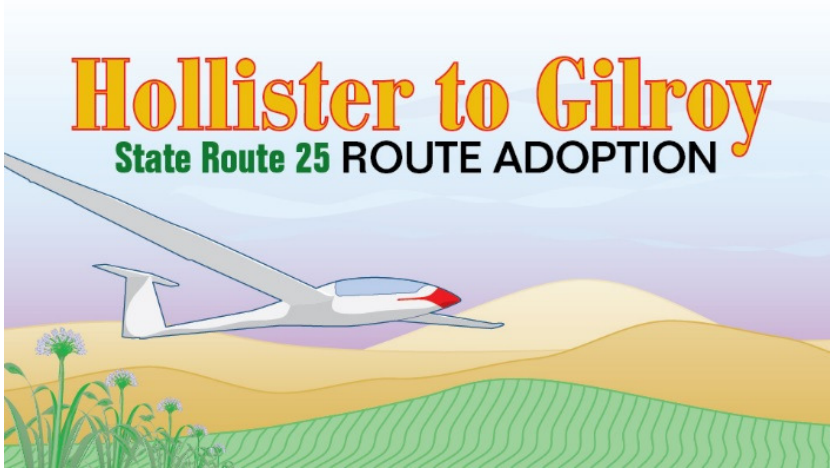
Hollister to Gilroy State Route 25
~~Widening and~~ Route Adoption

San Benito and Santa Clara Counties, California
05-SBt-25 (PM 51.5/60.1), 04-SCl-25 (PM 0.0/2.6)

05-485400
Project ID 05-0000-0565



Technical Studies

Volume I of II

State of California Department of Transportation

The environmental review, consultation, and any other action required in accordance with applicable federal laws for this project is being, or has been, carried out by the California Department of Transportation under its assumption of responsibility pursuant to 23 U.S.C. 327.

June 2016

Caltrans

Technical Studies
Volume I

Air Quality Study Report

Draft Relocation Impact Report

Hazardous Waste: Initial Site Assessment

Location Hydraulic Study

Noise Study Report

Paleontological Evaluation Report

Preliminary Geotechnical Report

Preliminary Mineral Resources Review

Traffic Operations Analysis Report Summary

Visual Impact Assessment

Water Quality Assessment Report

Air Quality Study Report

Air Quality Study Report

State Route 25 Widening and Route Adoption

Hollister to Gilroy

District 5 - San Benito - State Route - 25- PM 51.5/60.1

District 5 - San Benito - State Route - 156 PM R10.5/R12.2

District 4 - Santa Clara - State Route – 25- PM 0.0/2.6

EA – 05 – 485400 - Project 05-0000-0565

Prepared by the

State of California Department of Transportation

Revised July 2012 (Original signed April 2010)

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Air Quality Study Report

State Route 25 Widening Project Hollister to Gilroy

District 5 - San Benito - State Route – 25- PM 51.5/60.1

District 5 - San Benito - - State Route 156 PM R10.5/R12.2

District 4 - Santa Clara - State Route – 25- PM 0.0/2.6

EA - 05 – 485400 Project 05-0000-0565

Revised July 2012

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Executive Summary

The air study provides a discussion of the proposed project, the physical setting of the project area, and the regulatory framework for air quality. The report provides data on existing air quality, evaluates potential air quality impacts associated with the proposed project, and identifies mitigation measures recommended for potentially significant impacts.

The California Department of Transportation (Caltrans), in cooperation with the Council of San Benito County Governments and the Santa Clara Valley Transportation Authority, is proposing the eventual replacement of 11.2 miles of the existing State Route 25 two-lane highway with a four-lane expressway in San Benito and Santa Clara counties. A future interchange at State Route 25/State Route 156 would require widening on State Route 156 between post miles R10.5 and R12.2.

This report evaluates two proposed projects; (1) a route adoption and (2) a proposed construction project within the limits of the proposed route adoption. Five alternatives are under consideration including the No-Build Alternative: Alternatives 1 and 2 are route adoption alignments, and Alternatives A and B are proposed build alternatives.

The route adoption study extends from San Felipe Road within the City of Hollister (post mile 51.5) to the San Benito/Santa Clara County line (post mile 60.1) and on to the end of State Route 25 at U.S. 101, south of the City of Gilroy (post miles 0.0. to 2.6 in Santa Clara County).

The proposed construction project limits extend 3.8 miles in San Benito County, from Sand Felipe Road in Hollister to just west of Hudner Lane (post miles 51.5 to 55.3).

The proposed route adoption is located in portions of two air basins, the North Central Coast Air Basin (Hollister) and the San Francisco Bay Air Basin (Gilroy). Both the Santa Clara County and San Benito County portions of the project are located in State one and eight-hour ozone non-attainment areas. For Federal eight-hour ozone, Santa Clara County is non attainment-marginal and San Benito County is in non-attainment. For Federal one-hour ozone, Santa Clara County is unclassified moderate and San Benito County is in unclassified maintenance. Currently, there is no procedure for ozone hot spot conformity analysis. Both counties are in state and federal attainment for the other priority air pollutants.

A brief discussion of future analysis methods and possible pollutant issues for the route adoption will be included in this document. Mobile Source Air Toxics and Climate Change (Greenhouse) Gasses are a relatively new area of air pollution concern. There are no significance or threshold levels for these pollutants at this time. Current analysis methods and guidelines are evolving and results have some uncertainties. Caltrans anticipates that guidelines and modeling tools will be available by the time future projects within the footprint of the route adoption alternatives are funded and any Tier II environmental documents are prepared. A more specific analysis and discussion of potential effects of these pollutants will be conducted at that time.

The State Route 25 and 156 areas are not listed as containing serpentine and ultramafic rock. Therefore, the impact from naturally occurring asbestos during project construction would be minimal to none.

This analysis is based on the traffic study prepared for this project.

The proposed build alternatives are located in federal Particulate Matter (PM_{10} and $PM_{2.5}$) attainment areas; therefore, no hot spot conformity analysis is required for these pollutants. The build and the route adoption alternatives are located in a state PM10 non-attainment area. The route adoption is located in a state $PM_{2.5}$ non-attainment area and the build portion is located in a state PM2.5 attainment area. A project-level air quality analysis is required for National Environmental Policy Act (NEPA) and California Environmental Quality Act (CEQA) requirements. The particulate matter air pollution monitor closest to the project is located at 1979 Fairview Road, Hollister. Monitoring data was reviewed at the Air Resources Board web site. No exceedence of either the state or federal standards for PM_{10} was recorded between 2005 and 2010. The Gilroy-9th Street and Hollister-Fairview Road PM2.5 air monitors have only been operating since 2007. No exceedence of the either the state or federal standard for $PM_{2.5}$ was recorded between 2007 through 2010 at the Hollister monitor. The Gilroy-9th Street $PM_{2.5}$ Monitor listed 3 days in 2009 exceeding the federal standard.

Historical air quality data show that existing carbon monoxide levels for the general vicinity of the project area do not exceed either the state or federal ambient air quality standards. San Benito County is located in a Carbon Monoxide attainment area, so a project-level hot spot analysis was not required.

Mobile Source Air Toxics are a relatively new group of air pollutants to be of concern. Mobile source air toxics are compounds emitted from highway vehicles and non-road equipment. Currently no pollutant threshold or significance limits have been issued by the USEPA or the California Air Resources Board. There is no system of pollutant monitoring stations like there is for the priority pollutants such as ozone. The September 30, 2009 *Updated Interim Guidance Update on Mobile Source Air Toxic Analysis in NEPA* discuss technical shortcomings of current air models and the uncertain science with respect to health effects. Health effects are of most concern to sensitive receptors located with 500 feet of the project. There are currently no sensitive receptors identified along the proposed route adoption. Using the limited guidance and modeling tool available today the amount of Mobile Source Air Toxics modeled for the Build Horizon year is less than the No Build. This indicates that the project would not worsen the air quality.

This project is intended to decrease congestion. Higher traffic speeds and less stop and go traffic should decrease Carbon Monoxide, PM_{10} and $PM_{2.5}$ and Mobile Source Air Toxics in the horizon year. Any isolated rural residences that will be closer to the new highway, may be affected by slightly higher emissions than if the project is not built. Based on the limited modeling tools and guidelines available for Greenhouse Gasses it appears that the Build alternative would create more emissions than the No Build alternative. However, due to the modeling limitations and lack of CEQA guidance, Caltrans has determined that in the absence of further regulatory or scientific information related to greenhouse gas emissions and CEQA significance, it is too speculative to make a determination regarding the project's direct impact and its contribution on the cumulative scale to climate change.

Potential construction air quality impacts that would occur are increased dust (PM_{10} and $PM_{2.5}$) from heavy equipment, land clearing and off-road work. Mobile Source Air Toxics and Carbon Monoxide may be temporarily increased at or near the construction areas due to heavy equipment operations. Mitigation during construction would rely on adhering to Caltrans Standard Special Provision for dust with Section 14.01 and 14.02 requiring the contractor to comply with local air district rules.

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List of Abbreviated Terms

AADT	Annual Average Daily Traffic
AB32	(California) Assembly Bill 32
AB1493	(California) Assembly Bill 1493
APCD	Air Pollution Control District
AQ	Air Quality
AQMD	Air Quality Management District
(California) ARB	(California) Air Resources Board
CAA	(federal) Clean Air Act
CAAA	(federal) Clean Air Act Amendments of 1990
CAAQS	California Ambient Air Quality Standards
Cal EPA	California Environmental Protection Agency
CALINE	California Line Dispersion Model
Caltrans	California Department of Transportation
CE	Categorical Exclusion, Categorical Exemption
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
CH_4	Methane
CO	Carbon Monoxide
CO2	Carbon Dioxide
DE	Diesel Exhaust
DOT	United States Department of Transportation
EB	East Bound
EMFAC-2007	Emissions Factors-2007 (air model)
EPA	United States Environmental Protection Agency
FHWA	Federal Highway Administration
FTA	Federal Transportation Authority
FTIP	Federal Transportation Improvement Program
GHG	Greenhouse Gas(s)
HDPE	High Density Polyethylene
H2S	Hydrogen Sulfide

IAC	Interagency Consultation
IRIS	Integrated Risk Information System
LED	Light Emitting Diodes
LOS	Level of Service
MPH	Miles per Hour
MPO	Metropolitan Planning Organization
MSAT	Mobile Source Air Toxics
NAAQS	National Ambient Air Quality Standards
NB	North bound
NEPA	National Environmental Policy Act
NO_2	Nitrogen Dioxide
NSSP	(Caltrans' Non Standard Specifications
NOA	Naturally Occurring Asbestos
O_3	Ozone
Pb	Lead
PM	post mile
PM_{10}	Particulate Matter 10 Microns or less
$PM_{2.5}$	Particulate Matter 2.5 Microns or less
ppb	Parts per Billion
ppm	Parts per Million
PVC	polyvinyl chloride
POAQC	Project(s) of Air Quality Concern
RACM	Reasonably Achievable Control Measure
ROG	Reactive Organic Gasses
RTIP	Regional Transportation Improvement Program
RTP	Regional Transportation Plan
RTPA	Regional Transportation Planning Agency
SAC-Metro Construction Emissions tool	Sacramento Metropolitan Air Pollution Control District Road Construction Emissions Model
SAFTEA-LU	Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users
SB	South Bound
SIP	State Implementation Plan
SR	State Route
SO_2	Sulfur Dioxide
SWPPP	Storm Water Pollution Permit Plan
SOx	Oxides of Sulfur
VMT	Vehicle Miles Traveled
TACs	Toxic Air Contaminants
TIPs	Transportation Improvement Programs
VMT	Vehicle Miles Traveled

VRP	Visibility Reducing Particles
$\mu g/m^3$	Microgram per cubic meter (also equals to ppb)
TCMs	Transportation Control Measures
WB	West Bound

1. Purpose of Air Quality Study Report

This report documents the anticipated air quality effects of the proposed project. Because this document is intended to satisfy the requirements of both the California Environmental Quality Act and the National Environmental Policy Act, it addresses both state and federal air quality standards.

2. Project Location, Description, and Alternatives

The California Department of Transportation (Caltrans), in cooperation with San Benito Council of Governments and Santa Clara Valley Transportation Authority is evaluating the conversion of 11.2 miles of the existing State Route 25 two-lane conventional highway to a four-lane expressway in San Benito and Santa Clara counties. The Draft Environmental Impact Report and Environmental Impact Statement includes two proposed projects: (1) a TIER I route adoption and (2) a Tier II proposed construction project within the limits of the proposed route adoption.

1. The route adoption study extends from San Felipe Road within the City of Hollister (post mile 51.5) to the San Benito/Santa Clara County line (post mile 60.1) and on to the end of State Route 25 at U.S. 101 south of the city of Gilroy (post miles 0.0 to 2.6 in Santa Clara County).

2. The proposed construction project limits extend 3.8 miles in San Benito County, from San Felipe Road in Hollister to just west of Hudner Lane (post miles 51.5 to 55.3). The existing 2-lane conventional highway would be replaced by a 4-lane expressway.

State Route 25, a two-lane conventional highway, runs northwest through the relatively flat terrain of the Hollister Valley, terminating at U.S. 101 after crossing the Pajaro River and Carnadero Creek. Agriculture dominates the surrounding landscape, and farmsteads and houses are scattered along the length of the study area. Residences, retail businesses, and agriculture-related commercial operations are more concentrated at both ends of the route adoption study area, on the outskirts of Gilroy and Hollister.

The purpose of the proposed route adoption project is to:

- Select a corridor for State Route 25 between Hollister and Gilroy that will accommodate existing and future travel demand.
- Facilitate local and regional land use planning by identifying future right-of-way needed for the State Route 25 corridor.

The purpose of the proposed build project is to:

- Improve traffic flow and reduce delays on State Route 25 between San Felipe Road in Hollister and Hudner Lane in San Benito County.
- Increase capacity along State Route 25 between San Felipe Road in Hollister and Hudner Lane in rural San Benito County.

Slow-moving farm equipment and trucks share this two-lane roadway with local and commuter traffic. An increased number of vehicles travel this stretch of State Route 25. During peak commute hours, the roadway is congested. Traffic flow is delayed by vehicles turning into and out of the many intersecting driveways and local roads, affecting the flow of the faster moving vehicles. Commercial truck traffic traveling through the area on State Route 25 is subject to delays as well. A new route alignment should be adopted so that the appropriate area for a future expressway can be incorporated into the San Benito and Santa Clara County General Plans now, before future development occurs along this stretch of highway.

The No-Action Alternative would result in no action being taken, and no further improvements would be made except for Phase 1 of the State 25 Safety and Operations Enhancement Project, which began construction in May 2009 and is scheduled to be completed in May 2010.

Alternatives

Alternative 1 and 2 Route Adoption Alignment Alternatives

Both of the route adoption alternatives would follow the same alignment from the bend in Route 25 approximately 1.7 miles south of Shore Road (post mile 56.1) in San Benito County to U.S. 101 in Santa Clara County. The alignment would be wide enough to accommodate a future four-lane expressway (342 feet) with a 62 foot median and one or two frontage roads. The alignments would also be wide enough to accommodate a future interchange near the existing intersection of Route 25 and Route 156 and a future Route 25/101 interchange north of the existing interchange. There would be enough room to build new bridges over Carnadero Creek and the Pajaro River. The Union Pacific Railroad Hollister branch line and the Union Pacific main line just east of U.S. 101 would cross under the proposed Route 25 expressway.

Between post mile 56.1 and the east end of the proposed project at San Felipe Road, the two alignment alternatives separate.

Alternative 1 proposes to align the future four-lane expressway to the east (or north) of the existing two lane north/south highway and Alternative 2 proposes to align to the west (or south) of the existing two lane highway.

Alternatives A and B (Build Alternatives)

Both construction alternatives extend 3.8 miles in San Benito County, from just west of Hudner Lane (post mile 55.3) to San Felipe Road (post mile 51.5). Unlike the Route Adoption Alternatives, the build alternatives propose a realigned and widened at-grade intersection at Route 25 and Route 156 instead of an interchange. Both construction alternatives would transition back to the existing two-lane highway near Hudner Lane.

Alternative A would be constructed at the southeastern end of the Alternative 1 Route Adoption alignment. Direct access to the expressway would be available from San Felipe Road, Wright Road, Flynn Road, State Route 156, two west-side frontage roads and one east-side frontage road. An undercrossing at the Don Chapin Gravel operation driveway would provide access to this otherwise landlocked parcel.

For Alternative A, an undercrossing would be built at the gravel quarry driveway to provide access to this parcel.

Alternative B would be constructed at the southeastern end of the Alternative 2 Route Adoption alignment. Direct access to the expressway would be available from San Felipe Road, Wright Road, Briggs Road, a west-side frontage road, State Route 156, an east-side frontage road, and Hudner Lane. The second west-side frontage road would connect to Hudner Lane.

Alternative 2 was selected as the preferred route adoption alternative and Alternative B was selected as the preferred build alternative. Selection was based on construction and right-of-way costs, environmental impact analysis, and community and agency input. Route Adoption Alternative 2 and Build Alternative B were modified based on public comments received during the circulation of the draft environmental document. These modifications reduced the amount of farmland impacts and lowered the project costs. The changes for both alternatives include:

- Reducing the median width from 62 feet to 46 feet
- Reducing the minimum right-of-way width from 342 feet to 240 feet
- Moving the new alignment closer to the existing highway

- Replacing some frontage roads that were proposed on new alignment with private access easements

In addition, the route adoption Alternative 2 would include:

- Moving the proposed future interchange at State Routes 156 and 25 to the east
- Shortening a west side frontage road to end in a cul-de-sac south of Hudner Lane
- Moving the above frontage road close to the expressway alignment in the vicinity of Hudner Lane

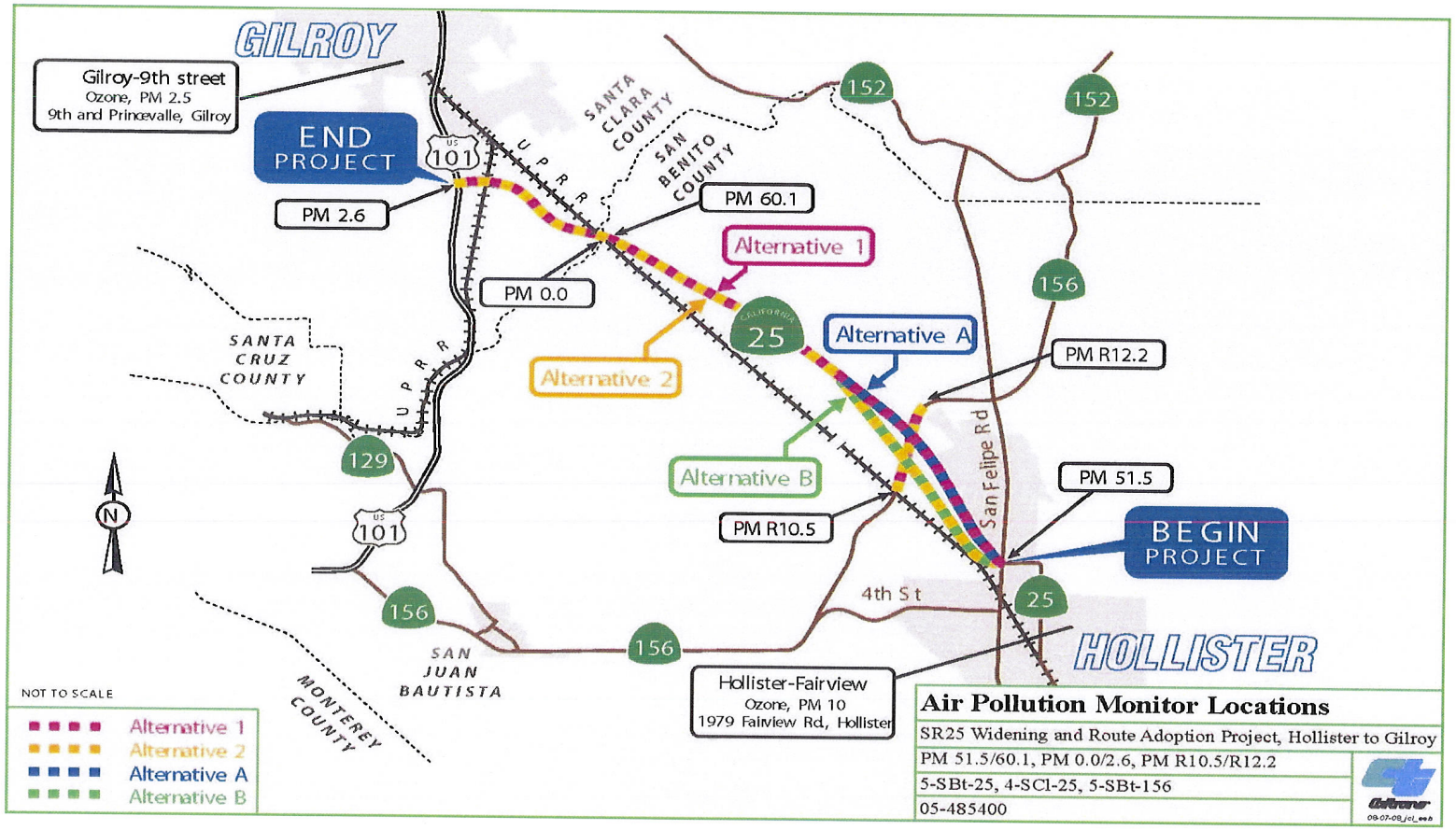
Modifications made specifically to Build Alternative B include:

- Removing the Briggs Road extension that would intersect with the expressway
- Reducing the project limit by 0.3 mile to end south of Hudner Lane
- Replacing the proposed west side frontage roads with private road easements

No-Action Alternative

The No Action Alternative would result in no action being taken and no further improvements would be made to State Route 25 within the Route Adoption limits other than those already programmed/funded or under construction.

Figure 1. Project Map and Location of Closest Air Monitors



3. Federal, State, and Local Regulations

The primary legislation that governs federal air quality regulations is the Clean Air Act Amendments of 1990 (CAAA). The CAAA delegates primary responsibility for clean air to the U.S. Environmental Protection Agency (EPA). The EPA develops rules and regulations to preserve and improve air quality and delegates specific responsibilities to state and local agencies. Under the Clean Air Act, the EPA has established the National Ambient Air Quality Standards (NAAQS) for six potential air pollutants: carbon monoxide (CO), ozone (O_3), nitrogen dioxide (NO_2), suspended particulate matter (PM_{10} & $PM_{2.5}$), sulfur dioxide (SO_2), and lead (Pb).

The State of California has developed the California Ambient Air Quality Standards (CAAQS). The Air Resources Board (ARB), which is part of the California EPA regulatory agency, develops air quality regulations at the state level. The state regulations mirror federal regulations by establishing industry-specific pollution controls for criteria, toxic, and nuisance pollutants. California also requires that plans and strategies for attaining state ambient air quality standards as set forth in the California Clean Air Act of 1988 be developed throughout the state. The ARB also is responsible for developing motor emissions standards for California vehicles.

Route Adoption

The proposed project is located within two air basins. The Santa Clara County portion is within the San Francisco Air Basin that is under the jurisdiction of the Bay Area Air Quality Management District. The San Benito County portion is within the North Central Coast Air Basin that is under the jurisdiction of the Monterey Bay Unified Air Pollution Control District. These districts administer air quality regulations developed at the federal, state, and local levels. These regulations are described below.

Build Alternatives

The San Benito County portion is within the North Central Coast Air Basin that is under the jurisdiction of the Monterey Bay Unified Air Pollution Control District. The district administers air quality regulations developed at the federal, state, and local levels. These regulations are described below.

4. Air Quality Pollutants and Standards

As stated, the federal and state governments have established ambient air quality standards for six criteria pollutants: carbon monoxide (CO), ozone (O_3), particulate matter (PM), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), and lead (Pb) (See Table 1). O_3 and PM are generally considered regional pollutants because they or their precursors affect air quality on a regional scale. Pollutants such as CO, NO_2, SO_2, and Pb are considered local pollutants because they tend to accumulate in the air locally. PM is also considered as a local pollutant. In the area of the proposed project site, Ozone and Carbon Monoxide are of particular concern.

A. **Carbon Monoxide (CO)**: Carbon Monoxide is a public health concern because it combines readily with hemoglobin and thus reduces the amount of oxygen transported in the bloodstream. Effects on humans range from slight headaches to nausea to death. State and federal CO standards have been set for both 1-hour and 8-hour averaging times. The state 1-hour standard is 20 parts per million (ppm) by volume, and the federal 1-hour is 35 ppm. Both the state and federal standards are 9 ppm for the 8-hour averaging period. Motor vehicles are the dominant source of CO emissions in most areas. High CO levels develop primarily during winter when periods of light wind combine with ground-level temperature inversions. These conditions result in reduced dispersion of vehicle emissions. In addition, motor vehicles emit more CO in cool temperatures than in warm temperatures.

B. **Ozone (O_3):** Ozone is not emitted directly into the air but is formed by a photochemical reaction in the atmosphere. Ozone precursors, which include oxides of nitrogen and reactive organic gases, react in the atmosphere in the presence of sunlight to form ozone. State and federal standards for ozone have been set for a 1-hour averaging time. The state requires that ozone concentration not exceed .09 ppm of ozone being produced in a given area in 1 hour. The federal 1-hour ozone standard is .12 ppm, but it does not apply in California. The federal 8-hour ozone standard is .08 ppm and the state standard is .07 ppm.

C. **Particulate Matter (PM_{10}) & ($PM_{2.5}$)**: Particulate matter emissions are generated by a wide variety of sources, including agricultural activities, industrial emissions, dust suspended by vehicle traffic and construction equipment, and secondary aerosols formed by reactions in the atmosphere. The NAAQS for particulate matter applies to two classes of particulate: particulate matter 2.5 microns or less in diameter ($PM_{2.5}$) and particulate matter 10 microns or less in diameter (PM_{10}).

The state PM_{10} standards are 50 micrograms per cubic meter ($\mu g/m^3$) as a 24-hour average and 20 $\mu g/m^3$ as an annual arithmetic mean. The federal PM_{10} standards are 150 $\mu g/m^3$ as a 24-hour average. The federal standards for $PM_{2.5}$ are 15 $\mu g/m^3$ and 35 $\mu g/m^3$ for annual and 24 hours respectively. The state standard for $PM_{2.5}$ is 12 $\mu g/m^3$ as an annual arithmetic mean. There is no separate state standard for 24-hour $PM_{2.5}$.

D. **Nitrogen Dioxide (NO_2):** Nitrogen dioxide belongs to a family of highly reactive gases called nitrogen oxides (NOx). These gases form when fuel is burned at high temperatures, and come principally from motor vehicle exhaust and stationary sources such as electric utilities and industrial boilers. A suffocating, brownish gas, nitrogen dioxide is a strong oxidizing agent that reacts in air to form corrosive nitric acid, as well as toxic organic nitrates. It also plays a major role in the atmospheric reactions that produce ground-level ozone (or smog). EPA's health-based national air quality standard for nitrogen dioxide is .053 ppm.

E. **Sulfur Dioxide (SO_2):** Sulfur dioxide belongs to the family of sulfur oxide gases (SOx). These gases are formed when fuel containing sulfur (mainly coal and oil) is burned, and during metal smelting and other industrial processes. EPA's health-based national air quality standard for sulfur dioxide is .030 ppm (measured on an annual average) and .14 ppm (measured over 24 hours).

F. **Lead (Pb):** Lead is a metal found naturally in the environment as well as in manufactured products. The major sources of lead emissions have historically been motor vehicles and industrial sources. Due to the phase out of leaded gasoline, metal processing is the major source of lead emissions to the air today. The highest levels of lead in air are generally found near lead smelters. Other stationary sources are waste incinerators, utilities, and lead-acid battery manufacturers.

G. **Mobile Source Air Toxics (MSATs):** These toxics are a subset of the 188 air toxics defined in the Clean Air Act. They are now federally regulated under 40 Code of Federal Regulations 1502.22 by the U.S. Environmental Protection Agency. Mobile source air toxics are 21 compounds emitted from highway vehicles and non-road equipment. There are six main toxics including diesel exhaust, benzene, napthalene, formaldehyde, acrolein, 1-3 butadiene. The Federal Highway Administration issued interim guidance on February 3, 2006 for analysis in National Environmental Policy Act documents. Currently, available technical

tools do not enable us to predict the project-specific health impacts, so only a qualitative analysis is conducted.

Table 1. Federal and State Ambient Air Quality Standards

Ambient Air Quality Standards						
Pollutant	Averaging Time	California Standards [1]		Federal Standards [2]		
		Concentration [3]	Method [4]	Primary [3,5]	Secondary [3,6]	Method [7]
Ozone (O_3)	1 Hour	0.09 ppm (180 µg/m³)	Ultraviolet Photometry	—	Same as Primary Standard	Ultraviolet Photometry
	8 Hour	0.070 ppm (137 µg/m³)		0.075 ppm (147 µg/m³)		
Respirable Particulate Matter (PM10)	24 Hour	50 µg/m³	Gravimetric or Beta Attenuation	150 µg/m³	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	20 µg/m³		—		
Fine Particulate Matter (PM2.5)	24 Hour	No Separate State Standard		35 µg/m³	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	12 µg/m³	Gravimetric or Beta Attenuation	15.0 µg/m³		
Carbon Monoxide (CO)	8 Hour	9.0 ppm (10mg/m³)	Non-Dispersive Infrared Photometry (NDIR)	9 ppm (10 mg/m³)	None	Non-Dispersive Infrared Photometry (NDIR)
	1 Hour	20 ppm (23 mg/m³)		35 ppm (40 mg/m³)		
	8 Hour (Lake Tahoe)	6 ppm (7 mg/m³)		—	—	—
Nitrogen Dioxide (NO_2)	Annual Arithmetic Mean	0.030 ppm (57 µg/m3)	Gas Phase Chemiluminescence	53 ppb (100 µg/m³) (see footnote 8)	Same as Primary Standard	Gas Phase Chemiluminescence
	1 Hour	0.18 ppm (339 µg/m³)		100 ppb (188 µg/m³) (see footnote 8)	None	
Sulfur Dioxide (SO_2)	24 Hour	0.04 ppm (105 µg/m³)	Ultraviolet Fluorescence	—	—	Ultraviolet Flourescence; Spectrophotometry (Pararosaniline Method)[9]
	3 Hour	—		—	0.5 ppm (1300 µg/m³) (see footnote 9)	
	1 Hour	0.25 ppm (655 µg/m³)		75 ppb (196 µg/m³) (see footnote 9)	—	
Lead[10]	30 Day Average	1.5 µg/m³	Atomic Absorption	—	—	—
	Calendar Quarter	—		1.5 µg/m³	Same as Primary Standard	High Volume Sampler and Atomic Absorption
	Rolling 3-Month Average[11]	—		0.15 µg/m³		
Visibility Reducing Particles	8 Hour	Extinction coefficient of 0.23 per kilometer — visibility of ten miles or more (0.07 — 30 miles or more for Lake Tahoe) due to particles when relative humidity is less than 70 percent. Method: Beta Attenuation and Transmittance through Filter Tape.		No Federal Standards		
Sulfates	24 Hour	25 µg/m³	Ion Chromatography			
Hydrogen Sulfide	1 Hour	0.03 ppm (42 µg/m³)	Ultraviolet Fluorescence			
Vinyl Chloride[10]	24 Hour	0.01 ppm (26 µg/m³)	Gas Chromatography			

See footnotes on next page ...

For more information please call ARB-PIO at (916) 322-2990 California Air Resources Board (09/08/10)

Source: California Air Resources Board (09-08-10) and Environmental Protection Agency (10/13/06) mg/m3=milligrams per cubic meter; NA=no standard implemented; ppm=part per million; µg/m3=micrograms per cubic meter

Footnotes:

1. California standards for ozone, carbon monoxide, sulfur dioxide (1 and 24 hour),nitrogen dioxide, suspended particulate matter—PM_{10}, $PM_{2.5}$, and visibility reducing particles, are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.

2. National standards (other than ozone, particulate matter, and those based on annual averages or annual arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest eight hour concentration in a year, averaged over three years, is equal to or less than the standard. For PM10, the 24 hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 µgm3 is equal to or less than one. For PM2.5, the24 hour standard is attained when 98 percent of the daily concentrations, averaged over three years, are equal to or less than the standard. Contact U.S. EPA for further clarification and current federal policies.

3. Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based upon a reference temperature of 25°C and a reference pressure of 760 torr. Most measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 torr; ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.

4. Any equivalent procedure which can be shown to the satisfaction of the ARB to give equivalent results at or near the level of the air quality standard may be used.

5. National Primary Standards: The levels of air quality necessary, with an adequate margin of safety to protect the public health.

6. National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.

7. Reference method as described by the EPA. An "equivalent method" of measurement may be used but must have a "consistent relationship to the reference method" and must be approved by the EPA.

8. To attain this standard, the 3-year average of the 98th percentile of the daily maximum 1-hour average at each monitor within an area must not exceed 0.100 ppm (effective January 22, 2010). Note that the (ppm). To directly compare the national standards to the California standards the units can be converted from ppb to ppm. In this case, the national standards of 53 ppb and 100 ppb are identical to 0.053 ppm and 0.100 ppm, respectively.

9. On June 2, 2010, the U.S. EPA established a new 1-hour SO2 standard, effective August 23, 2010, which is based on the 3-year average of the annual 99th percentile of 1-hour daily maximum concentrations. EPA also proposed a new automated Federal Reference Method (FRM), using ultraviolet technology, but will retain the older paraosaniline methods until the new FRM have adequately permeated State monitoring networks. The EPA also revoked both the existing 24-hour SO_2 standard of 0.14 ppm and the annual primary SO_2 standard of 0.030 ppm, effective August 23, 2010. The secondary SO_2 standard was not revised at that time; however, the secondary standard is undergoing a separate review by EPA. Note that the new standard is in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the new primary national standard to the Californian standard the units can be converted to ppm. IN this case, the national standard of 75 ppb is identical to 0.075 ppm.

10. The ARB has identified lead and vinyl chloride as 'toxic air contaminants' with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.

11. National lead standard, rolling 3-month average: final rule signed October 15, 2008.

5. Air Quality Conformity

The 1990 Federal Clean Air Act Amendments (CAAA), enacted on November 15, 1990, placed tough new requirements on sources and causes of air pollution in areas failing to meet federal air quality standards. The CAAA require substantial reduction from all pollution sources, including pollutants from the transportation sector. The CAAA included more stringent requirements for demonstrating that transportation plans and projects contributed to improvement in air quality contained in the conformity provisions in section 176(a). On Nov 15, 1993, the EPA published a conformity rule delineating specific criteria and procedures for fulfilling the conformity requirements of the CAAA. This rule was recently updated and published in the Federal Register August 15, 1997. It became effective September 15, 1997.

The Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) made a number of revisions to the Clean Air Act's transportation conformity provisions. In particular, SAFETEA-LU made the following changes:

1. Changes 18-month trigger to two years for redetermination of conformity after certain air quality planning actions.
2. Changes frequency of conformity for plans and Transportation Improvement Programs (TIPs) from every 3 years to every 4 years.
3. Provides option for Metropolitan Planning Organizations (MPOs) to shorten the time horizon for conformity determination.
4. Allows Transportation Control Measures (TCMs) to be substituted or to be added to existing TCMs without a State Implementation Plan (SIP) mechanism.
5. Provides a 12-month grace period before a lapse occurs after an applicable deadline is missed.
6. Limits Conformity SIPs to interagency consultation and enforcement provisions.

6. Transportation Conformity

The Federal Clean Air Act requires that all transportation plans and programs pass the air quality conformity test. This process involves forecasting future emissions of air pollution to determine whether the amount of future pollution resulting from the plan or program would be within the allowable limit for motor vehicle emissions.

Route Adoption

Transportation conformity must be determined for all federal nonattainment area pollutants classified as regional pollutants. In the San Francisco Bay Air Basin (Santa

Clara County), this pollutant is Ozone. Transportation projects also generate Carbon Monoxide, which is considered a localized pollutant. In non-attainment and maintenance areas, Carbon Monoxide micro-scale modeling is required to determine whether a transportation project would cause or contribute to localized violations of Federal Carbon Monoxide Standards. Santa Clara County is currently listed as a federal attainment-maintenance area for Carbon Monoxide. If Santa Clara is still classified as a Carbon Monoxide attainment-maintenance area when any Tier II environmental document is prepared, a project level hot spot analysis will be conducted.

Assumptions used in the Final Transportation Air Quality Conformity Analysis for the Transportation 2038 Plan and 2009 Transportation Improvement Program/Amendment #09-06 (Santa Clara County) analyses included current modeling assumptions for population, registered vehicles, and the use of the EMFAC 2007 air model. The Metropolitan Transportation Commission also uses the "Baycast" travel demand model. Other assumptions used included the current attainment status of pollutants and implementing methods to reduce Greenhouse Gas emissions.

For Santa Clara County, the portion of the U.S. 101 Widening Project that includes the State Route 25/ U.S. 101 interchange and is within the route adoption alignment for this project is a constrained project in the Valley Transportation Plan 3035. That project is also shown in the Metropolitan Transportation Commission's Transportation 2038 Plan (2009).

The portion of the project between San Felipe Road and Hudner Lane (the build alternatives) is listed as a constrained project in the Council of San Benito County Governments 2010 Regional Transportation Plan. The remaining highway segment within the proposed route adoption in San Benito County, between Hudner Lane and the San Benito County/Santa Clara County line, is listed as an unconstrained project.

In San Benito County, this project was in the 2002 and 2006 San Benito County Regional Transportation Improvement Program (RTIP), however it was not included in the 2010 RTIP.

Build Alternatives

Transportation conformity must be determined for all nonattainment area pollutants classified as regional pollutants. In the North Central Coast Air Basin (Hollister),

those pollutants are ozone. Transportation projects also generate Carbon Monoxide (CO), which is considered a localized pollutant. CO micro-scale modeling is required to determine whether a transportation project would cause or contribute to localized violations of CO NAAQS. San Benito County is currently listed as a federal attainment area for Carbon Monoxide; therefore, micro-scale modeling and hot spot analysis was not required. A study of Carbon Monoxide effects was conducted for this document for NEPA and CEQA purposes.

Regional conformity must be determined based on a full study at least every 3 years. In California, it is determined at least every two years when the state-required Regional Transportation Plan (RTP) updates are done. In addition, a new federal TIP is required every four years, for which a conformity determination is required. Amendments to both the RTP and TIP between mandated conformity analysis also must have conformity demonstrated, including a full-scale revision of the regional analysis if regionally significant projects are added, deleted, or significantly modified.

Regional conformity is demonstrated by showing that the project is included in a conforming RTP and TIP with substantially the same design concept and scope that was used for the regional conformity analysis.

In San Benito County, this project was in the 2002 and 2006 San Benito County Regional Transportation Improvement Program (RTIP), however it was not included in the 2010 RTIP.

Project level conformity is demonstrated by showing that it will not cause a localized exceedance of Carbon Monoxide and/or PM_{10} and/or $PM_{2.5}$ standards, and that it will not interfere with "timely implementation" of Transportation Control Measures called out in the State Implementation Plan. The March 10, 2006 final conformity rule (71 FR 12468) has the following Key Elements:

- This rule requires that $PM_{2.5}$ hot spot analyses be performed only for new transportation projects with significant diesel traffic. Examples of such "projects of air quality concern" include intermodal freight or bus terminals, and major highway projects and congested intersections involving significant diesel traffic. No hot spot analyses will be required for most projects in $PM_{2.5}$ areas, because most projects are not an air quality concern. This final rule also streamlines existing PM_{10} hot spot requirements in a similar way.

- The streamlined approach in this final rule will ensure that transportation and air quality agencies in $PM_{2.5}$ and PM_{10} areas use their resources efficiently, while achieving clean air goals.
- In both $PM_{2.5}$ and PM_{10} areas, a quantitative hot spot analysis is not required until EPA issues a new motor vehicles emissions model capable of estimating local emissions as well as future hot spot modeling guidance. Qualitative analyses will apply in the interim.
- This rule extends an existing flexibility by allowing the U.S. Department of Transportation to make "categorical hot spot findings," which waive $PM_{2.5}$ and PM_{10} hot spot reviews for categories of projects where modeling shows that there is no air quality concern.

7. Regional Climate and Topography

Route Adoption

Wet winters and dry summers characterize the region's climate. Rainfall totals can vary widely over a short distance, with coastal mountain areas receiving over 40 inches of rain and inland areas receiving about 15 inches. During rainy periods, horizontal and vertical air causes air pollutant dispersal. Rain also washes out dust and other pollutants. Regional wind patterns vary from season to season. Wind tends to move from areas of high pressure to areas of low pressure. In warmer months, this means that air currents move inland. Although Pacific Ocean air is generally free of harmful air pollutants, it picks up pollutants from numerous sources, and will then carry these pollutants to areas many miles away.

Build Alternatives

Most of the project lies in San Benito County flanked on each side by the Coast Ranges. The major surface waters of the area are the Pajaro River, and the Carnadero Creek. Northwest winds are dominant during the summer when ozone readings at the Hollister and Gilroy monitors are highest during the year.

8. Emissions Analyses

There is a network of air pollution monitors in California. Monitors for specific pollutants may or may not be located near a proposed project. A review of data for Particulate Matter 2.5 and PM_{10} from nearby air monitoring stations was conducted. The Hollister-Fairview Road monitor, located at 1979 Fairview Road in Hollister, is approximately two miles from the State Route 25/San Felipe Road intersection. The

pollutants PM_{10} and Ozone are monitored at the Hollister monitor. The Gilroy 9th Street monitor that is located at 9th and Princevalle in Gilroy monitors Ozone and $PM_{2.5}$. The 9th Street monitor is located about three miles north oft the State Route 25/U.S. 101 interchange (see Figure 1).

Route Adoption

Santa Clara County is currently in state and federal 8-hour ozone nonattainment and state 1-hour ozone nonattainment. The county is also in a federal Carbon Monoxide maintenance area. The County is located in a state PM_{10} and $PM_{2.5}$ nonattainment area. It is in attainment for all other state and federal priority pollutants.

San Benito County is in nonattainment for the state 1-and 8-hour ozone standard and the state PM_{10} standard. It is in attainment status for all the other state and federal priority pollutants.

Build Alternatives

San Benito County is in nonattainment for the state 1-and 8-hour ozone standard. It is in attainment status for all the other state and federal priority pollutants.

There is no Carbon Monoxide monitor located near the project location. The closest Carbon Monoxide monitor is located approximately 28 miles away on Jackson Street in San Jose. Any data available from this monitor is not relevant to this study, as it too far away from the project site.

No sensitive receptors were identified

Table 2. State and Federal Conformity Status

	Federal Conformity	State Conformity
Ozone 8-hour	Santa Clara County: Nonattainment San Benito County-Attainment	Santa Clara County: Nonattainment San Benito County-Nonattainment
Ozone 1-hour	Federal Standard was revoked in 2005	Santa Clara County: Nonattainment San Benito County-Nonattainment
Carbon Monoxide	Santa Clara County: Attainment/ Maintenance San Benito County: Attainment/Unclassified	Santa Clara County: Attainment/Unclassified San Benito County: Attainment/Unclassified
Particulate Matter$_{10}$	Santa Clara County: San Benito County: Attainment/Unclassified	Santa Clara County: San Benito County: Nonattainment
Particulate Matter$_{2.5}$	Santa Clara County: San Benito County: Attainment/Unclassified	Santa Clara County Nonattainment San Benito County: Attainment
Sulfur Dioxide	Santa Clara County: San Benito County: Attainment/Unclassified	Santa Clara County: San Benito County: Attainment/Unclassified
Lead	Santa Clara County: San Benito County: Attainment/Unclassified	Santa Clara County: San Benito County: Attainment/Unclassified
Hydrogen Sulfide	Santa Clara County: San Benito County: Attainment/Unclassified	Santa Clara County: San Benito County: Attainment/Unclassified

Source: California Air Resources Board Area Designations web site and US EPA web site.

A. Regional Analysis

Route Adoption

Over the next 25 to 30 years, population growth in Santa Clara and San Benito counties is expected to increase. The actual amount of growth would depend on local and national economy, employment opportunities, housing costs and other variables.

Assumptions used in the Final Transportation Air Quality Conformity Analysis for the Transportation 2035 Plan and 2009 Transportation Improvement Program/Amendment #09-06 (Santa Clara County) analyses included current modeling assumptions for population, registered vehicles, and the use of the EMFAC 2007 air model. The Metropolitan Transportation Commission also uses the "Baycast" travel demand model. Other assumptions used included the current attainment status of pollutants and implementing methods to reduce Greenhouse Gas emissions.

For Santa Clara County, the portion of the U.S. 101 widening project that includes the State Route 25/ U.S. 101 interchange and is within the Route Adoption Alignment for this project and is a constrained project in the Valley Transportation Plan 2038. That project is also shown in the Metropolitan Transportation Commission's 2038 Plan (2009).

Direct permanent and indirect impacts will be studied in more detail when portions of the route adoption alternatives are funded for construction in the future and any Tier II environmental documents are prepared.

Direct temporary impacts would include construction activities that could increase short-term air emissions. This would be studied in more detail and would be considered a less-than-significant impact. Short-term impacts result from the following construction-related sources: construction equipment emissions; dust from grading and earthmoving operations; and emissions from workers' vehicles traveling to and from construction sites.

Indirect impacts will not be studied at this time as there are many unknowns regarding funding, future growth, and future state and local air regulations. The land use goals and objectives of the San Benito County General Plan emphasize managing growth to maintain the county's rural atmosphere, character, and amenities.

The Community Impact Assessment prepared for this project analyzed existing and future land uses and the potential for growth inducement. Caltrans concluded that

construction of an expressway within the project area would not cause growth. For more information please refer to the Draft Environmental Impact Report/Draft Tier I Environmental Impact Statement sections Existing and Future Land Use, and Growth.

Direct Permanent impacts would include less air pollutants from vehicles due to the improved level of service, and improvements in motor fuel formulations and emission control devices.

Build Alternatives

Over the next 25 to 30 years, population growth in the San Benito County region could vary widely based on various factors, including water and land availability, employment opportunities, housing costs, and interest rates.

Planning assumptions are expected to be consistent with the conformity analysis for the Association of Monterey Bay Area Governments 2005 Metropolitan Transportation Plan.

Direct temporary impacts would include construction activities that could increase short-term air emissions. This would be considered a less-than-significant impact. Short-term impacts result from the following construction-related sources: construction equipment emissions; dust from grading and earthmoving operations; and emissions from workers' vehicles traveling to and from construction sites.

There would be construction-related emissions during the building of the project versus not building the project.

Direct permanent impacts would include less air pollutants from vehicles due to the improved level of service, and improvements in motor fuel formulations and emission control devices.

Minimization of air pollutants would include complying with Caltrans Standard Specifications pertaining to dust control and dust palliative requirements, which are a required part of all construction contracts and should effectively reduce and control emission impacts during construction.

B. Project Level Analysis

The applicable state and federal standards are listed in Table 1 of this document and the conformity status for state and federal air pollutants is shown in Table 2.

As stated above, if a project is located in a non-attainment or maintenance area for a given pollutant, then additional air quality analysis and reduction measures in regard to that pollutant are required. This "hot spot" analysis is most frequently done for carbon monoxide (CO) and particulate matter.

There is a network of air pollution monitors in California. Monitors for specific pollutants may or may not be located near the proposed route adoption and project area (see Figure1).

Other key information used in this study is the current and future Level of Service (see Tables 3 and 5) and Annual Average Daily Traffic data (see Table 4).

Table 3. Existing and Predicted Level of Service

Alternatives		Segment on State Route 25	Peak Hour	Level of Service With Projects (worst case scenario)			Level of Service Without Projects		
				2006	2018	2038	2006	2018	2038
Route Adoption Alternatives	Build Alternatives A and B	San Felipe Road to State Route 156	AM	E	A	B	E	E	E
			PM	E	A	A	E	E	E
		State Route 156 to Hudner Lane	AM	E	B	B	E	E	E
			PM	E	B	B	E	E	E
	Route Adoption Alternative	Hudner Lane to Union Pacific Railroad main line crossing	AM	E	E	E	E	E	E
			PM	E	E	E	E	E	E

Source: Caltrans District 5 Traffic Operations May 2009, updated March 2011

Table 4. Current and Predicted Annual Average Daily Traffic

Alternatives		Segment on State Route 25	Daily traffic 10% Trucks				
			2006 (Existing)	2018	2018 No Build	2038	2038 No Build
Route Adoption Alternatives	Build Alternatives	San Felipe Road to State Route 156	14,700	21,300	19,800	27,100	23,000
		State Route 156 to Hudner Lane	21,300	20,490	22,200	28,900	24,400
		Hudner Lane to the Union Pacific Railroad main line crossing	22,500	21,100	26,500	32,200	28,600

Source: Caltrans District 5 Traffic Operations February 2011

Table 5. Existing & Predicted Level of Service and Average Speeds Without Projects

Alternatives		Segment on State Route 25	Peak Hour	Average Travel Speed (miles per hour)			Level of Service		
				2006	2018	2038	2006	2018	2038
Route Adoption Alternatives	Build Alternatives	San Felipe Road to State Route 156	AM	44.9	45.6	40.8	E	E	E
			PM	45.0	45.6	40.8	E	E	E
		State Route 156 to Hudner Lane	AM	43.7	42.1	38.9	E	E	E
			PM	42.4	42.7	40.2	E	E	E
		Hudner Lane to Union Pacific Railroad main line crossing	AM	43.7	40.5	38.9	E	E	E
			PM	42.4	41.4	40.2	E	E	E

Source: Caltrans District 5 Traffic Operations 2009, updated March 2011.

Table 6. Existing & Predicted Level of Service and Average Speeds With Project

2018

	Segment	Peak Hour	Miles per Hour	LOS
Alternative A	San Felipe Rd to Jct Rte 156	AM	59.3	A
		PM	59.3	A
	Jct Rte 156 to Hudner Ln	AM	59.5	B
		PM	59.5	A
	Hudner Ln to RRXing (2-Ln)	AM	41.4	E
		PM	43.1	E
Alternative B	San Felipe Rd to Jct Rte 156	AM	59.3	A
		PM	59.3	A
	Jct Rte 156 to Hudner Ln	AM	59.5	B
		PM	59.5	A
	Hudner Ln to RR Xing (2-Ln)	AM	41.6	E
		PM	42.3	E

2038

	Segment	Peak Hour	Miles per Hour	LOS
Alternative A	San Felipe Rd to Jct Rte 156	AM	59.3	B
		PM	59.3	B
	Jct Rte 156 to Hudner Ln	AM	59.5	B
		PM	59.5	B
	Hudner Ln to RR Xing (2-Ln)	AM	30.0	F
		PM	33.8	F
Alternative B	San Felipe Rd to Jct Rte 156	AM	59.3	B
		PM	59.3	B
	Jct Rte 156 to Hudner Ln	AM	59.5	C
		PM	59.5	B
	Hudner Ln to RR Xing (2-Ln)	AM	30.0	F
		PM	33.6	F

Source: Caltrans District 5 Traffic Operations 2009, updated March 2011.

Ozone Analysis

Route Adoption

The proposed project route adoption (Alternatives 1 and 2) are located within a federal and a state 8-hour ozone non-attainment area (Santa Clara portion). Currently, the San Benito portion is located within an 8-hour ozone federal attainment area, but a state non-attainment area. The Ozone standards are monitored closest to the project boundaries at the Hollister-Fairview Road monitor (See Figure 1).

At the time any Tier II document is written, the area may still be in state and/or federal non-attainment. If there is an approved method for project level analysis, a project-level analysis will be conducted.

Build Alternatives

San Benito County is located within an 8-hour ozone federal attainment area, but a state non-attainment area. The County is located within a state one-hour non-attainment area. The federal one-hour standard was revoked. The Ozone standards are monitored closest to the project boundaries at the Hollister-Fairview Road Monitor (See Figure 1).

Between 2006 and 2010, there were three days which exceeded the federal 8-hour standard and fifteen days exceeded the state 8-hour standard at the Hollister monitor (See Table 6). One day in 2006 exceeded the state 1-hour standard. Ozone is a regional pollutant and there are currently no modeling tools or guidelines for project-level analysis.

Table 7. Monitor Readings- 8-Hour State & Federal Ozone

Monitor Location/Standard	Number of Days over 8-Hour Standard				
	2006	2007	2008	2009	2010
Gilroy-9th Street					
Federal Standard	5	0	1	2	5
State Standard	8	0	4	4	7
Hollister-Fairview Road					
Federal Standard	1	0	0	0	2
State Standard	5	2	2	2	4

Source: California Air Resources Board ADAM database web site November 2, 2011

Carbon Monoxide (CO) Analysis

Route Adoption

The Santa Clara Portion of the project is located in a Federal Carbon Monoxide Maintenance area. If Santa Clara is still a Federal Carbon Monoxide Maintenance area or a non-attainment area, when any Tier II document is written, a screening hot spot analysis will be required. The 1997 U.C Davis Transportation Carbon Monoxide Protocol (or current approved guidance document), will be used to study areas affected by the proposed project improvements.

At the time any Tier II document is written, a project level study will be conducted for CEQA purposes. This would take into account any findings from reviewing Carbon Monoxide trends and monitoring data in the area and would include any required hot spot analysis as discussed above.

The San Benito portion of the project is located in a federal Carbon Monoxide attainment area. At the time any Tier II document is written, a project level study will be conducted for CEQA purposes. The study would take into account any findings from reviewing Carbon Monoxide trends and air monitoring data in the area.

Build Alternatives

The build alternatives are located within the San Benito County. San Benito is located in a federal Carbon Monoxide attainment area, therefore, a hot spot analysis is not required. The Transportation Project-Level Carbon Monoxide Protocol, Section 2.1, and "Affected Projects" states that: "projects affected by the Protocol include projects in attainment, nonattainment or maintenance areas." Therefore, all projects would

still be subject to an air study for NEPA/CEQA review, even if a specific hot spot analysis was not required.

The Air Study followed the guidance in the Transportation Project-Level Carbon Monoxide Protocol. The Protocol Section 3.1, decision process was used. The following questions were answered:

- Is the Project exempt from all Emissions analysis? No;
- Is Project exempt from regional emission analyses? No;
- Is project locally defined as regionally significant? Yes;
- Is the project in a federal/California attainment area? Yes; examine local impacts:

San Benito County has never been in non-attainment for Carbon Monoxide. Carbon Monoxide is primarily caused by motor vehicles idling or at start-up during the colder months of the year. If built, this project would improve the level of service from E to either A or B or C. Considering the improved level of service and the historic Carbon Monoxide levels, Caltrans considers that the proposed alignment would promote smoother traffic flow and would help improve carbon monoxide levels in an area that is currently in attainment.

There is no Carbon Monoxide monitor located near the project location.

This project would improve traffic flow and decrease idling time. Idling contributes to Carbon Monoxide emissions. Therefore, this project would be expected to improve Carbon Monoxide emissions in the project area.

Particulate Matter Analysis

Route Adoption

Both San Benito and Santa Clara Counties are located within $PM_{2.5}$ and PM_{10} Federal attainment areas. If the Federal Particulate Matter attainment status would deteriorate to non-attainment at the time of any Tier II document, a hot spot analysis would then be conducted based on applicable guidelines. A general study of these pollutants is required for NEPA and CEQA purposes.

It is anticipated that future conditions in land use and the technological improvements affecting gasoline and diesel vehicle emissions will contribute to maintaining attainment with particulate matter standards.

The state PM_{10} standard (50 vs. 150 micrograms per cubic meter) is lower than the federal standard. There is no nearby PM_{10} monitor in Santa Clara County. The state $PM_{2.5}$ standard is slightly lower than the federal standard: 12 micrograms per cubic meter vs. 17 micrograms per cubic meter. Both the Gilroy-9th Street and the Hollister-Fairview Road air monitors have only been monitoring $PM_{2.5}$ since 2007.

The monitor at Gilroy-9th Street $PM_{2.5}$, is located at 9th and Princevalle in Gilroy, is located about three miles from the project limit, north of the State Route 25 and U.S. 101 interchange. The Gilroy-9th Street monitor has been monitoring $PM_{2.5}$ only since 2007. Both Federal and State 2008 Annual Average were 8.7; the 2009 Federal Annual Average was 8.9 and the 2010 Federal Annual average was 8.2 micrograms per cubic meter. No data was available for State annual average for 2009 and 2010. These annual averages were well below the state limit of 12 micrograms per cubic meter and the federal limit of 15 micrograms per cubic meter.

Build Alternatives

San Benito County is located within federal Particulate Matter $PM_{2.5}$ and PM_{10} attainment areas. A Project-level Hot Spot analysis is not required for these pollutants; however an air quality analysis is still required for NEPA and CEQA requirements.

For the analysis, a review of data for $PM_{2.5}$ and PM_{10} from nearby air monitoring stations was conducted. The Hollister-Fairview Road PM_{10} and $PM_{2.5}$ monitor, located at 1979 Fairview Road in Hollister is approximately two miles from the State Route 25/San Felipe Road intersection. This monitor began monitoring $PM_{2.5}$ in

2007. The Annual Federal and State Averages are the same each year. The 2007 average was 6.2, the 2008 was 6.9 and the 2009 was 5.4 micrograms per cubic meter. These annual averages were well below the state limit of 12 micrograms per cubic meter and the federal limit of 15 micrograms per cubic meter.

PM_{10}

The PM_{10} data from the Hollister monitor was reviewed using the Air Resources Board ADAM Database webpage on November 2, 2011. No days were recorded as exceeding either the federal or state standards from 2006 through 2010.

$PM_{2.5}$

The proposed project will improve the Level of Service (LOS). Currently all segments are operating at LOS E. The No Build projection indicates operation continuing at LOS E. The projected build scenarios indicate service would improve to LOS A or B or C (See Table 3). Less stop and go traffic and smoother traffic flow would contribute to lowered Particulate Matter levels. Paving road shoulders will help minimize re-entrained road dust. State and federal requirements to progressively decrease various air pollutants from diesel and gasoline fuels are expected to continue. This would promote decreased diesel particulate ($PM_{2.5}$) in the future. More stringent state and federal requirements and retrofit grant programs for heavy-duty diesel engines are also expected to decrease $PM_{2.5}$ over time. Based on the above factors affecting particulate matter, this project is not expected to worsen the particulate matter or cause a violation of existing state or federal PM_{10} and/or $PM_{2.5}$

The conclusion for Particulate Matter air pollutants is that this project would not be expected to cause or contribute to an exceedence of the existing standard state and federal standards. Other Air Issues

Mobile Source Air Toxics

In addition to the criteria air pollutants for which there are National Ambient Air Quality Standards, the EPA also regulates air toxics. Most air toxics originate from human-made sources, including on-road mobile sources, non-road mobile sources (e.g., airplanes), area sources (e.g., dry cleaners) and stationary sources (e.g., factories or refineries).

Mobile source air toxics are a subset of the 188 air toxics defined by the Clean Air Act. Mobile source air toxics are compounds emitted from highway vehicles and non-

road equipment. Some toxic compounds are present in fuel and are emitted to the air when the fuel evaporates or passes through the engine unburned. Other toxics are emitted from the incomplete combustion of fuels or as secondary combustion products. Metal air toxics also result from engine wear or from impurities in oil or gasoline.

The Federal Highway Administration has issued interim guidance on how mobile source air toxics (MSAT) should be addressed in National Environmental Policy Act documents for highway projects. The Federal Highway Administration has developed a tier approach for analyzing mobile source air toxics in such documents. Depending on the specific project circumstances, the Federal Highway Administration has identified three levels of analysis:

1. No analysis for exempt projects with no potential for meaningful mobile source air toxics effects
2. Qualitative analysis for projects with low potential mobile source air toxics effects
3. Quantitative analysis to differentiate alternatives for projects with higher potential mobile source air toxics

Exempt Projects or Projects with No Meaningful Potential Mobile Source Air Toxics Effects:

The types of projects included in this category are:

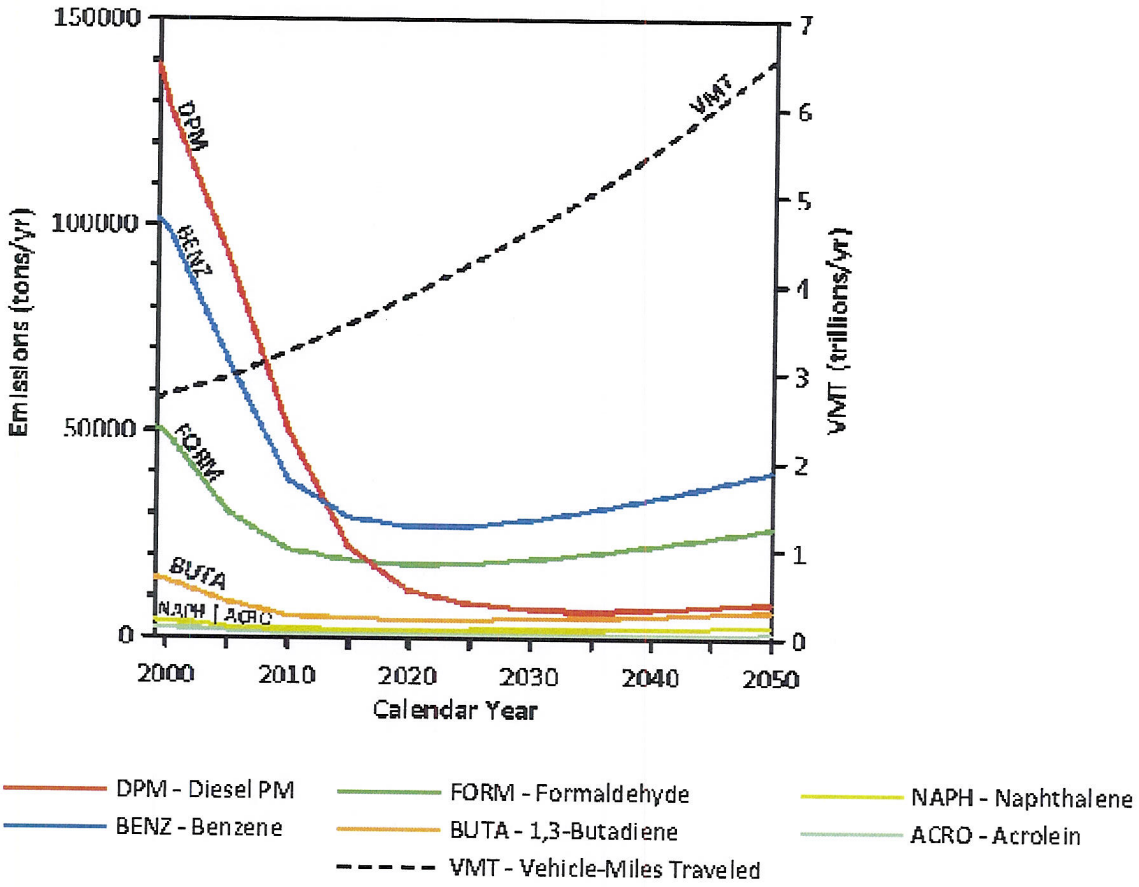
- Projects qualifying as a categorical exclusion under 23 CFR 771.117(c);
- Projects exempt under the Clean Air Act conformity rule under 40 CFR 93.126; or
- Other projects with no meaningful impacts on traffic volumes or vehicle mix.

Controlling air toxic emissions became a national priority with the passage of the Clean Air Act Amendments (CAAA) of 1990, whereby Congress mandated that the U.S. Environmental Protection Agency (EPA) regulate 188 air toxics, also known as hazardous air pollutants. The EPA has assessed this expansive list in their latest rule on the Control of Hazardous Air Pollutants from Mobile Sources (Federal Register, Vol. 72, No. 37, page 8430, February 26, 2007) and identified a group of 93 compounds emitted from mobile sources that are listed in their Integrated Risk Information System (IRIS) (http://www.epa.gov/ncea/iris/index.html). In addition,

EPA identified seven compounds with significant contributions from mobile sources that are among the national and regional-scale cancer risk drivers from their 1999 National Air Toxics Assessment (NATA) (http://www.epa.gov/ttn/atw/nata1999/). These are acrolein, benzene, 1,3-butadiene, diesel particulate matter plus diesel exhaust organic gases (diesel PM), formaldehyde, naphthalene, and polycyclic organic matter. While FHWA considers these the priority mobile source air toxics, the list is subject to change and may be adjusted in consideration of future EPA rules.

The 2007 EPA rule mentioned above requires controls that will dramatically decrease MSAT emissions through cleaner fuels and cleaner engines. According to an FHWA analysis using EPA's MOBILE6.2 model, even if vehicle activity (vehicle-miles travelled, VMT) increases by 145 percent as assumed, a combined reduction of 72 percent in the total annual emission rate for the priority MSAT is projected from 1999 to 2050, as shown in the following figure:

National Mobile Source Air Toxics Emission Trends 1999-2050 for Vehicles Operating on Roadways



Note:
(1) Annual emissions of polycyclic organic matter are projected to be 561 tons/yr for 1999, decreasing to 373 tons/yr for 2050.
(2) Trends for specific locations may be different, depending on locally derived information representing vehicle-miles travelled, vehicle speeds, vehicle mix, fuels, emission control programs, meteorology, and other factors.
Source: U.S. Environmental Protection Agency. MOBILE6.2 Model run 20 August 2009.

As a result, the EPA concluded that no further motor vehicle emissions standards or fuel standards were necessary to further control mobile source air toxics. The agency is preparing another rule under authority of Clean Air Act Section 202(l) that will address these issues and could adjust the full 21 and the primary six mobile source air toxics.

Unavailable Information for Project-Specific Mobile Source Air Toxics Impact Analysis

This air quality study includes a basic analysis of the likely mobile source air toxics emission impacts of this project. However, available technical tools do not enable us to predict the project-specific health impacts of the emission changes associated with the alternatives in the proposed project. Due to these limitations, the following discussion is included in accordance with Council of Environmental Quality regulations (40 CFR 1502.22(b)) regarding incomplete or unavailable information:

Information that is Unavailable or Incomplete. Evaluating the environmental and health impacts from mobile source air toxics on a proposed highway project would involve several key elements, including emissions modeling, dispersion modeling to estimate ambient concentrations resulting from the estimated emissions, exposure modeling to estimate human exposure to the estimated concentrations, and then final determination of health impacts based on the estimated exposure. Each of these steps is encumbered by technical shortcomings or uncertain science that prevents a more complete determination of the mobile source air toxics health impacts of this project.

Emissions: The EPA tools to estimate mobile source air toxics emissions from motor vehicles are not sensitive to key variables determining emissions of mobile source air toxics in the context of highway projects. While MOBILE 6.2 is used to predict emissions at a regional level, it has limited applicability at the project level. In California, the model used is the EMFAC (for Emission FACtors 2007).

Dispersion. The tools to predict how mobile source air toxics disperse are also limited. The EPA's current regulatory model MOBILE 6.2 and CAL3QHC, were developed and validated more than a decade ago for the purpose of predicting episodic concentrations of carbon monoxide to determine compliance with the National Ambient Air Quality Standards.

The performance of dispersion models is more accurate for predicting maximum concentrations that can occur at some time at some location within a geographic area. This limitation makes it difficult to predict accurate exposure patterns at specific times at specific highway project locations across an urban area to assess potential health risk. Studies conducted by the National Cooperative Highway Research Program will focus on identifying appropriate methods of documenting and communicating mobile source air toxics impacts in the National Environmental Policy Act process and to the general public. Along with these general limitations of dispersion models, the Federal Highway Administration is also faced with a lack of

monitoring data in most areas for use in establishing project-specific mobile source air toxics background concentrations.

Exposure Levels and Health Effects. Finally, even if emission levels and concentrations of mobile source air toxics could be accurately predicted, shortcomings in current techniques for exposure assessment and risk analysis preclude us from reaching meaningful conclusions about project-specific health impacts.

Exposure assessments are difficult because it is difficult to accurately calculate annual concentrations of mobile source air toxics near roadways, and to determine the portion of a year that people are actually exposed to those concentrations at a specific location. These difficulties are magnified for 70-year cancer assessments, particularly because unsupportable assumptions would have to be made regarding changes in travel patterns and vehicle technology (which affects emissions rates) over a 70-year period.

There are also considerable uncertainties associated with the existing estimates of toxicity of the various mobile source air toxics, because of factors such as low-dose extrapolation and translation of occupational exposure data to the general population. Because of these shortcomings, any calculated difference in health impacts between alternatives is likely to be much smaller than the uncertainties associated with calculating the impacts. Consequently, the results of such assessments would not be useful to decision-makers, who would need to weigh this information against other project impacts that are better suited for quantitative analysis.

Summary of Existing Credible Scientific Evidence Relevant to Evaluating the Impacts of Mobile Source Air Toxics. Research into the health impacts of mobile source air toxics is ongoing. For different emission types, there are a variety of studies that show that some either are statistically associated with adverse health outcomes through epidemiological studies (frequently based on emissions levels found in occupational settings) or that animals demonstrate adverse health outcomes when exposed to large doses.

Exposure to toxics has been a focus of a number of EPA efforts. Most notably, the agency conducted the National Air Toxics Assessment in 1996 to evaluate modeled estimates of human exposure applicable to the county level. While not intended for use as a measure of or benchmark for local exposure, the modeled estimates in the

National Air Toxics Assessment database best illustrate the levels of various toxics when aggregated to a national or state level.

The EPA is in the process of assessing the risks of various kinds of exposures to these pollutants. The EPA Integrated Risk Information System (IRIS) is a database of human health effects that may result from exposure to various substances found in the environment. The IRIS database is located at http://www.epa.gov/iris. The following toxicity information for the six prioritized mobile source air toxics was taken from the IRIS database *Weight of Evidence Characterization* summaries. This information is taken verbatim from EPA's IRIS database and represents the agency's most current evaluations of the potential hazards and toxicology of these chemicals or mixtures.

- **Benzene** is characterized as a known human carcinogen.
- The potential carcinogenicity of **acrolein** cannot be determined because the existing data are inadequate for an assessment of human carcinogenic potential for either the oral or inhalation route of exposure.
- **Formaldehyde** is a probable human carcinogen, based on limited evidence in humans, and sufficient evidence in animals.
- **1,3-butadiene** is characterized as carcinogenic to humans by inhalation.
- **Napthalene** has been reported to cause cataracts and retinal hemorrhage from chronic worker exposure. Chronic inflammation of the lung, chronic nasal inflammation, and other respiratory system problems were reported in mice chronically exposed to naphthalene via inhalation
- **Diesel exhaust** (DE) is likely to be carcinogenic to humans by inhalation from environmental exposures. Diesel exhaust as reviewed in this document is the combination of diesel particulate matter and diesel exhaust organic gases.

Other studies exist that address mobile source air toxics health impacts in proximity to roadways. The Health Effects Institute, a non-profit organization funded by the EPA, Federal Highway Administration, and industry, has done a series of studies to research near-roadway mobile source air toxics hot spots, the health implications of the entire mix of mobile source pollutants, and other topics. The final summary of the series is not expected for several years.

Recent studies (the Coast Air Quality Management District, Multiple Air Toxic Exposure Study-II) have reported that proximity to roadways is related to adverse health outcomes, particularly respiratory problems. Much of this research is not specific to mobile source air toxics, instead surveying the full spectrum of both criteria and other pollutants. The Federal Highway Administration cannot evaluate the validity of these studies, but more importantly, they do not provide information that would be useful to alleviate the uncertainties listed above and enable us to perform a more comprehensive evaluation of the health impacts specific to this project.

Relevance of Unavailable or Incomplete Information to Evaluating Reasonably Foreseeable Significant Adverse Impacts on the Environment, and Evaluation of impacts based upon theoretical approaches or research methods generally accepted in the scientific community. Because of the uncertainties outlined above, a quantitative assessment of the effects of air toxic emissions impacts on human health cannot be made at the project level. While available tools do allow us to reasonably predict relative emissions changes between alternatives for larger projects, the amount of mobile source air toxics emissions from each of the project alternatives and mobile source air toxics concentrations or exposures created by each of the project alternatives cannot be predicted with enough accuracy to be useful in estimating health impacts. (As noted above, the current emissions model is not capable of serving as a meaningful emissions analysis tool for smaller projects.) Therefore, the relevance of the unavailable or incomplete information is that it is not possible to make a determination of whether any of the alternatives would have "significant adverse impacts on the human environment."

ANALYSIS:

Route Adoption

There are many uncertainties for modeling Mobile Source Air Toxics, and there is uncertainty of future funding for the route adoption alternatives. These two factors added to the shortcomings in current techniques for exposure assessment and risk analysis preclude us from reaching meaningful conclusions about the future route adoption.

In the future, it is expected that both state and federal guidelines for using modeling tools will be in place. It is also expected that there may be project threshold limits for these pollutants. The California Air Toxics rules are expected to be similar to federal

Mobile Source Air Toxics guidelines. At the time any Tier II document is written, a project level study will be conducted for both NEPA and CEQA purposes.

Build Alternatives

In this document, Caltrans has provided a qualitative analysis of mobile source air toxics emissions relative to the various alternatives, and has acknowledged that the project alternatives may result in overall slightly increased exposure to mobile source air toxics emissions in certain locations, although the concentrations and duration of exposures are uncertain, and because of this uncertainty, the health effects from these emissions cannot be estimated.

The Build Alternatives A and B, meet the criteria for the Low Potential for Mobile Source Air Toxics Emissions category. The Federal Highway Administration guidance states that minor highway widening projects are those efforts for which the ultimate traffic level is predicted to be less than 150,000 Average Annual Daily Traffic (see Table 4). The projected 2038 traffic is less than 33,000 for all alternatives including the no-build alternative.

There were no sensitive receptors identified within 500 feet of the project limit. The FHWA guidance identifies Sensitive Land Uses as schools, medical centers and similar health care facilities, child care facilities, parks, and playgrounds. Vicinity of the project is defined as 500 feet or 150 meters from the edge of the nearest traveled lane.

The CT-EMFAC 2007 air model was used to estimate current and future Mobile Source Air Toxics, as follows in Table 8:

Table 8. Projected Mobile Source Air Toxics-Tons per Year

Year	Annual Vehicle Miles Travelled (VMT)	DIESEL PM (Tons/Yr)	FORMAL-DEHYDE	BUTA-DIENE	BENZENE	ACROLEIN	ACETALDELYDE
2006	64,440	0.0038	0.0087	0.0011	0.0054	0.0000	0.0036
2018 Build	80,120	0.0158	0.0053	0.0006	0.0032	0.0001	0.0022
2018 No Build	80,120	0.0024	0.0008	0.0001	0.0005	0.0000	0.0003
2038 Build	96,820	0.0030	0.0014	0.0003	0.0012	0.0001	0.0005
2038 No Build	96,820	0.0055	0.0026	0.0005	0.0022	0.0001	0.0010

Source: Caltrans District 6 Environmental Engineering CT-EMFAC runs

The estimated vehicle miles traveled is the same for the build and for the no-build alternatives in years 2018 and 2038. The build alternatives would have a better (higher) level of service and less stop and go traffic. In the design year the MSAT emissions are lower for the no-build than for either of the build alternatives. The table above indicated that the pollutants would be slightly higher for the build alternatives in 2038. Regardless of the alternative chosen, emissions will likely be lower than present levels in the design year because of the EPA's national control programs that are projected to reduce mobile source air toxics emissions by 57% to 87% between 2000 and 2020. Local conditions may differ from these national projections in terms of fleet mix and vehicle turnover, vehicle miles traveled growth rates, and local control measures. However, the magnitude of the EPA-projected reductions is so great (even after accounting for vehicle miles traveled growth) that mobile source air toxics emissions in the study area are likely to be lower in the future in nearly all cases.

As discussed above, the magnitude and the duration of these potential increases in the build alternatives compared to the No-Build Alternative cannot be accurately quantified due to the inherent deficiencies of current models. When a highway is widened and, as a result, moves closer to receptors, the localized level of mobile source air toxics emissions for the Build Alternative could be higher relative to the No-Build Alternative. The higher emissions would be made up for by an overall decrease in pollutants in the Hollister area due to increases in speeds and reductions in congestion (which are associated with lower mobile source air toxics emissions).

However, on a regional basis, the EPA's vehicle and fuel regulations, coupled with fleet turnover, will over time cause substantial reductions that, in almost all cases, will cause region wide mobile source air toxics levels to be significantly lower than today.

MSAT Conclusion

The EPA projections indicate a continuing downward trend of the six primary mobile source air toxics. As discussed above, the study of mobile source air toxics, dose-response effects and modeling tools are currently in a state where accurate information is incomplete or unavailable. This is relevant to making an accurate prediction of any reasonably foreseeable adverse effects on the human environment. There is currently no specific significance level for receptor exposure. Without a significance level for exposure, one cannot accurately and scientifically predict the effects on the human environment. Studies are currently being conducted to clarify some of these unknowns; however the information is not available now.

Because the emission effects of these projects are low, we expect there would be no appreciable difference in overall MSAT emissions among the two alternatives. The horizon year build estimates are lower than 2006 estimated emissions. In addition, quantitative analysis of these types of projects will not yield credible results that are useful to project-level decision-making due to the limited capabilities of the transportation and emissions forecasting tools.

Climate Change under the California Environmental Quality Act

In 2002, with the passage of Assembly Bill 1493 (AB 1493), California launched an innovative and pro-active approach to dealing with greenhouse gas emissions and climate change at the state level. AB 1493 requires the California Air Resources Board (CARB) to develop and implement regulations to reduce automobile and light truck greenhouse gas emissions.

On June 1, 2005, Governor Arnold Schwarzenegger signed Executive Order S-3-05. The goal of this order is to reduce California's greenhouse gas emissions to: 1) 2000 levels by 2010, 2) 1990 levels by the 2020 and 3) 80 percent below the 1990 levels by the year 2050. In 2006, this goal was further reinforced with the passage of Assembly Bill 32 (AB 32), the Global Warming Solutions Act of 2006. AB 32 sets the same overall greenhouse gas emissions reduction goals while further mandating that the

California Air Resources Board create a plan, which includes market mechanisms, and implement rules to achieve "real, quantifiable, cost-effective reductions of greenhouse gases." Executive Order S-20-06 further directs state agencies to begin implementing AB 32, including the recommendations made by the state's Climate Action Team.

With Executive Order S-01-07, Governor Schwarzenegger set forth the low carbon fuel standard for California. Under this order, the carbon intensity of California's transportation fuels is to be reduced by at least 10 percent by 2020.

Climate change and greenhouse gas reduction is also a concern at the federal level; however, at this time, no legislation or regulations have been enacted specifically addressing greenhouse gas emissions reductions and climate change. California, in conjunction with several environmental organizations and several other states, sued to force the U.S. Environmental Protection Agency (EPA) to regulate greenhouse gas as a pollutant under the Clean Air Act (*Massachusetts vs. Environmental Protection Agency et al.,* 549 U.S. 497 (2007). The court ruled that greenhouse gases do fit within the Clean Air Act's definition of a pollutant, and that the Environmental Protection Agency does have the authority to regulate greenhouse gases. Despite the Supreme Court ruling, there are no promulgated federal regulations to date limiting greenhouse gas emissions.

Project Analysis

The majority of the route adoption alternatives lies in San Benito County and a minor portion in Santa Clara County. The build alternatives proposed are located in San Benito County.

Economic growth in the neighboring county of Santa Clara has created pressure for residential growth in San Benito County where housing is more affordable. According to the 2000 U.S. Census Bureau, almost half of the workers that are 16 years and older in San Benito County commute outside San Benito County for employment. This growth trend has increased demands on the regional transportation system.

The U.S. Census Bureau indicates that the population of San Benito County has grown at a rapid rate. Between 1990 and 2000, the county experienced a 45.1 percent population increase, over 90 percent of which occurred in the City of Hollister. However, in 2003 growth slowed considerably.

The City of Hollister was placed under a building moratorium by the Central Coast Regional Water Quality Board in 2002, after a major spill occurred at the wastewater treatment plant. That moratorium ended in December 2008, after the newly completed wastewater treatment plant was approved by the Regional Water Quality Board. However, a growth control initiative which passed in November of 2002 is still in effect until June 13, 2012 that limits new housing in Hollister to 244 units per year.

Despite growth in the Hollister area, San Benito County remains a low-density, rural, and agricultural area outside the two cities of Hollister and San Juan Bautista.

According to the U.S. Census Bureau 2006 estimates, Santa Clara County has an estimated population of 1.7 million people. It is the fifth most populous county in California, and has 24 percent of the population of the San Francisco Bay area.

Santa Clara County has strict controls to keep growth within or adjacent to cities and to preserve the remaining farmland and rural areas in the county.

The build alternatives would relieve traffic congestion and improve traffic flow by providing additional travel lanes. Gasoline and diesel-powered vehicles operate less efficiently at low speeds. The existing conditions for the peak hour Level of Service within the entire project area on State Route 25 are at a peak hour Level of Service E.

For the build alternatives, Alternative A and Alternative B, existing average travel speeds are 44.9 miles per hour between San Felipe Road and State Route 156 during the morning peak hour, and 45.0 miles per hour during the evening peak traffic hour. For the segment between State Route 156 and Hudner Lane, average travel speeds are currently 43.7 miles per hour during the morning peak hour, and 42.4 miles per hour during the evening peak traffic hour.

If neither Alternative A nor Alternative B is constructed, average travel speeds on the existing would not decrease significantly by 2018 within the proposed build project limits. However, by 2038, speeds between San Felipe Road and State Route 156 are predicted to be reduced to 40.8 miles per hour during both the morning and evening peak traffic hours. Between State Route 156 and Hudner Lane, average travel speeds during the morning peak hour would be 38.9 miles per hour, and would be 40.2 miles during the evening peak traffic hour.

, and the percent-time-spent-following another vehicle is projected to increase to 88.8-89.8%.

A four-lane expressway between San Felipe Road and Hudner Lane would operate at Level of Service B or better during the peak traffic hours, except that, in Scenario 2 (a worst case scenario), the Level of Service for Alternative B would drop to Level of Service C by 2038 during the morning peak traffic (still an acceptable Level of Service). Although the vehicle density (passenger car per mile per lane) would increase, the average travel speed would remain constant at 59-60 miles per hour during both the morning and the evening peak hour between 2018 and 2038

Greenhouse gas emissions analysis and forecasting are a relatively new science using existing air modeling tools that were not originally designed for modeling greenhouse gases.

Estimated annual Carbon Dioxide emissions were modeled using CT-EMFAC 2007. The assumptions used in the model assume a non-peak hour (two hours per day) prevailing free-flow speed of 38-45 miles per hour and a non-peak hour prevailing free-flow speed of 55-60 miles per hour for the No-Build Alternative and both Build Alternatives. The total vehicle miles traveled were allotted 2 hours for peak and 22 hours for off-peak for all scenarios. Annual average daily traffic includes 10 percent truck traffic.

The results indicate only a rough estimate of emissions based on projected annual average daily traffic data. Table 4.1 displays carbon dioxide emissions in tons per year for the build alternatives and the No-Build Alternative based on projected annual average daily traffic data. There are other influences on the total effect that a project would have on greenhouse gasses. Other influences exist that would be a factor on the total effect that a project would have on greenhouse gasses, but currently there are no tools to quantitatively estimate these effects. Modeling tools and guidelines are not available at this time to project any effect from this specific project on global warming.

The results indicate only a rough estimate of emissions based on projected annual average daily traffic data. Table 8 displays carbon dioxide emissions in tons per year for the build alternatives and the No-Build Alternative. Other influences exist that would be a factor on the total effect that a project would have on greenhouse gasses, but there currently are no tools to quantitatively estimate these effects. Modeling tools

and guidelines are not available at this time to project any effect from this specific project on global warming.

Table 9. Estimated Carbon Dioxide Emissions for Build and No-Build Alternatives

Alternative	Segment on State Route 25	Daily traffic with 10% Trucks CO_2 Emissions (Tons per year)		
		2006 (Existing)	2018	2038
No-Build Alternative	San Felipe Road to State Route 156 (2.5 miles)	20	27	30
	State Route 156 to Hudner Lane (1.3 miles)	10	16	18
Alternative A or Alternative B	San Felipe Road to State Route 156 (2.5 miles)	20	29	29
	State Route 156 to Hudner Lane (1.3 miles)	10	16	20

Source: Caltrans Central Region Environmental Engineering June 2009

Only the build alternatives were studied at this time. The Route Adoption portion will undergo more detailed study in the future, and it is expected that modeling for greenhouse gasses will have improved by that time.

According to EMFAC modeling results, both the Build and No-Build Alternatives would result in more greenhouse gasses than the existing condition.. This is primarily because of EMFAC'S focus on predicted traffic volumes and speeds, which would increase with the additional two lanes the project adds to the highway.

Looking at the project alternatives solely in this manner creates an interesting situation. The highway segment is already operating at Level of Service E in the peak hour, which is considered failing, although it operates near the optimum speed of 45 miles per hour for lower CO_2 emissions. Based on the traffic study conducted for this project, the level of service for the No-Build Alternative will continue to deteriorate in the future years. As speeds sink further below 45 miles per hour, CO_2 emissions would show a corresponding increase. In both the No Build and Build conditions in the future years, CO_2 emissions will increase. For the 2018 year, the State Route 156 to Hudner Lane segment shows that both the No-Build and Build alternatives will have similar carbon dioxide emissions; for the San Felipe Road to Sate Route 156 segment, the Build alternative will have a slightly higher increase in emissions. For the 2038 year, the pattern is similar, except that for the San Felipe Road to State Route 156 segment, the No-Build alternative would have higher CO_2 emissions.

CEQA Conclusion

As discussed above, the modeling for the project does show that greenhouse gas emissions will increase over the existing conditions. However, for the San Felipe Road to State Route 156 segment of Alternative B (the preferred build alterative), the year 2038 emissions are lower than No-Build Alternative emissions. In light of this and the limitations discussed in the preceding sections, it is Caltrans' determination that in the absence of further regulatory or scientific information related to greenhouse gas emissions and California Environmental Quality Act significance, it is too speculative to make a determination regarding the project's direct impact and its contribution on the cumulative scale to climate change. However, Caltrans does anticipate a reduction in greenhouse gas emissions if Alternative B is constructed. Nonetheless, Caltrans is taking further measures to help reduce energy consumption and greenhouse gas emissions.

9. Short-Term Construction Impacts

Route Adoption

Since this is a route adoption, it is not appropriate to discuss construction impacts at this time. There may be additional air issues or guidance for Mobile Source Air Toxics by the time the project is funded and any Tier II document is written. All appropriate issues will be discussed at that time.

Build Alternatives

During construction, the proposed project will generate air pollutants. The exhaust from construction equipment contains hydrocarbons, oxides of nitrogen, carbon monoxide, suspended particulate matter, and odors. However, the largest percentage of pollutants would be windblown dust generated during excavation, grading, hauling, and various other activities. The impacts of these activities would vary each day as construction progresses. Dust and odors at some residences very close to the right of way could probably cause occasional annoyance and complaints.

Mobile Source Air Toxics emissions would also be expected from the diesel powered construction equipment. It is anticipated that the pollutant levels emitted from this equipment would be less in 2038 than now in 2008, due to changes in diesel fuel and progressively more stringent air pollution limitation requirements on diesel engines.

San Benito County is among the counties listed as containing serpentine and ultramafic rock (Governor's Office of Planning and Research, October 26, 2000). However, the known areas are not near the proposed project location. Therefore, the impact from Naturally Occurring Asbestos (NOA) during project construction would be minimal to none. If structures that may contain asbestos are to be demolished, it is the responsibility of the contractor to comply with the Rules and Regulations of the local Air Pollution Control Districts.

10. Avoidance, Minimization, and/or Mitigation Measures

Most of the construction impacts to air quality are short-term in duration and, therefore, will not result in long-term adverse conditions. Implementation of the following measures, some of which may also be required for other purposes such as storm water pollution control will reduce any air quality impacts resulting from construction activities:

The construction contractor shall comply with Caltrans' Standard Specifications in Section 14(2010).

> Section 14-9.01specifically requires compliance by the contractor with all applicable laws and regulations related to air quality, including air pollution control district and air quality management district regulations and local ordinances.

Section 14-9.02 is directed at controlling dust. If dust palliative materials other than water are to be used, material specifications are contained in Section 18.

11. References

California Air Resources Board ADAM database website

California Air Resources Board 2009 Almanac of Emissions and Air Quality

California Department of Transportation Standard Environmental Reference

Caltrans/UC Davis Transportation Project-Level Carbon Monoxide Protocol

Monterey Bay Unified Air Pollution Control District website

Bay Area Air Quality Management District website

San Benito County Governments website

http://www.ambag.org/publications/reports/Transportation/MTP/Environ%20Analysis%20B.pdf

Santa Clara Valley Transportation Authority website

Federal Highway Administration website (MSAT guidelines)

United States Environmental Protection Agency website

Environmental Impact Report (EIR) for the *Transportation 2035 Plan for the San Francisco Bay Area*:
http://www.mtc.ca.gov/planning/2035_plan/EIR/draft/2_02_Air_Quality_DEIR.pdf

http://www.mtc.ca.gov/planning/2030_plan/downloads/final_2030_plan/0-T2030Plan-final_FrontTOC.pdf

http://www.mtc.ca.gov/planning/2035_plan/EIR/final/MTC_AQCA-09_TIP_amend09-06.pdf

http://www.mtc.ca.gov/planning/2035_plan/EIR/final/MTC_AQCA-09_TIP_amend09-06.pdf--baycast

http://www.mtc.ca.gov/planning/2035_plan/EIR/final/MTC_AQCA-09_TIP_amend09-06.pdf

Appendix A CT-EMFAC Carbon Dioxide and MSAT model data

The following technical report does not include the appendices due to the technical nature of the data, but can be made available upon request.

Air Quality Study Report

State Route 25 Widening and Route Adoption

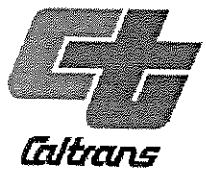
Hollister to Gilroy

District 5 - San Benito - State Route - 25- PM 51.5/60.1
District 5 - San Benito - State Route - 156 PM R10.5/R12.2
District 4 - Santa Clara - State Route – 25- PM 0.0/2.6

EA – 05 - 485400

Prepared by the
State of California Department of Transportation

Revised April 2010



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Air Quality Study Report

State Route 25 Widening Project Hollister to Gilroy

District 5 - San Benito - State Route - 25- PM 51.5/60.1

District 5 - San Benito - - State Route 156 PM R10.5/R12.2

District 4 - Santa Clara - State Route – 25- PM 0.0/2.6

EA- 05 - 485400

Revised April 2010

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District 6/Central Region

Executive Summary

The air study provides a discussion of the proposed project, the physical setting of the project area, and the regulatory framework for air quality. The report provides data on existing air quality, evaluates potential air quality impacts associated with the proposed project, and identifies mitigation measures recommended for potentially significant impacts.

The California Department of Transportation (Caltrans), in cooperation with the Council of San Benito County Governments and the Santa Clara Valley Transportation Authority, is proposing the eventual replacement of 11.2 miles of the existing State Route 25 two-lane highway with a four-lane expressway in San Benito and Santa Clara counties. A future interchange at State Route 25/State Route 156 would require widening on State Route 156 between post miles R10.5 and R12.2.

This report evaluates two proposed projects; (1) a route adoption and (2) a proposed construction project within the limits of the proposed route adoption. Five alternatives are under consideration including the No-Build Alternative: Alternatives 1 and 2 are route adoption alignments, and Alternatives A and B are proposed build alternatives.

The route adoption study extends from the San Felipe Road within the City of Hollister (post mile 51.5) to the San Benito/Santa Clara County line (post mile 60.1) and on to the end of State Route 25 at U.S. 101, south of the City of Gilroy (post miles 0.0. to 2.6 in Santa Clara County).

The proposed construction project limits extend 3.8 miles in San Benito County, from Sand Felipe Road in Hollister to just west of Hudner Lane (post miles 51.5 to 55.3).

The proposed route adoption is located in portions of two air basins, the North Central Coast Air Basin (Hollister) and the San Francisco Bay Air Basin (Gilroy). Both the Santa Clara County and San Benito County portions of the project are located in State one and eight-hour ozone non-attainment areas. For Federal eight-hour ozone, Santa Clara County is non attainment-marginal and San Benito County is in non-attainment. For Federal one-hour ozone, Santa Clara County is unclassified moderate and San Benito County is in unclassified maintenance. Currently, there is no procedure for ozone hot spot conformity analysis. Both counties are in state and federal attainment for the other priority air pollutants.

A brief discussion of future analysis methods and possible pollutant issues for the route adoption will be included in this document. Mobile Source Air Toxics and Climate Change (Greenhouse) Gasses are a relatively new area of air pollution concern. There are no significance or threshold levels for these pollutants at this time. Current analysis methods and guidelines are evolving and results have some uncertainties. Caltrans anticipates that guidelines and modeling tools will be available by the time future projects within the footprint of the route adoption alternatives are funded and Tier II environmental documents are prepared. A more specific analysis and discussion of potential effects of these pollutants will be conducted at that time.

The State Route 25 and 156 areas are not listed as containing serpentine and ultramafic rock. Therefore, the impact from naturally occurring asbestos during project construction would be minimal to none.

This analysis is based on the traffic study prepared for this project.

The proposed build alternatives are located in federal Particulate Matter (PM) 10 and 2.5 attainment areas; therefore, no hot spot conformity analysis is required for these pollutants. The build and the route adoption alternatives are located in a state PM10 non-attainment area. The route adoption is located in a state PM2.5 non-attainment area and the build portion is located in a state PM2.5 attainment area. A project-level air quality analysis is required for National Environmental Policy Act (NEPA) and California Environmental Quality Act (CEQA) requirements. The particulate matter air pollution monitor closest to the project is located at 1979 Fairview Road, Hollister. Monitoring data from 2003 through 2008 was reviewed at the Air Resources Board web site. No exceedence of either the state or federal standards for Particulate Matter10 was recorded for particulate matter during these years. The Hollister and the Gilroy PM2.5 air monitors have only been monitoring since 2007. No exceedence of the either the state or federal standard for PM2.5 was recorded for 2007 or 2008.

Historical air quality data show that existing carbon monoxide levels for the general vicinity of the project area do not exceed either the state or federal ambient air quality standards. San Benito County is located in a Carbon Monoxide attainment area, so a project-level hot spot analysis was not required.

Mobile Source Air Toxics are a relatively new group of air pollutants to be of concern. Mobile source air toxics are compounds emitted from highway vehicles and non-road equipment. Currently no pollutant threshold or significance limits have been issued by the USEPA or the California Air Resources Board. There is no system of pollutant monitoring stations like there is for the priority pollutants such as ozone. The February *2006 Interim FHWA guidelines on Air Toxic Analysis for NEPA Document* discuss technical shortcomings of current air models and the uncertain science with respect to health effects. Health effects are of most concern to sensitive receptors located with 500 feet of the project. There are currently no sensitive receptors identified along the proposed route adoption. Using the limited guidance and modeling tool available today the amount of Mobile Source Air Toxics modeled for the Build Horizon year is less than the No Build. This indicates that the project would not decrease the air quality.

This project is intended to decrease congestion. Higher traffic speeds and less stop and go traffic should decrease Carbon Monoxide, Particulate Matter 10 and 2.5 and Mobile Source Air Toxics in the horizon year. Any isolated rural residences that will be closer to the new highway, may be affected by slightly higher emissions than if the project is not built. Based on the limited modeling tools and guidelines available for Greenhouse Gasses it appears that the Build alternative would create more emissions than the No Build alternative. However, due to the modeling limitations and lack of CEQA guidance, Caltrans has determined that in the absence of further regulatory or scientific information related to greenhouse gas emissions and CEQA significance, it is too speculative to make a determination regarding the project's direct impact and its contribution on the cumulative scale to climate change.

Potential construction air quality impacts that would occur are increased dust (Particulate Matter 10 and 2.5) from heavy equipment, land clearing and off-road work. Mitigation during construction would rely on adhering to Caltrans Standard Special Provision for dust, 7-1.01F. Mobile Source Air Toxics and Carbon Monoxide may be increased at or near the construction area due to heavy equipment operations.

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1. Purpose of Air Quality Study Report

This report documents the anticipated air quality effects of the proposed project. Because this document is intended to satisfy the requirements of both the California Environmental Quality Act and the National Environmental Policy Act, it addresses both state and federal air quality standards.

2. Project Location, Description, and Alternatives

The California Department of Transportation (Caltrans), in cooperation with San Benito Council of Governments and Santa Clara Valley Transportation Authority is evaluating the conversion of 11.2 miles of the existing State Route 25 two-lane conventional highway to a four-lane expressway in San Benito and Santa Clara counties. The Draft Environmental Impact Report and Environmental Impact Statement includes two proposed projects: (1) a TIER I route adoption and (2) a proposed construction project within the limits of the proposed route adoption.

1. The route adoption study extends from San Felipe Road within the City of Hollister (post mile 51.5) to the San Benito/Santa Clara County line (post mile 60.1) and on to the end of State Route 25 at U.S. 101 south of the city of Gilroy (post miles 0.0 to 2.6 in Santa Clara County).

2. The proposed construction project limits extend 3.8 miles in San Benito County, from San Felipe Road in Hollister to just west of Hudner Lane (post miles 51.5 to 55.3). The existing 2-lane conventional highway would be replaced by a 4-lane expressway.

State Route 25, a two-lane conventional highway, runs northwest through the relatively flat terrain of the Hollister Valley, terminating at U.S. 101 after crossing the Pajaro River and Carnadero Creek. Agriculture dominates the surrounding landscape, and farmsteads and houses are scattered along the length of the study area. Residences, retail businesses, and agriculture-related commercial operations are more concentrated at both ends of the route adoption study area, on the outskirts of Gilroy and Hollister.

The purpose of the proposed route adoption project is to:

- Select a corridor for State Route 25 between Hollister and Gilroy that will accommodate existing and future travel demand.
- Facilitate local and regional land use planning by identifying future right-of-way needed for the State Route 25 corridor.

The purpose of the proposed build project is to:

- Improve traffic flow and reduce delays on State Route 25 between San Felipe Road in Hollister and Hudner Lane in San Benito County.
- Increase capacity along State Route 25 between San Felipe Road in Hollister and Hudner Lane in rural San Benito County.

Slow moving farm equipment, trucks, and local and commuter traffic share this two-lane roadway. An increasing number of vehicles travel this stretch of State Route 25 and, during peak commute hours, the roadway is congested. Traffic flow is delayed by vehicles turning onto and/or out of the many driveways and local roads, affecting the flow of the faster moving vehicles. Commercial truck traffic travels through the area on State Route 25, and is subject to delays as well. A new route alignment should be adopted so that the appropriate area for a future expressway can incorporated into the San Benito and Santa Clara County general plans now, before future development occurs along this stretch of highway.

The No-Action Alternative would result in no action being taken, and no further improvements would be made to Phase 1 of the State 25 Safety and Operations Enhancement Project, which began construction in May 2009 and is scheduled to be completed in May 2010.

Alternatives

Alternative 1 and 2 Route Adoption Alignment Alternatives

Both of the route adoption alternatives would follow the same alignment from the bend in Route 25 approximately 1.7 miles south of Shore Road (post mile 56.1) in San Benito County to U.S. 101 in Santa Clara County. The alignment would be wide enough to accommodate a future four-lane expressway (342 feet) with a 62 foot median and one or two frontage roads. The alignments would also be wide enough to accommodate a future interchange near the existing intersection of Route 25 and Route 156 and a future Route 25/101 interchange north of the existing interchange. There would be enough room to build new bridges over Carnadero Creek and the Pajaro River. The Union Pacific Railroad Hollister branch line and the Union Pacific main line just east of US101 would cross under the proposed Route 25 expressway.

Between post mile 56.1 and the east end of the proposed project at San Felipe Road, the two alignment alternatives separate.

Alternative 1 proposes to align the future four-lane expressway to the east (or north) of the existing two lane north/south highway and Alternative 2 proposes to align to the west (or south) of the existing two lane highway.

Alternatives A and B (Build Alternatives)

Instead of obtaining forecasting data from Caltrans Transportation Planning, the traffic study used two scenarios to predict Level of Service for Alternative A and Alternative B. In Scenario 1, the assumption was that traffic volume on State Route 25 would remain the same as if the project were not built. Under Scenario 2, it was assumed that the traffic volumes for Alternative A would be the same as were forecast for Alternative 1, and that traffic volumes for Alternative B would be identical to the traffic volumes forecast for Alternative 2. Both of these scenarios analyzed the effects of a constructed Alternative A and Alternative B (3.8 miles) within the length of the study area (San Felipe Road to the Union Pacific main line tracks near U.S. 101).

Table 4 shows the Level of Service for Alternatives A and B based on future no-build volumes on State Route 25 (Scenario 1). The four-lane expressway between San Felipe Road and Hudner Lane would operate at Level of Service B or better during the peak hours. Although the average travel speed remains constant between 2015 and 2035, the vehicle density would increase. However, the two-lane segment between Hudner Lane and railroad crossing at the Union Pacific main line would operate at Level of Service E during the peak hours. The average travel speed would continue to decline. By 2035, the Average Travel Speed would be 37.4 miles per hour during the AM peak and 38.8 miles per hour during the PM peak.

Both construction alternatives extend 3.8 miles in San Benito County, from just west of Hudner Lane (post mile 55.3) to San Felipe Road (post mile 51.5). Unlike the Route Adoption Alternatives, the build alternatives propose a realigned and widened at-grade intersection at Route 25 and Route 156 instead of an interchange. Both construction alternatives would transition back to the existing two-lane highway near Hudner Lane.

Alternative A would be constructed at the southeastern end of the Alternative 1 Route Adoption alignment. Direct access to the expressway would be available from San Felipe Road, Wright Road, Flynn Road, SR 156, two west-side frontage roads and one east-side frontage road. An undercrossing at the Don Chapin Gravel operation driveway would provide access to this otherwise landlocked parcel.

For Alternative A, an undercrossing would be built at the gravel quarry driveway to provide access to this parcel.

Alternative B would be constructed at the southeastern end of the Alternative 2 Route Adoption alignment. Direct access to the expressway would be available from San Felipe

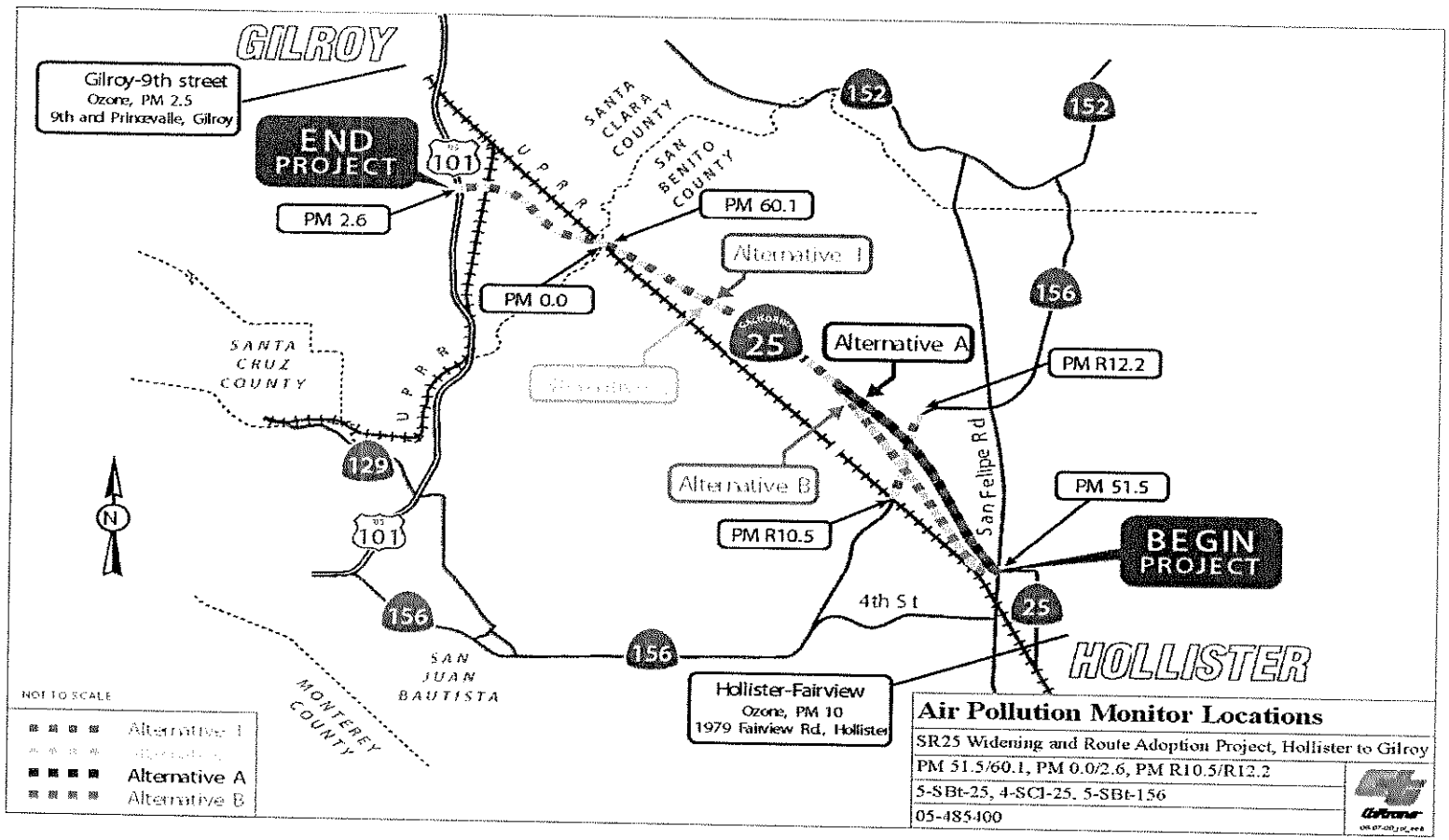
Road, Wright Road, Briggs Road, a west-side frontage road, SR 156, an east-side frontage road, and Hudner Lane. The second west-side frontage road would connect to Hudner Lane.

No-Action Alternative

The No Action Alternative would result in no action being taken and no further improvements would be made to State Route 25 within the Route Adoption limits other than those already programmed/funded or under construction. Construction began in May 2009 on the Route 25 Safety and Operations Enhancement Project and is expected to be completed by early 2010. Work is from just south of Hudner Lane (post mile 55.1) and end just south of the Union Pacific Railroad Crossing (post mile 60.0) in San Benito County. Roadway widening will consist of two 10-foot outside shoulders, two 12-foot traveled lanes, two-5' inside shoulders and placement of a temporary concrete median barrier. Rumble strips will be installed on all inside and outside shoulders. Hudner Lane and Shore Road intersections will be improved.

Current and future projected traffic is shown in Table 5.

Figure 1. Project Map and Location of Closest Air Monitors



3. Federal, State, and Local Regulations

The primary legislation that governs federal air quality regulations is the Clean Air Act Amendments of 1990 (CAAA). The CAAA delegates primary responsibility for clean air to the U.S. Environmental Protection Agency (EPA). The EPA develops rules and regulations to preserve and improve air quality and delegates specific responsibilities to state and local agencies. Under the Clean Air Act, the EPA has established the National Ambient Air Quality Standards (NAAQS) for six potential air pollutants: carbon monoxide (CO), ozone (O_3), nitrogen dioxide (NO_2), suspended particulate matter (PM_{10} & $PM_{2.5}$), sulfur dioxide (SO_2), and lead (Pb).

The State of California has developed the California Ambient Air Quality Standards (CAAQS). The Air Resources Board (ARB), which is part of the California EPA regulatory agency, develops air quality regulations at the state level. The state regulations mirror federal regulations by establishing industry-specific pollution controls for criteria, toxic, and nuisance pollutants. California also requires that plans and strategies for attaining state ambient air quality standards as set forth in the California Clean Air Act of 1988 be developed throughout the state. The ARB also is responsible for developing motor emissions standards for California vehicles.

Route Adoption- Alternatives 1 and 2

The proposed project is located within two air basins. The Santa Clara County portion is within the San Francisco Air Basin that is under the jurisdiction of the Bay Area Air Quality Management District. The San Benito County portion is within the North Central Coast Air Basin that is under the jurisdiction of the Monterey Bay Unified Air Pollution Control District. These districts administer air quality regulations developed at the federal, state, and local levels. These regulations are described below.

Build Alternatives - Alternatives A and B

The San Benito County portion is within the North Central Coast Air Basin that is under the jurisdiction of the Monterey Bay Unified Air Pollution Control District.

The district administers air quality regulations developed at the federal, state, and local levels. These regulations are described below.

4. Air Quality Pollutants and Standards

As stated, the federal and state governments have established ambient air quality standards for six criteria pollutants: carbon monoxide (CO), ozone (O_3), particulate matter (PM), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), and lead (Pb) (See Table 1). O_3 and PM are generally considered to be regional pollutants because they or their precursors affect air quality on a regional scale. Pollutants such as CO, NO_2, SO_2, and Pb are considered to be local pollutants because they tend to accumulate in the air locally. PM is also considered as a local pollutant. In the area of the proposed project site, Ozone and Carbon Monoxide are of particular concern.

A. **Carbon Monoxide (CO)**: Carbon Monoxide is a public health concern because it combines readily with hemoglobin and thus reduces the amount of oxygen transported in the bloodstream. Effects on humans range from slight headaches to nausea to death. State and federal CO standards have been set for both 1-hour and 8-hour averaging times. The state 1-hour standard is 20 parts per million (ppm) by volume, and the federal 1-hour is 35 ppm. Both the state and federal standards are 9 ppm for the 8-hour averaging period. Motor vehicles are the dominant source of CO emissions in most areas. High CO levels develop primarily during winter when periods of light wind combine with ground-level temperature inversions. These conditions result in reduced dispersion of vehicle emissions. In addition, motor vehicles emit more CO in cool temperatures than in warm temperatures.

B. **Ozone (O_3):** Ozone is not emitted directly into the air but is formed by a photochemical reaction in the atmosphere. Ozone precursors, which include oxides of nitrogen and reactive organic gases, react in the atmosphere in the presence of sunlight to form ozone. State and federal standards for ozone have been set for a 1-hour averaging time. The state requires that ozone concentration not exceed .09 ppm of ozone being produced in a given area in 1 hour. The federal 1-hour ozone standard is .12 ppm, but it does not apply in California. The federal 8-hour ozone standard is .08 ppm and the state standard is .07 ppm.

C. **Particulate Matter (PM_{10}) & ($PM_{2.5}$)**: Particulate matter emissions are generated by a wide variety of sources, including agricultural activities, industrial emissions, dust suspended by vehicle traffic and construction equipment, and secondary aerosols formed by reactions in the atmosphere. The NAAQS for particulate

matter applies to two classes of particulate: particulate matter 2.5 microns or less in diameter ($PM_{2.5}$) and particulate matter 10 microns or less in diameter (PM_{10}). The state PM_{10} standards are 50 micrograms per cubic meter ($\mu g/m^3$) as a 24-hour average and 20 $\mu g/m^3$ as an annual arithmetic mean. The federal PM_{10} standards are 150 $\mu g/m^3$ as a 24-hour average. The federal standards for $PM_{2.5}$ are 15 $\mu g/m^3$ and 35 $\mu g/m^3$ for annual and 24 hours respectively. The state standard for $PM_{2.5}$ is 12 $\mu g/m^3$ as an annual arithmetic mean. There is no separate state standard for 24-hour $PM_{2.5}$.

D. **Nitrogen Dioxide (NO_2):** Nitrogen dioxide belongs to a family of highly reactive gases called nitrogen oxides (NOx). These gases form when fuel is burned at high temperatures, and come principally from motor vehicle exhaust and stationary sources such as electric utilities and industrial boilers. A suffocating, brownish gas, nitrogen dioxide is a strong oxidizing agent that reacts in air to form corrosive nitric acid, as well as toxic organic nitrates. It also plays a major role in the atmospheric reactions that produce ground-level ozone (or smog). EPA's health-based national air quality standard for nitrogen dioxide is .053 ppm.

E. **Sulfur Dioxide (SO_2):** Sulfur dioxide belongs to the family of sulfur oxide gases (SOx). These gases are formed when fuel containing sulfur (mainly coal and oil) is burned, and during metal smelting and other industrial processes. EPA's health-based national air quality standard for sulfur dioxide is .030 ppm (measured on an annual average) and .14 ppm (measured over 24 hours).

F. **Lead (Pb):** Lead is a metal found naturally in the environment as well as in manufactured products. The major sources of lead emissions have historically been motor vehicles and industrial sources. Due to the phase out of leaded gasoline, metal processing is the major source of lead emissions to the air today. The highest levels of lead in air are generally found near lead smelters. Other stationary sources are waste incinerators, utilities, and lead-acid battery manufacturers.

G. **Mobile Source Air Toxics (MSATs):** These toxics are a subset of the 188 air toxics defined in the Clean Air Act. They are now federally regulated under 40 Code of Federal Regulations 1502.22 by the U.S. Environmental Protection Agency. Mobile source air toxics are 21 compounds emitted from highway vehicles and non-road equipment. There are six main toxics including diesel exhaust, benzene, acetaldehyde, formaldehyde, acrolein, 1-3 butadiene. The Federal Highway Administration issued interim guidance on February 3, 2006 for

analysis in National Environmental Policy Act documents. Currently, available technical tools do not enable us to predict the project-specific health impacts, so only a qualitative analysis is conducted.

Table 1. Federal and State Ambient Air Quality Standards

Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards [1]		Federal Standards [2]		
		Concentration [3]	Method [4]	Primary [3,5]	Secondary [3,6]	Method [7]
Ozone (O_3)	1 Hour	0.09 ppm (180 µg/m³)	Ultraviolet Photometry	—	Same as Primary Standard	Ultraviolet Photometry
	8 Hour	0.070 ppm (137 µg/m³)		0.075 ppm (147 µg/m³)		
Respirable Particulate Matter (PM10)	24 Hour	50 µg/m³	Gravimetric or Beta Attenuation	150 µg/m³	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	20 µg/m³		—		
Fine Particulate Matter (PM2.5)	24 Hour	No Separate State Standard		35 µg/m³	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	12 µg/m³	Gravimetric or Beta Attenuation	15.0 µg/m³		
Carbon Monoxide (CO)	8 Hour	9.0 ppm (10mg/m³)	Non-Dispersive Infrared Photometry (NDIR)	9 ppm (10 mg/m³)	None	Non-Dispersive Infrared Photometry (NDIR)
	1 Hour	20 ppm (23 mg/m³)		35 ppm (40 mg/m³)		
	8 Hour (Lake Tahoe)	6 ppm (7 mg/m³)		—	—	—
Nitrogen Dioxide (NO_2)	Annual Arithmetic Mean	0.030 ppm (57 µg/m3)	Gas Phase Chemiluminescence	0.053 ppm (100 µg/m³)	Same as Primary Standard	Gas Phase Chemiluminescence
	1 Hour	0.18 ppm (339 µg/m³)		—		
Sulfur Dioxide (SO_2)	Annual Arithmetic Mean	—	Ultraviolet Fluorescence	0.030 ppm (80 µg/m³)	—	Spectrophotometry (Pararosaniline Method)
	24 Hour	0.04 ppm (105 µg/m³)		0.14 ppm (365 µg/m³)	—	
	3 Hour	—		—	0.5 ppm (1300 µg/m³)	
	1 Hour	0.25 ppm (655 µg/m³)		—	—	—
Lead [8]	30 Day Average	1.5 µg/m³	Atomic Absorption	—	—	—
	Calendar Quarter	—		1.5 µg/m³	Same as Primary Standard	High Volume Sampler and Atomic Absorption
	Rolling 3-Month Average [8]	—		0.15 µg/m³		
Visibility Reducing Particles	8 Hour	Extinction coefficient of 0.23 per kilometer — visibility of ten miles or more (0.07 — 30 miles or more for Lake Tahoe) due to particles when relative humidity is less than 70 percent. Method: Beta Attenuation and Transmittance through Filter Tape.		No Federal Standards		
Sulfates	24 Hour	25 µg/m³	Ion Chromatography			
Hydrogen Sulfide	1 Hour	0.03 ppm (42 µg/m³)	Ultraviolet Fluorescence			
Vinyl Chloride [8]	24 Hour	0.01 ppm (26 µg/m³)	Gas Chromatography			

See footnotes on next page ...

For more information please call ARB-PIO at (916) 322-2990

California Air Resources Board (11/17/08)

1. California standards for ozone, carbon monoxide (except Lake Tahoe), sulfur dioxide (1 and 24 hour), nitrogen dioxide, suspended particulate matter—PM10, PM2.5, and visibility reducing particles, are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.
2. National standards (other than ozone, particulate matter, and those based on annual averages or annual arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest eight hour concentration in a year, averaged over three years, is equal to or less than the standard. For PM10, the 24 hour standard is attained when the expected number of days per calender year with a 24-hour average concentration above 150 µg/m3 is equal to or less than one. For PM2.5, the 24 hour standard is attained when 98 percent of the daily concentrations, averaged over three years, are equal to or less than the standard. Contact U.S. EPA for further clarification and current federal policies.
3. Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based upon a reference temperature of 25°C and a reference pressure of 760 torr. Most measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 torr; ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.
4. Any equivalent procedure which can be shown to the satisfaction of the ARB to give equivalent results at or near the level of the air quality standard may be used.
5. National Primary Standards: The levels of air quality necessary, with an adequate margin of safety to protect the public health.
6. National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.
7. Reference method as described by the EPA. An "equivalent method" of measurement may be used but must have a "consistent relationship to the reference method" and must be approved by the EPA.
8. The ARB has identified lead and vinyl chloride as 'toxic air contaminants' with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.
9. National lead standard, rolling 3-month average: final rule signed October 15, 2008.

5. Air Quality Conformity

The 1990 Federal Clean Air Act Amendments (CAAA), enacted on November 15, 1990, placed tough new requirements on sources and causes of air pollution in areas failing to meet federal air quality standards. The CAAA require substantial reduction from all pollution sources, including pollutants from the transportation sector. The CAAA included more stringent requirements for demonstrating that transportation plans and projects contributed to improvement in air quality contained in the conformity provisions in section 176(a). On Nov 15, 1993, the EPA published a conformity rule delineating specific criteria and procedures for fulfilling the conformity requirements of the CAAA. This rule was recently updated and published in the Federal Register August 15, 1997. It became effective September 15, 1997.

The Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) made a number of revisions to the Clean Air Act's transportation conformity provisions. In particular, SAFETEA-LU made the following changes:

1. Changes 18-month trigger to two years for redetermination of conformity after certain air quality planning actions.
2. Changes frequency of conformity for plans and Transportation Improvement Programs (TIPs) from every 3 years to every 4 years.

3. Provides option for Metropolitan Planning Organizations (MPOs) to shorten the time horizon for conformity determination.
4. Allows Transportation Control Measures (TCMs) to be substituted or to be added to existing TCMs without a State Implementation Plan (SIP) mechanism.
5. Provides a 12-month grace period before a lapse occurs after an applicable deadline is missed.
6. Limits Conformity SIPs to interagency consultation and enforcement provisions.

SAFETEA-LU requires EPA to revise the Transportation Conformity Rule by August 10, 2007, two years after the enactment of SAFETEA-LU.

6. Transportation Conformity

The federal Clean Air Act requires that all transportation plans and programs pass the air quality conformity test. This process involves forecasting future emissions of air pollution to determine whether the amount of future pollution resulting from the plan or program would be within the allowable limit for motor vehicle emissions.

Route Adoption- Alternatives 1 and 2

Transportation conformity must be determined for all federal nonattainment area pollutants classified as regional pollutants. In the San Francisco Bay Air Basin (Santa Clara County), this pollutant is Ozone. Transportation projects also generate Carbon Monoxide, which is considered a localized pollutant. In non-attainment and maintenance areas, Carbon Monoxide micro-scale modeling is required to determine whether a transportation project would cause or contribute to localized violations of Carbon Monoxide National Ambient Air Quality Standards (NAAQS). Santa Clara County is currently listed as a federal attainment-maintenance area for Carbon Monoxide. It may actually become an attainment area by the time a Tier II document is written. If Santa Clara is still classified as a Carbon Monoxide attainment-maintenance area when a Tier II environmental document is prepared, a project level hot spot analysis will be conducted.

Assumptions used in the Final Transportation Air Quality Conformity Analysis for the Transportation 2035 Plan and 2009 Transportation Improvement Program/Amendment #09-06 (Santa Clara County) analyses included current modeling assumptions for population, registered vehicles, and the use of the EMFAC 2007 air model. The Metropolitan Transportation Commission also uses the "Baycast" travel demand model. Other assumptions used included the current attainment status of pollutants and implementing methods to reduce Greenhouse Gas emissions.

The portion of the proposed project route adoption alternatives located in Santa Clara County listed in the Transportation 2030 Plan for the San Francisco Bay Area Regional Transportation Plan which was found to conform by Metropolitan Transportation Commission on March 17, 2005 and was federally approved October 2, 2006 as the State Route 25 Widening Project. Funding is anticipated to be approved before the anticipated project start date.

The State Route 25 Widening project was listed as a constrained project in the Council of San Benito Governments 2005 Regional Transportation plan. The Council of San Benito County Governments intends to pursue funding for the highway segment with the proposed route adoption, between Hudner Lane and the San Benito/Santa Clara County line. That section of State Route 25 was included in the constrained project list.

In San Benito County, this project was in the 2002 and 2006 San Benito County Regional Transportation Improvement Program (RTIP). Ozone impacts were considered in this document.

Build Alternatives - Alternatives A and B

Transportation conformity must be determined for all nonattainment area pollutants classified as regional pollutants. In the North Central Coast Air Basin (Hollister), those pollutants are ozone. Transportation projects also generate CO, which is considered a localized pollutant. CO micro-scale modeling is required to determine whether a transportation project would cause or contribute to localized violations of CO NAAQS. San Benito County is currently listed as a federal attainment area for Carbon Monoxide; therefore, micro-scale modeling and hot spot analysis was not required. A study of Carbon Monoxide effects was conducted for this document for NEPA and CEQA purposes.

Regional conformity must be determined based on a full study at least every 3 years. In California, it is determined at least every two years when the state-required Regional Transportation Plan (RTP) updates are done. In addition, a new federal TIP is required every four years, for which a conformity determination is required. Amendments to both the RTP and TIP between mandated conformity analysis also must have conformity demonstrated, including a full-scale revision of the regional analysis if regionally significant projects are added, deleted, or significantly modified.

Regional conformity is demonstrated by showing that the project is included in a conforming RTP and TIP with substantially the same design concept and scope that was used for the regional conformity analysis.

The State Route 25 Widening project was listed as a constrained project in the Council of San Benito Governments 2005 Regional Transportation plan (the most recent plan issued to date). The Council of San Benito Governments intends to pursue funding for the remaining highway segment with the proposed route adoption, between Hudner Lane and the San Benito/Santa Clara County line. That section of State Route 25 was included in the constrained project list.

In San Benito County, this project was in the 2006 San Benito County Regional Transportation Improvement Program (RTIP). Ozone impacts were considered in this document.

Project level conformity is demonstrated by showing that it will not cause a localized exceedance of Carbon Monoxide and/or PM_{10} and/or $PM_{2.5}$ standards, and that it will not interfere with "timely implementation" of Transportation Control Measures called out in the State Implementation Plan. The March 10, 2006 final conformity rule (71 FR 12468) has the following Key Elements:

- This rule requires that $PM_{2.5}$ hot spot analyses be performed only for new transportation projects with significant diesel traffic. Examples of such "projects of air quality concern" include intermodal freight or bus terminals, and major highway projects and congested intersections involving significant diesel traffic. No hot spot analyses will be required for most projects in $PM_{2.5}$ areas, because most projects are not an air quality concern. This final rule also streamlines existing PM_{10} hot spot requirements in a similar way.
- The streamlined approach in this final rule will ensure that transportation and air quality agencies in $PM_{2.5}$ and PM_{10} areas use their resources efficiently, while achieving clean air goals.
- In both $PM_{2.5}$ and PM_{10} areas, a quantitative hot spot analysis is not required until EPA issues a new motor vehicles emissions model capable of estimating local emissions as well as future hot spot modeling guidance. Qualitative analyses will apply in the interim.
- This rule extends an existing flexibility by allowing the U.S. Department of Transportation to make "categorical hot spot findings," which waive $PM_{2.5}$ and PM_{10} hot spot reviews for categories of projects where modeling shows that there is no air quality concern.

7. Regional Climate and Topography

Route Adoption- Alternatives 1 and 2

Wet winters and dry summers characterize the region's climate. Rainfall totals can vary widely over a short distance, with coastal mountain areas receiving over 40 inches of rain and inland areas receiving about 15 inches. During rainy periods, horizontal and vertical air causes air pollutant dispersal. Rain also washes out dust and other pollutants. Regional wind patterns vary from season to season. Wind tends to move from areas of high pressure to areas of low pressure. In warmer months, this means that air currents moves inland. Although Pacific Ocean air is generally free of harmful air pollutants, it picks up pollutants from numerous sources, and will then carry these pollutants to areas many miles away.

Build Alternatives - Alternatives A and B

Most of the project lies in San Benito County flanked on each side by the Coast Ranges. The major surface waters of the area are the Pajaro River, and the Carnadero Creek. These northwest winds are dominant during the summer when ozone readings at the Hollister and Gilroy monitors are highest during the year.

8. Emissions Analyses

There is a network of air pollution monitors in California. Monitors for specific pollutants may or may not be located near a proposed project. A review of data for Particulate Matter 2.5 and 10 from nearby air monitoring stations was conducted. The Hollister-Fairview monitor, located at 1979 Fairview Road in Hollister, is approximately two miles from the SR25/San Felipe Road intersection. The pollutants PM10 and Ozone are monitored at the Hollister monitor. The Gilroy 9th Street monitor that is located at 9th and Princevalle in Gilroy monitors Ozone and PM2.5. The 9th Street monitor is located about three miles north oft the SR 25/US101 interchange (see Figure 1).

Route Adoption- Alternatives 1 and 2

Santa Clara County is currently in state and federal 8-hour ozone nonattainment and state 1-hour ozone nonattainment. The county is also in a federal Carbon Monoxide maintenance area. The County is located in a state PM10 and PM2.5 nonattainment area. It is in attainment for all other state and federal priority pollutants.

San Benito County is in nonattainment for the state 1-and 8-hour ozone standard and the state PM10 standard. It is in attainment status for all the other state and federal priority pollutants.

Build Alternatives - Alternatives A and B

San Benito County is in nonattainment for the state 1-and 8-hour ozone standard. It is in attainment status for all the other state and federal priority pollutants.

There is no Carbon Monoxide monitor located near the project location. The closest Carbon Monoxide monitor is located approximately 28 miles away on Jackson Street in San Jose. Any data available from this monitor is not relevant to this study, as it too far away from the project site.

No sensitive receptors were identified.

Table 2. State and Federal Conformity

	Federal Conformity	State Conformity
O_3 8-hour	Santa Clara County: Nonattainment San Benito County-Attainment	Santa Clara County: Nonattainment San Benito County- Nonattainment
O_3 1-hour	Federal Standard was revoked in 2005	Santa Clara County: Nonattainment San Benito County- Nonattainment
CO	Santa Clara County: Attainment/ Maintenance San Benito County: Attainment/Unclassified	Santa Clara County: Attainment/Unclassified San Benito County: Attainment/Unclassified
PM_{10}	Santa Clara County: San Benito County: Attainment/Unclassified	Santa Clara County: San Benito County: Nonattainment
$PM_{2.5}$	Santa Clara County: San Benito County: Attainment/Unclassified	Santa Clara County Nonattainment San Benito County: Attainment
SO_2	Santa Clara County: San Benito County: Attainment/Unclassified	Santa Clara County: San Benito County: Attainment/Unclassified
Lead	Santa Clara County: San Benito County: Attainment/Unclassified	Santa Clara County: San Benito County: Attainment/Unclassified
H2S	Santa Clara County: San Benito County: Attainment/Unclassified	Santa Clara County: San Benito County: Attainment/Unclassified

Source: California Air Resources Board Area Designations web site and US EPA web site.

A. Regional Analysis

Route Adoption- Alternatives 1 and 2

Over the next 25 to 30 years, population growth in Santa Clara and San Benito counties is expected to increase. The actual amount of growth would depend on local and national economy, employment opportunities, housing costs and other variables.

Assumptions used in the Final Transportation Air Quality Conformity Analysis for the Transportation 2035 Plan and 2009 Transportation Improvement Program/Amendment #09-06 (Santa Clara County) analyses included current modeling assumptions for population, registered vehicles, and the use of the EMFAC 2007 air model. The Metropolitan Transportation Commission also uses the "Baycast" travel demand model. Other assumptions used included the current attainment status of pollutants and implementing methods to reduce Greenhouse Gas emissions.

The portion of the proposed project route adoption alternatives located in Santa Clara County listed in the Transportation 2030 Plan for the San Francisco Bay Area Regional Transportation Plan which was found to conform by Metropolitan Transportation Commission on March 17, 2005 and was federally approved October 2, 2006 as the State Route 25 Widening Project. Funding is anticipated to be approved before the anticipated project start date.

The project is included in 2008 Council of San Benito County Governments (not financially constrained) Regional Transportation Improvement Program, page 9. Funding is anticipated to be approved before the project start date.

Direct permanent and indirect impacts will be studied in more detail when the route adoption alternatives are funded for construction in the future and Tier II environmental documents are prepared.

Direct temporary impacts would include construction activities that could increase short-term air emissions. This would be studied in more detail and would be considered a less-than-significant impact. Short-term impacts result from the following construction-related sources: construction equipment emissions; dust from grading and earthmoving operations; and emissions from workers' vehicles traveling to and from construction sites.

Indirect impacts will not be studied at this time as there are many unknowns regarding funding, future growth, and future state and local air regulations. The land use goals and objectives of the San Benito County General Plan emphasize managing growth to maintain the county's rural atmosphere, character, and amenities.

The Community Impact Assessment prepared for this project analyzed existing and future land uses and the potential for growth inducement. Caltrans concluded that construction of an expressway within the project area would not cause growth. For more information please refer to the Draft Environmental Impact Report/Draft Tier I Environmental Impact Statement sections Existing and Future Land Use, and Growth.

Direct Permanent impacts would include less air pollutants from vehicles due to the improved level of service, and improvements in motor fuel formulations and emission control devices.

Build Alternatives - Alternatives A and B

Over the next 25 to 30 years, population growth in the San Benito County region could vary widely based on various factors, including water and land availability, employment opportunities, housing costs, and interest rates.

Planning assumptions are expected to be consistent with conformity analysis for the Association of Monterey Bay Area Governments 2005 Metropolitan Transportation Plan

Direct temporary impacts would include construction activities that could increase short-term air emissions. This would be considered a less-than-significant impact. Short-term impacts result from the following construction-related sources: construction equipment emissions; dust from grading and earthmoving operations; and emissions from workers' vehicles traveling to and from construction sites.

There would be construction-related emissions during the building of the project versus not building the project.

Direct permanent impacts would include less air pollutants from vehicles due to the improved level of service, and improvements in motor fuel formulations and emission control devices.

Indirect impacts would include growth issues. There may actually be less particulate matter near the proposed project due to road paving.

Minimization of air pollutants would include complying with Caltrans Standard Specifications pertaining to dust control and dust palliative requirement is a required part of all construction contracts and should effectively reduce and control emission impacts during construction.

B. Project Level Analysis

The applicable state and federal standards are listed in Table 1 of this document and the conformity status for state and federal air pollutants is shown in Table 2.

As stated above, if a project is located in a non-attainment or maintenance area for a given pollutant, then additional air quality analysis and reduction measures in regard to that pollutant are required. This "hot spot" analysis is most frequently done for carbon monoxide (CO) and particulate matter.

There is a network of air pollution monitors in California. Monitors for specific pollutants may or may not be located near the proposed route adoption and project area (see Figure1).

Other key information used in this study is the Level of Service and Annual Average Daily Traffic data (see Tables 3 and 4, respectively).

Table 3. Existing and Predicted Level of Service

Alternatives		Segment on State Route 25	Peak Hour	Level of Service With Projects (worst case scenario)			Level of Service Without Projects		
				2006/ 2007	2015	2035	2006/ 2007	2015	2035
Route Adoption Alternatives	Build Alternatives	San Felipe Road to State Route 156	AM	E	B	B	E	E	E
			PM	E	A	A	E	E	E
		State Route 156 to Hudner Lane	AM	E	B	B	E	E	E
			PM	E	A	B	E	E	E
		Hudner Lane to Union Pacific Railroad main line crossing	AM	E	E	E	E	E	E
			PM	E	E	E	E	E	E

Source: Caltrans District 5 Traffic Operations May 2009

Table 4. Current and Predicted Annual Average Daily Traffic

Alternatives		Segment on State Route 25	Daily traffic 10% Trucks		
			2006 (Existing)	2015	2035
Route Adoption Alternatives	Build Alternatives	San Felipe Road to State Route 156	14,700	20,100	23,700
		State Route 156 to Hudner Lane	21,300	22,900	28,900
		Hudner Lane to the Union Pacific Railroad main line crossing	22,500	22,700	32,200

Source: Caltrans District 5 Traffic Operations 2009

Table 5. Existing & Predicted Level of Service and Average Speeds Without Projects

Alternatives		Segment on State Route 25	Peak Hour	% Time Spent Following Another Vehicle			Average Travel Speed (miles per hour)			Level of Service		
				2006/ 2007	2015	2035	2006/ 2007	2015	2035	2006/ 2007	2015	2035
Route Adoption Alternatives	Build Alternatives	San Felipe Road to State Route 156	AM	83.1	83.0	90.9	44.9	44.5	38.8	E	E	E
			PM	82.3	85.0	89.3	45.0	45.2	40.4	E	E	E
		State Route 156 to Hudner Lane	AM	82.0	87.9	92.4	43.7	40.8	37.4	E	E	E
			PM	84.6	89.6	91.2	42.4	41.5	38.8	E	E	E
		Hudner Lane to Union Pacific Railroad main line crossing	AM	82.0	87.9	92.4	43.7	41.7	37.4	E	E	E
			PM	84.6	89.6	91.2	42.4	40.5	38.8	E	E	E

Source: Caltrans District 5 Traffic Operations 2009

Ozone Analysis

Route Adoption- Alternatives 1 and 2

The proposed project route adoption (Alternatives 1 and 2) are located within a federal and a state 8-hour ozone non-attainment area (Santa Clara portion). Currently, the San Benito portion is located within an 8- hour ozone federal attainment area, but a state non-attainment area. The Ozone standards are monitored closest to the project boundaries at the Fairview Road in Hollister (See Figure 1).

At the time a Tier II document is written, the area may still be in state and/or federal non-attainment. If there is an approved method for project level analysis, a project-level analysis will be conducted.

Build Alternatives - Alternatives A and B

San Benito County is located within an 8 - hour ozone federal attainment area, but a state non-attainment area. The County is located within a state one-hour non-attainment area. The federal one-hour standard was revoked. The Ozone standards are

monitored closest to the project boundaries at the Fairview Road in Hollister (See Figure 1).

Between 2005 and 2007, there was one day which exceeded the federal standard and eight days exceeded the state standard at the both the Gilroy and Hollister monitors (See Table 6). Ozone is a regional pollutant and there are currently no modeling tools or guidelines for project-level analysis.

Table 6. Monitor Readings- 8-Hour State & Federal Ozone

Monitor Location/Standard	Number of Days over 8 Hour Standard		
	2005	2006	2007
Gilroy-9th Street			
Federal Standard	0	2	0
State Standard	0	8	0
Hollister-Fairview Road			
Federal Standard	0	1	0
State Standard	1	5	2

Source: California Air Resources Board ADAM database web site.

Carbon Monoxide (CO) Analysis

Route Adoption- Alternatives 1 and 2

The Santa Clara Portion of the project is located in federal Carbon Monoxide Maintenance area. If Santa Clara is still a federal Carbon Monoxide Maintenance area or a non-attainment area, when the Tier II document is written, a screening hot spot analysis will be required. The 1997 U.C Davis Transportation Carbon Monoxide Protocol (or current approved guidance document), will be used to study areas affected by the proposed project improvements.

At the time the Tier II document is written, a project level study will be conducted for CEQA purposes. This would take into account any findings from reviewing Carbon Monoxide trends and monitoring data in the area and would include any required hot spot analysis as discussed above.

The San Benito portion of the project is located in a federal Carbon Monoxide attainment area. At the time a Tier II document is written, a project level study will be conducted for CEQA purposes. The study would take into account any findings from reviewing Carbon Monoxide trends and air monitoring data in the area.

Build Alternatives - Alternatives A and B

The build alternatives are located within the San Benito County. San Benito is located in a federal Carbon Monoxide attainment area, therefore, a hot spot analysis is not required. The Transportation Project-Level Carbon Monoxide Protocol, Section 2.1, and "Affected Projects" states that: "projects affected by the Protocol include projects in attainment, nonattainment or maintenance areas." Therefore, all projects would still be subject to an air study for NEPA/CEQA review, even if a specific hot spot analysis was not required.

The Air Study followed the guidance in the Transportation Project-Level Carbon Monoxide Protocol. The Protocol Section 3.1, decision process was used. The following questions were answered: Is the Project exempt from all Emissions analysis? No; Is Project exempt from regional emission analyses? No; Is project locally defined as regionally significant? Yes; Is the project in a federal/California attainment area? Yes; examine local impacts:

> San Benito County has never been in non-attainment for Carbon Monoxide. Carbon Monoxide is primarily caused by motor vehicles idling or at start-up during the colder months of the year. If built, this project would improve the level of service from E to A or B or C. Considering the improved level of service and the historic Carbon Monoxide levels, Caltrans considers that the proposed alignment would promote smoother traffic flow and would help improve carbon monoxide levels in an area that is currently in attainment.
>
> The closest Carbon Monoxide monitor is located approximately 28 miles away on Jackson Street in San Jose. No exceedences of the state or federal standard were reported at this monitor between 2006 and 2008. (See attachment 1). The highest reading was 2.92 parts per million (PPM) in 2006, which is still well below the 9 PPM eight-hour federal and state standards. Carbon Monoxide is primarily caused by vehicle emissions and the traffic between Gilroy and Hollister is considerably less than the traffic in the San

Jose area. Gasoline and diesel vehicles continue to emit fewer pollutants due to design changes over the years.

This project would improve traffic flow and decrease idling time which contributes to Carbon Monoxide emissions. Therefore, this project would be expected to improve Carbon Monoxide emissions in the project area.

Particulate Matter Analysis

Route Adoption- Alternatives 1 and 2

Both San Benito and Santa Clara Counties are located within Particulate Matter 2.5 and 10 and federal attainment areas. If the federal Particulate Matter attainment status would deteriorate to non-attainment at the time of a Tier II document, a qualitative hot spot analysis would then be conducted based on applicable guidelines. A general study is required for NEPA and CEQA purposes.

As this area has historically been in federal Particulate Matter 10 and 2.5 attainment, it is anticipated that future conditions in land use and improvements of gasoline and diesel emissions controls will not cause a new air quality violation.

The state PM10 standard is more strict (50 vs. 150 micrograms per cubic meter) than the federal standard. There has not been an exceedence of the state standard at the Gilroy monitor between 2005 and 2008. The state PM2.5 standard is slightly lower than the federal standard: 12 micrograms per cubic meter vs. 17 micrograms per cubic meter. Both the Gilroy and the Hollister air monitors have only been monitoring PM2.5 since 2007. No exceedences of the state or federal standards were recorded for those years. Exceedences were recorded in the San Jose area monitors, indicating that the particulate emissions are related to city traffic and stationary sources.

Build Alternatives - Alternatives A and B

San Benito County is located within a federal Particulate Matter 2.5 and 10 attainment areas. A Project-level Hot Spot analysis is not required for these pollutants; however an air quality analysis is still required for NEPA and CEQA requirements.

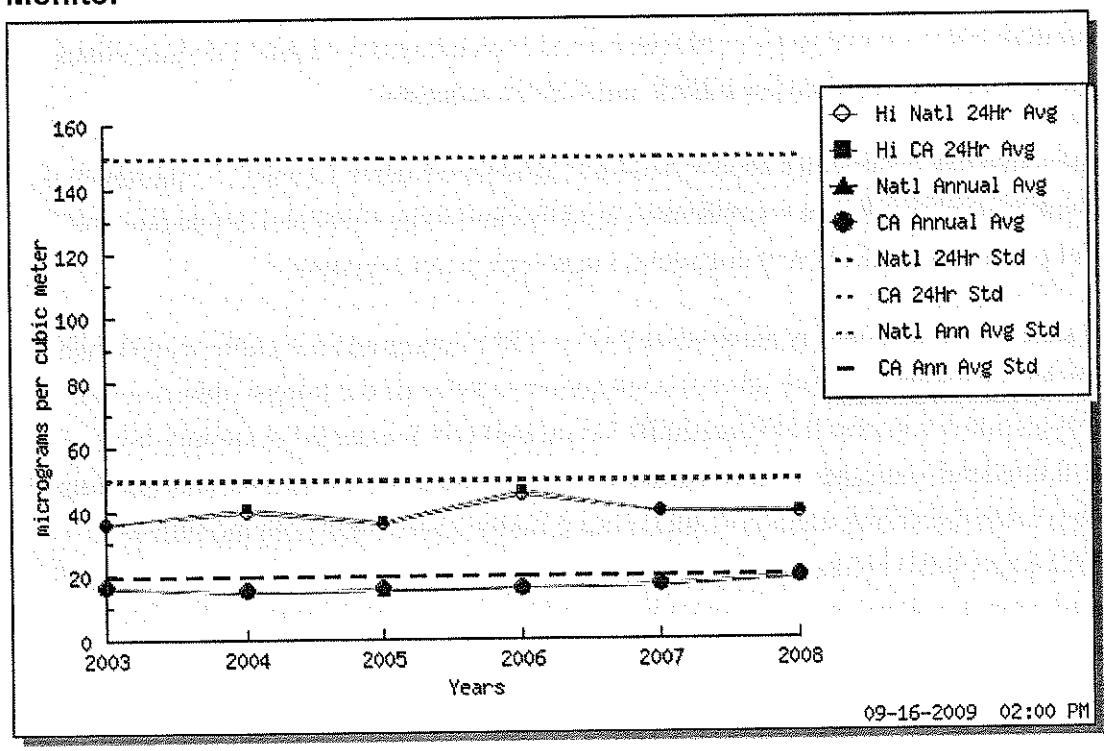
For the analysis, a review of data for Particulate Matter 2.5 and 10 from nearby air monitoring stations was conducted. The Hollister-Fairview PM10 and PM2.5 monitor, located at 1979 Fairview Road in Hollister is approximately two miles from

the SR25/San Felipe Road intersection. The Gilroy 9th Street PM10 and PM2.5 monitor is located at 9th and Princevalle in Gilroy. Both air monitors began monitoring PM2.5 in 2007. There are only two years of data from this monitor which is why a table is not included. The Gilroy monitor is located about three miles from the project limit, north of the SR 25 and US101 interchange.

PM10

The PM10 data from the Hollister monitor is shown below (see Figure 2). This graph indicates that the area has been below the federal and state standards from 2003 through 2008.

Figure 2. Particulate Matter 10 Trends 2003-2008 Hollister Monitor



Source: ARB ADAM Database

PM2.5

The Gilroy-9th Street monitor has been monitoring PM2.5 only since 2007 (two years), so no trend table was included. Both the federal and state 2007 Annual Average was 6.3 micrograms per cubic meter. The 2008 federal and state averages were both 7.0. The 2007 and 2008 annual averages were well below the state limit of

12 micrograms per cubic meter and the federal limit of 15 micrograms per cubic meter.

The proposed project will improve the Level of Service (LOS). Currently all segments are operating at LOS E. The No Build projection indicates operation continuing at LOS E. The projected build scenarios indicate service would improve to LOS A or B or C (See Table 3). Less stop and go traffic and smoother traffic flow would contribute to lowered Particulate Matter levels. Paving road shoulders will help minimize re-entrained road dust. State and federal requirements to progressively decrease various air pollutants from diesel and gasoline fuels are expected to continue. This would promote decreased diesel particulate (PM2.5) in the future. More stringent state and federal requirements and retrofit grant programs for heavy-duty diesel engines are also expected to decrease PM2.5 over time. Based on the above factors affecting particulate matter, this project is not expected to worsen the particulate matter or cause a violation of existing state or federal PM10 and/or PM2.5

The conclusion for PM10 and PM2.5 air pollutants is that this project would not be expected to cause or contribute to an exceedence of the existing standard state and federal standards.

C. Other Air Issues

1. Mobile Source Air Toxics

In addition to the criteria air pollutants for which there are National Ambient Air Quality Standards, the EPA also regulates air toxics. Most air toxics originate from human-made sources, including on-road mobile sources, non-road mobile sources (e.g., airplanes), area sources (e.g., dry cleaners) and stationary sources (e.g., factories or refineries).

Mobile source air toxics are a subset of the 188 air toxics defined by the Clean Air Act. Mobile source air toxics are compounds emitted from highway vehicles and non-road equipment. Some toxic compounds are present in fuel and are emitted to the air when the fuel evaporates or passes through the engine unburned. Other toxics are emitted from the incomplete combustion of fuels or as secondary combustion products. Metal air toxics also result from engine wear or from impurities in oil or gasoline.

The Federal Highway Administration has issued interim guidance on how mobile source air toxics (MSAT) should be addressed in National Environmental Policy Act

documents for highway projects. The Federal Highway Administration has developed a tier approach for analyzing mobile source air toxics in such documents. Depending on the specific project circumstances, the Federal Highway Administration has identified three levels of analysis:

1. No analysis for exempt projects with no potential for meaningful mobile source air toxics effects
2. Qualitative analysis for projects with low potential mobile source air toxics effects
3. Quantitative analysis to differentiate alternatives for projects with higher potential mobile source air toxics

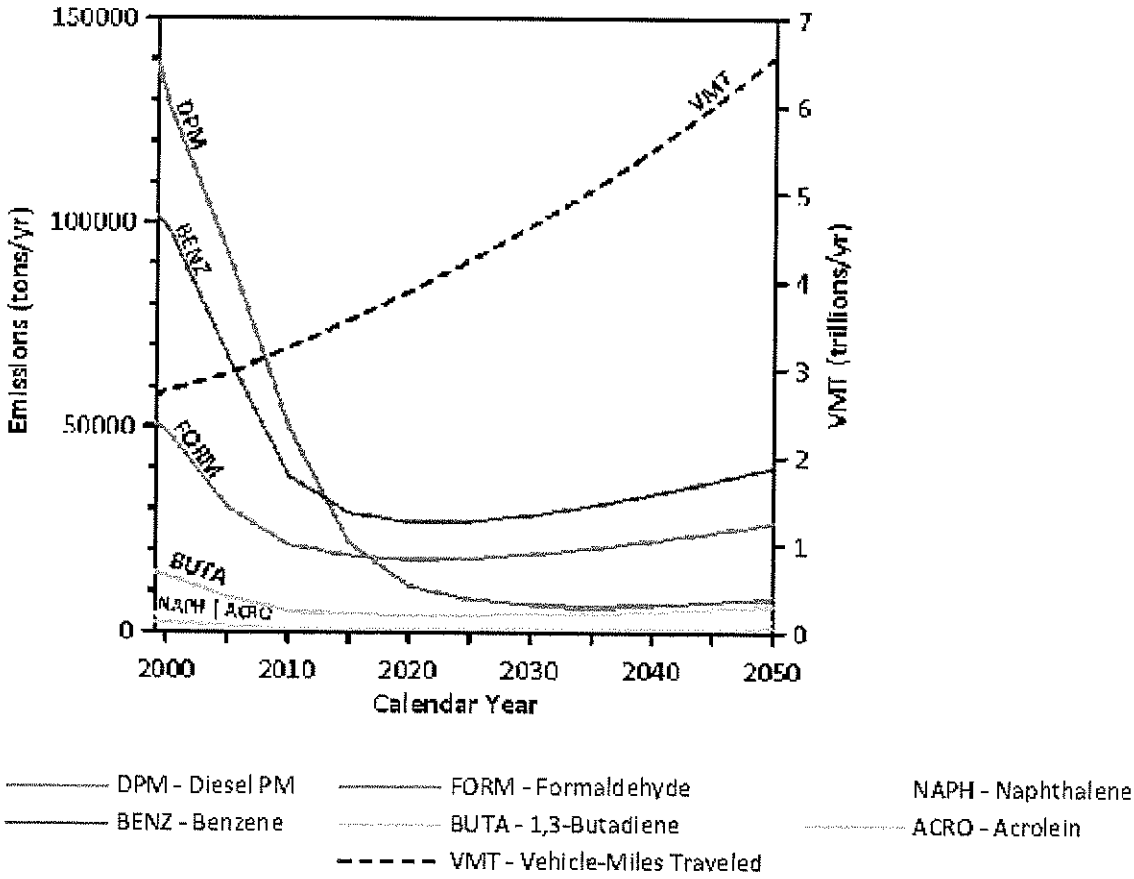
Exempt Projects or Projects with No Meaningful Potential Mobile Source Air Toxics Effects:

The types of projects included in this category are:

- Projects qualifying as a categorical exclusion under 23 CFR 771.117(c);
- Projects exempt under the Clean Air Act conformity rule under 40 CFR 93.126; or
- Other projects with no meaningful impacts on traffic volumes or vehicle mix.

Controlling air toxic emissions became a national priority with the passage of the Clean Air Act Amendments (CAAA) of 1990, whereby Congress mandated that the U.S. Environmental Protection Agency (EPA) regulate 188 air toxics, also known as hazardous air pollutants. The EPA has assessed this expansive list in their latest rule on the Control of Hazardous Air Pollutants from Mobile Sources (Federal Register, Vol. 72, No. 37, page 8430, February 26, 2007) and identified a group of 93 compounds emitted from mobile sources that are listed in their Integrated Risk Information System (IRIS) (http://www.epa.gov/ncea/iris/index.html). In addition, EPA identified seven compounds with significant contributions from mobile sources that are among the national and regional-scale cancer risk drivers from their 1999 National Air Toxics Assessment (NATA) (http://www.epa.gov/ttn/atw/nata1999/). These are acrolein, benzene, 1,3-butadiene, diesel particulate matter plus diesel exhaust organic gases (diesel PM), formaldehyde, naphthalene, and polycyclic organic matter. While FHWA considers these the priority mobile source air toxics, the list is subject to change and may be adjusted in consideration of future EPA rules.

The 2007 EPA rule mentioned above requires controls that will dramatically decrease MSAT emissions through cleaner fuels and cleaner engines. According to an FHWA analysis using EPA's MOBILE6.2 model, even if vehicle activity (vehicle-miles travelled, VMT) increases by 145 percent as assumed, a combined reduction of 72 percent in the total annual emission rate for the priority MSAT is projected from 1999 to 2050, as shown in the following figure:



Note:
(1) Annual emissions of polycyclic organic matter are projected to be 561 tons/yr for 1999, decreasing to 373 tons/yr for 2050.
(2) Trends for specific locations may be different, depending on locally derived information representing vehicle-miles travelled, vehicle speeds, vehicle mix, fuels, emission control programs, meteorology, and other factors

Source: U.S. Environmental Protection Agency. MOBILE6.2 Model run 20 August 2009.

As a result, the EPA concluded that no further motor vehicle emissions standards or fuel standards were necessary to further control mobile source air toxics. The agency is preparing another rule under authority of Clean Air Act Section 202(l) that will

address these issues and could adjust the full 21 and the primary six mobile source air toxics.

Unavailable Information for Project-Specific Mobile Source Air Toxics Impact Analysis

This air quality study includes a basic analysis of the likely mobile source air toxics emission impacts of this project. However, available technical tools do not enable us to predict the project-specific health impacts of the emission changes associated with the alternatives in the proposed project. Due to these limitations, the following discussion is included in accordance with Council of Environmental Quality regulations (40 CFR 1502.22(b)) regarding incomplete or unavailable information:

Information that is Unavailable or Incomplete. Evaluating the environmental and health impacts from mobile source air toxics on a proposed highway project would involve several key elements, including emissions modeling, dispersion modeling to estimate ambient concentrations resulting from the estimated emissions, exposure modeling to estimate human exposure to the estimated concentrations, and then final determination of health impacts based on the estimated exposure. Each of these steps is encumbered by technical shortcomings or uncertain science that prevents a more complete determination of the mobile source air toxics health impacts of this project.

Emissions: The EPA tools to estimate mobile source air toxics emissions from motor vehicles are not sensitive to key variables determining emissions of mobile source air toxics in the context of highway projects. While MOBILE 6.2 is used to predict emissions at a regional level, it has limited applicability at the project level. In California, the model used is the EMFAC (for Emission FACtors 2007).

Dispersion. The tools to predict how mobile source air toxics disperse are also limited. The EPA's current regulatory models, CALINE3 and CAL3QHC, were developed and validated more than a decade ago for the purpose of predicting episodic concentrations of carbon monoxide to determine compliance with the National Ambient Air Quality Standards.

The performance of dispersion models is more accurate for predicting maximum concentrations that can occur at some time at some location within a geographic area. This limitation makes it difficult to predict accurate exposure patterns at specific times at specific highway project locations across an urban area to assess potential health risk. The National Cooperative Highway Research Program models and other technical methods in the analysis of mobile source air toxics. This work also will

focus on identifying appropriate methods of documenting and communicating mobile source air toxics impacts in the National Environmental Policy Act process and to the general public. Along with these general limitations of dispersion models, the Federal Highway Administration is also faced with a lack of monitoring data in most areas for use in establishing project-specific mobile source air toxics background concentrations.

Exposure Levels and Health Effects. Finally, even if emission levels and concentrations of mobile source air toxics could be accurately predicted, shortcomings in current techniques for exposure assessment and risk analysis preclude us from reaching meaningful conclusions about project-specific health impacts.

Exposure assessments are difficult because it is difficult to accurately calculate annual concentrations of mobile source air toxics near roadways, and to determine the portion of a year that people are actually exposed to those concentrations at a specific location. These difficulties are magnified for 70-year cancer assessments, particularly because unsupportable assumptions would have to be made regarding changes in travel patterns and vehicle technology (which affects emissions rates) over a 70-year period.

There are also considerable uncertainties associated with the existing estimates of toxicity of the various mobile source air toxics, because of factors such as low-dose extrapolation and translation of occupational exposure data to the general population. Because of these shortcomings, any calculated difference in health impacts between alternatives is likely to be much smaller than the uncertainties associated with calculating the impacts. Consequently, the results of such assessments would not be useful to decision-makers, who would need to weigh this information against other project impacts that are better suited for quantitative analysis.

Summary of Existing Credible Scientific Evidence Relevant to Evaluating the Impacts of Mobile Source Air Toxics. Research into the health impacts of mobile source air toxics is ongoing. For different emission types, there are a variety of studies that show that some either are statistically associated with adverse health outcomes through epidemiological studies (frequently based on emissions levels found in occupational settings) or that animals demonstrate adverse health outcomes when exposed to large doses.

Exposure to toxics has been a focus of a number of EPA efforts. Most notably, the agency conducted the National Air Toxics Assessment in 1996 to evaluate modeled

estimates of human exposure applicable to the county level. While not intended for use as a measure of or benchmark for local exposure, the modeled estimates in the National Air Toxics Assessment database best illustrate the levels of various toxics when aggregated to a national or state level.

The EPA is in the process of assessing the risks of various kinds of exposures to these pollutants. The EPA Integrated Risk Information System (IRIS) is a database of human health effects that may result from exposure to various substances found in the environment. The IRIS database is located at http://www.epa.gov/iris. The following toxicity information for the six prioritized mobile source air toxics was taken from the IRIS database *Weight of Evidence Characterization* summaries. This information is taken verbatim from EPA's IRIS database and represents the agency's most current evaluations of the potential hazards and toxicology of these chemicals or mixtures.

- **Benzene** is characterized as a known human carcinogen.
- The potential carcinogenicity of **acrolein** cannot be determined because the existing data are inadequate for an assessment of human carcinogenic potential for either the oral or inhalation route of exposure.
- **Formaldehyde** is a probable human carcinogen, based on limited evidence in humans, and sufficient evidence in animals.
- **1,3-butadiene** is characterized as carcinogenic to humans by inhalation.
- **Acetaldehyde** is a probable human carcinogen based on increased incidence of nasal tumors in male and female rats and laryngeal tumors in male and female hamsters after inhalation exposure.
- **Diesel exhaust** (DE) is likely to be carcinogenic to humans by inhalation from environmental exposures. Diesel exhaust as reviewed in this document is the combination of diesel particulate matter and diesel exhaust organic gases.
- **Diesel exhaust** also represents chronic respiratory effects, possibly the primary noncancer hazard from mobile source air toxics. Prolonged exposures may impair pulmonary function and could produce symptoms, such as cough, phlegm, and chronic bronchitis. Exposure relationships have not been developed from these studies.

Other studies exist that address mobile source air toxics health impacts in proximity to roadways. The Health Effects Institute, a non-profit organization funded by the EPA, Federal Highway Administration, and industry, has done a series of studies to research near-roadway mobile source air toxics hot spots, the health implications of

the entire mix of mobile source pollutants, and other topics. The final summary of the series is not expected for several years.

Recent studies (the Coast Air Quality Management District, Multiple Air Toxic Exposure Study-II) have reported that proximity to roadways is related to adverse health outcomes, particularly respiratory problems. Much of this research is not specific to mobile source air toxics, instead surveying the full spectrum of both criteria and other pollutants. The Federal Highway Administration cannot evaluate the validity of these studies, but more importantly, they do not provide information that would be useful to alleviate the uncertainties listed above and enable us to perform a more comprehensive evaluation of the health impacts specific to this project.

Relevance of Unavailable or Incomplete Information to Evaluating Reasonably Foreseeable Significant Adverse Impacts on the Environment, and Evaluation of impacts based upon theoretical approaches or research methods generally accepted in the scientific community. Because of the uncertainties outlined above, a quantitative assessment of the effects of air toxic emissions impacts on human health cannot be made at the project level. While available tools do allow us to reasonably predict relative emissions changes between alternatives for larger projects, the amount of mobile source air toxics emissions from each of the project alternatives and mobile source air toxics concentrations or exposures created by each of the project alternatives cannot be predicted with enough accuracy to be useful in estimating health impacts. (As noted above, the current emissions model is not capable of serving as a meaningful emissions analysis tool for smaller projects.) Therefore, the relevance of the unavailable or incomplete information is that it is not possible to make a determination of whether any of the alternatives would have "significant adverse impacts on the human environment."

ANALYSIS:

Route Adoption- Alternatives 1 and 2

There are many uncertainties for modeling Mobile Source Air Toxics, and there is uncertainty of future funding for the route adoption alternatives. These two factors added to the shortcomings in current techniques for exposure assessment and risk analysis preclude us from reaching meaningful conclusions about the future route adoption.

In the future, it is expected that both state and federal guidelines for using modeling tools will be in place. It is also expected that there may be project threshold limits for these pollutants. The California Air Toxics rules are expected to be similar to federal Mobile Source Air Toxics guidelines. At the time a Tier II document is written, a project level study will be conducted for both NEPA and CEQA purposes.

Build Alternatives - Alternatives A and B

In this document, Caltrans has provided a qualitative analysis of mobile source air toxics emissions relative to the various alternatives, and has acknowledged that the project alternatives may result in overall slightly increased exposure to mobile source air toxics emissions in certain locations, although the concentrations and duration of exposures are uncertain, and because of this uncertainty, the health effects from these emissions cannot be estimated.

The Build Alternatives A and B, meet the criteria for the Low Potential for Mobile Source Air Toxics Emissions category. The Federal Highway Administration guidance states that minor highway widening projects are those efforts for which the ultimate traffic level is predicted to be less than 150,000 Average Annual Daily Traffic (see Table 4). The projected 2035 traffic is less than 33,000 for all alternatives including the no-build alternative.

There were no sensitive receptors identified within 500 feet of the project limit. The FHWA guidance identifies Sensitive Land Uses as schools, medical centers and similar health care facilities, child care facilities, parks, and playgrounds. Vicinity of the project is defined as 500 feet or 150 meters from the edge of the nearest traveled lane.

The CT-EMFAC 2007 air model was used to estimate current and future Mobile Source Air Toxics, as follows in Table 7:

Table 7. Projected Mobile Source Air Toxics-Tons per Year

Year	Annual Vehicle Miles Travelled (VMT)	DIESEL PM (Tons/Yr)	FORMAL-DEHYDE	BUTA-DIENE	BENZENE	ACROLEIN	ACETALDELYDE
2006	64,440	0.0038	0.0087	0.0011	0.0054	0.0000	0.0036
2015 Alt A or B	80,120	0.0158	0.0053	0.0006	0.0032	0.0001	0.0022
2015 No Build	80,120	0.0024	0.0008	0.0001	0.0005	0.0000	0.0003
2035 Alt A or B	96,820	0.0030	0.0014	0.0003	0.0012	0.0001	0.0005
2035 No Build	96,820	0.0055	0.0026	0.0005	0.0022	0.0001	0.0010

Source: Caltrans District 6 Environmental Engineering CT-EMFAC runs

The estimated vehicle miles traveled is the same for the build and for the no-build alternatives in years 2015 and 2035. The build alternatives would have a better (higher) level of service and less stop and go traffic. In the design year the MSAT emissions are lower than no-build for either of the build alternatives. The table above indicated that the pollutants would be slightly higher for the build alternatives in 2015. Regardless of the alternative chosen, emissions will likely be lower than present levels in the design year because of the EPA's national control programs that are projected to reduce mobile source air toxics emissions by 57% to 87% between 2000 and 2020. Local conditions may differ from these national projections in terms of fleet mix and vehicle turnover, vehicle miles traveled growth rates, and local control measures. However, the magnitude of the EPA-projected reductions is so great (even after accounting for vehicle miles traveled growth) that mobile source air toxics emissions in the study area are likely to be lower in the future in nearly all cases.

As discussed above, the magnitude and the duration of these potential increases in the build alternatives compared to the No-Build Alternative cannot be accurately quantified due to the inherent deficiencies of current models. When a highway is widened and, as a result, moves closer to receptors, the localized level of mobile source air toxics emissions for the Build Alternative could be higher relative to the No-Build Alternative. The higher emissions would be made up for by an overall decrease in pollutants in the Hollister area due to increases in speeds and reductions

in congestion (which are associated with lower mobile source air toxics emissions). However, on a regional basis, the EPA's vehicle and fuel regulations, coupled with fleet turnover, will over time cause substantial reductions that, in almost all cases, will cause region wide mobile source air toxics levels to be significantly lower than today.

Mobile Source Air Toxics Conclusion

The EPA projections indicate a continuing downward trend of the six primary mobile source air toxics. As discussed above, the study of mobile source air toxics, dose-response effects and modeling tools are currently in a state where accurate information is incomplete or unavailable. This is relevant to making an accurate prediction of any reasonably foreseeable adverse effects on the human environment. There is currently no specific significance level for receptor exposure. Without a significance level for exposure, one cannot accurately and scientifically predict the effects on the human environment. Studies are currently being conducted to clarify some of these unknowns; however the information is not available now.

Because the emission effects of these projects are low, we expect there would be no appreciable difference in overall MSAT emissions among the two alternatives. The horizon year build estimates are lower than 2006 estimated emissions. In addition, quantitative analysis of these types of projects will not yield credible results that are useful to project-level decision-making due to the limited capabilities of the transportation and emissions forecasting tools.

Climate Change under the California Environmental Quality Act
Regulatory Setting

While climate change has been a concern since at least 1988, as evidenced by the establishment of the United Nations and World Meteorological Organization's Intergovernmental Panel on Climate Change (IPCC), the efforts devoted to greenhouse gas emissions reduction and climate change research and policy have increased dramatically in recent years. These efforts are primarily concerned with the emissions of greenhouse gases related to human activity that include carbon dioxide (CO_2), methane, nitrous oxide, tetrafluoromethane, hexafluoroethane, sulfur hexafluoride, HFC-23 (fluoroform), HFC-134a (1, 1, 1, 2 –tetrafluoroethane), and HFC-152a (difluoroethane).

In 2002, with the passage of Assembly Bill 1493 (AB 1493), California launched an innovative and pro-active approach to dealing with greenhouse gas emissions and climate change at the state level. AB 1493 requires the California Air Resources Board (CARB) to develop and implement regulations to reduce automobile and light truck greenhouse gas emissions. These stricter emissions standards were designed to apply to automobiles and light trucks beginning with the 2009-model year; however, in order to enact the standards California needed a waiver from the U.S. Environmental Protection Agency (EPA). The waiver was denied by Environmental Protection Agency in December 2007 and efforts to overturn the decision have been unsuccessful. See *California v. Environmental Protection Agency*, 9th Cir. Jul. 25, 2008, No. 08-70011. However, on January 26, 2009, it was announced that EPA will reconsider their decision regarding the denial of California's waiver. On May 18, 2009, President Obama announced the enactment of a 35.5 miles per gallon fuel economy standard for automobiles and light duty trucks which will take effect in 2012. On June 30, 2009 EPA granted California the waiver. California is expected to enforce its standards for 2009 to 2011 and then look to the federal government to implement equivalent standards for 2012 to 2016. The granting of the waiver will also allow California to implement even stronger standards in the future. The state is expected to start developing new standards for the post-2016 model years later this year.

On June 1, 2005, Governor Arnold Schwarzenegger signed Executive Order S-3-05. The goal of this order is to reduce California's greenhouse gas emissions to: 1) 2000 levels by 2010, 2) 1990 levels by the 2020 and 3) 80 percent below the 1990 levels by the year 2050. In 2006, this goal was further reinforced with the passage of Assembly Bill 32 (AB 32), the Global Warming Solutions Act of 2006. AB 32 sets the same overall greenhouse gas emissions reduction goals while further mandating that *California*

Air Resources Board create a plan, which includes market mechanisms, and implement rules to achieve "real, quantifiable, cost-effective reductions of greenhouse gases." Executive Order S-20-06 further directs state agencies to begin implementing AB 32, including the recommendations made by the state's Climate Action Team.

With Executive Order S-01-07, Governor Schwarzenegger set forth the low carbon fuel standard for California. Under this order, the carbon intensity of California's transportation fuels is to be reduced by at least 10 percent by 2020.

Climate change and greenhouse gas reduction is also a concern at the federal level; however, at this time, no legislation or regulations have been enacted specifically addressing greenhouse gas emissions reductions and climate change. California, in conjunction with several environmental organizations and several other states, sued to force the U.S. Environmental Protection Agency (EPA) to regulate greenhouse gas as a pollutant under the Clean Air Act (*Massachusetts vs. Environmental Protection Agency et al.,* 549 U.S. 497 (2007). The court ruled that greenhouse gases do fit within the Clean Air Act's definition of a pollutant, and that the Environmental Protection Agency does have the authority to regulate greenhouse gases. Despite the Supreme Court ruling, there are no promulgated federal regulations to date limiting greenhouse gas emissions.

According to *Recommendations by the Association of Environmental Professionals on How to Analyze Greenhouse Gas Emissions and Global Climate change in CEQA Documents* (Hendrix and Wilson, March 5, 2007), an individual project does not generate enough greenhouse gas emissions to significantly influence global climate change. Rather, global climate change is a cumulative impact. This means that a project may participate in a potential impact through its incremental contribution combined with the contributions of all other sources of greenhouse gases. In assessing cumulative impacts, it must be determined if a project's incremental effect is "cumulatively considerable." See CEQA Guidelines sections 15064(i)(1) and 15130. To make this determination the incremental impacts of the project must be compared with the effects of past, current, and probable future projects. To gather sufficient information on a global scale of all past, current, and future projects to make this determination is a difficult if not impossible task.

As part of its supporting documentation for the Draft Scoping Plan, California Air Resources Board released an updated version of the greenhouse gas inventory for California (June 26, 2008). Shown below is a graph from that update that shows the

total greenhouse gas emissions for California for 1990, 2002-2004 average, and 2020 projected if no action is taken.

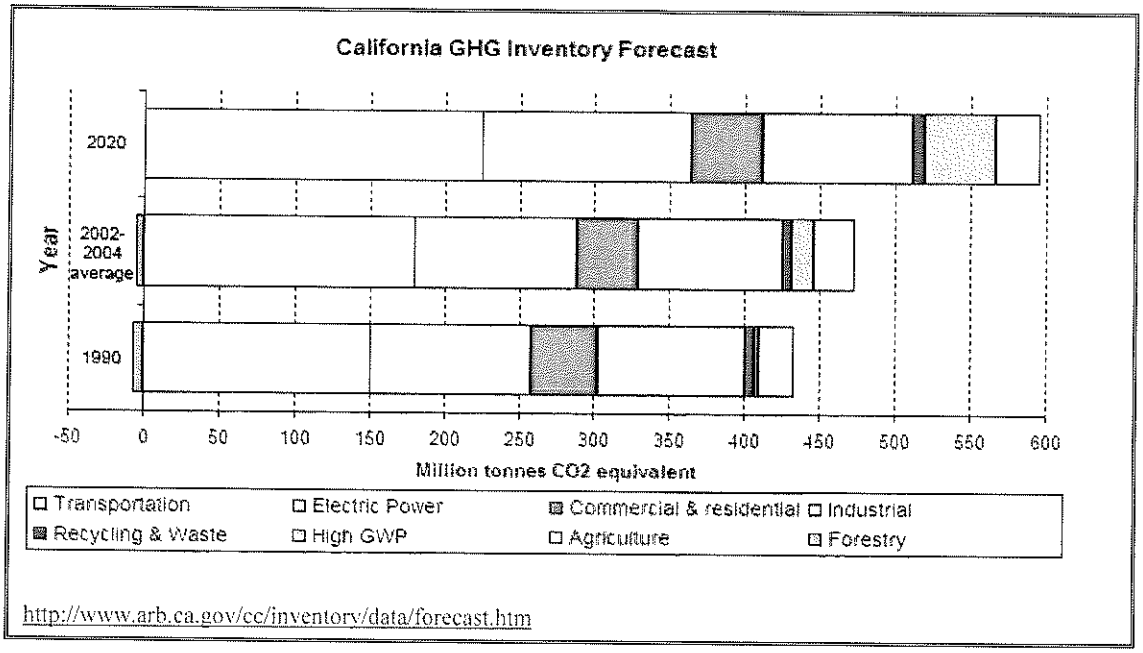


Figure 2 California Greenhouse Gas Inventory

Caltrans and its parent agency, the Business, Transportation, and Housing Agency, have taken an active role in addressing greenhouse gas emission reduction and climate change. Recognizing that 98 percent of California's greenhouse gas emissions are from the burning of fossil fuels and 40 percent of all human-made greenhouse gas emissions are from transportation, Caltrans has created and is implementing the *Climate Action Program at Caltrans* that was published in December 2006. This document can be found at: http://www.dot.ca.gov/docs/ClimateReport.pdf

One of the main strategies in the Department's Climate Action Program to reduce greenhouse gas emissions is to make California's transportation system more efficient. Transportation's contribution to greenhouse gas emissions depends on 3 factors: the types of vehicles on the road, the type of fuel the vehicles use, and the time/distance the vehicles travel. The highest levels of carbon dioxide from mobile sources, such as automobiles, occur at stop-and-go speeds (0 to 25 miles per hour). Optimum speeds are between 45 and 50 miles per hour. Looking at the state transportation system as a whole, enhancing operations and improving travel times in high congestion travel corridors will lead to an overall reduction in greenhouse gas emissions.

Project Analysis

The majority of the route adoption alternatives lies in San Benito County and a minor portion in Santa Clara County. The build alternatives proposed are located in San Benito County.

Economic growth in the neighboring county of Santa Clara has created pressure for residential growth in San Benito County where housing is more affordable. According to the 2000 U.S. Census Bureau, almost half of the workers that are 16 years and older in San Benito County commute outside San Benito County for employment. This growth trend has increased demands on the regional transportation system.

The U.S. Census Bureau indicates that the population of San Benito County has grown at a rapid rate. Between 1990 and 2000, the county experienced a 45.1 percent population increase, over 90 percent of which occurred in the City of Hollister. However, in 2003 growth slowed considerably.

The City of Hollister was placed under a building moratorium by the Central Coast Regional Water Quality Board in 2002, after a major spill occurred at the wastewater treatment plant. That moratorium ended in December 2008, after the newly completed wastewater treatment plant was approved by the Regional Water Quality Board. However, a growth control initiative which passed in November of 2002 is still in effect until June 13, 2012 that limits new housing in Hollister to 244 units per year.

Despite growth in the Hollister area, San Benito County remains a low-density, rural, and agricultural area outside the two cities of Hollister and San Juan Bautista.

According to the U.S. Census Bureau 2006 estimates, Santa Clara County has an estimated population of 1.7 million people. It is the fifth most populous county in California, and has 24 percent of the population of the San Francisco Bay area.

Santa Clara County has strict controls to keep growth within or adjacent to cities and to preserve the remaining farmland and rural areas in the county.

The build alternatives would relieve traffic congestion and improve traffic flow by providing additional travel lanes. Gasoline and diesel-powered vehicles operate less efficiently at low speeds. The existing conditions for the peak hour Level of Service within the entire project area on State Route 25 are at a peak hour Level of Service E.

For the build alternatives, Alternative A and Alternative B, existing average travel speeds are 44.9 miles per hour between San Felipe Road and State Route 156 during the morning peak hour, and 45.0 miles per hour during the evening peak traffic hour. For the segment between State Route 156 and Hudner Lane, average travel speeds are currently 43.7 miles per hour during the morning peak hour, and 42.4 miles per hour during the evening peak traffic hour.

If neither Alternative A nor Alternative B is constructed, average travel speeds on the existing highway would not decrease significantly by 2015 within the proposed build project limits. However, by 2035 speeds between San Felipe Road and State Route 156 are predicted to be reduced to 38.8 miles per hour during the morning peak traffic hour, and to 40.4 miles per hour during the evening peak. Between State Route 156 and Hudner Lane, average travel speeds during the morning peak hour would be 37.4 miles per hour, and 38.8 miles during the evening peak traffic hour.

A four-lane expressway between San Felipe Road and Hudner Lane would operate at Level of Service B or better during the peak traffic hours, except that, in Scenario 2 (a worst case scenario), the Level of Service for Alternative B would drop to Level of Service C by 2035 during the morning peak traffic (still an acceptable Level of Service). Although the vehicle density (passenger car per mile per lane) would increase, the average travel speed would remain constant at 59-60 miles per hour during the morning peak hour and at about 59.5 miles per hour during the evening peak hour between 2015 and 2035.

Greenhouse gas emissions analysis and forecasting are a relatively new science using existing air modeling tools that were not originally designed for modeling greenhouse gases.

Quantitative Analysis

Estimated annual Carbon Dioxide emissions were modeled using CT-EMFAC 2007. The assumptions used in the model are a non-peak hour (two hours per day) prevailing free-flow speed of 38-45 miles per hour and a non-peak hour prevailing free-flow speed of 55-60 miles per hour for the No-Build Alternative and both Build Alternatives. The total vehicle miles traveled were allotted 2 hours for peak and 22 hours for off-peak for all scenarios. Annual average daily traffic includes 10 percent truck traffic.

The results indicate only a rough estimate of emissions based on projected annual average daily traffic data. Table 8 displays carbon dioxide emissions in tons per year

for the build alternatives and the No-Build Alternative There are other influences on the total effect that a project would have on greenhouse gasses. Current modeling tools and guidelines are not available at this time to project any effect from this specific project on global warning.

Table 8 Estimated Carbon Dioxide Emissions for Build and No-Build Alternatives

Alternative	Segment on State Route 25	Daily traffic with 10% Trucks CO_2 Emissions (Tons per year)		
		2006 (Existing)	2015	2035
No-Build Alternative	San Felipe Road to State Route 156 (2.5 miles)	20	27	30
	State Route 156 to Hudner Lane (1.3 miles)	10	16	18
Alternative A or Alternative B	San Felipe Road to State Route 156 (2.5 miles)	20	29	29
	State Route 156 to Hudner Lane (1.3 miles)	10	16	20

Source: Air Quality Report, June 2009

Only the build alternatives were studied at this time. The Route Adoption portion will undergo more detailed study in the future, and it is expected that modeling for greenhouse gasses will have improved by that time.

According to EMFAC modeling results, both the Build and No-Build Alternatives would result in more greenhouse gasses than the existing condition.. This is primarily because of EMFAC'S focus on predicted traffic volumes and speeds, which would increase with the additional two lanes the project adds to the highway.

Looking at the project alternatives solely in this manner creates an interesting situation. The highway segment is already operating at level of service E in the peak hour, which is considered failing, although it operates near the optimum speed of 45 miles per hour for lower CO_2 emissions. Based on the traffic study conducted for this project, the level of service for the No-Build Alternative will continue to deteriorate in the future years. As speeds sink further below 45 miles per hour, CO_2 emissions would show a corresponding increase. In both the No Build and Build conditions in the future years, CO_2 emissions will increase. For the 2015 year, the State Route 156 to Hudner Lane segment shows that both the No-Build and Build alternatives will have similar carbon dioxide emissions; for the San Felipe Road to Sate Route 156 segment, the Build alternative will have a slightly higher increase in emissions. For

the 2035 year, the pattern is similar, except that for the San Felipe Road to State Route 156 segment, the No-Build alternative would have higher CO_2 emissions. The Build alternative will improve mobility in the corridor.

Limitations and Uncertainties with Modeling

EMFAC

Although EMFAC can calculate CO_2 emissions from mobile sources, the model does have limitations when it comes to accurately reflecting CO_2 emissions. According to the National Cooperative Highway Research Program report, *Development of a Comprehensive Modal Emission Model* (April 2008), studies have revealed that brief but rapid accelerations can contribute significantly to a vehicle's carbon monoxide and hydrocarbon emissions during a typical urban trip. Current emission-factor models are insensitive to the distribution of such modal events (i.e., cruise, acceleration, deceleration, and idle) in the operation of a vehicle and instead estimate emissions by average trip speed. This limitation creates an uncertainy in the model's results when compared to the estimated emissions of the various alternatives with baseline in an attempt to determine impacts. Although work by EPA and the CARB is underway on modal-emission models, neither agency has yet approved a modal emissions model that can be used to conduct this more accurate modeling. In addition, EMFAC does not include speed corrections for most vehicle classes for CO_2—for most vehicle classes emission factors are held constant which means that EMFAC is not sensitive to the decreased emissions associated with improved traffic flows for most vehicle classes. Therefore, unless a project involves a large number of heavy-duty vehicles, the difference in modeled CO_2 emissions due to speed change will be slight.

It is interesting to note that CARB is currently not using EMFAC to create its inventory of greenhouse gas emissions. It is unclear why the CARB has made this decision. Their website only states:

> REVISION: Both the EMFAC and OFFROAD Models develop CO_2 and CH_4 [methane] emission estimates; however, they are not currently used as the basis for [CARB'S] official [greenhouse gas] inventory which is based on fuel usage information…However, ARB is working towards reconciling the emission estimates from the fuel usage approach and the models.

Other Variables

With the current science, project-level analysis of greenhouse gas emissions is limited. There are numerous key greenhouse gas variables that are likely to change dramatically during the design life of the proposed project and would thus dramatically change the projected carbon dioxide emissions.

First, vehicle fuel economy is increasing. The Environmental Protection Agency's annual report, *Light-Duty Automotive Technology and Fuel Economy Trends: 1975 through 2008* (http://www.epa.gov/oms/fetrends.htm), which provides data on the fuel economy and technology characteristics of new light-duty vehicles including cars, minivans, sport utility vehicles, and pickup trucks, confirms that average fuel economy, has improved each year beginning in 2005, and is now the highest since 1993. Most of the increase since 2004 is due to higher fuel economy for light trucks, following a long-term trend of slightly declining overall fuel economy that peaked in 1987. These vehicles also have a slightly lower market share, peaking at 52 percent in 2004 with projections at 48 percent in 2008.

Table 9 Required Miles Per Gallon by Alternative

2015 Required Miles Per Gallon by Alternative							
No Action		25 Percent Below Optimized	Optimized (Preferred)	25 Percent Above Optimized	50 Percent Above Optimized	Total Costs Equal Total Benefits	Technology Exhaustion
Cars	27.5	33.9	35.7	37.5	39.5	43.3	52.6
Trucks	23.5	27.5	28.6	29.8	30.9	33.1	34.7

Table 9 shows the alternatives for vehicle fuel economy increases currently being studied by the National Highway Traffic Safety Administration in its Draft Environmental Impact Statement for New Corporate Average Fuel Economy Standards (June 2008).

Second, near zero carbon vehicles will come into the market during the design life of this project. According to a March 2008 report released by University of California Davis (UC Davis), Institute of Transportation Studies:

> "Large advancements have occurred in fuel cell vehicle and hydrogen infrastructure technology over the past 15 years. Fuel cell technology has progressed substantially resulting in power density, efficiency, range, cost, and durability all improving each year. In another sign of progress,

automotive developers are now demonstrating over 100 fuel cell vehicles (FCVs) in California – several in the hands of the general public – with configurations designed to be attractive to buyers. Cold-weather operation and vehicle range challenges are close to being solved, although vehicle cost and durability improvements are required before a commercial vehicle can be successful without incentives. The pace of development is on track to approach pre-commercialization within the next decade.

"A number of the U.S. Department of Energy 2010 milestones for fuel cell vehicles development and commercialization are expected to be met by 2010. Accounting for a five to six year production development cycle, the scenarios developed by the U.S. DOE suggest that 10,000s of vehicles per year from 2015 to 2017 would be possible in a federal demonstration program, assuming large cost share grants by the government and industry are available to reduce the cost of production vehicles."[1]

Third, driver behavior has been changing as the U.S. economy and oil prices have changed. In its January 2008 report, *Effects of Gasoline Prices on Driving Behavior and Vehicle Market*, http://www.cbo.gov/ftpdocs/88xx/doc8893/01-14-GasolinePrices.pdf, the Congressional Budget Office found the following results based on data collected from California: 1) freeway motorists have adjusted to higher gas prices by making fewer trips and driving more slowly; 2) the market share of sports utility vehicles is declining; and 3) the average prices for larger, less-fuel-efficient models have declined over the past five years as average prices for the most-fuel-efficient automobiles have risen, showing an increase in demand for the more fuel-efficient vehicles.

Limitations and Uncertainties with Impact Assessment

Taken from pp. 3-48 and 3-49 of the National Highway Traffic Safety Administration Draft Environmental Impact Statement for New Corporate Average Fuel Economy Standards (June 2008), Figure 3, illustrates how the range of uncertainties in assessing greenhouse gas impacts grows with each step of the analysis "Cascade of uncertainties typical in impact assessments showing the "uncertainty explosion" as these ranges are multiplied to encompass a comprehensive range of future consequences, including physical, economic, social, and political impacts and policy responses."

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[1] Cunningham, Joshua, Sig Cronich, Michael A. Nicholas. March 2008. *Why Hydrogen and Fuel Cells are Needed to Support California Climate Policy*, UC Davis, Institute of Transportation Studies, pp. 9-10.

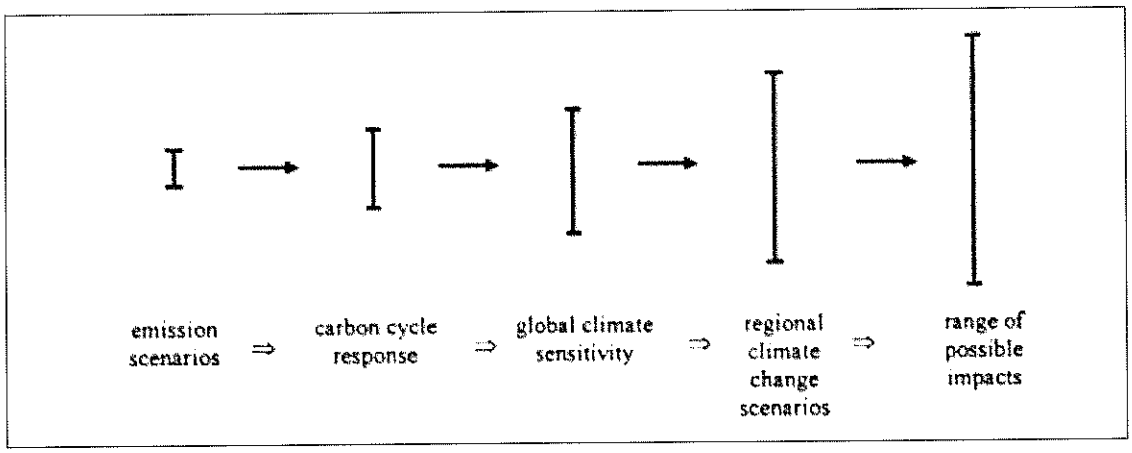

Figure 3 Cascade of Uncertainties

Much of the uncertainty in assessing an individual project's impact on climate change surrounds the global nature of the climate change. Even assuming that the target of meeting the 1990 levels of emissions is met, there is no regulatory framework in place that would allow for a ready assessment of what the modeled 11.4- to 20.9-ton increase in carbon dioxide (CO_2) emissions would mean for climate change given the overall California greenhouse gas emissions inventory of approximately 430 million tons of carbon dioxide (CO_2) equivalent. This uncertainty only increases when viewed globally. The IPCC has created multiple scenarios to project potential future global greenhouse gas emissions as well as to evaluate potential changes in global temperature, other climate changes, and their effect on human and natural systems. These scenarios vary in terms of the type of economic development, the amount of overall growth, and the steps taken to reduce greenhouse gas emissions. Non-mitigation IPCC scenarios project an increase in global greenhouse gas emissions by 9.7 up to 36.7 billion metric tons carbon dioxide from 2000 to 2030, which represents an increase of between 25 and 90 percent.[2]

The assessment is further complicated by the fact that changes in greenhouse gas emissions can be difficult to attribute to a particular project because the projects often cause shifts in the locale for some type of greenhouse gas emissions, rather than causing "new" greenhouse gas emissions. Although some of the emission increases might be new, a net global increase, reduction, or no change, is uncertain and there are no models approved by regulatory agencies that operate at the global or even statewide scale.

[2] Intergovernmental Panel on Climate Change (IPCC). February 2007. Climate Change 2007: The Physical Science Basis: Summary for Policy Makers. http://www.ipcc.ch/SPM2feb07.pdf.

The complexities and uncertainties associated with project-level impact analysis are further borne out in the recently released Draft Environmental Impact Statement completed by the National Highway Traffic Safety Administration Corporate Average Fuel Economy standards, June 2008. As the text quoted below shows, even when dealing with greenhouse gas emission scenarios on a national scale for the entire passenger car and light truck fleet, the numerical differences among alternatives is very small and well within the error sensitivity of the model.

> "In analyzing across the Corporate Average Fuel Economy 30 alternatives, the mean change in the global mean surface temperature, as a ratio of the increase in warming between the B1 (low) to A1B (medium) scenarios, ranges from 0.5% to 1.1%. The resulting change in sea level rise (compared to the No Action Alternative) ranges, across the alternatives, from 0.04 centimeter to 0.07 centimeter. In summary, the impacts of the Mode Year 2011-2015 Corporate Average Fuel Economy alternatives on global mean surface temperature, sea level rise, and precipitation are relatively small in the context of the expected changes associated with the emission trajectories. This is due primarily to the global and multi-sectoral nature of the climate problem. Emissions of CO_2, the primary gas driving the climate effects, from the United States automobile and light truck fleet represented about 2.5 o% f total global emissions of all greenhouse gases in the year 2000 (EPA, 2008; CAIT, 2008). While a significant source, this is a still small percentage of global emissions, and the relative contribution of CO_2 emissions from the United States light vehicle fleet is expected to decline in the future, due primarily to rapid growth of emissions from developing economies (which are due in part to growth in global transportation sector emissions)." [NHTSA Draft Environmental Impact Statement for New Corporate Average Fuel Economy Standards, June 2008, pp.3-77 to 3-78]

CEQA Conclusion

Based on the above, it is Caltrans' determination that in the absence of further regulatory or scientific information related to greenhouse gas emissions and California Environmental Quality Act significance, it is too speculative to make a determination regarding the project's direct impact and its contribution on the cumulative scale to climate change. However, Caltrans does anticipate a reduction in greenhouse gas emissions with the project. Nonetheless, Caltrans is firmly committed to implementing measures to help reduce the potential effects of the project. These measures are outlined in the following section.

Assembly Bill 32 Compliance

Caltrans continues to be actively involved on the Governor's Climate Action Team as California Air Resources Board works to implement AB 1493 and help achieve the targets set forth in AB 32. Many of the strategies Caltrans is using to help meet the targets in AB 32 come from the California Strategic Growth Plan, which is updated each year. Governor Arnold Schwarzenegger's Strategic Growth Plan calls for a $222 billion infrastructure improvement program to fortify the state's transportation system, education, housing, and waterways, including $107 in transportation funding during the next decade.

As shown on Figure 4 below, the Strategic Growth Plan targets a significant decrease in traffic congestion below today's level and a corresponding reduction in greenhouse gas emissions. The Strategic Growth Plan proposes to do this while accommodating growth in population and the economy. A suite of investment options has been created that combined together yield the promised reduction in congestion. The Strategic Growth Plan relies on a complete systems approach of a variety of strategies: system monitoring and evaluation, maintenance and preservation, smart land use and demand management, and operational improvements.

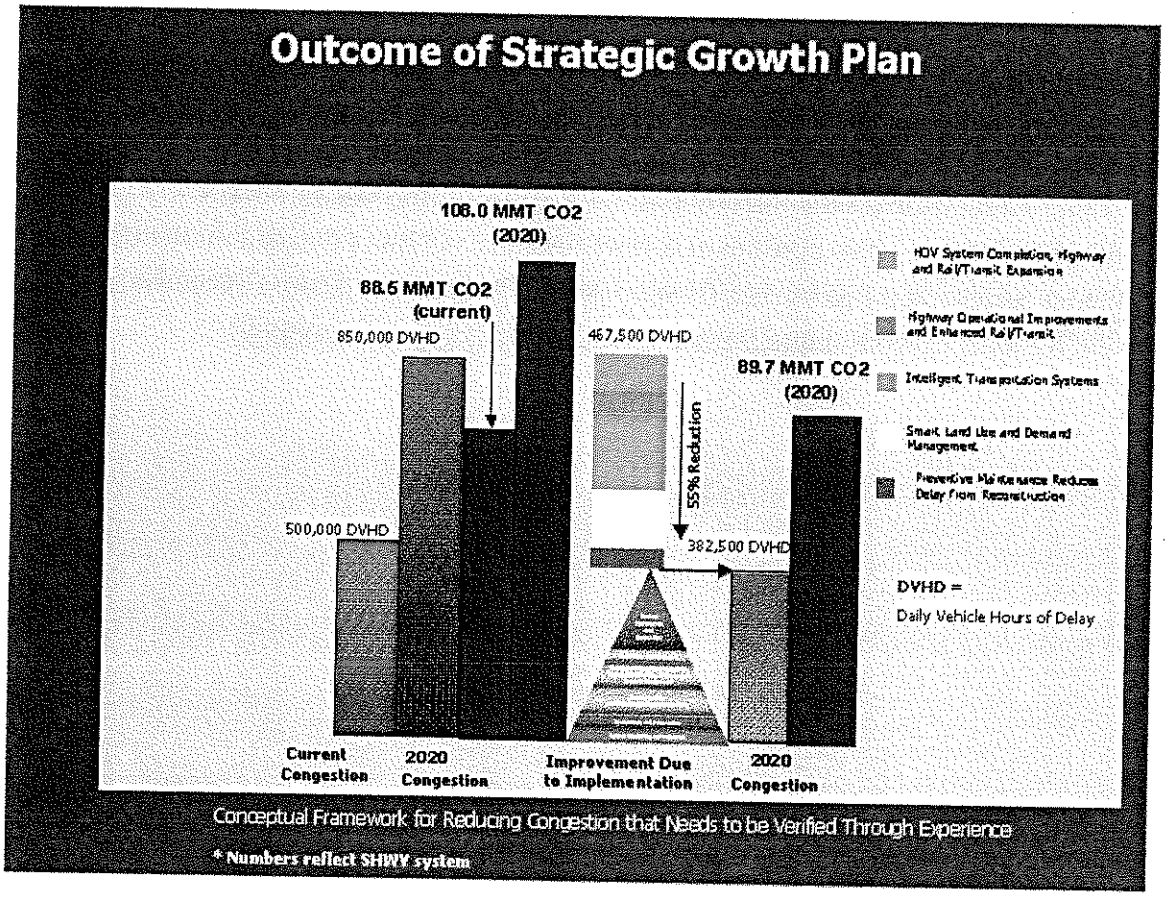

Figure 4 Outcome of Strategic Growth Plan

As part of the *Climate Action Program at Caltrans* (December 2006, http://www.dot.ca.gov/docs/ClimateReport.pdf), Caltrans is supporting efforts to reduce vehicle miles traveled by planning and implementing smart land use strategies: job/housing proximity, developing transit-oriented communities, and high density housing along transit corridors. Caltrans is working closely with local jurisdictions on planning activities; however, Caltrans does not have local land use planning authority.

Caltrans is also supporting efforts to improve the energy efficiency of the transportation sector by increasing vehicle fuel economy in new cars, light and heavy-duty trucks; Caltrans is doing this by supporting ongoing research efforts at universities, by supporting legislation efforts to increase fuel economy, and by its participation on the Climate Action Team. It is important to note, however, that the

control of the fuel economy standards is held by the U.S. Environmental Protection Agency and California Air Resource Board.

Lastly, the use of alternative fuels is also being considered; Caltrans is participating in funding for alternative fuel research at the University of California at Davis.

Table 10 summarizes the Department and statewide efforts that Caltrans is implementing to reduce greenhouse gas emissions. For more detailed information about each strategy, please see *Climate Action Program at Caltrans* (December 2006); it is available at http://www.dot.ca.gov/docs/ClimateReport.pdf.

Table 10 Climate Change Strategies

Strategy	Program	Partnership		Method/Process	Estimated CO2 Savings (MMT)	
		Lead	Agency		2010	2020
Smart Land Use	Intergovernmental Review (IGR)	Caltrans	Local Governments	Review and seek to mitigate development proposals	Not Estimated	Not Estimated
	Planning Grants	Caltrans	Local and regional agencies & other stakeholders	Competitive selection process	Not Estimated	Not Estimated
	Regional Plans and Blueprint Planning	Regional Agencies	Caltrans	Regional plans and application process	0.975	7.8
Operational Improvements & Intelligent Trans. System (ITS) Deployment	Strategic Growth Plan	Caltrans	Regions	State ITS; Congestion Management Plan	.007	2.17
Mainstream Energy & Greenhouse Gas into Plans and Projects	Office of Policy Analysis & Research; Division of Environmental Analysis	Interdepartmental effort		Policy establishment, guidelines, technical assistance	Not Estimated	Not Estimated
Educational & Information Program	Office of Policy Analysis & Research	Interdepartmental, CalEPA, CARB, CEC		Analytical report, data collection, publication, workshops, outreach	Not Estimated	Not Estimated
Fleet Greening & Fuel Diversification	Division of Equipment	Department of General Services		Fleet Replacement B20 B100	0.0045	0.0065 0.45 .0225
Non-vehicular Conservation Measures	Energy Conservation Program	Green Action Team		Energy Conservation Opportunities	0.117	.34
Portland Cement	Office of Rigid Pavement	Cement and Construction Industries		2.5 % limestone cement mix 25% fly ash cement mix > 50% fly ash/slag mix	1.2 .36	3.6
Goods Movement	Office of Goods Movement	Cal EPA, CARB, BT&H, MPOs		Goods Movement Action Plan	Not Estimated	Not Estimated
Total					2.72	18.67

To the extent that it is applicable or feasible for the project and through coordination with the project development team, the following measures will also be included in the project to reduce the greenhouse gas emissions and potential climate change impacts from the project:

1. Trees will be planted and native plants and grasses will be planted or seeded. Trees sequester atmospheric carbon to create beneficial greenhouse gas sinks. Tree canopy also creates a drop in paved surface temperatures through shade and the cooling effect of water as it evaporates into the air from leaves through transpiration. Vegetation, especially light-colored groundcovers such as grasses, generally increases albedo as compared to bare earth. Albedo is the extent to which an object diffusely reflects light from the sun. Plants also increase the amount of vapor in the air and rainwater retained in a location, thereby adding to the cooling effect as well as increasing groundwater recharge, decreasing the amount of rainwater that is runoff into storm drains and reducing the transport of pollutants into streams, and thus ultimately into the ocean.
2. Portland cement is lighter in color, which helps to reduce the albedo effect and cool the roadway surface. In addition, Caltrans has been a leader in the effort to add fly ash to Portland cement mixes, which can make the pavement stronger and reduces the greenhouse gas emissions associated with cement production.
3. The project would incorporate the use of energy-efficient lighting, such as LED traffic signals. LED bulbs—or balls, in the stoplight vernacular—cost $60 to $70 apiece but last five to six years, compared to the one-year average lifespan of the incandescent bulbs previously used. The LED balls themselves consume 10 percent of the electricity of traditional lights, which will also help reduce the project's CO_2 emissions.
4. According to Caltrans Standard Specification Provisions, idling time for lane closure during construction is restricted to 10 minutes in each direction.
5. In addition, the contractor must comply with Monterey Bay Unified Air Pollution Control District's rules, ordinances, and regulations in regards to air quality restrictions.

The following "green" practices and materials would be used in the project as part of highway planting and erosion control work:

- PVC irrigation pipe with recycled content

- Non-chlorinated High Density Polyethylene (HDPE) irrigation crossover conduit
- Compost and soil amendments derived from sewage sludge and green waste materials
- Fiber produced from recycled pulp such as newspaper, chipboard, cardboard
- Wood mulch made from green waste and/or clean manufactured wood or natural wood
- Native and drought-tolerant seed and plants species
- Irrigation controllers, including water conservation features
- Restricted pesticide use and reduction goals
- Landscaping will use reclaimed water where feasible if it becomes available

The State of California maintains several websites, which provide public information measures to improve renewable energy use, energy efficiency, water conservation and efficiency, land use and landscape maintenance, solid waste measures, and transportation alternatives.

9. Short-Term Construction Impacts

Route Adoption- Alternatives 1 and 2

Since this is a route adoption, it is not appropriate to discuss construction impacts at this time. There may be additional air issues or guidance for Mobile Source Air Toxics by the time the project is funded and the Tier II document is written. All appropriate issues will be discussed at that time.

Build Alternatives - Alternatives A and B

During construction, the proposed project will generate air pollutants. The exhaust from construction equipment contains hydrocarbons, oxides of nitrogen, carbon monoxide, suspended particulate matter, and odors. However, the largest percentage of pollutants would be windblown dust generated during excavation, grading, hauling, and various other activities. The impacts of these activities would vary each day as construction progresses. Dust and odors at some residences very close to the right of way could probably cause occasional annoyance and complaints.

Mobile Source Air Toxics emissions would also be expected from the diesel powered construction equipment. However, it is anticipated that the pollutant levels emitted from this equipment would be less in 2015 and 2035 than now in 2008, due to changes in diesel fuel and progressively more stringent air pollution limitation requirements on diesel engines.

San Benito County are among the counties listed as containing serpentine and ultramafic rock (Governor's Office of Planning and Research, October 26, 2000). However, the known areas are not near the proposed project location. Therefore, the impact from Naturally Occurring Asbestos (NOA) during project construction would be minimal to none. If structures that may contain asbestos are to be demolished, it is the responsibility of the contractor to comply with the Rules and Regulations of the local Air Pollution Control Districts.

10. Avoidance, Minimization, and/or Mitigation Measures

Caltrans Standard Specifications pertaining to dust control and dust palliative requirement is a required part of all construction contracts and should effectively reduce and control emission impacts during construction. The provisions of Caltrans Standard Specifications, Section 7-1.01F "Air Pollution Control" and Section 10 "Dust Control" require the contractor to comply with rules, ordinances, and regulations. Currently there are no requirements for Dust Control plans from either the Monterey Bay Unified Air Pollution Control District or for the Bay Area Air Quality Management District.

11. References

California Air Resources Board ADAM database website

California Air Resources Board 2009 Almanac of Emissions and Air Quality

California Department of Transportation Standard Environmental Reference

Caltrans/UC Davis Transportation Project-Level Carbon Monoxide Protocol

Monterey Bay Unified Air Pollution Control District website

Bay Area Air Quality Management District website

San Benito County Governments website

http://www.ambag.org/publications/reports/Transportation/MTP/Environ%20Analysis%20B.pdf

Santa Clara Valley Transportation Authority website

Federal Highway Administration website (MSAT guidelines)

United States Environmental Protection Agency website

Environmental Impact Report (EIR) for the *Transportation 2035 Plan for the San Francisco Bay Area*:
http://www.mtc.ca.gov/planning/2035_plan/EIR/draft/2_02_Air_Quality_DEIR.pdf

http://www.mtc.ca.gov/planning/2030_plan/downloads/final_2030_plan/0-T2030Plan-final_FrontTOC.pdf

http://www.mtc.ca.gov/planning/2035_plan/EIR/final/MTC_AQCA-09_TIP_amend09-06.pdf

http://www.mtc.ca.gov/planning/2035_plan/EIR/final/MTC_AQCA-09_TIP_amend09-06.pdf--baycast

http://www.mtc.ca.gov/planning/2035_plan/EIR/final/MTC_AQCA-09_TIP_amend09-06.pdf

Appendices

Attachment 1: Carbon Monoxide monitor data-San Jose Jackson Street 2005-2007

Attachment 2: Gilroy-Hollister Monitor Data-ozone, PM10 and PM2.5

Attached CT-EMFAC Carbon Dioxide and MSAT model data

Draft Relocation Impact Report

State of California
Department of Transportation
FINAL RELOCATION IMPACT REPORT

San Benito and Santa Clara County, CA
State Route 25 widening and Route Adoption Project
05-SBT-25--51.5/60.1
04-SCL-25-PM0.0/2.6
05-SBT-156-R10.5/12.2
EA: 05-485400

SUMMARY OF ALTERNATIVES FOR DRAFT RELOCATION IMPACT REPORT:

The five alternatives under evaluation are:

- Alternative 1: A Route Adoption Alignment (11.2 miles)
- Alternative 2: A Route Adoption Alignment (11.2 miles)
- Alternative A: A 3.8 mile constructed portion of Alternative 1 Route Adoption Alignment
- Alternative B: A 3.5 mile constructed portion of Alternative 2 Route Adoption Alignment
- No Build: If this alternative is chosen no action would be taken and no further improvements would be made to Route 25 within these limits.

The undersigned has completed this report of the above-referenced project and recommends approval of the report.

Phyllis Sarto
Phyllis Sarto,
Associate Right of Way Agent

The undersigned has reviewed and approved this report.

Jamie Lupo
Jamie Lupo
Office Chief, Environmental Mitigation &
Community Studies Branch

Date: 3/18/2011

Distribution: Original File
c: Region/District R/W Manager, Project Manager
Region/District R/W Branch Managers, Environmental
Planning Branch-Design

Attachments: Area Map

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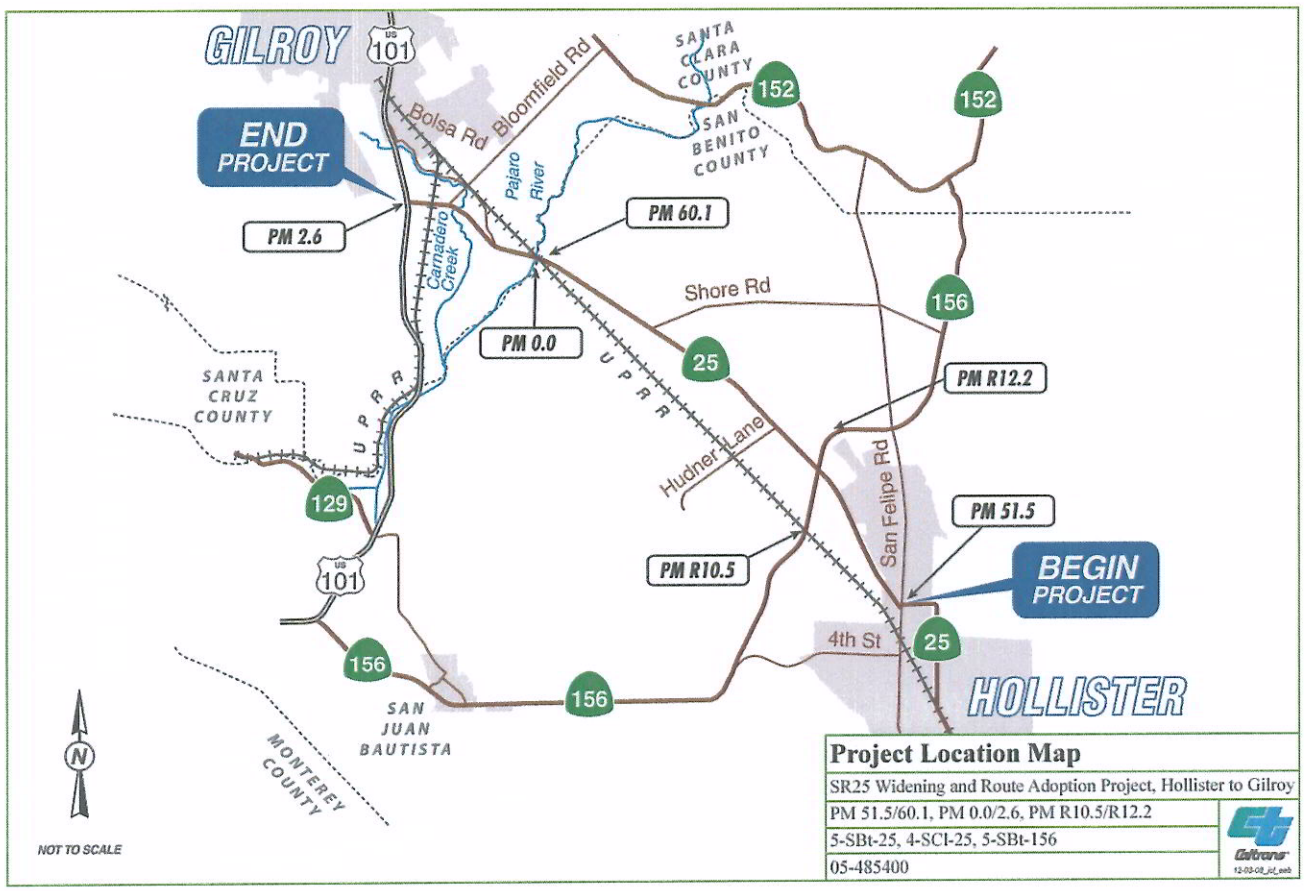

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SUMMARY AND PROJECT DATA

A. Purpose of Study:

The purpose of this study is to provide the Department of Transportation, local agencies and the public with information as what effect a proposed "route adoption" and "new expressway alternative" for State Route 25 would have on the residential and nonresidential occupants within the proposed project alternatives. Specifically, this report is concerned with potential problems that may be caused by the displacement of existing structures and their occupants.

The California Department of Transportation (Caltrans), in cooperation with San Benito Council of Governments and Santa Clara Valley Transportation Authority are evaluating the "route adoption" and conversion of 11.2 miles of the existing Route 25 two-lane conventional highway to a four-lane expressway in San Benito and Santa Clara counties. This Relocation Impact Report addresses both a Route Adoption Study for San Benito and Santa Clara counties and a proposed build project within the limits of the proposed route adoption alignment in San Benito County

B. Limits, Purpose and Need of Project:

The Route Adoption study extends from San Felipe Road within the City of Hollister (post mile 51.5) to the San Benito/Santa Clara County line (post mile 60.1) and on to the end of State Route 25 at U.S. 101 south of the City of Gilroy (post miles 0.0/2.6 in Santa Clara County).

The proposed construction project limits extend 3.8 miles in San Benito County, from San Felipe Road to just west of Hudner Lane (post miles 51.5/55.3).

Route 25, a two-lane conventional highway, runs northwest through the relatively flat terrain of the Hollister Valley, terminating at US 101 after crossing the Pajaro River and Carnadero Creek. Agriculture dominates the surrounding landscape, farms and houses are scattered along the length of the study area. Residences, retail businesses, and agriculture-related commercial operations are more concentrated at both ends of the route adoption study area, on the outskirts of Gilroy and Hollister.

Purpose

The purpose of the proposed route adoption project is to:

- Select a corridor for State Route 25 between Hollister and Gilroy that will accommodate existing and future travel demand.
- Facilitate local and regional land use planning by identifying future right-of-way needed for the State Route 25 corridor.

The purpose of the proposed build project is to:

- Improve traffic flow and reduce delays on State Route 25 between San Felipe Road in Hollister and Hudner Lane in San Benito County.
- Increase capacity along State Route 25 between San Felipe Road in Hollister and Hudner Lane in rural San Benito County.

Need

A lot of slow-moving farm equipment and trucks share this two-lane roadway with local and commuter traffic. An increased number of vehicles travel this stretch of State Route 25 and during

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peak commute hours, the roadway is congested. Traffic flow is delayed due to vehicles turning into and out of the many intersecting driveways and local roads, which affect the flow of the faster moving vehicles. Commercial truck traffic traveling through the area on State Route 25 is subject to delays as well. A new route alignment should be adopted so that the appropriate area for a future expressway can be incorporated into the San Benito and Santa Clara County General Plans now, before future development occurs along this stretch of highway.

C. Description of the alternatives under consideration:

This project encompasses two proposed projects: (1) a route adoption for an 11.2-mile four-lane expressway, and (2) construction of a proposed 3.8-mile four-lane expressway project within the limits of the proposed route adoption.

Route Adoption Alternatives
Alternatives 1 and 2 (the route adoption alternatives) extend from San Felipe Road within the City of Hollister (post mile 51.5) to the San Benito/Santa Clara County line (post mile 60.1) and on to the end of State Route 25 at U.S. 101 south of the City of Gilroy (post miles 0.0 to 2.6) in Santa Clara County, a total length of 11.2 miles. The alignments would be wide enough to accommodate an interchange near the existing intersection of State Route 25 and State Route 156 and a replacement State Route 25/U.S. 101 interchange north of the existing interchange.

Alternative 1 would be 342 feet in width including the median and drainage system, but this does not include the frontage roads on both sides. The alignment of Alternative 1 would begin at San Felipe Road and would follow the existing alignment of State Route 25 to the northern intersection of Briggs Road and State Route 25. The new alignment would remain east of the existing route from that point until just past Hudner Lane, where it would cross the existing State Route 25. The new alignment would be west of the existing highway for only a short distance before crossing the highway again between Hudner Lane and Shore Road. From that point, the new alignment would stay east of the existing State Route 25 until just past Carnadero Creek where it would realign with the existing State Route 25 until reaching U.S. 101.

Alternative 2 would be 240 feet wide or more, including the median and the drainage system, but this does not include frontage roads. The alignment of Alternative 2 would begin at San Felipe Road and run west of and parallel to the existing State Route 25 before crossing the route south of Shore Road. From that point, the new alignment would be the same as for Alternative 1, remaining east and north of the existing State Route 25 until just past Carnadero Creek where it would realign with the existing State Route 25 until reaching U.S. 101.

Build Alternatives
The proposed construction project limits extend 3.8 miles in San Benito County, from San Felipe Road in Hollister to near Hudner Lane (post miles 51.5 to 55.3). A four-lane expressway would replace the existing two-lane conventional highway. Unlike the route adoption alternatives, the build alternatives propose a realigned and widened at-grade intersection—instead of an interchange—at State Route 25/State Route 156.

Alternative A would be 342 feet in width including the median and drainage system, but this does not include the frontage roads on both sides. Alternative A would be constructed at the southeastern end of the Alternative 1 route adoption alignment. This alternative would transition back to the existing two-lane highway just northwest of Hudner Lane. Direct access to the expressway would be available

from San Felipe Road, Wright Road, Flynn Road, State Route 156, two west-side frontage roads and one eastside frontage road. An undercrossing would be built at the Don Chapin gravel quarry driveway to provide access to this parcel.

Alternative B would be 240 feet wide or more, including the median and the drainage system, but this does not including frontage roads. Alternative B would be built at the southwestern end of the Alternative 2 route adoption alignment. This alternative would be shorter than Alternative A, transitioning back into the existing highway at post mile 55.0 between State Route 156 and Hudner Lane. Direct access to the expressway would be possible from San Felipe Road, Wright Road, State Route 156, and a frontage road northeast of State Route 156.

No Build Alternative
No action would be taken with this alternative and no further improvements would be made to State Route 25 within the Route Adoption limits.

Corridor
There is a "core" corridor common to all alternatives. All alternatives are aligned near the existing State Route 25.

This study does not include the one-mile segment of State Route 25 between the Union Pacific main line tracks and the end of the highway at U.S. 101. A detailed relocation analysis report is being prepared for the U.S. 101 Widening Project State Route 129 to Monterey Road Environmental Impact Report, which is a District 4 over-site project.

D. Basis of Findings:

The sources used in the preparation of this report were both primary and secondary in nature, and include, The U.S. Census City of Hollister, San Benito County Housing Authority, California Department of Finance, Hollister Free Lance, and Hollister Realtors-Multiple Listing Service provided current data and statistical information for this report.

E. Description of the Displacement Area:

Alternative 1
Parcels impacted by this alternative are diversified agricultural lands, housing, businesses, church, recreational vehicle storage and a newly constructed large recreational vehicle sales business. This segment will have mainly strip acquisitions off the frontage of agricultural parcels. Full acquisition may be required and Relocation Benefits paid to the occupants/businesses affected by this Segment because several of these parcels are newly constructed with improvements.

Alternative A
There are less residential and non-residential units impacted by the Alternative A proposals which is only 3.8 miles long. Seven residential units and two non- residential units will require relocation assistance. Strip acquisitions off the frontage of agricultural parcels are required for some parcels.

Alternative 2
Alternative 2 parcels impacted by this alternative are diversified agricultural lands, with minimal impact to developed improvements. This alternative adopts a new right of way Alternative west of the existing SR-25. This segment will also require some strip acquisitions off the frontage of

agricultural parcels. The full acquisition and payment of Relocation Benefits to the occupants/businesses may be required but it is significantly less with this alternative compared to Alternative 1. This alternative will not impact the church, or new commercial improvements. The payment of severance damages will be required to the landowners and in some cases *Relocation Assistance Payments*.

Alternative B has the least impact to developed and agricultural parcels of all the build alternatives. The area is only 240 feet wide and avoids commercial developments. This alternative has the least impact on the project area and is the preferred alternative. It will require strip acquisitions off several parcels which would involve no relocation assistance.

F. Estimated displacement units by Alternative:

Residential:	Alt1	Alt A	Alt 2	Alt B
Owner Occupants of Single Family Residences:	14	12	7	0
Tenant Occupants of Single Family Residences:	2	0	1	0
Tenant Occupants of Multiple Unit Residences:	2	2	12	0
Owner Occupants of Mobile Homes:	3	0	3	0
Tenant Occupants of Mobile Homes:	0	0	0	0
TOTAL RESIDENTIAL UNITS:	21	14	23	0
TOTAL PERSONS:	70	53	32	0

Nonresidential:	Alt 1	Alt A	Alt 2	Alt B
Commercial Businesses:	5	3	8	0
Industrial/Manufacturing Businesses:	2	2	2	0
Nonprofit Organizations:	1	1	0	0
Agricultural/Farms:	2*	2*	47**	22**
TOTAL NONRESIDENTIAL UNITS:	10	8	57	22
TOTAL UNITS:	31	22	80	22

Note: Relocation of personal property only should be counted separately and noted whether the items will be moved to the remainder or to a separate site.

*full acquisition relocation required **partial acquisition no relocation

G. Type of Residential Displacement Improvements:

	Alt 1	Alt A	Alt 2	Alt B
Single Family Residence	14	12	8	0
Duplex/Triplex (Multi-Res)	2	2	0	0
Apartments (Multi-Res) 4 or more	2	0	0	0
Sleeping rooms/Shared Quarters	0	0	0	0
Mobile Homes	3	0	3	0
TOTAL UNITS:	21	14	11	0

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H. Adequate relocation resources exist for:

	Yes	No
Residential owners	☒	☐
Residential tenants	☒	☐
Mobile Homes	☒	☐
Businesses	☒	☐
Nonprofit Organizations	☒	☐
Agriculture	☒	☐

On Alternative 1 and A, it will be difficult to replace the Abundant Life Church that will require full acquisition of this new church building, youth facility and single family home. The impact to the San Benito County Sheriff's department's parking at their gun range will have minimal impact. Valley Trailer sales has constructed a new building and parking area for their trailers, after being displaced by State Route 25 Hollister Bypass.

I. Adequate relocation resources exist for:

1. The replacement neighborhood studied is the City of Hollister and surrounding rural areas of San Benito County. Due to the current market conditions replacement housing in the rural farm area is available within the City of Hollister and other areas of rural San Benito County.

2. The relocation areas are comparable in terms of amenities, public utilities, and accessibility to public services, transportation and shopping. Yes ☒ No ☐

3. The relocation resources are affordable to residential displacees given the use of replacement housing payments.

4. There are public projects in the area that will displace other families or require additional housing, there is adequate available housing that will provide "decent safe and sanitary" housing.

5. The State's relocation program is adequate to successfully relocate all displacees.

6. There are no special/significant relocation problems associated with this project.

7. The Last Resort Housing Program payments will be utilized to relocate residential households being displaced that will require "replacement housing payments", in excess of the statutory limit.

Percentage of owners	50%	50%
Percentage of renters	50%	50%

8. The construction of replacement housing under the Last Resort Housing Program will be possible on agriculture properties that are improved with single family residences and farm husbandry buildings.

H. DISPLACEMENT AREA DETAILED ANALYSIS

Santa Clara, portion of the project will affect two businesses, three residences and two farms. The U.S. 101widening project from State Route 129 to Monterey Road and State Route 25 will be discussed later in a Relocation Impact Report, prepared by District-04 for that segment.

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1. Residential Displacements

Alternative 1
Parcels impacted by this alternative are in a diversified fringe area of Hollister developed with housing on ranches and farm housing on agricultural lands. The project encompasses 11.2 miles. There are impacts to single family residences, multi-family dwellings, and non-residential improvements. The quality and size of these houses varies greatly. Some remaining housing will be served by private access easements or existing County roads.

Alternative A
Fewer parcels will be impacted by Alternative A which would only construct 3.8 miles of Alternative 1. This alternative impacts 14 residential properties and eight non residential units which is less than Alternative 1.

Alternative 2
Parcels impacted by this alternative are in a diversified fringe area of Hollister developed with housing on ranches and farm housing on agricultural lands. The project encompasses 11.2 miles. There are no impacts to subdivisions or multi-family dwellings. The quality and size of these houses varies greatly. Most remaining housing will be served by private access easements or existing County roads.

Alternative B
This project only requires 3.5 miles which is a portion of Alternative 2 Route Adoption. This project does not impact any family residences, industrial/manufacturing businesses or commercial businesses. This alternative has the least impact of the build alternatives.

2. Business and Nonprofit

Some businesses impacted by these alternatives may require the payment of severance damages and in some cases full acquisition of the structure because it will not be functional in the after condition. The ability of the business to rebuild and establish new parking on the remainder would have to be considered on a case by case basis during appraisal with appropriate severance damages or Relocation Assistance or in some instances both provided to the owner and/or tenants. There is always the possibility that an owner, manager or others may reside on the premise of a business, if so Relocation Assistance will be offered. It is assumed that the businesses impacted by this project are in compliance with allowable land uses as specified by the City of Hollister and San Benito County.

Alternative 1
Businesses impacted by this project are in compliance with allowable land uses as specified by the City of Hollister and San Benito County. Several of the businesses impacted, are relatively new in age, two of these businesses a non-profit church and a newly constructed recreational vehicle business. There is a county sheriff gun range that will maintain their parking. Some businesses are setback and will have minor impact from this project. Full acquisitions and payments of Relocation Benefits will be required to the occupants/businesses affected by this Segment, because several of these parcels have been constructed recently and are unique in their use. Relocation of the 80 plus recreation vehicles and boats will be a challenge, but it is likely that an adjacent parcel can be obtained and the business can improve the land and move these tenants.

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Alternative A
The project is only constructing a portion of Alternative 1 about 3.8 miles. This alternative reduces the impact on non residential units by nine as compared to Alternative 1.

Alternative 2
This alternative has less impact to the business community than Alternative 1, there are 6 commercial/industrial businesses will be relocated due to the project. Some businesses are setback and will have minor impact from this project. There is the possibility of full acquisition and payment of Relocation Benefits to the occupants/businesses affected by this Segment.

Alternative B
This alternative has no impact to the business or residential community. Partial acquisitions will be required from 20 agricultural uses.

a. Number of businesses directly impacted by the project:

	Alternative			
	Alt 1	**Alt A**	**Alt 2**	**Alt B**
Construction	0	0	0	0
Manufacturing	2	2	4	0
Retail	5	5	0	0
Government	0	0	0	0
Nonprofit	1	1	0	0
Service	2	0	2	0
TOTAL	10	8	6	0

b. Age of business:

	Alternative			
	Alt 1	**Alt A**	**Alt 2**	**Alt B**
1 - 3 years	0	0	4	0
4 - 7 years	0	0	0	0
8- 15 years	3	3	1	0
Over 15 years	5	5	1	0

c. Estimated number of employees:
Note: Small business is defined as less than 500. Over 500 = No reestablishment payment.

	Alternative			
	Alt 1	**Alt A**	**Alt 2**	**Alt B**
1 – 20	5	5	5	0

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21 – 100	3	3	1	0
101 – 500	0	0	0	0
Over 500	0	0	0	0

d. Minority Owned Businesses

There is a possibility that some of these businesses impacted by the project and route adoption that they are minority owned.

e. Number of the different type of facilities:

	Alternative			
	Alt 1	**Alt A**	**Alt 2**	**Alt B**
Strip Commercial	0	0	0	0
Small Shop-Center	0	0	0	0
Regional Center	0	0	0	0
Single Structure	5	5	6	0
Mixed Residential	3	3	0	0
Industrial Park	0	0	0	0
Low Rent Area	0	0	0	0

One unique displacement of note for Alternative 1 and A is the Flynn Road Mini Storage, which will require the relocation of 80 recreation vehicles and boats, there appears to be minimal impact to the actual mini storage business. To relocate these vehicles and boats will require an expanded relocation area, to surrounding counties and cities. Relocation resources are available, but the time to relocate these boats and recreation vehicles will be considerable. It does not appear that anyone lives in these vehicles. Alternative 2 and B will not affect this parcel. There is a parcel for sale east of the Mini Storage that could be acquired and improved to relocate the 80 recreational vehicles.

3. Agricultural Impact:

The agricultural land impacted by this project varies from class "A" fertile soil, rolling hill pastureland to swamp and overflow creek/river frontage. The route adoption and build alternatives propose to acquire strips of land off the frontage of agricultural parcels abutting the project, and in some cases for new or realignment of local roads. Years ago there were more than two alternatives being discussed. The alternatives allow for frontage roads and private road easements in order to prevent parcels from being land locked. These alternatives will have some excess parcels, but considering the length and scope of this project's alternatives and route adoption, the acquisition of excess parcels is minimal. On many of these ranches/farms/ranchettes, the different alternatives will require of some or all of the improvements, with a remainder parcel left, which is suitable to rebuild functional improvements. The preferred Alternative B will have the least agricultural impact.

a. Type of agriculture that will require full acquisitions versus partial acquisitions.

	Alternative			
	Alt 1	Alt A	Alt 2	Alt B
	Partial Acquisition	Partial Acquisition	Partial Acquisition	Partial Acquisition
Row Crops	28	25	30	20
Trees	3	1	1	1
Livestock	7	6	1	1
Other	0	0	0	0

II. REPLACEMENT AREA

A. Residential

Describe in relationship to the local town/community and to the Displacement Area:
The housing stock of Hollister and San Benito County is typical for a small rural farm town with minimal industry. The availability of housing varies with the time of year. Peak agricultural seasons of summer and fall find few vacant houses or apartments for rent, because of the influx of seasonal labor. There are many houses available for sale, the market is slow, and availability would meet the requirements of relocation for this project.

There have been several new subdivisions and housing stock constructed in Hollister over the past five years. There is a demand for affordable housing according to local realtors. The demand for used houses is constant.

The two main cities within San Benito County are Hollister and San Juan Bautista contain the majority of the housing stock.

1. Housing stock:

a.	Number of single family residences	14,024
b.	Number of multiple family units	3001
c.	Number of mobile homes	785
d.	Total housing units	17,814

"Table DP-4. San Benito County, CA Census Quick Facts, Census 2009"

2. Gross Monthly Rent of San Benito County rental units:

Less than $200	186	3.5%
$200-$299	121	2.3%
$300-$499	236	4.5%
$500-$749	579	11.0%
$750-$999	958	18.3%
$1,000-$1499	1,634	31.2%
$1,500 or more	1,527	29.1%
No Cash Rent	341	5.5%

Median Monthly Rental Rate $1,151

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A. Residential

3. Housing Occupancy:

Occupied housing units	16,671	93.6%
Vacant housing units	1,143	6.4%
Home owner vacancy rate		0.8%
Renter occupied vacancy rate		3.7%

"Table DP-1. Profile of Selected Housing Characteristics, Census 2009"

4. Housing characteristics

Residential housing characteristics within the project displacement area are mixed. The proposed project and its alternative closely follow the existing State Route 25, which is a mix of single-family homes, ranchettes and farmstead housing. In some cases the farmsteads also provide housing for their field workers on a seasonal basis. The impacted houses are not within traditional neighborhoods, but situated in a rural area of San Benito County.

Houses impacted by the alternatives are modest in size, in good to fair condition, they are older houses constructed from 2 to 50 years ago. Over the past 10 years, some have been remodeled; the majority of the houses are functional. Some of the houses are newer and well kept while others suffer from deferred maintenance. The predominant housing types for this area are single-family residences.

All of the houses impacted by this project have access to shopping and schools.

5. Average prices of typical single-family homes that are DS&S, in San Benito County:

Less than $50,000	143	1.3%
$50,000-$99,999	183	1.7%
$100,000-$149,999	221	2.0%
$150,000-$199,999	144	1.3%
$200,000-$299,999	954	8.6%
$300,000-$499,999	2,282	20.6%
$500,000-$999,999	840	9.0%
$1,000,000 or more	977	8.8%
Median House Price	$594,900	

"Table DP-4. Profile of Selected Housing Characteristics, Census 2009"

B. Residential Replacements Available on the Market

Current stock of relocation housing available for displaces, information provided by the San Benito County Association of Realtors and the *Hollister Free Lance* newspaper, January 2011.

Manufactured and Mobile Homes	50
Townhouses and Condos	285
Single Family Residences	508
Total Residential Replacement Stock	843 units

C. Business and Nonprofit Replacement:

1. Number of business sites that will be available for rent, purchase, or development:

	Alternative			
	Alt 1	**Alt 2**	**Alt A**	**Alt B**
Construction	5	5	5	5
Manufacturing	36	36	36	36
Retail	9	15	15	15
Government				
Nonprofit				
Service	17	17	17	17
TOTAL	71	71	71	71

This does not include lots that could be developed for industrial and business use that could be developed on lots within the Airport Industrial Development Complex that is within one mile east of the project area.

Provided by the San Benito County Association of Realtors and the *Hollister Free Lance* newspaper.

2. Discuss difficulties the businesses may encounter in finding replacement property because of:
   a. Replacement site requirements:
      In 2003, the County had a moratorium on new construction, because of water quality issues and the construction of a new water treatment plant. This construction moratorium was to hold the construction of new businesses and housing at a rate of one percent per year. There is no longer a moratorium on construction.
   b. Lease rates or purchase price:
      At the time of appraisal the compensation should be adequate for the displacee to replace their existing facility with a functional similar facility.
   c. Financial capacity of the businesses to accomplish the move:
      Businesses affected by this project appear to have the financial ability to replace themselves with relocation and acquisition monies that will be paid the displacement business.
   d. Special services that may be needed to assist businesses relocate (e.g., rezoning, reduced CUP costs, advanced payments, construction of replacement site, professional services to plan the move or obtain replacement site, business loans, special consideration by the local agency)

      At the "public meeting" for this project held in Hollister, Public Officials expressed a desire to work with all persons businesses and services that may require relocation for the construction of this project. This was reaffirmed with a recent visit with the San Benito Association of Governments who shared they will do everything to facilitate relocation of businesses in the project area.

3. Discuss issues the employees may have if the business relocates as planned:
   There does not appear to be any issues that would impact employees and their ability to work at any of the impacted businesses.

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4. Discuss issues the employees may have if the business cannot relocate as planned: There appear to be adequate resources that would not prevent the businesses from relocating within their existing community.

C. Residential Replacement:

1. Section 8 rental limits: The latest and most current information that is available from the San Benito County Housing Authority is listed below.

County of San Benito, California
Fair Market Rents
Effective October 1, 2011

This table shows the Fair Market Rents established by the Department of Housing and Urban Development. The Fair Market Rent is the 40th percentile of existing rents in the area. These figures are not the maximum rent the Housing Authority will pay to owners. That figure is determined using the Housing Authority's own studies of the local rental market.

Number of Bedrooms	FMRs
Mobile Home Space	$ 373
SRO	$ 464
0	$ 847
1	$1,147
2	$1,276
3	$1,808
4	$2,238

San Benito County Income Limits for Federal Programs
Effective May 14, 2010
Area Median: $74,100

Number of Persons in Family	30% of Median	50% of Median	80% of Median
1	$17,050	$28,400	$41,500
2	$19,500	$32,450	$51,550
3	$21,950	$36,500	$58,000
4	$24,350	$40,550	$64,400
5	$26,300	$43,850	$69,600
6	$28,250	$47,050	$74,7500
7	$30,200	$50,300	$79,900
8	$32,150	$53,550	$85,050

C. Residential Replacement: Schedule of Payments Standards
Effective October 1, 2010

The figures in these tables are established by the Housing Authority and reflect 90 to 110 percent of the Fair Market Rent. They are used to calculate how much assistance the Housing Authority will provide to families in the Housing Choice Voucher Program. These figures are not the maximum rent the Housing Authority will pay to owners. That figure is determined using the Housing Authority's own studies of the local rental market.

Number of Bedrooms	Santa Cruz County	Hollister & San Juan Bautista
SRO*	$ 760	$ 597
0**	$1,024	$ 796
1	$1,234	$1,078
2	$1,609	$1,199
3	$2,315	$1,700
4	$2,386	$2,104
5	$2,685	$2,419
6	$3,036	$2,735
7	$3,386	$3,050
8	$3,736	$3,366
Mobile Home Space	$630	$480

* Single Room Occupancy
** Studio

2. Replacement neighborhood is not homogeneous to displacement area.
This project is proposed in a semi-rural agricultural area and at the time of relocation there could possibly be no relocation resources available. To be realistic, these displaces will most likely have to relocate to the more urban area of Hollister or San Juan Bautista where the majority of the housing stock is centered, provided they do not choose to re-build on their remainder parcel.

3. Displacement neighborhood: Is a mix of rural ranchettes, businesses and farms. The age and condition of improvements varies from parcel to parcel. Some parcels are developed with new good quality improvements, while others have improvements that suffer from functional obsolesce.

4. Condition of units being displaced: Fair☐ Average☒ Good☐

5. Compared to condition of units in replacement area. Fair☐ Average☒ Good☐

6. Number of mobile home parks directly impacted by the project is none.

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D. Total Residential Replacement Stock 2009 Data

	DISPLACEMENTS	PROJECT AREA	REPLACEMENT AREA
Total Housing Units	13	Same	17,814
% Owner Occupied	55%	Same	68.2%
% Renter Occupied	45%	Same	31.8%
Total Housing Units Vacant	5%	Same	843
Vacancy Rate	1%	Same	6.4%
Housing Units For Sale	491	Same	502
Housing Units For Rent	73	Same	76
Persons per Household	3.82	Same	3.82
Median Housing Value	$284,000	Same	$284,000

III. RELOCATION RESOURCES

A. Adequate resources (availability, funds, staffing, time) exist for all displacees except (list):

Owner occupied SFR	N/A	Tenant occupied multi-res	N/A
Owner occupied duplex	N/A	Tenant occupied sleeping rooms	N/A
Owner occupied multi-res	N/A	Mobile homes	N/A
Tenant occupied SFR	N/A	Nonresidential	N/A
Tenant occupied duplex	N/A	Nonprofit	N/A

Explain how relocation will occur for those listed: Over a 24 month period appraisal, acquisition, payment of severance damages and relocation assistance payments will be made to displacees for a professional relocation of all parties that may require moving from impacted parcels.

B. The replacement area chosen and used as a basis for relocation resources is:
The relocation area studied for this report comprise the San Benito County cities of Hollister and San Juan Bautista, all have similar amenities as those present in the displacement area. In some cases housing on farms and ranchettes may be re-constructed on the remainder parcel.

C. Market availability is expected to remain adequate through the time of displacement. The current real estate market in the project area is providing an adequate supply and a stable if not decreasing cost for replacement parcels.

IV. RELOCATION PROBLEMS AND PROGRAMS

A. Relocation Problems discussed in detail, especially for the following categories. Just because no one fits one of the categories below, does NOT mean you DON'T have a problem.

Elderly*	Yes ☒	No ☐	Minorities	Yes ☒	No ☐
Low Income (30%)	Yes ☒	No ☐	Overcrowded Residence	Yes ☒	No ☐
Low Income (Poverty)	Yes ☒	No ☐	Handicapped*	Yes ☒	No ☐
Last Resort Housing Const	Yes ☒	No ☐	Minority Business	Yes ☒	No ☐
Marginal Business*	Yes ☒	No ☐	Other	Yes ☒	No ☐
Lack of Availability	Yes ☒	No ☐			

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* All indicate special advisory assistance will be needed.
Without the opportunity to meet and interview the displacees of this project, it has to be assumed that all of the above are a possibility.

IV. RELOCATION PROBLEMS AND PROGRAMS

1. Residential and Mobile Home Displacees:
   a. The Department will provide uniform and equitable treatment of persons displaced from their homes.
   b. Comparable replacement housing will be offered the displacee.
   c. Replacement housing will be Decent Safe and Sanitary.
   d. Residents not lawfully present in the United States are not eligible to receive relocation payments and assistance.
   e. If a displacee qualifies as a displaced person, they are entitled to reimbursement of their moving costs and certain related expenses incurred in moving.
   f. Replacement Housing Payments depend on whether the displacee is an owner or tenant and their length of occupancy.
   g. In some cases the displacee may elect to forego the Rent Differential payment and elect that they receive a Down Payment Option instead.
   h. In some locations where the available housing is insufficient to provide necessary housing, Caltrans will utilize Last Resort Housing. Last Resort Housing allows Caltrans to construct, rehabilitate or modify housing in order to meet the needs of the displacee.
   i. All displacees will be offered relocation advisory assistance for the purpose of locating a replacement property.
   j. All eligible displacee have a freedom of choice in the selection of their replacement housing.

2. Business, Farm or Nonprofit Organization:
   a. The Department will work toward to ensure that persons displaced are treated fairly, consistently and equitably so that such persons will not suffer disproportionate injuries as a result of projects designed for the benefit of the public as a whole.
   b. The Relocation Advisory Assistance Program, which is to aid in the locating of a suitable replacement property.
   c. Relocation Payments for the displacee for certain costs involved in the move to the new property, can be either "actual reasonable moving costs", "self-move agreement" or In-Lieu payment.
   d. Loss of Goodwill is considered an acquisition cost.
   e. Displaced businesses, farms and nonprofit organizations are entitled to reimbursement for actual reasonable expenses incurred in searching for a replacement property.
   f. Displaced businesses, farms and nonprofit organizations may be eligible for a payment for the actual direct loss of tangible personal property, which is incurred as a result of the move or discontinuance of the operation.
   g. Displaced businesses, farms and nonprofit organizations may be eligible for a payment, not to exceed $10,000, for expenses actually incurred in relocating and reestablishing the enterprise at the replacement site.
   h. All displacees will be offered relocation advisory assistance for the purpose of locating a replacement property.
   i. Your relocation benefits will not have an adverse effect on your Social Security Eligibility, Welfare Eligibity or Income Taxes.

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B. Housing Impact:
This project will not significantly impact the local housing stock for the community except as outlined below. There may be a significant effect on the local community housing stock caused by Alternative(s):

Alternative 1 & A N/A **Alternative 2 & B** N/A

B. Conclusion:
It appears that the Relocation Assistance Program and the payment of severance damages will be adequate to provide for the needs of anyone affected by the project.

FINAL CONCLUSION: Number of impacts by Alternative.

Alternative 1

Alternative 1 would be 342 feet in width including the median and drainage system, not including the frontage roads on one or both sides. The proposed Route Adoption Alignment covers 11.2 miles. It would impact 68 parcels and over 523.33 acres. In addition a portion of seven parcels would be required for private access easements for frontage roads.

Alternative A
Alternative A would be 342 feet in width including the median and drainage system, not including the frontage roads on one or both sides. Alternative A would be constructed at the southeastern end of the Alternative 1 route adoption alignment. This Alternative is 3.8 miles long. This proposed Alternative would impact 48 properties and 179.93 acres which has more of an impact on acreage and parcels than the preferred Alternative B.

Parcels impacted by this alternative are diversified agricultural lands, housing, businesses, and a large recreational vehicle sales business. This segment will have mainly strip acquisitions off the frontage of the agricultural parcels. This alternative may require the payment of moving expenses for 80 recreation vehicles and boats out of the proposed right of way. A full acquisition and payment of Relocation Benefits to the businesses affected by this Segment would be required. Payments for damages and in some cases *Relocation Assistance Payments* would be offered to qualified occupants.

One of the most complicated relocation challenges of this alternative are the Flynn Mini Storage along with 80 recreation vehicles, which would require locations to relocate these vehicles.

The church appears to be newly constructed, though relocation resources are adequate, the chance of satisfying all church members with their new property would be a challenge.

South Valley Trailer sales has recently constructed this new facility for their sales. The challenge of this relocation would be to identify a property that would offer a functionally similar location.

Alternative 2

Alternative 2 would be 240 feet in width including the median and drainage system, not including the frontage roads on one or both sides. The proposed Route Adoption Alignment covers 11.2 miles. It would impact 38 parcels and 400.62 acres. In addition a portion of nine parcels would be required for private access easements for frontage roads.

The addition of additional frontage roads decreased the impact of this alternative on businesses and residents.

Alternative B

Alternative B would be 240 feet wide or more, including the median and drainage system but not including frontage roads. The alignment impacts 19 property owners and 124.32 acres. This alignment has the least impact on the surround community and is the preferred alternative and supported by documentation of available replacement properties.

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State of California
DEPARTMENT OF TRANSPORTATION

Business, Transportation and Housing Agency

Memorandum

Flex your power!
Be energy efficient!

To: Lou Birdwell
Right of Way Agent
Environmental Mitigation and
Community Studies Branch, Central Region

Date: April 8, 2010

File: 05-48540
05-SBt-25 (PM 51.5/60.1)
04-SCl-25 (PM 0.0/2.6)
and 05-SBt-156 (PM R10.5/R12.2)

From: G. William 'Trais' Norris III
Branch Chief
Sierra Pacific Environmental Analysis Branch

Subject: Change to Purpose Statement

The Purpose statement for the SR25 Widening and Route Adoption project has changed. The new wording is

The purpose of the proposed route adoption project is to:

- Select a corridor for State Route 25 between Hollister and Gilroy that will accommodate existing and future travel demand.
- Facilitate local and regional land use planning by identifying future right-of-way needed for the State Route 25 corridor.

The purpose of the proposed build project is to:

- Improve traffic flow and reduce delays on State Route 25 between San Felipe Road in Hollister and Hudner Lane in San Benito County.
- Increase capacity along State Route 25 between San Felipe Road in Hollister and Hudner Lane in rural San Benito County.

The new purpose does not affect the conclusions of the Draft Relocation Impact Report for this project, last revised in November 2008.

c: Project file

State of California
Department of Transportation
DRAFT RELOCATION IMPACT REPORT

New Expressway and Route Adoption
San Benito and Santa Clara County, CA
Hollister to Gilroy Widening
05-SBT-25-PM 51.5/60.1
04-SCI-25-PM 0.0/2.6
05-SBT-156-PM R10.5/R12.2
EA: 05-485400

SUMMARY OF ALTERNATIVES FOR DRAFT RELOCATION IMPACT REPORT:

The five alternatives under evaluation are:

The five alternatives under evaluation are:

- Alternative 1: A Route Adoption Alignment (11.2 miles)
- Alternative 2: A Route Adoption Alignment (11.2 miles)
- Alternative A: A 3.8 mile constructed portion of Alternative 1 Route Adoption Alignment
- Alternative B: A 3.8 mile constructed portion of Alternative 2 Route Adoption Alignment
- No Action: If this alternative is chosen no action would be taken and no further improvements would be made to Route 25 within these limits other than those already programmed/funded or under construction.

The undersigned has completed this report of the above-referenced project and recommends approval of the report.

Louis Birdwell
LOUIS BIRDWELL
Associate Right of Way Agent

The undersigned has reviewed and approved this report.

MARIA TOLES
Chief, Relocation Assistance Branch
District-06 Right of Way

JAMIE LUPO
Office Chief, Central Region
Right of Way

Date: 11/20/08

Distribution: Original File
c: Region/District R/W Manager
Region/District R/W Branch Managers

Project Manager
Environmental Planning Branch-Design

Attachments:
Area Map

LB/tl Rev 11/20/08

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Project Vicinity Map

SR25 Widening and Route Adoption Project, Hollister to Gilroy
PM 51.5/60.1, PM 0.0/2.6, PM R10.5/R12.2
5-SBt-25, 4-SCl-25, 5-SBt-156
05-485400

Caltrans
07-30-08_jcl_eeb

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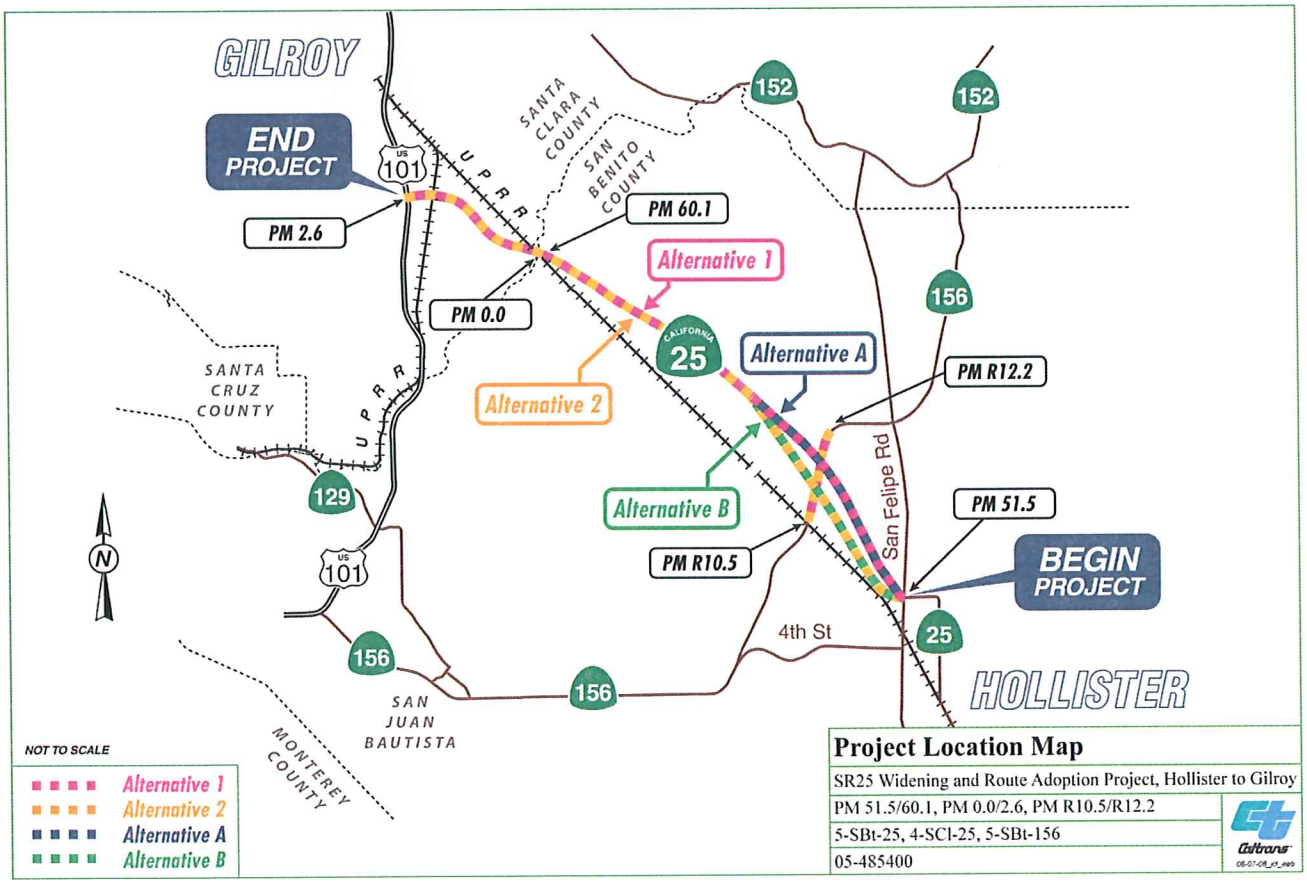
GILROY
END PROJECT
PM 2.6
US 101
UPRR
SANTA CLARA COUNTY
SAN BENITO COUNTY
PM 60.1
Alternative 1
PM 0.0
Alternative 2
CALIFORNIA 25
Alternative A
PM R12.2
152
152
156
SANTA CRUZ COUNTY
129
Alternative B
PM R10.5
PM 51.5
San Felipe Rd
BEGIN PROJECT
4th St
25
HOLLISTER
156
156
SAN JUAN BAUTISTA
MONTEREY COUNTY
N
NOT TO SCALE
Alternative 1
Alternative 2
Alternative A
Alternative B
Project Location Map
SR25 Widening and Route Adoption Project, Hollister to Gilroy
PM 51.5/60.1, PM 0.0/2.6, PM R10.5/R12.2
5-SBt-25, 4-SCl-25, 5-SBt-156
05-485400
Caltrans

I. SUMMARY AND PROJECT DATA

A. Purpose of Study:

The purpose of this study is to provide the Department of Transportation, local agencies and the public with information as to what effect a proposed "route adoption" and "new expressway alternative" for State Route 25 would have on the residential and nonresidential occupants within the proposed project alternatives. Specifically, this report is concerned with potential problems that may be caused by the displacement of existing structures and their occupants.

The California Department of Transportation (Caltrans), in cooperation with San Benito Council of Governments and Santa Clara Valley Transportation Authority is evaluating the conversion of 11.2 miles of the existing State Route 25 two-lane conventional highway to a four-lane expressway in San Benito and Santa Clara counties. The Draft Environmental Impact Report and Environmental Impact Statement includes two proposed projects: (1) TIER I route adoption and (2) a proposed construction project within the limits of the proposed route adoption.

1. The route adoption study extends from San Felipe Road within the City of Hollister (post mile 51.5) to the San Benito/Santa Clara County line (post mile 60.1) and on to the end of State Route 25 at U.S. 101 south of the city of Gilroy (post miles 0.0 to 2.6 in Santa Clara County).

2. The proposed construction project limits extend 3.8 miles in San Benito County, from San Felipe Road in Hollister to just west of Hudner Lane (post miles 51.5 to 55.3). The existing 2-lane conventional highway would be replaced by a 4-lane expressway.

State Route 25, a two-lane conventional highway, runs northwest through the relatively flat terrain of the Hollister Valley, terminating at U.S. 101 after crossing the Pajaro River and Carnadero Creek. Agriculture dominates the surrounding landscape, and farmsteads and houses are scattered along the length of the study area. Residences, retail businesses, and agriculture-related commercial operations are more concentrated at both ends of the route adoption study area, on the outskirts of Gilroy and Hollister.

B. Limits, Purpose and Need of Project:

The Route Adoption study extends from San Felipe Road within the City of Hollister (post mile 51.5) to the San Benito/Santa Clara County line (post mile 60.1) and on to the end of State Route 25 at U.S. 101 south of the City of Gilroy (post miles 0.0/2.56 in Santa Clara County).

The proposed construction project limits extend 3.8 miles in San Benito County, from San Felipe Road to just west of Hudner Lane (post miles 51.5/55.3).

Route 25, a two-lane conventional highway, runs northwest through the relatively flat terrain of the Hollister Valley, terminating at Route 101 after crossing the Pajaro River and Carnadero Creek. Agriculture dominates the surrounding landscape, and farmsteads and houses are scattered along the length of the study area. Residences, retail businesses, and agriculture-related commercial operations are more concentrated at both ends of the route adoption study area, on the outskirts of Gilroy and Hollister.

Purpose

The purposes of the proposed project is to:

- Select a route adoption corridor for State Route 25 between Hollister and Gilroy for planning purposes.
- Improve traffic flow, reduce delays, and enhance the movement of goods on State Route 25 between San Felipe Road in Hollister and Hudner Lane in San Benito County.
- Increase capacity along State Route 25 between San Felipe Road in Hollister and Hudner Lane in San Benito County.

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Need
A route adoption alignment would be defined to ensure that the appropriate area is incorporated into city and county general and specific plans for future growth and development.

Slow moving farm equipment, trucks, and local and commuter traffic share this two-lane roadway. An increasing number of vehicles travel this stretch of State Route 25 and, during peak commute hours, the roadway is congested. Traffic flow is delayed by vehicles turning onto and/or out of the many driveways and local roads, affecting the flow of the faster moving vehicles. Many commuters whose destination is beyond the local area take local roads (Bloomfield Road, Frazier Lade Road, and Shore Road) as shortcuts between State Route 25 and State Route 156 and also State Route 152. Significant commercial truck traffic travels through the area on State Route 25, and is subject to delays as well. A new route alignment should be adopted so that the appropriate area for a future expressway can be incorporated into the San Benito and Santa Clara County general plans now, before future development occurs along this stretch of highway.

Serving as a bedroom community for the Bay Area since about 1990, San Benito County, especially in the project area, has been growing rapidly. According to the U.S. Census Bureau, between 1990 and 2000, San Benito County's population increased by 45.1 percent, with most of the county's population growth in or near the two incorporated cities of Hollister and San Juan Bautista. Between 2003 and 2004, however, population growth in the county slowed down and increased by only 1.4 percent.

Economic growth in the neighboring county of Santa Clara has created pressure for residential growth in San Benito County where housing is more affordable. As a result, San Benito County's population growth rate has outpaced the State's and the proportion of employed persons commuting from San Benito County to Santa Clara County each day has grown. According to the U.S. Census Bureau, almost half of the residents in San Benito County, including its two incorporated cities, commute outside San Benito County for employment. The number of registered vehicles and registered drivers has also grown accordingly. This growth trend has increased demands on the regional transportation system.

C. Description of the three alternatives studied:

The five alternatives under evaluation are:

- Alternative 1: A Route Adoption Alignment (11.2 miles)
- Alternative 2: A Route Adoption Alignment (11.2 miles)
- Alternative A: A 3.8 mile constructed portion of Alternative 1 Route Adoption Alignment
- Alternative B: A 3.8 mile constructed portion of Alternative 2 Route Adoption Alignment
- No Action: If this alternative is chosen no action would be taken and no further improvements would be made to Route 25 within these limits other than those already programmed/funded or under construction.

Route Adoption Alignment Alternatives (1 and 2)

Both of the route adoption alternatives, Alternatives 1 and 2, are 11.2 miles long, and share the same alignment from approximately ½ mile south of Shore Road (post mile 56.1) in San Benito County to U.S. 101 in Santa Clara County. Between post mile 56.1 in San Benito County and the southern end of the proposed project at San Felipe Road, the two alignment alternatives separate: Alternative 1 proposes to align the future four-lane expressway generally to the east (or north) of the existing two-lane north/south highway while Alternative 2 would align mostly to the west (or south) of the existing two-lane highway. The alignments would be wide enough to accommodate a future four-lane expressway with a 62-foot median (342 feet) and frontage roads on one or both sides. The alignments would also be wide enough to accommodate a future interchange near the existing intersection of State Route 25 and State Route 156 and a future State Route 25/U.S. 101 interchange north of the existing interchange. Other improvements include new bridges over Carnadero Creek and the Pajaro River, and overcrossings of the Union Pacific Railroad Hollister branch line and the Union Pacific main line just east of U.S. 101.

Build Alternatives (A and B)

Both build alternatives, Alternative A and Alternative B would extend 3.8 miles in San Benito County, from San Felipe Road (post mile 51.5) to just west of Hudner Lane (post mile 55.3). Unlike the route adoption alternatives, the build alternatives propose a realigned and widened at-grade intersection at State Route 25 and State Route 156 instead of an interchange. Both construction alternatives would transition back to the existing two-lane highway just west of Hudner Lane. For Alternative A, an undercrossing would be built at the gravel quarry driveway to provide access to this parcel.

No Action Alternative

The No-Action Alternative would result in no action being taken, and no further improvements would be made to State Route 25 within the route adoption limits other than the State Route 25 Safety and Operations Enhancement Project. It is anticipated that work will begin early in 2009 and will be completed by early 2010. Work will begin just sough of Hudner Lane (post mile 55.1) and end just south of the Union Pacific Railroad crossing (post mile 60.0) in San Benito County. Roadway widening will consist of two 10-foot outside shoulders, two 120-foot travel lanes, two 5-foot inside shoulders and placement of a temporary concrete median barrier. Rumble strips will be installed on all inside and outside shoulders. The Hudner Lane and Shore Road intersections will be improved.

Corridor

There is a "core" corridor common to all alternatives. All alternatives are aligned with the existing State Route 25.

Alternatives 1 and A are designed along and near the existing State Route 25 from the beginning to the intersection of State Route 25 and State Route 156 Bypass at which point the alternatives will merge into a similar alignment as Alternative 2.

Alternatives 2 and B are designed to the west of the existing State Route 25 from the beginning to the intersection of State Route 25 and State Route 156 Bypass, at which point the alternatives will merge into a similar alignment as Alternative 1.

D. Basis of Findings:

The sources used in the preparation of this report were both primary and secondary in nature, and include: The "U.S. Census", City of Hollister, San Benito County Housing Authority, California Department of Finance, Hollister Free Lance, and Hollister Realtors-Multiple Listing Service provided current data and statistical information for this report.

E. Description of the Displacement Area:

Alternative 1 and Alternative A

Parcels impacted by this alternative are diversified agricultural lands, housing, businesses, church and sheriffs target range, recreational vehicle storage and a newly constructed large recreational vehicle sales business. This segment will have mainly strip acquisitions off the frontage of agricultural parcels. There is a likelihood of full acquisition and payment of Relocation Benefits to the occupants/businesses affected by this Segment because several of these parcels are newly constructed.

Alternative 2 and Alternative B

Parcels impacted by this alternative are diversified agricultural lands, with minimal impact to developed improvements. This alternative adopts a new right of way Alternative west of the existing SR-25 along with frontage roads. This segment will also require strip acquisitions off the frontage of agricultural parcels. The likelihood of full acquisition and payment of Relocation Benefits to the occupants/businesses is significantly less with this alternative compared to Alternative 1. This alternative will not impact the church, or new commercial improvements. The payment of severance damages will be required to the landowners and in some cases *Relocation Assistance Payments*.

F. Estimated displacement units by Alternative:

Residential:	Alt 1	Alt A	Alt 2	Alt B
Owner Occupants of Single Family Residences:	14	12	5	3
Tenant Occupants of Single Family Residences:	2	0	4	4
Tenant Occupants of Multiple Unit Residences:	2	2	2	2
Owner Occupants of Mobile Homes:	3	0	3	0
Tenant Occupants of Mobile Homes:	0	0	0	0
TOTAL RESIDENTIAL UNITS:	21	14	14	9
TOTAL PERSONS:	70	53	46	30

Nonresidential:	Alt 1	Alt A	Alt 2	Alt B
Commercial Businesses:	5	3	1	1
Industrial/Manufacturing Businesses:	2	2	1	1
Nonprofit Organizations:	1	1	0	0
Agricultural/Farms:	2	2	2	2
TOTAL NONRESIDENTIAL UNITS:	10	8	4	4
TOTAL UNITS:	31	22	18	13

Note: Relocation of personal property only should be counted separately and noted whether the items will be moved to the remainder or to a separate site.

G. Type of Residential Displacement Improvements:

	Alt 1	Alt A	Alt 2	Alt B
Single Family Residence	14	12	9	7
Duplex/Triplex (Multi-Res)	2	2	2	2
Apartments (Multi-Res) 4 or more	2	0	0	0
Sleeping rooms/Shared Quarters	0	0	0	0
Mobile Homes	3	0	3	0
TOTAL UNITS:	21	14	14	9

H. Adequate relocation resources exist for:

	Yes	No
Residential owners	☒	☐
Residential tenants	☐	☒
Mobile Homes	☒	☐
Businesses	☒	☐
Nonprofit Organizations	☐	☒
Agriculture	☒	☐

On Alternative 1 and A, it will be difficult to replace the Abundant Life Church that will require full acquisition of this new church building, youth facility and single family home. The impact to the San Benito County Sheriff's department's parking at their gun range will have minimal impact, with new design that will miss their parking area. Valley Trailer sales has constructed a new building and parking area for their trailers, after being displaced by the intersection safety project at State route 156 Business Route and State Route 25 Hollister Bypass.

I. Adequate relocation resources exist for:

1. The replacement neighborhood studied is the City of Hollister and surrounding rural areas of San Benito County. It may be impossible to find replacement housing in the rural farm areas, which will require a replacement housing search, within the City of Hollister and other areas of rural San Benito County.

2. The relocation areas are comparable in terms of amenities, public utilities, and accessibility to public services, transportation and shopping. Yes ☒ No ☐

3. The relocation resources are affordable to residential displacees given the use of replacement housing payments.

4. There are public projects in the area that will displace other families or require additional housing, there is adequate available housing that will provide "decent safe and sanitary" housing.

5. The State's relocation program is adequate to successfully relocate all displacees.

6. There are not special/significant relocation problems associated with this project.

7. The Last Resort Housing Program payments will be utilized to relocate residential households being displaced that will require "replacement housing payments", in excess of the statutory limit.

	Alt 1 & Alt A	Alt 2 & Alt B
Percentage of owners	50%	50%
Percentage of renters	50%	50%

8. The construction of replacement housing under the Last Resort Housing Program will be possible on agriculture properties that are improved with single family residences and farm husbandry buildings.
9. A field office would be beneficial for this project and route adoption, considering the commute distance from San Luis Obispo to Hollister and the cost of commuting.

J. DISPLACEMENT AREA DETAILED ANALYSIS

Santa Clara, portion of the project will affect two or three businesses, plus the acquisition of access rights for parcels off of State Route 101; these impacts will be discussed in detail within the State Route 101 and State Route 25 Relocation Impact Document, prepared by District-04.

1. Residential Displacements

Alternative 1 and A

Parcels impacted by this alternative are in a diversified fringe area of Hollister developed with housing on ranchettes and farm housing on agricultural lands. There are no impacts to subdivisions or multi-family dwellings. The quality and size of these houses varies greatly. Most remaining housing will be served by frontage roads or existing County roads.

Alternative 2 and B

Parcels impacted by this alternative are in a diversified fringe area of Hollister developed with housing on ranchettes and farm housing on agricultural lands. There are no impacts to subdivisions or multi-family dwellings. The quality and size of these houses varies greatly. Most remaining housing will be served by frontage roads or existing County roads.

2. Business and Nonprofit

Some businesses impacted by these alternatives may require the payment of severance damages and in some cases full acquisition of the structure because it will not be functional in the after condition. The ability of the business to rebuild and establish new parking on the remainder would have to be considered on a case by case basis during appraisal with appropriate severance damages or Relocation Assistance or in some instances both provided to the owner and/or tenants. There is always the possibility that an owner, manager

or others may reside on the premise of a business, if so Relocation Assistance will be offered. It is assumed that the businesses impacted by this project are in compliance with allowable land uses as specified by the City of Hollister and San Benito County.

Alternative 1 and A
Businesses impacted by this project are in compliance with allowable land uses as specified by the City of Hollister and San Benito County. Several of the businesses impacted, are relatively new in age, two of these businesses is a non-profit church and a newly constructed recreational vehicle business. There is a county sheriff gun range that will maintain their parking. Some businesses are setback and will have minor impact from this project. There is the likelihood of full acquisition and payment of Relocation Benefits to the occupants/businesses affected by this Segment, because several of these parcels have been constructed recently and are unique in their use. Relocation of the 80 plus recreation vehicles and boats will be a challenge, but there it is likely that an adjacent parcel can be obtained and the business improve the land and move these tenants.

Alternative 2 and B
This alternative has less impact to the business community than Alternative 1, notably the recreation vehicle sales company, a newly constructed trailer company, mini storage company with 80 plus recreational vehicles and boats along with a church and sheriffs target range. A gravel mine ¼ mile south of the SR-25 and SR-156 interchange will not be impacted by this Alternative. Some businesses are setback and will have minor impact from this project. There is the possibility of full acquisition and payment of Relocation Benefits to the occupants/businesses affected by this Segment.

Santa Clara County Route Adoption
Some businesses impacted by this Route Adoption may require the payment of severance damages and in some cases full acquisition of the structure because it will not be functional in the after condition, because of parcel acquisition and access controls.

a. Number of businesses directly impacted by the project:

	Alternative			
	Alt 1	**Alt A**	**Alt 2**	**Alt B**
Construction	0	0	0	0
Manufacturing	2	2	1	1
Retail	5	5	0	0
Government	0	0	0	0
Nonprofit	1	1	0	0
Service	0	0	1	1
TOTAL	8	8	2	2

b. Age of business:

	Alternative			
	Alt 1	**Alt A**	**Alt 2**	**Alt B**
1 - 3 years	0	0	0	0
4 - 7 years	0	0	0	0
8 - 15 years	3	3	1	1
Over 15 years	5	5	1	1

c. Estimated number of employees:
Note: Small business is defined as less than 500. Over 500 = No reestablishment payment.

	Alternative

	Alt 1	Alt A	Alt 2	Alt B
1 - 20	5	5	1	1
21 - 100	3	3	1	1
101 - 500	0	0	0	0
Over 500	0	0	0	0

d. Minority Owned Businesses
There is a possibility that some of these businesses impacted by the project and route adoption that they are minority owned.

e. Number of the different type of facilities:

	Alternative			
	Alt 1	**Alt A**	**Alt 2**	**Alt B**
Strip Commercial	0	0	0	0
Small Shop-Center	0	2	1	1
Regional Center	0	5	0	0
Single Structure	5	0	0	0
Mixed Residential	3	1	0	0
Industrial Park	0	0	1	1
Low Rent Area	0	0	0	0

One unique displacement of note for alternative 1 is the Flynn Road Mini Storage, which will require the relocation of 80 recreation vehicles and boats, there appears to be minimal impact to the actual mini storage business. To relocate these vehicles and boats will require an expanded relocation area, to surrounding counties and cities. Relocation resources are available, but the time to relocate these boats and recreation

vehicles will be considerable. It does not appear that anyone lives in these vehicles. Alternative 2 will not affect this parcel. There is a parcel for sale east of the Mini Storage that could be acquired and improved to relocate the 80 recreational vehicles.

3. Agricultural Impact:

The agricultural land impacted by this project varies from class "A" fertile soil, rolling hill pastureland to swamp and overflow creek/river frontage. Both alternatives propose to acquire strips of land off the frontage of agricultural parcels abutting the project, and in some cases for new or realignment of local roads. Both alternatives and route adoption allow for frontage roads to reduce the number of agricultural parcels that would be landlocked. Both alternatives will have some excess parcels, but considering the length and scope of this project's alternatives and route adoption, the acquisition of excess parcels is minimal. On many of these ranches/farms/ranchettes, the different alternatives will require of some or all of the improvements, with a remainder parcel left, which is suitable to rebuild functional improvements.

a. Type of agriculture that will require full acquisitions versus partial acquisitions.

	Alternative			
	Alt 1	**Alt A**	**Alt 2**	**Alt B**
	Partial Acquisition	Partial Acquisition	Partial Acquisition	Partial Acquisition
Row Crops	28	25	28	18
Trees	3	1	6	1
Livestock	7	6	6	1
Other	0	0	0	0

II. REPLACEMENT AREA

A. Residential

Describe in relationship to the local town/community and to the Displacement Area:
The housing stock of Hollister and San Benito County is typical for a small rural farm town with minimal industry. The availability of housing varies with the time of year. Peak agricultural seasons of summer and fall find few vacant houses or apartments for rent, because of the influx of seasonal labor. Houses for sale is static, and would meet the requirements of relocation for this project.

There have been several new subdivisions and housing stock constructed in Hollister over the past five years. There is a demand for affordable housing according to local realtors. The demand for used houses is constant.

The two main cities of San Benito County, Hollister and San Juan Bautista contain the majority of the housing stock.

1. Housing stock:

a.	Number of single family residences	17,723
b.	Number of multiple family units	2,109
c.	Number of mobile homes	858
d.	Total housing units	20,690

"Table DP-4. San Benito County, CA Census Quick Facts, Census 2005"

2. Gross Monthly Rent of San Benito County rental units:

Less than $200	132	2.8%
$200-$299	157	3.3%
$300-$499	371	7.8%
$500-$749	1,472	30.8%
$750-$999	1,332	27.9%
$1,000-$1499	808	16.9%
$1,500 or more	240	5.0%
No Cash Rent	265	5.5%
Median Monthly Rental Rate	$765	

3. Housing Occupancy:

Occupied housing units	15,885	95.5%
Vacant housing units	614	3.7%
Other vacant housing	134	.8%
Home owner vacancy rate		1.0%
Renter occupied vacancy rate		2.7%

"Table DP-1. Profile of Selected Housing Characteristics, Census 2000"

4. Housing characteristics

Residential housing characteristics within the project displacement area are mixed. The proposed project and its alternative closely follow the existing State Route 25, which is a mix of single-family homes, ranchettes and farmstead housing. In some cases the farmsteads also provide housing for their

field workers on a seasonal basis. The impacted houses are not within traditional neighborhoods, but situated in a rural area of San Benito County.

Houses impacted by the alternatives are modest in size, in good to fair condition, they are older houses constructed from 2 to 50 years ago. Over the past 10 years, some have been remodeled; the majority of the houses are functional. Some of the houses are newer and well kept while others suffer from deferred maintenance. The predominant housing types for this area are single-family residences.

All of the houses impacted by this project have access to shopping and schools.

5. **Average prices of typical single-family homes that are DS&S, in San Benito County:**

Less than $50,000	27	0.3%
$50,000-$99,999	87	0.9%
$100,000-$149,999	283	3.0%
$150,000-$199,999	963	10.3%
$200,000-$299,999	3,983	42.4%
$300,000-$499,999	3,167	33.7%
$500,000-$999,999	840	9.0%
$1,000,000 or more	35	0.4%
Median House Price	$284,000	

"Table DP-4. Profile of Selected Housing Characteristics, Census 2006"

B. Residential Replacements Available on the Market

Current stock of relocation housing available for displaces, information provided by the San Benito County Association of Realtors and the *Hollister Free Lance* newspaper.

Manufactured and Mobile Homes	27
Townhouses and Condos	24
Single Family Residences	335
Total Residential Replacement Stock	386 units

C. Business and Nonprofit Replacement:

1. Number of business sites that will be available for rent, purchase, or development:

	Alternative	
	Alt 1 & Alt A	**Alt 2 & Alt B**
Construction	5	5
Manufacturing	36	36
Retail	9	9
Government	0	0
Nonprofit	0	0
Service	17	17
TOTAL	67	67

This does not include lots that could be developed for industrial and business use that could be developed on lots within the Airport Industrial Development Complex that is within one mile east of the project area.
Provided by the San Benito County Association of Realtors and the *Hollister Free Lance* newspaper.

2. Discuss difficulties the businesses may encounter in finding replacement property because of:
   a. Replacement site requirements:
      Since September 2003, The County has had a moratorium on new construction, because of water quality issues and the construction of a new water treatment plant that should be on line running in

the Fall 2008. This construction moratorium was to hold the construction of new businesses and housing at a rate of one percent per year. The County and the San Benito Association of Governments are committed to help any businesses or residential parcels that would like to rebuild on the remainder, because they had provided their existing improvements for a public project.

b. Lease rates or purchase price:
At the time of appraisal the compensation should be adequate for the displacee to replace their existing facility with a functional similar facility.

c. Financial capacity of the businesses to accomplish the move:
Businesses affected by this project appear to have the financial ability to replace themselves with relocation and acquisition monies that will be paid the displacement business.

d. Special services that may be needed to assist businesses relocate (e.g., rezoning, reduced CUP costs, advanced payments, construction of replacement site, professional services to plan the move or obtain replacement site, business loans, special consideration by the local agency)
At the "public meeting" for this project held in Hollister, Public Officials expressed a desire to work with all persons businesses and services that may require relocation for the construction of this project. This was reaffirmed with a recent visit with the San Benito Association of Governments who shared they will do everything to facilitate relocation of businesses in the project area.

3. Discuss issues the employees may have if the business relocates as planned:
There does not appear to be any issues that would impact employees and their ability to work at any of the impacted businesses.

4. Discuss issues the employees may have if the business cannot relocate as planned:
There appear to be adequate resources that would not prevent the businesses from relocating within their existing community.

D. Residential Replacement:

1. Section 8 rental limits: The latest and most current information that is available from the San Benito County Housing Authority is listed below.

County of San Benito, California
Fair Market Rents
Effective October 1, 2006

This table shows the Fair Market Rents established by the Department of Housing and Urban Development. The Fair Market Rent is the 40th percentile of existing rents in the area. These figures are not the maximum rent the Housing Authority will pay to owners. That figure is determined using the Housing Authority's own studies of the local rental market.

Number of Bedrooms	FMRs
Mobile Home Space	$373
SRO	$464
0	$619
1	$838
2	$932
3	$1,321
4	$1,635
5	$1,880
6	$2,126
7	$2,371
8	$2,616

San Benito County Income Limits for Federal Programs
Effective March 8, 2006
Area Median: $74,100

Number of Persons in Family	30% of Median	50% of Median	80% of Median
1	$15,600	$25,950	$41,500
2	$17,800	$29,650	$47,450
3	$20,050	$33,350	$53,350
4	$22,250	$37,050	$59,300
5	$24,050	$40,000	$64,050
6	$25,800	$43,000	$68,800
7	$27,600	$45,950	$73,550
8	$29,350	$48,900	$78,300

Schedule of Payments Standards
Effective October 1, 2006

The figures in these tables are established by the Housing Authority and reflect 90 to 110 percent of the Fair Market Rent. They are used to calculate how much assistance the Housing Authority will provide to families in the Housing Choice Voucher Program. These figures are not the maximum rent the Housing Authority will pay to owners. That figure is determined using the Housing Authority's own studies of the local rental market.

Number of Bedrooms	Santa Cruz County	Hollister & San Juan Bautista
SRO*	$612	$485
0**	$850	$646
1	$1042	$875
2	$1,359	$973
3	$1,956	$1,379
4	$2,114	$1,707
5	$2,431	$1,963
6	$2,748	$2,219
7	$3,065	$2,475
8	$3,382	$2,731
Mobile Home Space	$519	$389

* Single Room Occupancy
** Studio

2. Replacement neighborhood is not homogeneous to displacement area.
This project is proposed in a semi-rural agricultural area and at the time of relocation there could possibly be no relocation resources available. To be realistic, these displaces will most likely have to relocate to the more urban area of Hollister or San Juan Bautista where the majority of the housing stock is centered, provided they do not choose to re-build on their remainder parcel.

3. Displacement neighborhood: Is a mix of rural ranchettes, businesses and farms. The age and condition of improvements varies from parcel to parcel. Some parcels are developed with new good quality improvements, while others have improvements that suffer from functional obselence.

4. Condition of units being displaced: Fair☐ Average☒ Good☐

5. Compared to condition of units in replacement area. Fair☐ Average☒ Good☐

6. Number of mobile home parks directly impacted by the project is none.

D. Total Residential Replacement Stock

	DISPLACEMENTS	PROJECT AREA	REPLACEMENT AREA
Total Housing Units	13	Same	16,499
% Owner Occupied	55%	Same	68.2%
% Renter Occupied	45%	Same	31.8%
Total Housing Units Vacant	5%	Same	748
Vacancy Rate	1%	Same	2.7%
Housing Units For Sale	491	Same	491
Housing Units For Rent	73	Same	73
Persons per Household	3.82	Same	3.82
Median Housing Value	$284,000	Same	$284,000

III. RELOCATION RESOURCES

A. Adequate resources (availability, funds, staffing, time) exist for all displacees except (list):

Owner occupied SFR	N/A	Tenant occupied multi-res	N/A
Owner occupied duplex	N/A	Tenant occupied sleeping rooms	N/A
Owner occupied multi-res	N/A	Mobile homes	N/A
Tenant occupied SFR	N/A	Nonresidential	N/A
Tenant occupied duplex	N/A	Nonprofit	N/A

Explain how relocation will occur for those listed: Over a 24 month period appraisal, acquisition, payment of severance damages and relocation assistance payments will be made to displacees for a professional relocation of all parties that may require to move from impacted parcels.

B. The replacement area chosen and used as a basis for relocation resources is:
The relocation area studied for this report comprise the San Benito County cities of Hollister and San Juan Bautista, all have similar amenities as those present in the displacement area. In some cases housing on farms and ranchettes may be re-constructed on the remainder parcel.

C. Market availability is expected to remain adequate through the time of displacement. The current real estate market in the project area is providing an adequate supply and a stable if not decreasing cost for replacement parcels.

IV. RELOCATION PROBLEMS AND PROGRAMS

A. Relocation Problems discussed in detail, especially for the following categories. Just because no one fits one of the categories below, does NOT mean you DON'T have a problem.

Elderly*	Yes ☒	No ☐	Minorities	Yes ☒	No ☐
Low Income (30%)	Yes ☒	No ☐	Overcrowded Residence	Yes ☒	No ☐
Low Income (Poverty)	Yes ☒	No ☐	Handicapped*	Yes ☒	No ☐
Last Resort Housing Const	Yes ☒	No ☐	Minority Business	Yes ☒	No ☐

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Marginal Business*	Yes ☒	No ☐	Other	Yes ☒	No ☐
Lack of Availability	Yes ☒	No ☐			

* All indicate special advisory assistance will be needed.

Without the opportunity to meet and interview the displacees of this project, it has to be assumed that all of the above are a possibility, that they will be impacted by one or both alternatives and route adoptions.

1. Residential and Mobile Home Displacees:
   a. The Department will provide uniform and equitable treatment of persons displaced from their homes.
   b. Comparable replacement housing will be offered the displacee.
   c. Replacement housing will be Decent Safe and Sanitary.
   d. Residents not lawfully present in the United States are not eligible to receive relocation payments and assistance.
   e. If a displacee qualifies as a displaced person, they are entitled to reimbursement of their moving costs and certain related expenses incurred in moving.
   f. Replacement Housing Payments depend on whether the displacee is an owner or tenant and their length of occupancy.
   g. In some cases the displacee may elect to forego the Rent Differential payment and elect that they receive a Down Payment Option instead.
   h. In some locations where the available housing is insufficient to provide necessary housing, Caltrans will utilize Last Resort Housing. Last Resort Housing allows Caltrans to construct, rehabilitate or modify housing in order to meet the needs of the displacee.
   i. All displacees will be offered relocation advisory assistance for the purpose of locating a replacement property.
   j. All eligible displacee have a freedom of choice in the selection of their replacement housing.

2. Business, Farm or Nonprofit Organization:
   a. The Department will work toward to ensure that persons displaced are treated fairly, consistently and equitably so that such persons will not suffer disproportionate injuries as a result of projects designed for the benefit of the public as a whole.

   b. The Relocation Advisory Assistance Program, which is to aid in the locating of a suitable replacement property.
   c. Relocation Payments for the displacee for certain costs involved in the move to the new property, can be either "actual reasonable moving costs", "self-move agreement" or In-Lieu payment.
   d. Loss of Goodwill is considered an acquisition cost.
   e. Displaced businesses, farms and nonprofit organizations are entitled to reimbursement for actual reasonable expenses incurred in searching for a replacement property.
   f. Displaced businesses, farms and nonprofit organizations may be eligible for a payment for the actual direct loss of tangible personal property, which is incurred as a result of the move or discontinuance of the operation.
   g. Displaced businesses, farms and nonprofit organizations may be eligible for a payment, not to exceed $10,000, for expenses actually incurred in relocating and reestablishing the enterprise at the replacement site.
   h. All displacees will be offered relocation advisory assistance for the purpose of locating a replacement property.
   i. Your relocation benefits will not have an adverse effect on your Social Security Eligibility, Welfare Eligibity or Income Taxes.

B. Housing Impact:
This project will not significantly impact the local housing stock for the community except as outlined below.
There may be a significant effect on the local community housing stock caused by Alternative(s):
Alternative 1 & A N/A **Alternative 2 & B** N/A

C. Conclusion:

It appears that the Relocation Assistance Program and the payment of severance damages will be adequate to provide for the needs of anyone affected by the proposed Route Adoption and either Alternative.

FINAL CONCLUSION: Number of impacts by Alternative and time/funding/staff needed to adequately relocate all.

Alternative 1 and Alternative A

Parcels impacted by these alternatives are diversified agricultural lands, housing, businesses, church, and a large recreational vehicle sales business. This segment will have mainly strip acquisitions off the frontage of the agricultural parcels. This alternative may require the payment of moving expenses for 80 recreation vehicles and boats out of the proposed right of way. There is a likelihood of full acquisition and payment of Relocation Benefits to the businesses affected by this Segment. A major impact would have been to a gravel mine ¼ mile south of SR-25 and SR-156 interchange, which has been mitigated by the proposal of an under-crossing to their entrance. It will be likely that the payment of damages and in some cases *Relocation Assistance Payments* will be offered.

Four of the most complicated relocation challenges of this alternative are the Flynn Mini Storage along with 80 recreation vehicles, which would present a challenge to identify adequate facilities to relocate these vehicles.

The church appears to be newly constructed, though relocation resources are adequate, the chance of satisfying all church members with their new property would be a challenge.

South Valley Trailer sales would be a challenge since they have recently constructed this new facility for their sales. The challenge of this relocation would be to identify a property that would offer a functionally similar location.

Alternative 2 and Alternative B

Parcels impacted by this alternative are diversified agricultural lands, with minimal impact to developed improvements. This alternative adopts a new right of way Alternative west of the existing SR-25 along with frontage roads. This segment will also require strip acquisitions off the frontage of these agricultural parcels. The likelihood of full acquisition and payment of Relocation Benefits to the occupants/businesses is significantly less with this alternative compared to Alternative 1. This alternative will not impact the church, or new commercial improvements. The payment of severance damages will be required to the landowners and in some cases *Relocation Assistance Payments*.

The addition of additional frontage roads decreased the impact of this alternative on businesses and residents.

The main disadvantage of this alternative is that it will increase the impact to prime agricultural lands and increase payments of severance damages because of partial acquisition of the larger parcel. There will be potentially more excess parcels in conjunction with this alternative but payment of damages and cost to cure payments should make the landowners whole.

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Hazardous Waste: Initial Site Assessment

State of California

Business, Transportation and Housing Agency

Flex your power!
Be energy efficient!

Memorandum

To: **WENDY KRONMAN**
Associate Environmental Planner

Date: March 9, 2012

File: SBT-25 (PM 51.5/60.1), SCL-25 (PM 0.0/2.6), SBT-156 (PM R10.5/R12.2) EA 05-485400

From: **JUERGEN VESPERMANN**
Senior Environmental Planner
Central Region Hazardous Waste and Paleontology Branch

Subject: Revised Initial Site Assessment (ISA) for the Hollister to Gilroy SR-25 Widening and Route Adoption Project

A revised evaluation for hazardous waste was conducted for the project located on State Route (SR)-25 in Santa Clara and San Benito counties and on SR-156 in San Benito County and supersedes previous reports. The California Department of Transportation (Caltrans), in cooperation with San Benito Council of Governments and Santa Clara Valley Transportation Authority, is proposing the eventual replacement of 11.2 miles of the existing two-lane highway with a four-lane expressway. A future interchange at SR-25/156 would require widening SR-156 between PM R10.5/R12.2. This report, as well as the Draft Environmental Impact Report/TIER I Environmental Impact Statement includes two proposed projects: 1) a route adoption (Alternatives 1 and 2) and 2) a proposed construction project within the limits of the proposed route adoption project (Alternatives A and B). There were five alternatives under consideration: a No-Build, Alternatives 1 and 2, and Alternatives A and B.

- The route adoption study extends from San Felipe Road in Hollister (PM 51.5) to the San Benito/Santa Clara County line (PM 60.1) and on to the end of SR-25 at U.S. 101 south of Gilroy (PM 0.0 to 2.6 in Santa Clara County).

- The proposed construction project extends 3.8 miles in San Benito County from San Felipe Road in Hollister to just west of Hudner Lane (PM 51.5 to 55.3).

Project Description Changes

Alternative 2 (ALT 2) was selected as the preferred route adoption alternative and Alternative B (ALT B) was selected as the preferred build alternative. The changes for both alternatives include:

- Reducing the median width from 62 feet to 46 feet,

- Reducing the minimum right-of-way width from 342 ft to 240 ft,
- Moving the new alignment closer to the existing highway, and
- Replacing some frontage roads with private access easements.

In addition, the route adoption Alternative 2 would include:

- Moving the proposed future interchange at SR-156/25 to the east,
- Shortening a west side frontage road to end in a cul-de-sac south of Hudner Lane, and
- Moving the above frontage road closer to the expressway alignment in the vicinity of Hudner Lane.

Modifications made specifically to the build Alternative B include:

- Removing the Briggs Road extension that would intersect with the expressway,
- Reducing the project limit by 0.3 mile to end south of Hudner Lane, and
- Replacing the proposed west side frontage roads with private road easements.

Hazardous Waste

Investigation for this ISA included examination of previous ISAs, aerial photographs, USGS Topographical Quadrangle Maps, review of the Regional Water Quality Control Board's Leaking Underground Storage Tank Information System (GEOTRACKER) list, review of EPA ECHO database, and the EnviroStor database systems, City of Hollister Fire Department records, County of San Benito and County of Santa Clara Environmental Health Department records and thorough site visits conducted during August and September 2006, February, September, and October 2007.

Categories of Concern

1. Hazardous waste sites with active underground storage tanks (USTs), aboveground storage tanks (ASTs), or high hazardous waste potential,
2. Hazardous waste sites with "no further action" letters,
3. Hazardous waste sites with low to moderate potential to affect the project,
4. Aerially-Deposited Lead (ADL), and
5. Asbestos-Containing Materials (ACMs), Lead-Based Paint (LBP) and Treated Wood Waste (TWW).

Category 1: Site #9, County of San Benito Sheriff's Department Shooting Range, is not within project boundaries. The proposed alternatives were designed to avoid this property.

No other sites due to the selected alternatives.

Category 2: No sites due to the selected alternatives.

Category 3:

Site #7, Hollister Truck Parts at 4364 Highway 25, is a truck repair shop with an AST on-site. ACMs and minor soil contamination may be encountered. This facility has a moderate potential for impacting ALT 2. No impact to ALT B; it is currently outside project limits.

Site #12, Hollister Equipment, Chapman Woodworks, and DeBrito Chocolate Factory at 160 Briggs Road and Ferguson Plumbing HVAC at 132 Briggs Rd, have a low to moderate potential for impacting both ALT 2 and ALT B. It is unlikely that the project would be impacted. Acquisition

for either alternative would be from the farming portion of the parcel, thus avoiding the location of the former USTs.

Site #60, Single family residence and repair shop at 4020 Bolsa Rd/Hwy 25, ACMs, LBP and/or minor soil contamination may be encountered. This parcel has a moderate potential for impacting ALT 2. No impact to ALT B; it is currently outside project limits.

Site #93, El Camino Packing Inc at 1404 Bolsa Rd, is a cold storage facility and may handle hazardous materials/waste. This facility has a moderate potential for impacting ALT 2. No impact to ALT B.

Site #95, A&D Christopher Ranch at 415 Bloomfield Ave, is a food processing plant complex and may handle hazardous materials/waste, including USTs and/or ASTs. This facility has a low to moderate potential for impacting ALT 2. It is unlikely that the project would be impacted. Acquisition would be from the orchard portion of the parcel, thus avoiding the location of processing plant. No impact to ALT B.

No other sites due to the selected alternatives.

Category 4:
Aerially-deposited lead (ADL) studies were conducted within the median of SR 101 between PM 0.37 and PM 4.2 in accordance with Task Order No. 04-275601-VX. The Soil Investigation Report is dated June 13, 2002 and concludes that there is no significant ADL contamination of soil within the study area that will require special handling. All excess soils can be reused or disposed of without restriction. An ADL study had also been conducted for portions of SR-25 in December 2001. The results indicated that lead levels in the soil were well below regulatory criteria and may be reused on-site or relinquished to the contractor without restriction.

Due to soil disturbing activities, SSP 15-027 would be included in the contractor's bid package to address the need for a Lead Compliance Plan for worker and public safety. The estimated cost for a LCP is $2500.

Category 5:
Asbestos-containing materials were not found in either Pajaro River Bridge (#43-0001) or Carnadaro Creek Bridge (#37-0008L) constructed in 1950 and 1949, respectively. However, ACMs and/or LBP may have been used in the construction of older homes/buildings in ALT 2. No impact to ALT B.

SSP 14-010 would be included in the contractor's bid package for the management of treated wood waste of removed/upgraded guardrail posts.

Both yellow and white striping, pavement markings, and paint have been known to contain high levels of lead. The appropriate SSP will be provided depending on whether white and/or yellow will be removed and the method in which they are removed (separate from or with asphalt grindings).

Additional Studies

Additional studies are not anticipated for Alternative B. Sites within Alternative 2 will require further invasive studies (Preliminary Site Investigations) which would be conducted in the future when TIER II environmental documents are prepared for projects occurring within the limits of route adoption Alternative 2.

Previously provided Attachment A is attached for reference. It includes individual assessor's parcel numbers (APNs) and detailed comments. If more information is needed, please contact Lea Spann at (559) 445-6466.

Attachment A. By parcel description of findings, San Benito County.

1) Situs: 160 BRIGGS RD, HOLLISTER CA 95023-9001 R002
APN: 019-090-014-0 Rec Date: 00/1987 Total Value: $24,902
County: SAN BENITO, CA Sale Price: Imprv Value:
Use: RESIDENTIAL LOT Document #: 7375 Land Value: $24,902
Card #: Zoning: 1st TD Amt: Lot Width: Depth:
New Pg: Map Pg: Rooms: Bedrms: Lot Area:
Phone: Stories: Full Baths: Half: Bldg/Liv Area:
Owners: HAYHURST FARMING & HARVESTINGINC Yr Built/Eff:
Mail: 5620 SOUTHSIDE RD; HOLLISTER CA 95023-9123 R001

ALT-B

COMMENTS: County records list parcel use as a Residential Lot. The parcel is located on the west side of SR-25. The situs address is 160 Briggs Road, includes an SFR, and is owned by Hayhust Farming and Harvesting, Inc. Records research did not reveal anything in the GEOTRACKER database. The VISTA report indicates that the site is doing business as Tony Lomanto Trucking and has six (6) active/inservice underground storage tanks (UST's) on-site; however, aerial photographs clearly show that this parcel only accommodates an SFR and not the former Tony Lomanto Trucking operation (see APN 019-090-013). The take portion of this property would include the SFR, to accommodate a frontage road cul-de-sac for ALT-A. The facility has a moderate potential of impacting the proposed widening project for ALT-A.

2) Situs: 800 BOLSA RD, HOLLISTER CA 95023-9361 R007
APN: 053-380-010-0 Rec Date: 08/05/1991 Total Value: $308,000
County: SAN BENITO, CA Sale Price: $587,000 Imprv Value: $43,000
Use: COMMERCIAL (NEC) Document #: 6351 Land Value: $265,000
Card #: Zoning: 1st TD Amt: Lot Width: Depth:
New Pg: Map Pg: Rooms: Bedrms: Lot Area:
Phone: 831/637-6574 Stories: Full Baths: Half: Bldg/Liv Area:
Owners: ROBERTS JANET P Yr Built/Eff:
Mail: 1401 THOMAS RD; HOLLISTER CA 95023-9120 R001

ALT-A

COMMENTS: In the original scoping for this project; County records list parcel use as Commercial (Nec). The parcel is located on the west side of SR-25. Records research did not reveal anything on VISTA, but GEOTRACKER indicates there are two, possibly four UST's on-site, and the site was formerly doing business as Spencer Rentals. San Benito County Environmental Health did not have any files regarding business activities or UST's, according to Ray Stevenson, Environmental Health Specialist. Field inspection in August 2001 revealed that the occupant was doing business as Our Earth Environmental Inc. The parcel had a chain link fence, overhead utilities, a tanker truck and 55 gallon barrels. A followup inspection conducted on February 22, 2002 revealed that Our Earth Environmental Inc. vacated the site and Abundant Four Square Church currently occupies the site with an office and storage building. The church also operates the adjacent parcel identified as APN: 053-380-011-0 at 790 Bolsa Road. The existing warehouse at 790 Bolsa Road is being remodeled as the church sancturary and is nearing completion. Pastor Bob Rueffner indicated that an environmental firm was hired to evaluate the potential for site contamination at this site (800 Bolsa Road) due to the previously operated businesses. A report was prepared by Enviro Consulting (Enviro) and concluded that soil staining ocurred in an area approximately 3 feet by 3 feet adjacent to the storage building. Contamination exists from oil and grease (O&G) and total petroleum hydrocarbons as diesel (TPHd). Although the Enviro report indicates regulatory record reviews did not reveal hazardous materials releases, it is clear contamination exists from some form of above ground storage tanks or drums. UST's may have existed on-site, however the location(s) are unknown. The facility has a **high potential** of impacting the proposed widening project, and additional studies would be needed to define the lateral and vertical extent of contamination cited in the Enviro report and to confirm the presence or absence of UST's. This triangular shaped parcel will likely be a full take for ALT-A. As of 2008 the property has received letters from the lead regulatory agency, San Benito County Environmental Health Department that the above address has met the remediation goals outlined in the cleanup plan and requires no further action for cleanup.

3) Situs: 2735 BOLSA RD, HOLLISTER CA 95023
APN: 014-090-056-0 Rec Date: 04/28/2000 Total Value: $1,104,311.00
County: SAN BENITO, CA Sale Price: $933,000 Imprv Value:
Use: INDUSTRIAL, MINE/QUARRY (NEC) Document #: Land Value:
Card #: Zoning: 1st TD Amt: $885,966 Lot Width: Depth:
New Pg: Map Pg: Rooms: Bedrms: Lot Area:
Phone: Stories: Full Baths: Half: Bldg/Liv Area:
Owners: REDTREE PROPERTIES, A DEL LTD PARTNERSHIP Yr Built/Eff:
Mail: P. O. Box 1041, Santa Cruz Ca, 95023
ALT-1/SBT-156
COMMENTS: The property is currently being operated as a mining facility supplying aggragate sand and gravels. There is no significant potential for encountering hazardous waste.

4) Situs: 720 BRIGGS RD, HOLLISTER CA 95023-9047 R002
APN: 019-090-031-0 Rec Date: 06/27/1997 Total Value: $317,949
County: SAN BENITO, CA Sale Price: $283,000 Imprv Value: $188,091
Use: RESIDENTIAL (NEC) Document #: 6260 Land Value: $129,858
Card #: Zoning: 1st TD Amt: $110,000 Lot Width: Depth:
New Pg: Map Pg: Rooms: Bedrms: Lot Area:
Phone: Stories: Full Baths: Half: Bldg/Liv Area:
Owners: HERSEY RICHARD W Yr Built/Eff:
Mail: 720 BRIGGS RD; HOLLISTER CA 95023-9047 R002
ALT-A
COMMENTS: County records list parcel use as Residential (Nec). It does not appear that the property is zoned for the current use. The Hershey residence is about 4 years old, which includes a commercial part-time auto body repair and paint shop. The parcel is located on the east side of SR-25. Records research did not reveal anything on GEOTRACKER or VISTA. According to the owner, Mr. Richard Hershey, no liquid waste is generated; however, that statement does not reconcile to the type of hazardous chemicals used for painting, which includes volatile and semi-volatile materials. The facility has a **high potential** of impacting the proposed widening project.

5) Situs: 660 BRIGGS RD, HOLLISTER CA 95023-9047 R002
APN: 019-090-032-0 Rec Date: Total Value: $1,144,440.00
County: SAN BENITO, CA Sale Price: Imprv Value:
Use: RESIDENTIAL (NEC) Document #: 6260 Land Value:
Card #: Zoning: 1st TD Amt: Lot Width: Depth:
New Pg: Map Pg: Rooms: Bedrms: Lot Area:
Phone: Stories: Full Baths: Half: Bldg/Liv Area:
Owners: AVILA, VINCENT Yr Built/Eff:
Mail: 660 BRIGGS RD; HOLLISTER CA 95023-9047 R002
ALT-A
COMMENTS: County records list parcel use as Residential (Nec). It does not appear that the property is zoned for the current use. The Hershey residence is about 4 years old, which includes a commercial part-time auto body repair and paint shop. The parcel is located on the east side of SR-25. Records research did not reveal anything on GEOTRACKER or VISTA. According to owner, Mr. Richard Hershey, no liquid waste is generated; however, that statement does not reconcile to the type of hazardous chemicals used for painting, which includes volatile and semi-volatile materials. The facility has a **high potential** of impacting the proposed widening project.

6) Situs: BRIGGS RD, HOLLISTER CA 95023-9316 R007
APN: 019-090-038-0 Rec Date: 00/1993 Total Value: $131,404
County: SAN BENITO, CA Sale Price: Imprv Value: $50,128
Use: ORCHARD Document #: 479 Land Value: $81,276
Phone: 831/637-3702 Stories: Full Baths: Half: Bldg/Liv Area:
Owners: JACOBSON FAMILY LIVING TRUST Yr Built/Eff:
Mail: 1083 YORKTOWN DR. SUNNYVALE CA. 94087
ALT-A CUL DE SAC
COMMENTS: The property is currently operated as agricultural farm land. No significant potential for hazardous waste.

7) Situs: HUDNER LN, HOLLISTER CA 95023
APN: 014-020-003-0 Rec Date: 00/1992 Total Value: $624,305
County: SAN BENITO, CA Sale Price: Imprv Value: $198,965
Use: TRUCK CROPS Document #: 12344 Land Value: $425,340
Card #: Zoning: 1st TD Amt: Lot Width: Depth:
New Pg: Map Pg: Rooms: Bedrms: Lot Area:
Phone: 831/637-3701 Stories: Full Baths: Half: Bldg/Liv Area:
Owners: RAJKOVICH MARTIN Yr Built/Eff:
Mail: PO BOX 189; HOLLISTER CA 95024-0189 B002

ALT-A, ALT-B, ALT-2

COMMENTS: County records list parcel use as Truck Crops. The parcel is located on the west side of SR-25. Records research did not reveal anything in the GEOTRACKER database or VISTA report. In addition to farming, a truck repair shop is doing business on-site as Hollister Truck Parts. According to Richard Terry, employee, the shop address is 4364 Hwy 25. An above ground tank (AGT) is located in a locked shed and is used to store waste oil. An active Ag well is immediately adjacent to the shed. Soil has minor stains from diesel and gasoline spills at AGT's, which appear to be associated with the farming business. There is also an inactive Ag well that would need to be properly abandoned. The facility has a moderate potential of impacting the proposed widening project.

8) Situs: WRIGHT RD, CA
APN: 019-130-025-0 Rec Date: Total Value: $121,901
County: SAN BENITO, CA Sale Price: Imprv Value:
Use: TRUCK CROPS Document #: 1968 Land Value:
Phone: Stories: Full Baths: Half: Bldg/Liv Area:
Owners: HUDNER, PAUL J TRUST Yr Built/Eff:
Mail: P.0. BOX 1066, HOLLISTER CA. 95024

ALT-B

COMMENTS: The property is currently operated as agricultural farm land. No significant potential for hazardous waste.

9) Situs: BOLSA RD, HOLLISTER CA
APN: 019-020-014-0
County: SAN BENITO, CA

ALT-A and ALT-B for construction of access to this parcel.

COMMENTS: County records do not include this parcel. The parcel is located on the west side of SR-25. Records research did not reveal anything in the GEOTRACKER database or VISTA report. A windshield survey revealed that the property is used as a shooting range for the County Sheriffs department and apparently is owned by the County of San Benito. High levels of lead are anticipated. The site includes an Ag well, and is otherwise in fallow. The facility has a **high potential** of impacting the proposed widening project.

10) Situs: OLD SALINAS HIGHWAY, HOLLISTER CA 95023
APN: 053-350-005-0 Rec Date: Total Value: $518,332
County: SAN BENITO, CA Sale Price: Imprv Value:
Use: AGRICULTRUAL FARMS Document #: Land Value
Phone: Stories: Full Baths: Half: Bldg/Liv Area:
Owners: VIDOVICH, JOHN ETAL Yr Built/Eff:
Mail: 11950 CIENEGA RD; HOLLISTER CA 95023

ALT-A Realign county road.

COMMENTS: The property is currently operated as agricultural farm land. No significant potential for hazardous waste.

11) Situs: BOLSA , HOLLISTER CA 95023
APN: 053-380-003-0 Rec Date: 00/1982 Total Value: $209,487
County: SAN BENITO, CA Sale Price: Imprv Value: $72,234
Use: GARAGE Document #: 481-392 Land Value: $137,253
Phone: 831/637-6574 Stories: Full Baths: Half: Bldg/Liv Area:
Owners: ROBERTS JANET P Yr Built/Eff:
Mail: 1401 THOMAS RD; HOLLISTER CA 95023-9120 R001

ALT-A, ALT-B Partially Constructed Interchange.

COMMENTS: County records list parcel use as Garage. The situs address is 530 San Felipe Road, is located east of SR-25 and is currently doing business as *South Valley Trailers.* According to the owner of the business, the site was operated as a gas and service station over 20 years ago and the underground fuel tanks were removed. GEOTRACKER records list the site as a leaking underground fuel tank (LUFT) site and was operated as M & M Exxon. Soil only was contaminated and was remediated by excavation and aeration. VISTA records indicate the site is closed as an underground storage tank (UST) site. The City of Hollister Fire Department files indicated that four tanks were removed, including two 5,000 gallon gasoline tanks, one 3,000 gallon gasoline tank and one 550 gallon waste oil tank. The tank(s) were reported as leaking in 1988, soil samples were taken, soil was excavated and a permit to aerate was obtained from the Monterey Bay Air Pollution District the same year. An on-site domestic well serves the property and is located adjacent to Highway 156, along with power poles. The facility has a moderate potential of impacting the proposed widening project. The San Benito County appears to be in condemnation litigation for this and the adjacent parcel.

12) Situs: 132 BRIGGS RD, HOLLISTER CA 95023-9001 R002
APN: 019-090-013-0 Rec Date: 00/1987 Total Value: $926,313
County: SAN BENITO, CA Sale Price: Imprv Value: $286,595
Use: TRUCK CROPS Document #: 7375 Land Value: $639,718
Owners: HAYHURST FARMING INC A CALIF CORP Yr Built/Eff:
Mail: 5620 SOUTHSIDE RD; HOLLISTER CA 95023-9123 R001

ALT-A for access CUL DE SAC, ALT-B Bisects the parcel.

COMMENTS: County records list parcel use as Truck Crops and is located on the west side of SR-25, at the northwest corner of Wright and Briggs Roads, and is immediately adjacent to APN 013-090-014. The parcel is twenty acres in size and has an SFR, mobile home at 540 Wright Road, and four (4) businesses identified as 132 Briggs Road and 160 Briggs Road, A, B and C. Records research did not reveal anything in the GEOTRACKER database and according to Ray Stevenson of San Benito County Environmental Health Department, no files exist for the property. The VISTA report indicates that the site is reportedly doing business as (DBA) Tony Lomanto Trucking and has six (6) active/inservice underground storage tanks (UST's) on-site. One 300 and one 500 gallon UST contains oil (not specified); one 500 gallon UST contains unknown material, one 2000 gallon UST contains unleaded gas, and two 10,000 gallon UST's contain diesel. On-site inspection revealed that the trucking company is no longer in business and there are no active or inactive tanks on-site.

The businesses at 160 Briggs A, B and C are identified as: Hollister Equipment, Chapman Woodworks, and DeBrito Chocolate Factory. At least two rusted and out-of-service UST's are stored on-site. A follow-up inspection was conducted on February 22, 2002. According to Mr. Arnold DeBrito, owner of Hollister Equipment, he believes the UST's mentioned in the VISTA report were removed prior to 1986, and pointed out the approximate location of the former UST locations within the same parcel but adjacent to the newer business DBA Ferguson Plumbing HVAC. In addition, an old concrete wash rack pad exists adjacent to Mr. DeBritos shop. Mr. DeBrito indicated that his shop was once DBA Lomanto Trucking and that is why the wash rack exists. It is no longer used but apparently empties into a septic tank. The wash rack appears to be outside of the APE. How the liquid waste was discharged from the tank is unknown but solvent and heavy metals may be of concern if the project boundaries change or it is determined that the wash rack is within the APE. No obvious staining of the ground surface was noted. Mr. DeBrito operates a 50-gallon waste oil AGT. Old rusting agricultural machinery is stored on-site by the landlords located outside of the APE.

Ferguson Plumbing HVAC business sells PVC, iron and copper pipe and does not have any UST's or AGT's on-site. During a field investigation on October 24, 2002, Mr. Rick Gambetta, local property owner and an employee of Ferguson Plumbing HVAC indicated that a 500-gallon UST was removed from the area Mr. DeBrito had previously pointed out at the Ferguson Plumbing HVAC site about five (5) years ago. Upon

further investigation, it appeared that a large area was subsiding as the possible result of tank removal(s). No vent pipes or fuel dispensers were noted, the area in question is outside the APE and downdgrade from the proposed project.

Adjacent and east of Ferguson Plumbing HVAC is an older SFR, situs address of 132 Briggs Road and may contain lead based paint and asbestos. The parcel facilities have a low potential of impacting the proposed widening project for ALT-B, Moderate potential for hazardous waste impacts to ALT-A.

13) Situs: 4153 BOLSA RD, HOLLISTER CA 95023-9309 R007
APN: 014-040-002-0 Rec Date: 00/1993 Total Value: $491,526
County: SAN BENITO, CA Sale Price: Imprv Value: $177,157
Use: ORCHARD Document #: 483 Land Value: $285,723
Owners: RAJKOVICH MARTIN-GEORGE-LUCILL Yr Built/Eff:
Mail: PO BOX 189; HOLLISTER CA 95024-0189 B002

ALT-B

COMMENTS: County records list parcel use as Orchard and is located east of SR-25. Records research of the GEOTRACKER list did not reveal underground storage tanks (UST's) or leaking underground fuel tanks (LUFT's). According to the VISTA list, there are five UST's onsite. Two 550 gallon UST's contain unleaded gasoline; one 550 gallon and one 2000 gallon UST contains diesel, and one 2000 gallon UST contains leaded gas. No above ground tanks are reported. No files exist regarding either above ground tanks (AGT's) or UST's at the San Benito County Environmental Health office. A field investigation was conducted on February 22, 2002. Mr. Martin Rajkovich, owner, was met on-site and he indicated that there are no longer any UST's on-site as they were removed about 30 years ago. There is currently a 1,000 gallon gasoline and diesel AGT on-site, both located within the area of potential effect. The facility has a **high potential** of impacting the proposed widening project.

14) Situs: 1980 BOLSA RD, HOLLISTER CA 95023-9316 R007
APN: 019-020-013-0 Rec Date: 00/1992 Total Value: $41,023
County: SAN BENITO, CA Sale Price: Imprv Value: $25,175
Use: LIGHT INDUSTRIAL Document #: 10133 Land Value: $15,848
Owners: MARTIN DELPHIN JR Yr Built/Eff:
Mail: 1980 BOLSA RD; HOLLISTER CA 95023-9316 R007

ALT-A

COMMENTS: County records list parcel use as Light Industrial. The parcel is located on the west side of SR-25. Records research did not reveal anything on GEOTRACKER or VISTA. The site is doing business as Dels Machine Shop. According to Mark Collison, business owner, he has been doing business for about 7 years. Inspection of the site did not reveal any soil staining or other hazardous waste activities. There are no USTs on-site. An SFR (mobile home) is also located on the site. Domestic well(s) and septic tank systems would need to be abandoned according to State water and local health agency regulations. The potential for inappropriate liquid hazardous waste disposal to septic tank system exists at this site, contaminating soil and/or groundwater. The facility has a minimal potential of impacting the proposed widening project, unless it becomes a full take.

15) Situs: 790 BOLSA RD, HOLLISTER CA 95023-9361 R007
APN: 053-380-011-0 Rec Date: 08/05/1991 Total Value: $461,000
County: SAN BENITO, CA Sale Price: $587,000 Imprv Value: $196,000
Use: GARAGE Document #: 6351 Land Value: $265,000
Phone: 831/637-6574 Stories: Full Baths: Half: Bldg/Liv Area:
Owners: ROBERTS JANET P Yr Built/Eff:
Mail: 1401 THOMAS RD; HOLLISTER CA 95023-9120 R001

ALT-A

COMMENTS: County records list parcel use as Garage. The parcel is located on the west side of SR-25. Records research did not reveal anything on GEOTRACKER or VISTA. The existing warehouse has been remodeled as the *Abundant Life Four Square Church* and is nearing completion. The parcel is immediately adjacent to and south of the church office and storage building, which formerly did business as *Spencer Rentals* (APN: 053-380-010) and *Our Earth Environmental Inc.* where contamination exists from oil and grease (O&G) and total petroleum hydrocarbons as diesel (TPHd). The facility has a moderate potential of impacting the proposed widening project, until determined otherwise.

16) Situs: 231-233 BRIGGS RD, HOLLISTER CA 95023-9001 R002
APN: 019-090-010-0 Rec Date: 00/1994 Total Value: $411,069
County: SAN BENITO, CA Sale Price: Imprv Value: $192,966
Use: TRUCK CROPS Document #: 2408 Land Value: $214,873
Card #: Zoning: 1st TD Amt: Lot Width: Depth:
New Pg: Map Pg: Rooms: Bedrms: Lot Area:
Phone: 831/637-2187 Stories: Full Baths: Half: Bldg/Liv Area:
Owners: CORDA BOB JR Yr Built/Eff:
Mail: 231 BRIGGS RD; HOLLISTER CA 95023-9001 R002
ALT-A
COMMENTS: County records list parcel use as Truck Crops. The parcel is located on the east and west side of SR-25. Records research did not reveal anything on GEOTRACKER or VISTA. A concrete culvert crosses SR-25 to APN 019-090-021. The site includes above ground storage tank and two residences at 231 and 233 Bridge Road. Approximately five 55 gallon barrels are stored on-site. In addition, an old barn exists on the parcel and may contain lead based paint. It is not uncommon to encounter elevated concentrations of lead in surface soils outside of older structures as a result of lead-based paint that has degraded or scraped off intentionally. The site has a moderate potential of impacting the proposed widening project unless otherwise determined.

17) Situs: BRIGGS RD, HOLLISTER CA 95023
APN: 019-090-018-0 Rec Date: 00/1993 Total Value: $73,970
County: SAN BENITO, CA Sale Price: Imprv Value: $61,601
Use: ORCHARD Document #: 484 Land Value: $12,369
Card #: Zoning: 1st TD Amt: Lot Width: Depth:
New Pg: Map Pg: Rooms: Bedrms: Lot Area:
Phone: 831/637-3702 Stories: Full Baths: Half: Bldg/Liv Area:
Owners: RAJKOVICH MARTIN-GEORGE-LUCILL Yr Built/Eff:
Mail: PO BOX 189; HOLLISTER CA 95024-0189 B002
ALT-A
COMMENTS: County records list parcel use as Orchard and is located on the east side of SR-25. Records research did not reveal anything on GEOTRACKER or VISTA. An old barn exists on the parcel and may contain lead based paint. It is also not uncommon to encounter elevated concentrations of lead in surface soils outside of older structures as a result of lead-based paint that has degraded or scraped off intentionally. The facility has a low potential of impacting the proposed widening project.

18) Situs: 2731 BOLSA RD, HOLLISTER CA 95023-9300 R007
APN: 014-080-005-0 Rec Date: 03/25/1999 Total Value: $338,427
County: SAN BENITO, CA Sale Price: Imprv Value: $160,000
Use: RESIDENTIAL (NEC) Document #: 4600 Land Value: $135,000
Card #: Zoning: 1st TD Amt: Lot Width: Depth:
New Pg: Map Pg: Rooms: Bedrms: Lot Area:
Phone: Stories: Full Baths: Half: Bldg/Liv Area:
Owners: CLARK, EVERETT & PAMELA Yr Built/Eff:
Mail: 2731 BOLSA RD; HOLLISTER CA 95023-9300 R007

COMMENTS: County records list parcel use as Residential (Nec). The parcel is located on the east side of SR-25. Records research did not reveal anything on GEOTRACKER or VISTA. The site is the former location of Fairhaven school. It appears that the school may have been renovated as a single family residence. The domestic well and septic tank system would need to be abandoned according to State water and local health agency regulations. Asbestos containing materials may still exist in the home and would need to be removed and disposed according to State and local regulations. The facility has a moderate potential of impacting the proposed widening project.

19) Situs: BOLSA RD, HOLLISTER CA 95023-9300 R007
APN: 053-420-001-0 Rec Date: Total Value:
County: SAN BENITO, CA Sale Price: Imprv Value:
Use: AIRPORT ACCESS/FRONTAGE Document #: 4600 Land Value:
Card #: Zoning: 1st TD Amt: Lot Width: Depth:
New Pg: Map Pg: Rooms: Bedrms: Lot Area:
Phone: Stories: Full Baths: Half: Bldg/Liv Area:
Owners: AIRPARK ASSC. LLC Yr Built/Eff:
Mail: P.O. BOX 721 APTOS CA. CA 95001
ALT-A + EASEMENT
COMMENTS: The property is currently operated as access frontage. No significant potential for hazardous waste.

20) Situs: 1020 HWY 25 , GILROY CA 95020
APN: 053-420-034 Rec Date: Total Value: $2,731,198
County: SAN BENITO, CA Sale Price: Imprv Value:
Use: VACANT LAND/INDUSTRIAL Document #: 4600 Land Value:
Card #: Zoning: 1st TD Amt: Lot Width: Depth:
New Pg: Map Pg: Rooms: Bedrms: Lot Area:
Phone: Stories: Full Baths: Half: Bldg/Liv Area:
Owners: AIRPARK ASSC. LLC Yr Built/Eff:
Mail: P.O. BOX 721 APTOS CA. CA 95001
ALT-A
COMMENTS: The property is currently operated as recovery frontage. No significant potential for hazardous waste.

21) Situs: BOLSA RD, HOLLISTER CA 95023-9313 R007
APN: 014-060-003-0 Rec Date: 00/1982 Total Value: $224,007
County: SAN BENITO, CA Sale Price: Imprv Value:
Use: AGRICULTURAL/FARMS Document #: Land Value:
Card #: Zoning: 1st TD Amt: Lot Width: Depth:
New Pg: Map Pg: Rooms: Bedrms: Lot Area:
Phone: Stories: Full Baths: Half: Bldg/Liv Area:
Owners: BERTUCCIO, TINA Yr Built/Eff:
Mail: 2360 AIRLINE WAY, HOLLISTER CA 95023
ALT-B
COMMENTS: The property is currently operated as farm acerage. No significant potential for hazardous waste.

22) Situs: BOLSA RD, HOLLISTER CA 95023-9313 R007
APN: 014-060-004-0 Rec Date: 00/1982 Total Value: $224,007
County: SAN BENITO, CA Sale Price: Imprv Value:
Use: AGRICULTURAL/FARMS Document #: Land Value:
Owners: BERTUCCIO, TINA Yr Built/Eff:
Mail: 2360 AIRLINE WAY, HOLLISTER CA 95023
ALT-B Bisects this property.
COMMENTS: The property is currently operated as farm acerage. No significant potential for hazardous waste.

23) Situs: 2533 BOLSA RD, HOLLISTER CA 95023-9300 R007
APN: 019-010-004-0 Rec Date: 06/04/1997 Total Value: $207,775
County: SAN BENITO, CA Sale Price: $250,000 Imprv Value: $119,471
Use: SFR Document #: 5323 Land Value: $88,304
Phone: 530/888-6836 Stories: Full Baths: Half: Bldg/Liv Area:
Owners: GAMBETTA RICK Yr Built/Eff:
Mail: 2533 BOLSA RD; HOLLISTER CA 95023-9300 R007
ALT-A
COMMENTS: County records list parcel use as SFR (Single Family Residence). The parcel is located on the west side of SR-25. Records research did not reveal anything on GEOTRACKER or VISTA. A stucco house and domestic exist on the property. The well would need to be abandoned according to State water and local health agency regulations. The facility has a low potential of impacting the proposed widening project.

24) Situs: 1940 BOLSA RD, HOLLISTER CA 95023-9316 R007
APN: 019-020-012-0 Rec Date: 01/31/1994 Total Value: $276,461
County: SAN BENITO, CA Sale Price: $200,000 Imprv Value: $161,755
Use: RESIDENTIAL (NEC) Document #: 1073 Land Value: $107,836
Card #: Zoning: 1st TD Amt: $182,000 Lot Width: Depth:
New Pg: Map Pg: Rooms: Bedrms: Lot Area:
Phone: 831/637-6970 Stories: Full Baths: Half: Bldg/Liv Area:
Owners: CHAMBERLAINS CHILDREN CENTER INC Yr Built/Eff:
Mail: PO BOX 1269; HOLLISTER CA 95024-1269 B011
ALT-A
COMMENTS: County records list parcel use as Residential (Nec). The parcel is located on the west side of SR-25. Records research did not reveal anything on GEOTRACKER or VISTA. The well would need to be abandoned according to State water and local health agency regulations. The facility has a low potential of impacting the proposed widening project.

25) Situs: WRIGHT RD, HOLLISTER CA 95023
APN: 019-090-015-0 Rec Date: 12/30/1998 Total Value: $56,850
County: SAN BENITO, CA Sale Price: Imprv Value:
Use: TRUCK CROPS Document #: 18065 Land Value: $56,850
Phone: 408/268-5347 Stories: Full Baths: Half: Bldg/Liv Area:
Owners: MCNAMEE CHARLES F & MARGARET G Yr Built/Eff:
Mail: 1202 CHATEAU DR; SAN JOSE CA 95120-4709 C001
ALT-A
COMMENTS: County records list parcel use as Truck Crops. The parcel is located on the east and west side of SR-25. Records research did not reveal anything on GEOTRACKER or VISTA. Overhead utilities cross SR-25 at the parcel and a cell box exists. The site is currently planted in peppers. The facility has a low potential of impacting the proposed widening project.

26) Situs: 741 FLYNN RD, HOLLISTER CA 95023-9308 R007
APN: 053-360-030-0 Rec Date: 05/02/1995 Total Value: $1,513,974
County: SAN BENITO, CA Sale Price: $200,000 Imprv Value: $1,112,551
Use: MINI WAREHOUSE Document #: 3701 Land Value: $395,236
Card #: Zoning: 1st TD Amt: $35,000 Lot Width: Depth:
New Pg: Map Pg: Rooms: Bedrms: Lot Area:
Phone: Stories: Full Baths: Half: Bldg/Liv Area:
Owners: CLINK RICHARD E & LINDA C 2001 Yr Built/Eff:
Mail: 458 COAKLEY DR; SAN JOSE CA 95117-1518 C003
ALT-A
COMMENTS: County records list parcel use as Mini Warehouse. The parcel is located on the east side of SR-25. Records research did not reveal anything on GEOTRACKER or VISTA. The site is doing business as Flynn Road Storage and RV Storage. The facility has a low potential of impacting the proposed widening project.

27) Situs: 463 MCCONNEL RD. HOLLISTER CA 95023-9313 R007
APN: 018-020-005-0 Rec Date: 00/1982 Total Value: $224,007
County: SAN BENITO, CA Sale Price: Imprv Value:
Use: AGRICULTURAL/FARMS Document #: Land Value:
Card #: Zoning: 1st TD Amt: Lot Width: Depth:
New Pg: Map Pg: Rooms: Bedrms: Lot Area:
Phone: Stories: Full Baths: Half: Bldg/Liv Area:
Owners: VIERA FAMILY TRUST Yr Built/Eff:
Mail: 1801 CUSHMAN, HOLLISTER CA 95023
ALT-2 SR-156 Interchange.
COMMENTS: The property is currently operated as farm acerage, with a small segment located in the proposed take area configured as residential and shop facilities. Demolition of these structures will likely encounter lead based paint and asbestos containing materials. No significant hazardous waste other than demolition debris anticipated.

28) Situs: BOLSA RD, HOLLISTER CA 95023
APN: 053-380-002-0 Rec Date: 00/1982 Total Value: $288,957
County: SAN BENITO, CA Sale Price: Imprv Value: $14,442
Use: COMMERCIAL (NEC) Document #: 481-392 Land Value: $274,515
Card #: Zoning: 1st TD Amt: Lot Width: Depth:
New Pg: Map Pg: Rooms: Bedrms: Lot Area:
Phone: 831/637-6574 Stories: Full Baths: Half: Bldg/Liv Area:
Owners: ROBERTS JANET P Yr Built/Eff:
Mail: 1401 THOMAS RD; HOLLISTER CA 95023-9120 R001
ALT-A, ALT-B
COMMENTS: County records list parcel use as Commercial (Nec). The parcel is located on the east side of SR-25, adjacent and north of South Valley Trailers (APN: 053-380-003). Records research did not reveal anything on GEOTRACKER or VISTA. The site appears to be vacant. The facility has been demolished and a new intersection for existing SR-25 has been constructed.

29) Situs: 156 BOLSA RD, HOLLISTER CA 95023
APN: 053-380-006-0 Rec Date: 00/1989 Total Value: $629,000
County: SAN BENITO, CA Sale Price: Imprv Value:
Use: COMMERCIAL LOT Document #: 9681 Land Value: $629,000
Card #: Zoning: 1st TD Amt: Lot Width: Depth:
New Pg: Map Pg: Rooms: Bedrms: Lot Area:
Phone: 831/637-6574 Stories: Full Baths: Half: Bldg/Liv Area:
Owners: ROBERTS JANET P Yr Built/Eff:
Mail: 1401 THOMAS RD; HOLLISTER CA 95023-9120 R001
ALT-A and ALT-B interchange improvements.
COMMENTS: County records list parcel use as Commercial Lot. The parcel is located on the east side of SR-25 and is currently in fodder. Records research did not reveal anything on GEOTRACKER or VISTA. The facility has a low potential of impacting the proposed widening project.

30) Situs: 2730 BOLSA RD, HOLLISTER CA 95023-9313 R007
APN: 018-020-012-0 Rec Date: 00/1982 Total Value: $224,007
County: SAN BENITO, CA Sale Price: Imprv Value:
Use: AGRICULTURAL/FARMS Document #: Land Value:
Card #: Zoning: 1st TD Amt: Lot Width: Depth:
New Pg: Map Pg: Rooms: Bedrms: Lot Area:
Phone: Stories: Full Baths: Half: Bldg/Liv Area:
Owners: HART, DONNA & CAROL Yr Built/Eff:
Mail: 2730 BOLSA RD, HOLLISTER CA 95023
ALT-2 SR-156 Interchange
COMMENTS: This property consists of several sets of shop buildings and residential structures similar to farm labor facilities. Demolition of these structures will likely encounter lead based paint and asbestos containing materials. Minor soil staining and wastes from agriculture related activities such as plastic irrigation tubing, empty drums, packing materials and refuse will be encountered about the site.

31) Situs: BOLSA RD, HOLLISTER CA 95023-9313 R007
APN: 018-210-006-0 Rec Date: 00/1982 Total Value: $224,007
County: SAN BENITO, CA Sale Price: Imprv Value:
Use: AGRICULTURAL/FARMS Document #: Land Value:
Owners: VIERA FAMILY TRUST Yr Built/Eff:
Mail: 1801 CUSHMAN ST, HOLLISTER CA 95023
ALT-2
COMMENTS: This property consists of several sets of shop buildings and residential structures similar to farm labor facilities. Demolition of these structures will likely encounter lead based paint and asbestos containing materials. Minor soil staining and wastes from agriculture related activities such as plastic irrigation tubing, empty drums, packing materials and refuse will be encountered about the site.

32) Situs: BOLSA RD, CA
APN: 013-040-009-0 Rec Date: 02/08/2001 Total Value: $979,000
County: SAN BENITO, CA Sale Price: $480,000 Imprv Value:
Use: TRUCK CROPS Document #: 1919 Land Value: $979,000
Card #: Zoning: 1st TD Amt: Lot Width: Depth:
New Pg: Map Pg: Rooms: Bedrms: Lot Area:
Phone: Stories: Full Baths: Half: Bldg/Liv Area:
Owners: LA KHA KIET L
Mail: 3133 IRVING ST; SAN FRANCISCO CA 94122-1427 C017
ALT-A
COMMENTS: The property is currently operated as farm acerage. No significant potential for hazardous waste.

33) Situs: BOLSA RD, CA
APN: 013-040-013-0 Rec Date: 10/15/1991 Total Value: $174,763
County: SAN BENITO, CA Sale Price: Imprv Value: $704
Use: AGRICULTURAL (NEC) Document #: 8512 Land Value: $174,059
Card #: Zoning: 1st TD Amt: Lot Width: Depth:
New Pg: Map Pg: Rooms: Bedrms: Lot Area:
Phone: 831/637-3185 Stories: Full Baths: Half: Bldg/Liv Area:
Owners: SABBATINI TRUST Yr Built/Eff:
Mail: PO BOX 339; HOLLISTER CA 95024-0339 B003
ALT-1, ALT-2
COMMENTS: The property is currently operated as farm acerage. No significant potential for hazardous waste.

34) Situs: , CA
APN: 013-040-026-0 Rec Date: 00/1988 Total Value: $834,340
County: SAN BENITO, CA Sale Price: Imprv Value: $48,836
Use: TRUCK CROPS Document #: 6930 Land Value: $785,504
Card #: Zoning: 1st TD Amt: Lot Width: Depth:
New Pg: Map Pg: Rooms: Bedrms: Lot Area:
Phone: Stories: Full Baths: Half: Bldg/Liv Area:
Owners: SHAW PO CHEI Yr Built/Eff:
Mail: 15165 SYCAMORE DR; MORGAN HILL CA 95037-9619 R003
ALT-1, ALT-2
COMMENTS: The property is currently operated as farm acerage. No significant potential for hazardous waste.

35) Situs: BOLSA RD, CA
APN: 013-040-032-0 Rec Date: 00/1993 Total Value: $269,013
County: SAN BENITO, CA Sale Price: Imprv Value: $7,650
Use: AGRICULTURAL (NEC) Document #: 1325 Land Value: $261,363
Owners: GARCIA FAMILY PARTNERSHIP A CAL PART Yr Built/Eff:
Mail: PO BOX 3932; SALINAS CA 93912-3932 B009
ALT-1, ALT-2
COMMENTS: The property is currently operated as farm acerage. No significant potential for hazardous waste.

36) Situs: BOLSA RD, CA
APN: 013-040-033-0 Rec Date: 00/1993 Total Value: $875,834
County: SAN BENITO, CA Sale Price: Imprv Value: $18,834
Use: TRUCK CROPS Document #: 9 Land Value: $857,000
Card #: Zoning: 1st TD Amt: Lot Width: Depth:
New Pg: Map Pg: Rooms: Bedrms: Lot Area:
Phone: Stories: Full Baths: Half: Bldg/Liv Area:
Owners: THOMAS TUNG & YING LEE Yr Built/Eff:
Mail: 1426 GRAY BLUFF TRL; CHAPEL HILL NC 27514-9126 R024
ALT-1, ALT-2
COMMENTS: The property is currently operated as farm acerage. No significant potential for hazardous waste.

37) Situs: SHORE RD, HOLLISTER CA 95023
APN: 013-060-017-0 Rec Date: 00/1992 Total Value: $1,253,958
County: SAN BENITO, CA Sale Price: Imprv Value: $83,255
Use: TRUCK CROPS Document #: 6216 Land Value: $1,170,703
Card #: Zoning: 1st TD Amt: Lot Width: Depth:
Phone: 650/424-0214 Stories: Full Baths: Half: Bldg/Liv Area:
Owners: FARRIS Yr Built/Eff:
Mail: 180 IRIS WAY; PALO ALTO CA 94303-3036 C023
ALT-1, ALT-2
COMMENTS: The property is currently operated as farm acerage. No significant potential for hazardous waste.

38) Situs: BOLSA RD, CA
APN: 013-060-019-0 Rec Date: 00/1992 Total Value: $150,419
County: SAN BENITO, CA Sale Price: Imprv Value: $4,799
Use: TRUCK CROPS Document #: 2939 Land Value: $145,620
Phone: 831/637-1422 Stories: Full Baths: Half: Bldg/Liv Area:
Owners: CASILLAS FAM MANUEL & HELEN Yr Built/Eff:
Mail: PO BOX 10; HOLLISTER CA 95024-0010 B001
ALT-1, ALT-2
COMMENTS: The property is currently operated as farm acerage. No significant potential for hazardous waste.

39) Situs: BOLSA RD, CA
APN: 013-060-020-0 Rec Date: 00/1988 Total Value: $156,272
County: SAN BENITO, CA Sale Price: Imprv Value: $8,294
Use: TRUCK CROPS Document #: 8298 Land Value: $147,978
Card #: Zoning: 1st TD Amt: Lot Width: Depth:
New Pg: Map Pg: Rooms: Bedrms: Lot Area:
Phone: 831/637-3555 Stories: Full Baths: Half: Bldg/Liv Area:
Owners: CASILLAS EMILIO Yr Built/Eff:
Mail: PO BOX 10; HOLLISTER CA 95024-0010 B001
ALT-1, ALT-2
COMMENTS: The property is currently operated as farm acerage. No significant potential for hazardous waste.

40) Situs: BOLSA RD, CA
APN: 013-060-021-0 Rec Date: 00/1993 Total Value: $172,063
County: SAN BENITO, CA Sale Price: Imprv Value: $23,597
Use: TRUCK CROPS Document #: 2141 Land Value: $148,466
Card #: Zoning: 1st TD Amt: Lot Width: Depth:
New Pg: Map Pg: Rooms: Bedrms: Lot Area:
Phone: 831/637-0998 Stories: Full Baths: Half: Bldg/Liv Area:
Owners: CASILLAS FRANK & JOYCE Yr Built/Eff:
Mail: PO BOX 10; HOLLISTER CA 95024-0010 B001
ALT-1, ALT-2
COMMENTS: The property is currently operated as farm acerage. No significant potential for hazardous waste.

41) Situs: BOLSA RD, CA
APN: 013-060-022-0 Rec Date: 00/1995 Total Value: $154,336
County: SAN BENITO, CA Sale Price: Imprv Value: $5,620
Use: TRUCK CROPS Document #: 958 Land Value: $148,716
Card #: Zoning: 1st TD Amt: Lot Width: Depth:
New Pg: Map Pg: Rooms: Bedrms: Lot Area:
Phone: 831/636-1347 Stories: Full Baths: Half: Bldg/Liv Area:
Owners: CASILLAS PAUL Yr Built/Eff:
Mail: PO BOX 10; HOLLISTER CA 95024-0010 B001
ALT-1
COMMENTS: The property is currently operated as farm acerage. No significant potential for hazardous waste.

42) Situs: BOLSA RD, CA
APN: 013-060-023-0 Rec Date: 00/1993 Total Value: $148,716
County: SAN BENITO, CA Sale Price: Imprv Value:
Use: TRUCK CROPS Document #: 959 Land Value: $148,716
Card #: Zoning: 1st TD Amt: Lot Width: Depth:
New Pg: Map Pg: Rooms: Bedrms: Lot Area:
Phone: 831/637-3094 Stories: Full Baths: Half: Bldg/Liv Area:
Owners: CASILLAS JOE & LILLIAN Yr Built/Eff:
Mail: PO BOX 10; HOLLISTER CA 95024-0010 B001
ALT-1, ALT-2
COMMENTS: The property is currently operated as farm acerage. No significant potential for hazardous waste.

43) Situs: BOLSA RD, CA
APN: 013-060-024-0 Rec Date: Total Value: $202,612
County: SAN BENITO, CA Sale Price: Imprv Value:
Use: TRUCK CROPS Document #: 877 Land Value: $202,612
Phone: 831/637-3088 Stories: Full Baths: Half: Bldg/Liv Area:
Owners: COSTA P & R Yr Built/Eff:
Mail: 2020 SHORE RD; HOLLISTER CA 95023-9205 R002
ALT-1, ALT-2
COMMENTS: The property is currently operated as farm acerage. No significant potential for hazardous waste.

44) Situs: BOLSA RD, CA
APN: 013-060-025-0 Rec Date: Total Value: $249,910
County: SAN BENITO, CA Sale Price: Imprv Value: $115,321
Use: TRUCK CROPS Document #: 877 Land Value: $134,589
Card #: Zoning: 1st TD Amt: Lot Width: Depth:
New Pg: Map Pg: Rooms: Bedrms: Lot Area:
Phone: 831/637-3088 Stories: Full Baths: Half: Bldg/Liv Area:
Owners: COSTA P & R Yr Built/Eff:
Mail: 2020 SHORE RD; HOLLISTER CA 95023-9205 R002
ALT-1 and ALT-2
COMMENTS: The property is currently operated as farm acerage. No significant potential for hazardous waste.

45) Situs: BOLSA RD, HOLLISTER CA 95023-9313 R007
APN: 019-010-008-0 Rec Date: 00/1982 Total Value: $224,007
County: SAN BENITO, CA Sale Price: Imprv Value:
Use: AGRICULTURAL/FARMS Document #: Land Value:
Card #: Zoning: 1st TD Amt: Lot Width: Depth:
New Pg: Map Pg: Rooms: Bedrms: Lot Area:
Phone: Stories: Full Baths: Half: Bldg/Liv Area:
Owners: SAN JUSTO HOMESTEAD ASSN Yr Built/Eff:
Mail:
ALT-B
COMMENTS: The property is currently operated as farm acerage. No significant potential for hazardous waste.

46) Situs: BOLSA RD, HOLLISTER CA 95023-9313 R007
APN: 019-080-001 Rec Date: 00/1982 Total Value: $224,007
County: SAN BENITO, CA Sale Price: Imprv Value:
Use: AGRICULTURAL/FARMS Document #: Land Value:
Card #: Zoning: 1st TD Amt: Lot Width: Depth:
New Pg: Map Pg: Rooms: Bedrms: Lot Area:
Phone: Stories: Full Baths: Half: Bldg/Liv Area:
Owners: HEYHURST FARMING CORP Yr Built/Eff:
Mail:
ALT-B
COMMENTS: The property is currently operated as farm acerage. No significant potential for hazardous waste.

47) Situs: BOLSA RD, HOLLISTER CA 95023-9313 R007
APN: 019-080-004 Rec Date: 00/1982 Total Value: $224,007
County: SAN BENITO, CA Sale Price: Imprv Value:
Use: AGRICULTURAL/FARMS Document #: Land Value:
Card #: Zoning: 1st TD Amt: Lot Width: Depth:
New Pg: Map Pg: Rooms: Bedrms: Lot Area:
Phone: Stories: Full Baths: Half: Bldg/Liv Area:
Owners: HEYHURST FARMING CORP Yr Built/Eff:
Mail:
ALT-B
COMMENTS: The property is currently operated as farm acerage. No significant potential for hazardous waste.

48) Situs: BOLSA RD, HOLLISTER CA 95023-9313 R007
APN: 019-080-006-0 Rec Date: 00/1982 Total Value: $224,007
County: SAN BENITO, CA Sale Price: Imprv Value:
Use: AGRICULTURAL/FARMS Document #: Land Value:
Owners: VOSTI ALEX Yr Built/Eff:
Mail:
ALT-B
COMMENTS: The property is currently operated as farm acerage. No significant potential for hazardous waste.

49) Situs: BOLSA RD, HOLLISTER CA 95023-9313 R007
APN: 019-130-010-0 Rec Date: 00/1982 Total Value: $224,007
County: SAN BENITO, CA Sale Price: Imprv Value:
Use: AGRICULTURAL/FARMS Document #: Land Value:
Card #: Zoning: 1st TD Amt: Lot Width: Depth:
New Pg: Map Pg: Rooms: Bedrms: Lot Area:
Phone: Stories: Full Baths: Half: Bldg/Liv Area:
Owners: HERBERT, PHILIP C Yr Built/Eff:
Mail:
ALT-B
COMMENTS: The property is currently operated as farm acerage. No significant potential for hazardous waste.

50) Situs: BOLSA RD, HOLLISTER CA 95023-9313 R007
APN: 019-130-021-0 Rec Date: 00/1982 Total Value: $224,007
County: SAN BENITO, CA Sale Price: Imprv Value:
Use: AGRICULTURAL/FARMS Document #: Land Value:
Card #: Zoning: 1st TD Amt: Lot Width: Depth:
New Pg: Map Pg: Rooms: Bedrms: Lot Area:
Phone: Stories: Full Baths: Half: Bldg/Liv Area:
Owners: HUDNER, PAUL J Yr Built/Eff:
Mail:
ALT-B
COMMENTS: The property is currently operated as farm acerage. No significant potential for hazardous waste.

51) Situs: BOLSA RD, HOLLISTER CA 95023-9313 R007
APN: 019-130-025-0 Rec Date: 00/1982 Total Value: $224,007
County: SAN BENITO, CA Sale Price: Imprv Value:
Use: AGRICULTURAL/FARMS Document #: Land Value:
Card #: Zoning: 1st TD Amt: Lot Width: Depth:
New Pg: Map Pg: Rooms: Bedrms: Lot Area:
Phone: Stories: Full Baths: Half: Bldg/Liv Area:
Owners: HUDNER, PAUL J Yr Built/Eff:
Mail:
ALT-B
COMMENTS: The property is currently operated as farm acerage. No significant potential for hazardous waste.

52) Situs: BOLSA RD, HOLLISTER CA 95023
APN: 014-020-005-0 Rec Date: 06/07/1996 Total Value: $608,360
County: SAN BENITO, CA Sale Price: $140,000 Imprv Value: $52,982
Use: TRUCK CROPS Document #: 5369 Land Value: $555,378
Card #: Zoning: 1st TD Amt: Lot Width: Depth:
New Pg: Map Pg: Rooms: Bedrms: Lot Area:
Phone: Stories: Full Baths: Half: Bldg/Liv Area:
Owners: YEN TRUST Yr Built/Eff:
Mail: 196 TUSCALOOSA AVE; ATHERTON CA 94027-4000 C013
ALT-1, ALT-2
COMMENTS: The property is currently operated as farm acerage. No significant potential for hazardous waste.

53) Situs: BOLSA RD, HOLLISTER CA 95023
APN: 014-020-006-0 Rec Date: 06/07/1996 Total Value: $649,813
County: SAN BENITO, CA Sale Price: $140,000 Imprv Value: $52,982
Use: TRUCK CROPS Document #: 5369 Land Value: $596,831
Phone: Stories: Full Baths: Half: Bldg/Liv Area:
Owners: YEN TRUST Yr Built/Eff:
Mail: 196 TUSCALOOSA AVE; ATHERTON CA 94027-4000 C013
ALT-1, ALT-2
COMMENTS: The property is currently operated as farm acerage. No significant potential for hazardous waste.

54) Situs: 4211 BOLSA RD, HOLLISTER CA 95023-9309 R007
APN: 014-040-003-0 Rec Date: 00/1992 Total Value: $206,387
County: SAN BENITO, CA Sale Price: Imprv Value: $39,067
Use: TRUCK CROPS Document #: 6012 Land Value: $167,320
Card #: Zoning: 1st TD Amt: Lot Width: Depth:
New Pg: Map Pg: Rooms: Bedrms: Lot Area:
Phone: 831/637-0794 Stories: Full Baths: Half: Bldg/Liv Area:
Owners: HOGAN HELEN L Yr Built/Eff:
Mail: 4211 BOLSA RD; HOLLISTER CA 95023-9309 R007
ALT-A
COMMENTS: The property is currently operated as farm acerage. No significant potential for hazardous waste.

55) Situs: BOLSA RD, HOLLISTER CA 95023
APN: 014-040-004-0 Rec Date: 00/1964 Total Value: $162,131
County: SAN BENITO, CA Sale Price: Imprv Value: $2,802
Use: TRUCK CROPS Document #: 295-527 Land Value: $159,329
Card #: Zoning: 1st TD Amt: Lot Width: Depth:
New Pg: Map Pg: Rooms: Bedrms: Lot Area:
Phone: Stories: Full Baths: Half: Bldg/Liv Area:
Owners: CASENTINI ODA HOGAN Yr Built/Eff:
Mail: PO BOX 3891; SALINAS CA 93912-3891 B008
ALT-A
COMMENTS: The property is currently operated as farm acerage. No significant potential for hazardous waste.

56) Situs: BOLSA RD, HOLLISTER CA 95023
APN: 014-040-005-0 Rec Date: Total Value: $155,388
County: SAN BENITO, CA Sale Price: Imprv Value: $2,802
Use: TRUCK CROPS Document #: 7485 Land Value: $152,586
Phone: 831/637-2631 Stories: Full Baths: Half: Bldg/Liv Area:
Owners: BREWSTER CYNTHIA FORD Yr Built/Eff:
Mail: 60 TERRYS CT; HOLLISTER CA 95023-6329 R004
ALT-A
COMMENTS: The property is currently operated as farm acerage. No significant potential for hazardous waste.

57) Situs: BOLSA RD, HOLLISTER CA 95023
APN: 014-040-006-0 Rec Date: Total Value: $45,912
County: SAN BENITO, CA Sale Price: Imprv Value:
Use: TRUCK CROPS Document #: 7487 Land Value: $45,912
Card #: Zoning: 1st TD Amt: Lot Width: Depth:
New Pg: Map Pg: Rooms: Bedrms: Lot Area:
Phone: Stories: Full Baths: Half: Bldg/Liv Area:
Owners: CASSINTINI ODA Yr Built/Eff:
Mail: 60 TERRYS CT; HOLLISTER CA 95023-6329 R004
ALT-1
COMMENTS: The property is currently operated as farm acerage. No significant potential for hazardous waste.

58) Situs: BOLSA RD, HOLLISTER CA 95023
APN: 014-040-007-0 Rec Date: Total Value: $35,734
County: SAN BENITO, CA Sale Price: Imprv Value: $1,059
Use: PASTURE Document #: 7487 Land Value: $34,675
Card #: Zoning: 1st TD Amt: Lot Width: Depth:
New Pg: Map Pg: Rooms: Bedrms: Lot Area:
Phone: Stories: Full Baths: Half: Bldg/Liv Area:
Owners: CASENTINI ODA Yr Built/Eff:
Mail: 60 TERRYS CT; HOLLISTER CA 95023-6329 R004
ALT-1
COMMENTS: The property is currently operated as farm acerage. No significant potential for hazardous waste.

59) Situs: BOLSA RD, HOLLISTER CA 95023
APN: 014-060-005-0 Rec Date: 00/1971 Total Value: $75,564
County: SAN BENITO, CA Sale Price: Imprv Value:
Use: TRUCK CROPS Document #: 366-80 Land Value: $75,564
Card #: Zoning: 1st TD Amt: Lot Width: Depth:
New Pg: Map Pg: Rooms: Bedrms: Lot Area:
Owners: BERTUCCIO TINA Yr Built/Eff:
Mail: 2360 AIRLINE HWY; HOLLISTER CA 95023-6106 R007
ALT-2
COMMENTS: The property is currently operated as farm acerage. No significant potential for hazardous waste.

60) Situs: 4020 BOLSA RD, HOLLISTER CA 95023
APN: 014-060-008-0 Rec Date: Total Value:
County: SAN BENITO, CA Sale Price: $ Imprv Value: $340,000
Use: SFR Document #: 278 Land Value: $
Phone: Stories: Full Baths: Half: Bldg/Liv Area:
Owners: GALVAN, TEODORO Yr Built/Eff:
Mail: 4020 BOLSA RD; HOLLISTER CA 95023-9209 R002
ALT-2
COMMENTS: This property will be a full take. The 1.24 acre property is currently operated as residential acerage and repair shop business. Moderate potential for hazardous waste.

61) Situs: HUDNER LN, HOLLISTER CA 95023
APN: 014-060-009-0 Rec Date: 01/12/1995 Total Value: $1,530,011
County: SAN BENITO, CA Sale Price: $1,400,000 Imprv Value: $163,928
Use: TRUCK CROPS Document #: 278 Land Value: $1,366,083
Phone: 831/637-7262 Stories: Full Baths: Half: Bldg/Liv Area:
Owners: FILICE Yr Built/Eff:
Mail: 10001 FAIRVIEW RD; HOLLISTER CA 95023-9209 R002
ALT-2
COMMENTS: The property is currently operated as farm acerage. No significant potential for hazardous waste.

62) Situs: BOLSA RD, HOLLISTER CA 95023
APN: 014-070-002-0 Rec Date: 00/1971 Total Value: $63,970
County: SAN BENITO, CA Sale Price: Imprv Value: $1,170
Use: TRUCK CROPS Document #: 371-700 Land Value: $62,800
Card #: Zoning: 1st TD Amt: Lot Width: Depth:
New Pg: Map Pg: Rooms: Bedrms: Lot Area:
Phone: Stories: Full Baths: Half: Bldg/Liv Area:
Owners: BERTUCCIO PAUL W-OLGA-IRMA Yr Built/Eff:
Mail: 230 5TH ST; HOLLISTER CA 95023-3902 C019
ALT-1
COMMENTS: The property is currently operated as farm acerage. No significant potential for hazardous waste.

63) Situs: BOLSA RD, HOLLISTER CA 95023
APN: 014-070-003-0 Rec Date: 00/1994 Total Value: $219,730
County: SAN BENITO, CA Sale Price: Imprv Value: $40,520
Use: TRUCK CROPS Document #: 2121 Land Value: $179,210
Card #: Zoning: 1st TD Amt: Lot Width: Depth:
New Pg: Map Pg: Rooms: Bedrms: Lot Area:
Phone: Stories: Full Baths: Half: Bldg/Liv Area:
Owners: BERTUCCIO PAUL W-OLGA-IRMA Yr Built/Eff:
Mail: 230 5TH ST; HOLLISTER CA 95023-3902 C019
ALT-1
COMMENTS: The property is currently operated as farm acerage. No significant potential for hazardous waste.

64) Situs: BOLSA RD, HOLLISTER CA 95023
APN: 014-070-004-0 Rec Date: 00/1971 Total Value: $165,190
County: SAN BENITO, CA Sale Price: Imprv Value: $8,920
Use: TRUCK CROPS Document #: 366-383 Land Value: $156,270
Card #: Zoning: 1st TD Amt: Lot Width: Depth:
New Pg: Map Pg: Rooms: Bedrms: Lot Area:
Phone: Stories: Full Baths: Half: Bldg/Liv Area:
Owners: BERTUCCIO PAUL W-OLGA-IRMA Yr Built/Eff:
Mail: 230 5TH ST; HOLLISTER CA 95023-3902 C019
ALT-1
COMMENTS: The property is currently operated as farm acerage. No significant potential for hazardous waste.

65) Situs: BOLSA HWY, HOLLISTER CA 95023
APN: 014-070-005-0 Rec Date: 00/1992 Total Value: $108,453
County: SAN BENITO, CA Sale Price: Imprv Value:
Use: ORCHARD Document #: 12342 Land Value: $94,026
Card #: Zoning: 1st TD Amt: Lot Width: Depth:
Phone: 831/637-3702 Stories: Full Baths: Half: Bldg/Liv Area:
Owners: RAJKOVICH MARTIN-GEORGE-LUCILL Yr Built/Eff:
Mail: PO BOX 189; HOLLISTER CA 95024-0189 B002
ALT-1
COMMENTS: The property is currently operated as farm orchard acerage. No significant potential for hazardous waste.

66) Situs: BOLSA RD, HOLLISTER CA 95023
APN: 014-080-001-0 Rec Date: Total Value: $351,976
County: SAN BENITO, CA Sale Price: Imprv Value: $109,553
Use: AGRICULTURAL (NEC) Document #: 8539 Land Value: $242,423
New Pg: Map Pg: Rooms: Bedrms: Lot Area:
Owners: BERTUCCIO TINA Yr Built/Eff:
Mail: 2360 AIRLINE HWY; HOLLISTER CA 95023-6106 R007
ALT-2
COMMENTS: The property is currently operated as farm acerage. No significant potential for hazardous waste.

67) Situs: BOLSA RD, HOLLISTER CA 95023-9313 R007
APN: 019-130-010 Rec Date: 00/1982 Total Value: $224,007
County: SAN BENITO, CA Sale Price: Imprv Value:
Use: AGRICULTURAL/FARMS Document #: Land Value:
Card #: Zoning: 1st TD Amt: Lot Width: Depth:
New Pg: Map Pg: Rooms: Bedrms: Lot Area:
Phone: Stories: Full Baths: Half: Bldg/Liv Area:
Owners: HERBERT, PHILIP C Yr Built/Eff:
Mail:
ALT-2
COMMENTS: The property is currently operated as farm acerage. No significant potential for hazardous waste.

68) Situs: BOLSA RD, HOLLISTER CA 95023
APN: 014-080-008-0 Rec Date: 00/1994 Total Value: $418,660
County: SAN BENITO, CA Sale Price: Imprv Value: $8,600
Use: TRUCK CROPS Document #: 2121 Land Value: $410,060
Card #: Zoning: 1st TD Amt: Lot Width: Depth:
New Pg: Map Pg: Rooms: Bedrms: Lot Area:
Phone: Stories: Full Baths: Half: Bldg/Liv Area:
Owners: BERTUCCIO PAUL W-IRMA-OLGA Yr Built/Eff:
Mail: 230 5TH ST; HOLLISTER CA 95023-3902 C019
ALT-1
COMMENTS: The property is currently operated as farm acerage. No significant potential for hazardous waste.

69) Situs: BOLSA RD, HOLLISTER CA 95023
APN: 014-080-009-0 Rec Date: 00/1995 Total Value: $235,975
County: SAN BENITO, CA Sale Price: Imprv Value: $4,144
Use: TRUCK CROPS Document #: 194 Land Value: $231,831
Card #: Zoning: 1st TD Amt: Lot Width: Depth:
New Pg: Map Pg: Rooms: Bedrms: Lot Area:
Phone: 831/637-4121 Stories: Full Baths: Half: Bldg/Liv Area:
Owners: HERBERT PHILIP C Yr Built/Eff:
Mail: PO BOX 162; HOLLISTER CA 95024-0162 B002
ALT-1, ALT-2
COMMENTS: The property is currently operated as farm acerage. No significant potential for hazardous waste.

70) Situs: BOLSA RD, HOLLISTER CA 95023
APN: 014-090-024-0 Rec Date: 04/28/2000 Total Value: $35,413
County: SAN BENITO, CA Sale Price: $933,000 Imprv Value:
Use: AGRICULTURAL (NEC) Document #: 5224 Land Value: $35,413
Owners: DON CHAPIN CO INC Yr Built/Eff:
Mail: 440 CRAZY HORSE CANYON RD; SALINAS CA 93907-8402 R011
ALT-1
COMMENTS: The property is currently operated as farm acerage. Formerly the property was used for the Farehaven School. No significant potential for hazardous waste.

71) Situs: 2730 BOLSA RD, HOLLISTER CA 95023-9000 R007
APN: 018-020-011-0 Rec Date: 00/1994 Total Value: $186,027
County: SAN BENITO, CA Sale Price: Imprv Value: $81,844
Use: TRUCK CROPS Document #: 3389 Land Value: $104,183
Card #: Zoning: 1st TD Amt: Lot Width: Depth:
Phone: 831/637-2123 Stories: Full Baths: Half: Bldg/Liv Area:
Owners: HART WILLARD J Yr Built/Eff:
Mail: 2730 BOLSA RD; HOLLISTER CA 95023-9000 R007
ALT-2
COMMENTS: The property is currently operated as farm acerage. No significant potential for hazardous waste.

72) Situs: BOLSA RD, HOLLISTER CA 95023-9300 R007
APN: 019-010-005-0 Rec Date: 06/04/1997 Total Value: $38,914
County: SAN BENITO, CA Sale Price: $250,000 Imprv Value: $643
Use: AGRICULTURAL (NEC) Document #: 5323 Land Value: $38,271
Phone: 530/888-6836 Stories: Full Baths: Half: Bldg/Liv Area:
Owners: GAMBETTA RICK Yr Built/Eff:
Mail: 2533 BOLSA RD; HOLLISTER CA 95023-9300 R007
ALT-1
COMMENTS: The property is currently operated as farm acerage, with a single family residence located at the south end. No significant potential for hazardous waste.

73) Situs: 2130 BOLSA RD, HOLLISTER CA 95023-9316 R007
APN: 019-010-007-0 Rec Date: 00/1994 Total Value: $131,760
County: SAN BENITO, CA Sale Price: $850,000 Imprv Value: $21,984
Use: PASTURE Document #: 2110 Land Value: $109,776
Phone: 831/636-4898 Stories: Full Baths: Half: Bldg/Liv Area:
Owners: ROHNERT FREDERICK W II & ALLISON L Yr Built/Eff:
Mail: 610 RANDYS CIR; HOLLISTER CA 95023-6628 R006
ALT-2, the south west corner
COMMENTS: The property is currently used pasture or vacant grassland. No significant potential for hazardous waste.

74) Situs: 2533 BOLSA RD, HOLLISTER CA 95023-9300 R007
APN: 019-010-010-0 Rec Date: 06/04/1997 Total Value: $127,054
County: SAN BENITO, CA Sale Price: $250,000 Imprv Value: $5,817
Use: TRUCK CROPS Document #: 5323 Land Value: $121,237
Card #: Zoning: 1st TD Amt: $43,000 Lot Width: Depth:
New Pg: Map Pg: Rooms: Bedrms: Lot Area:
Phone: 530/888-6836 Stories: Full Baths: Half: Bldg/Liv Area:
Owners: GAMBETTA RICK Yr Built/Eff:
Mail: 2533 BOLSA RD; HOLLISTER CA 95023-9300 R007
ALT-1
COMMENTS: The property is currently operated as farm acerage. No significant potential for hazardous waste.

75) Situs: BOLSA RD, HOLLISTER CA 95023
APN: 019-020-011-0 Rec Date: 03/23/1998 Total Value: $317,322
County: SAN BENITO, CA Sale Price: $305,000 Imprv Value: $5,202
Use: PASTURE Document #: 3219 Land Value: $312,120
Card #: Zoning: 1st TD Amt: $170,000 Lot Width: Depth:
Phone: Stories: Full Baths: Half: Bldg/Liv Area:
Owners: NICHOLSON LAURENCE M Yr Built/Eff:
Mail: 701 MCCRAY ST; HOLLISTER CA 95023-4033 C010
ALT-1
COMMENTS: The property is currently listed as pasture acerage, with some aggragte mining having been conducted in the past. No significant potential for hazardous waste.

76) Situs: 2017 BOLSA RD, HOLLISTER CA 95023-9300 R007
APN: 019-020-015-0 Rec Date: 00/1976 Total Value: $242,359
County: SAN BENITO, CA Sale Price: Imprv Value: $105,658
Use: ORCHARD Document #: 404-348 Land Value: $131,301
Phone: 831/637-5128 Stories: Full Baths: Half: Bldg/Liv Area:
Owners: JUREVICH WILLIAM M & PEARL N Yr Built/Eff:
Mail: 750 FLYNN RD; HOLLISTER CA 95023-9308 R007
ALT-1
COMMENTS: The property is currently operated as farm orchard. If the property is to be a full take, the single family residence and shop buildings will have some significant potential for encountering hazardous waste. If the buildings remain outside the proposed R/W as depicted, no significant potential for hazardous waste.

77) Situs: 1448 BOLSA RD, HOLLISTER CA 95023-9316 R007
APN: 019-090-001-0 Rec Date: 00/1993 Total Value: $243,606
County: SAN BENITO, CA Imprv Value: $98,656 Use: ORCHARD
Document #: 480 Land Value: $144,950 Phone: 831/637-4221
Owners: RAJKOVICH MARTIN-GEORGE-LUCILL Yr Built/Eff:
Mail: PO BOX 189; HOLLISTER CA 95024-0189 B002
ALT-2
COMMENTS: The property is currently operated as farm orchard. If the property is to be a full take, the single family residence and shop buildings will have some significant potential for encountering hazardous waste.

78) Situs: BOLSA RD, HOLLISTER CA 95023
APN: 019-090-003-0 Rec Date: 00/1993 Total Value: $30,499
County: SAN BENITO, CA Sale Price: Imprv Value: $2,623
Use: ORCHARD Document #: 484 Land Value: $27,876
Card #: Zoning: 1st TD Amt: Lot Width: Depth:
New Pg: Map Pg: Rooms: Bedrms: Lot Area:
Phone: 831/637-3702 Stories: Full Baths: Half: Bldg/Liv Area:
Owners: RAJKOVICH MARTIN-GEORGE-LUCILL Yr Built/Eff:
Mail: PO BOX 189; HOLLISTER CA 95024-0189 B002
ALT-1
COMMENTS: The property is currently operated as farm orchard acerage. No significant potential for hazardous waste.

79) Situs: BOLSA RD, HOLLISTER CA 95023-9309 R007
APN: 019-090-021-0 Rec Date: Total Value: $29,180
County: SAN BENITO, CA Sale Price: Imprv Value: $13,388
Use: ORCHARD Document #: 6717 Land Value: $15,792
Card #: Zoning: 1st TD Amt: Lot Width: Depth:
New Pg: Map Pg: Rooms: Bedrms: Lot Area:
Phone: 831/637-3702 Stories: Full Baths: Half: Bldg/Liv Area:
Owners: RAJKOVICH MARTIN Yr Built/Eff:
Mail: 4153 BOLSA RD; HOLLISTER CA 95023-9309 R007
ALT-1
COMMENTS: The property is currently operated as farm orchard. The single family residence and shop buildings will have some significant potential for encountering hazardous waste.

80) Situs: 1444 BOLSA RD, HOLLISTER CA 95023-9316 R007
APN: 019-090-022-0 Rec Date: 00/1993 Total Value: $131,404
County: SAN BENITO, CA Sale Price: Imprv Value: $50,128
Use: ORCHARD Document #: 479 Land Value: $81,276
Card #: Zoning: 1st TD Amt: Lot Width: Depth:
Phone: 831/637-3702 Stories: Full Baths: Half: Bldg/Liv Area:
Owners: RAJKOVICH MARTIN-GEORGE-LUCILL Yr Built/Eff:
Mail: PO BOX 189; HOLLISTER CA 95024-0189 B002
ALT-1
COMMENTS: The property is currently operated as farm orchard. The take segment depicted is a strip along the existing SR-25 R/W. If the property is to be a full take, the single family residence and shop buildings will have some significant potential for encountering hazardous waste. If the buildings remain outside the proposed R/W as depicted, no significant potential for hazardous waste.

81) Situs: WRIGHT RD, HOLLISTER CA 95023
APN: 019-130-002-0 Rec Date: 12/30/1998 Total Value: $57,201
County: SAN BENITO, CA Sale Price: Imprv Value: $11,717
Use: TRUCK CROPS Document #: 18053 Land Value: $45,484
Owners: TOWLE Yr Built/Eff:
Mail: 880 WEST ST; HOLLISTER CA 95023-4619 C002
Not used for this project, resides within the APE boundary.
COMMENTS: The property is currently operated as farm acerage. No significant potential for hazardous waste.

82) Situs: SAN FELIPE RD, CA
APN: 019-130-021-0 Rec Date: 00/1994 Total Value: $275,886
County: SAN BENITO, CA Sale Price: Imprv Value: $4,671
Use: TRUCK CROPS Document #: 1968 Land Value: $271,215
Owners: GORIN HENRY J Yr Built/Eff:
Mail: N/AVAIL;
ALT-A, ALT-B
COMMENTS: The property is currently operated as farm orchard acerage. No significant potential for hazardous waste.

83) Situs: , CA
APN: 053-360-029-0 Rec Date: 06/09/1999 Total Value: $402,900
County: SAN BENITO, CA Sale Price: $395,000 Imprv Value:
Use: TRUCK CROPS Document #: 8930 Land Value: $402,900
Card #: Zoning: 1st TD Amt: $25,000 Lot Width: Depth:
New Pg: Map Pg: Rooms: Bedrms: Lot Area:
Phone: Stories: Full Baths: Half: Bldg/Liv Area:
Owners: CLINK RICHARD E & LINDA C 2001 Yr Built/Eff:
Mail: 458 COAKLEY DR; SAN JOSE CA 95117-1518 C003
ALT-A
COMMENTS: The property has been converted to parking area for trailer storage. New warehouse building are located on the property. No significant potential for hazardous waste.

84) Situs: BOLSA RD, HOLLISTER CA 95023-9313 R007
APN: 014-060-003 Rec Date: 00/1982 Total Value: $224,007
County: SAN BENITO, CA Sale Price: Imprv Value:
Use: AGRICULTURAL/FARMS Document #: Land Value:
Card #: Zoning: 1st TD Amt: Lot Width: Depth:
New Pg: Map Pg: Rooms: Bedrms: Lot Area:
Phone: Stories: Full Baths: Half: Bldg/Liv Area:
Owners: BERTUCCIO, TINA Yr Built/Eff:
Mail:
ALT-2
COMMENTS: The property is currently operated as farm acerage. No significant potential for hazardous waste.

85) Situs: 640 BRIGGS RD, HOLLISTER CA 95023-9047 R002
APN: 053-360-011-0 Rec Date: 00/1993 Total Value: $266,949
County: SAN BENITO, CA Sale Price: Imprv Value: $62,599
Use: ORCHARD Document #: 481 Land Value: $204,350
Phone: 831/637-3702 Stories: Full Baths: Half: Bldg/Liv Area:
Owners: RAJKOVICH MARTIN-GEORGE-LUCILL Yr Built/Eff:
Mail: 4153 BOLSA RD; HOLLISTER CA 95023-9309 R007
ALT-A
COMMENTS: The property is currently operated as farm orchard acerage. No significant potential for hazardous waste.

86) Situs: BOLSA RD, HOLLISTER CA 95023
APN: 053-380-004-0 Rec Date: 00/1989 Total Value: $1,790,000
County: SAN BENITO, CA Sale Price: Imprv Value:
Use: TRUCK CROPS Document #: 9681 Land Value: $1,790,000
Card #: Zoning: 1st TD Amt: Lot Width: Depth:
New Pg: Map Pg: Rooms: Bedrms: Lot Area:
Phone: 831/637-6574 Stories: Full Baths: Half: Bldg/Liv Area:
Owners: ROBERTS JANET P Yr Built/Eff:
Mail: 1401 THOMAS RD; HOLLISTER CA 95023-9120 R001
ALT-A, ALT-B
COMMENTS: The property is currently operated as farm orchard acerage. No significant potential for hazardous waste.

87) Situs: BOLSA RD, HOLLISTER CA 95023-9313 R007
APN: 014-060-004 Rec Date: 00/1982 Total Value: $224,007
County: SAN BENITO, CA Sale Price: Imprv Value:
Use: AGRICULTURAL/FARMS Document #: Land Value:
Owners: BERTUCCIO, TINA Yr Built/Eff:
Mail:
ALT-2
COMMENTS: The property is currently operated for truck farming. The single family residence and shop buildings will have some significant potential for encountering hazardous waste associated with demolition of shop buildings.

88) Situs: BOLSA RD, HOLLISTER CA 95023-9313 R007
APN: 018-020-012 Rec Date: 00/1982 Total Value: $224,007
County: SAN BENITO, CA Sale Price: Imprv Value:
Use: AGRICULTURAL/FARMS Document #: Land Value:
Owners: ERICH, JEROME & MARTIN Yr Built/Eff:
Mail:
ALT-2
COMMENTS: The property is currently operated as farm acerage. No significant potential for hazardous waste.

89) Situs: BOLSA RD, HOLLISTER CA 95023-9313 R007
APN: 018-020-012-0 Rec Date: 00/1982 Total Value: $224,007
County: SAN BENITO, CA Sale Price: Imprv Value:
Use: AGRICULTURAL/FARMS Document #: Land Value:
Owners: ERICH, JEROME & MARTIN Yr Built/Eff:
ALT-2
COMMENTS: The property is currently operated as farm acreage. The take segment depicted is a strip bisecting the parcel. If the property is to be a full take, the single family residence and shop buildings will have some significant potential for encountering hazardous waste. If the buildings remain outside the proposed R/W as depicted, no significant potential for hazardous waste to be encountered.

90) Situs: BOLSA RD, HOLLISTER CA 95023-9313 R007
APN: 018-020-014-0 Rec Date: 00/1982 Total Value: $224,007
County: SAN BENITO, CA Sale Price: Imprv Value:
Use: AGRICULTURAL/FARMS Document #: Land Value:
Owners: HART, DONALD & CAROL TRUST Yr Built/Eff:
ALT-2
COMMENTS: The property is currently operated as farm acerage. No significant potential for hazardous waste.

91) Situs: BOLSA RD, HOLLISTER CA 95023-9313 R007
APN: 018-020-015-0 Rec Date: 00/1982 Total Value:
County: SAN BENITO, CA Sale Price: Imprv Value:
Use: AGRICULTURAL/FARMS Document #: Land Value:
OwnersYEN TRUST Yr Built/Eff:
ALT-2
COMMENTS: The property is currently operated as farm acerage. No significant potential for hazardous waste.

92) Situs: BOLSA RD, HOLLISTER CA 95023-9313 R007
APN: 018-210-005 Rec Date: 00/1982 Total Value: $224,007
County: SAN BENITO, CA Sale Price: Imprv Value:
Use: AGRICULTURAL/FARMS Document #: Land Value:
Owners: MCCONNLEL, GEORGE W. Yr Built/Eff:
Mail:
ALT-2
COMMENTS: The take segment of this property consists of the south-eastern corner, with an older shop building and other structures, as well as some orchard trees. Demolition of this older structure will likely encounter lead based paints and asbestos containing materials. There is moderate potential for encountering hazardous waste.

Attachment A Continued. By parcel description of findings, Santa Clara County.

93) Situs: 1405 BOLSA RD, GILROY CA 95020-9514 R003
APN: 841-37-014 Rec Date: 05/28/1991 Total Value: $866,358
County: SANTA CLARA, CA Sale Price: $650,000 Imprv Value: $291,316
Use: TRUCK CROPS Document #: 10916137 Land Value: $575,042
Card #: Zoning: *A40A 1st TD Amt: $500,000 Lot Width: Depth:
New Pg: 998-E2 Map Pg: 84-B6 Rooms: Bedrms: Lot Area: 1,874,387
Phone: Stories: 1.00 Full Baths: Half: Bldg/Liv Area:
Owners: SANTOS RALPH M & LINDA A Yr Built/Eff: 1950
Mail: 1280 BOLSA RD; GILROY CA 95020-9586 R003

ALT-1. ALT-2

COMMENTS: County records list parcel use as Truck Crops. The situs address is 1405 Bolsa Road, is located east of SR-25 and is currently doing business as *El Camino Packing*. According to Ms. Jeannie Lopez, Office Manager of Uesigi Farms Inc., the site is operated as a cold storage facility. Inspection was attempted on February 22, 2002 but no one was available to discuss the site. Contacted Mr. Ralph Santos on September 5, 2002 by telephone. He indicated that there are no UST's or AGT's on the property and that the cold storage facility uses freon and not liquid ammonia for refrigeration. The facility has a **low potential** of impacting the proposed widening project. Proposed ALT-1/2 would impact the eastern half of this parcel.

94) Situs: , GILROY CA 95020
APN: 841-32-013 Rec Date: 03/05/1973 Total Value: $152,782
County: SANTA CLARA, CA Sale Price: Imprv Value: $13,379
Use: TRUCK CROPS Document #: 4445796 Land Value: $139,403
Card #: Zoning: *A40A 1st TD Amt: Lot Width: Depth:
New Pg: Map Pg: 84-B6 Rooms: Bedrms: Lot Area: 826,333
Phone: Stories: Full Baths: Half: Bldg/Liv Area:
Owners: FILICE VINEYARDS Yr Built/Eff: 1925
Mail: 7888 WREN AVE # D-143; GILROY CA 95020-4962 C013

End of project.....D-4 TIES IN TO SR-101

COMMENTS: This parcel is on the west side of RR, coincident with the terminal end limit of this project. The property is currently operated as farm acreage. There is no significant potential for hazardous waste to be encountered.

95) Situs: 415 BLOOMFIELD AVE, GILROY CA 95020
APN: 841-33-006 Rec Date: Total Value: $24,893,054
County: SANTA CLARA, CA Sale Price: Imprv Value: $11,590,324
Use: ORCHARD Document #: 10227293 Land Value: $458,086
Card #: Zoning: *AW 1st TD Amt: Lot Width: Depth:
New Pg: 998-D2 Map Pg: Rooms: Bedrms: Lot Area: 5,569,582
Phone: Stories: Full Baths: Half: Bldg/Liv Area:
Owners: CHRISTOPHER DONALD C Yr Built/Eff:
Mail: 305 BLOOMFIELD AVE; GILROY CA 95020-9516 R003

ALT-1. ALT-2

COMMENTS: County records list the parcel use as Orchard. The situs address is 415 Bloomfield and is doing business as A & D Christopher Ranch. Records research did not reveal anything on the GEOTRACKER database, but was listed on the ERD Report as a WDS (Waste Discharge System) site governed by the Regional Water Quality Control Board (RWQCB). Waste Discharge Requirements (WDRs) have been issued to the facility by the RWQCB and are identified as ORDER NO. 91-69. A & D processes food such as garlic, ginger, and shallots and generates wastewater from the food processing and from "once through cooling water". According to Ms. Kimberly Gonzalez of the RWQCB, no enforcement Orders have been issued to the facility for violation of the WDRs. Staff also reviewed the Santa Clara County Environmental Health Department files on September 12, 2002 and determined that the facility has been inspected by the Hazardous Materials Division regarding businees plan requirements. The facility is permitted for a 10,000-gallon gasoline UST. County records are sketchy regarding the number of UST's and/or AGT's exist. Futher investigation is needed. The facility has a **low potential** of impacting the proposed widening project. The take portion of this parcel would consist of the orchard area south of the business complex. There would be no significant potential to encounter hazardous waste in the take portion.

96) Situs: , GILROY CA 95020
APN: 841-35-002 Rec Date: 12/27/2000 Total Value: $86,112
County: SANTA CLARA, CA Sale Price: $3,075,000 Imprv Value: $2,180
Use: TRUCK CROPS Document #: 15508774 Land Value: $83,932
Card #: Zoning: *AW 1st TD Amt: $2,100,000 Lot Width: Depth:
New Pg: Map Pg: 91-C1 Rooms: Bedrms: Lot Area: 1,288,505
Phone: Stories: Full Baths: Half: Bldg/Liv Area:
Owners: PURA TRUST_+ Yr Built/Eff:
Mail: N/AVAIL; SALINAS CA 93902
ALT-1. ALT-2
COMMENTS: This parcel includes the Carnadero Creek Flood Control Easement for Santa Clara County Water District. The parcel is used for agriculture. There is no significant potential for hazardous waste. The ALT 1 & 2 proposal would bridge Carnader Creek and bisect this parcel.

97) Situs: 1505 BOLSA RD, GILROY CA 95020-9597 R003
APN: 841-37-010 Rec Date: 06/15/1982 Total Value: $373,096
County: SANTA CLARA, CA Sale Price: Imprv Value: $86,072
Use: TRUCK CROPS Document #: 7389333 Land Value: $287,024
Card #: Zoning: *AW 1st TD Amt: Lot Width: Depth:
New Pg: 998-E2 Map Pg: 84-B6 Rooms: Bedrms: Lot Area: 4,303,728
Phone: 831/637-6574 Stories: Full Baths: Half: Bldg/Liv Area:
Owners: ROBERTS JANET P Yr Built/Eff:
Mail: 1401 THOMAS RD; HOLLISTER CA 95023-9120 R001
ALT-1. ALT-2
COMMENTS: This parcel is adjacent to SR-25 on the east side. The property is currently operated as farm acreage. This parcel includes the Pajaro River Flood Control Easement for Santa Clara County Water District. There is no significant potential for hazardous waste to be encountered. This parcel would be used to construct an intersection for ALT 1 & 2, and the parcel would affect the "No Build" Alternative.

98) Situs: 1105 BOLSA RD, GILROY CA 95020-8072 R003
APN: 841-51-003 Rec Date: 03/24/1989 Total Value: $405,119
County: SANTA CLARA, CA Sale Price: $415,000 Imprv Value: $80,317
Use: TRUCK CROPS Document #: 10051255 Land Value: $317,097
Card #: Zoning: *AW 1st TD Amt: Lot Width: Depth:
New Pg: 998-F4 Map Pg: 84-C6 Rooms: Bedrms: Lot Area: 3,105,828
Phone: Stories: Full Baths: Half: Bldg/Liv Area:
Owners: PETER O GLUHAICH FARMS PARTNERSHIP Yr Built/Eff:
Mail: 1105 NEW BOLSA RD; GILROY CA 95020 C/O SOPHIE GLUHAICH
ALT-1. ALT-2
COMMENTS: This parcel is adjacent to SR-25 on the east side. The property is currently operated as farm acreage. This parcel includes the Carnadero Creek Flood Control Easement for Santa Clara County Water District. Although there is no site information in the GEOTRACKER and other Environmental risk databases, there is a moderate potential for hazardous waste to be encountered in the demolition of the farm strutures. This parcel would be bisected by ALT 1 & 2, including the farm headquarters structures. Also the parcel would affect the "No Build" Alternative.

State of California
DEPARTMENT OF TRANSPORTATION

Business, Transportation and Housing Agency

Memorandum

Flex your power!
Be energy efficient!

To: Ken Doran
Hazardous Waste Specialist
Hazardous Waste and Paleontology Branch,
Central Region Environmental

Date: April 8, 2010

File: 05-48540
05-SBt-25 (PM 51.5/60.1)
04-SCl-25 (PM 0.0/2.6)
and 05-SBt-156 (PM R10.5/R12.2)

From: G. William 'Trais' Norris III
Branch Chief
Sierra Pacific Environmental Analysis Branch

Subject: Change to Purpose Statement

The Purpose statement for the SR25 Widening and Route Adoption project has changed. The new wording is

The purpose of the proposed route adoption project is to:

- Select a corridor for State Route 25 between Hollister and Gilroy that will accommodate existing and future travel demand.
- Facilitate local and regional land use planning by identifying future right-of-way needed for the State Route 25 corridor.

The purpose of the proposed build project is to:

- Improve traffic flow and reduce delays on State Route 25 between San Felipe Road in Hollister and Hudner Lane in San Benito County.
- Increase capacity along State Route 25 between San Felipe Road in Hollister and Hudner Lane in rural San Benito County.

The new purpose does not affect the conclusions of the Initial Site Assessment for this project last revised in December 2008.

c: Project file

State of California Business, Transportation and Housing Agency

Memorandum

To: WENDY KRONMAN
Associate Environmental Planner
Central Region Environmental

Date: December 1, 2008

File: SBt/25/156SCR/25
EA: 05-485401
PM: SBt -25 PM 51.5/60.1
SCR-25 PM R0.0/R2.08
SBt-156, PM R10.5/R12.5

From: GERALD WHITE, Chief 12-1-08
Central Region Hazardous Waste and Paleontology Branch

Subject: Revised Report for Route 25 from San Felipe Road near City of Hollister to Route 25/156

Project Description

The California Department of Transportation (Caltrans), in cooperation with San Benito Council of Governments and Santa Clara Valley Transportation Authority is evaluating the conversion of 11.2 miles of the existing State Route 25 two-lane conventional highway to a four-lane expressway in San Benito and Santa Clara counties. This Draft Environmental Impact Report and Environmental Impact Statement includes two proposed projects: (1) a TIER I route adoption and (2) a proposed construction project within the limits of the proposed route adoption.

1. The route adoption study extends from San Felipe Road within the City of Hollister (post mile 51.5) to the San Benito/Santa Clara County line (post mile 60.1) and on to the end of State Route 25 at U.S. 101 south of the city of Gilroy (post miles 0.0 to 2.6 in Santa Clara County).

2. The proposed construction project limits extend 3.8 miles in San Benito County, from San Felipe Road in Hollister to just west of Hudner Lane (post miles 51.5 to 55.3). The existing 2-lane conventional highway would be replaced by a 4-lane expressway.

   State Route 25, a two-lane conventional highway, runs northwest through the relatively flat terrain of the Hollister Valley, terminating at U.S. 101 after crossing the Pajaro River and Carnadero Creek. Agriculture dominates the surrounding landscape, and farmsteads and houses are scattered along the length of the study area. Residences, retail businesses, and agriculture-related commercial operations are more concentrated at both ends of the route adoption study area, on the outskirts of Gilroy and Hollister.

The purpose of the proposed project is to:

- Select a route adoption corridor for State Route 25 between Hollister and Gilroy for planning purposes.
  Improve traffic flow, reduce delays, and enhance the movement of goods on State Route 25 between San Felipe Road in Hollister and Hudner Lane in San Benito County.
- Increase capacity along State Route 25 between San Felipe Road in Hollister and Hudner Lane in San Benito County.

Slow moving farm equipment, trucks, and local and commuter traffic share this two-lane roadway. An increasing number of vehicles travel this stretch of State Route 25 and, during peak commute hours, the roadway is congested. Traffic flow is delayed by vehicles turning onto and/or out of the many driveways and local roads, affecting the flow of the faster moving vehicles. Many commuters whose destination is beyond the local area take local roads (Bloomfield Road, Frazier Lake Road, and Shore Road) as shortcuts between State Route 25 and State Route 156 and also State Route 152. Significant commercial truck traffic travels through the area on State Route 25, and is subject to delays as well. A new route alignment should be adopted so that the appropriate area for a future expressway can incorporated into the San Benito and Santa Clara County general plans now, before future development occurs along this stretch of highway.

Both of the route adoption alternatives, Alternatives 1 and 2, are 11.2 miles long, and share the same alignment from approximately 1/2 miles south of Shore Road (post mile 56.1) in San Benito County to U.S. 101 in Santa Clara County (See Figure 1.2). Between post mile 56.1 in San Benito County and the southern end of the proposed project at San Felipe Road, the two alignment alternatives separate: Alternative 1 proposes to align the future four-lane expressway generally to the east (or north) of the existing two-lane north/south highway while Alternative 2 would align mostly to the west (or south) of the existing two-lane highway. The alignments would be wide enough to accommodate a future four-lane expressway with a 62 foot median (342 feet) and frontage roads on one or both sides. The alignments would also be wide enough to accommodate a future interchange near the existing intersection of State Route 25 and State Route 156 and a future State Route 25/U.S. 101 interchange north of the existing interchange. Other improvements include new bridges over Carnadero Creek and the Pajaro River, and overcrossings of the Union Pacific Railroad Hollister branch line and the Union Pacific main line just east of U.S. 101.

Both build alternatives, Alternative A and Alternative B would extend 3.8 miles in San Benito County, from San Felipe Road (post mile 51.5) to just west of Hudner Lane (post mile 55.3). Unlike the route adoption alternatives, the build alternatives propose a realigned and widened at-grade intersection at State Route 25 and State Route 156 instead of an interchange. Both construction alternatives would transition back to the existing two-lane highway just west of Hudner Lane.

The No-Action Alternative would result in no action being taken, and no further improvements would be made to State Route 25 within the route adoption limits other than the State Route 25 Safety and Operations Enhancement Project. It is anticipated that work will begin early in 2009 and will be completed by early 2010. Work will begin just south of Hudner Lane (post mile 55.1) and end just south of the Union Pacific Railroad crossing (post mile 60.0) in San Benito County. Roadway widening will consist of two 10-foot outside shoulders, two 12-foot travel lanes, two 5-foot inside shoulders and placement of a temporary concrete median barrier. Rumble strips will be installed on all inside and outside shoulders. The Hudner Lane and Shore Road intersections will be improved.

Hazardous Waste

This ISA is a revision of our report dated Nov 01, 2006. Investigation for this ISA included examination of consultant reports from previous ISAs, aerial photographs; USGS Topographical Quadrangle Maps; review of the Regional Water Quality Control Board's Leaking Underground Storage Tank Information System (GEOTRACKER) list; review of EPA ECHO database., and the EnviroStor data base systems; City of Hollister Fire Department records, County of San Benito and County of Santa Clara Environmental Health Department records and a thorough field reconnaissance conducted during August and September 2006, February, September and October 2007. Initial aerially deposited lead (ADL) studies were conducted within the median of SR 101 between KP 0.6 (PM 0.37) and KP 6.8 (PM 4.2) in accordance with Task Order No. 04-275601-VX. The Soil Investigation Report is dated June 13, 2002 and concludes that there is no significant ADL contamination of soil, within the study area, that will require special handling. All excess soils can be reused or disposed of without restriction. Attachment A includes individual assessors parcel numbers (APN's) with detailed comments.

Categories of Concern:

1. **Hazardous waste sites with active underground storage tanks (UST's) or high hazardous waste potential.**

2. **Hazardous waste sites with "no further action" letters.**

3. **Hazardous waste sites with low to moderate potential to affect the project.**

4. **Aerially Deposited Lead (ADL).**

5. **Asbestos Containing Materials (ACM), Treated Wood Waste (TWW).**

San Benito County Assessment.

Category 1: Hazardous waste sites with active underground or above ground storage tanks (USTs ASTs) or high hazardous waste potential.

Site #4, APN 019-090-031-0, 720 Briggs Road. Hershey Auto Body and Paint. Commercial part-time auto body repair and painting business. Alternative 1 would occupy the western half of this property. Construction would result in at least one metal fabricated building being demolished. There is no significant potential for encountering hazardous waste upon the unoccupied "take" portion. Taking of the entire parcel will require that effort be made to ensure that improper handling of solvents and other paint based materials did not result in contamination of soil or ground water. ALT-A

Site #9, APN 019-020-014-0. County of San Benito Sheriff's Department Shooting Range. While this property is within the designated area of potential effect (APE) both Alternatives A and B avoid this properity. The potential for encountering hazardous waste is minimal based on the design as shown for both Alt A and B.

Site #13, APN 014-040-002-0. According to the GEOTRACKER data list, there were five UST's onsite. Two 550 gallon UST's contain unleaded gasoline; one 550 gallon and one 2000 gallon UST contains diesel, and one 2000 gallon UST contains leaded gas. No files exist regarding either above ground tanks (AGT's) or UST's at the San Benito County Environmental Health office.. A field investigation was conducted on February 22, 2002. Mr. Martin Rajkovich, owner, was met on-site and he indicated that there are no longer any UST's on-site as they were removed about 30 years ago. There is currently a 1,000 gallon gasoline and diesel AGT on-site, both located within

the area of potential effect. The facility has a high potential of impacting the proposed widening project ALT-A.

Category 2: Hazardous waste sites with "no further action" letters.

Site #11, APN 053-380-003-0, 530 San Felipe Road, Hollister. Former Leaking Underground Fuel Tank (LUFT) site. Environmental records held by San Benito County indicate that underground fuel storage tanks for this property have been removed, with a letter for "No Further Action" issued for this site. Alternative A and B may require the service station be demolished. This parcel and the adjacent parcel are listed as being owned by Janet Roberts. Current Construction of intersection improvements has been completed on parcel 053-380-002-0. Both ALT A and ALT B impact this site.

Site #2, APN 053-380-010-0, 800 Bolsa Road (Hwy 25). Abundant Life Four Square Church office, Environmental records held by San Benito County indicate that two underground fuel storage tanks for this property have been removed, with a letter for "No Further Action" issued for this site. There is no significant potential to encounter hazardous waste. County records list parcel use as Commercial (Nec). The parcel is located on the west side of SR-25. Records research did not reveal anything on VISTA, but GEOTRACKER indicates there are two, possibly four UST's on-site, and the site was formerly doing business as Spencer Rentals. San Benito County Environmental Health did not have any files regarding business activities or UST's, according to Ray Stevenson, Environmental Health Specialist. Field inspection in August 2001 revealed that the occupant was doing business as Our Earth Environmental Inc. The parcel had a chain link fence, overhead utilities, a tanker truck and 55 gallon barrels. A followup inspection conducted on February 22, 2002 revealed that Our Earth Environmental Inc. vacated the site and Abundant Four Square Church currently occupies the site with an office and storage building. The church also operates the adjacent parcel identified as APN: 053-380-011-0 at 790 Bolsa Road. The existing warehouse at 790 Bolsa Road has been remodeled as the church sancturary. Pastor Bob Rueffner indicated that an environmental firm was hired to evaluate the potential for site contamination at this site (800 Bolsa Road) due to the previously operated businesses. A report was prepared by Enviro Consulting (Enviro) and concluded that soil staining ocurred in an area approximately 3 feet by 3 feet adjacent to the storage building. Contamination exists from oil and grease (O&G) and total petroleum hydrocarbons as diesel (TPHd). Alternative A crosses this site, and Alternative B avoids this site.

Category 3: Hazardous waste sites with low to moderate potential to affect the project.

Site #12, APN 019-090-013-0, 160 Briggs Road, Hollister. Hollister Equipment, Chapman Woodworks, and the DeBrito Chocolate Factory, and Ferguson Plumbing HVAC at 132 Briggs Road. Six (6) active UST's on-site according to GEOTRACKER; however on-site investigations and anecdotal evidence have revealed that the tanks have been removed. ALT-A affects the eastern corner of this parcel by constructing a frontage road and cul de sac in the area of the single family residence. ALT-B bisects this parcel in an area that avoids the location of the former USTs.

Site #7, APN 014-020-003-0, 4364 Hwy 25. Hollister Truck Parts. Truck repair shop, Above Ground Tank (AGT) on-site. Moderate potential for ALT A to encounter hazardous waste in the shop building area, low potential of impacting ALT B which bisects the parcel.

Site #14, APN 019-020-013-0, 1980 Bolsa Road (Hwy 25), Hollister. Machine shop business. Moderate potential of impacting alternatives A.

Site #15, APN 053-380-011-0, 790 Bolsa Road (Hwy 25), Hollister. Existing warehouse remodeled as a church and is adjacent to a soil contamination site and potential UST site. Moderate potential of impacting ALT-A.

Site #16, APN 019-090-010-0, Situs is 231 – 233 Briggs Road, Hollister. Old barn and 55 gallon drums stored on-site, contents unknown. Moderate potential of impacting alternatives ALT-A.

Site #18, APN 014-080-005-0, 2731 Bolsa Rd (Hwy 25), Hollister. Former school location. Property is west of the ALT A APE line. Low potential of impacting ALT A or B.

Santa Clara County Assessment.

Category 3: Hazardous waste sites with low to moderate potential to affect the project.

Site #92, APN 841-37-014, 1405 Bolsa Rd. Gilroy. El Camino Packing Inc. With moderate potential to affect alternatives 1 and 2, and no siginificant potential of impacting the "No Build" alternative.

Site #94, APN 841-33-006, 415 Bloomfield Ave. Bolsa Rd, Gilroy. A & D Christopher Ranch. With no siginificant potential of impacting the "No Build" alternative, and moderate potential to affect alternatives 1 and 2.

Existing Route 25 Assessment

Category 4: Aerially Deposited Lead (ADL).

Aerially Deposited Lead surveys were conducted for portions of SR-25 under Consultant Contract with GEOCON INC. contract # 05-0G390k-TC dated December 2001. A Lead Compliance Plan Non-Standard Special Provision would incorporate the following information concerning lead contamination along SR-25: Lead concentrations ranged from non-detectable to 400 mg/kg. The mean concentration predicted based on statistical analysis indicates, with a 95% confidence level, that there would be 61.29 mg/kg lead contamination for soils removed to stockpiles from within the project confines. This level of ADL contamination in the soils is well below regulatory action levels, therefore soils may be reused or relinquished without restriction.

Category 5: Asbestos Containing Materials (ACM) and Treated Wood Wastes (TWW). If bridges are to be demolished/replaced under the no build alternative.

Pajaro River Bridge No. 43-0001 (1950), No Asbestos Containing Materials have been used in the bridge structure. Treated Wood (TWW) is used for the guard rail posts. If the approachs metal beam guardrails are removed for disposal, there is no longer special handling required for TWW disposal.

Carnadaro Creek Bridge No. 37-0008L (1949), No Asbestos Containing Materials have been used in the bridge structure. Treated Wood (TWW) is used for the guard rail posts. If the approachs metal beam guardrails are removed for disposal, there is no longer special handling required for TWW disposal.

If further information is needed, please contact Ken Doran at (559) 243-8276.

Attachment A. By parcel description of findings, San Benito County.

1) Situs: 160 BRIGGS RD, HOLLISTER CA 95023-9001 R002
APN: 019-090-014-0 Rec Date: 00/1987 Total Value: $24,902
County: SAN BENITO, CA Sale Price: Imprv Value:
Use: RESIDENTIAL LOT Document #: 7375 Land Value: $24,902
Card #: Zoning: 1st TD Amt: Lot Width: Depth:
New Pg: Map Pg: Rooms: Bedrms: Lot Area:
Phone: Stories: Full Baths: Half: Bldg/Liv Area:
Owners: HAYHURST FARMING & HARVESTINGINC Yr Built/Eff:
Mail: 5620 SOUTHSIDE RD; HOLLISTER CA 95023-9123 R001

ALT-B

COMMENTS: County records list parcel use as a Residential Lot. The parcel is located on the west side of SR-25. The situs address is 160 Briggs Road, includes an SFR, and is owned by Hayhust Farming and Harvesting, Inc. Records research did not reveal anything in the GEOTRACKER database. The VISTA report indicates that the site is doing business as Tony Lomanto Trucking and has six (6) active/inservice underground storage tanks (UST's) on-site; however, aerial photographs clearly show that this parcel only accommodates an SFR and not the former Tony Lomanto Trucking operation (see APN 019-090-013). The take portion of this property would include the SFR, to accommodate a frontage road cul-de-sac for ALT-A. The facility has a moderate potential of impacting the proposed widening project for ALT-A.

2) Situs: 800 BOLSA RD, HOLLISTER CA 95023-9361 R007
APN: 053-380-010-0 Rec Date: 08/05/1991 Total Value: $308,000
County: SAN BENITO, CA Sale Price: $587,000 Imprv Value: $43,000
Use: COMMERCIAL (NEC) Document #: 6351 Land Value: $265,000
Card #: Zoning: 1st TD Amt: Lot Width: Depth:
New Pg: Map Pg: Rooms: Bedrms: Lot Area:
Phone: 831/637-6574 Stories: Full Baths: Half: Bldg/Liv Area:
Owners: ROBERTS JANET P Yr Built/Eff:
Mail: 1401 THOMAS RD; HOLLISTER CA 95023-9120 R001

ALT-A

COMMENTS: In the original scoping for this project; County records list parcel use as Commercial (Nec). The parcel is located on the west side of SR-25. Records research did not reveal anything on VISTA, but GEOTRACKER indicates there are two, possibly four UST's on-site, and the site was formerly doing business as Spencer Rentals. San Benito County Environmental Health did not have any files regarding business activities or UST's, according to Ray Stevenson, Environmental Health Specialist. Field inspection in August 2001 revealed that the occupant was doing business as Our Earth Environmental Inc. The parcel had a chain link fence, overhead utilities, a tanker truck and 55 gallon barrels. A followup inspection conducted on February 22, 2002 revealed that Our Earth Environmental Inc. vacated the site and Abundant Four Square Church currently occupies the site with an office and storage building. The church also operates the adjacent parcel identified as APN: 053-380-011-0 at 790 Bolsa Road. The existing warehouse at 790 Bolsa Road is being remodeled as the church sancturary and is nearing completion. Pastor Bob Rueffner indicated that an environmental firm was hired to evaluate the potential for site contamination at this site (800 Bolsa Road) due to the previously operated businesses. A report was prepared by Enviro Consulting (Enviro) and concluded that soil staining ocurred in an area approximately 3 feet by 3 feet adjacent to the storage building. Contamination exists from oil and grease (O&G) and total petroleum hydrocarbons as diesel (TPHd). Although the Enviro report indicates regulatory record reviews did not reveal hazardous materials releases, it is clear contamination exists from some form of above ground storage tanks or drums. UST's may have existed on-site, however the location(s) are unknown. The facility has a **high potential** of impacting the proposed widening project, and additional studies would be needed to define the lateral and vertical extent of contamination cited in the Enviro report and to confirm the presence or absence of UST's. This triangular shaped parcel will likely be a full take for ALT-A. As of 2008 the property has received letters from the lead regulatory agency, San Benito County Environmental Health Department that the above address has met the remediation goals outlined in the cleanup plan and requires no further action for cleanup.

3) Situs: 2735 BOLSA RD, HOLLISTER CA 95023
APN: 014-090-056-0 Rec Date: 04/28/2000 Total Value: $1,104,311.00
County: SAN BENITO, CA Sale Price: $933,000 Imprv Value:
Use: INDUSTRIAL, MINE/QUARRY (NEC) Document #: Land Value:
Card #: Zoning: 1st TD Amt: $885,966 Lot Width: Depth:
New Pg: Map Pg: Rooms: Bedrms: Lot Area:
Phone: Stories: Full Baths: Half: Bldg/Liv Area:
Owners: REDTREE PROPERTIES, A DEL LTD PARTNERSHIP Yr Built/Eff:
Mail: P. O. Box 1041, Santa Cruz Ca, 95023
ALT-1/SBT-156
COMMENTS: The property is currently being operated as a mining facility supplying aggragate sand and gravels. There is no significant potential for encountering hazardous waste.

4) Situs: 720 BRIGGS RD, HOLLISTER CA 95023-9047 R002
APN: 019-090-031-0 Rec Date: 06/27/1997 Total Value: $317,949
County: SAN BENITO, CA Sale Price: $283,000 Imprv Value: $188,091
Use: RESIDENTIAL (NEC) Document #: 6260 Land Value: $129,858
Card #: Zoning: 1st TD Amt: $110,000 Lot Width: Depth:
New Pg: Map Pg: Rooms: Bedrms: Lot Area:
Phone: Stories: Full Baths: Half: Bldg/Liv Area:
Owners: HERSEY RICHARD W Yr Built/Eff:
Mail: 720 BRIGGS RD; HOLLISTER CA 95023-9047 R002
ALT-A
COMMENTS: County records list parcel use as Residential (Nec). It does not appear that the property is zoned for the current use. The Hershey residence is about 4 years old, which includes a commercial part-time auto body repair and paint shop. The parcel is located on the east side of SR-25. Records research did not reveal anything on GEOTRACKER or VISTA. According to the owner, Mr. Richard Hershey, no liquid waste is generated; however, that statement does not reconcile to the type of hazardous chemicals used for painting, which includes volatile and semi-volatile materials. The facility has a **high potential** of impacting the proposed widening project.

5) Situs: 660 BRIGGS RD, HOLLISTER CA 95023-9047 R002
APN: 019-090-032-0 Rec Date: Total Value: $1,144,440.00
County: SAN BENITO, CA Sale Price: Imprv Value:
Use: RESIDENTIAL (NEC) Document #: 6260 Land Value:
Card #: Zoning: 1st TD Amt: Lot Width: Depth:
New Pg: Map Pg: Rooms: Bedrms: Lot Area:
Phone: Stories: Full Baths: Half: Bldg/Liv Area:
Owners: AVILA, VINCENT Yr Built/Eff:
Mail: 660 BRIGGS RD; HOLLISTER CA 95023-9047 R002
ALT-A
COMMENTS: County records list parcel use as Residential (Nec). It does not appear that the property is zoned for the current use. The Hershey residence is about 4 years old, which includes a commercial part-time auto body repair and paint shop. The parcel is located on the east side of SR-25. Records research did not reveal anything on GEOTRACKER or VISTA. According to owner, Mr. Richard Hershey, no liquid waste is generated; however, that statement does not reconcile to the type of hazardous chemicals used for painting, which includes volatile and semi-volatile materials. The facility has a **high potential** of impacting the proposed widening project.

6) Situs: BRIGGS RD, HOLLISTER CA 95023-9316 R007
APN: 019-090-038-0 Rec Date: 00/1993 Total Value: $131,404
County: SAN BENITO, CA Sale Price: Imprv Value: $50,128
Use: ORCHARD Document #: 479 Land Value: $81,276
Phone: 831/637-3702 Stories: Full Baths: Half: Bldg/Liv Area:
Owners: JACOBSON FAMILY LIVING TRUST Yr Built/Eff:
Mail: 1083 YORKTOWN DR. SUNNYVALE CA. 94087

ALT-A CUL DE SAC

COMMENTS: The property is currently operated as agricultural farm land. No significant potential for hazardous waste.

7) Situs: HUDNER LN, HOLLISTER CA 95023

APN: 014-020-003-0 Rec Date: 00/1992 Total Value: $624,305
County: SAN BENITO, CA Sale Price: Imprv Value: $198,965
Use: TRUCK CROPS Document #: 12344 Land Value: $425,340
Card #: Zoning: 1st TD Amt: Lot Width: Depth:
New Pg: Map Pg: Rooms: Bedrms: Lot Area:
Phone: 831/637-3701 Stories: Full Baths: Half: Bldg/Liv Area:
Owners: RAJKOVICH MARTIN Yr Built/Eff:
Mail: PO BOX 189; HOLLISTER CA 95024-0189 B002

ALT-A, ALT-B

COMMENTS: County records list parcel use as Truck Crops. The parcel is located on the west side of SR-25. Records research did not reveal anything in the GEOTRACKER database or VISTA report. In addition to farming, a truck repair shop is doing business on-site as Hollister Truck Parts. According to Richard Terry, employee, the shop address is 4364 Hwy 25. An above ground tank (AGT) is located in a locked shed and is used to store waste oil. An active Ag well is immediately adjacent to the shed. Soil has minor stains from diesel and gasoline spills at AGT's, which appear to be associated with the farming business. There is also an inactive Ag well that would need to be properly abandoned. The facility has a low potential of impacting the proposed widening project.

8) Situs: WRIGHT RD, CA

APN: 019-130-025-0 Rec Date: Total Value: $121,901
County: SAN BENITO, CA Sale Price: Imprv Value:
Use: TRUCK CROPS Document #: 1968 Land Value:
Phone: Stories: Full Baths: Half: Bldg/Liv Area:
Owners: HUDNER, PAUL J TRUST Yr Built/Eff:
Mail: P.0. BOX 1066, HOLLISTER CA. 95024

ALT-B

COMMENTS: The property is currently operated as agricultural farm land. No significant potential for hazardous waste.

9) Situs: BOLSA RD, HOLLISTER CA

APN: 019-020-014-0
County: SAN BENITO, CA

ALT-A and ALT-B for construction of access to this parcel.

COMMENTS: County records do not include this parcel. The parcel is located on the west side of SR-25. Records research did not reveal anything in the GEOTRACKER database or VISTA report. A windshield survey revealed that the property is used as a shooting range for the County Sheriffs department and apparently is owned by the County of San Benito. High levels of lead are anticipated. The site includes an Ag well, and is otherwise in fallow. The facility has a **high potential** of impacting the proposed widening project.

10) Situs: OLD SALINAS HIGHWAY, HOLLISTER CA 95023

APN: 053-350-005-0 Rec Date: Total Value: $518,332
County: SAN BENITO, CA Sale Price: Imprv Value:
Use: AGRICULTRUAL FARMS Document #: Land Value
Phone: Stories: Full Baths: Half: Bldg/Liv Area:
Owners: VIDOVICH, JOHN ETAL Yr Built/Eff:
Mail: 11950 CIENEGA RD; HOLLISTER CA 95023

ALT-A Realign county road.

COMMENTS: The property is currently operated as agricultural farm land. No significant potential for hazardous waste.

11) Situs: BOLSA , HOLLISTER CA 95023
APN: 053-380-003-0 Rec Date: 00/1982 Total Value: $209,487
County: SAN BENITO, CA Sale Price: Imprv Value: $72,234
Use: GARAGE Document #: 481-392 Land Value: $137,253
Phone: 831/637-6574 Stories: Full Baths: Half: Bldg/Liv Area:
Owners: ROBERTS JANET P Yr Built/Eff:
Mail: 1401 THOMAS RD; HOLLISTER CA 95023-9120 R001

ALT-A, ALT-B Partially Constructed Interchange.

COMMENTS: County records list parcel use as Garage. The situs address is 530 San Felipe Road, is located east of SR-25 and is currently doing business as *South Valley Trailers.* According to the owner of the business, the site was operated as a gas and service station over 20 years ago and the underground fuel tanks were removed. GEOTRACKER records list the site as a leaking underground fuel tank (LUFT) site and was operated as M & M Exxon. Soil only was contaminated and was remediated by excavation and aeration. VISTA records indicate the site is closed as an underground storage tank (UST) site. The City of Hollister Fire Department files indicated that four tanks were removed, including two 5,000 gallon gasoline tanks, one 3,000 gallon gasoline tank and one 550 gallon waste oil tank. The tank(s) were reported as leaking in 1988, soil samples were taken, soil was excavated and a permit to aerate was obtained from the Monterey Bay Air Pollution District the same year. An on-site domestic well serves the property and is located adjacent to Highway 156, along with power poles. The facility has a moderate potential of impacting the proposed widening project. The San Benito County appears to be in condemnation litigation for this and the adjacent parcel.

12) Situs: 132 BRIGGS RD, HOLLISTER CA 95023-9001 R002
APN: 019-090-013-0 Rec Date: 00/1987 Total Value: $926,313
County: SAN BENITO, CA Sale Price: Imprv Value: $286,595
Use: TRUCK CROPS Document #: 7375 Land Value: $639,718
Owners: HAYHURST FARMING INC A CALIF CORP Yr Built/Eff:
Mail: 5620 SOUTHSIDE RD; HOLLISTER CA 95023-9123 R001

ALT-A for access CUL DE SAC, ALT-B Bisects the parcel.

COMMENTS: County records list parcel use as Truck Crops and is located on the west side of SR-25, at the northwest corner of Wright and Briggs Roads, and is immediately adjacent to APN 013-090-014. The parcel is twenty acres in size and has an SFR, mobile home at 540 Wright Road, and four (4) businesses identified as 132 Briggs Road and 160 Briggs Road, A, B and C. Records research did not reveal anything in the GEOTRACKER database and according to Ray Stevenson of San Benito County Environmental Health Department, no files exist for the property. The VISTA report indicates that the site is reportedly doing business as (DBA) Tony Lomanto Trucking and has six (6) active/inservice underground storage tanks (UST's) on-site. One 300 and one 500 gallon UST contains oil (not specified); one 500 gallon UST contains unknown material, one 2000 gallon UST contains unleaded gas, and two 10,000 gallon UST's contain diesel. On-site inspection revealed that the trucking company is no longer in business and there are no active or inactive tanks on-site.

The businesses at 160 Briggs A, B and C are identified as: Hollister Equipment, Chapman Woodworks, and DeBrito Chocolate Factory. At least two rusted and out-of-service UST's are stored on-site. A follow-up inspection was conducted on February 22, 2002. According to Mr. Arnold DeBrito, owner of Hollister Equipment, he believes the UST's mentioned in the VISTA report were removed prior to 1986, and pointed out the approximate location of the former UST locations within the same parcel but adjacent to the newer business DBA Ferguson Plumbing HVAC. In addition, an old concrete wash rack pad exists adjacent to Mr. DeBritos shop. Mr. DeBrito indicated that his shop was once DBA Lomanto Trucking and that is why the wash rack exists. It is no longer used but apparently empties into a septic tank. The wash rack appears to be outside of the APE. How the liquid waste was discharged from the tank is unknown but solvent and heavy metals may be of concern if the project boundaries change or it is determined that the wash rack is within the APE. No obvious staining of the ground surface was noted. Mr. DeBrito operates a 50-gallon waste oil AGT. Old rusting agricultural machinery is stored on-site by the landlords located outside of the APE.

Ferguson Plumbing HVAC business sells PVC, iron and copper pipe and does not have any UST's or AGT's on-site. During a field investigation on October 24, 2002, Mr. Rick Gambetta, local property owner and an employee of Ferguson Plumbing HVAC indicated that a 500-gallon UST was removed from the area Mr.

DeBrito had previously pointed out at the Ferguson Plumbing HVAC site about five (5) years ago. Upon further investigation, it appeared that a large area was subsiding as the possible result of tank removal(s). No vent pipes or fuel dispensers were noted, the area in question is outside the APE and downdgrade from the proposed project.

Adjacent and east of Ferguson Plumbing HVAC is an older SFR, situs address of 132 Briggs Road and may contain lead based paint and asbestos. The parcel facilities have a low potential of impacting the proposed widening project for ALT-B, Moderate potential for hazardous waste impacts to ALT-A.

13) Situs: 4153 BOLSA RD, HOLLISTER CA 95023-9309 R007
APN: 014-040-002-0 Rec Date: 00/1993 Total Value: $491,526
County: SAN BENITO, CA Sale Price: Imprv Value: $177,157
Use: ORCHARD Document #: 483 Land Value: $285,723
Owners: RAJKOVICH MARTIN-GEORGE-LUCILL Yr Built/Eff:
Mail: PO BOX 189; HOLLISTER CA 95024-0189 B002
ALT-B
COMMENTS: County records list parcel use as Orchard and is located east of SR-25. Records research of the GEOTRACKER list did not reveal underground storage tanks (UST's) or leaking underground fuel tanks (LUFT's). According to the VISTA list, there are five UST's onsite. Two 550 gallon UST's contain unleaded gasoline; one 550 gallon and one 2000 gallon UST contains diesel, and one 2000 gallon UST contains leaded gas. No above ground tanks are reported. No files exist regarding either above ground tanks (AGT's) or UST's at the San Benito County Environmental Health office. A field investigation was conducted on February 22, 2002. Mr. Martin Rajkovich, owner, was met on-site and he indicated that there are no longer any UST's on-site as they were removed about 30 years ago. There is currently a 1,000 gallon gasoline and diesel AGT on-site, both located within the area of potential effect. The facility has a **high potential** of impacting the proposed widening project.

14) Situs: 1980 BOLSA RD, HOLLISTER CA 95023-9316 R007
APN: 019-020-013-0 Rec Date: 00/1992 Total Value: $41,023
County: SAN BENITO, CA Sale Price: Imprv Value: $25,175
Use: LIGHT INDUSTRIAL Document #: 10133 Land Value: $15,848
Owners: MARTIN DELPHIN JR Yr Built/Eff:
Mail: 1980 BOLSA RD; HOLLISTER CA 95023-9316 R007
ALT-A
COMMENTS: County records list parcel use as Light Industrial. The parcel is located on the west side of SR-25. Records research did not reveal anything on GEOTRACKER or VISTA. The site is doing business as Dels Machine Shop. According to Mark Collison, business owner, he has been doing business for about 7 years. Inspection of the site did not reveal any soil staining or other hazardous waste activities. There are no USTs on-site. An SFR (mobile home) is also located on the site. Domestic well(s) and septic tank systems would need to be abandoned according to State water and local health agency regulations. The potential for inappropriate liquid hazardous waste disposal to septic tank system exists at this site, contaminating soil and/or groundwater. The facility has a minimal potential of impacting the proposed widening project, unless it becomes a full take.

15) Situs: 790 BOLSA RD, HOLLISTER CA 95023-9361 R007
APN: 053-380-011-0 Rec Date: 08/05/1991 Total Value: $461,000
County: SAN BENITO, CA Sale Price: $587,000 Imprv Value: $196,000
Use: GARAGE Document #: 6351 Land Value: $265,000
Phone: 831/637-6574 Stories: Full Baths: Half: Bldg/Liv Area:
Owners: ROBERTS JANET P Yr Built/Eff:
Mail: 1401 THOMAS RD; HOLLISTER CA 95023-9120 R001
ALT-A
COMMENTS: County records list parcel use as Garage. The parcel is located on the west side of SR-25. Records research did not reveal anything on GEOTRACKER or VISTA. The existing warehouse has been remodeled as the *Abundant Life Four Square Church* and is nearing completion. The parcel is immediately adjacent to and south of the church office and storage building, which formerly did business as *Spencer Rentals* (APN: 053-380-010) and *Our Earth Environmental Inc.* where contamination exists from oil and grease (O&G) and total petroleum

hydrocarbons as diesel (TPHd). The facility has a moderate potential of impacting the proposed widening project, until determined otherwise.

16) Situs: 231-233 BRIGGS RD, HOLLISTER CA 95023-9001 R002
APN: 019-090-010-0 Rec Date: 00/1994 Total Value: $411,069
County: SAN BENITO, CA Sale Price: Imprv Value: $192,966
Use: TRUCK CROPS Document #: 2408 Land Value: $214,873
Card #: Zoning: 1st TD Amt: Lot Width: Depth:
New Pg: Map Pg: Rooms: Bedrms: Lot Area:
Phone: 831/637-2187 Stories: Full Baths: Half: Bldg/Liv Area:
Owners: CORDA BOB JR Yr Built/Eff:
Mail: 231 BRIGGS RD; HOLLISTER CA 95023-9001 R002
ALT-A
COMMENTS: County records list parcel use as Truck Crops. The parcel is located on the east and west side of SR-25. Records research did not reveal anything on GEOTRACKER or VISTA. A concrete culvert crosses SR-25 to APN 019-090-021. The site includes above ground storage tank and two residences at 231 and 233 Bridge Road. Approximately five 55 gallon barrels are stored on-site. In addition, an old barn exists on the parcel and may contain lead based paint. It is not uncommon to encounter elevated concentrations of lead in surface soils outside of older structures as a result of lead-based paint that has degraded or scraped off intentionally. The site has a moderate potential of impacting the proposed widening project unless otherwise determined.

17) Situs: BRIGGS RD, HOLLISTER CA 95023
APN: 019-090-018-0 Rec Date: 00/1993 Total Value: $73,970
County: SAN BENITO, CA Sale Price: Imprv Value: $61,601
Use: ORCHARD Document #: 484 Land Value: $12,369
Card #: Zoning: 1st TD Amt: Lot Width: Depth:
New Pg: Map Pg: Rooms: Bedrms: Lot Area:
Phone: 831/637-3702 Stories: Full Baths: Half: Bldg/Liv Area:
Owners: RAJKOVICH MARTIN-GEORGE-LUCILL Yr Built/Eff:
Mail: PO BOX 189; HOLLISTER CA 95024-0189 B002
ALT-A
COMMENTS: County records list parcel use as Orchard and is located on the east side of SR-25. Records research did not reveal anything on GEOTRACKER or VISTA. An old barn exists on the parcel and may contain lead based paint. It is also not uncommon to encounter elevated concentrations of lead in surface soils outside of older structures as a result of lead-based paint that has degraded or scraped off intentionally. The facility has a low potential of impacting the proposed widening project.

18) Situs: 2731 BOLSA RD, HOLLISTER CA 95023-9300 R007
APN: 014-080-005-0 Rec Date: 03/25/1999 Total Value: $338,427
County: SAN BENITO, CA Sale Price: Imprv Value: $160,000
Use: RESIDENTIAL (NEC) Document #: 4600 Land Value: $135,000
Card #: Zoning: 1st TD Amt: Lot Width: Depth:
New Pg: Map Pg: Rooms: Bedrms: Lot Area:
Phone: Stories: Full Baths: Half: Bldg/Liv Area:
Owners: CLARK, EVERETT & PAMELA Yr Built/Eff:
Mail: 2731 BOLSA RD; HOLLISTER CA 95023-9300 R007

COMMENTS: County records list parcel use as Residential (Nec). The parcel is located on the east side of SR-25. Records research did not reveal anything on GEOTRACKER or VISTA. The site is the former location of Fairhaven school. It appears that the school may have been renovated as a single family residence. The domestic well and septic tank system would need to be abandoned according to State water and local health agency regulations. Asbestos containing materials may still exist in the home and would need to be removed and disposed according to State and local regulations. The facility has a moderate potential of impacting the proposed widening project.

19) Situs: BOLSA RD, HOLLISTER CA 95023-9300 R007
APN: 053-420-001-0 Rec Date: Total Value:
County: SAN BENITO, CA Sale Price: Imprv Value:
Use: AIRPORT ACCESS/FRONTAGE Document #: 4600 Land Value:
Card #: Zoning: 1st TD Amt: Lot Width: Depth:
New Pg: Map Pg: Rooms: Bedrms: Lot Area:
Phone: Stories: Full Baths: Half: Bldg/Liv Area:
Owners: AIRPARK ASSC. LLC Yr Built/Eff:
Mail: P.O. BOX 721 APTOS CA. CA 95001
ALT-A + EASEMENT
COMMENTS: The property is currently operated as access frontage. No significant potential for hazardous waste.

20) Situs: 1020 HWY 25 , GILROY CA 95020
APN: 053-420-034 Rec Date: Total Value: $2,731,198
County: SAN BENITO, CA Sale Price: Imprv Value:
Use: VACANT LAND/INDUSTRIAL Document #: 4600 Land Value:
Card #: Zoning: 1st TD Amt: Lot Width: Depth:
New Pg: Map Pg: Rooms: Bedrms: Lot Area:
Phone: Stories: Full Baths: Half: Bldg/Liv Area:
Owners: AIRPARK ASSC. LLC Yr Built/Eff:
Mail: P.O. BOX 721 APTOS CA. CA 95001
ALT-A
COMMENTS: The property is currently operated as recovery frontage. No significant potential for hazardous waste.

21) Situs: BOLSA RD, HOLLISTER CA 95023-9313 R007
APN: 014-060-003-0 Rec Date: 00/1982 Total Value: $224,007
County: SAN BENITO, CA Sale Price: Imprv Value:
Use: AGRICULTURAL/FARMS Document #: Land Value:
Card #: Zoning: 1st TD Amt: Lot Width: Depth:
New Pg: Map Pg: Rooms: Bedrms: Lot Area:
Phone: Stories: Full Baths: Half: Bldg/Liv Area:
Owners: BERTUCCIO, TINA Yr Built/Eff:
Mail: 2360 AIRLINE WAY, HOLLISTER CA 95023
ALT-B
COMMENTS: The property is currently operated as farm acerage. No significant potential for hazardous waste.

22) Situs: BOLSA RD, HOLLISTER CA 95023-9313 R007
APN: 014-060-004-0 Rec Date: 00/1982 Total Value: $224,007
County: SAN BENITO, CA Sale Price: Imprv Value:
Use: AGRICULTURAL/FARMS Document #: Land Value:
Owners: BERTUCCIO, TINA Yr Built/Eff:
Mail: 2360 AIRLINE WAY, HOLLISTER CA 95023
ALT-B Bisects this property.
COMMENTS: The property is currently operated as farm acerage. No significant potential for hazardous waste.

23) Situs: 2533 BOLSA RD, HOLLISTER CA 95023-9300 R007
APN: 019-010-004-0 Rec Date: 06/04/1997 Total Value: $207,775
County: SAN BENITO, CA Sale Price: $250,000 Imprv Value: $119,471
Use: SFR Document #: 5323 Land Value: $88,304
Phone: 530/888-6836 Stories: Full Baths: Half: Bldg/Liv Area:
Owners: GAMBETTA RICK Yr Built/Eff:
Mail: 2533 BOLSA RD; HOLLISTER CA 95023-9300 R007
ALT-A

COMMENTS: County records list parcel use as SFR (Single Family Residence). The parcel is located on the west side of SR-25. Records research did not reveal anything on GEOTRACKER or VISTA. A stucco house and domestic exist on the property. The well would need to be abandoned according to State water and local health agency regulations. The facility has a low potential of impacting the proposed widening project.

24) Situs: 1940 BOLSA RD, HOLLISTER CA 95023-9316 R007
APN: 019-020-012-0 Rec Date: 01/31/1994 Total Value: $276,461
County: SAN BENITO, CA Sale Price: $200,000 Imprv Value: $161,755
Use: RESIDENTIAL (NEC) Document #: 1073 Land Value: $107,836
Card #: Zoning: 1st TD Amt: $182,000 Lot Width: Depth:
New Pg: Map Pg: Rooms: Bedrms: Lot Area:
Phone: 831/637-6970 Stories: Full Baths: Half: Bldg/Liv Area:
Owners: CHAMBERLAINS CHILDREN CENTER INC Yr Built/Eff:
Mail: PO BOX 1269; HOLLISTER CA 95024-1269 B011
ALT-A

COMMENTS: County records list parcel use as Residential (Nec). The parcel is located on the west side of SR-25. Records research did not reveal anything on GEOTRACKER or VISTA. The well would need to be abandoned according to State water and local health agency regulations. The facility has a low potential of impacting the proposed widening project.

25) Situs: WRIGHT RD, HOLLISTER CA 95023
APN: 019-090-015-0 Rec Date: 12/30/1998 Total Value: $56,850
County: SAN BENITO, CA Sale Price: Imprv Value:
Use: TRUCK CROPS Document #: 18065 Land Value: $56,850
Phone: 408/268-5347 Stories: Full Baths: Half: Bldg/Liv Area:
Owners: MCNAMEE CHARLES F & MARGARET G Yr Built/Eff:
Mail: 1202 CHATEAU DR; SAN JOSE CA 95120-4709 C001
ALT-A

COMMENTS: County records list parcel use as Truck Crops. The parcel is located on the east and west side of SR-25. Records research did not reveal anything on GEOTRACKER or VISTA. Overhead utilities cross SR-25 at the parcel and a cell box exists. The site is currently planted in peppers. The facility has a low potential of impacting the proposed widening project.

26) Situs: 741 FLYNN RD, HOLLISTER CA 95023-9308 R007
APN: 053-360-030-0 Rec Date: 05/02/1995 Total Value: $1,513,974
County: SAN BENITO, CA Sale Price: $200,000 Imprv Value: $1,112,551
Use: MINI WAREHOUSE Document #: 3701 Land Value: $395,236
Card #: Zoning: 1st TD Amt: $35,000 Lot Width: Depth:
New Pg: Map Pg: Rooms: Bedrms: Lot Area:
Phone: Stories: Full Baths: Half: Bldg/Liv Area:
Owners: CLINK RICHARD E & LINDA C 2001 Yr Built/Eff:
Mail: 458 COAKLEY DR; SAN JOSE CA 95117-1518 C003
ALT-A

COMMENTS: County records list parcel use as Mini Warehouse. The parcel is located on the east side of SR-25. Records research did not reveal anything on GEOTRACKER or VISTA. The site is doing business as Flynn Road Storage and RV Storage. The facility has a low potential of impacting the proposed widening project.

27) Situs: 463 MCCONNEL RD. HOLLISTER CA 95023-9313 R007
APN: 018-020-005-0 Rec Date: 00/1982 Total Value: $224,007
County: SAN BENITO, CA Sale Price: Imprv Value:
Use: AGRICULTURAL/FARMS Document #: Land Value:
Card #: Zoning: 1st TD Amt: Lot Width: Depth:
New Pg: Map Pg: Rooms: Bedrms: Lot Area:
Phone: Stories: Full Baths: Half: Bldg/Liv Area:
Owners: VIERA FAMILY TRUST Yr Built/Eff:
Mail: 1801 CUSHMAN, HOLLISTER CA 95023
ALT-2 SR-156 Interchange.

COMMENTS: The property is currently operated as farm acerage, with a small segment located in the proposed take area configured as residential and shop facilities. Demolition of these structures will likely encounter lead based paint and asbestos containing materials. No significant hazardous waste other than demolition debris anticipated.

28) Situs: BOLSA RD, HOLLISTER CA 95023
APN: 053-380-002-0 Rec Date: 00/1982 Total Value: $288,957
County: SAN BENITO, CA Sale Price: Imprv Value: $14,442
Use: COMMERCIAL (NEC) Document #: 481-392 Land Value: $274,515
Card #: Zoning: 1st TD Amt: Lot Width: Depth:
New Pg: Map Pg: Rooms: Bedrms: Lot Area:
Phone: 831/637-6574 Stories: Full Baths: Half: Bldg/Liv Area:
Owners: ROBERTS JANET P Yr Built/Eff:
Mail: 1401 THOMAS RD; HOLLISTER CA 95023-9120 R001
ALT-A, ALT-B
COMMENTS: County records list parcel use as Commercial (Nec). The parcel is located on the east side of SR-25, adjacent and north of South Valley Trailers (APN: 053-380-003). Records research did not reveal anything on GEOTRACKER or VISTA. The site appears to be vacant. The facility has been demolished and a new intersection for existing SR-25 has been constructed.

29) Situs: 156 BOLSA RD, HOLLISTER CA 95023
APN: 053-380-006-0 Rec Date: 00/1989 Total Value: $629,000
County: SAN BENITO, CA Sale Price: Imprv Value:
Use: COMMERCIAL LOT Document #: 9681 Land Value: $629,000
Card #: Zoning: 1st TD Amt: Lot Width: Depth:
New Pg: Map Pg: Rooms: Bedrms: Lot Area:
Phone: 831/637-6574 Stories: Full Baths: Half: Bldg/Liv Area:
Owners: ROBERTS JANET P Yr Built/Eff:
Mail: 1401 THOMAS RD; HOLLISTER CA 95023-9120 R001
ALT-A and ALT-B interchange improvements.
COMMENTS: County records list parcel use as Commercial Lot. The parcel is located on the east side of SR-25 and is currently in fodder. Records research did not reveal anything on GEOTRACKER or VISTA. The facility has a low potential of impacting the proposed widening project.

30) Situs: 2730 BOLSA RD, HOLLISTER CA 95023-9313 R007
APN: 018-020-012-0 Rec Date: 00/1982 Total Value: $224,007
County: SAN BENITO, CA Sale Price: Imprv Value:
Use: AGRICULTURAL/FARMS Document #: Land Value:
Card #: Zoning: 1st TD Amt: Lot Width: Depth:
New Pg: Map Pg: Rooms: Bedrms: Lot Area:
Phone: Stories: Full Baths: Half: Bldg/Liv Area:
Owners: HART, DONNA & CAROL Yr Built/Eff:
Mail: 2730 BOLSA RD, HOLLISTER CA 95023
ALT-2 SR-156 Interchange
COMMENTS: This property consists of several sets of shop buildings and residential structures similar to farm labor facilities. Demolition of these structures will likely encounter lead based paint and asbestos containing materials. Minor soil staining and wastes from agriculture related activities such as plastic irrigation tubing, empty drums, packing materials and refuse will be encountered about the site.

31) Situs: BOLSA RD, HOLLISTER CA 95023-9313 R007
APN: 018-210-006-0 Rec Date: 00/1982 Total Value: $224,007
County: SAN BENITO, CA Sale Price: Imprv Value:
Use: AGRICULTURAL/FARMS Document #: Land Value:
Owners: VIERA FAMILY TRUST Yr Built/Eff:
Mail: 1801 CUSHMAN ST, HOLLISTER CA 95023
ALT-2

COMMENTS: This property consists of several sets of shop buildings and residential structures similar to farm labor facilities. Demolition of these structures will likely encounter lead based paint and asbestos containing materials. Minor soil staining and wastes from agriculture related activities such as plastic irrigation tubing, empty drums, packing materials and refuse will be encountered about the site.

32) Situs: BOLSA RD, CA
APN: 013-040-009-0 Rec Date: 02/08/2001 Total Value: $979,000
County: SAN BENITO, CA Sale Price: $480,000 Imprv Value:
Use: TRUCK CROPS Document #: 1919 Land Value: $979,000
Card #: Zoning: 1st TD Amt: Lot Width: Depth:
New Pg: Map Pg: Rooms: Bedrms: Lot Area:
Phone: Stories: Full Baths: Half: Bldg/Liv Area:
Owners: LA KHA KIET L
Mail: 3133 IRVING ST; SAN FRANCISCO CA 94122-1427 C017
ALT-A
COMMENTS: The property is currently operated as farm acerage. No significant potential for hazardous waste.

33) Situs: BOLSA RD, CA
APN: 013-040-013-0 Rec Date: 10/15/1991 Total Value: $174,763
County: SAN BENITO, CA Sale Price: Imprv Value: $704
Use: AGRICULTURAL (NEC) Document #: 8512 Land Value: $174,059
Card #: Zoning: 1st TD Amt: Lot Width: Depth:
New Pg: Map Pg: Rooms: Bedrms: Lot Area:
Phone: 831/637-3185 Stories: Full Baths: Half: Bldg/Liv Area:
Owners: SABBATINI TRUST Yr Built/Eff:
Mail: PO BOX 339; HOLLISTER CA 95024-0339 B003
ALT-1, ALT-2
COMMENTS: The property is currently operated as farm acerage. No significant potential for hazardous waste.

34) Situs: , CA
APN: 013-040-026-0 Rec Date: 00/1988 Total Value: $834,340
County: SAN BENITO, CA Sale Price: Imprv Value: $48,836
Use: TRUCK CROPS Document #: 6930 Land Value: $785,504
Card #: Zoning: 1st TD Amt: Lot Width: Depth:
New Pg: Map Pg: Rooms: Bedrms: Lot Area:
Phone: Stories: Full Baths: Half: Bldg/Liv Area:
Owners: SHAW PO CHEI Yr Built/Eff:
Mail: 15165 SYCAMORE DR; MORGAN HILL CA 95037-9619 R003
ALT-1, ALT-2
COMMENTS: The property is currently operated as farm acerage. No significant potential for hazardous waste.

35) Situs: BOLSA RD, CA
APN: 013-040-032-0 Rec Date: 00/1993 Total Value: $269,013
County: SAN BENITO, CA Sale Price: Imprv Value: $7,650
Use: AGRICULTURAL (NEC) Document #: 1325 Land Value: $261,363
Owners: GARCIA FAMILY PARTNERSHIP A CAL PART Yr Built/Eff:
Mail: PO BOX 3932; SALINAS CA 93912-3932 B009
ALT-1, ALT-2
COMMENTS: The property is currently operated as farm acerage. No significant potential for hazardous waste.

36) Situs: BOLSA RD, CA
APN: 013-040-033-0 Rec Date: 00/1993 Total Value: $875,834
County: SAN BENITO, CA Sale Price: Imprv Value: $18,834
Use: TRUCK CROPS Document #: 9 Land Value: $857,000
Card #: Zoning: 1st TD Amt: Lot Width: Depth:
New Pg: Map Pg: Rooms: Bedrms: Lot Area:

Phone: Stories: Full Baths: Half: Bldg/Liv Area:
Owners: THOMAS TUNG & YING LEE Yr Built/Eff:
Mail: 1426 GRAY BLUFF TRL; CHAPEL HILL NC 27514-9126 R024
ALT-1, ALT-2
COMMENTS: The property is currently operated as farm acerage. No significant potential for hazardous waste.

37) Situs: SHORE RD, HOLLISTER CA 95023
APN: 013-060-017-0 Rec Date: 00/1992 Total Value: $1,253,958
County: SAN BENITO, CA Sale Price: Imprv Value: $83,255
Use: TRUCK CROPS Document #: 6216 Land Value: $1,170,703
Card #: Zoning: 1st TD Amt: Lot Width: Depth:
Phone: 650/424-0214 Stories: Full Baths: Half: Bldg/Liv Area:
Owners: FARRIS Yr Built/Eff:
Mail: 180 IRIS WAY; PALO ALTO CA 94303-3036 C023
ALT-1, ALT-2
COMMENTS: The property is currently operated as farm acerage. No significant potential for hazardous waste.

38) Situs: BOLSA RD, CA
APN: 013-060-019-0 Rec Date: 00/1992 Total Value: $150,419
County: SAN BENITO, CA Sale Price: Imprv Value: $4,799
Use: TRUCK CROPS Document #: 2939 Land Value: $145,620
Phone: 831/637-1422 Stories: Full Baths: Half: Bldg/Liv Area:
Owners: CASILLAS FAM MANUEL & HELEN Yr Built/Eff:
Mail: PO BOX 10; HOLLISTER CA 95024-0010 B001
ALT-1, ALT-2
COMMENTS: The property is currently operated as farm acerage. No significant potential for hazardous waste.

39) Situs: BOLSA RD, CA
APN: 013-060-020-0 Rec Date: 00/1988 Total Value: $156,272
County: SAN BENITO, CA Sale Price: Imprv Value: $8,294
Use: TRUCK CROPS Document #: 8298 Land Value: $147,978
Card #: Zoning: 1st TD Amt: Lot Width: Depth:
New Pg: Map Pg: Rooms: Bedrms: Lot Area:
Phone: 831/637-3555 Stories: Full Baths: Half: Bldg/Liv Area:
Owners: CASILLAS EMILIO Yr Built/Eff:
Mail: PO BOX 10; HOLLISTER CA 95024-0010 B001
ALT-1, ALT-2
COMMENTS: The property is currently operated as farm acerage. No significant potential for hazardous waste.

40) Situs: BOLSA RD, CA
APN: 013-060-021-0 Rec Date: 00/1993 Total Value: $172,063
County: SAN BENITO, CA Sale Price: Imprv Value: $23,597
Use: TRUCK CROPS Document #: 2141 Land Value: $148,466
Card #: Zoning: 1st TD Amt: Lot Width: Depth:
New Pg: Map Pg: Rooms: Bedrms: Lot Area:
Phone: 831/637-0998 Stories: Full Baths: Half: Bldg/Liv Area:
Owners: CASILLAS FRANK & JOYCE Yr Built/Eff:
Mail: PO BOX 10; HOLLISTER CA 95024-0010 B001
ALT-1, ALT-2
COMMENTS: The property is currently operated as farm acerage. No significant potential for hazardous waste.

41) Situs: BOLSA RD, CA
APN: 013-060-022-0 Rec Date: 00/1995 Total Value: $154,336
County: SAN BENITO, CA Sale Price: Imprv Value: $5,620
Use: TRUCK CROPS Document #: 958 Land Value: $148,716
Card #: Zoning: 1st TD Amt: Lot Width: Depth:
New Pg: Map Pg: Rooms: Bedrms: Lot Area:

Phone: 831/636-1347 Stories: Full Baths: Half: Bldg/Liv Area:
Owners: CASILLAS PAUL Yr Built/Eff:
Mail: PO BOX 10; HOLLISTER CA 95024-0010 B001
ALT-1
COMMENTS: The property is currently operated as farm acerage. No significant potential for hazardous waste.

42) Situs: BOLSA RD, CA
APN: 013-060-023-0 Rec Date: 00/1993 Total Value: $148,716
County: SAN BENITO, CA Sale Price: Imprv Value:
Use: TRUCK CROPS Document #: 959 Land Value: $148,716
Card #: Zoning: 1st TD Amt: Lot Width: Depth:
New Pg: Map Pg: Rooms: Bedrms: Lot Area:
Phone: 831/637-3094 Stories: Full Baths: Half: Bldg/Liv Area:
Owners: CASILLAS JOE & LILLIAN Yr Built/Eff:
Mail: PO BOX 10; HOLLISTER CA 95024-0010 B001
ALT-1, ALT-2
COMMENTS: The property is currently operated as farm acerage. No significant potential for hazardous waste.

43) Situs: BOLSA RD, CA
APN: 013-060-024-0 Rec Date: Total Value: $202,612
County: SAN BENITO, CA Sale Price: Imprv Value:
Use: TRUCK CROPS Document #: 877 Land Value: $202,612
Phone: 831/637-3088 Stories: Full Baths: Half: Bldg/Liv Area:
Owners: COSTA P & R Yr Built/Eff:
Mail: 2020 SHORE RD; HOLLISTER CA 95023-9205 R002
ALT-1, ALT-2
COMMENTS: The property is currently operated as farm acerage. No significant potential for hazardous waste.

44) Situs: BOLSA RD, CA
APN: 013-060-025-0 Rec Date: Total Value: $249,910
County: SAN BENITO, CA Sale Price: Imprv Value: $115,321
Use: TRUCK CROPS Document #: 877 Land Value: $134,589
Card #: Zoning: 1st TD Amt: Lot Width: Depth:
New Pg: Map Pg: Rooms: Bedrms: Lot Area:
Phone: 831/637-3088 Stories: Full Baths: Half: Bldg/Liv Area:
Owners: COSTA P & R Yr Built/Eff:
Mail: 2020 SHORE RD; HOLLISTER CA 95023-9205 R002
ALT-1 and ALT-2
COMMENTS: The property is currently operated as farm acerage. No significant potential for hazardous waste.

45) Situs: BOLSA RD, HOLLISTER CA 95023-9313 R007
APN: 019-010-008-0 Rec Date: 00/1982 Total Value: $224,007
County: SAN BENITO, CA Sale Price: Imprv Value:
Use: AGRICULTURAL/FARMS Document #: Land Value:
Card #: Zoning: 1st TD Amt: Lot Width: Depth:
New Pg: Map Pg: Rooms: Bedrms: Lot Area:
Phone: Stories: Full Baths: Half: Bldg/Liv Area:
Owners: SAN JUSTO HOMESTEAD ASSN Yr Built/Eff:
Mail:
ALT-B
COMMENTS: The property is currently operated as farm acerage. No significant potential for hazardous waste.

46) Situs: BOLSA RD, HOLLISTER CA 95023-9313 R007
APN: 019-080-001 Rec Date: 00/1982 Total Value: $224,007
County: SAN BENITO, CA Sale Price: Imprv Value:
Use: AGRICULTURAL/FARMS Document #: Land Value:
Card #: Zoning: 1st TD Amt: Lot Width: Depth:

New Pg: Map Pg: Rooms: Bedrms: Lot Area:
Phone: Stories: Full Baths: Half: Bldg/Liv Area:
Owners: HEYHURST FARMING CORP Yr Built/Eff:
Mail:
ALT-B
COMMENTS: The property is currently operated as farm acerage. No significant potential for hazardous waste.

47) Situs: BOLSA RD, HOLLISTER CA 95023-9313 R007
APN: 019-080-004 Rec Date: 00/1982 Total Value: $224,007
County: SAN BENITO, CA Sale Price: Imprv Value:
Use: AGRICULTURAL/FARMS Document #: Land Value:
Card #: Zoning: 1st TD Amt: Lot Width: Depth:
New Pg: Map Pg: Rooms: Bedrms: Lot Area:
Phone: Stories: Full Baths: Half: Bldg/Liv Area:
Owners: HEYHURST FARMING CORP Yr Built/Eff:
Mail:
ALT-B
COMMENTS: The property is currently operated as farm acerage. No significant potential for hazardous waste.

48) Situs: BOLSA RD, HOLLISTER CA 95023-9313 R007
APN: 019-080-006-0 Rec Date: 00/1982 Total Value: $224,007
County: SAN BENITO, CA Sale Price: Imprv Value:
Use: AGRICULTURAL/FARMS Document #: Land Value:
Owners: VOSTI ALEX Yr Built/Eff:
Mail:
ALT-B
COMMENTS: The property is currently operated as farm acerage. No significant potential for hazardous waste.

49) Situs: BOLSA RD, HOLLISTER CA 95023-9313 R007
APN: 019-130-010-0 Rec Date: 00/1982 Total Value: $224,007
County: SAN BENITO, CA Sale Price: Imprv Value:
Use: AGRICULTURAL/FARMS Document #: Land Value:
Card #: Zoning: 1st TD Amt: Lot Width: Depth:
New Pg: Map Pg: Rooms: Bedrms: Lot Area:
Phone: Stories: Full Baths: Half: Bldg/Liv Area:
Owners: HERBERT, PHILIP C Yr Built/Eff:
Mail:
ALT-B
COMMENTS: The property is currently operated as farm acerage. No significant potential for hazardous waste.

50) Situs: BOLSA RD, HOLLISTER CA 95023-9313 R007
APN: 019-130-021-0 Rec Date: 00/1982 Total Value: $224,007
County: SAN BENITO, CA Sale Price: Imprv Value:
Use: AGRICULTURAL/FARMS Document #: Land Value:
Card #: Zoning: 1st TD Amt: Lot Width: Depth:
New Pg: Map Pg: Rooms: Bedrms: Lot Area:
Phone: Stories: Full Baths: Half: Bldg/Liv Area:
Owners: HUDNER, PAUL J Yr Built/Eff:
Mail:
ALT-B
COMMENTS: The property is currently operated as farm acerage. No significant potential for hazardous waste.

51) Situs: BOLSA RD, HOLLISTER CA 95023-9313 R007
APN: 019-130-025-0 Rec Date: 00/1982 Total Value: $224,007
County: SAN BENITO, CA Sale Price: Imprv Value:
Use: AGRICULTURAL/FARMS Document #: Land Value:
Card #: Zoning: 1st TD Amt: Lot Width: Depth:
New Pg: Map Pg: Rooms: Bedrms: Lot Area:

Phone: Stories: Full Baths: Half: Bldg/Liv Area:
Owners: HUDNER, PAUL J Yr Built/Eff:
Mail:
ALT-B
COMMENTS: The property is currently operated as farm acerage. No significant potential for hazardous waste.

52) Situs: BOLSA RD, HOLLISTER CA 95023
APN: 014-020-005-0 Rec Date: 06/07/1996 Total Value: $608,360
County: SAN BENITO, CA Sale Price: $140,000 Imprv Value: $52,982
Use: TRUCK CROPS Document #: 5369 Land Value: $555,378
Card #: Zoning: 1st TD Amt: Lot Width: Depth:
New Pg: Map Pg: Rooms: Bedrms: Lot Area:
Phone: Stories: Full Baths: Half: Bldg/Liv Area:
Owners: YEN TRUST Yr Built/Eff:
Mail: 196 TUSCALOOSA AVE; ATHERTON CA 94027-4000 C013
ALT-1, ALT-2
COMMENTS: The property is currently operated as farm acerage. No significant potential for hazardous waste.

53) Situs: BOLSA RD, HOLLISTER CA 95023
APN: 014-020-006-0 Rec Date: 06/07/1996 Total Value: $649,813
County: SAN BENITO, CA Sale Price: $140,000 Imprv Value: $52,982
Use: TRUCK CROPS Document #: 5369 Land Value: $596,831
Phone: Stories: Full Baths: Half: Bldg/Liv Area:
Owners: YEN TRUST Yr Built/Eff:
Mail: 196 TUSCALOOSA AVE; ATHERTON CA 94027-4000 C013
ALT-1, ALT-2
COMMENTS: The property is currently operated as farm acerage. No significant potential for hazardous waste.

54) Situs: 4211 BOLSA RD, HOLLISTER CA 95023-9309 R007
APN: 014-040-003-0 Rec Date: 00/1992 Total Value: $206,387
County: SAN BENITO, CA Sale Price: Imprv Value: $39,067
Use: TRUCK CROPS Document #: 6012 Land Value: $167,320
Card #: Zoning: 1st TD Amt: Lot Width: Depth:
New Pg: Map Pg: Rooms: Bedrms: Lot Area:
Phone: 831/637-0794 Stories: Full Baths: Half: Bldg/Liv Area:
Owners: HOGAN HELEN L Yr Built/Eff:
Mail: 4211 BOLSA RD; HOLLISTER CA 95023-9309 R007
ALT-A
COMMENTS: The property is currently operated as farm acerage. No significant potential for hazardous waste.

55) Situs: BOLSA RD, HOLLISTER CA 95023
APN: 014-040-004-0 Rec Date: 00/1964 Total Value: $162,131
County: SAN BENITO, CA Sale Price: Imprv Value: $2,802
Use: TRUCK CROPS Document #: 295-527 Land Value: $159,329
Card #: Zoning: 1st TD Amt: Lot Width: Depth:
New Pg: Map Pg: Rooms: Bedrms: Lot Area:
Phone: Stories: Full Baths: Half: Bldg/Liv Area:
Owners: CASENTINI ODA HOGAN Yr Built/Eff:
Mail: PO BOX 3891; SALINAS CA 93912-3891 B008
ALT-A
COMMENTS: The property is currently operated as farm acerage. No significant potential for hazardous waste.

56) Situs: BOLSA RD, HOLLISTER CA 95023
APN: 014-040-005-0 Rec Date: Total Value: $155,388
County: SAN BENITO, CA Sale Price: Imprv Value: $2,802
Use: TRUCK CROPS Document #: 7485 Land Value: $152,586
Phone: 831/637-2631 Stories: Full Baths: Half: Bldg/Liv Area:

Owners: BREWSTER CYNTHIA FORD Yr Built/Eff:
Mail: 60 TERRYS CT; HOLLISTER CA 95023-6329 R004
ALT-A
COMMENTS: The property is currently operated as farm acerage. No significant potential for hazardous waste.

57) Situs: BOLSA RD, HOLLISTER CA 95023
APN: 014-040-006-0 Rec Date: Total Value: $45,912
County: SAN BENITO, CA Sale Price: Imprv Value:
Use: TRUCK CROPS Document #: 7487 Land Value: $45,912
Card #: Zoning: 1st TD Amt: Lot Width: Depth:
New Pg: Map Pg: Rooms: Bedrms: Lot Area:
Phone: Stories: Full Baths: Half: Bldg/Liv Area:
Owners: CASSINTINI ODA Yr Built/Eff:
Mail: 60 TERRYS CT; HOLLISTER CA 95023-6329 R004
ALT-1
COMMENTS: The property is currently operated as farm acerage. No significant potential for hazardous waste.

58) Situs: BOLSA RD, HOLLISTER CA 95023
APN: 014-040-007-0 Rec Date: Total Value: $35,734
County: SAN BENITO, CA Sale Price: Imprv Value: $1,059
Use: PASTURE Document #: 7487 Land Value: $34,675
Card #: Zoning: 1st TD Amt: Lot Width: Depth:
New Pg: Map Pg: Rooms: Bedrms: Lot Area:
Phone: Stories: Full Baths: Half: Bldg/Liv Area:
Owners: CASENTINI ODA Yr Built/Eff:
Mail: 60 TERRYS CT; HOLLISTER CA 95023-6329 R004
ALT-1
COMMENTS: The property is currently operated as farm acerage. No significant potential for hazardous waste.

59) Situs: BOLSA RD, HOLLISTER CA 95023
APN: 014-060-005-0 Rec Date: 00/1971 Total Value: $75,564
County: SAN BENITO, CA Sale Price: Imprv Value:
Use: TRUCK CROPS Document #: 366-80 Land Value: $75,564
Card #: Zoning: 1st TD Amt: Lot Width: Depth:
New Pg: Map Pg: Rooms: Bedrms: Lot Area:
Owners: BERTUCCIO TINA Yr Built/Eff:
Mail: 2360 AIRLINE HWY; HOLLISTER CA 95023-6106 R007
ALT-2
COMMENTS: The property is currently operated as farm acerage. No significant potential for hazardous waste.

60) Situs: HUDNER LN, HOLLISTER CA 95023
APN: 014-060-009-0 Rec Date: 01/12/1995 Total Value: $1,530,011
County: SAN BENITO, CA Sale Price: $1,400,000 Imprv Value: $163,928
Use: TRUCK CROPS Document #: 278 Land Value: $1,366,083
Phone: 831/637-7262 Stories: Full Baths: Half: Bldg/Liv Area:
Owners: FILICE Yr Built/Eff:
Mail: 10001 FAIRVIEW RD; HOLLISTER CA 95023-9209 R002
ALT-2
COMMENTS: The property is currently operated as farm acerage. No significant potential for hazardous waste.

61) Situs: BOLSA RD, HOLLISTER CA 95023
APN: 014-070-002-0 Rec Date: 00/1971 Total Value: $63,970
County: SAN BENITO, CA Sale Price: Imprv Value: $1,170
Use: TRUCK CROPS Document #: 371-700 Land Value: $62,800
Card #: Zoning: 1st TD Amt: Lot Width: Depth:
New Pg: Map Pg: Rooms: Bedrms: Lot Area:

Phone: Stories: Full Baths: Half: Bldg/Liv Area:
Owners: BERTUCCIO PAUL W-OLGA-IRMA Yr Built/Eff:
Mail: 230 5TH ST; HOLLISTER CA 95023-3902 C019
ALT-1
COMMENTS: The property is currently operated as farm acerage. No significant potential for hazardous waste.

62) Situs: BOLSA RD, HOLLISTER CA 95023
APN: 014-070-003-0 Rec Date: 00/1994 Total Value: $219,730
County: SAN BENITO, CA Sale Price: Imprv Value: $40,520
Use: TRUCK CROPS Document #: 2121 Land Value: $179,210
Card #: Zoning: 1st TD Amt: Lot Width: Depth:
New Pg: Map Pg: Rooms: Bedrms: Lot Area:
Phone: Stories: Full Baths: Half: Bldg/Liv Area:
Owners: BERTUCCIO PAUL W-OLGA-IRMA Yr Built/Eff:
Mail: 230 5TH ST; HOLLISTER CA 95023-3902 C019
ALT-1
COMMENTS: The property is currently operated as farm acerage. No significant potential for hazardous waste.

63) Situs: BOLSA RD, HOLLISTER CA 95023
APN: 014-070-004-0 Rec Date: 00/1971 Total Value: $165,190
County: SAN BENITO, CA Sale Price: Imprv Value: $8,920
Use: TRUCK CROPS Document #: 366-383 Land Value: $156,270
Card #: Zoning: 1st TD Amt: Lot Width: Depth:
New Pg: Map Pg: Rooms: Bedrms: Lot Area:
Phone: Stories: Full Baths: Half: Bldg/Liv Area:
Owners: BERTUCCIO PAUL W-OLGA-IRMA Yr Built/Eff:
Mail: 230 5TH ST; HOLLISTER CA 95023-3902 C019
ALT-1
COMMENTS: The property is currently operated as farm acerage. No significant potential for hazardous waste.

64) Situs: BOLSA HWY, HOLLISTER CA 95023
APN: 014-070-005-0 Rec Date: 00/1992 Total Value: $108,453
County: SAN BENITO, CA Sale Price: Imprv Value:
Use: ORCHARD Document #: 12342 Land Value: $94,026
Card #: Zoning: 1st TD Amt: Lot Width: Depth:
Phone: 831/637-3702 Stories: Full Baths: Half: Bldg/Liv Area:
Owners: RAJKOVICH MARTIN-GEORGE-LUCILL Yr Built/Eff:
Mail: PO BOX 189; HOLLISTER CA 95024-0189 B002
ALT-1
COMMENTS: The property is currently operated as farm orchard acerage. No significant potential for hazardous waste.

65) Situs: BOLSA RD, HOLLISTER CA 95023
APN: 014-080-001-0 Rec Date: Total Value: $351,976
County: SAN BENITO, CA Sale Price: Imprv Value: $109,553
Use: AGRICULTURAL (NEC) Document #: 8539 Land Value: $242,423
Card #: Zoning: 1st TD Amt: Lot Width: Depth:
New Pg: Map Pg: Rooms: Bedrms: Lot Area:
Owners: BERTUCCIO TINA Yr Built/Eff:
Mail: 2360 AIRLINE HWY; HOLLISTER CA 95023-6106 R007
ALT-2
COMMENTS: The property is currently operated as farm acerage. No significant potential for hazardous waste.

66) Situs: BOLSA RD, HOLLISTER CA 95023-9313 R007
APN: 019-130-010 Rec Date: 00/1982 Total Value: $224,007
County: SAN BENITO, CA Sale Price: Imprv Value:
Use: AGRICULTURAL/FARMS Document #: Land Value:
Card #: Zoning: 1st TD Amt: Lot Width: Depth:

New Pg: Map Pg: Rooms: Bedrms: Lot Area:
Phone: Stories: Full Baths: Half: Bldg/Liv Area:
Owners: HERBERT, PHILIP C Yr Built/Eff:
Mail:

ALT-2

COMMENTS: The property is currently operated as farm acerage. No significant potential for hazardous waste.

67) Situs: BOLSA RD, HOLLISTER CA 95023
APN: 014-080-008-0 Rec Date: 00/1994 Total Value: $418,660
County: SAN BENITO, CA Sale Price: Imprv Value: $8,600
Use: TRUCK CROPS Document #: 2121 Land Value: $410,060
Card #: Zoning: 1st TD Amt: Lot Width: Depth:
New Pg: Map Pg: Rooms: Bedrms: Lot Area:
Phone: Stories: Full Baths: Half: Bldg/Liv Area:
Owners: BERTUCCIO PAUL W-IRMA-OLGA Yr Built/Eff:
Mail: 230 5TH ST; HOLLISTER CA 95023-3902 C019

ALT-1

COMMENTS: The property is currently operated as farm acerage. No significant potential for hazardous waste.

68) Situs: BOLSA RD, HOLLISTER CA 95023
APN: 014-080-009-0 Rec Date: 00/1995 Total Value: $235,975
County: SAN BENITO, CA Sale Price: Imprv Value: $4,144
Use: TRUCK CROPS Document #: 194 Land Value: $231,831
Card #: Zoning: 1st TD Amt: Lot Width: Depth:
New Pg: Map Pg: Rooms: Bedrms: Lot Area:
Phone: 831/637-4121 Stories: Full Baths: Half: Bldg/Liv Area:
Owners: HERBERT PHILIP C Yr Built/Eff:
Mail: PO BOX 162; HOLLISTER CA 95024-0162 B002

ALT-1, ALT-2

COMMENTS: The property is currently operated as farm acerage. No significant potential for hazardous waste.

69) Situs: BOLSA RD, HOLLISTER CA 95023
APN: 014-090-024-0 Rec Date: 04/28/2000 Total Value: $35,413
County: SAN BENITO, CA Sale Price: $933,000 Imprv Value:
Use: AGRICULTURAL (NEC) Document #: 5224 Land Value: $35,413
Owners: DON CHAPIN CO INC Yr Built/Eff:
Mail: 440 CRAZY HORSE CANYON RD; SALINAS CA 93907-8402 R011

ALT-1

COMMENTS: The property is currently operated as farm acerage. Formerly the property was used for the Farehaven School. No significant potential for hazardous waste.

70) Situs: 2730 BOLSA RD, HOLLISTER CA 95023-9000 R007
APN: 018-020-011-0 Rec Date: 00/1994 Total Value: $186,027
County: SAN BENITO, CA Sale Price: Imprv Value: $81,844
Use: TRUCK CROPS Document #: 3389 Land Value: $104,183
Card #: Zoning: 1st TD Amt: Lot Width: Depth:
New Pg: Map Pg: Rooms: Bedrms: Lot Area:
Phone: 831/637-2123 Stories: Full Baths: Half: Bldg/Liv Area:
Owners: HART WILLARD J Yr Built/Eff:
Mail: 2730 BOLSA RD; HOLLISTER CA 95023-9000 R007

ALT-2

COMMENTS: The property is currently operated as farm acerage. No significant potential for hazardous waste.

71) Situs: BOLSA RD, HOLLISTER CA 95023-9300 R007
APN: 019-010-005-0 Rec Date: 06/04/1997 Total Value: $38,914
County: SAN BENITO, CA Sale Price: $250,000 Imprv Value: $643
Use: AGRICULTURAL (NEC) Document #: 5323 Land Value: $38,271
Phone: 530/888-6836 Stories: Full Baths: Half: Bldg/Liv Area:

Owners: GAMBETTA RICK Yr Built/Eff:
Mail: 2533 BOLSA RD; HOLLISTER CA 95023-9300 R007
ALT-1
COMMENTS: The property is currently operated as farm acerage, with a single family residence located at the south end. No significant potential for hazardous waste.

72) Situs: 2130 BOLSA RD, HOLLISTER CA 95023-9316 R007
APN: 019-010-007-0 Rec Date: 00/1994 Total Value: $131,760
County: SAN BENITO, CA Sale Price: $850,000 Imprv Value: $21,984
Use: PASTURE Document #: 2110 Land Value: $109,776
Phone: 831/636-4898 Stories: Full Baths: Half: Bldg/Liv Area:
Owners: ROHNERT FREDERICK W II & ALLISON L Yr Built/Eff:
Mail: 610 RANDYS CIR; HOLLISTER CA 95023-6628 R006
ALT-2, the south west corner
COMMENTS: The property is currently used pasture or vacant grassland. No significant potential for hazardous waste.

73) Situs: 2533 BOLSA RD, HOLLISTER CA 95023-9300 R007
APN: 019-010-010-0 Rec Date: 06/04/1997 Total Value: $127,054
County: SAN BENITO, CA Sale Price: $250,000 Imprv Value: $5,817
Use: TRUCK CROPS Document #: 5323 Land Value: $121,237
Card #: Zoning: 1st TD Amt: $43,000 Lot Width: Depth:
New Pg: Map Pg: Rooms: Bedrms: Lot Area:
Phone: 530/888-6836 Stories: Full Baths: Half: Bldg/Liv Area:
Owners: GAMBETTA RICK Yr Built/Eff:
Mail: 2533 BOLSA RD; HOLLISTER CA 95023-9300 R007
ALT-1
COMMENTS: The property is currently operated as farm acerage. No significant potential for hazardous waste.

74) Situs: BOLSA RD, HOLLISTER CA 95023
APN: 019-020-011-0 Rec Date: 03/23/1998 Total Value: $317,322
County: SAN BENITO, CA Sale Price: $305,000 Imprv Value: $5,202
Use: PASTURE Document #: 3219 Land Value: $312,120
Card #: Zoning: 1st TD Amt: $170,000 Lot Width: Depth:
Phone: Stories: Full Baths: Half: Bldg/Liv Area:
Owners: NICHOLSON LAURENCE M Yr Built/Eff:
Mail: 701 MCCRAY ST; HOLLISTER CA 95023-4033 C010
ALT-1
COMMENTS: The property is currently listed as pasture acerage, with some aggragte mining having been conducted in the past. No significant potential for hazardous waste.

75) Situs: 2017 BOLSA RD, HOLLISTER CA 95023-9300 R007
APN: 019-020-015-0 Rec Date: 00/1976 Total Value: $242,359
County: SAN BENITO, CA Sale Price: Imprv Value: $105,658
Use: ORCHARD Document #: 404-348 Land Value: $131,301
Phone: 831/637-5128 Stories: Full Baths: Half: Bldg/Liv Area:
Owners: JUREVICH WILLIAM M & PEARL N Yr Built/Eff:
Mail: 750 FLYNN RD; HOLLISTER CA 95023-9308 R007
ALT-1
COMMENTS: The property is currently operated as farm orchard. If the property is to be a full take, the single family residence and shop buildings will have some significant potential for encountering hazardous waste. If the buildings remain outside the proposed R/W as depicted, no significant potential for hazardous waste.

76) Situs: 1448 BOLSA RD, HOLLISTER CA 95023-9316 R007
APN: 019-090-001-0 Rec Date: 00/1993 Total Value: $243,606
County: SAN BENITO, CA Imprv Value: $98,656 Use: ORCHARD
Document #: 480 Land Value: $144,950 Phone: 831/637-4221
Owners: RAJKOVICH MARTIN-GEORGE-LUCILL Yr Built/Eff:

Mail: PO BOX 189; HOLLISTER CA 95024-0189 B002

ALT-2

COMMENTS: The property is currently operated as farm orchard. If the property is to be a full take, the single family residence and shop buildings will have some significant potential for encountering hazardous waste.

77) Situs: BOLSA RD, HOLLISTER CA 95023
APN: 019-090-003-0 Rec Date: 00/1993 Total Value: $30,499
County: SAN BENITO, CA Sale Price: Imprv Value: $2,623
Use: ORCHARD Document #: 484 Land Value: $27,876
Card #: Zoning: 1st TD Amt: Lot Width: Depth:
New Pg: Map Pg: Rooms: Bedrms: Lot Area:
Phone: 831/637-3702 Stories: Full Baths: Half: Bldg/Liv Area:
Owners: RAJKOVICH MARTIN-GEORGE-LUCILL Yr Built/Eff:
Mail: PO BOX 189; HOLLISTER CA 95024-0189 B002

ALT-1

COMMENTS: The property is currently operated as farm orchard acerage. No significant potential for hazardous waste.

78) Situs: BOLSA RD, HOLLISTER CA 95023-9309 R007
APN: 019-090-021-0 Rec Date: Total Value: $29,180
County: SAN BENITO, CA Sale Price: Imprv Value: $13,388
Use: ORCHARD Document #: 6717 Land Value: $15,792
Card #: Zoning: 1st TD Amt: Lot Width: Depth:
New Pg: Map Pg: Rooms: Bedrms: Lot Area:
Phone: 831/637-3702 Stories: Full Baths: Half: Bldg/Liv Area:
Owners: RAJKOVICH MARTIN Yr Built/Eff:
Mail: 4153 BOLSA RD; HOLLISTER CA 95023-9309 R007

ALT-1

COMMENTS: The property is currently operated as farm orchard. The single family residence and shop buildings will have some significant potential for encountering hazardous waste.

79) Situs: 1444 BOLSA RD, HOLLISTER CA 95023-9316 R007
APN: 019-090-022-0 Rec Date: 00/1993 Total Value: $131,404
County: SAN BENITO, CA Sale Price: Imprv Value: $50,128
Use: ORCHARD Document #: 479 Land Value: $81,276
Card #: Zoning: 1st TD Amt: Lot Width: Depth:
New Pg: Map Pg: Rooms: Bedrms: Lot Area:
Phone: 831/637-3702 Stories: Full Baths: Half: Bldg/Liv Area:
Owners: RAJKOVICH MARTIN-GEORGE-LUCILL Yr Built/Eff:
Mail: PO BOX 189; HOLLISTER CA 95024-0189 B002

ALT-1

COMMENTS: The property is currently operated as farm orchard. The take segment depicted is a strip along the existing SR-25 R/W. If the property is to be a full take, the single family residence and shop buildings will have some significant potential for encountering hazardous waste. If the buildings remain outside the proposed R/W as depicted, no significant potential for hazardous waste.

80) Situs: WRIGHT RD, HOLLISTER CA 95023
APN: 019-130-002-0 Rec Date: 12/30/1998 Total Value: $57,201
County: SAN BENITO, CA Sale Price: Imprv Value: $11,717
Use: TRUCK CROPS Document #: 18053 Land Value: $45,484
Owners: TOWLE Yr Built/Eff:
Mail: 880 WEST ST; HOLLISTER CA 95023-4619 C002

Not used for this project, resides within the APE boundary.

COMMENTS: The property is currently operated as farm acerage. No significant potential for hazardous waste.

81) Situs: SAN FELIPE RD, CA
APN: 019-130-021-0 Rec Date: 00/1994 Total Value: $275,886

County: SAN BENITO, CA Sale Price: Imprv Value: $4,671
Use: TRUCK CROPS Document #: 1968 Land Value: $271,215
Owners: GORIN HENRY J Yr Built/Eff:
Mail: N/AVAIL;

ALT-A, ALT-B

COMMENTS: The property is currently operated as farm orchard acerage. No significant potential for hazardous waste.

82) Situs: , CA
APN: 053-360-029-0 Rec Date: 06/09/1999 Total Value: $402,900
County: SAN BENITO, CA Sale Price: $395,000 Imprv Value:
Use: TRUCK CROPS Document #: 8930 Land Value: $402,900
Card #: Zoning: 1st TD Amt: $25,000 Lot Width: Depth:
New Pg: Map Pg: Rooms: Bedrms: Lot Area:
Phone: Stories: Full Baths: Half: Bldg/Liv Area:
Owners: CLINK RICHARD E & LINDA C 2001 Yr Built/Eff:
Mail: 458 COAKLEY DR; SAN JOSE CA 95117-1518 C003

ALT-A

COMMENTS: The property has been converted to parking area for trailer storage. New warehouse building are located on the property. No significant potential for hazardous waste.

83) Situs: BOLSA RD, HOLLISTER CA 95023-9313 R007
APN: 014-060-003 Rec Date: 00/1982 Total Value: $224,007
County: SAN BENITO, CA Sale Price: Imprv Value:
Use: AGRICULTURAL/FARMS Document #: Land Value:
Card #: Zoning: 1st TD Amt: Lot Width: Depth:
New Pg: Map Pg: Rooms: Bedrms: Lot Area:
Phone: Stories: Full Baths: Half: Bldg/Liv Area:
Owners: BERTUCCIO, TINA Yr Built/Eff:
Mail:

ALT-2

COMMENTS: The property is currently operated as farm acerage. No significant potential for hazardous waste.

84) Situs: 640 BRIGGS RD, HOLLISTER CA 95023-9047 R002
APN: 053-360-011-0 Rec Date: 00/1993 Total Value: $266,949
County: SAN BENITO, CA Sale Price: Imprv Value: $62,599
Use: ORCHARD Document #: 481 Land Value: $204,350
Phone: 831/637-3702 Stories: Full Baths: Half: Bldg/Liv Area:
Owners: RAJKOVICH MARTIN-GEORGE-LUCILL Yr Built/Eff:
Mail: 4153 BOLSA RD; HOLLISTER CA 95023-9309 R007

ALT-A

COMMENTS: The property is currently operated as farm orchard acerage. No significant potential for hazardous waste.

85) Situs: BOLSA RD, HOLLISTER CA 95023
APN: 053-380-004-0 Rec Date: 00/1989 Total Value: $1,790,000
County: SAN BENITO, CA Sale Price: Imprv Value:
Use: TRUCK CROPS Document #: 9681 Land Value: $1,790,000
Card #: Zoning: 1st TD Amt: Lot Width: Depth:
New Pg: Map Pg: Rooms: Bedrms: Lot Area:
Phone: 831/637-6574 Stories: Full Baths: Half: Bldg/Liv Area:
Owners: ROBERTS JANET P Yr Built/Eff:
Mail: 1401 THOMAS RD; HOLLISTER CA 95023-9120 R001

ALT-A, ALT-B

COMMENTS: The property is currently operated as farm orchard acerage. No significant potential for hazardous waste.

86) Situs: BOLSA RD, HOLLISTER CA 95023-9313 R007
APN: 014-060-004 Rec Date: 00/1982 Total Value: $224,007
County: SAN BENITO, CA Sale Price: Imprv Value:
Use: AGRICULTURAL/FARMS Document #: Land Value:

Owners: BERTUCCIO, TINA Yr Built/Eff:
Mail:
ALT-2
COMMENTS: The property is currently operated for truck farming. The single family residence and shop buildings will have some significant potential for encountering hazardous waste associated with demolition of shop buildings.

87) Situs: BOLSA RD, HOLLISTER CA 95023-9313 R007
APN: 018-020-012 Rec Date: 00/1982 Total Value: $224,007
County: SAN BENITO, CA Sale Price: Imprv Value:
Use: AGRICULTURAL/FARMS Document #: Land Value:
Owners: ERICH, JEROME & MARTIN Yr Built/Eff:
Mail:
ALT-2
COMMENTS: The property is currently operated as farm acerage. No significant potential for hazardous waste.

88) Situs: BOLSA RD, HOLLISTER CA 95023-9313 R007
APN: 018-020-012-0 Rec Date: 00/1982 Total Value: $224,007
County: SAN BENITO, CA Sale Price: Imprv Value:
Use: AGRICULTURAL/FARMS Document #: Land Value:
Owners: ERICH, JEROME & MARTIN Yr Built/Eff:
Mail:
ALT-2
COMMENTS: The property is currently operated as farm acreage. The take segment depicted is a strip bisecting the parcel. If the property is to be a full take, the single family residence and shop buildings will have some significant potential for encountering hazardous waste. If the buildings remain outside the proposed R/W as depicted, no significant potential for hazardous waste to be encountered.

89) Situs: BOLSA RD, HOLLISTER CA 95023-9313 R007
APN: 018-020-014-0 Rec Date: 00/1982 Total Value: $224,007
County: SAN BENITO, CA Sale Price: Imprv Value:
Use: AGRICULTURAL/FARMS Document #: Land Value:
Owners: HART, DONALD & CAROL TRUST Yr Built/Eff:
Mail:
ALT-2
COMMENTS: The property is currently operated as farm acerage. No significant potential for hazardous waste.

90) Situs: BOLSA RD, HOLLISTER CA 95023-9313 R007
APN: 018-020-015-0 Rec Date: 00/1982 Total Value:
County: SAN BENITO, CA Sale Price: Imprv Value:
Use: AGRICULTURAL/FARMS Document #: Land Value:
OwnersYEN TRUST Yr Built/Eff:
Mail:
ALT-2
COMMENTS: The property is currently operated as farm acerage. No significant potential for hazardous waste.

91) Situs: BOLSA RD, HOLLISTER CA 95023-9313 R007
APN: 018-210-005 Rec Date: 00/1982 Total Value: $224,007
County: SAN BENITO, CA Sale Price: Imprv Value:
Use: AGRICULTURAL/FARMS Document #: Land Value:
Card #: Zoning: 1st TD Amt: Lot Width: Depth:
New Pg: Map Pg: Rooms: Bedrms: Lot Area:
Phone: Stories: Full Baths: Half: Bldg/Liv Area:
Owners: MCCONNLEL, GEORGE W. Yr Built/Eff:
Mail:
ALT-2

COMMENTS: The take segment of this property consists of the south-eastern corner, with an older shop building and other structures, as well as some orchard trees. Demolition of this older structure will likely encounter lead based paints and asbestos containing materials. There is moderate potential for encountering hazardous waste.

Attachment A Continued. By parcel description of findings, Santa Clara County.

92) Situs: 1405 BOLSA RD, GILROY CA 95020-9514 R003
APN: 841-37-014 Rec Date: 05/28/1991 Total Value: $866,358
County: SANTA CLARA, CA Sale Price: $650,000 Imprv Value: $291,316
Use: TRUCK CROPS Document #: 10916137 Land Value: $575,042
Card #: Zoning: *A40A 1st TD Amt: $500,000 Lot Width: Depth:
New Pg: 998-E2 Map Pg: 84-B6 Rooms: Bedrms: Lot Area: 1,874,387
Phone: Stories: 1.00 Full Baths: Half: Bldg/Liv Area:
Owners: SANTOS RALPH M & LINDA A Yr Built/Eff: 1950
Mail: 1280 BOLSA RD; GILROY CA 95020-9586 R003

ALT-1. ALT-2

COMMENTS: County records list parcel use as Truck Crops. The situs address is 1405 Bolsa Road, is located east of SR-25 and is currently doing business as *El Camino Packing*. According to Ms. Jeannie Lopez, Office Manager of Uesigi Farms Inc., the site is operated as a cold storage facility. Inspection was attempted on February 22, 2002 but no one was available to discuss the site. Contacted Mr. Ralph Santos on September 5, 2002 by telephone. He indicated that there are no UST's or AGT's on the property and that the cold storage facility uses freon and not liquid ammonia for refrigeration. The facility has a **low potential** of impacting the proposed widening project. Proposed ALT-1/2 would impact the eastern half of this parcel.

93) Situs: , GILROY CA 95020
APN: 841-32-013 Rec Date: 03/05/1973 Total Value: $152,782
County: SANTA CLARA, CA Sale Price: Imprv Value: $13,379
Use: TRUCK CROPS Document #: 4445796 Land Value: $139,403
Card #: Zoning: *A40A 1st TD Amt: Lot Width: Depth:
New Pg: Map Pg: 84-B6 Rooms: Bedrms: Lot Area: 826,333
Phone: Stories: Full Baths: Half: Bldg/Liv Area:
Owners: FILICE VINEYARDS Yr Built/Eff: 1925
Mail: 7888 WREN AVE # D-143; GILROY CA 95020-4962 C013

End of project.....D-4 TIES IN TO SR-101

COMMENTS: This parcel is on the west side of RR, coincident with the terminal end limit of this project. The property is currently operated as farm acreage. There is no significant potential for hazardous waste to be encountered.

94) Situs: 415 BLOOMFIELD AVE, GILROY CA 95020
APN: 841-33-006 Rec Date: Total Value: $24,893,054
County: SANTA CLARA, CA Sale Price: Imprv Value: $11,590,324
Use: ORCHARD Document #: 10227293 Land Value: $458,086
Card #: Zoning: *AW 1st TD Amt: Lot Width: Depth:
New Pg: 998-D2 Map Pg: Rooms: Bedrms: Lot Area: 5,569,582
Phone: Stories: Full Baths: Half: Bldg/Liv Area:

Owners: CHRISTOPHER DONALD C Yr Built/Eff:
Mail: 305 BLOOMFIELD AVE; GILROY CA 95020-9516 R003
ALT-1. ALT-2
COMMENTS: County records list the parcel use as Orchard. The situs address is 415 Bloomfield and is doing business as A & D Christopher Ranch. Records research did not reveal anything on the GEOTRACKER database, but was listed on the ERD Report as a WDS (Waste Discharge System) site governed by the Regional Water Quality Control Board (RWQCB). Waste Discharge Requirements (WDRs) have been issued to the facility by the RWQCB and are identified as ORDER NO. 91-69. A & D processes food such as garlic, ginger, and shallots and generates wastewater from the food processing and from "once through cooling water". According to Ms. Kimberly Gonzalez of the RWQCB, no enforcement Orders have been issued to the facility for violation of the WDRs. Staff also reviewed the Santa Clara County Environmental Health Department files on September 12, 2002 and determined that the facility has been inspected by the Hazardous Materials Division regarding businees plan requirements. The facility is permitted for a 10,000-gallon gasoline UST. County records are sketchy regarding the number of UST's and/or AGT's exist. Futher investigation is needed. The facility has a **low potential** of impacting the proposed widening project. The take portion of this parcel would consist of the orchard area south of the business complex. There would be no significant potential to encounter hazardous waste in the take portion.

95) Situs: , GILROY CA 95020
APN: 841-35-002 Rec Date: 12/27/2000 Total Value: $86,112
County: SANTA CLARA, CA Sale Price: $3,075,000 Imprv Value: $2,180
Use: TRUCK CROPS Document #: 15508774 Land Value: $83,932
Card #: Zoning: *AW 1st TD Amt: $2,100,000 Lot Width: Depth:
New Pg: Map Pg: 91-C1 Rooms: Bedrms: Lot Area: 1,288,505
Phone: Stories: Full Baths: Half: Bldg/Liv Area:
Owners: PURA TRUST_+ Yr Built/Eff:
Mail: N/AVAIL; SALINAS CA 93902
ALT-1. ALT-2
COMMENTS: This parcel includes the Carnadero Creek Flood Control Easement for Santa Clara County Water District. The parcel is used for agriculture. There is no significant potential for hazardous waste. The ALT 1 & 2 proposal would bridge Carnader Creek and bisect this parcel.

96) Situs: 1505 BOLSA RD, GILROY CA 95020-9597 R003
APN: 841-37-010 Rec Date: 06/15/1982 Total Value: $373,096
County: SANTA CLARA, CA Sale Price: Imprv Value: $86,072
Use: TRUCK CROPS Document #: 7389333 Land Value: $287,024
Card #: Zoning: *AW 1st TD Amt: Lot Width: Depth:
New Pg: 998-E2 Map Pg: 84-B6 Rooms: Bedrms: Lot Area: 4,303,728
Phone: 831/637-6574 Stories: Full Baths: Half: Bldg/Liv Area:
Owners: ROBERTS JANET P Yr Built/Eff:
Mail: 1401 THOMAS RD; HOLLISTER CA 95023-9120 R001
ALT-1. ALT-2
COMMENTS: This parcel is adjacent to SR-25 on the east side. The property is currently operated as farm acreage. This parcel includes the Pajaro River Flood Control Easement for Santa Clara County Water District. There is no significant potential for hazardous waste to be encountered. This parcel would be used to construct an intersection for ALT 1 & 2, and the parcel would affect the "No Build" Alternative.

97) Situs: 1105 BOLSA RD, GILROY CA 95020-8072 R003
APN: 841-51-003 Rec Date: 03/24/1989 Total Value: $405,119
County: SANTA CLARA, CA Sale Price: $415,000 Imprv Value: $80,317
Use: TRUCK CROPS Document #: 10051255 Land Value: $317,097
Card #: Zoning: *AW 1st TD Amt: Lot Width: Depth:
New Pg: 998-F4 Map Pg: 84-C6 Rooms: Bedrms: Lot Area: 3,105,828
Phone: Stories: Full Baths: Half: Bldg/Liv Area:
Owners: PETER O GLUHAICH FARMS PARTNERSHIP Yr Built/Eff:
Pool:
Mail: 1105 NEW BOLSA RD; GILROY CA 95020 C/O SOPHIE GLUHAICH

ALT-1. ALT-2

COMMENTS: This parcel is adjacent to SR-25 on the east side. The property is currently operated as farm acreage. This parcel includes the Carnadero Creek Flood Control Easement for Santa Clara County Water District. Although there is no site information in the GEOTRACKER and other Environmental risk databases, there is a moderate potential for hazardous waste to be encountered in the demolition of the farm strutures. This parcel would be bisected by ALT 1 & 2, including the farm headquarters structures. Also the parcel would affect the "No Build" Alternative.

Location Hydraulic Study

State of California
DEPARTMENT OF TRANSPORTATION

Business, Transportation and Housing Agency

Memorandum

Flex your power!
Be energy efficient!

To: Tom Fisher
Hydraulics Engineer
Central Region Hydraulics Branch B

Date: April 8, 2010

File: 05-48540
05-SBt-25 (PM 51.5/60.1)
04-SCl-25 (PM 0.0/2.6)
and 05-SBt-156 (PM R10.5/R12.2)

From: G. William 'Trais' Norris III
Branch Chief
Sierra Pacific Environmental Analysis Branch

Subject: Change to Purpose Statement

The Purpose statement for the SR25 Widening and Route Adoption project has changed. The new wording is

The purpose of the proposed route adoption project is to:

- Select a corridor for State Route 25 between Hollister and Gilroy that will accommodate existing and future travel demand.
- Facilitate local and regional land use planning by identifying future right-of-way needed for the State Route 25 corridor.

The purpose of the proposed build project is to:

- Improve traffic flow and reduce delays on State Route 25 between San Felipe Road in Hollister and Hudner Lane in San Benito County.
- Increase capacity along State Route 25 between San Felipe Road in Hollister and Hudner Lane in rural San Benito County.

The new purpose does not affect the conclusions of the Location Hydraulic Study report prepared for this project in April 2007 by Diego Caldera, and last updated in September 2008.

c: Project file

State of California
DEPARTMENT OF TRANSPORTATION

Business, Transportation and Housing Agency

Memorandum

Flex your power!
Be energy efficient!

Date: September 8, 2008

File: 05-SBt 25-KP 82.9/96.7
05-SBt 156-KP R17.5/R18.7
04-SCl 25-KP 0 0/4.1
04-SCl 101-KP 1.5/8.1
EA 05-485400

From: TOM FISHER
Senior Hydraulics Engineer
Central Region Hydraulics Branch B

Subject: Addendum to Location Hydraulic Study

This is an addendum to the Location Hydraulic Study (April 20, 2007) for the above referenced project. This to update the project description as follow;

The California Department of Transportation (Caltrans), in cooperation with San Benito Council of Governments and Santa Clara Valley Transportation Authority is evaluating the conversion of 11.2 miles of the existing State Route 25 two-lane conventional highway to a four-lane expressway in San Benito and Santa Clara counties. This Draft Environmental Impact Report and Environmental Impact Statement includes two proposed projects: (1) a TIER I route adoption and (2) a proposed construction project within the limits of the proposed route adoption.

The route adoption study extends from San Felipe Road within the City of Hollister (post mile 51.5) to the San Benito/Santa Clara County line (post mile 60.1) and on to the end of State Route 25 at U.S. 101 south of the city of Gilroy (post miles 0.0 to 2.6 in Santa Clara County).

The proposed construction project limits extend 3.8 miles in San Benito County, from San Felipe Road in Hollister to just west of Hudner Lane (post miles 51.5 to 55.3). The existing 2-lane conventional highway would be replaced by a 4-lane expressway.

State Route 25, a two-lane conventional highway, runs northwest through the relatively flat terrain of the Hollister Valley, terminating at U.S. 101 after crossing the Pajaro River and Carnadero Creek. Agriculture dominates the surrounding landscape, and farmsteads and houses are scattered along the length of the study area. Residences, retail businesses, and agriculture-related commercial operations are more concentrated at both ends of the route adoption study area, on the outskirts of Gilroy and Hollister.

The purpose of the proposed project is to:

Select a route adoption corridor for State Route 25 between Hollister and Gilroy for planning purposes

Improve traffic flow, reduce delays, and enhance the movement of goods on State Route 25 between San Felipe Road in Hollister and Hudner Lane in San Benito County.

Increase capacity along State Route 25 between San Felipe Road in Hollister and Hudner Lane in San Benito County.

Slow moving farm equipment, trucks, and local and commuter traffic share this two-lane roadway. An increasing number of vehicles travel this stretch of State Route 25 and, during peak commute hours, the roadway is congested. Traffic flow is delayed by vehicles turning onto and/or out of the many driveways and local roads, affecting the flow of the faster moving vehicles. Many commuters whose destination is beyond the local area take local roads (Bloomfield Road, Frazier Lake Road, and Shore Road) as shortcuts between State Route 25 and State Route 156 and also State Route 152. Significant commercial truck traffic travels through the area on State Route 25, and is subject to delays as well. A new route alignment should be adopted so that the appropriate area for a future expressway can incorporated into the San Benito and Santa Clara County general plans now, before future development occurs along this stretch of highway.

Both of the route adoption alternatives, Alternatives 1 and 2, are 11.2 miles long, and share the same alignment from approximately 1/2 miles south of Shore Road (post mile 56.1) in San Benito County to U.S. 101 in Santa Clara County (See Figure 1.2). Between post mile 56.1 in San Benito County and the southern end of the proposed project at San Felipe Road, the two alignment alternatives separate: Alternative 1 proposes to align the future four-lane expressway generally to the east (or north) of the existing two-lane north/south highway while Alternative 2 would align mostly to the west (or south) of the existing two-lane highway. The alignments would be wide enough to accommodate a future four-lane expressway with a 62 foot median (342 feet) and frontage roads on one or both sides. The alignments would also be wide enough to accommodate a future interchange near the existing intersection of State Route 25 and State Route 156 and a future State Route 25/U.S. 101 interchange north of the existing interchange. Other improvements include new bridges over Carnadero Creek and the Pajaro River, and overcrossings of the Union Pacific Railroad Hollister branch line and the Union Pacific main line just east of U.S. 101.

Both build alternatives, Alternative A and Alternative B would extend 3.8 miles in San Benito County, from San Felipe Road (post mile 51.5) to just west of Hudner Lane (post mile 55.3). Unlike the route adoption alternatives, the build alternatives propose a realigned and widened at-grade intersection at State Route 25 and State Route 156 instead of an interchange. Both construction alternatives would transition back to the existing two-lane highway just west of Hudner Lane.

The No-Action Alternative would result in no action being taken, and no further improvements would be made to State Route 25 within the route adoption limits other than the State Route 25 Safety and Operations Enhancement Project. It is anticipated that work will begin early in 2009 and will be completed by early 2010. Work will begin just south of Hudner Lane (post mile 55.1) and end just south of the Union Pacific Railroad crossing (post mile 60 0) in San Benito County. Roadway widening will consist of two 10-foot outside shoulders, two 12-foot travel lanes, two 5-foot inside shoulders and placement of a temporary concrete median barrier. Rumble strips will be installed on all inside and outside shoulders. The Hudner Lane and Shore Road intersections will be improved.

Latest mapping (FEMA, Quadrangle Maps) were checked for any changes in topography or site conditions, no changes were noted. Revised description does not affect the Location Hydraulic Study Therefore, the study is valid.

If you have any questions or need additional information, please feel free to call Diego Caldera at 559-243-3500 or myself at 559-243-3498.

c: DC
File

LOCATION HYDRAULIC STUDY

Route 25 in San Benito and Santa Clara Counties
April 20, 2007

TABLE OF CONTENTS
SBt 25 KP 82.9/96.7 (PM 51.5/60.1)
SCl 25 KP 0.0/4.1 (PM 0.0/2.0)
05-485400

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Attachments:

A. Floodplain Evaluation Report Summary
B. Project Vicinity Map
C. 7.5 Minute Quadrangle Topographic Map
D. Flood Insurance Rate Map (FEMA)

1.0 INTRODUCTION

1.1 Purpose and Scope

The purpose of this study is to identify and evaluate the base flooding encroachments by the proposed project. This report will address the flow of water as it affects the state highway, the base floodplain, and the surrounding area.

1.2 Project Description

This project proposes converting the existing two lane conventional highway to a four-lane expressway. Two alternatives are being proposed for this project. These are as follow:

Both Alternatives 1 & 2 propose the following:

Converting the existing two-lane conventional highway to a four-lane expressway. Included with this upgrade would be widening the median from the existing 1.9 feet to 62 feet. In converting to an expressway, local roads would directly access SR 25, but not driveways. Instead of constructing new frontage roads, much of the existing facility will be used as a frontage road and new roads will only be constructed as needed to provide access to landlocked parcels.

The existing SR 25/156 signalized intersection would be upgraded to an Interchange.

Shore Road would be realigned to intersect with the realigned SR 25 expressway at a 90-degree angle.

The roadway in Santa Clara County would be realigned east of the existing SR 25 and the existing would become a frontage road

Bridges would be constructed at the Pajaro River and the Carnadero Creek.

The new four-lane expressway would be elevated over the two existing at-grade rail intersections. This project would construct only the eastern most RR grade separation.

The existing Bolsa Road would end in a cul-de-sac east of the new expressway and the remainder would be removed. A new realigned Bolsa Road would be constructed east of the existing, intersecting with the new SR 25 expressway and ending at the existing SR 25.

A new intersection would be constructed between Route 156 and Shore Road to connect the east and west frontage roads to the new expressway and to each other.

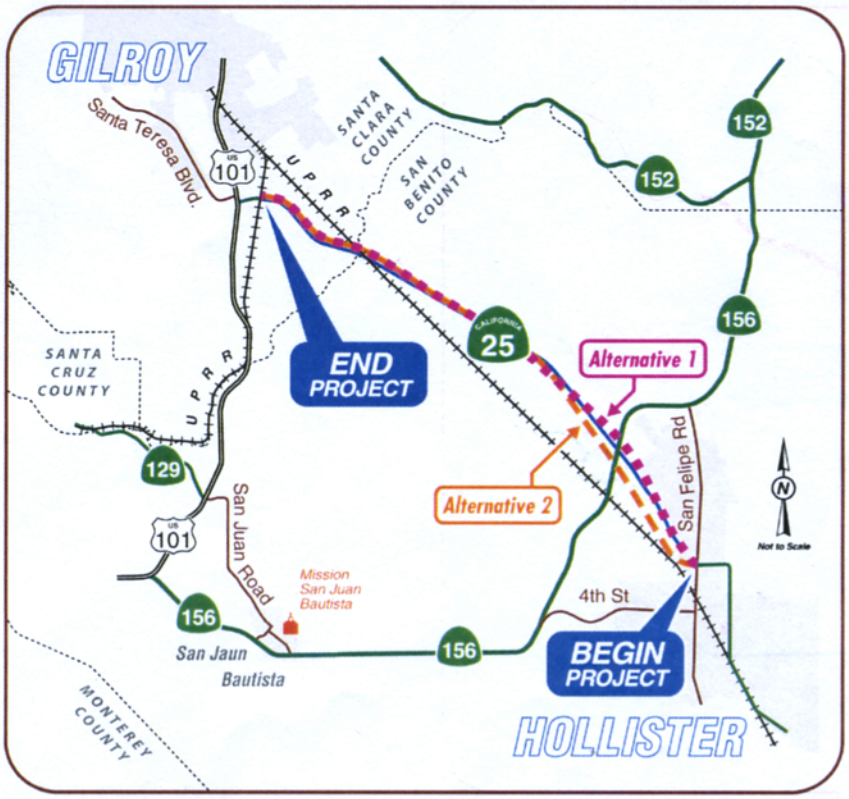
This project is dependent on construction of a new SR 25/ US 101 interchange which is proposed as part of the US 101 Widening Project (Route 129 to Monterey Road). The transition between projects will occur above grade north of Bloomfield Avenue approaching the railroad that runs parallel to US 101.

In San Benito County, south of Shore Road the two build alternatives are different

Alternative 1:
This alternative proposes to realign the new four-lane expressway east of the existing facility, thereby allowing portions of the existing two-lane route to be utilized as frontage road. Wright Road east of State Route 25 would be realigned to create an improved intersection with the new facility. Briggs Road would be extended to Flynn Road east of State Route 25. An undercrossing would be provided for the gravel community since their only access would be closed by the new State Route 25. New State Route 25/156 interchange would be constructed east of the existing intersection. Frontage roads will be necessary between Route 156 and Shore Road on either side of the proposed State Route 25 expressway. The frontage road in the east side would utilize the existing Route 25 as frontage road and provide new frontage road extending to a cul-de-sac north of Route 156.

Alternative 2:
This alternative proposes to realign the new four-lane expressway west of the existing facility and the entire existing two lanes would be utilized as frontage road. An intersection would be created at Wright Road west of existing State Route 25. Briggs Road would be extended west to the new four-lane facility and an intersection would be provided. A new State Route 25/156 interchange would be constructed west of the existing intersection. Frontage road would be constructed west of the proposed State Route 25 expressway where necessary to provide access to landlocked parcels. As with Alternative 1, frontage roads would be needed to provide access to landlocked parcels although no new frontage road would be constructed on the east side, instead the existing roadway would be utilized completely. The new frontage road on the west side would end in a cul-de-sac north of Route 156.

FIGURE 1 – PROJECT LOCATION MAP



1.3 Project Background

Route 25 is a two-lane undivided highway with one 3.6 meter lane for each direction of travel within the project limits. The paved shoulder width on both sides of the highway varies from 0.6 to 2.4 meter. This segment of Route 25 primarily traverses agricultural land and accommodates many driveways and pull out areas used by agricultural vehicles and farm workers. Route 25 is the primary route between an increasing job market in the Silicon Valley and more affordable and available residential housing in the County of San Benito. Traffic volumes on local roads and Route 25 have increased dramatically in response to the booming market in Santa Clara County and the supply of new housing being constructed in San Benito County. Increasing traffic, lack of alternative routes, and conflict between slower moving agricultural and commuter traffic combine to cause escalating congestion and safety concerns within the project limits. Therefore, SBtCOG and the San Benito community including the County of San Benito, the Business Council, and the community based "Stay Alive on 25" group placed a high priority in improving Route 25.

2.0 SITE CHARACTERISTICS

2.1 Climate

The climate of the northern San Benito County is characterized by warm summers and cool, moist winters. The normal temperature for the summer and winter is 73 °F to 46 °F, respectively. However, it is not unusual for temperatures to rise above 100 °F a few days every summer or to fall below 40 °F occasionally in the winter. The average yearly rainfall is 13 inches in Hollister and 21.7 inches for San Juan Bautista. Most of the precipitation occurs in the period from October through May. The climate of Santa Clara County is characterized by warm, dry summers and cool, moist winters. Periodically, summer temperatures may rise above 100 °F, and although the winters are generally mild, temperatures may drop below 20 °F for short period of time. Annual precipitation in the area averages approximately 20 inches; however, in some years more than 35 inches has been recorded. Most of the annual precipitation, approximately 98 percent, occurs during the period from October through May.

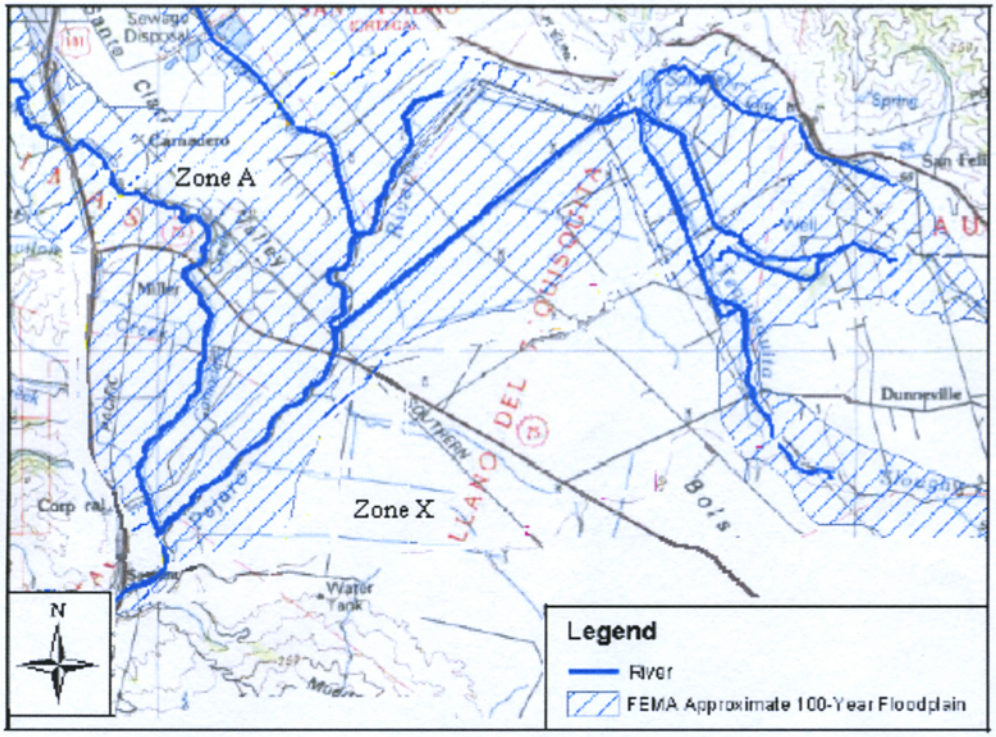
2.2 Topography

San Benito County lies along the alignment of the Diablo Range and varies in distance approximately 10 to 700 miles from the Pacific Ocean, by referring to the nearest and farthest points of the County to the ocean. San Benito County was founded in 1873. San Benito County is drained by streams flowing from the general southeast direction to the northeast which then empty into the Pajaro River and the Pajaro River joins the Pacific Ocean. The topography in the County is varied from rolling hills to broad valleys, narrow passes, and moderate mountains. The elevation ranges from 76 feet to 3,801 National Geodetic Vertical Datum (NGVD).
Santa Clara County in the central part of western California. Santa Clara is primarily in a flat alluvial plain that lies between the Santa Cruz Mountains and the Diablo Range. Most of the area consists of basically level terrain; toward the east and west, this gives way to rolling foothills. The elevations in Santa Clara County range from 140 feet to 1200 feet. The slope of the land is toward the south.

2.3 Designated Floodplains

For this evaluation, the Flood Insurance Rate Maps (FIRM) were consulted, the FEMA hydraulic calculations were reviewed, and a field trip was performed. Between the post mile 51.5 and 59.6 in San Benito County based on FIRM #06069C0080 C and #06069C0025 C dated September 27, 1991, designates this area as Zone X. Zone X is defined as "Areas determined to be outside the 500-year flood plain". Between the post mile of 59.6 to 60.1 in San Benito County and between post mile 0.0 to 2.0 in Santa Clara County based on FIRM #06069C0025 C dated September 27, 1991 and FIRM # 0603370760 F dated August 17, 1998 designates this area as Zone A. Zone A is defined as "Areas of 100-year flood; base flood elevations and flood hazards factors are not determined.

Figure 2. Topographic map showing boundaries of 100 year floodplain



3.0 PROJECT CONCLUSIONS

3.1 Risk Assessment

Both alternatives transversely encroach the floodplain within post mile of 59.6 to 60.1 in San Benito County and post mile 0.0 to 2.0 in Santa Clara County. In addition, the proposed alignment crosses Pajaro River at the county line (San Benito/Santa Clara) and Carnadero Creek at post mile 1.54 in Santa Clara County. To minimize backwater the course of action is to install a combination of drainage ditches, cross culverts, and new bridges at the Pajaro River and the Carnadero Creek.

3.2 Summary

Route 25 will be placed on an embankment within the floodplain area. In the event of a flood, appropriate openings in the roadway embankment,by means of bridges and culverts, will allow flood waters to pass and follow their historic patterns and therefore, not significantly affect the base flood elevations.

Study Prepared by:

Diego C. Caldera
Hydraulics
District 6, Fresno, CA

4.0 REFERENCES

1. San Benito County, California (unincorporated areas) Flood Insurance Study (September 27, 1991) by Federal Emergency Management Agency (FEMA)
2. San Clara County, California (unincorporated areas) Flood Insurance Study (August 17, 1998) by Federal Emergency Management Agency (FEMA)
3. Flood Insurance Rate Map
4. United States Geological Topographic Map
5. Average rainfall, and average maximum and minimum temperatures from Climate Data from www.worldclimate.com

FLOOD PLAIN EVALUATIONS REPORT SUMMARY

Dist 05 Co. SBt/SCl Rte. 25 P.M. SBt 51.5/60.0 - SCl 0.0/2.0
Project No: 05-48540 Bridge No

Limit:

Floodplain Description:

		YES	NO
1	Is the proposed action a longitudinal encroachment of a floodplain?	____	X
2	Are the risks associated with the implementation of the proposed action significant?	____	X
3	Will the proposed action support probable incompatible floodplain development?	____	X
4	Are there any significant impacts on the natural and beneficial floodplain values?	____	X
5	Routine construction procedures are required to minimize impacts on the floodplain. Are there any special mitigation measures necessary to minimize impacts or restore and preserve natural and beneficial floodplain value? If yes, explain.		X
6	Does the proposed action constitute a significant floodplain encroachment as defined in 23 CFR, Section 650.105(q)?	____	X
7	Are Location Hydraulic Studies that document the above answers on file? If not explain.	X	____

PREPARED BY:

for [signature] 4/24/07
District Hydraulic Engineer Date

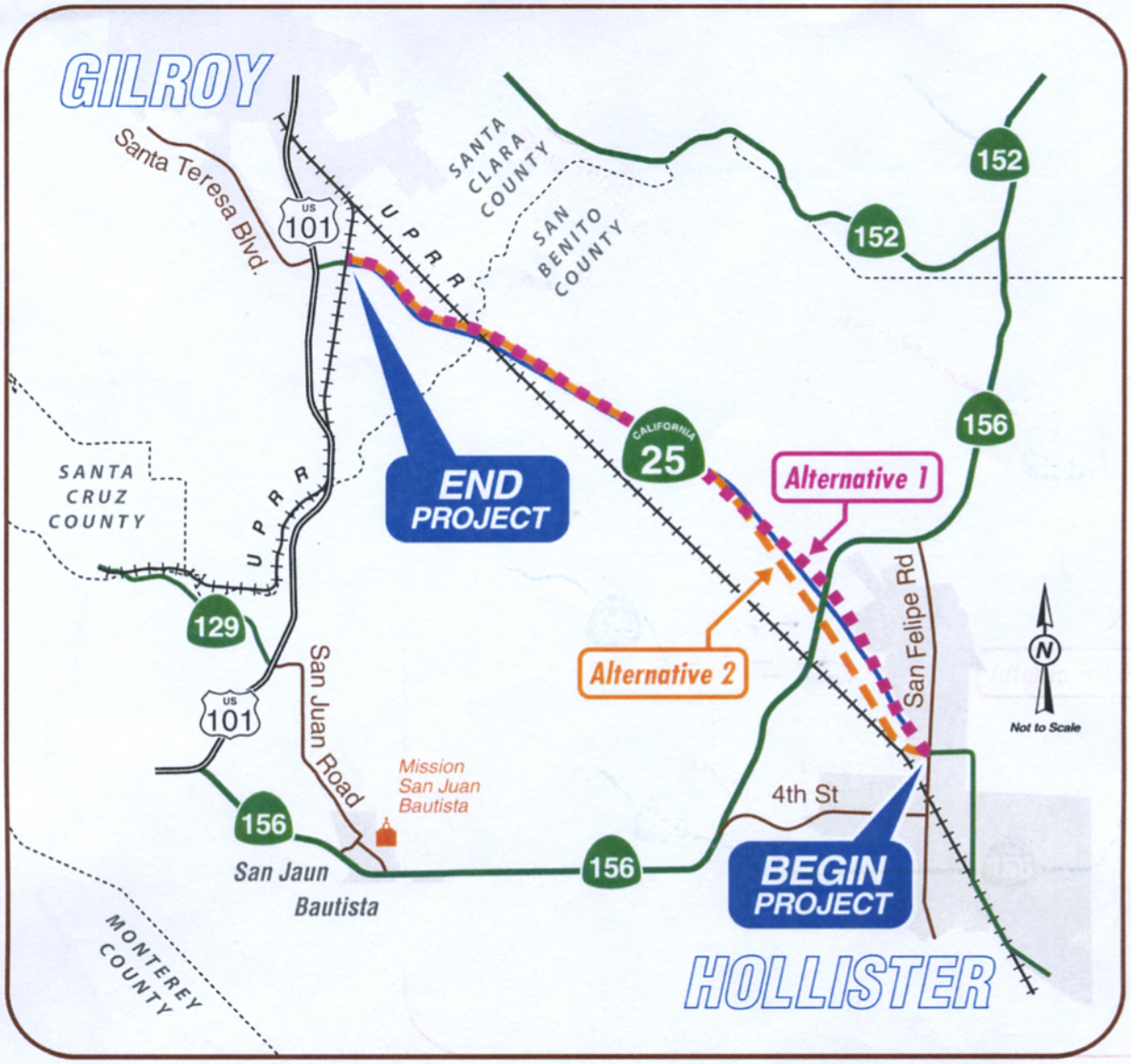
[signature] 10/20/08
District Environmental Branch Chief Date

[signature] 10/20/08
District Project Engineer Date

I CONCUR:

FHWA Date

ATTACHMENT A



ATTACHMENT B

Technical Information for Location Hydraulic Study

Dist. 05 Co. SBt/SCl Rte. 25 K.P. SBt 82.9/96.7 SCl 0.0/4.1
EA 05-48540 Bridge Number

Floodplain Description: Both alternatives transversely encroach the floodplain within post mile of 59.6 to 60.1 in San Benito County and post mile 0.0 to 2.0 in Santa Clara County. In addition, the proposed alignment crosses Pajaro River at the county line (San Benito/Santa Clara) and Carnadero Creek at post mile 1.54 in Santa Clara County.

1. Description of Proposal (include any physical barriers i.e. concrete barriers, soundwalls, etc. and design elements to minimize floodplain impacts)
Construct 4-lane expressway on embankment. Drainage culverts provided to allow floodwaters to pass thru embankment.

2. ADT: Current Projected
AADT 22,500 32,800

3. Hydraulic Data: Base Flood Q100= 2000 cfs
WSE100= 167.5 ft The flood of record, if greater than Q100:
WSE N/A
Q= N/A m^3/s
Are NFIP maps available? Yes X No
Are NFIP studies available? Yes X No

	Yes	No
4. Is the highway location alternative within a regulatory floodway?		X
5. Attach map with flood limits outlined showing all building or other improvements within the base floodplain.		
Potential Q100 backwater damages:		
A. Residences?	X	
B. Other Bldgs?	X	
C. Crops?	X	
D. Natural and beneficial Floodplain values?		X
6. Type of Traffic:		
A. Emergency supply or evacuation route?	X	
B. Emergency vehicle access?	X	
C. Practicable detour available?		X
D. School bus or mail route?	X	

7. Estimated duration of traffic interruption for 100-year event 0 hours.

Technical Information for Location Hydraulic Study

8. Estimated value of Q100 flood damages (if any) – moderate risk level
   A. Roadway $ 0
   B. Property $ 0
   Total $ 0

9 Assessment of Level of Risk
Low X Moderate_____ High_____
For High Risk projects, during design phase, additional Design Study Risk Analysis may be Necessary to determine design alternative.

PREPARED BY:

Signature – Dist. Hydraulic Engineer (Item Numbers 3, 4, 5, 7, 9) — Date: 4/25/07

Is there any longitudinal encroachment, significant encroachment, or any support of incompatible Floodplain development? No X Yes_____

If yes, provide evaluation and discussion of practicability of alternatives in accordance with 23 CFR 650.113

Information developed to comply with the Federal requirement for the Location Hydraulic Study Shall be retained in the project files

Signature – Dist. Project Engineer (Item numbers 1, 2, 6, 8) — Date: 12/19/08

End Project
Beg Project
EA 485400
ROUTE 25
SB† PM 51.5/60.1
SCI PM 0.0/2.0
TOPOGRAPHIC MAP
ATTACHMENT C

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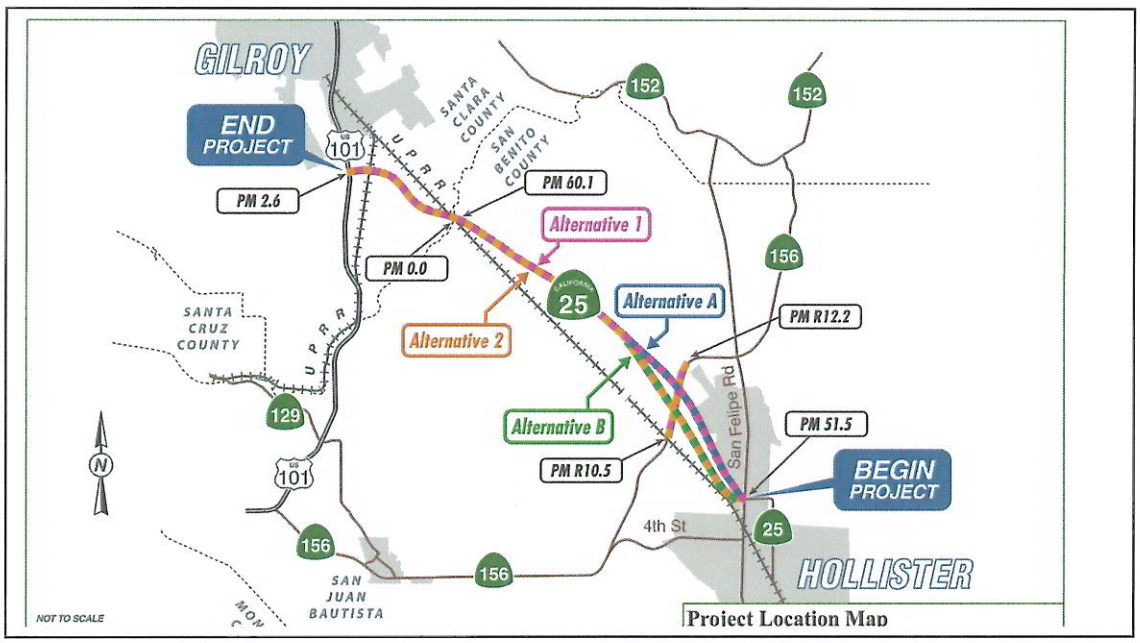
Noise Study Report

State Route 25 Widening and Route Adoption Hollister to Gilroy. *NSR*



State Route 25 Widening and Route Adoption Hollister to Gilroy

5-SBt-25 PM 51.5/60.1 and 4-SCI-25 PM 0.0/2.6

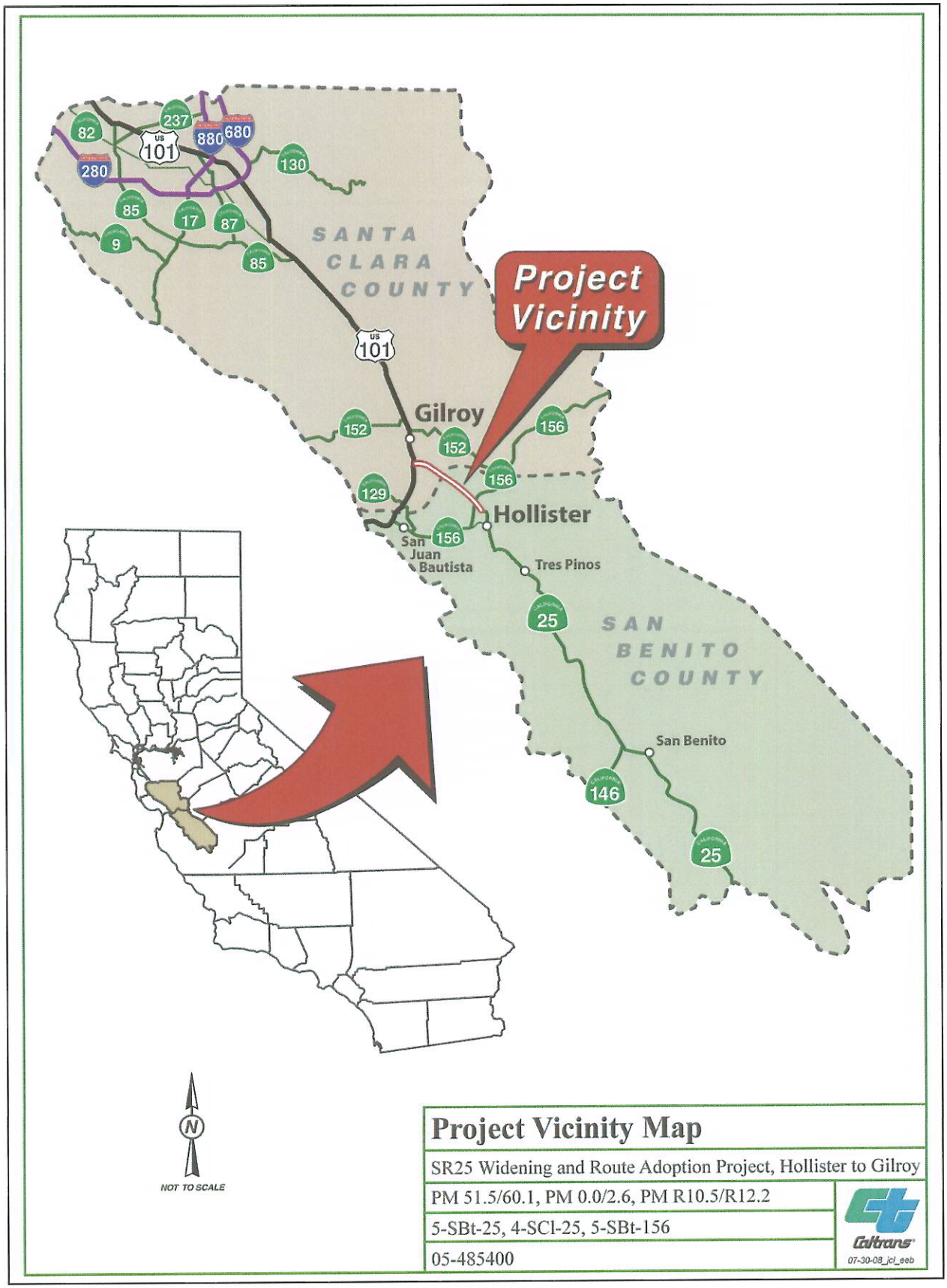
5-SBt-156 PM R 10.5/R12.2

E.A. 05-485400

May 2011

Caltrans

For individuals with sensory disabilities, this document is available in Braille, large print, on audiocassette, or computer disk. To obtain a copy in one of these alternate formats, please call or write to Caltrans, Attn: G. William "Trais" Norris III, Sierra Pacific Environmental Analysis Branch, 2015 E. Shields Avenue Suite 100 Fresno CA 93726-5428; (559) 243-8178 Voice, or use the California Relay Service TTY number, (800) 735-2929.



Project Vicinity Map

SR25 Widening and Route Adoption Project, Hollister to Gilroy

PM 51.5/60.1, PM 0.0/2.6, PM R10.5/R12.2

5-SBt-25, 4-SCl-25, 5-SBt-156

05-485400

Caltrans

07-30-08_jcl_eeb

Noise Study Report

State Route 25 Widening and Route Adoption Hollister to Gilroy

5-SBt-25 PM 51.5/60.1 and 4-SCI-25 PM 0.0/2.6

5-SBt-156 PM R 10.5/R12.2

E.A. 05-485400

May 2011

Prepared By: Abdulrahim N. Chafi Date: 5/25/2011

Abdulrahim N. Chafi, Ph.D.,P.E., INCE

Phone Number (559) 243-8225

Office Name Environmental Engineering Branch

District/Region 06/Central Region

Approved By: Date: 5/25/11

Ken J. Romero, P.E.,Chief

Phone Number (559) 243-8161

Office Name Environmental Engineering Branch

District/Region 06/Central Region

Summary

The purpose of this study is to evaluate potential noise impacts of the proposed realignment of State Route 25 between the Cities of Hollister and Gilroy in San Benito and Santa Clara Counties respectively. Currently, four-lane alternatives are being considered to replace the existing two-lane highway. The primary use of land is farmland, although there are also relatively isolated rural residents and businesses within the project limits.

A noise analysis is required for all Type I projects. A type I project is defined by Title 23, U.S. Code of Federal Regulations, Part 772 (23CFR 772) as a proposed federal or federal aid highway project for the construction of a highway on a new location or the physical alteration of an existing highway, which changes either the horizontal or the vertical alignment or increase the number of through lanes. This is a Type I project since it proposes to change the horizontal alignment and increase the number of through lanes.

When traffic noise impacts are identified, noise abatement measures must be considered. Traffic noise impacts result from one or more of the following occurrences: 1) an increase of 12dBA or more over existing noise levels, and 2) predicted noise levels approach or exceed the Noise Abatement Criteria (NAC). Implementation of the proposed project would result in potential noise impacts to adjacent receivers within the study area.

The conclusions of the study are listed below:

No-Build Alternative: There are currently eight receptors that experience peak-hour noise levels approaching or exceeding the Noise Abatement Criteria. Under this alternative there would be additional receptors experiencing noise impacts by year 2038.

Alternative –A: Under this alternative receptors number R2, R10, R11, R12, R13, and R20 would experience noise impacts by year 2038.

R2, R10, R11, R12, and R20 are within the right of way for Alt "A".

Barrier analysis for R13 shows that a sound wall is not feasible in this location.

Alternative-B: Under this alternative receptor number R18 would experience a substantial noise increase by year 2038.

Sound wall for R18 is not feasible because of the presence of local street and access requirement for a driveway.

The results of the traffic noise modeling and the barrier analysis indicate that no sound walls are recommended for this project.

Alternative B was selected as the preferred build alternative.

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List of Abbreviated Terms

CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
CNEL	Community Noise Equivalent Level
dB	Decibels
FHWA	Federal Highway Administration
Hz	Hertz
kHz	Kilohertz
L_{dn}	Day-Night Level
L_{eq}	Equivalent Sound Level
$L_{eq(h)}$	Equivalent Sound Level over one hour
L_{max}	Maximum Sound Level
LOS	Level of Service
L_{xx}	Percentile-Exceeded Sound Level
mPa	micro-Pascals
mph	miles per hour
NAC	noise abatement criteria
NADR	Noise Abatement Decision Report
NEPA	National Environmental Policy Act
NSR	noise study reports
Protocol	Caltrans Traffic Noise Analysis Protocol for New Highway Construction, Reconstruction, and Retrofit Barrier Projects
SPL	sound pressure level
TeNS	Caltrans' Technical Noise Supplement
TNM 2.5	FHWA Traffic Noise Model Version 2.5

Chapter 1. Introduction

1.1. Purpose of the Noise Study Report

The purpose of this NSR is to evaluate noise impacts and abatement under the requirements of Title 23, Part 772 of the Code of Federal Regulations (23 CFR 772) "Procedures for Abatement of Highway Traffic Noise". 23 CFR 772 provides procedures for preparing operational and construction noise studies and evaluating noise abatement considered for federal and federal-aid highway projects. According to 23 CFR 772.3, all highway projects that are developed in conformance with this regulation are deemed to be in conformance with Federal Highway Administration (FHWA) noise standards.

The Caltrans Traffic Noise Analysis Protocol for New Highway Construction, Reconstruction, and Retrofit Barrier Projects (Protocol) (Caltrans 2006) provides Caltrans policy for implementing 23 CFR 772 in California. The Protocol outlines the requirements for preparing noise study reports (NSR). Noise impacts associated with this project under the National Environmental Policy Act (NEPA) and the California Environmental Quality Act (CEQA) are evaluated in the project's environmental document State Route 25 widening and Route Adoption Hollister to Gilroy.

1.2. Project Purpose and Need

The purpose of the proposed project is to:

1. Improve traffic flow and reduce delays on State Route 25 between San Felipe Road in Hollister and Hudner Lane in San Benito County

2. Increase capacity along State Route 25 between San Felipe Road in Hollister and Hudner Lane in rural San Benito County.

The purpose of the proposed route adoption project is to:

1. Select a corridor for State Route 25 between Hollister and Gilroy that will accommodate existing and future travel demand.

2. Facilitate local and regional land use planning by identifying future right-of-way needed for the State Route 25 corridor.

Chapter 2. Project Description

The California Department of Transportation (Caltrans), in cooperation with San Benito Council of Governments and Santa Clara Valley Transportation Authority is evaluating the conversion of 11.2 miles of the existing State Route 25 two-lane conventional highway to a four-lane expressway in San Benito and Santa Clara counties. The Draft Environmental Impact Report and Environmental Impact Statement includes two proposed projects: (1) a TIER I route adoption and (2) a proposed construction project within the limits of the proposed route adoption.

1. The route adoption study extends from San Felipe Road within the City of Hollister (post mile 51.5) to the San Benito/Santa Clara County line (post mile 60.1) and on to the end of State Route 25 at U.S. 101 south of the city of Gilroy (post miles 0.0 to 2.6 in Santa Clara County).

2. The proposed construction project limits extend 3.8 miles in San Benito County, from San Felipe Road in Hollister to just west of Hudner Lane (post miles 51.5 to 55.3). The existing 2-lane conventional highway would be replaced by a 4-lane expressway.

State Route 25, a two-lane conventional highway, runs northwest through the relatively flat terrain of the Hollister Valley, terminating at U.S. 101 after crossing the Pajaro River and Carnadero Creek. Agriculture dominates the surrounding landscape, and farmsteads and houses are scattered along the length of the study area. Residences, retail businesses, and agriculture-related commercial operations are more concentrated at both ends of the route adoption study area, on the outskirts of Gilroy and Hollister.

Slow moving farm equipment, trucks, and local and commuter traffic share this two-lane roadway. An increasing number of vehicles travel this stretch of State Route 25 and, during peak commute hours, the roadway is congested. Traffic flow is delayed by vehicles turning onto and/or out of the many driveways and local roads, affecting the flow of the faster moving vehicles. Many commuters whose destination is beyond the local area take local roads (Bloomfield Road, Frazier Lake Road, and Shore Road) as shortcuts between State Route 25 and State Route 156 and also State Route 152. Significant commercial truck traffic travels through the area on State Route 25, and is subject to delays as well. A new route alignment is being proposed so that the appropriate area for a future expressway can be incorporated into the San Benito and Santa Clara

County general plans now, before future development occurs along this stretch of highway.

ALTERNATIVES:

The project has five alternatives under consideration:

2.1. No Build

Under the No Build Alternative, no changes would be made to SR 25 in the project area.

2.2. Build Alternative

- Alternative 1: A Route adoption Alignment (11.2 miles)
- Alternative 2: A Route adoption Alignment (11.2 miles)
- Alternative A: A 3.8 mile constructed portion of Alternative 1 Route Adoption Alignment.
- Alternative B: A 3.8 miles constructed portion of Alternative 2 Route Adoption Alignment.

Alternative 1 and 2 Route Adoption Alignment Alternatives

Both of the route adoption alternatives would follow the same alignment from the bend in Route 25 approximately 1/2 miles south of Shore Road (post mile 56.1) in San Benito County to U.S. 101 in Santa Clara County. The alignment would be wide enough to accommodate a future four-lane expressway (342 feet) with a 62 foot median, and one or two frontage roads. The alignments would also be wide enough to accommodate a future interchange near the existing intersection of Route 25 and Route 156 and a future Route 25/101 interchange north of the existing interchange. There would be enough room to build new bridges over Carnadero Creek and the Pajaro River. The Union Pacific Railroad Hollister branch line and the Union Pacific main line just east of US101 would cross under the proposed Route 25 expressway.

Between post mile 56.1 and the east end of the proposed project at San Felipe Road, the two alignment alternatives separate.

Alternative 1 proposes to align the future four-lane expressway to the east (or north) of the existing two lane north/south highway and Alternative 2 proposes to align to the west (or south) of the existing two lane highway.

Alternatives A and B (Build Alternatives)

Both construction alternatives extend 3.8 miles in San Benito County, from just west of Hudner Lane (post mile 55.3) to San Felipe Road (post mile 51.5). Unlike the Route Adoption Alternatives, the build alternatives propose a realigned and widened at-grade intersection at Route 25 and Route 156 instead of an interchange. Both construction alternatives would transition back to the existing two-lane highway near Hudner Lane.

Alternative A would be constructed at the southeastern end of the Alternative 1 Route Adoption alignment. Direct access to the expressway would be available from San Felipe Road, Wright Road, Flynn Road, SR 156, two west-side frontage roads and one east-side frontage road. An undercrossing at the Don Chapin Gravel operation driveway would provide access to this otherwise landlocked parcel.

For Alternative A, an undercrossing would be built at the gravel quarry driveway to provide access to this parcel.

Alternative B would be constructed at the southeastern end of the Alternative 2 Route Adoption alignment. Direct access to the expressway would be available from San Felipe Road, Wright Road, Briggs Road, a west-side frontage road, SR 156, an east-side frontage road, and Hudner Lane. The second west-side frontage road would connect to Hudner Lane.

Alternative 2 was selected as the preferred route adoption alternative and Alternative B was selected as the preferred build alternative. Selection was based on construction and right-of-way costs, environmental impact analysis, and community and agency input. Route Adoption Alternative 2 and Build Alternative B were modified based on public comments received during the circulation of the draft environmental document. These modifications reduced the amount of farmland impacts and lowered the project costs. The changes for both alternatives include:

- Reducing the median width from 62 feet to 46 feet
- Reducing the minimum right –of-way width from 342 feet to 240 feet
- Moving the new alignment closer to the existing highway
- Replacing some frontage roads that were proposed on new alignment with private access easements

In addition, the route adoption Alternative 2 would include:

- Moving the proposed future interchange at State Route 156 and 25 to the east
- Shortening a west side frontage road to end in a cul-de-sac south of Hudner Lane
- Moving the above frontage road close to the expressway alignment in the vicinity of Hudner Lane

Modifications made specifically to Build Alternative B include:

- Removing the Briggs Road extension that would intersect with the expressway
- Reducing the project limit by 0.3 mile to end south of Hudner Lane
- Replacing the proposed west side frontage roads with private road easements.

No-Action Alternative

The No Action Alternative would result in no action being taken and no further improvements would be made to State Route 25 within the Route Adoption limits other than those already programmed/funded or under construction.

Chapter 3. Fundamentals of Traffic Noise

The following is a brief discussion of fundamental traffic noise concepts. For a detailed discussion, please refer to Caltrans' Technical Noise Supplement (TeNS) (Caltrans 1998), a technical supplement to the Protocol, that is available on Caltrans Web site (http://www.dot.ca.gov/hq/env/noise/pub/tens_complete.pdf).

3.1. Sound, Noise, and Acoustics

Sound can be described as the mechanical energy of a vibrating object transmitted by pressure waves through a liquid or gaseous medium (e.g., air) to a hearing organ, such as a human ear. Noise is defined as loud, unexpected, or annoying sound.

In the science of acoustics, the fundamental model consists of a sound (or noise) source, a receiver, and the propagation path between the two. The loudness of the noise source and obstructions or atmospheric factors affecting the propagation path to the receiver determine the sound level and characteristics of the noise perceived by the receiver. The field of acoustics deals primarily with the propagation and control of sound.

3.2. Frequency

Continuous sound can be described by frequency (pitch) and amplitude (loudness). A low-frequency sound is perceived as low in pitch. Frequency is expressed in terms of cycles per second, or Hertz (Hz) (e.g., a frequency of 250 cycles per second is referred to as 250 Hz). High frequencies are sometimes more conveniently expressed in kilohertz (kHz), or thousands of Hertz. The audible frequency range for humans is generally between 20 Hz and 20,000 Hz.

3.3. Sound Pressure Levels and Decibels

The amplitude of pressure waves generated by a sound source determines the loudness of that source. Sound pressure amplitude is measured in micro-Pascals (mPa). One mPa is approximately one hundred billionth (0.00000000001) of normal atmospheric pressure. Sound pressure amplitudes for different kinds of noise environments can range from less than 100 to 100,000,000 mPa. Because of this huge range of values, sound is rarely expressed in terms of mPa . Instead, a logarithmic scale is used to describe sound pressure level (SPL) in terms of decibels (dB). The threshold of hearing for young people is about 0 dB, which corresponds to 20 mPa.

3.4. Addition of Decibels

Because decibels are logarithmic units, SPL cannot be added or subtracted through ordinary arithmetic. Under the decibel scale, a doubling of sound energy corresponds to a 3-dB increase. In other words, when two identical sources are each producing sound of the same loudness, the resulting sound level at a given distance would be 3 dB higher than one source under the same conditions. For example, if one automobile produces an SPL of 70 dB when it passes an observer, two cars passing simultaneously would not produce 140 dB—rather, they would combine to produce 73 dB. Under the decibel scale, three sources of equal loudness together produce a sound level 5 dB louder than one source.

3.5. A-Weighted Decibels

The decibel scale alone does not adequately characterize how humans perceive noise. The dominant frequencies of a sound have a substantial effect on the human response to that sound. Although the intensity (energy per unit area) of the sound is a purely physical quantity, the loudness or human response is determined by the characteristics of the human ear.

Human hearing is limited in the range of audible frequencies as well as in the way it perceives the SPL in that range. In general, people are most sensitive to the frequency range of 1,000–8,000 Hz, and perceive sounds within that range better than sounds of the same amplitude in higher or lower frequencies. To approximate the response of the human ear, sound levels of individual frequency bands are weighted, depending on the human sensitivity to those frequencies. Then, an "A-weighted" sound level (expressed in units of dBA) can be computed based on this information.

The A-weighting network approximates the frequency response of the average young ear when listening to most ordinary sounds. When people make judgments of the relative loudness or annoyance of a sound, their judgments correlate well with the A-scale sound levels of those sounds. Other weighting networks have been devised to address high noise levels or other special problems (e.g., B-, C-, and D-scales), but these scales are rarely used in conjunction with highway-traffic noise. Noise levels for traffic noise reports are typically reported in terms of A-weighted decibels or dBA. Table 3-1 describes typical A-weighted noise levels for various noise sources.

Table 3-1. Typical A-Weighted Noise Levels

Common Outdoor Activities	Noise Level (dBA)	Common Indoor Activities
	— 110 —	Rock band
Jet fly-over at 1000 feet		
	— 100 —	
Gas lawn mower at 3 feet		
	— 90 —	
Diesel truck at 50 feet at 50 mph		Food blender at 3 feet
	— 80 —	Garbage disposal at 3 feet
Noisy urban area, daytime		
Gas lawn mower, 100 feet	— 70 —	Vacuum cleaner at 10 feet
Commercial area		Normal speech at 3 feet
Heavy traffic at 300 feet	— 60 —	
		Large business office
Quiet urban daytime	— 50 —	Dishwasher next room
Quiet urban nighttime	— 40 —	Theater, large conference room (background)
Quiet suburban nighttime		
	— 30 —	Library
Quiet rural nighttime		Bedroom at night, concert
	— 20 —	
		Broadcast/recording studio
	— 10 —	
Lowest threshold of human hearing	— 0 —	Lowest threshold of human hearing

Source: Caltrans 1998.

3.6. Human Response to Changes in Noise Levels

As discussed above, doubling sound energy results in a 3-dB increase in sound. However, given a sound level change measured with precise instrumentation, the subjective human perception of a doubling of loudness will usually be different than what is measured.

Under controlled conditions in an acoustical laboratory, the trained, healthy human ear is able to discern 1-dB changes in sound levels, when exposed to steady, single-frequency ("pure-tone") signals in the midfrequency (1,000 Hz–8,000 Hz) range. In typical noisy environments, changes in noise of 1 to 2 dB are generally not perceptible. However, it is widely accepted that people are able to begin to detect sound level increases of 3 dB in typical noisy environments. Further, a 5-dB increase is generally perceived as a distinctly noticeable increase, and a 10-dB increase is generally perceived as a doubling of loudness. Therefore, a doubling of sound energy (e.g., doubling the volume of traffic on a highway) that would result in a 3-dB increase in sound, would generally be perceived as barely detectable.

3.7. Noise Descriptors

Noise in our daily environment fluctuates over time. Some fluctuations are minor, but some are substantial. Some noise levels occur in regular patterns, but others are random. Some noise levels fluctuate rapidly, but others slowly. Some noise levels vary widely, but others are relatively constant. Various noise descriptors have been developed to describe time-varying noise levels. The following are the noise descriptors most commonly used in traffic noise analysis.

- **Equivalent Sound Level (L_{eq}):** L_{eq} represents an average of the sound energy occurring over a specified period. In effect, L_{eq} is the steady-state sound level containing the same acoustical energy as the time-varying sound that actually occurs during the same period. The 1-hour A-weighted equivalent sound level ($L_{eq}[h]$) is the energy average of A-weighted sound levels occurring during a one-hour period, and is the basis for noise abatement criteria (NAC) used by Caltrans and FHWA.

- **Percentile-Exceeded Sound Level (L_{xx}):** L_{xx} represents the sound level exceeded for a given percentage of a specified period (e.g., L_{10} is the sound level exceeded 10% of the time, and L_{90} is the sound level exceeded 90% of the time).

- **Maximum Sound Level (L_{max}):** L_{max} is the highest instantaneous sound level measured during a specified period.

- **Day-Night Level (L_{dn}):** L_{dn} is the energy average of A-weighted sound levels occurring over a 24-hour period, with a 10-dB penalty applied to A-weighted sound levels occurring during nighttime hours between 10 p.m. and 7 a.m.

- **Community Noise Equivalent Level (CNEL):** Similar to L_{dn}, CNEL is the energy average of the A-weighted sound levels occurring over a 24-hour period, with a 10-dB penalty applied to A-weighted sound levels occurring during the nighttime hours between 10 p.m. and 7 a.m., and a 5-dB penalty applied to the A-weighted sound levels occurring during evening hours between 7 p.m. and 10 p.m.

3.8. Sound Propagation

When sound propagates over a distance, it changes in level and frequency content. The manner in which noise reduces with distance depends on the following factors.

3.8.1. Geometric Spreading

Sound from a localized source (i.e., a point source) propagates uniformly outward in a spherical pattern. The sound level attenuates (or decreases) at a rate of 6 decibels for each doubling of distance from a point source. Highways consist of several localized noise sources on a defined path, and hence can be treated as a line source, which approximates the effect of several point sources. Noise from a line source propagates outward in a cylindrical pattern, often referred to as cylindrical spreading. Sound levels attenuate at a rate of 3 decibels for each doubling of distance from a line source.

3.8.2. Ground Absorption

The propagation path of noise from a highway to a receiver is usually very close to the ground. Noise attenuation from ground absorption and reflective-wave canceling adds to the attenuation associated with geometric spreading. Traditionally, the excess attenuation has also been expressed in terms of attenuation per doubling of distance. This approximation is usually sufficiently accurate for distances of less than 200 feet. For acoustically hard sites (i.e., sites with a reflective surface between the source and the receiver, such as a parking lot or body of water,), no excess ground attenuation is assumed. For acoustically absorptive or soft sites (i.e., those sites with an absorptive ground surface between the source and the receiver, such as soft dirt, grass, or scattered bushes and trees), an excess ground-attenuation value of 1.5 decibels per doubling of distance is normally assumed. When added to the cylindrical spreading, the excess ground attenuation results in an overall drop-off rate of 4.5 decibels per doubling of distance.

3.8.3. Atmospheric Effects

Receptors located downwind from a source can be exposed to increased noise levels relative to calm conditions, whereas locations upwind can have lowered noise levels. Sound levels can be increased at large distances (e.g., more than 500 feet) from the highway due to atmospheric temperature inversion (i.e., increasing temperature with elevation). Other factors such as air temperature, humidity, and turbulence can also have significant effects.

3.8.4. Shielding by Natural or Human-Made Features

A large object or barrier in the path between a noise source and a receiver can substantially attenuate noise levels at the receiver. The amount of attenuation provided by shielding depends on the size of the object and the frequency content of the noise source. Natural terrain features (e.g., hills and dense woods) and human-made features (e.g., buildings and walls) can substantially reduce noise levels. Walls are often

constructed between a source and a receiver specifically to reduce noise. A barrier that breaks the line of sight between a source and a receiver will typically result in at least 5 dB of noise reduction. Taller barriers provide increased noise reduction. Vegetation between the highway and receiver is rarely effective in reducing noise because it does not create a solid barrier.

Chapter 4. Federal Regulations and State Policies

This report focuses on the requirements of 23 CFR 772, as discussed below.

4.1. Federal Regulations

4.1.1. 23 CFR 772

23 CFR 772 provides procedures for preparing operational and construction noise studies and evaluating noise abatement considered for federal and federal-aid highway projects. Under 23 CFR 772.7, projects are categorized as Type I or Type II projects. FHWA defines a Type I project as a proposed federal or federal-aid highway project for the construction of a highway on a new location, or the physical alteration of an existing highway which significantly changes either the horizontal or vertical alignment, or increases the number of through-traffic lanes. A Type II project is a noise barrier retrofit project that involves no changes to highway capacity or alignment.

Type I projects include those that create a completely new noise source, as well as those that increase the volume or speed of traffic or move the traffic closer to a receiver. Type I projects include the addition of an interchange, ramp, auxiliary lane, or truck-climbing lane to an existing highway, or the widening an existing ramp by a full lane width for its entire length. Projects unrelated to increased noise levels, such as striping, lighting, signing, and landscaping projects, are not considered Type I projects.

Under 23 CFR 772.11, noise abatement must be considered for Type I projects if the project is predicted to result in a traffic noise impact. In such cases, 23 CFR 772 requires that the project sponsor "consider" noise abatement before adoption of the final NEPA document. This process involves identification of noise abatement measures that are reasonable, feasible, and likely to be incorporated into the project, and of noise impacts for which no apparent solution is available.

Traffic noise impacts, as defined in 23 CFR 772.5, occur when the predicted noise level in the design year approaches or exceeds the NAC specified in 23 CFR 772, or a predicted noise level substantially exceeds the existing noise level (a "substantial" noise increase). 23 CFR 772 does not specifically define the terms "substantial increase" or "approach"; these criteria are defined in the Protocol, as described below.

Table 4-1 summarizes NAC corresponding to various land use activity categories. Activity categories and related traffic noise impacts are determined based on the actual land use in a given area.

Table 4-1. Activity Categories and Noise Abatement Criteria

Activity Category	NAC, Hourly A-Weighted Noise Level (dBA-L_{eq}[h])	Description of Activities
A	57 Exterior	Lands on which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose
B	67 Exterior	Picnic areas, recreation areas, playgrounds, active sport areas, parks, residences, motels, hotels, schools, churches, libraries, and hospitals
C	72 Exterior	Developed lands, properties, or activities not included in categories A or B above
D	—	Undeveloped lands
E	52 Interior	Residences, motels, hotels, public meeting rooms, schools, churches, libraries, hospitals, and auditoriums

In identifying noise impacts, primary consideration is given to exterior areas of frequent human use. In situations where there are no exterior activities, or where the exterior activities are far from the roadway or physically shielded in a manner that prevents an impact on exterior activities, the interior criterion (Activity Category E) is used as the basis for determining a noise impact.

4.2. State Regulations and Policies

4.2.1. Traffic Noise Analysis Protocol for New Highway Construction and Reconstruction Projects

The Protocol specifies the policies, procedures, and practices to be used by agencies that sponsor new construction or reconstruction of federal or federal-aid highway projects. The NAC specified in the Protocol are the same as those specified in 23 CFR 772. The Protocol defines a noise increase as substantial when the predicted noise levels with project implementation exceed existing noise levels by 12 dBA. The Protocol also states that a sound level is considered to approach an NAC level when the sound level is within 1 dB of the NAC identified in 23 CFR 772 (e.g., 66 dBA is considered to approach the NAC of 67 dBA, but 65 dBA is not).

The TeNS to the Protocol provides detailed technical guidance for the evaluation of highway traffic noise. This includes field measurement methods, noise modeling methods, and report preparation guidance.

4.2.2. Section 216 of the California Streets and Highways Code

Section 216 of the California Streets and Highways Code relates to the noise effects of a proposed freeway project on public and private elementary and secondary schools. Under this code, a noise impact occurs if, as a result of a proposed freeway project, noise levels exceed 52 dBA-L_{eq}(h) in the interior of public or private elementary or secondary classrooms, libraries, multipurpose rooms, or spaces. This requirement does not replace the "approach or exceed" NAC criterion for FHWA Activity Category E for classroom interiors, but it is a requirement that must be addressed in addition to the requirements of 23 CFR 772.

If a project results in a noise impact under this code, noise abatement must be provided to reduce classroom noise to a level that is at or below 52 dBA-L_{eq}(h). If the noise levels generated from freeway and nonfreeway sources exceed 52 dBA-L_{eq}(h) prior to the construction of the proposed freeway project, then noise abatement must be provided to reduce the noise to the level that existed prior to construction of the project.

Chapter 5. Study Methods and Procedures

5.1. Methods for Identifying Land Uses and Selecting Noise Measurement and Modeling Receiver Locations

A field investigation was conducted to identify land uses that could be subject to traffic and construction noise impacts from the proposed project. Land use, in the project area, was categorized by land use type, activity category as defined in Table 4-1, and the extent of frequent human use. As stated in the Protocol, noise abatement is only considered for areas of frequent human use that would benefit from a lowered noise level. Although all developed land uses are evaluated in this analysis, the focus is on locations of frequent human use that would benefit from a lowered noise level. Accordingly, this impact analysis focuses on locations with defined outdoor activity areas, such as residential backyards and common use areas at multi-family residences.

The geometry of the project relative to nearby existing and planned land uses was also identified.

Short-term measurement locations were selected to represent each major developed area within the project area. A single long-term measurement site was selected to capture the diurnal traffic noise level pattern in the project area. Short-term measurement locations were selected to serve as representative modeling locations. Several other non-measurement locations were selected as modeling locations.

5.2. Field Measurement Procedures

A field noise study was conducted in accordance with recommended procedures in TeNS. The following is a summary of the procedures used to collect short-term and long term sound level data.

5.2.1. Short-Term Measurements

Short-term monitoring was conducted at four locations from Dec 13 to 16, 2006, using Larson-Davis Model 2238 Precision Type 1 sound level meters (serial numbers 2231630). Measurements were taken over a 15-minute period at each site. Short-term monitoring was conducted at Activity Category B land uses.

During the short-term measurements, field staff attended each meter. Minute-to-minute L_{eq} values collected during the measurement period (typically 15 minutes in duration) were logged manually, and dominant noise sources observed during each individual 1-

minute period were also identified and logged. Using this approach, those minutes when traffic noise was observed to be a dominant contributor to noise levels at a given measurement location could be distinguished from one-minute noise levels where other non-traffic noise sources (such as aircraft and lawn equipment) contributed significantly to existing noise levels. The calibration of the meter was checked before and after the measurement using a B&K Type 4231.

Temperature, wind speed, and humidity were recorded manually during the short-term monitoring session using a Kestrel 3000 portable weather station. During the short-term measurements, wind speed was 0.5 m/s. Temperature was 15°C (60°F) and the relative humidity 70%.

Traffic on SR 25 was classified and counted during short-term noise measurements. Vehicles were classified as automobiles, medium-duty trucks, or heavy-duty trucks. An automobile was defined as a vehicle with two axles and four tires that are designed primarily to carry passengers. Small vans and light trucks were included in this category. Medium-duty trucks included all cargo vehicles with two axles and six tires. Heavy-duty trucks included all vehicles with three or more axles. The posted speed on SR 25 was 55 mph.

5.2.2. Long -Term Measurements

Long-term monitoring was not conducted for this project.

5.3. Traffic Noise Levels Prediction Methods

Traffic noise levels were predicted using the FHWA Traffic Noise Model Version 2.5 (TNM 2.5). TNM 2.5 is a computer model based on two FHWA reports: FHWA-PD-96-009 and FHWA-PD-96-010 (FHWA 1998a, 1998b). Key inputs to the traffic noise model were the locations of roadways, shielding features (e.g., topography and buildings), noise barriers, ground type, and receivers. Three-dimensional representations of these inputs were developed using CAD drawings, aerials, and topographic contours provided by the Design Branch at Caltrans.

Traffic noise was evaluated under existing conditions, design year no-project conditions, and design year conditions with the project build alternatives. Loudest-hour traffic volumes, vehicle classification percentages, and traffic speeds under existing and design-year (2035) conditions were provided by Caltrans Traffic Engineers for input into the traffic noise model. The highest average traffic volumes on SR 25 are predicted to occur during the AM; therefore AM peak hour traffic volumes were used in the model. Tables

A-1 and A-2 in Appendix A summarize the traffic volumes and assumptions used for modeling existing and design-year conditions with and without the project alternative.

The loudest hour is generally characterized by free-flowing traffic at the highway design speed (i.e., Level of Service [LOS] C or better). Although the addition of median lanes on SR 25 will improve LOS, all segments on SR 25 are forecast to be at LOS D or worse during peak hours. For this analysis, it is assumed that each lane has a maximum capacity of 2,000 vehicles per hour at the design speed of the highway. Therefore, for the design year four-lane case, total modeled volumes in each direction were capped at 1200 vehicles per hour.

To validate the accuracy of the model, TNM 2.5 was used to compare measured traffic noise levels to modeled noise levels at field measurement locations. For each receiver, traffic volumes counted during the short-term measurement periods were normalized to 1-hour volumes. These normalized volumes were assigned to the corresponding project area roadways to simulate the noise source strength at the roadways during the actual measurement period. Modeled and measured sound levels were then compared to determine the accuracy of the model and if additional calibration of the model was necessary.

5.4. Methods for Identifying Traffic Noise Impacts and Consideration of Abatement

Traffic noise impacts are considered to occur at receiver locations where predicted design-year noise levels are at least 12 dB greater than existing noise levels, or where predicted design year noise levels approach or exceed the NAC for the applicable activity category. Where traffic noise impacts are identified, noise abatement must be considered for reasonableness and feasibility as required by 23 CFR 772 and the Protocol.

According to the Protocol, abatement measures are considered acoustically feasible if a minimum noise reduction of 5 dB at impacted receiver locations is predicted with implementation of the abatement measures. In addition, barriers should be designed to intercept the line-of-sight from the exhaust stack of a truck to the first tier of receivers, as required by the Highway Design Manual, Chapter 1100. Other factors that affect feasibility include topography, access requirements for driveways and ramps, presence of local cross streets, utility conflicts, other noise sources in the area, and safety considerations. The overall reasonableness of noise abatement is determined by considering factors such as cost; absolute predicted noise levels; predicted future increase in noise levels; expected noise abatement benefits; build date of surrounding residential

development along the highway; environmental impacts of abatement construction; opinions of affected residents; input from the public and local agencies; and social, legal, and technological factors.

The Protocol defines the procedure for assessing reasonableness of noise barriers from a cost perspective. A cost-per-residence allowance is calculated for each benefited residence (i.e., residences that receive at least 5 dB of noise reduction from a noise barrier). The 2007 base allowance is $36,000. Additional allowance dollars are added to the base allowance based on absolute noise levels, the increase in noise levels resulting from the project, achievable noise reduction, and the date of building construction in the area. Total allowances are calculated by multiplying the cost-per-residence by the number of benefited residences. If the total allowance for all evaluated noise barriers is more than 50% of the estimated construction cost, the allowance per residence is modified to a reduced value.

Chapter 6. Existing Noise Environment

6.1. Existing Land Uses

A field investigation was conducted to identify land uses that could be subject to traffic and construction noise impacts from the proposed project. In the project area there are several single-family residences, a church, and a hotel were identified as Activity Category B. Numerous commercial uses were also identified in the project area are Activity Category C.

As required by the Protocol, although all developed land uses are evaluated in this analysis, noise abatement is only considered for areas of frequent human use that would benefit from a lowered noise level. Accordingly, this impact analysis focuses on locations with defined outdoor activity areas, such as residential backyards and common use areas at multi-family residences.

Route 25, a two-lane conventional highway, runs northwest through the relatively flat terrain of the Hollister Valley, terminating at Route 101 after crossing the Pajaro River and Carnadero Creek. Agriculture dominates the surrounding landscape, and farmsteads and houses are scattered along the length of the study area. Residences, retail businesses, and agriculture-related commercial operations are more concentrated at both ends of the route adoption study area, on the outskirts of Gilroy and Hollister.
Agricultural uses include row crops, fruit and nut orchards, and livestock grazing. Agribusiness operations include produce packing, storage, and trucking facilities, seasonal fruit stands, a commercial composting operation, and an agricultural chemical supplier. Retail businesses within the project area include an auto body shop, trailer sales, a mini-storage facility, a chocolate factory, and a day-care center. An aggregate quarry and batch plant operation is located on the east side of State Route 25 south of State Route 156. Just to the east of this, outside the project area is the Hollister Municipal Airport. Other land uses within the proposed project area include a San Benito County Sheriffs'' shooting range, and a church.

In the project area there are 21 noise receptors two of them are commercial (Category C) and 19 are residential (Category B). The existing noise levels at 8 receptors are either approaching or exceeding the NAC.

6.2. Noise Measurement Results

The existing noise environment in the project area is characterized below based on short- and long-term noise monitoring that was conducted.

6.2.1. Short-Term Monitoring

Table 6-1 summarizes the results of the short-term noise monitoring conducted in the project area. The short-term monitoring was conducted using a Larson-Davis Model Instrument Number 2238 and serial number 2231630.

Table 6-1. Summary of Short-Term Measurements

Position	Address	Area	Land Uses	Start Time	Duration (minutes)	Measured L_{eq}	Autos	Medium Trucks	Heavy Trucks	Observed Speed (mph)
ST-1	660 San Felipe Rd	Project	Motel	12:56:55	15	59.7	210	20	3	65
ST-2	790 Bolsa Rd	Project	Church	09:44:36 a.m.	15	62.5	300	10	3	65
ST-3	233 Briggs Rd	Project	Residential	10:35:23 a.m.	15	62.3	322	13	4	65
ST-4	231 Briggs Rd	project	Residential	11:09:37 a.m.	15	65.0	380	10	3	65

Note: Refer to Figure 5-1 for measurement locations and boundaries of each area.

6.2.2. Long-Term Monitoring

No Long-term monitoring was conducted at any location.

TNM 2.5 was used to compare measured traffic noise levels to modeled noise levels at field measurement locations. Table 6-2 compares measured and modeled noise levels at

each measurement location. The predicted sound levels are within 2 dB of the measured sound levels and are, therefore, considered to be in reasonable agreement with the measured sound levels. Therefore, no calibration of the model was made.

Table 6-2. Comparison of Measured to Predicted Sound Levels in the TNM Model

Measurement Position	Measured Sound Level Leq(h),dBA	Predicted Sound Level Leq(h), dBA	Measured minus Predicted Leq(h), dBA
ST-1	59.7	59.8	- 0.1
ST-2	62.5	62.4	+ 0.1
ST-3	62.3	61.2	+ 1.1
ST-4	65.0	65.0	0.0

Table B-1 in Appendix B presents existing noise levels at each receiver.

Chapter 7. Future Noise Environment, Impacts, and Considered Abatement

7.1. Future Noise Environment and Impacts

Table B-1 in Appendix B summarizes the traffic noise modeling results for existing conditions and design-year conditions with and without the project. Predicted design-year traffic noise levels with the project are compared to existing conditions and to design-year no-project conditions. The comparison to existing conditions is included in the analysis to identify traffic noise impacts under 23 CFR 772. The comparison to no-project conditions indicates the direct effect of the project.

As stated in the TeNS, modeling results are rounded to the nearest decibel before comparisons are made. In some cases, this can result in relative changes that may not appear intuitive. An example would be a comparison between sound levels of 64.4 and 64.5 dBA. The difference between these two values is 0.1 dB. However, after rounding, the difference is reported as 1 dB.

Modeling results in Table B-1 indicate that predicted traffic noise levels for the design-year with-project conditions approach or exceed the NAC of 67 dBA $L_{eq}(h)$ for residences, church and motel. The results also indicate that predicted traffic noise levels for the design-year with-project conditions does not approach or exceed the NAC of 72 dBA $L_{eq}(h)$, for commercial areas.

Therefore, traffic noise impacts are predicted to occur at some single-family residences within the project area, and noise abatement must be considered.

7.2. Preliminary Noise Abatement Analysis

In accordance with 23 CFR 772, noise abatement is considered where noise impacts are predicted in areas of frequent human use that would benefit from a lowered noise level. Potential noise abatement measures identified in the Protocol include the following:

- Avoiding the impact by using design alternatives, such as altering the horizontal and vertical alignment of the project;
- Constructing noise barriers;

- Acquiring property to serve as a buffer zone;
- Using traffic management measures to regulate types of vehicles and speeds; and
- Acoustically insulating public-use or nonprofit institutional structures.

All of these abatement options have been considered. However, because of the configuration and location of the project, abatement in the form of noise barriers is the only abatement that is considered to be feasible.

Each noise barrier evaluated has been evaluated for feasibility based on achievable noise reduction. For each noise barrier found to be acoustically feasible, reasonable cost allowances were calculated.

For any noise barrier to be considered reasonable from a cost perspective, the estimated cost of the noise barrier should be equal to or less than the total cost allowance calculated for the barrier. The cost calculations of the noise barrier should include all items appropriate and necessary for construction of the barrier, such as traffic control, drainage modification, and retaining walls. Construction cost estimates are not provided in this NSR, but are presented in the NADR. The NADR is a design responsibility and is prepared to compile information from the NSR, other relevant environmental studies, and design considerations into a single, comprehensive document before public review of the project. The NADR is prepared by the project engineer after completion of the NSR and prior to publication of the draft environmental document. The NADR includes noise abatement construction cost estimates that have been prepared and signed by the project engineer based on site-specific conditions. Construction cost estimates are compared to reasonableness allowances in the NADR to identify which wall configurations are reasonable from a cost perspective.

The design of noise barriers presented in this report is preliminary and has been conducted at a level appropriate for environmental review and not for final design of the project. Preliminary information on the physical location, length, and height of noise barriers is provided in this report. If pertinent parameters change substantially during the final project design, preliminary noise barrier designs may be modified or eliminated from the final project. A final decision on the construction of the noise abatement will be made upon completion of the project design.

The following is a discussion of noise abatement considered for each alternative where traffic noise impacts are predicted.

7.2.1. Alternative A

Twenty-one sensitive receptors have been identified on this alternative. The existing noise level at receptors R2, R3, R6, R7, R8, R11, R12 and R20 are either approaching or exceeding the noise abatement criteria (NAC), and the predicted noise level of R2, R10, R11, R12, R13, and R20 is approaching or exceeding NAC.

Receptor R2 is a single-family residence at 4211 Bolsa Rd. The existing noise level is 66.2dBA and the predicted level is 76.9dBA. R2 is within the proposed right of way.

No mitigation is needed at this location.

Receptor R10 is a single-family residence at 233 Briggs Rd. The existing noise level is 64.2dBA and the predicted level is 72.1dBA. R10 is within the proposed right of way.

No mitigation is needed at this location.

Receptor R11 is a single-family residence at 231 Briggs Rd. The existing noise level is 68.1dBA and the predicted level is 78.9dBA. R11 is within the proposed right of way.

No mitigation is needed at this location.

Receptor R12 is a single-family residence at 312 Briggs Rd. The existing noise level is 66.6dBA and the predicted level is 77.1dBA. R12 is within the proposed right of way.

No mitigation is needed at this location.

Receptor R13 is a single-family residence at 640 Briggs Rd. The existing noise level is 59.9dBA and the predicted level is 65.9dBA. A barrier analyses is conducted for this receptor to determine if a sound wall would be feasible. As shown in Appendix B, Table B-2, "Barrier Analyses" a sound wall is not feasible at this location.

No mitigation is recommended at this location.

Receptor R20 is a Church at 790 Bolsa Rd. The existing noise level is 66.3dBA and the predicted is 67.2dBA. R20 is within the proposed right of way.

No mitigation is needed at this location.

7.2.2. Alternative B

Twenty-one sensitive receptors have been identified on this alternative. The existing noise levels at receptors R2, R3, R6, R7, R8, R11, R12, and R20 are either approaching or exceeding the noise abatement criteria NAC.

Under alternative "B" the predicted noise level at all these receptors is well below the noise abatement criteria.

No mitigation is needed at these receptors.

However, a substantial increase in noise level is predicted at R18, located at 540 and 560 Wright Road, where the existing noise level is 51.3dBA and the predicted level is 63.0 dBA. Soundwall at this location is not feasible because of the presence of a local street and access requirement for a driveway.

No mitigation is recommended at this location.

7.2.3. Route Adoption

A tier II environmental document will be prepared and when funding is available to construct portions of the route adoption alignment selected, a noise study report will be prepared at that time to analyze potential noise impacts.

Chapter 8. Construction Noise

During construction of the project, noise from construction activities may intermittently dominate the noise environment in the immediate area of construction. Construction noise is regulated by Caltrans Standard Specifications Section 7-1.01I, "Sound Control Requirements," which states that noise levels generated during construction shall comply with applicable local, state, and federal regulations, and that all equipment shall be fitted with adequate mufflers according to the manufacturers' specifications.

Table 8-1 summarizes noise levels produced by construction equipment that is commonly used on roadway construction projects. Construction equipment is expected to generate noise levels ranging from 70 to 90 dB at a distance of 50 feet, and noise produced by construction equipment would be reduced over distance at a rate of about 6 dB per doubling of distance.

Table 8-1. Construction Equipment Noise

Equipment	Maximum Noise Level (dBA at 50 feet)
Scrapers	89
Bulldozers	85
Heavy Trucks	88
Backhoe	80
Pneumatic Tools	85
Concrete Pump	82

Source: Federal Transit Administration 1995.

No adverse noise impacts from construction are anticipated because construction would be conducted in accordance with Caltrans Standard Specifications Section 7-1.01I and applicable local noise standards. Construction noise would be short-term, intermittent, and overshadowed by local traffic noise. Further, implementing the following measures would minimize the temporary noise impacts from construction:

- All equipment will have sound-control devices that are no less effective than those provided on the original equipment. No equipment will have an unmuffled exhaust.
- As directed by Caltrans, the contractor will implement appropriate additional noise mitigation measures, including changing the location of stationary construction equipment, turning off idling equipment, rescheduling construction activity, notifying adjacent residents in advance of construction work, and installing acoustic barriers around stationary construction noise sources.

Chapter 9. References

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Appendix A Traffic Data

This appendix contains tables presenting the traffic data for existing conditions, design year conditions without the project, and design year conditions with the project for each alternative.

Table A-1. Traffic Data for Alternative A&B (Rte Adoption Alt. 1& 2)

Location	AADT/2006	AADT/2018	AADT/2038
San Felipe Rd to Jct Rte 156	14,700	22,000	28,000
Jct Rte 156 to Hudner Ln	21,300	24,100	35,200
Hudner Ln to RRXing	22,500	23,500	34,300
SBt 156 n/o SBt 25	11,300	15,200	20,500
SBt 156 s/o SBt 25	14,000	15,200	23,300

Source: Caltrans District 05 Traffic Engineering.

Table A-2. Traffic Data for No-Build

Location	AADT/2006	AADT/2018	AADT/2038
San Felipe Rd to Jct Rte 156	14,700	20,400	23,700
Jct Rte 156 to Hudner Ln	21,300	26,200	28,800
Hudner Ln to RRXing	22,500	29,400	31,800
SBt 156 n/o SBt 25	11,300	17,100	21,300
SBt 156 s/o SBt 25	14,000	19,100	22,900

Source: Caltrans District 05 Traffic Engineering.

Appendix B Predicted Future Noise Levels and Noise Barrier Analysis

Table B-1 Existing and Predicted Noise Levels for Alt "A", Alt "B" and No-build

Receptor Location	Existing Noise Level Leq(h),dBA	Future Noise Level (2038) No Build	Future Noise Levels (2038) Alt"A"	Future Noise Levels (2038) Alt"B"
R1/ Res. 3616 Bolsa Rd	46.3	48	47.3	47.5
R2/Res. 4211 Bolsa Rd	**66.2**	**67.1**	**76.9**	54.3
R3/Res.4020 Bolsa Rd	**67.4**	**68.3**	59.4	56.0
R4/Res.3447 Bolsa Rd	58.3	59.2	61	60.4
R5/Res. 593 McConnell Rd	46.3	47.7	47.5	57
R6/Res. 2730 A Bolsa Rd	**66**	**66.9**	54.4	52.4
R7/Res. 2731 Bolsa Rd	**65.4**	**66.3**	58.2	50.8
R8/Res. 1980 Bolsa Rd	**67.1**	**68**	61.1	50.5
R9/Res. 2130, 2017, 2533 Bolsa Rd	61.2	62.1	63.5	49.9
R10/Res.233 Briggs Rd	64.2	65.1	**72.1**	45.6
R11/Res. 231 Briggs Rd	**68.1**	**68.9**	**78.9**	50.7
R12/Res. 312 Briggs Rd	**66.6**	**67.4**	**77.1**	49.3
R13/Res. 640 Briggs Rd	59.9	60.8	**65.9**	48.2
R14/Comm. 160 B&C Briggs Rd	54.7	55.9	59	56.5
R15/Res. 100 Briggs Rd	59.2	60.3	64.3	55.8
R16/Res. 132 Briggs Rd	55.0	56.2	59.6	56.5
R17/Comm.100 Briggs Rd	53.9	55.1	58.7	55.2
R18/Res. 540 and 560 Wright Rd	51.3	52.5	53.0	63.0
R19/Motel 660 San Felipe	61.4	63.7	62.1	59.4
R20/Church.790 Bolsa Rd	**66.3**	**68.6**	**67.2**	53.5
R21/Res. Near Gateway Dr.	45.7	47.2	45.1	46.8

Table B-2 Results of barrier analyses for Alt "A"

Receiver	Existing Noise Level Leq(h), dBA	2038 Predicted Noise Level Leq(h),dBA	Sound Wall H/L (ft)/Reduction dBA	Alt/Comments
640 Briggs Rd	59.9	65.9	18/102/4.4	Alt"A"/ Not feasible

State of California
DEPARTMENT OF TRANSPORTATION

Business, Transportation and Housing Agency

Memorandum

Flex your power!
Be energy efficient!

To: Abdul Rahim Chafi
Noise Specialist
Environmental Engineering Branch, Central Region

Date: April 8, 2010

File: 05-48540
05-SBt-25 (PM 51.5/60.1)
04-SCl-25 (PM 0.0/2.6)
and 05-SBt-156 (PM R10.5/R12.2)

From: G. William 'Trais' Norris III
Branch Chief
Sierra Pacific Environmental Analysis Branch

Subject: Change to Purpose Statement

The Purpose statement for the SR25 Widening and Route Adoption project has changed. The new wording is

The purpose of the proposed route adoption project is to:

- Select a corridor for State Route 25 between Hollister and Gilroy that will accommodate existing and future travel demand.
- Facilitate local and regional land use planning by identifying future right-of-way needed for the State Route 25 corridor.

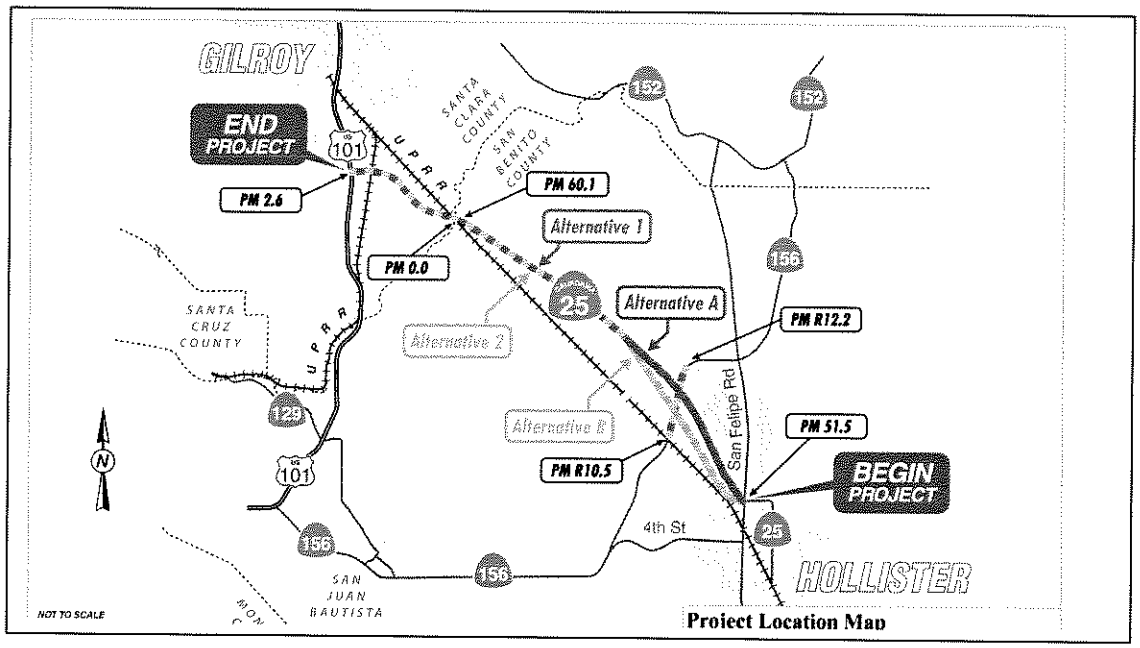
The purpose of the proposed build project is to:

- Improve traffic flow and reduce delays on State Route 25 between San Felipe Road in Hollister and Hudner Lane in San Benito County.
- Increase capacity along State Route 25 between San Felipe Road in Hollister and Hudner Lane in rural San Benito County.

The new purpose does not affect the conclusions of the Noise Study Report prepared for this project, last revised in August 2009.

c: Project file

State Route 25 Widening and Route Adoption Hollister to Gilroy. *NSR*



State Route 25 Widening and Route Adoption Hollister to Gilroy

5-SBt-25 PM 51.5/60.1 and 4-SCI-25 PM 0.0/2.6

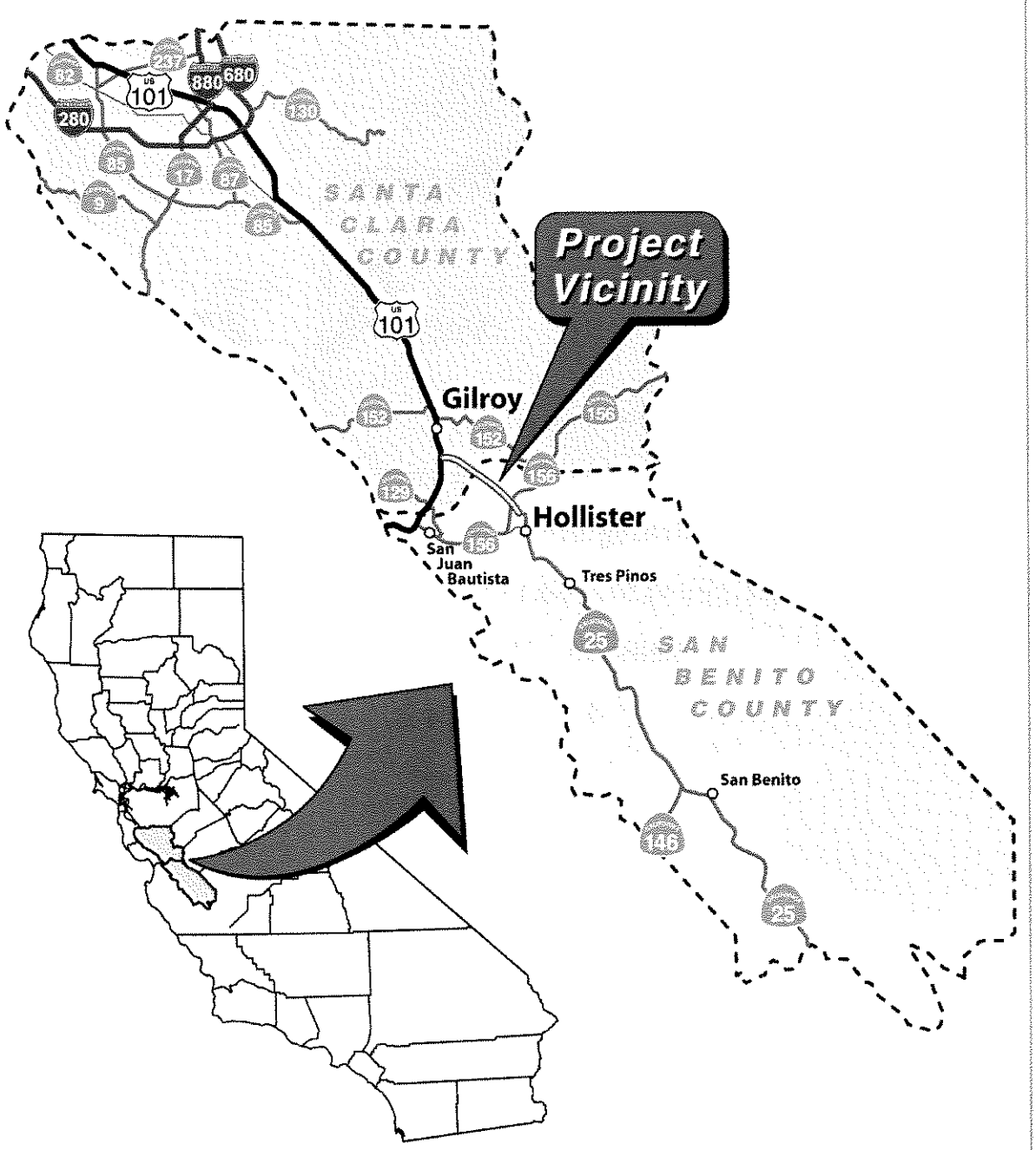
5-SBt-156 PM R 10.5/R12.2

E.A. 05-485400

August 2009

Caltrans

For individuals with sensory disabilities, this document is available in Braille, large print, on audiocassette, or computer disk. To obtain a copy in one of these alternate formats, please call or write to Caltrans, Attn: G. William "Trais" Norris III, Sierra Pacific Environmental Analysis Branch, 2015 E. Shields Avenue Suite 100 Fresno CA 93726-5428; (559) 243-8178 Voice, or use the California Relay Service TTY number, (800) 735-2929.



Project Vicinity Map

SR25 Widening and Route Adoption Project, Hollister to Gilroy

PM 51.5/60.1, PM 0.0/2.6, PM R10.5/R12.2

5-SBt-25, 4-SCl-25, 5-SBt-156

05-485400

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Noise Study Report

State Route 25 Widening and Route Adoption Hollister to Gilroy

5-SBt-25 PM 51.5/60.1 and 4-SCI-25 PM 0.0/2.6

5-SBt-156 PM R 10.5/R12.2

E.A. 05-485400

August 2009

Prepared By: Abdulrahim N. Chafi Date: 4/12/2010

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Summary

The purpose of this study is to evaluate potential noise impacts of the proposed realignment of State Route 25 between the Cities of Hollister and Gilroy in San Benito and Santa Clara Counties respectively. Currently, four-lane alternatives are being considered to replace the existing two-lane highway. The primary use of land is farmland, although there are also relatively isolated rural residents and businesses within the project limits.

A noise analysis is required for all Type I projects. A type I project is defined by Title 23, U.S. Code of Federal Regulations, Part 772 (23CFR 772) as a proposed federal or federal aid highway project for the construction of a highway on a new location or the physical alteration of an existing highway, which changes either the horizontal or the vertical alignment or increase the number of through lanes. This is a Type I project since it proposes to change the horizontal alignment and increase the number of through lanes.

When traffic noise impacts are identified, noise abatement measures must be considered. Traffic noise impacts result from one or more of the following occurrences: 1) an increase of 12dBA or more over existing noise levels, and 2) predicted noise levels approach or exceed the Noise Abatement Criteria (NAC). Implementation of the proposed project would result in potential noise impacts to adjacent receivers within the study area.

The conclusions of the study are listed below:

No-Build Alternative: There are currently eight receptors that experience peak-hour noise levels approaching or exceeding the Noise Abatement Criteria. Under this alternative there would be additional receptors experiencing noise impacts by year 2035.

Alternative –A: Under this alternative receptors number R2, R10, R11, R12, R13, and R20 would experience noise impacts by year 2035.

R2, R10, R11, R12, and R20 are within the right of way for Alt "A".

Barrier analysis for R13 shows that a sound wall is not feasible in this location.

Alternative-B: Under this alternative receptor number R1 would experience a substantial noise increase by year 2035.

Barrier analysis for R1 shows that a sound wall is not feasible at this location.

The results of the traffic noise modeling and the barrier analysis indicate that no sound walls are recommended for this project.

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List of Abbreviated Terms

CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
CNEL	Community Noise Equivalent Level
dB	Decibels
FHWA	Federal Highway Administration
Hz	Hertz
kHz	Kilohertz
L_{dn}	Day-Night Level
L_{eq}	Equivalent Sound Level
$L_{eq(h)}$	Equivalent Sound Level over one hour
L_{max}	Maximum Sound Level
LOS	Level of Service
L_{xx}	Percentile-Exceeded Sound Level
mPa	micro-Pascals
mph	miles per hour
NAC	noise abatement criteria
NADR	Noise Abatement Decision Report
NEPA	National Environmental Policy Act
NSR	noise study reports
Protocol	Caltrans Traffic Noise Analysis Protocol for New Highway Construction, Reconstruction, and Retrofit Barrier Projects
SPL	sound pressure level
TeNS	Caltrans' Technical Noise Supplement
TNM 2.5	FHWA Traffic Noise Model Version 2.5

Chapter 1. Introduction

1.1. Purpose of the Noise Study Report

The purpose of this NSR is to evaluate noise impacts and abatement under the requirements of Title 23, Part 772 of the Code of Federal Regulations (23 CFR 772) "Procedures for Abatement of Highway Traffic Noise". 23 CFR 772 provides procedures for preparing operational and construction noise studies and evaluating noise abatement considered for federal and federal-aid highway projects. According to 23 CFR 772.3, all highway projects that are developed in conformance with this regulation are deemed to be in conformance with Federal Highway Administration (FHWA) noise standards.

The Caltrans Traffic Noise Analysis Protocol for New Highway Construction, Reconstruction, and Retrofit Barrier Projects (Protocol) (Caltrans 2006) provides Caltrans policy for implementing 23 CFR 772 in California. The Protocol outlines the requirements for preparing noise study reports (NSR). Noise impacts associated with this project under the National Environmental Policy Act (NEPA) and the California Environmental Quality Act (CEQA) are evaluated in the project's environmental document State Route 25 widening and Route Adoption Hollister to Gilroy.

1.2. Project Purpose and Need

The purpose of the proposed project is to:

1. Select a route adoption corridor for State Route 25 between Hollister and Gilroy for planning purposes.

2. Improve traffic flow, reduce delays, and enhance the movement of goods on State Route 25 between San Felipe Road in Hollister and Hudner Lane in San Benito County.

3. Increase capacity along State Route 25 between San Felipe Road in Hollister and Hudner Lane in San Benito County.

Chapter 2. Project Description

The California Department of Transportation (Caltrans), in cooperation with San Benito Council of Governments and Santa Clara Valley Transportation Authority is evaluating the conversion of 11.2 miles of the existing State Route 25 two-lane conventional highway to a four-lane expressway in San Benito and Santa Clara counties. The Draft Environmental Impact Report and Environmental Impact Statement includes two proposed projects: (1) a TIER I route adoption and (2) a proposed construction project within the limits of the proposed route adoption.

1. The route adoption study extends from San Felipe Road within the City of Hollister (post mile 51.5) to the San Benito/Santa Clara County line (post mile 60.1) and on to the end of State Route 25 at U.S. 101 south of the city of Gilroy (post miles 0.0 to 2.6 in Santa Clara County).

2. The proposed construction project limits extend 3.8 miles in San Benito County, from San Felipe Road in Hollister to just west of Hudner Lane (post miles 51.5 to 55.3). The existing 2-lane conventional highway would be replaced by a 4-lane expressway.

State Route 25, a two-lane conventional highway, runs northwest through the relatively flat terrain of the Hollister Valley, terminating at U.S. 101 after crossing the Pajaro River and Carnadero Creek. Agriculture dominates the surrounding landscape, and farmsteads and houses are scattered along the length of the study area. Residences, retail businesses, and agriculture-related commercial operations are more concentrated at both ends of the route adoption study area, on the outskirts of Gilroy and Hollister.

Slow moving farm equipment, trucks, and local and commuter traffic share this two-lane roadway. An increasing number of vehicles travel this stretch of State Route 25 and, during peak commute hours, the roadway is congested. Traffic flow is delayed by vehicles turning onto and/or out of the many driveways and local roads, affecting the flow of the faster moving vehicles. Many commuters whose destination is beyond the local area take local roads (Bloomfield Road, Frazier Lake Road, and Shore Road) as shortcuts between State Route 25 and State Route 156 and also State Route 152. Significant commercial truck traffic travels through the area on State Route 25, and is subject to delays as well. A new route alignment is being proposed so that the appropriate area for a future expressway can be incorporated into the San Benito and Santa Clara

County general plans now, before future development occurs along this stretch of highway.

ALTERNATIVES:

The project has five alternatives under consideration:

2.1. No Build

Under the No Build Alternative, no changes would be made to SR 25 in the project area.

2.2. Build Alternative

- Alternative 1: A Route adoption Alignment (11.2 miles)
- Alternative 2: A Route adoption Alignment (11.2 miles)
- Alternative A: A 3.8 mile constructed portion of Alternative 1 Route Adoption Alignment.
- Alternative B: A 3.8 miles constructed portion of Alternative 2 Route Adoption Alignment.

Alternative 1 and 2 Route Adoption Alignment Alternatives

Both of the route adoption alternatives would follow the same alignment from the bend in Route 25 approximately 1/2 miles south of Shore Road (post mile 56.1) in San Benito County to U.S. 101 in Santa Clara County. The alignment would be wide enough to accommodate a future four-lane expressway (342 feet) with a 62 foot median, and one or two frontage roads. The alignments would also be wide enough to accommodate a future interchange near the existing intersection of Route 25 and Route 156 and a future Route 25/101 interchange north of the existing interchange. There would be enough room to build new bridges over Carnadero Creek and the Pajaro River. The Union Pacific Railroad Hollister branch line and the Union Pacific main line just east of US101 would cross under the proposed Route 25 expressway.

Between post mile 56.1 and the east end of the proposed project at San Felipe Road, the two alignment alternatives separate.

Alternative 1 proposes to align the future four-lane expressway to the east (or north) of the existing two lane north/south highway and Alternative 2 proposes to align to the west (or south) of the existing two lane highway.

Alternatives A and B (Build Alternatives)

Both construction alternatives extend 3.8 miles in San Benito County, from just west of Hudner Lane (post mile 55.3) to San Felipe Road (post mile 51.5). Unlike the Route Adoption Alternatives, the build alternatives propose a realigned and widened at-grade intersection at Route 25 and Route 156 instead of an interchange. Both construction alternatives would transition back to the existing two-lane highway near Hudner Lane.

Alternative A would be constructed at the southeastern end of the Alternative 1 Route Adoption alignment. Direct access to the expressway would be available from San Felipe Road, Wright Road, Flynn Road, SR 156, two west-side frontage roads and one east-side frontage road. An undercrossing at the Don Chapin Gravel operation driveway would provide access to this otherwise landlocked parcel.

For Alternative A, an undercrossing would be built at the gravel quarry driveway to provide access to this parcel.

Alternative B would be constructed at the southeastern end of the Alternative 2 Route Adoption alignment. Direct access to the expressway would be available from San Felipe Road, Wright Road, Briggs Road, a west-side frontage road, SR 156, an east-side frontage road, and Hudner Lane. The second west-side frontage road would connect to Hudner Lane.

No-Action Alternative

The No Action Alternative would result in no action being taken and no further improvements would be made to State Route 25 within the Route Adoption limits other than those already programmed/funded or under construction. Improvements at the San Felipe Road/ State Route 25 intersection are currently under construction in 2008 as part of the Route 25 Hollister Bypass Project. It is anticipated that work will beginning early 2009 on the Route 25 Safety and Operations Enhancement Project and will be completed by early 2010. Work will begin just south of Hudner Lane (post mile 55.1) and end just south of the Union Pacific Railroad Crossing (post mile 60.0) in San Benito County. Roadway widening will consist of two 10-foot outside shoulders, two 12-foot traveled lanes, two-5' inside shoulders and placement of a temporary concrete median barrier. Rumble strips will be installed on all inside and outside shoulders. Hudner Lane and Shore Road intersections will be improved.

Chapter 3. Fundamentals of Traffic Noise

The following is a brief discussion of fundamental traffic noise concepts. For a detailed discussion, please refer to Caltrans' Technical Noise Supplement (TeNS) (Caltrans 1998), a technical supplement to the Protocol, that is available on Caltrans Web site (http://www.dot.ca.gov/hq/env/noise/pub/tens_complete.pdf).

3.1. Sound, Noise, and Acoustics

Sound can be described as the mechanical energy of a vibrating object transmitted by pressure waves through a liquid or gaseous medium (e.g., air) to a hearing organ, such as a human ear. Noise is defined as loud, unexpected, or annoying sound.

In the science of acoustics, the fundamental model consists of a sound (or noise) source, a receiver, and the propagation path between the two. The loudness of the noise source and obstructions or atmospheric factors affecting the propagation path to the receiver determine the sound level and characteristics of the noise perceived by the receiver. The field of acoustics deals primarily with the propagation and control of sound.

3.2. Frequency

Continuous sound can be described by frequency (pitch) and amplitude (loudness). A low-frequency sound is perceived as low in pitch. Frequency is expressed in terms of cycles per second, or Hertz (Hz) (e.g., a frequency of 250 cycles per second is referred to as 250 Hz). High frequencies are sometimes more conveniently expressed in kilohertz (kHz), or thousands of Hertz. The audible frequency range for humans is generally between 20 Hz and 20,000 Hz.

3.3. Sound Pressure Levels and Decibels

The amplitude of pressure waves generated by a sound source determines the loudness of that source. Sound pressure amplitude is measured in micro-Pascals (mPa). One mPa is approximately one hundred billionth (0.00000000001) of normal atmospheric pressure. Sound pressure amplitudes for different kinds of noise environments can range from less than 100 to 100,000,000 mPa. Because of this huge range of values, sound is rarely expressed in terms of mPa . Instead, a logarithmic scale is used to describe sound pressure level (SPL) in terms of decibels (dB). The threshold of hearing for young people is about 0 dB, which corresponds to 20 mPa.

3.4. Addition of Decibels

Because decibels are logarithmic units, SPL cannot be added or subtracted through ordinary arithmetic. Under the decibel scale, a doubling of sound energy corresponds to a 3-dB increase. In other words, when two identical sources are each producing sound of the same loudness, the resulting sound level at a given distance would be 3 dB higher than one source under the same conditions. For example, if one automobile produces an SPL of 70 dB when it passes an observer, two cars passing simultaneously would not produce 140 dB—rather, they would combine to produce 73 dB. Under the decibel scale, three sources of equal loudness together produce a sound level 5 dB louder than one source.

3.5. A-Weighted Decibels

The decibel scale alone does not adequately characterize how humans perceive noise. The dominant frequencies of a sound have a substantial effect on the human response to that sound. Although the intensity (energy per unit area) of the sound is a purely physical quantity, the loudness or human response is determined by the characteristics of the human ear.

Human hearing is limited in the range of audible frequencies as well as in the way it perceives the SPL in that range. In general, people are most sensitive to the frequency range of 1,000–8,000 Hz, and perceive sounds within that range better than sounds of the same amplitude in higher or lower frequencies. To approximate the response of the human ear, sound levels of individual frequency bands are weighted, depending on the human sensitivity to those frequencies. Then, an "A-weighted" sound level (expressed in units of dBA) can be computed based on this information.

The A-weighting network approximates the frequency response of the average young ear when listening to most ordinary sounds. When people make judgments of the relative loudness or annoyance of a sound, their judgments correlate well with the A-scale sound levels of those sounds. Other weighting networks have been devised to address high noise levels or other special problems (e.g., B-, C-, and D-scales), but these scales are rarely used in conjunction with highway-traffic noise. Noise levels for traffic noise reports are typically reported in terms of A-weighted decibels or dBA. Table 3-1 describes typical A-weighted noise levels for various noise sources.

Table 3-1. Typical A-Weighted Noise Levels

Common Outdoor Activities	Noise Level (dBA)	Common Indoor Activities
	— 110 —	Rock band
Jet fly-over at 1000 feet		
	— 100 —	
Gas lawn mower at 3 feet		
	— 90 —	
Diesel truck at 50 feet at 50 mph		Food blender at 3 feet
	— 80 —	Garbage disposal at 3 feet
Noisy urban area, daytime		
Gas lawn mower, 100 feet	— 70 —	Vacuum cleaner at 10 feet
Commercial area		Normal speech at 3 feet
Heavy traffic at 300 feet	— 60 —	
		Large business office
Quiet urban daytime	— 50 —	Dishwasher next room
Quiet urban nighttime	— 40 —	Theater, large conference room (background)
Quiet suburban nighttime		
	— 30 —	Library
Quiet rural nighttime		Bedroom at night, concert
	— 20 —	
		Broadcast/recording studio
	— 10 —	
Lowest threshold of human hearing	— 0 —	Lowest threshold of human hearing

Source: Caltrans 1998.

3.6. Human Response to Changes in Noise Levels

As discussed above, doubling sound energy results in a 3-dB increase in sound. However, given a sound level change measured with precise instrumentation, the subjective human perception of a doubling of loudness will usually be different than what is measured.

Under controlled conditions in an acoustical laboratory, the trained, healthy human ear is able to discern 1-dB changes in sound levels, when exposed to steady, single-frequency ("pure-tone") signals in the midfrequency (1,000 Hz–8,000 Hz) range. In typical noisy environments, changes in noise of 1 to 2 dB are generally not perceptible. However, it is widely accepted that people are able to begin to detect sound level increases of 3 dB in typical noisy environments. Further, a 5-dB increase is generally perceived as a distinctly noticeable increase, and a 10-dB increase is generally perceived as a doubling of loudness. Therefore, a doubling of sound energy (e.g., doubling the volume of traffic on a highway) that would result in a 3-dB increase in sound, would generally be perceived as barely detectable.

3.7. Noise Descriptors

Noise in our daily environment fluctuates over time. Some fluctuations are minor, but some are substantial. Some noise levels occur in regular patterns, but others are random. Some noise levels fluctuate rapidly, but others slowly. Some noise levels vary widely, but others are relatively constant. Various noise descriptors have been developed to describe time-varying noise levels. The following are the noise descriptors most commonly used in traffic noise analysis.

- **Equivalent Sound Level (L_{eq}):** L_{eq} represents an average of the sound energy occurring over a specified period. In effect, L_{eq} is the steady-state sound level containing the same acoustical energy as the time-varying sound that actually occurs during the same period. The 1-hour A-weighted equivalent sound level ($L_{eq}[h]$) is the energy average of A-weighted sound levels occurring during a one-hour period, and is the basis for noise abatement criteria (NAC) used by Caltrans and FHWA.

- **Percentile-Exceeded Sound Level (L_{xx}):** L_{xx} represents the sound level exceeded for a given percentage of a specified period (e.g., L_{10} is the sound level exceeded 10% of the time, and L_{90} is the sound level exceeded 90% of the time).

- **Maximum Sound Level (L_{max}):** L_{max} is the highest instantaneous sound level measured during a specified period.

- **Day-Night Level (L_{dn}):** L_{dn} is the energy average of A-weighted sound levels occurring over a 24-hour period, with a 10-dB penalty applied to A-weighted sound levels occurring during nighttime hours between 10 p.m. and 7 a.m.

- **Community Noise Equivalent Level (CNEL):** Similar to L_{dn}, CNEL is the energy average of the A-weighted sound levels occurring over a 24-hour period, with a 10-dB penalty applied to A-weighted sound levels occurring during the nighttime hours between 10 p.m. and 7 a.m., and a 5-dB penalty applied to the A-weighted sound levels occurring during evening hours between 7 p.m. and 10 p.m.

3.8. Sound Propagation

When sound propagates over a distance, it changes in level and frequency content. The manner in which noise reduces with distance depends on the following factors.

3.8.1. Geometric Spreading

Sound from a localized source (i.e., a point source) propagates uniformly outward in a spherical pattern. The sound level attenuates (or decreases) at a rate of 6 decibels for each doubling of distance from a point source. Highways consist of several localized noise sources on a defined path, and hence can be treated as a line source, which approximates the effect of several point sources. Noise from a line source propagates outward in a cylindrical pattern, often referred to as cylindrical spreading. Sound levels attenuate at a rate of 3 decibels for each doubling of distance from a line source.

3.8.2. Ground Absorption

The propagation path of noise from a highway to a receiver is usually very close to the ground. Noise attenuation from ground absorption and reflective-wave canceling adds to the attenuation associated with geometric spreading. Traditionally, the excess attenuation has also been expressed in terms of attenuation per doubling of distance. This approximation is usually sufficiently accurate for distances of less than 200 feet. For acoustically hard sites (i.e., sites with a reflective surface between the source and the receiver, such as a parking lot or body of water,), no excess ground attenuation is assumed. For acoustically absorptive or soft sites (i.e., those sites with an absorptive ground surface between the source and the receiver, such as soft dirt, grass, or scattered bushes and trees), an excess ground-attenuation value of 1.5 decibels per doubling of distance is normally assumed. When added to the cylindrical spreading, the excess ground attenuation results in an overall drop-off rate of 4.5 decibels per doubling of distance.

3.8.3. Atmospheric Effects

Receptors located downwind from a source can be exposed to increased noise levels relative to calm conditions, whereas locations upwind can have lowered noise levels. Sound levels can be increased at large distances (e.g., more than 500 feet) from the highway due to atmospheric temperature inversion (i.e., increasing temperature with elevation). Other factors such as air temperature, humidity, and turbulence can also have significant effects.

3.8.4. Shielding by Natural or Human-Made Features

A large object or barrier in the path between a noise source and a receiver can substantially attenuate noise levels at the receiver. The amount of attenuation provided by shielding depends on the size of the object and the frequency content of the noise source. Natural terrain features (e.g., hills and dense woods) and human-made features (e.g., buildings and walls) can substantially reduce noise levels. Walls are often

constructed between a source and a receiver specifically to reduce noise. A barrier that breaks the line of sight between a source and a receiver will typically result in at least 5 dB of noise reduction. Taller barriers provide increased noise reduction. Vegetation between the highway and receiver is rarely effective in reducing noise because it does not create a solid barrier.

Chapter 4. Federal Regulations and State Policies

This report focuses on the requirements of 23 CFR 772, as discussed below.

4.1. Federal Regulations

4.1.1. 23 CFR 772

23 CFR 772 provides procedures for preparing operational and construction noise studies and evaluating noise abatement considered for federal and federal-aid highway projects. Under 23 CFR 772.7, projects are categorized as Type I or Type II projects. FHWA defines a Type I project as a proposed federal or federal-aid highway project for the construction of a highway on a new location, or the physical alteration of an existing highway which significantly changes either the horizontal or vertical alignment, or increases the number of through-traffic lanes. A Type II project is a noise barrier retrofit project that involves no changes to highway capacity or alignment.

Type I projects include those that create a completely new noise source, as well as those that increase the volume or speed of traffic or move the traffic closer to a receiver. Type I projects include the addition of an interchange, ramp, auxiliary lane, or truck-climbing lane to an existing highway, or the widening an existing ramp by a full lane width for its entire length. Projects unrelated to increased noise levels, such as striping, lighting, signing, and landscaping projects, are not considered Type I projects.

Under 23 CFR 772.11, noise abatement must be considered for Type I projects if the project is predicted to result in a traffic noise impact. In such cases, 23 CFR 772 requires that the project sponsor "consider" noise abatement before adoption of the final NEPA document. This process involves identification of noise abatement measures that are reasonable, feasible, and likely to be incorporated into the project, and of noise impacts for which no apparent solution is available.

Traffic noise impacts, as defined in 23 CFR 772.5, occur when the predicted noise level in the design year approaches or exceeds the NAC specified in 23 CFR 772, or a predicted noise level substantially exceeds the existing noise level (a "substantial" noise increase). 23 CFR 772 does not specifically define the terms "substantial increase" or "approach"; these criteria are defined in the Protocol, as described below.

Table 4-1 summarizes NAC corresponding to various land use activity categories. Activity categories and related traffic noise impacts are determined based on the actual land use in a given area.

Table 4-1. Activity Categories and Noise Abatement Criteria

Activity Category	NAC, Hourly A-Weighted Noise Level (dBA-L_{eq}[h])	Description of Activities
A	57 Exterior	Lands on which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose
B	67 Exterior	Picnic areas, recreation areas, playgrounds, active sport areas, parks, residences, motels, hotels, schools, churches, libraries, and hospitals
C	72 Exterior	Developed lands, properties, or activities not included in categories A or B above
D	—	Undeveloped lands
E	52 Interior	Residences, motels, hotels, public meeting rooms, schools, churches, libraries, hospitals, and auditoriums

In identifying noise impacts, primary consideration is given to exterior areas of frequent human use. In situations where there are no exterior activities, or where the exterior activities are far from the roadway or physically shielded in a manner that prevents an impact on exterior activities, the interior criterion (Activity Category E) is used as the basis for determining a noise impact.

4.2. State Regulations and Policies

4.2.1. Traffic Noise Analysis Protocol for New Highway Construction and Reconstruction Projects

The Protocol specifies the policies, procedures, and practices to be used by agencies that sponsor new construction or reconstruction of federal or federal-aid highway projects. The NAC specified in the Protocol are the same as those specified in 23 CFR 772. The Protocol defines a noise increase as substantial when the predicted noise levels with project implementation exceed existing noise levels by 12 dBA. The Protocol also states that a sound level is considered to approach an NAC level when the sound level is within 1 dB of the NAC identified in 23 CFR 772 (e.g., 66 dBA is considered to approach the NAC of 67 dBA, but 65 dBA is not).

The TeNS to the Protocol provides detailed technical guidance for the evaluation of highway traffic noise. This includes field measurement methods, noise modeling methods, and report preparation guidance.

4.2.2. Section 216 of the California Streets and Highways Code

Section 216 of the California Streets and Highways Code relates to the noise effects of a proposed freeway project on public and private elementary and secondary schools. Under this code, a noise impact occurs if, as a result of a proposed freeway project, noise levels exceed 52 dBA-L_{eq}(h) in the interior of public or private elementary or secondary classrooms, libraries, multipurpose rooms, or spaces. This requirement does not replace the "approach or exceed" NAC criterion for FHWA Activity Category E for classroom interiors, but it is a requirement that must be addressed in addition to the requirements of 23 CFR 772.

If a project results in a noise impact under this code, noise abatement must be provided to reduce classroom noise to a level that is at or below 52 dBA-L_{eq}(h). If the noise levels generated from freeway and nonfreeway sources exceed 52 dBA-L_{eq}(h) prior to the construction of the proposed freeway project, then noise abatement must be provided to reduce the noise to the level that existed prior to construction of the project.

Chapter 5. Study Methods and Procedures

5.1. Methods for Identifying Land Uses and Selecting Noise Measurement and Modeling Receiver Locations

A field investigation was conducted to identify land uses that could be subject to traffic and construction noise impacts from the proposed project. Land use, in the project area, was categorized by land use type, activity category as defined in Table 4-1, and the extent of frequent human use. As stated in the Protocol, noise abatement is only considered for areas of frequent human use that would benefit from a lowered noise level. Although all developed land uses are evaluated in this analysis, the focus is on locations of frequent human use that would benefit from a lowered noise level. Accordingly, this impact analysis focuses on locations with defined outdoor activity areas, such as residential backyards and common use areas at multi-family residences.

The geometry of the project relative to nearby existing and planned land uses was also identified.

Short-term measurement locations were selected to represent each major developed area within the project area. A single long-term measurement site was selected to capture the diurnal traffic noise level pattern in the project area. Short-term measurement locations were selected to serve as representative modeling locations. Several other non-measurement locations were selected as modeling locations.

5.2. Field Measurement Procedures

A field noise study was conducted in accordance with recommended procedures in TeNS. The following is a summary of the procedures used to collect short-term and long term sound level data.

5.2.1. Short-Term Measurements

Short-term monitoring was conducted at four locations from Dec 13 to 16, 2006, using Larson-Davis Model 2238 Precision Type 1 sound level meters (serial numbers 2231630). Measurements were taken over a 15-minute period at each site. Short-term monitoring was conducted at Activity Category B land uses.

During the short-term measurements, field staff attended each meter. Minute-to-minute L_{eq} values collected during the measurement period (typically 15 minutes in duration) were logged manually, and dominant noise sources observed during each individual 1-

minute period were also identified and logged. Using this approach, those minutes when traffic noise was observed to be a dominant contributor to noise levels at a given measurement location could be distinguished from one-minute noise levels where other non-traffic noise sources (such as aircraft and lawn equipment) contributed significantly to existing noise levels. The calibration of the meter was checked before and after the measurement using a B&K Type 4231.

Temperature, wind speed, and humidity were recorded manually during the short-term monitoring session using a Kestrel 3000 portable weather station. During the short-term measurements, wind speed was 0.5 m/s. Temperature was 15°C (60°F) and the relative humidity 70%.

Traffic on SR 25 was classified and counted during short-term noise measurements. Vehicles were classified as automobiles, medium-duty trucks, or heavy-duty trucks. An automobile was defined as a vehicle with two axles and four tires that are designed primarily to carry passengers. Small vans and light trucks were included in this category. Medium-duty trucks included all cargo vehicles with two axles and six tires. Heavy-duty trucks included all vehicles with three or more axles. The posted speed on SR 25 was 55 mph.

5.2.2. Long -Term Measurements

Long-term monitoring was not conducted for this project.

5.3. Traffic Noise Levels Prediction Methods

Traffic noise levels were predicted using the FHWA Traffic Noise Model Version 2.5 (TNM 2.5). TNM 2.5 is a computer model based on two FHWA reports: FHWA-PD-96-009 and FHWA-PD-96-010 (FHWA 1998a, 1998b). Key inputs to the traffic noise model were the locations of roadways, shielding features (e.g., topography and buildings), noise barriers, ground type, and receivers. Three-dimensional representations of these inputs were developed using CAD drawings, aerials, and topographic contours provided by the Design Branch at Caltrans.

Traffic noise was evaluated under existing conditions, design year no-project conditions, and design year conditions with the project build alternatives. Loudest-hour traffic volumes, vehicle classification percentages, and traffic speeds under existing and design-year (2035) conditions were provided by Caltrans Traffic Engineers for input into the traffic noise model. The highest average traffic volumes on SR 25 are predicted to occur during the AM; therefore AM peak hour traffic volumes were used in the model. Tables

A-1 and A-2 in Appendix A summarize the traffic volumes and assumptions used for modeling existing and design-year conditions with and without the project alternative.

The loudest hour is generally characterized by free-flowing traffic at the highway design speed (i.e., Level of Service [LOS] C or better). Although the addition of median lanes on SR 25 will improve LOS, all segments on SR 25 are forecast to be at LOS D or worse during peak hours. For this analysis, it is assumed that each lane has a maximum capacity of 2,000 vehicles per hour at the design speed of the highway. Therefore, for the design year four-lane case, total modeled volumes in each direction were capped at 1200 vehicles per hour.

To validate the accuracy of the model, TNM 2.5 was used to compare measured traffic noise levels to modeled noise levels at field measurement locations. For each receiver, traffic volumes counted during the short-term measurement periods were normalized to 1-hour volumes. These normalized volumes were assigned to the corresponding project area roadways to simulate the noise source strength at the roadways during the actual measurement period. Modeled and measured sound levels were then compared to determine the accuracy of the model and if additional calibration of the model was necessary.

5.4. Methods for Identifying Traffic Noise Impacts and Consideration of Abatement

Traffic noise impacts are considered to occur at receiver locations where predicted design-year noise levels are at least 12 dB greater than existing noise levels, or where predicted design year noise levels approach or exceed the NAC for the applicable activity category. Where traffic noise impacts are identified, noise abatement must be considered for reasonableness and feasibility as required by 23 CFR 772 and the Protocol.

According to the Protocol, abatement measures are considered acoustically feasible if a minimum noise reduction of 5 dB at impacted receiver locations is predicted with implementation of the abatement measures. In addition, barriers should be designed to intercept the line-of-sight from the exhaust stack of a truck to the first tier of receivers, as required by the Highway Design Manual, Chapter 1100. Other factors that affect feasibility include topography, access requirements for driveways and ramps, presence of local cross streets, utility conflicts, other noise sources in the area, and safety considerations. The overall reasonableness of noise abatement is determined by considering factors such as cost; absolute predicted noise levels; predicted future increase in noise levels; expected noise abatement benefits; build date of surrounding residential

development along the highway; environmental impacts of abatement construction; opinions of affected residents; input from the public and local agencies; and social, legal, and technological factors.

The Protocol defines the procedure for assessing reasonableness of noise barriers from a cost perspective. A cost-per-residence allowance is calculated for each benefited residence (i.e., residences that receive at least 5 dB of noise reduction from a noise barrier). The 2007 base allowance is $36,000. Additional allowance dollars are added to the base allowance based on absolute noise levels, the increase in noise levels resulting from the project, achievable noise reduction, and the date of building construction in the area. Total allowances are calculated by multiplying the cost-per-residence by the number of benefited residences. If the total allowance for all evaluated noise barriers is more than 50% of the estimated construction cost, the allowance per residence is modified to a reduced value.

Chapter 6. Existing Noise Environment

6.1. Existing Land Uses

A field investigation was conducted to identify land uses that could be subject to traffic and construction noise impacts from the proposed project. In the project area there are several single-family residences, a church, and a hotel were identified as Activity Category B. Numerous commercial uses were also identified in the project area are Activity Category C.

As required by the Protocol, although all developed land uses are evaluated in this analysis, noise abatement is only considered for areas of frequent human use that would benefit from a lowered noise level. Accordingly, this impact analysis focuses on locations with defined outdoor activity areas, such as residential backyards and common use areas at multi-family residences.

Route 25, a two-lane conventional highway, runs northwest through the relatively flat terrain of the Hollister Valley, terminating at Route 101 after crossing the Pajaro River and Carnadero Creek. Agriculture dominates the surrounding landscape, and farmsteads and houses are scattered along the length of the study area. Residences, retail businesses, and agriculture-related commercial operations are more concentrated at both ends of the route adoption study area, on the outskirts of Gilroy and Hollister.
Agricultural uses include row crops, fruit and nut orchards, and livestock grazing. Agribusiness operations include produce packing, storage, and trucking facilities, seasonal fruit stands, a commercial composting operation, and an agricultural chemical supplier. Retail businesses within the project area include an auto body shop, trailer sales, a mini-storage facility, a chocolate factory, and a day-care center. An aggregate quarry and batch plant operation is located on the east side of State Route 25 south of State Route 156. Just to the east of this, outside the project area is the Hollister Municipal Airport. Other land uses within the proposed project area include a San Benito County Sheriffs'' shooting range, and a church.

In the project area there are 21 noise receptors two of them are commercial (Category C) and 19 are residential (Category B). The existing noise levels at 8 receptors are either approaching or exceeding the NAC.

6.2. Noise Measurement Results

The existing noise environment in the project area is characterized below based on short- and long-term noise monitoring that was conducted.

6.2.1. Short-Term Monitoring

Table 6-1 summarizes the results of the short-term noise monitoring conducted in the project area. The short-term monitoring was conducted using a Larson-Davis Model Instrument Number 2238 and serial number 2231630.

Table 6-1. Summary of Short-Term Measurements

Position	Address	Area	Land Uses	Start Time	Duration (minutes)	Measured L_{eq}	Autos	Medium Trucks	Heavy Trucks	Observed Speed (mph)
ST-1	660 San Felipe Rd	Project	Motel	12:56 :55	15	59.7	210	20	3	65
ST-2	790 Bolsa Rd	Project	Church	09:44 :36 a.m.	15	62.5	300	10	3	65
ST-3	233 Briggs Rd	Project	Residential	10:35 :23 a.m.	15	62.3	322	13	4	65
ST-4	231 Briggs Rd	project	Residential	11:09 :37 a.m.	15	65.0	380	10	3	65

Note: Refer to Figure 5-1 for measurement locations and boundaries of each area.

6.2.2. Long-Term Monitoring

No Long-term monitoring was conducted at any location.

TNM 2.5 was used to compare measured traffic noise levels to modeled noise levels at field measurement locations. Table 6-2 compares measured and modeled noise levels at each measurement location. The predicted sound levels are within 2 dB of the measured sound levels and are, therefore, considered to be in reasonable agreement with the measured sound levels. Therefore, no calibration of the model was made.

Table 6-2. Comparison of Measured to Predicted Sound Levels in the TNM Model

Measurement Position	Measured Sound Level Leq(h),dBA	Predicted Sound Level Leq(h), dBA	Measured minus Predicted Leq(h), dBA
ST-1	59.7	59.8	- 0.1
ST-2	62.5	62.4	+ 0.1
ST-3	62.3	61.2	+ 1.1
ST-4	65.0	65.0	0.0

Table B-1 in Appendix B presents existing noise levels at each receiver.

Chapter 7. Future Noise Environment, Impacts, and Considered Abatement

7.1. Future Noise Environment and Impacts

Table B-1 in Appendix B summarizes the traffic noise modeling results for existing conditions and design-year conditions with and without the project. Predicted design-year traffic noise levels with the project are compared to existing conditions and to design-year no-project conditions. The comparison to existing conditions is included in the analysis to identify traffic noise impacts under 23 CFR 772. The comparison to no-project conditions indicates the direct effect of the project.

As stated in the TeNS, modeling results are rounded to the nearest decibel before comparisons are made. In some cases, this can result in relative changes that may not appear intuitive. An example would be a comparison between sound levels of 64.4 and 64.5 dBA. The difference between these two values is 0.1 dB. However, after rounding, the difference is reported as 1 dB.

Modeling results in Table B-1 indicate that predicted traffic noise levels for the design-year with-project conditions approach or exceed the NAC of 67 dBA $L_{eq}(h)$ for residences, church and motel. The results also indicate that predicted traffic noise levels for the design-year with-project conditions does not approach or exceed the NAC of 72 dBA $L_{eq}(h)$, for commercial areas.

Therefore, traffic noise impacts are predicted to occur at some single-family residences within the project area, and noise abatement must be considered.

7.2. Preliminary Noise Abatement Analysis

In accordance with 23 CFR 772, noise abatement is considered where noise impacts are predicted in areas of frequent human use that would benefit from a lowered noise level. Potential noise abatement measures identified in the Protocol include the following:

- Avoiding the impact by using design alternatives, such as altering the horizontal and vertical alignment of the project;
- Constructing noise barriers;

- Acquiring property to serve as a buffer zone;
- Using traffic management measures to regulate types of vehicles and speeds; and
- Acoustically insulating public-use or nonprofit institutional structures.

All of these abatement options have been considered. However, because of the configuration and location of the project, abatement in the form of noise barriers is the only abatement that is considered to be feasible.

Each noise barrier evaluated has been evaluated for feasibility based on achievable noise reduction. For each noise barrier found to be acoustically feasible, reasonable cost allowances were calculated.

For any noise barrier to be considered reasonable from a cost perspective, the estimated cost of the noise barrier should be equal to or less than the total cost allowance calculated for the barrier. The cost calculations of the noise barrier should include all items appropriate and necessary for construction of the barrier, such as traffic control, drainage modification, and retaining walls. Construction cost estimates are not provided in this NSR, but are presented in the NADR. The NADR is a design responsibility and is prepared to compile information from the NSR, other relevant environmental studies, and design considerations into a single, comprehensive document before public review of the project. The NADR is prepared by the project engineer after completion of the NSR and prior to publication of the draft environmental document. The NADR includes noise abatement construction cost estimates that have been prepared and signed by the project engineer based on site-specific conditions. Construction cost estimates are compared to reasonableness allowances in the NADR to identify which wall configurations are reasonable from a cost perspective.

The design of noise barriers presented in this report is preliminary and has been conducted at a level appropriate for environmental review and not for final design of the project. Preliminary information on the physical location, length, and height of noise barriers is provided in this report. If pertinent parameters change substantially during the final project design, preliminary noise barrier designs may be modified or eliminated from the final project. A final decision on the construction of the noise abatement will be made upon completion of the project design.

The following is a discussion of noise abatement considered for each alternative where traffic noise impacts are predicted.

7.2.1. Alternative A

Twenty-one sensitive receptors have been identified on this alternative. The existing noise level at receptors R2, R3, R6, R7, R8, R11, R12 and R20 are either approaching or exceeding the noise abatement criteria (NAC), and the predicted noise level of R2, R10, R11, R12, R13, and R20 is approaching or exceeding NAC.

Receptor R2 is a single-family residence at 4211 Bolsa Rd. The existing noise level is 66.2dBA and the predicted level is 76.9dBA. R2 is within the proposed right of way.

No mitigation is needed at this location.

Receptor R10 is a single-family residence at 233 Briggs Rd. The existing noise level is 64.2dBA and the predicted level is 72.1dBA. R10 is within the proposed right of way.

No mitigation is needed at this location.

Receptor R11 is a single-family residence at 231 Briggs Rd. The existing noise level is 68.1dBA and the predicted level is 78.9dBA. R11 is within the proposed right of way.

No mitigation is needed at this location.

Receptor R12 is a single-family residence at 312 Briggs Rd. The existing noise level is 66.6dBA and the predicted level is 77.1dBA. R12 is within the proposed right of way.

No mitigation is needed at this location.

Receptor R13 is a single-family residence at 640 Briggs Rd. The existing noise level is 59.9dBA and the predicted level is 65.9dBA. A barrier analyses is conducted for this receptor to determine if a sound wall would be feasible. As shown in Appendix B, Table B-2, "Barrier Analyses" a sound wall is not feasible at this location.

No mitigation is recommended at this location.

Receptor R20 is a Church at 790 Bolsa Rd. The existing noise level is 66.3dBA and the predicted is 67.2dBA. R20 is within the proposed right of way.

No mitigation is needed at this location.

7.2.2. Alternative B

Twenty-one sensitive receptors have been identified on this alternative. The existing noise levels at receptors R2, R3, R6, R7, R8, R11, R12, and R20 are either approaching or exceeding the noise abatement criteria NAC.

Under alternative "B" the predicted noise level at all these receptors is well below the noise abatement criteria.

No mitigation is needed at these receptors.

However, a substantial increase in noise level is predicted at R1, located at 3616 Bolsa Road, where the existing noise level is 46.3dBA and the predicted level is 58.5dBA. A barrier analysis was conducted to determine if a sound wall would be feasible due to a substantial increase in noise levels. As shown in Appendix B, Table B-2, "Barrier Analyses," a sound wall is not feasible at this location.

No mitigation is recommended at this location.

7.2.3. Route Adoption

A tier II environmental document will be prepared and when funding is available to construct portions of the route adoption alignment selected, a noise study report will be prepared at that time to analyze potential noise impacts.

Chapter 8. Construction Noise

During construction of the project, noise from construction activities may intermittently dominate the noise environment in the immediate area of construction. Construction noise is regulated by Caltrans Standard Specifications Section 7-1.01I, "Sound Control Requirements," which states that noise levels generated during construction shall comply with applicable local, state, and federal regulations, and that all equipment shall be fitted with adequate mufflers according to the manufacturers' specifications.

Table 8-1 summarizes noise levels produced by construction equipment that is commonly used on roadway construction projects. Construction equipment is expected to generate noise levels ranging from 70 to 90 dB at a distance of 50 feet, and noise produced by construction equipment would be reduced over distance at a rate of about 6 dB per doubling of distance.

Table 8-1. Construction Equipment Noise

Equipment	Maximum Noise Level (dBA at 50 feet)
Scrapers	89
Bulldozers	85
Heavy Trucks	88
Backhoe	80
Pneumatic Tools	85
Concrete Pump	82

Source: Federal Transit Administration 1995.

No adverse noise impacts from construction are anticipated because construction would be conducted in accordance with Caltrans Standard Specifications Section 7-1.01I and applicable local noise standards. Construction noise would be short-term, intermittent, and overshadowed by local traffic noise. Further, implementing the following measures would minimize the temporary noise impacts from construction:

- All equipment will have sound-control devices that are no less effective than those provided on the original equipment. No equipment will have an unmuffled exhaust.
- As directed by Caltrans, the contractor will implement appropriate additional noise mitigation measures, including changing the location of stationary construction equipment, turning off idling equipment, rescheduling construction activity, notifying adjacent residents in advance of construction work, and installing acoustic barriers around stationary construction noise sources.

Chapter 9. References

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Federal Transit Administration. 1995. *Transit noise and vibration impact assessment.* (DOT-T-95-16.) Office of Planning, Washington, DC. Prepared by Harris Miller Miller & Hanson, Inc. Burlington, MA.

Appendix A Traffic Data

This appendix contains tables presenting the traffic data for existing conditions, design year conditions without the project, and design year conditions with the project for each alternative.

Table A-1. Traffic data for No-Build

Location	AADT/2006	AADT/2015	AADT/2035
SBt 25 (PM 51.4 to 54.0)	14,700	20,100	23,700
SBt 25 (PM 54.0 to 60.1)	21,300	22,900	28,900
SBt 25 (PM 0.00 to 2.10)	22,500	22,700	32,200

Source: Caltrans District 06 Traffic Engineering.

Table A-2. Traffic Data for Alt "A&B"

Location	AADT/2006	AADT/2015	AADT/2035
SBt 25 (PM 51.4 to 54.0)	14,700	20,100	26,900
SBt 25 (PM 54.0 to 60.1)	21,300	22,900	33,600
SBt 25 (PM 0.00 to 2.10)	22,500	22,700	32,800

Source: Caltrans District 06 Traffic Engineering.

Appendix B Predicted Future Noise Levels and Noise Barrier Analysis

Table B-1 Existing and Predicted Noise Levels for Alt "A", Alt "B" and No-build

Receptor Location	Existing Noise Level Leq(h),dBA	Future Noise Level (2035) No Build	Future Noise Levels (2035) Alt"A"	Future Noise Levels (2035) Alt"B"
R1/ Res. 3616 Bolsa Rd	46.3	48	47.3	58.5
R2/Res. 4211 Bolsa Rd	**66.2**	**67.1**	**76.9**	53.3
R3/Res.4020 Bolsa Rd	**67.4**	**68.3**	59.4	55.3
R4/Res.3447 Bolsa Rd	58.3	59.2	61	59.4
R5/Res. 593 McConnell Rd	46.3	47.7	47.5	54
R6/Res. 2730 A Bolsa Rd	**66**	**66.9**	54.4	51.7
R7/Res. 2731 Bolsa Rd	**65.4**	**66.3**	58.2	49.8
R8/Res. 1980 Bolsa Rd	**67.1**	**68**	61.1	50
R9/Res. 2130, 2017, 2533 Bolsa Rd	61.2	62.1	63.5	48.9
R10/Res.233 Briggs Rd	64.2	65.1	**72.1**	49.2
R11/Res. 231 Briggs Rd	**68.1**	**68.9**	**78.9**	49.6
R12/Res. 312 Briggs Rd	**66.6**	**67.4**	**77.1**	49.3
R13/Res. 640 Briggs Rd	59.9	60.8	**65.9**	47.9
R14/Comm. 160 B&C Briggs Rd	54.7	55.9	59	54.1
R15/Res. 100 Briggs Rd	59.2	60.3	64.3	53.3
R16/Res. 132 Briggs Rd	55.0	56.2	59.6	53.8
R17/Comm.100 Briggs Rd	53.9	55.1	58.7	54.6
R18/Res. 540 and 560 Wright Rd	51.3	52.5	53.0	62.2
R19/Motel 660 San Felipe	61.4	63.7	62.1	59.4
R20/Church.790 Bolsa Rd	**66.3**	**68.6**	**67.2**	52.9
R21/Res. Near Gateway Dr.	45.7	47.2	45.1	46.2

Table B-2 Results of barrier analyses for Alt "A" and "B"

Receiver	Existing Noise Level Leq(h), dBA	2035 Predicted Noise Level Leq(h),dBA	Sound Wall H/L (ft)/Reduction dBA	Alt/Comments
640 Briggs Rd	59.9	65.9	18/102/4.4	Alt"A"/ Not feasible
3616 Bolsa Rd	46.3	58.5	18/144/1.3	Alt"B"/ Not feasible

Paleontological Evaluation Report

Memorandum

Flex your power!
Be energy efficient!

To: WENDY KRONMAN
Associate Environmental Planner
Sierra Pacific Analysis Branch

Date: March 17, 2011
File: SBT-25
PM 51.5/55.0
EA: 05-485400
Project ID:
05-0000-0565

From: Juergen Vespermann, Chief
Central Region Hazardous Waste and Paleontology Branch

Subject: Addendum to Caltrans Report Titled:
Paleontological Evaluation Report, State Route 25 Widening and Route Adoption, Hollister to Gilroy, San Benito and Santa Clara Counties, California, 5-SBt PM 51.5/60.1; 4-SCl-25 PM 0.2/2.6; 5-SBt-156 PM R10.5/R12.2, EA: 05-485400, November 20, 2008

This addendum assesses potential impacts to paleontological resources associated with a recent change to the project description for construction of a segment of the State Route 25 expressway (PM 51.5/55.0) as described below for Build Alternative B (modified).

Previous Route Adoption Alternatives 1 and 2, and Build Alternatives A and B were evaluated in a Paleontological Evaluation Report prepared by Caltrans Engineering Geologist Peter Hansen (Paleontological Evaluation Report, State Route 25 Widening and Route Adoption Hollister to Gilroy, San Benito and Santa Clara Counties, California, 5-SBt-25 PM 51.5/60.1; 4-SCL-25 PM 0.0/2.6; 5-SBT-156 PM R10.5/R12.2, EA: 05-485400, November 20, 2008). At the time the project descriptions were circulated and paleontological resources evaluated, the Paleontological Evaluation Report (PER) recommended mitigation monitoring for both Route Adoptions and Build Alternatives. Since the PER was prepared, Alternative 2 was selected as the preferred Route Adoption and Alternative B as the preferred Build Alternative. Since that time, the preferred route adoption and preferred build alternative have been modified.

This addendum only assesses Build Alternative B (modified) on State Route 25 between PM 51.5 and 55.0. It does not change the recommendations made in the above mentioned PER that pertain to the route adoption alternatives or excavation activities beyond PM 55.0. At present and unless further evaluated, the PER's recommendation to perform mitigation monitoring for the Alternative 2 Route Adoption remains unchanged.

This addendum was prepared by review of information contained in: The California State University, Fresno, Department of Geology Paleontological Sensitivity Mapping Project

database; geologic maps; and geologic and paleontologic literature, new State Route 25 alignment maps, new project descriptions, and the November 2008 PER (see references).

Build Alternative B (modified) Project Description

Construct a three mile long expressway on a new alignment between San Felipe Road and Hudner Lane. The new alignment includes construction of an at- grade intersection at State Route 156. The expressway will be constructed on fill and will be elevated five feet above the surrounding ground surface.

The new alignment parallels existing State Route 25 and is located south of the existing northwest trending highway. The new expressway segment gradually merges back into the existing alignment west of State Route 25/156 intersection and south of Hudner Lane.

Under Build Alternative B (modified), construction of the Briggs Road extension between the new alignment and existing State Route 25 (Build Alternative B [unmodified]), has been eliminated.

Build Alternative B (modified) - Paleontological Impacts

No impacts to paleontological resources are anticipated. The modified build alternative will be constructed entirely on fill, which will be placed on top of Holocene alluvium. Any excavation in Holocene alluvium is expected to be shallow and is not anticipated to be deeper than two to three feet. As previously assessed, the November 2008 Paleontological Evaluation Report ranks the Holocene alluvium as low sensitivity. It should also be noted that the new alignment traverses land that is currently farmed and plowed for row crops. This activity has already disturbed the upper few feet of soil, thereby diminishing the likelihood of encountering in-place fossils. Additionally, because the modified build alternative eliminated construction of the Briggs Road extension, the high sensitivity San Benito Gravels will not be excavated.

Recommendations

No further studies are recommended and mitigation monitoring is not required for Build Alternative B (modified). A re-evaluation is recommended if there are any other project description changes to the Build Alternative B (modified).

Perform mitigation monitoring for the Alternative 2 Route Adoption as stated in the PER.

If you need further information, please contact Richard C. Stewart at (559) 243-8229.

REFERENCES

CSUF, 2000, Paleontological sensitivity mapping project, technical report and data base: California Department of Transportation and California State University, Fresno, Interagency Agreement No. 06A0163, 49 p.

Caltrans, 2008, Paleontological Evaluation Report, State Route 25 Widening and Route Adoption, Hollister to Gilroy, San Benito and Santa Clara Counties, California, 5-SBt PM 51.5/60.1; 4-SCl-25 PM 0.2/2.6; 5-SBt-156 PM R10.5/R12.2, EA: 05-485400, November 20, 2008, prepared by Peter A. Hansen, District 06 Engineering Geologist/Paleontology Coordinator.

Caltrans, 05-485400; Project Description Changes: E-mail from Wendy Kronman, Associate Environmental Planner, Caltrans District 06 to Richard Stewart, Engineering Geologist, Caltrans District 06, March 1, 2011, Subject: Re: SR25 - info for your reports under revision.

Caltrans, 05-485400; Excavation Depths: Forwarded e-mail from Wendy Kronman, Associate Environmental Planner, Caltrans District 06 to Richard Stewart, Engineering Geologist, Caltrans District 06, March 8, 2011, Subject: Fw: 05-485400 San Benito 25 excavation depths.

Caltrans, 05-485400; New Maps: Forwarded e-mail from Wendy Kronman, Associate Environmental Planner, Caltrans District 06 to Richard Stewart, Engineering Geologist, Caltrans District 06, March 8, 2011, Subject: Fw: SR25 Widening & Rte Adoption - New Maps of Redesigned Preferred Alternatives to Review, Revised ROW Acquisition, AND Updated MCCE Needed Before Dec. 3.

Caltrans, 05-485400; New Cross Section: Forwarded e-mail from Wendy Kronman, Associate Environmental Planner, Caltrans District 06 to Richard Stewart, Engineering Geologist, Caltrans District 06, March 8, 2011, Subject: Fw: 05-485400 New Cross-section of Expressway - Alts 2 and B.

State of California
DEPARTMENT OF TRANSPORTATION

Business, Transportation and Housing Agency

Memorandum

Flex your power!
Be energy efficient!

To: Peter Hansen
Engineering Geologist
Hazardous Waste and Paleontology Branch,
Central Region Environmental

Date: April 8, 2010

File: 05-48540
05-SBt-25 (PM 51.5/60.1)
04-SCl-25 (PM 0.0/2.6)
and 05-SBt-156 (PM R10.5/R12.2)

From: G. William 'Trais' Norris III
Branch Chief
Sierra Pacific Environmental Analysis Branch

Subject: Change to Purpose Statement

The Purpose statement for the SR25 Widening and Route Adoption project has changed. The new wording is

The purpose of the proposed route adoption project is to:

- Select a corridor for State Route 25 between Hollister and Gilroy that will accommodate existing and future travel demand.
- Facilitate local and regional land use planning by identifying future right-of-way needed for the State Route 25 corridor.

The purpose of the proposed build project is to:

- Improve traffic flow and reduce delays on State Route 25 between San Felipe Road in Hollister and Hudner Lane in San Benito County.
- Increase capacity along State Route 25 between San Felipe Road in Hollister and Hudner Lane in rural San Benito County.

The new purpose does not affect the conclusions of the Paleontological Evaluation Report prepared for this project, last revised in November 2008.

c: Project file

PALEONTOLOGICAL EVALUATION REPORT

STATE ROUTE 25 WIDENING AND ROUTE ADOPTION HOLLISTER TO GILROY

SAN BENITO and SANTA CLARA COUNTIES, CALIFORNIA

5-SBt-25 PM 51.5/60.1
4-SCl-25 PM 0.0/2.6
5-SBt-156 PM R10.5/R12.2

EA: 05-485400

November 20, 2008

PALEONTOLOGICAL EVALUATION REPORT

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5-SBt-156 PM R10.5/R12.2

EA: 05-485400

November 20, 2008

Prepared By: Peter A. Hansen Date: November 20, 2008

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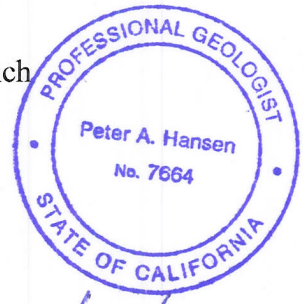

Approved By: Gerald H. White Date: 11/20/08

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For individuals with sensory disabilities this document is available in alternate formats. Please call or write to Gerald H. White, Department of Transportation, 2015 East Shields, Suite 100, Fresno, CA 93726. 559-243-8233 Voice, or use the CA Relay Service TTY number 1-800-735-2929.

SUMMARY

Regulatory Setting

Paleontology is the study of life in past geologic time based on fossil plants and animals. A number of federal statutes specifically address paleontological resources, their treatment, and funding for mitigation as a part of federally authorized or funded projects (such as the Antiquities Act of 1906 [16 U.S. Code 431-433], Federal-Aid Highway Act of 1935 [20 U.S. Code 78]). Under California law, paleontological resources are protected by the California Environmental Quality Act, the California Administrative Code, Title 14, Section 4306 et seq., and Public Resources Code Section 5097.5.

Affected Environment

An initial paleontology study in February 2001 determined that there were high sensitivity paleontological resources in the area of the proposed project to widen State Route 25 and recommended additional study to determine if the project would impact these resources. A paleontology study of the project area was conducted by Dr. Robert Dundas, a vertebrate paleontologist from the California State University, Fresno Geology Department [*ROUTE 25 (SAN BENITO AND SANTA CLARA COUNTIES, CALIFORNIA) ASSESSMENT REPORT ON PALEONTOLOGICAL SENSITIVITY*, June 17, 2002]. The results of that study are incorporated into this paleontological evaluation report to reflect the current design alternatives.

The geologic strata that occur near the project area include Franciscan Complex, Miocene-Pliocene sedimentary rocks, Plio-Pleistocene continental deposits, and Quaternary alluvium that includes Pleistocene older alluvium and Holocene alluvium. Franciscan Complex, Miocene-Pliocene sedimentary rocks, and Pleistocene older alluvium occur in the route adoption alternatives area near the U.S. 101 interchange. The Plio-Pleistocene continental deposits occur in the build alternatives area between Hollister and State Route 156. Holocene alluvium covers the valley floor that is crossed by all of the proposed alternatives.

Scientifically significant paleontological resources are identified sites or geologic deposits containing individual fossils or assemblages of fossils that are unique or unusual, diagnostically or stratigraphically important, and add to the existing body of knowledge. Fossils found undisturbed are particularly important, as they aid in stratigraphic correlation, interpretation of tectonic events, paleoclimatology, and evolution in general. Terrestrial vertebrate fossils are often assigned greater significance than other fossils because they are rarer than other types of fossils and require a greater amount of scientific study. If a paleontological resource is determined to be significant, of high sensitivity, or of scientific importance, and the project impacts it, a mitigation program must be developed and implemented.

The Franciscan Complex rocks in the project area do not contain fossils and are ranked no sensitivity. The Miocene-Pliocene sedimentary rocks contain fossils of mammals, fish, sharks, and birds, and are therefore considered high sensitivity. The Plio-Pleistocene continental deposits contain fossils of bison, camels, horses, and mammoths.

Mammoth fossils have been recovered from these continental deposits near the project area at two locations just north and south of Hollister. The Plio-Pleistocene continental deposits are ranked high sensitivity. The Pleistocene older alluvium contains fossils of bison, peccaries (similar to a large pig), and mammoths, and this alluvium is also designated high sensitivity. Although the uppermost few feet of Holocene alluvium are ranked as low sensitivity, deeper excavation may encounter scientifically important fossils.

Environmental Consequences

The Miocene-Pliocene mammal, fish, shark, and bird fossils; the upper Pliocene to lower Pleistocene camel and horse fossils; and the Pleistocene mammoth and peccary fossils found locally in the Miocene-Pliocene sedimentary rocks and the Plio-Pleistocene continental deposits are scientifically important for several reasons. These fossils range in age that covers the time between the Hemphillian, Blancan, Irvingtonian and Rancholabrean fossil ages, and fossils found here could provide important data for the interpretation of the relationship between species of the four ages and their geomorphological evolution. Terrestrial vertebrate fossils are rarer than other types of fossils because the best conditions for fossil preservation are relatively rare in terrestrial settings. These conditions include little or no disturbance after death and quick burial in oxygen depleted, fine-grained sediments. Any invertebrate fossils found in association with the vertebrate fossils would aid in stratigraphic correlation and provide data for the interpretation of the ages of other specimens found. All of these fossils will provide important scientific information on tectonic events, paleoclimatology, the relationships between species, and evolution in general.

Route adoption alternatives 1 and 2 and build alternatives A and B would excavate in hills containing high sensitivity Plio-Pleistocene continental deposits. Alternatives 1 and A will pass through the hill northeast of existing State Route 25 and require excavation for an undercrossing and for the westbound off ramp at State Route 156. Alternatives 2 and B will require excavation to extend Briggs Road west to the new alignment. Excavation for overcrossing foundation footings where State Route 25 will cross State Route 156 might also encounter Plio-Pleistocene continental deposits. Route adoption alternatives 1 and 2 might extend far enough south along U.S. 101 to require excavation in high sensitivity Miocene-Pliocene sedimentary rocks. Construction in the U.S. 101 and State Route 25 interchange area could require excavation in high sensitivity Pleistocene older alluvium. All construction alternatives would impact paleontological resources and could destroy scientifically important fossils.

Avoidance, Minimization, and/or Mitigation Measures

All proposed route adoption and build alternatives would have an adverse impact to paleontological resources that cannot be avoided without proper mitigation. Adverse impacts to paleontological resources could be avoided or minimized by selecting the No-build alternative or by implementing a well-designed paleontological resource mitigation plan. Proper paleontological mitigation and salvage could actually result in beneficial effects on paleontological resources through the discovery of fossils that would not have been exposed without construction and, therefore, would not have been available for

study. The implementation of the following mitigation measures will result in the project having a less than significant impact to paleontological resources.

Paleontological mitigation for the project will include:

1. A nonstandard special provision for paleontology mitigation will be included in the construction contract special provisions section to advise the construction contractor of the requirement to cooperate with the paleontological salvage.

2. A qualified principal paleontologist (M.S. or PhD in paleontology or geology familiar with paleontological procedures and techniques) will be retained to prepare a detailed Paleontological Mitigation Plan prior to the start of construction. All geologic work will be performed under the supervision of a California Professional Geologist.

3. The qualified principal paleontologist will be present at pre-grading meetings to consult with grading and excavation contractors.

4. Near the beginning of excavations, the principal paleontologist will conduct an employee environmental awareness training session for all persons involved in earth moving for the project.

5. A paleontological monitor, under the direction of the qualified principal paleontologist, will be on site to inspect cuts for fossils at all times during original grading involving sensitive geologic formations.

6. When fossils are discovered, the paleontologist (or paleontological monitor) will recover them. Construction work in these areas will be halted or diverted to allow recovery of fossil remains in a timely manner.

7. Bulk sediment samples will be recovered from fossiliferous horizons and processed for microvertebrate remains as determined necessary by the principal paleontologist.

8. Fossil remains collected during the monitoring and salvage portion of the mitigation program will be cleaned, repaired, sorted, and cataloged.

9. Prepared fossils, along with copies of all pertinent field notes, photos, and maps, will then be deposited in a scientific institution with paleontological collections.

10. A final report will be completed that outlines the results of the mitigation program and will be signed by the Principal Paleontologist and Professional Geologist.

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List of Abbreviated Terms

BLM	U.S. Department of the Interior, Bureau of Land Management
Caltrans	California Department of Transportation
CEQA	California Environmental Quality Act
CGS	California Geological Survey (California Division of Mines and Geology)
CSUF	California State University, Fresno
DOD	Department of Defense
FHWA	Federal Highway Administration
LACM	Natural History Museum of Los Angeles County
Ma	Million years
MRZ	Mineral Resource Zone
PEAR	Preliminary Environmental Analysis Report
PER	Paleontological Evaluation Report
PIR	Paleontological Identification Report
PL	Public Law
PM	Post Mile
PMP	Paleontological Mitigation Plan
PMR	Paleontological Mitigation Report
PSS	Paleontological Stewardship Summary
SBt	San Benito County
SCl	Santa Clara County
SMARA	Surface Mining and Reclamation Act
UCMP	University of California Museum of Paleontology
USDA	United States Department of Agriculture
USDI	United States Department of the Interior
VTA	Santa Clara Valley Transportation Authority
WBS	Work Breakdown Structure – Guide to Project Delivery Workplan Standards

Key Words

Calaveras Fault
City of Hollister
Chittenden Quadrangle
Etchegoin Formation
Franciscan Complex
Hollister Quadrangle
Hollister Valley
Lake San Benito
Miocene-Pliocene sedimentary rocks
Paciens Fault
Pajaro River
Pancho Rico Formation
Plio-Pleistocene sedimentary rocks
Purisima Formation
Quaternary alluvium
San Andreas Fault
San Benito Gravels
San Benito River
San Benito County
San Felipe Lake
San Felipe Quadrangle
San Pablo Formation
Santa Clara County
Santa Clara Formation
Santa Clara Valley
Santa Cruz Sheet
Santa Margarita Formation

INTRODUCTION

The California Department of Transportation (Caltrans), in cooperation with San Benito Council of Governments and Santa Clara Valley Transportation Authority is evaluating the conversion of 11.2 miles of the existing State Route 25 two-lane conventional highway to a four-lane expressway in San Benito and Santa Clara Counties (figures 1 and 2). The evaluation includes two proposed projects: (1) a TIER I route adoption and (2) a proposed construction project within the limits of the proposed route adoption (figures 2 to 7).

1. The route adoption study extends from San Felipe Road within the city of Hollister (post mile 51.5) to the San Benito/Santa Clara County line (post mile 60.1) and on to the end of State Route 25 at U.S. 101 south of the city of Gilroy (post miles 0.0 to 2.6 in Santa Clara County).

2. The proposed construction project limits extend 3.8 miles in San Benito County, from San Felipe Road in Hollister to just west of Hudner Lane (post miles 51.5 to 55.3). The existing 2-lane conventional highway would be replaced by a 4-lane expressway.

State Route 25, a two-lane conventional highway, runs northwest through the relatively flat terrain of the Hollister Valley, terminating at U.S. 101 after crossing the Pajaro River and Carnadero Creek. Agriculture dominates the surrounding landscape, and farmsteads and houses are scattered along the length of the study area. Residences, retail businesses, and agriculture-related commercial operations are more concentrated at both ends of the route adoption study area, on the outskirts of Gilroy and Hollister.

Caltrans protects and enhances the environment and quality of life in accordance with the environmental, economic and social goals of California (Caltrans, 1992). The Department evaluates the environmental benefits and consequences of its activities and implements practices that minimize environmental impacts. Caltrans, as part of the project development and delivery process, is obligated to conduct paleontological studies in response to Federal, State, and local laws, regulations, and ordinances (Caltrans, 2008).

Paleontology is the study of life in past geologic time based on fossil plants and animals. Fossils furnish information about the kinds of plants and animals that existed, when they appeared and vanished, where and how they lived, and the type of environments they preferred (CGS, 2002). Fossils help us to learn how species evolved, how some descended from others, and how groups of organisms are related.

It is the policy of the United States that the public lands be managed in a manner that will protect the quality of scientific and historical values (BLM, 1998). The paleontological resources found on the public lands are recognized as constituting a fragile and nonrenewable scientific record of the history of life on earth, and so represent an important and critical component of America's natural heritage.

Purpose and Need
The purpose of the proposed project is to:

- Select a route adoption corridor for State Route 25 between Hollister and Gilroy for planning purposes.
- Improve traffic flow, reduce delays, and enhance the movement of goods on State Route 25 between San Felipe Road in Hollister and Hudner Lane in San Benito County.
- Increase capacity along State Route 25 between San Felipe Road in Hollister and Hudner Lane in San Benito County.

Slow moving farm equipment, trucks, and local and commuter traffic share this two-lane roadway. An increasing number of vehicles travel this stretch of State Route 25 and, during peak commute hours, the roadway is congested. Traffic flow is delayed by vehicles turning onto and/or out of the many driveways and local roads, affecting the flow of the faster moving vehicles. Many commuters whose destination is beyond the local area take local roads (Bloomfield Road, Frazier Lake Road, and Shore Road) as shortcuts between State Route 25 and State Route 156 and also State Route 152. Significant commercial truck traffic travels through the area on State Route 25, and is subject to delays as well. A new route alignment should be adopted so that the appropriate area for a future expressway can incorporated into the San Benito and Santa Clara County general plans now, before future development occurs along this stretch of highway.

Project History
Originally, in 2001, the project limits on State Route 25 were from San Felipe Road in Hollister to the State Route 25/U.S. 101 interchange south of Gilroy. Because the proposal included modifying the State Route 25/U.S. 101 interchange, the project limits extended one mile south and north of the existing interchange on U.S. 101. In 2003 the project scope expanded to include a connection from the new State Route 25/U.S. 101 interchange to Santa Teresa Boulevard on the west. In addition, the existing four-lane expressway segment between the vicinity of the State Route 25/U.S. 101 interchange and the Monterey Road interchange in Gilroy, a distance of two miles, was proposed for widening to a six-lane freeway. In December of 2006 the additional work in Santa Clara County became part of the Caltrans District 4 project, known as the U.S. 101 Widening Project State Route 129 to Monterey Road project. In January 2008, the northern limits of the project were expanded again to U.S. 101 to have a logical termini, or end point, for the route adoption study.

Previous Studies
Staff from the Central Region Hazardous Waste Branch reviewed the proposed improvements to State Route 25 and U.S. 101 in San Benito and Santa Clara Counties with respect to potential paleontology resources (Caltrans, 2001). The preliminary evaluation included review of: The California State University, Fresno, Department of Geology Paleontological Sensitivity Mapping Project database (CSUF, 2000); geologic

maps; and geologic and paleontologic literature. Additional study was recommended to identify geologic strata that would be disturbed by project related activities and assess the potential to encounter significant paleontology resources during construction.

California State University, Fresno Geology Department conducted a paleontology study in the project area for the Route 25 & 101 Widening project (CSUF, 2002, Appendix A). The result of that study was presented to the Central Sierra Environmental Analysis Branch (Caltrans, 2002) and is incorporated into this Paleontological Evaluation Report (PER).

This PER (State Route 25 Widening and Route Adoption Hollister to Gilroy) includes a revised project description and updates a previous PER (Route 25 Widening Project) prepared July 25, 2008.

Project Alternatives

Both of the route adoption alternatives, Alternatives 1 and 2, are 11.2 miles long, and share the same alignment from approximately 1/2 mile south of Shore Road (post mile 56.1) in San Benito County to U.S. 101 in Santa Clara County (figures 3-5). Between post mile 56.1 in San Benito County and the southern end of the proposed project at San Felipe Road, the two alignment alternatives separate: Alternative 1 proposes to align the future four-lane expressway generally to the east (or north) of the existing two-lane north/south highway while Alternative 2 would align mostly to the west (or south) of the existing two-lane highway. The alignments would be wide enough to accommodate a future four-lane expressway with a 62 foot median (342 feet) and frontage roads on one or both sides. The alignments would also be wide enough to accommodate a future interchange near the existing intersection of State Route 25 and State Route 156 and a future State Route 25/U.S. 101 interchange north of the existing interchange. Other improvements include new bridges over Carnadero Creek and the Pajaro River, and overcrossings of the Union Pacific Railroad Hollister branch line and the Union Pacific main line just east of U.S. 101.

Both build alternatives, Alternative A and Alternative B would extend 3.8 miles in San Benito County, from San Felipe Road (post mile 51.5) to just west of Hudner Lane (post mile 55.3)(figures 6-7). Unlike the route adoption alternatives, the build alternatives propose a realigned and widened at-grade intersection at State Route 25 and State Route 156 instead of an interchange. Both construction alternatives would transition back to the existing two-lane highway just west of Hudner Lane. For Alternative A, an undercrossing would be built at the gravel quarry driveway to provide access to this parcel.

The No-Action Alternative would result in no action being taken, and no further improvements would be made to State Route 25 within the route adoption limits other than the State Route 25 Safety and Operations Enhancement Project. It is anticipated that work will begin early in 2009 and will be completed by early 2010. Work will begin just south of Hudner Lane (post mile 55.1) and end just south of the Union Pacific Railroad crossing (post mile 60.0) in San Benito County. Roadway widening will consist of two

10-foot outside shoulders, two 12-foot travel lanes, two 5-foot inside shoulders and placement of a temporary concrete median barrier. Rumble strips will be installed on all inside and outside shoulders. The Hudner Lane and Shore Road intersections will be improved.

Project Impact Area

The geology impacted by construction excavation as described above is shown on Plate I in Appendix D at the end of this report. The Route Adoption alternatives in the west area (figure 3, plate Ia) would connect to U.S. 101 with an interchange that might require excavation to the northwest to connect with local roads. Additional widening of U.S. 101 south of the interchange area might be required as originally planned for the project.

Alternates 1 and A (figures 4 and 6, Plate Id) would be constructed through the hills northeast of existing State Route 25; the undercrossing for the gravel company and the interchange at State Routes 25/156 would require major excavation in the hills. Alternates 2 and B (figures 5 and 7, Plate Id) would construct a road cut through the hill southwest of State Route 25 for the extension of Briggs Road.

Regulatory Setting

Construction of this project will be funded in part by the United States Department of Transportation. The Federal Aid Highway Act of 1956 (PL 84-627) and 1958 (PL 85-767) specifically extends the Antiquities Act of 1906 (PL 59-209) to apply to paleontological resources on highway projects funded by the Highway Act and authorizes the use of Highway Act funds for paleontological salvage to the extent approved as necessary by the State Highway Department. (Pub. L. 85-767, Aug. 27, 1958, 72 Stat. 913; Pub. L. 86-657, Sec. 8(e), July 14, 1960, 74 Stat. 525. See also 23USC305.) The Antiquities Act requires that properly qualified institutions and experts carry out any investigations. Typical federal requirements for paleontological resource management for compliance with the Antiquities Act are outlined in Bureau of Land Management Manual Section 8270 (BLM, 1998).

The California Environmental Quality Act (CEQA), the California Administrative Code, Title 14, Section 4307 et seq., and Public Resources Code Section 5097.5 protect paleontological resources. CEQA requires that public agencies not approve projects as proposed if there are feasible alternatives or feasible mitigation measures available which would substantially lessen the significant environmental effects of such projects (Chapter 1, Section 21002). California Public Resources Code 5097.5 protects vertebrate paleontological sites, including fossilized footprints or any other paleontological features situated on public lands. Typical California requirements for paleontological studies and mitigation are outlined in Title 20, California Code of Regulations, Chapter 5, Article 6, Appendix B, (16) Paleontological Resources; and Caltrans Standard Environmental Reference, Volume 1, Chapter 8 - Paleontology (Caltrans, 2008).

Studies Required

The studies required for project-related paleontological resource efforts involve three steps that include identification, evaluations, and, as necessary, mitigation (Caltrans, 2008). These three steps generally entail preparation of 5 separate documents that are:

A Paleontological Identification Report (PIR)
A Paleontological Evaluation Report (PER)
A Paleontological Mitigation Plan (PMP)
A Paleontological Mitigation Report (PMR)
A Paleontological Stewardship Summary (PSS)

In practice the Paleontological Identification and Paleontological Evaluation Reports are frequently a combined product as in this report.

Paleontological Identification Report

A Paleontological Identification Report (PIR) first determines the potential for a Caltrans project to impact paleontological resources. If the proposed project involves ground disturbance, there may be the potential to impact paleontological resources. A PIR is prepared to assess the potential for resources to be impacted by the project. Concurrent with the writing of the environmental document, qualified personnel will prepare a Paleontological Evaluation Report (PER) and Paleontological Mitigation Plan (PMP), if needed.

The PIR should include a description of the project setting, type of survey conducted, a summary of the literature search and findings, and discussion as to the effects that the project might have on resources within or adjacent to the project area. Evaluation of potential paleontological resources/issues will include a review of databases and/or a background document review, as well as contact with any necessary outside agencies, museums, universities, and individuals. Conducting a windshield survey of the project, if appropriate, follows this work. The Paleontology Coordinator, consultant, or contact liaison will prepare a report detailing the geologic and paleontological setting of the project as well as the results of database/background/contact review. The report should also discuss any agency coordination and permits that may be required (e.g., permits to conduct investigations on USDI, Bureau of Land Management; USDA, Forest Service; or DOD/Army Corps of Engineers administered lands). Finally, the package should include a summary for inclusion in the Preliminary Environmental Analysis Report (PEAR), along with estimates of the hours and time spans required to conduct studies for the environmental document by WBS code. The locations of any constrains that should be considered during preliminary design should also be illustrated on the aerial maps provided to Caltrans Environmental by Caltrans Design.

Paleontological Evaluation Report

If paleontological resources will be impacted by the project, it is necessary to undertake an assessment (PER) to determine: 1) Caltrans' legal responsibilities; 2) the necessity for involving other agencies and stakeholders; 3) whether the resource can be avoided (regardless of its potential significance); and 4) the significance of the resource.

Completion of this effort will require the services of a professional meeting the experience/education requirements of a Principal Paleontologist in order to determine the significance of the paleontological resource.

Preparer Qualifications

Mitigation is an eligible Federal project cost, in accordance with the Federal Aid Highway Act of 1956 (PL 84-627) and 1958 (PL 85-767). Federal funds are authorized to the extent determined as necessary by the state highway department, provided that the state is in compliance with the Antiquities Act of 1906 (PL 59-209). Documentation acceptable to FHWA must be submitted. The Antiquities Act requires that any investigations be undertaken by properly qualified institutions and experts as determined by the Secretaries of Interior, Agriculture, and War. Bureau of Land Management Manual Section 8270 (BLM, 1998) provides detailed procedures and standards for paleontological resource management for compliance with the Antiquities Act. BLM qualifications for conducting paleontology assessments are similar to Caltrans requirements for a qualified Principal Paleontologist as outlined in the Caltrans Standard Environmental Reference, Volume 1, Chapter 8 - Paleontology, Preparer Qualifications (Caltrans, 2008).

The determination of a project's potential impact on paleontological resources and the significance of any impact will necessarily be based on the identification of geologic strata that will be affected by excavation and an assessment of the extent of the impact to the geologic strata. This will require professional investigation, analysis, and interpretation of the project area geology. California Business and Professions Code, Chapter 12.5, requires that such geologic reports prepared for public decision making documents be prepared by a California licensed Professional Geologist, or by a subordinate employee under his direction.

SCOPE OF STUDY

This PER is being prepared because a preliminary survey of the project site identified the presence of paleontological resources in the project area that could potential be affected by project excavation (Caltrans, 2001). The purpose of this investigation is to identify the paleontological resources at the project site and evaluate the project's potential to affect those resources. The study will identify the project area's geology and stratigraphy and extent of project excavation. The study will then assess whether there are known or reasonably anticipated paleontological resources within the project area and if project excavation will impact the resource. Once it has been determined that a paleontological resource will be impacted by the project, it is necessary to determine Caltrans' legal responsibilities, the necessity for involving other agencies and stakeholders, whether the resource can be avoided, and the significance of the resource. This study will then identify the recommended course of action for any mitigation and estimate mitigation costs.

Study Methods

California State University, Fresno Geology Department conducted a paleontology study in the project area for the Route 25 & 101 Widening project (CSUF, 2002). The study area covered all of the current State Route 25 Widening and Route Adoption Hollister to Gilroy project and parts of what is now the Santa Clara County U.S. 101 project. The results of that study are incorporated in this PER. Dr. Robert Dundas, California State University, Fresno, conducted the paleontology studies. Dr. Dundas is a geologist and vertebrate paleontologist with a Ph.D. in Paleontology from the University of California at Berkeley and has over fourteen years experience in paleontology assessments. He has held positions as Editor of PaleoBios and Senior Museum Preparator for the University of California Museum of Paleontology. He has been a Lecturer at the University of California at Berkeley and San Francisco State University. He is currently Assistant Professor in the Department of Earth and Environmental Sciences, California State University, Fresno. Dr. Dundas has worked extensively on fossil locations in the San Joaquin Valley including the Madera County Fairmead Landfill.

A record search for fossil sites within the Route 25 & 101 Widening project area was conducted at the University of California Museum of Paleontology at Berkeley (UCMP) and the Los Angeles County Museum of Natural History (LACM) by Dundas (CSUF, 2002). After reviewing the geologic maps, consulting the UCMP and LACM locality records, and conducting a field examination of the project area, high sensitivity zones were plotted around areas of exposed Purisima Formation, San Benito Gravels, and older alluvial fan deposits. A copy of the report is included in Appendix A.

This PER, prepared by Caltrans Paleontology Coordinator Peter Hansen, is based on the letter report prepared by Dr. Dundas for the Route 25 & 101 Widening Project and covers all alternatives of the State Route 25 Widening and Route Adoption Hollister to Gilroy Project. The evaluation included review of: The California State University, Fresno, Department of Geology Paleontological Sensitivity Mapping Project database (CSUF, 2000); geologic maps; and geologic and paleontologic literature (see attached references). Mr. Hansen conducted a field survey of the new project alternatives on February 28, 2007. Mr. Hansen is a Caltrans Engineering Geologist in the Central Region Hazardous Waste and Paleontology Branch and has done paleontology assessment work for the last seven years. Mr. Hansen is California Professional Geologist No. 7664.

Limitations

This PER is based on previous studies and published geologic reports. The assessment of which geologic formations will be impacted is believed to be reasonable and accurate based on existing mapping. The extent to which scientifically important fossils will be encountered during construction excavation cannot be determined until excavation begins and the sensitive strata are exposed.

Geologic hazards in the State Route 25 Widening and Route Adoption Hollister to Gilroy project area appear to include construction of an interchange structure at State Route 156 that would span the active Calaveras Fault and impacts to significant mineral resources in

a designated Mineral Resource Zone 2. The studies required for seismic hazards and mineral resources are beyond the scope of this report.

AFFECTED ENVIRONMENT

Regional Geology

The project area, within the Hollister Valley, about 110 miles south of San Francisco, is shown on the topographic maps (figures 8 and 9) and study area map (figure 10) in Appendix D. It lies mostly in northern San Benito County and extends into southern Santa Clara County within the San Felipe, Hollister, and Chitenden USGS quadrangles. The build portion is in San Benito County in the southern half of the San Felipe quadrangle and extends into the northern portion of the Hollister quadrangle north of the city of Hollister. The route adoption extends all the way from Hollister to the intersection of State Route 25 and US 101, south of Gilroy in Santa Clara County. Project alternatives are shown on the Route Adoption and Construction Alternatives maps in the appendices of this report (figures 3 to 7).

The Hollister Valley lies at the southern end of the Santa Clara Valley within the southern portion of the Coast Range geomorphic province (Jenkins, 1943; Jennings and Strand, 1958). The Coast Ranges are characterized by longitudinal mountain ranges and intervening valleys trending northwest. The topography of the province is controlled by faulting and folding. The Santa Clara Valley lies between the Santa Cruz Mountains on the west and the Diablo Range on the east (figure 11). The San Andreas Fault zone separates the Santa Cruz Mountains from the Gabilan Range to the west where the fault trends slightly oblique to the adjacent ranges. The Calaveras Fault zone extends from south of the San Benito River, where it is coincident with the Paciens Fault zone, northward through the city of Hollister, past San Felipe Lake and along the east side of the Santa Clara Valley.

The Pajaro River separates Hollister Valley from Santa Clara Valley and drains San Felipe Lake at the north end of Hollister Valley (figure 11). The southern end of Hollister Valley is the San Benito River and the San Andreas Fault zone. The project area lies along the Calaveras Fault, about 6 miles northeast of the San Andreas Fault. The Calaveras Fault zone passes through the center of Hollister Valley separating it into two structural blocks: the Diablo Block on the east and the San Justo block on the west between the Calaveras and the San Andreas (figure 12). The Gabilan block lies to the southwest of the San Andreas Fault.

In the Hollister Valley area, the Calaveras Fault zone is within Pleistocene-Holocene sediments at the surface (Rogers, 1993). There is a major contrast in pre-Pleistocene rocks across the fault. The basement rocks east of the fault are Franciscan complex and Cretaceous sedimentary rock of the Great Valley Sequence. Between the Calaveras and San Andreas Faults there is no Cretaceous Great Valley Sequence. The presence of Pliocene Purisima rocks west of the Calaveras Fault, but not east of the fault, indicates

lateral displacement. (A geologic time scale showing relative geologic ages is included in Appendix D, figure 13).

Although the Pliocene rocks of the southern Santa Clara Valley area were originally mapped as Purisima by Talifero (1948), the type section of Haehl and Arnold (1904) is along Purisima Creek in the Santa Cruz Mountains west of the San Andreas (Powell, 1998). The marine invertebrate fossils from Purisima rocks between the San Andreas and Calaveras Faults differ significantly from the invertebrate fossils of the type Purisima west of the San Andreas (Rogers, 1993). Dibblee (1975) and Dibblee and Brabb (1978) referred some of these rocks to the Etchegoin Formation. The nomenclature history of Purisima and Etchegoin is discussed in the section on Miocene-Pliocene sedimentary rocks below and in Appendix C.

Local Geology

The area of the proposed alternatives is shown on the geologic map in Plate I. Unit identifiers in the text refer to the geologic map shown on Plate I, which is adapted from the digital database of Wagner and others (2002). Additional explanation of the database conversion is presented in Appendix B.

State Route 25 parallels the Calaveras Fault at the southern end of the project area until the highway heads more westerly where it crosses State Route 156 (Rogers, 1993; Wagner and others, 2002). Alternatives 1 and A follow along the east side of the fault until they cross the fault at their intersection with State Route 156 (Plate Id). Alternatives 2 and B cross the fault between Wright Road and Briggs Road before continuing along the west side of the fault.

The hills of sand and gravel along the southern end of the project are compression ridges created by the action of the San Andreas and Calaveras Fault systems (Kohler-Antablin, 1999). The sand and gravel in the hill on the east side of State Route 25 between State Route 156 and the Hollister Municipal Airport is the SCL/Bolsa sand and gravel mine area. The area is newly classified as a Mineral Resource Zone 2 (MRZ-2). The California Department of Conservation's Division of Mines and Geology classifies mineral resources in compliance with the Surface Mining and Reclamation Act (SMARA) of 1975. Areas classified as MRZ-2 are areas where adequate information indicates that significant mineral deposits are present, or where it is judged that a high likelihood exists for their presence. The Don Chapin Company is currently mining this area.

The geologic strata that occur near the project area include the Franciscan Complex, Miocene-Pliocene sedimentary rocks, Plio-Pleistocene continental deposits, and Quaternary alluvium. Franciscan Complex, Miocene-Pliocene sedimentary rocks, and Pleistocene older alluvium occur in the Route Adoption Alternatives area. The Plio-Pleistocene continental deposits occur in the Build Alternatives area. Holocene alluvium covers the valley floor of all of the proposed construction alternatives.

Franciscan Complex

The Franciscan Complex crops out west of the project area forming most of the hills just west of the State Route 25/U.S. 101 interchange (Plate Ia). The Franciscan rocks are pervasively sheared, weakly metamorphosed marine sedimentary and volcanic rocks (Dibblee and Brabb, 1978).

The Franciscan rock descriptions presented here are from Graymer (1997). These rocks are on Graymer's (1997) New Almaden structural block, which is made up of two Franciscan terranes overlain by Miocene and younger strata. The block is bounded on the west by the Sargent Fault and on the east by the San Jose Fault of Brabb and Hanna (1981), which is a postulated fault beneath the surficial deposits of Santa Clara Valley.

The Franciscan Complex in the project area consists of greenstone agglomerate (KJfgs), sandstone (KJfss), and smaller areas of limestone and chert (KJfls, KJfch). The existing interchange southbound off- and on-ramps are built onto one of the small chert units, and additional small limestone and chert units crop out to the south and west. The hill just to the west of the interchange is part of the greenstone agglomerate that extends to the west and northwest. The sandstone unit crops out west and north of the greenstone.

The sandstone unit (KJfss) is a foliated, fine- to coarse-grained, lithic and mica lithic wacke with clasts of slate up to 5 mm, and is interbedded with gray slate and argillite. Locally there are clasts and lenses of limestone to 50 cm in length. It is stratigraphically above and contains clasts of the limestone and chert units. The interbedded limestone and chert units (KJfls, KJfch) are thinly bedded gray limestone and black, red, green, and gray radiolarian chert. The beds are mostly less than ½ meter thick. The greenstone agglomerate member (KJfgs) is composed of altered basalt, pillow-basalt, basalt breccia, and basalt-chert. Much of the rock has a distinct clastic texture indicating volcanoclastic breccia (Graymer, 1997). The matrix of the agglomerate is in large part altered glass.

Miocene-Pliocene sedimentary rocks

The upper Miocene and Pliocene sedimentary rocks near the project area are indicated on the geologic map on Plate I as Etchegoin Formation (MPe), and unnamed Pliocene continental mudstone (Puc) and sandstone (Pus). These rocks crop out in the hills to the south of the project and along US 101 and have been referred to the Purisima "Group", Purisima Formation, Etchegoin Formation, San Pablo Formation, Pancho Rico Formation, and Santa Margarita Formation. Allen (1946) included them in his Purisima "Group" in mapping the San Juan Bautista Quadrangle just to the south of the project area, and Taliaferro (1948) mapped them as Purisima Formation. Dibblee (1975) mapped these rocks in the Hollister quadrangle as Etchegoin Formation, and non-marine sedimentary rocks and valley deposits. These sedimentary rocks were apparently originally deposited on both sides of the San Andreas Fault, Purisima on the west and Etchegoin on the east, and have since been offset by the right lateral movement along the fault (Perkins, 1987). Therefore, this report's discussion of fossils of the project area includes fossils from both formations. A more complete discussion of the nomenclature history of the Mocene-Pliocene rocks of the study area is presented in Appendix C.

The upper Miocene-Pliocene rocks in the Hollister quadrangle were mapped as "Purisima" Formation by Rogers (1993) and this discussion of lithology is from his report. Rogers states that rocks east of the San Andreas are probably not Purisima as defined in coastal San Mateo County although they seem to represent the same period of time and are lithologically similar conglomerate, sandstone, and siltstone. The "Purisima" Formation of the Hollister quadrangle is characterized by massive mudstones probably deposited in a transitional environment (perhaps lagoonal) rather than open marine. The "Purisima" Formation is moderately- to poorly-consolidated sandstone, siltstone, shale, mudstone, and minor pebbly sandstone and grit.

Rogers (1993) divides his "Purisima" Formation into four members. The lowest unit is the marine sandstone member composed of brown and gray, medium-grained, well-sorted sandstone interbedded with gray shale and mudstone. The lower non-marine sandstone member is similar to the upper sandstone member with some grit containing Monterey chert detritus, light-colored tuff, and black and brown mottled lignite. The mucky mudstone member is a brown and green mudstone interbedded with minor massive gray, well-sorted sandstone and fissile shale rich in carbonized wood and leaf impressions. The upper non-marine sandstone member is massive, light to dark gray, and brown, medium-to-fine grained sandstone interbedded with gray and green shale and mudstone.

The "Purisima" Formation is overlain by the San Benito Formation (Rogers, 1993). Within the Hollister Valley near the build alternatives A and B project areas, upper Miocene-Pliocene sediments are generally at least 1,000 feet below the surface. However, along the Calaveras Fault in the project area, these sediments appear to have been pushed up closer to the surface by compression action of the fault.

Plio-Pleistocene continental deposits

Plio-Pleistocene continental deposits (QT) form small hills at the southeastern end of the project (Plate Id). These unconsolidated gravel deposits were mapped as the San Benito gravels in the San Benito quadrangle by Wilson (1943) and in the Hollister quadrangle by Taliaferro (1948). Dibblee (1975) referred these deposits to the Santa Clara Formation of Cooper (1894). Dibblee (1966) designated a type area for the Santa Clara Formation at the Stevens Creek reservoir in the Palo Alto 15 minute quadrangle, west of the city of San Jose, and east of the San Andreas Fault. Rogers (1993), mapping the Hollister and San Felipe 7 ½ minute quadrangles, designated the gravels in the hills on the east side of the Calaveras Fault as San Benito Formation and the gravels in the Flint Hills to the west as unnamed sand and gravel, unconsolidated; possibly equivalent to the San Benito Formation. Wagner and others (2002) map these deposits as Plio-Pleistocene continental deposits.

Brabb and others (2000) describe the Santa Clara Formation as gray to red-brown poorly indurated conglomerate, sandstone, and mudstone in irregular and lenticular beds. The conglomerate consists mainly of subangular to subrounded cobbles in a sandy matrix but locally includes pebbles and boulders. The cobbles and pebbles are mainly chert, greenstone, and greywacke with some schist, serpentinite, and limestone. Sarna-Wojcicki (1976) found a tuff bed in Santa Clara Formation near Woodside, and

correlated it with a similar tuff in the Merced Formation. Later work indicated that the tuff correlates with the 435 ka Rockland ash (Brabb and others, 2000). The Pliocene and Pleistocene Santa Clara Formation is equivalent in age to the Irvington gravels of Savage (1951) northeast of the Santa Clara valley (McLaughlin and others, 2001). The Irvington gravels contain the Irvingtonian fauna.

Rogers (1993) describes the San Benito Formation in the Hollister and San Felipe quadrangles as unconsolidated, light-gray gravel, sand, and silt. It is commonly cross-bedded and includes massive well-sorted fine sand and silt. The gravel is composed dominantly of Franciscan detritus. The unnamed sand and gravel is described as unconsolidated; possibly equivalent to the San Benito Formation but containing minor gravel and a large amount of massive maroon or variegated maroon, purple, and gray, well-sorted sand and silt, with some light-gray, cross-bedded silt and dark-green, massive mudstone. It is locally unconformable on "Purisima" Formation. Similar sand and gravel deposits to the west contain light gray vitric tuff correlated by trace element study to Merced ash, which Rogers (1993) believes to be 0.65 to 0.7 million years old. The unnamed sand and gravel of Rogers (1993) contains a Pliocene-Pleistocene, non-marine gastropod species previously found only in the Santa Clara and Tehama Formations (Rogers, 1993, p. 4)

Quaternary Alluvium

Pleistocene older alluvium (Qo) occurs west of U.S. 101 near the junction with State Route 25 (Wagner and others, 2002). This alluvium is mapped as upper Pleistocene terrace gravels and fans by Allen (1946), as older alluvial fan deposits by Helley and Brabb (1971), and as Pleistocene older alluvium by Dibblee and Brabb (1978). Graymer (1997) mapped most of this alluvium as Pleistocene alluvial fan and fluvial deposits and describes them as brown dense gravely and clayey sand or clayey gravel that fines upward to sandy clay, variously sorted. Graymer states that all Pleistocene alluvial fan and fluvial deposits can be related to modern stream courses. They are distinguished from younger alluvial fans and fluvial deposits by higher topographic position, greater degree of dissection, and stronger soil profile development. They are less permeable than Holocene deposits, and locally contain fresh water mollusks and extinct late Pleistocene vertebrate fossils.

Holocene alluvium (Q) covers much of the valley floor in the project area (Wagner and others, 2002). Allen (1946) mapped these deposits as Recent alluvium: silts, sands, and clays. Helley and Brabb (1971) mapped the younger alluvium as fan deposits of fine-grained sand and silt, fluvial deposits of fine sand to silty clay and interfluvial basin deposits of organic clay and silty clay. Dibblee and Brabb (1978) and Dibblee (1975) map these deposits as Holocene surficial deposits – alluvium, clay and silt. Rogers (1993) mapped the young alluvium in the Hollister and San Felipe quadrangles as fine-grained lacustrine and alluvial deposits. Graymer (1997) mapped the young alluvium west of the Pajaro River as Holocene alluvial fan and fluvial deposits, floodbasin deposits, floodplain deposits, and natural levee deposits.

The undifferentiated alternating lake deposits and alluvial deposits are described by Rogers (1993) as unconsolidated, well sorted, gray to blue silt, clay and sand that include deposits of intermittent "Lake San Benito" of Jenkins (1973). The lacustrine deposits are described in well logs as blue clay and contain a small gastropod fauna. Graymer (1997) describes the alluvial fan deposits as brown or tan, medium dense to dense, gravely sand or sandy gravel that generally grades upward to sandy or silty clay. Near the distal fan edges, the fluvial deposits are typically brown, never reddish, medium dense sand that fines upward to sandy or silty clay. The floodbasin deposits are very fine silty clay to clay deposits occupying flat-floored basins at the distal edge of alluvial fans. The floodplain deposits are medium to dark gray, dense, sandy to silty clay. Lenses of coarser material of silt, sand, and pebbles may be locally present. The floodplain deposits usually occur between levee deposits and basin deposits. The natural levee deposits are loose, moderately- to well-sorted sandy or clayey silt grading to sandy or silty clay. These porous and permeable levee deposits border stream channels, usually both banks, and slope away to flatter floodplains and basins.

Fossils

A record search for fossil sites within the project area was conducted at the University of California Museum of Paleontology at Berkeley (UCMP) and the Los Angeles County Museum of Natural History (LACM) by Dundas (CSUF, 2002). The LACM has no fossil localities within the project area but has a fossil site nearby from Plio-Pleistocene terrestrial deposits along Tres Pinos Creek. The UCMP has no fossil sites within the project area but has several vertebrate localities nearby from the San Benito Gravels.

The UCMP online collections database reports 53 Hemphillian age vertebrate fossil localities from the Purisima Formation with over 600 specimens of mammals, fish, sharks, and birds, primarily from localities in Santa Cruz County. The Purisima also has over 100 invertebrate fossil localities listed. The database reports 49 Hemphillian and Blancan age vertebrate fossil localities from Etchegoin Formation in Fresno and Kings Counties. The Etchegoin has over 700 invertebrate fossil localities listed in Contra Costa, Fresno, Kings, Monterey, San Benito, and San Luis Obisbo Counties; about 90 of these are in San Benito County.

The UCMP online collections database reports 14 fossil localities in Santa Clara Formation, including 8 in Santa Clara County. The following UCMP vertebrate localities occur in the Santa Clara Formation in Santa Clara County:

Table 1. Santa Clara Formation Vertebrate Fossil Localities

Locality #	Locality Name	Specimen #	Taxa	Element
V90003	Molecular Medicine bldg.	136495	Bison	mid humerus
V90055	Calabazas Creek	no specimens in the database for this locality		
V93037	Anderson Lake	139034	Camelidae	tibia
V99497	Strannigan Backyard	148568	Equus	tooth

The UCMP online collections database reports the following vertebrate fossil localities occur near the project area in San Benito Gravels:

Table 2. San Benito Gravels Vertebrate Fossil Localities

Locality #	Locality Name	Specimen #	Taxa	Element
V2407	Live Oak School	34291	Equus	dentary Frag.
V2408	Elkhorn Ranch	34289	Equus	tooth
V2409	Emmett School	34290	Equus	tooth
V4506	Tres Pinos	37741	Hipparion	/P frag
V6561	San Felipe	8753	Platygonus	tooth
V6963	Sallee Ranch	83780	Mammuthus columbi	tooth
V6964	Abbe Ranch	83784	Equus	dentary frag.
V6965	Hollister Gravel Pit	83785	Mammuthus	scapula fragment
V6968	Bird Creek	83789	Mammuthus columbi	tooth

The San Benito Formation contains vertebrate fauna at two localities reported and mapped by Rogers (1993, p. 4), one at the north end of Hollister and the other south of Hollister. In June 1967, a large elephant tusk was uncovered in the County Hospital Pit (V6965, at the south end of Hollister on State Route 25, PM 48.5) during operations by the San Benito County Road Department (Rogers. 1993, p.19). No other fossil remains were recovered, after a period of controlled excavation and careful examination by T.H. Rogers (California Division of Mines and Geology) and Ronald G. Wolff (University of California, Berkeley, Department of Paleontology). Elephant remains were reported from other sand and gravel quarries in the area. The locality at the north end of Hollister at Park Hill (State Route 25, PM 51.6) reported by Rogers (1993, p. 22) appears to be UCMP locality V6968 from which a mammoth tooth was recovered.

Graymer (1997) reports extinct late Pleistocene vertebrate fossils in the Pleistocene older alluvium. The source of the information was not found; however, the UCMP database reports 6 Rancholabrean localities in Santa Clara County from unnamed Pleistocene sediments:

Table 3. Santa Clara County Pleistocene Vertebrate Fossil Localities

Locality #	Locality Name	Specimen #	Taxa	Element
V4961	Milpitas	39212	Bison	cheek tooth
V6561	San Felipe	8753	Platygonus	tooth
V79134	Long Point	no specimens in the database from this locality		
V91128	Lawrence Expressway E	137236	Mammuthus	illum
V91248	Onizuka	no specimens in the database from this locality		
V99597	SCVWD Mammoth	150077	Mammuthus columbi	tusks, cranial elements, pelvis, podials, femur, partial rib

ENVIRONMENTAL CONSEQUENCES

Definitions of Significance and Sensitivity

If a paleontological resource cannot be avoided, then it is necessary to determine its significance or scientific importance before any mitigation measures are proposed. This may be stated for a particular fossil species, fossil assemblage, or for a rock unit as a whole. This discussion of significance and sensitivity is from the Caltrans Standard Environmental Reference (Caltrans, 2008).

Generally, scientifically significant paleontological resources are identified sites or geologic deposits containing individual fossils or assemblages of fossils that are unique or unusual, diagnostically or stratigraphically important, and add to the existing body of knowledge in specific areas, stratigraphically, taxonomically, or regionally (Reynolds, 1990). Particularly important are fossils found in situ (undisturbed) in primary context (e.g., fossils that have not been subjected to disturbance subsequent to their burial and fossilization). As such, they aid in stratigraphic correlation, particularly those offering data for the interpretation of tectonic events, geomorphological evolution, paleoclimatology, the relationships between aquatic and terrestrial species, and evolution in general. Discovery of *in situ* fossil bearing deposits is rare for many species, especially vertebrates. Terrestrial vertebrate fossils are often assigned greater significance than other fossils because they are rarer than other types of fossils. This is primarily due to the fact that the best conditions for fossil preservation include little or no

disturbance after death and quick burial in oxygen depleted, fine-grained, sediments. While these conditions often exist in marine settings, they are relatively rare in terrestrial settings (e.g., as a result of pyroclastic flows and flashflood events). This has ramifications on the amount of scientific study needed to adequately characterize an individual species and therefore affects how relative sensitivities are assigned to formations and rock units.

Significance may also be stated for a particular rock unit, predicated on the research potential of fossils suspected to occur in that unit. Such significance is often stated as "sensitivity" or "potential." In most cases decisions about how to manage paleontological resources must be based on this potential because the actual situation cannot be known until construction excavation for the project is underway. Caltrans uses the following tripartite scale.

High Potential - Rock units which, based on previous studies, contain or are likely to contain significant vertebrate, significant invertebrate, or significant plant fossils. These units include, but are not limited to, sedimentary formations that contain significant nonrenewable paleontological resources anywhere within their geographical extent, and sedimentary rock units temporally or lithologically suitable for the preservation of fossils. These units may also include some volcanic and low-grade metamorphic rock units. Fossiliferous deposits with very limited geographic extent or an uncommon origin (e.g., tar pits and caves) are given special consideration and ranked as highly sensitive. High sensitivity includes the potential for containing: 1) abundant vertebrate fossils; 2) a few significant fossils (large or small vertebrate, invertebrate, or plant fossils) that may provide new and significant taxonomic, phylogenetic, ecologic, and/or stratigraphic data; 3) areas that may contain datable organic remains older than Recent, including Neotoma (sp.) middens; or 4) areas that may contain unique new vertebrate deposits, traces, and/or trackways. Areas with a high potential for containing significant paleontological resources require monitoring and mitigation.

Low Potential - This category includes sedimentary rock units that: 1) are potentially fossiliferous, but have not yielded significant fossils in the past; 2) have not yet yielded fossils, but possess a potential for containing fossil remains; or 3) contain common and/or widespread invertebrate fossils if the taxonomy, phylogeny, and ecology of the species contained in the rock are well understood. Sedimentary rocks expected to contain vertebrate fossils are not placed in this category because vertebrates are generally rare and found in more localized stratum. Rock units designated as low potential generally do not require monitoring and mitigation. However, as excavation for construction gets underway it is possible that new and unanticipated paleontological resources might be encountered. If this occurs, a Construction Change Order must be prepared in order to have a qualified Principal Paleontologist evaluate the resource. If the resource is determined to be significant, monitoring and mitigation is required.

No Potential - Rock units of intrusive igneous origin, most extrusive igneous rocks, and moderately to highly metamorphosed rocks are classified as having no potential for containing significant paleontological resources. For projects encountering only these

types of rock units, paleontological resources can generally be eliminated as a concern and no further action taken.

Significance assessments should necessarily be based on the recommendations of a professional Principal Paleontologist with expertise in the region under study and the resources found in that region. An evaluation of a particular rock unit's significance rests on the known importance of specific fossils. Often this significance is reflected as a sensitivity ranking relative to other rock units in the same region. Regardless of the format used by a paleontologist to rank formations, the importance of any rock unit must be explicitly stated in terms of specific fossils known or suspected to be present (and if the latter, why such fossils are suspected), and why these fossils are of paleontological importance.

If a paleontological resource assessment results in a determination that the site is insignificant or of low sensitivity, this conclusion should be documented in a Paleontological Evaluation Report and in the project's environmental document in order to demonstrate compliance with applicable statutory requirements. If a paleontological resource is determined to be significant, of high sensitivity, or of scientific importance, and the project impacts it, a mitigation program must be developed and implemented.

Construction Related Impacts

Route adoption alternatives 1 and 2 incorporate build alternatives A and B respectively in their southern portions and then are the same for the northern portions in Santa Clara County. The route adoption alternatives would likely require excavation in Franciscan Complex rocks at the U.S. 101 and State Route 25 interchange area (see geologic map Plate Ia). Early project proposals included widening U.S. 101 south of the interchange and adding connectors to local streets to the northwest. Depending on the chosen design for the interchange and U.S. 101 improvements, the Route Adoption alternatives could include excavation in the upper Miocene and Pliocene sedimentary rocks (Etchegoin or Purisima Formation) south of the interchange and, more likely, excavation in Pleistocene older alluvium (Quaternary, older alluvial fan deposits), particularly for any improvements made to the northwest of the present interchange.

All construction alternatives propose excavation in the gravel hills between State Route 156 and the city of Hollister containing Plio-Pleistocene continental deposits (Santa Clara Formation or San Benito Gravels) and have the potential to encounter vertebrate fossils (Plate Id). Build alternative A would require excavation in the Plio-Pleistocene continental deposits where it passes through the hill north of the current State Route 25 alignment. The majority of the excavation would likely occur at the northbound offramp at State Route 156 and the undercrossing at the Don Chapin gravel operation. Build alternative B would pass to the southwest of the Plio-Pleistocene continental deposits in the hill west of the existing State Route 25 alignment. Some excavation in the deposits would be required for the alternative B main alignment. Excavation for the Briggs Road connecter between the alternative B main alignment and the existing State Route 25/Briggs Road intersection would require a major road cut through the deposits.

All construction alternatives would require clearing and grubbing excavation in the younger alluvium that covers the valley floor as preparation for the structural section. Depending on the depth of excavation and the thickness of the younger alluvium, lakebed deposits in the alluvium could be encountered. Excavation for overcrossing foundation footings at State Route 156 may extend into Plio-Pleistocene continental deposits.

The Franciscan rocks in the project area appear to be unfossiliferous (CSUF, 2002). Excavation in these rocks would not be a significant impact to paleontological resources. The Miocene-Pliocene sedimentary rocks are highly fossiliferous, containing a large number of both vertebrate and invertebrate localities elsewhere in the region. Excavation in the local Miocene-Pliocene sediments can be expected to encounter sensitive fossil resources. However, unless plans change to include excavation along U.S. 101 south of the U.S. 101 and State Route 25 interchange, these resources are not likely to be impacted.

The Plio-Pleistocene and Pleistocene older alluvium contain nonrenewable paleontological resources of scientific interest that are unique, unusual, and stratigraphically important. The younger alluvium that covers the valley floor includes lakebed deposits that may contain vertebrate fish fossils or smaller microfossils of mammals or reptiles that are of scientific interest. Any additional fossils found would add to the existing body of scientific knowledge.

Terrestrial vertebrate fossils are rarer than other types of fossils. This is due to the fact that the best conditions for fossil preservation are relatively rare in terrestrial settings. These conditions include little or no disturbance after death and quick burial in oxygen depleted, fine-grained, sediments. A greater amount of scientific study is needed to adequately characterize individual species of terrestrial vertebrate fossils. Any invertebrate fossils found in association with the vertebrate fossils, such as fresh water mollusks, would aid in stratigraphic correlation and provide data for the interpretation of the ages of other specimens found, tectonic events, paleoclimatology, the relationships between species, and evolution in general.

Scientifically significant paleontological resources are identified sites or geologic deposits containing individual fossils or assemblages of fossils that are unique or unusual, diagnostically or stratigraphically important, and add to the existing body of knowledge in specific areas, stratigraphically, taxonomically, or regionally. The Miocene-Pliocene mammal, fish, shark, bird, and invertebrate fossils, the upper Pliocene to lower Pleistocene camel and horse fossils, and the Pleistocene mammoth and peccary fossils found locally in the Miocene-Pliocene sedimentary rocks and the Plio-Pleistocene continental deposits are scientifically important because these fossils range in age that covers the time between the Hemphillian, Blancan, Irvingtonian and Rancholabrean fossil ages, and fossils found here could provide important data for the interpretation of the relationship between species of the four ages and their geomorphological evolution. Rock units that contain or are likely to contain significant vertebrate, significant invertebrate, or significant plant fossils require monitoring and mitigation (Caltrans, 2008).

The Miocene-Pliocene sedimentary rocks, Plio-Pleistocene continental deposits, and Pleistocene older alluvium have produced vertebrate fossils in the region and are therefore designated as highly sensitive (CSUF, 2002). Excavation in these units will require monitoring and mitigation. The upper most few feet of sediment in the project area covered by younger alluvium are unlikely to yield significant vertebrate fossils and are ranked as low sensitivity. However, deeper excavation has a chance of encountering scientifically important fossils where excavation is deep enough to encounter undisturbed sediments. Monitoring is recommended where excavation will disturb *in situ* sedimentary strata below the upper soil layers (i.e. upper few feet). Although construction excavation for the State Route 25 Widening and Route Adoption Hollister to Gilroy project would have an adverse impact on paleontological resources, implementation of appropriate mitigation measures to salvage paleontologic resources during construction could reduce that impact to a less than significant level.

Cumulative Impacts

Caltrans constructs highways in many locations throughout the Coast Ranges that require excavation in fossiliferous sediments similar to those found in the State Route 25 Widening and Route Adoption Hollister to Gilroy Project area. While individually many of these construction projects involve smaller amounts of excavation resulting in a lower intensity of impact, the total extent of all excavation for these projects could result in the loss of a large number of important fossils. The loss of even a few scientifically significant fossil specimens would mean the inability to piece together important parts of the earth's history and the evolution of species.

Although construction excavation for the State Route 25 Widening and Route Adoption Hollister to Gilroy project would have an adverse cumulative impact on paleontological resources, implementation of appropriate mitigation measures to salvage those resources during construction could reduce that impact to a less than significant level.

Land Ownership/Permits Required

If paleontological specimens are collected from private property, written permission is required from the landowner. In the instance of mitigation during the construction phase of a state transportation project, Caltrans typically is the fee-simple landowner. In the case of easements across federally administered lands, the Federal land-managing agency generally retains ownership of the paleontological specimens and permits may be required from the agency.

All land required for the construction of the State Route 25 Widening and Route Adoption Hollister to Gilroy project appears to be privately owned and will become Caltrans property prior to construction. No federal, state, or local agency land other than Caltrans property will be involved in construction that would require permits for paleontological studies or fossil collection.

RECOMENDATIONS

The upper Miocene and Pliocene sedimentary rocks (Etchegoin or Purisima Formation), Plio-Pleistocene continental deposits (Santa Clara Formation or San Benito Gravels), and Pleistocene older alluvium (Quaternary, older alluvial fan deposits) deposits have produced vertebrate remains in the region and are therefore designated as highly sensitive (CSUF, 2002). Because there is a possibility of encountering scientifically significant vertebrate specimens during excavation into these units, paleontological monitoring is indicated where excavation will disturb *in situ* deposits of these strata. The uppermost few feet of sediment in the project area covered by younger alluvial fan deposits are unlikely to yield significant vertebrate remains. However, deeper excavation has a chance of encountering vertebrate fossils. Monitoring is recommended where excavation will disturb *in situ* sedimentary strata below the upper soil layers (i.e. upper few feet).

The goal of monitoring is to reduce the adverse impact on paleontological resources within the project area by collecting scientifically significant vertebrate fossils. The contractor undertaking monitoring should develop a paleontological resource impact mitigation plan that addresses in detail the procedures for collecting vertebrate fossils, including recording pertinent geographic and stratigraphic information, stabilization (preservation) methods for the specimens, and make provisions for the remains to be accessioned into the collections of an appropriate repository (such as the LACM or UCMP) and catalogued for future scientific study. The mitigation plan should address both macrofossil and microfossil recovery. Following completion of monitoring, collection, and specimen processing, the contractor should generate a final report detailing the results of the mitigation program.

Mitigation

The adverse impact to paleontological resources by construction excavation on the State Route 25 Widening and Route Adoption Hollister to Gilroy Project cannot be avoided by selecting a different alternative except no build. Route adoption alternatives 1 and 2 and build alternatives A and B would all have an adverse impact to paleontological resources that cannot be avoided without proper mitigation. Adverse impacts to paleontological resources could be avoided or minimized by selecting the No-build alternative or by implementing a well-designed paleontological resource mitigation plan. Proper paleontological monitoring and mitigation could actually result in beneficial effects on paleontological resources through the discovery of fossils that would not have been exposed without construction and, therefore, would not have been available for study. The salvage of fossil specimens during construction excavation for this project could result in the reduction of the adverse impact to a less than significant level.

To reduce this potentially significant impact to a less than significant level, the following mitigation measures are recommended.

Avoidance, Minimization, and/or Mitigation Measures
Paleontological mitigation for the project should include:

1. A nonstandard special provision for paleontology mitigation should be included in the construction contract special provisions section to advise the construction contractor of the requirement to cooperate with the paleontological salvage.

2. A qualified principal paleontologist (M.S. or PhD in paleontology or geology familiar with paleontological procedures and techniques) should be retained to prepare a detailed Paleontological Mitigation Plan prior to the start of construction. All geologic work will be performed under the supervision of a California Professional Geologist.

3. The qualified principal paleontologist will be present at pre-grading meetings to consult with grading and excavation contractors.

4. Near the beginning of excavations, the principal paleontologist will conduct an employee environmental awareness training session for all persons involved in earth moving for the project.

5. A paleontological monitor, under the direction of the qualified principal paleontologist, will be on site to inspect cuts for fossils at all times during original grading involving sensitive geologic formations.

6. When fossils are discovered, the paleontologist (or paleontological monitor) will recover them. Construction work in these areas will be halted or diverted to allow recovery of fossil remains in a timely manner.

7. Bulk sediment samples will be recovered from fossiliferous horizons and processed for microvertebrate remains as determined necessary by the principal paleontologist.

8. Fossil remains collected during the monitoring and salvage portion of the mitigation program will be cleaned, repaired, sorted, and cataloged.

9. Prepared fossils, along with copies of all pertinent field notes, photos, and maps, will then be deposited in a scientific institution with paleontological collections.

10. A final report will be completed that outlines the results of the mitigation program and will be signed by the Principal Paleontologist and Professional Geologist.

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APPENDIX A Letter report from Dr. Robert Dundas, CSU, Fresno

CALIFORNIA
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June 17, 2002

Gerald White
Central Region Hazardous Waste Branch
State of California
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Dear Mr. White,

ROUTE 25 (SAN BENITO AND SANTA CLARA COUNTIES, CALIFORNIA)
ASSESSMENT REPORT ON PALEONTOLOGICAL SENSITIVITY

I. Project description

California State University, Fresno has completed a paleontological resource assessment of the State Route (SR) 25 project from the intersection of San Felipe Road in the city of Hollister in San Benito County to the junction of SR 25 and SR 101 in Santa Clara County (SBT-25 PM 51.5/60.1 & SCL-25 PM 0.0/2.5). The objectives were to identify specific fossil localities and sensitive geologic formations within the proposed project area and make recommendations for mitigating project related impacts to fossils resources. The project will upgrade the existing two-lane highway to a four-lane expressway. Because there are also proposed alternatives that would result in partial realignment of SR 25 and change the location of the SR 25/SR 101 interchange, in addition to perhaps altering SR 101, this assessment examined all strata within a mile of the existing SR 25 corridor and the areas of the proposed alternatives. This assessment was conducted to assist Caltrans with compliance responsibilities under CEQA and NEPA.

II. Findings

We reviewed pertinent geologic maps and conducted a literature search to identify stratigraphic units in the project area (Appendix A). The strata that occur in the project area include the Franciscan Group, Purisima Formation, San Benito Gravels and Quaternary alluvium (Allen, 1946). The San Benito Gravels and Quaternary alluvium are the stratigraphic units along the current SR 25 corridor and are referenced herein by distances from the city of Hollister, while formations adjacent to SR 101 are described relative to distances from the existing SR 25/SR 101 interchange.

FRANCISCAN GROUP

The Franciscan Group within the project area includes the agglomerate and tuff member, limestone member, and sandstone member (Allen, 1946). It is exposed immediately adjacent to the roadway from the SR 25/SR 101 interchange continuing south along SR 101 for about one mile. It is also exposed within a mile to the west of SR 101 from 1.0-1.5 miles south of the SR 25/SR 101 interchange and from the interchange to about two miles north (Jennings and Strand, 1958).

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The agglomerate and tuff member consists of undifferentiated pyroclastic basalt fragments with a tuffaceous matrix. The fresh surface is dark green, weathering to a dark yellow or red color, and may be up to 915 meters thick. The tuffaceous beds are less abundant than the fragmented basalt, but when present, they contain lenses of limey chert, silicified shale, and limestone (Allen, 1946).

The sandstone member is predominantly medium- to coarse-grained and well-indurated. The fresh surface is generally green to gray, weathering buff to red, and is generally massive with scattered thin interbeds of shale. The shale is well-indurated, thin-bedded, and black to gray on fresh surfaces and weathers yellow to red (Allen, 1946).

The limestone member is exposed in isolated outcrops along SR 101. The limestone is generally gray, but can vary from white to black. It is commonly well-bedded with some shale and significant amounts of both interbedded black chert and chert fragments within the limestone (Allen, 1946). The unit is unfossiliferous.

PURISIMA FORMATION

The middle and upper Pliocene Purisima Formation is exposed in the western portion of the project area adjacent to SR 101 from 1.5-3.9 miles south of the SR101/SR 25 interchange. It is an approximately 3049 meter thick section of friable clays, silts, sands, and gravels that is marine near the base and nonmarine in the upper portion. Poorly preserved marine fossils in calcified lenses and silts are common in the lower portion of the sequence. The upper 1524 meters are often cross-bedded and contain fresh water fossils. The Purisima Formation is highly fossiliferous west of the San Andreas fault. For example, 21 meters of the basal 100 meters exposed in Pajaro Canyon contain fossil beds, mostly of small oysters (*Ostrea vespertina*?). The unit unconformably overlies the Monterey diatomaceous shale (Allen, 1946).

The University of California Museum of Paleontology (UCMP) has vertebrate fossil localities within the Purisima Formation in Santa Cruz County, but none have been recorded in San Benito County or Santa Clara County.

SAN BENITO GRAVELS

The nonmarine Plio-Pleistocene San Benito Gravels, approximately 610 meters thick, are exposed in three isolated areas in the southern part of the project area. One exposure, known as Park Hill, is in downtown Hollister, another forms small hills lying adjacent to SR 25 approximately 1.3-3.5 miles north of Hollister, and the third significant occurrence is about one mile west of SR 25, extending 1.3-3.5 miles north of Hollister (Jennings and Strand, 1958; Wilson, 1943). The San Benito Gravels are predominantly poorly sorted gravels, sands, and clays that are sometimes consolidated into conglomerate, sandstone, and shale. The conglomerates and gravels have a grain size ranging from a few centimeters up to about 61 centimeters. The clasts range in composition from the Franciscan Group and granite to various sedimentary rocks. The sands and sandstones are variably cemented and contain intermixed silt and clay. The most common sandstone clasts include quartz, feldspar, biotite, abundant rock fragments with a wide range of heavy minerals. The clay/shales are generally yellow to brown, poorly bedded, and can occur as isolated beds or be interbedded with sand and gravel. Cross-bedding, channels and lenses in the unit vary significantly both laterally and vertically. The San Benito Gravels were probably deposited on a floodplain through erosion from areas of high relief during Pliocene

deformation (Wilson, 1943).

The San Benito Gravels are fossiliferous and contain both vertebrate fossils and fresh water mollusks. Vertebrate fossils include upper Pliocene to lower Pleistocene camel and horse remains (Wilson, 1943), and Pleistocene mammoth and peccary remains. There are several vertebrate localities within the San Benito Gravels in San Benito County (see Appendix C).

QUATERNARY ALLUVIUM

Helley and Brabb (1971) divided the alluvium in the project area into two distinct units; older alluvial fan deposits and younger alluvial fan deposits. The older alluvial fan deposits are only exposed along SR 101. They occur about 0.3 to 1.0 miles west of SR 101 from the SR 101/SR 25 junction northward for approximately 2.5 miles. These older alluvial fan deposits also occur adjacent to SR 101 fairly continuously starting 0.64 miles south of the SR 101/SR 25 interchange and continuing south for approximately 3.2 miles. The older alluvial fan deposits are "older fan deposits bordering uplands; at fan heads incised by channels..; at outer margins overlapped by younger alluvial fan deposits" (Helley and Brabb, 1971). These deposits are predominantly coarse sand and gravel that have yielded Pleistocene vertebrate fossils in the past (Helley and Brabb, 1971). The younger alluvial fan deposits occur along both SR 101 and SR 25. The younger deposits are separated into three units. The oldest of the three units consists mostly of fan deposits that grade headward to levee and terrace deposits. It is mostly fine-grained sand and silt that coarsens toward the fan head. The next youngest unit is mostly fine sand to silty clay representing fluvial deposition at the margins of fans. The youngest of these three units consists of interfluvial basin deposits that are mostly organic clay and silty clay (Helley and Brabb, 1971).

A record search for fossil sites within the project area was conducted at the University of California Museum of Paleontology at Berkeley (UCMP) and the Los Angeles County Museum of Natural History (LACM). The LACM has no fossil localities within the project area but has a fossil site nearby from the San Benito Gravels along Tres Pinos Creek (Appendix B). The UCMP has no fossil sites within the project area but has several vertebrate localities nearby from the San Benito Gravels (Appendix C).

After reviewing the geologic maps, consulting the UCMP and LACM locality records, and conducting a field examination of the project area, we plotted high sensitivity zones around areas of exposed Purisima Formation, San Benito Gravels, and older alluvial fan deposits (see accompanying topographic map). The project area underlain by younger Quaternary strata is ranked as low sensitivity for yielding scientifically significant vertebrate remains.

III. Recommendations

The Purisima Formation, San Benito Gravels, and older alluvial fan deposits have produced vertebrate remains in the region and are therefore designated as highly sensitive. Because there is a possibility of encountering scientifically significant vertebrate specimens during excavation into these units, paleontological monitoring is indicated where exavation will disturb in situ deposits of these strata.

The uppermost few feet of sediment in the project area covered by younger alluvial fan deposits are unlikely to yield significant vertebrate remains and therefore do not require further attention. However, deeper excavation has a chance of encountering vertebrate fossils. We recommend monitoring where excavation will disturb in situ sedimentary strata below the upper soil layers (i.e. upper few feet).

The goal of monitoring is to reduce the adverse impact on paleontological resources within the project area by collecting scientifically significant vertebrate fossils. The contractor undertaking monitoring should develop a paleontological resource impact mitigation plan that addresses in detail the procedures for collecting vertebrate fossils, including recording pertinent geographic and stratigraphic information, stabilization (preservation) methods for the specimens, and make provisions for the remains to be accessioned into the collections of an appropriate repository (such as the LACM or UCMP) and catalogued for future scientific study. The mitigation plan should address both macrofossil and microfossil recovery. Following completion of monitoring, collection, and specimen processing, the contractor should generate a final report detailing the results of the mitigation program.

Sincerely,

Robert G. Dundas, Ph.D.
Vertebrate Paleontologist

enc.

APPENDIX A

LITERATURE REFERENCES

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APPENDIX B

NATURAL HISTORY MUSEUM OF LOS ANGELES COUNTY
LETTER REPORT ON FOSSIL LOCALITIES

NATURAL HISTORY MUSEUM
OF LOS ANGELES COUNTY

Vertebrate Paleontology Section
Telephone: (213) 763-3325
FAX: (213) 746-7431
e-mail: smcleod@rcf.usc.edu

30 May 2002

Dr. Robert G. Dundas
Department of Earth & Environmental Sciences
California State University
Fresno, CA 93740

re: Vertebrate Paleontology records search for the Caltrans Highway 25 from Hollister, San Benito County, to Highway 101 near Gilroy, Santa Clara County, project area

Dear Bob:

I have conducted a thorough search of our vertebrate paleontological records for the Caltrans Highway 25 from Hollister, San Benito County, to Highway 101 near Gilroy, Santa Clara County, project area as indicated on the map attachment in your e-mail to me on 29 May 2002, covering the Hollister, San Felipe, and Chittenden USGS topographic quadrangles. We have no fossil vertebrate localities directly within the project area, but we have one locality nearby from the sediments that are exposed in the proposed project area.

Almost the entire proposed project area has exposures of Quaternary Alluvium associated with the flood plain creek drainages, but at the southern end of the proposed project area, near the junction of Highway 25 and Highway 156 south into Hollister, there are surface exposures of Plio-Pleistocene terrestrial deposits. Southeast of the proposed project area, along Tres Pinos Creek east of Highway 25, we have a single locality from these latter deposits (not yet officially recorded) that produced a fossil horse skull.

Shallow excavations in the Quaternary Alluvium deposits exposed in almost all of the proposed project area are not likely to produce significant fossil vertebrate remains. Deeper excavations in those deposits or any excavations in the Plio-Pleistocene deposits in the very southeastern part of the proposed project area, however, may well encounter significant vertebrate fossils. Therefore, any substantial subsurface excavation below the uppermost layers in the Quaternary Alluvium or anywhere in the Plio-Pleistocene deposits should be closely monitored. Additional records of fossil localities in the area may be available through the University of California at Berkeley Museum of Paleontology and the California State University at San Jose. Any fossils recovered during mitigation should be deposited in an accredited and permanent scientific institution for the benefit of current and future generations.

Sincerely,

Samuel A. McLeod

Samuel A. McLeod, Ph.D.
Vertebrate Paleontology

900 Exposition Boulevard Los Angeles, CA 90007

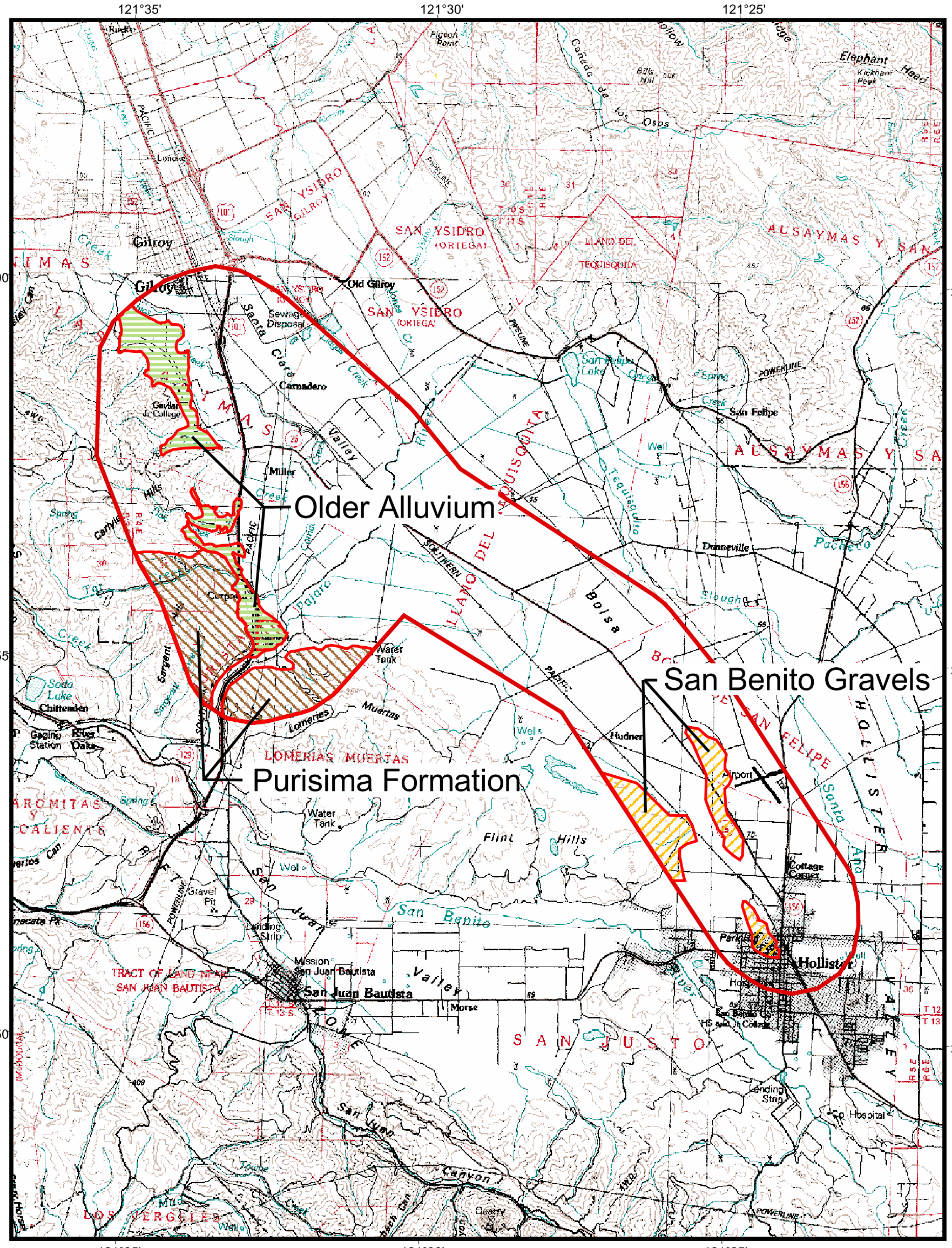
enclosure: invoice

APPENDIX C

UNIVERSITY OF CALIFORNIA MUSEUM OF PALEONTOLOGY (UCMP)
VERTEBRATE FOSSIL LOCALITIES NEAR THE SR25 PROJECT AREA

Locality #	Locality Name	Specimen #	Taxa	Element
V6561	San Felipe	8753	*Platygonus*	Tooth
V6963	Sallee Ranch	83780	*Mammuthus columbi*	Tooth
V6965	Hollister Gravel Pit	83785	*Mammuthus*	Scapula fragment
V6968	Bird Creek	83789	*Mammuthus columbi*	Tooth

The above localities occur south of the project area in the San Benito Gravels.



USGS 30x60 minute topographic base map: Monterey, California

0 1 2 3 4 5 Miles

Scale 1:100000

Contour Interval 50 meters

N

ROUTE 25 (SAN BENITO AND SANTA CLARA COUNTIES, CALIFORNIA) PALEONTOLOGICAL SENSITIVITY Showing Areas of High Sensitivity

LEGEND

- Older Alluvium
- San Benito Gravels
- Purisima Formation
- CSUF Paleontology Study Area

GIS data from CSUF, 2002, Dr. Robert Dundas, Vertebrate Paleontologist, California State University, Fresno, ROUTE 25 (SAN BENITO AND SANTA CLARA COUNTIES, CALIFORNIA) ASSESSMENT REPORT ON PALEONTOLOGICAL SENSITIVITY. Letter report to Gerald White, Caltrans, Fresno, California, June 17, 2002.

APPENDIX B Digital Database Conversion

The shape files used to generate the geologic map of Plate I are from arcinfo coverages contained on the California Geological Survey CD: Geologic map of Monterey 30' x 60' quadrangle and adjacent areas, California: a digital database: CGS CD 2002-04, 2002. Coverages were first converted to ArcView shapefiles and then reprojected from NAD 27, UTM 10, meters to NAD 83, geographic degrees using ArcView GIS 3.2. Transformation information is shown below. Accuracy of the transformation was checked by comparing the geographic shape file arcs and polygons against topography on USGS quad tiffs from Caltrans Design Quad Map Index (http://cadd.dot.ca.gov/html/gis/mapping/webmapping/quadmap/link_quad.asp) in a view projected to State Plane 1983, California, Zone IV.

Input directory and file name(s):
d:\gis\cgs\monterey\shapes\utm10
monterey_geo_polys.shp
faults.shp
monterey_geo_arcs.shp

Input Coordinate System:
Name: NAD_1927_UTM_Zone_10N
POSC: 26710
Unit: Meter
Geographic CSYS: GCS_North_American_1927
Datum: D_North_American_1927
Prime Meridian: Greenwich
False Easting: 500000
False Northing: 0
Base Projection: Transverse_Mercator
Central_Meridian: -123.0
Central_Parallel: 0.0
Scale_Factor: 0.9996

Input Geographic Transformation:
NAD_1927_To_NAD_1983_NADCON [108001]

Output Geographic Transformation:
none

Output Coordinate System:
Name: GCS_North_American_1983_HARN
POSC: 104269
Unit: Degree
Datum: D_North_American_1983
Prime Meridian: Greenwich

Output directory and/or file name(s):
d:\gis\cgs\monterey\shapes\geo

APPENDIX C Miocene-Pliocene sedimentary rocks

The upper Miocene and Pliocene sedimentary rocks near the project area are indicated on the geologic map on Plate I as Etchegoin Formation (MPe), and unnamed Pliocene continental mudstone (Puc) and sandstone (Pus). These rocks crop out in the hills to the south of the project and along US 101 and have been referred to the Purisima "Group", Purisima Formation, Etchegoin Formation, San Pablo Formation, Pancho Rico Formation, and Santa Margarita Formation. These sedimentary rocks were apparently originally deposited on both sides of the San Andreas Fault, Purisima on the west and Etchegoin on the east, and have since been offset by the right lateral movement along the fault (Perkins, 1987). These sedimentary rocks are lithologically similar and were first mapped and named prior to the acceptance of plate tectonic theory and long distance offset of the San Andreas. The geology of the area is further complicated by the Calaveras, Sargent, and numerous other faults that divide the area in to different structural blocks that have apparently moved in relation to each other (see figures 11 and 12). The following discussion is an attempt to shed some light on the distinction between the Purisima Formation and the Etchegoin Formation.

Allen (1946) included them in his Purisima "Group" in mapping the San Juan Bautista Quadrangle just to the south of the project area, and Taliaferro (1948) mapped them as Purisima Formation. Dibblee (1975) mapped these rocks in the Hollister quadrangle as Etchegoin Formation, and non-marine sedimentary rocks and valley deposits. Dibblee and Brabb (1978) referred some of these rocks to the Etchegoin Formation and most of the rest to unnamed continental mudstones and sandstones. Dibblee and others (1979) included some of these rocks in Santa Clara Formation.

Rogers (1993) mapped these rocks as "Purisima" Formation but suggested they were more similar to Merced Formation than Purisima, noting that the Purisima reference sections are all on the west side of the San Andreas while these rocks are on the east side in a different geologic terrane. Rogers states that rocks east of the San Andreas are probably not Purisima as defined in coastal San Mateo County although they seem to represent the same period of time and are lithologically similar conglomerate, sandstone, and siltstone.

Powell (1998) also includes these rocks in the Purisima Formation, although he notes the problem of different lithology and fossils and the fact that they are east of the San Andreas. Powell and others (2007) prefer using either unnamed Pliocene rocks or Pancho Rico Formation for these rocks. Powell (1998) gives a through discussion of the history of the Purisima Formation literature. The definition of what is Purisima is complicated by the numerous fault bound blocks along the San Andreas Fault system on which the "Purisima" has been deposited.

The Purisima Formation is widely distributed in central California coastal exposures from Point Reyes in Marin County to more extensive exposures in the Santa Cruz Mountains from the coast in San Mateo and Santa Cruz Counties inland to the San Andreas Fault

(Powell and others, 2007). Purisima occurs as scattered outcrops within fault-bounded blocks with significant strike slip displacement. The scattered outcrops grouped as Purisima Formation are all fine- to coarse-grained clastic rocks with dark andesitic fragments and locally abundant silisic tephra and occupy the same stratigraphic position at their various exposures. The type section is at Purisima Creek in San Mateo County, and there is a supplementary reference section in the sea cliff section from Santa Cruz eastward to Rio del Mar, Santa Cruz County. Purisima Formation was named by Haehl and Arnold (1904) for exposures near Purisima Creek. The Formation has been mapped and studied by many geologists and paleontologists since.

The Purisima contains a large mulluscan fauna. There are also pinneped remains from the cliff exposures of Purisima near Point Santa Cruz California, and sirenian ribs and otarioid remains from the basal bed west of Point Santa Cruz. Vertebrate remains have come from the upper part of the Purisima at Santa Cruz as well as extensive collections of fishes and birds from Santa Cruz section. Powell and others (2007) assign a late Miocene and Pliocene age (6.07 Ma to 2.47 ma) to the Purisima. In the Chittenden Pass area, late Miocene to early Pliocene fossil localities of the "Purisima" appear to be east of the San Andreas Fault in strata that were referred to the Etchegoin Formation by Dibblee and Brabb (1978).

Perkins' (1987) studied of the provenance of the Etchegoin Formation based on framework and heavy mineral composition of sandstone in stratigraphic sections. His study covered rocks mapped as Etchegoin Formation in the San Joaquin basin including the west side of the Diablo range (see figure 14). Perkins' correlation of upper Miocene and Pliocene Etchegoin on the east side of the San Andreas with upper Miocene Purisima, San Pablo, and Pancho Rico on the west side of the San Andreas is shown in figure 15. Paleogeographic reconstructions of the late Miocene to Pliocene San Joaquin basin that restore approximately 250 to 160 kilometers of right lateral movement along the San Andreas Fault place the Purisima, San Pablo, and Pancho Rico off the southwestern tip of the Diablo Range during deposition of their sediments on the west side of the San Andreas Fault adjacent to Etchegoin deposition on the east side (figures 16 to 18).

The nomenclature applied to Etchegoin strata is varied due to large compositional variations and the use of Etchegoin as both a lithostratigraphic and chronostratigraphic term (Perkins, 1987). Dibblee's (1973) reference section on Reef Ridge includes strata called Jacalitos by some. The upper part is a bluish-gray sandstone known as the blue sandstone facies. The lower part is lacking the bluish-gray sandstone and is know as the brown sandstone facies.

The Etchegoin is found extensively in the subsurface of the San Joaquin Valley (Perkins, 1987). In the Southwestern part of the valley it is formally sub-divided into two members: the lower is the Tupman Shale Member and the upper is the Carman Sandstone Member. Mega fossils are rare in the Tupman Shale Member, while shallow marine mollusks and foraminifera are common. The Carmon Sandstone Member is fossiliferous.

The Etchegoin is composed of marine and nonmarine sandstone, siltstone, and conglomerate along the flanks of the southern Diablo Range (Perkins, 1987). The thickness of the Etchegoin is variable and is as much as 1600 meters thick. The Etchegoin is dominantly sandstone with interbedded siltstone and less commonly conglomerate. The brown sandstone facies sandstone beds are typically fine- to coarse-grained, moderately yellowish brown, semifriable, and unstratified to thinly bedded. The siltstone is commonly interbedded with sandstone and is sandy or clayey, light olive gray, unstratified to thickly bedded. The brown sandstone facies in San Benito region is similar to the brown sandstone found southward but contains more cross bedding and fossils of marine mollusks are common.

The blue sandstone facies is composed of bluish-gray sandstone beds (Perkins, 1987). The color is dependent on the degree of weathering. Sandstone brownish-gray in color may become bluish-gray on deep excavation below the weathered zone. The blue sandstone facies is very pale blue to light blue sandstone interbedded with brownish-gray sandstone and siltstone similar to brown sandstone facies. The beds are discontinuous and locally bifurcate. Beds with blue color are rarely more than 50% of the facies and are not present in the San Benito region. They are cross-bedded, medium to coarse grained, moderately well sorted, subrounded to rounded, and commonly pebbly. Conglomerate beds are common north of Coalinga. There is a southward decrease in their frequency, and in the Reef Ridge area they are rare. The conglomerate is found as distinct thin beds or as amalgamated beds with intervals that are less than 4 meters thick. They are both framework-supported and matrix-supported.

On the west side of the San Joaquin Valley the Etchegoin is unconformably over the upper Miocene Reef Ridge Shale of the Monterey Formation and is conformably overlain by the Pliocene San Joaquin Formation (Perkins, 1987). On the west flank of the Diablo Range, the stratagraphic succession is not as well defined. In Warthan Canyon the Etchegoin is unconformable on the Cretaceous Panoche Formation.

The unnamed nonmarine strata mapped in the Hollister, Chitenden, and San Benito quadrangles overlies the Etchegoin (Dibblee, 1975; Dibblee and Brabb, 1978). The age of the Etchegoin based fossils places it in the upper Miocene (Perkins, 1987). The presence of plant fragments, paleosols, terrestrial vertebrate fossils in some of the units indicate a nonmarine origin. Etchegoin strata were deposited in a variety of environments including fluvial, lagoonal, beach, nearshore and offshore environments. Strata of fluvial origin are interbedded with marine strata. The Etchegoin represents a transitional environment between marine and nonmarine.

Rogers (1993) mapped the upper Miocene-Pliocene rocks in the Hollister quadrangle as "Purisima" Formation. Rogers recognized that the rocks east of the San Andreas are probably not Purisima as defined in coastal San Mateo County although they seem to represent the same period of time and are lithologically similar conglomerate, sandstone, and siltstone. The Rogers (1993) report is one of the latest, most complete descriptions of the Miocene-Pliocene rocks in the State Route 25 Widening and Route Adoption Hollister to Gilroy project area and is used in this report.

APPENDIX D Maps and Illustrations

Figure 1. State Route 25 Widening and Route Adoption Hollister to Gilroy Project Vicinity Map
Figure 2. State Route 25 Widening and Route Adoption Hollister to Gilroy Project Location and Alternatives Map
Figure 3. State Route 25 Widening and Route Adoption Hollister to Gilroy Route Adoption Alternatives 1 and 2.
Figure 4. State Route 25 Widening and Route Adoption Hollister to Gilroy Alternative 1 (east area).
Figure 5. State Route 25 Widening and Route Adoption Hollister to Gilroy Alternative 2 (east area).
Figure 6. State Route 25 Widening and Route Adoption Hollister to Gilroy Construction Alternative A.
Figure 7. State Route 25 Widening and Route Adoption Hollister to Gilroy Construction Alternative B.
Figure 8. Topographic Map, scale 1:250,000
Figure 9. Topographic Map, scale 1:100,000
Figure 10. Map of study area.
Figure 11. Physiographic/tectonic map.
Figure 12. Map of study area showing major structural blocks.
Figure 13. Geologic Time Scale
Figure 14. Map of central California showing the original extent of Etchegoin deposition.
Figure 15. Stratigraphic correlations of upper Miocene and Pliocene rocks.
Figure 16. Paleogeographic reconstruction of central California at about 11 Ma.
Figure 17. Paleogeographic reconstruction of central California at about 8 Ma.
Figure 18. Paleogeographic reconstruction of central California at about 6 Ma.

Plate Ia. Geologic Map of State Route 25 Widening and Route Adoption Hollister to Gilroy Project, US 101 Interchange Area
Plate Ib. Geologic Map of State Route 25 Widening and Route Adoption Hollister to Gilroy Project, West Route Adoption Area
Plate Ic. Geologic Map of State Route 25 Widening and Route Adoption Hollister to Gilroy Project, Middle Area
Plate Id. Geologic Map of State Route 25 Widening and Route Adoption Hollister to Gilroy Project, Route 156 to Hollister Area

Figure 1. State Route 25 Widening and Route Adoption Hollister to Gilroy Project Vicinity Map

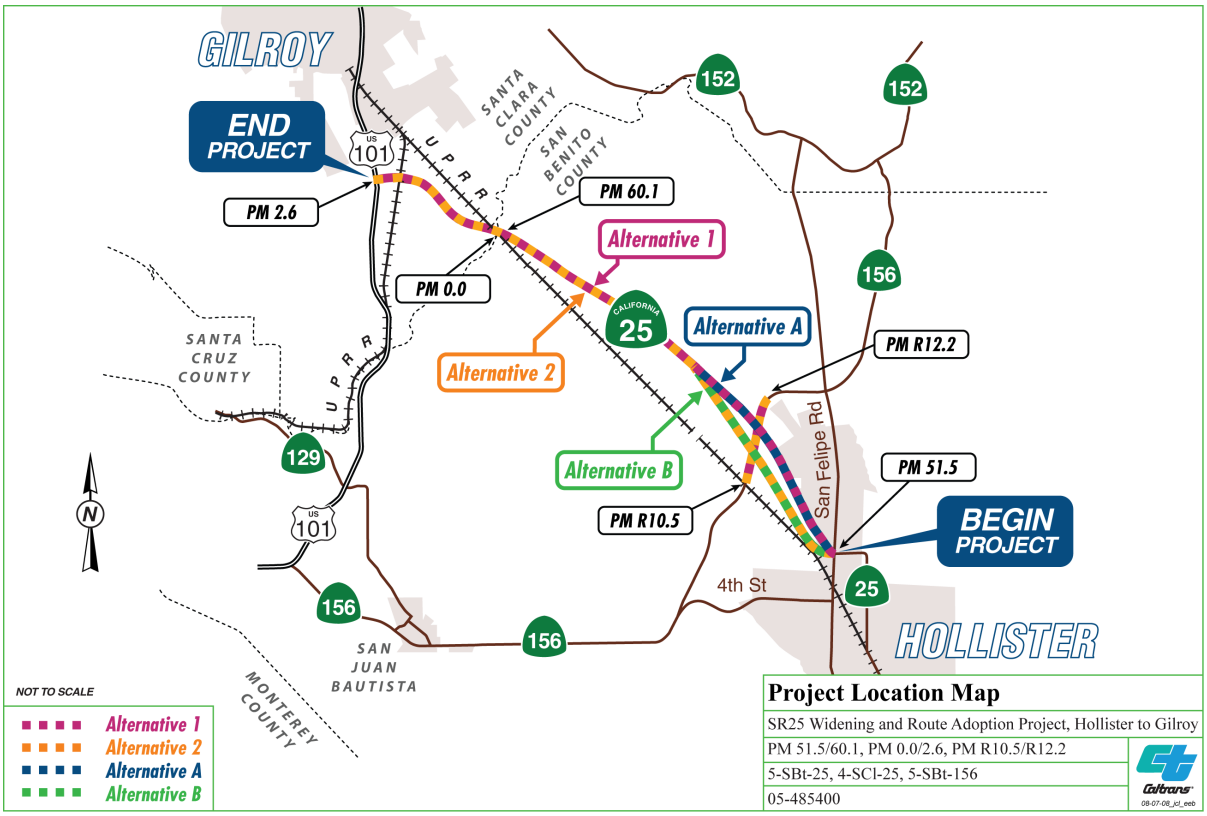


Figure 2. State Route 25 Widening and Route Adoption Hollister to Gilroy Project Location and Alternatives Map

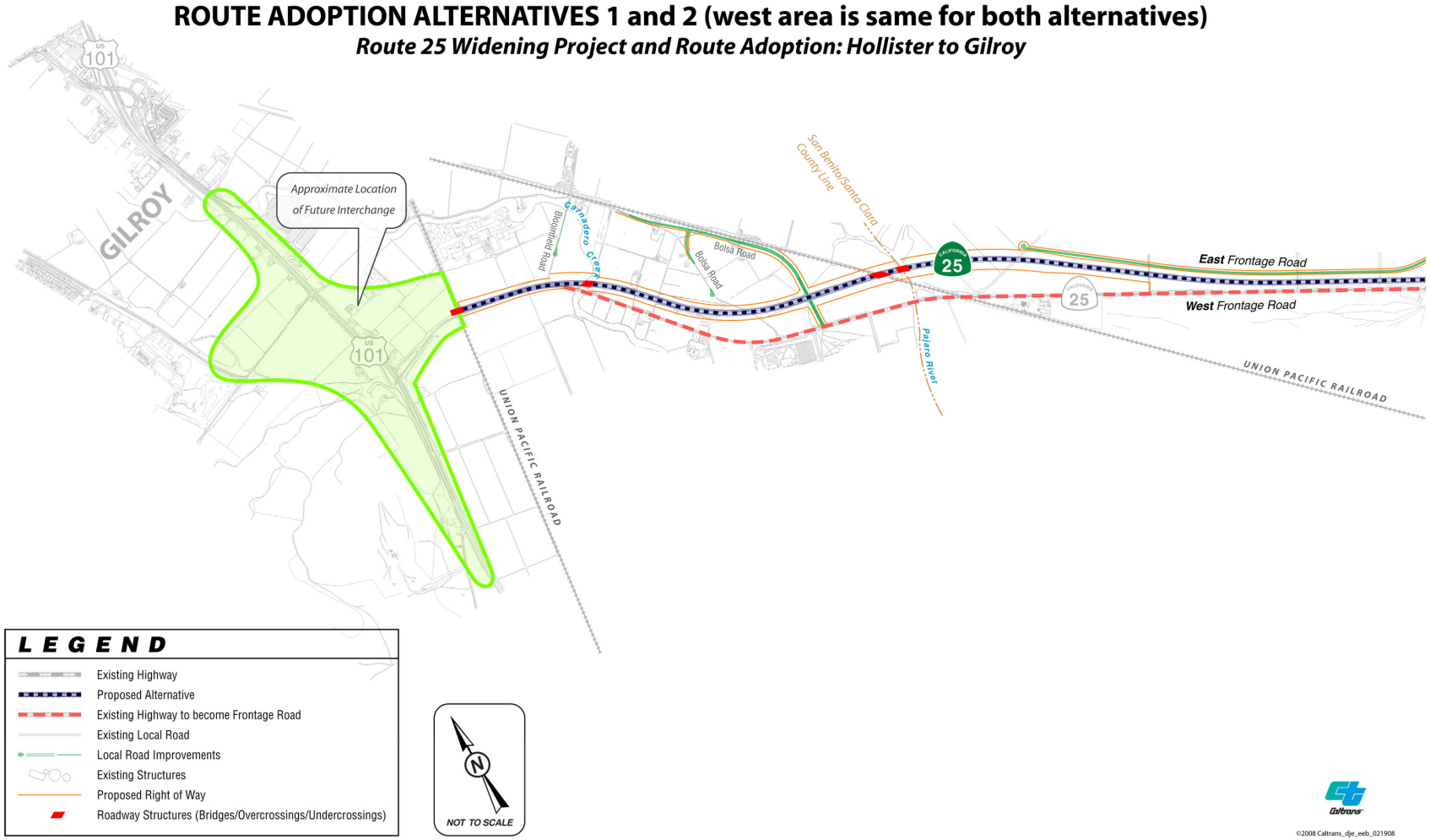


Figure 3. State Route 25 Widening and Route Adoption Hollister to Gilroy Route Adoption Alternatives 1 and 2.

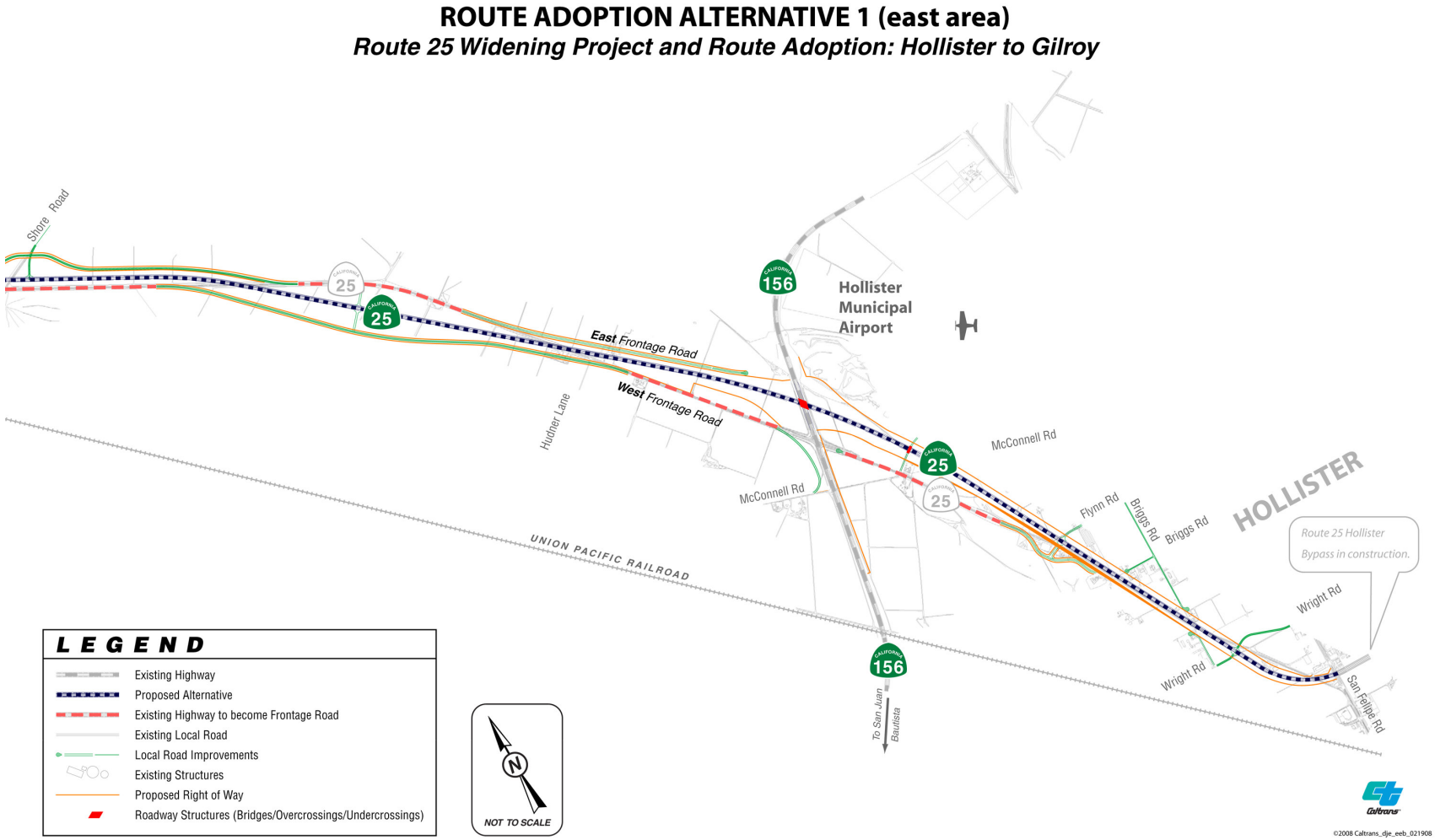


Figure 4. State Route 25 Widening and Route Adoption Hollister to Gilroy Alternative 1 (east area).

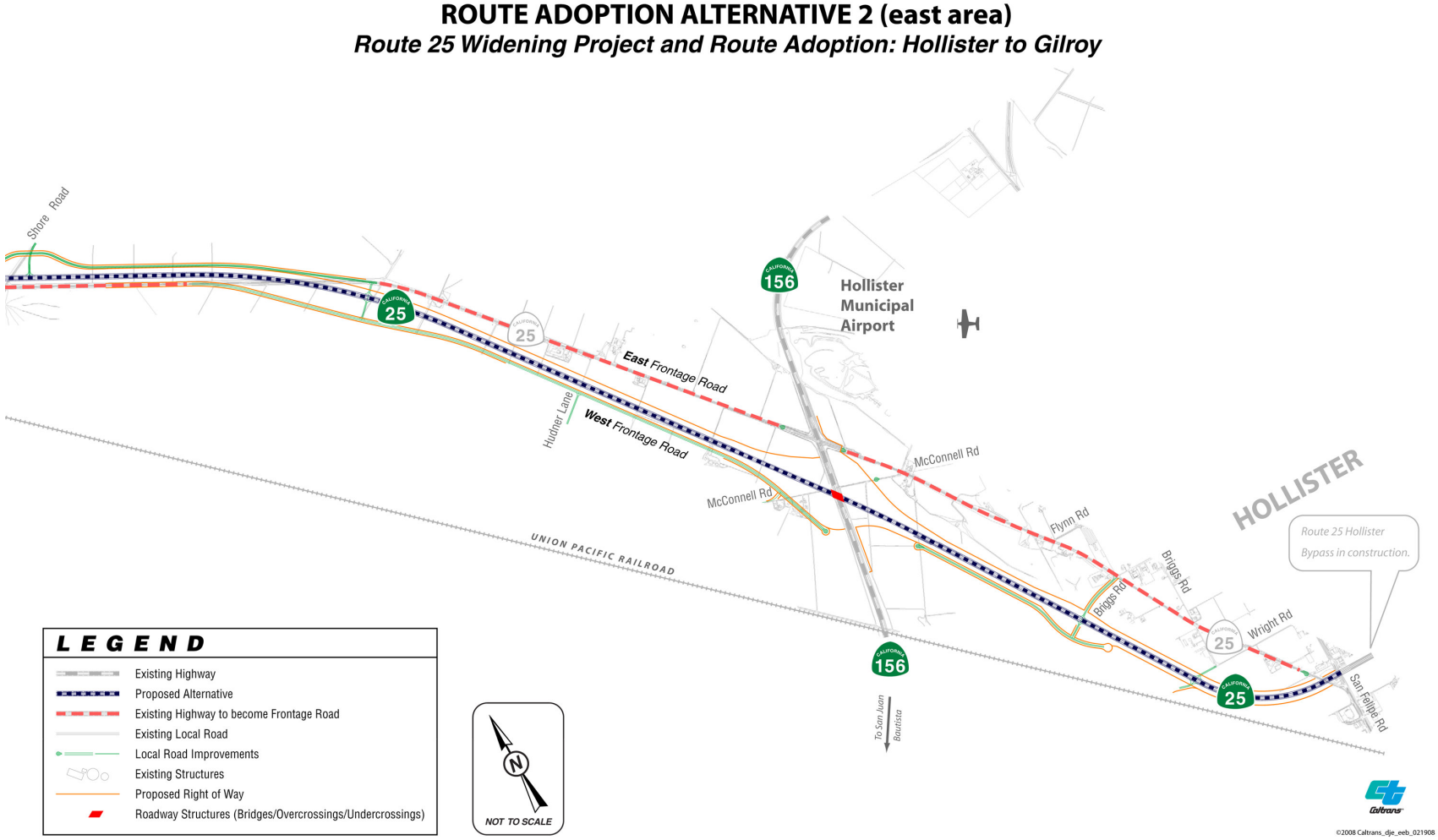


Figure 5. State Route 25 Widening and Route Adoption Hollister to Gilroy Alternative 2 (east area).

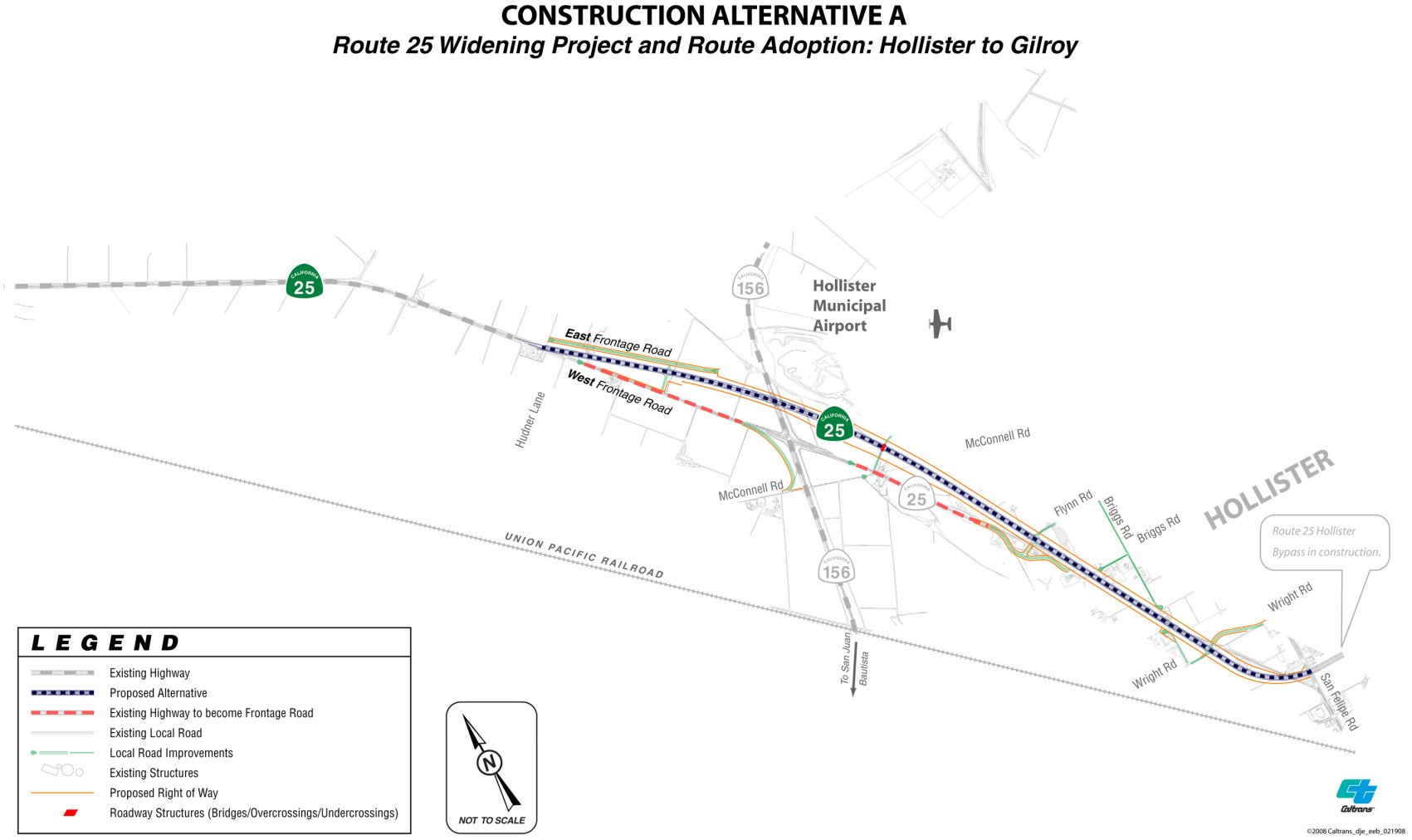


Figure 6. State Route 25 Widening and Route Adoption Hollister to Gilroy Construction Alternative A.

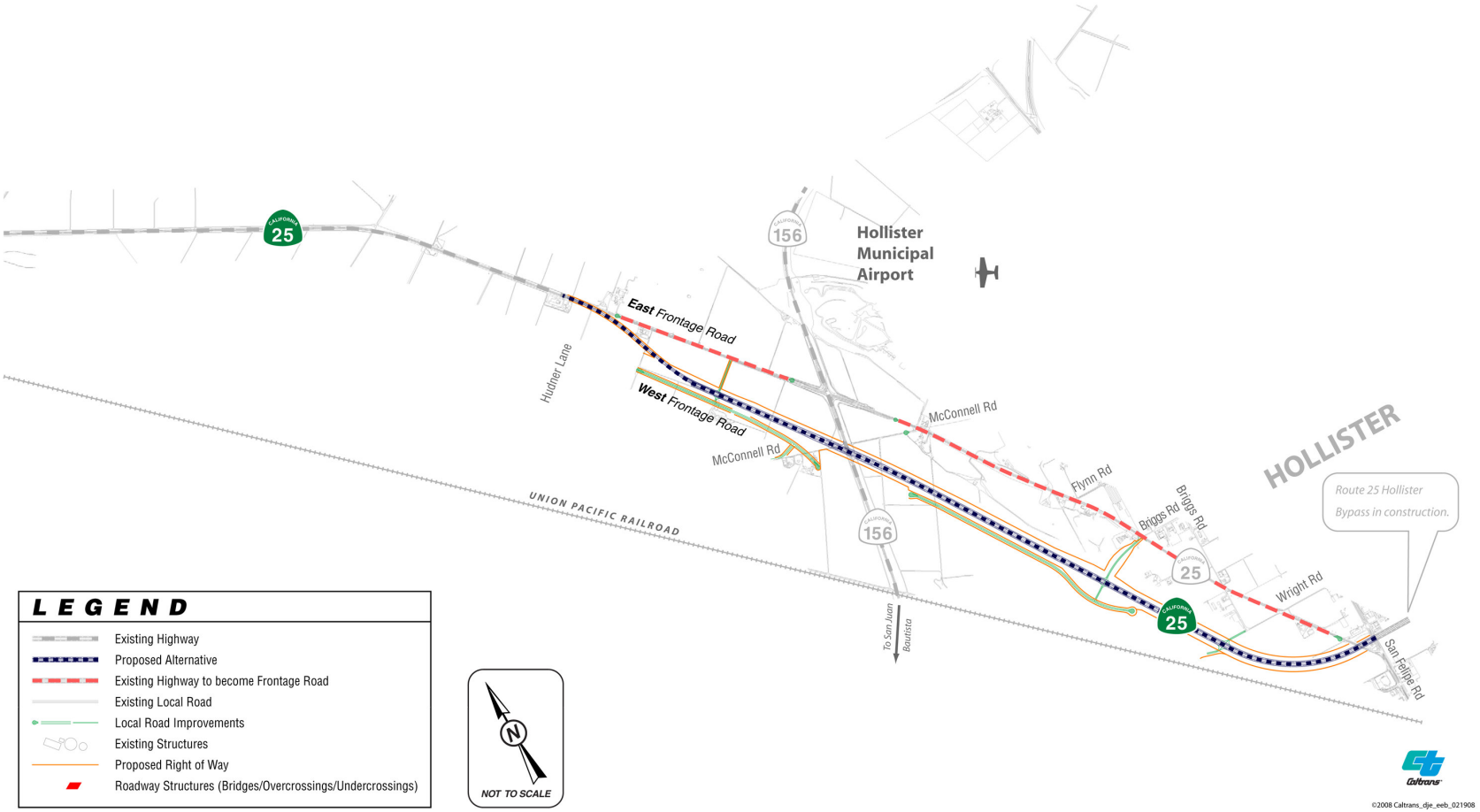


Figure 7. State Route 25 Widening and Route Adoption Hollister to Gilroy Construction Alternative B.

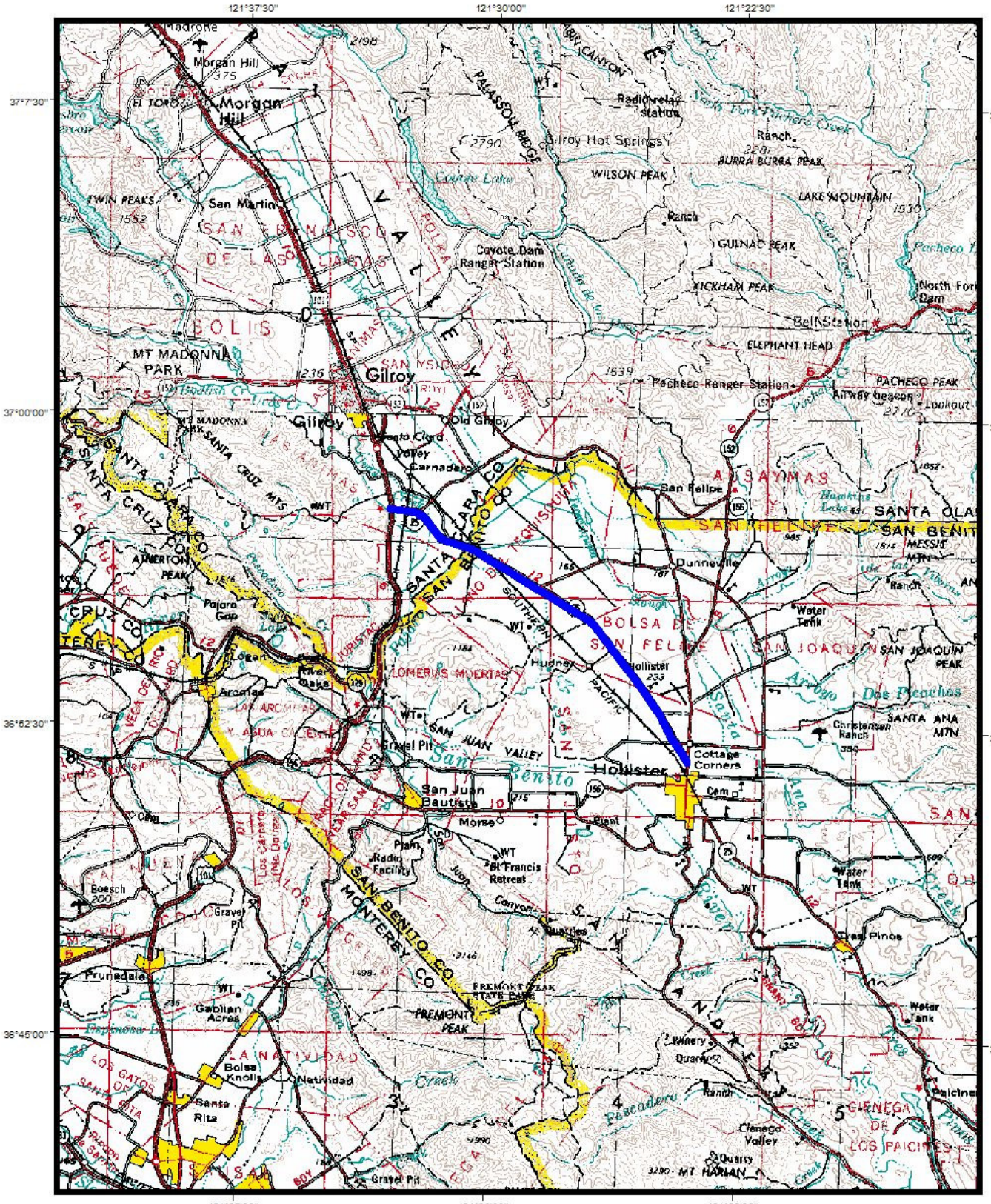


FIGURE 8 TOPOGRAPHIC MAP
STATE ROUTE 25 WIDENING and ROUTE ADOPTION HOLLISTER TO GILROY PROJECT
SAN BENITO AND SANTA CLARA COUNTIES, CALIFORNIA

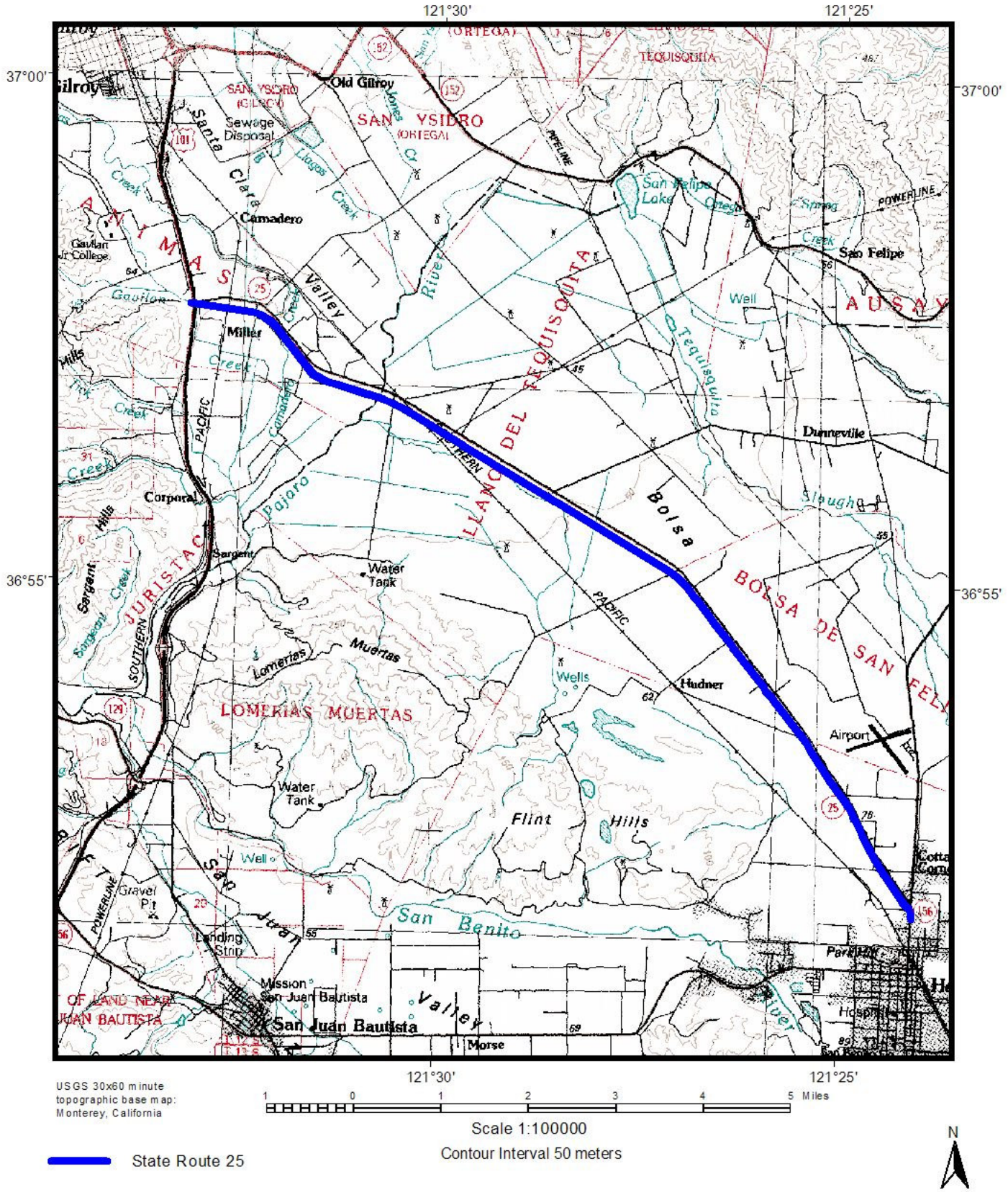


FIGURE 9 TOPOGRAPHIC MAP
STATE ROUTE 25 WIDENING and ROUTE ADOPTION HOLLISTER TO GILROY PROJECT
SAN BENITO AND SANTA CLARA COUNTIES, CALIFORNIA

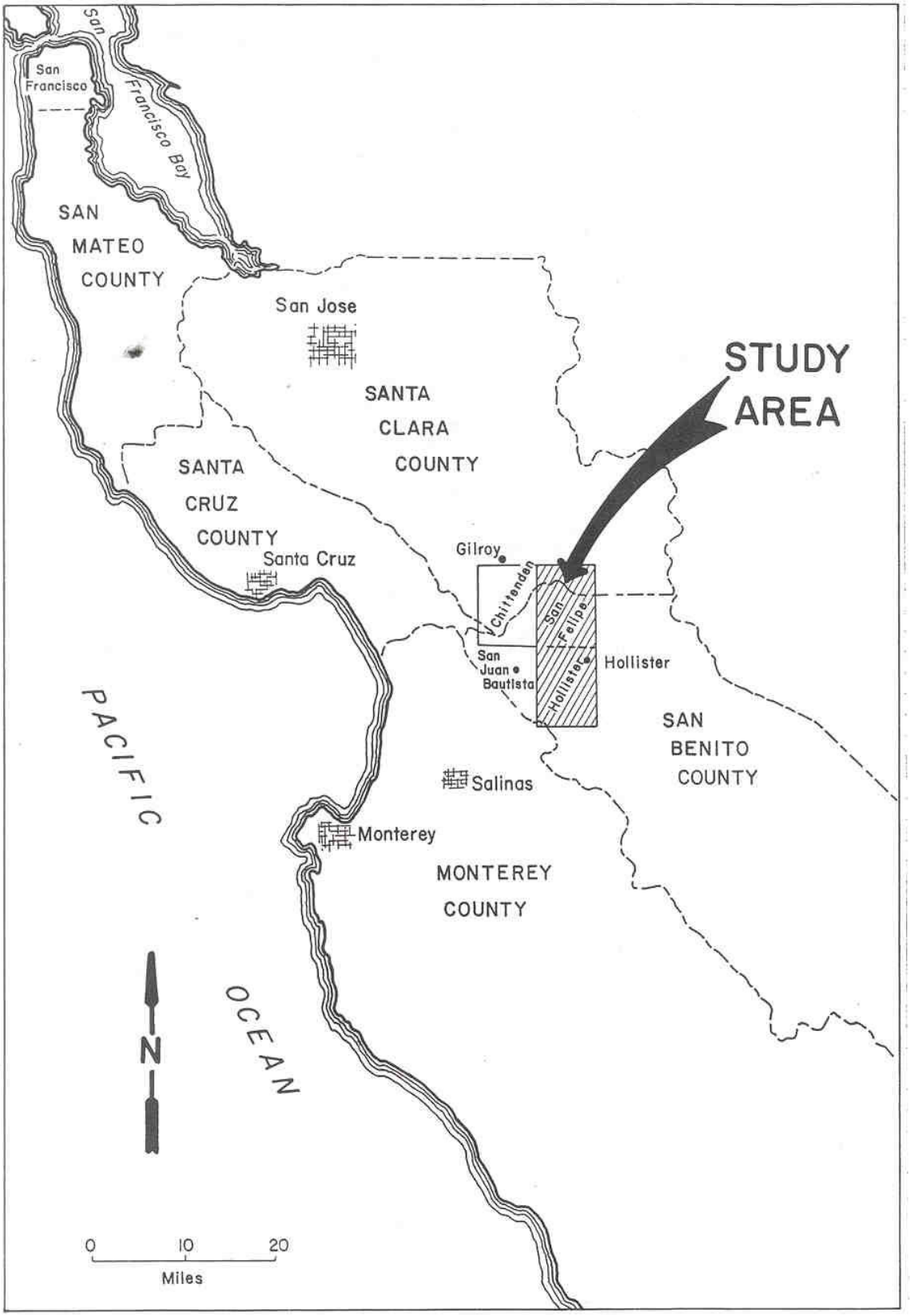


Figure 10. Map of study area (from Rogers, 1993).

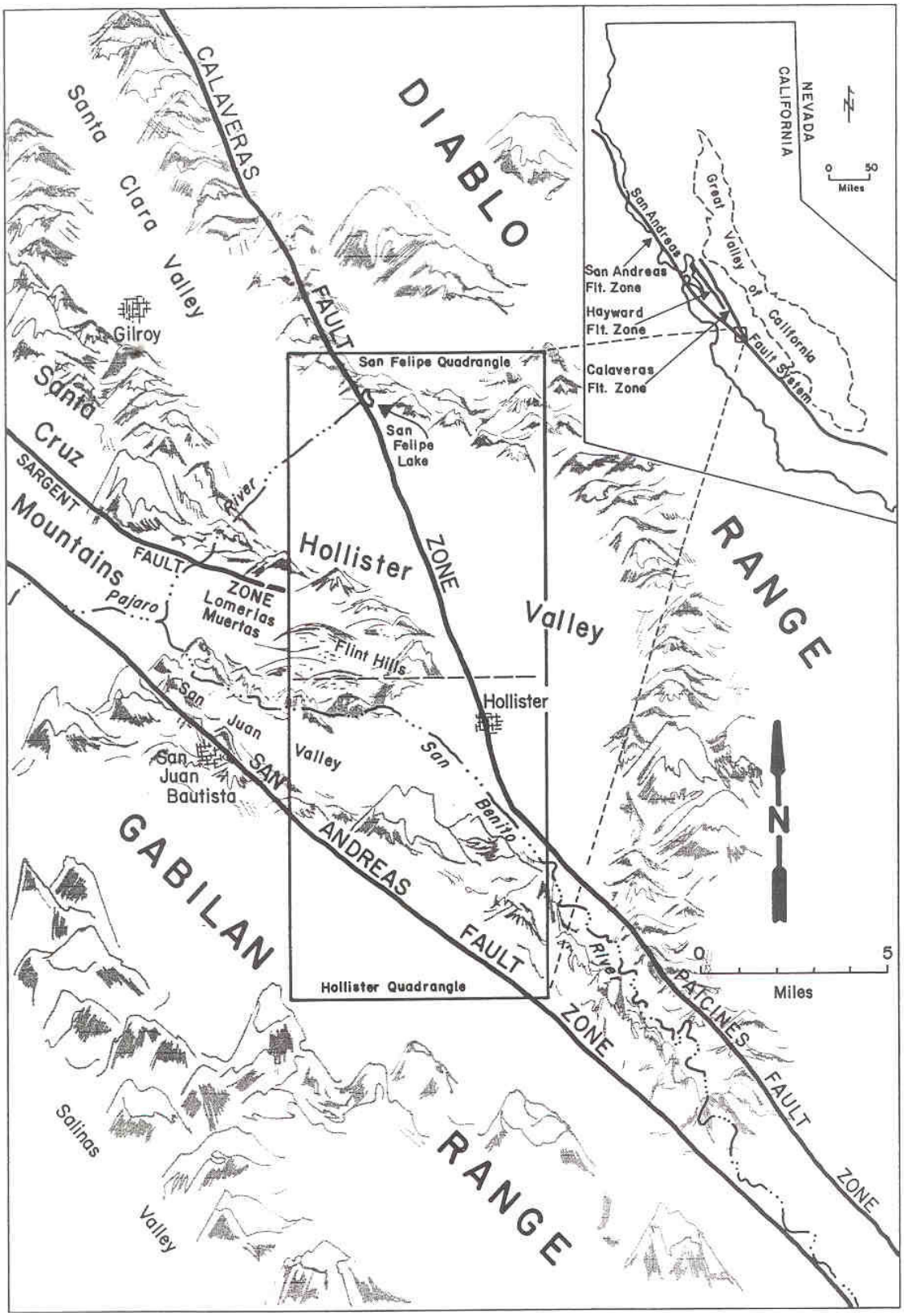


Figure 11. Physiographic/tectonic map (Rogers, 1993).

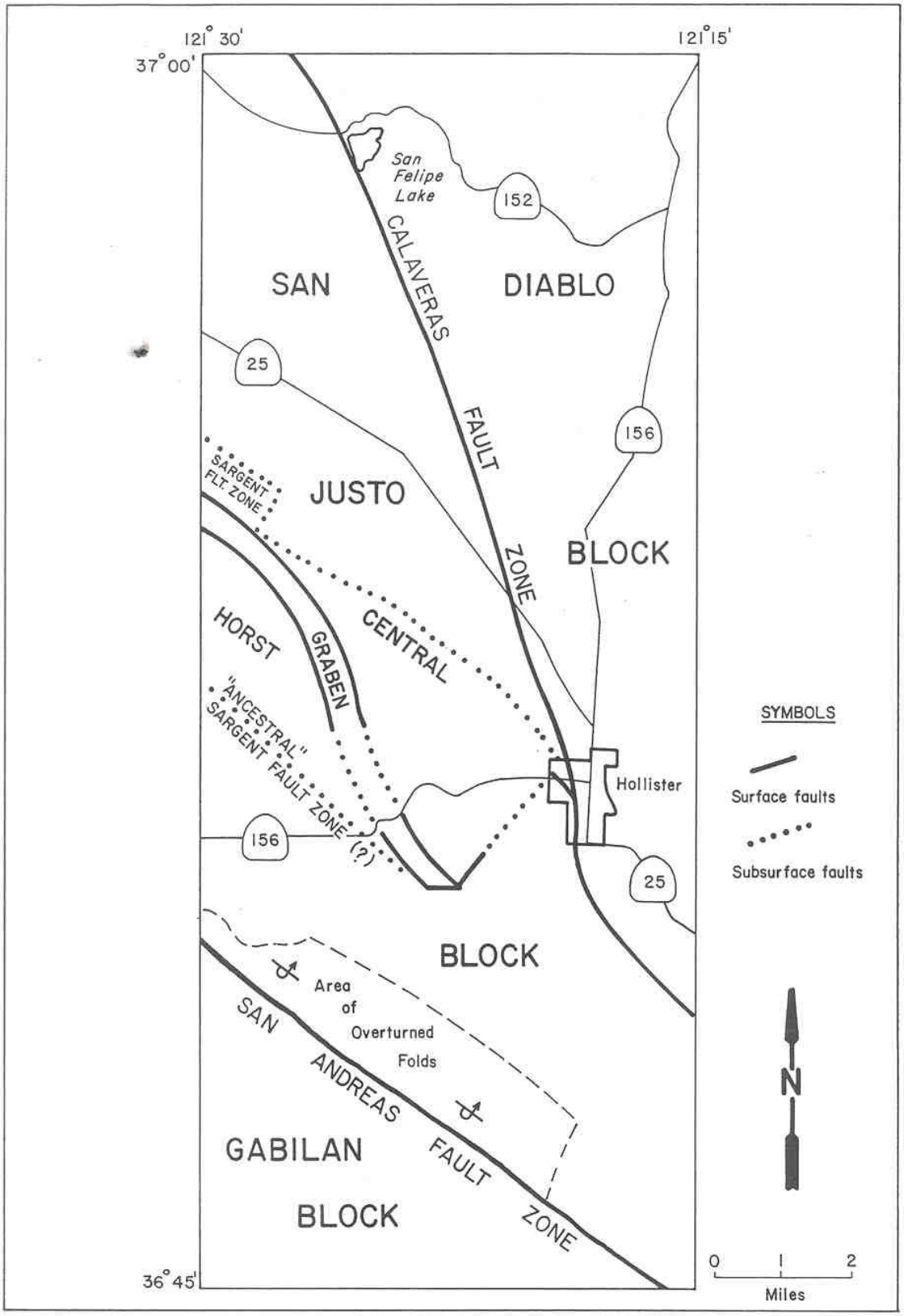


Figure 12. Map of study area showing major structural blocks (Rogers, 1993).

GEOLOGIC TIME SCALE

RELATIVE GEOLOGIC TIME			TIME In Millions of Years Before Present
Era	**Period**	**Epoc**	
CENOZOIC	Quaternary	Holocene	0.011
		Pleistocene	1.6
	Tertiary	Pliocene	5.3
		Miocene	24
		Oligocene	37
		Eocene	58
		Paleocene	65
MESOZOIC	Cretaceous		144
	Jurassic		208
	Triassic		245
PALEOZOIC	Permian		286
	Carboniferous: Pennsylvanian		320
	Carboniferous: Mississippian		360
	Devonian		408
	Silurian		438
	Ordovician		505
	Cambrian		570
PRECAMBRIAN			

Modified from California Geological Survey Note 17

Figure 13.

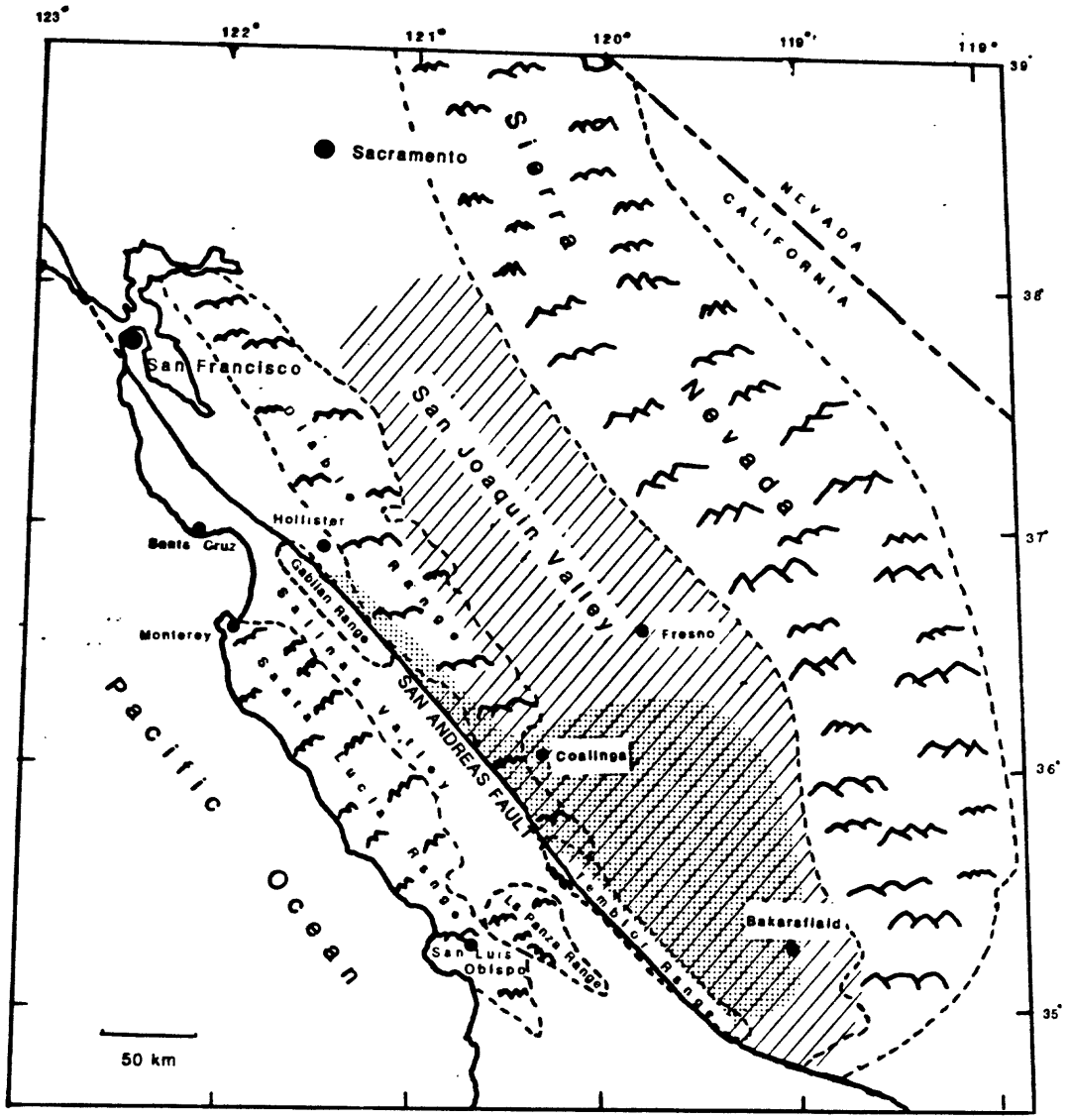


Figure 14. Map of central California showing the locations of the San Joaquin Valley (hachured area) and the original extent of Etchegoin deposition (stippled area)(Perkins, 1987, figure 1).

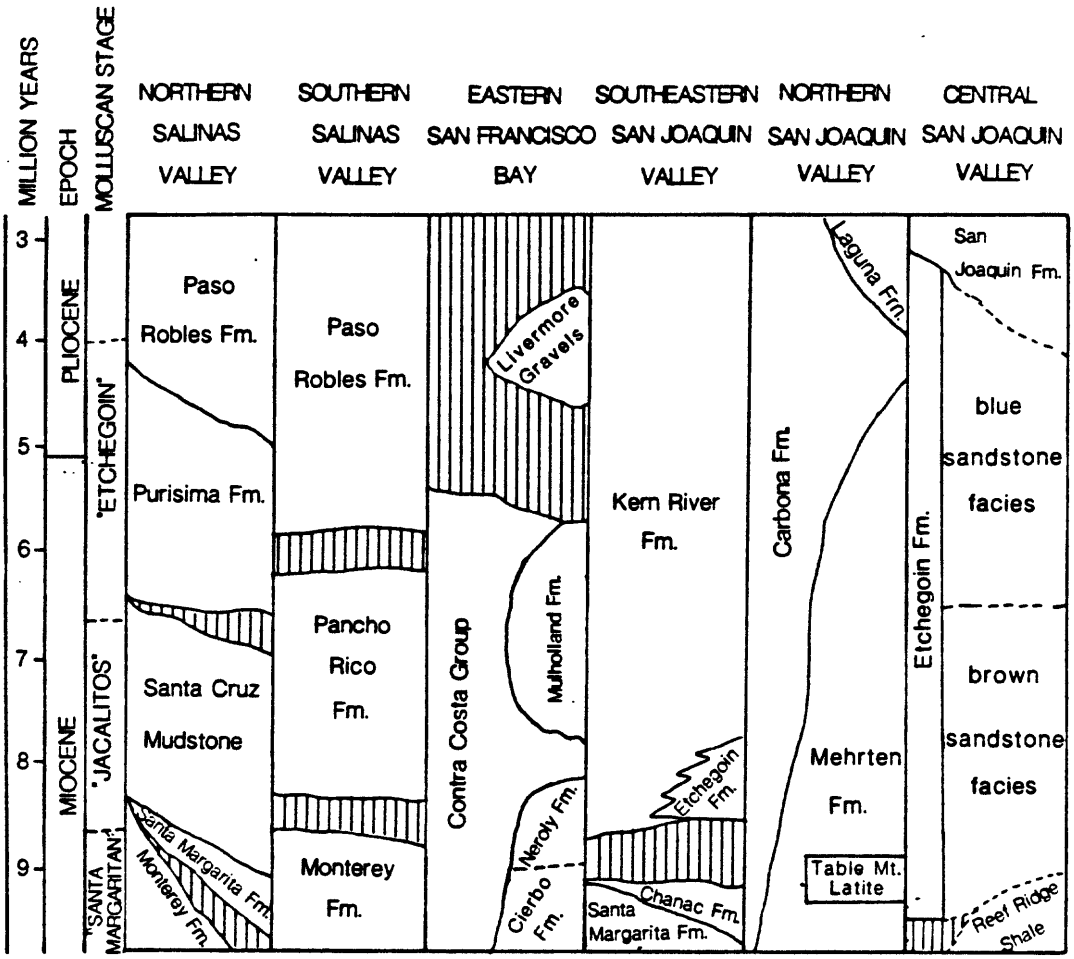


Figure 15. Stratigraphic correlations of upper Miocene and Pliocene rocks in central California (from Perkins, 1987, figure 6). Correlations are based in part upon data reported by Addicott and Galehouse (1973), Bartow (1987), Bartow and Pittman (1984), Creely and others (1982), Durham and Addicott (1965), Greene and Clark (1979), Raymond (1969), and Wagner (1981).

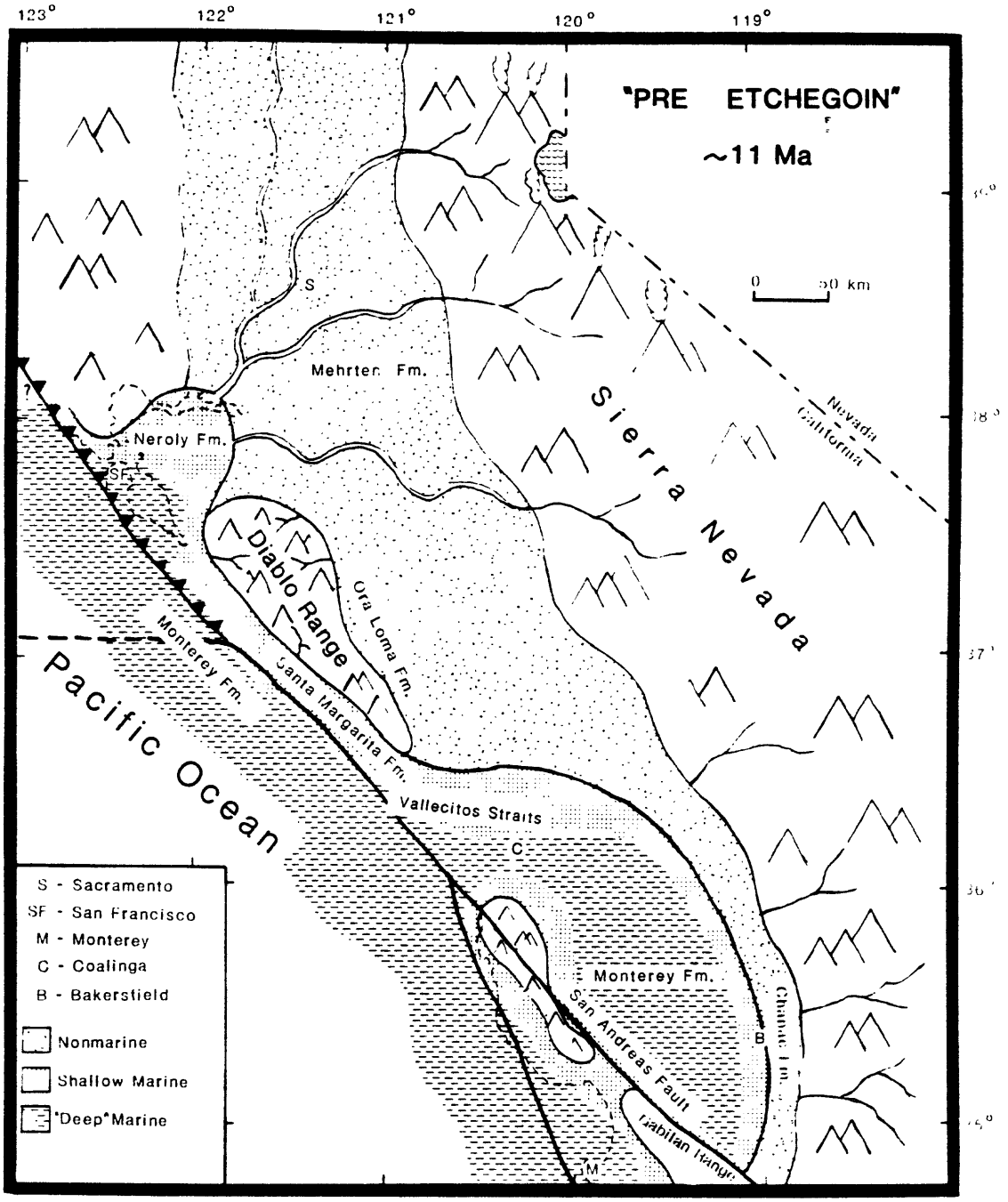


Figure 16. Paleogeographic reconstruction of central California at about 11 Ma (Perkins, 1987, figure 23). The "pre-Etchegoin" paleogeography is modified from Bartow (1987), Green and Clark (1979), and Graham and others (1984). Approximately 250 km of right-lateral movement has been restored along the San Andreas fault.

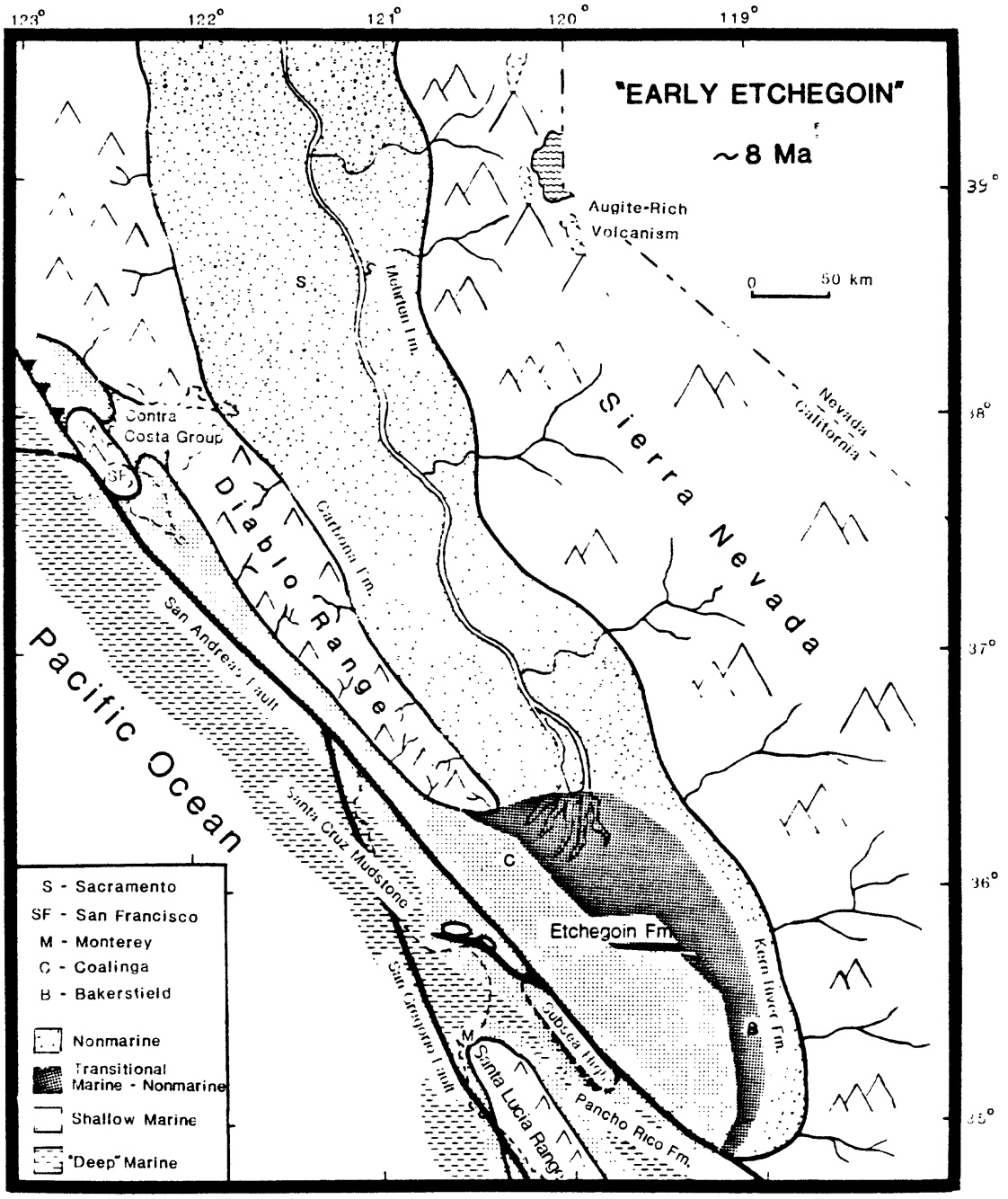


Figure 17. Paleogeographic reconstruction for central California at about 8 Ma (Perkins, 1987, figure 24). The "early Etchegoin" paleogeography is detailed by provenance of the Etchegoin Formation, depositional environments of lower Etchegoin strata, and stratigraphic correlations with coeval strata. Approximately 210 km of right-lateral movement has been restored along the San Andreas fault.

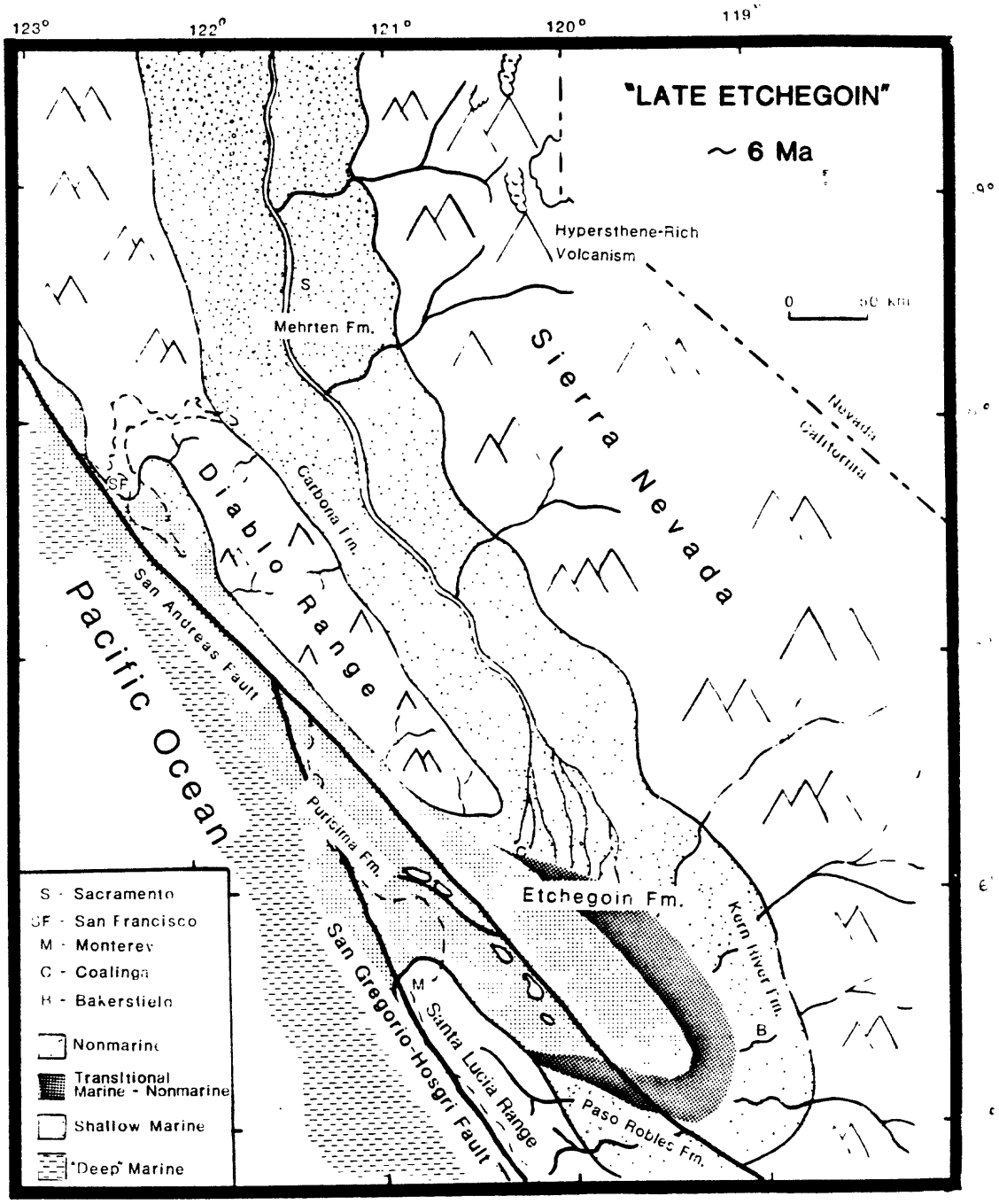
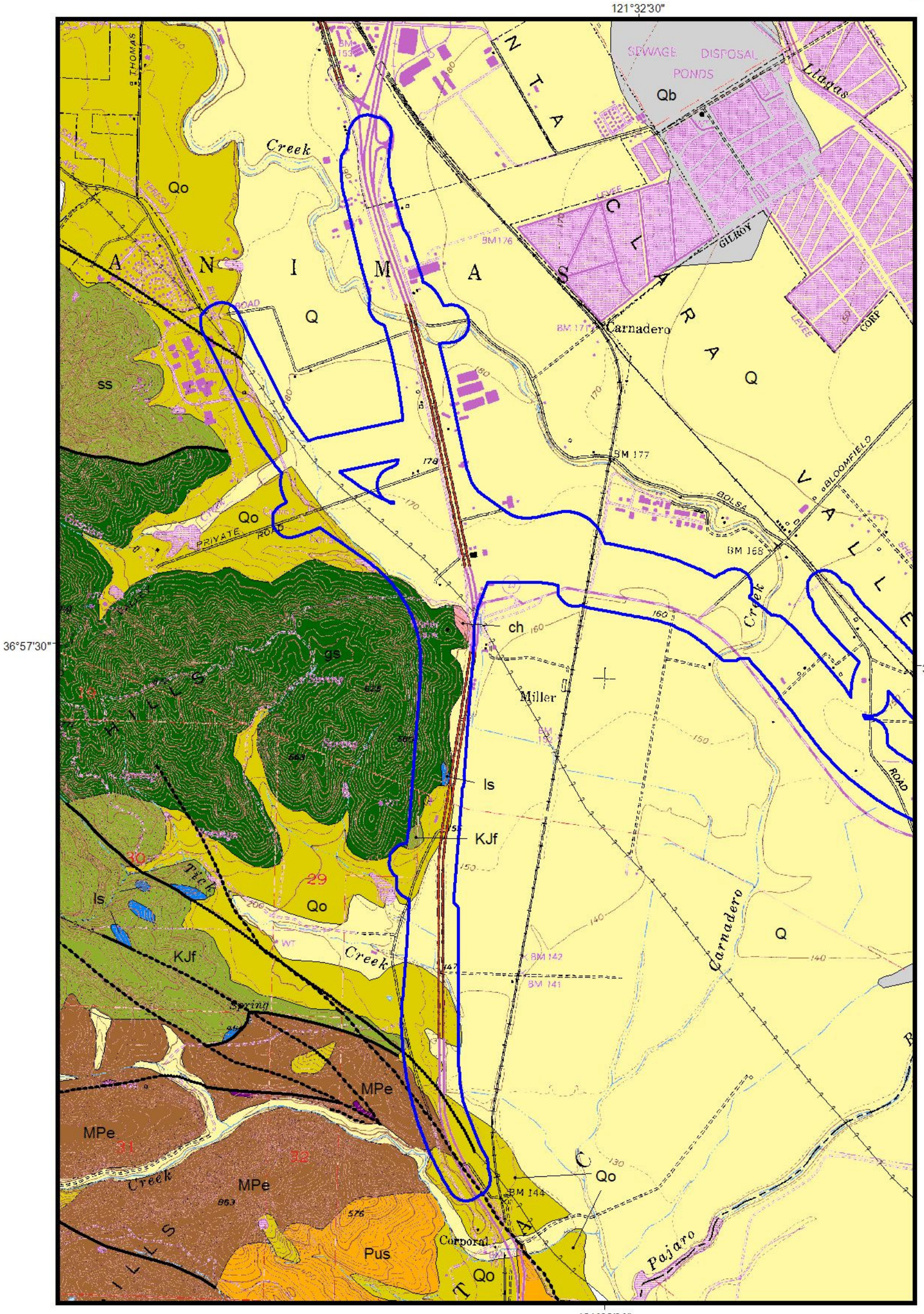


Figure 18. Paleogeographic reconstruction for central California at about 6 Ma (Perkins, 1987, figure 25). The "late Etchegoin" paleogeography is detailed by provenance of the Etchegoin Formation, depositional environments of upper Etchegoin strata, and stratigraphic correlations to coeval strata. Approximately 160 km of right-lateral movement has been restored along the San Andreas fault.



Topografic base from USGS Chittenden 7.5' quadrangle
Geology from California Geological Survey,
CGS CD 2002-4 (Wagner and others, 2002)

Scale: 1:24000

GEOLOGIC MAP
STATE ROUTE 25 WIDENING AND ROUTE ADOPTION HOLISTER TO GILROY
US 101 INTERCHANGE AREA

N

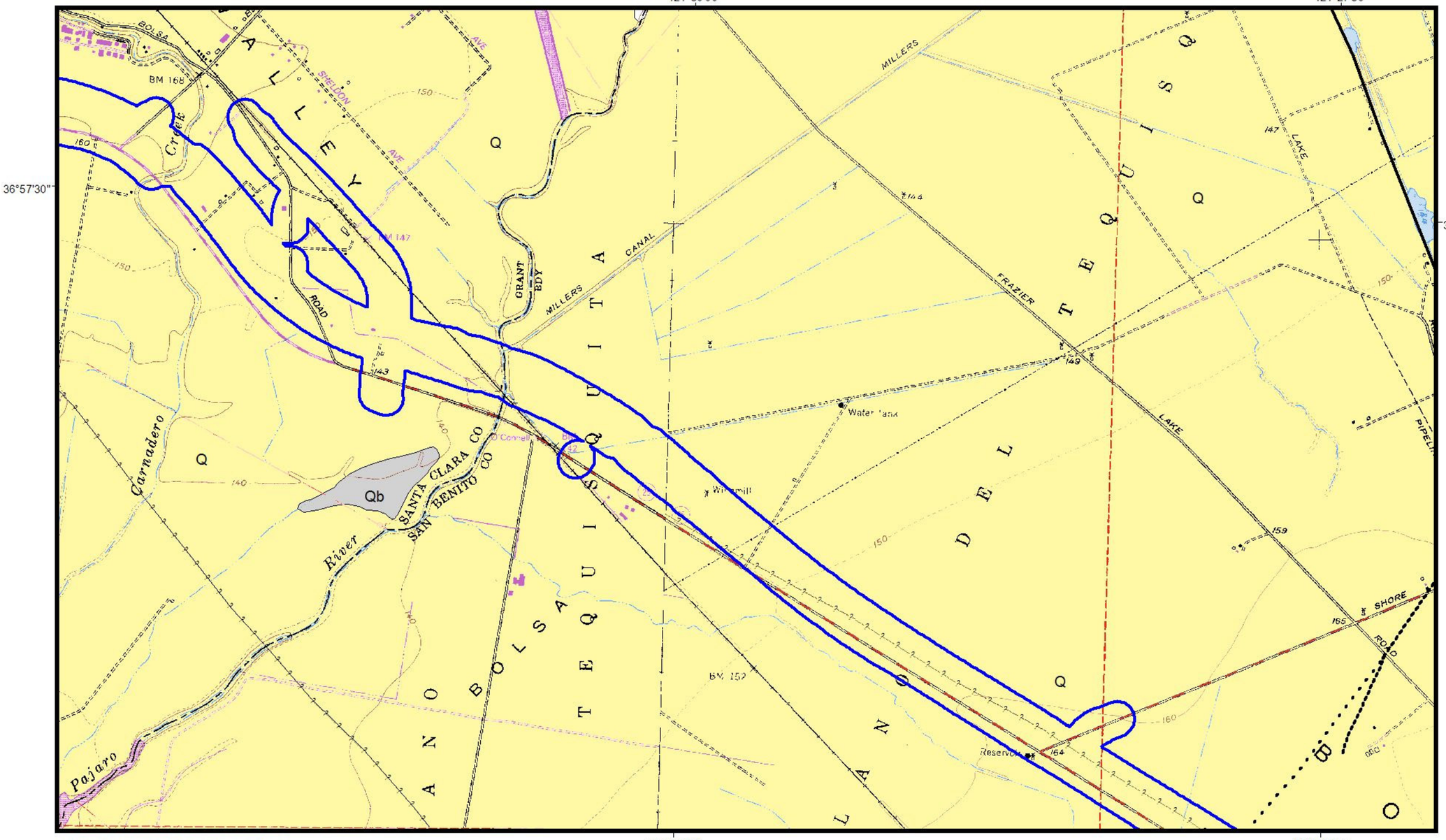
Area of possible route adoption construction based on proposed designs for interchange construction.

EXPLANATION

- Q Alluvium
- Qb Basin deposits
- Qo Older alluvium
- Pus Unnamed Pliocene continental sandstone
- MPe Etchegoin Formation
- KJf Franciscan Complex
- ch Chert
- gs Greenstone
- ls Limestone
- ss Sandstone

- fault, certain
- fault, approx. located
- fault, concealed
- fault, concealed, queried

Plate Ib



Topografic base from USGS Chittenden and San Felipe 7.5' quadrangles
Geology from California Geological Survey, CGS CD 2002-4 (Wagner and others, 2002)

121°30'00" 0 0.2 0.4 0.6 0.8 1 Miles 121°27'30"

Scale 1:24000

N

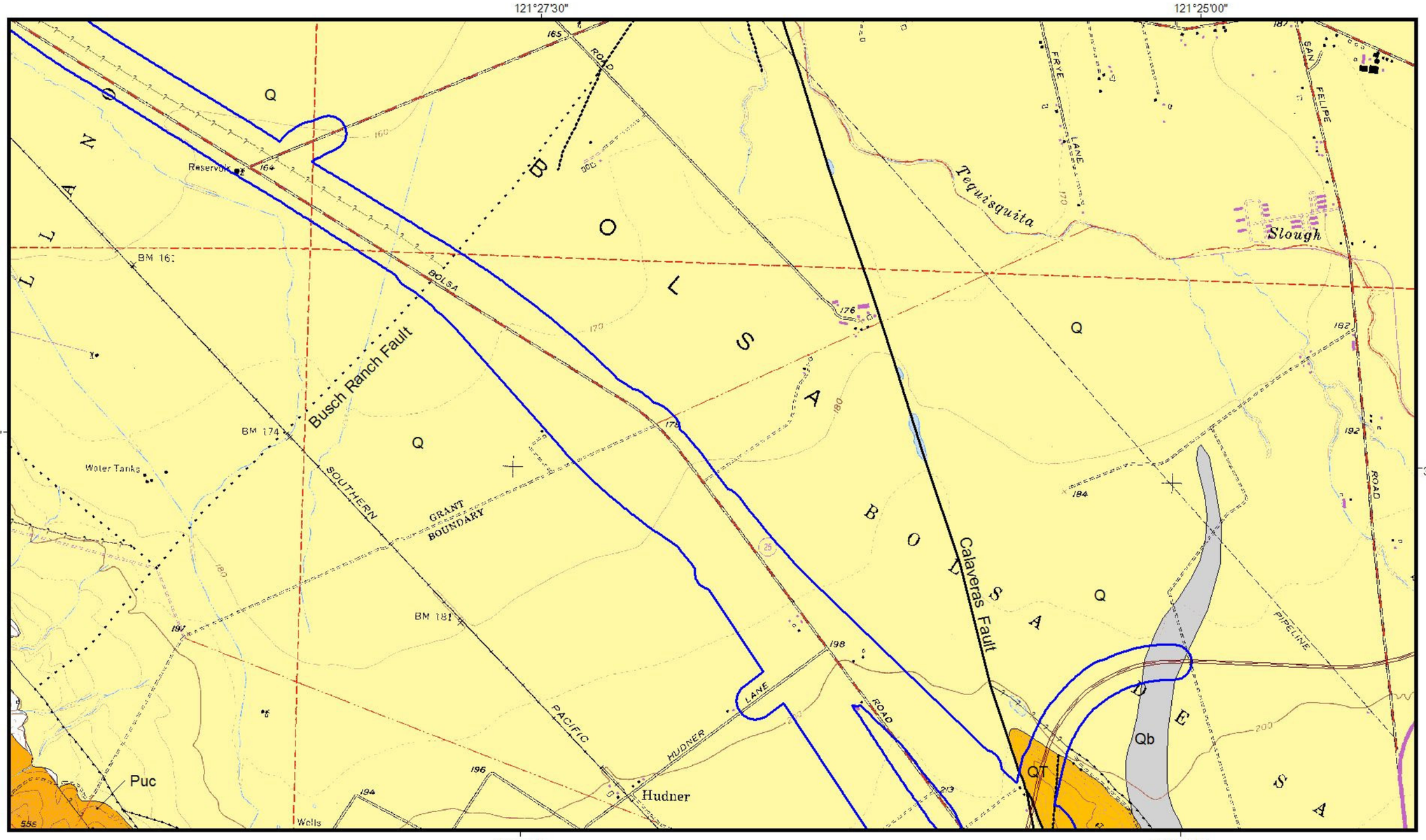
GEOLOGIC MAP
STATE ROUTE 25 WIDENING AND ROUTE ADOPTION HOLLISTER TO GILROY
WEST ROUTE ADOPTION AREA

Area of possible route adoption construction

EXPLANATION

- Q Alluvium
- Qb Basin deposits
- fault, certain
- fault, approx. located
- fault, concealed
- fault, concealed, queried

Plate Ic



Topografic base from USGS San Felipe 7.5' quadrangle
Geology from California Geological Survey,
CGS CD 2002-4 (Wagner and others, 2002)

0 0.2 0.4 0.6 0.8 1 Miles

Scale 1:24000

N

GEOLOGIC MAP
STATE ROUTE 25 WIDENING AND ROUTE ADOPTION HOLLISTER TO GILROY
MIDDLE AREA

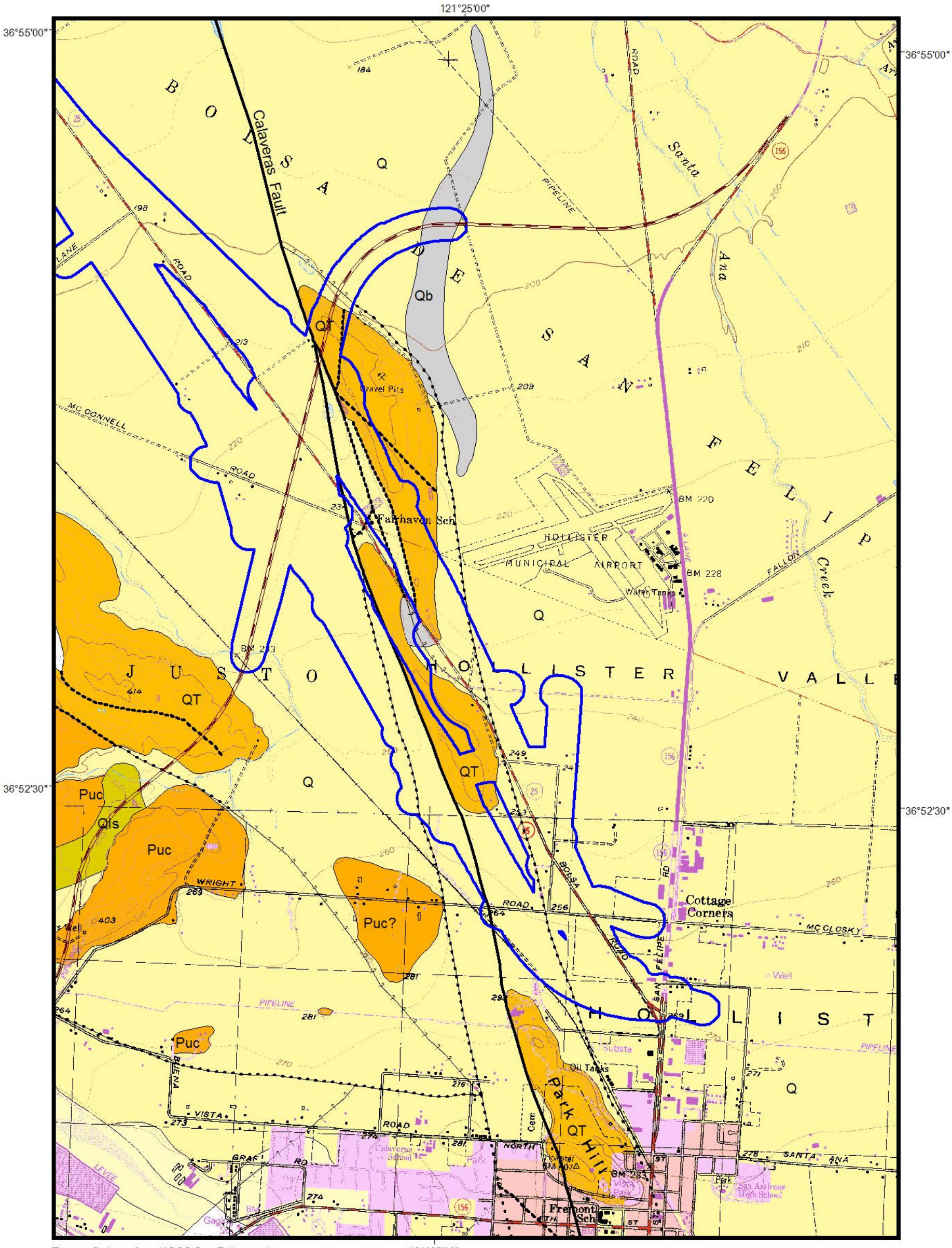
Area of proposed route adoption and construction alternatives

Route 156 in its present location.

EXPLANATION

- Q Alluvium
- Qb Basin deposits
- QT Plio-Pleistocene continental deposits
- Puc Unnamed Pliocene continental mudstone
- fault, certain
- fault, approx. located
- fault, concealed
- fault, concealed, queried

Plate Id



Topografic base from USGS San Felipe and Hollister 7.5' quadrangles
Geology from California Geological Survey, CGS CD 2002-4 (Wagner and others, 2002)

121°25'00"

0 0.2 0.4 0.6 0.8 1 Miles

Scale 1:24000

EXPLANATION

- Q Alluvium
- Qb Basin deposits
- Qls Landslide deposits
- QT Plio-Pleistocene continental deposits
- Puc Unnamed Pliocene continental mudstone
- fault, certain
- fault, approx. located
- fault, concealed
- fault, concealed, queried

GEOLOGIC MAP
STATE ROUTE 25 WIDENING AND ROUTE ADOPTION HOLLISTER TO GILROY
ROUTE 156 TO HOLLISTER AREA

N

Area of proposed route adoption and construction alternatives

Route 156 in its present location.

Preliminary Geotechnical Report

M e m o r a n d u m

Flex your power!
Be energy efficient!

To: JACK R. WALKER
Senior Design Engineer
Office of Design II, Branch A
Central Region – District 6

Date: August 25, 2008

File: 5-SBt-25-PM 51.5/60.1,
4-SCl-25-PM 0.0/2.6
SBt-156-PM R10.5/R12.2
Route 25 Widening and Route
Adoption Hollister to Gilroy
05-485400

From: **DEPARTMENT OF TRANSPORTATION**
DIVISION OF ENGINEERING SERVICES
GEOTECHNICAL SERVICES

Subject: Preliminary Geotechnical Report Confirmation

The Preliminary Geotechnical Report (PGR) dated January 31, 2003 for the above referenced project was reviewed per your request dated August 15, 2008. The review was requested to confirm that the PGR is applicable to the recently developed project description, purpose, and need.

The review confirms that the 2003 report addresses the alternatives as presented and does not conflict with the recently developed project description, purpose, and need. A revised Preliminary Geotechnical Report is not necessary.

If you have any questions or comments, please contact me at (805) 549-3194.

MICHAEL S. FINEGAN, PE, CHIEF
Geotechnical Design – North
Branch D

Memorandum

Flex your power!

Be energy efficient!

To: FOAD AL-HAMDANI
Senior Design Engineer
Central Region Project Development
Office of Design II, Branch Y

Attn: Jasvir Singh, Project Engineer

Date: January 31, 2003

File: 05-485400
05-SBT-25-82.9/96.7
(PM 51.5/60.1)

From: **DEPARTMENT OF TRANSPORTATION**
DIVISION OF ENGINEERING SERVICES
GEOTECHNICAL SERVICES – MS 5

Subject: Preliminary Geotechnical Report

Introduction

The purpose of this report is to provide preliminary geotechnical recommendations for the widening of Route 25 between Hollister, California and Route 101 in Santa Clara County, and to describe the presence of any geotechnical conditions that may influence the design of the project.

Existing Facilities and Proposed Improvements

Route 25 in the project area is a two-lane conventional highway with 3.6-meter travel lanes and 0.6-meter to 2.4-meter paved shoulders. This segment of Route 25 primarily traverses agricultural land and accommodates many driveways and pullout areas used by agricultural vehicles and farm workers' vehicles.

Route 25 crosses Route 156 near Hollister with a signalized intersection. At the northern limit of the project in Santa Clara County, Route 25 meets Route 101 in a grade-separated interchange.

Route 25 is the primary route between an increasing job market in the Silicon Valley and more affordable and available residential housing in San Benito County. Traffic volumes on Route 25 have increased dramatically in response to the booming job market in Santa

Clara County and the supply of new housing in San Benito County. Increasing traffic, lack of alternative routes, and conflicts between commuter traffic and slower moving agricultural traffic combine to cause escalating traffic congestion and safety concerns within the project limits.

This project proposes to widen Route 25 to a four-lane divided highway between San Felipe Road (Kilometer Post 82.9) near the city of Hollister in San Benito County and the Route 25/101 Separation (Kilometer Post 4.1) in Santa Clara County. The project also proposes to construct a Separation at the junction of Routes 25 and 156, construct grade separations at the existing railroad crossings within the project limits, and modify/upgrade the existing Route 25/101 Separation.

There are basically two "build" alternatives under consideration. One would upgrade the existing two-lane facility to a standard four-lane expressway with an 18.6-m wide median and a frontage road system on both sides of the highway. The second alternative would widen the existing roadway to a four-lane conventional, divided highway. Since the existing highway primarily traverses agricultural land, widening is feasible on either side of the existing alignment.

References

The following publications and references were used to assist in the assessment of site conditions:

1. *California Seismic Hazard Map 1996,* Caltrans, Lalliana Mualchin, 1996.

2. *1996 California Seismic Hazard Map Report,* Caltrans, Lalliana Mualchin, 1996.

3. *Preliminary Geologic Map of the Chittenden Quadrangle, Santa Clara, Santa Cruz and San Benito Counties, California,* Thomas W. Dibblee, Jr. and Earl E. Brabb, 1978.

4. *Geologic Map of the Hollister Quadrangle, California,* T.W. Dibblee Jr. & T.H. Rogers, 1975.

5. *Geology of the Hollister and San Felipe Quadrangles, San Benito, Santa Clara, and Monterey Counties, California*, California Division of Mines and Geology, Open-File Report 93-01, Thomas H. Rogers, 1993.

6. *Groundwater Management Plan for the San Benito County Part of the Gilroy-Hollister Groundwater Basin,* Jones & Stokes Associates, Inc. and CH2M Hill, 1998.

The information presented herein is based on a limited site reconnaissance and literature review. Thus, actual conditions in the project area may differ from those assumed in this report. The information presented in this report is for planning and scoping purposes only. Additional investigations and analyses will be required to fully develop and support design recommendations.

Physical Setting

The project area occurs within the Coast Ranges Geomorphic Province. It lies in the Santa Clara Valley, and is bounded to the southwest by the San Andreas Rift Zone and the Gabilan Range, and to the north and east by the Diablo Range. Route 25 crosses the Pajaro River at the border between San Benito and Santa Clara Counties.

The surrounding mountains are oriented from northwest to southeast. The elevation at roadway level in the project area ranges from approximately 45 meters (150 feet) to about 80 meters (260 feet). The elevation range of the surrounding mountains is from less than 600 meters (2000 feet) up to about 1500 meters (5000 feet). Mass wasting and fluvial erosion are the main geomorphic processes.

The climate in the project area remains temperate year-round because of the close proximity to the Pacific Ocean. December is the coolest month of the year with an average high temperature of 57°F and an average low temperature of 31°F. July and August are typically the warmest months with average highs and lows of 84°F and 49°F respectively. During the winter, the coolest areas are the farthest inland, away from the ocean. Likewise, during the summer the temperatures are warmest the farthest inland. Winds are lightest in the winter, except during storms, and strongest in the summer.

Annual rainfall averages only 35 cm (14 inches) and occurs mostly between late October and mid April. Snowfall is extremely rare, even at the higher elevations nearby.

A common feature of the summer weather is the coastal fog, which blankets most of the area. Usually the low overcast burns off by late morning and moves back in before midnight.

Geology

The surficial deposits within the project area are primarily Quaternary alluvial deposits consisting of silts, clays, sands, and gravels. According to *Groundwater Management Plan for the San Benito County Part of the Gilroy-Hollister Groundwater Basin* these deposits are generally quite permeable. The surficial deposits are underlain in most locations by Pliocene Purisima Formation, which is lithologically similar to the overlying alluvium, but more consolidated and less permeable.

The one cut slope within the project limits, on the easterly side of Route 25 between Kilometer Posts 85.60 and 85.92, is within the Quaternary aged San Benito Formation (geologic unit QPsb). The San Benito Formation is composed of unconsolidated, light gray gravel, sand, and silt. The San Benito Formation is commonly cross-bedded and includes massive well-sorted fine sand and silt. Gravel of the San Benito Formation is dominantly composed of detritus from the Jurassic to Cretaceous aged Franciscan Complex. The cut slope is on the western flank of an inferred anticline whose axis is approximately parallel to adjacent State Route 25 (Rogers, 1993).

Seismicity

Several faults are located near the project area. Table 1 lists the active and potentially active faults in the project vicinity as described on the *California Seismic Hazard Map 1996* (Caltrans, 1996). Their corresponding Moment Magnitudes, distances to project site, and maximum bedrock accelerations are also given.

According to the *California Seismic Hazard Map 1996* (Caltrans, 1996), the controlling fault for the project area is the Calaveras-Pacines-San Benito (CPS, strike-slip fault). This fault is capable of producing a Maximum Credible Earthquake (MCE) with a moment magnitude, M_W=7.50. According to the Caltrans-adopted Mualchin peak acceleration curves, the maximum credible bedrock acceleration in the project area due to an earthquake along this fault is 0.71g (gravity).

Branches of the Calaveras-Pacines-San Benito Fault cross Route 25 at approximately Kilometer Post 85.4 and from approximately Kilometer Posts 86 to 87. Ground rupture hazard is high at these locations, and bridges in the vicinity will be sited and designed with consideration to ground displacement.

Table 1: Active and Potentially Active Faults

Fault	*Moment Magnitude of Maximum Credible Earthquake*[1]	*Shortest Distance to Fault from Project Area (km)*	*Peak Bedrock Acceleration*[2]
Calaveras-Pacines-San Benito	7.50	0.0	0.71g
Sargent	6.75	2.2	0.56g
San Andreas/N	8.00	9.7	0.51g
Zayante-Vergales	7.25	9.7	0.40g

Liquefaction is a near-total loss of soil strength due to an increase in pore water pressure during cyclic loading, such as occurs during an earthquake. Loose, cohesionless soils that may become saturated due to a high water table may liquefy during an earthquake. Embankments founded on liquefiable soils may be subject to slope instability and settlement during an earthquake event. Similarly, earth-retaining structures may settle or overturn should the soils beneath them liquefy.

For liquefaction to occur, three ingredients in combination are necessary: loose granular soils, saturated soil conditions, and strong ground shaking. Given the close proximity of the site to earthquake faults, strong ground shaking is likely to occur at some point during the design life of any structures constructed within the project limits. The unknowns are the presence or absence of loose granular soils and whether or not the soils are saturated. According to geologic maps of the project area, near surficial soils are recent alluvium. Loose granular soils are a common component of alluvium. According to *Groundwater Management Plan for the San Benito County Part of the Gilroy-Hollister Groundwater Basin* (1998), groundwater levels have receded significantly in the project area since 1913. A large portion of the project area had artesian groundwater conditions in 1913. By 1997, water levels in the same area were between 20 feet and 100 feet below the ground surface. Furthermore, historical groundwater overdraft has resulted in a reversal of the groundwater flow direction in much of the project area. Given this information it is possible that there will be layers of saturated granular soils at some of the bridge sites.

[1] According to *California Seismic Hazard Map 1996* (Caltrans, 1996).
[2] According to Mualchin peak-acceleration curves in *Peak Acceleration From Maximum Credible Earthquakes in California* (Caltrans, 1992).

Subsurface information for all bridge sites will be necessary before it can be accurately determined whether liquefaction will be a concern.

Preliminary Recommendations

The existing highway alignment traverses relatively flat terrain, so it is anticipated that the widening will require minimal embankment heights (generally less than 3 meters) throughout the project limits except at the approaches to structures. The structure approach embankments will have to be evaluated for stability and settlement potential. Subsurface investigations will be necessary at the approach embankments to determine the strength of the foundation soils and the potential for settlement. If layers of soft compressible soils are found at those locations it may be necessary to monitor pore water pressures during construction of embankments and regulate the rate of construction to assure adequate strength gain of the foundation soils during construction. The embankments may have to be surcharged during construction to accelerate consolidation of the foundation soils. A delay period may be specified between the completion of the embankment and the construction of the bridge foundations. In extreme cases, ground improvement techniques may be warranted.

Preliminarily, it is recommended that all embankments be constructed with 1:2 or flatter side slopes. Steeper slopes, up to 1:1.5, are feasible if the embankments are constructed of select material conforming to the following specifications:

Maximum Sand Equivalent = 50
Maximum Plasticity Index = 20
Minimum Plasticity Index = 12

There is one cut slope on the northbound side of the existing highway alignment between Kilometer Post 85.60 and Kilometer Post 85.92. During a site reconnaissance conducted by Office of Geotechnical Design personnel, in situ materials in the surface of the slope were observed to consist of brown to gray, weakly cemented, fine sandy siltstone. No rock structure was observed in the materials. The slope is well vegetated with grasses and small shrubs.

The cut slope has an inclination of approximately 1:2, and appears to be performing satisfactorily. A subsurface investigation should be undertaken at this location so that the global stability of any proposed cut widening can be evaluated. It is preliminarily

recommended that the slope be excavated no steeper than 1:2. Since this is the only potential source of embankment material within the project limits though, it may be desirable to completely remove the hill (topographic maps show that gravel was mined from the formation in the past). As part of the slope investigation work performed for the Geotechnical Design Report the material will be tested to assess its suitability for constructing embankments.

The maximum steepness of any cut slopes or embankments will probably be governed by the susceptibility of the soils to erosion. The Soil Erodibility Factor K for use in the Universal Soil Loss Equation will be determined for the cut slope at Kilometer Post 85.6 at the time the Geotechnical Design Report is prepared. Since a significant portion of the embankment material will probably have to be imported, it will not be possible to provide an estimate of the K factor for fills unless a material source is specified. The District Landscape Architect will need to be consulted for erosion control recommendations.

Without conducting site-specific subsurface investigations, it is not possible to determine the feasibility of constructing storm water retention basins within the project limits. The permeability of the native soils is anticipated to be widely variable. We will need to know the locations and elevations of any proposed retention basins before we can initiate any study of their viability.

Once the preferred project alternative has been selected and detailed design has begun, a Geotechnical Design Report should be requested from this office. The report will provide final design recommendations for the proposed project based on a thorough site investigation. Advance Planning Studies for any bridges should be requested from the Office of Bridge Design. Please send copies of the requests to this office so that we may begin site investigations for structure foundations.

If you have any questions or comments, please call me at (805) 549-3745 (CalNet 629-3745) or Ron Richman at (805) 549-3385 (CalNet 629-3385).

Supervised by,

REGISTERED PROFESSIONAL ENGINEER
D.L. Appelbaum
No. C 50001
Exp. 6-30-05
CIVIL
STATE OF CALIFORNIA

RON RICHMAN, P.E., C.E.G., Chief
Office of Geotechnical Design – North

DANIEL L. APPELBAUM, P.E.
Transportation Engineer
Office of Geotechnical Design – North

c: Roy Bibbens
Dennis Reeves
GDN.01

Preliminary Mineral Resources Review

Memorandum

Flex your power!
Be energy efficient!

To: WENDY KRONMAN
Associate Environmental Planner
Sierra Pacific Analysis Branch

Date: March 18, 2011
File: SBT-25
PM 51.5/55.0
EA: 05-485400
Project ID:
05-0000-0565

From: Juergen Vespermann, Chief
Central Region Hazardous Waste and Paleontology Branch

Subject: Addendum to Memorandum Titled:
November 19, 2008 Preliminary Mineral Resources Review for State Route 25 Widening and Route Adoption Hollister to Gilroy, State Route 25, San Benito and Santa Clara Counties; SBT-25; EA: 05-485400; PM 51.5/60.1

This addendum addresses potential mineral resource impacts associated with construction of Build Alternative B (modified) of the State Route 25 Expressway (PM 51.5/55.0).

A preliminary mineral resource review for the Route 25 Adoption Alternatives 1 and 2 and Build Alternatives A and B was conducted by Caltrans Engineering Geologist Peter Hansen (Preliminary Mineral Resources Review for State Route 25 Widening and Route Adoption Hollister to Gilroy, State Route 25, San Benito and Santa Clara Counties, Memorandum from Gerald H. White to Wendy Kronman, November 19, 2008).

As determined in the memorandum, both Route Adoption Alternatives 1 and 2 and Build Alternatives A and B would excavate Plio-Pleistocene deposits currently mined for sand and gravel within the project area. Mr. Hansen points out that any Caltrans acquisition of right of way classified as a Mineral Resource Zone (MRZ) by the California Geological Survey requires Caltrans to acknowledge the presence of these resources in the project setting description of the final environmental document. In addition, the California Geological Survey would also require the following in the final environmental document: a quantitative assessment of the project's impacts to the future availability of the affected mineral resource, how the project's alternatives lessen future self sufficiency of the County to supply its economy's projected demand for mineral resources, how will the project increase the County's future reliance on more expensive imported mineral resources, and a discussion of mitigation measures that would avoid or lessen any project impact on the future availability of the mapped mineral resource.

As determined from Open File Report 99-01 titled, *Update of Mineral Land Classification: Aggregate Materials in the Monterey Bay Production-Consumption*

Region, California, 1999, prepared by the California Department of Conservation, Division of Mines and Geology, a MRZ exists north of State Route 25 just south of the State Route 25/156 intersection.

Since the preliminary mineral resource review was prepared, Alternative 2 was selected as the preferred Route Adoption and Alternative B as the preferred Build Alternative. Since that time, the preferred route adoption and preferred build alternative have been modified.

This addendum only assesses Build Alternative B (modified) on State Route 25. It does not change findings made in the mineral resources review prepared by Mr. Hansen with respect to future projects within the preferred Route Adoption Alternative 2.

Build Alternative B (modified) Project Description

Construct a three mile long expressway on a new alignment between San Felipe Road and Hudner Lane between PM 51.5 and 55.0. The new alignment includes construction of an at- grade intersection at State Route 156. The expressway will be constructed on fill and will be elevated five feet about the surrounding ground surface.

The new alignment parallels existing State Route 25 and is located south of the existing northwest trending highway. The new expressway segment gradually merges back into the existing alignment west of State Route 25/156 intersection and south of Hudner Lane.

Under Build Alternative B (modified), construction of the Briggs Road extension between the new alignment and existing State Route 25 (Build Alternative B [unmodified]), has been eliminated.

Conclusions

Build Alternative B (modified) does not encroach on an existing MRZ as mapped in California Geological Survey Open File Report 99-01. A re-evaluation is recommended if there are any other project description changes to the Build Alternative B (modified).

As future environmental documents are prepared for Route 25 Expressway projects within the Route Adoption Alternative 2, re-evaluate the location of any right of way with respect to California Geological Survey MRZ maps and perform mineral resource analysis for inclusion in the final environmental document, if warranted.

If you need further information, please contact Richard C. Stewart at (559) 243-8229.

REFERENCES

Caltrans, 2008, Preliminary Mineral Resources Review, State Route 25 Widening and Route Adoption Hollister to Gilroy, State Route 25, San Benito and Santa Clara Counties, SBT-25, EA: 05-485400, PM 51.5/60.1, November 19, 2008, Memorandum from Gerald H. White to Wendy Kronman.

State of California
DEPARTMENT OF TRANSPORTATION

Business, Transportation and Housing Agency

Memorandum

Flex your power!
Be energy efficient!

To: Peter Hansen
Engineering Geologist
Hazardous Waste and Paleontology Branch,
Central Region Environmental

Date: April 8, 2010

File: 05-48540
05-SBt-25 (PM 51.5/60.1)
04-SCl-25 (PM 0.0/2.6)
and 05-SBt-156 (PM R10.5/R12.2)

From: G. William 'Trais' Norris III
Branch Chief
Sierra Pacific Environmental Analysis Branch

Subject: Change to Purpose Statement

The Purpose statement for the SR25 Widening and Route Adoption project has changed. The new wording is

The purpose of the proposed route adoption project is to:

- Select a corridor for State Route 25 between Hollister and Gilroy that will accommodate existing and future travel demand.
- Facilitate local and regional land use planning by identifying future right-of-way needed for the State Route 25 corridor.

The purpose of the proposed build project is to:

- Improve traffic flow and reduce delays on State Route 25 between San Felipe Road in Hollister and Hudner Lane in San Benito County.
- Increase capacity along State Route 25 between San Felipe Road in Hollister and Hudner Lane in rural San Benito County.

The new purpose does not affect the conclusions of the Preliminary Mineral Resources Review completed for this project in November 2008.

c: Project file

State of California
DEPARTMENT OF TRANSPORTATION

Business, Transportation and Housing Agency

Memorandum

Flex your power!
Be energy efficient!

To: WENDY KRONMAN
Associate Environmental Planner
Sierra Pacific Environmental Analysis Branch

Date: November 19, 2008

File: SBT-25
EA: 05-485400
PM: 51.5/60.1

From: GERALD H. WHITE 11/19/08
Chief
Central Region Hazardous Waste and Paleontology Branch

Subject: Preliminary Mineral Resources Review for:
State Route 25 Widening and Route Adoption Hollister to Gilroy
State Route 25, San Benito and Santa Clara Counties

Staff from the Central Region Hazardous Waste and Paleontology Branch reviewed the proposed State Route 25 Widening and Route Adoption Hollister to Gilroy project in San Benito County with respect to potential mineral resources. The preliminary evaluation included review of geologic maps and literature (see attached references).

The extraction of minerals is essential to the continued economic well-being of the state and to the needs of the society. Impacts to mineral resource areas are subject to the Surface Mining and Reclamation Act (SMARA) of 1975, Public Resources Code, Division 2, Chapter 9, Section 2710 et seq. The intent of the Legislature is to create and maintain an effective and comprehensive surface mining and reclamation policy with regulation of surface mining operations so as to assure that adverse environmental effects are prevented or minimized.

The California Department of Transportation (Caltrans), in cooperation with San Benito Council of Governments and Santa Clara Valley Transportation Authority are evaluating the conversion of 11.2 miles of the existing State Route 25 two-lane conventional highway to a four-lane expressway in San Benito and Santa Clara Counties (figure 1). This includes both a route adoption study and a proposed construction project within the limits of the proposed route adoption (figure 2). The route adoption study extends from San Felipe Road within the City of Hollister (post mile 51.5) to the San Benito/Santa Clara County line (post mile 60.1) and on to the end of State Route 25 at U.S. 101 south of the City of Gilroy (post miles 0.0/2.6 in Santa Clara County). The proposed construction project limits extend 3.8 miles in San Benito County, from San Felipe Road in Holister to just west of Hudner Lane (post miles 51.5/55.3).

Route adoption alternatives 1 and 2 would share the same alignment along State Route 25 from approximately 1/2 mile south of Shore Road (post mile 56.1) in San Benito County to U.S. 101 in Santa Clara County. The alignments would be wide enough to accommodate a future

interchange near the existing intersection of State Route 25 and State Route 156 and a future State Route 25 / U.S. 101 interchange north of the existing interchange.

Between post mile 56.1 and the east end of the proposed project at San Felipe Road, the two alignment alternatives separate. Alternative 1 proposes to align the future four-lane expressway to the east (or north) of the existing two-lane north/south highway and Alternative 2 proposes to align to the west (or south) of the existing two-lane highway.

Alternative A would be constructed at the southeastern end of the Alternative 1 Route Adoption alignment. Direct access to the expressway would be available from San Felipe Road, Wright Road, Flynn Road, State Route 156, two west-side frontage roads and one east-side frontage road. An undercrossing at the Don Chapin Gravel operation driveway would provide access to this otherwise landlocked parcel.

Alternative B would be constructed at the southeastern end of the Alternative 2 Route Adoption alignment. Direct access to the expressway would be available from San Felipe Road, Wright Road, Briggs Road, a west-side frontage road, State Route 156, an east-side frontage road, and Hudner Lane.

Plio-Pleistocene continental deposits (QT) form small hills at the southeastern end of the project in the area of Alternatives A and B (see the attached geologic maps, Plates I and II, of the State Route 25 Widening and Route Adoption project in the Route 156 to Hollister area). These unconsolidated gravel deposits were mapped as San Benito Gravel in the San Benito quadrangle by Wilson (1943) and in the Hollister quadrangle by Taliaferro (1948). Dibblee (1975) referred these deposits to the Santa Clara Formation of Cooper (1894). Rogers (1993), mapping the Hollister and San Felipe 7 ½ minute quadrangles, designated the gravels in the hills on the east side of the Calaveras Fault as San Benito Formation. Wagner and others (2002) map these deposits as Plio-Pleistocene continental deposits.

Route Adoption Alternatives 1 and 2 and Build Alternatives A and B would excavate in hills containing the Plio-Pleistocene continental deposits. The approximate locations of the alternative's right-of-way lines to the Plio-Pleistocene continental deposits (QT) are shown on the attached geologic maps. Alternatives 1 and A (Plate I) will pass through the hill northeast of existing State Route 25 and require excavation for an undercrossing at the Don Chapin Gravel operation driveway and for the westbound off ramp at State Route 156. Alternatives 2 and B (Plate II) will require excavation through the southern most hill to extend Briggs Road west to the new alignment.

These hills of sand and gravel are compression ridges created by the action of the San Andreas and Calaveras Fault systems (Kohler-Antablin, 1999). The sand and gravel in the hill on the east side of State Route 25 between State Route 156 and the Hollister Municipal Airport is the SCL/Bolsa sand and gravel mine area. The area is newly classified as a Mineral Resource Zone 2 (MRZ-2). The California Department of Conservation's Division of Mines and Geology (now

the California Geological Survey) classifies mineral resources in compliance with the Surface Mining and Reclamation Act (SMARA) of 1975. Areas classified as MRZ-2 are areas where adequate information indicates that significant mineral deposits are present, or where it is judged that a high likelihood exists for their presence. These deposits are shown on Plate 8 (see attachment) of Open-File Report 99-01 (OFR 99-01) titled, *Update of Mineral Land Classification: Aggregate Materials in the Monterey Bay Production-Consumption Region, California*, 1999, Department of Conservation Division of Mines and Geology, 50 pages.

Alternatives 1 and A would pass through the southern end and along the western edge of the SCL/Bolsa sand and gravel mine area and so would affect significant deposits of aggregate mineral resources. Additionally, Alternatives 2 and B would affect the southern most sand and gravel hill where Briggs Road would extend west from existing State Route 25 to the new alignment across the hill. Although the State Geologist has apparently not classified this area, this sand and gravel hill likely contains similar aggregate mineral resources as the SCL/Bolsa sand and gravel mine area and might be considered significant deposits.

The California Department of Conservation's Geologic Survey (CGS) reviews environmental documents for impacts to mineral resources. The CGS investigates, maps and classifies significant mineral resource deposits in California in order to inform land use decisions that conserve these resources. The Department of Conservation has commented on environmental documents for Caltrans projects that impact mineral resources and has offered the following suggestions (DOC, 2001):

The final document should acknowledge the presence of these resources in the description of the project's setting. The final document should also quantitatively assess the impacts of the project's alternatives with respect to the future availability of the affected mineral resources. How will the project's alternatives lessen the future self-sufficiency of the County in terms of its being able to supply its economy's projected demand for aggregate resources? How will the project increase the County's future reliance on more expensive imported mineral resources? Mitigation measures should be discussed that will avoid or lessen any project impacts on the future availability of the mapped mineral resources.

If further information is needed, please contact Peter Hansen at 559-243-8229.

Attachments

Figure 1. State Route 25 Widening and Route Adoption project vicinity map
Figure 2. State Route 25 Widening and Route Adoption project location map
Plates I and II, Geologic maps
Plate 8 of Open-File Report 99-01

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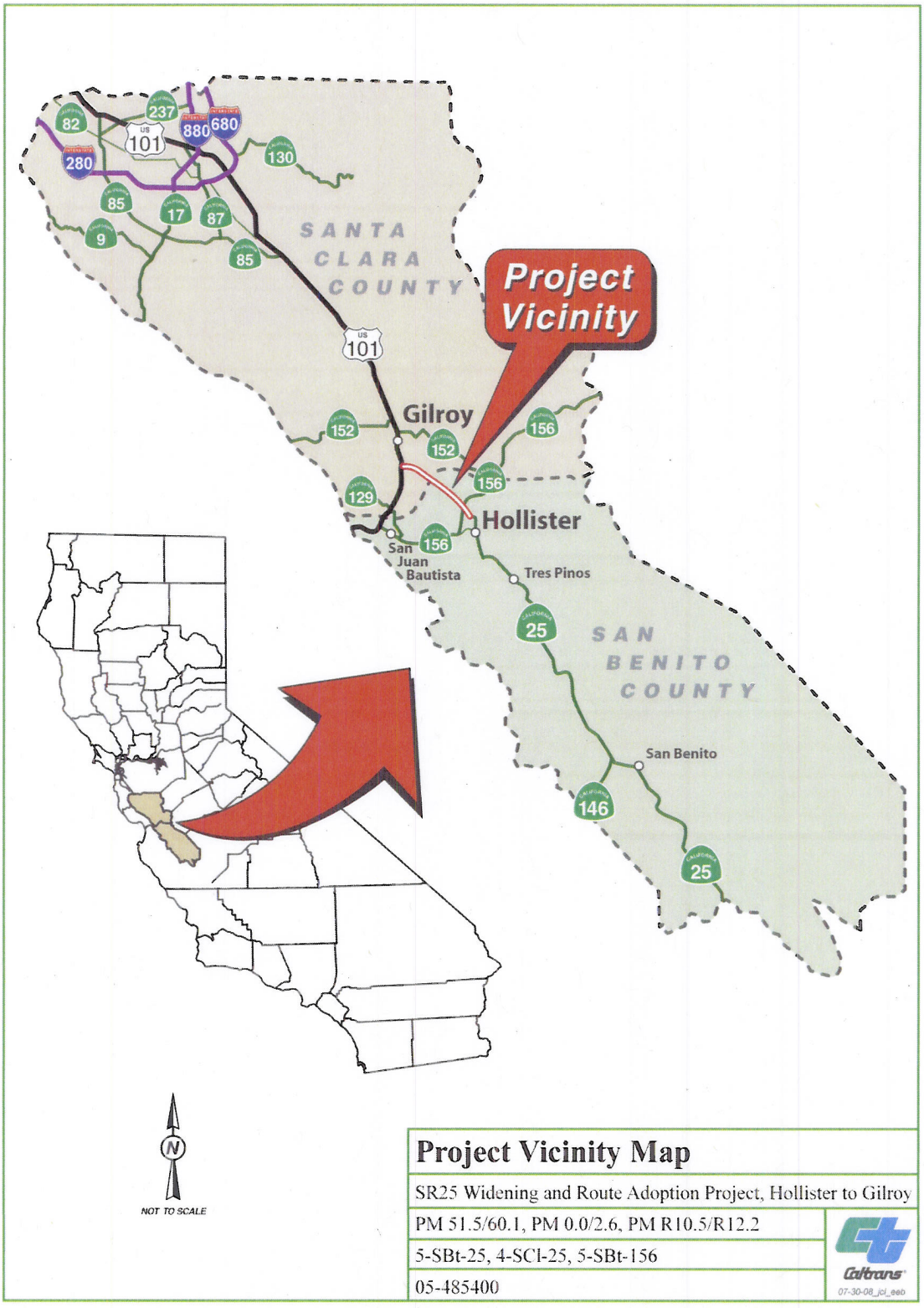


Figure 1. State Route 25 Widening and Route Adoption Hollister to Gilroy project vicinity map. The project would convert 11.2 miles of the existing State Route 25 two-lane conventional highway to a four-lane expressway in San Benito and Santa Clara Counties.

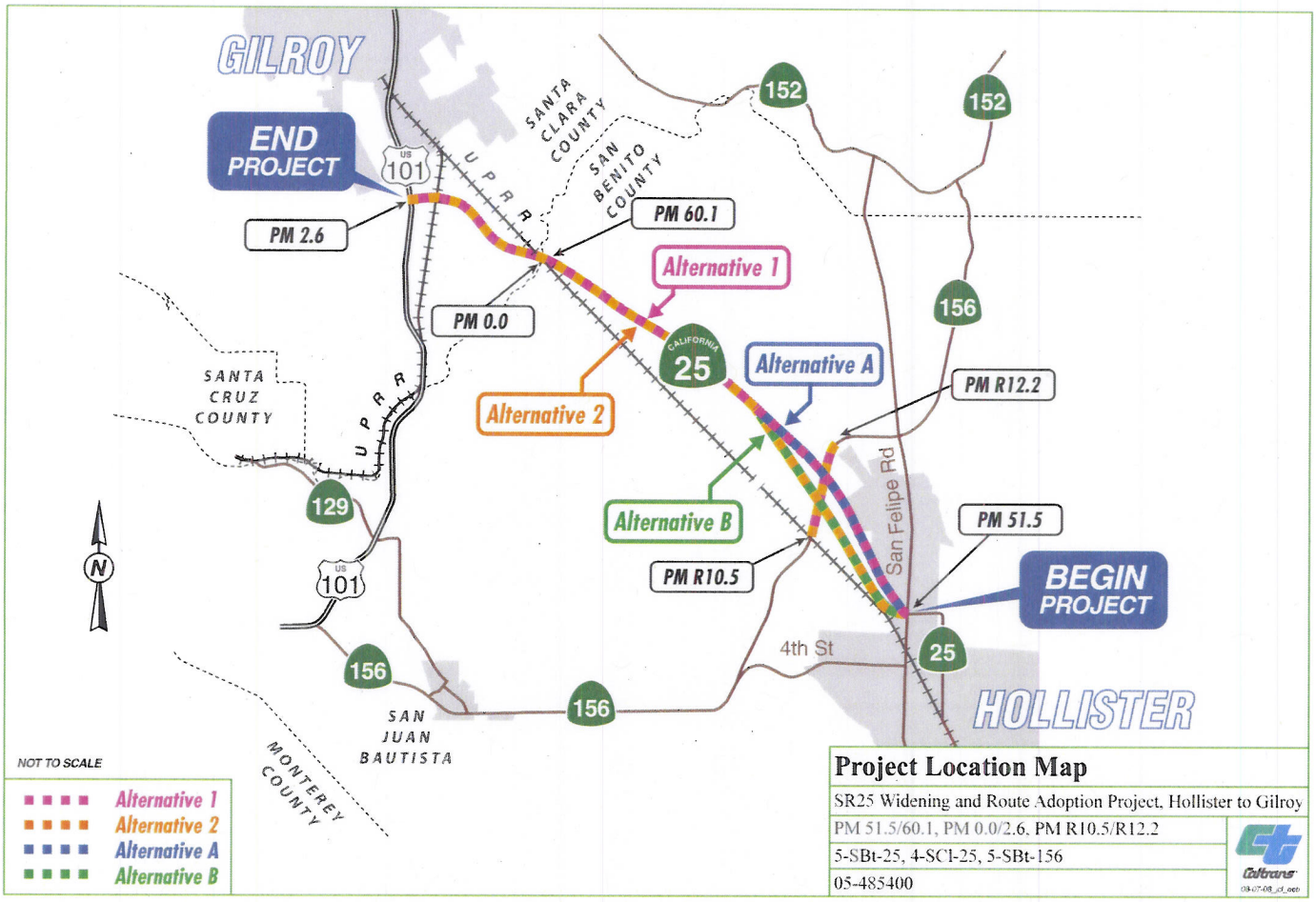
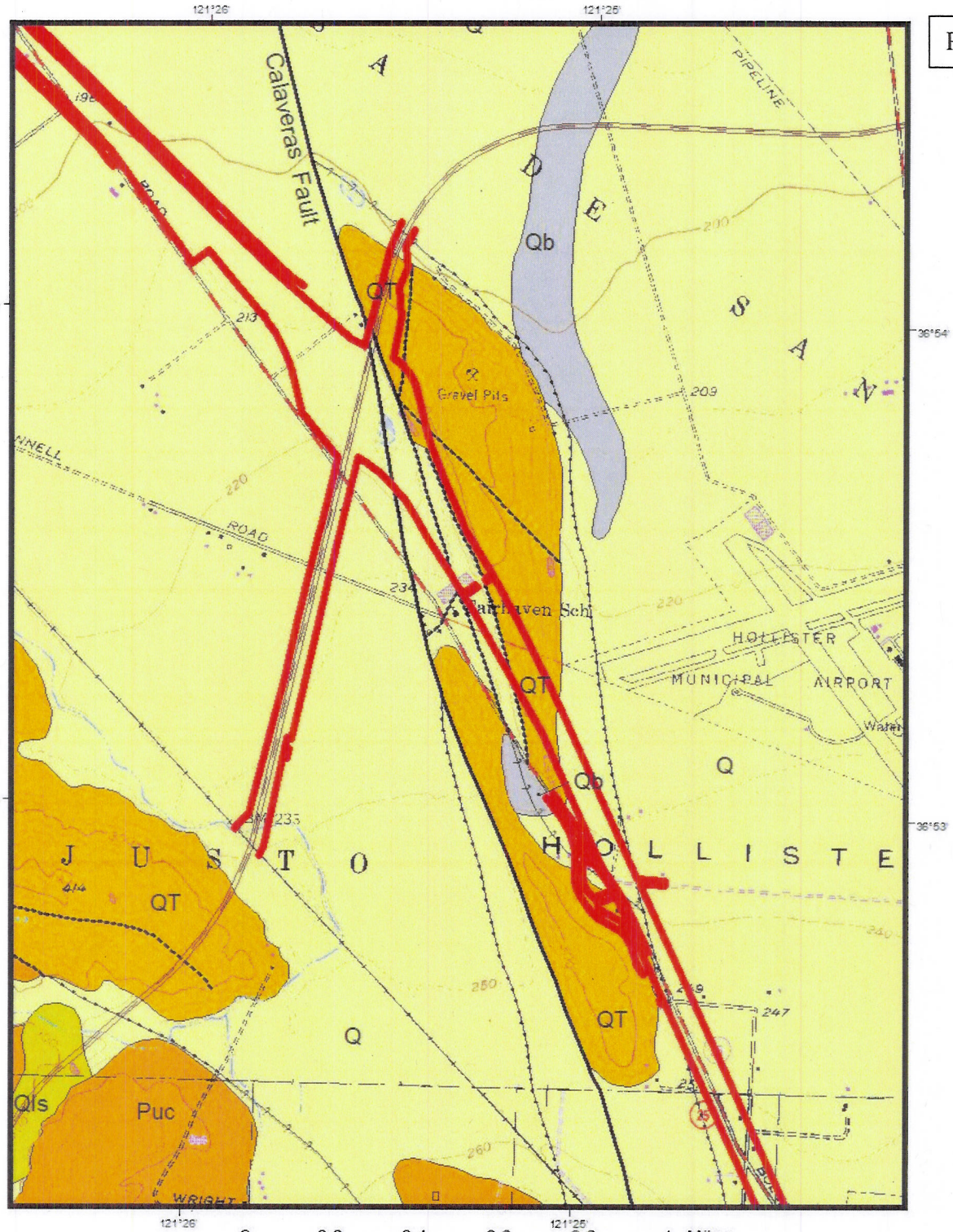


Figure 2. State Route 25 Widening and Route Adoption Hollister to Gilroy project location map. The project includes both a route adoption study and a proposed construction project within the limits of the proposed route adoption. The route adoption study extends from San Felipe Road within the City of Hollister (post mile 51.5) to the San Benito/Santa Clara County line (post mile 60.1) and on to the end of State Route 25 at U.S. 101 south of the City of Gilroy (post miles 0.0/2.6 in Santa Clara County). The proposed construction project limits extend 3.8 miles in San Benito County, from San Felipe Road in Holister to just west of Hudner Lane (post miles 51.5/55.3). The alignments would be wide enough to accommodate a future interchange near the existing intersection of State Route 25 and State Route 156 and a future State Route 25 / U.S. 101 interchange north of the existing interchange.

Plate I



Topografic base from USGS San Felipe and Hollister 7.5' quadrangles
Geology from California Geological Survey, CGS CD 2002-4 (Wagner and others, 2002)

0 0.2 0.4 0.6 0.8 1 Miles

Scale 1:24000

EXPLANATION

- Q Alluvium
- Qb Basin deposits
- Qls Landslide deposits
- QT Plio-Pleistocene continental deposits
- Puc Unnamed Pliocene continental mudstone
- fault, certain
- fault, approx. located
- fault, concealed
- fault, concealed, queried

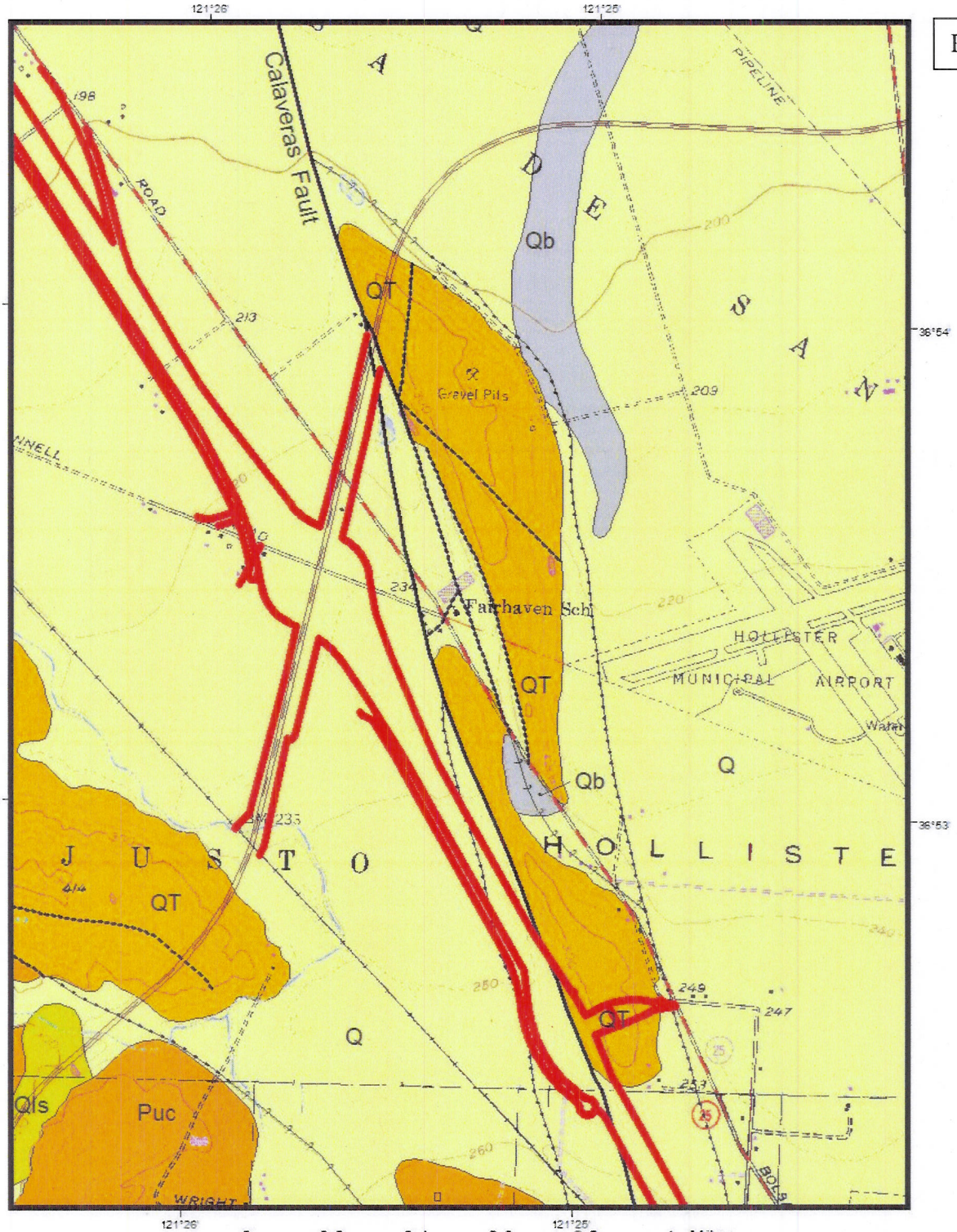
GEOLOGIC MAP
STATE ROUTE 25 WIDENING AND ROUTE ADOPTION
HOLLISTER TO GILROY PROJECT
ROUTE 156 TO HOLLISTER AREA
ALTERNATIVES 1 AND A

N

Right of Way / Fence Line
Alternatives 1 and A

Route 156 in its present location.

Plate II



Topografic base from USGS San Felipe and Hollister 7 5' quadrangles
Geology from California Geological Survey, CGS CD 2002-4 (Wagner and others, 2002)

0 0.2 0.4 0.6 0.8 1 Miles

Scale 1:24000

GEOLOGIC MAP
STATE ROUTE 25 WIDENING AND ROUTE ADOPTION
HOLLISTER TO GILROY PROJECT
ROUTE 156 TO HOLLISTER AREA
ALTERNATIVES 2 AND B

N

Right of Way / Fence Line Alternatives 2 and B

Route 156 in its present location.

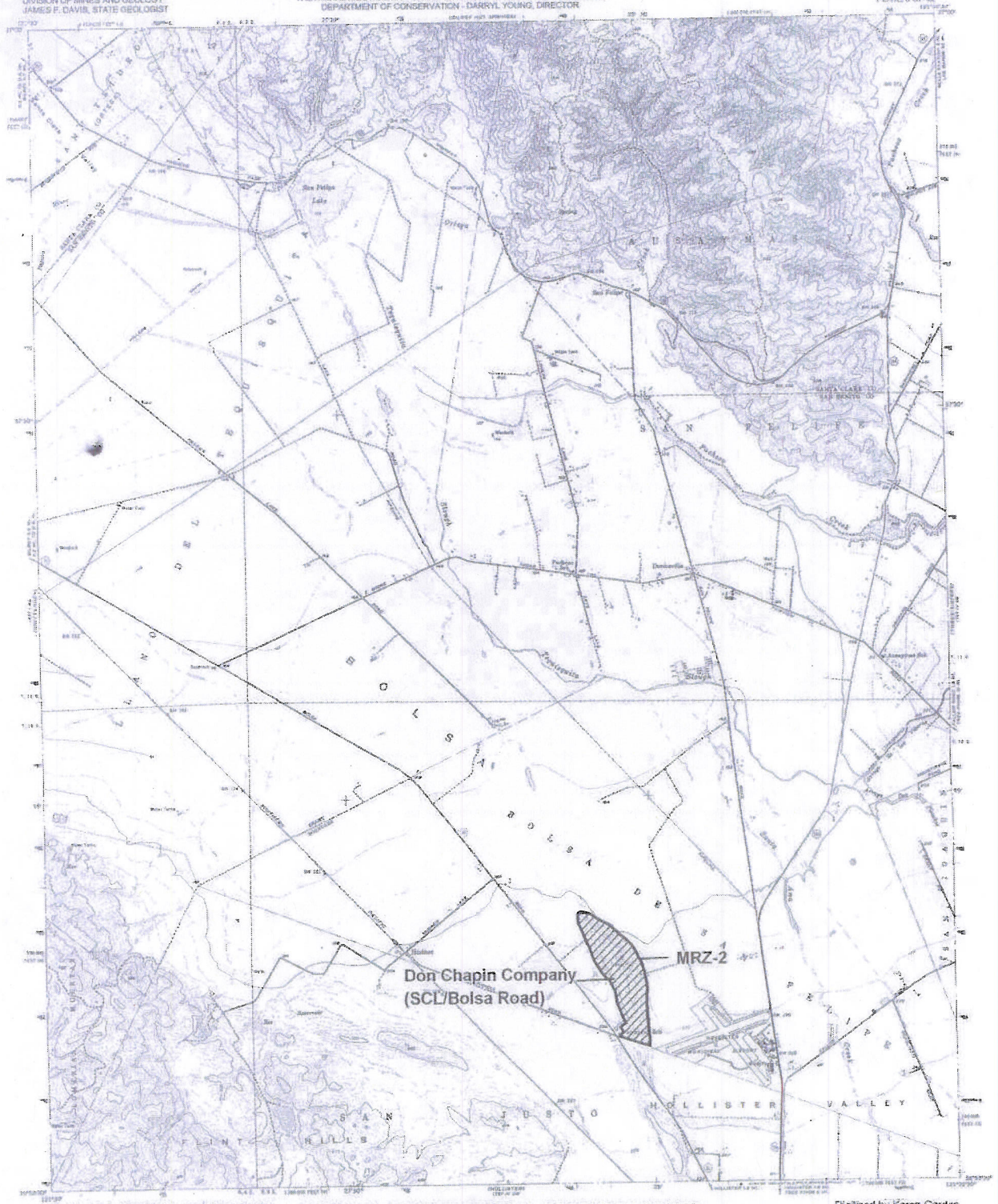
EXPLANATION

- Q Alluvium
- Qb Basin deposits
- Qls Landslide deposits
- QT Plio-Pleistocene continental deposits
- Puc Unnamed Pliocene continental mudstone
- fault, certain
- fault, approx. located
- fault, concealed
- fault, concealed, queried

DIVISION OF MINES AND GEOLOGY
JAMES F. DAVIS, STATE GEOLOGIST

STATE OF CALIFORNIA - GRAY DAVIS, GOVERNOR
THE RESOURCES AGENCY - MARY NICHOLS, SECRETARY FOR RESOURCES
DEPARTMENT OF CONSERVATION - DARRYL YOUNG, DIRECTOR

SAN FELIPE QUADRANGLE
OPEN-FILE REPORT 99-01
PLATE 8 OF 42



TOPOGRAPHIC BASE MAP BY U.S. GEOLOGICAL SURVEY
Reduced from 1:24,000

NEWLY CLASSIFIED MINERAL RESOURCE ZONES

AGGREGATE RESOURCES ONLY

MONTEREY BAY
PRODUCTION-CONSUMPTION REGION
BY
SUSAN KOHLER-ANTABLIN
1999

Digitized by Karen Garden

EXPLANATION

MINERAL RESOURCE ZONE BOUNDARY

MRZ-2 Area where adequate information indicates that significant mineral deposits are present, or where it is judged that a high likelihood exists for their presence.

PROPERTY OWNED OR CONTROLLED BY AGGREGATE PRODUCER

NEWLY CLASSIFIED AREA

N

0 0.5 1
Miles

0 0.5 1
Kilometers

MINES AND GEOLOGY
CALIFORNIA CONSERVATION

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PREPARED IN COMPLIANCE WITH THE SURFACE MINING AND RECLAMATION ACT OF 1975, ARTICLE 4, SECTION 2761

STATE GEOLOGIST

SAN FELIPE QUADRANGLE
PLATE 8 of 42

Traffic Operations Analysis Report Summary

The following technical report does not include the appendices due to the length of the technical data, which can be made available upon request.

State of California
DEPARTMENT OF TRANSPORTATION

Business, Transportation and Housing Agency

Memorandum

Flex your power!
Be energy efficient!

To: Bing Yu
Traffic Engineer
Traffic Operations District 5

Date: April 8, 2010

File: 05-48540
05-SBt-25 (PM 51.5/60.1)
04-SCl-25 (PM 0.0/2.6)
and 05-SBt-156 (PM R10.5/R12.2)

From: G. William 'Trais' Norris III
Branch Chief
Sierra Pacific Environmental Analysis Branch

Subject: Change to Purpose Statement

The Purpose statement for the SR25 Widening and Route Adoption project has changed. The new wording is

The purpose of the proposed route adoption project is to:

- Select a corridor for State Route 25 between Hollister and Gilroy that will accommodate existing and future travel demand.
- Facilitate local and regional land use planning by identifying future right-of-way needed for the State Route 25 corridor.

The purpose of the proposed build project is to:

- Improve traffic flow and reduce delays on State Route 25 between San Felipe Road in Hollister and Hudner Lane in San Benito County.
- Increase capacity along State Route 25 between San Felipe Road in Hollister and Hudner Lane in rural San Benito County.

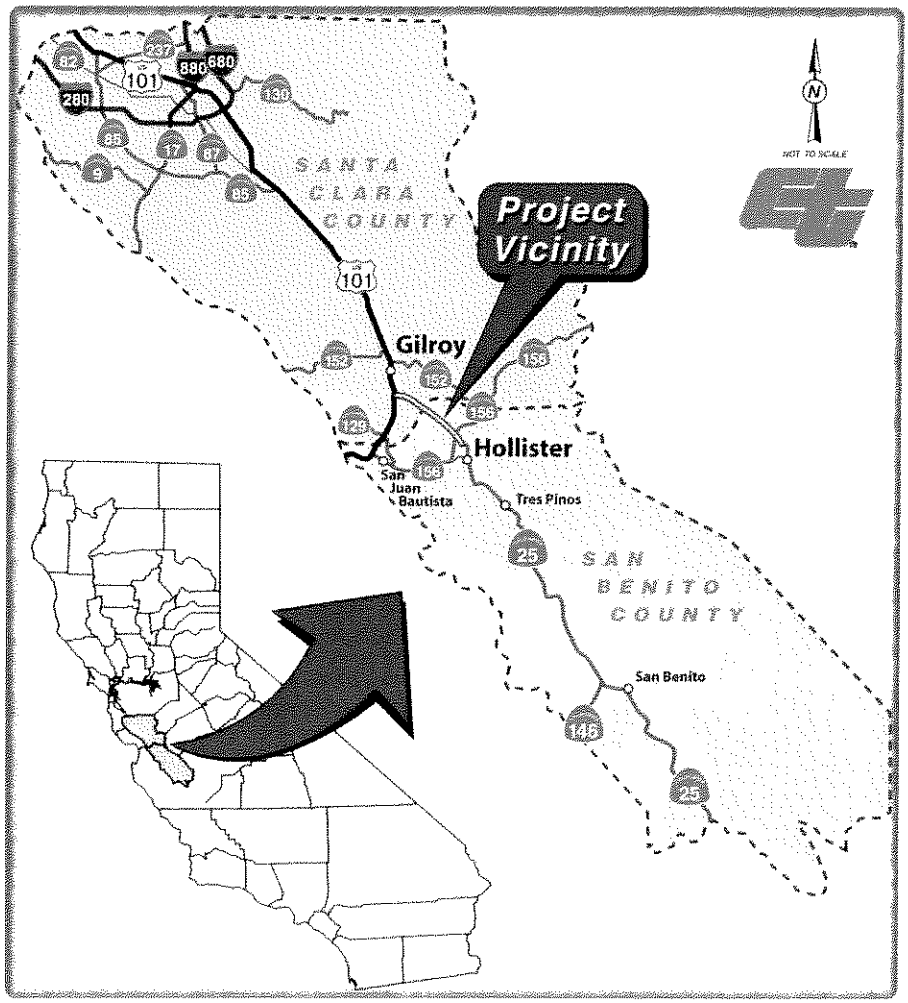
The new purpose does not affect the conclusions of the Traffic Analysis Level of Service report for this project last revised in June 2009.

c: Project file

Traffic Operations Analysis

Level of Service Report

Existing and Future

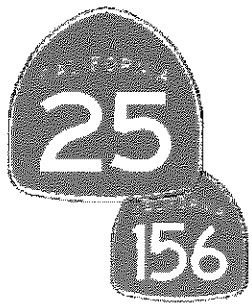


EA: 05-485400

05 - SBt - 25 - PM 51.5/60.1;

05 - SBt - 156 - PM R10.5/R12.2;

04 - SCl - 25 - PM 0.0/2.6



Route 25 in San Benito County in the City of Hollister at intersection of San Felipe Road to the San Benito/Santa Clara County line and on to the end of Route 25 at the Junction of US Route 101 south of the City of Gilroy in Santa Clara County

Prepared by: Bing Y. Yu, PE
bing.yu@dot.ca.gov
(District 5 Traffic Operations)

For: Project Development

Rev. June 4, 2009

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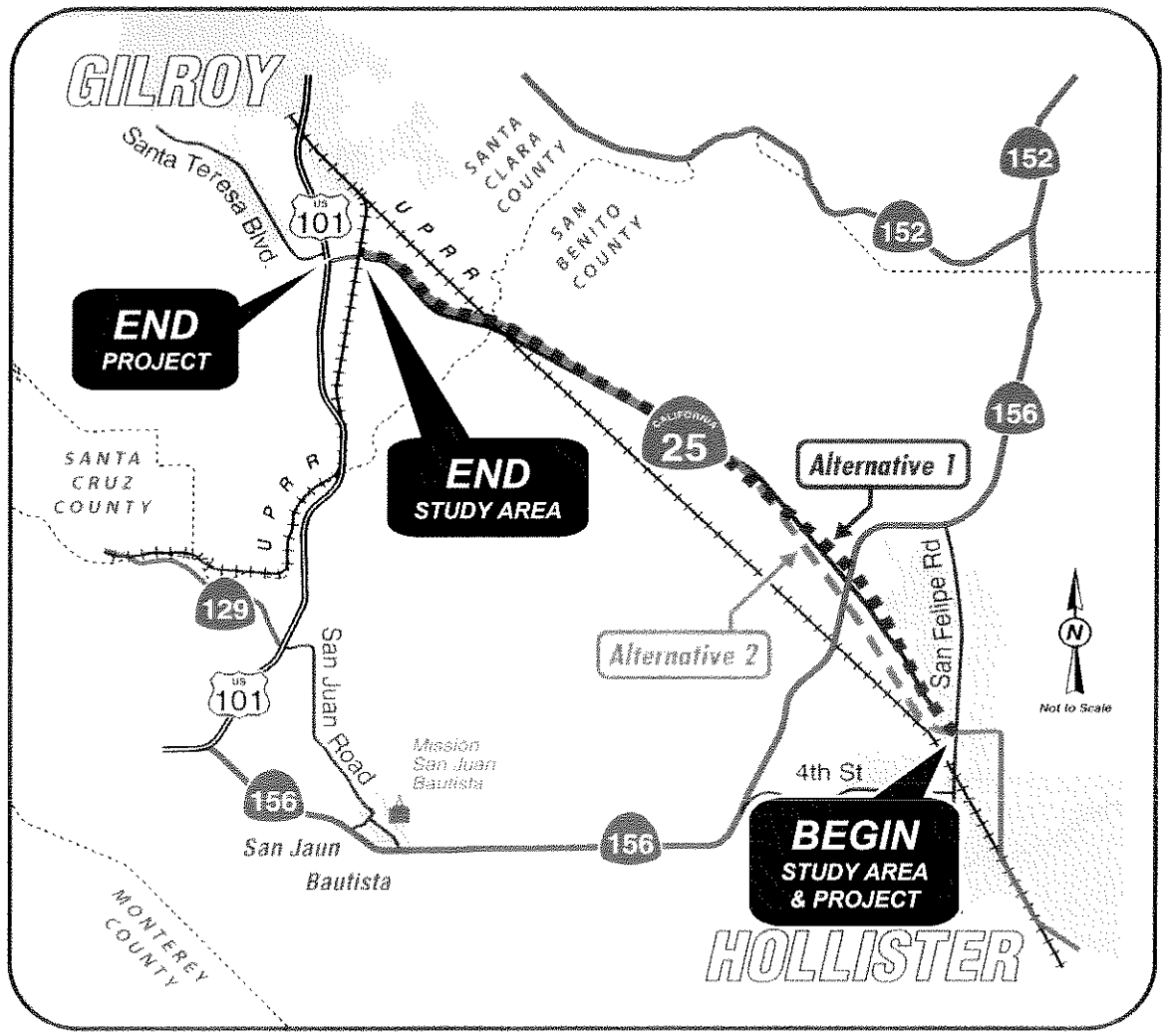
PROJECT DESCRIPTION

Existing Route 25 is a two-lane conventional highway with one 12-foot lane for northbound and southbound directions of travel within the study area. A 4-foot soft barrier separates the travel lanes. The paved shoulder width on both sides of the highway is 8 feet and 10 feet after the completion of the safety and operational improvements project (EA 05-0K520_). This 11-mile (~8.6 miles is within San Benito County, ~2.5 miles within Santa Clara County) portion of Route 25, primarily traverses through agricultural land on level terrain and accommodates many access points and pullout areas used by agricultural vehicles. It also serves as the primary connector route between the City of Hollister and Gilroy. Within the study limits, there are two existing signalized intersection, Route 25/San Felipe Rd and Route 25/Route 156. Other minor road connectors within the study limits are two-way stop controlled. The annual average daily traffic (AADT) on Route 25 just west of San Felipe Road is 14,700 vehicles, 21,300 vehicles west (or north) of Route 156, and 22,500 west of the San Benito/Santa Clara County line to the Route 101 junction. The posted speed limit is 55 mph. Traffic pattern peaks in the northbound direction in the morning and southbound in the afternoon.

Figure 1: Study Area & Project Limits



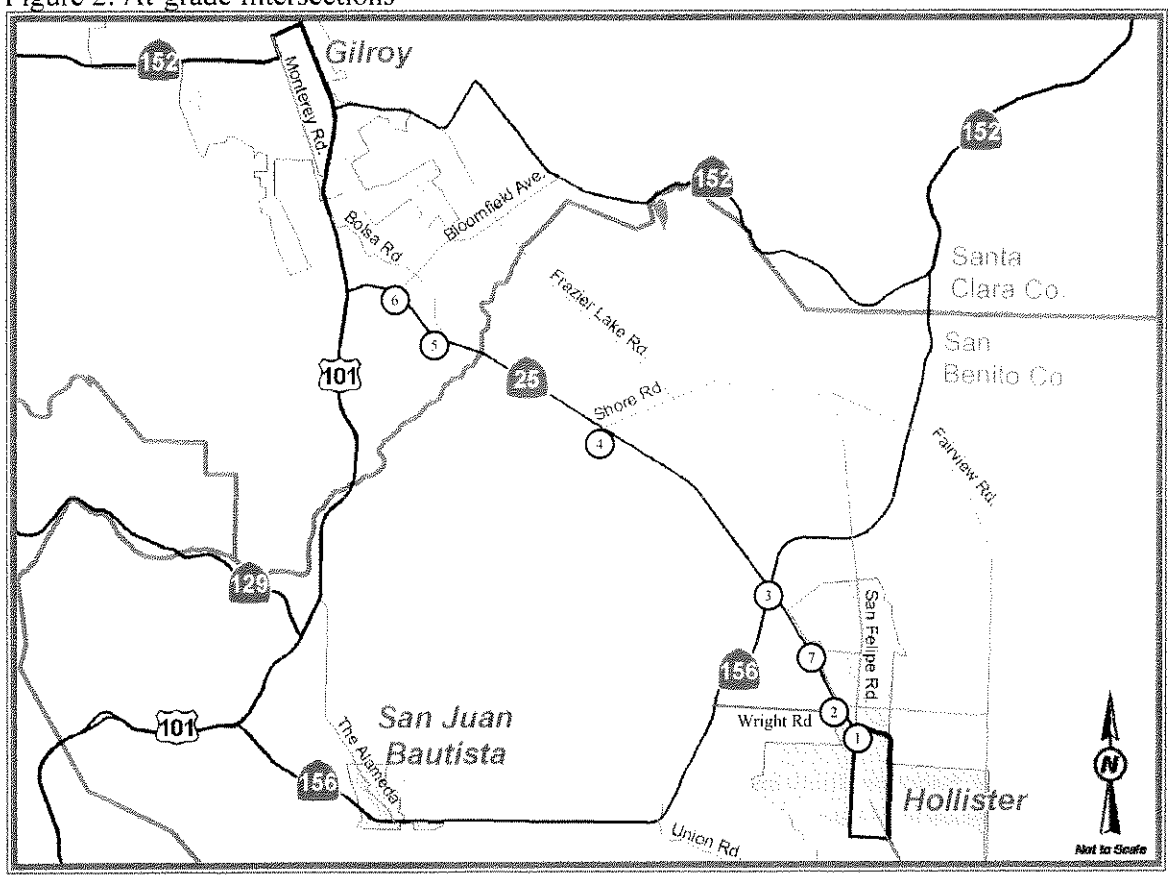
As part of the Route Adoption Study and a proposed construction project, this Traffic Operations Analysis was conducted to evaluate the proposed widening of Route 25 from a two-lane conventional

highway to a four-lane expressway: the Route Adoption limits extend from San Felipe Road (PM 51.5) to the San Benito/Santa Clara County line (PM 60.1), and in Santa Clara County, from the San Benito/Santa Clara County line to Route 25/101 junction (PM 2.5); the proposed 3.8-mile construction project limits is within San Benito County, extends from San Felipe Road north to just west of Hudner Lane (PM 51.5/55.3). However, the analysis does not include the Route 25/100 interchange. The northern limit of this analysis is the Union Pacific railroad crossing (PM 2.1), approximately 0.4 mile east of the existing interchange.

The Operations Analysis of Route 25 within the study limits were evaluated under existing, future no-build, and future built conditions for the following alternatives:

- No-build: If this alternative is chosen no action would be taken and no further improvements would be made to Route 25 within these limits other than those already programmed/funded or under construction.
- Alternative 1: A Route Adoption Alignment (11 miles four-lane expressway).
- Alternative 2: A Route Adoption Alignment (11 miles four-lane expressway).
- Alternative A: Construct 3.8-mile portion of Alternative 1 Route Adoption Alignment
    - Scenario 1 – Assume traffic volume on Route 25 is the same as no-build.
    - Scenario 2 – Assume traffic volume on Route 25 is the same as Alternative 1.
- Alternative B: Construct 3.8-mile portion of Alternative 2 Route Adoption Alignment.
    - Scenario 1 – Assume traffic volume on Route 25 is the same as no-build.
    - Scenario 2 – Assume traffic volume on Route 25 is the same as Alternative 2.

Figure 2: At-grade Intersections



Additionally, the Traffic Operation Analysis analyzed the operations of the following at-grade intersections under existing, future no-build, and future built conditions:

1. Route 25 / San Felipe Road
2. Route 25 / Wright Road
3. Route 25 / Route 156 (at-grade and interchange)
4. Route 25 / Shore Road
5. Route 25 / Bolsa Road
6. Route 25 / Bloomfield Avenue
7. Route 25 / Flynn Road

There is an on going project to widen Route 101 from 4 lanes to 6 lanes between the Rte 129/Rte 101 interchange in San Benito County and the Monterey Rd/Rte 101 interchange at the south end of Gilroy, including a new interchange at the junction of Route 25 and Route 101. As part of that effort, Dowling Associates is preparing a traffic operations report for Santa Clara Valley Transportation Authority (VTA). The study area for that report encompass Route 101 within the project limits mention and a portion of Route 25 east of Route 101 between the Rte 25/Rte 101 interchange and the junction of Rte 25/Rte 156 in San Benito County.

TRAFFIC DATA COLLECTION

No existing traffic volumes were available prior to this analysis for the intersection listed above. Intersection turning movement volumes were collected in September 2006 and May 2007 during the AM and PM peak periods. The Peak Hour Factor (PHF) obtained from peak period counts were applied to the individual intersections for analysis of existing operation conditions. A summary of the existing turning movement counts is included in Appendix A. The latest traffic census data from 2006 shows the truck percentage is approximately 10% on Route 25 near Briggs Road and 6.5% at the Route 101 junction.

Additionally, directional traffic volumes were collected in September 2006 on Route 25 near San Felipe Road, Wright Road, Highway 156 junction, Shore Road, and Bloomfield Avenue.

Future forecast traffic volumes were obtained from the Association of Monterey Bay Area Governments (AMBAG) Travel Forecast Model for the No-build alternative, Alternative 1, and Alternative 2. Peak Hour Factors are assumed to be 0.92 in urban areas and 0.88 in rural areas for future conditions. A summary of the future (No-build, Alternative 1, & Alternative 2) turning movement counts is included in Appendix A.

LEVEL OF SERVICE METHODOLOGIES

The operations of roadway facilities are described with the term Level of Service (LOS). LOS is a qualitative description of traffic flow based on such factors as speed, travel time, delay, and freedom to maneuver. Six levels are defined from LOS A, as the best operating conditions, to LOS F, or the worse operating conditions. LOS E represents "at-capacity" operations. When volumes exceed capacity, stop-and-go conditions result and operations are designated as LOS F. Two software packages were used for the analysis: SYNCHRO software for signalized intersections, Highway Capacity Software (HCS) was used for unsignalized intersections and roadway segments (two-lane conventional highway & four-lane expressway).

Intersections

Signalized Intersections

The level of service methodology adopted by Caltrans analyzes a signalized intersection's operation based on average control vehicular delay calculated using the method described in Chapter 16 of the 2000 Highway Capacity Manual (HCM). Control delay includes initial deceleration delay, queue move-up time, stopped delay, and final acceleration delay. Table 1 summarizes the relationship between delay and LOS for signalized intersections.

Caltrans' level of service threshold for signalized intersections is LOS C or better.

Table 1: SIGNALIZED INTERSECTION LEVEL OF SERVICE CRITERIAS

Level of Service	Description	Average Control Delay Per Vehicle (Sec)
A	Operations with very low delay occurring with favorable progression and/or short cycle lengths.	≤ 10.0
B	Operations with low delay occurring with good progression and/or short cycle lengths.	10.1 to 20.0
C	Operations with average delays resulting from fair progression and/or longer cycle lengths. Individual cycle failures begin to appear.	20.1 to 35.0
D	Operations with longer delays due to a combination of unfavorable progression, long cycle lengths, and high v/c ratios. Many vehicles stop and individual cycle failures are noticeable.	35.1 to 55.0
E	Operations with high delay values indicating poor progression, long cycle lengths, and high v/c ratios. Individual cycle failures are frequent occurrences.	55.1 to 80.0
F	Operations with delays unacceptable to most drivers occurring due to over-saturation, poor progression, or very long cycle lengths.	> 80.0

Unsignalized Intersections

Unsignalized intersections were evaluated using the methodology contained in Chapter 17 of the 2000 HCM. The LOS rating is based on the weighted average control delay expressed in seconds per vehicle. Control delay includes initial deceleration delay, queue move-up time, stopped delay, and final acceleration. At two-way or side street-controlled intersections, LOS was calculated for each controlled movement, not for the intersection as a whole. For approaches composed of a single lane, the control delay was computed as the average of all movements in that lane. For all-way stop controlled locations, LOS was computed for the intersection as a whole. Table 2 summarizes the relationship between delay and LOS for unsignalized intersections.

Caltrans' level of service threshold for signalized intersections is LOS C or better.

Table 2: UNSIGNALIZED INTERSECTION LEVEL OF SERVICE CRITERIAS

Level of Service	Description	Average Control Delay Per Vehicle (Sec)
A	Little or no delay.	≤ 10.0
B	Short traffic delays.	10.1 to 15.0
C	Average traffic delays.	15.1 to 25.0
D	Long traffic delays.	25.1 to 35.0
E	Very long traffic delays.	35.1 to 50.0
F	Extreme traffic delays with capacity exceeded.	> 50.0

Roadway Segments

Two-lane Highway Segments

Roadways were evaluated using the two-lane highway analysis methodology described in Chapter 20 of the 2000 HCM. The LOS designation for two-lane highway facilities, as shown in Table 3, is correlated to the Percent Time-Spent-Following (PTSF), which is defined as the average percentages of travel time vehicles spend traveling in platoons behind slower vehicles due to their inability to pass. The HCS analysis software was used to calculate the LOS of each two-lane highway segment. In the minimum acceptable highway LOS is C.

Two-lane highway facilities are separated into two classes. Class I facilities have higher speeds and more direct routes where mobility is more important which drivers expect to travel at relatively high speeds. The LOS is defined by both PTSF and average travel speed (ATS). Two-lane highways that are major intercity routes, primary arterials connecting major traffic generators, daily commuter routes, or primary links in state or national highway. Route 25 is a Class I facility between San Felipe Road and the Highway 101 junction.

Class II facilities have slower travel speeds and drivers are more acceptable to the higher levels of time-spent-following. These highways primarily serve shorter trips, the beginning & ending portions of longer trips, or recreational trips where travel time is less important. LOS is defined only in terms of percent time-spent-following without consideration of average travel speed.

Table 3: TWO-LANE HIGHWAY LEVEL OF SERVICE CRITERIAS

Level of Service	Class I		Class II
	ATS (mph)	PTSF	PTSF
A	> 55	≤ 35 %	≤ 40%
B	50.1 to 55	35.1% to 50%	40.1% to 55%
C	45.1 to 50	50.1% to 65%	55.1% to 70%
D	40.1 to 45	65.1% to 80%	70.1% to 85%
E	30.1 to 40	80.1% to 100%	85.1% to 100%
F	< 30	100%	100%

Multilane Expressway Segments

Multilane expressways were evaluated using the methodology outlined in Chapter 21 of the 2000 HCM. This method was used to evaluate operations proposed four-lane expressway. The criteria for multilane highway segments are based on density (passenger car per mile per lane, pc/ml/ln) and the typical flow rate (passenger car per hour per lane, pc/h/ln) of the roadway segment. The correlation to LOS designation is shown in Table 4.4. Caltrans' level of service standard is LOS C.

Table 4: MULTILANE EXPRESSWAY LEVEL OF SERVICE CRITERIAS

Free-Flow Speed	Criteria	Level of Service				
		A	B	C	D	E
60 mph	Maximum Density (pc/ml/ln)	11	18	26	35	40
	Average Speed (mph)	60.0	60.0	59.4	56.7	55.0
	Maximum Volume to Capacity Ratio (v/c)	0.30	0.49	0.70	0.90	1.00
	Maximum Service Flow Rate (pc/h/ln)	660	1080	1550	1980	2200
55 mph	Maximum Density (pc/ml/ln)	11	18	26	35	41
	Average Speed (mph)	55.0	55.0	54.9	52.9	51.2
	Maximum Volume to Capacity Ratio (v/c)	0.29	0.47	0.68	0.88	1.00
	Maximum Service Flow Rate (pc/h/ln)	600	990	1430	1850	2100

Table 4 (Continue)

Free-Flow Speed	Criteria	Level of Service				
		A	B	C	D	E
50 mph	Maximum Density (pc/ml/ln)	11	18	26	35	43
	Average Speed (mph)	50.0	50.0	50.0	48.9	47.5
	Maximum Volume to Capacity Ratio (v/c)	0.28	0.45	0.65	0.86	1.00
	Maximum Service Flow Rate (pc/h/ln)	550	900	1300	1710	2000
45 mph	Maximum Density (pc/ml/ln)	11	18	26	35	45
	Average Speed (mph)	45.0	45.0	45.0	44.4	42.2
	Maximum Volume to Capacity Ratio (v/c)	0.26	0.43	0.62	0.82	1.00
	Maximum Service Flow Rate (pc/h/ln)	490	810	1170	1550	1900
Note: Density is the primary determinant of LOS. LOS F is characterized by highly unstable and variable traffic flow. Prediction of accurate flow rate, density, and speed at LOS F is difficult.						

Basis Freeway Segments

Freeway mainline segments were evaluated using the methodology presented in 2000 HCM. The procedure is based on the density of the traffic flow using methods described Chapter 23: Basis Freeway Segments. Density is expressed in vehicles per mile per lane (veh/mi/ln). Table 5 presents the range of densities for freeway mainline segment Level of Service.

Caltrans' level of service threshold is LOS C or better.

Table 5: FREEWAY LEVEL OF SERVICE CRITERIAS

Free-Flow Speed	Criteria	Level of Services				
		A	B	C	D	E
75 mph	Maximum Density (pc/ml/ln)	11	18	26	35	45
	Average Speed (mph)	75.0	74.8	70.6	62.2	53.3
	Max Volume to Capacity Ratio (v/c)	0.34	0.56	0.76	0.90	1.00
	Maximum Service Flow Rate (pc/h/ln)	820	1350	1830	2170	2400
70 mph	Maximum Density (pc/ml/ln)	11	18	26	35	45
	Average Speed (mph)	70.0	70.0	68.2	61.5	53.3
	Maximum Volume to Capacity Ratio (v/c)	0.32	0.53	0.74	0.90	1.00
	Maximum Service Flow Rate (pc/h/ln)	770	1260	1770	2150	2400
65 mph	Maximum Density (pc/ml/ln)	11	18	26	35	45
	Average Speed (mph)	65.0	65.0	64.6	59.7	52.2
	Maximum Volume to Capacity Ratio (v/c)	0.30	0.50	0.71	0.89	1.00
	Maximum Service Flow Rate (pc/h/ln)	710	1170	1680	2090	2350
60 mph	Maximum Density (pc/ml/ln)	11	18	26	35	45
	Average Speed (mph)	60.0	60.0	60.0	57.6	51.1
	Maximum Volume to Capacity Ratio (v/c)	0.29	0.47	0.68	0.88	1.00
	Maximum Service Flow Rate (pc/h/ln)	660	1080	1560	2020	2300
55 mph	Maximum Density (pc/ml/ln)	11	18	26	35	45
	Average Speed (mph)	55.0	55.0	55.0	54.7	50.0
	Maximum Volume to Capacity Ratio (v/c)	0.27	0.44	0.64	0.85	1.00
	Maximum Service Flow Rate (pc/h/ln)	600	990	1430	1910	2250

Traffic Signal Warrants

As required by the California Manual on Uniform Traffic Control Devices (CA MUTCD, 2006 Edition), the justification to signalize an at-grade intersection requires an engineering study of traffic conditions, pedestrian characteristics, and physical characteristics of the location to determine whether installation of a signal is warranted. The study includes the following signal warrants and other factors related to existing operation and safety at a location:

Warrant 1, Eight-Hour Vehicular Volume.
Warrant 2, Four-Hour Vehicular Volume.
Warrant 3, Peak Hour.
Warrant 4, Pedestrian Volume.
Warrant 5, School Crossing.
Warrant 6, Coordinated Signal System.
Warrant 7, Crash Experience.
Warrant 8, Roadway Network.

For new intersections or other locations where it is not practical to count actual traffic volumes, the Average Traffic Estimate warrant is used. It is based on forecasted Average Daily Traffic (ADT). For this Operations Analysis, only the ADT warrant can be utilize to evaluate the need of the at-grade unsignalized intersections. The ADT warrant is only used as a guide to estimate when a traffic signal is needed in the future. It is by no mean the determining factor for the installation of a traffic signal. A more thorough investigation is needed when the time comes which should include the eight warrants using actual field data and not just forecasted ADT volumes.

LEVEL OF SERVICE ANALYSIS RESULTS

Existing (2006 & 2007)

Two-Lane Highway Segments

The existing Route 25 within the project limits is a Class I two-lane highway facility. It serves as a commuter route and a primary connector between the City of Hollister and US Highway 101. The section of Route 25 in the project limits is broken into three segments for the analysis: San Felipe Rd to Junction of Route 156, Junction of Route 156 to Hudner Lane, Hudner Lane to the railroad crossing west of Bloomfield Avenue. The existing AADT are shown on Table 6 and the results of the segment operational analysis are presented in Table 7.

The corresponding LOS calculations are attached to Appendix B.

Table 6: Existing (2006) Annual Average Daily Traffic

Segment	AADT
San Felipe Rd to Jct Rte 156	14,700
Jct Rte 156 to Hudner Ln	21,300
Hudner Ln to RRXing	22,500
SBt 156 n/o SBt 25	11,300
SBt 156 s/o SBt 25	14,000

Table 7: Existing Two-Lane Highway Segment LOS*

Segment	Peak Hour	Count Date	PTSF (%)	ATS (mph)	v/c	LOS
San Felipe Rd to Jct Rte 156	AM	Sep-06	83.1	44.9	0.50	E
	PM	Sep-06	82.3	45.0	0.49	E
Jct Rte 156 to Hudner Ln	AM	May-07	82.0	43.7	0.61	E
	PM	May-07	84.6	42.4	0.67	E
Hudner Ln to Jct Rte 101	AM	May-07	82.0	43.7	0.61	E
	PM	May-07	84.6	42.4	0.67	E

Intersections

The existing lane configurations and peak hour turning movement volumes are attached to Appendix A. The traffic volumes collected in September, 2006 and May, 2007 was used to determine the LOS for the seven at-grade intersections. The AM and PM peak hour operational condition are presented in Table 8. The corresponding LOS calculations are attached to Appendix C.

Table 8: Existing Intersection LOS

E-W Road	N-S Road	Intersection Control	Lane Configuration	Count Date	AM Peak			PM Peak		
					Delay (sec)	LOS		Delay (sec)	LOS	
Rte 25	San Felipe Rd	TWSC	NB 1-L, 2-T	Sep-06	64.5	F		14.4	B	
			SB 2-T, 1-R		0.0	A		0.0	A	
			EB 1-L, 1-R		> 50.0	F		42.9	F	
Rte 25 (w/Bypass)	San Felipe Rd	Signal	NB 2-L, 1-T, 1-TR	2008	22.3	C		23.9	C	
			SB 2-L, 1-T, 1-TR		22.5	C		23.5	C	
			EB 1-L, 2-T, 1-R		12.5	B	18.3 sec	18.6	B	20.5 sec
			WB 1-L, 2-T, 2-R		16.3	B	B	15.6	B	B
Wright Rd	Rte 25	TWSC	NB 1-L, 1-TR	Sep-06	7.9	A		11.0	B	
			SB 1-L, 1-TR		11.5	B		8.4	A	
			WB 1-LTR		48.8	E		> 50.0	F	
			EB 1-LTR		48.6	E		> 50.0	F	
Briggs Rd (North)	Rte 25	TWSC	NB 1-LTR	Sep-06	8.0	A		11.2	B	
			SB 1-LTR		11.2	B		8.2	A	
			WB 1-LTR		20.6	C		10.8	B	
Rte 25	Briggs Rd (South)	TWSC	NB 1-LTR	Sep-06	37.1	E		48.4	E	
			SB 1-LTR		40.3	E		48.9	E	
			WB 1-LTR		7.9	A		11.2	B	
			EB 1-LTR		11.1	B		8.2	A	
Flynn Rd	Rte 25	TWSC	NB 1-TR	Sep-06	0.0	A		0.0	A	
			SB 1-L, 1-T		11.5	B		8.3	A	
			WB 1-LR		21.9	C		16.5	C	
Rte 25	Rte 156	Signal	NB 1-L, 1-T, 1-TR	Sep-06	39.8	D		37.5	D	
			SB 1-L, 1-T, 1-TR		35.7	D		34.2	C	
			EB 1-L, 1-T, 1-TR		21.4	C	33.5 sec	29.5	C	29.8 sec
			WB 1-L, 1-T, 1-TR		34.7	C	C	19.0	B	C
Shore Rd	Rte 25	TWSC	NB 1-TR	Sep-06	0.0	A		0.0	A	
			SB 1-L, 1-T		14.1	B		9.2	A	
			WB 1-LR		> 50.0	F		> 50.0	F	
Rte 25	Bolsa Rd	TWSC	WB 1-TR	May-07	0.0	A		0.0	A	
			EB 1-LT		12.9	B		8.9	A	
			SB 1-LR		> 50.0	F		> 50.0	F	
Rte 25	Bloomfield Ave	TWSC	WB 1-TR	May-07	0.0	A		0.0	A	
			EB 1-L, 1-T		13.5	B		9.2	A	
			SB 1-LR		39.9	E		> 50.0	F	

Future No-build

Two-Lane Highway Segments

The future no-build alternative assumes no roadway improvements on Route 25 within the study limits. However, east of the San Felipe Road intersection it is assumed that the Route 25 Bypass improvement has been completed. The portion of Route 25 within the project limits is broken into three segments for the analysis: San Felipe Rd to Junction of Route 156, Junction of Route 156 to Hudner Lane, Hudner Lane to the railroad crossing west of Bloomfield Avenue. The future AADT volumes are shown on Table 9. The future AADT volumes are the same for all no-build and build alternatives. The future two-lane highway operational conditions in the year 2015 and 2035 are presented in Table 10. The corresponding LOS calculations are attached to Appendix D.

Table 9: Future Project Annual Average Daily Traffic

Location	2015	2025	2035
SBt 25 (PM 51.4 to 54.0)	20,100	23,800	23,700
SBt 25 (PM 54.0 to 60.1)	22,900	29,100	28,900
SBt 25 (PM 0.0 to 2.1)	22,700	33,500	32,200
SBt 156 n/o SBt 25	14,450	20,500	21,100
SBt 156 s/o SBt 25	16,980	22,000	22,700

Table 10: Future No-build Two-Lane Highway Segment LOS*

Segment	Peak Hour	Count Date	PTSF (%)	ATS (mph)	v/c	LOS
San Felipe Rd to Jct Rte 156	AM	2015	83.9	44.5	0.52	E
	PM	2015	84.5	45.2	0.48	E
Jct Rte 156 to Hudner Ln	AM	2015	87.9	40.8	0.69	E
	PM	2015	89.6	41.5	0.66	E
Hudner Ln to Jct Rte 101	AM	2015	87.9	40.8	0.69	E
	PM	2015	89.6	41.5	0.66	E
San Felipe Rd to Jct Rte 156	AM	2025	86.5	42.4	0.61	E
	PM	2025	85.4	43.2	0.58	E
Jct Rte 156 to Hudner Ln	AM	2025	89.4	40.4	0.70	E
	PM	2025	88.6	41.1	0.67	E
Hudner Ln to Jct Rte 101	AM	2025	89.4	40.4	0.70	E
	PM	2025	88.6	41.1	0.67	E
San Felipe Rd to Jct Rte 156	AM	2035	90.9	38.8	0.76	E
	PM	2035	89.3	40.4	0.70	E
Jct Rte 156 to Hudner Ln	AM	2035	92.4	37.4	0.83	E
	PM	2035	91.2	38.8	0.77	E
Hudner Ln to Jct Rte 101	AM	2035	92.4	37.4	0.83	E
	PM	2035	91.2	38.8	0.77	E

Intersections

The future No-build alternative assumes no changes to lane configuration at the seven intersections within the study limits. With the exception that the Route 25 Bypass has been completed. The Route 25/San Felipe Road intersection is relocated just to north of the existing intersection. Instead of the existing T intersection, a fourth leg is added on the east side of the intersection.

The results of the intersection analysis are presented in Table 11. The corresponding LOS calculations are attached to Appendix E.

Table 11A: Future (2015) No-build Intersection LOS

E-W Road	N-S Road	Intersection Control	Lane Configuration	Count Date	AM Peak			PM Peak		
					Delay (sec)	LOS		Delay (sec)	LOS	
Rte 25	San Felipe Rd	Signal	NB 2-L, 1-T, 1-TR	2015	24.8	C		24.1	C	
			SB 2-L, 1-T, 1-TR		25.3	C		24.8	C	
			EB 1-L, 2-T, 1-R		18.7	B	20.1 sec	21.6	C	22.0 sec
			WB 1-L, 2-T, 2-R		15.4	B	C	16.0	B	C
Wright Rd	Rte 25	TWSC	NB 1-L, 1-TR	2015	9.1	A		9.5	A	
			SB 1-L, 1-TR		10.7	B		9.3	A	
			EB 1-LTR		> 50.0	F		41.5	E	
			WB 1-LTR		> 50.0	F		36.2	E	
Briggs Rd (North)	Rte 25	TWSC	NB 1-LTR	2015	9.2	A		9.8	A	
			SB 1-LTR		10.2	B		9.1	A	
			WB 1-LTR		17.1	C		13.3	B	
Rte 25	Briggs Rd (South)	TWSC	NB 1-LTR	2015	> 50.0	F		46.4	E	
			SB 1-LTR		> 50.0	F		46.9	E	
			WB 1-LTR		9.2	A		9.8	A	
			EB 1-LTR		10.2	B		9.1	A	
Flynn Rd	Rte 25	TWSC	NB 1-TR	2015	0.0	A		0.0	A	
			SB 1-L, 1-T		10.1	B		9.0	A	
			WB 1-LR		17.8	C		16.0	C	
Rte 25	Rte 156	Signal	NB 1-L, 1-T, 1-TR	2015	35.3	D		28.2	C	
			SB 1-L, 1-T, 1-TR		35.6	D		26.9	C	
			EB 1-L, 1-T, 1-TR		25.1	C	31.5 sec	25.6	C	26.0 sec
			WB 1-L, 1-T, 1-TR		32.8	C	C	19.1	B	C
Shore Rd	Rte 25	TWSC	NB 1-T, 1-R	2015	0.0	A		0.0	A	
			SB 1-L, 1-T		13.3	B		11.4	B	
			WB 1-LR		36.4	E		33.9	D	
Rte 25	Bolsa Rd	TWSC	WB 1-TR	2015	0.0	A		0.0	A	
			EB 1-LT		11.8	B		10.1	B	
			SB 1-LR		> 50.0	F		> 50.0	F	
Rte 25	Bloomfield Ave	TWSC	WB 1-TR	2015	0.0	A		0.0	A	
			EB 1-L, 1-T		19.7	C		12.0	B	
			SB 1-LR		> 50.0	F		29.0	D	

Table 11B: Future (2025) No-build Intersection LOS

E-W Road	N-S Road	Intersection Control	Lane Configuration	Count Date	AM Peak			PM Peak		
					Delay (sec)	LOS		Delay (sec)	LOS	
Rte 25	San Felipe Rd	Signal	NB 2-L, 1-T, 1-TR	2025	28.1	C		28.3	C	
			SB 2-L, 1-T, 1-TR		28.6	C		29.9	C	
			EB 1-L, 2-T, 1-R		20.7	C	22.8 sec	28.6	C	26.4 sec
			WB 1-L, 2-T, 2-R		17.9	B	C	15.9	B	C
Wright Rd	Rte 25	TWSC	NB 1-L, 1-TR	2025	9.7	A		10.2	B	
			SB 1-L, 1-TR		11.9	B		9.9	A	
			EB 1-LTR		> 50.0	F		> 50.0	F	
			WB 1-LTR		> 50.0	F		> 50.0	F	
Briggs Rd (North)	Rte 25	TWSC	NB 1-LTR	2025	9.7	A		10.5	B	
			SB 1-LTR		11.0	B		9.5	A	
			WB 1-LTR		20.1	C		14.7	C	
Rte 25	Briggs Rd (South)	TWSC	NB 1-LTR	2025	> 50.0	F		> 50.0	F	
			SB 1-LTR		> 50.0	F		> 50.0	F	
			WB 1-LTR		9.7	A		10.5	B	
			EB 1-LTR		11.0	B		9.5	A	
Flynn Rd	Rte 25	TWSC	NB 1-TR	2025	0.0	A		0.0	A	
			SB 1-L, 1-T		10.9	B		9.5	A	
			WB 1-LR		21.3	C		19.7	C	
Rte 25	Rte 156	Signal	NB 1-L, 1-T, 1-TR	2025	37.6	D		30.4	C	
			SB 1-L, 1-T, 1-TR		37.5	D		30.6	C	
			EB 1-L, 1-T, 1-TR		40.5	D	39.4 sec	31.4	C	30.7 sec
			WB 1-L, 1-T, 1-TR		40.4	D	D	24.2	C	C
Shore Rd	Rte 25	TWSC	NB 1-T, 1-R	2025	0.0	A		0.0	A	
			SB 1-L, 1-T		13.7	B		11.7	B	
			WB 1-LR		39.5	E		36.7	E	
Rte 25	Bolsa Rd	TWSC	WB 1-TR	2025	0.0	A		0.0	A	
			EB 1-LT		12.3	B		10.4	B	
			SB 1-LR		> 50.0	F		> 50.0	F	
Rte 25	Bloomfield Ave	TWSC	WB 1-TR	2025	0.0	A		0.0	A	
			EB 1-L, 1-T		24.3	C		15.5	C	
			SB 1-LR		> 50.0	F		41.0	E	

Table 11C: Future (2035) No-build Intersection LOS

E-W Road	N-S Road	Intersection Control	Lane Configuration	Count Date	AM Peak			PM Peak		
					Delay (sec)	LOS		Delay (sec)	LOS	
Rte 25	San Felipe Rd	Signal	NB 2-L, 1-T, 1-TR	2035	33.9	C		32.5	C	
			SB 2-L, 1-T, 1-TR		34.5	C		37.1	D	
			WB 1-L, 2-T, 2-R		22.6	C	26.6 sec	37.0	D	32.0 sec
			EB 1-L, 2-T, 1-R		20.4	C	C	16.7	B	D
Wright Rd	Rte 25	TWSC	NB 1-L, 1-TR	2035	10.2	B		10.9	B	
			SB 1-L, 1-TR		13.5	B		10.6	B	
			EB 1-LTR		> 50.0	F		>50.0	F	
			WB 1-LTR		> 50.0	F		>50.0	F	
Briggs Rd (North)	Rte 25	TWSC	NB 1-LTR	2035	10.3	B		11.3	B	
			SB 1-LTR		12.0	B		10.0	B	
			WB 1-LTR		24.6	C		16.4	C	
Rte 25	Briggs Rd (South)	TWSC	NB 1-LTR	2035	> 50.0	F		> 50.0	F	
			SB 1-LTR		> 50.0	F		> 50.0	F	
			WB 1-LTR		12.0	B		11.3	B	
			EB 1-LTR		10.3	B		10.0	A	
Flynn Rd	Rte 25	TWSC	NB 1-TR	2035	0.0	A		0.0	A	
			SB 1-L, 1-T		11.7	B		9.9	A	
			WB 1-LR		>50.0	F		38.6	E	
Rte 25	Rte 156	Signal	NB 1-L, 1-T, 1-TR	2035	49.2	D		35.2	D	
			SB 1-L, 1-T, 1-TR		49.9	D		33.9	C	
			WB 1-L, 1-T, 1-TR		69.9	E	55.0 sec	31.1	C	37.6 sec
			EB 1-L, 1-T, 1-TR		46.8	D	E	46.7	D	D
Shore Rd	Rte 25	TWSC	NB 1-T, 1-R	2035	0.0	A		0.0	A	
			SB 1-L, 1-T		14.0	B		11.9	B	
			WB 1-LR		>50.0	F		>50.0	F	
Rte 25	Bolsa Rd	TWSC	WB 1-TR	2035	0.0	A		0.0	A	
			EB 1-LT		13.0	B		10.8	B	
			SB 1-LR		>50.0	F		>50.0	F	
Rte 25	Bloomfield Ave	TWSC	WB 1-TR	2035	0.0	A		0.0	A	
			EB 1-L, 1-T		33.7	D		17.9	C	
			SB 1-LR		>50.0	F		>50.0	F	

Future Alternative 1

Four-Lane Expressway Segments

The Route Adoption Alternative 1 proposes to align the future southern segment of the four-lane expressway to the northeast of the existing two-lane highway. The northern segment would parallel the existing alignment just to the northeast beginning from the bend in Route 25 approximately ½ mile south of Shore Road (PM 56.1) in San Benito County to US Route 101 in Santa Clara County. Between post mile 56.1 in San Benito County and the southern end of the proposed project at San Felipe Road, this alternative proposes to align the future four-lane expressway generally to the east (or north) of the existing two-lane north/south highway. The alignment width is enough to accommodate a future four-lane expressway (342 feet) with a 62-foot median and one or two frontage roads. The alignment will also include right-of-way to accommodate a proposed future interchange just north of the existing at-grade intersection at Route 25/Route 156. Other improvements include new bridges over Carnadero Creek and the Pajaro River, and overcrossings of the Union Pacific Railroad Hollister branch line and the Union Pacific railroad line just east of Rte 101.

The results of the four-lane expressway analysis are presented in Table 12 for the year 2015, 2025, and 2035. The corresponding LOS calculations are attached to Appendix F.

Table 12: Future Four-Lane Expressway (Alt. 1) Segment LOS[Error! Bookmark not defined.]

Segment	Peak Hour	Count	ATS (mph)	Density (pc/mi/ln)	LOS
San Felipe Rd to Jct Rte 156	AM	2015	59.3	11.1	B
	PM	2015	59.3	8.5	A
Jct Rte 156 to Hudner Ln	AM	2015	59.5	12.2	B
	PM	2015	59.5	9.0	A
Hudner Ln to Jct Rte 101	AM	2015	59.5	12.2	B
	PM	2015	59.5	9.0	A
San Felipe Rd to Jct Rte 156	AM	2025	59.3	12.9	B
	PM	2025	59.3	10.0	A
Jct Rte 156 to Hudner Ln	AM	2025	59.5	14.9	B
	PM	2025	59.5	11.2	B
Hudner Ln to Jct Rte 101	AM	2025	59.5	14.9	B
	PM	2025	59.5	11.2	B
San Felipe Rd to Jct Rte 156	AM	2035	59.3	15.5	B
	PM	2035	59.3	12.9	B
Jct Rte 156 to Hudner Ln	AM	2035	59.5	17.4	B
	PM	2035	59.5	15.2	B
Hudner Ln to Jct Rte 101	AM	2035	59.5	17.4	B
	PM	2035	59.5	15.2	B

Although there are two short freeway segments within the study area on Route 25 for Alternatives 1 and 2: in and near the Route 25/156 interchange, and between Bolsa Road and Route 101 junction. The two short freeway segments are assumed to be four-lane expressway for the analysis. Typically, an expressway segment has a lower vehicle capacity per lane compared to a basic freeway segment. The results in Table 12 illustrate that the four-expressway would operate with a LOS B or better during peak hours of operation up to the year 2035; the short freeway segments would operate with a LOS B or better.

Intersections

A majority of the intersections within the study limits would remain at-grade access to Route 25 with the exception of Route 156 and Bloomfield Ave. A new diamond interchange is proposed at the junction of Routes 25 and 156. The at-grade intersection at Bloomfield Ave would be closed. Access to Route 25 from Bloomfield Ave is possible via the intersection at Bolsa Road instead.

The Route 25/156 interchange is assumed to be the diamond layout with the on/off-ramps from Route 25 intersecting Route 156. The forecasted traffic volumes on Route 25 are more than double that of Route 156. Thus, it is logical to have the ramp intersections on Route 156. If the at-grade ramp intersections on Route 156 are to be signalized in the future, the overall impact would be less as oppose to having the ramp intersections on Route 25.

The results of the intersection analysis are presented in Table 13 below. The corresponding LOS calculations are attached to Appendix G.

The westbound and eastbound approaches at Wright Road and Flynn Road would operate at LOS E or worse. That is to be expected as the through movement volumes on Route 25 are much higher than the minor approaches. Although the average delays of the minor legs are high, due to the low volumes, there is no extensive queuing on the minor legs. The operation of the intersection would achieve a LOS C or better with signals. However, based on the forecasted ADT, neither intersection would meet signal warrant in 2025; Wright Road would meet the ADT signal warrant in 2035. Signalizing the intersections for such low volume approaches would seriously disrupt the progression of traffic flow on Route 25 where there is little or no disruption unsignalized.

The Route 25 ramp intersections with Route 156 would experience delays operating with LOS E or worse. Similar to Wright Road and Flynn Road, the ramp intersections volumes are low enough to not experience any significant queuing. The Route 25 southbound off-ramp intersection would meet the ADT signal warrant by 2025. The northbound off-ramp would not meet the ADT signal warrant at all. Likewise, it is recommended to operate the Route 25 ramp intersections unsignalized with stop controlled.

Table 13: Future (Alt. 1) Intersection LOS

E-W Road	N-S Road	Intersection Control	Lane Configuration	Count Date	AM Peak			PM Peak		
					Delay (sec)	LOS		Delay (sec)	LOS	
Rte 25	San Felipe Rd	Signal	NB 2-L, 1-T, 1-TR	2035	29.7	C		27.0	C	
			SB 2-L, 1-T, 1-TR		29.0	C		31.2	C	
			WB 1-L, 3-T, 2-R		16.9	B	22.3 sec	14.0	B	25.2 sec
			EB 1-L, 2-T, 1-R		20.5	B	C	25.7	C	C
Wright Rd	Rte 25	TWSC	NB 1-L, 1-T, 1-TR	2035	10.5	B		12.2	B	
			SB 1-L, 1-T, 1-TR		22.5	C		10.4	B	
			WB 1-LT, 1-R		>50.0	F		17.1	C	
			EB 1-LT, 1-R		>50.0	F		36.2	D	
Flynn Rd	Rte 25	TWSC	NB 1-L, 1-T, 1-TR	2035	11.0	B		13.5	B	
			SB 1-L, 1-T, 1-TR		26.8	D		10.7	B	
			WB 1-L, 1-TR		24.7	C		18.3	C	
			EB 1-L, 1-TR		>50.0	F		33.3	D	
Rte 25 NB Ramps	Rte 156	TWSC	NB 1-L, 1-T	2035	10.4	B		10.5	B	
			SB 1-TR		0.0	A		0.0	A	
			WB 1-L, 1-TR		>50.0	F		>50.0	F	
		Signal	NB 1-L, 1-T		9.1	A		8.3	A	
			SB 1-T, 1-R		7.2	A	8.6 sec	6.3	A	8.8 sec
			WB 1-L, 1-TR		16.5	B	A	21.4	C	A
Rte 25 SB Ramps	Rte 156	TWSC	NB 1-TR	2035	0.0	A		0.0	A	
			SB 1-L, 1-T		9.7	A		10.7	B	
			EB 1-L, 1-TR		49.9	F		31.7	D	
		Signal	NB 1-T, 1-R		9.8	A		18.9	B	
			SB 1-L, 1-T		7.9	A	9.7 sec	10.6	B	15.9 sec
			EB 1-L, 1-TR		16.7	B	A	19.6	B	B
Shore Rd	Rte 25	TWSC	NB 2-T, 1-R	2035	0.0	A		0.0	A	
			SB 1-L, 2-T		42.5	E		25.9	D	
			WB 1-L, 1-R		>50.0	F		>50.0	F	
		Signal	NB 2-T, 1-R		26.0	C		19.9	B	
			SB 2-L, 2-T		8.2	A	20.6 sec	12.9	B	16.0 sec
			WB 1-L, 1-R		34.7	C	C	19.2	B	B
Rte 25	Bolsa Rd	TWSC	NB 1-L, 1-TR	2035	>50.0	F		19.7	C	
			SB 1-L, 1-TR		>50.0	F		27.2	D	
			WB 1-L, 1-T, 1-TR		14.3	B		15.8	C	
			EB 1-L, 1-T, 1-TR		36.5	E		12.5	B	
		Signal	NB 1-L, 1-TR		26.9	C		15.8	B	
			SB 1-L, 1-TR		29.8	C		16.4	B	
			WB 1-L, 1-T, 1-TR		16.9	B	14.6 sec	4.8	A	6.9 sec
			EB 1-L, 1-T, 1-TR		10.1	B	B	7.3	A	A

The Route 25/Shore Road intersection meets ADT signal warrant by 2025, as the traffic volume is forecasted to increase sharply in the future build alternatives on Shore Road. The Route 25/Bolsa Road intersection meets ADT signal warrant in 2035. However, a signal at Bolsa Road intersection is not recommended. The intersection is the terminus of the freeway segment to the west.

With the exception of Route 25 intersections at San Felipe Road and Route 156, it is recommended to continue to operate the existing unsignalized intersections and the new ramp intersections with stop-controlled. Although the signal warrants are met at intersection at Wright Road, the Route 25 southbound ramps at Route 156, Shore Road, and Bolsa Road, the ADT warrants only shows these intersection are candidates for signalization and not necessarily a requirement. The future operations of the intersections should be monitored, and when necessary conduct further signal warrant analysis using actual field traffic data to evaluate whether signal control is more beneficial than unsignalized.

Table 14 is a summary of the signal warrant analysis for the existing unsignalized intersections and the new ramp intersections. Signal warrant analysis worksheets are attached in Appendix M.

Table 14: Signal Warrants Summary (ADT)

	Intersection	Condition A	Condition B	Combination of A + B (80%)
2025	Wright Rd	No	No	No
	Flynn Rd	No	No	No
	NB On/Offramp	No	No	No
	SB On/Offramp	No	No	No
	Shore Rd	Yes	Yes	n/a
	Bolsa Rd	No	Yes	No
2035	Wright Rd	Yes	Yes	n/a
	Flynn Rd	No	No	No
	NB On/Offramp	No	No	No
	SB On/Offramp	Yes	Yes	n/a
	Shore Rd	Yes	Yes	n/a
	Bolsa Rd	Yes	Yes	n/a

Future Alternative 2

Four-Lane Expressway Segments

The Route Adoption Alternative 2 proposes to align the future southern segment of the four-lane expressway to the southwest of the existing two-lane highway. Same as Alternative 1, the northern segment would parallel the existing alignment just to the northeast beginning from the bend in Route 25 approximately ½ mile south of Shore Road (PM 56.1) in San Benito County to Route 101 in Santa Clara County. The alignment width is enough to accommodate a future four-lane expressway (342 feet) with a 62-foot median and one or two frontage roads. Between post mile 56.1 in San Benito County and the southern end of the proposed project at San Felipe Road, the alignment is mostly to the west (or south) of the existing two-lane highway. An interchange is proposed for this alternative just to the south of the existing at-grade intersection at Rte 25/Rte 156. As with Alternative 1, new bridges are proposed over Carnadero Creek and the Pajaro River, and overcrossings of the Union Pacific Railroad Hollister branch line and the Union Pacific main line just east of Route 101. The future AADT volumes are the same as with Alternative 1 shown on Table 9.

The results of the four-lane expressway analysis are presented in Table 15 for the year 2015, 2025, and 2035. The corresponding LOS calculations are attached to Appendix H.

Similar to Alternative 1, Alternative 2 has two freeway segments within the study area on Route 25: in and near the Route 25/156 interchange, and between Bolsa Road and Route 101 junction. The two short freeway segments are assumed to be four-lane expressway for the analysis. The results in Table 15 shows that the four-expressway would operate with a LOS C or better during peak hours of operation up to the year 2035, thus the short freeway segments would also operate at a LOS C or better.

Table 15: Future Four-Lane Expressway (Alt. 2) Segment LOS*

Segment	Peak Hour	Count Date	ATS (mph)	Density (pc/mi/ln)	LOS
San Felipe Rd to Jct Rte 156	AM	2015	59.3	11.2	B
	PM	2015	59.3	9.4	A
Jct Rte 156 to Hudner Ln	AM	2015	59.5	12.1	B
	PM	2015	59.5	9.8	A
Hudner Ln to Jct Rte 101	AM	2015	59.5	12.1	B
	PM	2015	59.5	9.8	A
San Felipe Rd to Jct Rte 156	AM	2025	59.3	13.0	B
	PM	2025	59.3	11.1	B
Jct Rte 156 to Hudner Ln	AM	2025	59.5	14.8	B
	PM	2025	59.5	12.3	B
Hudner Ln to Jct Rte 101	AM	2025	59.5	14.8	B
	PM	2025	59.5	12.3	B
San Felipe Rd to Jct Rte 156	AM	2035	59.3	15.9	B
	PM	2035	59.3	13.1	B
Jct Rte 156 to Hudner Ln	AM	2035	59.5	18.3	C
	PM	2035	59.5	15.6	B
Hudner Ln to Jct Rte 101	AM	2035	59.5	18.3	C
	PM	2035	59.5	15.6	B

Intersections

The improvements are the same as Alternative 1 with a new interchange at the junction of Route 156 and 25. Direct at-grade access to and from Route 25 on Bloomfield Avenue would be closed. Access to Route 25 is provided via Bolsa Road. The Route 25/156 interchange is assumed to be the diamond layout with the on/off-ramps from Route 25 intersecting Route 156. The results of the intersection analysis are presented in Table 16.

The corresponding LOS calculations are attached to Appendix I.

Table 16: Future (Alt 2) Intersection LOS

E-W Road	N-S Road	Intersection Control	Lane Configuration	Count Date	AM Peak			PM Peak		
					Delay (sec)	LOS		Delay (sec)	LOS	
Rte 25	San Felipe Rd	Signal	NB 2-L, 1-T, 1-TR	2035	32.6	C		32.8	C	
			SB 2-L, 1-T, 1-TR		33.0	C		33.7	C	
			WB 1-L, 3-T, 2-R		31.2	C	31.0 sec	22.8	C	31.0 sec
			EB 1-L, 2-T, 1-R		27.1	C	C	32.5	C	C
Wright Rd	Rte 25	TWSC	NB 1-L, 1-T, 1-TR	2035	10.9	B		13.9	B	
			SB 1-L, 1-T, 1-TR		24.2	C		9.9	A	
			WB 1-LT, 1-R		>50.0	F		14.2	B	
			EB 1-LT, 1-R		>50.0	F		25.7	D	
Briggs Rd	Rte 25	TWSC	NB 1-L, 1-T, 1-TR	2035	11.6	B		13.6	B	
			SB 1-L, 1-T, 1-TR		15.6	C		10.2	B	
			WB 1-L, 1-TR		38.1	E		22.3	C	
			EB 1-L, 1-TR		20.4	C		23.7	C	
Rte 25 NB Ramps	Rte 156	TWSC	NB 1-L, 1-T	2035	10.4	B		10.4	A	
			SB 1-TR		0.0	A		0.0	A	
			WB 1-L, 1-TR		>50.0	F		>50.0	F	
		Signal	NB 1-L, 1-T		9.0	A		15.5	B	
			SB 1-T, 1-R		7.3	A	8.6 sec	10.2	B	13.2 sec
			WB 1-L, 1-TR		16.9	B	A	17.2	B	B
Rte 25 SB Ramps	Rte 156	TWSC	NB 1-TR	2035	0.0	A		0.0	A	
			SB 1-L, 1-T		9.8	A		10.5	B	
			EB 1-L, 1-TR		49.1	E		26.7	D	
		Signal	NB 1-T, 1-R		4.1	A		5.7	A	
			SB 1-L, 1-T		3.6	A	5.3 sec	3.8	A	6.5 sec
			EB 1-L, 1-TR		18.3	B	A	19.6	B	A
Shore Rd	Rte 25	TWSC	NB 2-T, 1-R	2035	0.0	A		0.0	A	
			SB 1-L, 2-T		39.7	E		28.8	D	
			WB 1-L, 1-R		>50.0	F		>50.0	F	
		Signal	NB 2-T, 1-R		30.9	C		18.4	B	
			SB 2-L, 2-T		4.3	A	20.3 sec	12.1	B	15.2 sec
			WB 1-L, 1-R		23.3	C	C	19.4	B	B
Rte 25	Bolsa Rd	TWSC	NB 1-L, 1-TR	2035	>50.0	F		20.5	C	
			SB 1-L, 1-TR		>50.0	F		27.2	D	
			WB 1-L, 1-T, 1-TR		14.2	B		15.8	C	
			EB 1-L, 1-T, 1-TR		35.9	E		12.5	B	
		Signal	NB 1-L, 1-TR		33.9	C		16.8	B	
			SB 1-L, 1-TR		34.9	C		17.4	B	
			WB 1-L, 1-T, 1-TR		18.8	B	17.6 sec	4.4	A	6.7 sec
			EB 1-L, 1-T, 1-TR		14.6	B	B	7.0	A	A

Similar to Alternative 1, a majority of the at-grade intersection minor legs would operate at a LOS D or worse during the peak hours. Although the delay is significant, there is no queuing issue associated with the delays due to the lower volumes on the minor approaches. Installing signals at the intersections where they meet signal warrants (see Table 14) will help to reduce the delay on the minor legs to achieve a LOS C, however the negative impact on Route 25 is increased delay. To give a simplified hypothetical situation comparing an intersection with and without a signal; assume a T intersection such as existing Bloomfield Ave/Rte 25 or Bolsa Rd/Rte 25. The combined through volume is 2000 vehicles an hour with another 200 turning left onto the side street. From side street, there's a total of 250 vehicles either turning left or right. Unsignalized with the side street traffic having to stop, none of 2000 through vehicles will experience any delay. The 200 left-turning vehicles will experience an average delay of 20 seconds per vehicle and the 250 entering the intersection from the side street will experience an average of 30 seconds per vehicle. The 450 (200+250) vehicles experiencing delay for the hour will have a combined total of 7.4 hours of delay. Signalized the same intersection, all 2450 vehicles will experience an average delay of 10 seconds per vehicle. The signal has reduced the delay for 450 turning vehicles, but increased the delay of the 2000 through vehicles from zero to 10 seconds. The total delay created with the signal is 20.4 hours, almost three times the delay if unsignalized. The impact of the signal is far greater because the signal affects more vehicles at the intersection verses an unsignalized intersection. The delay between the signalized and unsignalized intersection may reach equilibrium if side street traffic continues to increase. As recommended for Alternative 1, the future operations of the candidate intersections should be monitored and conduct further signal warrant analysis using actual peak hour traffic data rather than forecasted ADT volumes used for this analysis.

Future Alternative A & B

Four-Lane Expressway/Two-Lane Highway Segments

Alternative A would construct the southern end of the Route Adoption Alternative 1 alignment: 3.8 miles in length beginning from San Felipe Road (PM 51.5), and transition back to the existing two-lane highway near Hudner Lane (PM 55.3). Direct access to the expressway would be available from San Felipe Road, Wright Road, Flynn Road, Route 156, two west-side frontage roads and one east-side frontage road. An undercrossing at the Don Chapin Gravel operation driveway would provide access to this otherwise landlocked parcel. Unlike the Route Adoption alternatives, this build alternative proposes to reconfigure the at-grade intersection at Route 25 and Route 156 instead of an interchange, though relocated just north of the existing intersection.

Similar to Alternative A, Alternative B would construct the southern end of the Alternative 2 Route Adoption alignment: 3.8 miles in length beginning from San Felipe Road (PM 51.5), and transition back to the existing two-lane highway near Hudner Lane (PM 55.3). Direct access to the expressway would be available from San Felipe Road, Wright Road, Briggs Road, a west-side frontage road, Route 156, an east-side frontage road, and Hudner Lane. The second west-side frontage road would connect to Hudner Lane. This build alternative would also maintain the at-grade intersection at Route 25/Route 156 instead of an interchange, as it is relocated just to the south of the existing intersection instead.

A few assumptions would have to be made prior to continuing the analysis for Alternative A and B as there are no forecast models for either construction alternative. Comparing the traffic volumes on Route 25 between the no-build and the build alternatives, the no-build volumes on Route 25 are lighter. The Travel Forecast Model predicts that traffic would divert from Route 25 in the no-build alternative due to congestion. This is considered as a constrained model. Traffic would mostly continue to stay away from the segment west of Route 156 if Route 25 between Hudner Lane and Route 101 junction is to remain a two-lane highway. On the other hand, when the forecast model assigns all the traffic demand to the route regardless of the capacity on the link even to the point of over saturation, the forecast model is unconstrained. That would mean there is diversion from Route 25 although there is congestion. For comparison, the segment LOS analysis for Alternative A and B will assume the no-build and build scenarios as follow:

- Alternative A:
  - Scenario 1 (Constrained) – Assume traffic volume on Route 25 is the same as no-build.
  - Scenario 2 (Unconstrained) – Assume traffic volume on Route 25 is the same as Alternative 1.
- Alternative B:
  - Scenario 1 (Constrained) – Assume traffic volume on Route 25 is the same as no-build.
  - Scenario 2 (Unconstrained) – Assume traffic volume on Route 25 is the same as Alternative 2.

Scenario 1(Constrained)

Table 17 shows the segment LOS for Alternative A and B based on future no-build volumes on Route 25. The corresponding LOS calculation worksheets are attached to Appendix J. The four-lane expressway between San Felipe Road and Hudner Lane would operate at LOS B or better during the peak hours. Although the average travel speed remains constant between 2015 and 2035, the vehicle density would increase. The two-lane segment between Hudner Lane and railroad crossing would operate at LOS E during the peak hours. The average travel speed would continue to decline. By 2035, the ATS would be 37.4 mph during the AM peak and 38.8 mph during the PM peak.

Table 17: Alternative A & B Segment LOS (Scenario 1)*

Segment	Peak Hour	Count Date	PTSF (%)	ATS (mph)	Density (pc/mi/ln)	LOS
San Felipe Rd to Jct Rte 156 (4-Ln)	AM	2015		59.3	9.0	A
	PM	2015		59.3	8.0	A
Jct Rte 156 to Hudner Ln (4-Ln)	AM	2015		59.5	11.3	B
	PM	2015		59.5	10.3	A
Hudner Ln to RRXing (2-Ln)	AM	2015	89.0	40.8	0.69 (v/c)	E
	PM	2015	88.2	41.5	0.66 (v/c)	E
RRXing to Jct Rte 101 (4-Ln)	AM	2015		59.5	11.3	B
	PM	2015		59.5	10.3	A
San Felipe Rd to Jct Rte 156 (4-Ln)	AM	2025		59.3	10.5	A
	PM	2025		59.3	9.6	A
Jct Rte 156 to Hudner Ln (4-Ln)	AM	2025		59.5	11.5	B
	PM	2025		59.5	10.5	A
Hudner Ln to RRXing (2-Ln)	AM	2025	89.4	40.4	0.70 (v/c)	E
	PM	2025	88.6	41.1	0.67 (v/c)	E
RRXing to Jct Rte 101 (4-Ln)	AM	2025		59.5	11.5	B
	PM	2025		59.5	10.5	A
San Felipe Rd to Jct Rte 156 (4-Ln)	AM	2035		59.3	12.1	B
	PM	2035		59.3	11.0	A
Jct Rte 156 to Hudner Ln (4-Ln)	AM	2035		59.5	12.9	B
	PM	2035		59.5	11.2	B
Hudner Ln to RRXing (2-Ln)	AM	2035	92.4	37.4	0.83 (v/c)	E
	PM	2035	91.2	38.8	0.77 (v/c)	E
RRXing to Jct Rte 101 (4-Ln)	AM	2035		59.5	11.5	B
	PM	2035		59.5	10.5	A

Scenario 2(Unconstrained)

Table 18 and Table 19 show the segment LOS for Alternative A and Alternative B assuming the traffic volumes forecasted for a fully constructed Alternatives 1 and 2, respectively, in 2015, 2025, and 2035. The four-lane expressway between San Felipe Road and Hudner Lane would operate at an acceptable LOS of C or between during peak hours of operation. However, the two-lane segment between Hudner Lane and the railroad crossing would operate at LOS E in 2015 and 2025, and LOS F by 2035 during the peak hours. Additionally, the volume to capacity ratio (v/c) is greater than one during the AM peak with the average travel speed falling below 30 mph. The traffic volume is above the roadway capacity. Traffic flow would most likely be at a stop-and-go condition.

Table 18: Alternative A Segment LOS (Scenario 2)*

Segment	Peak Hour	Count Date	PTSF (%)	ATS (mph)	Density[6] (pc/mi/ln)	LOS
San Felipe Rd to Jct Rte 156 (4-Ln)	AM	2015		59.3	11.1	B
	PM	2015		59.3	8.5	A
Jct Rte 156 to Hudner Ln (4-Ln)	AM	2015		59.5	12.2	B
	PM	2015		59.5	9.0	A
Hudner Ln to RRXing (2-Ln)	AM	2015	89.2	40.7	0.69 (v/c)	E
	PM	2015	86.7	42.5	0.62 (v/c)	E
RRXing to Jct Rte 101 (4-Ln)	AM	2015		59.5	12.2	B
	PM	2015		59.5	9.0	A
San Felipe Rd to Jct Rte 156 (4-Ln)	AM	2025		59.3	12.9	B
	PM	2025		59.3	10	A
Jct Rte 156 to Hudner Ln (4-Ln)	AM	2025		59.5	14.9	B
	PM	2025		59.5	11.2	B
Hudner Ln to RRXing (2-Ln)	AM	2025	93.1	37.1	0.85 (v/c)	E
	PM	2025	90.9	39.2	0.75 (v/c)	E
RRXing to Jct Rte 101 (4-Ln)	AM	2025		59.5	12.2	B
	PM	2025		59.5	9.0	A
San Felipe Rd to Jct Rte 156 (4-Ln)	AM	2035		59.3	15.5	B
	PM	2035		59.3	12.9	B
Jct Rte 156 to Hudner Ln (4-Ln)	AM	2035		59.5	17.4	B
	PM	2035		59.5	15.2	B
Hudner Ln to RRXing (2-Ln)	AM	2035	97.5	< 30	1.13 (v/c)	F
	PM	2035	95.4	34	0.98 (v/c)	F
RRXing to Jct Rte 101 (4-Ln)	AM	2035		59.5	12.2	B
	PM	2035		59.5	9.0	A

Table 19: Alternative B Segment LOS (Scenario 2)*

Segment	Peak Hour	Count Date	PTSF (%)	ATS (mph)	Density (pc/mi/ln)	LOS
San Felipe Rd to Jct Rte 156 (4-Ln)	AM	2015		59.3	11.2	B
	PM	2015		59.3	9.4	A
Jct Rte 156 to Hudner Ln (4-Ln)	AM	2015		59.5	12.1	B
	PM	2015		59.5	9.8	A
Hudner Ln to RRXing (2-Ln)	AM	2015	89.0	40.8	0.69 (v/c)	E
	PM	2015	88.0	41.6	0.66 (v/c)	E
RRXing to Jct Rte 101 (4-Ln)	AM	2015		59.5	12.1	B
	PM	2015		59.5	9.8	A
San Felipe Rd to Jct Rte 156 (4-Ln)	AM	2025		59.3	13	B
	PM	2025		59.3	11.1	B
Jct Rte 156 to Hudner Ln (4-Ln)	AM	2025		59.5	14.8	B
	PM	2025		59.5	12.3	B
Hudner Ln to RRXing (2-Ln)	AM	2025	92.7	37.2	0.84 (v/c)	E
	PM	2025	91.7	38.1	0.80 (v/c)	E
RRXing to Jct Rte 101 (4-Ln)	AM	2025		59.5	12.1	B
	PM	2025		59.5	9.8	A
San Felipe Rd to Jct Rte 156 (4-Ln)	AM	2035		59.3	15.6	B
	PM	2035		59.3	13.1	B
Jct Rte 156 to Hudner Ln (4-Ln)	AM	2035		59.5	18.3	C
	PM	2035		59.5	15.6	B
Hudner Ln to RRXing (2-Ln)	AM	2035	97.8	< 30	1.12 (v/c)	F
	PM	2035	95.6	33.8	0.99 (v/c)	F
RRXing to Jct Rte 101 (4-Ln)	AM	2035		59.5	12.1	B
	PM	2035		59.5	9.8	A

The results shown in the Table 18 and Table 19 represent the worst-case unconstrained scenario based on forecasted traffic volumes of Alternative 1 and 2 with Route 25 being a four-lane expressway between San Felipe Road and railroad crossing just east of the Route 101 junction. If traffic volumes do materialize to the level forecasted for Alternative 1 and 2 with segment between Hudner Lane and the Route 101 junction remaining as a two-lane highway, congestion would be extreme. As in the case with the no-build alternative, drivers may choose to divert and find alternative routes instead.

Intersections

The 2015 project opening day intersection LOS is summarized in Table 20 for Alternative A under Scenario 2, and Table 21 for Alternative B under Scenario 2. The corresponding LOS calculation worksheets are attached to Appendix K for Alternative A and Appendix L for Alternative B. The intersection analysis will assume the worst-case unconstrained scenario by using the Route Adoption Alternative 1 and 2 traffic volumes at the intersections.

For Alternative A and B, all the intersections within the four-way expressway would operate at a LOS C or better in 2015. The intersections north of Hudner Lane would operate at LOS D or worse on the minor side street legs.

Table 20: Project Opening Day Intersection LOS (Alternative A, Scenario 2)

E-W Road	N-S Road	Intersection Control	Lane Configuration	Count Date	AM Peak			PM Peak		
					Delay (sec)	LOS		Delay (sec)	LOS	
Rte 25	San Felipe Rd	Signal	NB 2-L, 1-T, 1-TR	2015	17.3	B		18.3	B	
			SB 2-L, 1-T, 1-TR		18.0	B		19.2	B	
			WB 1-L, 3-T, 2-R		13.5	B	14.8 sec	12.0	B	16.1 sec
			EB 1-L, 2-T, 1-R		11.6	B	B	14.3	B	B
Wright Rd	Rte 25	TWSC	NB 1-L, 1-T, 1-TR	2015	8.3	A		9.4	A	
			SB 1-L, 1-T, 1-TR		10.7	B		8.5	A	
			WB 1-L, 1-TR		13.5	B		11.0	B	
			EB 1-L, 1-TR		15.4	C		15.1	C	
Flynn Rd	Rte 25	TWSC	NB 1-L, 1-T, 1-TR	2015	8.5	A		9.7	A	
			SB 1-L, 1-T, 1-TR		11.2	B		8.6	A	
			WB 1-L, 1-TR		14.2	B		10.6	B	
			EB 1-L, 1-TR		13.9	B		14.5	B	
Rte 25 (at-grade)	Rte 156	Signal	NB 1-L, 2-T, 1-TR	2015	22.8	C		19.8	B	
			SB 1-L, 2-T, 1-TR		26.6	C		21.6	C	
			WB 1-L, 2-T, 1-TR		22.7	C	22.8 sec	17.8	B	19.9 sec
			EB 1-L, 2-T, 1-TR		20.5	C	C	20.3	C	B
Shore Rd	Rte 25	TWSC	NB 1-T, 1-R	2015	0.0	A		0.0	A	
			SB 1-L, 1-T		15.4	C		12.0	B	
			WB 1-LR		>50.0	F		>50.0	F	
Rte 25	Bolsa Rd	TWSC	SB 1-LR	2015	37.4	E		>50.0	F	
			WB 1-TR		0.0	A		0.0	A	
			EB 1-LT		13.0	B		9.6	A	
Rte 25	Bloomfield Ave	TWSC	SB 1-LR	2015	>50.0	F		33.1	D	
			WB 1-TR		0.0	A		0.0	A	
			EB 1-L, 1-T		13.4	B		9.6	A	

Table 21: Project Opening Day Intersection LOS (Alternative B, Scenario 2)

E-W Road	N-S Road	Intersection Control	Lane Configuration	Count Date	AM Peak			PM Peak		
					Delay (sec)	LOS		Delay (sec)	LOS	
Rte 25	San Felipe Rd	Signal	NB 2-L, 1-T, 1-TR	2015	21.7	C		22.4	C	
			SB 2-L, 1-T, 1-TR		22.6	C		21.6	C	
			WB 1-L, 3-T, 2-R		16.4	B	18.6 sec	16.0	B	19.0 sec
			EB 1-L, 2-T, 1-R		16.0	B	B	16.6	B	B
Wright Rd	Rte 25	TWSC	NB 1-L, 1-T, 1-TR	2015	8.6	A		9.9	A	
			SB 1-L, 1-T, 1-TR		11.2	B		8.4	A	
			WB 1-L, 1-TR		13.2	B		10.5	B	
			EB 1-L, 1-TR		13.6	B		13.5	B	
Briggs Rd	Rte 25	TWSC	NB 1-L, 1-T, 1-TR	2015	8.8	A		9.9	A	
			SB 1-L, 1-T, 1-TR		10.5	B		8.6	A	
			WB 1-L, 1-TR		17.2	C		13.4	B	
			EB 1-L, 1-TR		12.2	B		14.2	B	
Rte 25 (at-grade)	Rte 156	Signal	NB 1-L, 2-T, 1-TR	2015	21.6	C		17.0	B	
			SB 1-L, 2-T, 1-TR		25.6	C		16.9	B	
			WB 1-L, 2-T, 1-TR		23.3	C	22.8 sec	17.1	B	18.8 sec
			EB 1-L, 2-T, 1-TR		21.4	C	C	21.4	C	B
Shore Rd	Rte 25	TWSC	NB 1-T, 1-R	2015	0.0	A		0.0	A	
			SB 1-L, 1-T		15.3	C		11.6	B	
			WB 1-LR		>50.0	F		>50.0	F	
Rte 25	Bolsa Rd	TWSC	SB 1-LR	2015	>50.0	F		>50.0	F	
			WB 1-TR		0.0	A		0.0	A	
			EB 1-LT		12.4	B		9.7	A	
Rte 25	Bloomfield Ave	TWSC	SB 1-LR	2015	>50.0	F		39.0	E	
			WB 1-TR		0.0	A		0.0	A	
			EB 1-L, 1-T		13.7	B		9.8	A	

The operations of the intersections beyond 2015 for Alternative A and Alternative B are essentially the same as Alternative 1 and Alternative 2, respectively, south of Hudner Lane. North of Hudner lane intersection LOS's are same as the no-build alternative. Refer to Table 11A to 11C for the LOS results. The only exception is the junction of Route 25/156, where it would remain as an at-grade intersection where as the Route Adoption Alternatives 1 and 2 assume an interchange at the junction.

The intersection analysis will assume the worst-case scenario by using the Route Adoption Alternative 1 and 2 traffic volumes at the intersection of Route 25/156. Table 22 and Table 23 show a summary of the intersection LOS for Alternative A and Alternative B in the year 2025 and 2035. Figure 3 illustrates the lane configuration of the at-grade intersection required in 2025 and 2035 to maintain a LOS C or better. The reconfigured intersection would be relocated to the north of the existing intersection in Alternative A and to the south in Alternative B. For either alternative, each approach would need three through lanes and one dedicated left-turn lane. Beyond 2025, the Route 25 northbound approach would require an additional through lane, for a total of four through lanes, in order to a LOS C. The corresponding LOS calculation worksheets are attached to Appendix K for Alternative A and Appendix L for Alternative B.

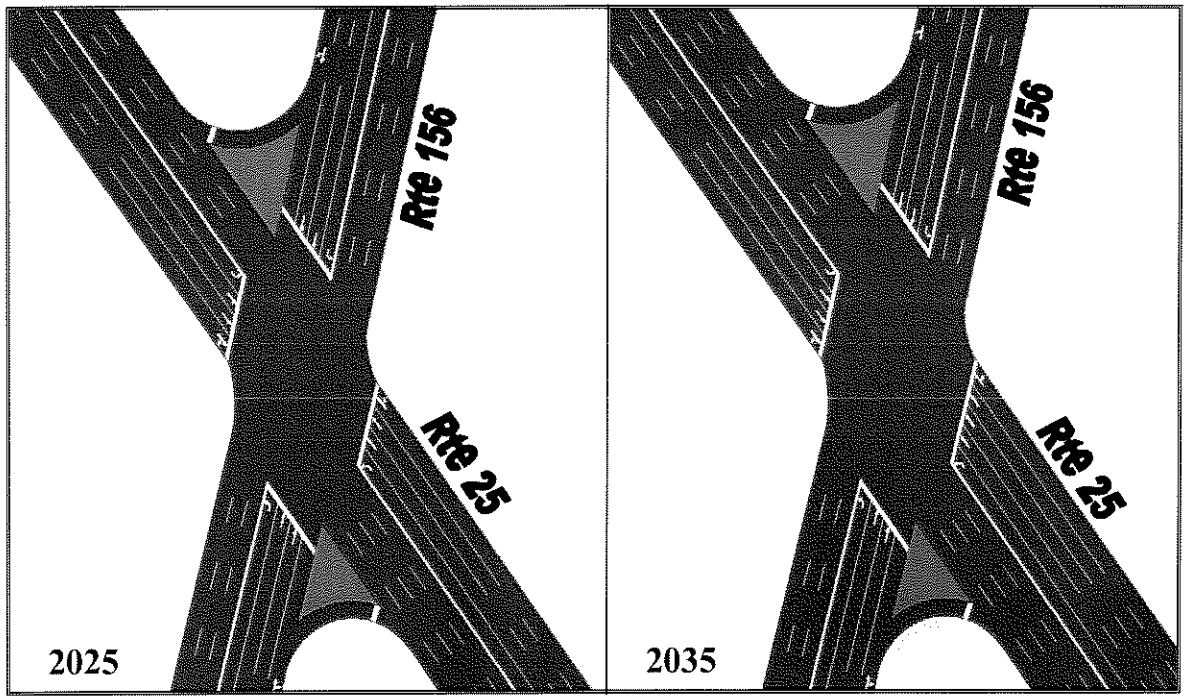
Table 22: Future Rte 25/156 Intersection LOS (Alternative A, Scenario 2)

E-W Road	N-S Road	Intersection Control	Lane Configuration	Count Date	AM Peak			PM Peak		
					Delay (sec)	LOS		Delay (sec)	LOS	
Rte 25 (at-grade)	Rte 156	Signal	NB 1-L, 2-T, 1-TR	2025	26.7	C		22.0	C	
			SB 1-L, 2-T, 1-TR		31.9	C		24.5	C	
			WB 1-L, 2-T, 1-TR		30.6	C	28.1 sec	19.2	B	22.1 sec
			EB 1-L, 2-T, 1-TR		21.6	C	C	22.7	C	C
		Signal	NB 1-L, 2-T, 1-TR	2035	26.9	C		25.4	C	
			SB 1-L, 2-T, 1-TR		32.9	C		27.9	C	
			WB 1-L, 3-T, 1-TR		31.3	C	29.5 sec	19.3	B	24.6 sec
			EB 1-L, 2-T, 1-TR		26.9	C	C	25.3	C	C

Table 23: Future Rte 25/156 Intersection LOS (Alternative B, Scenario 2)

E-W Road	N-S Road	Intersection Control	Lane Configuration	Count Date	AM Peak			PM Peak		
					Delay (sec)	LOS		Delay (sec)	LOS	
Rte 25 (at-grade)	Rte 156	Signal	NB 1-L, 2-T, 1-TR	2025	19.5	B		17.7	B	
			SB 1-L, 2-T, 1-TR		16.8	B		19.6	B	
			WB 1-L, 2-T, 1-TR		24.2	C	20.8 sec	18.9	B	22.8 sec
			EB 1-L, 2-T, 1-TR		19.0	B	B	30.0	C	C
		Signal	NB 1-L, 2-T, 1-TR	2035	26.7	C		27.9	C	
			SB 1-L, 2-T, 1-TR		33.1	C		31.6	C	
			WB 1-L, 3-T, 1-TR		34.3	C	31.6 sec	19.3	B	26.8 sec
			EB 1-L, 2-T, 1-TR		30.2	C	C	28.3	C	C

Figure 3: Route 25/156 At-grade Intersection



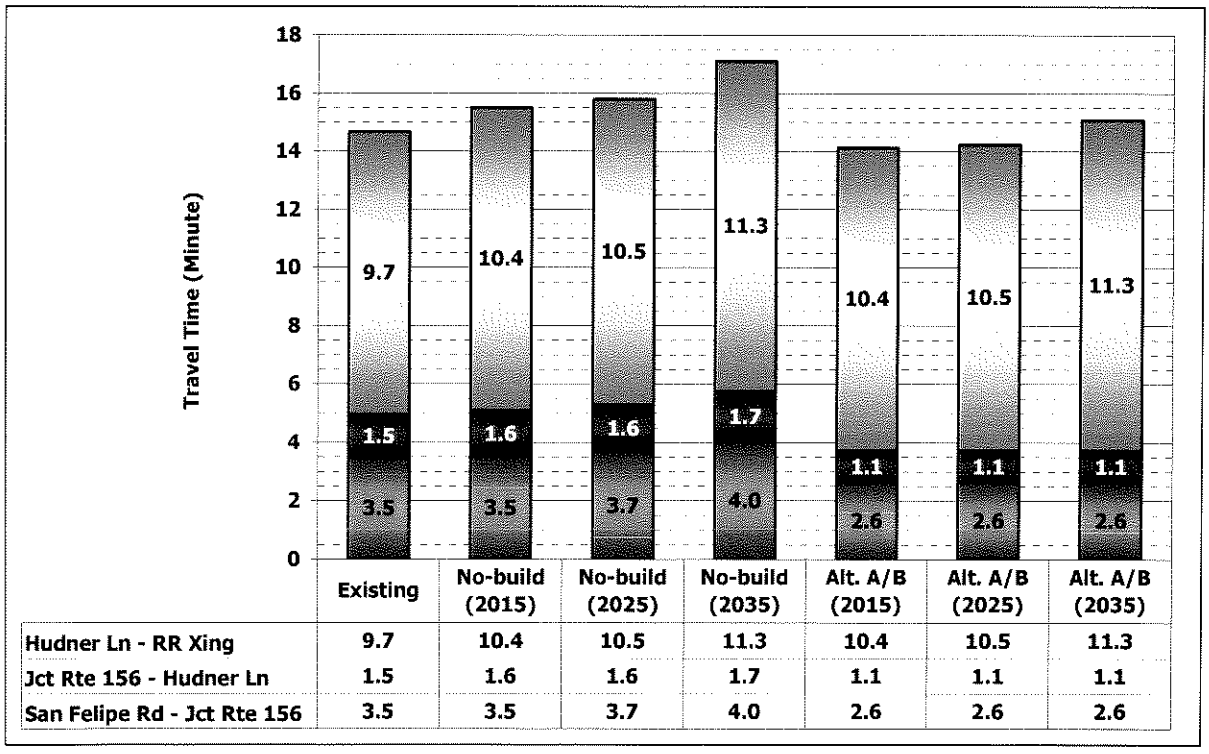
SCENARIO 1 (CONSTRAINED) PEAK HOUR AVERAGE TRAVEL TIME

Using average travel speed (ATS) results from the road segment analysis, the average travel time (ATT) through the study area can be determined. Figure 4 and 5 show the AM and PM peak hour ATT on Route 25 between the San Felipe Road and the railroad crossing just east of the Route 101 junction in the year 2015, 2025, and 2035. Both figures compare the no-build and build alternatives. "Alt. A/B" shown in figures represents the ATT for both Alternatives A and Alternative B. The ATT's are assumed to the same for both build alternatives as are based on the future no-build volumes on Route 25.

The bar graphs in the figures are broken down into three segments by color for each alternative: San Felipe Rd to Junction of Route 156, Junction of Route 156 to Hudner Lane, and Hudner Lane to the railroad crossing. The number shown for each color-coded block represents the average travel time for a highway segment. For each alternative, the three different color bars are combined to represent the total time needed to travel all three segments during the peak. All the bar graphs include existing ATT to compare to future conditions for the various alternatives.

Looking at the existing alternative in Figure 4, the AM ATT on Route 25 between San Felipe Road and Route 156 is 3.5 minutes, between Route 156 and Hudner Lane is 1.5 minutes, and between Hudner Lane and the railroad crossing is 9.7 minutes. To sum up the ATT for all three segments will give a total travel time of 14.7 minutes during the AM peak. If Route 25 within the study area is to remain as a two-lane highway, the ATT during the AM peak will increase to 15.8 minutes and 17.0 minutes in the year 2025 and 2035, respectively.

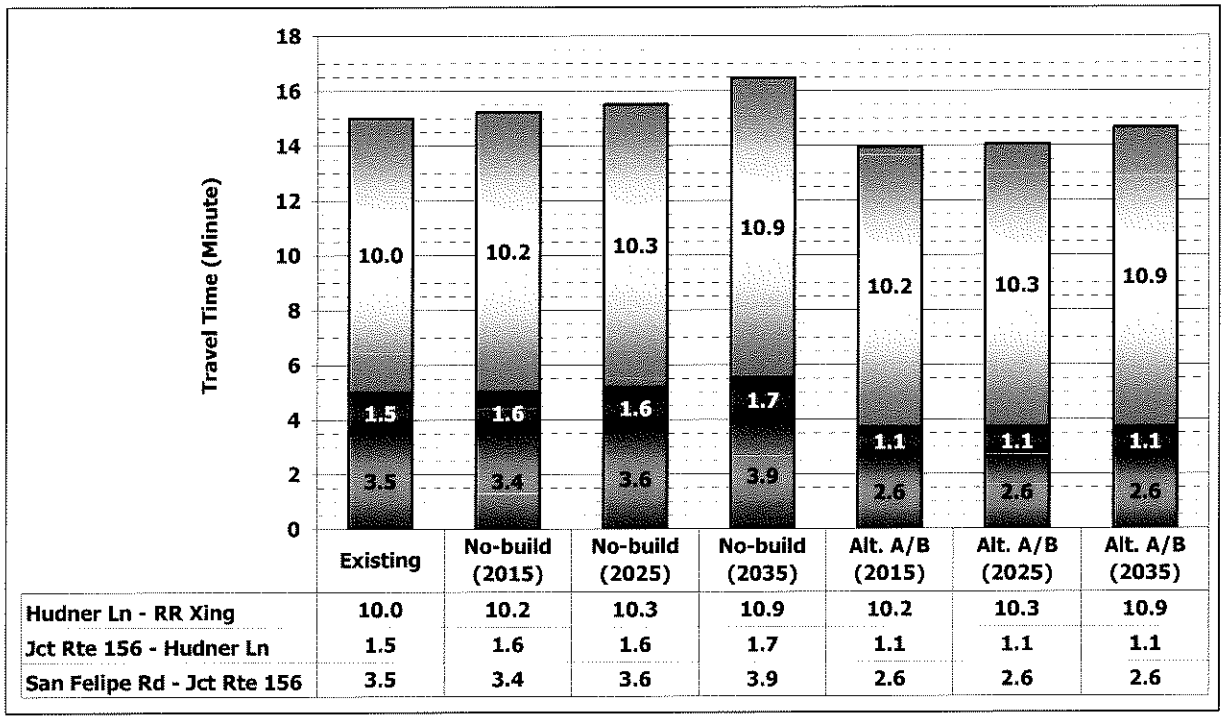
Figure 4: AM Peak Average Travel Time



On project opening day in 2015, the ATT would be reduced to 14.1 minutes for both Alternative A and B, and rise to 15.1 minutes in 2035. Compared to the no-build ATT in 2035, the build alternatives would experience a total ATT savings of 2.0 minutes during the AM peak. The difference is 13.3% in total ATT.

The ATT saving is in the four-lane expressway segment of Route 25 between San Felipe Road and Hudner Lane. The ATT within the 2-lane highway segment between Hudner Lane and the railroad crossing would otherwise stay the same for both the no-build alternative and build Alternative A or B.

Figure 5: PM Peak Average Travel Time



	Existing	No-build (2015)	No-build (2025)	No-build (2035)	Alt. A/B (2015)	Alt. A/B (2025)	Alt. A/B (2035)
Hudner Ln - RR Xing	10.0	10.2	10.3	10.9	10.2	10.3	10.9
Jct Rte 156 - Hudner Ln	1.5	1.6	1.6	1.7	1.1	1.1	1.1
San Felipe Rd - Jct Rte 156	3.5	3.4	3.6	3.9	2.6	2.6	2.6

Figure 5 illustrates the P.M. peak ATT on Route 25 between the San Felipe Road and the railroad crossing just east of Route 101 in the year 2015, 2025, and 2035. The existing PM peak hour total ATT is 15.0 minutes between San Felipe Road and the railroad crossing. PM peak hour ATT on Route 25 would have increased to 15.2 minutes, 15.5 minutes, and 16.5 minutes in 2015, 2025 and 2035, respectively, under no-build condition. The ATT would drop to 13.9 minutes on project opening day in 2015. Compared to the existing PM total ATT on 15.0 minutes, the saving is 1.1 minutes even though the 2015 PM volumes are higher. The total savings would have increased to 1.8 minutes or a difference of 12.2% with the build alternatives in 2035.

For Alternative A and B under Scenario 1, the ATT will remain unchanged at 3.7 minutes along the expressway segment between San Felipe Road and Hudner Lane between 2015 and 2035. The difference is along the segment between Hudner Lane and the railroad crossing. The AM peak ATT will steadily increase along this segment for Alternative A and B requiring 10.4 minutes in 2015, 10.5 minutes in 2025 and 11.3 minutes in 2035. In the PM peak, drivers would experience slightly less delay with an ATT of 10.2, 10.3, and 11.3 minutes in 2015, 2025, and 2035, respectively.

In addition, the ATT shown in the Figure 4 and 5 do not reflect the potential delay incurred at signalized intersections; San Felipe Rd, and Rte 156, for instance, assuming Alternative A or Alternative B is chosen to be implemented. The ATT on Route 25 from San Felipe Road to Hudner Lane is 3.7 minutes not accounting for the potential delay caused by the traffic signal at the Route 156 intersection. And, assuming there is signal Rte 25/Wright Road intersection since it meets the ADT signal warrant in 2035. Keep in mind that a LOS C at a signalized intersection still incurs a delay of up to 35 seconds. There is a potential added delay of 1.2 minutes created by the two signals at Wright Road and Route 156 during the

peak hours. The total travel time would be 4.9 minutes between San Felipe Road and Hudner Lane. Thus, any traffic signal on Route 25 would add delay and in turn increase travel time.

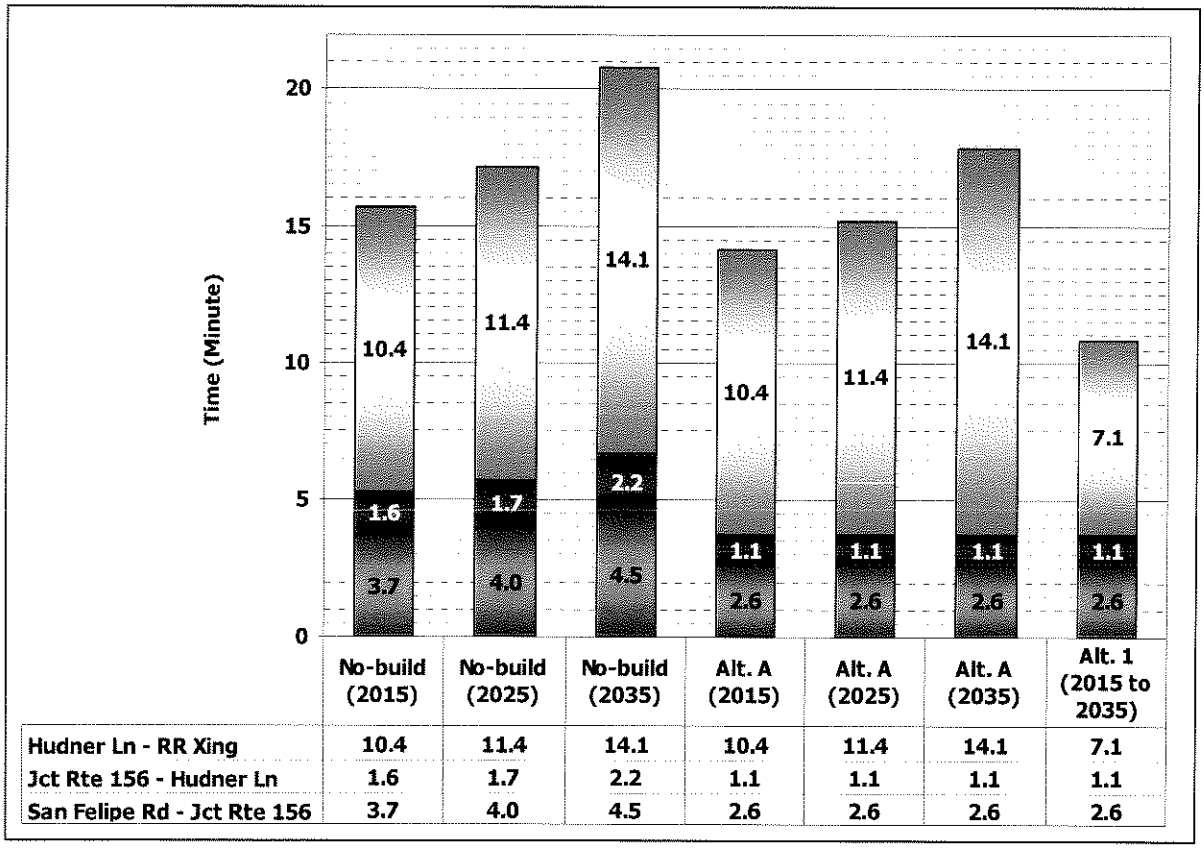
SCENARIO 2 (UNCONSTRAINED) PEAK HOUR AVERAGE TRAVEL TIME

For the Scenario 2 travel time analysis, it's assumed that the same unconstrained traffic volumes are applied to both the build and no-build alternatives. There two sets of unconstrained forecasted traffic volume data, Route Adoption Alternative 1 and Alternative 2. Alternative A and Alternative B correspond with Alternative 1 and Alternative 2, respectively. The same set of traffic volume would be assumed for the no-build alternative for a fair apple-to-apple comparison. In other words, the ATT on the no-build network with a constrained set of traffic volumes would be shorter when compared to the no-build network with an unconstrained set of volumes. The set of data should be assumed for both build and no-build alternatives to do an equal comparison.

Alternative A & Alternative 1 Average Travel Time

Figure 6 illustrates the ATT for the no-build, Alternative A, and Alternative 1during the AM peak hour with the unconstrained traffic volume on Route 25. The total ATT with the no-build alternative is 15.7 minutes in 2015, 17.1 minutes in 2025, and 20.8 minutes in 2035. For Alternative A, the total ATT would be 14.1 minutes in 2015, 15.1 minutes in 2025, and 17.8 minutes in 2035. The travel time savings for Alternative A is within the expressway segment between San Felipe Road and Hudner Lane. The ATT's are about the same between Hudner Lane and the railroad crossing. The Route Adoption Alternative 1, the total ATT would stay constant through out the 20-year design life at 10.8 minutes.

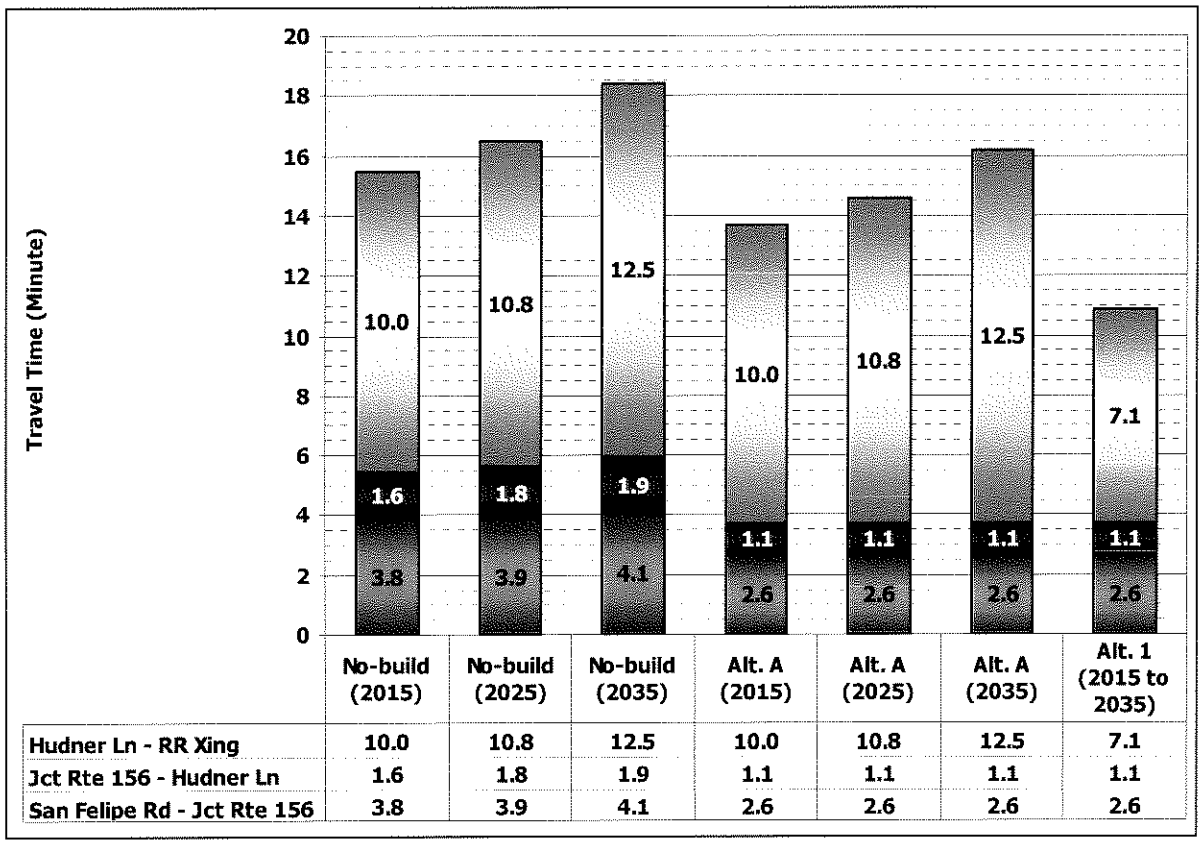
Figure 6: AM Peak Average Travel Time (Alternative A/1)



	No-build (2015)	No-build (2025)	No-build (2035)	Alt. A (2015)	Alt. A (2025)	Alt. A (2035)	Alt. 1 (2015 to 2035)
Hudner Ln - RR Xing	10.4	11.4	14.1	10.4	11.4	14.1	7.1
Jct Rte 156 - Hudner Ln	1.6	1.7	2.2	1.1	1.1	1.1	1.1
San Felipe Rd - Jct Rte 156	3.7	4.0	4.5	2.6	2.6	2.6	2.6

Figure 7 illustrates the ATT for the no-build, Alternative A, and Alternative 1during the PM peak hour with the unconstrained traffic volume on Route 25. The total ATT with the no-build alternative is 15.4 minutes in 2015, 16.5 minutes in 2025, and 18.4 minutes in 2035. For Alternative A, the total ATT would be 13.7 minutes in 2015, 14.5 minutes in 2025, and 16.2 minutes in 2035. Same as in the AM peak, The Route Adoption Alternative 1 PM total ATT is 10.8 minutes from 2015 to 2035.

Figure 7: PM Peak Average Travel Time (Alternative A/1)

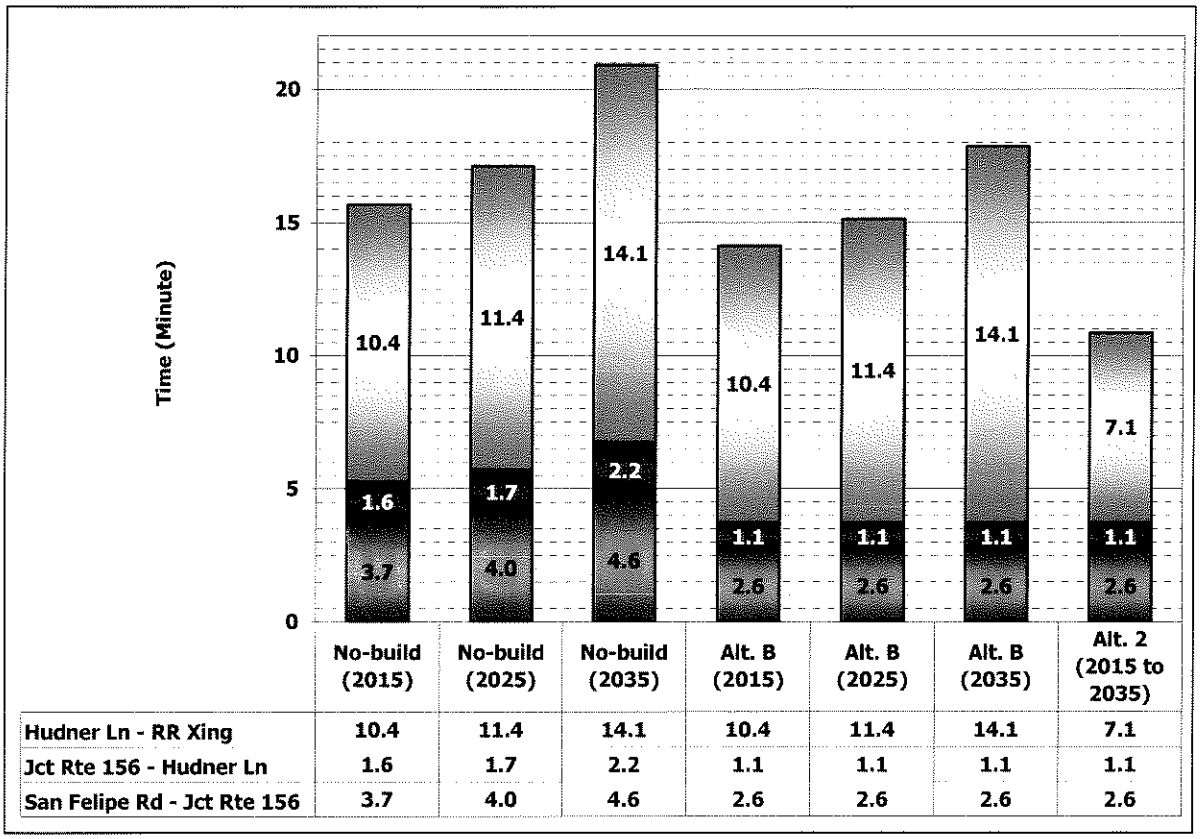


	No-build (2015)	No-build (2025)	No-build (2035)	Alt. A (2015)	Alt. A (2025)	Alt. A (2035)	Alt. 1 (2015 to 2035)
Hudner Ln - RR Xing	10.0	10.8	12.5	10.0	10.8	12.5	7.1
Jct Rte 156 - Hudner Ln	1.6	1.8	1.9	1.1	1.1	1.1	1.1
San Felipe Rd - Jct Rte 156	3.8	3.9	4.1	2.6	2.6	2.6	2.6

Alternative B & Alternative 2 Average Travel Time

Figure 8 illustrates the ATT for the no-build, Alternative B, and Alternative 2during the AM peak hour with the unconstrained traffic volume on Route 25. The total ATT with the no-build alternative is 15.7 minutes in 2015, 17.1minutes in 2025, and 20.9 minutes in 2035. For Alternative B, the total ATT would be 14.1, 15.1, and 17.8 minutes in 2015, 2025, and 2035 respectively. The travel time savings for Alternative B is within the expressway segment between San Felipe Road and Hudner Lane. The ATT's are the same between Hudner Lane and the railroad crossing. The Route Adoption Alternative 2, the ATT is constant through the 20-year design life at 10.8 minutes.

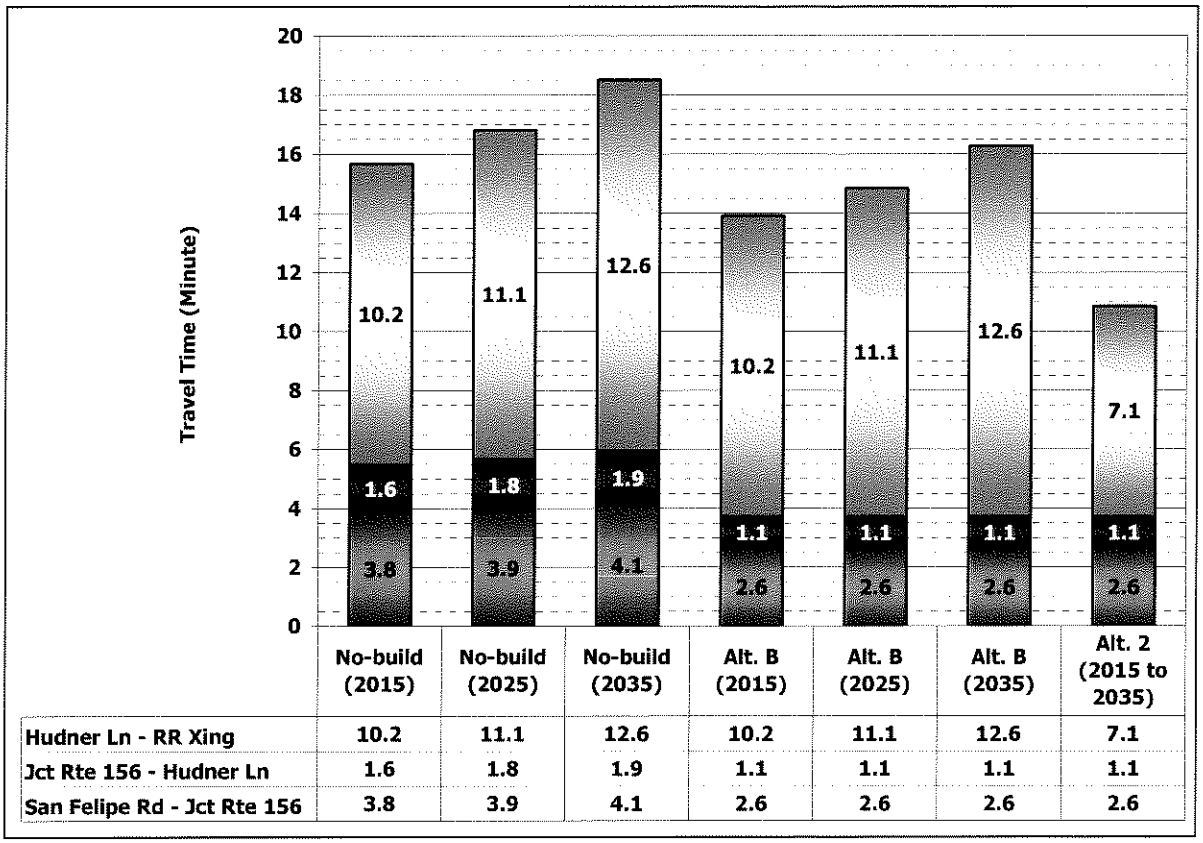
Figure 8: AM Peak Average Travel Time (Alternative B/2)



	No-build (2015)	No-build (2025)	No-build (2035)	Alt. B (2015)	Alt. B (2025)	Alt. B (2035)	Alt. 2 (2015 to 2035)
Hudner Ln - RR Xing	10.4	11.4	14.1	10.4	11.4	14.1	7.1
Jct Rte 156 - Hudner Ln	1.6	1.7	2.2	1.1	1.1	1.1	1.1
San Felipe Rd - Jct Rte 156	3.7	4.0	4.6	2.6	2.6	2.6	2.6

Figure 9 illustrates the ATT for the no-build, Alternative B, and Alternative 2 during the PM peak hour with the unconstrained traffic volume on Route 25. The total ATT with the no-build alternative is 15.6 minutes in 2015, 16.8 minutes in 2025, and 18.5 minutes in 2035. For Alternative B, the total ATT would be 13.9 minutes in 2015, 14.8 minutes in 2025, and 16.3 minutes in 2035. Same as in the AM peak, The Route Adoption Alternative 1 PM total ATT is 10.8 minutes from 2015 to 2035.

Figure 9: PM Peak Average Travel Time (Alternative B/2)



	No-build (2015)	No-build (2025)	No-build (2035)	Alt. B (2015)	Alt. B (2025)	Alt. B (2035)	Alt. 2 (2015 to 2035)
Hudner Ln - RR Xing	10.2	11.1	12.6	10.2	11.1	12.6	7.1
Jct Rte 156 - Hudner Ln	1.6	1.8	1.9	1.1	1.1	1.1	1.1
San Felipe Rd - Jct Rte 156	3.8	3.9	4.1	2.6	2.6	2.6	2.6

Both Route Adoption Alternative 1 and 2 operate similarly. The four-lane expressway have the same travel time even with the traffic volume varying quite a bit between the AM and PM peaks: San Felipe Road to Route 156 takes 2.6 minutes, Route 156 to Hudner Lane takes 1.1 minutes, and Hudner Lane to the railroad crossing takes 7.1 minutes. The total ATT is 10.8 minutes in 2015, 2025, and 2035 for both the AM and PM peak hours boasting the best performance out of all the alternatives with the shortest ATT. Neither alternative would experience any performance degradation between 2015 and 2035 while the ATT remained the same although the traffic volume on Route 25 would increase during same period. The stable ATT during both the AM and PM peak hours of operation suggest the four-expressway would provide sufficient capacity at least through 2035 and still able to maintain a LOS C or better on the mainline.

Alternative A and B under Scenario 1 or 2, the ATT would remain unchanged at 3.7 minutes along the expressway segment between San Felipe Road and Hudner Lane between 2015 and 2035. The travel timing savings are within this segment when compared to the no-build alternative. Where ATT's are equal for the Alternative A and B, and no-build alternatives Hudner Lane and the railroad crossing when compared year to year during the same peak hour. The ATT would steadily increase along this two-lane segment over time with the increase in traffic volume. For Alternative A and B, generally the future travel times are lower during the PM. The reason is that the future traffic volumes are lower in the PM peak than in the AM peak. Where as the existing PM peak is higher.

When Alternative A and B are assumed to have the same traffic volume forecasted for Alternative 1 and 2 (Scenario 2), the volumes would exceed the capacity of the road. Referring back to Table 18 and 19, the v/c ratios during AM peak are greater than one within the two-lane highway segment for both Alternative A and B. The HCM two-lane highway methodology can not estimate the average travel speed (ATS) if

the v/c ratio is greater one, but can only report that the ATS is less than 30 mph. This can be attributed to the two-lane highway segment's sensitivity to traffic variations as the demand volume approaches and/or at the capacity of the road. Minor changes in traffic demand would upset the traffic flow and reduce the ATS. The graphs in Figure 6 and 8 assumed an ATS of 30 mph during the AM peak hour for 2035 in order to estimate the ATT on Route 25 between Hudner Lane and the railroad crossing for Alternative A and B. The ATS could potentially be lower than 30 mph under stop-and-go traffic flow between Hudner Lane and the Route 101 junction.

DELAY COST ANALYSIS

For the delay cost analysis, three value factors are taken into consideration: passenger delay cost (per person per hour), commercial vehicle/truck delay cost (per vehicle per hour), and wasted fuel cost (per galleon). For example, a passenger (driver or passenger) in a personal vehicle can earn $10 per hour. The passenger delayed for an hour on the road, the cost is $10. For the truck delay value, let's say its $30 per hour. Then for an hour of delay, cost for the truck is $30. The wasted fuel cost is based on the fact that fuel efficiency of cars varies with speed. For instance, a car can travel 30 miles per galleon of fuel at traveling 55 miles per hour free-flow. At 40 miles per hour however, the car can only achieve 20 miles per galleon. To cover a distance of 30 miles, the car only needs one gallon of fuel traveling 55 miles per hour. Due to congestion, car can only travel at 40 miles per hour. To cover the same distances of 30 miles at 40 miles per hour, the car would have to consume one and a half gallon of fuel. The extra half gallon of fuel consumed driving in congestion at a lower speed is considered as wasted fuel that the car would not have otherwise used in free-flow.

The following factors are used in the delay cost calculations:

- Cost per person hour = $16.55[1]
- Commercial Vehicle Cost per vehicle hour = $87.38[1]
- Average Fuel Cost = $ 2.74 (SF Bay Area) [1, 2]
- Two-lane highway free-flow speed = 55 miles per hour
- Four-lane expressway free-flow speed (San Felipe Rd to Rte 156) = 59.3 mph
- Four-lane expressway free-flow speed (Rte 156 to railroad crossing) = 59.5 mph

Table 24 below is a summary of annual delay cost on the existing Route 25 between San Felipe Road and the railroad crossing rounded to the nearest thousand. The annual delay cost is $1,641,000 during the AM peak hour of operation and $2,085,000 during the PM peak hour of operation. The total annual cost for both peak hours totaled $3,726,000.

Table 24: Existing Delay Cost

		Passenger Delay Cost	Truck Delay Cost	Wasted Fuel Cost	Total
AM	San Felipe Rd - Jct Rte 156	$ 69,000	$ 19,000	$ 195,000	$ 283,000
Delay	Jct Rte 156 - Hudner Ln	$ 42,000	$ 18,000	$ 121,000	$ 181,000
Costs	Hudner Ln - RR Xing	$ 274,000	$ 115,000	$ 789,000	$ 1,178,000
					$ 1,641,000
PM	San Felipe Rd - Jct Rte 156	$ 75,000	$ 20,000	$ 212,000	$ 307,000
Delay	Jct Rte 156 - Hudner Ln	$ 56,000	$ 23,000	$ 158,000	$ 237,000
Costs	Hudner Ln - RR Xing	$ 363,000	$ 152,000	$ 1,027,000	$ 1,542,000
					$ 2,085,000
				Annual Total	$ 3,726,000

Tables 25 to 30 summarize the future delay cost for the no-build, Alternative A and Alternative B. For Route Adoption Alternative 1 and 2, there would not be any delay cost associated with either of the alternatives, as both would operate in free-flow conditions in the future.

[1] 2008 dollar value adjusted for inflation.
[2] Historical average for the past 7 years.

Scenario 1

Table 25: Future No-build Delay Cost

No-build (2015)					
		Passenger Delay Cost	Truck Delay Cost	Wasted Fuel Cost	Total
AM	San Felipe Rd - Jct Rte 156	$ 81,000	$ 22,000	$ 228,000	$ 331,000
Delay	Jct Rte 156 - Hudner Ln	$ 60,000	$ 25,000	$ 167,000	$ 252,000
Costs	Hudner Ln - RR Xing	$ 391,000	$ 164,000	$ 1,084,000	$ 1,639,000
					$ 2,222,000
PM	San Felipe Rd - Jct Rte 156	$ 82,000	$ 22,000	$ 232,000	$ 336,000
Delay	Jct Rte 156 - Hudner Ln	$ 62,000	$ 26,000	$ 174,000	$ 262,000
Costs	Hudner Ln - RR Xing	$ 405,000	$ 169,000	$ 1,133,000	$ 1,708,000
					$ 2,306,000
				Annual Total	$ 4,528,000
No-build (2025)					
		Passenger Delay Cost	Truck Delay Cost	Wasted Fuel Cost	Total
AM	San Felipe Rd - Jct Rte 156	$ 116,000	$ 31,000	$ 319,000	$ 467,000
Delay	Jct Rte 156 - Hudner Ln	$ 66,000	$ 28,000	$ 182,000	$ 275,000
Costs	Hudner Ln - RR Xing	$ 430,000	$ 179,000	$ 1,184,000	$ 1,792,000
					$ 2,535,000
PM	San Felipe Rd - Jct Rte 156	$ 101,000	$ 27,000	$ 280,000	$ 408,000
Delay	Jct Rte 156 - Hudner Ln	$ 79,000	$ 33,000	$ 213,000	$ 325,000
Costs	Hudner Ln - RR Xing	$ 512,000	$ 214,000	$ 1,388,000	$ 2,114,000
					$ 2,847,000
				Annual Total	$ 5,382,000
No-build (2035)					
		Passenger Delay Cost	Truck Delay Cost	Wasted Fuel Cost	Total
AM	San Felipe Rd - Jct Rte 156	$ 203,000	$ 55,000	$ 530,000	$ 788,000
Delay	Jct Rte 156 - Hudner Ln	$ 101,000	$ 42,000	$ 268,000	$ 412,000
Costs	Hudner Ln - RR Xing	$ 659,000	$ 275,000	$ 1,744,000	$ 2,679,000
					$ 3,878,000
PM	San Felipe Rd - Jct Rte 156	$ 161,000	$ 44,000	$ 431,000	$ 636,000
Delay	Jct Rte 156 - Hudner Ln	$ 84,000	$ 35,000	$ 225,000	$ 344,000
Costs	Hudner Ln - RR Xing	$ 544,000	$ 227,000	$ 1,466,000	$ 2,237,000
					$ 3,217,000
				Annual Total	$ 7,095,000

Table 26: Future (Scenario1) Build Delay Cost

		Passenger Delay Cost	Truck Delay Cost	Wasted Fuel Cost	Total
Alt. A/B - Scenario 1 (2015)					
AM	San Felipe Rd - Jct Rte 156	$ 0	$ 0	$ 0	$ 0
Delay	Jct Rte 156 - Hudner Ln	$ 0	$ 0	$ 0	$ 0
Costs	Hudner Ln - RR Xing	$ 391,000	$ 164,000	$ 1,084,000	$ 1,639,000
					$ 1,639,000
PM	San Felipe Rd - Jct Rte 156	$ 0	$ 0	$ 0	$ 0
Delay	Jct Rte 156 - Hudner Ln	$ 0	$ 0	$ 0	$ 0
Costs	Hudner Ln - RR Xing	$ 405,000	$ 169,000	$ 1,133,000	$ 1,708,000
					$ 1,708,000
				Annual Total	**$ 3,347,000**
Alt. A/B - Scenario 1 (2025)					
		Passenger Delay Cost	Truck Delay Cost	Wasted Fuel Cost	Total
AM	San Felipe Rd - Jct Rte 156	$ 0	$ 0	$ 0	$ 0
Delay	Jct Rte 156 - Hudner Ln	$ 0	$ 0	$ 0	$ 0
Cost	Hudner Ln - RR Xing	$ 430,000	$ 179,000	$ 1,184,000	$ 1,792,000
					$ 1,792,000
PM	San Felipe Rd - Jct Rte 156	$ 0	$ 0	$ 0	$ 0
Delay	Jct Rte 156 - Hudner Ln	$ 0	$ 0	$ 0	$ 0
Costs	Hudner Ln - RR Xing	$ 512,000	$ 214,000	$ 1,388,000	$ 2,114,000
					$ 2,114,000
				Annual Total	**$ 3,906,000**
Alt. A/B - Scenario 1 (2035)					
		Passenger Delay Cost	Truck Delay Cost	Wasted Fuel Cost	Total
AM	San Felipe Rd - Jct Rte 156	$ 0	$ 0	$ 0	$ 0
Delay	Jct Rte 156 - Hudner Ln	$ 0	$ 0	$ 0	$ 0
Costs	Hudner Ln - RR Xing	$ 659,000	$ 275,000	$ 1,744,000	$ 2,679,000
					$ 2,679,000
PM	San Felipe Rd - Jct Rte 156	$ 0	$ 0	$ 0	$ 0
Delay	Jct Rte 156 - Hudner Ln	$ 0	$ 0	$ 0	$ 0
Costs	Hudner Ln - RR Xing	$ 544,000	$ 227,000	$ 1,466,000	$ 2,237,000
					$ 2,237,000
				Annual Total	$ 4,916,000

Scenario 2

Table 27A: Future (Scenario 2) No-build Delay Cost

No-build w/Alt 1 vol (2015)					
		Passenger Delay Cost	Truck Delay Cost	Wasted Fuel Cost	Total
AM	San Felipe Rd - Jct Rte 156	$ 124,000	$ 33,000	$ 339,000	$ 497,000
Delay	Jct Rte 156 - Hudner Ln	$ 59,000	$ 25,000	$ 164,000	$ 247,000
Costs	Hudner Ln - RR Xing	$ 383,000	$ 160,000	$ 1,068,000	$ 1,611,000
					$ 2,355,000
PM	San Felipe Rd - Jct Rte 156	$ 156,000	$ 42,000	$ 419,000	$ 618,000
Delay	Jct Rte 156 - Hudner Ln	$ 77,000	$ 32,000	$ 210,000	$ 319,000
Costs	Hudner Ln - RR Xing	$ 502,000	$ 210,000	$ 1,367,000	$ 2,078,000
					$ 3,015,000
				Annual Total	$ 5,370,000
No-build w/Alt 1 vol (2025)					
		Passenger Delay Cost	Truck Delay Cost	Wasted Fuel Cost	Total
AM	San Felipe Rd - Jct Rte 156	$ 191,000	$ 52,000	$ 503,000	$ 745,000
Delay	Jct Rte 156 - Hudner Ln	$ 101,000	$ 42,000	$ 268,000	$ 411,000
Costs	Hudner Ln - RR Xing	$ 657,000	$ 275,000	$ 1,744,000	$ 2,676,000
					$ 3,832,000
PM	San Felipe Rd - Jct Rte 156	$ 165,000	$ 44,000	$ 440,000	$ 649,000
Delay	Jct Rte 156 - Hudner Ln	$ 120,000	$ 50,000	$ 313,000	$ 483,000
Costs	Hudner Ln - RR Xing	$ 782,000	$ 327,000	$ 2,037,000	$ 3,146,000
					$ 4,278,000
				Annual Total	$ 8,110,000
No-build w/Alt 1 vol (2035)					
		Passenger Delay Cost	Truck Delay Cost	Wasted Fuel Cost	Total
AM	San Felipe Rd - Jct Rte 156	$ 364,000	$ 98,000	$ 897,000	$ 1,360,000
Delay	Jct Rte 156 - Hudner Ln	$ 243,000	$ 102,000	$ 578,000	$ 923,000
Costs	Hudner Ln - RR Xing	$ 1,584,000	$ 662,000	$ 3,763,000	$ 6,009,000
					$ 8,291,000
PM	San Felipe Rd - Jct Rte 156	$ 220,000	$ 59,000	$ 572,000	$ 851,000
Delay	Jct Rte 156 - Hudner Ln	$ 145,000	$ 60,000	$ 370,000	$ 575,000
Costs	Hudner Ln - RR Xing	$ 941,000	$ 393,000	$ 2,409,000	$ 3,744,000
					$ 5,170,000
				Annual Total	$ 13,461,000

Table 27B: Future (Scenario 2) No-build Delay Cost

No-build w/Alt 2 vol (2015)					
		Passenger Delay Cost	Truck Delay Cost	Wasted Fuel Cost	Total
AM	San Felipe Rd - Jct Rte 156	$ 129,000	$ 35,000	$ 352,000	$ 516,000
Delay	Jct Rte 156 - Hudner Ln	$ 58,000	$ 24,000	$ 161,000	$ 243,000
Costs	Hudner Ln - RR Xing	$ 376,000	$ 157,000	$ 1,049,000	$ 1,582,000
					$ 2,341,000
PM	San Felipe Rd - Jct Rte 156	$ 164,000	$ 44,000	$ 438,000	$ 646,000
Delay	Jct Rte 156 - Hudner Ln	$ 75,000	$ 31,000	$ 205,000	$ 311,000
Costs	Hudner Ln - RR Xing	$ 488,000	$ 204,000	$ 1,333,000	$ 2,026,000
					$ 2,983,000
				Annual Total	**$ 5,324,000**
No-build w/Alt 2 vol (2025)					
		Passenger Delay Cost	Truck Delay Cost	Wasted Fuel Cost	Total
AM	San Felipe Rd - Jct Rte 156	$ 202,000	$ 54,000	$ 528,000	$ 785,000
Delay	Jct Rte 156 - Hudner Ln	$ 98,000	$ 41,000	$ 262,000	$ 401,000
Costs	Hudner Ln - RR Xing	$ 640,000	$ 267,000	$ 1,703,000	$ 2,611,000
					$ 3,797,000
PM	San Felipe Rd - Jct Rte 156	$ 173,000	$ 47,000	$ 459,000	$ 678,000
Delay	Jct Rte 156 - Hudner Ln	$ 117,000	$ 49,000	$ 306,000	$ 472,000
Costs	Hudner Ln - RR Xing	$ 762,000	$ 318,000	$ 1,991,000	$ 3,071,000
					$ 4,221,000
				Annual Total	$ 8,018,000
No-build w/Alt 2 vol (2035)					
		Passenger Delay Cost	Truck Delay Cost	Wasted Fuel Cost	Total
AM	San Felipe Rd - Jct Rte 156	$ 384,000	$ 104,000	$ 939,000	$ 1,427,000
Delay	Jct Rte 156 - Hudner Ln	$ 243,000	$ 101,000	$ 577,000	$ 921,000
Costs	Hudner Ln - RR Xing	$ 1,581,000	$ 660,000	$ 3,756,000	$ 5,997,000
					$ 8,345,000
PM	San Felipe Rd - Jct Rte 156	$ 229,000	$ 62,000	$ 593,000	$ 885,000
Delay	Jct Rte 156 - Hudner Ln	$ 146,000	$ 61,000	$ 374,000	$ 581,000
Costs	Hudner Ln - RR Xing	$ 950,000	$ 397,000	$ 2,432,000	$ 3,779,000
					$ 5,245,000
				Annual Total	$ 13,590,000

Table 28: Alternative A Future (Scenario 2) Delay Cost

Alt. A - w/Alt 1 vol (2015)					
		Passenger Delay Cost	Truck Delay Cost	Wasted Fuel Cost	Total
AM	San Felipe Rd - Jct Rte 156	$ 0	$ 0	$ 0	$ 0
Delay	Jct Rte 156 - Hudner Ln	$ 0	$ 0	$ 0	$ 0
Costs	Hudner Ln - RR Xing	$ 383,000	$ 160,000	$ 1,068,000	$ 1,611,000
					$ 1,611,000
PM	San Felipe Rd - Jct Rte 156	$ 0	$ 0	$ 0	$ 0
Delay	Jct Rte 156 - Hudner Ln	$ 0	$ 0	$ 0	$ 0
Costs	Hudner Ln - RR Xing	$ 502,000	$ 210,000	$ 1,367,000	$ 2,078,000
					$ 2,078,000
					$ 3,689,000
Alt. A - w/Alt 1 vol (2025)					
		Passenger Delay Cost	Truck Delay Cost	Wasted Fuel Cost	Total
AM	San Felipe Rd - Jct Rte 156	$ 0	$ 0	$ 0	$ 0
Delay	Jct Rte 156 - Hudner Ln	$ 0	$ 0	$ 0	$ 0
Costs	Hudner Ln - RR Xing	$ 657,000	$ 275,000	$ 1,744,000	$ 2,676,000
					$ 2,676,000
PM	San Felipe Rd - Jct Rte 156	$ 0	$ 0	$ 0	$ 0
Delay	Jct Rte 156 - Hudner Ln	$ 0	$ 0	$ 0	$ 0
Costs	Hudner Ln - RR Xing	$ 782,000	$ 327,000	$ 2,037,000	$ 3,146,000
					$ 3,146,000
					$ 5,822,000
Alt. A - w/Alt 1 vol (2035)					
		Passenger Delay Cost	Truck Delay Cost	Wasted Fuel Cost	Total
AM	San Felipe Rd - Jct Rte 156	$ 0	$ 0	$ 0	$ 0
Delay	Jct Rte 156 - Hudner Ln	$ 0	$ 0	$ 0	$ 0
Costs	Hudner Ln - RR Xing	$ 1,584,000	$ 662,000	$ 3,763,000	$ 6,009,000
					$ 6,009,000
PM	San Felipe Rd - Jct Rte 156	$ 0	$ 0	$ 0	$ 0
Delay	Jct Rte 156 - Hudner Ln	$ 0	$ 0	$ 0	$ 0
Costs	Hudner Ln - RR Xing	$ 941,000	$ 393,000	$ 2,409,000	$ 3,744,000
					$ 3,744,000
					$ 9,753,000

Table 29: Future (Scenario 2) No-build Delay Cost

No-build w/Alt 2 vol (2015)					
		Passenger Delay Cost	Truck Delay Cost	Wasted Fuel Cost	Total
AM	San Felipe Rd - Jct Rte 156	$ 129,000	$ 35,000	$ 352,000	$ 516,000
Delay	Jct Rte 156 - Hudner Ln	$ 58,000	$ 24,000	$ 161,000	$ 243,000
Costs	Hudner Ln - RR Xing	$ 376,000	$ 157,000	$ 1,049,000	$ 1,582,000
					$ 2,341,000
PM	San Felipe Rd - Jct Rte 156	$ 164,000	$ 44,000	$ 438,000	$ 646,000
Delay	Jct Rte 156 - Hudner Ln	$ 75,000	$ 31,000	$ 205,000	$ 311,000
Costs	Hudner Ln - RR Xing	$ 488,000	$ 204,000	$ 1,333,000	$ 2,026,000
					$ 2,983,000
				Annual Total	$ 5,324,000
No-build w/Alt 2 vol (2025)					
		Passenger Delay Cost	Truck Delay Cost	Wasted Fuel Cost	Total
AM	San Felipe Rd - Jct Rte 156	$ 202,000	$ 54,000	$ 528,000	$ 785,000
Delay	Jct Rte 156 - Hudner Ln	$ 98,000	$ 41,000	$ 262,000	$ 401,000
Costs	Hudner Ln - RR Xing	$ 640,000	$ 267,000	$ 1,703,000	$ 2,611,000
					$ 3,797,000
PM	San Felipe Rd - Jct Rte 156	$ 173,000	$ 47,000	$ 459,000	$ 678,000
Delay	Jct Rte 156 - Hudner Ln	$ 117,000	$ 49,000	$ 306,000	$ 472,000
Costs	Hudner Ln - RR Xing	$ 762,000	$ 318,000	$ 1,991,000	$ 3,071,000
					$ 4,221,000
				Annual Total	$ 8,018,000
No-build w/Alt 2 vol (2035)					
		Passenger Delay Cost	Truck Delay Cost	Wasted Fuel Cost	Total
AM	San Felipe Rd - Jct Rte 156	$ 384,000	$ 104,000	$ 939,000	$ 1,427,000
Delay	Jct Rte 156 - Hudner Ln	$ 243,000	$ 101,000	$ 577,000	$ 921,000
Costs	Hudner Ln - RR Xing	$ 1,581,000	$ 660,000	$ 3,756,000	$ 5,997,000
					$ 8,345,000
PM	San Felipe Rd - Jct Rte 156	$ 229,000	$ 62,000	$ 593,000	$ 885,000
Delay	Jct Rte 156 - Hudner Ln	$ 146,000	$ 61,000	$ 374,000	$ 581,000
Costs	Hudner Ln - RR Xing	$ 950,000	$ 397,000	$ 2,432,000	$ 3,779,000
					$ 5,245,000
				Annual Total	$ 13,590,000

Table 30: Alternative B Future (Scenario 2) Delay Cost

Alt. B - w/Alt 2 vol (2015)					
		Passenger Delay Cost	Truck Delay Cost	Wasted Fuel Cost	Total
AM	San Felipe Rd - Jct Rte 156	$ 0	$ 0	$ 0	$ 0
Delay	Jct Rte 156 - Hudner Ln	$ 0	$ 0	$ 0	$ 0
Costs	Hudner Ln - RR Xing	$ 376,000	$ 157,000	$ 1,049,000	$ 1,582,000
					$ 1,582,000
PM	San Felipe Rd - Jct Rte 156	$ 0	$ 0	$ 0	$ 0
Delay	Jct Rte 156 - Hudner Ln	$ 0	$ 0	$ 0	$ 0
Costs	Hudner Ln - RR Xing	$ 488,000	$ 204,000	$ 1,333,000	$ 2,026,000
					$ 2,026,000
				Annual Total	$ 3,608,000
Alt. B - w/Alt 2 vol (2025)					
		Passenger Delay Cost	Truck Delay Cost	Wasted Fuel Cost	Total
AM	San Felipe Rd - Jct Rte 156	$ 0	$ 0	$ 0	$ 0
Delay	Jct Rte 156 - Hudner Ln	$ 0	$ 0	$ 0	$ 0
Costs	Hudner Ln - RR Xing	$ 640,000	$ 267,000	$ 1,703,000	$ 2,611,000
					$ 2,611,000
PM	San Felipe Rd - Jct Rte 156	$ 0	$ 0	$ 0	$ 0
Delay	Jct Rte 156 - Hudner Ln	$ 0	$ 0	$ 0	$ 0
Costs	Hudner Ln - RR Xing	$ 762,000	$ 318,000	$ 1,991,000	$ 3,071,000
					$ 1,991,000
				Annual Total	$ 4,602,000
Alt. B - w/Alt 2 vol (2035)					
		Passenger Delay Cost	Truck Delay Cost	Wasted Fuel Cost	Total
AM	San Felipe Rd - Jct Rte 156	$ 0	$ 0	$ 0	$ 0
Delay	Jct Rte 156 - Hudner Ln	$ 0	$ 0	$ 0	$ 0
Costs	Hudner Ln - RR Xing	$ 1,581,000	$ 660,000	$ 3,756,000	$ 5,997,000
					$ 5,997,000
PM	San Felipe Rd - Jct Rte 156	$ 0	$ 0	$ 0	$ 0
Delay	Jct Rte 156 - Hudner Ln	$ 0	$ 0	$ 0	$ 0
Costs	Hudner Ln - RR Xing	$ 950,000	$ 397,000	$ 2,432,000	$ 3,779,000
					$ 3,779,000
				Annual Total	$ 9,776,000

DELAY SAVING ANALYSIS

The delay cost for a no-build alternative can be considered as delay saving for a build alterative. For instance, there would not be delay cost associated with neither Alternative 1 nor 2. On the flip side, both would create delay savings if built. Tables 31 to 35 summarize the delay savings for Alternatives A, Alternative B, Alternative 1 and Alterative 2.

Scenario 1

Table 31: Future (Scenario1) Build Delay Saving

Alt. A/B - w/Alt 1 vol (2015)					
		Passenger Delay Saving	Truck Delay Saving	Wasted Fuel Cost Saving	Total Savings
AM	San Felipe Rd - Jct Rte 156	$ 81,000	$ 22,000	$ 228,000	$ 331,000
Delay	Jct Rte 156 - Hudner Ln	$ 60,000	$ 25,000	$ 167,000	$ 252,000
Savings	Hudner Ln - RR Xing	$ 0	$ 0	$ 0	$ 0
					$ 583,000
PM	San Felipe Rd - Jct Rte 156	$ 82,000	$ 22,000	$ 232,000	$ 336,000
Delay	Jct Rte 156 - Hudner Ln	$ 62,000	$ 26,000	$ 174,000	$ 262,000
Savings	Hudner Ln - RR Xing	$ 0	$ 0	$ 0	$ 0
					$ 598,000
				Annual Total	**$ 1,181,000**
Alt. A/B - w/Alt 1 vol (2025)					
		Passenger Delay Saving	Truck Delay Saving	Wasted Fuel Cost Saving	Total Savings
AM	San Felipe Rd - Jct Rte 156	$ 116,000	$ 31,000	$ 319,000	$ 467,000
Delay	Jct Rte 156 - Hudner Ln	$ 66,000	$ 28,000	$ 182,000	$ 275,000
Savings	Hudner Ln - RR Xing	$ 0	$ 0	$ 0	$ 0
					$ 742,000
PM	San Felipe Rd - Jct Rte 156	$ 101,000	$ 27,000	$ 280,000	$ 408,000
Delay	Jct Rte 156 - Hudner Ln	$ 79,000	$ 33,000	$ 213,000	$ 325,000
Savings	Hudner Ln - RR Xing	$ 0	$ 0	$ 0	$ 0
					$ 733,000
				Annual Total	**$ 1,475,000**
Alt. A/B - w/Alt 1 vol (2035)					
		Passenger Delay Saving	Truck Delay Saving	Wasted Fuel Cost Saving	Total Savings
AM	San Felipe Rd - Jct Rte 156	$ 203,000	$ 55,000	$ 530,000	$ 788,000
Delay	Jct Rte 156 - Hudner Ln	$ 101,000	$ 42,000	$ 268,000	$ 412,000
Savings	Hudner Ln - RR Xing	$ 0	$ 0	$ 0	$ 0
					$ 1,200,000
PM	San Felipe Rd - Jct Rte 156	$ 161,000	$ 44,000	$ 431,000	$ 636,000
Delay	Jct Rte 156 - Hudner Ln	$ 84,000	$ 35,000	$ 225,000	$ 344,000
Savings	Hudner Ln - RR Xing	$ 0	$ 0	$ 0	$ 0
					$ 980,000
				Annual Total	**$ 2,180,000**
				20yr savings -	$ 31,555,000

Scenario 2

Table 32: Future (Scenario 2) Build Delay Saving

Alt. A - w/Alt 1 vol (2015)					
		Passenger Delay Saving	Truck Delay Saving	Wasted Fuel Cost Saving	Total Savings
AM	San Felipe Rd - Jct Rte 156	$ 124,000	$ 33,000	$ 339,000	$ 497,000
Delay	Jct Rte 156 - Hudner Ln	$ 59,000	$ 25,000	$ 164,000	$ 247,000
Savings	Hudner Ln - RR Xing	$ 0	$ 0	$ 0	$ 0
					$ 744,000
PM	San Felipe Rd - Jct Rte 156	$ 156,000	$ 42,000	$ 419,000	$ 618,000
Delay	Jct Rte 156 - Hudner Ln	$ 77,000	$ 32,000	$ 210,000	$ 319,000
Savings	Hudner Ln - RR Xing	$ 0	$ 0	$ 0	$ 0
					$ 937,000
				Annual Total	$ 1,681,000
Alt. A - w/Alt 1 vol (2025)					
		Passenger Delay Saving	Truck Delay Saving	Wasted Fuel Cost Saving	Total Savings
AM	San Felipe Rd - Jct Rte 156	$ 191,000	$ 52,000	$ 503,000	$ 745,000
Delay	Jct Rte 156 - Hudner Ln	$ 101,000	$ 42,000	$ 268,000	$ 411,000
Savings	Hudner Ln - RR Xing	$ 0	$ 0	$ 0	$ 0
					$ 1,156,000
PM	San Felipe Rd - Jct Rte 156	$ 165,000	$ 44,000	$ 440,000	$ 649,000
Delay	Jct Rte 156 - Hudner Ln	$ 120,000	$ 50,000	$ 313,000	$ 483,000
Savings	Hudner Ln - RR Xing	$ 0	$ 0	$ 0	$ 0
					$ 1,132,000
				Annual Total	$ 2,288,000
Alt. A - w/Alt 1 vol (2035)					
		Passenger Delay Saving	Truck Delay Saving	Wasted Fuel Cost Saving	Total Savings
AM	San Felipe Rd - Jct Rte 156	$ 364,000	$ 98,000	$ 897,000	$ 1,360,000
Delay	Jct Rte 156 - Hudner Ln	$ 243,000	$ 102,000	$ 578,000	$ 923,000
Savings	Hudner Ln - RR Xing	$ 0	$ 0	$ 0	$ 0
					$ 2,283,000
PM	San Felipe Rd - Jct Rte 156	$ 220,000	$ 59,000	$ 572,000	$ 851,000
Delay	Jct Rte 156 - Hudner Ln	$ 145,000	$ 60,000	$ 370,000	$ 575,000
Savings	Hudner Ln - RR Xing	$ 0	$ 0	$ 0	$ 0
					$ 1,426,000
				Annual Total	$ 3,709,000
				20yr savings -	$ 49,830,000

Table 33: Future (Scenario 2) Build Delay Saving

Alt. B - w/Alt 2 vol (2015)					
		Passenger Delay Saving	Truck Delay Saving	Wasted Fuel Cost Saving	Total Savings
AM	San Felipe Rd - Jct Rte 156	$ 129,000	$ 35,000	$ 352,000	$ 516,000
Delay	Jct Rte 156 - Hudner Ln	$ 58,000	$ 24,000	$ 161,000	$ 243,000
Savings	Hudner Ln - RR Xing	$ 0	$ 0	$ 0	$ 0
					$ 759,000
PM	San Felipe Rd - Jct Rte 156	$ 164,000	$ 44,000	$ 438,000	$ 646,000
Delay	Jct Rte 156 - Hudner Ln	$ 75,000	$ 31,000	$ 205,000	$ 311,000
Savings	Hudner Ln - RR Xing	$ 0	$ 0	$ 0	$ 0
					$ 957,000
				Annual Total	$ 1,716,000
Alt. B - w/Alt 2 vol (2025)					
		Passenger Delay Saving	Truck Delay Saving	Wasted Fuel Cost Saving	Total Savings
AM	San Felipe Rd - Jct Rte 156	$ 202,000	$ 54,000	$ 528,000	$ 785,000
Delay	Jct Rte 156 - Hudner Ln	$ 98,000	$ 41,000	$ 262,000	$ 401,000
Savings	Hudner Ln - RR Xing	$ 0	$ 0	$ 0	$ 0
					$ 1,186,000
PM	San Felipe Rd - Jct Rte 156	$ 173,000	$ 47,000	$ 459,000	$ 678,000
Delay	Jct Rte 156 - Hudner Ln	$ 117,000	$ 49,000	$ 306,000	$ 472,000
Savings	Hudner Ln - RR Xing	$ 0	$ 0	$ 0	$ 0
					$ 1,150,000
				Annual Total	$ 2,336,000
Alt. B - w/Alt 2 vol (2035)					
		Passenger Delay Saving	Truck Delay Saving	Wasted Fuel Cost Saving	Total Savings
AM	San Felipe Rd - Jct Rte 156	$ 384,000	$ 104,000	$ 939,000	$ 1,427,000
Delay	Jct Rte 156 - Hudner Ln	$ 243,000	$ 101,000	$ 577,000	$ 921,000
Savings	Hudner Ln - RR Xing	$ 0	$ 0	$ 0	$ 0
					$ 2,348,000
PM	San Felipe Rd - Jct Rte 156	$ 229,000	$ 62,000	$ 593,000	$ 885,000
Delay	Jct Rte 156 - Hudner Ln	$ 146,000	$ 61,000	$ 374,000	$ 581,000
Savings	Hudner Ln - RR Xing	$ 0	$ 0	$ 0	$ 0
					$ 1,466,000
				Annual Total	$ 3,814,000
				20yr savings -	$ 51,010,000

Table 34: Future Route Adoption Delay Saving

Alt. 1 (2015)					
		Passenger Delay Saving	Truck Delay Saving	Wasted Fuel Cost Saving	Total Savings
AM	San Felipe Rd - Jct Rte 156	$ 124,000	$ 33,000	$ 339,000	$ 497,000
Delay	Jct Rte 156 - Hudner Ln	$ 59,000	$ 25,000	$ 164,000	$ 247,000
Savings	Hudner Ln - RR Xing	$ 383,000	$ 160,000	$ 1,068,000	$ 1,611,000
					$ 2,355,000
PM	San Felipe Rd - Jct Rte 156	$ 156,000	$ 42,000	$ 419,000	$ 618,000
Delay	Jct Rte 156 - Hudner Ln	$ 77,000	$ 32,000	$ 210,000	$ 319,000
Savings	Hudner Ln - RR Xing	$ 502,000	$ 210,000	$ 1,367,000	$ 2,078,000
					$ 3,015,000
				Annual Total	$ 5,370,000
Alt. 1 (2025)					
		Passenger Delay Saving	Truck Delay Saving	Wasted Fuel Cost Saving	Total Savings
AM	San Felipe Rd - Jct Rte 156	$ 191,000	$ 52,000	$ 503,000	$ 745,000
Delay	Jct Rte 156 - Hudner Ln	$ 101,000	$ 42,000	$ 268,000	$ 411,000
Savings	Hudner Ln - RR Xing	$ 657,000	$ 275,000	$ 1,744,000	$ 2,676,000
					$ 3,832,000
PM	San Felipe Rd - Jct Rte 156	$ 165,000	$ 44,000	$ 440,000	$ 649,000
Delay	Jct Rte 156 - Hudner Ln	$ 120,000	$ 50,000	$ 313,000	$ 483,000
Savings	Hudner Ln - RR Xing	$ 782,000	$ 327,000	$ 2,037,000	$ 3,146,000
					$ 4,278,000
				Annual Total	$ 8,110,000
Alt. 1 (2035)					
		Passenger Delay Saving	Truck Delay Saving	Wasted Fuel Cost Saving	Total Savings
AM	San Felipe Rd - Jct Rte 156	$ 364,000	$ 98,000	$ 897,000	$ 1,360,000
Delay	Jct Rte 156 - Hudner Ln	$ 243,000	$ 102,000	$ 578,000	$ 923,000
Savings	Hudner Ln - RR Xing	$ 1,584,000	$ 662,000	$ 3,763,000	$ 6,009,000
					$ 8,292,000
PM	San Felipe Rd - Jct Rte 156	$ 220,000	$ 59,000	$ 572,000	$ 851,000
Delay	Jct Rte 156 - Hudner Ln	$ 145,000	$ 60,000	$ 370,000	$ 575,000
Savings	Hudner Ln - RR Xing	$ 941,000	$ 393,000	$ 2,409,000	$ 3,744,000
					$ 5,170,000
				Annual Total	$ 13,462,000
				20yr savings -	$ 175,260,000

Table 35: Future Route Adoption Delay Saving

Alt. 2 (2015)					
		Passenger Delay Saving	Truck Delay Saving	Wasted Fuel Cost Saving	Total Savings
AM	San Felipe Rd - Jct Rte 156	$ 129,000	$ 35,000	$ 352,000	$ 516,000
Delay	Jct Rte 156 - Hudner Ln	$ 58,000	$ 24,000	$ 161,000	$ 243,000
Savings	Hudner Ln - RR Xing	$ 376,000	$ 157,000	$ 1,049,000	$ 1,582,000
					$ 2,341,000
PM	San Felipe Rd - Jct Rte 156	$ 164,000	$ 44,000	$ 438,000	$ 646,000
Delay	Jct Rte 156 - Hudner Ln	$ 75,000	$ 31,000	$ 205,000	$ 311,000
Savings	Hudner Ln - RR Xing	$ 488,000	$ 204,000	$ 1,333,000	$ 2,026,000
					$ 2,983,000
				Annual Total	$ 5,324,000
Alt. 2 (2025)					
		Passenger Delay Saving	Truck Delay Saving	Wasted Fuel Cost Saving	Total Savings
AM	San Felipe Rd - Jct Rte 156	$ 202,000	$ 54,000	$ 528,000	$ 785,000
Delay	Jct Rte 156 - Hudner Ln	$ 98,000	$ 41,000	$ 262,000	$ 401,000
Savings	Hudner Ln - RR Xing	$ 640,000	$ 267,000	$ 1,703,000	$ 2,611,000
					$ 3,797,000
PM	San Felipe Rd - Jct Rte 156	$ 173,000	$ 47,000	$ 459,000	$ 678,000
Delay	Jct Rte 156 - Hudner Ln	$ 117,000	$ 49,000	$ 306,000	$ 472,000
Savings	Hudner Ln - RR Xing	$ 762,000	$ 318,000	$ 1,991,000	$ 3,071,000
					$ 4,221,000
				Annual Total	$ 8,018,000
Alt. 2 (2035)					
		Passenger Delay Saving	Truck Delay Saving	Wasted Fuel Cost Saving	Total Savings
AM	San Felipe Rd - Jct Rte 156	$ 384,000	$ 104,000	$ 939,000	$ 1,427,000
Delay	Jct Rte 156 - Hudner Ln	$ 243,000	$ 101,000	$ 577,000	$ 921,000
Savings	Hudner Ln - RR Xing	$ 1,581,000	$ 660,000	$ 3,756,000	$ 5,997,000
					$ 8,345,000
PM	San Felipe Rd - Jct Rte 156	$ 229,000	$ 62,000	$ 593,000	$ 885,000
Delay	Jct Rte 156 - Hudner Ln	$ 146,000	$ 61,000	$ 374,000	$ 581,000
Savings	Hudner Ln - RR Xing	$ 950,000	$ 397,000	$ 2,432,000	$ 3,779,000
					$ 5,245,000
				Annual Total	$ 13,590,000
				20yr savings -	$ 174,750,000

CONCLUSION AND RECOMMENDATIONS

Without additional capacity on Route 25 within the study area, the two-lane highway segment between San Felipe Road and Route 101 will continue operation below the acceptable LOS C and experience congestion during the peak hours. As traffic demand increases over time on Route 25, the ATS will drop and thus increase travel time. The difference in the forecasted traffic volumes between the no-build and build alternative shows that the demand is there on Route 25 if capacity is provide.

Alternative A or Alternative B can only be viewed as an interim solution. The best-case scenario is when there is diversion from Route 25. While having the four-lane expressway between San Felipe Road and Hudner Lane will provide some relief with a lower overall ATT compared to the No-build alternative. At worst if there is no diversion, the two-lane highway segment between Hudner Lane and Route 101 will remain as a constraint on traffic flow. The congestion on Route 25 will continue to grow a Route Adoption alternative is adopted and all sections are constructed. In any case, the travel time study and delay cost analysis have shown there would be positive savings with the build alternatives.

Existing signalized intersections, San Felipe Road and Route 25, should be maintained as such after the completion of the project. Existing unsignalized and new intersections (i.e. – Wright Rd, southbound Rte 25 offramp at Rte 156 junction, Shore Rd, & consolidated Bloomfield Ave/Bolsa Rd) that met the ADT signal warrant are candidate locations for signalization with the proper signal warrant analysis after the project. Installing them hastily can be detrimental to mainline operation. Although traffic signals can reduce delay on the side streets, the negative impact on the mainline is increased delay. A potential delay of up to 35 seconds at the signalized intersection is still a LOS C. Every signal a vehicle encounters on the mainline can incur up to 35 seconds of added travel time. Some of the potential travel time saved with four-lane expressway can be negated with traffic signals. For this reason it is important to have actual field data to conduct the signal warrant analysis to weigh the benefits (e.g. – reduce broadside accidents, reduce delay on the side street) verses the negatives (e.g. – mainline delay, increase end of queue rear end accidents) a traffic signal will bring. Only when the benefit out weighs the negative should a traffic signal installed.

The recommended intersection configuration is attached in Appendix N. The configuration layouts also include the minimum storage requirements for turn pockets where channelization is needed. For the at-grade intersection of Rte 25/Rte 156 in Alternative A and Alternative B, the recommended mainline storage is provided as well. The minimum storage shown is just that, and the deceleration distance is not included in the numbers shown in the diagrams.

---

*6-04-09: The segment analysis on Route 25 for existing, no-build, and all the build alternatives has been extended north (or west) to the junction of Rte 101. The original segment analysis ends at the railroad crossing which is Route Adoption project limit. However, VTA (Valley Transportation Authority) has not finalized the traffic study for the 6-lane widening project on Route 101 as of the writing of this report. As part of the VTA's widening project to reconstruct the Rte 25/Rte 101 interchange, it is the PDT's understanding that VTA would widen Route 25 to a four-lane expressway from the interchange to the railroad crossing matching the Route Adoption project limit. The extension of the segment analysis for build alternatives is based on the assumption that Rte 25 between the railroad crossing and the Rte 25/Rte 101 interchange would be a four-lane expressway.

Visual Impact Assessment

Visual Impact Assessment Summary
SUPPLEMENTAL UPDATE
May 2011

The Visual Impact Assessment (VIA) technical study was originally completed in July 2008 and was based on the design alternatives current at that time. Subsequently, in response to public and agency comments received during the Draft Environmental Document Public Hearing held in May 2010, certain design modifications to reduce the project footprint were made to the preferred alternatives – Route Adoption Alternative B and Build Alternative 2. Supplemental updates made to this VIA Summary are based on those changes and are indicated below in italic.

Project Alternatives

This project proposes to convert 11 miles of the existing Route 25 two-lane conventional highway to a four-lane expressway between the City of Hollister in San Benito County and Highway 101 in Santa Clara County. Two route adoption alternatives, and two route widening "build" alternatives within the limits of the proposed Route Adoption corridors, were assessed for potential visual impacts.

Route adoption Alternative 1 proposes to align the future four-lane expressway and Route 25/156 interchange mainly to the north of the existing two lane highway. Route adoption Alternative 2 proposes to align the future four-lane expressway and Route 25/156 interchange to the south of the existing highway. The proposed alignment of Alternative 1 and 2 between Shore Road and Route 101 is the same. The most noticeable visual change at the western end of Alternatives 1 and 2 would be the sequence of four tall new bridge structures.

Alternative 1 differs from Alternative 2 between Shore Road and San Felipe Road, in that it more closely follows the existing alignment of Route 25. Alternative 2 is further south of the existing alignment of Route 25. The most notable visual change at the eastern end of Alternatives 1 and 2 would be substantial expansion of paved expressway into agricultural land.

Route widening Alternative A would be at the eastern end of the Alternative 1 route adoption alignment, overlapping the existing highway near San Felipe Road and then generally veering north of the existing Route 25/156 intersection. Route widening Alternative B would be at the eastern end of the Alternative 2 route adoption alignment, approximately a quarter of a mile south of the existing facility.

Both route widening Alternatives, A and B, propose to construct approximately 3.8 miles of four-lane expressway in San Benito County, from San Felipe Road to Hudner Lane. Unlike the route adoption alternatives, the build alternatives propose a realigned and widened at-grade intersection at Route 25/156 instead of an interchange.

The existing highway would become part of a frontage road system in all alternatives, and several local roads would be re-configured to accommodate the new expressway.

Supplemental Update:
Two key design modifications were made to proposed Route Adoption Alternative 2 and proposed Build Alternative B. The median width was reduced from 62 feet to 46 feet, and the proposed horizontal alignment was moved somewhat closer to the existing alignment. The mile post limit for Build Alternative B was changed to PM 55.0.

Project Setting

The project setting consists primarily of open space and sparse development, which combine together to create a predominately rural feeling. The rugged natural backdrop of the distant mountain terrain compliments the highly modified patchwork of rich valley farm land. Row crops, orchards and grazing fields dominate the landscape and are an important part of its high visual quality. Views of scattered farmhouses and barns support the strongly defined agricultural identity of the area. The continuity of the viewshed from the unfenced two-lane road contributes to the visual experience of the region's scenic beauty. Detractors to the existing view include utility poles and overhead lines, and roadside signs. Community sensitivity to visual issues, is reflected in numerous county general plan documents, and is considered to be high with regard to protecting the rural character of the area.

Visual Impacts

Route adoption Alternative 1 would result in a moderate loss of visual quality due to changes in agricultural and architectural context. Changes would include loss of agricultural vegetation, loss of mature trees, removal of some iconic rural buildings, substantially expanded pavement, introduction of large-scale structures, and increased visual encroachment of man-made elements in a generally rural area.

Route adoption Alternative 2 would have a moderately adverse impact on the visual quality of the corridor through the Hollister Valley for similar reasons, however the magnitude of its changes is somewhat greater between San Felipe Road and Shore Road. Alternative 2 would have lower potential impacts to vernacular architecture along the existing highway alignment than Alternative 1, but Alternative 2 would experience a larger degree of change in visual quality due to the expansion of pavement, signs, fencing, and some utilities into previously undeveloped agricultural land. Alternative 2 between San Felipe Road and Shore Road is a greater departure from the existing rural condition and is likely to be a more noticeable visual change to the local community than Alternative 1. Once in place, the changes proposed by either Alternative 1 or 2 would probably not be unduly noticed by most motorists unfamiliar with the area, however their general perception of the corridor is likely to be of a less rural, more structured, and developed character.

Supplemental Update:

The proposed reduction in median width would diminish the positive visual effect of a wide vegetated expanse separating the new lanes of pavement. The new horizontal alignment would also increase the negative perception of expansive paved surfaces because of the reduced vegetated buffer between the expressway itself and the frontage road system. Conversely, when compared to the previous design alternatives - the reduced median width and the more concentrated alignment would increase preservation of positive views of expansive agricultural land along the roadside and would reduce the sense of rural fragmentation and encroachment of human-made elements into the rural landscape caused by the proposed new expressway. Additionally, the frontage road system would be 5.5 miles shorter for the modified Alt 2.

Adverse visual changes which would result from construction of either Route widening Alternative A or B, include loss of agricultural vegetation, loss of mature trees, removal of some rural buildings, substantially expanded pavement area, and increased encroachment of man-made elements such as fencing, signs and lighting. The impacts are similar to those described for their respective adoption corridors, Alternatives 1 and 2. Alternative B would result in a somewhat greater loss of visual quality due to changes in rural character, than Alternative A. The closer

proximity of Alternative A's northern alignment and northern intersection to existing Route 25 improvements and future airport expansion area would result in less visual fragmentation of the landscape over time. Alternatives A and B both propose new at-grade intersections at Route 25/156, and at Route 25/San Felipe Road which has been identified as a key "gateway" into the community of Hollister.

Supplemental Update:
Visual impacts such as loss of agricultural vegetation and mature trees, expanded pavement, introduction of large-scale structures, and increased encroachment of human-made elements in a generally rural area would all still be experienced by various viewer groups, however the magnitude of those changes would be lessened by the proposed reduction in median width.

Similarly, Build Alternative B design modifications, which eliminate new frontage roads, would decrease 1.9 miles of proposed pavement. Only portions of the existing highway would be used for the frontage road system. This modification would lessen negative visual impacts from expanded pavement.

Design modifications to the horizontal alignment for Route Adoption Alternative 2 would still result in the removal of some rural buildings, however no buildings would be removed in Build Alternative B.

Design modifications to the horizontal alignment for Build Alternative B, and Route Adoption Alternative 2 would also reduce the difference in visual quality impacts when compared with Build Alternative A, and Route Adoption Alternative 1 such that the loss of visual quality would be comparable for either Build Alternative A or B or Adoption Alternative or 2.

Measures recommended to avoid, minimize, and/or mitigate for visual impacts include context sensitive grading and utility location, aesthetic treatments to structures, shielded lighting, appropriate erosion control, and replacement and "gateway" landscape planting.

With the implementation of the recommended mitigation measures, the proposed project alternatives appear to be consistent with local planning policies and goals regarding visual resources. Visual changes caused by any of the proposed alternatives are anticipated to be within the expectations of the typical viewer and the appealing visual quality of the surrounding agricultural and mountain views would still characterize the project area.

Supplemental Update:
The Design modifications made to the preferred alternatives, Alternative 2 and Alternative B, would lessen the negative visual impacts of the proposed project and would be perceived positively by the public. Measures recommended in the original VIA to avoid, minimize and mitigate for visual impacts are still applicable to all proposed design alternatives.

State of California
DEPARTMENT OF TRANSPORTATION

Business, Transportation and Housing Agency

Memorandum

Flex your power!
Be energy efficient!

To: Corby Kilmer
Landscape Architect
Landscape Architure District 5

Date: April 8, 2010

File: 05-48540
05-SBt-25 (PM 51.5/60.1)
04-SCl-25 (PM 0.0/2.6)
and 05-SBt-156 (PM R10.5/R12.2)

From: G. William 'Trais' Norris III
Branch Chief
Sierra Pacific Environmental Analysis Branch

Subject: Change to Purpose Statement

The Purpose statement for the SR25 Widening and Route Adoption project has changed. The new wording is

The purpose of the proposed route adoption project is to:

- Select a corridor for State Route 25 between Hollister and Gilroy that will accommodate existing and future travel demand.
- Facilitate local and regional land use planning by identifying future right-of-way needed for the State Route 25 corridor.

The purpose of the proposed build project is to:

- Improve traffic flow and reduce delays on State Route 25 between San Felipe Road in Hollister and Hudner Lane in San Benito County.
- Increase capacity along State Route 25 between San Felipe Road in Hollister and Hudner Lane in rural San Benito County.

The new purpose does not affect the conclusions of the Visual Impact Assessment completed for this project in July 2008.

c: Project file

State of California
DEPARTMENT OF TRANSPORTATION

Business, Transportation and Housing Agency

M e m o r a n d u m

Flex your power!
Be energy efficient!

To: **G. William "Trais" Norris, III**
Senior Environmental Planner
Sierra Pacific Environmental Analysis Branch

Date: January 28, 2009
File: SBt- 25 51.5/60.1
SCl 25 0.0/2.6
SBt 156 R10.5/R12.2
EA 05-485400

Attn: **Wendy Kronman**

From: Corby Kilmer
Landscape Architect, Design III, - Branch B
Central Region – District 5 Landscape Architecture

Subject: Rt. 25 Widening - Revised Purpose and Need Statement

The completed Visual Impact Assessment addresses the following updated purpose and need statement, project description, and alternatives descriptions:

The California Department of Transportation (Caltrans), in cooperation with San Benito Council of Governments and Santa Clara Valley Transportation Authority is evaluating the conversion of 11.2 miles of the existing State Route 25 two-lane conventional highway to a four-lane expressway in San Benito and Santa Clara counties. This Draft Environmental Impact Report and Environmental Impact Statement includes two proposed projects: (1) a TIER I route adoption and (2) a proposed construction project within the limits of the proposed route adoption.

1. *The route adoption study extends from San Felipe Road within the City of Hollister (post mile 51.5) to the San Benito/Santa Clara County line (post mile 60.1) and on to the end of State Route 25 at U.S. 101 south of the city of Gilroy (post miles 0.0 to 2.6 in Santa Clara County).*

2. *The proposed construction project limits extend 3.8 miles in San Benito County, from San Felipe Road in Hollister to just west of Hudner Lane (post miles 51.5 to 55.3). The existing 2-lane conventional highway would be replaced by a 4-lane expressway.*

State Route 25, a two-lane conventional highway, runs northwest through the relatively flat terrain of the Hollister Valley, terminating at U.S. 101 after crossing the Pajaro River and Carnadero Creek. Agriculture dominates the surrounding landscape, and farmsteads and houses are scattered along the length of the study area. Residences, retail businesses, and agriculture-related commercial operations are more concentrated at both ends of the route adoption study area, on the outskirts of Gilroy and Hollister.
The purpose of the proposed project is to:

- *Select a route adoption corridor for State Route 25 between Hollister and Gilroy for planning purposes.*
- *Improve traffic flow, reduce delays, and enhance the movement of goods on State Route 25 between San Felipe Road in Hollister and Hudner Lane in San Benito County.*

VISUAL IMPACT ASSESSMENT TECHNICAL REPORT

Route 25
Widening and Route Adoption
Hollister to Gilroy
Tier I EIS / EIR

SBt - 25 - PM 51.5 / 60.1
SBt - 156 - PM R10.5 / R12.5
SCl - 25 - PM 0.0 / 2.56
05-485400

Caltrans

California Department of Transportation
District 5 Landscape Architecture Branch
50 Higuera Street
San Luis Obispo, CA 93401

July 2008

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VISUAL IMPACT ASSESSMENT SUMMARY

Project Alternatives

This project proposes to convert 11 miles of the existing Route 25 two-lane conventional highway to a four-lane expressway between the City of Hollister in San Benito County and Highway 101 in Santa Clara County. Two route adoption alternatives, and two route widening "build" alternatives within the limits of the proposed Route Adoption corridors, were assessed for potential visual impacts.

Route adoption Alternative 1 proposes to align the future four-lane expressway and Route 25/156 interchange mainly to the north of the existing two lane highway. Route adoption Alternative 2 proposes to align the future four-lane expressway and Route 25/156 interchange to the south of the existing highway. The proposed alignment of Alternative 1 and 2 between Shore Road and Route 101 is the same. The most noticeable visual change at the western end of Alternatives 1 and 2 would be the sequence of four tall new bridge structures.

Alternative 1 differs from Alternative 2 between Shore Road and San Felipe Road, in that it more closely follows the existing alignment of Route 25. Alternative 2 is further south of the existing alignment of Route 25. The most notable visual change at the eastern end of Alternatives 1 and 2 would be the substantial expansion of paved expressway into agricultural land.

Route widening Alternative A would be at the eastern end of the Alternative 1 route adoption alignment, overlapping the existing highway near San Felipe Road and then generally veering north of the existing Route 25/156 intersection. Route widening Alternative B would be at the eastern end of the Alternative 2 route adoption alignment, approximately a quarter of a mile south of the existing facility.

Both route widening Alternatives, A and B, propose to construct approximately 3.8 miles of four-lane expressway in San Benito County, from San Felipe Road to Hudner Lane. Unlike the route adoption alternatives, the build alternatives propose a realigned and widened at-grade intersection at Route 25/156 instead of an interchange.

The existing highway would become part of a frontage road system in all alternatives, and several local roads would be re-configured to accommodate the new expressway.

Project Setting

The project setting consists primarily of open space and sparse development, which combine together to create a predominately rural feeling. The rugged natural backdrop of the distant mountain terrain compliments the highly modified patchwork of rich valley farm land. Row crops, orchards and grazing fields dominate the landscape and are an important part of its high visual quality. Views of scattered farmhouses and barns support the strongly defined agricultural identity of the area. The continuity of the viewshed from the unfenced two-lane road contributes to the visual experience of the region's scenic beauty. Detractors to the existing view include utility poles and overhead lines, and roadside signs. Community sensitivity to visual issues, is reflected in numerous county general plan documents, and is considered to be high with regard to

protecting the rural character of the area.

Visual Impacts

Route adoption Alternative 1 would result in a moderate loss of visual quality due to changes in agricultural and architectural context. Changes would include loss of agricultural vegetation, loss of mature trees, removal of some iconic rural buildings, substantially expanded pavement, introduction of large-scale structures, and increased visual encroachment of man-made elements in a generally rural area.

Route adoption Alternative 2 would have a moderately adverse impact on the visual quality of the corridor through the Hollister Valley for similar reasons, however the magnitude of its changes is somewhat greater between San Felipe Road and Shore Road. Alternative 2 would have lower potential impacts to vernacular architecture along the existing highway alignment than Alternative 1, but Alternative 2 would experience a larger degree of change in visual quality due to the expansion of pavement, signs, fencing, and some utilities into previously undeveloped agricultural land. Alternative 2 between San Felipe Road and Shore Road is a greater departure from the existing rural condition and is likely to be a more noticeable visual change to the local community than Alternative 1. Once in place, the changes proposed by either Alternative 1 or 2 would probably not be unduly noticed by most motorists unfamiliar with the area, however their general perception of the corridor is likely to be of a less rural, more structured and developed character.

Adverse visual changes which would result from construction of either Route widening Alternative A or B, include loss of agricultural vegetation, loss of mature trees, removal of some rural buildings, substantially expanded pavement area, and increased encroachment of man-made elements such as fencing, signs and lighting. The impacts are similar to those described for their respective adoption corridors, Alternatives 1 and 2. Alternative B would result in a somewhat greater loss of visual quality due to changes in rural character, than Alternative A. The closer proximity of Alternative A's northern alignment and northern intersection to existing Route 25 improvements and future airport expansion area would result in less visual fragmentation of the landscape over time. Alternatives A and B both propose new at-grade intersections at Route 25/156, and at Route 25/San Felipe Road which has been identified as a key "gateway" into the community of Hollister.

Measures recommended to avoid, minimize, and/or mitigate for visual impacts include context sensitive grading and utility location, aesthetic treatments to structures, shielded lighting, appropriate erosion control, and replacement and "gateway" landscape planting.

With the implementation of the recommended mitigation measures, the proposed project alternatives appear to be consistent with local planning policies and goals regarding visual resources. Visual changes caused by any of the proposed alternatives are anticipated to be within the expectations of the typical viewer and the appealing visual quality of the surrounding agricultural and mountain views would still characterize the project area.

1 INTRODUCTION

1.1 Purpose of This Report

The purpose of this Visual Impact Assessment (VIA) is to compile and analyze environmental data germane to the assessment of potential visual impacts from the State Route 25 Widening and Route Adoption Project (project). As such, this report provides the technical foundation for the assessment of potential visual impacts from the project that are summarized in the environmental document. This report is prepared in compliance with the National Environmental Policy Act (NEPA) and with the California Environmental Quality Act (CEQA).

Visual or aesthetic resources are the natural and cultural features of the landscape that can be seen and contribute to the public's appreciative enjoyment of the environment. Visual resource or aesthetic impacts or effects are generally defined in terms of a project's physical characteristics and potential visibility and the extent to which the project's presence would change the perceived visual character and quality of the environment in which it would be located.

This assessment considers the potential visual impact of the State Route 25 Widening and Route Adoption project. Components of the existing visual landscape and the proposed project alternatives are analyzed, including permanent visible features, and major temporary construction staging impacts, if any. Design alternatives which have been dropped from further consideration are not analyzed in this final technical report. Potential cumulative impacts from separate improvement projects which are existing or currently proposed for other portions of Route 25 in the same general area are discussed.

The VIA identifies existing visual resources within the area, evaluates the proposed improvements for visual compatibility within the existing landscape, determines the affect the proposed design alternatives would have on the public's experience of the regions' aesthetic qualities, and recommends mitigation measures to minimize potential adverse visual impacts associated with the State Route 25 Widening and Route Adoption project on the surrounding visual environment.

This report will help to address the following typical community concerns:

- What would the proposed project look like?
- Would I see the changes from my home or business?
- How can negative visual impacts be reduced?

1.2 Proposed Project Description

The California Department of Transportation (Department), in cooperation with San Benito Council of Governments and Santa Clara Valley Transportation Authority is evaluating the conversion of 11 miles of the existing Route 25 two-lane conventional highway to a four-lane expressway in San Benito and Santa Clara counties. This VIA considers both a Route Adoption

corridor and a proposed construction project within the limits of the proposed Route Adoption:

- The Route Adoption study extends from San Felipe Road within the City of Hollister (post mile 51.5) to the San Benito/Santa Clara County line (post mile 60.1) and on to the end of State Route 25 at U.S. 101 south of the City of Gilroy (post miles 0.0/2.56 in Santa Clara County).
- The proposed construction project limits extend 3.8 miles in San Benito County, from San Felipe Road to just west of Hudner Lane (post miles 51.5/55.3).

1.3 Existing Facilities

State Route 25 transverses the entire length of San Benito County from the southern county boundary at the junction of Route 198 near King City north through Paicines, Tres Pinos, and the City of Hollister. It connects to US 101 just past the northern county boundary south of Gilroy. This minor arterial is primarily a rural two-lane facility, except for a section in Hollister where it is four lanes.

Route 25 within the project limits runs northwest from San Felipe Road at the suburban fringe of Hollister, traverses the relatively flat open terrain of the Hollister Valley, intersects Route 156, crosses the Union Pacific Railroad Hollister line, the Pajaro River (the San Benito/Santa Clara County line), Carnadero Creek and the Union Pacific Railroad main line until it terminates at the Route101/25 interchange. Agriculture dominates most of the surrounding landscape, and farming operations and rural houses are scattered along its length. Power poles and overhead power lines parallel Route 25. Suburban residences, retail businesses, and agriculture-related commercial operations are concentrated at both ends of the route adoption study area, on the outskirts of Gilroy and Hollister.

Route 25 from Hollister to Route 101 is a high traffic volume highway which serves as an east-west corridor for interregional commuter traffic within central California, for statewide movement of goods and services, and for tourist travel between inland valleys and the Monterey coastal regions, Figure 1-1. The highway also serves the needs of regional agriculture and local businesses and communities. This two-lane roadway with few areas where passing can be done safely, is currently shared by slow moving farm equipment, trucks, and local and commuter traffic. An increasing number of vehicles travel this stretch of Route 25 and during peak commute hours the roadway is congested. Traffic flow is impeded by vehicles turning onto and/or out of the numerous driveways and local roads, affecting the flow of the faster moving vehicles. Significant commercial truck traffic travels through the area on Route 25, and is subject to delays as well. Many commuters whose destination is beyond the local area take local roads (Shore Road and Frazier Lake Road) as shortcuts between Highways 25, 156 and 152.

The existing northbound and southbound travel lanes of Route 25 are 12 feet wide with 10 foot outside shoulders on both sides. The roadbed is undivided, except that the travel lanes are separated by a 2 foot wide "soft median barrier" pavement rumble strip to alert drivers should they veer outside their lanes. Rumble strips have also been installed on the outside edge of traveled way. Route 25 intersects with the railroad tracks of the Union Pacific Hollister branch line before it reaches the San Benito/Santa Clara County line at the Pajaro River. It then

continues over the Carnadero Creek and crosses the Union Pacific mainline, and terminates at Route 101 in Santa Clara County, just south of the Gilroy City limits.

State Route 156 transverses northern San Benito County from US 101 west of San Juan Bautista through San Juan Bautista and Hollister to the San Benito-Santa Clara County line where it connects with Route 152. It is a four-lane expressway from US 101 to San Juan Bautista, where it narrows into a conventional two-lane rural highway. In the Hollister area, Route 156 becomes a two-lane expressway as it bypasses Hollister north of the city limits and maintains that configuration to the county line.

Route 25's intersection with Route 156 is a signalized intersection. Route 25 currently intersects San Felipe Road with an unsignalized intersection. A separate local project, the Route 25 Bypass Project, realigns a portion of Route 25 around the City of Hollister and connects within the widening project limits at the intersection of San Felipe Road and existing Route 25. The modified intersection will add signalization and will be open to traffic in 2008.

1.4 Proposed Project Alternatives

There are five alternatives under evaluation, Figure 1-2. They are:

- Alternative 1: A Route Adoption Alignment (11 miles) with Rt 25/156 IC to the North
- Alternative 2: A Route Adoption Alignment (11 miles) with Rt 25/156 IC to the South
- Alternative A: A 3.8 mile constructed portion of Alternative 1 Route Adoption Alignment
- Alternative B: A 3.8 mile constructed portion of Alternative 2 Route Adoption Alignment
- No Action: No improvements would be made to Route 25 within these limits other than those already programmed/funded or under construction.

No-Action Alternative

The "No Action" alternative assumes that no visual changes to the transportation corridor would occur on existing Route 25 within the proposed project limits. Visual changes which are or will occur as part of two separate local transportation projects, the Route 25 Bypass, currently under construction, and the Highway 25 Safety and Operational Enhancements Project, currently in the design phase, are considered to be part of the "existing" conditions for purposes of this analysis. Besides the traffic signal at San Felipe Road and Route 25, the most noticeable feature which will be added to the visual environment as a result of these two projects is 8.5 miles of concrete median barrier proposed as part of the safety project. The barrier is within the limits of Route Adoption Alternatives 1 and 2, but is outside the limits of build Alternatives A and B and so would be part of their existing visual context. The concrete median barrier would be removed in future when the remainder of the highway within the Route Adoption corridor is widened.

The "No Action" alternative is provided as a basis of comparison to the "Adoption" and "Build" alternatives, and satisfies requirements for analyzing "no action" in the environmental document. The feasibility and potential transportation impacts from taking no action are described elsewhere in the environmental document. The "No Action" alternative is represented in this technical report by the descriptions and illustrations of existing visual conditions.

Figure 1-3 illustrates the common and unique features of each alternative described as follows:

Route Adoption Alignment Alternatives (1 and 2)
A route adoption alignment would be defined to ensure that the appropriate area is incorporated into future city and county general and specific plans. Both of the route adoption alternatives would follow the same alignment from the bend in Route 25 approximately 1.7 miles south of Shore Road (post mile 56.1) in San Benito County to U.S. 101 in Santa Clara County. The alignment would be wide enough to accommodate a future four-lane expressway (342 feet) with a 62 foot median and one or two frontage roads. In the future the alignments would also be wide enough to accommodate four new overhead structures including an approximately 16.5 foot high, grade separation interchange at Route 156; a 43 foot high bridge structure at the Pajaro River; a 9 foot high bridge over Carnadero Creek; and a 23 foot high separation over the eastern most Union Pacific Railroad Hollister branch line crossing. The expressway would be elevated over the western Union Pacific main line at-grade railroad crossing by the proposed Route 25/ U.S.101 interchange north of the existing interchange (part of the Route 101 Widening project).

Between post mile 56.1 and the east end of the proposed project at San Felipe Road, the two alignment alternatives separate.

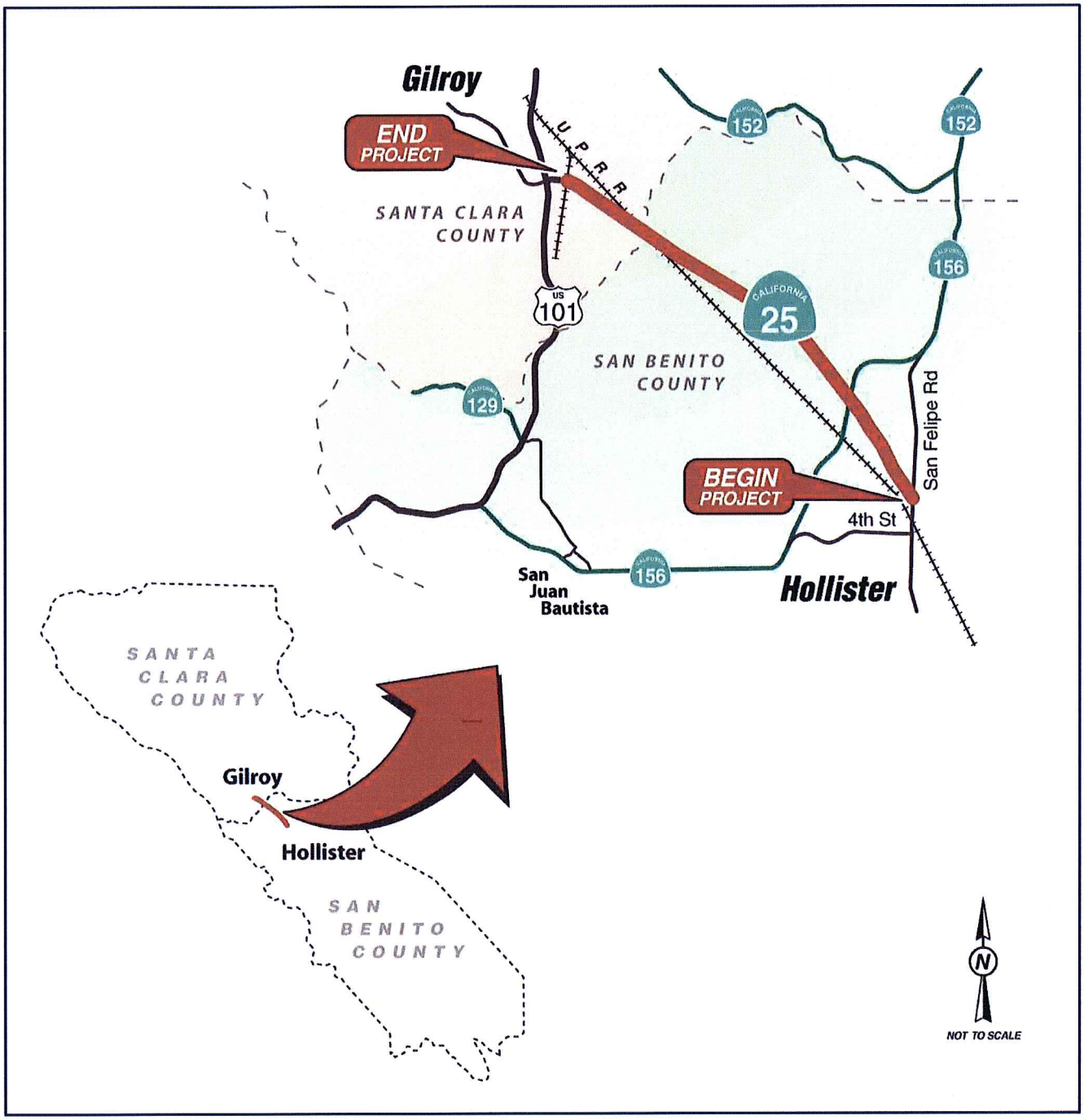
- Alternative 1 proposes to align the future four-lane expressway and Route 25/156 interchange to the east (or north) of the existing two lane north/south highway. An interchange would elevate Route 156 over Route 25 and provide access by means of on/off ramps. Frontage and local road connections would be constructed where needed to provide access to individual properties.
- Alternative 2 proposes to align the future four-lane expressway and Route 25/156 interchange to the west (or south) of the existing two lane highway. An interchange would elevate Route 156 over Route 25 and provide access by means of on/off ramps. Frontage and local road connections would be constructed where needed to provide access to individual properties.

Build Alternatives (A and B)
Both construction alternatives extend 3.8 miles in San Benito County, from just west of Hudner Lane (post mile 55.3) to San Felipe Road (post mile 51.5). Unlike the Route Adoption Alternatives, the build alternatives propose a realigned and widened at-grade intersection at Route 25 and Route 156 instead of an interchange. Both construction alternatives would transition back to the existing two-lane highway near Hudner Lane.

- Alternative A would be constructed at the southeastern end of the Alternative 1 Route Adoption alignment and proposes to realign the new four-lane expressway *north* of the existing facility, and the existing highway would be utilized as a frontage road. Direct access to the expressway would be available from San Felipe Road, Wright Road, Flynn Road, Route 156, two west-side frontage roads and one east-side frontage road. A 15 foot high undercrossing at the Don Chapin gravel operation driveway would provide access to this otherwise landlocked parcel.
- Alternative B would be constructed at the southeastern end of the Alternative 2 Route

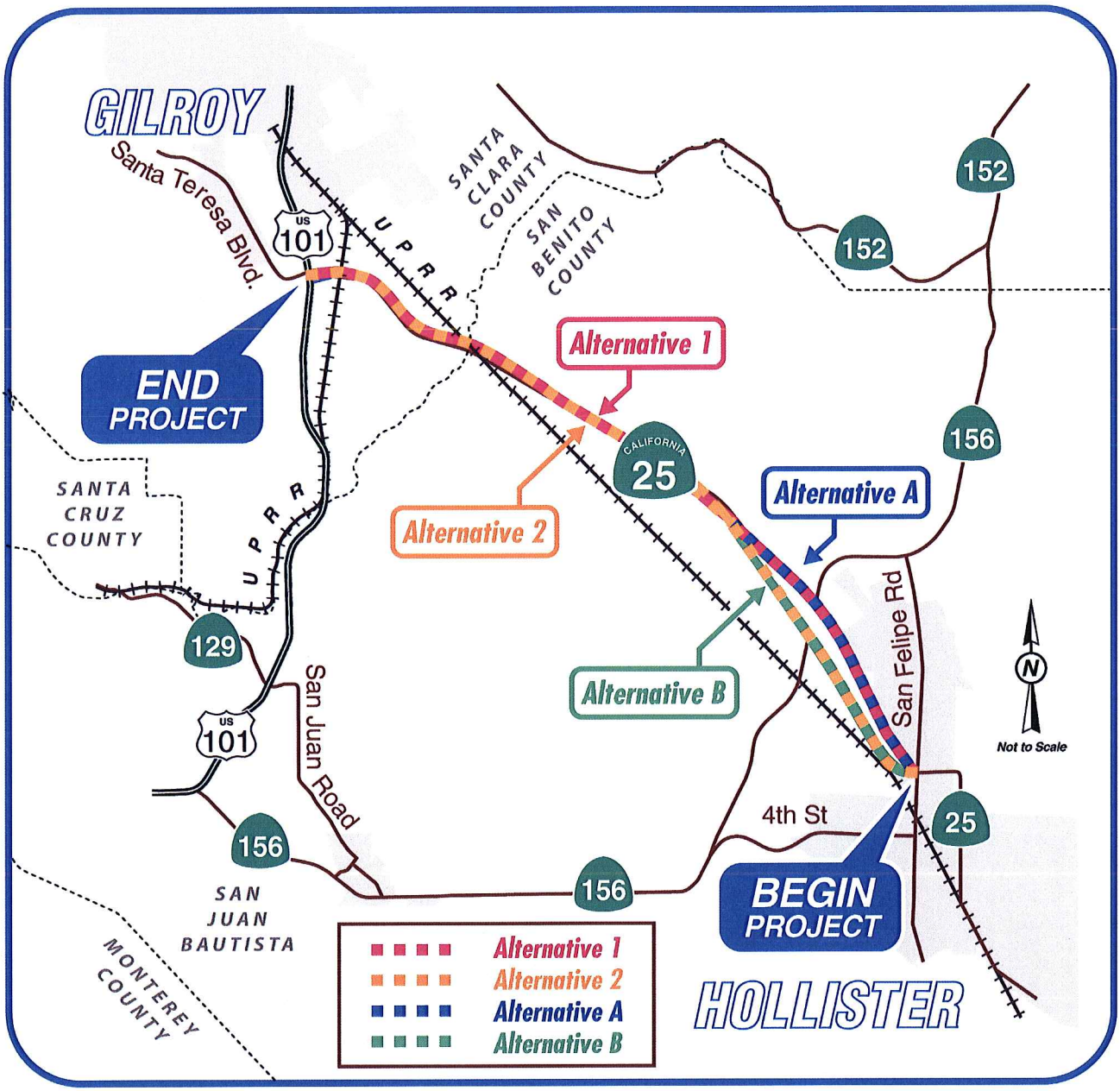
Adoption alignment. Direct access to the expressway would be available from San Felipe Road, Wright and Briggs Roads, a west-side frontage road, Route 156, an east-side frontage road, and Hudner Lane. A second west-side frontage road would connect to Hudner Lane.

Both Alternatives A and B would convert the existing two lane conventional highway to a four lane expressway including: 4 - 12 foot wide lanes; a 5 foot wide inside shoulder and a 10 foot wide outside shoulder; an elevated road cross section approximately 6 feet higher than the existing grade; an unpaved 52 foot wide center median; a frontage road system with 2 - 12 foot lanes and 10 foot wide outside shoulders constructed in part from the existing highway. The project would also include 10 foot wide roadside drainage swales. The elevation of the frontage road system would vary from the grade of the existing pavement to about 3 feet higher in some sections. Some power poles and overhead utility lines would be relocated but would generally follow the frontage road system, switching from side to side of the new Route 25 alignment.



Project Vicinity Map

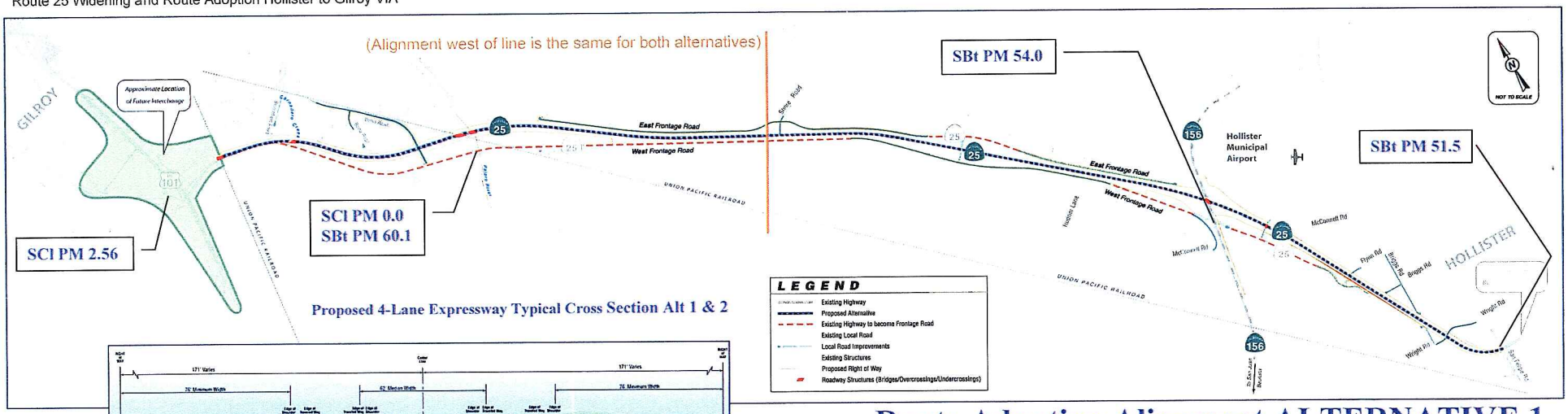
Figure 1-1
No Scale



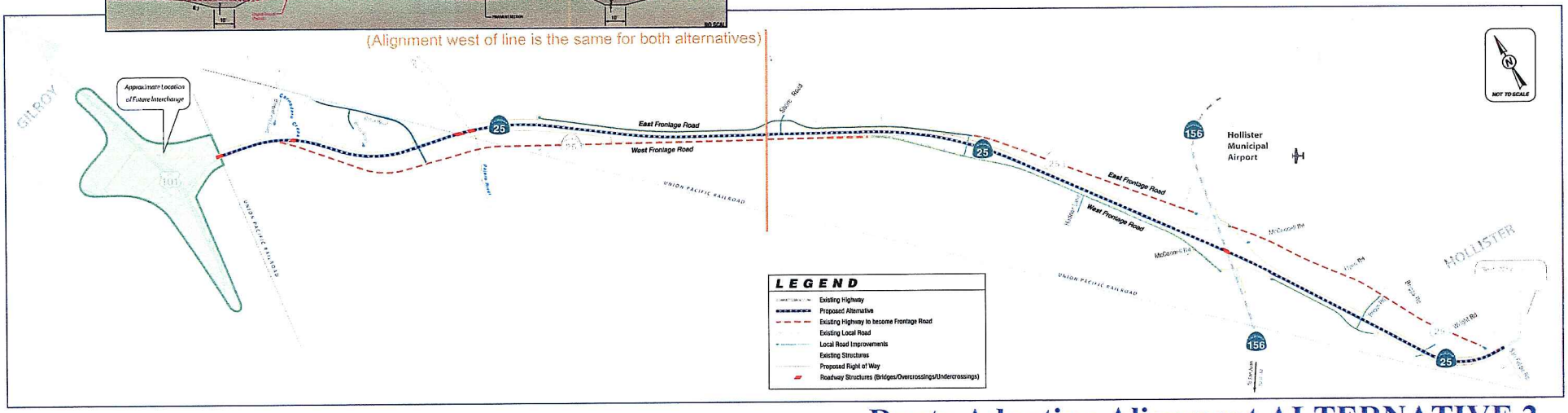
Project Location Map

FIGURE 1-2

No Scale

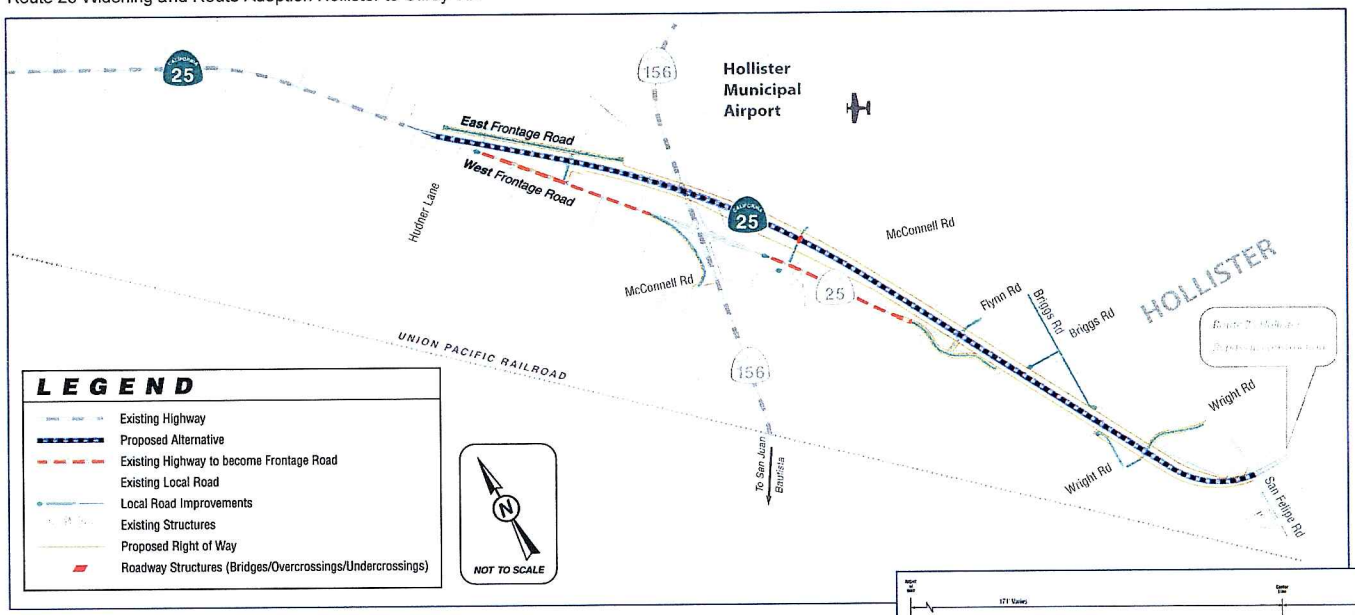


Route Adoption Alignment ALTERNATIVE 1

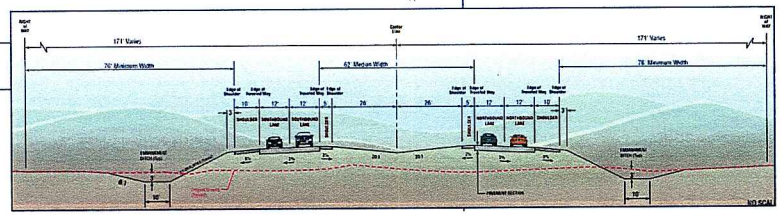


Route Adoption Alignment ALTERNATIVE 2

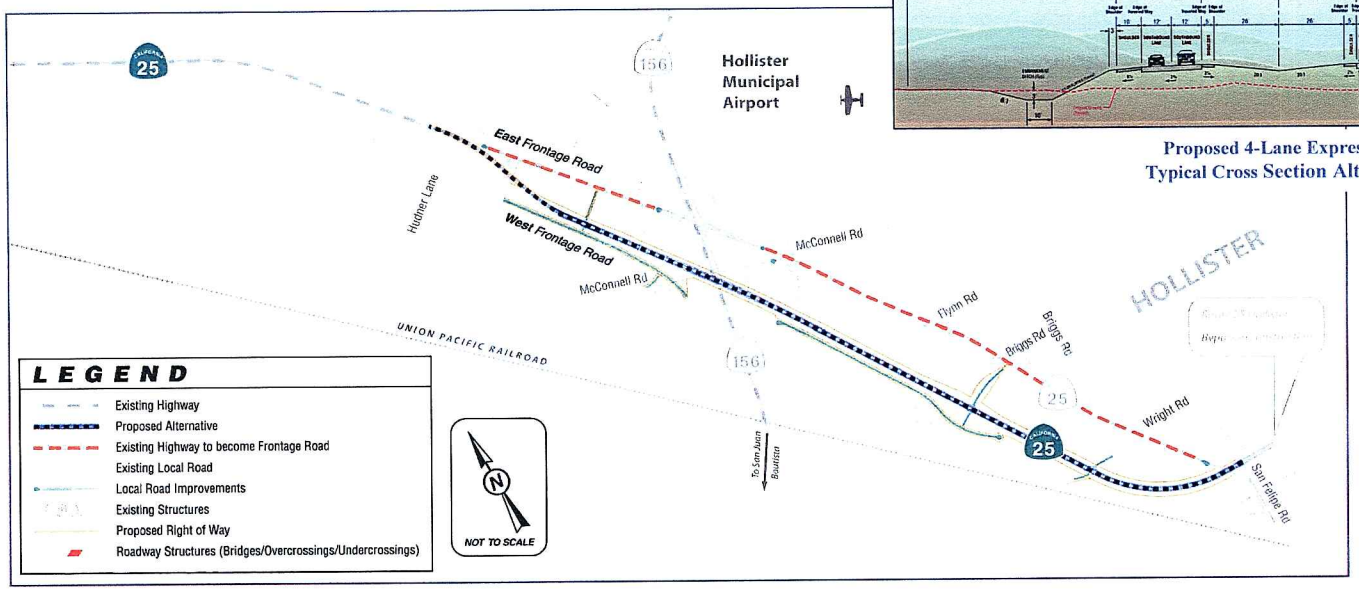
FIGURE 1-3
No Scale



Route Widening Alignment ALTERNATIVE A



Proposed 4-Lane Expressway
Typical Cross Section Alt A & B



Route Widening Alignment ALTERNATIVE B

FIGURE 1-4
No Scale

2 METHODOLOGY

2.1 Visual Impact Assessment

This Visual Impact Assessment (VIA) is part of a TIER I Environmental Impact Statement / Environmental Impact Report which includes both a route adoption study and a proposed construction widening project within the limits of the proposed route adoption. This VIA assesses the potential visual impacts of the construction alternatives proposed to be built, and assesses the potential visual impacts of the alternative locations and future features proposed as part of the Route Adoption corridor. Other alternatives which were considered but subsequently dropped are not included. Project components reviewed included permanent visible features and potential temporary construction staging impacts such as detour roads. The final environmental document may also include additional general discussion of visual issues which may arise during the circulation period for the draft environmental document and will include formal responses to specific public comments received.

The visual impact assessment methodology used for the Route 25 Widening and Route Adoption project was based on The Federal Highway Administration (FHWA) Visual Impact Assessment for Highway Projects Guidelines (U.S. Department of Transportation 1983), developed in conjunction with the American Society of Landscape Architects. This method of analysis has been tailored to meet the specific needs of this project.

2.2 Regulatory Setting

Federal

The National Environmental Policy Act (NEPA) of 1969, as amended, establishes that the federal government use all practicable means to ensure all Americans safe, healthful, productive, and aesthetically and culturally pleasing surroundings [42 U.S. Code 4331(b)(2)]. To further emphasize this point, the Federal Highway Administration in its implementation of the National Environmental Policy Act [23 U.S. Code 109(h)] directs that final decisions regarding projects are to be made in the best overall public interest taking into account adverse environmental impacts, including among others, the destruction or disruption of aesthetic values. Adverse effects may be direct, indirect, or cumulative.

State

The California Environmental Quality Act (CEQA) establishes that it is the policy of the state to take all action necessary to provide the people of the state "with…enjoyment of aesthetic, natural, scenic and historic environmental qualities" [CA Public Resources Code Section 21001(b)].

Likewise, it is the policy of the California Department of Transportation to protect natural scenic beauty, preserve vegetation, unfold scenic vistas, to fit the character of the area traversed, to blend the highway into the landscape in a manner that is compatible with community values and

plans, to enhance the aesthetic qualities of the highway structures and their environment, and to mitigate for impacts to visual quality with features such as replacement and screen planting, contour grading, and surface treatments. "On any highway, pleasing appearance is an important consideration. Scenic values must be considered along with safety, utility, economy, and all the other factors considered in planning and design. This is particularly true of the many portions of the State Highway System situated in areas of natural beauty. The location of the highway, its alignment and profile, the cross section design, and other features should be in harmony with the setting".

Local

Public opinion and policy concerning the established visual character of the regional landscape are important factors in assessing baseline values ascribed to the setting. These policies and community based goals serve as an essential tool for predicting the likely reaction that changes resulting from the proposed project would evoke from the viewing public. The importance of preserving the rural character of the area and the local community's sensitivity to the visual quality of the region have been established in local city and county planning documents, policies and ordinances, and have been reiterated in recent independent public surveys. The City of Hollister General Plan and the EIR for the general plan; the San Benito County General Plan and the Regional Transportation Plan and its EIR, and the Santa Clara County General Plan all affirm goals for the preservation of scenic resources, especially agricultural views and scenic roads, that strengthen the rural identity of the region, and sustain quality of life.

Hollister General Plan

The Environmental Impact Report (EIR) for the Draft Hollister General Plan identified potential impacts to visual quality, scenic vistas and natural resources by new development in sections 4.7-1 Scenic Resources, 4.7-2 Conflicts with Adjoining Development, 4.7-3 Visual Setting and Character of the City and Section 4.7-4, Nighttime Lighting and Glare. The following assessments and guidelines illustrate which visual features are important to local viewers:

- The overall visual and physical character of the City has transformed over the past three decades from a predominantly agricultural community composed of a residential core arranged in a traditional tree-lined grid pattern and surrounded by orchards and fields into a largely suburban community of subdivisions and commercial strips that sprawl into farmlands. The dramatic growth of Hollister, particularly in the last decade, appears to have blurred the community's historic visual qualities through a quilt of competing land uses, building scales and types.
- Transportation corridors are where many people develop their impression of the City. Street trees add to the visual quality of streets and the community as a whole. Trees strengthen neighborhood values by giving streets identity and a sense of place.
- Because the area is largely flat and more than 50% undeveloped, modifications would be noticeable from major thoroughfares entering the city, such as State Routes 156 and 25.
- Existing "gateways" to the City from all directions are characterized as either "non-descript", "visually chaotic" or lacking "comprehensive environmental design". In particular the commercial corridor along San Felipe Road (Business 156) is described as "a mixture of building scales and large, distracting signs", and commercial and light industrial buildings which "partially obscure distant views to the mountains".

- Views of major landscape features, including the hills, should remain visible.
- Increased urban growth, could alter the visual setting or character of the area. Development could be perceived as a negative aesthetic impact in comparison to the current state. Development would dramatically alter the visual setting of the area as it converts from agricultural use or vacant to development.
- The build-out of the general plan would diminish the rural character and the visual quality of the San Benito Valley area especially in the southern, western and northern portions where farming operations are most active.
- The character of undeveloped areas would be altered, replacing the rural open land largely with a suburban landscape that is marked by a thinly distributed residential pattern.
- The expansion of many telephone and distribution lines for electricity would introduce generally unattractive vertical elements inconsistent with the rural setting.
- Intensification of development could increase nighttime light trespass on adjoining areas and has the potential to increase glare visible from adjacent areas and roadways. New light sources could also result in a greater overall level of light at night, thus reducing night sky visibility and affecting Fremont Peak Observatory and the general character of the community.
- Early-twentieth century buildings reflect the small-town agricultural character and history of Hollister.
- Development which would result in buildings and structures which are larger in height, mass and scale than existing adjoining development is of concern.
- Existing aesthetic features should be preserved and protected, and they should be applied to new development.

The Adopted 2005 Hollister General Plan expresses the same community concerns, that "as Hollister continues to grow, development pressure on the edges of the City will increase. Without a strategy to counterbalance this pressure, development will creep further from the core of Hollister. If this happens, new buildings will begin to cover the scenic hillsides that surround Hollister".

The Hollister General Plan Land Use Element states: "The North Gateway area is intended to create an entry boulevard for motorists arriving in Hollister from the north along Highway 25". Development of the north gateway should:

- Provide decorative landscaping along Highway 25 and San Felipe Roads, possibly palm trees
- Screen retail uses between Highway 25, Wright and San Felipe Roads with decorative landscaping
- Add a landscaped median on San Felipe Road, south of the Highway 25 bypass
- Install pedestrian-oriented decorative lighting in addition to traditional overhead automobile-oriented lighting
- Develop distinct features to create an entry statement. Themes could draw from agricultural elements or focus on Hollister's family friendly environment

The Hollister General Plan also recognizes "the importance of agriculture to the community" and the Circulation Element describes Route 25 as "primarily a rural two-lane facility". The Open

Space and Agriculture Element states that a central concern of the General Plan is "to continue to protect natural resource areas as development occurs and to concentrate development to minimize sprawl". It also states that it is important to coordinate City and County land use policies "for protection of the County's existing rural atmosphere".

Goal OS1 of the Open Space Element is to "Preserve and protect open space and the natural environment for all to enjoy". OS1.1 Open Space Preservation states that Hollister should "retain and protect open space areas whenever practical through the protection of prime farmlands, the prevention of new development in areas ... that serve as wildlife habitat or as visual assets for the community".

OS1.6 Utilities in Open Space states that the Hollister area should "discourage utilities in open space areas. Necessary utilities in open space should be located and designed to minimize harm to the area's environmental and visual quality".

Measures recommended to reduce the potential impacts of light pollution from new development include:

- All light sources should be fully shielded from off-site view,
- All lights should be downcast,
- Escape of light to the atmosphere should be minimized,
- Low intensity, indirect light sources should be encouraged, except where other types of lighting is warranted for public safety reasons,
- Mercury, metal halide, and similar intense and bright lights should not be permitted except where their need is specifically approved and their source of light is restricted.

Similarly, Section 32.5 Development Lighting Regulations of the San Benito County Code has a "dark skies" ordinance to encourage lighting that minimizes light pollution, glare, and degradation of the night time visual environment. It establishes three lighting zones; the project is within Zone 3, 13 miles beyond the Fremont Observatory. Section 32.2(C) calls for the use of low-pressure sodium lamps and shielding of street lighting on County or private roadways, including highways. Construction lighting is considered temporary lighting if it is not used for more than one 30-day period within a calendar year, with one possible 30-day extension (Section 32.3(B)(25) and Section 32.12).

There are a number of local plans that contain similar policies pertaining to the regulation of scenic resources as expressed in the Hollister General Plan. These include the Hollister Redevelopment Plan, the Hollister Municipal Airport Master Plan, and the Hollister Municipal Airport Comprehensive Land Use Plan. In conformance with the airport plans, both the City of Hollister and San Benito County have implemented ordinances and zoning regulations to restrict the height of structures and objects of natural growth and the uses of airspace in the vicinity of the Hollister Municipal Airport. All of Route Widening Alternatives A and B and a portion of Route Adoption Alternatives 1 and 2 are within the Airport Influence Area. Development within the county, including new roads and landscaping, is subject to review and conformance with airspace height restrictions, if any.

San Benito County General Plan

The San Benito County General Plan lists several land use goals, objectives, and policies pertaining to the protection of scenic visual resources:

- To maintain the County's rural atmosphere.
- To protect prime agricultural areas.
- To direct future County growth to areas which are neither environmentally sensitive nor of substantial agricultural importance.
- To protect hillsides and grazing lands.
- To utilize agricultural and open space lands to help define urban and rural residential areas.

California Government Code Section 65302(a) states in part that the Land Use Element of a county general plan shall designate the proposed general location and extent of the uses of the land for open space, including agriculture, natural resources, recreation, and enjoyment of scenic beauty. Policies 26, 27 and 28 of the Land Use Element of the San Benito County General Plan discourage spot commercial uses, encourage regional commercial services near existing or future highway interchanges, require high standards for design and landscaping of the structures in those commercial areas and states that the scenic character of thoroughfare commercial areas shall be maintained.

The San Benito County General Plan Open Space Element, policies 15, 16, 17, 18 and 19, affirm that zoning ordinances and open space policies shall "protect and preserve the rural landscape," "continued agricultural uses," and scenic viewscapes "including scenic highways corridors," shall conserve "natural resources," and shall define limits of "urbanization". The Open Space Element states that "it is the County's policy to preserve a rural atmosphere by directing population growth and public service extensions to infill development and avoiding leapfrog growth". Regarding ridgeline development the Open Space Element asserts that "to preserve the rural character of the area, new development should be directed away from the horizon through the use of building envelopes and integration of building architecture into the contour of the horizon". Policy 37 states that "it is the County's policy to apply zoning categories and scenic easement easements for the protection of environmentally hazardous or aesthetically valuable resources". The 1997 Scenic Vegetation zoning ordinance designates scenic corridors of 340-400' from state highways for purposes of review of all projects involving grading within such scenic corridors. It states that projects should be screened to minimize visual impacts of grading operations seen from any scenic highway and that vegetative cover is required to hide grading scars and blend with the natural landscape.

The San Benito County General Plan Transportation Element includes policies which emphasize the importance of road development which "minimize cut and fill" and "follow the natural contours of the land as much as possible", especially in hillside areas.

In recent public surveys, conducted as part of San Benito County's General Plan Update process, residents were asked what they liked most about living in San Benito County, "scenic natural landscape and agricultural open space" was among the top four most popular answers. Respondents also stated that "keeping San Benito County rural, agrarian, and uncrowded, while

meeting the needs of limited growth, were the most important things that should be done to improve the county's future."

In recent community workshops, conducted as part of San Benito County's General Plan Update process several overarching themes emerged "including the desire to achieve balance between preserving the County's rural heritage and developing new economic opportunities for residents, as well as defining a strong cultural/place-based identity"; "some participants emphasized the need to promote the kind of transportation that will ensure the preservation/vitality of agriculture in the County. Along this same vein, others suggested identifying crops with roadway signage to promote agriculture through agritourism". It was also suggested that San Benito County's unique identify should be established "through eco- and agritourism opportunities such as wine trails, organic farms, [and]scenic drives".

Santa Clara County General Plan

The Santa Clara County General Plan express the importance of "preservation of rural character, rural lifestyle opportunities, and scenic resources" in the community. It characterizes natural resources in the county such as "a diversity of habitats, excellent agricultural soils and climate, and scenic resources" as having multiple values, not merely value as commodities.

- Ecological value, the value inherent to natural processes regardless of any particular utility to humanity
- Aesthetic and/or recreational value, the value we place on the visual or spiritual quality, beauty, and possible recreational use of our natural environment, all of which contributes greatly to our sense of place and the quality of life unique to this area or region as compared to others
- Agriculture and the remaining supply of highly valuable agricultural lands are not only of great economic importance, but also provide scenic relief from the monotony of continuous urban development

Several elements of the Santa Clara County General Plan illustrate the value placed on scenic resources in the County as follows:

- "At one time, much of the valley lands were in agricultural uses, particularly orchards and many other flowering crops. Now mostly urbanized, the north valley is an expanse of homes, businesses, and roadways. The clutter, noise, distractions, and, in places, unsightliness of urban life are unavoidable. More than ever, the scenic and aesthetic resources of Santa Clara County provide valuable relief from the all too often monotonous uniformity and tensions of urban life. As our urban environment and economy continue to grow and intensify, the psychological and even spiritual value of natural and man-made beauty grow also. The largely undeveloped hillsides visible from the valley floor, and the other scenic characteristics of the area help distinguish Santa Clara County from its neighboring counties and cities, furthermore enhancing the overall attractiveness and competitiveness of the county's economy".
- "For all the natural beauty available to residents and visitors of this vast state, it may be most important to preserve the beauty and scenic quality of the resources closest to us.

All deserve the opportunity in their everyday lives to realize the inherent beauty of nature, on both a grand and small scale, without having to travel great distances from home to do so. The goals and policies of all jurisdictions in Santa Clara County should be to ensure such opportunities to all residents, regardless of socio-economic status, and to ensure that future residents may also enjoy the scenic and aesthetic qualities of our surroundings".

- Hillsides, ridgelines, scenic transportation corridors, major county entryways, and other areas designated as being of special scenic significance should receive additional consideration and protections due to their prominence, visibility, or symbolic value (SCL Co Gen Plan Sec C-RC 60 and C-PR(i) 20).
- The County should continue to seek out opportunities to improve the quality of the transportation experience for Santa Clara travelers through scenic preservation and visual improvements. Land surrounding much of the rural county roadway system is largely undeveloped. This open land serves many important ecological and aesthetic functions. As development pressures increase in the areas adjacent to rural roadways, it will become more important to include consideration of aesthetic, historic and natural amenities along roadways in future decisions regarding roadway development. Some roadways in the County are candidates for visual improvements. These improvements may include landscaping as well as historic structure repair and renovation.
- Roadways in the County serve multiple purposes. The most obvious of these is, of course, transporting people and goods from one destination to another. Another function of our roadways is to provide recreation and an opportunity to appreciate the scenic values within rural areas.

2.3 Visual Impact Assessment Process

The Department conducted a Visual Impact Assessment (VIA) to analyze in greater detail the impacts the proposed project may have on its visual environment. Visual impact is determined by identifying visual resource change and viewer response to that change. A change in the visual environment may not result in substantial permanent visual impacts if the surrounding visual environment can absorb the change without losing its overall quality, if there is limited response to the change, or if the change can be mitigated. Project areas that experience extensive negative change in the quality of visual resources, combined with high viewer sensitivity to that change, result in the greatest visual impacts. The steps to completing the assessment were as follows:

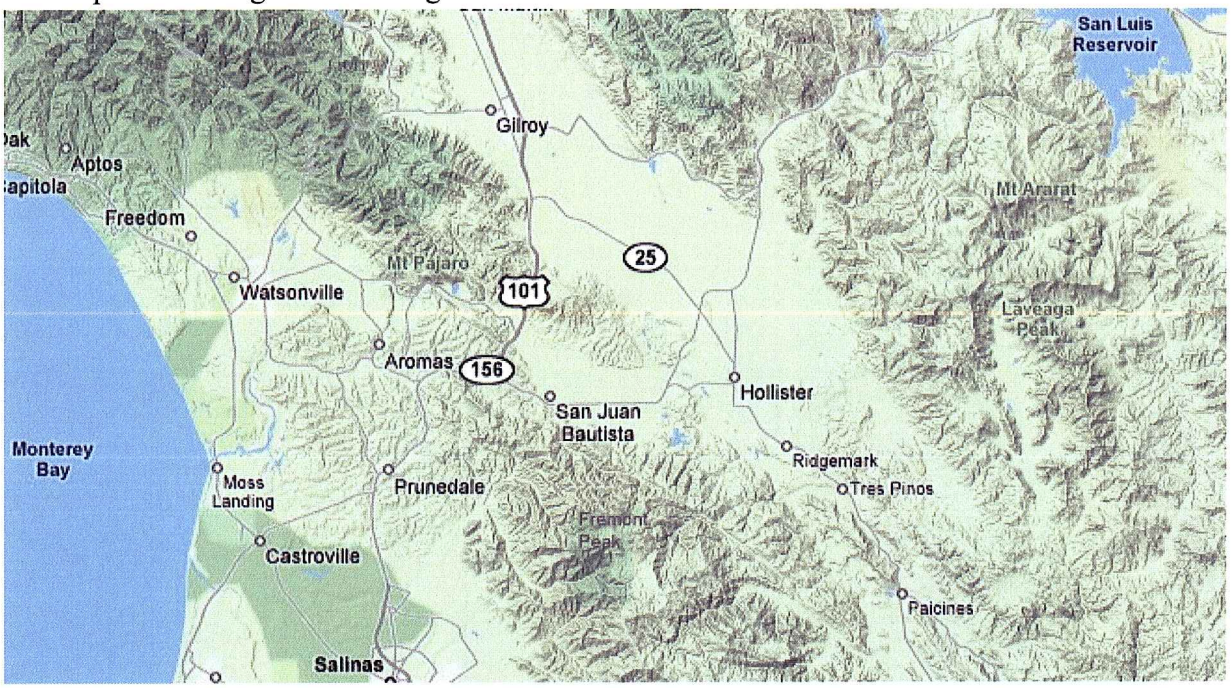
- Inventory the existing visual resources of the region and the project area;
- Describe principle visual characteristics and evaluate the quality of the existing visual environment;
- Identify major viewer groups, viewer exposure and viewer sensitivity to existing visual resources;
- Determine potential adverse and beneficial resource changes introduced by the proposed project for each adoption and build alternative;
- Discuss the significance of the major visual issues;
- Evaluate the visual quality of the proposed conditions for each alternative;
- Assess viewer response to identified visual resource changes;

- Analyze the degree of visual impact and identify appropriate mitigation measures, if any, which should be incorporated into the project design to reduce negative visual impacts and to enhance positive features to compensate for changes.

Visual impact assessments inherently have both subjective and objective components. These steps have been developed to define consistent objective criteria, and to recognize where subjective decisions are made. Consideration of the visual impact of the project for various viewer groups, including both local and statewide highway users, (for views *from* the highway) is a key element of the methodology; local adjacent land users (for views *of* the highway) are also taken into account.

2.4 Existing Visual Conditions

The context of the visual assessment study area was determined by examining the existing visual environment of the region. This sets the framework for the evaluation of the project area's visual quality and the physical changes that would result from the Route Adoption or the Route Widening construction. The Project's potential for visual impacts was assessed by analyzing color aerials, site photographs, quadrangle and survey maps and preliminary project plans. This study defined viewsheds and revealed areas of potential visibility *of* and *from* the Project, which were explored during field investigations and documented.



The study area was subsequently examined for subdivision into smaller units of relatively homogeneous landscape elements composed of similar topography, vegetation, water, and/or manmade elements. The Landscape Units (units) are generally consistent in character and have well defined boundaries of scale, color and texture, or variety of components. The use of landscape units provides a manageable basis of comparison for the visual quality analysis.

Similarly, every possible view of a project can not be examined. Therefore key Observer Viewpoints (OVs) which were representative of the visual character were then selected for more detailed analysis of each alternative. On-site photographs were taken at these observer viewpoints to document the existing "seen" environment. These viewing locations were selected to represent the general visual character of the project, show unique project components or effected resources, and to represent principal affected viewer groups.

2.5 Proposed Visual Conditions

To determine visual impact, proposed project conditions were then examined for physical change and resulting visual quality. The physical changes that would potentially occur to the corridor as a result of the proposed features in the route adoption corridor and more specifically as a result of the proposed widening construction project alternatives were considered. Changes were analyzed including construction of new lanes, frontage roads and drainage channels, removal of vegetation, and removal or addition of other manmade elements such as buildings, signs, signals, and above ground utilities.

To determine the proposed visual environment, potential physical changes to the landscape were evaluated both in the field and by using computer-generated photo simulations to illustrate the likely appearance of each viewpoint in the "after" construction condition. Existing landmarks in the photographed views, such as buildings and trees, were used to visually place physical changes in those views.

2.6 Visual Quality Evaluation

A Visual Quality Evaluation (VQE) for each Observer Viewpoint was conducted in order to assess the magnitude of the potential visual changes caused by the proposed project. The VQE compares the visual quality of the existing conditions to the proposed conditions. These quality ratings illustrate how close the existing scene is to the ideal for that landscape unit and considers proposed features which may reinforce the scene, be of little consequence in the view, or which may seriously diminish the quality of the visual landscape.

Visual quality was evaluated and numerically quantified based on the established criteria of Vividness, Intactness, and Unity:

- Vividness. Vividness is the visual power or memorability of contrasting landscape elements as they combine to form a striking and distinctive visual pattern. A view having landmark characteristics or one you are likely to remember. For example --a mature oak tree with a 100 foot diameter canopy in an open grassy meadow; or a panoramic view of a high mountain range. A vivid view might also be a dramatic city skyline along a harbor. For purposes of the VQE, a view with positive attributes would be rated high for

vividness, while a view such as a large auto wrecking facility, which is vivid due to negative attributes, would be rated low.

- Intactness. Intactness is the integrity of the visual order in the natural or manmade environment and its freedom from non-typical encroaching elements. Do the components of the scene contribute to or detract from the ideal of that landscape type? - e.g. in a "rural" landscape do the various elements contribute to or detract from an ideal "rural" landscape? If all of the various elements of a scene seem to "belong" together, there is a high level of intactness. A view of a well-kept rural residential neighborhood, with neat houses and farmyards and few encroaching elements such as abandoned machinery would have a high intactness rating. Whereas a 150 foot tall electric transmission tower and power lines bisecting a small pristine valley would be considered as detracting from the intactness of the scene.

- Unity. Unity is the compositional harmony or inter-compatibility between landscape elements when considered as a whole. Unity represents the degree to which the visual resources of the landscape join together to form a coherent, harmonious visual pattern. A scene composed of compatible forms, lines, textures, materials, and colors. Weathered barns, wood and wire fences, green pasture land, and a curving dirt road are consistent with and reinforce a unified rural landscape feeling. However the placement of a flashing neon sign or a straight paved road would detract from the composition or visual unity of that same scene, while a rustic wood sign or a meandering gravel road might enhance it.

A numerical rating between 1 and 7 was assigned for each of these three traits in the existing condition from each viewpoint, with 1 being the lowest value and 7 the highest. None of these is itself equivalent to visual quality, all three should be high to indicate high quality. These three ratings were then averaged to represent the visual quality rating for a given viewpoint in the "before" condition. For example, unspoiled rolling pasturelands received a high rating. By comparison, a scene of buildings encroaching into the natural environment, where the buildings were of no particular coherent quality or appeared out of place, was rated low.

The scene was then re-assessed for the vividness, intactness, and unity of each OV in the "after" condition. For example if unspoiled rolling pasturelands were bisected by a new highway the scene might receive a lower rating, whereas if unsightly buildings encroaching into the natural environment were removed, the viewpoint might receive a higher rating than before.

Where numerical change in the VQE occurred, the change was analyzed for its degree of impact on the existing scenic character. The numeric difference, between the "before" and "after" rating, identified change at a given viewpoint, how great was the change, and whether that change was negative or positive, that is, a loss of scenic quality or a gain of scenic quality. Visual quality change was then compared to the expected number of potential viewer groups affected, as well as community scenic values, as identified in public forums and applicable planning documents.

Visual change was combined with viewer response to determine the ultimate visual impact of the Project *of* and *from* key observer viewpoints. Evaluation of viewer response to change was based upon influences such as proximity, opportunity and frequency of viewing, duration, activity, direction and speed of observation, and potential distractions from the visual change. Viewer sensitivity was also ascertained from local public documents such a county general plans. Visual change was combined with viewer response to determine the ultimate visual impact of the Project *of* and *from* key observer viewpoints.

2.7 Cumulative Visual Impacts

A cumulative effect is defined in the NEPA Regulations as "the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions". Cumulative impacts can result from individually minor yet collectively significant actions taking place over a period of time. CEQA has similar language and requirements.

Cumulative impacts to the project study area have been considered from two perspectives; first the analysis methodology includes discussion of the aesthetic effect that the combined project components may have on the overall visual character of the regional landscape. Secondly, it identifies other adjacent development, as known, which may be experienced in conjunction with the project and which would contribute to further changes in the visual character of the area. These cumulative effects are compared to viewers' likely sensitivity and level of expectation.

2.8 Thresholds of Significance

According to CEQA guidelines, an effect on the environment is considered to be significant if it is a substantial adverse change in the physical conditions within the area being studied, "including…objects of aesthetic significance". A project would have a significant effect on the environment if it would "have a substantial, demonstrable, negative visual effect".

The CEQA Guidelines define a "significant effect" on the environment to mean a "substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project including...objects of historic or aesthetic significance" (California Code of Regulations [CCR], Title 14, § 15382). Section 15125(c) of the CEQA guidelines also states that "[t]he EIR shall discuss any inconsistencies between the proposed Project and applicable general plans and regional plans".

Appendix G of the CEQA Guidelines, under Aesthetics, lists the following four questions to be addressed regarding whether the potential impacts of a project are significant:

1. Would the project have a substantial adverse effect on a scenic vista?
2. Would the project substantially damage scenic resources, including, but not limited to,

trees, rock outcroppings, and historic buildings within a state scenic highway?
3. Would the project substantially degrade the existing visual character or quality of the site and its surroundings?
4. Would the project create a new source of substantial light or glare that would adversely affect day or nighttime views in the area?

Findings under CEQA include: 1) no impact, 2) less than significant impact, 3) less than significant with mitigation, or 4) potentially significant impact.

2.10 Mitigation of Visual Impacts

The identification of specific types of visual impact and the location of those impacts is a critical step in determining if mitigation measures are necessary, and if so, which measures would be most effective to reduce the impact from a level of significance to a less than significant level of visual change. Mitigation measures that reduce negative visual effects and that enhance positive visual changes are developed. In locations where visual quality is high, even the effects of relatively simple changes such as additional guardrail may require mitigation. Areas where visual quality is low may also require mitigation of visual effects to improve existing visual quality if the environment is experienced frequently by many people, such as a community gateway. The effectiveness of the mitigation measures is evaluated by comparing the existing visual quality rating of each landscape unit, the visual quality without mitigation, and the visual quality with mitigation. Visually successful projects usually achieve a balance of vividness, intactness and unity.

3 EXISTING VISUAL CONDITIONS

3.1 Initial Analysis

Before an assessment of the environmental effects of a project can be determined, the environment which will be affected must be defined. The following section establishes the general visual environment of the State Route 25 Widening and Route Adoption project and it's place in the regional landscape. Baseline conditions were analyzed, including:

- Existing Visual Environment;
- Community Values and Visual Sensitivity;
- Viewsheds;
- Landscape Units; and
- Key Observer Viewpoints.

An initial analysis of the overall project study area included field observations, document research, and feedback from community meetings.

3.2 Existing Visual Environment

Visual understanding or recognition of the regions' landscape components is based on the character of these components. Visual character is described in terms of pattern elements and pattern character. Visual pattern elements are primarily the attributes of objects; they include form, line, color, and texture. The visual relationship between these pattern elements can be an important secondary visual attribute of an object or an entire landscape. For example, there is a difference between the visual character of a two-lane country road and an eight-lane freeway, although both may exhibit similar line, color, and texture. The visual contrast between a highway project and its visual environment can be traced to four aspects of pattern character:

- Dominance - Specific landscape components that may be visually commanding.
- Scale - The size relationship between landscape components and their surroundings.
- Diversity - The overall number, variety and intermixing of visual pattern elements.
- Continuity - The uninterrupted flow of pattern elements in the landscape.

A regional landscape is made up of a characteristic combination of landscape components which distinguishes one region from the next. The components of the regional landscape are its landform (or topography) and landcover. Landcover components may include climate, water, soil, vegetation, fauna, and man-made features.

Hollister Valley and Surrounding Mountains

♦ Landform

The project is located within California's Central Coast, approximately 300 miles north of Los Angeles, 50 miles south of San Jose, and 40 miles east of Monterey. The Pacific Ocean lies approximately 15 miles due west. The project spans two counties - San Benito County and Santa Clara County, and begins approximately 8 miles south of Gilroy and ends at the City of Hollister. The proposed project is within a homogeneous visual region comprised of broad agricultural lands bordered by coastal mountains, -the gentle Flint Hills of the Gabilan Range and the San Benito River near the City of Hollister to the south, by the Santa Cruz Mountain Range to the west and by the more rugged Diablo Range to the north and east. The San Andreas Rift Zone crosses the region south of Hollister. The surrounding mountains are generally oriented northwest to southeast. The alignment of the existing two-lane highway within the project limits parallels this northwest-southeast direction, bisecting the broad alluvial plain of the approximately 5 mile wide Hollister Valley. The road is generally straight with a few gentle curves and is flat. Viewshed elevations of the existing roadway range from about 270 feet above sea level near Hollister to 160 feet near Bloomfield Avenue. The elevation of the surrounding hills and mountain ridges varies from 300 feet to approximately 3000 feet. The distant rolling mountain terrain provides a rugged natural backdrop in contrast to the highly modified patchwork of rich valley farm land and the fringe of suburban development. The continuity of the natural and vegetated viewshed from the road is an important part of the high visual quality of the area. Open agricultural fields create a dominant element in the landscape and provide a clearly defined visual identity. Within this region prominent cone-shaped peaks, Mt. Ararat, and Leveaga Peak, punctuate the otherwise even ridgeline of the surrounding mountains. Nearby Fremont Peak is a State Park with an observatory favored by astronomers for its clear views unsullied by artificial light. "When the summer advection fog rolls in from Monterey Bay and covers the lights of Hollister and Gilroy, the skies above Fremont Peak are as dark and star-filled as any place to be found within 100 miles of the San Francisco Bay area."

♦ Landcover – Water and Climate

The Pajaro River and Carnadero Creek both cross Route 25 at its western end near Route 101. The Pajaro River is the boundary between San Benito and Santa Clara counties. Water levels in these streams varies seasonally. Although water itself is not always readily visible, its presence in the landscape is marked by corridors of tall verdant riparian vegetation contrasted by drier grass-covered hills and the low row crops of adjacent farm fields. Agricultural drainages are also present along the highway edge.

Carnadero Creek

The Diablo Range protects the region from the hot, dry air of the San Joaquin Valley, and the Chittenden Pass allows cool ocean breezes to pass through the area creating a temperate year round climate, with relatively small average temperature variations from winter to summer. December is coolest with an average temperature of 57* F and an average low of 31*F. July and August are typically the warmest months with average highs and lows of 84*F to 49*F. Winds are lighter in the winter and stronger in the summer. Annual rainfall averages only 14 inches and occurs mainly between late October and mid April. Snowfall is extremely rare even at higher mountain elevations. In summer occasional coastal fog can blanket the valley from late night through late morning. Fog and haze vary the quality of light, shadow, and color on the forms of the surrounding landscape and sometimes obscure clear views of the distant mountains.

♦ Landcover - Vegetation

Unbroken expanses of vegetation are a major component of the region's natural attractiveness. The mild Mediterranean climate of the area supports a classic California botanical palette and extensive agriculture. The distinct cultivated patterns and colors of orchards and agricultural row crops are a key visual component throughout the flat fields of the Hollister Valley. The mild climate allows several harvests a year. The central coast region contains many plant communities and related fauna due to its diverse topography, soil types, and micro-climates. The most noticeable vegetation associations in the region include oak woodland, chaparral, and non-native grasslands on the hills; riparian scrub and trees along the river and creek; agricultural fields and orchards in the valley; and ornamental plantings near homes and businesses. This vegetation pattern is generally consistent throughout the project area. Vegetation provides soil stability and preserves water quality by preventing soil erosion, and can provide habitat for wildlife. During the winter and spring, the oak-dotted hillsides and grasslands are a vibrant

green, and blossoming orchards and wildflowers can be a colorful accent.

Orchards in Spring

In the summer and fall, the hills are golden brown with the gray green of the oak trees more highly contrasted by the dry grasses. The bright green of irrigated crops and orchards alternates seasonally with the soft earthtone of fallow fields. Crops are visible immediately adjacent to the side of the road and ruderal vegetation grows sporadically along the disturbed edge of the pavement. Mature skyline trees are scattered along the roadside or are planted in dense windrow screens. Trees in general are a valued scenic resource to most viewers, and linear plantings such as these are often associated with an historic agricultural setting.

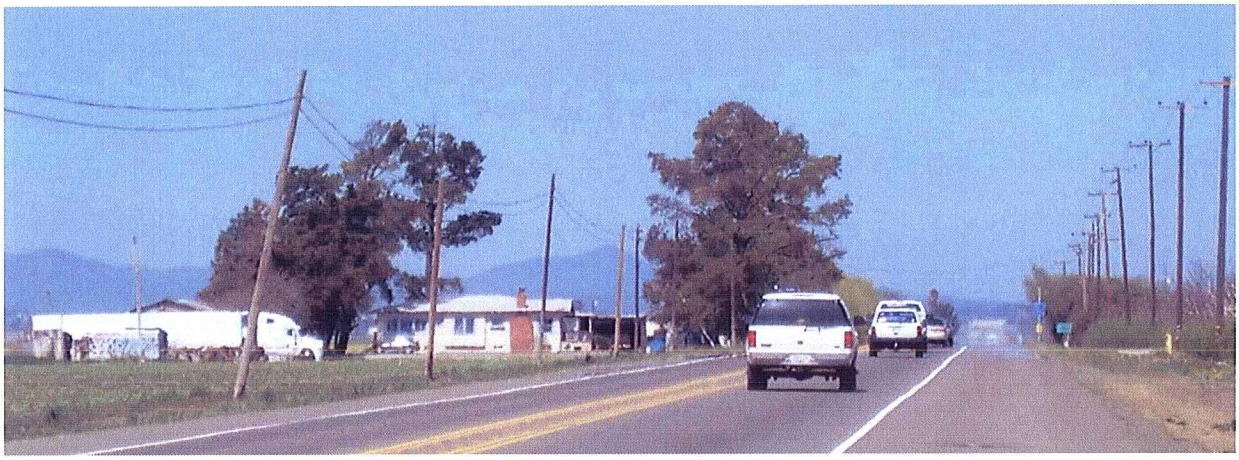
Windrow Trees

Wildlife in the region can be relatively diverse and abundant, even in heavily cultivated areas. Throughout natural and developed areas, small mammals, reptiles, and birds, typical of central California are found. Views of wildlife are often cited as a pleasurable part of rural living.

♦ Landcover – Land Use and Man-Made Development

As is characteristic of the region, the project setting consists primarily of open space and sparse rural development, with denser suburban, commercial and light industrial development at the edges of Hollister and near Route 101. Man-made structures are present in the landscape but are not generally visually dominant. They include a mix of scattered rural residences, outbuildings, a few commercial buildings, and utility poles and overhead lines. The infrequency of man-made development along the majority of the project corridor is such that the panorama is generally open and continuous. Surrounding open space is used for agriculture, grazing, and drainage basins, which combine together to create a predominately rural feeling and contribute to the region's scenic beauty.

The existing paved highway itself is the major man-made component of the existing view. Within the project limits, this segment of existing Route 25 is a conventional, two-lane highway consisting of one 12-ft lane in each direction of travel with 10 ft outside shoulders on both sides.



Typical View of Route 25

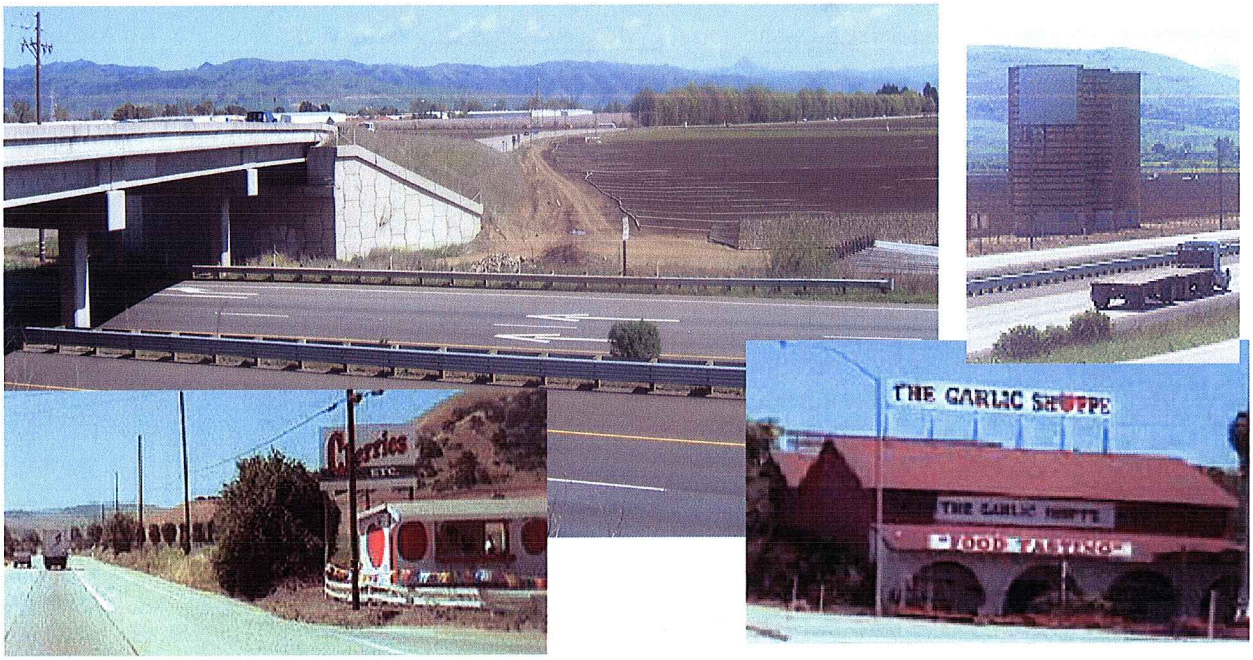
The roadbed is undivided, although the travel lanes are separated by a 2 foot "soft barrier" (paved median with rumble strip to alert drivers if they veer outside the lane) and rumble strips on the shoulders. In general the road is bordered by unpaved farm access roads and roadside drainage ditches. Route 25 in the project area averages approximately 18,300 vehicles per day, including cars, commercial trucks, and farm equipment. Trains cross the alignment but there are no train stops in the study area. Foreground elements such as traffic signs, signals, and light standards and linear features such as fences, are present but are relatively unobtrusive in contrast with panoramic mid-ground and distant views. Utility lines and poles frame the road and are a dominant vertical element but they are in keeping with the country feeling of the project location. There are approximately 180 utility poles westbound and 86 eastbound, 50 highway signs westbound and 53 eastbound, 82 miscellaneous roadside panels and markers westbound and 75 eastbound, signal lights in each direction at 25/156, 9 emergency phone call boxes westbound and 4 eastbound, and approximately 18 mailboxes visible along the road on either side, along with other miscellaneous agriculture related appurtenances. Structures along the corridor include farm house residences, roadside produce stands, an industrial operation and several commercial businesses.

Union Pacific Railroad Crossing

Nine paved and named local roads intersect Route 25 at at-grade intersections (Wright Road, Briggs Road(Right), Briggs Road (Left) Flynn Road, McConnell Road, Hudner Lane, Shore Road, Bolsa Road, Bloomfield Avenue). Approximately 40 unpaved driveways and random farm access roads intersect this segment of Route 25 There are two water crossings at the Pajaro River and at Carnadero Creek, and two Union Pacific rail intersections (UPRR mainline and Hollister branch). Route 25 previously intersected San Felipe Road with an unsignalized intersection, however the local Route 25 Hollister Bypass Project, currently under construction, will modify this intersection and add signalization. Route 25's intersection with Route 156 is a signalized at-grade intersection. Route 156, within the project limits is a two-lane expressway that transitions to four lanes just north of the intersection with Route 25.

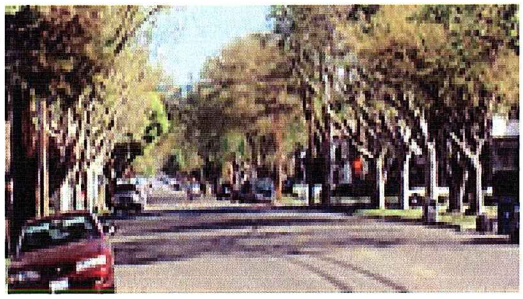
Existing Route 25 and Route 156 Signalized Intersection

Route 25 ends at the Route 101 interchange structure and ramps. Route 101 north of Route 25 is dotted with many roadside fruit stands and the familiar "Garlic Shoppe" sign which typifies Gilroy's history as a garlic growing region. The very tall concrete silos near Bloomfield Ranch on Route 101 just south of the Route 25 interchange are also well known visual landmarks.



Existing Route 101 and Route 25 Interchange Area

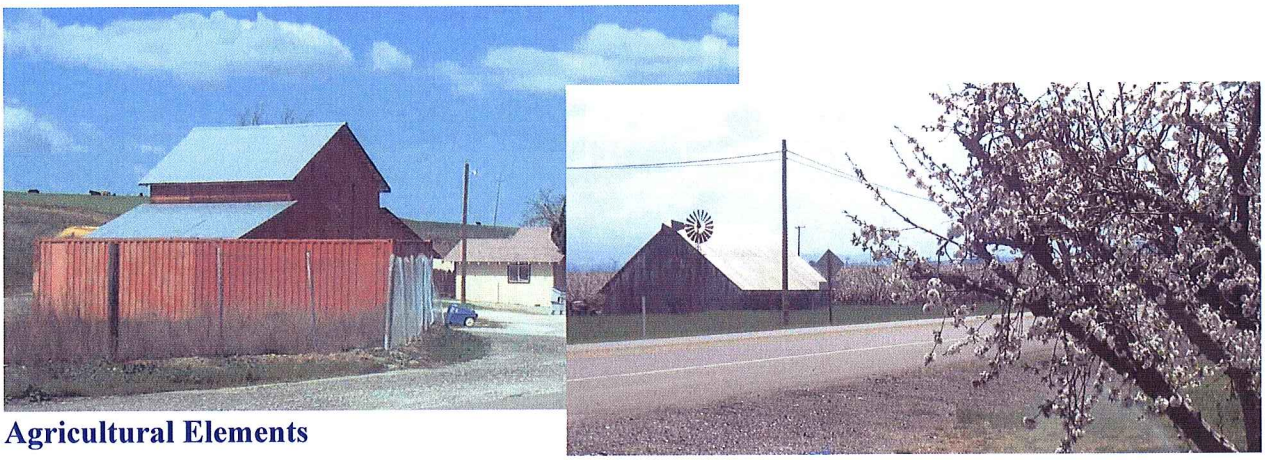
The new signalized intersection at Route 25 and San Felipe Road which is currently being constructed by the Hollister Bypass project, and the extensive concrete median barrier which will be included as part of the upcoming Highway 25 Safety and Operational Enhancements project were considered as "existing" conditions under the No-Build Alternative.



After agriculture, the City of Hollister is one of the main land uses in the area. Hollister is the San Benito County seat and is the county's largest city, with a population of over 36,000. Hollister is a rapidly growing small town, supported by local government work and business, and by regional commuters, as well as recreational tourists. While the heart of downtown Hollister includes picturesque tree lined streets, and charming historic architecture, the outskirts of Hollister at the beginning of the Route 25 widening project is a less than scenic sprawl of strip commercial development. In its General Plan this specific area was identified as lacking visual coherence. Overall, the community expressed concern that "development pressure on the edges of the City will increase" and that new buildings "will begin to cover scenic hillsides" unless a strategy is in place to protect them. Visual encroachment of utilities, signs, signals, and especially large billboards, all distract from scenic views and compromise the visual quality of this major "gateway" entrance into the city.

San Felipe Road at Edge of Hollister

Similarly land use at the west end of the project near Route 101 seems slated for visual change from its once scenic rural produce stands to more established commercial businesses, and light industrial uses. Currently small ranch style homes with related agricultural structures are widely spread apart on large parcels scattered along Route 25. There are several barns along the corridor which emphasize the area's bucolic character. No structures are visible on the surrounding hillsides from the highway, but some views of the mountains are blocked by development on the road. The low level of development between Route 101 and the City of Hollister creates something of a 'green' buffer characterized by agriculture and open space. Overall the existing project study area contains harmonious land forms, and land uses which combine to form a picturesque and pleasant setting.



Agricultural Elements

3.3 Community Values and Visual Sensitivity

Community groups are concerned about the visual quality of highways where they live and work. The view *from* and *of* the road is often the basis for much of what is perceived as their everyday environment. Citizens are concerned about the potential visual impacts of highway projects in the region and their effect on local lifestyles and visitor perceptions of their area.

The major portion of the proposed project lies in San Benito County. San Benito County encompasses roughly 1,300 square miles, of which approximately 99% is unincorporated land, with approximately 95% of that land being used as agricultural farmland or open space rangeland and forest. The 2005 population of San Benito County was about 56,000. By contrast, Santa Clara County, located at the southern end of the San Francisco Bay area, is a highly populated county supporting approximately 1,700,000 people in a county of roughly the same size. Santa Clara County's "Silicon Valley" is a major employment center, providing more than a quarter of all jobs in the region. The growth in commuters is a result of more affordable housing in San Benito County and better paying jobs in Santa Clara County. Recently, plans for a large new residential development in Coyote Valley in Santa Clara County were dropped which could continue the trend for increased development in existing communities like Hollister.

The importance of preserving the look and feel of the Hollister area and the local community's sensitivity to the aesthetic character of the region are established by city and county planning documents and design development guidelines. All affirm long-range goals, objectives, and policies for the protection of visual resources which strengthen the unique identity of the area, sustain quality of life, and maintain the special features that distinguish the region. Hollister calls itself "Hometown, California". Local policies support this historic, agricultural character and friendly, small town theme by setting controls on the scale and height of development in and near Hollister and through design guidelines which protect and enhance its appearance, particularly for new construction in relationship to the preferred styles and features of existing development. Although most of the proposed Route 25 widening project is outside the city proper, it is still within the sphere of influence of the community's aesthetic guidelines and future visions. San Benito County also identifies protecting the enjoyment of scenic beauty and maintaining the scenic agricultural character of the area among its top general plan goals. Santa Clara County

shares similar visual quality goals to create "attractive communities enhanced by the beauty of their natural settings".

Public comments received during recent community outreach efforts for the San Benito County General Plan Update and for two private development proposals for large scale "new-towns" in the area – by Del Webb and by DMB for El Rancho San Benito, have reiterated this local identity as an historic agricultural community with friendly small town charm set within a dramatic physical context of scenic natural beauty.

Among the comments received during the Department's early public informational open house on this project in 2003, those related to visual impacts included questions about the increase in pavement and the loss of agricultural land in the community. A moderate degree of local viewer sensitivity to aesthetic issues of the project was ascertained, most concerns were in relationship to project features closest to the City of Hollister or to private residences.

The following scenic qualities, resources, and goals were identified as being valued by the community and important to retaining the visual character of the local Hollister area and of both San Benito and Santa Clara County overall:

- Agricultural heritage (protect agricultural lands from development, enhance farming and ranching, preserve open space around cities, create open space buffers between agriculture and development) and strengthen agro-tourism.
- Rural character and quality of life (restrict hillside and ridgeline development, minimize cut and fill, minimize pavement, create scenic easements to protect aesthetically valuable resources)
- Natural world (safeguard natural resources, retain visibility of hills, vegetation, creeks and rivers, and wildlife, enhance riparian habitat and wildlife corridors)
- Night sky observation (limit/reduce light pollution and glare, adhere to "dark sky" lighting zone ordinances, shield lighting, minimize lighted signs)
- Historic architectural character (preserve historic features, new designs should compliment existing structures)
- Aesthetics and recreation (protect visual and spiritual quality, beauty, symbolic value, and recreational use of natural environment)
- City gateways (create a positive image for the community, business and tourism at significant points of entry, develop entry themes based on agriculture, maintain and enhance small town charm and identity, use buildings, trees and landscaping, decorative pedestrian oriented lighting and street furniture to define spaces for travelers)
- Landscaping (preserve existing significant trees and tree groupings where possible, provide decorative landscaping along roads (Rt 101, 25 and San Felipe), screen unsightly man-made features and land uses, frame scenic views, promote street tree planting for energy conserving shade and air pollution reduction, conserve water)
- Utilities and Signs (discourage utilities in open space areas, design to minimize harm to visual quality, encourage underground utilities, discourage billboards)

Negative visual changes were also noted as follows:

- Loss of open space and/or agricultural lands and open space buffers between communities
- Unconsolidated development, suburban sprawl, and leapfrog growth
- Hillside development or blocked hillside views
- Unattractive vertical elements such as new utility poles and overhead lines
- Obtrusive nighttime lighting and glare

Open views surrounding the project area are noted as providing a picturesque setting. Their vividness is highly dependant upon the elevation of the viewer, and viewer access and proximity to visual detail. Views of farms and barns, cultivated fields, pastures, and orchards, and distant mountain ranges are noted as important visual assets and there is local concern over the conversion of farmland and open space to other uses. It was noted in a local newspaper article that a major draw for visitors to the area is "the miles of open, uncluttered highways that ribbon through vast, open vistas".

Major existing vehicular corridors, such as Route 25, have also been identified as important to the local business and tourist economy. The community has expressed a strong desire to maintain Hollister's identity as a rural and historic community. The intersection of Route 25 and San Felipe Road has been identified as a northern "gateway" to the city. Such gateways generally mark the passage from one visual experience into another, and can announce entry into a special place by creating a positive visual experience.

Additional ordinances and planning policies that contribute to community appearance are restrictions on lighting to preserve night time viewing of the stars, regulations to prevent sign clutter, protection of wildlife habitat as a visual link to the natural world, and recreational use, and public parks. There is also an emphasis on landscaping, especially trees, as a means to screen unsightly land uses, to frame scenic views, to provide shade, and to create green buffers. The county also supports efforts to regenerate oak woodland, maintain habitat and avoid fragmentation of open space.

3.4 Scenic Highways

The portion of State Route 25 within the project limits is not an officially designated state scenic highway nor is it currently listed as "eligible" to become a state scenic highway. (The portion of State Route 25 from postmile 51.4 at the project limits near Hollister south to Route 198 is the only segment of State Route 25 which is currently listed as "Eligible" to become a California Scenic Highway, however official scenic highway status has not been requested by the local jurisdiction). The portion of State Route 25 within the project limits is not included as a scenic road in county or city planning documents either. Federal, State and/or local scenic designation would require a higher degree of aesthetic consideration for a scenic highway, but even if Route 25 were to be officially adopted, its status would not exclude new transportation construction in the corridor.

The San Benito County General Plan Scenic Roads and Highways Element identifies Route 101 as a designated scenic corridor within the county. This scenic corridor is defined as "all land 400 feet either side of the centerline of the road", however only the portion of Highway 101 in Santa Clara County is within the limits of either Route Adoption alternative. The Santa Clara County General Plan considers scenic highways to be important links in the county's recreation and transportation systems. Section *C-PR(i) 20 proposes* that certain routes be added to the "California Master Plan of Scenic Highways Eligible for Official Scenic Highway Designation". Although scenic highways can only be designated by an act of the State legislature, the Santa Clara County General Plan identifies Route 101, within the Route Adoption limits, as deserving attention by the State Legislature to "help preserve the scenic character of this corridor as future development occurs".

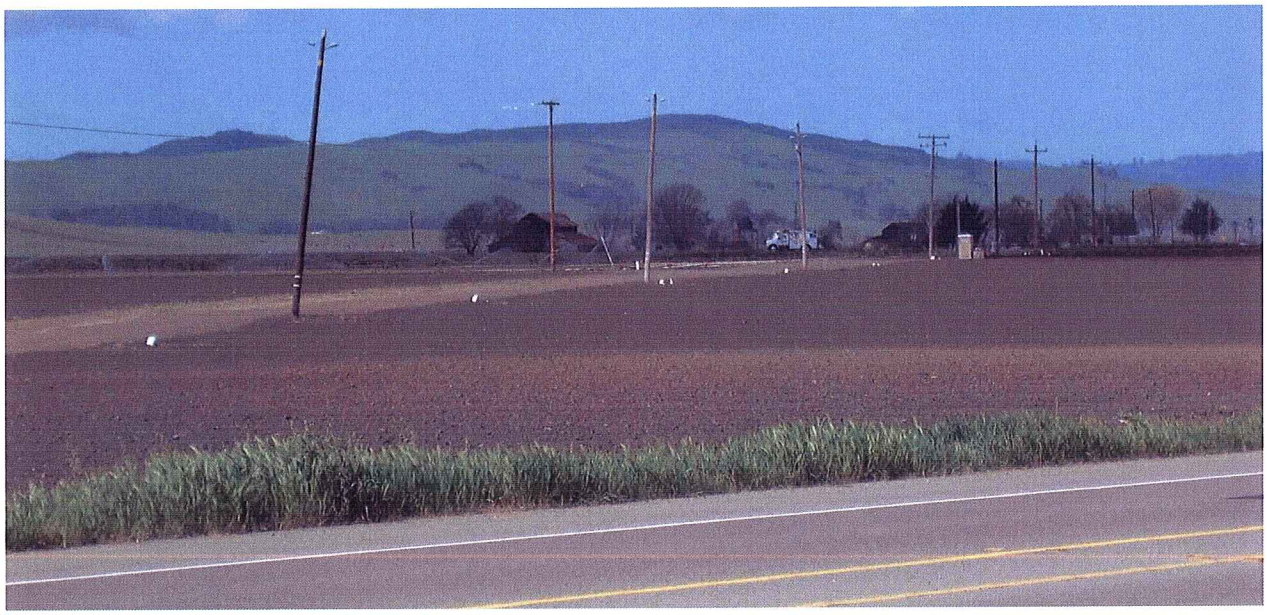
3.5 Viewsheds

Land form (topography), vegetation and land use all combine to create an area's visual quality and identity. A viewshed is defined as the surface areas visible from an observer's static viewpoint. Land form is the prime factor defining an area's viewshed limits. The limits of some viewsheds are also defined by land use and vegetation, for instance in areas where buildings or trees obstruct views. Viewsheds identify what is seen but not its quality.

The degree of impact a viewed object or place may have on the viewer is directly related to the distance that viewer is from the scene. A visual impact assessment considers what areas will be seen from the road, and at what distance and conversely what areas will be able to see the proposed project. A viewshed may extend for many miles but generally objects more than 2-3 miles away are perceived as being in the background. In order to better understand the influence distance has on the level of detail which can be readily discerned by the average viewer distance zones can be generally characterized as follows:

- Foreground 0- 1/4 mile Cows visible and you can see their ears.
- Mid Ground 1-2 miles Cows visible and you can see their legs.
- Background 2-3 miles Cows are visible.
- Seldom Seen 3-4 miles No cows are visible.

The viewshed represents a stationary viewing situation and can not factor in the more limited cone of vision and visual experience of a motorist's in-motion view of a particular area traveling at a given speed or direction. At 60 miles per hour the average driver can focus for a distance of approximately 1800 feet with a cone of vision of 20° and a peripheral angle of vision of 45°. Landscape character along the 11 mile Route Adoption corridor of Route 25 is dominated by features in the mid and distant background, Figure 3-1. The viewshed of existing Route 25 is generally unconstrained and is only momentarily interrupted by intermittent features in the foreground. Trees and man-made features, ranging from road signs, utility lines, metal guardrail, and light standards to residential and commercial developments, are generally confined to the foreground and are scattered along the road edge. The viewshed is expansive in all directions with panoramic views of the distant ridgelines. As the alignment approaches the City of Hollister the viewshed is constrained by adjacent development.



Typical Route 25 Viewshed

3.6 Landscape Units

Concern over the appearance of a highway project is often based on how it will affect the overall visual character of a particular area rather than on the specific visual resources it may displace. In order to provide a framework for understanding the visual effects of a proposed highway project, the project landscape can be divided into distinct visual assessment units. These landscape units may be thought of as "outdoor rooms". In other words, a visual assessment unit is perceived as a complete visual environment, or one with certain visual characteristics that distinguish it from the next.

Breaks between landscape units occur where a major change in the visual character of the alignment is evident. The major features affecting the way the landscape is perceived, and thus how the divisions of the landscape along the alternatives are determined are: topography,

vegetation, land use, and viewshed limits. All of these factors work together to create the landscape character of each landscape unit. Changes in any one, or a combination of these factors, may result in a new landscape unit. Landscape units provide a framework for comparing the visual effects of highway project alternatives.

Evaluations of existing conditions were made during in 2007, and they were updated in 2008to match the most current proposed alternatives. Photolog tapes, photographs, and site visits were used to gather information about the site and to establish viewshed limits. The project limits were then assessed for landscape units. Classification into landscape units allows for evaluation of how proposed changes would affect the unique visual character of each unit. At highway speeds of approximately 55 mph, perception of a landscape unit is generally not less than ½ mile or 30 seconds of visual experience.

The Route Adoption study area is composed of one landscape unit for both Alternatives 1 and 2. The general landform and vegetative cover throughout the project limits are visually consistent, and no atypical features are present. Topographically, the unit varies from flat fields to distant rolling hills, and is distinguished by patterns of cultivation bordered by natural vegetation. The straight roadway, level with the bright green of row crops is contrasted by the muted colors of natural vegetation on distant hilly landforms. The motorist's viewshed is generally unobstructed except by occasional fruit orchards. Land use includes agricultural and scattered rural residences. The appearance of water is limited to creeks and rivers distinguished by the greenery of riparian shrubs and trees. A low to moderate number of manmade elements are present throughout. The unit has a scenic agricultural character. Overall the unit is rated moderately high for vividness, intactness and unity.

The proposed Widening Alternatives, A and B, are within this same existing landscape unit. However once constructed that segment of Route 25 would likely become a new separate landscape unit due the contrasting nature of the new four-lane footprint when compared the remaining two-lane road within the adoption corridor. This would be especially true for Alternative B which creates an "island" of land between the old and new alignments.

Similarly, route adoption Alternatives 1 and 2 propose configuration changes and the addition of large scale overhead structures at the Route 101/25 interchange, and at the railroad and creek crossing area which would be likely result in a separate landscape unit in future visual assessments.

3.7 Key Observer Viewpoints

Specific locations from which the visual conditions of the proposed project can be assessed are needed, however every possible view *from* and *of* the project cannot be examined. Therefore key observer viewpoints (OV) were selected to best represent a range of viewer groups and of landscape features and compositions which typify the visual quality associated with the proposed project, Figure 3-2.

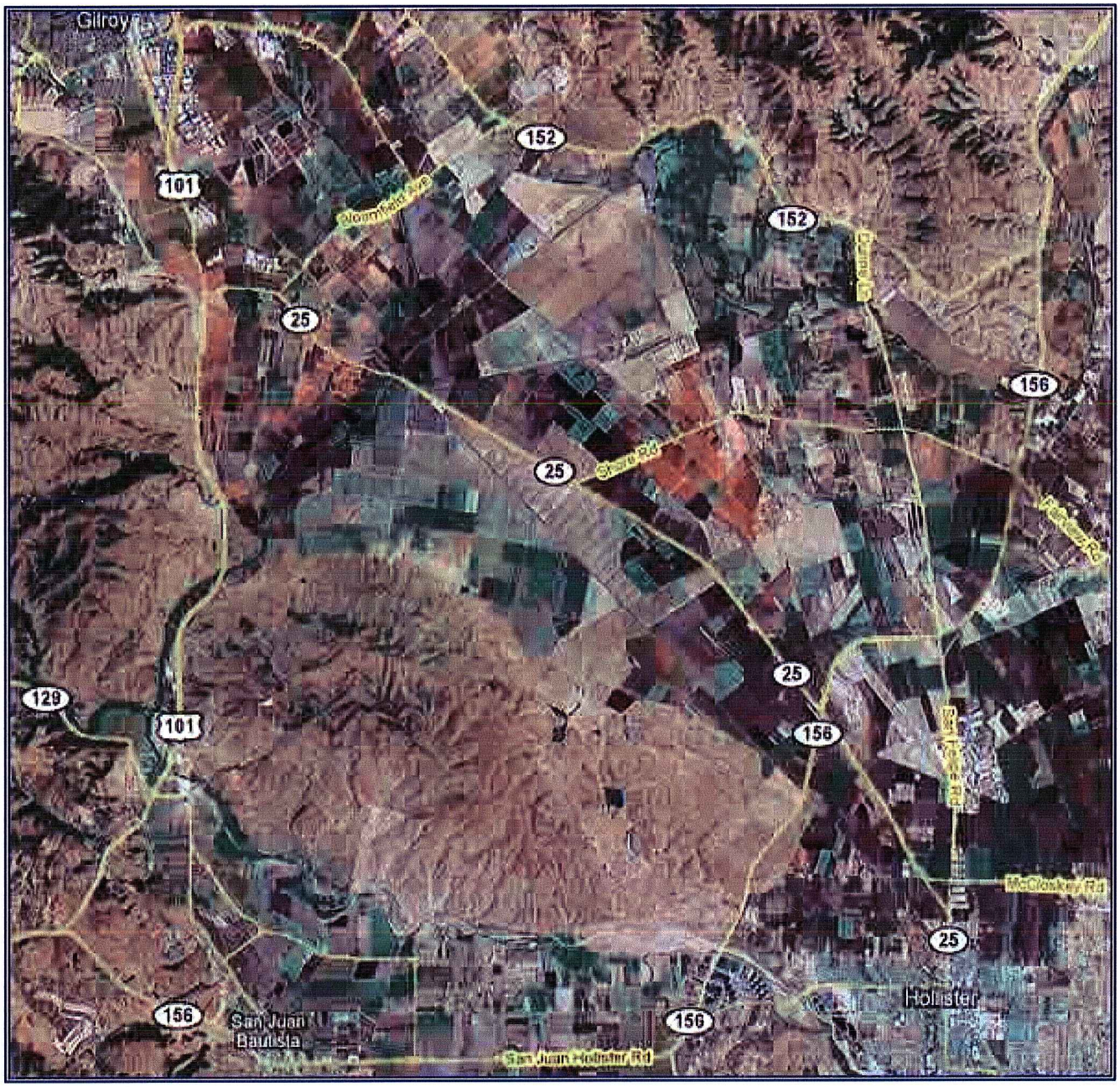
Key viewpoints were selected from field reviews and photographs taken along the alignment. Each location was selected because it illustrates certain typical characteristics associated with the project. The following criteria were used to select the key observer viewpoints:

- Viewpoints were selected because they were representative of the character typical in particular section of roadway or the surrounding area or because they had the potential to illustrate changes typical of the project proposal.
- Viewpoints that illustrated critical visual resources, or population concentrations, or unique natural or project features were selected.
- Viewpoints which clarified a transition between visual environments or which contrasted the differences between alternatives were included.

3.8 Analysis of Baseline Visual Conditions

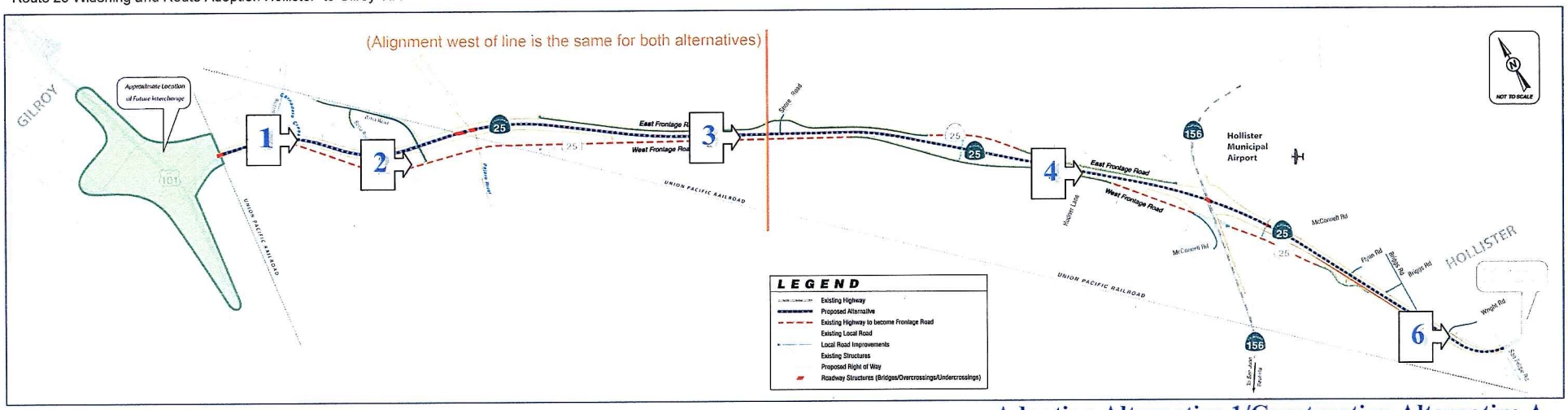
An assessment of visual character is descriptive and non-evaluative; that is, it is based on defined attributes that are neither good nor bad in themselves. A change in visual character can not be described as having good or bad attributes until it is compared with the viewer response to that change. In order to provide an objective means of measuring the resource change for the proposed Build Alternatives, the visual quality of the existing visual conditions at each of the viewpoints was analyzed and rated for (A)vividness, (B)intactness, and (C)unity on a scale of 1 to 7, with 1 = Very Low and 7 = Very High. These three ratings were combined together to determine the overall visual quality of the viewpoint. An average of the ratings was then used to determine a final landscape rating for each viewpoint. Visual quality is a measure of the excellence of a view. A high value for any single criterion (i.e., vividness, intactness, or unity) does not necessarily indicate a high quality view. Rather, all three factors must be generally high to indicate a high level of visual quality.

Typical Local Road

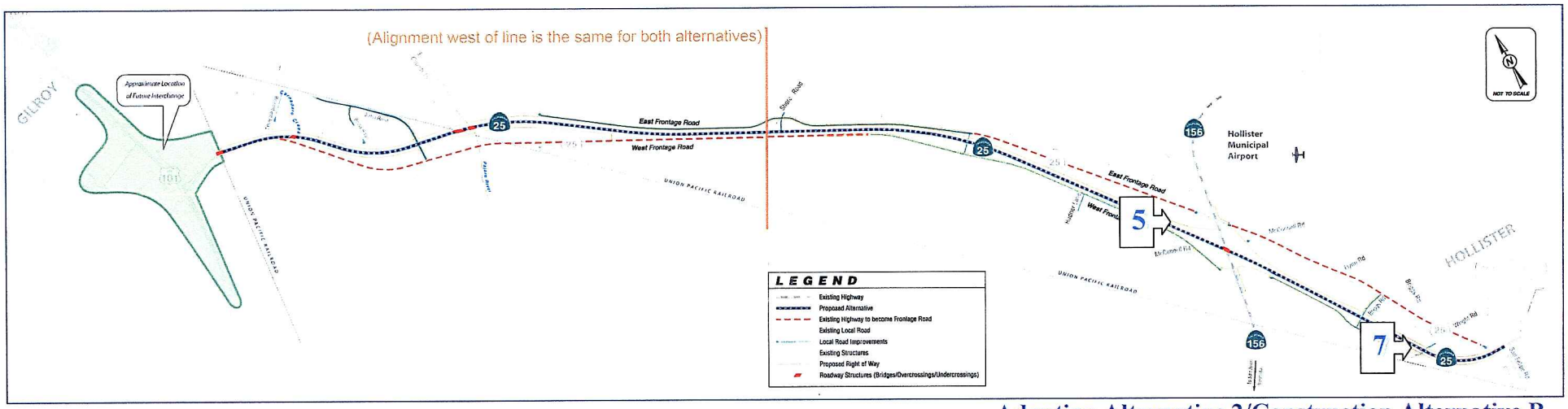


Aerial Map of Existing Conditions

FIGURE 3-1
No Scale



Adoption Alternative 1/Construction Alternative A



Adoption Alternative 2/Construction Alternative B

Key Observer Viewpoints

FIGURE 3-2

No Scale

4 PROPOSED VISUAL CONDITIONS

4.1 Visual Quality Change

The quality of a visual experience depends on the characteristics of the resources which stimulate that experience and on the nature of the viewer ; - their location, numbers, activities, and values. In order to determine potential visual impacts for the Route 25 Widening and Route Adoption project, proposed conditions in terms of physical change and the resulting effects on visual quality were examined. Following a study of project plans, profiles, and cross sections, the physical changes that would occur as a result of the alternatives were analyzed and summarized. Numerous factors were considered including:

- Location, height, and cross-section measurements of proposed road profiles;
- Modifications to the existing route and local roads;
- Grading, removal of vegetation; and paving, and
- Other design features such as drainage channels, bridges, signs and utilities.

During the inventory and assessment of the project's baseline visual conditions (see Section 3), key observer viewpoints were selected as representative of the landscape unit and the overall visual quality of the project area, or as unique to a particular alternative or viewer group. Viewpoints were evaluated for existing visual quality, Figure 3-2. In the analysis of proposed visual conditions computer-generated visual simulations of these same viewpoints were used to evaluate proposed changes and to aid in the visualization process.

The visual impact of each alternative was assessed in four steps, as follows:

- Determine the change in visual quality,
- Define viewer exposure and sensitivity,
- Determine viewer response, and
- Evaluate impact, based on the visual quality change and viewer response to that change.

Visual quality change is a measurement of the difference between the existing and proposed visual quality at the observer viewpoint. This difference indicates a reduction or improvement in visual quality due to project impacts. A scale of 1(Very Low) to 7 (Very High) visual quality change was used to evaluate the extent of the change for each viewpoint.

4.2 Viewer Exposure

Viewer identity, and viewer sensitivity and response, which are affected by viewers' activities and distance from the visual quality change, were determined. Four categories comprise the list of potential viewers of this proposed project:

- Local residents and regular travelers, using the highway for local trips or for commuting;
- Intermittent regional users and recreational travelers; using the highway to reach a planned destination or a spontaneous trip;
- Commercial truck drivers, using the road for agricultural and commerce related trips; and

- Local residents, viewing the visual changes from other public spaces, their place of business, or residence.

4.3 Viewer Sensitivity

Preliminary project concepts were presented to the public at an informational open house meeting held in coordination with the San Benito County Council of Governments (SBtCOG), the City of Hollister, and the California Highway Patrol (CHP) in September 2003. Comments received during that meeting were considered during the development of the proposed project alternatives. General plan documents, and local policies, ordinances, and statutes, from the City of Hollister and from San Benito and Santa Clara counties, were reviewed to help gauge local sentiments about their visual environment, and to take into account any existing legal protections of the viewshed, and to ascertain future directions envisioned by the community for the preservation or enhancement of scenic qualities in the area. Additionally, public discourse on two recent proposals for large scale development along Route 25, the Del Webb development and the El Rancho San Benito development, were reviewed for comments related to local perceptions and considerations for the regional visual environment.

Different viewer groups would be affected by the proposed widening project in varying degrees and ways. Viewer sensitivity is based on (1) the number of viewers in a given group, (2) their viewing location, (3) their distance and (4) position of view (near/far, high/low), (5) their frequency of view, (6) their activity and (7) their awareness (what are they doing and when). The community of Hollister is concerned about the potential visual impacts of the project on the local countryside. Local residents are sensitive to preservation of the region's rural character. Viewers from outside the immediate area would be less sensitive to visual change.

From the Road

The view *from* the road is the basis for much of what motorists know about their surrounding environment. This viewer group is comprised of various highway users. The highway user most often experiences an "overview" of the area, this is especially true of the vehicle driver. Middle ground views and foreground details along the highway are generally of short duration, distant views are more noticeable, all views depend on the limits of the motorist's cone of vision and their speed of travel. The awareness of visual resources by the highway user also varies with their activity. The average traffic on Route 25 in this area is approximately 18,300 vehicles per day. Both adoption alternatives are approximately 11 miles long; so a motorist traveling 60 mph would traverse the entire project limits in approximately 11 minutes.

- **Regular highway travelers and local commuters**
  The local highway driver is likely to make short trips to various destinations in the immediate vicinity. Since there are not many interconnected county roads or frontage roads paralleling Route 25, local residents most often use the highway to get to and from other nearby towns or regional resources. The local highway user might be expected to be sensitive to the visual quality in their everyday environment due to their long term familiarity with the area's visual resources, their close identification with regional

landmarks, and their repeated exposure to visual change. The highway is integral to their mental image of where they live. Unique visual features of the landscape become recognizable destinations, personal landmarks, signifying arrival and departure from "home". However, because the trip purpose of these travelers is to get from one place to another and to pass through the area in a timely manner, regular local highway users may become less sensitive to small visual changes over time. The commuter would also be likely to become less aware of their visual environment because of the repetitive nature of their activity, traveling back and forth to work or school on a daily basis, especially if the distance they travel to their jobs is considerable.

- **Intermittent highway users and recreational travelers**
  Although less familiar with the existing visual conditions, intermittent motorists are also likely to be attuned to visual quality. Most intermittent users traverse the highway for recreational travel, going to or returning from the Monterey coast or other recreational locations in the Hollister area. Recreational travelers are generally likely to focus on the visual environment outside their car windows and ride in vehicles with passengers. Passengers have extended time to view the surrounding area and, as a result, may be more responsive to visual resources. Recreational travelers may also tend to proceed more slowly than regular travelers do, causing heightened awareness of visual quality. In recreation surveys, Americans have ranked pleasure driving on scenic roads as a favorite activity. Tourists who are new to an area are generally likely to have a high awareness of the visual resources around them, yet may be much less sensitive to specific changes in that unfamiliar environment. Leisure drivers may tend to notice and value the unusual. For these reasons local residents and business owners are often concerned about the first impressions created along the highway when entering their community. Intermittent commercial drivers are generally time conscious and might be expected to focus more on traffic conditions and less so on the surrounding scene.

Of the Road

Awareness of visual resources varies greatly for viewers *of* the road due to the variety of viewer activities and the distance they may be located from the highway. Within the project limits the number of "*of* the road" viewers is generally much smaller when compared to highway users. The population of San Benito County is approximately 56,000, - 36,000 of which live in or near Hollister. Approximately 20 homes or businesses have a direct view of the project area. Where existing views are high in quality or are valued by many people, the visual costs borne by highway neighbors may overshadow the visual benefits enjoyed by highway users. This viewer group generally includes nearby home and business owners, employees and customers of commercial areas adjacent to the existing highway, agriculture workers, and pedestrians and recreationalists. All of these observers are stationary or travel at a much slower speed and so have a longer duration view of the details of a highway facility and of the nuances of the surrounding natural area than do the highway users. Their awareness of visual resources is likely to be high.

- **Residents abutting the highway right of way or within the highway viewshed**
  A negative response to visual quality changes might be expected from local residents who (1) are most familiar with the existing conditions, (2) are concerned about their investment in the community, (3) view the changes on a frequent basis, and (4) view the changes from their homes. The project would become a permanent part of their everyday viewshed. Most homes on the existing alignment would continue to have highway views with the new lanes and interchange added.
- **Businesses and Community Centers abutting the proposed highway right of way**
  Local businesses may also be sensitive to visual change but for different reasons. Typically, businesses are located near or along the roadway for advertising visibility as well as easy access. Additional travel lanes for safety or capacity may not necessarily be considered a visual concern by businesses so long as advertising visibility and ease of access are maintained.
- **Pedestrians and recreational users**
  This group includes people who experience the highway from the roadside other than in a car, such as pedestrians, bicyclists, equestrians and hikers. These local viewers are highly sensitive to visual quality changes because these types of activities are highly "visual" experiences. They would have very detailed foreground views of the highway and of related structures such as median barriers or of landscaping. However despite the high viewer response that might be expected from these users, their numbers are very low.

4.4 Proposed Conditions

Route Adoption Alternatives 1 and 2
A Route Adoption alignment, Alternative 1 or Alternative 2, would be selected to establish an appropriate area and document a future alignment and location for Route 25 in the San Benito County and Santa Clara County General Plans. As transportation funds become available, portions of the expressway would be constructed. Both of the proposed Route Adoption alternatives would follow the same alignment from the bend in Route 25 approximately 1.7 miles south of Shore Road (post mile 56.1) in San Benito County to U.S. 101 in Santa Clara County. Between post mile 56.1 and the east end of the proposed project at San Felipe Road, the two alignment alternatives separate. Alternative 1 proposes to align the future four-lane expressway to the north of the existing two lane highway and Alternative 2 proposes to align to the south of the existing two lane highway. The existing highway would become part of the new frontage road system, Figure 1-3.

The proposed 342 foot wide adoption corridor would be wide enough to accommodate a four-lane expressway including: four - 12 foot wide lanes; a 5 foot wide inside shoulder and a 10 foot wide outside shoulder; 10 foot wide roadside drainage swales, ; an unpaved 62 foot wide center median; one or two frontage road systems with 2 - 12 foot lanes and 10 foot wide outside shoulders constructed in part from the existing highway. The project would include realignment of several local roads and elimination of private driveway access. Both alternatives would include a grade separation interchange at Route 156; a bridge structure at the Pajaro River and at Carnadero Creek; and a separation over each Union Pacific Railroad crossing. Some alteration

of Route 156 would be needed to accommodate the new structure. The route adoption alignment would also be wide enough to accommodate a future Route 101/25 interchange north of the existing Route 101 interchange. The elevated expressway cross section would be higher than the existing highway grade and the elevation of the frontage road system would vary from the grade of the existing pavement and higher in new sections. Some power poles with overhead utility lines would be relocated and would generally follow the frontage road system switching from side to side of the new Route 25 alignment.

South of Shore Road Alternative 1 proposes to realign the new four-lane expressway north and east of the existing facility. Wright Road would be realigned to create an improved intersection. Briggs Road would be extended to Flynn Road. A new undercrossing would be provided for access to the Don Chapin Company. A new Route 25/156 interchange, which would elevate Route 156 over Route 25 and provide access by means of on/off ramps, would be constructed north of the existing signalized at-grade intersection. Frontage roads would be constructed between Route 156 and Shore Road on either side of proposed Route 25 expressway. The frontage road on the east side would end at a cul-de-sac north of Route 156.

Alternative 2 proposes to realign the new four-lane expressway and Route 25/156 interchange south and west of the existing facility, and the existing highway would be utilized as a frontage road. An intersection would be created at Wright Road and Briggs Road would be extended to an intersection with the new facility. Frontage roads would be constructed west of the proposed expressway where needed to provide access to individual properties.

Route Widening Alternatives A and B

Both widening alternatives propose to construct a new 3.8 mile long Route 25 four-lane expressway alignment in San Benito County, from San Felipe Road (post mile 51.5) to just west of Hudner Lane (post mile 55.3). Unlike the Route Adoption alternatives, which propose a future Route 25/156 interchange with overhead structures, the build alternatives propose a realigned and widened, signalized at-grade intersection at Route 25/156. Both construction alternatives would transition back to the existing two-lane highway near Hudner Lane.

Alternative A and Alternative B differ in their relationship to existing Route 25. Alternative A aligns to the north and Alternative B aligns to the south. Both alternatives propose to reuse the existing pavement as part of a new frontage road system.

Alternative A would be constructed at the southeastern end of the Alternative 1 Route Adoption alignment. Direct access to the expressway would be available from San Felipe Road, Wright Road, Flynn Road, Route 156, two west-side frontage roads and one east-side frontage road. An undercrossing at the Don Chapin gravel operation driveway would provide access to this otherwise landlocked parcel.

Alternative B would be constructed at the southeastern end of the Alternative 2 Route Adoption alignment. Direct access to the expressway would be available from San Felipe Road, Wright Road, Briggs Road, a west-side frontage road, Route 156, an east-side frontage road, and Hudner Lane. The second west-side frontage road would connect to Hudner Lane.

4.5 Evaluation of Impacts

Route Adoption

Route adoption offers the local community an excellent opportunity to control the form and aesthetics of visual change in the corridor over time, especially with regard to structures, agricultural buffers and landscaping. Adoption would allow context sensitive development of a unique identity for the region which would help preserve its rural character while still meeting transportation needs. In general Route Adoption may help to preserve existing local land uses and views for several years to come. In the future, as portions of the expressway are constructed within either route adoption alternative, Alternative 1 or Alternative 2, negative visual impacts to vividness, intactness and unity could result due to the loss of cultivated planting from foreground views, and the increased encroachment of man-made elements into the pastoral scene. Views of distant mountains and the feeling of open space would likely be retained, however the visual change of the new more homogenous and expanded expressway configuration would diminish the generally rural character of the area. Changes anticipated to be made at the Route 101/25 interchange and along portions of Route 101 within the vicinity of the interchange could also have impacts on the visual quality of both route adoption alternatives and will need to be assessed in the future.

Alternative 1

Alternative 1 differs from Alternative 2 between Shore Road and San Felipe Road, in that it more closely follows the existing alignment of Route 25 and it places the proposed new Route 25/156 interchange north of the existing intersection, closer to the airport area. Alternative 1 would exhibit a loss of intactness and unity due to changes in architectural context and vegetation. Alternative 1 would remove some farmhouses and barns or other agricultural buildings which help support the bucolic appearance of the area. Alternative 1 has an impact to the vertical visual plane due to it proposed higher elevation above the existing grade and the loss of trees, and to the ground plane due to the replacement of low agricultural vegetation with pavement and uncultivated grasses. While cutbacks to some strip frontage property would generally not be missed, the changes from agricultural land use to roadway use would negatively affect the existing scene, and the tangible quality of orchards and row crops growing along the road shoulder as well as the easy access to iconic rural features such as local fruit stands and country mailboxes would be lost. The change in color from the green of irrigated crops along the road edge would also be replaced by the more typical brown and gold of dry grasses, and unfenced open space vistas would become demarcated by fencing. The paved area of the new expressway would be roughly twice the size of the existing highway, and portions of the existing road would become part of a new frontage road system and several local roads would be re-routed or cul-de-sac'ed, greatly increasing the magnitude of engineered elements seen. Once in place, grading elevation changes would not be unduly noticed by most motorists unfamiliar with the area. The generally straight alignment of Alternative 1 does include a few very gentle curves and curving roads are generally perceived as more visually pleasing and rural in character.

Since there are not many trees within the limits of the proposed project, the initial loss of some of these trees, especially of agricultural orchards, and tall skyline trees and mature windrows would likely be most noticeable to local drivers. Such a loss would have the greatest negative impact to any residences along the road that depend on the trees for shade or for visual screening from the highway. In the long term the permanent loss of trees would diminish the general vividness of the area.

The new Route 25/Route 156 interchange would lower the vividness of the panoramic view for a short distance for drivers on Route 25 due to the somewhat obstructed view of distant mountains by the proposed interchange structure and side slopes; however positive views for motorists on Route 156 would be increased due to their elevated viewing position over Route 25. Intactness at the new interchange would be increased if it results in the reduction of visual clutter such as the multiple traffic signals and overhead signs present in the existing at-grade condition, however the intactness at other local road intersections could be decreased by the addition of street lights and traffic signs.

Alternative 2

Alternative 2 differs from Alternative 1 between San Felipe Road and Shore Road, in that it is separated more distantly south of the existing alignment of Route 25 and it places the proposed new Route 25/156 interchange south of the existing intersection. Alternative 2 would have a greater loss of intactness and unity as its alignment differs more significantly from the existing alignment of Route 25 than does Alternative 1. Alternative 2 would have lower potential impacts to vernacular architecture along the existing highway alignment than Alternative 1, but would experience a greater change in intactness due to the higher degree of encroachment of new man-made facilities such as pavement, signs, fencing, and some utilities into previously undeveloped agricultural land and its increased proximity to a few residences which are currently distant from the existing alignment.

The visual change in scale created by the expanded pavement, the higher elevation of the new expressway above the existing grade, and the conversion of the existing highway to a frontage road system, in combination with changes to several local road configurations, would diminish the vividness of the scene overall and greatly increase the magnitude of engineered elements seen between San Felipe Road and Shore Road. The generally straight alignment of Alternative 2 does include a few very gentle curves and curving roads are generally perceived as more visually pleasing. Alternative 2 has a greater potential to replace positive rural views with less desirable expressway views from Hollister to the Route 25/Route 156 interchange area. It would spatially break up the existing unified agricultural landscape between the existing highway alignment and the railroad tracks to the south.

Alternative 2 between San Felipe Road and Shore Road has a lesser degree of impact to the vertical visual plane due to the loss of some orchards and mature tall trees, and a larger degree of impact to the ground plane due to the noticeable loss of agricultural vegetation. The green of irrigated crops would be replaced by the gray paved roadway and the typical brown and gold of dry roadside grasses. Previously unfenced open space vistas would become divided by linear fence lines.

The new Route 25/Route 156 interchange would lower the vividness of the panoramic view for a short distance for drivers on Route 25 due to the somewhat obstructed view of distant mountains by the proposed interchange structure and side slopes; however positive views for motorists on Route 156 would be increased due to their elevated viewing position over Route 25. Intactness at the new interchange would be increased if it results in the reduction of visual clutter such as the multiple traffic signals and overhead signs present in the existing at-grade condition, however the intactness at other local road intersections would be decreased by the addition of street lights and traffic signs. The addition of lighting or other vertical elements such as power poles along the Alternative 2 corridor would be an especially visible impact.

Alternative 2 between San Felipe Road and Shore Road is a greater departure from the existing rural condition and is likely to be a more noticeable visual change to the local community than Alternative 1. Once in place, the changes included in Alternative 2 would probably not be unduly noticed by most motorists unfamiliar with the area however their general perception of the area is likely to be of a less rural, more structured and developed character.

Alternatives 1 and 2

The proposed alignment of Alternative 1 and 2 between Shore Road and Route 101 is the same, and so the potential visual impacts are also the same. In comparison to current existing conditions, the most noticeable visual changes at the western end of Alternatives 1 and 2 would be the sequence of proposed new structures. The Pajaro River bridge, especially due to its likely tall height above the water, in combination with the lower Carnadero Creek bridge, and the two railroad undercrossings would echo the more urbanized feeling of nearby Route 101 and its proposed interchange improvements. Drivers on Route 25 would experience the visual advantage of an elevated viewing position and the agricultural and mountain panorama would be unobstructed except for power lines in some directions. The bridge structures would however intermittently block views of the surrounding mountains for a small number of neighboring viewers of the road and would be most noticeable in profile to traveler's on Route 101 going north. The high speed of travel on both Routes 25 and 101, would limit the time any single feature would be viewed and the attractiveness of the less developed surrounding scene would still generally dominate the driving experience.

The loss of some riparian vegetation and scattered tall trees and the visual change in scale created by the expanded pavement width and slightly higher elevation of the new expressway, and the conversion of the existing highway to a frontage road system, in combination with modifications to several local road configurations would diminish the vividness and intactness of both the Alternative 1 and Alternative 2 scene overall, leading to a less rural character along the corridor. However, the factors that contribute most to the existing scenic view quality such as the topography and distant mountain vistas, and sparse development and agricultural land uses, would all still be present and are generally of sufficient scale to balance and absorb the potential visual changes proposed by route adoption. Put simply, the visual qualities that make this area enjoyable would still contribute to a pleasing experience.

Route Widening

The visual change proposed by the two route widening alternatives, Alternative A and Alternative B, would be dominated by the greatly expanded paved footprint of the new expressway, in combination with the conversion of the existing highway to a frontage road system and changes to several local road configurations. The vividness, intactness, and unity of the visual scene would decrease, leading to a less rural visual experience along the corridor under either proposed alternative.

Alternative A

Widening Alternative A would be built within the Alternative 1 route adoption corridor between Hudner Lane and San Felipe Road. Alternative A differs from Alternative B in that it more closely follows the existing alignment of Route 25 and it places the proposed new Route 25/156 intersection north of the existing intersection, closer to the airport area. Alternative A would exhibit a loss of intactness and unity due to changes in architectural context and vegetation. Alternative A would remove some farmhouses and barns or other agricultural buildings which help support the bucolic appearance of the area, as well as some commercial buildings. Alternative A has an impact to the vertical visual plane due to it proposed higher elevation above the existing grade and the loss of mature trees, and to the ground plane due to the replacement of low agricultural vegetation with pavement and uncultivated grasses. While cutbacks to some strip frontage property would generally not be missed, the changes from agricultural land use to roadway use would negatively affect the existing scene, and the tangible quality of orchards and row crops growing along the road shoulder as well as the easy access to iconic rural features would be diminished.

Since there are not many trees within the limits of the proposed project, the initial loss of agricultural orchards and tall skyline trees and mature windrows would likely be most noticeable to local drivers. Such a loss would have the greatest negative impact to any residences along the road that depend on the trees for shade or for visual screening from the highway. The permanent loss of trees in the vertical plane would diminish the general vividness of the area. The change in color from the bright green of irrigated crops along the road edge would be replaced by the more ordinary brown and gold of dry grasses, and unfenced open space vistas would become demarcated by new fencing.

The reconfigured frontage road and local road system, when combined with the newly paved area of the proposed expressway would cover more than twice the surface area of the existing highway, and would substantially increase the magnitude of engineered elements seen. The overall footprint of Alternative A is more compact than the spread out surface pattern of Alternative B combined with its proposed frontage/local road system. Alternative A loses vividness and intactness in foreground and midground views because pavement dominates the scene and the visual relief of vegetated space between the frontage roads and the new expressway is narrower. The profile of the expressway would be raised. Proposed embankments would generally be 6 feet high or less, with 2:1 side slopes or flatter. Drainage ditches would parallel the new alignment on either side and are proposed to be 3 feet deep on average. The vertical change of the proposed expressway profile would lessen the rural unity of the scene slightly, but grading elevation changes would not be unduly noticed by most motorists. Drivers on the new

Route 25 expressway would experience the visual advantage of an elevated viewing position and the remaining agricultural and mountain panorama would be unobstructed except for power lines in some directions. The high speed of travel on Routes 25, would limit the time any single feature would be viewed and the attractiveness of the less developed surrounding scene would still generally dominate their driving experience.

The new Route 25/Route 156 intersection would decrease intactness in the area due to the increased number of traffic signals and overhead signs and the addition of street lights and roadside signs. Alternative A would also require some relocation of existing overhead utilities which would not be likely to have much effect in general since they are already part of the viewshed, however it may place poles within sight of some residences or businesses which might not ordinarily see them now. Alternative A would dovetail into the Hollister Route 25 Bypass project currently under construction. The entrance into the City of Hollister near San Felipe Road would be less distinct and generally unremarkable. Signals and signs at the new intersection would contribute to the general visual clutter of this node. Once in place, the changes included in Alternative A would probably not be unduly noticed by most motorists unfamiliar with the area however their general perception of the area is likely to be of a less rural, more structured and developed character.

The loss of agricultural vegetation and trees and the visual change in scale created by the expanded pavement area would diminish the vividness, intactness, and unity of the Alternative A scene overall, leading to a less rural character along the corridor. However, the factors that contribute most to the existing scenic view quality such as the topography and distant mountain vistas, and sparse development and agricultural land uses, would all still be present and are generally of sufficient scale to balance and absorb the potential visual changes proposed by route widening. Put simply, the qualities that make this area enjoyable would still contribute to a pleasing visual experience.

Alternative B

Widening Alternative B would be built within the Alternative 2 route adoption corridor between Hudner Lane and San Felipe Road. Alternative B differs from Alternative A in that it is more distant from the existing alignment of Route 25, is in closer proximity to some residences which are currently distant from the existing alignment, and it places the proposed new Route 25/156 intersection south of the existing intersection.

Alternative B is a greater departure from the existing Route 25 alignment than Alternative A and would therefore have a more noticeable visual impact on the landscape and is likely to be a more noticeable visual change to the local community. Alternative B would create a loss of vividness, intactness and unity due to substantial changes in existing agricultural context and the encroachment of new, large-scale man-made facilities such as pavement, signs, fencing, and some overhead utilities into otherwise largely undeveloped farm land. The alignment of Alternative B would create a greater fragmentation of foreground and midground rural agricultural views. The new alignment would result in multiple long narrow vegetated areas sandwiched in between the old highway, the new expressway and its median, the new frontage road and the existing railroad line. Previously unfenced open space vistas would become divided

by linear fence lines. Alternative B would appreciably increase the magnitude of engineered elements seen between San Felipe Road and Hudner Lane and has a greater potential to replace positive rural views with less vivid views of multiple paved lanes than Alternative A.

Alternative B between San Felipe Road and Hudner Lane has a lesser degree of impact to the vertical visual plane due to the loss of some orchards and mature tall trees, and a larger degree of impact to the ground plane due to the noticeable loss of agricultural vegetation. The green of irrigated crops would be replaced by the gray paved roadway and the typical brown and gold of dry roadside grasses. The permanent reduction of agricultural land use views would also likely be most noticeable to local residents.

The reconfigured frontage road and local road system, when combined with the newly paved area of the proposed expressway would cover more than twice the surface area of the existing highway, and would substantially increase the magnitude of engineered elements seen. The overall footprint of Alternative B is more widespread than the surface pattern of Alternative A. Alternative B loses vividness and intactness in foreground and midground views because pavement and other engineered roadway features dominate the scene. The profile of the expressway would be raised. Proposed embankments would generally be 6 feet high or less, with 2:1 side slopes or flatter. Drainage ditches would parallel the new alignment on either side and are proposed to be 3 feet deep on average. The vertical change of the proposed expressway profile would lessen the rural unity of the scene slightly, but grading elevation changes would not be unduly noticed by most motorists. Drivers on the new Route 25 expressway would experience the visual advantage of an elevated viewing position and the remaining agricultural and mountain panorama would be unobstructed except for power lines in some directions. The high speed of travel on Routes 25, would limit the time any single feature would be viewed and the attractiveness of the less developed surrounding scene would still generally influence their driving experience.

Alternative B realigns the new facility around much of the existing infrastructure, reducing the number of utility relocations and effects to vernacular farm houses, barns, and commercial buildings on the existing alignment, as compared to Alternative A. Power poles and overhead lines would generally remain along the existing alignment and so distant views from the new and slightly elevated Alternative B alignment would be somewhat better than those on Alternative A. The placement of any new overhead utilities along the Alternative B corridor would be an especially visible impact and could place poles and/or light within sight of some residences which might not ordinarily see them now. The intactness of the scene at the Route 25/156 at-grade intersection and at other local road intersections would also diminish due to the addition of more signs, signals and lights.

Alternative B would dovetail into the Hollister Route 25 Bypass project currently under construction. The entrance into the City of Hollister near San Felipe Road would be less distinct and generally unremarkable. Signals and signs at the new intersection would contribute to the general visual clutter of this node. Once in place, the changes included in Alternative B would probably not be unduly noticed by most motorists unfamiliar with the area however their general perception is likely to be of a less rural, more structured and developed character.

Loss of agricultural vegetation and trees, and the visual change in scale created by the expanded pavement area would diminish the vividness, intactness, and unity of Alternative B. The factors that contribute to the existing scenic quality such as agricultural land uses, distant mountain vistas, and sparse development, would all still be present and are generally of sufficient scale to balance and absorb the potential visual changes proposed by route widening, however viewer ratings indicate that Alternative B would be a less pleasing visual experience than Alternative A.

No Action

The No Action Alternative, would not result in a direct physical change to the existing visual environment of the highway at this time, except as it may be changed by the cumulative impacts of other transportation projects. In future other changes in land use or development outside the transportation corridor are also likely to influence the visual quality of the existing landscape. A re-assessment of existing visual conditions in comparison to features proposed to be built along the adopted route alignment would be made in the future when construction of subsequent build alternatives becomes financially viable.

Rating Differences

Proposed changes in visual quality and viewer response to change were compared to existing conditions to determine visual impacts. Existing conditions at key observer viewpoints, and computer-simulations of proposed project alternatives are illustrated in Figures 4-1 to 4-7. Simulations in this report do not represent final or exact designs; they are only intended to show general location, form, and possible aesthetic treatments. The following comparison summarizes the numerical ratings of each project alternative from each of the observer viewpoints:

VIEW LOCATION		ROUTE ADOPTION			ROUTE WIDENING	
		Existing	Alt 1	Alt 2	Alt A	Alt B
OV-1	East to Carnadero Ck	6.1	5.3	5.3	-	-
OV-2	East at Bolsa Rd	5.9	5.1	5.1	-	-
OV-3	East Typical	5.3	5.1	5.1	-	-
OV-4	East at Hudner Ln	5.6	5.2	-	-	=
OV-5	East to Rt25/156 Alt's 2 & B	6.1	-	4.9	-	5.1
OV-6	East at Wright Rd Alt A	5.3	-	-	5.2	-
OV-7	East at Wright Rd Alt B	5.3	-	-	-	4.9

The overall existing visual quality of the project area is rated moderately high to high from all observer viewpoints. The appealing scenic quality of the Route 25 corridor through rural northern San Benito County and southern Santa Clara County is due primarily to the juxtaposition of a wide open agricultural valley, surrounded by mostly undeveloped hillsides and striking distant coastal mountain ranges. The surrounding viewshed is characterized by simple land forms and low growing vegetation. Trees are lightly scattered along the roadside or are clustered in orderly orchard rows. Picturesque farm houses and barns support the pastoral visual theme of the region. Commercial development anchors either end of the route at Highway 101 to the west and near Hollister to the east.

Local viewers in the project area have varying sensitivities, but are generally expected to have high expectations regarding the scenic quality and aesthetic character of roads near where they live and work, and moderate expectations regarding commuter-routes outside their home community. They are concerned about the impacts of highway projects on local lifestyles, the conversion of farmland and open space to other uses, and tourist perceptions of the area. Community values and local sensitivities pertaining to visual quality, quality of life issues and future growth are found in planning policies including the Hollister General Plan, the San Benito County General Plan, and the Santa Clara County General Plan. Citizens' concerns regarding the importance of preserving rural character in the area have also been expressed in several community workshops, council meetings, and local newspaper articles relating to future potential residential development along Route 25.

The portion of State Route 25 within the project limits is not an officially designated state scenic highway nor is it currently listed as "eligible" to become a state scenic highway. Route 25 is not included as a scenic road in San Benito County or in the City of Hollister planning documents. Santa Clara County policy discussion of scenic roads generally emphasizes the importance of the preservation of rural character, rural lifestyle opportunities, and scenic resources and states that hillsides, ridgelines, scenic transportation corridors, major county entryways, and other areas of scenic significance should receive consideration and protections due to their prominence, visibility, or symbolic value.

This assessment finds the visual impacts associated with Route Adoption are of three basic types:

- Diminished rural agricultural character in general ;
- Loss of vegetation and increased paved surface in previously undeveloped land;
- The replacement of multiple at-grade intersections with large overhead structures.

Route Adoption in and of itself would not physically change the visual landscape of Route 25 except that it may help to preserve the status quo from changes by other factors. However in future, if the features proposed as part of either the Alternative 1 or 2 alignment were to be built the area would experience visual change. A moderately high level of visual change would occur due to paving of agricultural fields for four lanes with a median, and new frontage and local road connections. A moderate level of visual change would occur due to the addition of man-made elements such as right of way fencing, new signs and lighting, the elevation of the new road above the valley floor and especially the construction of five new overhead structures varying in height above the new roadbed. The proposed footprint of both adoption alternatives would be considerably wider than the existing condition and would contribute to a loss of rural character along the corridor. Visual proximity to the foreground details of agricultural planting would become more distant. The proposed project changes would be visible mainly to commuter traffic and to a low number of adjacent residences and businesses. The ability of the large scale natural scene to absorb visual changes within the confines of the road is high, and the beauty of surrounding panoramic vistas would still dominate most driving experiences. Characteristic views of rural farms and row crops would still be present in the scene but they would generally be diminished by the encroachment of typical expressway elements. The potential intensity of

change at the Route 101/25 interchange area due to reconfiguration of structures and changes in adjacent land use has greater potential to change the rural character of that part of the county.

This assessment finds visual impacts associated with Route Widening are of three basic types:

- Diminished rural agricultural character in general;
- Loss of vegetation and increased paved surface in previously undeveloped land;
- Encroachment of man-made elements.

Visual assessment ratings show that the increased footprint of Route Widening Alternative B, a four lane expressway with frontage roads, would have a somewhat greater negative visual impact, than Alternative A, which follows the existing route more closely. Alternative A's alignment north of the existing road helps to preserve a larger uninterrupted expanse of agricultural fields and mountain views to the south. Viewers familiar with this portion of Route 25 would notice that the highway facility had been substantially widened and realigned in either alternative. A change in views from adjacent local homes and businesses would also occur in either alternative, however those with direct views are low in number.

The major visual changes for the Route Widening alternatives are categorized as follows:

Horizontal Scale
The proposed new lanes, intersections and raised profile would be placed in the context of an existing highway with similar facilities. The proposed alignment would join the new Route 25 Bypass project at San Felipe Road. Initially the contrast with the existing two-lane condition would be high and the change of scale would be most noticeable to local drivers familiar with the route. Average motorists involved in routine commuting would tend to have less sensitivity to changes as multiple lanes are a common sight in the general highway environment however they would notice the transition back to two lanes near Hudner Lane. Truck drivers and commercial travelers would be expected to have the lowest sensitivity to the proposed project and would tend to view it from an improved safety perspective rather than an aesthetic one. Inclusion of the proposed median, frontage roads, and drainage channels would make the proposed footprint of both build alternatives considerably wider than the remaining two-lane segment and would contribute to a diminished experience of rural character along the Route 25 corridor. Viewer groups unfamiliar with Route 25, such as tourists and recreational travelers, would be less sensitive to the change to four lanes due to the similarity with other stretches of highway in the State, however their visual experience would also be less memorable and less distinguished then the existing, more rural, two-lane condition.

Vertical Height
The proposed project changes would be visible from multiple locations, angles and distances, however the ability of the large scale natural scene to absorb visual changes within the confines of the existing road is high. The elevated profile of the new lanes is unlikely to be unduly noted by most drivers and cut and fills areas are minimal. The higher vantage point of the raised profile would facilitate access to panoramic vistas and the proposed project would not block views of the surrounding hills which contribute greatly to the scenic quality of the corridor.

However motorists would also view a much wider expanse of pavement and more man-made elements, and visual proximity to foreground details of agricultural planting would become more distant. Expressways are typically fenced to prevent public access which would also place another man-made element between the viewer and the farm fields. The slightly raised profile would be more noticeable to surrounding neighbors, especially those positioned below the on the flat valley plain however these viewers are generally low in number. Grading for drainage ditches would also result in an additional loss of cultivated land. Existing local road intersections would be graded to match the profile of frontage roads, and new lighting might be seen at night time by some neighbors if luminaries, required for safety at these intersections, are not shielded.

Vegetation

Alternative A has a greater potential impact to mature trees and orchards along the existing Route 25 corridor, whereas Alternative B would likely result in a greater loss of cultivated planting. Neither Route Widening alternative impacts riparian habitat and there is almost no existing native vegetation within the project limits. Local residents would be more aware of the loss of tall trees than drivers unfamiliar with the route. Trees provide vertical variety in an otherwise flat landscape. The most noticeable visual change would occur on lands within the confines of the highway right of way which would be converted from the vibrant green of irrigated agricultural use to ruderal grasses and forbs which would be green only for a brief time in the spring, and dry and brown the majority of the year.

Man-Made Elements

Alternative A would impact or change the visual experience of approximately 12-14 structures - residences and commercial or industrial businesses. Alternative B would impact approximately 8-10 structures. Local residents, especially those with homes on or near the proposed alignment, would be more sensitive to visual change than highway commuters. Diminished farming views, the loss of vegetation and the addition of a substantial width of paving and associated manmade structures, such as signals, signs, fencing and utilities, into an area with moderate to low previous encroachments would result in decreased rural character.

The Alternative B alignment of the new highway lanes to the south of the existing route would change the background view of the farm fields to a major highway view between some homes and the distant hills, and the heightened elevation of the new alignment would decrease direct views of the distant hills and fields somewhat. The number of residential viewers of this change is expected to be low. Despite the separation between the old and new alignment, roughly 500 feet in Alternative A and 1200 feet in Alternative B, and the soft buffer of the median, the distance is too short for meaningful visual separation; all paved surfaces would be perceived as part of one large man-made system.

Temporary Impacts

In addition to permanent changes that will affect the visual environment as a result of the proposed build alternatives, temporary visual impacts due to the contractors' operations would also be seen. Scenic resources identified would be protected at all stages of the project's construction, however disposal sites, construction signs, material storage, and other items of

work necessary for construction would briefly detract from the visual quality of the area and could create temporary negative visual impacts affecting local community events. Mitigation for construction impacts should be considered, as with other project impacts, and appropriately incorporated into the project.

Temporary visual impacts due to construction activities for either Alternatives A or B would occur incrementally as construction progresses. Earthwork and dirt stockpiles in the agricultural setting would not be dissimilar to seasonal plowing of adjacent farm fields. Topsoil should be preserved for use in areas to be landscaped. Impacts from detour roads would be minimized with staged construction since the existing roadway could remain functional for a long portion of the construction period, especially for Alternative B. Construction area signs, equipment and workers would be seen to varying degrees throughout the roughly two year construction period. Lighting from nighttime work, if any, would be visible in the area, but hours would conform to dark sky restrictions. Night work could have the potential to shorten the overall construction period. The loss of vegetation would be temporary in that it would be replaced with new plantings, however the benefit of revegetation would only be noticeable in time after a considerable period of growth.

4.6 Cumulative Impacts

A cumulative effect is defined in the NEPA Regulations as "the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions". Cumulative impacts can result from individually minor yet collectively significant actions taking place over a period of time. CEQA has similar language and requirements; the visual impact of individual project components may not be substantial when considered separately, but may have greater implications when considered collectively in a given regional context.

The perceived boundaries of the communities of Hollister and Gilroy, and the sense of arrival into those communities, have changed several times over the last 150 years. The Hollister-Gilroy Road was originally a graded dirt wagon trail in the 1870's. It evolved from a pre-automobile era gravel road to a paved road and to a designated State Route (Route 119) in the 1930's. State Route 119 was realigned in the late 1950's and renumbered to Route 25 in 1964. Land use patterns have been defined by agricultural production since the establishment of the road. The long and continuous farming heritage of the region has preserved its pastoral visual character and the existing simple two-lane road complements that rural appearance.

Various changes made in more recent times to increase safety on Route 25 such as shoulder widening, a soft median barrier, rumble stripping and the signalized intersection at Route 156 have done little to alter the overall appearance of the corridor. However the cumulative effect of future transportation projects will likely become much more noticeable as the larger scale of those changes will be more visually evident. Also perception of visual changes to Route 25 will be combined with similar expansive changes to adjacent stretches of rural highway such as Routes 156, 101, and 152.

In 2005 a Route 25 Safety and Operational Improvements Project was approved and will be constructed. That project includes installation of concrete median barrier along existing Route 25, intersection improvements and left and right turn lanes at various locations, and private road easements to consolidate access. The improvements installed by the safety project, especially the concrete median barrier, would further increase the presence of man-made features in the visual environment.

In 1996 the Route 156 Hollister Bypass was constructed to help re-route heavy commercial truck traffic away from downtown Hollister. Similarly a new local project known as the Route 25 Hollister Bypass is currently under construction to further alleviate congestion in downtown Hollister. That project includes a long soundwall and has similar features to the proposed four lane widening alignment. Both build Alternatives A and B of the proposed Route Widening project would join the new Route 25 Bypass at San Felipe Road.

One major "new town" private development plan which has the potential to bring substantial visual change to the area, is also under consideration by San Benito and Santa Clara counties. Changes to the intactness of the view outside the confines of the highway such as the loss of farmland or blocking of distant views by development are likely to contribute to a further decrease in the general scenic rural character of the area.

San Benito County's transition from a rural county to a more suburbanized county has placed tremendous pressure on the transportation system to accommodate a great number of users. The two-lane undivided rural highways that have been used primarily to provide access for trucking and farm equipment to agricultural production areas are now also carrying large numbers of commuters. Overall the existing project study area contains harmonious land forms, and land uses which combine to create a picturesque and pleasant setting, however this visual landscape is at a tipping point toward a much more engineered appearance.

Route Adoption Alignment ALTERNATIVES 1 & 2

Existing View from Bloomfield Road East Toward Carnadero Creek

This key view is located at the western end of the project, at a point where eastbound travelers have fully exited their Route 101 driving experience. Motorist's approach the threshold of riparian vegetation and enter into the visually pleasant spatial character typically found in the Hollister Valley. The scene is dominated by the rough texture of dense trees along the creek and the green carpet of low row crops. Distant mountain views are briefly screened. The roadway is unobtrusive and its straight alignment is compatible with the surrounding flat topography. The low number of man-made elements such as utility lines and signs contributes to the intact and unified appearance characteristic of this viewpoint. This existing view is rated high in all categories.

Proposed Eastbound View Alternatives 1 & 2

The new expressway alignment shifts north of the existing highway, and the existing pavement becomes a frontage road. There is a slight loss of vividness and unity in the scene due the structured effect of the expressway configuration, however it still remains distinctive. The line of the road is compatible with the terrain, wire fence lines subtly define right of way boundaries, and the new bridge structure is relatively unobtrusive. The decrease in intactness is due to the combined effect of the increased paved surface, the encroachment of man-made elements into the view, and the loss of some mature trees and the replacement of irrigated agricultural land use patterns with the dry rough mown grasses of a typical highway median and roadsides. The height of the remaining trees helps balance the scale of the new highway paving and some distant mountain views are revealed. The proposed view is rated moderately high.

Alternatives 1 and 2	Vividness	Intactness	Unity	(=V+I+U/3)
EXISTING	6.2	6.0	6.2	6.1
PROPOSED	5.7	4.5	5.8	5.3
Visual Quality Difference =				- 0.8

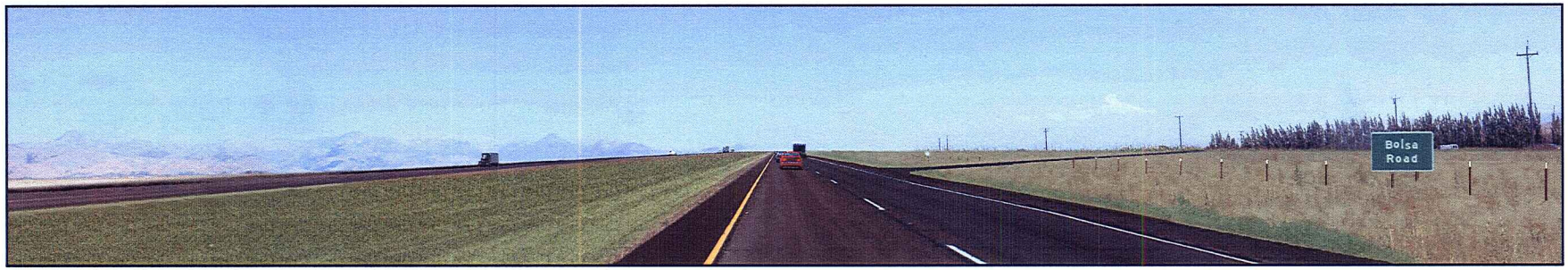
Key Observer Viewpoint No.1

FIGURE 4-1

Route Adoption Alignment ALTERNATIVES 1 & 2

Existing View Looking East from Bolsa Road

This key view of existing farm fields is located approximately where existing Bolsa Road would be removed and cul de saced to the north. Motorist's on Route 25 and on local roads experience the typical rural character of the Hollister Valley. The scene is dominated by agricultural vegetation. Distant mountain views are evident. The roadway is compatible with the surrounding flat topography. A few man-made elements such as utility lines and residential driveways and structures are part of the scene. This existing view is rated moderate for vividness and intactness and slightly higher for unity of form and rural materials.



Proposed Eastbound View Alternatives 1 & 2

The new expressway alignment would continue north of the existing highway, and the existing pavement continues as the frontage road. A portion of Bolsa Road is removed and relocated further east to provide access between the new expressway and the frontage road. There is a loss of vividness, intactness, and unity in the scene due the structured effect of the expressway configuration The alignment of the road is compatible with the terrain, and wire fence lines define right of way boundaries. The decrease in visual quality is due to the combined effect of the increased paved surface, the encroachment of man-made elements into the scene, and the loss of agricultural views. The distant mountain vistas and open space panoramas are still present but there is an overall loss of rural character. The proposed view is rated moderate.

Alternatives 1 and 2	Vividness	Intactness	Unity	(=V+I+U/3)
EXISTING	5.8	5.9	6.0	5.9
PROPOSED	5.0	4.5	5.8	5.1
Visual Quality Difference =				- 0.8

Key Observer Viewpoint No.2

FIGURE 4-2

Route Adoption Alignment ALTERNATIVES 1 & 2

Existing Eastbound View

This key view of is typical of the landscape unit, especially of areas along the proposed alignment where land is either fallow or used for grazing rather than row crops. There is almost no intrusion of man made elements except the existing road itself and utility poles. Distant mountain vistas are seen in all directions and the visual experience of wide open spaces is expansive. This existing view is rated moderately high in all categories.

Proposed Eastbound View Alternatives 1 & 2

The new alignment shifts north of the existing highway, and the existing pavement becomes a frontage road. There is some loss of vividness and unity in the scene due the structured effect of the expressway configuration, however it still remains memorable The line of the road is compatible with the terrain, wire fence lines subtly define right of way boundaries. The decrease in intactness is due to the combined effect of the increased paved surface and the encroachment of man-made elements into the view. The low key rough mown grasses of the proposed highway corridor are similar to the existing uncultivated land use pattern. The location of the utility poles is unchanged. The proposed view is rated moderately high.

Alternatives 1 and 2	Vividness	Intactness	Unity	(=V+I+U/3)
EXISTING	5.3	5.3	5.3	5.3
PROPOSED	5.0	4.5	5.8	5.1
Visual Quality Difference =				- 0.2

Key Observer Viewpoint No.3

FIGURE 4-3

Route Adoption Alignment ALTERNATIVE 1

Existing Eastbound View Near Hudner Lane

This key view of existing Route 25 is located at the junction with Hudner Lane. This view is typical of areas along the corridor which have a greater number of existing man-made features, including rural homes, mature trees, irrigated or fallow farm fields, overhead utility lines, and roadside ditches and traffic signs. The overall character is still rural. The smooth pavement is contrasted by the soft pattern of farming furrows which define the roadway edges . The valley view is surrounded by distant mountains and the tall trees add visual interest. The straight roadway alignment is compatible with the surrounding flat topography. This existing view is rated moderate to moderately high.

Proposed Eastbound View Alternative 1

The proposed alignment of Alternative 1 has the greater visual impacts in this area than does Alternative 2 which shifts further south and avoids the existing development. The pavement of the new Alt. 1 expressway overlaps the existing highway, and a new frontage road connecting to Hudner is created. There is a slight loss of vividness and unity in the scene due the structured effect of the expressway configuration and the loss of characteristic agricultural elements and structures and mature trees, however the scene still remains vivid and some previously screened mountain views are revealed. The line of the road is compatible with the terrain, wire fence lines subtly define right of way boundaries, and the utilities are relocated to the frontage road. The intactness changes very little as well since the trade off in man-made features encroaching into the view is similar. The proposed view is rated moderate to moderately high.

Alternatives 1 and 2	Vividness	/ Intactness	/ Unity	/ (=V+I+U/3)
EXISTING	5.8	5.2	5.8	5.6
PROPOSED	5.4	4.5	5.8	5.2
Visual Quality Difference =				- 0.4

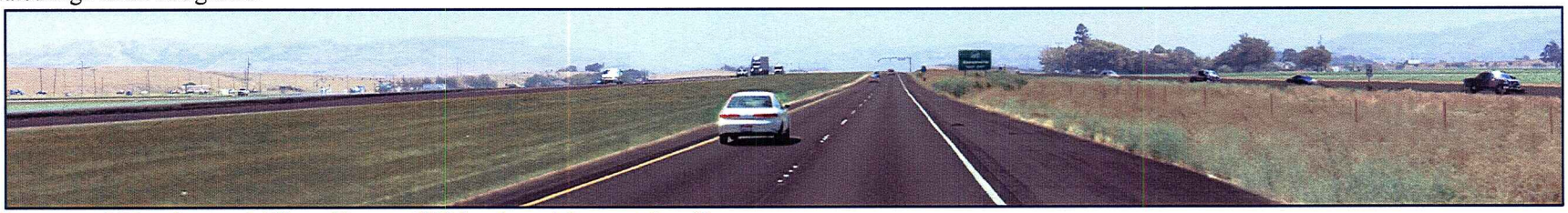
Key Observer Viewpoint No.4

FIGURE 4-4

Route Widening Alignment ALTERNATIVE B & Route Adoption Alignment ALTERNATIVE 2

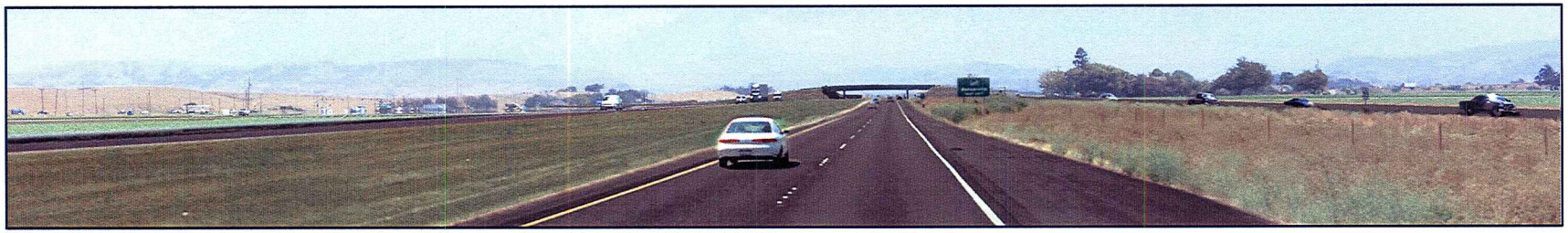
Existing Eastbound View Near Route 156

This key view of agricultural row crops is located just southwest of the existing Route 25/156 intersection. The scene is dominated by expansive views of the rhythmic planting patterns typically found in the Hollister Valley. Distant mountain views define the horizon line. The low number of man-made elements such as farm buildings, utility lines and scattered trees all contribute to the intact and unified appearance characteristic of this rural viewpoint. This existing view is rated high in all categories.



Proposed Eastbound View Route Widening Alternative B

The new Route Widening alignment Alternative B is located south of the existing highway, and the existing pavement becomes a frontage road. There is a noticeable loss of vividness, intactness and unity in the scene due the structured effect of the expressway configuration and the loss of rural character. The line of the road is compatible with the terrain, and distant mountain views are still seen. The decrease in visual quality is due to the combined effect of the increased paved surface, the encroachment of man-made elements into the view, and the loss of agricultural land usepatterns. The proposed view is rated moderately low.



Proposed Eastbound View Route Adoption Alternative 2

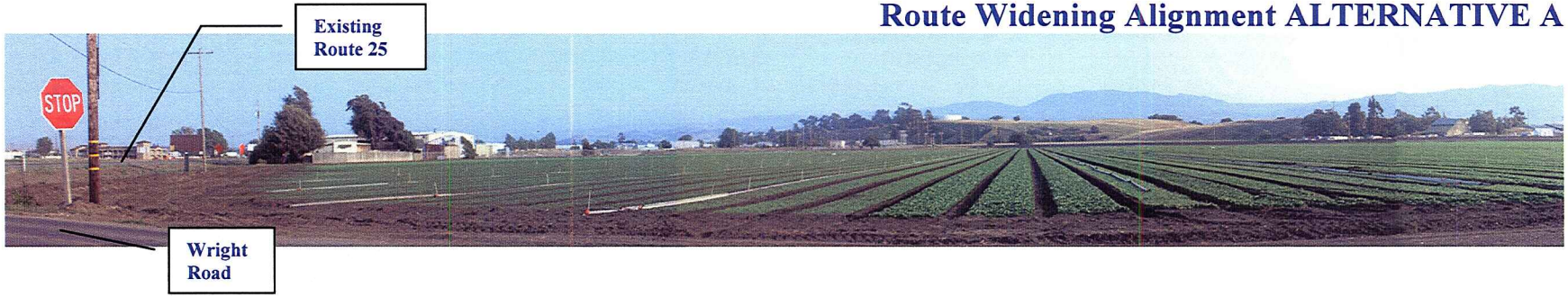
The Route Adoption alignment proposes to replace the Route 25/156 at-grade intersection signals with an overhead structure and on/off ramps. This would result in a further loss of rural character and a decrease in the intactness of the corridor due to the addition of another large scale man-made element. The proposed view is rated moderately low.

Alternatives B and 2	Vividness	Intactness	Unity	(=V+I+U/3)
EXISTING	6.2	6.0	6.2	6.1
PROPOSED Alt B	5.0	4.5	5.8	5.1
Visual Quality Difference =				- 1.0
PROPOSED Alt 2	5.0	4.2	5.6	4.9
Visual Quality Difference =				- 1.2

Key Observer Viewpoint No.5

Figure 4-5

Route Widening Alignment ALTERNATIVE A



Existing Eastbound View Near Wright Road

This key view at the eastern end of the project, is off existing Wright Road looking toward Hollister. The scene is a transitional mix of man-made elements, agricultural fields, rural and commercial structures, and the beckoning horizon of the distant mountains and wide open space. The roadway is unobtrusive and its flat profile and straight alignment seen in the distance are compatible with the surrounding topography. Windswept treees, utility poles and street signs, as well as the storage tanks on the knoll, all contribute to the mixed character of land use patterns. This existing view is rated moderate in all categories.

Proposed Eastbound View Near Wright Road Alternative A

The new expressway alignment of Alternative A generally overlaps the existing alignment of Route 25, the new pavement in this view is slightly to the south of the existing highway (until it begins to shift north around Flynn Road). There is a slight loss of vividness in the scene due the structured effect of the expressway configuration and the loss of skyline trees, however views of agriculture remain visible The line of the road is compatible with the terrain, wire fence lines define right of way boundaries, and the views of commercial structures are lessened while rural ones remain in the background. The intactness of the scene is lessened slightly due to the combined effect of the increased paved surface, the continued presence of man-made elements in the view, and the reduced agricultural land use pattern. The proposed view is rated moderate.

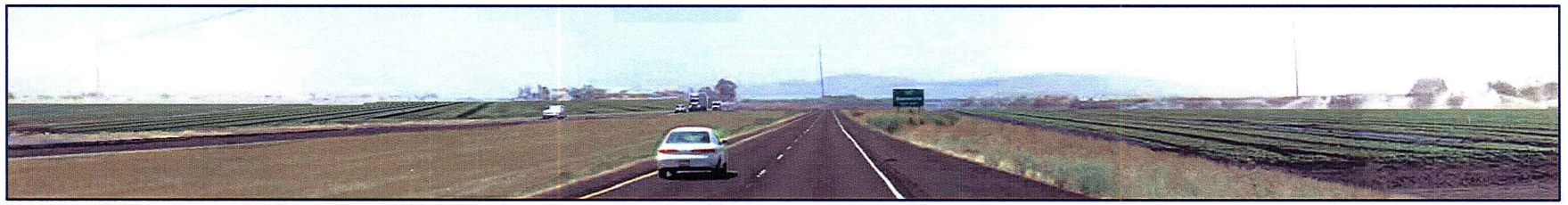
Alternative A	Vividness	Intactness	Unity	(=V+I+U/3)
EXISTING	5.6	5.0	5.2	5.3
PROPOSED Alt A	5.6	4.9	5.1	5.2
Visual Quality Difference =				**- 0.1**

Key Observer Viewpoint No.6

FIGURE 4-6

Existing Eastbound View Near Wright Road

This key view of existing agricultural fields is located at the eastern end of the project, on Wright Road looking toward Hollister. Existing Route 25 is distant from the scene and the visually pleasant agricultural character typically found in the Hollister Valley dominates. The view is unified in form and function by iconic barns, the rhythmic pattern of plowed earth, and the beckoning horizon line of the distant mountains. The few scatter power poles are unobtrusive; and skyline trees and the movement of water from the irrigation system add visual interest. This existing view is rated moderate to moderately high.



Proposed Eastbound View Near Wright Road Alternative B

The new expressway alignment of Alternative B shifts well south of the existing highway, and the existing pavement becomes a frontage road. There is a loss of vividness and unity in the scene due the structured effect of the expanded paved area. The line of the road is compatible with the terrain, and tree silhouettes and distant mountain views are still present. The decrease in intactness is due to the combined impact of the increased paved surface and the increased encroachment of man-made elements into the diminished agricultural view.

Alternative B	Vividness	/ Intactness	/ Unity	/ (=V+I+U/3)
EXISTING	5.6	5.0	5.2	5.3
PROPOSED Alt B	5.3	4.5	4.9	4.9
Visual Quality Difference =				- 0.3

Key Observer Viewpoint No.7
FIGURE 4-7

5 MITIGATION MEASURES

5.1 Mitigation of Visual Impacts

A visual impact assessment identifies the change in visual character, both adverse and beneficial, produced by the project, determines the degree of viewer sensitivity, and establishes appropriate measures to be incorporated into the project design to avoid, reduce, minimize, and mitigate visual impacts. The purpose of this section is to identify methods which would enhance positive visual features and which would mitigate adverse visual impacts caused by both the Route Adoption and the proposed Route Widening alternatives.

5.2 Mitigation Objectives

Appropriate design and construction procedures can generally be effective in reducing the severity of a new highway's visual impact on its surroundings. In general, visual mitigation seeks to:

- integrate new facilities with natural surroundings and the adjacent community;
- to preserve or enhance key existing scenic qualities;
- to frame desirable vistas;
- to buffer objectionable views;
- to soften visual impacts of large structures or graded slopes;
- to utilize forms and materials which are well related to other existing elements;
- to apply aesthetic treatments which fit the visual character of the area; and
- to provide visually attractive interchanges and entrances to communities.

Each specific type of project impact and its location, determines which mitigation measures would be most effective in reducing the visual impacts. This does not mean that project features should be, or could be hidden; rather that they should give the appearance that they work with the existing geographic and cultural features that comprise the area. These features include the existing road, topography, vegetative forms, textures and colors, and adjacent land uses. Selected project alternatives should be tailored so that they become a harmonious part of the region, appearing as a visual resource or neutral rather than as a visual detriment.

5.3 Visual Quality

The existing landscape character varies from agricultural fields with scattered commercial and residential development along the existing highway alignment, to distant oak dotted mountains . Throughout, the area retains a distinctively rural feeling. The moderate to moderately-high visual quality of existing Route 25 is mostly due to the following:

- Viewshed - The encompassing horizon line view and the high contrast between distant mountain vistas and flat mid range and foreground agricultural fields seen from a low viewing position.
- Vegetation - The patterning and space-defining quality of the cultivated soil and the color contrast of the vibrant green row crops in juxtaposition to scattered skyline trees and the muted vegetation on the surrounding hills.

Land Use - The narrow paved area adjacent to broad open land use in combination with the low visual encroachment of man-made elements.

5.4 Design Issues

Increased paving to accommodate additional lanes of traffic has become a necessary part of modern highway system design. A roadway which is safe, well-built and well-maintained strengthens the perception of a visually appealing community. Unfortunately, expansive highway paving can also be perceived as an unappealing visual feature traditionally associated with urban areas rather than rural ones. In order to help mitigate the visual impact of the proposed project, the design should incorporate features which minimize its negative visual qualities and which take advantage of its potential to be a compatible asset in harmony with those visual resources which are unique to the character of the area. This can be accomplished by preserving the dominance and vividness of the surrounding scene, and by increasing its unity with the expressway itself and its compatibility with the adjacent natural and cultural world.

Design issues addressed by recommended mitigation measures for this project include:

- Changes in road width and height
- Increase in number of man-made elements
- Loss of vegetation

5.5 Recommended Avoidance, Minimization and Mitigation Measures

In order to maintain the visual quality of the site and to decrease the amount of negative visual impact caused by the proposed project, specific design, construction, and maintenance actions are recommended. Mitigation measures present multiple design approaches to blend the project into the character of the area, and to maximize the visual experience of the highway user and neighbors. These recommended mitigation measures are intended for use by designers in preparing the final plans and specifications, and as a tool for the public to articulate their concerns and preferences.

Based on the visual impact assessment of the proposed alternatives and local community planning policies and guidelines the following visual mitigation measures are recommended for incorporation into selected project alternatives:

Measures 1 through 40 apply to both Route Adoption Alternatives 1 and 2

Grading

1. Refine the horizontal alignment of the selected alternative to minimize impacts to iconic rural structures and to avoid loss of mature trees.
2. Minimize the height of the proposed lanes above existing grade as much as possible, while still meeting drainage requirements.
3. Provide berms of various slopes and sizes to reduce the visual dominance of new structures.
4. Use contour grading and slope rounding where appropriate.
5. Remove old road signatures and grade to blend with surrounding terrain and drainage patterns.
6. Preserve topsoil for re-use in areas to be seeded or landscaped.

Materials and Aesthetics Treatments

7. Develop an aesthetic theme compatible with the region's agricultural identity. Use the theme as a framework for the design of future projects and aesthetic features to preserve and enhance the rural character of the area.
8. Create design continuity between all structures and with other built features, repeat similar lines, forms, colors and textures of the established aesthetic theme.
9. Design structures, such as bridges, bridge rails and soundwalls, with suitable form and architectural elements, including appropriate historic inspirations and unique details.
10. Use open abutments set back from the roadway edge to reduce constricted views.
11. Use open style safety rails which compliment the established bridge form and that minimize blocked views of open space and distant mountains.
12. Mount signs on bridges within the silhouette of the bridge. If two or more signs are mounted side by side they should be of the same height to coordinate the appearance of the signage system.
13. Use colors, surface treatments and material choices which blend with the surrounding natural palette and which minimize reflectivity and glare.
14. Apply surface treatments to both community side views and roadway views. Minimize the risk and visibility of graffiti by avoiding long flat surfaces. Protect new structures with anti-graffiti coating, or other methods such as vine planting where appropriate.
15. Place new fencing only as minimally required. New fencing should be rural in character - barbed wire or wire mesh on wood and/or metal posts. Chain link fencing should be avoided.
16. Limit traffic signage to the greatest extent possible. Remove obsolete signs and flashing warnings applicable to the old alignment but no longer needed for safety.
17. Limit new light sources and comply with or exceed County "dark sky" restrictions. Fully shield light fixtures. Retrofit existing light sources within the project limits as needed to comply with county ordinances.
18. Limit the use of new signals, flashing warnings, and reflectors to the minimum required.

Erosion Control

19. Seed or plant all disturbed areas with vegetation appropriate to site conditions with regard to soil type, plant community, availability of water and compatibility with adjacent

farming operations. Include species for quick cover as well as long lived and deep rooted species for long term stabilization and native wildflowers. Use the same seed mix in each subsequent new construction project to establish continuity along the route. Let erosion control areas grow in a natural appearance to help disguise trash and debris collection

20. Limit seed mix choices in median areas to only a few varieties so that a weedy appearance in the median is avoided, and a more uniform, cultivated look, compatible with the adjacent row crops, is established.
21. Seed or plant drainage channels with tall grasses and other filtering vegetation to optimize water quality benefits and to screen the visibility of the expressway pavement from the local frontage roads. Mow drainage channel vegetation should be mowed only where and when necessary for safety or function.

Landscaping and Right of Way

22. Acquire adequate right of way to accommodate planting with regard to required clear recovery setbacks for trees and shrubs and to create landscape buffers between the expressway and residential areas.
23. Acquire sufficient right of way for successful preservation of stream banks at proposed crossings of the Pajaro River and Carnadero Creek.
24. Consider excess land and remnant parcels for use as mitigation areas, if additional area is needed for riparian habitat replacement due to biological impacts. Consider opportunities to create permanent agricultural and open space easements which preserve key vistas.
25. Minimize impacts to vegetation, especially trees, when locating new utilities or relocating existing utilities. Overhead utility lines and poles should be relocated to locations which will not conflict with existing or future mature tree canopies, and so that trees will not be required to be pruned in an unnatural manner or where a bare, unplanted band marking the utility easement would result.
26. Place new utilities underground wherever possible. If they can not be placed underground they should be placed where they are the least disruptive to the view. Place above ground elements such as electrical cabinets in safe and visually unobtrusive locations.
27. Irrigate landscaping to establish; use reclaimed water if available. Connect into existing irrigation systems when available. Develop well water sources if needed.
28. Preserve existing trees and orchards to the greatest extent possible. If removal can not be avoided, replace removed trees.
29. Replace removed trees as close to the location of removal as possible when needed to mitigate site specific visual losses, or to protect established drainage and sun or shade conditions. Adjust replacement locations depending on the availability of water and suitable space within the right of way.
30. Replace riparian vegetation for visual as well as biological mitigation purposes, at new structures over Carnadero Creek and the Pajaro River.
31. Focus landscape planting at cross road nodes and in locations with existing development with long open vistas in between. Use the same planting palette in each subsequent new construction project to establish landscape continuity along the route. Group plants in large masses to provide simplicity for highway speeds. Add detailed planting for lower speed frontage road views or pedestrian level experiences.
32. Replace trees removed by the project at ratios which guarantee a high survival rate in

order to fulfill future visual as well as habitat functions.

33. Plant skyline trees reminiscent of agricultural windrows where appropriate to distract from the visibility and dominance of paved expanses and as needed to unify the region's visual identity. Screen undesirable views for drivers and residential viewers.
34. Plant the Route 156 and Route 101 interchanges with tall trees to de-emphasize the height of new structures within their surroundings and to frame scenic views. Plant screen shrubs to blend abutments and soften the appearance of graded slopes.
35. Select plant species to reinforce the rural and historic flavor which characterizes the region. Emphasize drought tolerant and/or native plants with low maintenance, and low water requirements once established. Include ornamental plants tolerant of smog and urban heat in more developed areas such as the San Felipe Road and Route 101.
36. Include various plant species, textures, foliage colors and seasonal accents layered to create interest, provide rhythm, and avoid monotony. Planting patterns should emulate the simplicity and geometric patchwork of row crops in certain locations and should be more natural and rough in others.
37. Plant a mix of medium, large, and box size containers to increase the density of cover, to screen more quickly, and to lend a more mature blended appearance.
38. Plant a signature landscape at "entry" nodes at San Felipe Road and at Route 101 to emphasize the sense of arrival and departure from the community. Tall trees which form a welcoming "gateway", should be planted to frame the view and create a visually appealing scene.
39. Colorful accent plant groupings that have seasonal interest, should be included in commercial areas. Layer planting with tree canopies of varied heights and textures, mixed with appropriate understory shrubs and ground covers for visual variety. Planting should create a green buffer between commercial buildings and the highway without blocking business visibility or perceived accessibility.
40. Pursue Caltrans' "landscaped freeway" status to protect the viewshed from future encroachment by billboards.

Measures 41 through 82 apply to both Route Widening Alternatives A and B

Grading

41. Refine the horizontal alignment of the selected alternative to minimize impacts to iconic rural structures and to avoid loss of mature trees.
42. Minimize the height of the proposed lanes above existing grade as much as possible, while still meeting drainage requirements.
43. Remove old road signatures and grade to blend with surrounding terrain and drainage patterns.
44. Preserve topsoil for re-use in areas to be seeded or landscaped.

Materials and Aesthetics Treatments

45. Create design continuity between built features, repeat similar lines, forms, colors and textures.
46. Place new fencing only as minimally required. New fencing should be barbed wire or wire mesh on metal posts. Chain link fencing should be avoided.
47. Limit traffic signage to the greatest extent possible. Remove obsolete signs and flashing

warnings applicable to the old alignment but no longer needed for safety.

48. Limit new light sources and comply with or exceed County "dark sky" restrictions. Fully shield light fixtures. Retrofit existing light sources within the project limits as needed to comply with county ordinances.
49. Limit the use of new signals, flashing warnings, and reflectors to the minimum required.

Erosion Control

50. Seed or plant all disturbed areas with vegetation appropriate to site conditions with regard to soil type, plant community, availability of water and compatibility with adjacent farming operations. Include species for quick cover as well as long lived and deep rooted species for long term stabilization and native wildflowers.
51. Limit seed mix choices in median areas to only a few varieties so that a weedy appearance in the median is avoided, and a more uniform, cultivated look, compatible with the adjacent row crops, is established.
52. Seed or plant drainage channels with tall grasses and other filtering vegetation to optimize water quality benefits and to screen the visibility of the expressway pavement from the local frontage roads.

Landscaping and Right of Way

53. Acquire adequate right of way to accommodate planting with regard to required clear recovery setbacks for trees and shrubs and to create landscape buffers between the expressway and residential areas.
54. Consider use of excess land and remnant parcels to create permanent agricultural and open space easements which preserve key vistas.
55. Minimize impacts to vegetation, especially trees, when locating new utilities or relocating existing utilities. Overhead utility lines and poles should be relocated to locations which will not conflict with existing or future mature tree canopies, and so that trees will not be required to be pruned in an unnatural manner or where a bare, unplanted band marking the utility easement would result.
56. Place new utilities underground wherever possible. If they can not be placed underground they should be placed where they are the least disruptive to the view. Place above ground elements such as electrical cabinets in safe and visually unobtrusive locations.
57. Use an automatic irrigation system to establish landscaping; include water saving features.. Develop a well water source if needed. Use a remote irrigation control system (RICS) if feasible.
58. Use reclaimed water for landscape irrigation purposes if available.
59. Preserve existing trees and orchards to the greatest extent possible. If removal can not be avoided, replace removed trees.
60. Replace removed trees as close to the location of removal as possible when needed to mitigate site specific visual losses, or to protect established drainage and sun or shade conditions. Adjust replacement locations depending on the availability of water and suitable space within the right of way.
61. Focus landscape planting at the Route 156 intersection and at local cross road nodes and in locations with existing development with long open vistas in between. Use a consistent planting palette to establish landscape continuity along the route. Group plants

in large masses to provide simplicity for highway speeds. Add detailed planting for lower speed frontage road views or pedestrian level experiences.

62. Include various plant species, textures, foliage colors and seasonal accents layered to create interest, provide rhythm, and avoid monotony. Planting patterns should emulate the simplicity and geometric patchwork of row crops in certain locations and should be more natural and rough in others.
63. Replace trees removed by the project at ratios which guarantee a high survival rate.
64. Plant skyline trees reminiscent of agricultural windrows where appropriate to distract from the visibility and dominance of paved expanses and as needed to unify the region's visual identity. Screen undesirable views for drivers and residential viewers.
65. Select plant species to reinforce the rural and historic flavor which characterizes the region. Emphasize drought tolerant and/or native plants with low maintenance, and low water requirements once established. Include ornamental plants tolerant of smog and urban heat near San Felipe Road.
66. Plant a mix of medium, large, and box size containers to increase the density of cover, to screen more quickly, and to lend a more mature blended appearance.
67. Plant a signature landscape at "entry" nodes at San Felipe Road to emphasize the sense of arrival and departure from the community of Hollister. Include tall palm trees as prescribed in the Hollister General Plan to form a welcoming "gateway", to frame the view, and to create a visually appealing scene.
68. Colorful accent plant groupings that have seasonal interest, should be included in commercial areas. Layer planting with tree canopies of varied heights and textures, mixed with appropriate understory shrubs and ground covers for visual variety. Planting should create a green buffer between commercial buildings and the highway without blocking business visibility or perceived accessibility.
69. Pursue Caltrans' "landscaped freeway" status to protect the viewshed from future encroachment by billboards.

Construction and Maintenance

70. Maximize protection of existing vegetation when locating temporary haul roads, detours, and staging areas.
71. Contour grade, cultivate, seeded and/or plant all temporary detours, stockpile storage areas, and contractor's staging and equipment yards. Establish as necessary to blend with the finished landscape.
72. Screen temporary construction trailers and stockpiles in residential and business areas if requested. Avoid razor wire in staging and materials storage areas.
73. Provide a comprehensive, coordinated and attractive temporary signing solution for local businesses during construction.
74. Follow County "dark sky" restrictions on temporary lighting during construction.
75. Repair or replace existing facilities such as fences, lighting fixtures and road signs to match new aesthetic themes and standards.Establish new vegetation with appropriate planting, seeding, watering, and mulching practices. Protect new plants with root and foliage protectors to prevent pest damage.
77. Design planting to be weaned off of supplemental irrigation once established.
78. Create a maintenance program to assure the establishment of landscaping to maturity.
79. Let erosion control areas grow in a natural appearance to help disguise trash and debris

collection. Mow drainage channel vegetation only when necessary for safety or function.

80. Minimize fire hazards through use of proper mowing techniques and appropriate plants to decrease fuel volumes near commercial or residential development.

5.6 Effect of Mitigation Measures

Visual resources and the visibility of particular elements varies along a corridor. Consequently, mitigation is varied in response to visual impacts. Mitigation measures were recommended based on their feasibility and their ability to satisfy the mitigation objectives for the proposed alternatives. Additional public comments and suggestions for mitigation measures which might be received during the environmental review process, would also be considered during design. (Photo simulations of the proposed project included in Section 4 depict alternatives without the application of mitigation measures except erosion control).

The implementation of mitigation methods does not necessarily result in the complete reduction of visual impacts to a pre-project level, only to a less than substantial level. Some visual mitigation strategies such as landscape planting would become effective only after a period of time. With the implementation of the listed mitigation measures, the proposed project alternatives appear to be consistent with local planning policies and goals regarding visual resources. Visual changes caused by any of the proposed alternatives are anticipated to be within the expectations of the typical viewer and the appealing visual quality of the surrounding agricultural and mountain views would still characterize the project area.

Route Adoption Alternatives 1 and 2

Structural elements proposed as part of Route Adoption would be designed to give the expressway an overall sense of visual unity without being monotonous. Unique form and architectural detail compatible with an agricultural regional identity would compensate for the visual impact of new structures in the rural area.

Tree planting would further integrate these large man-made features into the general scene and would strengthen the "gateway" feeling near the Route 101 interchange. The bold scale of planting reminiscent of agricultural windrows at key locations along the corridor would further tie the region together visually and would provide an appropriate balance to mitigate for the wider expanses of paved area added to the project area. Development of a signature landscape palette would mitigate potential cumulative impacts by increasing visual continuity in the corridor while at the same time providing a distinct and unified regional rural theme. The vegetated median would have a neutral visual impact in that it results in a wider overall footprint for both alternatives but it remains a "vegetated" buffer between the paved expanses of the expressway lanes and the frontage road system.

Appropriate grading and mitigation planting of simple masses and varied size plant material at the Route 156 interchange and other key crossroad areas would make the expressway and frontage roads more visually compatible with the natural feeling of the surrounding environment and would hasten the screening of undesirable paving views from certain locations. Mitigation

for the areas isolated between the paving of the existing road and the new expressway in either alignment would include preservation of agricultural use to the greatest extent possible.

Route Widening Alternatives A and B

Mitigation measures proposed as part of Route Widening would give the expressway an overall sense of visual unity without being monotonous. Erosion control seeding would integrate the new expressway into the general scene. The bold scale of planting reminiscent of agricultural windrows at a few key locations along the corridor would further tie the region together visually and would provide an appropriate balance to mitigate for the wider expanses of paved area added to the project area. Development of a consistent planting palette would mitigate potential cumulative impacts by increasing visual continuity in the corridor while at the same time providing a distinct and unified regional rural theme. The vegetated median would have a neutral visual impact in that it results in a wider overall footprint for both alternatives but it remains a "vegetated" buffer between the paved expanses of the expressway lanes and the frontage road system.

Distinctive landscape planting near the San Felipe Road intersection would strengthen the "gateway" feeling and mark the transition from the expressway into the city, consistent with documented community goals and policies.

Mitigation planting of simple masses and varied size plant material at the Route 156 intersection and other key crossroad areas would make the expressway and frontage roads more visually compatible with the natural feeling of the surrounding environment and would hasten the screening of undesirable paving views from certain locations. Mitigation for the areas isolated between the paving of the existing road and the new expressway in either alignment would include preservation of agricultural use to the greatest extent possible.

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- *Increase capacity along State Route 25 between San Felipe Road in Hollister and Hudner Lane in San Benito County.*

Slow moving farm equipment, trucks, and local and commuter traffic share this two-lane roadway. An increasing number of vehicles travel this stretch of State Route 25 and, during peak commute hours, the roadway is congested. Traffic flow is delayed by vehicles turning onto and/or out of the many driveways and local roads, affecting the flow of the faster moving vehicles. Many commuters whose destination is beyond the local area take local roads (Bloomfield Road, Frazier Lake Road, and Shore Road) as shortcuts between State Route 25 and State Route 156 and also State Route 152. Significant commercial truck traffic travels through the area on State Route 25, and is subject to delays as well. A new route alignment should be adopted so that the appropriate area for a future expressway can incorporated into the San Benito and Santa Clara County general plans now, before future development occurs along this stretch of highway.

Both of the route adoption alternatives, Alternatives 1 and 2, are 11.2 miles long, and share the same alignment from approximately ½ mile south of Shore Road (post mile 56.1) in San Benito County to U.S. 101 in Santa Clara County (See Figure 1.2). Between post mile 56.1 in San Benito County and the southern end of the proposed project at San Felipe Road, the two alignment alternatives separate: Alternative 1 proposes to align the future four-lane expressway generally to the east (or north) of the existing two-lane north/south highway while Alternative 2 would align mostly to the west (or south) of the existing two-lane highway. The alignments would be wide enough to accommodate a future four-lane expressway with a 62 foot median (342 feet) and frontage roads on one or both sides. The alignments would also be wide enough to accommodate a future interchange near the existing intersection of State Route 25 and State Route 156 and a future State Route 25/U.S. 101 interchange north of the existing interchange. Other improvements include new bridges over Carnadero Creek and the Pajaro River, and overcrossings of the Union Pacific Railroad Hollister branch line and the Union Pacific main line just east of U.S. 101.

Both build alternatives, Alternative A and Alternative B would extend 3.8 miles in San Benito County, from San Felipe Road (post mile 51.5) to just west of Hudner Lane (post mile 55.3). Unlike the route adoption alternatives, the build alternatives propose a realigned and widened at-grade intersection at State Route 25 and State Route 156 instead of an interchange. Both construction alternatives would transition back to the existing two-lane highway just west of Hudner Lane.

The No-Action Alternative would result in no action being taken, and no further improvements would be made to State Route 25 within the route adoption limits other than the State Route 25 Safety and Operations Enhancement Project. It is anticipated that work will begin early in 2009 and will be completed by early 2010. Work will begin just south of Hudner Lane (post mile 55.1) and end just south of the Union Pacific Railroad crossing (post mile 60.0) in San Benito County. Roadway widening will consist of two 10-foot outside shoulders, two 12-foot travel lanes, two 5-foot inside shoulders and placement of a temporary concrete median barrier. Rumble strips will be installed on all inside and outside shoulders. The Hudner Lane and Shore Road intersections will be improved.

cc: File

Water Quality Assessment

WATER QUALITY ASSESSMENT REPORT

For

State Route 25 Widening and Route Adoption Project
San Benito and Santa Clara Counties

SBT 25 PM 51.5/60.1
SCL 25 PM 0.0/2.56
SBT 156 PM R10.5/R12.2

EA 05-485400

California Department of Transportation
District 6, Fresno

May 25, 2011

Ken J Romero
Chief
Central Region Environmental Engineering Branch

OBJECTIVES

The objective of this water quality assessment (WQA) report is to evaluate potential impacts of the proposed project on water quality. The WQA identifies impacts on surface water and groundwater resources resulting from this project, and describes mitigation measures (if necessary) to reduce any significant impacts to less than significant levels. This technical report will be incorporated into a joint environmental document, to be prepared under the guidelines of the National Environmental Policy Act (NEPA) and the California Environmental Quality Act (CEQA).

The WQA determines if project induced effects would have a significant impact on water quality. Significance is based on whether discharges to receiving waters would cause exceedances of water quality objectives or have an adverse impact to the beneficial uses identified by the state's lead agency, the Regional Water Quality Control Board (RWQCB).

This report describes the environmental and regulatory setting, the environmental impacts of the project, and measures to minimize adverse impacts on hydrology and water quality.

PROJECT LOCATION AND DESCRIPTION

The California Department of Transportation (Caltrans), in cooperation with San Benito Council of Governments and Santa Clara Valley Transportation Authority is evaluating the conversion of 11.2 miles of the existing State Route 25 two-lane conventional highway to a four-lane expressway in San Benito and Santa Clara counties (Figure 1). This Draft Environmental Impact Report and Environmental Impact Statement includes two proposed projects: (1) a TIER I route adoption and (2) a proposed construction project within the limits of the proposed route adoption.

The route adoption study extends from San Felipe Road within the City of Hollister (post mile 51.5) to the San Benito/Santa Clara County line (post mile 60.1) and on to the end of State Route 25 at U.S. 101 south of the City of Gilroy (post miles 0.0 to 2.6 in Santa Clara County).

The proposed construction project limits extend 3.8 miles in San Benito County, from San Felipe Road in Hollister to just west of Hudner Lane (post miles 51.5 to 55.3). The existing 2-lane conventional highway would be replaced by a 4-lane expressway.
State Route 25, a two-lane conventional highway, runs northwest through the relatively flat terrain of the Hollister Valley, terminating at U.S. 101 after crossing the Pajaro River and Carnadero Creek. Agriculture dominates the surrounding landscape, and farmsteads and houses are scattered along the length of the study area. Residences, retail businesses, and agriculture-related commercial operations are more concentrated at both ends of the route adoption study area, on the outskirts of Gilroy and Hollister.
The purpose of the proposed project is to:

- Select a route adoption corridor for State Route 25 between Hollister and Gilroy for planning purposes.
- Improve traffic flow, reduce delays, and enhance the movement of goods on State Route 25 between San Felipe Road in Hollister and Hudner Lane in San Benito County.
- Increase capacity along State Route 25 between San Felipe Road in Hollister and Hudner Lane in San Benito County.

Slow moving farm equipment, trucks, and local and commuter traffic share this two-lane roadway. An increasing number of vehicles travel this stretch of State Route 25 and, during peak commute hours, the roadway is congested. Traffic flow is delayed by vehicles turning onto and/or out of the many driveways and local roads, affecting the flow of the faster moving vehicles. Many commuters whose destination is beyond the local area take local roads (Bloomfield Road, Frazier Lake Road, and Shore Road) as shortcuts between State Route 25 and State Route 156 and also State Route 152. Significant commercial truck traffic travels through the area on State Route 25, and is subject to delays as well. A new route alignment should be adopted so that the appropriate area for a future expressway can incorporated into the San Benito and Santa Clara County general plans now, before future development occurs along this stretch of highway.

Both of the route adoption alternatives, Alternatives 1 and 2, are 11.2 miles long, and share the same alignment from approximately ½ mile south of Shore Road (post mile 56.1) in San Benito County to U.S. 101 in Santa Clara County (Figure 2). Between post mile 56.1 in San Benito County and the southern end of the proposed project at San Felipe Road, the two alignment alternatives separate: Alternative 1 proposes to align the future four-lane expressway generally to the east (or north) of the existing two-lane north/south highway while Alternative 2 would align mostly to the west (or south) of the existing two-lane highway. The alignments would be wide enough to accommodate a future four-lane expressway with a 46 feet median and frontage roads on one or both sides. The alignments would also be wide enough to accommodate a future interchange near the existing intersection of State Route 25 and State Route 156 and a future State Route 25/U.S. 101 interchange north of the existing interchange. Other improvements include new bridges over Carnadero Creek and the Pajaro River, and overcrossings of the Union Pacific Railroad Hollister branch line and the Union Pacific main line just east of U.S. 101.

Both build alternatives, Alternative A and Alternative B would extend 3.8 miles in San Benito County, from San Felipe Road (post mile 51.5) to just west of Hudner Lane (post mile 55.3). Unlike the route adoption alternatives, the build alternatives propose a realigned and widened at-grade intersection at State Route 25 and State Route 156 instead of an interchange. Both construction alternatives would transition back to the existing two-lane highway just west of Hudner Lane.

The No-Action Alternative would result in no action being taken, and no further improvements would be made to State Route 25 within the route adoption limits other than the State Route 25 Safety and Operations Enhancement Project. It is anticipated that work will begin early in 2009 and will be completed by early 2010. Work will begin just south of Hudner Lane (post mile 55.1) and end just south of the Union Pacific Railroad crossing (post mile 60.0) in San Benito County. Roadway widening will consist of two 10-foot outside shoulders, two 12-foot travel lanes, two 5-foot inside shoulders and placement of a temporary concrete median barrier. Rumble strips will be installed on all inside and outside shoulders. The Hudner Lane and Shore Road intersections will be improved.

Current Project Description Changes:

Alternative 2 was selected as the preferred route adoption alternative and Alternative B was selected as the preferred build alternative. Selection was based on construction and right-of-way costs, environmental impact analysis, and community and agency input. Route Adoption Alternative 2 and Build Alternative B were modified based on public comments received during the circulation of the draft environmental document. These modifications reduced the amount of farmland impacts and lowered the project costs. The changes for both alternatives include:

- Reducing the median width from 62 feet to 46 feet
- Reducing the minimum right-of-way width from 342 feet to 240 feet
- Moving the new alignment closer to the existing highway
- Replacing some frontage roads that were proposed on new alignment with private access easements

In addition, the route adoption Alternative 2 would include:

- Moving the proposed future interchange at State Routes 156 and 25 to the east
- Shortening a west side frontage road to end in a cul-de-sac south of Hudner Lane
- Moving the above mentioned frontage road close to the expressway alignment in the vicinity of Hudner Lane

Modifications made specifically to Build Alternative B include:

- Removing the Briggs Road extension that would intersect with the expressway
- Reducing the project limit by 0.3 mile to end south of Hudner Lane
- Replacing the proposed west side frontage roads with private road easements

FIGURE 1 - PROJECT VICINITY MAP

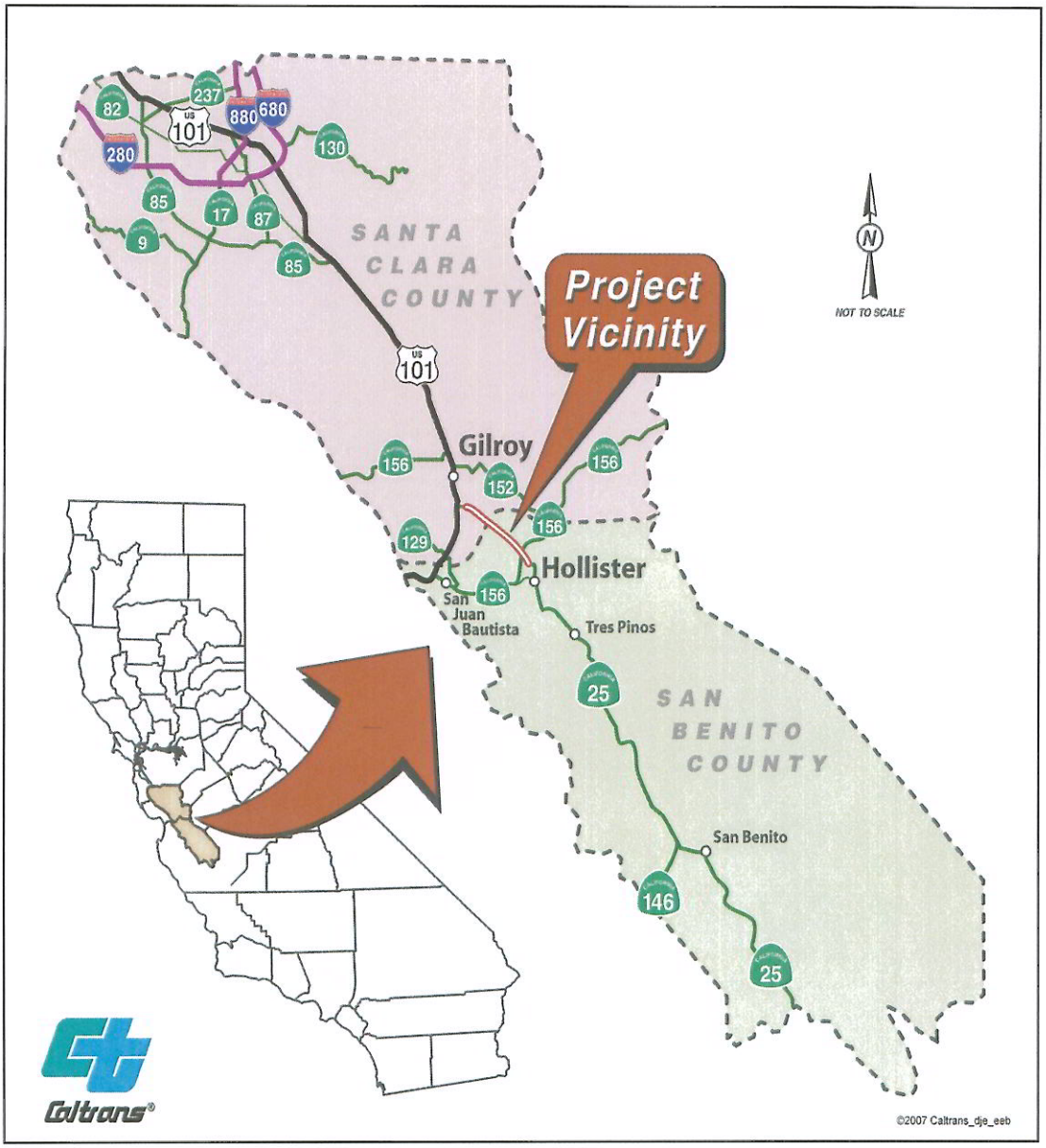
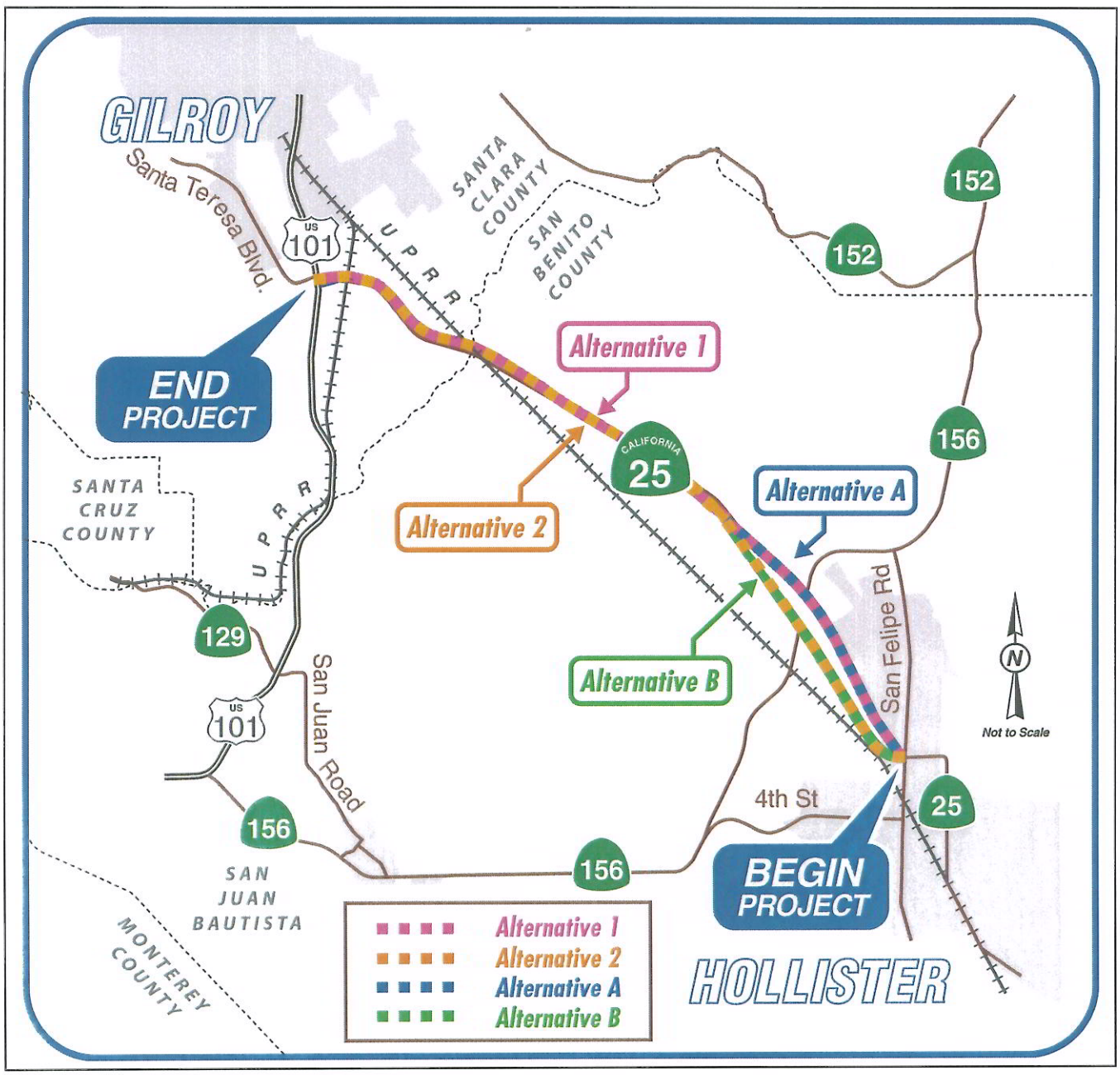


FIGURE 2 – PROJECT LOCATION MAP



Approach to Water Quality Assessment Report

The water quality assessment (WQA) evaluates the potential impacts of the proposed project on water quality. The WQA identifies impacts on surface water and groundwater resources resulting from the project, and describes procedures, and practices that would minimize the project's impacts; and describes mitigation measures (if necessary) to reduce any significant impacts to less than significant levels.

As stated above, the WQA determines whether project induced effects would have a significant impact on water quality. Significance is based on whether discharges to receiving waters would cause exceedances of water quality objectives or have an adverse impact to the beneficial uses identified by the RWQCB.

One of the most critical steps in identifying and controlling nonpoint source (NPS) pollution is to correctly characterize the existence of a water quality problem. The water quality problem may be defined either as a threat or impairment to the designated use of water resources. Clear WQA should lead to the following:

- Defining the water resource(s) of concern;
- Delineating the water use impairments and identifying location and history;
- Stating the pollutant(s), the pollutant sources, and significance of the source
- Identifying and recommending best management practices (BMPs) or treatment methods to mitigate the identified concerns

Based on the descriptive data compiled on water resources of the project and mindful of the regulatory context, standards for water quality impacts were developed. CEQA, and Caltrans storm water quality guidelines were consulted in the preparation of the standards to determine water quality impacts. Hydrological impacts were evaluated by examining the potential impacts of the project on the surface and groundwater hydrology of the project area.

Standards of Water Quality Impact

The WQA determines whether the project-induced effects would have adverse impacts on water quality. Adverse impact is based on whether discharges to receiving waters would cause exceedances of water quality objectives or would impair the beneficial uses identified by the State of California. For the purpose of this WQA, an impact is considered adverse if the proposed project would:

- Violate any water quality standards or waste discharge requirements;
- Substantially alter the existing drainage pattern of the site or area, including alteration of a stream or river in a manner that would result in substantial erosion or siltation on or off-site;
- Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increasing the rate or amount of surface runoff, which would result in flooding on or off-site;
- Create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems, or cause substantial additional sources of polluted runoff;

- Otherwise substantially degrade water quality;
- Place within a 100-year flood hazard area structures, which would impede or redirect flood flows.

AFFECTED ENVIRONMENT

The quality of water in an area depends upon several factors, including topography, geology, soils, surface and groundwater hydrology, land use, climate and precipitation. Following is a brief description of these general characteristics in the project area and surroundings.

Regional Geology

The major portion of the project lies in San Benito County and a minor portion on the north in Santa Clara County. The area consists topographically of a long, narrow valley termed as the Pajaro Valley Basin flanked on each side by chains of the Coastal Mountains.

Structurally, the area shows two mountain ranges diverse geologic formation, striking northwest and separated by a narrow valley filled with younger formations and detritus. Traversing the valley is the San Andreas Fault Zone.

The Pajaro Basin is bounded to the west by Monterey Bay and to the east by the San Andreas Fault, adjacent pre-Quaternary formations, and the Santa Cruz Mountains beyond.

Water Resources

This section deals with the surface water and groundwater present in the area, and discusses its quality from both a regional and project level perspective.

Surface Water

The major surface waters of the area are the Pajaro River, and the Carnadero Creek. The project is located within the Pajaro River Hydrologic Unit 305.30 hydrologic area in South Santa Clara Valley.

The Pajaro River is the main waterbody in this area (known to the RWQCB as Hydrologic Unit 5 and carrying a total area of 844,972 acres) and has its final outfall in Monterey Bay. It drains an area of approximately 1,300 square miles of the coastal plains and mountains of Central California. A tributary of Monterey Bay, the watershed drains portions of Santa Cruz, Monterey, Santa Clara and San Benito Counties.

Parts of the Santa Clara Valley watershed are in the FEMA 100 year flood plain termed as Soap Lake Floodplain (Figures 3 and 4).

Carnadero Creek flowes steadily, albeit with little velocity, within its rocky banks. The bottom varies in width from approximately 18' to 3' and contains mostly rocks with just minimal amounts of sediments. Carnadero Creek drains into the Pajaro River.

Figure 3. Topographic map showing boundaries of 100 year floodplain

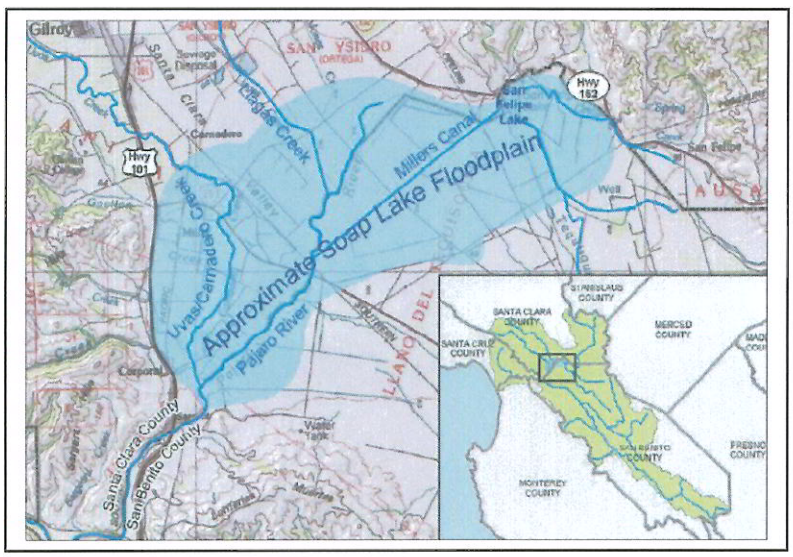
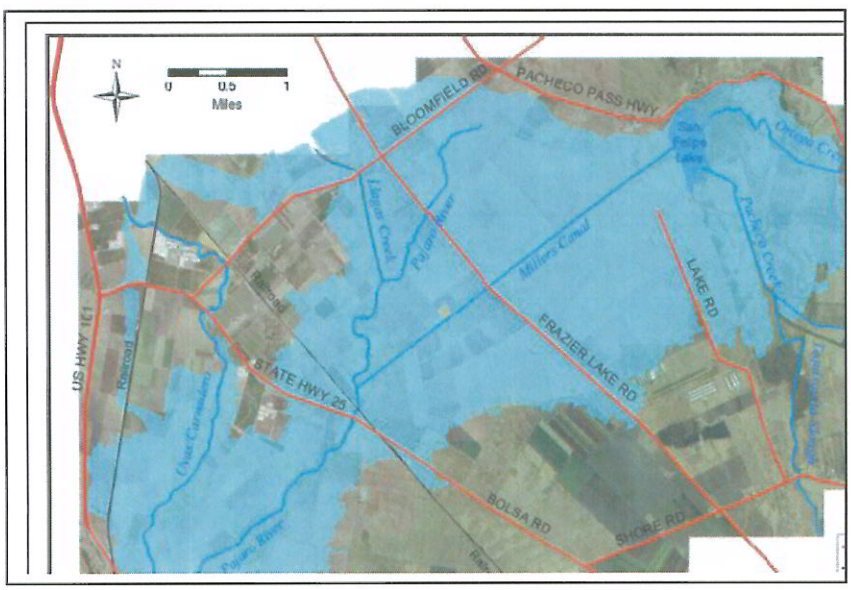


Figure 4. Aerial photo showing boundaries of 100 year floodplain



Surface Water Quality

Regional analysis of surface water quality included in the Basin Plan prepared by the California Regional Water Quality Control Board indicated that the following were the major issues relating to degredation of water quality in the area:

- Toxicity to Aquatic Organisms in Streams Attributed to Pesticides
- Potential for Adverse Effects on Biota from Pesticides in Bed Sediment
- Nutrient Concentrations
- Mineralization
- Agricultural Pollutants
- Abandoned Mines
- Urban Pollutants

The Pajaro River has been listed as one of the major waterbodies targeted for investigation due to sedimentation, heavy metals, and nitrates. The water quality of the Pajaro River is considered as being impaired under Section 303 (d) of the Clean Water Act.

The identified pollutants include, pesticides/herbicides, electrical conductivity, and urban waste. Appendix A provides a detailed list of pollutants and their sources. The Pajaro River is unable to meet current Total Maximum Daily Loads (TMDLs) for sedimentation. Appendix B shows the TMDLs for the Basin.

In order to address the TMDLs not being met, Soap Lake is being restored to enable the City of Watsonville to meet promulgated goals and to provide additional flood protection. Soap Lake is a floodplain that sits between San Felipe Lake and SR 101. San Felipe Lake is located at the headwaters of the Pajaro River just east of Soap Lake. The lake is also the terminus of Pacheco Creek and the Santa Ana/Los Viboras/Dos Pichachos Creeks system.

At high storage levels the two lakes could become one large flood control storage facility. For smaller flood events, Soap Lake and San Felipe Lake are two separate storage bodies. However, the relative water surface elevations in the two lakes control the discharge between the lakes via the Miller Canal. As the elevations become more identical the discharge between the lakes is reduced until the two lakes combine water surface elevations and become one large flood storage area.

The development of this lake is to augment the Lower Pajaro River levee flood control project, which protects the town of Watsonville from flood events and to assist in meeting TMDL goals. A Joint Power Authority has been formed (Pajaro River Watershed Flood Prevention Authority) between the four counties and four water districts within the Pajaro River Watershed. The project intends to minimize direct discharge of stormwater runoff into the lower Pajaro River, thus assisting in managing the reduction of TMDLs to the River.

The other water body, Carnadero Creek, appears to have generally good water quality, and is not included in the 303 (d) list as being impaired. No TMDLs have been identified for this waterbody.

Groundwater

The project is located in the Pajaro Valley Groundwater Basin. The Pajaro River streamflow and local runoff are the two sources of surface water available for groundwater recharge. Long-term groundwater levels in the areas have declined in the last 50 years due to excessive seasonal pumping.

Almost all of the water used to support the huge agricultural industry in the watershed comes from underlying aquifers. As a result, demand has exceeded supply in many parts of the watershed, resulting in overdraft and seawater intrusion. In addition, there is widespread contamination of the upper aquifers by nitrates. The conclusions drawn in the Basin Plan indicates that the primary source of the contamination is agriculture.

Nitrate contamination of groundwater has been identified as a serious water quality problem in the Pajaro Valley ground water Basin for many years. Agricultural wells indicate the presence of nitrates in groundwater throughout the Basin. Although septic systems, improper handling and storage of farm chemicals, and relatively small-scale confined animal facilities have most likely contributed to the nitrate loading, there is general agreement that crop application is the primary nitrate source.

As of 1993, average nitrate concentrations in the 180 foot aquifer approached or exceeded the maximum drinking water standard (45 mg/L nitrate as $\underline{NO_3^-}$) in three of the Basin's four hydrologic sub-basins. Between 1987 and 1993, average nitrate concentrations increased in the second-deepest regional (400-foot) aquifer. This signifies that nitrate contamination is spreading from the upper most regional (180-foot) aquifer to a deeper zone that had been characterized by higher quality water.

Several agricultural groundwater wells were found throughout the alignments of the project during a site visit. Some of these wells had the pumps and power removed while others seemed active. These wells, some of which will be in the alternative alignments will require proper abandonment; however, local water agencies or counties should be consulted prior to abandonment to ensure that none of the wells will be used as barrier wells to protect against saltwater intrusion.

Water Quality Objectives and Beneficial Uses

The State Water Resource Control Board (SWRCB) is the designated lead agency for all federal Clean Water Act (CWA) powers delegated to the state by the US EPA. The Regional Water Quality Control Board (RWQCB) adopts Water Quality Control Plans (Basin Plans) and issue NPDES permits for their respective regions. Each Basin Plan establishes regional water quality objectives to ensure reasonable protection of California's surface and ground water, while recognizing the possibility of changing the character of the water to some degree without unreasonably affecting beneficial uses. Environmental as well as economic concerns are considered in setting these water quality objectives. The Basin plans and guidelines must be approved by the SWRCB.

The proposed project is located within the jurisdiction of the Central Coast RWQCB, Central Coast Region. The RWQCB has adopted the Water Quality Control Plan for Central Coast Region, Fourth Edition. This plan defines existing and potential beneficial uses.

The Central Coast RWQCB has established water quality objectives for the protection of surface and groundwater in the region. Water quality objectives consist of both narrative and numerical goals and are established to preserve, present and probable future beneficial uses of regional water bodies. These uses are Municipal and domestic Supply (MUN), Agricultural (AGR), Industry Process Supply (PRO), Water Contact Recreation (REC-1), Non-Contact Water Recreation (REC-2), and Warm Freshwater Habitat (WARM), Wildlife Habitat (WILD), Migratory Habitat (MGR) and Spawning for Warm Freshwater species.

The beneficial uses for the Pajaro River and the Carnadero Creek per the Basin Plan are shown in Appendix A.

Regulations

Surface water and groundwater resources, and their associated water quality, are regulated in California through many different applicable laws, regulations, and ordinances administered by local, state, and federal agencies. These regulations ensure that the

hydrologic characteristics of surface water and groundwater resources are considered so that existing beneficial uses they provide are not impaired. All project activities need to be in compliance *with Federal Clean Water Act, Porter-Cologne Water Quality Control Act (California Water Code), and the Water Quality Control Plan (Basin Plan) for the California RWQCB, Central Coast Region.*

Permits

- **Section 401** – State Water Resources Control Board Water Quality Certification

Section 401 of the Clean Water Act requires that any applicant for a federal permit to conduct any activity, including the construction or operation of a facility, which may result in the discharge of any pollutant, must obtain certification from the State. For the purposes of this project, the Regional Water Quality Control Board administers Section 401. Since the project involves direct construction with the Pajaro River and Carnadero Creek, a water quality certification will be required.

- **Section 402** - Regional Water Quality Control Board NPDES Permit.

In California, US EPA has delegated NPDES permitting authority to the SWRCB and the nine RWQCBs. The SWRCB has issued a Statewide NPDES permit and Waste Discharge Requirements (WDRs) to Caltrans for storm water and non-storm water runoff.

All projects are covered by the Caltrans Statewide NPDES Permit No. CAS000003 (SWRCB No. 99-06-DWQ). Under this permit the required Statewide Storm Water Management Plan directs that potential impacts to water quality (erosion, discharges of hazardous material, disruption of natural drainage patterns, etc.) be addressed in the planning, design, and construction phases

- **U.S. Army Corps of Engineers 404** -Dredge/Fill Permitting

Section 404 of the Clean Water Act established a permit program to regulate the discharge of dredged material into waters of the United States. The program's scope also includes the regulation of discharges of dredge or fill material into wetlands adjacent to national waters. The permit program is administered by the Secretary of the Army through the U.S. Army Corps of Engineers.

A 404 Permit will be required for this project.

- **California Department of Fish and Game** 1601 Streambed Alteration permit will be required.

WATER QUALITY IMPACTS

This section discusses surface water and groundwater quality impacts that could result from implementation of the project. The previous sections have described the existing water quality conditions, and the major issues/sources of the water quality impairment. One of the significant sources, amongst several discussed above is runoff from roads, highways, and bridges.

This report assesses the existing water quality and the regulatory setting and whether project induced effects would have a significant impact on water quality. Significance is based on whether discharges to receiving waters would cause exceedances of water quality objectives or have an adverse impact to the beneficial uses identified by the state lead agency, the Regional Water Quality Control Board.

Potential sources of water pollution associated with this project include runoff containing sediment from soil erosion, petroleum and wear products from motor vehicle operation, landscaping chemicals and hazardous materials spilled in highway accident. Transport of these materials off-site would usually occur from rainfall runoff. The following will discuss in brief the type of pollutants the Caltrans project could generate that may have the potential to degrade existing water quality.

Contaminants in runoff pollution from roads, highways, and bridges include:

Sediment: Sediment is produced when soil particles are eroded from the land and transported to surface waters. Natural erosion usually occurs gradually because vegetation protects the ground. When land is cleared or disturbed to build a road or bridge, however, the rate of erosion increases. The vegetation is removed and the soil is left exposed, to be quickly washed away in the next rain. Erosion around bridge structures, road pavements, and drainage ditches can damage and weaken these structures.

Other pollutants such as heavy metals and pesticides adhere to sediment and are transported with it by wind and water. These pollutants degrade water quality and can harm aquatic life by interfering with photosynthesis, respiration, growth, and reproduction.

Oils and Grease: Oils and grease are leaked onto road surfaces from car and truck engines, spilled at fueling stations, and discarded directly onto the pavement or into storm sewers instead of being taken to recycling stations. Rain transports these pollutants directly to surface waters.

Table 1 Water Quality Impact For Proposed Alternatives

Water Quality Impact	Alternative 1 Route Adoption	Alternative 2 Route Adoption	Alternative A Build	Alternative B Build	No Action Alternative
Site Topography	Short-Term	Short-Term	Short-Term	Short-Term	None
Vegetal Cover	Short-Term	Short-Term	Short-Term	Short-Term	None
Drainage or Runoff Patterns	Short-Term	Short-Term	Short-Term	Short-Term	None
Soil Erosion	Short-Term	Short-Term	Short-Term	Short-Term	None
Floodplain Area	Short-Term	Short-Term	None	None	None
Groundwater	None	None	None	None	None
Temperature	None	None	None	None	None
Turbidity	Short-Term	Short-Term	None	None	None
Dissolved Oxygen	Short-Term	Short-Term	None	None	None
Nutrients (primarily nitrogen and phosphorous)	Short-Term	Short-Term	Short-Term	Short-Term	None
Organic and Inorganic Chemicals	Short-Term	Short-Term	Short-Term	Short-Term	None
Alkalinity and pH	Short-Term	Short-Term	None	None	None

Short-Term Water Quality Impacts

Short-term impacts to surface water quality could occur during construction of this project. The primary impacts would occur from demolition, exposure to loose soil during excavation, grading, and filling activities during construction. Suspended solids, dissolved solids and organic pollutants in surface water runoff (agricultural sources) could increase as nearby soils are disturbed and dust is generated. Highway runoff would be routed away from the highway via culverts and other water control devices approved in the Storm Water Management Plan (SWMP).

Long Term Water Quality Impacts

Long term water quality impacts include minor increases in impervious surface resulting from tapering of shoulders around bridges and intersection realignments. The net change from intersection realignments is expected to be close to zero.

MITIGATION ASSESSMENT

The Water Quality Assessment of the project has determined that short-term impacts and long-term impacts to the quality of water resources of the area could occur during construction of the Project.

CALTRANS currently plans to store all runnoff within its Right of Way (with trapazoidal ditches) and eventually overflow into Carnadero and Pajaro Creek. A final determination on managing the runoff will be done by the CALTRANS Hydraulics, and the Storm Water Branch. For specific stormwater issues the NPDES/Storm Water Quality Branch could be contacted at (559) 243-3565.

The proposed route adoption alternatives 1 & 2 in the future will include direct construction within the Pajaro River, and the Carnadero Creek. Proposed Alternatives A & B will not cross any waterways, however, they have the potential of having short water quality impacts as stated in Table 1. Management measures and BMPs will be needed to address Water Quality impacts during planning, design, construction, and operational and maintenance stages for alternatives 1, 2, A & B. The total impervious surface area (total impervious surface area includes the build and existing surfaces) for Alternative 1 is estimated to be 232 acres, and for Alternative 2 is estimated to be 201 acres. Route Adoption Alternative 1 and 2 are assumed to have similar water quality impacts as they have approximately same proposed impervious surface area.

The net impervious surface area for Build Alternative A is estimated to be 48 acres, and for Build Alternative B is estimated to be 31.2 acres. The two alternatives are assumed to have similar water quality impacts as they have approximately the same proposed impervious surface area.

Key management measures include the following:

- Protect areas that provide important water quality benefits or are particularly susceptible to erosion or sediment loss.
- Limit land disturbance such as clearing and grading and cut/fill to reduce erosion and sediment loss.
- Limit disturbance of natural drainage features and vegetation.
- Place bridge structures so that sensitive and valuable aquatic ecosystems are protected.
- Prepare and implement an approved SWPPP.
- Ensure proper storage and disposal of toxic material.
- Incorporate pollution prevention into operation and maintenance procedures to reduce pollutant loadings to surface runoff.
- Develop and implement runoff pollution controls for existing road systems to reduce pollutant concentrations and volumes.

- All applicable temporary construction site Best Management Practices will be identified as bid items to be included in the bid package and Storm Water Pollution Prevention Plan for this project.
- During the rainy season, October 15 through April 15, disturbed soil areas will be limited to 5 acres or less.
- Permanent storm water treatment Best Management Practices will be included to treat 100% of the net impervious surfaces in the Caltrans right-of-way.

The assessment of the mitigation measures to avoid or minimize negative impacts of the project on water quality are based on:

- Caltrans project development process,
- Caltrans environmental planning process,
- best management practices (BMP) in the Caltrans Construction Site BMPs Manual,
- Caltrans Standard Specifications,
- Caltrans Standard Special Provisions,
- Caltrans construction inspection and contract enforcement procedures.

Storm water BMPs are selected for each individual project during the production of the SWPPP. The selection of BMPs depends on the specific circumstances and conditions in the project area. BMPs are applied to meet the maximum extent practicable (MEP) and best conventional technology/best available technology (BCT/BAT) requirements and to address compliance with water quality standards. BMPs are described in detail in the Construction Site Best Management Practices (BMPs) Manual (March, 2003).

In the project development phases, plans need to be developed to insure that there will be no detrimental discharge into any body of water. In the construction phase, the contractor has responsibility, as stated in Caltrans' Standard Specifications Section 7-1.01G, to take necessary steps to eliminate potential impacts.

Standard Specifications, Section 7-1.01G requires the construction contractor to implement pollution control practices related to construction projects via a Water Pollution Control Program (WPCP) or a Storm Water Pollution Prevention Plan (SWPPP).

The proposed project is expected to disturb more than one acre of soil, and the following would be required:

1. A Notification of Construction (NOC) is to be submitted to the appropriate RWQCB at least 30 days prior to the start of construction. (The NOC is usually prepared by the Project Engineer and submitted by the Regional Storm Water Coordinator). The NOC form requires a tentative start date and duration, location, description of project,

estimate of affected area, resident engineer (or other construction contact) with telephone number, etc.

2. A Storm Water Pollution Prevention Plan (SWPPP) is to be prepared and implemented during construction to the satisfaction of the Resident Engineer.

3. A Notice of Construction Completion (NOCC) is to be submitted to the RWQCB upon completion of the construction and stabilization of the site. A project will be considered complete when the criteria for final stabilization in the State General Construction Permit is met.

CONCLUSIONS AND RECOMMENDATION

The project would involve construction work within the Pajaro River, and the Carnadero Creek (construction of two new bridges) and has the potential of having short-term but less than significant surface water quality impacts. Water quality impacts from alternatives 1 and 2 expected to be similar. Also water quality impacts for alternatives A & B are expected to be similar.

Mitigative measures like installing a retard fence designed to slow the water velocity would reduce the short term impacts to less than significant. No groundwater impacts are expected from the project. The major potential surface water quality impacts are:

- Increases in sediments, turbidity and total dissolved solids
- Toxicity due to chemical substances originating from construction activities.

By incorporating proper and accepted engineering practices and BMPs, the proposed Improvements Project would not produce significant impacts to water quality during construction or its operation.

If you have any questions, please contact Rajeev L. Dwivedi, at (559) 243-8227.

APPENDIX A

Existing Water Quality Assessment Data

Pajaro River

Water Quality Assessment

Waterbody Data	Value
Approximate Size:	32.16
Unit of Measure:	Miles
RWQCB Region:	3
Calwater Watershed (RBUASPW):	30510030
Year Last Assessed:	1998
Is Waterbody on 303(d) List?	Yes
Assessment Comments:	08/26/98- 12/29/98-CCAMP Characterization - 1998 - Included bioassessment, clam bioaccumulation, sed toxicity and chemistry, water chemistry, chlorophyll a

Beneficial Uses

Beneficial Use	Fully Supporting	Threatened, but Supporting	Partially Supporting	Not Supporting	Not Assessed
Agricultural Supply	0	0	32.16	0	0
AGRICULTURE	0	0	32.16	0	0
AQUATIC LIFE SUPPORT	0	0	32.16	0	0
Cold Freshwater Habitat	0	0	32.16	0	0
Commercial and Sport Fishing (CA)	0	0	32.16	0	0
DRINKING WATER SUPPLY	0	0	32.16	0	0
Fish Migration	0	0	32.16	0	0
Fish Spawning	0	0	32.16	0	0
Groundwater Recharge	0	0	32.16	0	0
Industrial Service Supply	0	0	32.16	0	0

Municipal & Domestic	0	0	32.16	0	0
Non-Contact Recreation	0	0	32.16	0	0
OVERALL USE SUPPORT	0	0	32.16	0	0
Rare & Endangered Species	0	0	32.16	0	0
SECONDARY CONTACT REC	0	0	32.16	0	0
SWIMMABLE	0	0	32.16	0	0
Warm Freshwater Habitat	0	0	32.16	0	0
Water Contact Recreation	0	0	32.16	0	0
Wildlife Habitat	0	0	32.16	0	0

Causes of Impairment

Cause of Impairment	Magnitude
ALGAE	Moderate
Flow alteration	Moderate
MERCURY	Moderate
Metals	Moderate
Nutrients	Moderate
Organic enrichment/Low DO	Moderate
Other habitat alterations	Moderate
Pathogens/Path.Indicators	Moderate
Pesticides	Moderate
Priority organics	Moderate
Salinity/TDS/chlorides	Moderate
Siltation	Moderate
Suspended solids	Moderate
Turbidity	Moderate

Sources of Impairment

Source of Impairment	Magnitude
Agriculture	Moderate
Agriculture-grazing	Slight
Agriculture-irrigation tailwater	Moderate

Agriculture-storm runoff	Moderate
Agriculture-subsurface drainage	Moderate
Channelization	Slight
Construction/Land Development	Moderate
Contaminated Sediments	Moderate
Habitat Modification	Slight
Hydromodification	Slight
Irrigated Crop Production	High
Nonpoint Source	Moderate
Point Source	Slight
Removal of Riparian Vegetation	High
Resource Extraction	Slight
Saltwater Intrusion	Slight
Streambank Modification/Destabilization	High
Urban Runoff/Storm Sewers	Moderate

Total Maximum Daily Load Pollutants

TMDL Pollutant	Source of Pollutant
Nutrients	Agricultural Return Flows
Nutrients	Agriculture
Nutrients	Agriculture-irrigation tailwater
Nutrients	Agriculture-storm runoff
Nutrients	Agriculture-subsurface drainage
Nutrients	Channelization
Nutrients	Irrigated Crop Production
Nutrients	Nonpoint Source
Nutrients	Removal of Riparian Vegetation
Nutrients	Urban Runoff/Storm Sewers
Nutrients	Wastewater - land disposal
Sedimentation/Siltation	Agriculture
Sedimentation/Siltation	Agriculture-storm runoff
Sedimentation/Siltation	Channel Erosion

Sedimentation/Siltation	Channelization
Sedimentation/Siltation	Habitat Modification
Sedimentation/Siltation	Hydromodification
Sedimentation/Siltation	Irrigated Crop Production
Sedimentation/Siltation	Range Land
Sedimentation/Siltation	Removal of Riparian Vegetation
Sedimentation/Siltation	Resource Extraction
Sedimentation/Siltation	Streambank Modification/Destabilization
Sedimentation/Siltation	Surface Mining

Carnadero Creek

Water Quality Assessment

Waterbody Data	Value
Approximate Size:	1.79
Unit of Measure:	Miles
RWQCB Region:	3
Calwater Watershed (RBUASPW):	30530020
Year Last Assessed:	1999
s Waterbody on 303(d) List?	No
Assessment Comments:	02/23/99-

Beneficial Uses

Beneficial Use	Fully Supporting	Threatened, but Supporting	Partially Supporting	Not Supporting	Not Assessed
Agricultural Supply	0	0	0	0	1.79
AGRICULTURE	0	0	0	0	1.79
Aquaculture	0	0	0	0	1.79
AQUATIC LIFE SUPPORT	0	0	0	0	1.79
Cold Freshwater Habitat	0	0	0	0	1.79
Commercial and Sport Fishing (CA)	0	0	0	0	1.79

DRINKING WATER SUPPLY	0	0	0	0	1.79
Estuarine Habitat	0	0	0	0	1.79
FISH CONSUMPTION	0	0	0	0	1.79
Fish Migration	0	0	0	0	1.79
Fish Spawning	0	0	0	0	1.79
Freshwater Replenishment	0	0	0	0	1.79
Groundwater Recharge	0	0	0	0	1.79
Industrial Service Supply	0	0	0	0	1.79
Municipal & Domestic	0	0	0	0	1.79
Navigation	0	0	0	0	1.79
Non-Contact Recreation	0	0	0	0	1.79
OVERALL USE SUPPORT	0	0	0	0	1.79
Preserva.of Bio.Hab.of Spec.Signif.	0	0	0	0	1.79
Rare & Endangered Species	0	0	0	0	1.79
SECONDARY CONTACT REC	0	0	0	0	1.79
SWIMMABLE	0	0	0	0	1.79
Warm Freshwater Habitat	0	0	0	0	1.79
Water Contact Recreation	0	0	0	0	1.79
Wildlife Habitat	0	0	0	0	1.79

Causes of Impairment

No Causes of Impairment are Currently Listed

Sources of Impairment

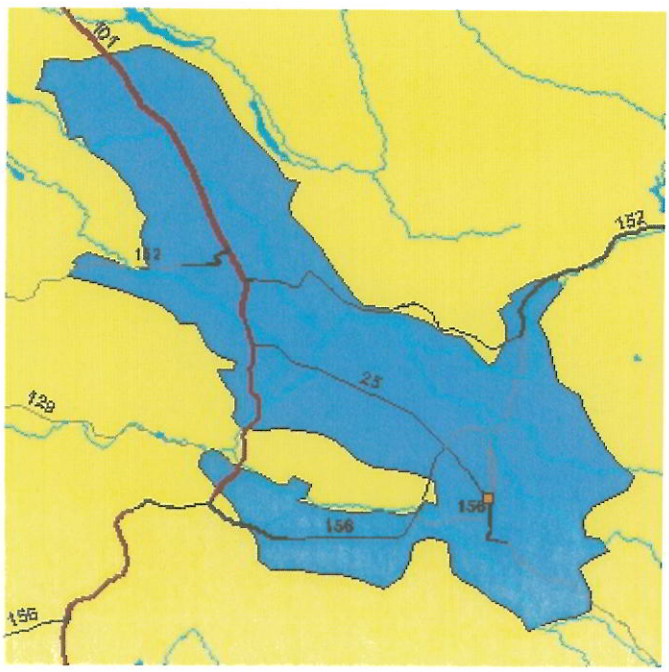
No Sources of Impairment are Currently Listed

Total Maximum Daily Load Pollutants

No TMDLs are Currently Listed

APPENDIX B

Hydrologic and TMDL Information for Hydrologic Sub-Area 305.30 - Pajaro River



HSA Information

Hydrologic Unit	PAJARO RIVER
Hydrologic Area	South Santa Clara Valley
Hydrologic Sub-Area	
Watershed Area (acres)	126996
Average Annual Rainfall (inches)	17.3

Caltrans Storm Water Loads for HSA 305.30

Constituent Group	Caltrans Annual Loads from HSA 305.30 (Kg/year)
Conventionals	
Total Dissolved Solids	62556
Total Suspended Solids	61799
Disolved Organic Carbon	13677
Total Organic Carbon	14795
Nutrients	
Ammonia	788
Nitrate as Nitrogen	788
Total Kjeldahl Nitrogen	1520
Total Phosphorus	213
Dissolved Ortho-Phosphate	81
Dissolved Metals	
Arsenic	0.82
Cadmium	0.15
Chromium	1.33
Copper	11.52
Lead	1.99
Nickel	2.59
Zinc	64.58
Total Metals	
Arsenic	2.6
Cadmium	0.42
Chromium	5.96
Copper	24.81
Lead	16.19
Nickel	6.21
Zinc	180.82

The estimated annual average loads from Caltrans facilities in a HSA are in this table. These loads are for preliminary planning purposes and for scenario comparisons. The loads are from untreated impervious surfaces only. Unpaved areas along highways right-of-ways are not included in the calculations.

State of California
DEPARTMENT OF TRANSPORTATION

Business, Transportation and Housing Agency

Memorandum

Flex your power!
Be energy efficient!

To: Rajeev Dwivedi
Water Quality Specialist
Central Region Environmental Engineering Branch

Date: April 8, 2010

File: 05-48540
05-SBt-25 (PM 51.5/60.1)
04-SCl-25 (PM 0.0/2.6)
and 05-SBt-156 (PM R10.5/R12.2)

From: G. William 'Trais' Norris III
Branch Chief
Sierra Pacific Environmental Analysis Branch

Subject: Change to Purpose Statement

The Purpose statement for the SR25 Widening and Route Adoption project has changed. The new wording is

The purpose of the proposed route adoption project is to:

- Select a corridor for State Route 25 between Hollister and Gilroy that will accommodate existing and future travel demand.
- Facilitate local and regional land use planning by identifying future right-of-way needed for the State Route 25 corridor.

The purpose of the proposed build project is to:

- Improve traffic flow and reduce delays on State Route 25 between San Felipe Road in Hollister and Hudner Lane in San Benito County.
- Increase capacity along State Route 25 between San Felipe Road in Hollister and Hudner Lane in rural San Benito County.

The new purpose does not affect the conclusions of the Water Quality Report for this project last revised in August 2009.

c: Project file

California Department of Transportation
District 6, Fresno

WATER QUALITY ASSESSMENT REPORT

For

Route 25 Widening Project from Hollister to Gilroy
San Benito and Santa Clara Counties

SBT – 25- PM 51.5/60.1
SCL – 25 – PM 0.0/2.56
EA 05-485400

August 27, 2009

Ken J Romero
Chief
Central Region Environmental Engineering Branch

OBJECTIVES

The objective of this water quality assessment (WQA) report is to evaluate potential impacts of the proposed project on water quality. The WQA identifies impacts on surface water and groundwater resources resulting from this project, and describes mitigation measures (if necessary) to reduce any significant impacts to less than significant levels. This technical report will be incorporated into a joint environmental document, to be prepared under the guidelines of the National Environmental Policy Act (NEPA) and the California Environmental Quality Act (CEQA).

The WQA determines if project induced effects would have a significant impact on water quality. Significance is based on whether discharges to receiving waters would cause exceedances of water quality objectives or have an adverse impact to the beneficial uses identified by the state's lead agency, the Regional Water Quality Control Board (RWQCB).

This report describes the environmental and regulatory setting, the environmental impacts of the project, and measures to minimize adverse impacts on hydrology and water quality.

PROJECT LOCATION AND DESCRIPTION

The California Department of Transportation (Caltrans), in cooperation with San Benito Council of Governments and Santa Clara Valley Transportation Authority is evaluating the conversion of 11.2 miles of the existing State Route 25 two-lane conventional highway to a four-lane expressway in San Benito and Santa Clara counties. This Draft Environmental Impact Report and Environmental Impact Statement includes two proposed projects: (1) a TIER I route adoption and (2) a proposed construction project within the limits of the proposed route adoption.

The route adoption study extends from San Felipe Road within the City of Hollister (post mile 51.5) to the San Benito/Santa Clara County line (post mile 60.1) and on to the end of State Route 25 at U.S. 101 south of the city of Gilroy (post miles 0.0 to 2.6 in Santa Clara County).

The proposed construction project limits extend 3.8 miles in San Benito County, from San Felipe Road in Hollister to just west of Hudner Lane (post miles 51.5 to 55.3). The existing 2-lane conventional highway would be replaced by a 4-lane expressway. State Route 25, a two-lane conventional highway, runs northwest through the relatively flat terrain of the Hollister Valley, terminating at U.S. 101 after crossing the Pajaro River and Carnadero Creek. Agriculture dominates the surrounding landscape, and farmsteads and houses are scattered along the length of the study area. Residences, retail businesses, and agriculture-related commercial operations are more concentrated at both ends of the route adoption study area, on the outskirts of Gilroy and Hollister.
The purpose of the proposed project is to:

- Select a route adoption corridor for State Route 25 between Hollister and Gilroy for planning purposes.
- Improve traffic flow, reduce delays, and enhance the movement of goods on State Route 25 between San Felipe Road in Hollister and Hudner Lane in San Benito County.
- Increase capacity along State Route 25 between San Felipe Road in Hollister and Hudner Lane in San Benito County.
-

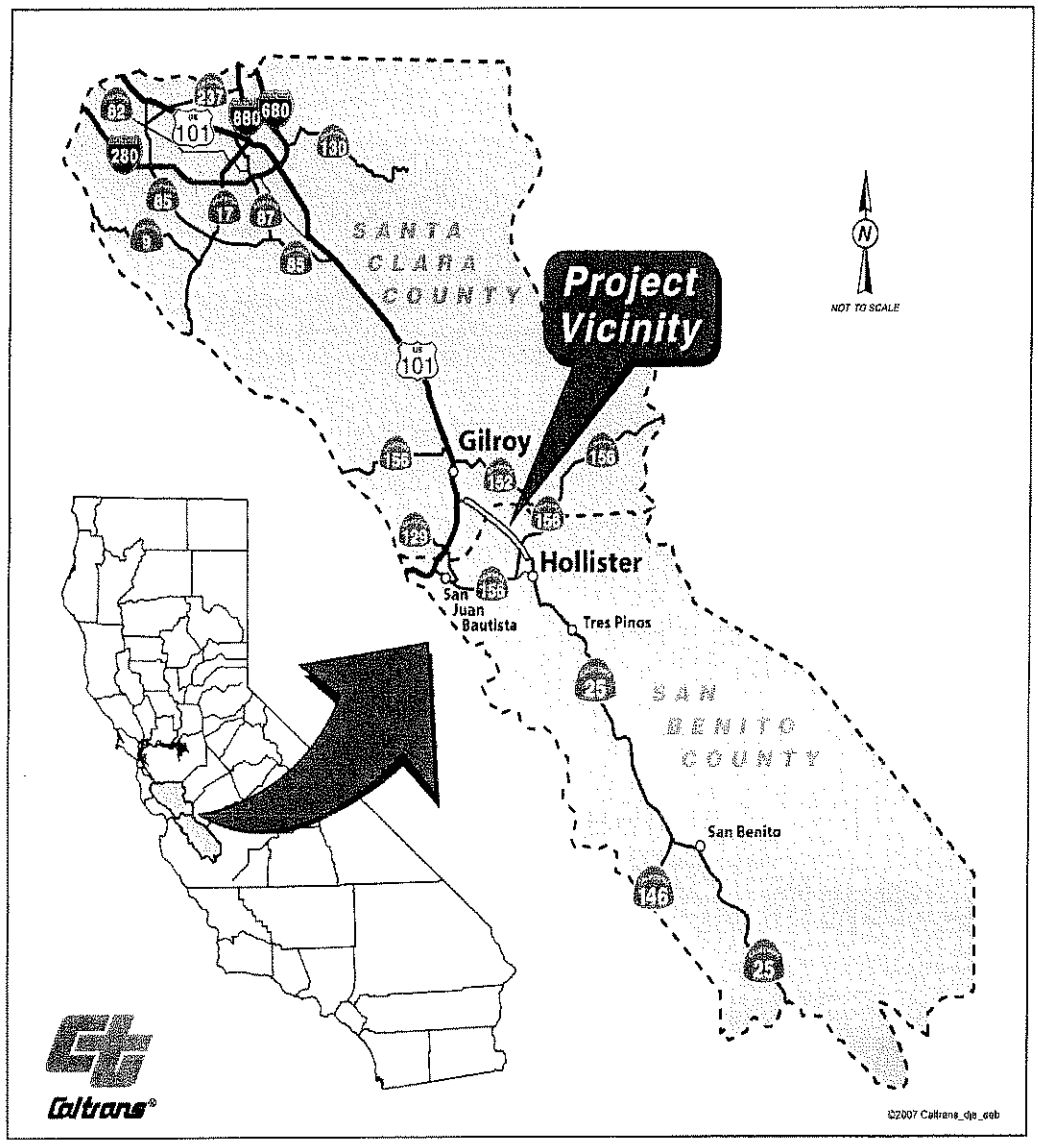
Slow moving farm equipment, trucks, and local and commuter traffic share this two-lane roadway. An increasing number of vehicles travel this stretch of State Route 25 and, during peak commute hours, the roadway is congested. Traffic flow is delayed by vehicles turning onto and/or out of the many driveways and local roads, affecting the flow of the faster moving vehicles. Many commuters whose destination is beyond the local area take local roads (Bloomfield Road, Frazier Lake Road, and Shore Road) as shortcuts between State Route 25 and State Route 156 and also State Route 152. Significant commercial truck traffic travels through the area on State Route 25, and is subject to delays as well. A new route alignment should be adopted so that the appropriate area for a future expressway can incorporated into the San Benito and Santa Clara County general plans now, before future development occurs along this stretch of highway.

Both of the route adoption alternatives, Alternatives 1 and 2, are 11.2 miles long, and share the same alignment from approximately ½ mile south of Shore Road (post mile 56.1) in San Benito County to U.S. 101 in Santa Clara County (See Figure 1.2). Between post mile 56.1 in San Benito County and the southern end of the proposed project at San Felipe Road, the two alignment alternatives separate: Alternative 1 proposes to align the future four-lane expressway generally to the east (or north) of the existing two-lane north/south highway while Alternative 2 would align mostly to the west (or south) of the existing two-lane highway. The alignments would be wide enough to accommodate a future four-lane expressway with a 62 foot median (342 feet) and frontage roads on one or both sides. The alignments would also be wide enough to accommodate a future interchange near the existing intersection of State Route 25 and State Route 156 and a future State Route 25/U.S. 101 interchange north of the existing interchange. Other improvements include new bridges over Carnadero Creek and the Pajaro River, and overcrossings of the Union Pacific Railroad Hollister branch line and the Union Pacific main line just east of U.S. 101.

Both build alternatives, Alternative A and Alternative B would extend 3.8 miles in San Benito County, from San Felipe Road (post mile 51.5) to just west of Hudner Lane (post mile 55.3). Unlike the route adoption alternatives, the build alternatives propose a realigned and widened at-grade intersection at State Route 25 and State Route 156 instead of an interchange. Both construction alternatives would transition back to the existing two-lane highway just west of Hudner Lane.

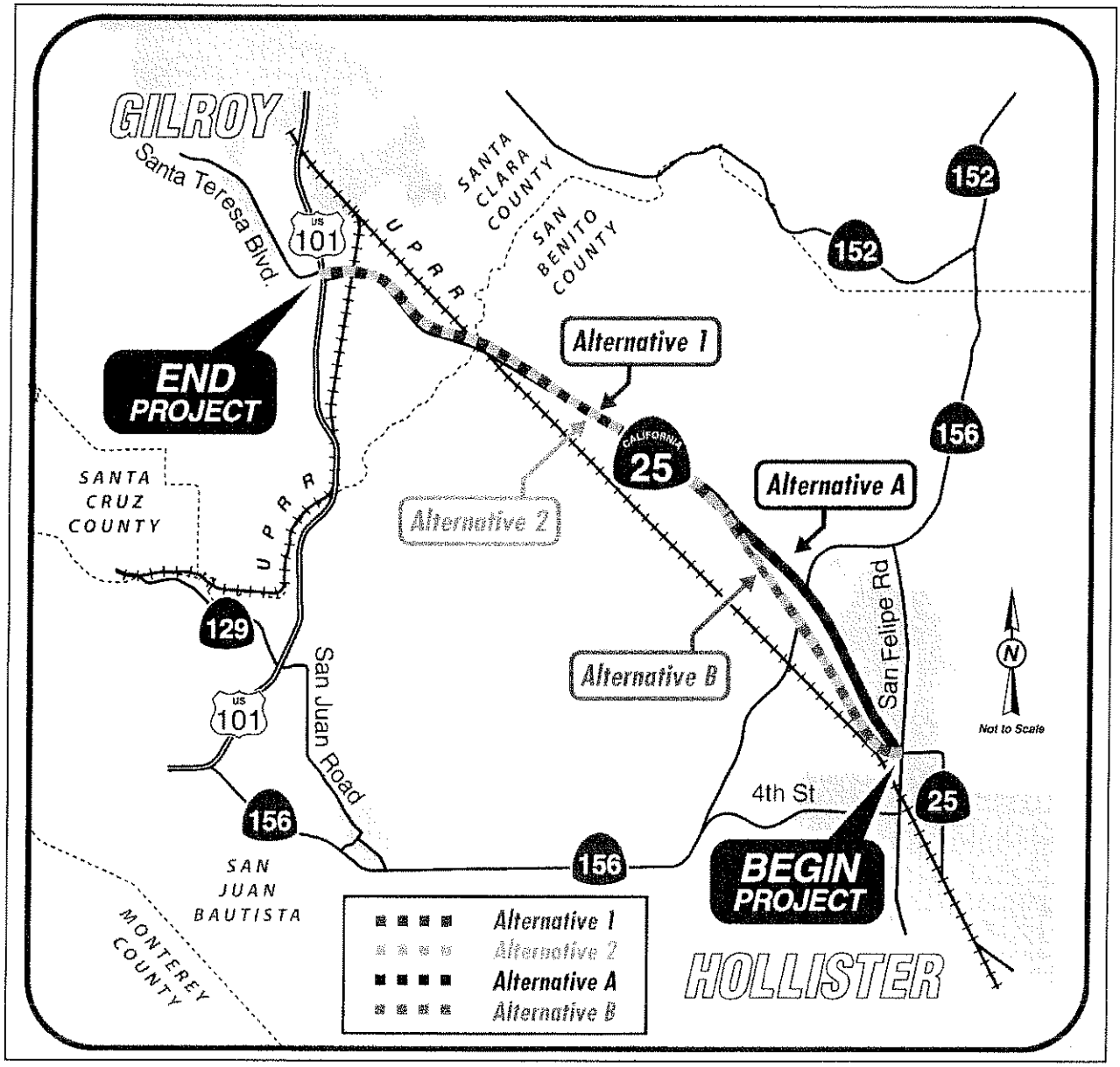
The No-Action Alternative would result in no action being taken, and no further improvements would be made to State Route 25 within the route adoption limits other than the State Route 25 Safety and Operations Enhancement Project. It is anticipated that work will begin early in 2009 and will be completed by early 2010. Work will begin just south of Hudner Lane (post mile 55.1) and end just south of the Union Pacific Railroad crossing (post mile 60.0) in San Benito County. Roadway widening will consist of two 10-foot outside shoulders, two 12-foot travel lanes, two 5-foot inside shoulders and placement of a temporary concrete median barrier. Rumble strips will be installed on all inside and outside shoulders. The Hudner Lane and Shore Road intersections will be improved.

FIGURE 1 - PROJECT VICINITY MAP



"Caltrans improves mobility across California"

FIGURE 2 – PROJECT LOCATION MAP



Approach to Water Quality Assessment Report

The water quality assessment (WQA) evaluates the potential impacts of the proposed project on water quality. The WQA identifies impacts on surface water and groundwater resources resulting from the project, and describes procedures, and practices that would

minimize the project's impacts; and describes mitigation measures (if necessary) to reduce any significant impacts to less than significant levels.

As stated above, the WQA determines whether project induced effects would have a significant impact on water quality. Significance is based on whether discharges to receiving waters would cause exceedances of water quality objectives or have an adverse impact to the beneficial uses identified by the RWQCB.

One of the most critical steps in identifying and controlling nonpoint source (NPS) pollution is to correctly characterize the existence of a water quality problem. The water quality problem may be defined either as a threat or impairment to the designated use of water resources. Clear WQA should lead to the following:

- Defining the water resource(s) of concern;
- Delineating the water use impairments and identifying location and history;
- Stating the pollutant(s), the pollutant sources, and significance of the source
- Identifying and recommending best management practices (BMPs) or treatment methods to mitigate the identified concerns

Based on the descriptive data compiled on water resources of the project and mindful of the regulatory context, standards for water quality impacts were developed. CEQA, and Caltrans storm water quality guidelines were consulted in the preparation of the standards to determine water quality impacts. Hydrological impacts were evaluated by examining the potential impacts of the project on the surface and groundwater hydrology of the project area.

Standards of Water Quality Impact

The WQA determines whether the project-induced effects would have adverse impacts on water quality. Adverse impact is based on whether discharges to receiving waters would cause exceedances of water quality objectives or would impair the beneficial uses identified by the State of California. For the purpose of this WQA, an impact is considered adverse if the proposed project would:

- Violate any water quality standards or waste discharge requirements;
- Substantially alter the existing drainage pattern of the site or area, including alteration of a stream or river in a manner that would result in substantial erosion or siltation on or off-site;
- Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increasing the rate or amount of surface runoff, which would result in flooding on or off-site;
- Create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems, or cause substantial additional sources of polluted runoff;
- Otherwise substantially degrade water quality;
- Place within a 100-year flood hazard area structures, which would impede or redirect flood flows.

AFFECTED ENVIRONMENT

The quality of water in an area depends upon several factors, including topography, geology, soils, surface and groundwater hydrology, land use, climate and precipitation. Following is a brief description of these general characteristics in the project area and surroundings.

Regional Geology

The major portion of the project lies in San Benito County and a minor portion on the north in Santa Clara County. The area consists topographically of a long, narrow valley termed as the Pajaro Valley Basin flanked on each side by chains of the Coastal Mountains.

Structurally, the area shows two mountain ranges diverse geologic formation, striking northwest and separated by a narrow valley filled with younger formations and detritus. Traversing the valley is the San Andreas Fault Zone.

The Pajaro Basin is bounded to the west by Monterey Bay and to the east by the San Andreas Fault, adjacent pre-Quaternary formations, and the Santa Cruz Mountains beyond.

Water Resources

This section deals with the surface water and groundwater present in the area, and discusses its quality from both a regional and project level perspective.

Surface Water

The major surface waters of the area are the Pajaro River, and the Carnadero Creek. The project is located within the Pajaro River Hydrologic Unit 305.30 hydrologic area South Santa Clara Valley.

The Pajaro River is the main waterbody in this area (known to the RWQCB as Hydrologic Unit 5 and carrying a total area of 844,972 acres) and has its final outfall in Monterey Bay. It drains an area of approximately 1,300 square miles of the coastal plains and mountains of Central California. A tributary of Monterey Bay, the watershed drains portions of Santa Cruz, Monterey, Santa Clara and San Benito Counties.

Parts of the Santa Clara Valley watershed are in the FEMA 100 year flood plain termed as Soap Lake Floodplain (Figures 3 and 4).

Carnadero Creek flowed steadily, albeit with little velocity, within its rocky banks. The bottom varies in width from approximately 18' to 3' and contains mostly rocks with just minimal amounts of sediments. It drains into the Pajaro River.

Figure 3. Topographic map showing boundaries of 100 year floodplain

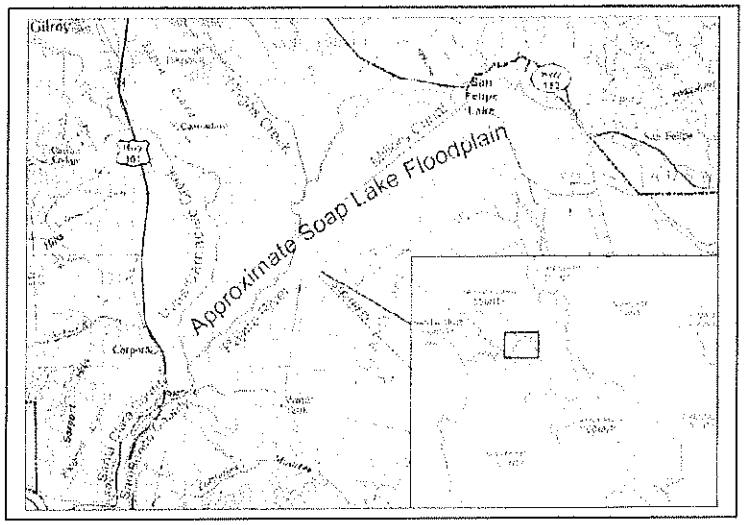
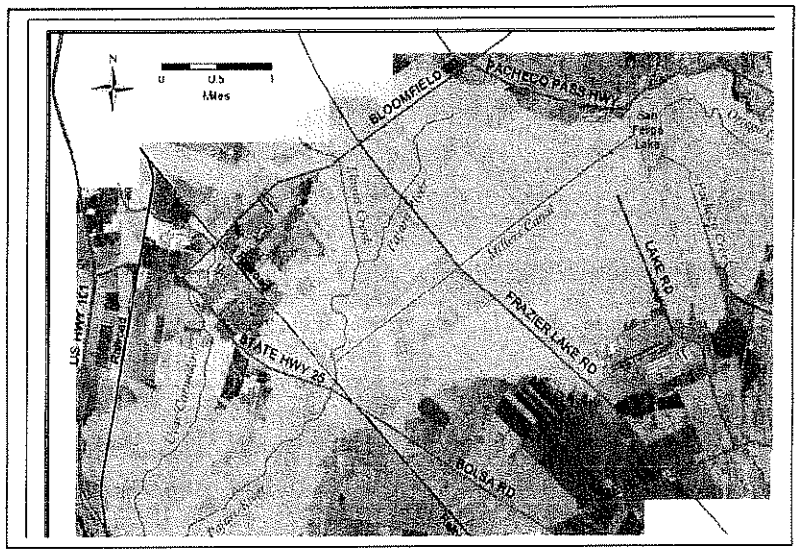


Figure 4. Aerial photo showing boundaries of 100 year floodplain



Surface Water Quality

Regional analysis of surface water quality included in the Basin Plan prepared by the California Regional Water Quality Control Board indicated that the following were the major issues relating to degredation of water quality in the area:

- Toxicity to Aquatic Organisms in Streams Attributed to Pesticides
- Potential for Adverse Effects on Biota from Pesticides in Bed Sediment and Biota
- Nutrient Concentrations
- Mineralization
- Agricultural Pollutants
- Abandoned Mines
- Urban Pollutants

The Pajaro River has been listed as one of the major waterbodies targeted for investigation due to sedimentation, heavy metals, and nitrates. The water quality of the Pajaro River is considered as being impaired under Section 303 (d) of the Clean Water Act.

The identified pollutants include, pesticides/herbicides, electrical conductivity, and urban waste. Appendix A provides a detailed list of pollutants and their sources. The Pajaro River is unable to meet current Total Maximum Daily Loads (TMDLs) for sedimentation. Appendix B shows the Water Quality Standards, and the TMDLs for the Basin.

In order to address the TMDLs not being met, Soap Lake is being restored to enable the City of Watsonville to meet promulgated goals and to provide additional flood protection. Soap Lake is a floodplain that sits between San Felipe Lake and SR 101. San Felipe Lake is located at the headwaters of the Pajaro River just east of Soap Lake. The lake is also the terminus of Pacheco Creek and the Santa Ana/Los Viboras/Dos Pichachos Creeks system.

At high storage levels the two lakes could become one large flood control storage facility. For smaller flood events, Soap Lake and San Felipe Lake are two separate storage bodies. However, the relative water surface elevations in the two lakes control the discharge between the lakes via the Miller Canal. As the elevations become more identical the discharge between the lakes is reduced until the two lakes combine water surface elevations and become one large flood storage area.

The development of this lake is to augment the Lower Pajaro River levee flood control project, which protects the town of Watsonville from flood events and to assist in meeting TMDL goals. A Joint Power Authority has been formed (Pajaro River Watershed Flood Prevention Authority) between the four counties and four water districts within the Pajaro River Watershed. The project intends to minimize direct discharge of stormwater runoff into the lower Pajaro River, thus assisting in managing the reduction of TMDLs to the River.

The other water body, Carnadero Creek, appears to have generally good water quality, and is not included in the 303 (d) list as being impaired. No TMDLs have been identified for this waterbody.

Groundwater

The project is located in the Pajaro Valley Groundwater Basin. The Pajaro River streamflow and local runoff are the two sources of surface water available for groundwater recharge. Long-term groundwater levels in the areas have declined in the last 50 years due to excessive seasonal pumping.

Almost all of the water used to support the huge agricultural industry in the watershed comes from underlying aquifers. As a result, demand has exceeded supply in many parts of the watershed, resulting in overdraft and seawater intrusion. In addition, there is widespread contamination of the upper aquifers by nitrates. The conclusions drawn in the Basin Plan indicates that the primary source of the contamination is agriculture.

Nitrate contamination of ground water has been identified as a serious water quality problem in the Ground Water Basin for many years. Agricultural wells indicate the presence of nitrates in ground water throughout the Basin. Although septic systems, improper handling and storage of farm chemicals, and relatively small-scale confined animal facilities have most likely contributed to the nitrate loading, there is general agreement that crop application is the primary nitrate source.

As of 1993, average nitrate concentrations in the 180 foot aquifer approached or exceeded the maximum drinking water standard (45 mg/L nitrate as $\underline{NO_3^-}$) in three of the Basin's four hydrologic sub-basins. Between 1987 and 1993, average nitrate concentrations increased in the second-deepest regional (400-foot) aquifer. This signifies that nitrate contamination is spreading from the uppermost regional (180-foot) aquifer to a deeper zone that had been characterized by higher quality water.

Several agricultural groundwater wells were found throughout the alignments of the project during a site visit. Some of these wells had the pumps and power removed while others seemed active. These wells, some of which will be in the alternative alignments will require proper abandonment; however, local water agencies or counties should be consulted prior to abandonment to ensure that none of the wells will be used as barrier wells to protect against saltwater intrusion.

Water Quality Objectives and Beneficial Uses

The State Water Resource Control Board (SWRCB) is the designated lead agency for all federal Clean Water Act (CWA) powers delegated to the state by the US EPA. The Regional Water Quality Control Board (RWQCB) adopts Water Quality Control Plans (Basin Plans) and issue NPDES permits for their respective regions. Each Basin Plan WQCP establishes regional water quality objectives to ensure reasonable protection of California's surface and ground water, while recognizing the possibility of changing the character of the water to some degree without unreasonably affecting beneficial uses. Environmental as well as economic concerns are considered in setting these water quality objectives. The Basin plans and guidelines must be approved by the SWRCB.

The proposed project is located within the jurisdiction of the RWQCB, Central Coast Region. The RWQCB has adopted the Water Quality Control Plan for Central Coast Region, Fourth Edition. This plan defines existing and potential beneficial uses.

The Central Coast RWQCB has established water quality objectives for the protection of surface and groundwater in the region. Water quality objectives consist of both narrative and numerical goals and are established to preserve past, present, and probable future beneficial uses of regional water bodies. These uses are Municipal and domestic Supply (MUN), Agricultural (AGR), Industry Process Supply (PRO), Water Contact Recreation (REC-1), Non-Contact Water Recreation (REC-2), and Warm Freshwater Habitat (WARM), Wildlife Habitat (WILD), Migratory Habitat (MGR) and Spawning for Warm Freshwater species.

The beneficial uses for the Pajaro River and the Carnadero Creek per the Basin Plan are shown in Appendix A.

Regulations

Surface water and groundwater resources, and their associated water quality, are regulated in California through many different applicable laws, regulations, and ordinances administered by local, state, and federal agencies. These regulations ensure that the

hydrologic characteristics of surface water and groundwater resources are considered so that existing beneficial uses they provide are not impaired. All project activities need to be in compliance *with Federal Clean Water Act, Porter-Cologne Water Quality Control Act (California Water Code), and the Water Quality Control Plan (Basin Plan) for the California RWQCB, Central Coast Region.*

Permits

- **Section 401** – State Water Resources Control Board Water Quality Certification

Section 401 of the Clean Water Act requires that any applicant for a federal permit to conduct any activity, including the construction or operation of a facility, which may result in the discharge of any pollutant, must obtain certification from the State. For the purposes of this project, the Regional Water Quality Control Board administers Section 401. Since the project involves direct construction with the Pajaro River and Carnadero Creek, a water quality certification will be required.

- **Section 402** - Regional Water Quality Control Board NPDES Permit.

In California, US EPA has delegated NPDES permitting authority to the SWRCB and the nine RWQCBs. The SWRCB has issued a Statewide NPDES permit and Waste Discharge Requirements (WDRs) to Caltrans for storm water and non-storm water runoff.

All projects are covered by the Caltrans Statewide NPDES Permit No. CAS000003 (SWRCB No. 99-06-DWQ). Under this permit the required Statewide Storm Water Management Plan directs that potential impacts to water quality (erosion, discharges of hazardous material, disruption of natural drainage patterns, etc.) be addressed in the planning, design, and construction phases

- **U.S. Army Corps of Engineers 404** -Dredge/Fill Permitting

Section 404 of the Clean Water Act established a permit program to regulate the discharge of dredged material into waters of the United States. The program's scope also includes the regulation of discharges of dredge or fill material into wetlands adjacent to national waters. The permit program is administered by the Secretary of the Army through the U.S. Army Corps of Engineers.

A 404 Permit will be required for this project.

- **California Department of Fish and Game** 1601 Streambed Alteration permit will be required.

WATER QUALITY IMPACTS

This section discusses surface water and groundwater quality impacts that could result from implementation of the project. The previous sections have described the existing water quality conditions, and the major issues/sources of the water quality impairment. One of the significant sources, amongst several discussed above is runoff from roads, highways, and bridges.

This report assesses the existing water quality and the regulatory setting and whether project induced effects would have a significant impact on water quality. Significance is based on whether discharges to receiving waters would cause exceedances of water quality objectives or have an adverse impact to the beneficial uses identified by the state lead agency, the Regional Water Quality Control Board.

Potential sources of water pollution associated with this project include runoff containing sediment from soil erosion, petroleum and wear products from motor vehicle operation, landscaping chemicals and hazardous materials spilled in highway accident. Transport of these materials off-site would usually occur from rainfall runoff. The following will discuss in brief the type of pollutants the Caltrans project could generate that may have the potential to degrade existing water quality.

Contaminants in runoff pollution from roads, highways, and bridges include:

Sediment: Sediment is produced when soil particles are eroded from the land and transported to surface waters. Natural erosion usually occurs gradually because vegetation protects the ground. When land is cleared or disturbed to build a road or bridge, however, the rate of erosion increases. The vegetation is removed and the soil is left exposed, to be quickly washed away in the next rain. Erosion around bridge structures, road pavements, and drainage ditches can damage and weaken these structures.

Other pollutants such as heavy metals and pesticides adhere to sediment and are transported with it by wind and water. These pollutants degrade water quality and can harm aquatic life by interfering with photosynthesis, respiration, growth, and reproduction.

Oils and Grease: Oils and grease are leaked onto road surfaces from car and truck engines, spilled at fueling stations, and discarded directly onto the pavement or into storm sewers instead of being taken to recycling stations. Rain transports these pollutants directly to surface waters.

Table 1 Water Quality Impact For Proposed Alternatives

Water Quality Impact	Alternative 1	Alternative 2	Alternative A	Alternative B	No Action Alternative
Site Topography	Short-Term	Short-Term	Short-Term	Short-Term	None
Vegetal Cover	Short-Term	Short-Term	Short-Term	Short-Term	None
Drainage or Runoff Patterns	Short-Term	Short-Term	Short-Term	Short-Term	None
Soil Erosion	Short-Term	Short-Term	Short-Term	Short-Term	None
Floodplain Area	Short-Term	Short-Term	None	None	None
Groundwater	None	None	None	None	None
Temperature	None	None	None	None	None
Turbidity	Short-Term	Short-Term	None	None	None
Dissolved Oxygen	Short-Term	Short-Term	None	None	None
Nutrients (primarily nitrogen and phosphorous)	Short-Term	Short-Term	Short-Term	Short-Term	None
Organic and Inorganic Chemicals	Short-Term	Short-Term	Short-Term	Short-Term	None
Alkalinity and pH	Short-Term	Short-Term	None	None	None

Short-Term Water Quality Impacts

Short-term impacts to surface water quality could occur during construction of this project. The primary impacts would occur from demolition, exposure to loose soil during excavation, grading, and filling activities during construction. Suspended solids, dissolved solids and organic pollutants in surface water runoff (agricultural sources) could increase as nearby soils are disturbed and dust is generated. Highway runoff would be routed away from the highway via culverts and other water control devices approved in the Storm Water Management Plan (SWMP).

Long Term Water Quality Impacts

Long term water quality impacts include minor increases in impervious surface resulting from tapering of shoulders around bridges and intersection realignments. The net change from intersection realignments is expected to be close to zero.

MITIGATION ASSESSMENT

The Water Quality Assessment of the project has determined that short-term impacts and long-term impacts to the quality of water resources of the area could occur during construction of the Project.

CALTRANS currently plans to store all runnoff within its Right of Way (with trapazoidal ditches) and eventually overflow into Carnadero and Pajaro Creek. A final determination on managing the runoff will be done by the CALTRANS Hydraulics, and the Storm Water Branch. For specific stormwater issues the NPDES/Storm Water Quality Branch could be contacted. At (559) 243-3565.

The proposed route adoption alternatives 1 & 2 in the future will include direct construction within the Pajaro River, and the Carnadero Creek. Proposed Alternatives A & B will not cross any waterways, however, they have the potential of having short water quality impacts as stated in Table 1. Management measures and BMPs will be needed to address Water Quality impacts during planning, design, construction, and operational and maintenance stages for alternatives 1, 2, A & B. The total impervious area (total surface includes the build and existing surfaces) for Alternative 1 is estimated to be 232 acres, and for Alternative 2 is estimated to be 244 acres. Alternative 1 and 2 are assumed to have similar water quality impacts as they have approximately same proposed surface impervious area.

The total impervious area for Alternative A is estimated to be 48 acres, and for Alternative B is estimated to be 54 acres. The two alternatives are assumed to have similar water quality impacts as they have approximately same proposed surface impervious area.

Key management measures include the following:

- Protect areas that provide important water quality benefits or are particularly susceptible to erosion or sediment loss.
- Limit land disturbance such as clearing and grading and cut/fill to reduce erosion and sediment loss.
- Limit disturbance of natural drainage features and vegetation.
- Place bridge structures so that sensitive and valuable aquatic ecosystems are protected.
- Prepare and implement an approved SWPPP.
- Ensure proper storage and disposal of toxic material.
- Incorporate pollution prevention into operation and maintenance procedures to reduce pollutant loadings to surface runoff.
- Develop and implement runoff pollution controls for existing road systems to reduce pollutant concentrations and volumes.

- All applicable temporary construction site Best Management Practices will be identified as bid items to be included in the bid package and Storm Water Pollution Prevention Plan for this project.
- During the rainy season, October 15 through April 15, disturbed soil areas will be limited to 5 acres or less.
- Permanent storm water treatment Best Management Practices will be included to treat 100% of the net impervious surfaces in the Caltrans right-of-way.

The assessment of the mitigation measures to avoid or minimize negative impacts of the project on water quality are based on:

- Caltrans' project development process,
- Caltrans environmental planning process,
- best management practices (BMP) in the Caltrans Construction Site BMPs Manual,
- Caltrans Standard Specifications,
- Caltrans Standard Special Provisions,
- Caltrans construction inspection and contract enforcement procedures.

Storm water BMPs are selected for each individual project during the production of the SWPPP. The selection of BMPs depends on the specific circumstances and conditions in the project area. BMPs are applied to meet the maximum extent practicable (MEP) and best conventional technology/best available technology (BCT/BAT) requirements and to address compliance with water quality standards. BMPs are described in detail in the Construction Site Best Management Practices (BMPs) Manual (March, 2003).

In the project development phases, plans need to be developed to insure that there will be no detrimental discharge into any body of water. In the construction phase, the contractor has responsibility, as stated in Caltrans' Standard Specifications Section 7-1.01G, to take necessary steps to eliminate potential impacts.

Standard Specifications, Section 7-1.01G requires the construction contractor to implement pollution control practices related to construction projects via a Water Pollution Control Program (WPCP) or a Storm Water Pollution Prevention Plan (SWPPP).

The proposed project is expected to disturb more than one acre of soil, and the following would be required:

1. A Notification of Construction (NOC) is to be submitted to the appropriate RWQCB at least 30 days prior to the start of construction. (The NOC is usually prepared by the Project Engineer and submitted by the Regional Storm Water Coordinator). The NOC form requires a tentative start date and duration, location, description of project,

estimate of affected area, resident engineer (or other construction contact) with telephone number, etc.

2. A Storm Water Pollution Prevention Plan (SWPPP) is to be prepared and implemented during construction to the satisfaction of the Resident Engineer.

3. A Notice of Construction Completion (NOCC) is to be submitted to the RWQCB upon completion of the construction and stabilization of the site. A project will be considered complete when the criteria for final stabilization in the State General Construction Permit is met.

CONCLUSIONS AND RECOMMENDATION

The project would involve construction work within the Pajaro River, and the Carnadero Creek (construction of two new bridges) and has the potential of having short-term but less than significant surface water quality impacts. Water quality impacts from alternatives 1 and 2 expected to be similar. Also water quality impacts for alternatives A & B are expected to be similar.

Mitigative measures like installing a retard fence designed to slow the water velocity would reduce the short term impacts to less than significant. No groundwater impacts are expected from the project. The major potential surface water quality impacts are:

- Increases in sediments, turbidity and total dissolved solids
- Toxicity due to chemical substances originating from construction activities.

By incorporating proper and accepted engineering practices and BMPs, the proposed Improvements Project would not produce significant impacts to water quality during construction or its operation.

CALTRANS is in the process of designing hydraulic and stormwater management issues. Once a final determination is made, this water quality report will be amended to reflect the change in scope of design.

If you have any questions, please contact Rajeev L. Dwivedi, at (559) 243-8227.

APPENDIX A

Existing Water Quality Assessment Data

Pajaro River

Water Quality Assessment

Waterbody Data	Value
Approximate Size:	32.16
Unit of Measure:	Miles
RWQCB Region:	3
Calwater Watershed (RBUASPW):	30510030
Year Last Assessed:	1998
Is Waterbody on 303(d) List?	Yes
Assessment Comments:	08/26/98- 12/29/98-CCAMP Characterization - 1998 - Included bioassessment, clam bioaccumulation, sed toxicity and chemistry, water chemistry, chlorophyll a

Beneficial Uses

Beneficial Use	Fully Supporting	Threatened, but Supporting	Partially Supporting	Not Supporting	Not Assessed
Agricultural Supply	0	0	32.16	0	0
AGRICULTURE	0	0	32.16	0	0
AQUATIC LIFE SUPPORT	0	0	32.16	0	0
Cold Freshwater Habitat	0	0	32.16	0	0
Commercial and Sport Fishing (CA)	0	0	32.16	0	0
DRINKING WATER SUPPLY	0	0	32.16	0	0
Fish Migration	0	0	32.16	0	0
Fish Spawning	0	0	32.16	0	0

Groundwater Recharge	0	0	32.16	0	0
Industrial Service Supply	0	0	32.16	0	0
Municipal & Domestic	0	0	32.16	0	0
Non-Contact Recreation	0	0	32.16	0	0
OVERALL USE SUPPORT	0	0	32.16	0	0
Rare & Endangered Species	0	0	32.16	0	0
SECONDARY CONTACT REC	0	0	32.16	0	0
SWIMMABLE	0	0	32.16	0	0
Warm Freshwater Habitat	0	0	32.16	0	0
Water Contact Recreation	0	0	32.16	0	0
Wildlife Habitat	0	0	32.16	0	0

Causes of Impairment

Cause of Impairment	Magnitude
ALGAE	Moderate
Flow alteration	Moderate
MERCURY	Moderate
Metals	Moderate
Nutrients	Moderate
Organic enrichment/Low DO	Moderate
Other habitat alterations	Moderate
Pathogens/Path Indicators	Moderate
Pesticides	Moderate
Priority organics	Moderate
Salinity/TDS/chlorides	Moderate
Siltation	Moderate
Suspended solids	Moderate
Turbidity	Moderate

Sources of Impairment

Source of Impairment	Magnitude
Agriculture	Moderate
Agriculture-grazing	Slight
Agriculture-irrigation tailwater	Moderate
Agriculture-storm runoff	Moderate
Agriculture-subsurface drainage	Moderate
Channelization	Slight
Construction/Land Development	Moderate
Contaminated Sediments	Moderate
Habitat Modification	Slight
Hydromodification	Slight
Irrigated Crop Production	High
Nonpoint Source	Moderate
Point Source	Slight
Removal of Riparian Vegetation	High
Resource Extraction	Slight
Saltwater Intrusion	Slight
Streambank Modification/Destabilization	High
Urban Runoff/Storm Sewers	Moderate

Total Maximum Daily Load Pollutants

TMDL Pollutant	Source of Pollutant
Nutrients	Agricultural Return Flows
Nutrients	Agriculture
Nutrients	Agriculture-irrigation tailwater
Nutrients	Agriculture-storm runoff
Nutrients	Agriculture-subsurface drainage
Nutrients	Channelization
Nutrients	Irrigated Crop Production

Nutrients	Nonpoint Source
Nutrients	Removal of Riparian Vegetation
Nutrients	Urban Runoff/Storm Sewers
Nutrients	Wastewater - land disposal
Sedimentation/Siltation	Agriculture
Sedimentation/Siltation	Agriculture-storm runoff
Sedimentation/Siltation	Channel Erosion
Sedimentation/Siltation	Channelization
Sedimentation/Siltation	Habitat Modification
Sedimentation/Siltation	Hydromodification
Sedimentation/Siltation	Irrigated Crop Production
Sedimentation/Siltation	Range Land
Sedimentation/Siltation	Removal of Riparian Vegetation
Sedimentation/Siltation	Resource Extraction
Sedimentation/Siltation	Streambank Modification/Destabilization
Sedimentation/Siltation	Surface Mining

Carnadero Creek

Water Quality Assessment

Waterbody Data	Value
Approximate Size:	1.79
Unit of Measure:	Miles
RWQCB Region:	3
Calwater Watershed (RBUASPW):	30530020
Year Last Assessed:	1999
s Waterbody on 303(d) List?	No
Assessment Comments:	02/23/99-

Beneficial Uses

Beneficial Use	Fully Supporting	Threatened, but Supporting	Partially Supporting	Not Supporting	Not Assessed
Agricultural Supply	0	0	0	0	1.79
AGRICULTURE	0	0	0	0	1.79
Aquaculture	0	0	0	0	1.79
AQUATIC LIFE SUPPORT	0	0	0	0	1.79
Cold Freshwater Habitat	0	0	0	0	1.79
Commercial and Sport Fishing (CA)	0	0	0	0	1.79
DRINKING WATER SUPPLY	0	0	0	0	1.79
Estuarine Habitat	0	0	0	0	1.79
FISH CONSUMPTION	0	0	0	0	1.79
Fish Migration	0	0	0	0	1.79
Fish Spawning	0	0	0	0	1.79
Freshwater Replenishment	0	0	0	0	1.79
Groundwater Recharge	0	0	0	0	1.79
Industrial Service Supply	0	0	0	0	1.79
Municipal & Domestic	0	0	0	0	1.79
Navigation	0	0	0	0	1.79
Non-Contact Recreation	0	0	0	0	1.79
OVERALL USE SUPPORT	0	0	0	0	1.79
Preserva.of Bio.Hab.of Spec.Signif.	0	0	0	0	1.79
Rare & Endangered Species	0	0	0	0	1.79
SECONDARY CONTACT REC	0	0	0	0	1.79
SWIMMABLE	0	0	0	0	1.79
Warm Freshwater Habitat	0	0	0	0	1.79
Water Contact Recreation	0	0	0	0	1.79
Wildlife Habitat	0	0	0	0	1.79

Causes of Impairment

No Causes of Impairment are Currently Listed

Sources of Impairment

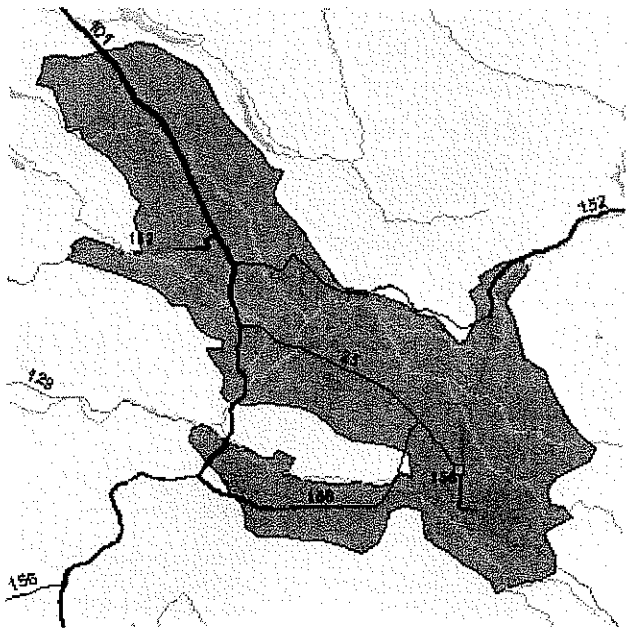
No Sources of Impairment are Currently Listed

Total Maximum Daily Load Pollutants

No TMDLs are Currently Listed

APPENDIX B

Hydrologic and TMDL Information for Hydrologic Sub-Area 305.30 - Pajaro River



HSA Information

Hydrologic Unit	PAJARO RIVER
Hydrologic Area	South Santa Clara Valley
Hydrologic Sub-Area	
Watershed Area (acres)	126996
Average Annual Rainfall (inches)	17.3

Caltrans Storm Water Loads for HSA 305.30

Constituent Group	Caltrans Annual Loads from HSA 305.30 (Kg/year)
Conventionals	
Total Dissolved Solids	62556
Total Suspended Solids	61799
Disolved Organic Carbon	13677
Total Organic Carbon	14795
Nutrients	
Ammonia	788
Nitrate as Nitrogen	788
Total Kjeldahl Nitrogen	1520
Total Phosphorus	213
Dissolved Ortho-Phosphate	81
Dissolved Metals	
Arsenic	0.82
Cadmium	0.15
Chromium	1.33
Copper	11.52
Lead	1.99
Nickel	2.59
Zinc	64.58
Total Metals	
Arsenic	2.6
Cadmium	0.42
Chromium	5.96
Copper	24.81
Lead	16.19
Nickel	6.21

Zinc	180.82

The estimated annual average loads from Caltrans facilities in a HSA are in this table. These loads are for preliminary planning purposes and for scenario comparisons. The loads are from untreated impervious surfaces only. Unpaved areas along highways right-of-ways are not included in the calculations.