Route 1/9 Intersection Improvement Project

City of Santa Cruz, Santa Cruz County, California
05-SCr-1 PM 17.5/17.7 and 05-SCr-9 PM 0.0/0.2
EA 05-465800
Project ID 05-0002-0105
SCH 2014062001

Initial Study with Mitigated Negative Declaration

Prepared by the
State of California Department of Transportation

March 2015

Caltrans

General Information About This Document

The California Department of Transportation (Caltrans) has prepared this Initial Study with Mitigated Negative Declaration, which examines the potential environmental impacts of the proposed project in Santa Cruz County, California. The document describes why the project is being proposed, the existing environment that could be affected by the project, potential project impacts, and proposed avoidance, minimization, and/or mitigation measures. This document has been prepared in coordination with the City of Santa Cruz and in compliance with the California Environmental Quality Act (CEQA) and CEQA Guidelines (Title 14 California Code of Regulations Section 15000 et seq).

The Draft Initial Study was circulated for public review and comment from June 2, 2014, to July 11, 2014. A Notice of Intent to Adopt a Mitigated Negative Declaration, as well as an offer to hold a public meeting, was mailed to a list of stakeholders that included both governmental offices and private citizens who live in the project area. This Notice of Intent and offer to hold a public meeting was published in the local newspaper (*Santa Cruz Sentinel*) on Tuesday, June 3, 2014. In response to two requests, a public meeting was held on Monday, June 30, 2014. A notice for this public meeting was published in the *Santa Cruz Sentinel* on Sunday, June 22, 2014. The comments received during the circulation period and at the public meeting and responses to those comments are provided in Appendix I of this document.

Elsewhere in this document, a vertical line in the right margin of the page indicates a content change was made since the draft document circulation. This information supersedes and/or clarifies information contained in the Draft Initial Study.

Hard copies of this document as well as the technical studies are available at:

- Caltrans district office at 50 Higuera Street, San Luis Obispo, California 93401
- City of Santa Cruz Central Library at 224 Church Street, Santa Cruz, California 95060

Electronic copies of this document can be accessed at:

- City of Santa Cruz website (www.cityofsantacruz.com) under "Latest News"
- Caltrans District 5 website (www.dot.ca.gov/dist05/projects) under "Santa Cruz County"

For individuals with sensory disabilities, this document is available in Braille, in large print, on audiocassette, or on computer disk. To obtain a copy in one of these alternate formats, please call or write to Caltrans, Attn: Jason Wilkinson, Caltrans District 5 Environmental Analysis Branch, 50 Higuera Street, San Luis Obispo, California, 93401; (805) 542-4663 Voice. Or, use the California Relay Service number: 1-800-735-2929 (TTY), 1-800-735-2922 (Voice), or 711.

05-SCr-1 PM 17.5/17.7 and 05-SCr-9 PM 0.0/0.2
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Improve traffic operations at the Route 1/9 intersection in the City of Santa Cruz

INITIAL STUDY
with Mitigated Negative Declaration

Submitted Pursuant to: (State) Division 13, California Public Resources Code

THE STATE OF CALIFORNIA
Department of Transportation

3/20/15
Date of Approval

Jason Wilkinson
Senior Environmental Planner
District 5 Analysis Branch
California Department of Transportation

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Mitigated Negative Declaration

Pursuant to: Division 13, Public Resources Code

SCH 2014062001

Project Description

The California Department of Transportation (Caltrans) would widen the intersection at Route 1 and Route 9 in the City of Santa Cruz in Santa Cruz County, California, to accommodate additional vehicle turn lanes, bicycle lanes, and shoulders.

Determination

Caltrans has prepared an Initial Study for this project, and following public review, has determined from this study that the project would not have a significant effect on the environment for the following reasons:

The project would have no effect on the coastal zone, wild and scenic rivers, parks and recreational facilities, farmlands/timberlands, community character/cohesion, paleontology, mineral resources, cultural resources, and growth.

In addition, the project would have less than significant effects to land use, hazardous materials, air quality, geology and soils, hydrology, water quality, noise, displacement of people, traffic and transportation, utilities, and emergency services with incorporation of the project features and avoidance and minimization measures identified in the Initial Study for these environmental resource topics, as applicable.

With the following mitigation measures incorporated, the project would have less than significant effects to visual resources, natural communities, and special-status species

- To mitigate impacts on natural habitats, barrier fencing around sensitive habitat areas would be installed and a U.S. Fish and Wildlife Service-approved biologist would be retained to conduct environmental awareness training for the construction crew and to monitor construction activities in and adjacent to sensitive habitats.
- To mitigate impacts on riparian habitat, the project would avoid and minimize disturbance to riparian habitat, implement Best Management Practices to maintain water quality, and include replanting of disturbed riparian areas with native species.
- To mitigate impacts on the channel in the Arroyo de San Pedro Regaldo, portions of the creek channel temporarily disturbed would be restored to original grade following construction, and the riparian area along the arroyo would be replanted.

- To mitigate potential impacts on California red-legged frogs, tidewater gobies, and their habitats, the project would implement measures from the Biological Opinion issued for this project. The measures include: conducting pre-construction surveys 48 hours before construction begins, having an onsite biological monitor, and schedulding construction to minimize impacts. Measures to also protect fish species include limiting in-water construction activities to between July 1 and October 1 and locating maintenance and staging activities at least 60 feet from the Arroyo de San Pedro Regaldo drainage.
- To mitigate impacts on the white-tailed kite and other non-special-status migratory birds, vegetation removal associated with construction would be restricted to the non-breeding season (October 1–January 31) to the extent feasible and construction activities would begin before the nesting season (February 1–September 30). If construction cannot begin before this time, nesting surveys would be conducted and a no-disturbance buffer would be established if an active nest is found.
- To mitigate impacts on the foothill yellow-legged frog and western pond turtle, pre-construction surveys would be conducted and frogs and/or turtles would be relocated outside the construction area.
- To mitigate impacts to visual resources, retaining walls would be built with aesthetic treatments to the extent feasible, and loss of landscaping would be replaced where space allows or owners would be compensated for their loss of landscaping. The River Street gateway sign would be moved to the reconstructed median on River Street considering available space and City and State design and roadway standards.
- To mitigate impacts to visual resources and biological resources, removal of any heritage trees would be subject to the permit and mitigation requirements of the City of Santa Cruz, which includes one of the following two options for each heritage tree removed.
  - Three 15-gallon trees (representing a 3:1 ratio) or one 24-inch-box-size specimen tree (representing a 1:1 ratio) must be replanted for each heritage tree removed. A $250 bond must be placed with the permit application, which will be returned when the replacement trees are planted and certified by the city arborist; or
  - Monetary contribution of $150.00 for each tree to be removed to the Santa Cruz Tree Trust Fund.

Jason Wilkinson
Senior Environmental Planner
District 5 Environmental Analysis Branch
California Department of Transportation

3/20/15
Date

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List of Abbreviated Terms

AB 32	Assembly Bill 32
ARB	California Air Resources Board
Caltrans	California Department of Transportation
CARB	California Air Resources Board
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
CO	carbon monoxide
CO_2	carbon dioxide
dBA	A-weighted decibels
FCAA	Federal Clean Air Act
FHWA	Federal Highway Administration
FTA	Federal Transit Administration
GHGs	greenhouse gases
H_2S	hydrogen sulfide
HFC-134a	s, s, s, 2 –tetrafluoroethane
HFC-152a	difluoroethane
HFC-23	fluoroform
L_{dn}	day-night sound level
L_{eq}	equivalent sound level
M_{max}	Maximum Moment Magnitude
MPO	Metropolitan Planning Organization
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NO_2	nitrogen dioxide
O_3	ozone
Pb	lead
PM	post mile
PM	particulate matter
PM10	particles of 10 micrometers or smaller
PM2.5	particles of 2.5 micrometers and smaller
Resources Agency	California Natural Resources Agency
Route 1/9 intersection	intersection at Route 1 and Route 9/River Street
RTPs	Regional Transportation Plans
SB 375	Senate Bill 375
SIP	State Implementation Plan
SO_2	sulfur dioxide
TIPs	Federal Transportation Improvement Programs
U.S. EPA	U.S. Environmental Protection Agency
USDOT	U.S. Department of Transportation

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Chapter 1 Proposed Project

1.1 Introduction

The California Department of Transportation (Caltrans) proposes to make improvements to the intersection at Route 1 and Route 9/River Street (called the Route 1/9 intersection in this document) in the City of Santa Cruz in Santa Cruz County, California. These roadways are under Caltrans' jurisdiction. The City of Santa Cruz is the project proponent. Figure 1-1 shows the regional vicinity of the project location, and Figure 1-2 shows the project location in the City of Santa Cruz.

The project would improve traffic operations at the existing Route 1/9 intersection by widening the existing intersection to accommodate additional vehicle turn lanes, bicycle lanes, and shoulders (see Figure 1-3). The additional turning lanes would improve traffic operations and better accommodate existing and projected traffic volumes. The project will be funded by three funding sources: State Transportation Improvement Program (STIP), City of Santa Cruz Traffic Impact Fees (TIF), and other local funding options. The current cost estimate for the Preferred Alternative is $5,975,000, which includes right-of-way and construction costs.

The project is listed in the recently updated 2014 Regional Transportation Plan prepared by the Santa Cruz County Regional Transportation Commission in coordination with the Association of Monterey Bay Area Governments and the Transportation Agency for Monterey County. The project is also listed in the 2014 Santa Cruz County Regional Transportation Improvement Program (adopted on December 5, 2013, and as amended through May 2014) to receive funding through fiscal year 2016/2017.

Because federal funds may be used, the project is also subject to the requirements of the National Environmental Policy Act (NEPA). However, it has been determined that the project falls under a Categorical Exclusion. Therefore, this document only pertains to the California Environmental Quality Act (CEQA).

1.2 Purpose and Need

1.2.1 Purpose

The purposes of the project are to:

- Improve traffic operations at the Route 1/9 intersection
- Better accommodate existing and projected traffic volumes at the Route 1/9 intersection

1.2.2 Need

Improve Traffic Operations

During the morning peak hour, long vehicle queues—lines of backed up traffic—have been observed on Route 1 at the Route 1/9 intersection in both the east and west directions extending beyond both the left- and right-turn lanes and blocking access to the turn lanes; these queues typically are able to clear the intersection during one green light phase. During the afternoon peak, a similar queuing has been observed on Route 1. However, the two southbound Route 9 left-turn queues frequently spill out of the turn lanes and queue back to Fern Street and occasionally as far as back as Encinal Street (see Figure 1-3). The queues in these lanes clear the intersection in a single green light phase, but the remaining queues of vehicles outside the lanes are unable to clear the intersection. The northbound River Street through movement often backs up to Potrero Street to the south. The eastbound River Street left-turn lane does not clear in one signal phase, and the northbound Route 9 accepting lane often backs up into the intersection.

Better Accommodate Existing and Projected Traffic Volumes

With general growth in the project area, development of the Harvey West area on Route 9 north of the intersection, and continued growth of the University of California at Santa Cruz campus, increased trip generation will exacerbate an already congested Route 1/9 intersection. The University of California at Santa Cruz's Draft Long Range Development Plan (2005–2020) estimates a future population of 19,500 full-time students. The recent construction of the Rebele Family Shelter on the corner of Route 9/Coral Street will also contribute to increasing congestion at the Route 1/9 intersection. With the continued development of planned industrial and office space and increased university-related traffic, the operation of the Route 1/9 intersection will continue to deteriorate.

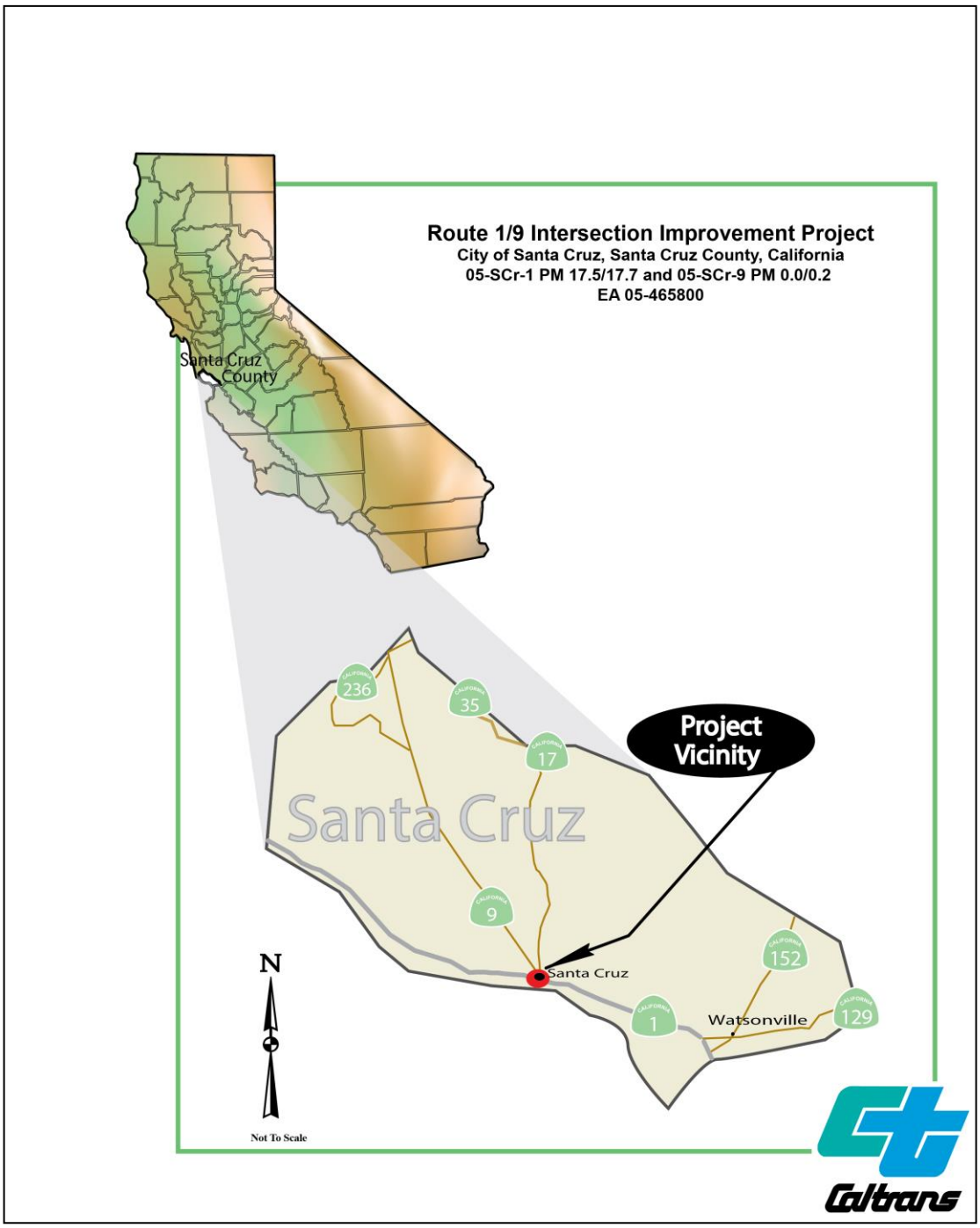

Figure 1-1 Project Vicinity Map

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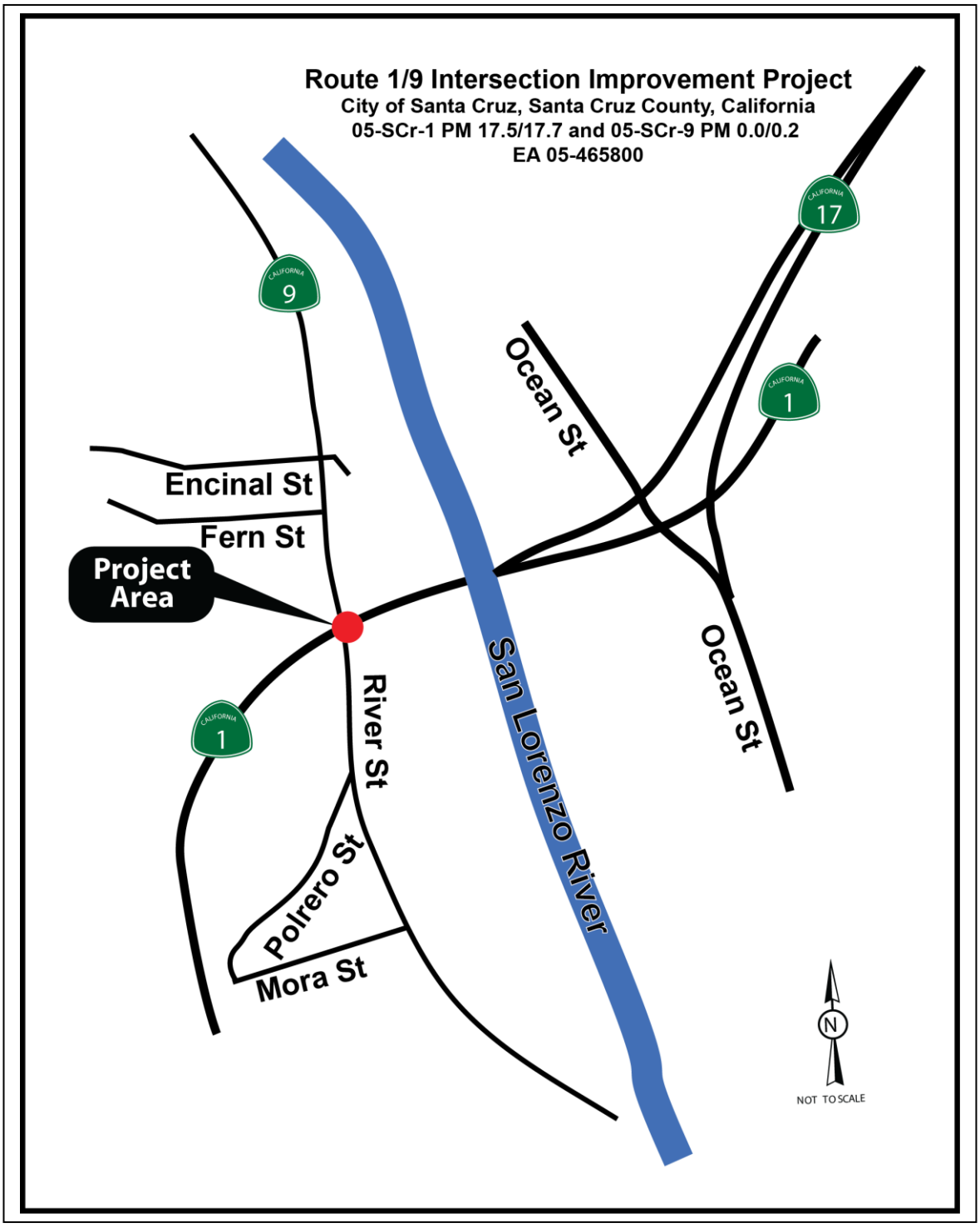

Figure 1-2 Project Location Map

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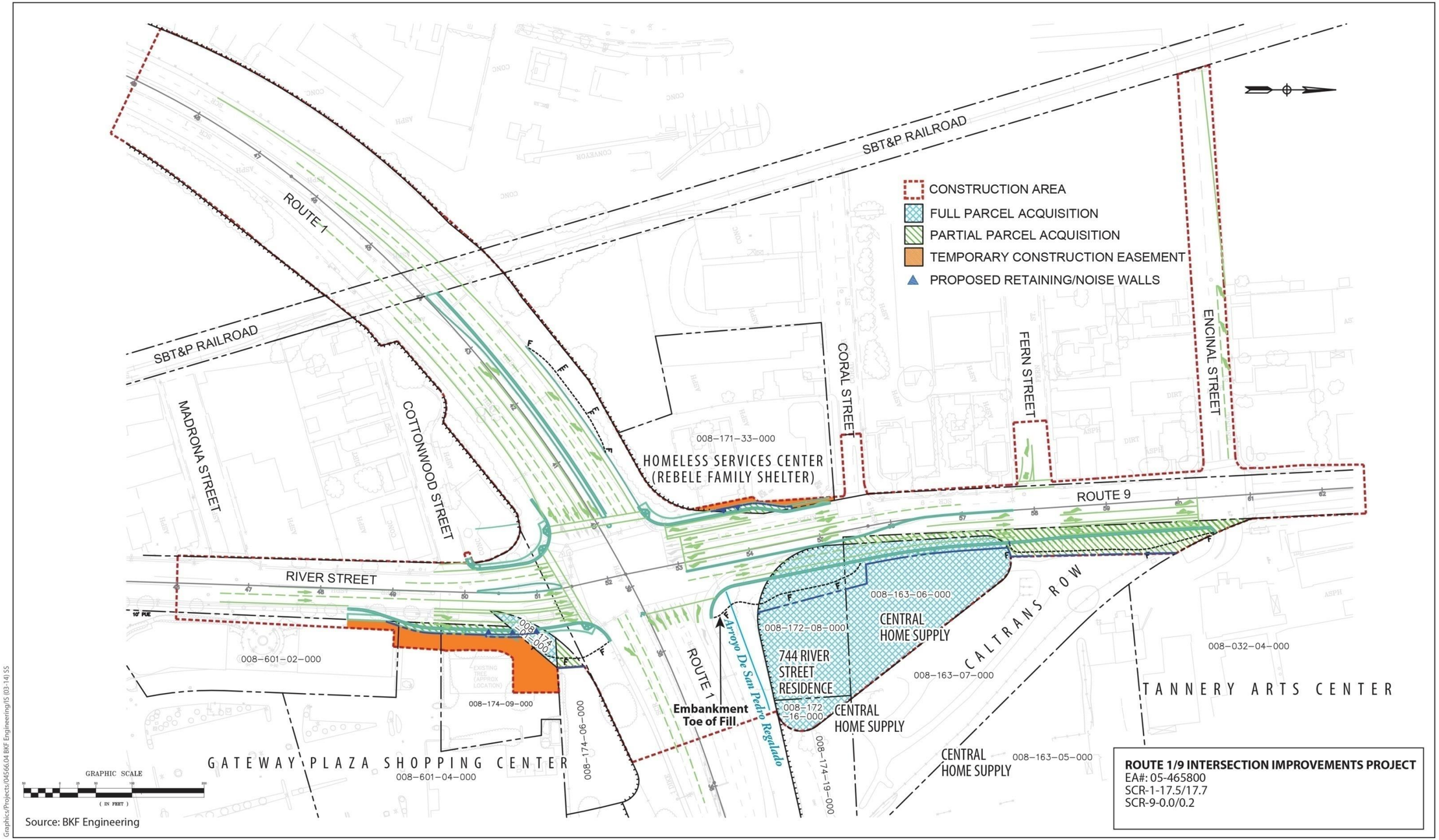

Figure 1-3 Project Area Map

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1.3 Project Description

Caltrans proposes to widen the Route 1/9 intersection by adding additional turn lanes, bicycle lanes, and shoulders to address the existing long vehicle queues that occur there. Due to the limited right-of-way that is available at this intersection, one design alternative is proposed, as described in Section 1.4.

The Route 1/9 intersection is located in the City of Santa Cruz in Santa Cruz County (Figure 1-2). The existing intersection, with traffic signals for all movements through the intersection, has the following lane configurations:

- Route 9 southbound: One right-turn lane, one through lane, and two left-turn lanes. The left-turn lanes continue past Coral Street.
- Route 1 westbound: One right-turn lane, three through lanes, and two left-turn lanes.
- River Street northbound: Two right-turn lanes, one through lane, and one left-turn lane.
- Route 1 eastbound: One shared through/right-turn lane, two through lanes, and one left-turn lane.

The proposed modifications are described in detail in Section 1.4.1 below.

1.4 Alternatives

1.4.1 Proposed Build Alternative

The following improvements (listed below by segment) are proposed at the Route 1/9 intersection. The project design plan, including potential retaining walls and the construction area, is identified in Figure 1-3. Although both Route 1 and Route 9 are regionally considered north-south thoroughfares, in the project area, Route 1 runs in an east-west orientation and Route 9 runs north-south. So, travel lanes on Route 1 are referred to as running in an “eastbound” or “westbound” direction, and travel lanes on Route 9 are referred to as running in a “northbound” or “southbound” direction in the discussion below.

Route 9 (North of the Route 1/9 Intersection)

Northbound Route 9

- Add a second northbound 12-foot through lane and an 8-foot shoulder on northbound Route 9, from Route 1 to Fern Street, to receive vehicular and bicycle traffic from both the new left-turn lane on Route 1 and the converted shared left/through lane from northbound River Street.
- Add a 4-foot through bike lane, 12-foot right-turn lane, and 4-foot shoulder on northbound Route 9, between Fern Street and Encinal Street, to accommodate bicycle through traffic, and vehicular traffic turning into the Tannery Arts Center.
- Replace channelizers with a 2-foot raised concrete median along Route 9 from Route 1 to south of Fern Street.

These improvements would require widening the existing roadway. Curb and gutter (at locations noted above) would be constructed along Route 9 from the Route 1/9 intersection to the south side of the Route 9/Encinal Street intersection.

An earthen embankment would be constructed to support the roadway widening over the drainage culvert (known as Arroyo de San Pedro Regaldo) at the northeast corner of the Route 1/9 intersection. The embankment would have a 2:1 slope with the toe of the embankment extending about 40 feet beyond the existing roadway. The existing culvert would be extended about 25 feet. The existing concrete apron and cutoff wall that extend about 25 feet from the existing culvert would remain in place or reconstructed "in-kind." All in-water construction activities would be conducted during the dry season. Minor excavation would be needed for the proposed embankment; this excavation would occur within the existing embankment and culvert areas that were backfilled following construction of the original culvert. Dewatering would be accomplished by using small check dams and bypass pipes.

An earthen embankment would be constructed to support the roadway widening from just south of Fern Street to Encinal Street. The embankment would have a 4:1 slope with the toe of the embankment extending about 35 feet beyond the existing roadway. The area of the 4:1 embankment along Central Home Supply is currently within the Caltrans right-of-way and is being leased by Central Home Supply.

Southbound Route 9

- Add a new shared 12-foot through/left-turn lane on southbound Route 9 to permit a triple left onto eastbound Route 1.
- Add a new 4-foot through bike lane to accommodate bicycle through traffic.
- Reconstruct a masonry block wall at the corner just south of the Homeless Services Center. Reconstruction of the masonry wall would not likely involve footings that are deeper than the existing footings.

These improvements would require widening the existing roadway along Route 9. Curb, gutter, and a minimum 6.5-foot sidewalk would be reconstructed from the Route 1/9 intersection to just south of Coral Street. Road widening could also require relocating various road signs; an ornamental metal picket fence; electrical power poles; light poles along the sidewalk between Route 1 and Coral Street; an existing storm drain inlet; and an electrical box near the northwest quadrant of the Route 1/9 intersection. Excavation required for the installation of poles, storm drain inlets, and other utilities would be up to about 6 feet deep and would occur within the existing roadway prism where excavation and embankment work occurred previously with the original roadway construction and utilities installation.

River Street (South of the Route 1/9 Intersection)

Northbound River Street

- Modify the left-turn lane to provide a shared 12-foot through/left-turn lane so that two northbound lanes to Route 9 are provided.
- Extend the queuing length for the two 12-foot right-turn lanes onto eastbound Route 1.

These improvements would require widening the existing roadway along River Street. Curb, gutter, and sidewalk would be reconstructed from the Route 1/9 intersection to a point about 300 feet south of the intersection. To accommodate curb, gutter, and sidewalk (including curb returns), the existing landscape strip would be removed, and the sidewalk would be narrowed from 8 feet to 5 feet; sidewalk in the State right-of-way would measure a minimum of 6.5 feet. Due to the elevation difference between the roadway and the existing grade just southeast of the intersection, a retaining wall may be necessary to minimize impacts to the adjacent properties. Where there is sufficient room to grade, the embankment slope would be graded to a 2:1 (horizontal: vertical) maximum slope. Minor excavation up to 2 feet deep would be required for the retaining wall footing; additional excavation or

drilling may also be needed for small-diameter/shallow retaining wall piles if, based on the geotechnical surveys, it is determined that piles are needed. These details related to the design of the wall will be determined during final design.

Road widening would result in the relocation of a utility joint trench located beneath the existing sidewalk, including utility boxes, vaults, backflow preventers, roadside signs, and street lights. The widening would also result in reconstruction of the pedestrian and bicycle access to the Gateway Plaza shopping center. The widening would affect the driveway to the commercial office building at 700/720 River Street; this could require reconstruction of the driveway and the retaining wall (including hand railing) immediately adjacent to the commercial office and result in the loss of one to two onsite parking spaces along the driveway.

Also, the narrow concrete raised median in the middle of River Street, between Madrone Street and Cottonwood Street, would be removed and replaced with a double-yellow median stripe. The median surrounding the existing River Street gateway sign would be reconstructed to accommodate the new alignment, and the gateway sign would be moved to the new median.

Excavation required for the improvements and construction activities described above would be up to about 6 feet deep and would occur within the existing roadway prism where excavation and embankment work occurred previously with the original roadway construction and utilities installation.

Southbound River Street

- Realign the two 12-foot through lanes and 6-foot bike lane to receive traffic from the bike lane and two through lanes on southbound Route 9.

These improvements would require widening southbound River Street from the Route 1/9 intersection to the River Street/Cottonwood Street intersection. To accommodate curb, gutter, and sidewalk (including curb returns), the existing landscape strip would be removed, and the sidewalk would be narrowed from 8 feet to 5 feet; sidewalk in the State right-of-way would measure a minimum of 6.5 feet. The existing street light poles and other utility facilities would be relocated due to the widening. Excavation required for these improvements would be up to about 6 feet deep and would occur within the existing roadway prism where excavation and embankment work occurred previously with the original roadway construction and utilities installation.

Route 1 (West of Route 1/9 Intersection)

Eastbound Route 1

- Add an additional 12-foot left-turn lane on eastbound Route 1 so that two lanes turn onto northbound Route 9.
- Remove the existing traffic signal mast arm and "pork chop" island between the right-turn lane and through lane. A new signal mast arm would be installed at the curb return at the southwest corner of the intersection of Route 1/River Street, just south of the curb ramps.
- Reconstruct the median and restripe eastbound Route 1 lanes from the Route 1/9 intersection to the Santa Cruz Big Trees and Pacific Railway tracks, to accommodate the additional left-turn lane.

These improvements would not require road widening along eastbound Route 1. The crosswalk would be restriped to align with the reconstructed median.

Westbound Route 1

- Minor widening and striping realignment of westbound Route 1 due to widening associated with the second left-turn lane along eastbound Route 1. The widening would occur within the Caltrans right-of-way along westbound Route 1.

Route 1 (East of Route 1/9 Intersection)

Eastbound Route 1

- Minor change to the median nose to accommodate Route 1/9 intersection improvements, including receiving the triple left-turn movement from southbound Route 9.
- Restripe eastbound Route 1 lanes from the Route 1/9 intersection to about 185 feet south of the San Lorenzo River Bridge to accommodate the transition to the improved intersection.

These improvements would not require road widening along eastbound Route 1.

Westbound Route 1

There are no improvements proposed on westbound Route 1 east of the Route 1/9 intersection.

1.4.2 No-Project Alternative

Under the No-Project Alternative, improvements to the Route 1/9 intersection would not be constructed. The Route 1/9 intersection would continue to be heavily

congested. With continued development of planned industrial and office space and increased University of California at Santa Cruz traffic, the operation and level of service of the Route 1/9 intersection would continue to deteriorate.

1.4.3 Identification of the Preferred Alternative

Caltrans in coordination with the City of Santa Cruz has identified the build alternative as the preferred alternative. Identification of the preferred alternative came after consideration of public input received on the draft environmental document. Input was received from individuals, non-profit organizations, and local entities. The team also considered the project purpose and need, project funding, schedule and right-of-way constraints. The no-build alternative would not satisfy the purpose and need. The preferred alternative (project) provides additional lanes for vehicular traffic to better accommodate existing and anticipated future traffic volumes, and it improves the roadway shoulders and bicycle lanes to improve access for bicycle traffic. The planned improvements to the intersection would improve the traffic operations at this location for both vehicular and bicycle traffic.The No-Build alternative would not satisfy the purpose and need of the project because congestion and other operational problems would continue and conditions could deteriorate over time.

1.4.4 Alternatives Considered but Eliminated from Further Discussion Prior to Draft Environmental Document

Alternative 1 was considered during the 2006 preliminary scoping exercise and was based on Alternative 2 included in the Preliminary Scoping Report. This alternative would have added a southbound left-turn lane on Route 1 and a 12-foot through lane along with an 8-foot shoulder on northbound Route 9 from the Route 1/Route 9 intersection to Encinal Street. A park-and-ride lot in the northeast quadrant of the intersection was also part of Alternative 1. The project development team determined the alternative did not adequately improve the operational capacity of the intersection and therefore did not meet the project purpose and need. Alternative 1 was considered but rejected from further consideration.

The following design features were also considered but rejected from further consideration:

Non-standard lane and shoulder widths were considered as a way to minimize impacts to the drainage known as Arroyo de San Pedro Regaldo and to reduce right-

of-way impacts. However, reducing these widths required design exceptions that could not be approved because the reduced widths could affect safety at the intersection.

A retaining wall was considered for the northeast quadrant of the Route 1/9 intersection as a way to support the roadway widening over the Arroyo de San Pedro Regaldo drainage. The retaining wall design option was eliminated from consideration because it was determined that it would be more expensive, take longer to construct, and require greater maintenance than the earthen embankment design.

1.5 Permits and Approvals Needed

The following permits, reviews, and approvals would be required for project construction:

Agency	Permit/Approval	Status
City of Santa Cruz	Approval of project design	To be obtained after California Environmental Quality Act (CEQA) certification
	Heritage Tree Ordinance Permit	To be obtained prior to construction
U.S. Fish and Wildlife Service	Section 7 Biological Opinion for California red-legged frog and tidewater goby	Biological Opinion received from U.S. Fish and Wildlife Service on October 29, 2012 (see Appendix E for relevant correspondence)
National Marine Fisheries Service	Section 7 concurrence related to Central California Coast steelhead and Central California Coast coho salmon	Letter of concurrence for a Not Likely to Adversely Affect conclusion received from National Marine Fisheries Service on February 22, 2012 (see Appendix F for relevant correspondence)
U.S. Army Corps of Engineers	Section 404 Nationwide Permit	To be obtained during the final design phase of the project
California Department of Fish and Wildlife	Streambed Alteration Agreement	To be obtained during the final design phase of the project
Regional Water Quality Control Board	Section 401 Water Quality Certification	To be obtained during the final design phase of the project

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Chapter 2 Affected Environment, Environmental Consequences, and Avoidance, Minimization, and/or Mitigation Measures

This chapter explains the impacts that the project would have on the human, physical, and biological environments in the project area. It describes the existing environment that could be affected by the project, potential impacts from the project, and proposed avoidance, minimization, and/or mitigation measures. Any indirect impacts are included in the general impacts analysis and discussions that follow.

As part of the scoping and environmental analysis for the project, the following environmental issues were considered, but no adverse impacts were identified and/or the issues were determined to not be relevant. Consequently, there is no further discussion of these issues in this document.

- Coastal Zone—The project area is not in the Coastal Zone.
- Wild and Scenic Rivers—No designated Wild and Scenic Rivers are in or near the project area.
- Parks and Recreational Facilities—The project would not directly affect any parks or recreational facilities. The closest park is Harvey West Park at 326 Evergreen Street, about a quarter-mile west of the Route 1/9 intersection.
- Farmlands/Timberlands—The project is in an urban area. No farmland or timberland lies in the project area.
- Community Character and Cohesion—The project would not change or divide an established community. The project would widen an existing intersection.
- Paleontology—The project area is underlain by Quaternary alluvium that has been disturbed with previous construction activities and has a low potential to contain sensitive paleontological resources.
- Mineral Resources—The project would not affect availability of resources.
- Cultural Resources—No historic properties were identified within the proposed project limits. The State Historic Preservation Officer concurred with that finding on March 26, 2012 (refer to Appendix G).

- Growth—The project would not induce population growth, either directly or indirectly, within or outside of the City of Santa Cruz. The project would not add capacity to Route 1 or 9, nor would it provide new access to undeveloped areas that would accelerate or shift planned or unplanned growth. The project would accommodate growth that has already occurred. As such, the project would not generate a need for or impact public services and utilities such as schools, water supply, wastewater treatment, and solid waste collection and disposal. Also, the project would not displace a substantial number of housing units or people, necessitating construction of replacement housing elsewhere.

2.1 Human Environment

2.1.1 Land Use

Existing and Future Land Use

Affected Environment

Existing land uses near the project include a mix of residential, public facility, and commercial uses (see Figure 2-1). North of the Route 1/9 intersection, land uses west of Route 9 include two residential properties, six commercial properties, and the Rebele Family Shelter and Homeless Services Center. Land uses east of Route 9 consist of the Tannery Arts Center, a landscaping and building supply business (Central Home Supply), a vacant parcel owned by Caltrans and leased to the building supply business for storing materials, a residential property (744 River Street), and a drainage culvert (Arroyo De San Pedro Regaldo). South of the Route 1/9 intersection, land uses west of River Street consist of a hot tub business, an auto repair shop, and a commercial warehouse. East of River Street, land uses include two City-owned vacant parcels, a commercial building (office and medical) and a shopping center (Gateway Plaza).

The City of Santa Cruz adopted an update to its General Plan in July 2012 to direct and manage development in the city through the year 2030. A review of the General Plan Land Use map (see Figure 2-2) found three land use designations next to the project: Community Facilities, Industrial, and Community Commercial. The area north of Route 1 is designated with all three of these land use designations, and the area south of the Route 1 corridor is designated Community Commercial.

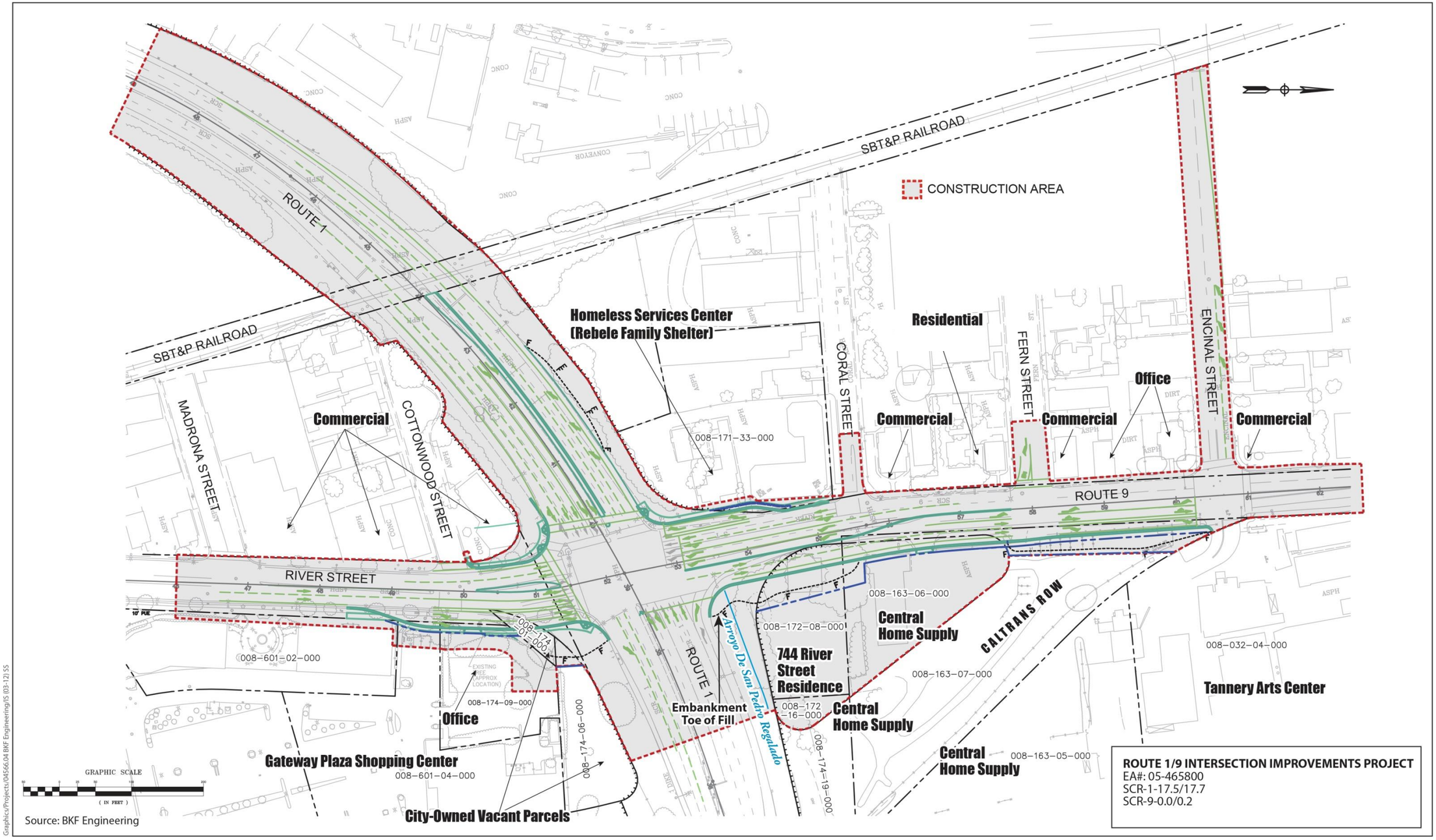

Figure 2-1 Existing Land Uses in Project Vicinity

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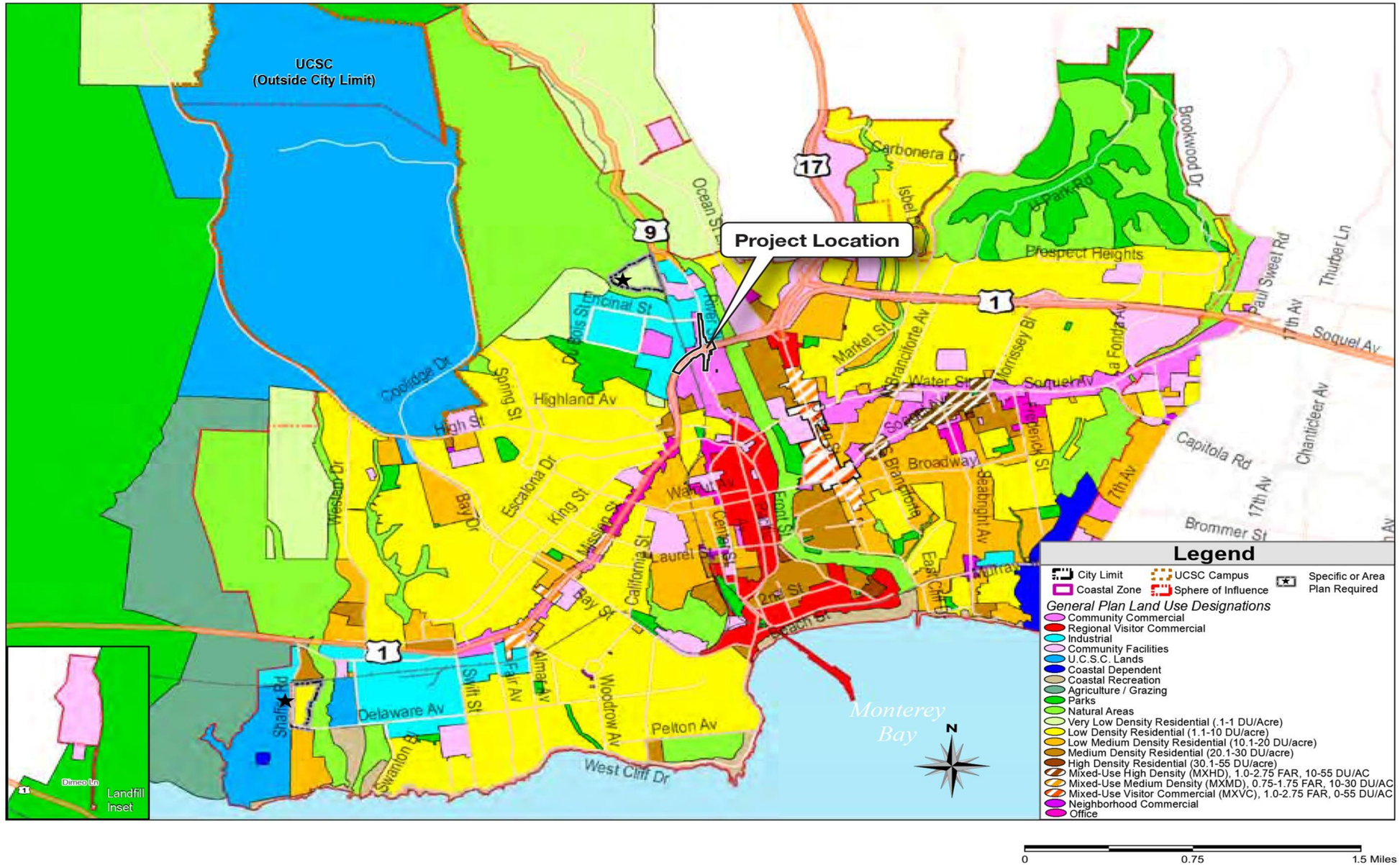

Figure 2-2 General Plan Land Use Designations

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Zoning designations for the project area include General Industrial, Thoroughfare Commercial, and Community Commercial. The area north of Route 1 is zoned General Industrial except for the area between the railway and Route 9, which is zoned Community Commercial and extends north to just beyond Encinal Street west of Route 9. The area south of Route 1 is zoned Thoroughfare Commercial west of River Street and Community Commercial east of River Street.

Although there is limited developable land within the city limits, demand for housing is high due to Santa Cruz's desirable location and climate and the presence of the University of California at Santa Cruz. The city is largely built-out; any future growth would occur in the downtown area and along major transportation corridors. The City of Santa Cruz promotes industrial and large regional retail uses within the Harvey West area, which is west of the project limits.

Route 1 experiences a substantial amount of commuter traffic as workers travel to jobs outside of or in the city. As described in the General Plan 2030, in 2007 more than half of the jobs in the city were held by workers who lived outside the city. Many of these jobs were in retail, lodging, or other services with lower wages. At that time, there was also a 27% surplus in jobs compared to employed residents, and local businesses had to hire workers from outside the city to fill the positions. In addition, close to half of city residents commuted to jobs outside the city.

According to the 2008 Association of Monterey Bay Area Governments projections, in 2010, the City of Santa Cruz's jobs-to-housing ratio was approximately 1.4. This ratio is expected to reach 1.6 in 2035 and corresponds to an increase in jobs of 23% while housing units are projected to increase by 11%. This reinforces the north-south commute pattern in the city. As described in the General Plan 2030, the City would like to balance the jobs-to-housing ratio so residents can live in housing that they can afford and that will be close to their jobs.

Planned development located within a 1-mile radius of the Route 1/9 intersection is listed in Table 2-1. For projects with a residential component, only those with more than 10 residential units are listed. Planned projects include seven residential projects (three of which have a commercial component), one memory care facility, one hotel, and an arts center.

Table 2-1 Planned Development in the Vicinity of the Proposed Project, as of December 2014

Name	Jurisdiction	Proposed Uses	Status
1314 Ocean Street	City of Santa Cruz	14 condominiums, 4 townhouses, 1 single-family dwelling, and 1,591 sq. ft. commercial	Pending Application
1930 Ocean Street Ext	City of Santa Cruz	40 condominium units	Pending Application
1013 Pacific Avenue	City of Santa Cruz	17 condominiums (demolish existing mixed-use building)	Pending Application
350 Ocean Street	City of Santa Cruz	58 multi-family dwellings (demolish existing 20 multi-family and 2 single-family dwellings) and 5,269 sq. ft. commercial	Approved
1547 Pacific Avenue	City of Santa Cruz	66 residential units and 4,500 sq. ft. commercial	Approved
211 Mora	City of Santa Cruz	10 apartments	Approved
110 Lindberg Street	City of Santa Cruz	21 multi-family dwellings	Under Construction
150 Jewell Street	City of Santa Cruz	48 unit memory care facility	Under Construction
407 Broadway	City of Santa Cruz	111-room hotel	Under Construction
Tannery Arts Center	City of Santa Cruz	120,000 sq. ft. arts center	Under Construction

Source: Eric Marlatt. Principal Planner. City of Santa Cruz. December 4, 2014.

Environmental Consequences

Improving the Route 1/9 intersection would affect land uses, as shown in Table 2-2 and Figure 1-3.

Table 2-2 Total Area Converted under the Proposed Project

	Acres Affected	
	Right-of-Way Acquisition	**Converted to Transportation Use**
Commercial	0.83	0.18
Public Facility	0.02	0.02
Residential	0.53	0.16
Vacant	0.27	0.27
Total	**1.65**	**0.63**

Source: Route 1/9 Intersection Improvement Project Final Relocation Impact Memorandum, January 28, 2015.

A total of 0.63 acre would be converted to transportation uses with construction of the proposed improvements, and 1.65 acres of land would be acquired, assuming a worst-case estimate (the 0.63-acre estimate is included in the 1.65-acre estimate). The estimate of 1.65 acres assumes that all of Assessor's Parcel Numbers 008-163-06-000 and 008-172-16-000 would be acquired for this project. These two parcels are not needed for the proposed roadway right-of-way, but full acquisition of these parcels is assumed as a worst-case scenario (see the Relocations and Real Property Acquisition section below for further details on these two parcels).

Avoidance, Minimization, and/or Mitigation Measures

Because the proposed improvements to the Route 1/9 intersection would require relocations and have visual resource impacts, see the Avoidance, Minimization, and/or Mitigation Measures in the following sections: 2.1.3.1, Relocations and Real Property Acquisition and 2.1.5, Visual/Aesthetics. Measures proposed include providing relocation benefits, using aesthetic wall treatments, and replacing landscaping where space allows or compensating owners for their loss of landscaping.

Consistency with State, Regional, and Local Plans

Affected Environment

Land use planning and development in the vicinity of the proposed project is governed by the City of Santa Cruz. The regional planning agency for the area is the Santa Cruz County Regional Transportation Commission.

Santa Cruz County Regional Transportation Plan

The Route 1/9 Intersection Improvement project is identified in the 2014 Regional Transportation Plan as being needed to maintain and improve the existing transportation system through 2035. The project is also identified in the 2014 Santa Cruz County Regional Transportation Improvement Program (adopted in December 2013) to receive funding through fiscal year 2016/2017. The projects in the Transportation Improvement Program include those that preserve existing transportation facilities, reduce congestion, and increase safety.

City of Santa Cruz Cumulative Development Traffic Study

The proposed project is identified in the City of Santa Cruz's April 2005 Cumulative Development Traffic Study. This study quantifies total cumulative trips that are expected to be added in the city from new development. Based on the findings of the study, the City of Santa Cruz identified a per-trip traffic impact fee. The impact fee was calculated by dividing the total cost of all new projects by the additional trips added by new development. The current city-wide fee is $405 per trip.

City of Santa Cruz General Plan 2030

The General Plan 2030, adopted on July 26, 2012, includes goals, policies and programs for development in the City of Santa Cruz. Many of the goals and policies in the general plan relate to improving mobility. Mobility Element Goal M3 is to provide a safe, efficient, and adaptive road system. Under Goal M3, Action M3.1.13 calls for improved access to and from the Harvey West area as well as a better connection to the downtown area. In addition, Policy M3.2 is to ensure road safety for

all users by improving the condition, safety and efficiency of the Route 1/9 intersection for motorists as well as for pedestrians and bicyclists.

City of Santa Cruz Noise Element and Noise Ordinance

Policy 3.2.1 of the City of Santa Cruz General Plan Hazards, Safety, and Noise Element establishes an L_{dn} noise level target of 65 dBA for outdoor activity areas in new multi-family residential developments. It also requires that interior noise in all new multi-family housing not exceed an L_{dn} of 45 dBA with windows and doors closed.

The City Noise Ordinance does not specify explicit noise level standards. However, Section 9.36.010 prohibits any offensive noise within 100 feet of any building or place regularly used for sleeping purposes between the hours of 10:00 p.m. and 8:00 a.m. This prohibition may be changed to the hours between 10:00 p.m. and 7:00 a.m. for any activity performed under contract awarded by the City of Santa Cruz where the Director of Public Works determines the following:

- that the project has the potential to disrupt traffic and that this disruption could be alleviated by authorizing construction work to start at 7:00 a.m., or
- that, due to time constraints on project completion, it is necessary to allow the contractor to begin work at 7:00 a.m.

In addition, these prohibitions do not apply to activities undertaken by, or pursuant to contract with, the City of Santa Cruz, or apply to any other activity undertaken by the City, another governmental agency, or City contractor, for public health and safety purposes. The proposed project would fall under this exemption.

Environmental Consequences

The project is consistent with the 2014 Santa Cruz County Regional Transportation Plan because it is included in the plan. The project is also consistent with the relevant goals and policies in the City of Santa Cruz General Plan 2030 that are aimed at maximizing the efficiency and safety of the existing road system while ensuring that it accommodates all modes of travel, operates at an acceptable level of service, and is not expanded unnecessarily.

Specifically, the project is consistent with the Mobility Element Goal M3 of the General Plan 2030 to provide a safe, efficient, and adaptive road system. Action M3.1.13, listed under Goal M3, calls for improved access to and from the Harvey West area as well as a better connection to the downtown area. The proposed project

would improve access to these areas by reducing congestion and improving safety. In addition, the project would be consistent with Policy M3.2 to ensure road safety for all users by improving the condition, safety and efficiency of the Route 1/9 intersection for motorists as well as for pedestrians and bicyclists.

Avoidance, Minimization, and/or Mitigation Measures

No mitigation is required.

2.1.2 Community Impacts

Relocations and Real Property Acquisition

Regulatory Setting

The Caltrans Relocation Assistance Program is based on the Federal Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (as amended) and Title 49 Code of Federal Regulations Part 24. The purpose of Relocation Assistance Program is to ensure that persons displaced as a result of a transportation project 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. See Appendix C for a summary of the Relocation Assistance Program.

All relocation services and benefits are administered without regard to race, color, national origin, or sex in compliance with Title VI of the Civil Rights Act (42 U.S. Code 2000d, et seq.). See Appendix B for a copy of Caltrans' Title VI Policy Statement.

Affected Environment

This section is based on the Final Relocation Impact Memorandum (January 28, 2015) prepared for this project.

The project area consists of about one-quarter mile of roadway right-of-way at the Route 1/9 intersection through a developed urban/suburban area in Santa Cruz. In the project vicinity, the primary land uses are commercial in the southwest and southeast quadrants of the Route 1/9 intersection; a homeless services center in the northwest quadrant; and a residence, landscape and building supply business (Central Home Supply), and arts center (Tannery Arts Center) in the northeast quadrant.

Environmental Consequences

The road widening would displace a private residence (744 River Street, Assessor's Parcel Number 008-172-08-000) on the east side of Route 9 and Central Home Supply (808 River Street, Assessor's Parcel Number 008-163-06-000), a landscape and building supply business, both owned by the same property owner. The road widening would also result in loss of unofficial parking in front of Central Home Supply and would displace a portion of the Central Home Supply's showroom; the entire Central Home Supply parcel is not needed to accommodate the additional right-of-way needed for the project.

Although full acquisition of Assessor's Parcel Number 008-163-06-000 is not required to accommodate the proposed right-of-way, full acquisition of this parcel is assumed for the purposes of the environmental analysis conducted for this project as a worst-case assumption. Because full acquisition of the parcel that houses the Central Home Supply buildings may be required, full acquisition of Assessor's Parcel Number 008-172-16-000, also owned by the property owner of Assessor's Parcel Number 008-172-08-000 and 008-163-06-000, is also assumed. This parcel is used by Central Home Supply for materials storage. The disposition of these properties will be determined during final design. See Figure1-3 and Table 2-3.

The building housing the Rebele Family Shelter (Assessor's Parcel Number 008-171-33-000) would not be directly affected by the project. However, with the proposed intersection improvements, the travel lane on Route 9 would be closer to the southeast corner of the building. The nearest lane on southbound Route 9 is currently about 28 feet from the shelter building; with the project, the new right-turn lane would be about 19 feet from the building. Due to the standardization of the lane widths, the upstream lane that contributes to this right-turn lane would be 7 feet farther away from the building. A temporary construction easement would also be needed on this parcel for construction of the intersection improvements.

No-Project Alternative

No relocations would occur under the No-Project Alternative. Therefore, no avoidance or minimization measures would be required.

Table 2-3 Proposed Right-of-Way Acquisition and Temporary Construction Easements

Assessor's Parcel Number	Property Owner	Land Use	Square Footage			
			Right-of-Way Acquisition	Excess on Full Property Acquisitions[a]	Temporary Construction Easement	Comments
Northwest Quadrant of SR 1/9 Intersection						
008-171-33-000	City of Santa Cruz	Homeless Services Center	903	0	1,427	
Northeast Quadrant of SR 1/9 Intersection						
008-163-06-000	Santee	Central Home Supply Business (landscaping and building supply)	30,709	24,879	0	Entire parcel is not needed for roadway right-of-way. A number of options will be evaluated during final design. Full acquisition of this parcel is assumed for this analysis.
008-172-16-000	Santee	Materials Storage for Central Home Supply	3,253	3,253	0	Parcel not needed for roadway right-of-way. However, full acquisition is assumed since the owner of this parcel also owns Assessor's Parcel Number 008-163-06-000.
008-172-08-000	Santee	Residence at 744 River Street	23,013	15,850	0	
008-163-07-000	State of California	Undeveloped	8,579	0	1,397	
Southeast Quadrant of SR 1/9 Intersection						
008-174-01-000	City of Santa Cruz	Undeveloped	2,278	0	0	
008-174-06-000	City of Santa Cruz	Undeveloped	845	0	0	
008-174-09-000	Tedesco	Gateway Plaza Shopping Center	1,387	0	6,012	
008-601-02-000	SPG Associates	Gateway Plaza Shopping Center	47	0	988	
008-601-04-000	Gateway Plaza Associates	Gateway Plaza Shopping Center	650	0	1,499	

Source: Route 1/9 Intersection Improvement Project Final Relocation Impact Memorandum, January 28, 2015.
[a] Square footage that is not directly needed for the proposed roadway right-of-way.

Avoidance, Minimization, and/or Mitigation Measures

Online reviews of a rental website (www.apartmenthunterz.com) and classified advertisements in the Santa Cruz Sentinel (http://www.santacruzsentinel.com/)

showed that properties similar to the renter-occupied home potentially displaced by the project were available for rent in the 95060 zip code area. The residential replacement area, located in the same zip code as the project area, can be characterized as having similar or better street usage, accessibility, composition, utilities, landscaping, and proximity to transportation.

An online review of available residential rental housing units was conducted on August 14, 2014 (www.apartmenthunterz.com and www.santacruzsentinel.com). The review showed 60 apartments, units in multiplex buildings, condos/townhouses, and houses available for rent within the 95060 zip code area. Of the 60 rentals, there were 6 studios, 16 one-bedroom units, 20 two-bedroom units, 13 three-bedroom units, 4 four-bedroom units, and 1 five-bedroom unit. Eleven units were single-family homes. Prices ranged from $1,100 per month for a studio to $6,000 per month for a four-bedroom/four-bathroom single-family home. An additional search for rental units under $1,100 per month was conducted on Craig's List (www.craigslist.org) on August 14, 2014, and showed rooms for $900 per month and studios for $1,000 per month. So, there is available rental housing on the market similar to the displacement property to relocate the residents of the renter-occupied home potentially displaced by the project.

The City of Santa Cruz offers a First-Time Homebuyer Program, designed to fill the gap between what a first-time homebuyer can borrow from a mortgage lender and the purchase price of the home. This program could assist potentially displaced renters in purchasing housing equal to the home that is being displaced by the project.

The residential replacement dwelling would be in equal or better neighborhoods, at prices within the financial means of the individuals and family displaced, and reasonably accessible to their places of employment. Before any displacement occurs, affected individuals would be offered a comparable replacement dwelling that is open to all persons regardless of race, color, religion, sex, or national origin, consistent with the requirements of Title VIII of the Civil Rights Act of 1968. This assistance would also include supplying information concerning federal- and state-assisted housing programs, and any other known services being offered by public and private agencies in the area. If there are displacees in Section 8 housing, the City or its contractor must assure that Section 8 housing is available to the displacees at the time of relocation. This assistance would be led by the City of Santa Cruz (not Caltrans). Specific policies on relocation benefits are described in Appendix C.

Limited replacement resources are expected to be available on the market to relocate the business potentially displaced by the project. An online review of available commercial/retail properties was conducted on December 17, 2014 (www.loopnet.com and www.santacruzsentinel.com). The LoopNet review showed six retail properties and three vacant land properties available in the 95060 zip code area. Of these, three retail properties and two vacant land properties appeared potentially suitable for a landscaping and building supply business. The review of classified advertisements in the *Santa Cruz Sentinel* showed five commercial properties available within an 8-mile radius of zip code 95060. Of these, one appeared potentially suitable for a landscaping and building supply business. The business being displaced would receive information on comparable properties for lease or purchase. This assistance would be led by the City of Santa Cruz (not Caltrans). Specific policies on relocation benefits are described in Appendix C.

2.1.3 Utilities/Emergency Services

Affected Environment

Utility facilities in the project vicinity include the following:

- Overhead electric and telephone/communication wires
- Underground electric, gas, sanitary sewer, water, telephone, and fiber optics

Pacific Gas & Electric is the provider of gas and electricity service in the project area. The City of Santa Cruz provides sanitary sewer service and water service. There are several telephone/communication providers.

The City of Santa Cruz Fire Department provides fire protection services and emergency response to the city. Of the three fire stations maintained by the department, Station 2 at 1103 Soquel Avenue is closest to the project site. The City of Santa Cruz Police Department, the Santa Cruz County Sheriff's Office, and the California Highway Patrol provide police protection and traffic enforcement in the project area.

Environmental Consequences

The following utility systems would be affected by the project improvements:

- Street lighting along Route 9 and River Street would need to be relocated.
- Traffic signals would need to be modified including relocating/replacing poles and the signal boxes at the Route 1/9 and Route 9/Encinal Street intersections.

- Overhead telephone poles at Route 9/Encinal Street would be relocated.
- Overhead joint pole for telephone and electrical at Route 9/Coral Street would be relocated.
- Underground joint trenches and related facilities for gas and electric on River Street would be adjusted/relocated, as needed, due to possible underground conflicts.
- The water fire hydrant on River Street would be relocated.

Implementation of the project is expected to alleviate congestion within the project area, thereby decreasing the number of accidents that emergency service providers would need to respond to. Also, when police and fire personnel need to use Routes 1 and 9 as a response route, the reduction in congestion would help rescue crews reach their destinations more quickly. Construction of the project may result in a slight increase in congestion during peak hours within the project construction area, but these impacts would be temporary.

No-Project Alternative

Utilities would remain unchanged under the No-Project Alternative. Therefore, no avoidance or minimization measures would be required.

Avoidance, Minimization, and/or Mitigation Measures

The relocation or reconfiguration of any utilities affected by the project would be coordinated with the affected utility owner/company. Coordination efforts would include planning for utility re-routes, identifying any other potential conflicts, and formulating strategies for overcoming problems that could arise to ensure minimum disruption of utility service or operation during the utility work and project construction.

No mitigation is required.

2.1.4 Traffic and Transportation/Pedestrian and Bicycle Facilities

Regulatory Setting

Caltrans, as assigned by the Federal Highway Administration, directs that full consideration should be given to the safe accommodation of pedestrians and bicyclists during the development of federal-aid highway projects (see 23 Code of Federal Regulations 652). It further directs that the special needs of the elderly and the disabled must be considered in all federal-aid projects that include pedestrian

facilities. When current or anticipated pedestrian and/or bicycle traffic presents a potential conflict with motor vehicle traffic, every effort must be made to minimize the detrimental effects on all highway users who share the facility.

In July 1999, the U.S. Department of Transportation issued an Accessibility Policy Statement pledging a fully accessible multimodal transportation system. Accessibility in federally assisted programs is governed by the U.S. Department of Transportation regulations (49 Code of Federal Regulations Part 27) implementing Section 504 of the Rehabilitation Act (29 U.S. Code 794). The Federal Highway Administration has enacted regulations for the implementation of the 1990 Americans with Disabilities Act (ADA), including a commitment to build transportation facilities that provide equal access for all persons. These regulations require application of the ADA requirements to federal-aid projects, including Transportation Enhancement Activities.

Affected Environment

This section is based on the Traffic Operations Report (February 8, 2011) prepared for this project.

Key Intersections

The traffic analysis for the project evaluated baseline and future (2030) traffic conditions at the intersection of Route 1/9 and three other closely spaced intersections along Route 9 as follows (see Figure 2-3):

1. Route 9 and Route 1 (signals)
2. Route 9 and Coral Street (no signals)
3. Route 9 and Fern Street (no signals)
4. Route 9 and Encinal Street (signals)

Baseline peak hour delays at the studied intersections are presented in Table 2-4.

Table 2-4 Baseline Intersection Delay

Intersection		Intersection Control	Delay (seconds)[a]	
			Morning	Afternoon
1.	Route 1/9	Signal	64.0	152.6
2.	Route 9/Coral Street	No signal	2.1	27.2
3.	Route 9/Fern Street	No signal	2.1	77.6
4.	Route 9/Encinal Street	Signal	9.1	19.7

Source: Highway 1 and Highway 9 Intersection Modification Traffic Operations Report, February 8, 2011.

[a] The delay reported at intersections with and without signals is the average for all movements approaching the intersection.

Baseline conditions are based on 2005 traffic counts conducted in the field. With the economic downturn and rising gas prices over the past eight years (specifically 2008/2009), the City has noticed reduced traffic volumes on all corridors and less development than originally modeled. The economic downturn not only affected traffic conditions in 2008/2009, but in subsequent years. Therefore, traffic counts in 2010 (or 20 years before the project traffic forecast of 2030) generally have been lower than they were in 2005. It is probable that the analysis in this section presents a worst-case analysis because the actual change in traffic volumes between 2005 and 2030 may be greater than or equal to the change between 2010 and 2030. The 2030 traffic forecast used in this analysis incorporates the most up-to-date land use assumptions in the project vicinity.

Figure 2-3 Traffic Study Area and Study Intersections

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Each intersection is described below:

1. Route 1/9: During the morning peak hour at this intersection with signals, long though vehicle queues occur on Route 1 in both the northbound and southbound directions. The queues often extend beyond the left-turn and right-turn lanes, blocking access to the turn lanes. During the afternoon peak hour, long through queues occur in the northbound and southbound directions on Route 1. As in the morning peak hour, these queues often extend beyond the left-turn and right-turn lanes, blocking access to the turn lanes. The two southbound left-turn queues on Route 9 frequently spill out of the turn lanes and queue back to Fern Street and occasionally as far as Encinal Street. The northbound through movement on River Street occasionally queues past Cottonwood Street to the south.

2. Route 9/Coral Street: About 300 feet north of Route 1, Coral Street intersects with Route 9. At this T-intersection, traffic on Coral Street is controlled with a stop sign. Northbound left turns on Route 9 and eastbound left turns on Coral Street are not allowed. The only conflicting movements at this intersection are southbound through traffic (on Route 9) and the eastbound right turns on Coral Street. During the morning peak hour, vehicle queues in the two southbound left-turn lanes at the Route 1/9 intersection occasionally spill back past Coral Street. However, in general, this intersection functions well during the morning peak hour. During the afternoon peak hour, eastbound traffic on Coral Street has difficulty accessing southbound Route 9 due to the long queues from the Route 1/9 intersection that continuously block the intersection. Queuing on Coral Street occasionally blocks the driveway to the Rebele Family Shelter.

3. Route 9/Fern Street: This T-intersection with no signal operates well during the morning peak hour. During the afternoon peak hour, the southbound queue from the Route 1/9 intersection typically extends through this intersection. The intersection is marked “Keep Clear” to allow northbound left-turn vehicles access to Fern Street. The northbound left-turn lane frequently spills beyond the lane, blocking the northbound through lane on Route 9.

4. Route 9/Encinal Street: At this intersection with signals, northbound left-turn queues frequently spill back past Fern Street during both peak hours. However, the queues are typically able to clear the intersection in one signal cycle.

Accident data show that a total of 56 accidents occurred at the Route 1/9 intersection between January 2006 and December 2008, or 18.7 accidents per year. During this

same period, 6 accidents occurred at the Route 9/Coral Street intersection (or 2 accidents per year), 2 accidents at the Route 9/Fern Street intersection (or 0.7 accidents per year), and 11 accidents at the Route 9/Encinal Street intersection (or 3.7 accidents per year). Based on a comparison of these measured accident rates against "expected accident rates" (accident occurrences at similar locations subjected to similar traffic flows), the analysis found that:

- The Route 1/9 intersection accident rate of 0.68 accidents per million vehicles entering the intersection is above the expected accident rate of 0.43 accidents per million vehicles.
- The Route 9/Coral Street intersection accident rate of 0.30 accidents per million vehicles entering the intersection is above the expected accident rate of 0.14 accidents per million vehicles.
- The Route 9/Fern Street intersection accident rate of 0.11 accidents per million vehicles entering the intersection is below the expected accident rate of 0.14 accidents per million vehicles.
- The Route 9/Encinal Avenue intersection accident rate of 0.63 accidents per million vehicles entering the intersection is above the expected accident rate of 0.43 accidents per million vehicles.

Existing Pedestrian and Bicycle Facilities

The City recently completed a bicycle and pedestrian bridge, called the San Lorenzo River Multipurpose Path, across the San Lorenzo River just south of the Route 1 bridge and 600 feet east of the Route 1/9 intersection. The San Lorenzo River Multipurpose Path provides a direct pedestrian and bicycle connection between Gateway Plaza and Encinal Street and provides an alternative to pedestrian/bicycle travel on River Street and Route 9 (see Figure 2-4). This path is part of the Santa Cruz County Regional Transportation Commission's bikeway system and is now considered the primary north-south pedestrian and bicycle corridor along the San Lorenzo River. River Street and Route 9 are identified as part of the city and county's bikeway system. Bicycle access is prohibited on Route 1.

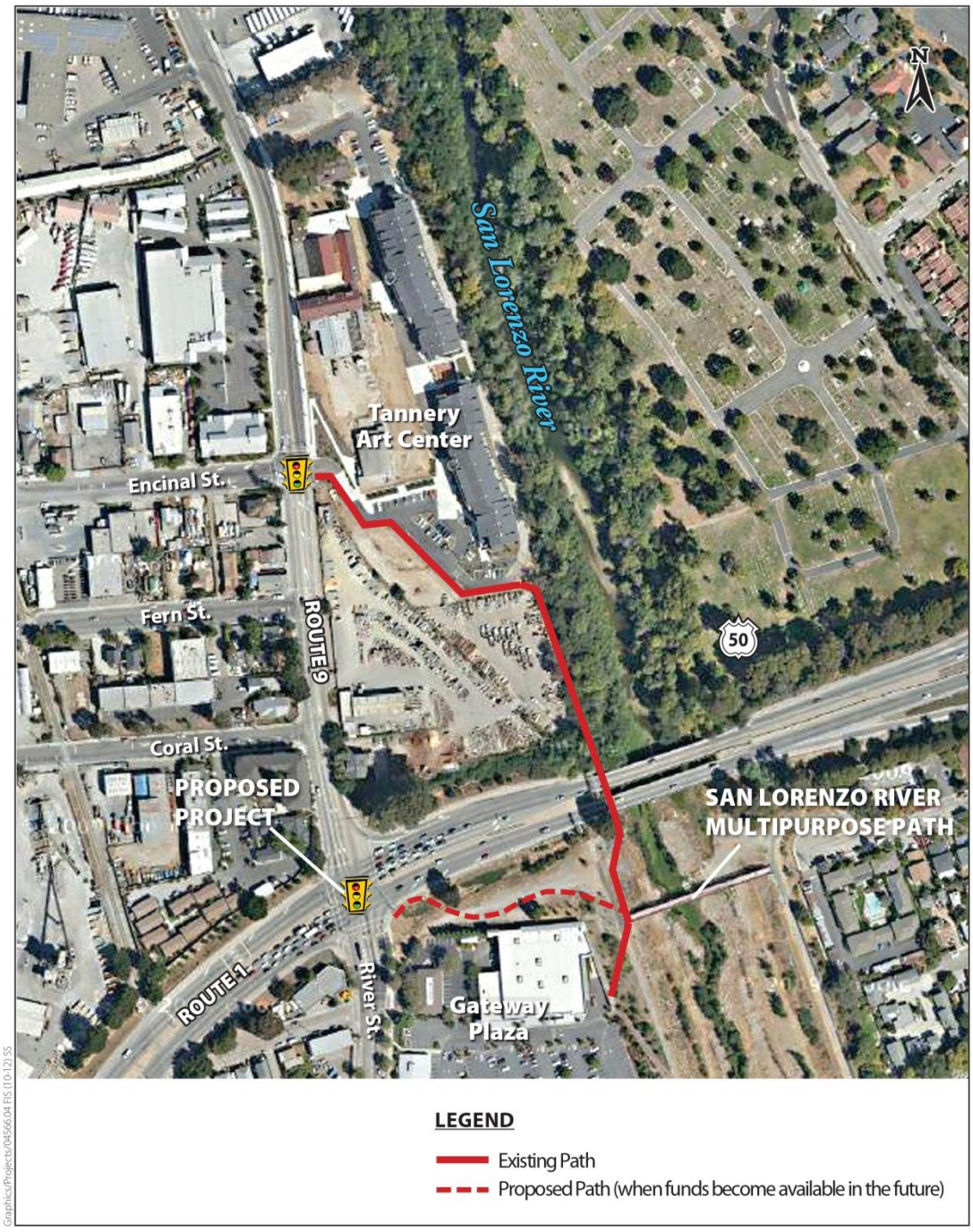

Figure 2-4 San Lorenzo River Multipurpose Path

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A sidewalk for pedestrians is available along Route 9 between Encinal Street and Route 1. Pedestrian access along River Street is available south of Route 1 on both sides of the street. Pedestrians are permitted to cross Route 1 only at the westerly leg of the intersection (with signals) at Route 9. Pedestrians are permitted to cross Route 9 at the northerly leg of the intersection (with signals) at Encinal Street and the southerly leg of the intersection (with signals) at Route 1. Pedestrian access on the east side of Route 9 is not available other than via the San Lorenzo River Multipurpose Path along the San Lorenzo River. Along Route 1, pedestrian access is prohibited.

Environmental Consequences

2030 Peak Hour Traffic Volumes and Delay

Peak hour turns for both the morning and afternoon peak hour were provided in the Association of Monterey Bay Area Government's travel forecasting model. Turns in the morning and afternoon peak hours were provided for the years 2000 and 2030. Design turn volumes were developed from the traffic counts, and traffic projections were forecasted from the model. The future design volumes were calculated by adding 83% (25/30) of the modeled estimated increase in traffic between 2000 and 2030 to the 2005 traffic counts. Design turns at the three downstream intersections were developed from the design volumes at the Route 1/9 intersection. The turn volumes at these intersections were calculated proportionally to the increase in traffic on Route 9.

Also included in the 2030 turn volumes were morning and afternoon peak hour volumes from the Tannery Arts Center on the east side of Route 9 across from Encinal Street. These traffic volumes were obtained from the Tannery Arts Center Traffic Impact Analysis Final Draft Report (November 7, 2004).

The model projects significant increases in traffic along Route 1 in both directions. The combined (northbound and southbound) through movements on Route 1 at the intersection with Route 9 are projected to increase by approximately 33% during the morning peak hour and 29% during the afternoon peak hour by 2030. Traffic volumes on Route 9, west of Route 1, are forecasted to increase by about 36% during the morning peak and about 18% during the afternoon peak hour.

Based on the 2030 design volumes, delay was calculated for "No-Project" and "Project" future scenarios (Table 2-5).

Table 2-5 Year 2030 Delay for No-Project and Project Conditions

Intersection		Intersection Control	Hr.	2005 Delay (sec)[a]	2030 No-Build Delay (sec)[a]	2030 Project Delay (sec)[a]	Change in Delay (2030 Project Minus Baseline)	Change In Delay (2030 Project Minus 2030 No-Project)
1.	Route 1/9	Signals	AM	64.0	77.3	66.6	2.6	-10.7
			PM	152.6	164.7	100.4	52.2	-64.3
2.	Route 9/ Coral Street	No signals	AM	2.1	4.0	2.9	0.8	-1.1
			PM	27.2	30.3	78.4	51.2	48.1
3	Route 9/ Fern Street	No signals	AM	2.1	3.0	2.5	0.4	-0.5
			PM	77.6	154.3	132.7	55.1	-21.6
4.	Route 9/ Encinal Street	Signals	AM	9.1	13.1	13.4	4.3	0.3
			PM	19.7	43.2	48.8	29.1	5.6

Source: Highway 1 and Highway 9 Intersection Modification Traffic Operations Report, February 8, 2011.
[a] The delay reported at intersections with and without signals is the average per vehicle for all movements.

Route 1/9 Intersection

2030 No-Project Conditions: Under no-project conditions, the average delay per vehicle is expected to be 77.3 seconds during the morning peak hour and 164.7 seconds during the afternoon peak hour, respectively. The long delays in the morning and afternoon peak hours are due to the high volumes at the intersection of Route 1/9 as well as the delay caused by northbound vehicles waiting to turn left from Route 9 onto Fern Street. Under these conditions, the northbound left-turn volume from Route 9 onto Fern Street and the conflicting southbound through volume on Route 9 are projected to increase significantly. This situation will result in fewer gaps for traffic turning left from Route 9 onto Fern Street causing a spillover of left-turning traffic into the through lane. This spillover would cause significant delays to the southbound left-turn traffic and northbound right-turn traffic from Route 1 onto Route 9 and the northbound through traffic on River Street.

2030 Project Conditions: With the proposed construction of the project, the delay reduces to 66.6 seconds during the morning peak hour and 100.4 seconds during the afternoon peak hour. The project improvements, which include an additional left-turn lane from Route 1 onto northbound Route 9 and widening the northbound roadway segment of Route 9 between Route 1 and Fern Street to two lanes, contribute to the decrease in average delay at this intersection in the morning and afternoon peak hour periods. Southbound left-turn traffic from Route 1 to Route 9, the northbound right-turn traffic from Route 1 to Route 9, and the northbound through traffic on River Street toward Encinal Street would be able to take advantage of the additional northbound through lane. Although the delays in the morning and afternoon peak hour are reduced, the problem of spillover of left-turn traffic from Route 9 onto Fern

Street and spillback of this traffic into the Route 1/9 intersection would continue to exist.

Baseline Conditions versus 2030 Project Conditions: Under baseline conditions along Route 1 during the morning and afternoon peak periods, long vehicle queues repeatedly extended beyond both the left- and right-turn lanes in both the northbound and southbound direction, blocking access to the turn lanes. Similarly, along southbound Route 9, similar excessive queuing conditions occurred for the two left-turn lanes, often spilling out of the turn lanes and backing up to Fern Street and occasionally as far as Encinal. This resulted in significant delay and required multiple signal cycles for vehicles to pass through the intersection; delay for the intersection was 64.0 seconds and 152.6 seconds in the morning and afternoon peak hours, respectively.

Under 2030 with-project conditions, the morning and afternoon peak hour level of service for the intersection remains the same compared to baseline conditions (E and F, respectively), but the average delay would be significantly reduced by 52.2 seconds in the afternoon peak hour compared to baseline conditions. The project improvements, which include an additional left-turn lane from Route 1 onto northbound Route 9 and widening the northbound roadway segment of Route 9 between Route 1 and Fern Street to two lanes, contribute to the significant decrease in average delay at this intersection in the afternoon peak hour period. Southbound left-turn traffic from Route 1 to Route 9, the northbound right-turn traffic from Route 1 to Route 9, and the northbound through traffic on River Street toward Encinal Street would be able to take advantage of the additional northbound through lane.

Route 9/Coral Street Intersection

2030 No-Project Conditions: Under no-project conditions, this intersection is expected to operate with 4.0 seconds of delay during the morning peak hour and with 30.3 seconds of delay during the afternoon peak hour. Excessive delay is experienced by right-turning vehicles on Coral Street that eventually turn left at the downstream intersection of Route 1/9. These vehicles need to find gaps in the southbound traffic on Route 9 to merge into the innermost lane to make a left-turn at the downstream intersection of Route 1/9.

2030 Project Conditions: With the project improvements in place, the delay is expected to decrease to 2.9 seconds during the morning peak hour and increase to 78.4 seconds during the afternoon peak hour. Under no-build conditions, the southbound right-turn lane at the Route 1/9 intersection extends all the way back to

Coral Street, which works better for traffic from Coral Street that is turning right at the Route 1/9 intersection. Under project conditions, this right-turn lane would be converted to a through lane and a separate right-turn lane of about 125 feet would be provided. This alignment makes it more difficult for right-turning traffic from Coral Street because these vehicles would have to find gaps in the southbound Route 9 traffic, resulting in greater delays for this movement. Also, the queue from southbound Route 9 through traffic at the Route 1/9 intersection sometimes extends beyond Coral Street, so there are no gaps for right-turning traffic from Coral Street. With the project, the delay for Coral Street traffic would increase, but the delay for traffic on Route 9 would decrease. Also, the number of vehicles able to cross this intersection would increase under project conditions.

Baseline Conditions versus 2030 Project Conditions: During the morning peak hour, vehicle queues in the two southbound left-turn lanes at the Route 1/9 intersection occasionally spilled back past Coral Street. Overall, this intersection functioned well during the morning peak hour. During the afternoon peak hour, eastbound vehicle traffic on Coral Street had difficulty accessing southbound Route 9 due to the long vehicle queues from the Route 1/9 intersection that continuously blocked the intersection, resulting in an average delay of 27.2 seconds.

Under 2030 project conditions, the morning peak hour level of service delay decreases. However, the average delay in the afternoon peak hour increases by 51.2 seconds. The increase in average delay is largely due to background growth that is expected to occur by 2030. Therefore, with the project, the delay for Coral Street traffic would increase, but the delay for traffic on Route 9 would decrease. In addition, the number of vehicles able to cross this intersection (absolute volume of traffic served) would increase under project conditions.

Route 9/Fern Street Intersection

2030 No-Build Conditions: This intersection is projected to operate with 3.0 seconds of delay during the morning peak hour and 154.3 seconds of delay during the afternoon peak hour. Right-turning vehicles on Fern Street that eventually turn left at the downstream intersection of Route 1/9 would experience significant delays. These vehicles would need to find gaps in the southbound traffic to merge into the innermost lane to make a left turn at the Route 1/9 intersection.

2030 Project Conditions: With the project improvements in place, delay during the morning peak hour is slightly reduced by 0.5 second. In the afternoon peak hour, delay is expected to be reduced by about 21.6 seconds. The right-turning vehicles on Fern Street would benefit from the project as both the receiving lanes on southbound Route 9 would provide access to left-turn lanes at the Route 1/9 intersection (under no-project conditions, only the innermost through lane is aligned to accommodate the left-turning vehicles).

Baseline Conditions and 2030 Project Conditions: During the morning peak hour, the intersection operated well with an average delay of 2.1 seconds under baseline conditions. During the afternoon peak hour with an average delay of 77.6 seconds, the southbound vehicle queue from the Route 1/9 intersection frequently extended through the intersection. The northbound left-turn traffic frequently spilled beyond the left-turn lane, blocking the northbound through lane. Traffic flow was affected by the eastbound approach on Fern Street.

Under 2030 project conditions, the average delay in the afternoon peak hour increases by approximately 55.1 seconds (from 77.6 to 132.7 seconds). The increase in average delay is largely due to background growth that is expected to occur by 2030. The right-turning vehicles on Fern Street would benefit from the project because both of the receiving lanes on southbound Route 9 would provide access to left-turn lanes at the Route 1/9 intersection (under no-project conditions, only the innermost through lane is aligned to accommodate the left-turning vehicles). With the project, though the delay for Fern Street traffic would increase, the delay for traffic on Route 9 would decrease. Also, the number of vehicles able to cross this intersection (absolute volume of traffic served) would increase under project conditions.

Route 9/Encinal Street Intersection

2030 No-Build Conditions: This intersection is expected to operate with 13.1 seconds of delay during the morning peak hour and 43.2 seconds of delay during the afternoon peak hour under no-project conditions.

2030 Project Conditions: With construction of the project, this intersection is expected to operate with 13.4 seconds of delay during the morning peak hour and 48.8 seconds of delay during the afternoon peak hour. The increase in delay is related to the increase in the number of vehicles being served at this intersection. The throughput at this intersection is expected to increase by 10% in the afternoon peak hour due to the upstream widening of Route 9 from one lane to two lanes.

Baseline Conditions and 2030 Project Conditions: This intersection operated well during both peak hours. No major operational problems were seen except that, during both peak hours, northbound left-turn vehicle queues spilled back past Fern Street; the queues were able to clear the intersection in one signal cycle.

Under the 2030 project scenario, the average delay in the morning peak hour increases slightly by 4.3 seconds. The average delay in the afternoon peak hour increases by 29.1 seconds. The increase in average delay is largely due to background growth that is expected to occur by 2030. However, the absolute volume of traffic served will increase in both the morning and afternoon peak hour in 2030 with the project compared to baseline conditions due to the upstream widening of Route 9 from one lane to two lanes. Therefore, with the project, the delay for Encinal Street traffic would increase, but the delay for traffic on Route 9 would decrease.

Demand Versus Volume Served

In addition to the average delay at the intersections, the number of vehicles that the four study intersections would serve (the number of vehicles that are expected to exit an intersection) was compared to the demand at these intersections under baseline conditions.

Table 2-6 shows the throughput (volume that is being served) compared to the demand under baseline, 2030 no-project, and 2030 project conditions.

Table 2-6 Demand Versus Peak Hour Volume Served

Intersection		Intersection Control	Peak Hour	Baseline Traffic Served		2030 No-Project Traffic Served		2030 Project Traffic Served		2030 Project Minus Baseline		2030 Project Minus 2030 No-Project	
				Peak Hour Volume	% of Demand	Peak Hour Volume	% of Demand	Peak Hour Volume	% of Demand	Peak Hour Volume	Change in % of Demand Served	Peak Hour Volume	Change in % of Demand Served
1.	Route 1/9	Signals	AM	4,607	95%	4,697	71%	5,044	77%	437	-18%	347	6%
			PM	4,638	73%	4,806	63%	5,448	71%	810	-2%	642	8%
2.	Route 9/ Coral Street	No signals	AM	1,588	97%	1,810	81%	1,934	87%	346	-10%	124	6%
			PM	1,939	78%	1,996	68%	2,221	75%	292	-3%	225	7%
3.	Route 9/ Fern Street	No signals	AM	1,491	99%	1,679	81%	1,793	86%	302	-13%	114	5%
			PM	1,675	74%	1,754	65%	2,022	75%	347	1%	268	10%
4.	Route 9/ Encinal Street	Signals	AM	1,160	96%	1,384	85%	1,449	89%	289	-7%	65	4%
			PM	1,411	86%	1,462	75%	1,659	86%	248	0	197	11%

Source: Highway 1 and Highway 9 Intersection Modification Traffic Operations Report, February 8, 2011.

As shown in Table 2-6, under baseline conditions, the Route 1/9 intersection could accommodate 95% of the morning peak hour traffic demand and 73% of the afternoon peak hour traffic demand. Under 2030 no-project conditions with traffic volumes increasing by approximately 30%, the Route 1/9 intersection is projected to serve only 71% of the morning peak hour traffic demand and 63% of the afternoon peak hour traffic demand. With project improvements, the traffic volume served at this intersection is projected to increase to 77% of the morning peak hour traffic demand and 71% of the afternoon peak hour traffic demand.

Traffic served at the other three study intersections is also projected to increase with the project. In general, during the morning peak hour, 4% to 6% more traffic would be able to travel through the intersections. The benefits of the project are much greater during the afternoon peak hour, with 8% to 10% more serving capacity than under no-project conditions. This means that though congestion would continue to occur in the future, the duration of the congestion would be shorter with the project improvements.

Total Network Performance and System Delay

The systemwide average delay and the total number of vehicles served through the system were also assessed to evaluate the benefits of the project. "Systemwide delay" is the delay associated with all the vehicles entering and exiting the study corridor network. "Total vehicles served" is the total number of vehicles expected to be able to travel through the study corridor during the peak hour. As shown in Table 2-7, the total delay under project conditions would decrease by 156 hours in the morning peak hour and 260 hours in the afternoon peak hour, compared to no-project conditions. With the project improvements, the network would be able to accommodate 331 more vehicles in the morning peak hour and 620 more vehicles in the afternoon peak hour.

Table 2-7 Total System Delay and Network Performance

Measure of Effectiveness	Peak Hour	Baseline	2030 No-Project	2030 Project	2030 No-Project Minus Baseline	2030 Project Minus Baseline	2030 Project Minus 2030 No-Project
Total Delay (hours)	AM	231	1,034	878	803	647	-156
	PM	612	1,526	1,266	914	654	-260
Vehicles Served	AM	4,688	4,853	5,184	165	496	331
	PM	4,869	5,049	5,669	180	800	620

Source: Highway 1 and Highway 9 Intersection Modification Traffic Operations Report, February 8, 2011.

Based on the traffic analysis, implementation of project improvements would result in significant improvements in reducing systemwide average delay and accommodating more travelers within the corridor. As noted in Table 2-5, the project improvements would reduce delay, compared to no-project conditions, at the Route 1/9 and Route 9/Fern Street intersections, but increase delay at certain movements at the Route 9/Encinal Street and Route 9/Coral Street intersections. At the Route 9/Encinal Street intersection, the increase in delay is related to the expected increase in throughput at this intersection. With the widening of Route 9 from one lane to two lanes, the intersection would serve a greater number of vehicles. At the Route 9/Coral Street intersection, the project would increase the delay for the Coral Street movement, but would decrease delay for the Route 9 movement.

Pedestrian and Bicycle Facilities

With the project, the current crosswalks at the Route 1/9 and Route 9/Encinal Street intersections would be generally unchanged. The crosswalk distance across Route 1 would be reduced from 152 feet to 133 feet with removal of the pork-chop islands, and the distance across River Street would increase from 120 feet to 122 feet. A widened 8-foot shoulder accessible to bicycles would be provided on northbound Route 9 between Route 1 and Fern Street; a 4-foot-wide shoulder would continue north of Fern Street to Encinal Street. Also, 4-foot bike lanes would be provided on the northern and southern legs of the Route 1/9 intersection and the southern leg of the Route 9/Encinal Street intersection. Curb ramps that comply with the Americans with Disabilities Act (ADA) would be provided at all appropriate pedestrian crossings. Also, changes to intersections with signals would include installation of bicycle detection devices for the bike lanes.

Construction Impacts

The project is expected to consist of four stages of construction to maintain flow through the intersection during construction of the project:

- Stage one would consist of construction of the roadway widening along northbound Route 9 and River Street, including shoulder, curb and gutter and drainage improvements.
- Stage two would shift all Route 9 traffic to the constructed portion of northbound Route 9 and River Street to free up southbound Route 9 and River Street for demolition and construction of the proposed median and associated drainage improvements. Once the median is in place, pavement delineation would be laid out to open both directions of Route 9 and River Street.

- Stage three would consist of roadway construction of the north side of Route 1 where widening occurs as well as the curb return and sidewalk at the northwest quadrant.
- Stage four would consist of construction of the Route 1 proposed median and associated drainage features, and reconstruction of the median nose on the east side of the intersection.

Cumulative Impacts

The impact analysis described above is a cumulative analysis because future traffic conditions are evaluated based on anticipated future growth in 2030, as proposed by the City of Santa Cruz General Plan, compared to baseline conditions. The project's incremental contribution to cumulative traffic operations is not expected to be cumulatively considerable as the project is designed to decrease delays and increase throughput through the intersection.

No-Project Alternative

A comparison of existing conditions to no-project conditions shows that traffic is expected to increase between baseline conditions and 2030 whether or not the project is constructed. Delays are also expected to be greater in 2030 than they are under baseline conditions due to background growth in the area.

The analysis above shows that project improvements would result in significant improvements in reducing systemwide average delay within the corridor in 2030 compared to 2030 conditions without the project. The total number of vehicles served throughout the system would also increase with the project.

Avoidance, Minimization, and/or Mitigation Measures

1. The City would develop a Traffic Management Plan to assess stage construction and traffic handling, to minimize impacts to vehicular, bicycle, and pedestrian traffic during project construction. To prepare the plan, the City would coordinate with affected local entities to develop necessary strategies to maintain efficient and safe movement of vehicles through the construction zone. Measures that may be included in the plan are a public awareness campaign, portable changeable message signs, and a Construction Zone Enhanced Enforcement Program.
2. Pedestrian and bicycle access during construction would be staged to preserve existing or similar access points and travel routes to the maximum extent. The San Lorenzo River Multipurpose Path along the San Lorenzo River would also be

available as an alternative route to bypass the construction area along River Street and Route 9.

2.1.5 Visual/Aesthetics

Regulatory Setting

The California Environmental Quality Act 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" (California Public Resources Code Section 21001[b]).

Affected Environment

The project area is largely characterized by commercial development. One permanent residence that is tenant-occupied sits in the northeast quadrant of the Route 1/9 intersection. Route 1/9 and River Street are not State- or City-designated scenic routes, and there are no scenic vistas associated with the project. Route 9, heading north from the intersection, serves as an entry to the redwoods through Pogonip, which is City-designated open space, and Henry Cowell Redwoods State Park, which is just beyond Pogonip.

Figure 2-5 is a location map showing where representative photos of the proposed project were taken, and Figure 2-6 includes the corresponding photos. The views are described below:

- Mature trees and landscaping surround the residence, and mature riparian vegetation lines the drainage in the northeast corner of the intersection (Figure 2-6, Photo 1).
- Central Home Supply is a landscaping and building supply store whose showroom and several parking spaces front Route 9 (Figure 2-6, Photo 2).
- The residence at 744 River Street in the northeast quadrant of the Route 1/9 intersection is next to Arroyo de San Pedro Regaldo. The residence is barely visible behind the fencing and existing vegetation (Figure 2-6, Photo 3).
- Vegetation in the northeast quadrant of the Route 1/9 intersection is associated with Arroyo de San Pedro Regaldo. In the southeast quadrant, landscaping fronts commercial uses (Figure 2-6, Photo 4).

- This view looks south down River Street toward the landscaping and fencing in front of the Rebele Family Shelter and Homeless Services Center (Figure 2-6, Photo 5).
- River Street contains a medical office complex and commercial uses south of Route 1. Landscaping along River Street is provided by street trees and one heritage redwood tree; there are also ornamental and overhead cobra streetlights near the intersection (Figure 2-6, Photo 6).
- The southeast corner of the intersection contains a medical office complex and commercial uses. Landscaping along River Street is provided by street trees and one heritage redwood tree; there are also ornamental streetlights along the roadway (Figure 2-6, Photo 7).
- Between the northwest and southwest corners, the median contains a decorative, lighted sign that reads "River Street–Welcome to Downtown Santa Cruz." The City's General Plan identifies River Street as one of the nine entrances to the city's downtown (Figure 2-6, Photo 8).

Just outside of the project area, but in close proximity to the east, lies the San Lorenzo River and the San Lorenzo River Multipurpose Path. The more natural river corridor and recreational trail provide a visual contrast to the more urbanized setting of the Route 1/9 intersection.

Viewers who would see the proposed project include those traveling in vehicles along Routes 1 and 9, River Street, and adjacent local streets. These viewers would have low sensitivity to visual changes resulting from the proposed project due to the short periods of time they view the project site and their focus on driving. Viewers associated with adjacent businesses would have moderately high sensitivity to visual changes resulting from the proposed project because they have semi-permanent views from their respective facilities, but they are also not focused on views of the roadways.

Recreationists such as cyclists, walkers, runners, and joggers traveling on project roadways would also be moderately sensitive to visual changes because, while they are likely to regard the outdoor environment as a holistic visual experience, they are often only transient viewers seeing the proposed project for a short time as they pass through the area.

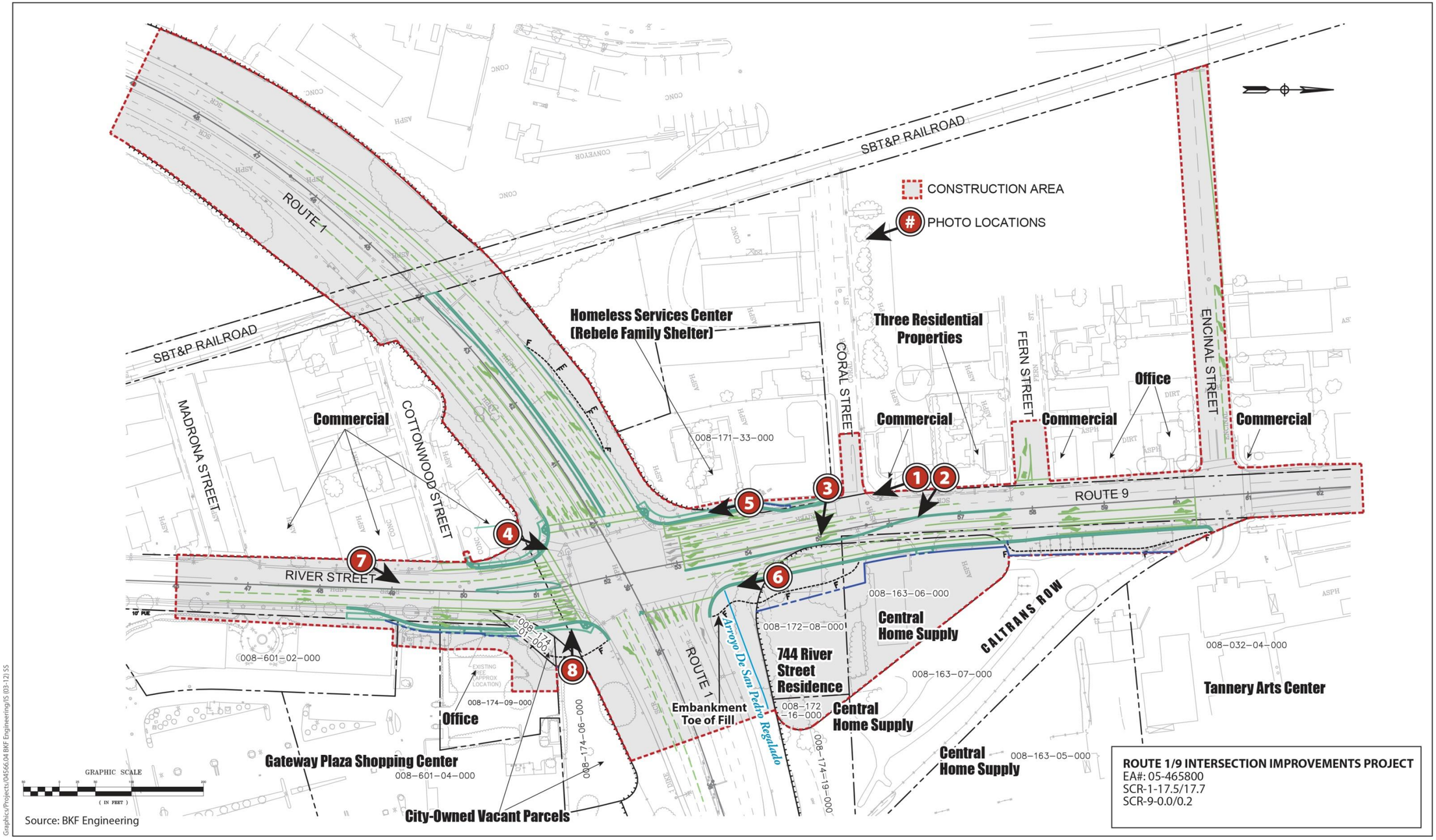

Figure 2-5 Location Map of Representative Photos

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Photo 1: Looking south down Route 9, north of Coral Street, toward the Route 1/9 and River Street intersection.

Photo 2: Looking southeast across Route 9, north of Coral Street, toward Central Home Supply.

Figure 2-6 Representative Photos (1 and 2)

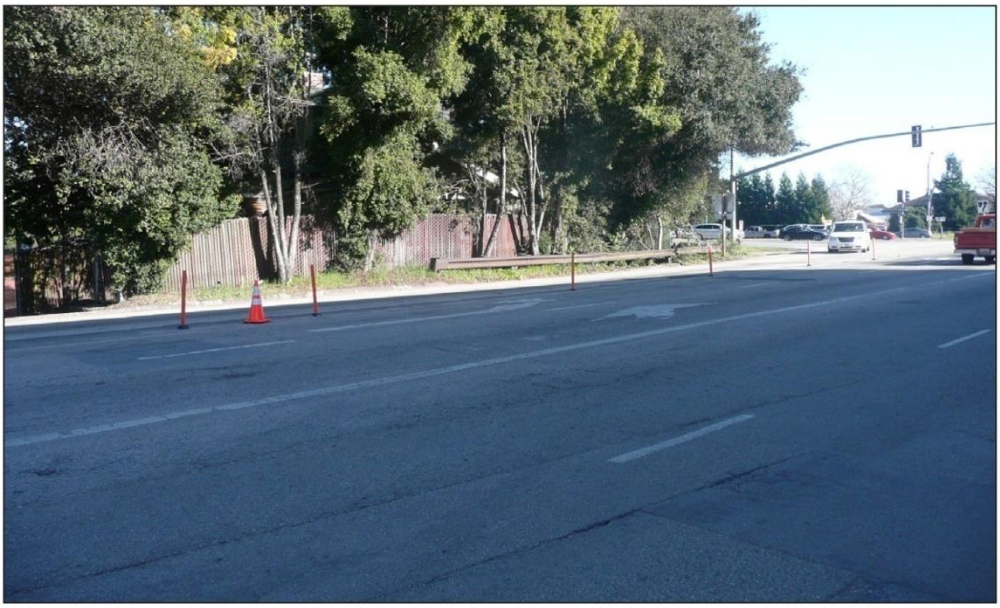

Photo 3: Looking southeast across Route 9, south of Coral Street, toward the residence at 744 River Street.

Photo 4: Looking northeast from the southwest corner of the Route 1/9 intersection toward Arroyo de San Pedro Regalado and Route 1.

Figure 2-6 Representative Photos (3 and 4)

Photo 5: Looking south down River Street, adjacent to the Rebele Family Shelter and Homeless Services Center, toward the Route 1/9 intersection.

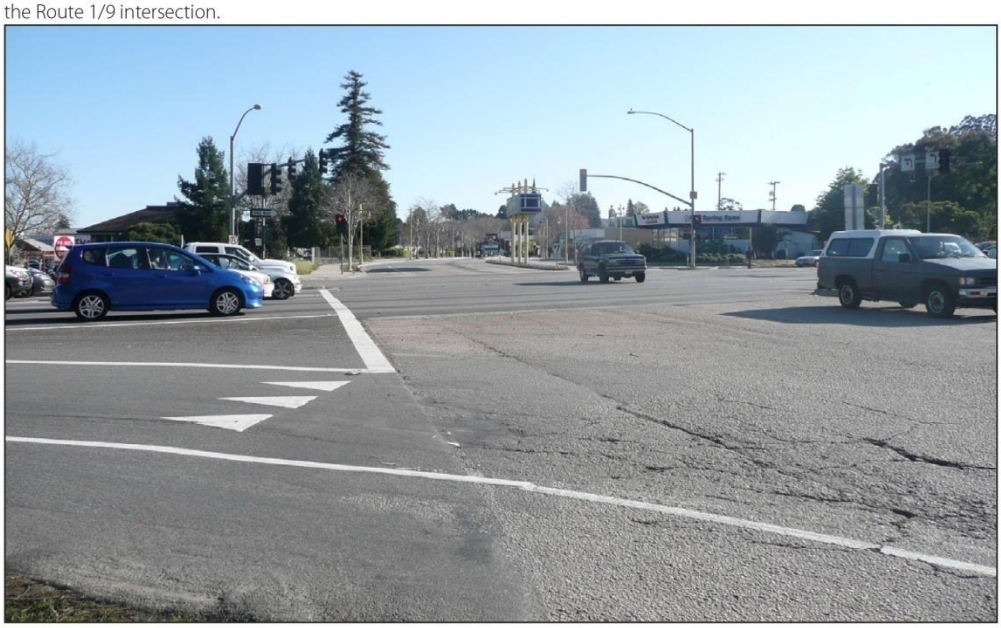

Photo 6: Looking south from the northeast corner of the Route 1/9 intersection toward River Street.

Figure 2-6 Representative Photos (5 and 6)

Photo 7: Looking northeast across River Street, south of Cottonwood Street, toward the Route 1/9 intersection.

Photo 8: Looking west at the River Street gateway sign.

Figure 2-6 Representative Photos (7 and 8)

Environmental Consequences

The project would generally increase the urbanized feel and look of the Route 1/9 intersection with the following changes:

- Removal of the residence at 744 River Street (see Photo 3 in Figure 2-6) and Central Home Supply (see Photo 2). As noted in the project description in Chapter 1, though full acquisition of the parcel that contains Central Home Supply is not required to accommodate the proposed right-of-way, full acquisition of this parcel is assumed for the purposes of the environmental analysis done for this project as a worst-case assumption.
- Potential construction of a new retaining wall near the medical office complex in the southeast quadrant of the Route 1/9 intersection that would be visible to viewers at the medical office complex.
- Removal of ornamental trees and shrubs in front of the Rebele Family Shelter and Homeless Services Center in the northwest quadrant of the Route 1/9 intersection (see Photo 5).
- Removal of about 5 street trees, landscaping, and 2 redwood trees (including 1 of heritage size) in the southeast quadrant of the Route 1/9 intersection. The city defines heritage trees as all species of trees with a circumference of 44 inches or more (equivalent to a diameter of about 14 inches or more) measured at 54 inches above the existing grade.
- Removal of riparian trees and woody understory plants, including eucalyptus trees (of heritage size) and Himalayan blackberry, next to the roadway in the Arroyo de San Pedro Regaldo (northeast) quadrant of the intersection (see Photo 3). See the "Embankment Toe of Fill" in the northeast quadrant of Figure 2-5.
- Additional pavement with widening of the intersection.

Because the River Street median would be changed during construction of the project, the River Street sign would be affected.

Traffic signals at the intersection would be relocated or changed, and street lights along Route 9 and River Street and overhead poles at Route 9/Encinal Street and Route 9/Coral Street would be relocated. These are existing elements in the landscape, and their relocation would not introduce new visual elements into the landscape. The project would reduce the amount of lighting in the project area; with the removal of Central Home Supply and the rental home, those sources of light

would no longer be present. However, removal of vegetation, buildings associated with Central Home Supply, and the rental home, and an increase in the amount of pavement in the project area would increase the amount of glare by increasing reflective paved surfaces and removing sources of shade.

No-Project Alternative

The No-Project Alternative would not result in any aesthetic/visual impacts. Therefore, no avoidance or minimization measures are required.

Avoidance, Minimization, and/or Mitigation Measures

1. Loss of landscaping would be replaced where space allows, or owners would be compensated for their loss of landscaping. Project landscaping would adhere to the following:
   - Seventy-five percent of the plants would be species that are native and indigenous to the project area and California.
   - Invasive plant species would not be used at any location.
   - Vegetation would be planted within the first year following project completion.
   - Irrigation for the replanted areas would use a smart watering system that evaluates the existing site conditions and plant material along with weather conditions to avoid overwatering. Broken spray head, pipes, or other components would be repaired within 1 to 2 days or shut down to avoid wasteful watering practices.
2. Any retaining walls that would be visible to viewers would be treated with aesthetic treatments, to the extent feasible, for the walls to blend with the surroundings. Aesthetics and color would be context sensitive. Walls would be matte and roughened. Low-sheen and non-reflective surface materials would be used to avoid the potential for glare.
3. The River Street gateway sign would be moved to the reconstructed River Street median considering available space and City and State design and roadway safety standards.

Avoidance, minimization, and/or mitigation measures provided under Section 2.3.1, *Natural Communities*, would also benefit visual resources. Specifically, Measure 6 requires compensation for temporary construction-related loss of riparian vegetation by replanting disturbed areas with the native species, including coast live oak and

arroyo willow. Measure 7 requires compensation for heritage trees, including the redwood tree in the southeast quadrant of the intersection, by paying a $250.00 bond for each tree to be removed and then replanting onsite or making a $150.00 donation to the City's Tree Trust fund for each tree to be removed. The replanting option requires the applicant to plant three 15-gallon trees (representing a 3:1 ratio) or one 24-inch-box-size specimen tree (representing a 1:1 ratio) for each approved tree removal.

2.2 Physical Environment

2.2.1 Hydrology and Floodplain

This section is based on the Location Hydraulics Memorandum (March 5, 2012) prepared for this project.

Affected Environment

The project is next to the 100-year inundation area of the San Lorenzo River (see Figure 1-2). Figure 2-7 shows the Federal Emergency Management Agency Flood Insurance Rate Map for the San Lorenzo River. The flood map shows that the project area has a substantial overbank area identified as Hazard Zone A. Runoff from the San Lorenzo River overtops the river banks, but does not overtop the existing Route 1 Bridge.

The U.S. Geological Survey reports a total drainage area of 115 square miles at the Santa Cruz streamgage for the San Lorenzo River. The peak recorded flow at the Santa Cruz gage is 30,400 cubic feet per second on December 23, 1955. The highest reading for the 1988 through current period is 19,000 cubic feet per second. Flood control improvements were made along the San Lorenzo River through downtown Santa Cruz following the 1955 floods and then improved again in the 1990s and early 2000s when the river levees were raised and bridges over the river were replaced.

Environmental Consequences

Except for a limited area of fill in the Arroyo De San Pedro Regaldo drainage, upstream of the Route 1 Bridge, the project would be outside the Federal Emergency Management Agency 100-year inundation area of the San Lorenzo River. The fill is proposed downstream of two existing buildings that block flows through the project area making the zone where the fill would be placed ineffective for conveying river flow. The fill needed for roadway widening would not affect 100-year water levels in the San Lorenzo River.

No increase in flooding risk is expected with construction of the project. The project would fill a small portion of the San Lorenzo River overbank, reducing total overbank flow area by less than 1%. The grading would occur above the 10-year water level and would not change hydraulics for storms more frequent than a 10-year event. The fill would occur outside the effective flow path of the bridge and would not affect flow velocities and friction losses.

No-Project Alternative

This alternative would not result in any drainage impacts. Therefore, no avoidance or minimization measures are required.

Avoidance, Minimization, and/or Mitigation Measures

No mitigation is required.