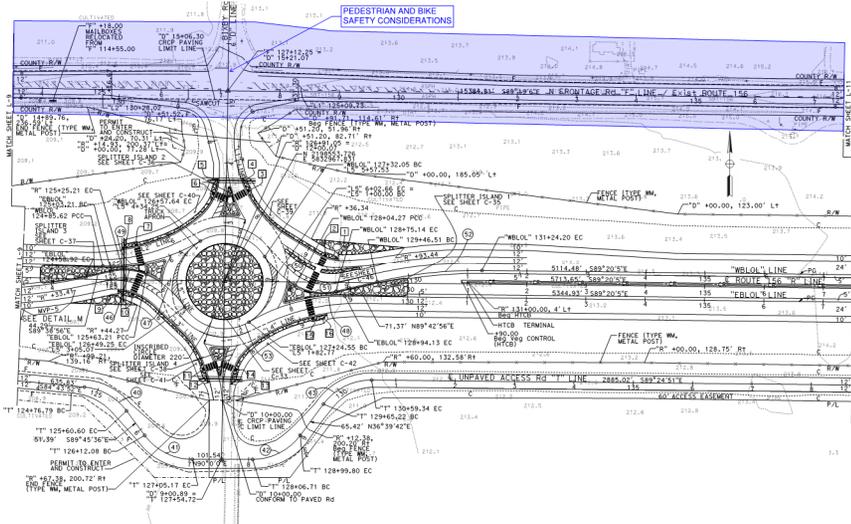
At the east end, the SR-156 Frontage Road will be realigned to tie into Mitchell Road just west of Union Road. The intersection of SR-156 and Union Road will remain signalized with modifications to the existing signal and intersection occurring as part of Caltrans' project. An annotated excerpt from Caltrans' plans appears below in **Figure 28**. The new alignment of the SR-156 Frontage Road is shaded in blue.

Figure 28. New Alignment of SR-156 Frontage Road (Image from Caltrans)



A multilane modern roundabout is planned for the intersection of the new SR-156 and Bixby Road and is shown below in **Figure 29**. It will be constructed as part of the SR-156 realignment project. The SR-156 Frontage Road is highlighted in blue. Presently, the intersection of Bixby Road and the SR-156 Frontage Road is proposed to have stop control for east/west traffic. Northbound and southbound traffic will not be required to stop.

Figure 29. Proposed Roundabout at SR-156 Frontage Road and Bixby Road (Image from Caltrans)

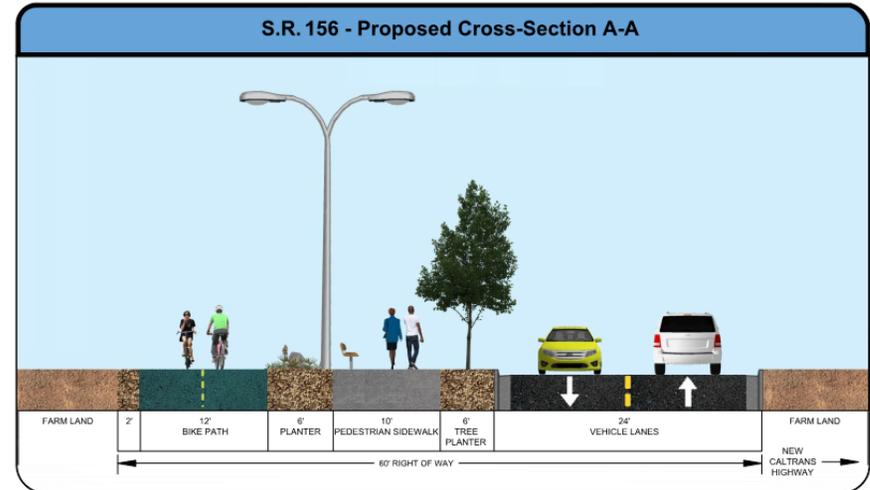


Based on input from the PDT and stakeholders, two alternative cross sections were initially considered for the SR-156 Frontage Road. In both alternatives, modes of travel are separated by buffers. Motor vehicles continue to be served by a two way, two lane roadway. Pedestrians are provided sidewalks and cyclists are afforded a two lane, two way bikeway.

Alternative 1

As shown in **Figure 30**, Alternative 1 shifts the vehicular roadway southward to accommodate a wide sidewalk and a two way bikeway along the north side of the corridor. Within the buffers are landscaping planters, shade trees, street lighting, and pathway lighting. Street furniture such as benches and trash receptacles are suggested for inclusion along the sidewalk.

Figure 30. Alternative I: Proposed Cross-Section



Specific considerations for this alternative include:

- A sidewalk along only one side eliminates the need for crosswalks. However, options for residents of the properties along the south side of the SR-156 Frontage Road to safely access the sidewalk and bike path need to be provided. Similarly, access to mail boxes must be preserved.
- Design, implementation, and long-term maintenance of landscaping, street furniture, pavement, and lighting needs to be programmed and funded by the owning agency or delegate.
- Xeriscaping with drought resistant trees, shrubs, and grasses is strongly recommended. The landscaped areas should be designed as rain gardens and linear detention for storm water quality and management.
- Lighting fixtures should be full-cutoff and shielded to minimize light pollution and light trespass. The light sources should have a color temperature of 2,700K or below (soft white / amber). Lights should not emit more light than is necessary and should be directed at the

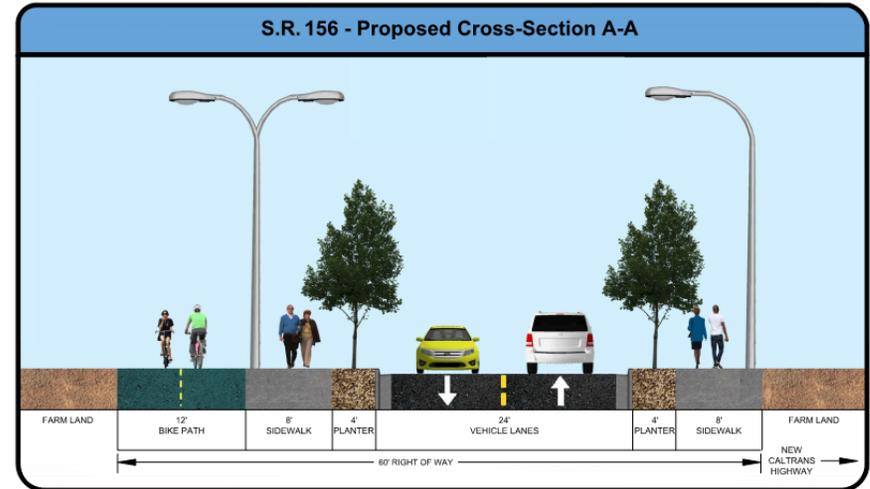
area of need and not beyond. Lights should have photovoltaic cells so they turn off during daylight hours. Consideration should be made for LED and solar power technology. Decorative poles and fixtures should be considered for project branding and identification.

- Construction and project phasing should be considered.
- Additional safety considerations are required where the sidewalk and bike path cross intersecting roadways and driveways. Of particular concern is the intersection of Bixby Road. Based on a cursory analysis of the design of the roundabout and the tangent roadway north of it, traffic exiting the roundabout could be traveling at speeds up to 35 MPH, which places cyclists and pedestrians at a high risk of being seriously injured or killed if struck by a crossing vehicle.
- The vehicular lanes should be designed to provide for a desired operating speed in the 10 to 20 MPH range at cyclist and pedestrian intersections and 20 to 30 MPH elsewhere. The use of geometric street features such as roundabouts, splitter islands, chokers, and raised crosswalks designed to also accommodate farm equipment and implements should be included.

Alternative 2

As shown in **Figure 31**, Alternative 2 shifts the vehicular roadway southward but to a lesser degree to accommodate a sidewalk along the south side of the roadway. This alternative follows typical convention where a sidewalk is present on both sides of the street. A sidewalk and a two way bikeway are on the north side of the corridor. Within the buffers are planters with landscaping, shade trees, street lighting, and pathway lighting. Street furniture such as benches and trash receptacles are suggested for inclusion along the sidewalk.

Figure 31. Alternative 2: Proposed Cross-Section



Specific considerations for this alternative include:

- A sidewalk along both sides creates the need for crosswalks.
- Access to mail boxes must be preserved.
- Design, implementation, and long-term maintenance of landscaping, street furniture, pavement, and lighting needs to be programmed and funded by the owning agency or delegate.
- Xeriscaping with drought resistant trees, shrubs, and grasses is strongly recommended. The landscaped areas should be designed as rain gardens and linear detention for storm water quality and management.
- Lighting fixtures should be full-cutoff and shielded to minimize light pollution and light trespass. The light sources should have a color temperature of 2,700K or below (soft white / amber). Lights should not emit more light than is necessary and should be directed at the area of need and not beyond. Lights should have photovoltaic cells so they turn off during daylight hours. Consideration should be made for



- LED and solar power technology. Decorative poles and fixtures should be considered for project branding and identification.
- Construction and project phasing should be considered.
- Additional safety considerations are required where the sidewalk and bike path cross intersecting roadways and driveways. Of particular concern is the intersection of Bixby Road. Based on a cursory analysis of the design of the roundabout and the tangent roadway north of it, traffic exiting the roundabout could be traveling at speeds up to 35 MPH, which places cyclists and pedestrians at a high risk of being seriously injured or killed if struck by a crossing vehicle. Alternatives for providing safer crossing of Bixby Road by cyclists and pedestrians both initially and long-term should be considered.
- The vehicular lanes should be designed to provide for a desired operating speed in the 10 to 20 MPH range at cyclist and pedestrian intersections and 20 to 30 MPH elsewhere. The use of geometric street features such as roundabouts, splitter islands, chokers, and raised crosswalks designed to also accommodate farm equipment and implements should be included.

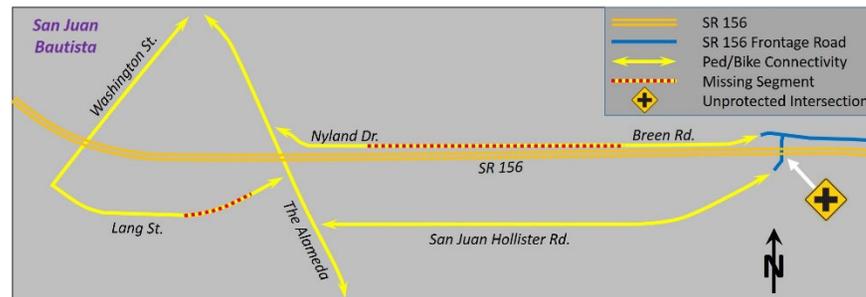
SR-156 Frontage Road Connections

Connecting the east end of the SR-156 Frontage Road corridor to Hollister is facilitated by Mitchell Road and Union Road to San Juan Hollister Road and SR-156 Business/Fourth Street. The signalized intersection of SR-156 and Union Road affords a protected crossing of SR-156 by cyclists and pedestrians.

The west end of the SR-156 Frontage Road which ties into Breen Road does not connect to San Juan Bautista. Breen Road bends northward and terminates at private property and field roads. Yet, there are possible corridors that could be considered and are depicted in **Figure 32**.

One route would parallel SR-156 along the north side. Presently there is a missing segment between Breen Road and the terminus of Nyland Drive. By implementing a connection across this gap allows the corridor to

Figure 32. Potential Ped/Bike Connectivity to SR-156 Frontage Road



become viable. This connection could be either a shared use facility for cyclists and pedestrians only, or it could be a multimodal connection that allows for motor vehicle use as well. The former could perhaps be implemented within the existing SR-156 right of way. A future study with community engagement and Caltrans participation would be required to advance this option.

Another option is to connect to San Juan Bautista via San Juan Hollister Road and The Alameda. However, the unprotected crossing of SR-156 is a barrier for cyclists and pedestrians and precludes the viability of this option from a safety standpoint. To eliminate this obstacle, the intersection of SR-156 and San Juan Hollister should either be signalized or converted to a multilane modern roundabout like is being constructed at Bixby Road. A future study with community engagement and Caltrans participation would be required to advance this option.

Another corridor to consider is comprised of Washington Street and Lang Street. Washington Street is grade separated and crosses beneath SR-156, providing a desirable low-stress connection between downtown San Juan Bautista and The Alameda south of SR-156. However, this corridor is incomplete as there is a missing segment along Lang Street. Presently, the street plan for San Juan Bautista does not include the extension of Lang Street to close this gap. However, should future development of this property be anticipated, the inclusion of either a through street or at least



a dedicated facility for cyclists and pedestrians could be requested of the developer.

7. FINAL RECOMMENDATIONS

Overview

The SR-156 Multimodal Enhancement Study focused on the SR-156 corridor near San Juan Bautista in order to:

- Address traffic circulation issues at Monterey Street and SR-156 and The Alameda and SR-156.
- Optimize and connect the non-motorized system by providing safer connections for cyclists and pedestrians traveling across SR-156 via The Alameda, including Safe Routes to the only primary school in the City of San Juan Bautista (i.e., San Juan School).
- Provide access to Juan Bautista de Anza National Historic Trail from The Alameda to encourage active, healthy, and environmentally sound transportation choices.
- Improve cycling connectivity along existing SR-156 between Hollister and San Juan Bautista once this segment of the highway is relinquished to the County of San Benito.

This report is intended to be a planning-level document that leverages and complements other studies, plans, and programs. It presents a subjective analysis of existing conditions and offers a variety of alternatives, options, and recommendations intended to be thoughtful and responsive to the study's stated goals and objectives, the context, and the community's input and concerns. As such, it does not hold nor is it intended to hold any binding authority over any jurisdictional agencies, policy boards, or governmental bodies. It simply provides information so that the community and its leadership may make informed decisions or at least have informed opinions.

It is recommended that any future planning and engineering studies and design incorporate the tenants and principles of this study so that there is continuity, consistency, and compatibility of thought and effort.

SR-156 and Monterey Street

Three alternatives were considered for this location and its vicinity:

1. Make modest operational changes to the intersection using traditional signing and striping improvements.
2. Consider the intersection for signalization in order to provide a safer connection across SR-156 for cyclists and pedestrians.
3. Consider reconstructing the intersection into a multilane modern roundabout.

Alternative 1 and Alternative 3 are recommended.

It is recommended that short-term operational improvements be made to the intersection through signing and striping supported by a future and separate traffic engineering assessment and design effort.

It is recommended that the intersection be considered for conversion to a multilane modern roundabout supported by the deliberate efforts of a future engineering study that includes community engagement and Caltrans participation. This option is more responsive to the study's goals and objectives and the stated concerns of the community than the option of a traffic signal.

SR-156 and The Alameda

Four alternatives were considered for this location and its vicinity:

1. Add a fourth crosswalk to the intersection, implement the associated traffic signal modifications, and install "sharrow" markings along The Alameda.



2. Add a fourth crosswalk to the intersection, implement the associated traffic signal modifications, and restripe The Alameda to provide a bike lane.
3. Construct a shared use path along the eastern edge of The Alameda, add a fourth crosswalk to the intersection that provides separate and parallel alignments for pedestrians and cyclists, implement the associated traffic signal modifications.
4. Consider reconstructing the intersection into a multilane modern roundabout.

Alternative 2 and Alternative 3 are recommended.

It is recommended that short-term operational improvements be made by implementing Alternative 2 by adding the fourth crosswalk to the intersection and implementing the required modifications to the existing traffic signal and implement bike lanes along The Alameda, supported by a future and separate traffic engineering assessment and design effort that includes community engagement and Caltrans participation. The opinion of probable budget for implementation of this alternative is \$120,000.

It is recommended that planning and design be programmed for the implementation of Alternative 3, a separated shared use path along The Alameda extending from San Juan Elementary School to approximately 100 feet south of SR-156, supported by a future and separate traffic engineering assessment and design effort, which includes community engagement and Caltrans participation. The opinion of probable budget for implementation of this alternative is \$650,000.

While more responsive to the study's goals and objectives and the stated concerns of the community than the option of a traffic signal, considering converting the intersection to a multilane modern roundabout is not recommended at this time due to likely significant adverse impacts to adjacent properties. However, should future crash patterns and community concerns exacerbate, this option should be reconsidered

supported by the deliberate efforts of a future planning and engineering study that includes community engagement and Caltrans participation.

Juan Bautista de Anza National Historic Trail Connection

One alternative was considered for this corridor, the construction of a shared use trail along the eastern side of The Alameda from SR-156 to Juan Bautista de Anza National Historic Trail.

This alternative is recommended.

It is recommended that planning and design be programmed for the implementation of a separated shared use path along The Alameda supported by a future and separate traffic engineering assessment and design effort that includes community engagement and collaboration with other agencies and entities. The opinion of probable budget for implementation of this alternative is \$1,000,000.

SR-156 Frontage Road

Two alternatives were considered for this corridor:

1. Construct a single walkway along the north side of the roadway. Construct a two way separated bike path along the north side of the roadway.
2. Construct separate walkways along both sides of the roadway. Construct a two way separated bike path along the north side of the roadway.

Alternative 1 is recommended.

It is recommended that planning and design be programmed for the implementation of a single walkway and separated bike path along the north side of the SR-156 Frontage Road, supported by a future and separate planning and engineering effort that includes community engagement. The opinion of probable budget for implementation of this alternative is \$22,000,000. Given the order of magnitude of the probable



budget and the likely need for this project to be implemented turnkey, a possible funding strategy might be to consider a partnership between the City of San Juan Bautista, the City of Hollister, San Benito County, and Caltrans. Other non-governmental entities (NGOs), nonprofit agencies, or local interests could also be approached for partnering and community support.

SR-156 Frontage Road Connections

Four alternatives were considered for providing cycling and pedestrian connections beyond the SR-156 Frontage Road to Hollister and to San Juan Bautista.

1. Connect to Hollister via Mitchell Road and Union Road to San Juan Hollister Road and SR-156 Business/Fourth Street.
2. Connect to San Juan Bautista via a parallel corridor along the north side of SR-156 utilizing Breen Road, Nyland Drive, and The Alameda. Construct the missing segment between Breen Road and Nyland Drive to complete the corridor.
3. Cross SR-156 and connect to San Juan Bautista via San Juan Hollister Road and The Alameda. Provide either a traffic signal or a multilane modern roundabout at the intersection of SR-156 and San Juan Hollister Road.
4. Connect to The Alameda via Washington Street and Lang Street. Construct the missing segment of Lang Street as part of possible future development.

Alternative 1, Alternative 2, Alternative 3, and Alternative 4 are recommended.

It is recommended that a future study of the connection from SR-156 Frontage Road to Hollister be planned and programmed that explores how best to configure these roadways and their associated intersections to provide for safer and more comfortable use by cyclists and pedestrians of all ages and abilities.

It is recommended that a future study be planned and programmed that analyzes, compares, and contrasts Alternative 2 with Alternative 3. The scope of the study should include community engagement, participation by Caltrans, and collaboration with other agencies and entities. As part of considering Alternative 3, it is recommended that the intersection of SR-156 and San Juan Hollister Road be considered for either signalization or for conversion to a multilane modern roundabout.

It is recommended that a future study be planned and programmed to review and recommend improvements along Washington Street and Lang Street to provide low-stress cycling and accessible pedestrian facilities. It is also recommended that the study develop strategies to fill in the missing gap along Lang Street. The scope of the study should include community engagement and collaboration with other agencies and entities.