United States Highway 101 Express Lanes Project

SANTA CLARA COUNTY, CALIFORNIA
DISTRICT 4 – SCL – 101 (PM 16.00/52.55)
4 – SCL – 85 (PM 23.0/R24.1)
EA 2G7100/0412000459

Initial Study with Mitigated Negative Declaration/Environmental Assessment with Finding of No Significant Impact

Prepared by the
State of California Department of Transportation
in Cooperation with the Santa Clara Valley Transportation Authority

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

Caltrans

July 2015

SCH: 2015012012
4-SCL-101-PM 16.00/52.55
4-SCL-85-PM 23.0/R24.1
2G7100/0412000459

Construct express lane facility on US 101 from East Dunne Avenue in Morgan Hill to the Santa Clara/San Mateo County line in Palo Alto (Post Miles 16.00 to 52.55) and restripe the northern 1.1 miles of SR 85 in Mountain View (Post Miles 23.0 to R24.1).

Initial Study with Mitigated Negative Declaration/Environmental Assessment

Submitted Pursuant to: (State) Division 13, California Public Resources Code
(Federal) 42 USC 4332(2)(C)

THE STATE OF CALIFORNIA
Department of Transportation

and

Santa Clara Valley Transportation Authority

July 21, 2015
Date of Approval

Bijan Sartipi
District Director
California Department of Transportation, District 4
NEPA and CEQA Lead Agency

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SCH: 2015012012

CALIFORNIA DEPARTMENT OF TRANSPORTATION
FINDING OF NO SIGNIFICANT IMPACT

FOR THE

US 101 EXPRESS LANES PROJECT

The California Department of Transportation (Department) has determined that the Build Alternative will have no significant impact on the human environment. This FONSI is based on the attached EA and supporting technical reports, which have been independently evaluated by the Department and determined to adequately and accurately discuss the need, environmental issues, and impacts of the proposed project and appropriate mitigation measures. It provides sufficient evidence and analysis for determining that an EIS is not required. The Department takes full responsibility for the accuracy, scope, and content of the attached EA.

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

July 21, 2015
Date

BIJAN SARTIPI
District Director,
California Department of Transportation,
District 4

SCH: 2015012012

MITIGATED NEGATIVE DECLARATION

Pursuant to: Division 13, Public Resources Code

Project Description

The State of California Department of Transportation (Department), in cooperation with the Santa Clara Valley Transportation Authority (VTA), proposes to create an express lane facility on United States Highway 101 (US 101) in both directions between East Dunne Avenue in Morgan Hill and approximately the Oregon Expressway/Embarcadero Road interchange in Palo Alto (Post Miles [PM] 16.00/52.55). The project would convert the existing northbound and southbound single high occupancy vehicle (HOV) lanes to high occupancy toll (HOT) lanes (express lanes) within these limits. A second express lane would be added in both directions from Cochrane Road in Morgan Hill to State Route (SR) 85 in San Jose (PM17.82/26.78), and from Blossom Hill Road in San Jose to North Fair Oaks Avenue in Sunnyvale (PM28.61/44.83) to create a dual express lane facility in these segments. The project would also convert the US 101/SR 85 HOV direct connectors in Mountain View to express lane connectors. Auxiliary lanes would be added in four segments of US 101. Express lane signs and lighting would be added within the right-of-way. The express lanes would allow HOVs to continue to use the lanes without paying a toll, and eligible single-occupant vehicles (SOVs) to pay a toll to use the lanes. The project length is 36.55 miles on US 101 and 1.1 miles on SR 85, for a total of 37.65 miles.

Determination

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

The proposed project would have no effect on agricultural and forest resources, land use and planning, mineral resources, public services, and recreation. In addition, the proposed project would have less than significant effects to aesthetics, air quality, biological resources, cultural resources, geology and soils, greenhouse gas emissions, hazards and hazardous materials, hydrology and water quality, noise, paleontology, population and housing, transportation/traffic, and utilities and service systems. With the following mitigation measure incorporated, the proposed project would have less than significant effects on riparian habitat and threatened and endangered species:

- Payment of fees to the Santa Clara Valley Habitat Conservation Plan/Natural Communities Conservation Plan (HCP/NCCP).

Melanie Brent

Melanie Brent, Deputy District Director
Environmental Planning and Engineering
District 4
California Department of Transportation

July 16, 2015

Date

Summary

The State of California Department of Transportation (Department), in cooperation with the Santa Clara Valley Transportation Authority (VTA), proposes to create an express lane facility on United States Highway 101 (US 101) in both directions between East Dunne Avenue in Morgan Hill and approximately the Oregon Expressway/Embarcadero Road interchange in Palo Alto (Post Miles [PM] 16.00/52.55). The project would convert the existing northbound and southbound single high occupancy vehicle (HOV) lanes to high occupancy toll (HOT) lanes (express lanes) within these limits. A second express lane would be added in both directions from Cochrane Road in Morgan Hill to State Route (SR) 85 in San Jose (PM17.82/26.78), and from Blossom Hill Road in San Jose to North Fair Oaks Avenue in Sunnyvale (PM 28.61/44.83) to create a dual express lane facility in these segments (shown in Appendix F).

The project would also convert the US 101/State Route (SR) 85 HOV direct connectors in Mountain View to express lane connectors, restripe the northern 1.1 miles of SR 85 to introduce a buffer separating the general purpose lanes from the express lane, and connect the SR 85 express lanes to the US 101 express lanes. Auxiliary lanes would be added in both directions on US 101 between Great America Parkway and Lawrence Expressway and in the northbound direction on US 101 between Old Bayshore Highway and North First Street. The project length is 36.55 miles on US 101 and 1.1 miles on SR 85, for a total of 37.65 miles.

Use of the HOV lanes is currently restricted to vehicles with two or more occupants, motorcycles, and certain alternative fuel vehicles. The project would allow single-occupant vehicles (SOVs) to pay a toll to use the lanes, while HOVs would use the lanes for free.

The Department is the lead California Environmental Quality Act (CEQA) agency for the project, and effective October 1, 2012 has been assigned environmental review and consultation responsibilities under the National Environmental Policy Act (NEPA) pursuant to 23 United States Code (USC) 327. The project is proposed by the Department in cooperation with VTA, which is responsible for providing regional funding.

The purpose of the project is to manage traffic in the congested HOV segments of US 101 between the SR 85 interchange in southern San Jose and the Oregon Expressway/Embarcadero Road interchange in Palo Alto, and maintain consistency with provisions defined in Assembly Bill 2032 (2004) and Assembly Bill 574 (2007) to implement express lanes in an HOV lane system in Santa Clara County and the US 101 South Corridor System Management Plan.

This Initial Study/Environmental Assessment (IS/EA) addresses the proposed project's potential to have adverse impacts on the environment. Potential impacts and avoidance, minimization, and mitigation measures are summarized in Table S-1.

Table S-1: Summary of Impacts and Avoidance, Minimization, and/or Mitigation Measures

Affected Resource	Potential Impact: No Build Alternative	Potential Impact: Build Alternative	Avoidance, Minimization, and/or Mitigation Measures	Section Reference in IS/EA
Environmental Justice	None.	The project would not cause disproportionately high and adverse effects on minority or low-income populations.	None required.	2.1.1.3
Utilities/ Emergency Services	None.	Utility relocations within the right-of-way are anticipated due to the outside widening. Emergency services access would be maintained throughout project construction.	The project's Transportation Management Plan (TMP) will address temporary lane closures during construction. No further measures are needed.	Section 2.1.2.3
Traffic and Transportation/ Pedestrian and Bicycle Facilities	For the AM northbound peak commute direction in 2015 and increasingly in 2035, primary bottlenecks including at De La Cruz and San Tomas/Montague, and Rengstorff and San Antonio, would cause significant congestion in the general purpose lanes. HOV lane congestion would occur around Moffett to Fair Oaks and 1st to Hellyer as a result of high HOV volumes and congestion in the general purpose lanes. For the PM southbound peak commute direction, congestion is expected at primary bottlenecks between the Rengstorff on-ramp and Middlefield on-ramp, De La Cruz on-ramp and SR-87 off-ramp, and Old Oakland on-ramp and McKee off-ramp in 2015. HOV lane speeds would drop below 50 MPH at a few locations due to congestion in the general purpose lanes. Congestion in the HOV and general purpose lanes is expected to be worse in 2035.	The project provides for additional capacity during critical peak periods. It would reduce (improve) corridor travel times and congestion delays, especially in the northbound peak AM commute period in 2015. It would continue to provide improved benefits through 2035 in comparison to the No Build Alternative, but there would be some highway segments that have reduced levels of service as a result of increased demand/traffic that uses the corridor.	None required.	Section 2.1.3.3

Table S-1: Summary of Impacts and Avoidance, Minimization, and/or Mitigation Measures

Affected Resource	Potential Impact		Avoidance, Minimization, and/or Mitigation Measures	Section Reference in IS/EA
	No Build Alternative	Build Alternative		
Visual/ Aesthetics	None.	Inside and outside pavement widening for the second express lane would require removal of vegetation within approximately a lane width of the existing highway. Some additional vegetation would be removed where necessary to maintain current safety “clear zones” and where bridge abutment work is proposed. Up to seventy-seven acres of naturally occurring vegetation could be affected. Additionally there are landscaped trees and other plantings at interchanges, in front of sound walls, and along the highway that would be removed. The total trees removed could amount to as many as 757 trees. Areas of vegetation removal would be within some sections of the freeway that have landscape freeway status. The proposed changes would be visually compatible with the existing freeway setting and represent a low to moderate effect. The project would not have substantial adverse effects on a state scenic highway or scenic vista. Project lighting would not result in light or glare impacts. In accordance with Department policy, landscaping and irrigation that is damaged or removed during project construction would be replaced.	Highway planting, including landscaping, irrigation systems, and plant establishment will be funded and designed in conjunction with the roadway improvements. The planting will replace removed or damaged vegetation as a result of construction to the extent feasible. Re-planting will be completed within two years. Aesthetic treatment will be provided in the design of retaining walls. Lighting for night work will require downward cast and be confined to the immediate work area.	Section 2.1.4.4

Table S-1: Summary of Impacts and Avoidance, Minimization, and/or Mitigation Measures

Affected Resource	Potential Impact		Avoidance, Minimization, and/or Mitigation Measures	Section Reference in IS/EA
	No Build Alternative	Build Alternative		
Cultural Resources	None.	The project's Area of Potential Effects contains 22 cultural resources, 3 of which have built environment components. With implementation of the proposed avoidance, minimization, and mitigation measures the project would not cause a substantial adverse change to a historical or archeological resource as defined by CEQA. The project would not affect or use a Section 4(f) historic resource.	All sites previously determined eligible and all unevaluated sites will be designated as Environmental Sensitive Areas (ESAs) and will be avoided during construction. If cultural materials are unearthed during construction, work will be halted in the area until a qualified archaeologist can assess the find. If human remains are discovered, State Health and Safety Code Section 7050.5 states that further disturbances and activities shall stop in any area or nearby area suspected to overlie remains, and the County Coroner contacted. Pursuant to CA PRC Section 5097.98, if the remains are thought to be Native American, the coroner will notify the NAHC, which will then notify the Most Likely Descendent (MLD). At this time, the person who discovered the remains will contact the District Environmental Branch so that they may work with the MLD on the respectful treatment and disposition of the remains. Further provisions of PRC 5097.98 are to be followed as applicable.	Section 2.1.5.4
Hydrology and Floodplain	None.	Parts of the project corridor are in the 100-year floodplain. The project would not cause longitudinal encroachments or substantially increase impervious surfaces or runoff quantity.	Measures proposed to avoid and minimize impacts to water quality and storm water runoff would also avoid and minimize hydrology and floodplain impacts.	Section 2.2.2.4

Table S-1: Summary of Impacts and Avoidance, Minimization, and/or Mitigation Measures

Affected Resource	Potential Impact		Avoidance, Minimization, and/or Mitigation Measures	Section Reference in IS/EA
	No Build Alternative	**Build Alternative**		
Water Quality and Storm Water Runoff	As US 101 has no known existing treatment best management practices (BMPs), roadway runoff would affect water quality.	Project construction could have temporary impacts on water quality and storm water runoff from increased erosion and subsequent transport of sediment to nearby surface waters. Spills and fluid leaks from construction vehicles, equipment, or materials could also occur during construction. Groundwater could be encountered during installation of foundations. The project would have a disturbed soil area of approximately 220 acres and would increase impervious surface area by approximately 61 acres. The project area is susceptible to hydromodification.	Temporary and permanent erosion control BMPs will be included in the project to prevent an adverse change in downstream water quality. Potentially feasible treatment BMPs that will be considered during final design include biofiltration devices, infiltration devices, media filters, and detention devices. The required Storm Water Pollution Prevention Plan (SWPPP) will include storm water BMPs for temporary soil stabilization and sediment control. BMPs would treat approximately 145 acres of impervious area. The exact location of treatment BMPs will be determined during the final design phase.	Section 2.2.2.4
Geology/Soils/ Seismicity/ Topography	The No Build Alternative would be subject to the same geologic, soils, and seismic hazards as the Build Alternative.	The project area could be exposed to strong earthquake shaking. Liquefaction could affect untreated soil at foundations for overhead signs and widened US 101 bridge decks in areas of high susceptibility.	Project elements will be designed and constructed to meet the Department's seismic design requirements for ground shaking and ground motions. Additional geotechnical subsurface and design investigations will be performed during the final project design and engineering phase. The investigations will include site-specific evaluation of subsurface conditions at the location of proposed foundation features.	Section 2.2.3.4
Paleontology	None.	Road widening, grading and trenching may affect Pleistocene alluvial fan deposits and the Santa Clara Formation where those geologic units are exposed at or near the surface. Drilling for various project components may potentially affect Pleistocene alluvial fan deposits and the Santa Clara Formation where those units are overlain by more recent sediments of unknown depths.	The project would implement resource stewardship measures to allow for monitoring during active construction within surface exposures of Pleistocene alluvial fan deposits and Santa Clara Formation and discovery, collection, and curation of fossils, if found, in accordance with a Paleontological Mitigation Plan.	Section 2.2.4.4

Table S-1: Summary of Impacts and Avoidance, Minimization, and/or Mitigation Measures

Affected Resource	Potential Impact: No Build Alternative	Potential Impact: Build Alternative	Avoidance, Minimization, and/or Mitigation Measures	Section Reference in IS/EA
Hazardous Waste/Materials	None.	Sixteen potential hazardous materials sites are outside but within 1 mile of the project corridor. The risk of encountering contaminated groundwater from these sites during project construction is medium to high, depending on the depth of excavation or disturbance. Soils adjacent to the project corridor may contain naturally occurring asbestos or pesticides from previous agricultural land uses. Vehicle tire and brake wear, oil, grease, and exhaust from vehicular traffic on SR 85 and US 101 and other roads within the project area may have contaminated surface soils in the immediate vicinity with aerially deposited lead (ADL) and other heavy metals.	Further investigation of potential hazardous materials sites is recommended due to the potential presence of petroleum hydrocarbons, solvents, and ADL in soil and/or groundwater. During final project design, soils and groundwater would be tested to determine management options and special handling requirements for the construction contractor. If encountered, contaminated soil, groundwater, and other hazardous materials would be properly characterized and disposed of at an appropriate facility per applicable regulations. The Department will investigate in depth for contaminants and shall take avoidance, minimization and/or mitigation measures to prevent soil and ground water contamination. The Department will also ensure workers' safety.	Section 2.2.5.4
Air Quality	None.	The project would not increase concentrations of criteria pollutants that would result in air quality standard violations. The project would not violate standards for carbon monoxide (CO) or particulate matter less than 2.5 micrograms in diameter ($PM_{2.5}$). Minor increases in mobile source air toxics in the project horizon year (2035) would be offset by emissions improvements from national control programs. Construction activities associated with the proposed project would be relatively short in duration and intensity and would not exceed state thresholds for construction emissions, with the exception of one pollutant, Nitrogen oxides (NO_x).	Implementation of the Department's Special Provisions, Standard Specifications, and other recommended measures listed in Section 2.2.6.4 would minimize or eliminate dust from construction activities and reduce the project's emissions of NO_x below the state threshold of significance.	Section 2.2.6.4

Table S-1: Summary of Impacts and Avoidance, Minimization, and/or Mitigation Measures

Affected Resource	Potential Impact		Avoidance, Minimization, and/or Mitigation Measures	Section Reference in IS/EA
	No Build Alternative	**Build Alternative**		
Noise	Residences and other land uses along SR 85 and US 101 have existing and future noise levels that approach or exceed federal noise abatement criteria.	Depending on the location, the project would have no effect on existing noise levels, or no more than a 3-decibel increase. A 3-decibel increase in the noise level is barely perceptible to the human ear (Caltrans 2011c). Construction noise would be temporary, limited in duration, and generally at or below the existing freeway noise levels. A traffic noise abatement evaluation following Department procedures identified feasible sound walls, but none were determined cost-effective.	Measures would be implemented to minimize or reduce the potential for temporary noise impacts resulting from project construction. The final decision regarding noise abatement will be made following completion of the project design and public involvement process.	Section 2.2.7.4

Table S-1: Summary of Impacts and Avoidance, Minimization, and/or Mitigation Measures

Affected Resource	Potential Impact: No Build Alternative	Potential Impact: Build Alternative	Avoidance, Minimization, and/or Mitigation Measures	Section Reference in IS/EA
Natural Communities	None.	The project area is highly developed with commercial, industrial, and residential land uses. Undeveloped areas and roadsides may contain naturally occurring (non-landscaped) vegetation communities. Native plants and trees are restricted to limited areas along US 101 and riparian habitat at certain stream crossings. Landscaped areas are present in almost all intersection cloverleafs and along the sides of the freeway. Serpentine soils and grasslands are present within the southern portion of the corridor, and approximately 0.12 acre would be affected by project construction. Fencing would be used to minimize this impact. Indirect effects to these grasslands could potentially occur from increased deposition of nitrogen associated with additional traffic with the project. Approximately 77 acres of naturally occurring vegetation along US 101 could be affected by the project. US 101 passes through Coyote Valley, an important wildlife corridor. Wildlife may cross beneath the highway using culverts or under bridges. The project would not affect these crossings except for some culvert extensions, and temporary construction disturbance. The project would not involve work within any creek crossing, and would not result in habitat fragmentation or impacts to fish passage.	Replacement landscaping, including tree planting, would be provided. A project landscaping plan will be developed during final design and plantings will be complete within two years. Tree removal will take place before the start of the nesting season for protected raptors and migratory birds (February 1-August 31). Vegetation will be preserved in areas of the project limits where no construction is planned. Preconstruction surveys for serpentine grasslands will be conducted during the spring before construction begins. If serpentine grasslands are present within the limits of construction, an approximate 5-foot buffer will be placed around the grasslands using environmentally sensitive area (ESA) fencing. Compensatory mitigation for direct and indirect effects to serpentine grasslands will be provided through payment of a serpentine fee to the Santa Clara Valley Habitat Conservation Plan/Natural Communities Conservation Plan (HCP/NCCP). The project will include median barriers where appropriate that are designed to allow wildlife to cross in event they are trapped within the right-of-way. Right-of-way “directional” fencing will modified near culvert openings encourage/allow safe passage under bridges and at culverts.	Section 2.3.1.4

Table S-1: Summary of Impacts and Avoidance, Minimization, and/or Mitigation Measures

Affected Resource	Potential Impact: No Build Alternative	Potential Impact: Build Alternative	Avoidance, Minimization, and/or Mitigation Measures	Section Reference in IS/EA
Wetlands and Other Waters	None.	No permanent or temporary impacts are anticipated to waters of the U.S. or wetlands. The project would not affect culverts that are conveyed entirely underground. Roadway widening would permanently affect 0.06 acre of non-jurisdictional cattail wetlands, which are considered waters of the state.	Temporarily affected areas will be restored to pre-project or ecologically improved conditions. Measures will be employed to prevent construction material or debris from entering surface waters or their channels. Erosion control measures will be in place prior to, during, and after construction to avoid silt or sediment entering surface waters. Compensatory mitigation for permanent impacts of 0.06 acre of waters of the state would be provided through payment of an in-lieu fee to the HCP/NCCP. Alternatively, off-site mitigation would be implemented.	Section 2.3.2.4
Plant Species	None.	Project construction has the potential to increase nitrogen deposition with serpentine soil areas, which could affect plant growth and completion.	Payment of serpentine and nitrogen deposition fees would be made to the Santa Clara Valley HCP/NCCP.	Section 2.3.3.4

Table S-1: Summary of Impacts and Avoidance, Minimization, and/or Mitigation Measures

Affected Resource	Potential Impact: No Build Alternative	Potential Impact: Build Alternative	Avoidance, Minimization, and/or Mitigation Measures	Section Reference in IS/EA
Animal Species	None.	There would be no aquatic impacts, but project construction could affect upland dispersal habitat for the western pond turtle. Project construction at ramp loops would temporarily affect potential foraging and nesting habitat for western burrowing owl. Project construction could temporarily disturb marginally suitable roosting and nesting sites for "high-priority" bat species, but would not have any permanent habitat loss. Project construction during the nesting season (February 1-August 31) could cause nesting migratory birds and raptors to abandon their nests, which could result in nest failure. Project construction may temporarily deter wildlife species from using wildlife crossing structures.	Temporary construction-related effects on western pond turtle habitat and western burrowing owl use of the project area will be avoided or minimized by implementing the proposed measures. Preconstruction surveys will be conducted for bat roosts. If located, the roosts will be flagged and avoided during construction. If construction takes place during the nesting season (February 1 through August 31), preconstruction surveys will be conducted for nesting migratory birds and raptors. If active nests are found, buffers will be imposed until nesting is completed. Modified barriers will be installed in the median to facilitate animal movement across US 101. The barriers will be located from just north of Yuba Buena Road to just north of E Dunne Avenue.	Section 2.3.4.4
Threatened and Endangered Species	None.	Project construction could result in permanent effects to 10.42 acres of potential upland habitat for California red-legged frog (CRLF) and California tiger salamander (CTS), and temporary construction effects to 23.34 acres of upland habitat. Project construction would permanently affect up to 0.12 acre of serpentine habitat that has the potential to contain host plants for bay checkerspot butterflies. Serpentine grassland habitat for coyote ceanothus and Metcalf Canyon Jewel-flower could be indirectly affected by nitrogen deposition related to project construction and project related traffic.	Preconstruction surveys, wildlife exclusion fencing, use of appropriate erosion control materials, and biological monitoring will avoid or minimize effects to CRLF and CTS. Preconstruction surveys and ESA fencing for the host plant for bay checkerspot butterfly, construction outside of the adult flight period (March through early May), and regular watering of exposed soils will avoid or minimize effects to bay checkerspot butterfly. Preconstruction surveys and ESA fencing for Metcalf Canyon jewel-flower and the plant's serpentine grassland habitat will avoid or minimize impacts to Metcalf canyon jewel-flower.	Section 2.3.5.4

Table S-1: Summary of Impacts and Avoidance, Minimization, and/or Mitigation Measures

Affected Resource	Potential Impact		Avoidance, Minimization, and/or Mitigation Measures	Section Reference in IS/EA
	No Build Alternative	Build Alternative		
Invasive Species	None.	Invasive species in the project corridor include non-natives such as English ivy, yellow star thistle, jubata grass, sweet fennel, black mustard, soft brome Italian ryegrass, and Italian thistle. Project construction activities have the potential to inadvertently spread invasive species.	Project landscaping and erosion control will not use species listed as noxious weeds. No disposal of soil and plant materials will be allowed from areas that support invasive species to areas dominated by native vegetation. The Resident Engineer will be educated on weed identification and the importance of controlling and preventing the spread of identified invasive non-native species. Gravel and/or fill material to be placed in relatively weed-free areas will come from weed-free sources. Certified weed-free imported materials (or rice straw in upland areas) will be used.	Section 2.3.5.4
Cumulative Impacts	None.	The project would have no impact, including cumulative impact, on land use, growth, farmlands/timberlands, or community impacts. The project would offset impacts to utilities and emergency services, traffic and transportation/pedestrian and bicycle facilities, cultural resources, hydrology and floodplain, water quality and storm water runoff, geology/soils/seismic/topography, paleontology, hazardous waste/materials, air quality, natural communities, wetlands and other waters, plant species, animal species, threatened and endangered species, and invasive species; therefore, cumulative impacts would not occur. The project would not contribute to cumulatively considerable or significant impacts to the visual or noise environment.	None required.	Section 2.4.2

Table S-1: Summary of Impacts and Avoidance, Minimization, and/or Mitigation Measures

Affected Resource	Potential Impact		Avoidance, Minimization, and/or Mitigation Measures	Section Reference in IS/EA
	No Build Alternative	Build Alternative		
Climate Change	None.	As the project would increase vehicle speeds during the peak period, future (2035) carbon dioxide emissions would be lower than with the No Build Alternative. Slight increases in greenhouse gas emissions during construction would be offset by the improvement in operational emissions. A protion of the project, from approximately the northern limits to the North Rengstorff Avenue interchange are within areas mapped for vulnerability to future sea level rise. The affected area is approximately the same as the mapped 100-year floodplain evaluated for the project. The project changes in the affected area are primarily installation of signs that would have no contribution to future predicted water levels and are considered a relatively low infrastructure investment.	None required.	Section 2.5

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Chapter 1 Proposed Project

1.1 Introduction

State of California Department of Transportation (Department), in cooperation with the Santa Clara Valley Transportation Authority (VTA), proposes an express lane project on United States Highway 101 (US 101) within Santa Clara County, California. The Department is the lead agency under the National Environmental Policy Act (NEPA) per assignment of responsibilities by the Federal Highway Administration (FHWA) pursuant to Title 23, United States Code (USC), Section 327. The Department is also the California Environmental Quality Act (CEQA) lead agency for the project.

The Project would convert the existing High Occupancy Vehicle (HOV) lanes to High Occupancy Toll lanes (express lanes) between approximately the East Dunne Avenue interchange in Morgan Hill and the Oregon Expressway/Embarcadero Road interchange in Palo Alto. A second express lane would be added in both directions from Cochrane Road in Morgan Hill to State Route (SR) 85 in San Jose, and from Blossom Hill Road in San Jose to North Fair Oaks Avenue in Sunnyvale to create a dual express lane facility in these segments (shown in Figure 1.1-2, and in greater detail in Appendix F). Use of the HOV lanes is currently restricted to vehicles with two or more occupants, motorcycles, and certain alternative fuel vehicles. The project would allow single-occupant vehicles (SOVs) to pay a toll to use the lanes, while HOVs would use the lanes for free.

The project would also convert the US 101/State Route (SR) 85 HOV direct connectors in Mountain View to express lane connectors, restripe the northern 1.1 miles of SR 85 to introduce a buffer separating the general purpose lanes from the express lane, and connect the SR 85 express lanes to the US 101 express lanes. Auxiliary lanes would be added in both directions on US 101 between Great America Parkway and Lawrence Expressway, in the northbound direction on US 101 between Lawrence Expressway and North Fair Oaks Avenue, and in the northbound direction on US 101 between Old Bayshore Highway and North First Street. The project length is 36.55 miles on US 101 and 1.1 miles on SR 85, for a total of 37.65 miles.

The project is listed in the Metropolitan Transportation Commission’s (MTC’s) 2013 Regional Transportation Plan (RTP) (Association of Bay Area Governments [ABAG] and MTC 2013) as Reference Number 240466, “US 101 Express Lanes between Whipple Avenue and Dunne Avenue.” The project is also included in the 2013 Transportation Improvement Program (TIP), which was adopted by MTC on July 18, 2013 (TIP ID No. SCL110002), as “US 101 Express Lanes.”

1.1.1 Location and Route Description

US 101 in Santa Clara County is a 52.55-mile freeway that connects Gilroy to Palo Alto (Figure 1.1-1). SR 85 is a 24.1-mile freeway that connects southern San Jose to Mountain View. In Santa Clara County, US 101 passes through Gilroy, Morgan Hill, San Jose, Santa Clara, Sunnyvale, Mountain View and Palo Alto. US 101 typically has four lanes in each direction, including three general purpose lanes and one HOV lane. Some locations also contain auxiliary lanes which connect an on-ramp with the next off-ramp and are not designed for through traffic. Appendix F shows the location of auxiliary lanes.

Figure 1.1-1: Project Location and Regional Setting

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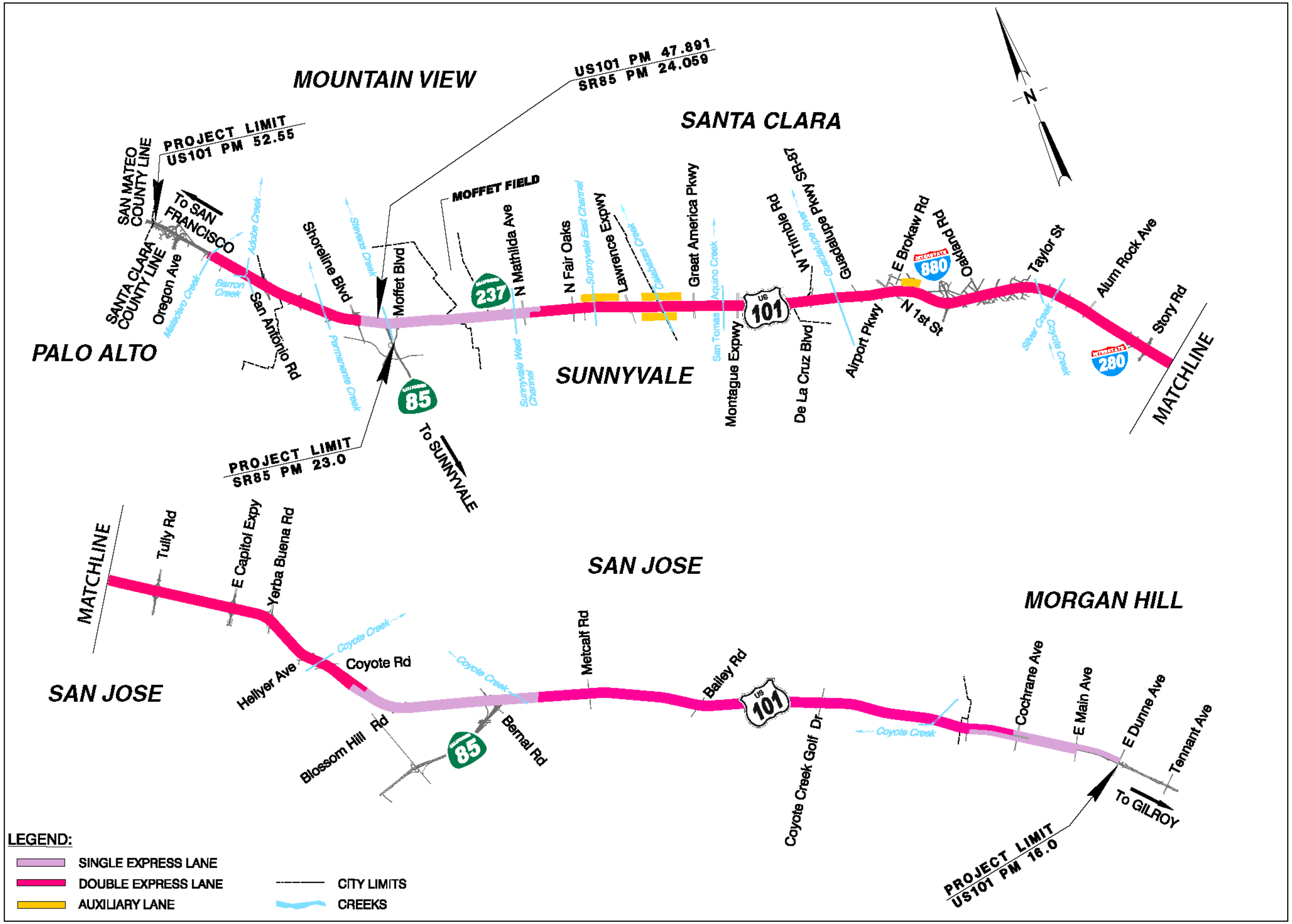

Figure 1.1-2: Project Area

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1.2 Purpose and Need

1.2.1 Purpose of the Project

The purpose of the project is to:

- Manage traffic in the congested segments of US 101 between the Dunne Avenue interchange in Morgan Hill and the Oregon Expressway/Embarcadero Road interchange in Palo Alto.
- Maintain consistency with provisions defined in Assembly Bill (AB) 2032 (2004) and AB 574[1] (2007) (which amended California Streets and Highways Code Sections 149.6-149.8) to implement express lanes in an HOV lane system in Santa Clara County, as well as with the US 101 South Corridor System Management Plan.

1.2.2 Project Need

Current and future transportation demand contributes to the need for this project as discussed below.

1.2.2.1 Transportation Demand and Congestion

The following describes the existing traffic operations on US 101 and projected future traffic growth.

In Santa Clara County, US 101 typically has one HOV lane and three general purpose lanes in each direction, with auxiliary lanes (lanes that extend from on-ramps to off-ramps) in some segments. US 101 within the project limits carries up to 245,000 vehicles per day, including HOV traffic, between Morgan Hill in the south and Palo Alto in the north.

High transportation demand in several segments of the general purpose lanes causes substantial congestion and reduced speeds. During the peak periods (6 AM to 10 AM and 3 PM to 7 PM), US 101 cannot accommodate all the traffic demand in the corridor, resulting in bottlenecks in many general purpose lane segments. As a result, there are segments of US 101 where the general purpose lanes function substantially below the posted speed limit of 65 miles per hour (mph). In specific, the following "bottleneck" locations, where congestion is most severe at peak periods, were identified during the studies of existing traffic conditions. Backed up traffic, or queues, were observed at the following locations that extended from 1.5 miles to over 5 miles in length:

<u>Northbound AM</u>

- Tully Road Loop on-ramp to Tully Road Diagonal on-ramp
- McKee Road on-ramp to Oakland Road off-ramp
- Trimble Road on-ramp to Montague Expressway off-ramp
- Shoreline Boulevard on-ramp to northbound Rengstorff Ave off-ramp

[1] Following the passage of AB 2032 and AB 574, California Streets and Highways Code Sections 149.6-149.8 (2010) allowed for the designation of HOV lanes to HOT lanes. AB 2032 and AB 574 specifically authorized VTA to undertake pricing programs of HOT lanes pursuant to the conditions of AB 2032 indefinitely and for HOT lanes other than the Sonol Grade segment of State Highway Route 680.

<u>Southbound AM</u>

- University Avenue on-ramp and Oregon Expressway off-ramp
- Oregon Expressway on-ramp to San Antonio Road off-ramp

<u>Northbound PM</u>

- San Antonio Road on-ramp to Oregon Expressway/Embarcadero Road off-ramp
- Oregon Expressway/Embarcadero Road on-ramp to University Avenue off-ramp

<u>Southbound PM</u>

- Oregon Expressway on-ramp to San Antonio Road off-ramp
- Rengstorff Avenue on-ramp to Old Middlefield Way on-ramp
- De La Cruz Boulevard on-ramp to State Route 87 off-ramp
- Oakland Road on-ramp to McKee Road off-ramp
- I-280/I-680 on-ramp to Tully off-ramp
- Tully Road on-ramp to Capitol Expressway off-ramp

These segments of US 101 are considered to operate at poor Levels of Service (LOS) during peak traffic periods. LOS is an indicator of operational conditions on a freeway and is defined in categories ranging from A to F. These categories can be viewed much like school grades, with A representing the best conditions and F indicating substantial congestion with stop-and-go traffic. On freeways, LOS is evaluated in terms of the ability to travel at the posted speed limit and maneuver easily among lanes. The Department and VTA consider LOS E and F to be poor levels of service. LOS is discussed further in Section 2.1.3.

<u>**US 101 HOV Lanes**</u>

High demand also occurs in the existing HOV lanes, which function at speeds below the acceptable level, diminishing the incentive for drivers to carpool. AB 2032 (2004) amended California Streets and Highways Code Section 149[b] to set the requirement that HOV lanes operate at least at LOS C or D, which indicates minimal delays and corresponds to a target threshold of approximately 1,650 vehicles per hour (vph) per HOV lane.[2] LOS D operating conditions in the HOV lane are only allowed with written approval from the Department. The 1,650 vph threshold is intended to provide HOVs with reliable travel times.

According to the most recent Department traffic data, the 2010 peak period HOV lane use on US 101 ranged from 690 to 1,541 vph in the northbound direction, and 630 to 1,476 vph in the southbound direction (Caltrans 2011a). These data indicate that HOV lanes on US 101 are approaching or at poor levels of service. Based on the threshold above, parts of the northbound and southbound HOV lanes are approaching capacity in the downtown San Jose area, as well between SR 85 and Oregon Expressway/Embarcadero Road. The traffic studies for this project identified segments of the existing HOV lanes as congested at the following locations:

<u>Northbound AM</u>

- Capitol Expressway off-ramp and Tully Road on-ramp

[2] 23 USC 166(d)(2) defines "average" as "90 percent of the time over a consecutive 180-day period during morning or evening weekday peak hour periods (or both)."

- I-680 on-ramp and Old Oakland Road off-ramp
- North 1st Street on-ramp and Trimble Road on-ramp
- SR 85 HOV connector and Rengstorff Avenue off-ramp

Northbound PM

- Ellis Street off-ramp and San Antonio Road on-ramp
- Oregon Expressway/Embarcadero Road off- and on-ramps

Southbound PM

- Marsh Road on-ramp and Rengstorff Avenue on-ramp
- Great America Parkway off-ramp and De La Cruz Boulevard on-ramp
- 4th Street on-ramp and Old Oakland Road on-ramp
- Santa Clara Street on-ramp and Tully Road on-ramp

Projected Travel Demand

Traffic conditions are expected to worsen in the San Francisco Bay Area in the future with continued development in the region and along US 101 within the project limits. The congested areas previously noted will expand in distance, and the periods of peak congestion will extend for a longer duration. Between 2010 and 2035, Santa Clara County is predicted to grow by over 252,000 residents and add 365,000 jobs, increases of 14.1 and 43.3 percent, respectively (California Department of Finance 2013; Caltrans 2012a). Commute trips within Santa Clara County are forecasted to increase by 51 percent between 2010 and 2035, and commute trips from San Francisco, San Mateo, and Alameda counties to Santa Clara County destinations are forecasted to increase by 34 to 51 percent (MTC 2008). Over the same period, the Santa Clara County expects to increase the capacity of the roadway system by 5 to 6 percent (VTA 2009).

Growth in travel demand on US 101 is expected to increase morning and afternoon peak traffic conditions. Congestion will increase in the general purpose lanes, and the HOV lanes will experience delays and will not provide accelerated travel times intended for the facility. The resulting delays can reasonably be expected to diminish the public’s incentive to carpool or use public transit in the US 101 HOV lanes.

1.2.2.2 Legislation

California Streets and Highways Code Section 149.6 allows for permanent implementation of a value pricing program within any two corridors in the Santa Clara County HOV lane system.

The enabling legislation stipulates that revenue collected from the express lanes will be used to support transportation improvements and transit projects within the corridor.

1.2.3 Independent Utility and Logical Termini

FHWA regulations (23 Code of Federal Regulations [CFR] 771.111 [f]) require that the project:

- Have rational end points for a transportation improvement and be of sufficient length such that environmental issues can be adequately addressed;
- Be useable and require a reasonable expenditure even if no additional transportation improvements in the area are made; and
- Not restrict consideration of other foreseeable transportation improvements.

The project meets requirements for independent utility and logical termini. The project limits encompass the majority of the urbanized length of US 101 within Santa Clara County. Therefore, the project includes sufficient area to address all needed project improvements and their potential environmental impacts. The Express Lanes were designed and evaluated for traffic performance as an individual project, and would operate with independent utility regardless of whether any other improvements are made to US 101 or adjacent facilities.

The northern limits of the project conform to the end of the existing double HOV lanes. The 2-ft striped buffer separating the express lanes from the general purpose lanes is terminated before the northern project limit to allow smooth transition of the express lane vehicles (paying vehicles) out of the express lane and into the adjacent general purpose lanes, eliminating the need to extend the existing lanes further north. There are also right-of-way and environmental constraints that prohibit the project from widening north of the Oregon Expressway/Embarcadero Road interchange into San Mateo County.

At the southern end, the project intends to capitalize on the available capacity in the existing HOV lane that starts/ends around the Cochrane interchange and add a second express lane that follows the same limits as the existing HOV lane. However, in order to accommodate a significant traffic demand in the northbound direction during the AM peak period, and similar demand in the southbound direction during the PM peak period, the project proposes to extend one lane south to Dunne Avenue.

Both the northern and southern limits will provide adequate distance for express and HOV lane traffic to weave into or out of the proposed express lanes facility without creating any bottlenecks or queues in the system, and therefore without requiring any additional transportation improvements into the corridor to make the express lanes operate efficiently.

All structures within the project limits were reviewed, and it was determined that all bridges along the project corridor will be either widened by the project or provide sufficient width to accommodate the double express lanes facility and allow the project to proceed forward. Widening of three bridges (at Coyote Creek, San Tomas Aquino Creek, and Guadalupe River) will be conducted in a future widening project to provide standard shoulder and lane widths. These bridges can accommodate the double express lanes with non-standard design features.

Overall, although some widening is necessary to accommodate the new additional lane in each direction, the project would efficiently utilize the existing US 101 median and facility to the extent feasible, and would be functional without any further system improvements that are not already planned and approved.

The project would not prevent consideration of alternatives for other foreseeable transportation improvements on US 101. The proposed project would not preclude implementation of other planned projects. The addition of express lanes would be independently considered on SR 85 and SR 237 within Santa Clara County. The range of design alternatives considered for other projects would not be affected by express lanes on US 101.

1.3 Project Description

This section describes the proposed project and the project alternatives that were developed by a multidisciplinary team to achieve the identified purpose and need of the project, while avoiding or minimizing environmental impacts. Two alternatives are considered in this document: the Build Alternative that would convert the existing HOV lanes on northbound and southbound US 101 to express lane facilities and add a second express lane in both directions for the majority of the corridor, and the No Build Alternative.

The project corridor includes 36.55 miles on US 101 and 1.1 miles on SR 85, for a total of 37.65 miles. US 101 typically has four lanes in each direction, including three general purpose lanes and one HOV lane, as well as auxiliary lanes in some locations. SR 85 in the project limits has three lanes in each direction, two general purpose lanes and one HOV lane.

The purpose of the project is to manage traffic in the most congested segments of the freeway between East Dunne Avenue in Morgan Hill and the Oregon Expressway/Embarcadero Road interchange in Palo Alto, and maintain consistency with provisions defined in AB 2032 (2004) and AB 574 (2007) to implement express lanes in an HOV lane system in Santa Clara County.

1.3.1 Build Alternative

The project would convert the existing northbound and southbound single high occupancy vehicle (HOV) lanes to high occupancy toll (HOT) lanes (referred to as express lanes) within the project limits. The Build Alternative would also widen the freeway to add a second express lane in both directions from Cochrane Road in Morgan Hill to SR 85 in San Jose, and from Blossom Hill Road in San Jose to North Fair Oaks Avenue in Sunnyvale to create a dual express lane facility in these segments. The proposed dual express lanes would transition to a single express lane at each end of the corridor where they begin to conform to the existing highway lanes. The project would also convert the US 101/SR 85 HOV direct connectors in Mountain View to express lane connectors (Figure 1.1-2).

The addition of the second express lane would involve a combination of inside and outside widening. The majority of the inside widening (toward or within the existing median) would take place within the US 101 segments south of the SR 85/US 101 interchange in southern Santa Clara County, where the median width varies between 46 and 86 feet. The project proposes to widen and pave the median to accommodate the additional lanes. The outside widening for the second express lane would take place in various locations to accommodate the additional lanes (primarily north of the US 101/SR 85 interchange in San Jose to the US 101/SR 85 interchange in Mountain View). North of the US 101/SR 85 interchange in Mountain View to the northern project limits in Palo Alto no pavement changes are planned unless necessary to accommodate minor realignment for signs or utilities. Details of the widening are shown in Appendix F.

The express lanes facility would be separated from the adjacent general purpose lanes by a striped buffer zone. The buffer zone, delineated with solid stripes, would have designated openings to provide access into and out of the express lanes facility. Although the project includes limited access at this time, it may be modified to include continuous access in the future.

Outside widening is also proposed to accommodate auxiliary lanes. The auxiliary lanes would be added in both directions on US 101 between Great America Parkway and Lawrence Expressway, in the northbound direction on US 101 between Lawrence Expressway and North Fair Oaks Avenue, and in the northbound direction on US 101 between Old Bayshore Highway and North First Street (as shown on Figure 1.1-2 and Appendix F). The project would add signs and tolling equipment within the area of lane widening and striping, and signs approaching the beginning of the express lanes to inform motorists of the upcoming express lanes.

New retaining walls are proposed in the median of US 101 where inside widening is proposed and there is an elevation difference between northbound and southbound US 101. For example, this occurs from approximately Cochrane Road to Bailey Avenue. Retaining walls are also proposed at overcrossing structures where it is necessary to accommodate the additional width of the roadway under the structure or where existing walls have to be reconstructed for additional space. Retaining walls are also proposed in some locations on the outside shoulder of US 101 including near the Yerba Buena Road, Brokaw Road/North 1st Street, and I-880 interchanges.

1.3.1.1 Express Lane Configuration, Signs, and Lighting

Like the existing HOV lanes, the express lanes would be adjacent to the center median and would be separated from the adjacent general purpose lanes by lane striping. The striping would be changed from the existing dashed line for the HOV lane to a double-line striped buffer zone. The striped buffer zone would have designated openings to provide access into and out of the express lanes (called access zones), as shown in Figure 1.3-1, below. The buffer zones serve to limit vehicle movement in and out of the express lanes to the designated access zones.

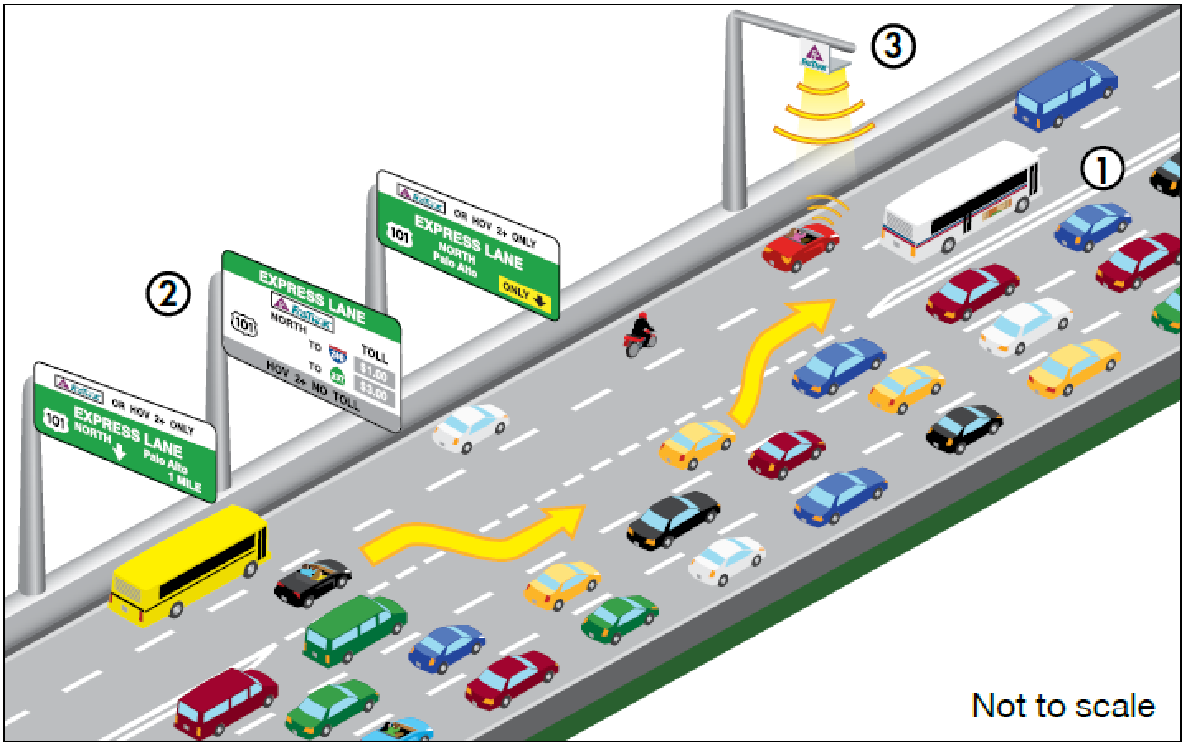

Figure 1.3-1: Express Lane Schematic

Figure 1.3-1 shows an example of the lane striping, express lane signs, and a toll structure in the two-lane sections of the US 101 Express Lanes Project. The "(1)" shows the double striped buffer zone separating the express lanes from the general purpose lanes. The messaging sign labeled with "(2)" has electronic panels that show the current toll for SOVs with FasTrak. The toll structure labeled with "(3)" communicates with FasTrak toll tags and deducts tolls from FasTrak accounts. The figure does not represent the actual spacing of signs and toll structures. Representative views of signs and toll structures are provided in Section 2.1.4.3.

Static overhead and barrier-mounted signs would provide advance notice of an express lane exit, including a list of specific interchanges immediately downstream of the exit shown on the sign. The exit would be situated to allow a user adequate distance to change lanes before reaching a particular interchange to exit the freeway. Each access zone would typically have the following signs:

- One overhead static advance information sign placed approximately 1-mile ahead of the access zone to notify drivers of an approaching entry/exit point
- One overhead Dynamic Message Sign (DMS) showing the toll amount to the downstream destination, placed approximately ¼ mile ahead of the access zone
- One local exits roadside sign providing the drivers with advance information of the downstream off-ramp destinations that are served by the upcoming access zone and the distance to the access zone. This sign would be mounted to the overhead DMS pole, approximately ¼ mile ahead of the access zone.

- One overhead Express Lane entrance static sign placed at the beginning of each access zone with an arrow pointing left
- One local exit roadside sign mounted to the Express Lane entrance sign pole showing the name of the exit ramps served by this access zone
- One "Fastrak or HOV 2+ Only" overhead static sign placed at the end of each access zone, with one or two arrows pointing down according to the number of Express Lanes

A total of 87 new overhead sign structures would be installed, and 43 existing overhead sign structures would be removed and replaced (due to widening). Overhead and roadside express lane signage would match overhead express lane signage on other routes in appearance to maintain visual consistency, including color and shape of the signs and poles.

Lighting would be added to the US 101 median in areas with access zones and CHP enforcement areas. During the design phase of the project, the specific lighting plans may change to include lighting at toll change zones and toll-related sign gantries. The project would also include signs to advise express lane users that entering or exiting the facility anywhere other than designated buffer zones is a traffic violation.

CHP enforcement and observation areas will be developed in coordination with the Department and the CHP. Enforecement areas would be located on tanget sections of the freeway and away from ingress and egress locations. The locations would allow adequate sight distance for enforcement. The final locations of the enforecement areas would be decided during final design.

The project plans included in this Environmental Document reflect a controlled (or limited) access scenario; however, continuous access may be expanded to maintain much of the existing continuous access striping scheme, where appropriate, during the design phase of the project. The Bay Area Express Lane network plans to include 550 miles of express lanes by 2035 and is an open access system (via continuous access striping) except where access is limited via buffer striping or double white solid striping, as necessary, to enhance or preserve operational efficiency and traffic safety. Additional evaluation will take place during the design phase to validate the original assumptions, taking into account the project's implementation strategy.

Figure 1.3-2 shows a detailed schematic of express lane access zones throughout the project corridor.

1.3.1.2 Express Lane Operations

Express lane operations would be tightly integrated with monitoring of traffic speed and density, enforcement, incident management, and other subsystems to maintain free-flow conditions. Static overhead signs would be installed to notify drivers as they approach an express lane access zone. An overhead messaging sign located just before each access zone would display the current toll rates. The messaging sign would display the price to the destination served by the next exit from the express lanes facility as well as the other downstream exits.

The toll rates on the messaging signs would be updated every 3 to 6 minutes to reflect changing speed and traffic density measured at intervals along the express lanes.

After entering the express lanes, all vehicles would pass through one or more tolling zones. Overhead antennas in the express lanes would "read" the toll tag and track the number of zones so that the correct toll is charged to the customer's FasTrak prepaid account.

Toll increases for SOVs would be used to meet the minimum average operating speed of 45 mph for HOVs (Title 23, USC, Section 166(d)(2)) and to maintain the target LOS of C or D for HOVs (California Streets and Highways Code Section 149.6[b]) (Section 1.2.2.1). If the express lanes reach capacity, the messaging signs would change to read "HOV only." At that point, only HOVs would be allowed into the lanes. SOVs would not be allowed even if they have a FasTrak toll tag.

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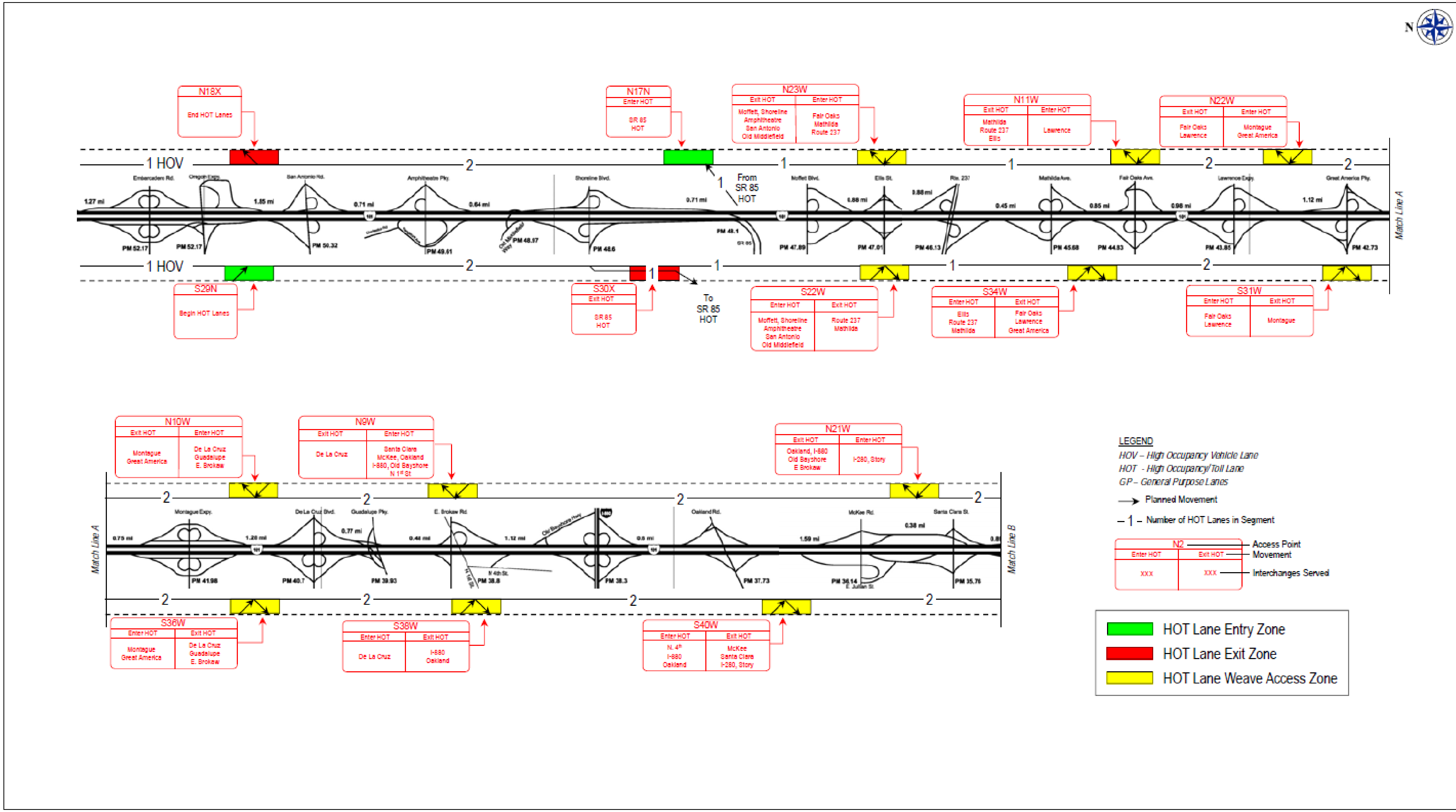

Figure 1.3-2: Express Lanes Access Zone Schematic (Sheet 1 of 2)

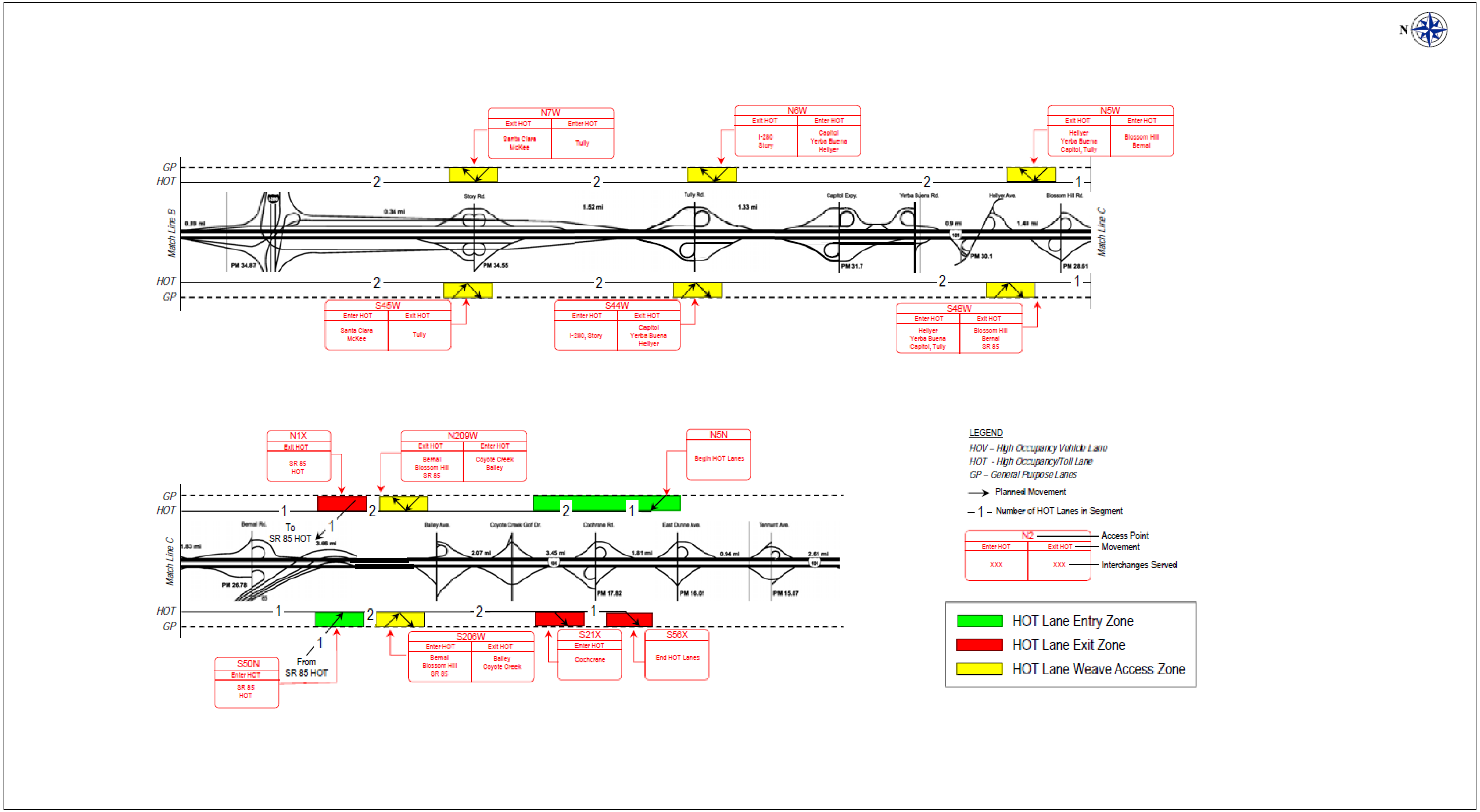

Figure 1.3-2: Express Lanes Access Zone Schematic (Sheet 2 of 2)

1.3.1.3 Customer Service and Account Management

SOVs would need to have FasTrak toll tags to use the express lanes. The toll tag is a small battery-powered radio toll collection device that can be mounted to the inside of a vehicle windshield. FasTrak toll tags are already used to automatically pay tolls on Bay Area bridges. Toll tags can be obtained online, by phone, mail, or fax, in person from the Bay Area Toll Authority's (BATA) Regional Customer Service Center (RCSC), or from retail outlets such as Walgreens, Safeway, and Costco. Toll tags can also be obtained anonymously (without providing personal or vehicle information) from the RCSC. There is no charge to open a FasTrak account, but each account holder must keep a minimum balance in a prepaid account.

More information about obtaining a FasTrak toll tag is available at https://www.bayareafastrak.org/vector/dynamic/signup/index.shtml, or by calling 1-877-BAY-TOLL (1-877-229-8655).

1.3.1.4 SOV Transaction Processing

To use the express lanes as an SOV, the user would need to mount a FasTrak transponder to the vehicle windshield. Upon entering the express lanes and then after passing underneath the toll antennas, transaction records would be sent in near–real time from each toll zone controller to the Central Processing System (CPS) for processing and configuring trips in a specified format for communicating with the RCSC.

1.3.1.5 HOV Transaction Processing

Currently the law provides that all existing HOVs will continue to be exempt from paying a toll in the US 101 express lanes. HOVs are defined as:

- Passenger vehicles with two or more occupants;
- Transit or para-transit vehicles with no axle count limitation;
- Motorcycles; and
- Alternative fuel vehicles with a Department of Motor Vehicles (DMV)-issued white or green decal.

HOVs do not require a FasTrak toll tag to use the express lanes[3]. Drivers who have a FasTrak toll tag in their vehicle but are carpooling with two or more people can still use the express lanes for free. FasTrak toll tags come with a Mylar bag. Placing the toll tag in the Mylar bag shields the tag from being "read" by the overhead toll antenna and prevents the toll from being collected.

1.3.1.6 Violation Processing

The California Highway Patrol (CHP) is responsible for enforcing all laws that apply to the express lanes, including toll and HOV laws.

Vehicles without a FasTrak toll tag would trigger a transaction indicator beacon. CHP officers would monitor the indicator beacon and observe from a distance whether the identified vehicle

[3] Pending legislation would require passenger vehicles with two or more occupants to pay tolls using a new switchable FasTrak transponder. The legislation takes effect in Alameda County January 1, 2015 and is pending in Santa Clara County (Richards 2014).

is a qualified HOV. If the CHP determines an SOV in the express lane does not have a valid toll tag, the vehicle will be pulled over and cited.

1.3.1.7 Right-of-Way and Temporary Construction Easements

All project-related activities would take place within the existing right-of-way with the exception of five temporary construction easement (TCE) locations encompassing 27 parcels. The five temporary construction easement locations would be adjacent to US 101 between SR 87 and I-880. No additional right-of-way is proposed. Utility relocations within the right-of-way are anticipated to provide sufficient space to accommodate the outside widening.

1.3.1.8 Bridge Widening and Modifications

Bridge widening and modifications to existing abutments would be required at a number of grade separations, and overcrossing and undercrossing structures as shown in Tables 1.3.1-1 and 1.3.1-2. Bridges over creeks would not be widened as part of this project, therefore no in-water work is proposed.

Table 1.3.1-1: Proposed US 101 Bridge Widening Locations and Dimensions

Bridge No.	Post Mile	Bridge Location	Existing Bridge Dimensions (feet; approximate)	Proposed Widening (feet; approximate)		Type of Work
				Added Width	After Widening	
37-344	21.25	Coyote Creek Golf Drive Undercrossing	SB Bridge: 70.1 Width, 169.9 Length NB Bridge: 70.8 Width, 198.1 Length	SB: 20.5 NB: 20.5	SB: 90.6 NB: 91.3	Widen SB & NB bridges toward the median.
37-404	21.55	Utility Facility Undercrossing (Golf Course)	SB Bridge: 81.7 Width, 84 Length NB Bridge: 82 Width, 84 Length	SB: 20.5 NB: 20.5	SB: 102.2 NB: 102.5	Widen SB & NB bridges toward the median.
37-347	27.01	Bernal Road Undercrossing	SB Bridge: 69.2 Width, 213.9 Length NB Bridge: 92.2 Width, 214.2 Length	25.0 (added to combined SB & NB structure)	SB & NB: 186.4	Deck the median between NB and SB bridges (one combined bridge)
37-108	29.72	Coyote Road Undercrossing	SB Bridge: 71.8 Width, 131.9 Length NB Bridge: 71.8 Width, 131.9 Length	SB: 9.5 NB: 9.5	SB: 81.3 NB: 81.3	Widen SB bridge to the Outside. Widen NB bridge to the median.
37-409	31.00	Yerba Buena Road Undercrossing	SB Bridge: 69.9 Width, 159.7 Length NB Bridge 69.9 Width, 159.4 Length	SB: 11.3 NB: 11.3	SB: 81.2 NB: 81.2	Widen SB bridge to the Median. Widen NB bridge to the outside.

SB = South Bound Travel Direction
NB = North Bound Travel Direction

Table 1.3.1-2: Proposed Modification to Bridge Abutments

Bridge No.	Post Mile	Bridge Name	Type of Work
37-668	33.03	Tully Road OC	Modify abutments
37-222	35.46	San Antonio Street OC	Modify abutments
37-48	35.76	Santa Clara Street OC	Modify abutments
37-123	36.12	Julian Street/McKee Road OC	Modify NB abutment
37-115	37.99	North San Jose UP	Modify SB abutment
37-118	38.09	10th Street OC	Modify SB abutment
37-403R	39.90	Jct 87/101 SEP	Modify SB abutment
37-183G	39.91	Jct 87/101 SEP	Modify SB abutment
37-390	42.73	Bowers Avenue OC	Modify abutments
37-152	43.85	Lawrence Expressway OC	Modify abutments

OC = overcrossing; UP = underpass; NB=northbound; SB= southbound; SEP = grade separation

1.3.1.9 Other Project Details and Construction

The piles for the overhead signs would be up to 6 feet in diameter and extend to approximately 30 feet below ground surface. The piles for the toll structures would be up to 2.5 feet in diameter and would extend to approximately 10 feet below ground surface. Some Traffic Operations Systems (TOS) equipment such as traffic monitoring stations, Closed Circuit Television (CCTV) cameras, cabinets, and controllers would be installed along the outside edge of pavement within the existing right-of-way. Existing ramp metering equipment such as signal heads and poles, loops, conduits, controllers and cabinets, service cabinets, advance warning signs and pull boxes that are impacted as a result of the widening and shifting of lane lines would be replaced or relocated. Maintenance vehicle pullouts would be installed in shoulder areas to allow access to the TOS equipment. The specific locations of these features would be developed during final project design.

Lighting would be installed on mast-arm structures in the median of US 101 as well as on overhead signs and toll structures. The median lighting structures would be supported on cast-in-drilled-hole or driven piles approximately 2.5 feet in diameter and 5 to 8 feet below ground surface. The actual spacing and number of lights in the project corridor would be determined during the design phase in coordination with Caltrans Department of Traffic Safety and other functional groups.

Trenching would be conducted along the outside edge of pavement for installation of conduits. The depth of trenching would be 3 to 5 feet below the roadway surface. Conduits would be jacked across the freeway to the median where needed to provide power and communication feeds to the new overhead signs and toll structures.

Existing highway infrastructure, such as metal beam guard rail (MBGR), lighting, overhead signs, and drainage systems would be relocated, modified, or fully replaced in areas within the right-of-way where the pavement would be widened.

Biofiltration devices are proposed to provide storm water treatment for impervious areas that would be added or reworked as part of the project. These devices would be installed within the existing right-of-way.

Project construction would take place at night, on weekends and during non-peak weekday hours. During construction, some lane and ramp closures would be required, but full freeway closures are not expected.

1.3.1.10 US 101/SR 85 Direct Connectors

At the south end of US 101 in southern San Jose, both the northbound and southbound HOV direct connectors from SR 85 to US 101 (PM 26.78) would be converted to express lane connectors by the SR 85 Express Lanes Project (EA 4A7900), allowing SOVs with valid FasTrak devices to use the direct connectors.

At the north end of the project in Mountain View (PM 48.09), the US 101 Express Lanes Project would convert the existing HOV connectors to express lane connectors and would extend the buffer striping onto SR 85 to connect to the buffer constructed by the SR 85 Express Lanes Project. The combination of SR 85 and US 101 Express Lanes projects would provide a complete express lane system on both freeways that includes the direct connectors.

1.3.1.11 Traffic Systems Management (TSM) and Traffic Demand Management (TDM) Alternatives

Traffic Systems Management (TSM) strategies increase the efficiency of existing facilities by accommodating a greater number of vehicle trips on a facility without increasing the number of through lanes. Traffic Demand Management (TDM) focuses on regional means of reducing the number of vehicle trips and vehicle miles traveled (VMT) as well as increasing vehicle occupancy. TSM encourages transit use and ridesharing, which the proposed project would continue to facilitate. The Build Alternative would increase the efficiency of US 101 by allowing more vehicles to travel within this corridor while minimizing expansion of the freeway. Although TSM measures alone could not satisfy the purpose and need of the project, the following TSM measures have been incorporated into the Build Alternative for this project: vehicle detection systems to monitor traffic speed and density, enforcement, incident management, and other subsystems to maintain acceptable LOS C/D in the express lanes, which would benefit transit and other HOVs.

1.3.2 No Build Alternative

The No Build Alternative assumes that no modifications would be made to US 101 in Santa Clara County, including the continuous access HOV lane, other than routine maintenance and rehabilitation of the facility and any currently planned and programmed projects within the area.

The No Build Alternative would not provide traffic congestion management. It would not provide managed-toll lanes that allow SOV drivers to use the available space in the HOV lanes during peak periods. Drivers would remain limited to the choice of using the HOV lanes or remaining in the congested general purpose lanes. Under this scenario, traffic conditions and congestion will continue to degrade with increased future freeway traffic demand. The capacity of the highway will remain the same through future years of projected growth and demand for travel options. Comparing No Build conditions between 2015 and 2035, the average travel time for drivers during the most congested period, AM northbound, will increase in all segments, but will substantially increase in the segment from Bernal Road to I-880[4].

1.3.3 Estimated Cost and Schedule

The project is currently funded through the project approval and environmental document phase from federal and VTA local funding sources. The Department and VTA are working with local, state, and federal agencies to identify funding sources for the design and construction of the project. The estimated total cost for the project is $431 million. As of June 2015, the VTA has secured approximately $7M in partial funding for the design of the project.

The proposed schedule identifies completion of the project approval and environmental document phase in 2015, start of construction in 2017, and opening of the express lanes to traffic in 2022.

1.3.4 Identification of a Preferred Alternative

The Project Development Team identified the Build Alternative as the preferred alternative on March 12, 2015, after considering comments received during the public comment period. The following summarizes the reasons for choosing the Build Alternative over the No Build Alternative:

- The Build Alternative would help manage congestion on most segments of US 101 between the Dunne Avenue interchange in Morgan Hill and the Oregon Expressway/Embarcadero Road interchange in Palo Alto, a stated purpose of the project.
  - In the 2015 No Build Alternative, 17 HOV lane segments in the northbound AM peak hours, and six HOV lane segments in the southbound PM peak hours would operate at impaired LOS E or F. In the 2035 No Build Alternative, HOV lane congestion would be substantially worse; 29 HOV lane segments in the northbound AM peak hours and 22 HOV lane segments in the southbound PM peak hours would operate at LOS E or F.
  - In the 2015 and 2035 Build Alternative, express lane LOS in the northbound AM peak hours would greatly improve, with four express segments at LOS E or F in 2015 and only one segment at LOS E or F in 2035. Express lane LOS would also improve somewhat compared to the No Build Alternative, with two express lane segments operating at LOS E or F in 2015 and 19 segments at LOS E or F in 2035. While some individual segments of the corridor would experience a decrease in LOS compared to the No Build Alternative, the Build Alternative would serve a higher volume of travelers, especially in 2035 (increases of 6 to 9 percent compared to the No Build Alternative).
  - In 2015 and 2035, travel times in the express lanes would improve slightly with the Build Alternative in the northbound AM peak hours compared with the No Build Alternative. In 2015, northbound AM peak travel times would improve by 0.3 to 14.3

[4] Based on comparison of "No Build" travel times between the study years 2015 and 2035 in Tables 6-3 and 7-3 in the Traffic Operations Analysis Report, June 2014.

minutes in the general purpose lanes depending on the freeway segment, and by 0.3 to 2.9 minutes in the express lanes. In 2035, northbound AM peak travel times would improve by 0.8 to 8.6 minutes in the general purpose lanes, and by 0.3 to 9.1 minutes in the express lanes. Travel times would remain the same in the southbound PM peak hours compared with the No Build Alternative.

- The Build Alternative would be consistent with the provisions defined in Assembly Bill 2032 (2004) and Assembly Bill 574 (2007) to implement express lanes in an HOV system in Santa Clara County, a stated purpose of the project. Net revenue generated from the express lanes would be used in the US 101 corridor for HOV, transportation, and transit service improvements, as directed in the bills and codified in California Streets and Highways Code Section 149.6.
- The No Build Alternative would leave US 101 with an existing single HOV lane in each direction, and no changes to the number of lanes. In the future, the traffic conditions will continue to deteriorate with respect to LOS and longer travel times. The No Build Alternative would not meet the two stated purposes of the project:
    - The No Build Alternative would not provide any further means beyond the existing HOV lanes to manage and improve traffic flow in the future as travel demand and traffic volumes increase, and travel times would continue to increase; and
    - The No Build Alternative would not provide express lanes on US 101 in Santa Clara County, which would not be consistent with State legislation to implement express lanes.

Overall, the Build Alternative would better accommodate projected population growth and travel demand than the No Build Alternative. The Build Alternative would decrease travel time delays in the majority of future year peak and non-peak periods while providing a reliable means to maintain higher volumes of traffic.

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

Several alternatives were considered during the early stages of project development but were eliminated because they did not meet the project's purpose and need or would have unacceptable environmental impacts. The following describes these alternatives and why they were not advanced for further evaluation.

1.3.5.1 Single Express Lane/Separate Access Zones

Converting the existing single HOV lane in each direction to a single express lane was considered. However, traffic forecasts predict that in less than 20 years the existing HOV lane will meet or exceed capacity (approximately 1,650 vph per lane). As that occurs, speeds would decline to a level where there will be no excess capacity available in the HOV lane for the SOVs willing to pay a toll to use the express lanes.

In addition a separate ingress/egress option for a single-lane alternative would not have the same access zones as a two-lane facility. Therefore, transitioning to two express lanes in the future (which is the ultimate vision for US 101 as currently proposed) would require reconstruction of all overhead sign structures, electronic toll structures, and access zones in new locations. Because this alternative would not meet the long term capacity needs, it was dropped from further consideration.

1.3.5.2 Single Express Lane/Shared Access Zones

This alternative would be similar to the Separate Access Zones concept described above (convert the single HOV lane to a single express lane), but would feature designated, combined entrance and exit openings to provide access into and out of the express lane facility. It has similar future capacity constraints as described for the previous separate access zones alternative but also introduces more concentrated weaving movements at each access zone that could negatively impact traffic flow. Because this alternative would introduce additional congestion points at the weaving locations, it was dropped from further consideration.

1.3.5.3 Add Additional General Purpose Lane(s)

An additional general purpose lane, added to the freeway in each direction, would increase the capacity of the highway and improve traffic conditions, including at bottleneck locations. Pavement would be added as needed, and the freeway would be restriped to maintain the existing HOV lane adjacent to the inside median. However, adding a general purpose lane would not relieve congestion in the HOV lane nor encourage HOVs to reduce congestion. It was therefore not considered further.

1.3.5.4 Add Separated Express Lane and HOV Lane

This alternative would also add a new lane in each direction. The existing HOV lane would remain as a facility for HOV users only, and the new lane would serve toll-paying drivers only during peak periods as an express lane. This type of facility would not allow as much flexibility of choice to drivers: all HOV users would be limited to a single lane, as would all express lane users. If HOV or express lane use was high at any given moment, their respective lane would begin to suffer congestion and defeat the efficiency of having HOV or express lanes. The ability of HOV and express lane users to access either of the two lanes and mix allows greater flexibility of choice to the drivers and reduces the potential for congestion. This option was not considered further because it would not avoid any of the environmental impacts of the proposed project, and would not provide superior traffic operations.

1.3.6 Permits and Approvals Needed

The following permits, reviews, and approvals would be required for project construction. Permit applications will be submitted during the design phase.

Table 1.3.6-1: Project Permits and Approvals

Agency	Permit/Approval	Status
U.S. Fish and Wildlife Service (USFWS)	Section 7 consultation for threatened and endangered species.	● The Biological Assessment was submitted to the USFWS in March 2014 to address species protected under Section 7 of the FESA. A Biological Opinion was Issued by

Table 1.3.6-1: Project Permits and Approvals

Agency	**Permit/Approval**	**Status**
		USFWS on March 10, 2015 (FF08ESMF00-2014-F-0534-2; see Appendix E).
Federal Highway Administration (FHWA)	Concurrence with project's conformity to Clean Air Act and other requirements.	● Air quality studies were submitted for FHWA concurrence on March 19, 2015 FHWA issued their conformity determination on April 20, 2015.
State Historic Preservation Officer (SHPO)	Concurrence on findings with respect to historic resources and Section 106 requirements.	● SHPO concurred with the Department's eligibility determinations in June 2014. In November 2014, the Department concluded the cultural resources finding for this project as No Adverse Effect with Standard Conditions – Environmentally Sensitive Areas (ESAs).
U.S. Army Corps of Engineers (USACE)	Concurrence on delineation of waters of the United States within the project's study area. There are no identified impacts within the project construction area.	● The Department consulted with the USACE by forwarding them a copy of the Wetland Delineation on February 14, 2014. USACE concurrence of wetland delineation is anticipated during the design phase of the project.
California Department of Fish and Wildlife (CDFW)	Section 1602 Lake and Streambed Alteration Permit and Incidental Take Permit	● Permit applications will be submitted during the project design phase.
San Francisco Bay Regional Water Quality Control Board (RWQCB)	Section 401 Water Quality Certification; National Pollutant Discharge Elimination System (NPDES) approval for work greater than one acre.	● Application for Section 401 Water Quality Certification or waiver will be submitted during the project design phase. ● A Notice of Intent and the Storm Water Pollution Prevention Plan (SWPPP) will be submitted prior to construction.
Santa Clara Valley Water District (SCVWD) and local cities	Encroachment permit for work within a right-of-way.	● Applications for encroachment permits will be submitted during the project design phase or prior to construction.

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

This chapter addresses the environmental impacts of the proposed project. An evaluation of the proposed project is provided below and is consistent with CEQA checklist criteria provided in Appendix A. Avoidance, minimization, and/or mitigation measures are discussed in the following sections and summarized in Appendix G. The environmental resource discussions presented in this chapter are based on the technical studies cited at the beginning of each discussion and listed in Appendix I. Technical studies were prepared for community impacts, traffic, visual resources, cultural resources, hydrology, water quality, storm water, geotechnical conditions, paleontology, hazardous waste and materials, air quality, noise, and biological resources.

As part of the scoping and environmental analysis carried out for the project, the following environmental issues were considered but no adverse impacts were identified. As a result, there is no further discussion about these issues in this document.

Land Use

Existing and Future Land Use

All project-related activities would take place within the existing right-of-way with the exception of five temporary construction easements. No additional right-of-way is proposed. No permanent property acquisitions are needed, therefore, no direct or indirect changes to land uses would result from the project. The proposed project would serve an existing developed urban area and would not involve unused rural land (URS 2012a).

Consistency with State, Regional, and Local Plans and Programs

The project is listed in the Santa Clara Valley Transportation Plan 2035 (VTA 2009) and in the Metropolitan Transportation Commission's (MTC) RTP 2040 (ID 240466; ABAG and MTC 2013). The project is consistent with the RTP goal of providing a regional network of express lanes. The project would not conflict with regional growth plans or the Santa Clara Valley Habitat Conservation Plan/Natural Communities Conservation Plan (HCP/NCCP). General and community plans were reviewed for the jurisdictions in the project vicinity, which are Santa Clara County and the cities of Palo Alto, Mountain View, Sunnyvale, Santa Clara, Morgan Hill, and San Jose.

The project corridor is not within the coastal zone. Twelve major waterways cross or are adjacent to the project corridor, but none are National or California Designated Wild and Scenic Rivers or rivers under study for this designation (URS 2012a).

Parks and Recreational Facilities

The project would not require the temporary or permanent use of any parkland or recreational facility. No temporary or permanent closures of bike or pedestrian trails are anticipated.

Section 4(f) resources within one-quarter mile of the project area include public parks, recreational areas, and wildlife refuges (URS 2012a); however, the project would not include the "use" of these resources. The project would not directly or indirectly affect a Section 4(f) resource, as discussed in Appendix B. Cultural resources considered under Section 4(f) are discussed in Section 2.1.5.

Growth

All permanent features of the proposed project would be within the existing US 101 right-of-way and would not include the construction of new interchanges. As a result, the project would not provide new access to previously inaccessible areas or improve access in ways that would foster local development beyond that which is already planned.

The proposed project would respond to existing and foreseeable demands of the community served, rather than trigger further development beyond the project itself. Therefore, the project would accommodate but not influence growth (URS 2012a).

Farmlands/Timberlands

Farmland is adjacent to the project corridor in San Jose and unincorporated Santa Clara County (California Department of Conservation 2011). Prime Farmland and Grazing Land are adjacent to the project corridor in San Jose and unincorporated Santa Clara County. Seven Williamson Act parcels are located within 0.25 mile of the project corridor (California Department of Conservation 2009). Of those seven parcels, two are located directly adjacent to the project corridor just north of the Cochrane Road interchange in southern San Jose.

All permanent improvements associated with the proposed project would take place within the existing right-of-way. Therefore, the project does not have the potential to result in the conversion of Prime Farmland, Unique Farmland, or Grazing Land. In addition, the project would not conflict with a Williamson Act contract. The project does not have the potential to result in timberland conversion.

Community Impacts

Community Character and Cohesion

The project would not displace or relocate any residents, change any existing community boundaries, physically divide an established community, or create a new barrier to movement within the project corridor. Access to and from the project corridor and nearby streets would not change as a result of this project.

Relocations and Real Property Acquisition

The project would not require acquisition or relocation of any residences, businesses, or other land uses.

2.1 Human Environment

2.1.1 Environmental Justice

The following discussion is from the Community Impact Assessment (URS 2012a) for the proposed project, which was completed in December 2012.

2.1.1.1 Regulatory Setting

All projects involving a federal action (funding, permit, or land) must comply with Executive Order (EO) 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*, signed by President William J. Clinton on February 11, 1994. This EO directs federal agencies to take the appropriate and necessary steps to identify and address disproportionately high and adverse effects of federal projects on the health or environment of minority and low-income populations (i.e. environmental justice communities of concern) to the greatest extent practicable and permitted by law.

All considerations under Title VI of the Civil Rights Act of 1964 and related statutes have also been included in this project. The Department's commitment to upholding the mandates of Title VI is demonstrated by its Title VI Policy Statement, signed by the Director, which can be found in Appendix C of this document.

2.1.1.2 Affected Environment

The study area for this analysis included Census block groups whose borders lie within a 0.5-mile of any part of the project corridor. In total, 186 block groups comprised the study area (shown on Figure 2.1.1-1). The baseline for the environmental justice study area is from the 2010 Census and 2010 American Communities Survey [ACS].

For each Census block group within the study area, the following data were gathered:

- Total population (U.S. Census Bureau 2010)
- Ethnicity and race (U.S. Census Bureau 2010)
- The ratio of income to poverty level of individuals in the past 12 months (U.S. Census Bureau, ACS 2006-2010 5-Year Estimates)

Minority persons are defined by the 2010 U.S. Census as all individuals not identified as "White only," including those identified as Hispanic or Latino. Low-income persons were defined as those individuals with household incomes below the Census poverty threshold which equals the ratio of income to poverty level in the past 12 months below 1.0.[5]

Low income was defined based on the Department of Health and Human Services poverty guidelines. For 2014, this was $23,850 for a family of four.

The state-, region-, county-, and city-wide percentages of minority and low-income populations were reviewed to define any "disproportionate" adverse effects (U.S. Census Bureau, American Community Survey 2010 [1- year estimates for state-, region-, and county-level data]; and 2008-2010 [3-year estimates for city-level data]). San Mateo County data were included in the analysis because a portion of the study area extends into the southern part of that county.

Environmental Justice (EJ) communities are traditionally defined as a Census block group population that meets either or both of the following criteria:

1. The Census block group contains 50 percent or more minority persons, and/or the block group contains 25 percent or more low-income persons.
2. The percentage of minority and/or low-income persons in any Census block group is substantially (e.g., more than 10 percentage points) greater than the average of the surrounding region (e.g., the counties overlapping the study area).

[5] The Census assigns each person or family one of 48 possible poverty thresholds, which vary according to the size of the family and the age of the members. The 2010 weighted average threshold for a family of four is $22,314. The 2010 Department of Health and Human Services poverty guidelines for a family of four is similar, at $22,050; the 2014 guideline is $23,850.

Applying the first criterion, 22 of 186 block groups in the study area have more than 25 percent low-income population. Applying the second criterion, the “surrounding region” of the study area was defined as San Mateo and Santa Clara Counties. The average low-income population for these counties was calculated as 9.4 percent. Thus, a Census block group that is more than 10 percent above the average of the surrounding area (or 19.4 percent low-income) would be considered an EJ community. Thirty two of 186 total block groups are above 19.4 percent and are considered low-income EJ communities.

Approximately 98 percent of the population living within the EJ study area is in Santa Clara County, with the remaining 2 percent in southern San Mateo County.

Comparing at a more regional level, the San Francisco Bay Area as a whole has a high percentage of minority individuals. According to the 2010 Census, 57.6 percent of the total population is minority and, according to the 2010 ACS estimate, 11.1 percent are living below the U.S. Census poverty threshold.

As stated above, the surrounding region of the project is defined as San Mateo and Santa Clara counties. According to an average of 2010 Census data, 62.8 percent of the surrounding region is minority and according to the 2010 ACS estimate, 9.4 percent are living below the U.S. Census poverty threshold. Within the study area, these percentages are higher, with minority and low-income individuals representing 77.3 percent and 11.6 percent of the study area population, respectively. Hispanics are the predominant minority in all portions of the EJ study area.

2.1.1.3 Environmental Consequences

The data above indicate that there are EJ communities in the study area with a substantial population of minority and/or low-income residents. The potential for EJ implications from the project are discussed below.

Project Operation

Use of the express lanes requires the ability to obtain a FasTrak toll tag. Toll tags can be obtained online, by phone, mail, or fax, in person from the Bay Area Toll Authority (BATA), Regional Customer Service Center (RCSC), or from retail outlets such as Walgreens, Safeway, and Costco. With the number of options available, persons of all income levels would have similar access to a FasTrak account. The initial cost to establish an account is less when paid with a credit card than with cash or check ($25 versus $70, although $20 of the $70 is refunded when the account is closed). The higher initial cost for cash or check accounts could be considered an additional economic burden to those who do not pay by credit card, a portion of whom could be low-income or minority persons. However, as the choice to use the express lanes (and establish the necessary FasTrak account) is voluntary, the higher initial costs for cash or check accounts do not constitute a disproportionately high and adverse effect. Low income groups that are unable to afford FasTrak can still access the express lanes in carpools and by using public transportation.

VTA has sought public input on equity issues since early project planning began in 2004. Public outreach, described in detail in Section 3.1, included minorities and persons from varying income levels. Outreach continued during the public review period for the IS/EA. Comments

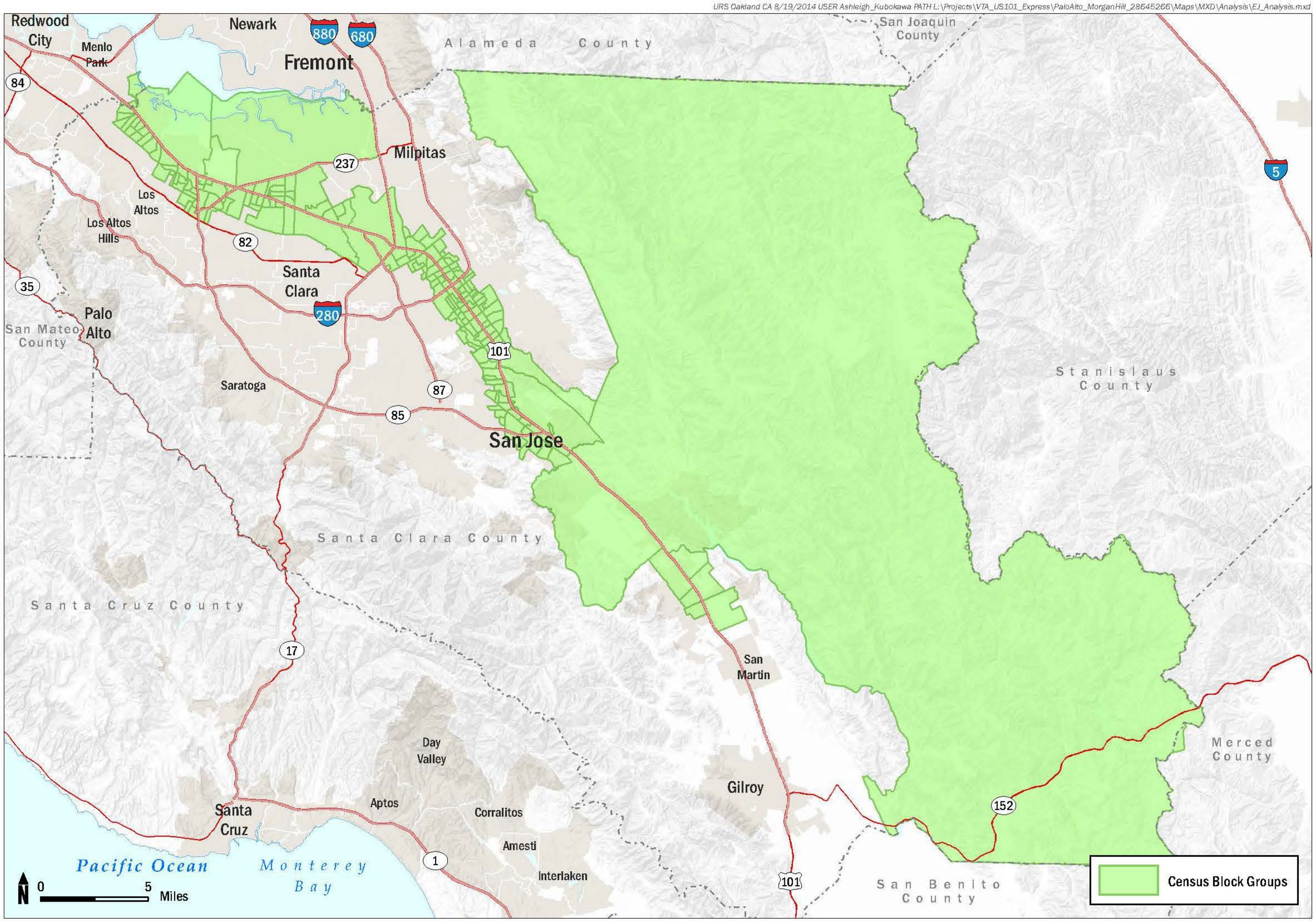

Figure 2.1.1-1: Environmental Justice Study Area

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regarding potential effects to minority and low-income populations have been addressed and approaches to avoid or minimize effects have been incorporated into the Final IS/EA.

Based on the above discussion and analysis, the Build Alternative will not cause disproportionately high and adverse effects to minority or low-income populations per Executive Order 12898 regarding environmental justice.

2.1.1.4 Avoidance, Minimization, and/or Mitigation Measures

None required.

2.1.2 Utilities/Emergency Services

2.1.2.1 Affected Environment

Utilities

The project area contains overhead electric and communications lines and underground electric, gas, sanitary sewer, water, reclaimed water, communications, and fiber optic lines. Utilities in the project area were identified through site visits and reviews of utility plans obtained from the Department, VTA, utility providers, and local municipalities. Utility providers in the project area are listed below by category:

- Gas and electric—Pacific Gas and Electric (PG&E), City of Santa Clara, City of Palo Alto, Calpine, Swissport Fueling, Inc., and Air Products
- Communications—AT&T, Comcast, Level 3 Communications, Verizon, Qwest Communication, Nextlink, and MCI
- Water—City of Morgan Hill, San Jose Water Company, Santa Clara Valley Water District (SCVWD), California Water Service Company, Great Oaks Water Company, City of Sunnyvale Water Division, City of Mountain View Water Division, City of Palo Alto Water Division, and City and County of San Francisco
- Sanitary—City of Morgan Hill, City of San Jose, City of Santa Clara, City of Sunnyvale, City of Los Altos, City of Mountain View, and City of Palo Alto

City storm drain systems are locally maintained.

Emergency Services

Each municipality along the project corridor has its own fire and police departments, with the exception of Morgan Hill. The City of Morgan Hill has its own police department, but contracts with the Santa Clara County Fire Department for fire and emergency medical services.

2.1.2.2 Environmental Consequences

Utilities

The project would not require utility relocations outside the right-of-way. Utility relocations within the right-of-way would be required where there is a conflict with the proposed project improvements. Utility impacts would be limited to the extension of casings (protective pipes or channels) for existing underground facilities. All other existing utilities would be protected in place. Relocation of utilities that are in conflict with the proposed project improvements, including adjustment of manholes, will be the responsibility of the utility owner.

A number of utilities located within the Caltrans right-of-way do not meet the Caltrans Utility Encroachment Policy. The majority of these utilities are not in conflict with the proposed improvements and do not adversely affect highway safety and traffic operations, thus the project proposes to perpetuate the existing condition. The utilities are documented in the Utility Policy Variance Request (UPVR) which was reviewed by Caltrans District 4, Right-of-Way and Headquarters Division of Design in December 2012 and July 2013.

Utility potholing would be conducted during project design to confirm utility locations. Utility relocations will be further defined during the final design phase and, if deemed necessary, will be performed in advance of the project construction. The anticipated utility relocations are shown in Table 2.1.2-1, below.

Table 2.1.2-1: Anticipated Utility Relocations

Facility	Owner	State Obligation	Local Obligation	Utility Owner Obligation
6" distribution gas in 8" casing (extend casing), station “A” 1410+50	PG&E	$0	$30,000	$30,000
20" water in 36" casing (extend casing), station “A” 1465+30	City of Santa Clara	$0	$80,000	$0
U/G electric in 48" casing (extend casing), station “A” 1494+70	City of Santa Clara	$0	$330,000	$0
12" water in casing (extend casing), station “A” 1510+70	City of Santa Clara	$0	$80,000	$0
12" Recycled water in 24" casing (extend casing), station “A” 1512+20	City of Santa Clara	$0	$80,000	$0
33” VCP sanitary sewer in 48” casing (extend casing), station “A” 1548+50	City of Sunnyvale	$0	$120,000	$0
20” transmission gas in 30” casing (extend casing), station “A” 1551+70	PG&E	$0	$90,000	$0
10” transmission gas in 16” casing (extend casing), station “A”	PG&E	$0	$70,000	$0

Table 2.1.2-1: Anticipated Utility Relocations

Facility	Owner	State Obligation	Local Obligation	Utility Owner Obligation
1551+90				
18" water in 30" casing (extend casing), station "A" 1551+30	City of Sunnyvale	$0	$80,000	$0
4" distribution gas in 8" casing (extend casing), station "A" 1638+70	PG&E	$0	$30,000	$30,000
	Totals	$0	$990,000	$60,000

Emergency Services

The fire and police departments for each jurisdiction along the project corridor are listed below:

- Santa Clara County Fire Department (serves Santa Clara County and Campbell, Cupertino, Los Altos, Los Altos Hills, Los Gatos, Monte Sereno, Morgan Hill, and Saratoga)
- Santa Clara County Sherriff's Office (serves Cupertino, Los Altos Hills, Saratoga, and the unincorporated areas of the county)
- City of Palo Alto Police Department and Fire Department
- City of Mountain View Police Department and Fire Department
- City of Sunnyvale Department of Public Safety (police, fire, and emergency medical)
- City of Santa Clara Police Department and Fire Department
- City of San Jose Police Department and Fire Department
- City of Morgan Hill Police Department

The project would require full or partial lane and shoulder closures to allow for utility work, such as installation of conduit or sensors in or under the roadway. These actions could result in short-term temporary transportation related impacts during project construction for all of the jurisdictions listed above. A Transportation Management Plan (TMP) will be prepared during the design phase of the project to minimize traffic disruptions from project construction. The TMP will include outreach to inform the agencies listed above and the public of the times and locations of upcoming construction, construction signs in and approaching the project area, and incident management for traffic control in the vicinity of construction activities. Access will be maintained for emergency response vehicles. No adverse impacts to emergency services are anticipated from project construction. After project completion, the additional express lane could improve access for emergency service providers using US 101 to respond to incidents.

2.1.2.3 Avoidance, Minimization, and/or Mitigation Measures

None required.

2.1.3 Traffic and Transportation/Pedestrian and Bicycle Facilities

The following discussion is based on the *Traffic Operations Analysis Report* (DKS 2014) which was approved in June 2014. The CEQA baseline (i.e. existing condition) for this section is 2009, the most recent year for which complete data were available when the traffic studies began in 2011. The 2009 data also serves as the NEPA baseline (i.e. the pre-project environmental condition).

2.1.3.1 Affected Environment

Roadway Network

US 101 in the project limits has three general purpose lanes and one HOV lane in each direction. Several sections of northbound and southbound US 101 also have auxiliary lanes to facilitate merging and weaving between interchanges.

Pedestrian and Bicycle Facilities

There are no pedestrian or bicycle facilities on US 101 in the project limits. The US 101 freeway does not allow bicycle or pedestrian use. There are Class I bike path crossings of US 101 on overhead and undercrossing structures at (from north to south) Permanente Creek, Stevens Creek, San Tomas Aquino Creek, Guadalupe River, and Coyote Creek. There are other Class II bicycle lanes and Class II bicycle routes along local roads and streets that also cross under or over US 101. No bike or pedestrian facilities connect to US 101, or would be affected by the project; therefore, pedestrian and bicycle facilities are not discussed further.

Traffic Operations Analysis Study Area and Methods

The traffic study area consists of the US 101 freeway, including on- and off-ramps, from the US 101/East Dunne Avenue interchange in Morgan Hill to the Santa Clara/San Mateo County Line in Palo Alto (see Figure 1.1-2).

This section and the next section describe and compare overall performance of the No Build and Build future conditions, by factors such as delay, total travel time, speed, and cumulative distance traveled. This information was calculated over four segment groups which represent the major system interchanges within the corridor, and combined cover the entire project limits. The traffic study analyzed peak period conditions, defined as 6 AM to 10 AM (AM peak) and 3 PM to 7 PM (PM peak), and peak hour conditions within the peak periods (7 AM to 8 AM and 5 PM to 6 PM). These conditions represent the most congested periods of the day, and are used to define the peak hour for purposes of the impact analysis. The primary travel direction is northbound in the AM peak and southbound in the PM peak.

Forecasts were developed using VTA's 2005 countywide travel demand model using Association of Bay Area Governments "Projections 2009" data, the latest information available at the time the environmental studies were initiated. The traffic operations analysis was developed using a micro-simulation model.

The traffic forecast and operational analysis was conducted for existing conditions, a project opening year of 2015, and a horizon year of 2035. The traffic analysis studied 2015 and 2035 conditions both with and without the project (2015 Build and No Build, 2035 Build and No Build). This is a long project and exact timing may be subject to change during the design phase. However, 2015 opening and 2035 horizon year timing was used to provide an analytical basis for the traffic studies. This comparison shows a complete picture of the future transportation environment that accounts for traffic from planned future development in the approved general plans of the cities in Santa Clara County. This comparison also accounts for planned growth in the region, as well as planned improvements to the transportation network.

Existing conditions reflect the Caltrans Traffic Census database (2007-2010), 2009 Caltrans Annual Average Daily Truck Traffic Database, VTA's 101 Ramp Metering Study, The Bay Area 2009 HOV Lanes Report, Caltrans Performance Measurement System (PeMS) and project-specific traffic volume counts conducted in April 2011. The HOV lane usage information for the study area was derived from the Bay Area HOV Lane Report 2009 and traffic counts collected in 2011.

Details of the traffic modeling results for both study years (2015 and 2035) are listed in the tables in Appendix D. Traffic Level of Service(LOS) and volumes are identified and discussed by specific locations in each direction of the highway and study year, and the results are listed in the tables in Appendix D. Those tables list predicted operating conditions between each interchange or roadway segment, and by proposed express lane access lane start and end points, LOS conditions, volumes, and allow comparison of No Build and Build conditions between the general purpose lanes (the existing non-HOV or "general purpose" lanes) and the express lanes (proposed, which would serve both HOV and express lanes users).

Section 2.1.3.2 summarizes the findings of the *Traffic Operations Analysis Report* (DKS 2014), with emphasis on the key operational parameters of travel time and LOS for both the general purpose and HOV/express lanes on US 101. LOS is a grading system used by transportation planners and engineers to measure and describe the operational status of the roadway network. LOS is a description of the quality of a roadway facility's operation, ranging from LOS A (indicating free-flow traffic conditions with little or no delay) to LOS F (representing oversaturated conditions where traffic flows exceed design capacity, resulting in long queues and delays). Vehicle density, calculated by vehicles per lane per mile, is used to determine the overall LOS that a roadway facility provides.

A qualitative description of LOS conditions and the corresponding vehicle density is shown in Table 2.1.3-1.

Table 2.1.3-1: Roadway Level of Service Thresholds

Level of Service	Description	Density (vplpm)
A	Free-flow speeds prevail. Vehicles are almost completely unimpeded in their ability to maneuver within the traffic stream.	≤11
B	Free-flow speeds are maintained. The ability to maneuver within the traffic stream is only slightly restricted.	> 11 to 18
C	Flow with speeds at or near free-flow speeds. Freedom to maneuver with the traffic stream is noticeably restricted, and lane changes require more care and vigilance on the part of the driver.	> 18 to 26
D	Speeds decline slightly with increasing flows. Freedom to maneuver with the traffic stream is more noticeably limited, and the driver experiences reduced physical and psychological comfort.	> 26 to 35
E	Operation at capacity. There are virtually no usable gaps within the traffic stream, leaving little room to maneuver. Any disruption can be expected to produce a breakdown with queuing.	> 35 to 45
F	Represents a breakdown in flow.	> 45

Note: Density is reported in vehicles per lane per mile (vplpm)
Source: Highway Capacity Manual (Transportation Research Board 2000).

Existing Conditions

The US 101 corridor has substantial congestion and reduced speeds (for single occupant vehicles), especially during the peak periods (6 AM to 10 AM and 3 PM to 7 PM). The congestion and delays result in “bottleneck” locations on the freeway, which were identified during the traffic studies and listed in Section 1.2.2.1. Drivers also experience delays in some HOV segments on US 101 in the northbound direction between East Capitol Expressway and Rengstorff Avenue in the AM peak period, and Ellis Street and Oregon Expressway/Embarcadero Road in the PM peak period. In the southbound direction, the HOV lane has congestion in the PM peak period in some segments from north of the San Mateo County line to Tully Road in San Jose. The existing HOV percentages during the peak periods vary between 11 percent and 21 percent with the highest percentages being between Montague Expressway in Santa Clara and Fair Oaks Boulevard in Sunnyvale. The HOV lane percentage illustrates the relative proportion of vehicles using the HOV lanes over the vehicles using all mainline lanes, including the HOV and general purpose lanes.

2015 No Build Conditions

This section describes the modeled No Build conditions for the 2015 year, to provide a basis for comparison to the Build conditions discussed in Section 2.1.3.2.

AM Peak Hour Congestion. The bottleneck congestion points identified for “Existing Conditions” are predicted to remain under 2015 No Build conditions. The AM northbound direction is the peak flow, when bottlenecks would increase in several locations between freeway ramps including: between East Dunne Avenue and Cochrane Road, Tully Road off- and on-ramps, McKee Road on and Oakland Road off, De La Cruz Boulevard on and San Tomas/Montague Expressways off, Fair Oak Avenue on and N. Mathilda Avenue off, and N. Rengstorff Avenue off and on. These bottlenecks result in significant congestion on northbound US 101, especially through the northern two thirds of the corridor. In addition, the bottleneck near Old Oakland Road shifts north to between the Old Oakland Road on and northbound I-880 off due, in part, to the high volume exiting to northbound I-880. Speeds within the AM northbound HOV lane drop below 45 mph in several locations, generally corresponding to bottleneck or congested segments in the general purpose lanes. This HOV lane congestion may be attributed to a combination of high HOV lane volumes and traffic exiting the HOV lane trying to merge into the congested general purpose lanes. Appendix D, Table D-1 lists the modeled conditions for 2015 northbound AM and PM peak hour (7 AM to 8 AM and 5 PM to 6 PM), and Table D-2 lists conditions for 2015 southbound..

In the AM southbound direction (off-peak), only limited congestion at the north end or start of the corridor is expected in the general purpose lanes under the No Build Alternative. The existing HOV lanes are expected to operate at free flow speeds.

PM Peak Hour Congestion. The northbound general purpose lanes on US 101 during the PM peak period are expected to be largely uncongested. Isolated slowdowns with speeds dropping below 55 mph are projected at the following locations: Capitol-Tully, Tully-I-280, De La Cruz-San Tomas, San Tomas-Great America, and at Mathilda. Similar conditions for the northbound US 101 general purpose lanes are expected under the Build alternative, with slowdowns in the same locations. In most areas, average hourly speeds in the general purpose lanes are expected to be around 60 mph.

The PM peak hour direction on US 101 is southbound. Major bottlenecks include those between the Rengstorff Avenue on-ramp and Middlefield Road on-ramp, between the De La Cruz Boulevard diagonal on-ramp and SR 87 off-ramp, and between the Old Oakland Road on and McKee Road off-ramp. The queue from the Rengstorff Avenue-Middlefield Road bottleneck would extend well upstream into San Mateo County.

2035 No Build Conditions

This section describes the modeled No Build conditions for the 2035 year.

AM Peak Hour Congestion. Congested conditions would continue, and worsen, in the northbound general purpose lanes during the AM peak hour under 2035 No Build conditions. The primary bottlenecks would be between De La Cruz Boulevard and San Tomas/Montague Expressways (on and off), and between Rengstorff Avenue and San Antonio Road. In the peak hour, the queue from the De La Cruz Boulevard bottleneck would extend upstream as far as Bailey Road. At the same time, conditions worsen in the northern portion of the corridor due to the Rengstorff Avenue bottleneck. Appendix D, Table D-3 lists the modeled conditions for 2035 northbound AM and PM peak, and Table D-4 lists conditions for 2035 southbound.

Northbound congestion is also predicted in areas of the HOV lane for the AM peak hour. Significant congestion in the northbound HOV lane, with speeds below 45 mph, would occur in several locations, notably around N. Mathilda Avenue to N. Fair Oaks Avenue and through the middle of the corridor (between 1st and Hellyer Avenue). These areas generally correspond with the same segments where congestion is heaviest in the general purpose lanes.

In the AM southbound general purpose lanes, a major bottleneck is expected to occur between the Oregon/Embarcadero on-ramp and San Antonio Road off-ramp under the No Build Alternative. The queue from this bottleneck is expected to extend well back into San Mateo County. Through the remainder of Santa Clara County, only isolated slowing with speeds dropping below 50 mph is expected in the general purpose lanes. The southbound HOV lane is expected to operate at essentially free flow speeds in the AM peak hour.

PM Peak Hour Congestion. Under 2035 No Build conditions, during the PM peak hour, northbound general purpose and HOV lanes on US 101 are expected to be uncongested through a majority of the corridor, with average speeds above 55 mph. The exception is predicted congestion in the northern portion of the corridor with bottlenecks around De La Cruz Boulevard, Moffett Boulevard, and Rengstorff Avenue. Average hourly speeds in these areas are expected to drop below 30 mph in these areas in the general purpose lanes and 40 to 50 mph in the HOV lanes.

In the PM southbound peak hour, significant congestion is expected in 2035 throughout the northern portion of the corridor under the No Build Alternative. During the peak hour, the queue from the De La Cruz Avenue bottleneck would merge with that from the Rengstorff Avenue bottleneck and extend well upstream into San Mateo County. In addition, bottlenecks would appear between the East Taylor Street to Mabury Road off and on, and between I-280/I-680 on and Tully Road off. In the HOV lane, congestion is predicted in pockets between the start of the corridor and De La Cruz Avenue.

2.1.3.2 Environmental Consequences

The following summarizes the traffic conditions for each study year (2015 and 2035), in the northbound and southbound directions with the project (Build conditions). For each scenario, changes to traffic operations with the project are described. Details of the traffic modeling results for both study years are listed in the tables in Appendix D. Separately, travel times (the modeled average time to travel a segment of the corridor) were also predicted, and are discussed in the following sections. Overall, the project would provide for additional traffic capacity during the critical peak hour and improve travel time. The traffic flow would function at or better than the no project for the overall corridor and major segments with regard to average reduced delay, especially in the AM 2015 northbound peak period. The corridor would also serve substantially more vehicles during the peak hour. Because of the additional volume of traffic and an additional lane along some segments of the corridor, there are exceptions where lane changes and merging would impact levels of service in specific locations, which are identified below.

2015 Build Conditions

AM Peak Hour Congestion. The AM 2015 northbound peak hour would realize the most substantial improvement on the freeway with the project. With the Build Alternative the additional lane segments and express lane operation in both directions would allow more traffic to use the freeway, and the level of congestion in the peak AM northbound general purpose lanes decreases substantially in some of the highway's most congested segments compared to No Build conditions. Most notably, the bottlenecks between the East Dunne Avenue on and Cochrane Road off-ramps, and between the Tully off- and on-ramps are eliminated under the Build Alternative. In addition, the level of congestion associated with a bottleneck between Old Oakland Road and I-880 is substantially reduced.

Relatively few areas show a decrease in LOS, and where the LOS does decline the segments remain at acceptable operating conditions (LOS of D or better). Tables D-1 and D-2 in Appendix D list operating conditions in 2015 for northbound and southbound peak hours (the tables in Appendix D are based on the Project's *Traffic Operations Analysis Report* (DKS 2014)).

AM Peak Hour Travel Speeds and Time. Higher speeds and comparatively better traffic flow is predicted by the traffic modeling for the proposed express lanes, with speeds dropping below 50 mph only at the East Santa Clara Street and Ellis Street access zones. Higher volumes would be achieved in the northbound direction with the HOV/Express Build Alternative, even at the bottleneck locations, largely as a result of the highway's capacity to handle higher flows in the proposed express lanes compared to the No Build Alternative's single HOV lane.

Overall, the Build Alternative would produce higher speeds in both the general purpose and HOV/express lanes. As a result, travel times within the overall corridor in the peak AM hour in the northbound direction would be lower by as much as 14 minutes in the general purpose lanes, and 1 to 3 minutes in the express lanes (compared to the existing HOVs). The range of reduction is shown in Table 2.1.3-2 below. In general, vehicles in the express lanes would experience little or no delay, and substantial time savings in overall travel through the corridor. The Build Alternative would improve (reduce) travel time in the most heavily congested northbound portions of the project limits. There would be slight increases in travel time in the southbound non-peak direction with the increased traffic flow and volumes, but these changes would be one-half minute or less and do not represent a substantial delay.

Table 2.1.3-2: 2015 AM Peak Hour[1] Travel Time Comparison (Minutes)

Lane Type	Segment	Free Flow[2]	No Build	Build	Build – No Build Difference
NORTHBOUND					
General Purpose	1. Dunne Ave On - Bernal Rd On	10.1	11.7	10.9	-0.8
	2. Bernal Rd On - Rt 880 Jct	10.6	28.6	14.3	-14.3
	3. Rt 880 Jct - Rt 237 On	7.3	18.1	15.2	-2.8
	4. Rt 237 On - Embarcadero On	5.4	11.0	10.7	-0.3
HOV/Express	1. Dunne Ave On - Bernal Rd On	10.1	10.8	10.0	-0.9
	2. Bernal Rd On - Rt 880 Jct	10.6	14.0	11.1	-2.9
	3. Rt 880 Jct - Rt 237 On	7.3	9.0	7.6	-1.4
	4. Rt 237 On - Embarcadero On	5.4	6.2	5.9	-0.3
SOUTHBOUND					
General Purpose	1. San Antonio Off - Rt 237 Jct	4.0	5.4	5.8	0.4
	2. Rt 237 Jct - McKee Rd Off	9.4	10.4	11.0	0.5
	3. McKee Rd Off - Rt 85 Jct	9.2	9.9	9.9	0.0
	4. Rt 85 Jct - Cochrane Rd Off	7.7	7.5	7.9	0.4
HOV/Express	1. San Antonio Off - Rt 237 Jct	4.0	4.2	4.4	0.2
	2. Rt 237 Jct - McKee Rd Off	9.4	9.4	9.7	0.3
	3. McKee Rd Off - Rt 85 Jct	9.2	8.9	9.0	0.1
	4. Rt 85 Jct - Cochrane Rd Off	7.7	6.7	6.9	0.2

Note: 1. AM peak hour defined as 7:00 to 8:00AM
2. Free flow travel time is based on an assumed speed of 65 mph. In some cases, model speeds may exceed 65 mph producing travel times that are less than free flow.
Source: DKS 2014

PM Peak Hour Congestion. In the general purpose lanes, similar conditions are expected as for the No Build previously described. No congestion is forecasted in the northbound HOV/express lanes during the 2015 PM peak hour with the Build Alternative.

In the southbound PM Peak hour, many of the same general purpose lane bottleneck locations remain. The benefit of the project is the increase in total throughput at these bottlenecks (general purpose plus HOV/express lanes) that would enable a higher utilization of the corridor. Levels of service are predicted to decline in the southbound HOV/express lanes in a few places including between Oregon and Mathilda Avenue and between McKee Road and I-280, and in the general purpose lanes between Great America Parkway and Montague Expressways, and Cochrane to EL (See Traffic Operations Analysis Report Appendix E for a list of corridors (DKS 2014)).

PM Peak Hour Travel Speeds and Time. Over the length of the corridor, northbound travel times in both the general purpose and HOV/express lanes are approximately the same for both the No Build and Build Alternatives (Table 2.1.3-3). HOV/express lane users are expected to experience no travel time delay, while those in the general purpose lanes would experience only minor delay.

Table 2.1.3-3: 2015 PM Peak Hour[1] Travel Time Comparison (Minutes)

Lane Type	Segment	Free Flow[2]	No Build	Build	Build – No Build Difference
NORTHBOUND					
General Purpose	1. Dunne Ave On - Bernal Rd On	10.1	10.7	10.6	-0.1
	2. Bernal Rd On - Rt 880 Jct	10.6	11.6	11.3	-0.3
	3. Rt 880 Jct - Rt 237 On	7.3	8.3	8.3	0.0
	4. Rt 237 On - Embarcadero On	5.4	6.0	5.9	-0.1
HOV/Express	1. Dunne Ave On - Bernal Rd On	10.1	10.0	9.4	-0.6
	2. Bernal Rd On - Rt 880 Jct	10.6	9.9	10.1	0.2
	3. Rt 880 Jct - Rt 237 On	7.3	7.2	7.0	-0.2
	4. Rt 237 On - Embarcadero On	5.4	5.1	5.4	0.3
SOUTHBOUND					
General Purpose	1. San Antonio Off - Rt 237 Jct	3.9	7.9	8.2	0.2
	2. Rt 237 Jct - McKee Rd Off	8.9	14.5	16.6	2.1
	3. McKee Rd Off - Rt 85 Jct	9.2	10.2	10.1	-0.1
	4. Rt 85 Jct - Cochrane Rd Off	7.3	7.6	8.1	0.6
HOV/Express	1. San Antonio Off - Rt 237 Jct	3.9	4.3	4.5	0.2
	2. Rt 237 Jct - McKee Rd Off	8.9	10.4	10.3	-0.1
	3. McKee Rd Off - Rt 85 Jct	9.2	9.2	9.5	0.3
	4. Rt 85 Jct - Cochrane Rd Off	7.3	7.0	7.3	0.3

Note: 1. PM peak hour defined as 5:00 to 6:00 PM
2. Free flow travel time is based on an assumed speed of 65 mph. In some cases, model speeds may exceed 65 mph producing travel times that are less than free flow.
Source: DKS 2014

In the southbound direction general purpose lanes, travel times between the No Build and Build Alternatives are predicted to vary by less than 1 minute, with the exception of the segment between SR 237 and McKee Road where the average travel time would increase by 2.1 minutes. In the HOV/express lane, the differences in travel time between the two alternatives are negligible. Over the length of the corridor, the proposed Build Alternative would result in significant travel time savings compared to the general purpose lanes most notably in the two northern segments.

2035 Build Conditions

AM Peak Hour Congestion. In 2035 in the AM peak hour, the same primary bottlenecks are expected in the northbound general purpose lanes; however, the level of congestion in the peak northbound direction decreases compared to No Build. The proposed express lanes conditions are expected to be considerably better than those in the No Build HOV lane. In the express lanes, speeds drop below 45 mph for one or more hours within several access zones but, with a few exceptions, remain above 55 mph between access zones. In the southbound direction, levels of service would be the same or improved in almost all segments. Tables D-3 and D-4 in Appendix D list operating conditions in 2035 for northbound and southbound peak conditions.

Higher volumes are achieved under the Build Alternative, even at the bottleneck locations, largely as a result of higher flows in the express lane compared to the No Build HOV lane. Overall, the Build Alternative would produce higher speeds in the general purpose and HOV/express lanes, lower densities, and better LOS compared to the No Build Alternative.

The project would deliver higher volumes to the north end of the study corridor beyond the end of the express lane. As the two proposed express lanes end in the northbound direction, they would merge into one in the segment south of the Oregon Expressway/Embarcadero Road off-ramp. This could result in a congested location that may be avoided through adjustment of the express lane pricing. (See Traffic Operations Analysis Report Appendix F for a list of corridors (DKS 2014)).

AM Peak Hour Travel Speeds and Time. The Build Alternative would gain reductions in northbound travel time compared to the No Build, including approximately 9 minutes in both general purpose and HOV/express lane travel times in the segment between Bernal Road and I-880 (Table 2.1.3-4). It would also gain moderate reductions in general purpose lane travel time in the segment from Dunne to Bernal (-4.7 minutes), and in HOV/express lane travel time in the segment from I-880 to SR 237 (-2.9 minutes). In general, vehicles in the express lane would experience only slight delay relative to free flow travel times. In the southbound direction, the differences in travel time between No Build and Build would be relatively minor.

PM Peak Hour Congestion. In the northbound PM 2035 peak hour, the level of congestion in the general purpose lanes associated with the Moffett and Rengstorff bottlenecks would be lessened (improved); however, the traffic increases at the De La Cruz Boulevard bottleneck and a new bottleneck would appear around Tully Road. These changes would occur as a result of increased demand at these locations under the Build Alternative.

With the project, southbound bottlenecks would occur at several of the same locations as the No Build (i.e. Rengstorff Avenue – Middlefield Road, De La Cruz Boulevard - SR 87, and the East Taylor Street - Mabury Road off- and on-ramps), while new bottlenecks would emerge between SR 85 and Bailey Avenue off, and between East Dunne Avenue on and Tennant Avenue off.

These new bottlenecks would occur because the volume of traffic reaching these points is much higher under the Build Alternative compared to the No Build Alternative (Appendix D, Tables D-3 and D-4).

Table 2.1.3-4: 2035 AM Peak Hour[1] Travel Time Comparison (Minutes)

Lane Type	Segment	Free Flow[2]	No Build	Build	Build – No Build Difference
NORTHBOUND					
General Purpose	1. Dunne Ave On - Bernal Rd On	10.1	19.8	15.1	-4.7
	2. Bernal Rd On - Rt 880 Jct	10.6	125.4	116.7	-8.6
	3. Rt 880 Jct - Rt 237 On	7.3	24.7	26.6	1.8
	4. Rt 237 On - Embarcadero On	5.4	13.6	12.8	-0.8
HOV/Express	1. Dunne Ave On - Bernal Rd On	10.1	10.1	10.5	0.4
	2. Bernal Rd On - Rt 880 Jct	10.6	20.4	11.3	-9.1
	3. Rt 880 Jct - Rt 237 On	7.3	10.4	7.5	-2.9
	4. Rt 237 On - Embarcadero On	5.4	6.3	6.0	-0.3
SOUTHBOUND					
General Purpose	1. San Antonio Off - Rt 237 Jct	3.9	10.1	9.6	-0.6
	2. Rt 237 Jct - McKee Rd Off	9.0	10.8	10.7	0.0
	3. McKee Rd Off - Rt 85 Jct	9.2	10.1	10.0	-0.1
	4. Rt 85 Jct - Dunne Ave Off	9.5	9.8	9.1	-0.7
HOV/Express	1. San Antonio Off - Rt 237 Jct	3.9	5.0	4.6	-0.4
	2. Rt 237 Jct - McKee Rd Off	9.0	9.5	9.5	0.0
	3. McKee Rd Off - Rt 85 Jct	9.2	9.0	9.3	0.3
	4. Rt 85 Jct - Dunne Ave Off	9.5	8.9	8.4	-0.5

Note: 1. AM peak hour defined as 7:00 to 8:00AM
2. Free flow travel time is based on an assumed speed of 65 mph. In some cases, model speeds may exceed 65 mph producing travel times that are less than free flow.
3. Source: DKS 2014

PM Peak Hour Travel Speeds and Time. In the northbound direction, the Build Alternative would produce slightly higher general purpose lane travel times compared to the No Build Alternative through the middle of the corridor, but significant reductions in time would be gained in the northern segment, and total delay would be essentially the same over the length of the project corridor (Table 2.1.3-5). For both the No Build and Build Alternatives, HOV/express lane users are expected to experience little travel time delay.

In the southbound direction, the Build Alternative would produce an increase in the general purpose travel times, notably in the segment between San Antonio and SR 237, as a result of higher travel demand using the improved freeway. The express lanes would provide a moderate reduction in travel time (-3.2 minutes) through the northern portion of the corridor.

Table 2.1.3-5: 2035 PM Peak Hour[1] Travel Time Comparison (Minutes)

Lane Type	Segment	Free Flow[2]	No Build	Build	Build – No Build Difference
NORTHBOUND					
General Purpose	1. Dunne Ave On - Bernal Rd On	10.1	10.8	10.6	-0.1
	2. Bernal Rd On - Rt 880 Jct	10.6	12.0	13.0	1.0
	3. Rt 880 Jct - Rt 237 On	7.3	8.6	10.2	1.6
	4. Rt 237 On - Embarcadero On	5.4	9.1	6.6	-2.5
HOV/Express	1. Dunne Ave On - Bernal Rd On	10.1	9.8	9.7	-0.1
	2. Bernal Rd On - Rt 880 Jct	10.6	10.0	10.5	0.5
	3. Rt 880 Jct - Rt 237 On	7.3	7.2	7.2	0.1
	4. Rt 237 On - Embarcadero On	5.4	5.9	5.7	-0.2
SOUTHBOUND					
General Purpose	1.San Antonio Off - Rt 237 Jct	3.9	37.6	44.3	6.7
	2. Rt 237 Jct - McKee Rd Off	9.0	42.1	41.0	-1.2
	3. McKee Rd Off - Rt 85 Jct	9.2	10.5	11.8	1.3
	4. Rt 85 Jct - Dunne Ave Off	9.5	10.3	12.6	2.0
HOV/Express	1. San Antonio Off - Rt 237 Jct	3.9	9.3	8.9	-0.4
	2. Rt 237 Jct - McKee Rd Off	9.0	13.2	10.4	-2.8
	3. McKee Rd Off - Rt 85 Jct	9.2	9.3	9.6	0.3
	4. Rt 85 Jct - Dunne Ave Off	9.5	9.5	8.8	-0.7

Note: 1. PM peak hour defined as 5:00 to 6:00 PM
2. Free flow travel time is based on an assumed speed of 65 mph. In some cases, model speeds may exceed 65 mph producing travel times that are less than free flow.
Source: DKS 2014

Impact Summary

As identified in this section, some segments of the corridor would operate at LOS E or F, or have a decrease in level of service compared to the No Build Alternative associated with the higher volume of traffic during the peak hours. This is associated with the higher volume of traffic that is predicted to use the highway with the project in place, during the peak hour. However, the Build Alternative would serve a higher volume of travelers as evidenced by the predicted increase in total distance traveled, or vehicle miles traveled, especially in 2035 (increases of 6 to 9 percent compared to the No Build Alternative). The total travel delays, measured in vehicle hour delay along the entire corridor, would more than double between 2015 and 2035 under No Build conditions. The Build Alternative would substantially decrease these delays in the majority of future year peak and non-peak periods and directions with the Build Alternative. The express lanes can be managed through pricing and even temporary closure to non-HOV vehicles, providing a means to maintain higher volume of traffic and a minimum level of service with respect to the No Build Alternative except within some of the most congested segments of the highway.

Project construction would require full or partial lane and shoulder closures to allow for utility work, restriping, and installation of overhead signs. The closures could result in short-term, temporary impacts during project construction. The project includes preparation of a traffic management plan (TMP) to minimize traffic disruptions from project construction. The TMP would provide for public outreach to inform local agencies and the public of the times and locations of upcoming construction, construction signs in and approaching the project area, and incident management for traffic control in the vicinity of construction activities. With the TMP, no substantial adverse construction impacts are anticipated.

All of the improvements that would be constructed by the project would comply with the applicable provisions of the ADA.

2.1.3.3 Avoidance, Minimization, and Mitigation

The traffic evaluation predicted areas along the corridor that would have high traffic demand in 2035 in both No Build and Build conditions. With the proposed improvements, there would be higher volumes of traffic than the No Build Alternative, and some new bottlenecks would occur, primarily in the PM peak direction in 2035 (northbound at Tully Road, and southbound between SR 85 and Bailey Avenue off, and between East Dunne Avenue on and Tennant Avenue off). To avoid or minimize poor operating conditions, the proposed project includes a centralized express lane monitoring system and corresponding management strategy that would be used to regulate express lane demand in order to avoid operational issues that violate federal and state standards for express lanes. The express lane management strategy includes dynamic toll pricing to regulate the number of toll-paying SOVs using the express lanes, even to the extent of restricting the express lanes to HOVs only. Under these circumstances (HOV use only), the project is providing additional HOV capacity compared to the existing single HOV lane, which is an improvement over existing conditions. In addition, physical design alterations such as conversion to continuous-access design, lengthening the access zones or reducing buffer areas, relocation of access zones, addition of a merge or weave lane at access zones, addition of general purpose auxiliary lanes, and construction of direct connector ramps, can be implemented to mitigate potential deficiencies. Each of these measures would provide adjustments to how the express lanes function in response to actual traffic conditions and driver behavior, allowing drivers longer areas to change lanes or merge where needed. These adjustments are typical corrections or changes to a highway that improve traffic flow, and would reduce or avoid potential points of congestion.

The express lane operator would regularly monitor and report on the performance of the US 101 Express Lanes, measuring it against the speed and LOS standards established in federal and state laws. The express lane operator is required to take one or more management or design adjustment actions described above to restore express lane speeds and LOS to meet the applicable standards. These features would be part of the design and operation of the project, and no mitigation measures are proposed.

2.1.4 Visual/Aesthetics

This section describes the visual setting of the project area as described in the *Visual Impact Assessment* completed in January 2013 (URS 2013a) and the *Supplement to the Visual Impact Assessment* completed in December 2013 (URS 2013b) for the proposed project.

2.1.4.1 Regulatory Setting

The National Environmental Policy Act (NEPA) of 1969 as amended establishes that the federal government use all practicable means to ensure all Americans safe, healthful, productive, and *aesthetically* (emphasis added) and culturally pleasing surroundings (42 USC 4331[b][2]). To further emphasize this point, the Federal Highway Administration (FHWA) in its implementation of NEPA (23 USC 109[h]) directs that final decisions on projects are to be made in the best overall public interest taking into account adverse environmental impacts, including among others, the destruction or disruption of aesthetic values.

The CEQA establishes that it is the policy of the state to take all action necessary to provide the people of the state "with…enjoyment of *aesthetic*, natural, scenic and historic environmental qualities" (CA Public Resources Code [PRC] Section 21001[b]).

2.1.4.2 Affected Environment

According to the California Scenic Highway Mapping System, US 101 in the project corridor is not designated or eligible for designation as a state scenic highway (Caltrans 2007a). However, the County of Santa Clara considers the South Valley Freeway (US 101 from Gilroy to the SR 85/US 101 interchange in southern San Jose) a Scenic Highway and proposes to add it to the California Master Plan of Scenic Highways Eligible for Official Scenic Highway Designation (County of Santa Clara 1994). In addition, the City of San Jose General Plan designates US 101 as a Rural Scenic Corridor from the southern limits of San Jose to Metcalf Road. The City of San Jose General Plan states that "development along designated Rural Scenic Corridors [should preserve] significant views of the Valley and mountains, especially in, or adjacent to, Coyote Valley, the Diablo Range, the Silver Creek Hills, the Santa Teresa Ridge and the Santa Cruz Mountains" (City of San Jose 2011a, Policy CD-9.3).

The Department classified portions of the project corridor as landscape freeway, a designation used to control the placement of outdoor advertising displays in landscaped areas adjacent to freeways (California Business and Professions Code Section 5440; Caltrans 2011b). Classified landscape freeway sections contain at least 1000 continuous feet of ornamental landscaping with no gaps greater than 200 feet. There are 11 sections of landscape freeway on US 101 in the project area, totaling 22.7 miles. The sections of freeway designated as landscape freeway are non-contiguous along the project corridor. Nearly 6.2 miles of landscape freeway are adjacent to large interchanges. Some of the larger sections of landscape freeway include 1.5 miles in Sunnyvale, 2.7 miles in San Jose, and almost 5 miles in south San Jose. Areas between these segments are not classified as landscape freeway status but contain a mix of native vegetation, grasses, and some areas with no vegetation.

No scenic resources as defined by CEQA or Chapter 27 of the Department Standard Environmental Reference exist along the project corridor.

The elevation of US 101 in relation to surrounding development is at-grade for the majority of the corridor. In several segments from north of the Cochrane Road interchange to the Yerba Buena Road interchange, US 101 is depressed by approximately 25 feet in relation to the development on the northbound side of the freeway.

Scenic Quality of US 101

The US 101 corridor can be separated into two distinct segments based on visual quality: East Dunne Avenue to the SR 85/US 101 interchange in southern San Jose, and the SR 85/US 101 interchange in southern San Jose to the Santa Clara/San Mateo County line, just north of the Oregon Expressway/Embarcadero Road interchange.

Segment 1: East Dunne Avenue to SR 85/US 101 Interchange in Southern San Jose

US 101 between the southern project limit at East Dunne Avenue and the SR 85/US 101 interchange in San Jose is 11 miles of roadway bordered by grasslands and rolling hills (Exhibit A). There is residential and commercial development in the vicinity of the SR 85/US 101 interchange, and at the southern project limit. The southern portion of US 101 in the project corridor has moderate visual quality with visibility of the Santa Teresa Hills to the west (Exhibit B) and the Mount Hamilton Range to the east and southeast, as well as the presence of sound walls (Exhibit C), grasslands and trees, areas of residential developments (Exhibit D), overhead signs and gantries (Exhibit E), the 50-acre PG&E Metcalf Substation, and high-voltage transmission towers and overhead lines (Exhibit F).

Exhibit A. Northbound US 101, just north of East Dunne Avenue in Morgan Hill. Grasslands border the freeway to the east (right) and distant views of the Mount Hamilton Range can be seen to the northeast.

Exhibit B. Northbound US 101 just north of the Coyote Creek Golf Drive interchange. Grasslands and rolling hills border the freeway to the east (right) and distant views of the Santa Teresa Hills can be seen to the west.

Exhibit C. Southbound US 101 just south of the East Main Avenue interchange in Morgan Hill, with a masonry wall on the west side (right) of the freeway.

Exhibit D. Southbound US 101 south of SR 85 interchange in southern San Jose, with a sound wall on the west side (right) of the freeway.

Exhibit E. Northbound US 101 south of SR 85 interchange in southern San Jose, with gantry in the foreground and residential development to the east (center and right side of photo).

Exhibit F. Northbound US 101 north of Bailey Avenue in southern San Jose. The PG&E Metcalf Substation is just west (left) of the southbound lanes.

Segment 2: SR 85/US 101 Interchange in Southern San Jose to Santa Clara/San Mateo County Line

US 101 between the SR 85/US 101 interchange in southern San Jose to the northern project limit at the Santa Clara/San Mateo County line is bordered primarily by dense urban development (Exhibit G). The viewshed is dominated by sound walls, overcrossings, sign gantries and cantilever structures (Exhibit H-I). Features along the corridor include Norman Y Mineta San Jose International Airport, Moffett Federal Airfield (Exhibit J) and San Francisco Bay marshlands (Exhibit K). However, existing views of the Bay shoreline area are north of the SR 85 interchange in Mountain View, and would not substantially change as work would be limited to lane restriping and installation of several overhead signs.

Exhibit G. Northbound US 101 just south of Lawrence Expressway in Sunnyvale, views of development, sound walls and vegetation bordering the freeway.

Exhibit H. Northbound US 101 just north of McKee Road in San Jose. A railroad overcrossing and overhead utility lines can been seen in the distance.

Exhibit I. Northbound US 101 at Hellyer Avenue off-ramp. Grassland hillsides and Coyote Creek border the freeway to the east (right) and sound walls border the freeway to the west (left)

Exhibit J. Northbound US 101 south of Ellis Street interchange near the Sunnyvale/ Mountain View border. Moffett Federal Airfield borders US 101 to the east (right).

Exhibit K. Northbound US 101 north of San Antonio Road in Palo Alto; Palo Alto Baylands Park is to the east (right)

Scenic Quality of SR 85

The 1.1-mile portion of northern SR 85 in the project limits is bordered by urban development on the southbound side and the Stevens Creek Trail on the northbound side. Freeway facilities include sound walls, sign gantries, and cantilever structures. Development along the freeway includes residential communities and commercial development. Sound walls are present along the entire portion of SR 85 in the project limits (Exhibit L).

SR 85 in the project limits has low visual quality. Motorists on SR 85 generally observe sound walls (which in some locations are covered in ivy or other vegetation), mature trees and other landscaping. Views of existing commercial and residential development and the Stevens Creek Trail are shielded by sound walls and/or trees.

Exhibit L. Southbound SR 85 just south of the SR 85/US 101 interchange in Mountain View, with sound walls and vegetation bordering the freeway

2.1.4.3 Environmental Consequences

<u>Project Changes to the Visual Environment</u>

The project would incrementally change the appearance of US 101 through lane restriping, pavement widening, tree removal, bridge widening, the construction of retaining walls, and the installation of project signs and toll structures. No new sound walls or changes to existing sound walls are proposed. These project activities are described further below. Work on the portion of SR 85 at the US 101/SR 85 direct connectors in Mountain View would mainly consist of striping and signing and would not include widening or additional right-of-way.

Lane Restriping and Pavement Widening

A dual express lanes facility is proposed for the majority of the corridor, with the exception of short segments near the SR 85 express lane connectors where a single express lane is proposed. A single express lane is proposed between the SR 85 interchange and the Blossom Hill Road interchange in San Jose, and between the North Mathilda Avenue interchange and the SR 85 interchange in Mountain View.

The addition of the second express lane would involve a combination of inside and outside widening (as shown in Appendix F). The majority of the inside widening (widened toward the median) would take place within the US 101 segments south of the SR 85/US 101 interchange in southern San Jose, where a wide unpaved median exists. In these segments, pavement widening would be constructed in the median to accommodate the dual express lanes facility. The outside widening (outside of the existing pavement) would take place in the remainder of the corridor to accommodate the additional lanes as needed.

The express lanes facility would be separated from the adjacent general purpose lanes by a striped buffer zone. The buffer zone, delineated with solid stripes, would have designated openings to provide access into and out of the express lanes facility. The striped buffer zone would be more visually prominent than the existing striping between the HOV lanes and the general purpose lanes. Although the project includes limited access at this time, it may be modified to include continuous access in the future. These project effects are considered a low level of change to the visual environment.

Vegetation Removal and Landscape Freeway Status

Inside and outside widening would result in the removal of existing vegetation, including tree and shrub species located within approximately a lane width of the edge of pavement, within median areas, and inside loop ramps. Some additional vegetation may be removed to maintain a safety "clear zone" along the widened roadway. There are 417 acres of vegetation and 757 trees with a diameter at breast height (DBH) greater than 5 inches within the overall right-of-way of the project corridor. An estimated 77 acres including some trees would need to be removed for the segments of the project where widening and the second lanes are installed in each direction, and for work at bridge abutments and where inside widening is proposed. Due to the potential vegetation removal from inside and outside widening, the project would have a moderate level of change to the visual setting.

Table 2.1.4-1 lists an inventory of the linear feet of roadway along US 101 where the project may potentially remove vegetation alongside the shoulders and medians. The potentially affected vegetation is identified as landscaped (planted or maintained), ruderal (vegetation that typically colonizes disturbed lands), and natural (plant types representative of, or expected in, undisturbed conditions). Station numbers are shown on the maps in Appendix F.

Table 2.1.4-1: Linear Segments of US 101 Where Vegetation will Likely be Removed

Beginning Station[1]	Ending Station	Quantity (Linear Ft)	Location[2]	Vegetation Type[3]
Mountain View				
1762	1758	400	NB Shoulder	L
Sunnyvale				
1687	1671	1600	NB Shoulder	R
1626	1608	1800	NB Shoulder	L
1604	1598	600	NB Shoulder	L
1599	1596	300	SB Shoulder	L
1594	1560	3400	NB Shoulder	L
1557	1553	400	SB Shoulder	L
1554	1545	900	NB Shoulder	L
1549	1545	400	SB Shoulder	L
Santa Clara				
1539	1492	4700	NB Shoulder	R, L
1543	1509	3400	SB Shoulder	R, L
1489	1481	800	NB Shoulder	R
1489	1485	400	SB Shoulder	R
1478	1467	1100	NB Shoulder	R
1477	1466	1100	SB Shoulder	L
1433	1409	2400	NB Shoulder	L
1432	1359	7300	SB Shoulder	R, L
San Jose				
1385	1377	800	NB Shoulder	R
1351	1345	600	NB Shoulder	R, L
1346	1342	400	SB Shoulder	R, L
1335	1325	1000	NB Shoulder	L
1308	1292	1600	SB Shoulder	L
1300	1284	1600	NB Shoulder	L
1289	1283	600	SB Shoulder	L
1278	1274	200	NB Shoulder	L
1263	1246	1700	SB Shoulder	R, L
1244	1236	800	SB Shoulder	L
1242	1236	600	NB Shoulder	L

Table 2.1.4-1: Linear Segments of US 101 Where Vegetation will Likely be Removed

Beginning Station[1]	Ending Station	Quantity (Linear Ft)	Location[2]	Vegetation Type[3]
1231	1225	600	NB Shoulder	R
1230	1222	800	SB Shoulder	R, L, N
1216	1205	1100	NB Shoulder	R, L
1209	1205	400	SB Shoulder	L
1190	1185	500	NB Shoulder	R, L
1188	1185	300	SB Shoulder	L
1184	1174	1000	NB Shoulder	L, N
1184	1174	1000	SB Shoulder	R
1172	1155	1700	NB Shoulder	L
1172	1158	1400	SB Shoulder	R
1148	1140	800	NB Shoulder	L
1126	1123	300	SB Shoulder	L
1122	1101	2100	SB Shoulder	R, L
1122	1088	3400	NB Shoulder	R, L
1098	1078	2000	SB Shoulder	R, L
1087	1081	600	NB Shoulder	R, L
1048	1044	400	SB Shoulder	R, L
1035	979	5600	SB Shoulder	R, L
1030	980	5000	NB Shoulder	R, L
977	925	5200	NB Shoulder	R, L
975	925	5000	SB Shoulder	R, L
877	873	400	SB Shoulder	L
875	872	300	NB Shoulder	R
865	823	4200	NB Shoulder	R, L, N
847	838	900	SB Shoulder	R, L
831	827	400	SB Shoulder	R, L
808	805	300	SB Shoulder	N
809	805	400	NB Shoulder	N
802	796	600	SB Shoulder	R, L
794	754	4000	NB Shoulder	R, L
775	768	700	SB Shoulder	R
612	488	12400	SB Shoulder	R, L, N
578	465	11300	NB Shoulder	R, L, N
570	235	33500	Center Median	R
484	466	1800	SB Shoulder	R, N
461	452	900	SB Shoulder	R
450	445	500	SB Shoulder	R
447	440	700	NB Shoulder	R
Morgan Hill				
234	231	300	Center Median	N
230	62	16800	Center Median	R
196	178	1800	SB Shoulder	R

Footnotes:
1. For project mapping purposes, stationing is established to provide reference points in linear feet along the freeway centerline, and is shown in the maps in Appendix F. Stationing is approximate and in increments of 100 feet (Station 1230 is 1230+00 feet).
2. NB = Northbound, SB = Southbound, with respect to travel direction on US 101.
3. L – Landscape, R – Ruderal, N – Natural

The amount of vegetation removed would ultimately be determined during final project design and serve as the basis for determining the amount of replacement landscape planting required for the project. Following construction, vegetation would be replaced where adequate setback occurs within the right-of-way, and where planting is feasible per Caltrans policies. Areas where landscaping may not be able to be replaced in the same location were estimated and are listed below in Table 2.1.4-2.

Table 2.1.4-2: Linear Segments of US 101 Where Vegetation will not Likely be Replaced in the Same Location

Approximate Beginning Station[1]	Approximate Ending Station	Quantity (Linear Ft)	Location[2]	Landscape Freeway Status Potentially Affected?
Sunnyvale				
1594	1585	900	SB Shoulder	Yes[4]
San Jose				
1374	1358	1600	SB Shoulder	No[3]
1335	1324	1100	NB Shoulder	Yes
1241	1238	300	SB Shoulder	Yes
1143	1142	100	NB Shoulder	No[5]
1016	996	2000	SB Shoulder	Yes
965	927	3800	SB Shoulder	Yes
844	840	400	NB Shoulder	Yes
802	797	500	SB Shoulder	Yes
562	506	5600	Median	Yes[6]
477	476	100	Median	No[3]
475	473	200	Median	No[3]

Footnotes:

1. For project mapping purposes, stationing is established to provide reference points in linear feet along the freeway centerline, and is shown in the maps in Appendix F. Stationing is in increments of 100 feet.
2. NB = Northbound, SB = Southbound, with respect to travel direction on US 101.
3. These segments are not within designated landscape freeway.
4. Within this overall segment, only Station 1591 to 1585 is designated landscape freeway.
5. Although within designated landscape freeway, the removal of 100 feet of landscaping would leave a gap of less than the 200 foot minimum criteria, and would not affect landscape freeway status.
6. Within this overall segment, only Station 514 to 506 is designated landscape freeway.

Within the project limits along US 101, existing landscape freeway status would be maintained (i.e., there would remain at least 1000 linear feet of continuous planting, with no gaps greater than 200 feet long) in all affected areas except the following segments, as listed in Table 2.1.4-2:

- Station 1594 to 1585 is a 900 foot section just east of North Fair Oaks Ave in Sunnyvale. Outside widening on the northbound side of US 101 and existing sound walls on the southbound side may prevent replanting on the edges of the freeway.
- Station 1335 to 1324 is an 1100 foot section just west of East Brokaw Road. Vegetation would be removed on the northbound side of US101 to accommodate outside widening. It may be possible to replant vegetation on the southbound portion of the road. Replanting on one side of a designated landscape freeway can retain its current status.
- Station 1241 to 1238 is a 300 foot section east of North 10th Street. Outside widening on the northbound and southbound directions may prevent replanting on the edges of the freeway.
- Station 1016 to 996 is a 2000 foot section on US 101 between Story Road and Tully Road. Outside and inside widening may prevent replanting on the edges or median of the freeway.

- Station 965 to 927 is a 3800 foot section of US 101 between Tully Road and East Capitol Expressway. Outside and inside widening may prevent replanting on the edges or median of the freeway.
- Station 844 to 840 is a 400 foot section is north of Hassler Parkway. Outside and inside widening may prevent replanting.
- Station 802 to 797 is a 500 foot section just south of Coyote Road on the southbound shoulder. It may be possible to replant on the northbound shoulder. Replanting on one side of a designated landscape freeway can retain its current status.
- Station 562 to 506 is a 5600 foot section where vegetation would be removed from just west and east of Metcalf Road along US 101. Only the last 1200 foot of this segment is designated landscape status. Outside and inside widening in this area may prevent replanting.

Retaining Walls

A retaining wall would be required in the median between the northbound and southbound lanes from Cochrane Road to Bailey Avenue where there is an elevation difference between the northbound and southbound US 101 profiles. Retaining walls are also proposed in some locations on the outside shoulder of US 101 near the Yerba Buena Road, Brokaw Road/North 1st Street, and I-880 interchanges. The height of the retaining walls would range from 4 to 10 feet.

The proposed construction of retaining walls would represent a low to moderate level of change to the visual setting.

US 101 Bridge Widening

Bridge widening and modifications to existing overcrossing abutments would be required in several locations, as described in Section 1.3.1.8. Bridge widening over creeks is not proposed as part of this project.

Section 1.3.1.8 and Table 1.3.1-1 describes bridge widening, including the existing structure, the proposed work, and the width after widening. The bridges are in areas where existing transportation facilities (roadways, bridges, and embankments) dominate the immediate viewshed. The proposed bridge work would be visible to motorists on US 101 and, to a lesser extent, to nearby viewers outside of the freeway corridor. The proposed bridge work would represent a low level of change to the visual setting.

Project Signs and Tolling Equipment

Approximately 29 sets of express lanes signs would be installed in the median of US 101 over the 37.65-mile project corridor. No new signs are currently proposed on SR 85 in the project limits. In some locations, the express lane signs would replace existing signs or be added to existing overhead gantries. The exact number and locations of these features would be determined during the project design phase in coordination with the toll system design.

In general, each set of entry and exit points for the express lanes would have four signs that convey the following information:

- Express lane entrance in 1 mile

- The current toll rate shown in a messaging sign panel for SOV use of the express lanes (see Exhibit M, below); when tolls are not being collected, the messaging sign panels would read "Open to All"
- Express lane entrance and exit, on one sign (see Exhibits N and O, below)
- FasTrak or HOV 2+ Only (See Exhibit O, below)

Exhibit M. Representative view of an entrance/toll sign with messaging (from I-680 southbound express lanes in Fremont)

Exhibit N. Representative view of an express lane entrance sign (from I-680 southbound express lanes in Fremont)

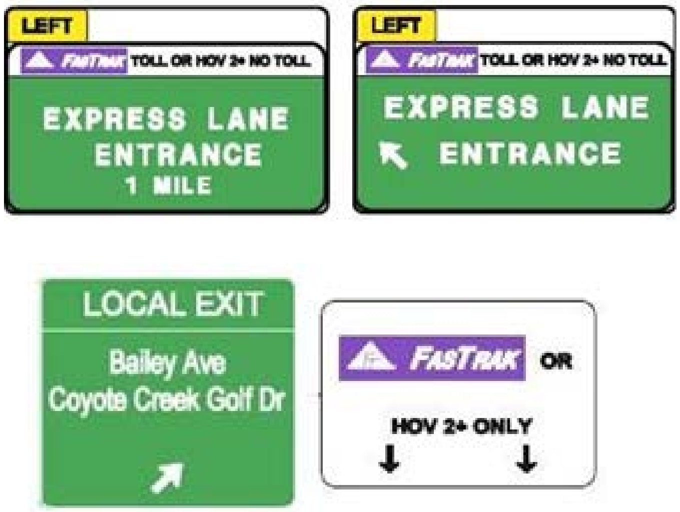

Exhibit O. Sample express lane exit signs and FasTrak or HOV 2+ Only sign.

Some existing HOV lane signs would be removed, and new overhead and median signs installed would provide information on the express lanes. Section 1.3.1.1 describes the proposed installation of these sign structures. The project would also install approximately 29 new cantilever structures in the median of US 101 mounted with toll antennas (see Exhibit P, below). As with the overhead signs, the toll structures would be approximately 26 feet in height. FasTrak electronic toll antennas would communicate with the FasTrak transponders in SOVs in the express lanes to record and charge for trips.

Exhibit P. Representative view of a toll structure (viewed from I-680 southbound express lanes in Fremont)

As noted in Section 1.3.1.8, some traffic operations systems (TOS) equipment such as traffic monitoring stations, Closed Circuit Television (CCTV) cameras, cabinets, and controllers would be installed along the outside edge of pavement within the existing right-of-way. The specific locations of these features would be developed during final project design. The equipment would be small in scale and consistent with the existing visual character of the project corridor.

The majority of the proposed signage, including changeable message signs, would be placed within the median. Changeable message signs would not be placed on the shoulder and, therefore would not disturb residents along the corridor. Views of Mount Hamilton, Morgan Hill and Santa Theresa hills may be temporarily blocked to motorists. However, compared to the visual scale of these landmarks, the signs are not large enough to completely block views. Thus, views of these landmarks would not be fully blocked. At the southern end of the project where views are more rural, signs are spaced at longer intervals. The overall change associated with installation of signs and equipment is considered low to moderate. The changes would be located entirely within a developed freeway, primarily within the median, and would be consistent with existing signs as described further in this section under impact summary.

Lighting

The location of project lighting is dependent on the safety analysis recommendation determined during the final design phase. As such, the location of project lighting is not final at this point. Mast-arm luminaires[6] would be mounted on the concrete median barrier along each of the approximately 29 express lane access zones on US 101. Mast-arm luminaires may also be added at other locations along the roadway in accordance with Department standards and policies.

Lighting would be added to each of the approximately 29 tolling structures in the median of US 101, as well as on project-related overhead signs. Lighting on tolling structures would be mounted on a mast arm that would be approximately 10 to 15 feet above the mast arm shown in Exhibit P. A representative light fixture on an overhead sign is shown in Exhibit M.

The actual spacing and number of lights in the project corridor would be determined during detailed project design in coordination with Caltrans Department of Traffic Safety.

The maximum height of the luminaires and other light fixtures would be 35 to 40 feet. In the median, the luminaires would be double mast arm to provide illumination to both directions of US 101. All light fixtures would have light-emitting diodes (LEDs) configured at the minimum necessary number of bulbs, optimal mounting height, mast-arm length, and angle to restrict light to the freeway right-of-way. If needed, the fixtures would be outfitted with shields to prevent light intrusion to adjacent properties.

The luminaires and other light fixtures would have non-reflective surfaces. The proposed luminaires would have a slender profile and would be visually compatible with those in the existing freeway corridor. US 101 in the project limits already contains lighting along and just outside of the freeway, and adjacent commercial and other land uses have nighttime illumination. Project lighting would introduce a moderate level of change to the existing environment.

<u>Project Impacts</u>

This section evaluates how the project-related changes described above would affect viewers along the project corridor including motorist on US 101 and SR 85, viewers adjacent to the project corridor (including residences), and viewers in more distant areas. Project construction is estimated to be four years total; however, construction activities at any given location would be short term, lasting from several days to a few months.

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[6] A luminaire is a light fixture that is mounted to a pole, either directly or on a cantilever arm (referred to as a mast arm).

Lane Restriping and Pavement Widening

Motorists. Lane restriping and pavement widening would be primarily noticeable to motorists during the construction period, when construction is in progress and equipment and vehicles are present.

Once completed, these project elements would be consistent with views of existing pavement in the freeway corridor. The lane striping, particularly for striped buffer zone, would be more visually prominent than the current striping but would remain consistent with views in the corridor. Motorists are not expected to be highly sensitive to these changes.

Viewers adjacent to the project corridor and in more distant areas. Construction activities would be visible outside of the US 101 corridor primarily in areas without sound walls and/or vegetative shielding and in locations where the upper stories of residences and other buildings have views of US 101. As described above, views of construction equipment, vehicles, and activities would be short term. When completed, the lane restriping and pavement would be consistent with existing views in the corridor. Viewers adjacent to US 101 and in more distant areas are not expected to be highly sensitive to these changes.

Impact summary. These project components would represent a low level of change to the existing visual setting, and construction would be visible for no more than a few months in any given location. No substantial adverse effects to scenic vistas, scenic resources, or visual quality in or around the project corridor would occur.

Vegetation Removal

Motorists. Roadway widening would affect 77 acres of the 417 acres of vegetation in the project corridor. Landscaping, trees, and shrubs would be removed from the medians to accommodate inside widening and along the edge of pavement and inside the on- and off-ramps during construction to accommodate outside widening. In some cases, tree removal may expose more areas of sound walls to motorists along the corridor and viewers outside the corridor. In accordance with Department policy, landscaping and irrigation that is damaged or removed during project construction would be replaced.

This project activity would be primarily noticeable to motorists during the period of several days to a few weeks when the vegetation removal work is in progress. Once completed, the removal of this vegetation would be minimally noticeable to motorists on US 101.

Landscaping will be replaced where feasible and in accordance with Department policy. Six segments of US 101 currently designated as landscaped freeway status may have landscaping removed in both directions that cannot be replaced in sufficient quantity to retain the current criteria for landscaped freeway status. Removal of vegetation in these areas that cannot be replaced could indirectly lead to future “declassification.” However, declassifying the landscape freeway status for any portion of a freeway would require a series of steps independent of this project, and the authority for placement of private signage outside of the State right-of-way would continue to remain with local jurisdictions.

Viewers adjacent to the project corridor. Vegetation removal would be visible outside of the US 101 corridor primarily in areas without sound walls and/or vegetative shielding and in locations where the upper stories of residences and other buildings have views of US 101. This project activity would be primarily noticeable to viewers adjacent to US 101 during the period of several days to a few weeks when the removal work is in progress. The removal would not have substantial adverse effects on views of the freeway corridor. Viewers adjacent to US 101 are not expected to be highly sensitive to project-related vegetation removal.

To allow for construction of abutments and new bridge decking, small amounts of landscaping and ruderal vegetation might be removed from embankments between existing northbound and southbound bridge abutments. The loss of small amounts of vegetation in these areas would not substantially affect the visual quality of these areas. Viewer sensitivity to this change is considered low as the affected areas would be within the median of the freeway at bridges, and notable primarily by motorists during construction.

Viewers in more distant areas. The proposed vegetation removal would not be of sufficient duration or scale to be visible to viewers that are not directly adjacent to US 101.

Impact summary. Inside and outside widening along with the construction of abutments and bridge decking would remove 77 acres of vegetation from the project corridor. These project components would represent a moderate level of change to the existing visual setting. No substantial adverse effects to scenic vistas, scenic resources, or visual quality in or around the project corridor would occur. Landscape freeway status could be affected within six to eight segments of the freeway. Final design will re-evaluate these affected areas and define whether planting can be replaced.

Retaining Walls

Motorists. Retaining walls would be constructed in the median of US 101 from Cochrane Road to Bailey Avenue and along the shoulder of US 101 near the Yerba Buena Road, Brokaw Road/North 1st Street, and I-880 interchanges. The construction of retaining walls would be primarily noticeable to motorists during the construction period, when construction equipment and vehicles are present and work is in progress. Although the walls might block long-range views of the hills and ridgelines to the west, east, and northeast, the views would be short in duration for motorists moving at freeway speeds. The height of the retaining walls would range from 4 to 10 feet and would be consistent with views of existing retaining walls in the freeway corridor. Motorists are not expected to be highly sensitive to these changes.

Viewers adjacent to the project corridor and in more distant areas. Construction of retaining walls would be visible outside of the US 101 corridor primarily in areas without sound walls and/or vegetative shielding and in locations where the upper stories of residences and other buildings have views of US 101. As described above, views of construction equipment, vehicles, and activities would be short term. When completed, the construction of retaining walls would be consistent with existing views in the corridor. Viewers adjacent to US 101 and in more distant areas are not expected to be highly sensitive to these changes.

Impact summary. These project components would represent a low level of change to the existing visual setting, and construction would be visible for no more than a few weeks in any given location. Aesthetic treatment of the walls would be included as part of the project design. No substantial adverse effects to scenic vistas, scenic resources, or visual quality in or around the project corridor would occur.

US 101 Bridge Widening

Motorists. Bridge widening would be visible to motorists on US 101 both during and after construction but would not substantially change the visual quality for motorists in those areas. Foreground views of the bridge widening areas from SR 85 and US 101 would be fleeting at freeway speeds. Motorists are not expected to be highly sensitive to the views of the widened bridges.

Viewers adjacent to the project corridor. US 101 bridge widening would not substantially change the visual quality for viewers on the streets beneath the bridges or adjacent to the project corridor. In several locations the bridges crossings are depressed below the grade of surrounding development, therefore the bridge work would not be highly visible to nearby viewers except those passing under the bridge crossings, either during or after construction. In addition, the bridges are in areas that are already dominated by views of overhead signs, overhead utility lines, and transportation facilities. The proposed bridge widening would not degrade views for people approaching or passing under the bridges.

By closing the existing gaps between northbound and southbound US 101 bridges, the project would decrease natural light for short segments on local streets and sidewalks directly under US 101. Overall, the visual change that would result from closing the bridge gaps would be minor and consistent with similar freeway crossings in the local and regional area. The loss of small areas of natural light from bridge widening would not affect viewers on or above the grade of US 101, and would not substantially degrade views for those on the local streets below the bridge crossings.

Viewers in more distant areas. The bridges at Coyote Creek Golf Drive, the golf course utility facility, and Bernal Road would be widened toward the median rather than toward the outer edges of the freeway, thereby reducing potential visual impacts for long-range views on US 101 and viewers outside of the US 101 corridor. At Coyote Road and Yerba Buena Road, the bridges would be widened on both the inside and outside. However the bridges are in areas that are already dominated by views of overhead signs, overhead utility lines, and transportation facilities. Therefore, these project changes would not be highly visible in long-range views on US 101 or to viewers outside of the US 101 corridor.

Impact summary. As the proposed bridge work would represent a low level of change to the visual setting and viewers would not be highly sensitive to the change, no adverse impacts are expected. This project activity would not affect scenic vistas, scenic resources, or visual quality in or around the project corridor.

Project Signs and Tolling Equipment, and Lighting

Overhead signs, tolling equipment, and lighting are considered together in this discussion because they are similar in terms of height and visual mass. The effects of the lighting that is produced by the luminaires are addressed in the “Light and Glare” section, below.

The proposed roadside TOS equipment and median barrier-mounted signs would be small in scale and consistent with the corridor’s existing visual character; therefore, they are not discussed further.

Motorists. During the day, the overhead signs, toll structures, and luminaires would be visible in the foreground of motorists’ distant views of the Santa Cruz Mountains to the southwest, the Santa Teresa Hills to the west, and the Mount Hamilton Range to the east and southeast. Views of the project features would be short in duration for motorists moving at freeway speeds. During the night, when distant views of the hills are less visible, the overhead signs, toll structures, and luminaires would not conflict with or obstruct motorists’ views.

US 101 already contains overhead signs, including messaging signs and gantry structures with multiple signs, mast-arm luminaires, and other types of light fixtures. The proposed overhead signs, toll structures, mast-arm luminaires, and other types of light fixtures would be consistent with the visual context of the existing freeway setting and with existing signs in the corridor and in Santa Clara County. Existing views of areas outside of the freeways would not be noticeably impaired or blocked for motorists. Motorists' sensitivity to these changes would be low to moderate.

Viewers adjacent to the project corridor and in more distant locations. The signs, toll structures, and luminaires would also be visible to viewers at the various land uses adjacent to both sides of US 101 in locations where the freeway corridor is not shielded by sound walls, trees, or development. In some locations, the upper stories of homes and other development along the freeway could have views of the tops of signs, toll structures, and lighting structures. The additional signs and toll structures would be visually compatible with this highly trafficked corridor and its segments of urbanization.

The toll structures and luminaires would have a relatively slender profile and represent a low level of change to the existing environment. The proposed roadside TOS equipment and median barrier-mounted signs would be small in scale and consistent with the corridor's existing visual character. These project elements are expected to have little, if any, effect on visual quality.

The sensitivity of viewers to these project features would depend on their distance from and viewing angle of the project corridor, as well as the degree to which the signs, toll structures, and lighting structures are shielded or blocked by topography, sound walls, trees, or other development. In most locations, where views of these project features would be shielded or blocked, viewers adjacent to US 101 would have low sensitivity to the signs, toll structures, and luminaires. Partial views of these project features would be noticeable but not highly conspicuous or intrusive, and would not substantially change the visual quality of the setting.

The US 101 corridor is also visible to viewers in more distant areas such as the hills east of US 101 in San Jose. Project signs would be visible in some long-range views, depending on viewer location, and would be consistent with the corridor's existing visual character. The toll structures and luminaires would be minimally visible from a distance.

The segment of US 101 south of the SR 85/US 101 interchange in southern San Jose has been designated as a County Scenic Highway (southward to Gilroy; County of Santa Clara 1994) and a City of San Jose Rural Scenic Corridor (from Metcalf Road to Bailey Avenue; City of San Jose 2008). As noted in Section 2.1.4.2, the viewshed of approximately 1.5 mile of this 11-mile segment is dominated by high-voltage transmission towers and lines on both sides of the freeway (Exhibit F), and particularly by the PG&E Metcalf Substation immediately west of US 101. Northbound US 101 in this segment contains prominent roadway signs, including two sign gantries that span the northbound lanes, one of which is shown in Exhibit E. Southbound US 101 contains an exit sign for the existing double HOV lane connector from SR 85, which would be replaced with an exit sign for the express lane facility. The modification of existing signs or addition of a small number signs or luminaires in this area would not substantially affect the visual quality of this segment. The project signs, toll structures, and luminaires would not conflict with Santa Clara County General Plan or City of San Jose General Plan scenic preservation goals for this segment of US 101.

The TOS equipment such as traffic monitoring stations, CCTV cameras, cabinets, and controllers would be installed along the outside edge of pavement within the existing right-of-way. The specific locations of these features would be developed during final project design. The equipment would be small in scale and consistent with a freeway facility and the existing visual character of the project corridor.

Project signs are proposed in the segment of US 101 north of the SR 85/US 101 interchange in Mountain View. However, these features would not affect the visual quality of US 101 or conflict with BCDC visual guidelines for roads along the San Francisco Bay shoreline.

Impact summary. The project signs, toll structures, or luminaires would represent a low to moderate level of change to the visual setting, and viewer sensitivity would range from low to moderate, depending on the location. These project features are not expected to result in substantial adverse impacts to scenic vistas, scenic resources, or visual quality in or around the project corridor.

Light and Glare

Motorists. The sign and project lighting would not adversely affect motorists on US 101. Additional lighting would increase visibility of roadway and traffic conditions, which would benefit motorists by improving safety.

Viewers adjacent to the project corridor. The messaging sign and project lighting would be visible to viewers at the various land uses adjacent to both sides of the project corridor in locations where the freeway corridor is not shielded by sound walls, trees, tall embankments, or development. Viewers at commercial, industrial, and community land uses are not expected to be sensitive to changes in nighttime lighting in the project corridor because activities at these land uses occur primarily during daytime hours.

Viewers at residential land uses could be sensitive to changes in nighttime lighting in the project corridor. The sensitivity of viewers would depend on their distance from and viewing angle of the project corridor, as well as the degree to which the signs and luminaires are shielded or blocked by topography, sound walls, trees, or other development. In most locations, where views of these project features would be shielded or blocked, viewers adjacent to US 101 would have low sensitivity. In locations where these project features would have greater visibility, viewers would have moderate sensitivity.

Project lighting from the messaging signs and luminaires would not be expected to result in daytime or nighttime glare or light intrusion to residences adjacent to the project corridor for the following reasons:

- The messaging components of the signs would have sensors that automatically adjust the brightness of the toll cost numbers to ambient light conditions, so that the LED components are no brighter than needed for motorist visibility at any time.
- Lighting for non-messaging signs would be activated by photocell sensors and would have a fixed level of brightness. Signs listing upcoming exits and distances, as well as other roadway signs that do not direct motorist actions, are not required to be illuminated unless the signs are illegible without fixed lighting. Toll structures would not be illuminated.

- The proposed luminaires and other light fixtures would have LEDs configured at the minimum necessary illumination level and optimal angle to restrict light to the freeway right-of-way. If needed, the fixtures would be outfitted with shields to prevent light intrusion to surrounding properties. LED fixtures minimize light intrusion, uplighting (i.e., urban sky glow), and reflected light from the roadway compared with high-pressure sodium fixtures (Leotek 2013).
- The DMS and other signs and the luminaires would be placed in the median, as far as practicable from nearby sensitive viewers.

Daytime or nighttime glare or light intrusion is not anticipated outside of the freeway corridor. Messaging signs would be illuminated as needed for motorist visibility and safety and would not result in inappropriate intensities of light and glare. LED luminaires minimize direct uplighting and reflected light from the roadway compared with high-pressure sodium luminaires, and would not contribute appreciably to urban sky glow. Nighttime lighting from the luminaires and other fixtures would be confined to the US 101 right-of-way, with minimal glare or intrusion affecting surrounding residences and other properties. Lighting associated with the messaging signs and luminaires is not expected to result in light intrusion, surface brightness, or glare to motorists, adjacent residents, or other viewers along the project corridor. No substantial adverse changes to scenic vistas, scenic resources, or visual quality in or around the project corridor would occur from light intrusion, glare, or surface brightness.

2.1.4.4 Avoidance, Minimization, and/or Mitigation Measures

Consistent with Caltrans policy, highway planting, including landscaping, irrigation systems, and plant establishment would be funded and designed in conjunction with the roadway improvements. This highway planting will replace vegetation removed or damaged as a result of construction and serve to minimize visual impacts. Plantings would be completed within two years of the project. Vegetation would be preserved, and protective measures employed, where no construction is planned. Construction staging areas would avoid existing planted areas to the extent feasible.

Retaining walls would include aesthetic treatment consistent with the corridor. Flood lighting for night work would be placed and adjusted such that light is cast downward and confined to the immediate work area.

2.1.5 Cultural Resources

The following section is based on information from the *Historic Property Survey Report* (HPSR; URS 2014b), *Archaeological Survey Report* (ASR; URS 2014c), *Extended Phase I (XP1) Study* (URS 2014d), the *Historical Resources Evaluation Report* (HRER; URS 2014e), *Supplemental Historic Property Survey Report* (SHPSR; URS 2014k), *Environmentally Sensitive Area Action Plan* (ESA Action Plan; URS 2014j) for the proposed project. The HPSR, ASR, XPI Study, and HRER were completed in April 2014. The SHPSR and ESA Action Plan were completed in October 2014.

2.1.5.1 Regulatory Setting

The term “cultural resources” as used in this document refers to all “built environment” resources (structures, bridges, railroads, water conveyance systems, etc.), culturally important resources, and archaeological resources (both prehistoric and historic), regardless of significance. Laws and regulations dealing with cultural resources include:

The National Historic Preservation Act (NHPA) of 1966 , as amended, sets forth national policy and procedures for historic properties, defined as districts, sites, buildings, structures, and objects included in or eligible for listing in the National Register of Historic Places (NRHP). Section 106 of the NHPA requires federal agencies to take into account the effects of their undertakings on historic properties and to allow the Advisory Council on Historic Preservation the opportunity to comment on those undertakings, following regulations issued by the Advisory Council on Historic Preservation (36 CFR 800). On January 1, 2014, a Section 106 Programmatic Agreement (Section 106 PA) between the Advisory Council, the Federal Highway Administration (FHWA), State Historic Preservation Officer (SHPO), and the Department went into effect for Department projects, both state and local, with FHWA involvement. The Section 106 PA implements the Advisory Council's regulations, 36 CFR 800, streamlining the Section 106 process and delegating certain responsibilities to the Department. The FHWA's responsibilities under the Section 106 PA have been assigned to the Department as part of the Surface Transportation Project Delivery Program (23 USC 327).

Historic properties may also be covered under Section 4(f) of the U.S. Department of Transportation Act, which regulates the "use" of land from historic properties. See Appendix B for specific information about Section 4(f) in relation to the project.

Historical resources are considered under the California Environmental Quality Act (CEQA) as well as CA Public Resources Code (PRC) Section 5024.1, which established the California Register of Historical Resources (CRHR). PRC Section 5024 requires state agencies to identify and protect state-owned resources that meet the National Register of Historic Places listing criteria. It further specifically requires the Department to inventory state-owned structures in its rights-of-way.

2.1.5.2 Affected Environment

The study areas for cultural resources investigations are referred to as the Areas of Potential Effects (APEs). The archaeological APE for the project is comprised of the US 101 right-of-way from post mile (PM) 16.00 to 52.55 and the SR 85 right-of-way from PM 23.0 to R24.1. It extends outside the US 101 right-of-way to encompass temporary construction easements (TCEs) on parcels adjacent to US 101 between SR 87 and I-880. In accordance with stipulations VI.B.8 and VIII.A of the Section 106 PA Attachment 3, it also extends around known boundaries of archaeological sites that may be affected by the project.

The architectural APE is comprised of the US 101 and SR 85 Department rights-of-way and project limits except where it extends outside the US 101 right-of-way to encompass the temporary construction easements and the entirety of each parcel that contains a temporary construction easement. The architectural APE includes all areas where there is a potential for direct and indirect effects on built environment resources.

The archaeological and architectural APEs represents the maximum extent of project-related-activities for the proposed undertaking and include all areas that could be permanently or temporarily affected by the proposed project.

Records and Archival Review

A cultural resources records search was completed on January 3, 2012, by the Northwest Information Center (NWIC) at Sonoma State University in Rohnert Park (NWIC File No. 11-0229). Site records were accessed for the APE and a 1-mile radius, and previous studies were accessed for the APE and a ¼-mile radius on the *Palo Alto, Mountain View, Milpitas, San Jose West, San Jose East, Santa Teresa Hills,* and *Morgan Hill* USGS 7.5-minute quadrangles. The search by the NWIC included lists and mapped locations of prior reports and documented resources within a 1-mile radius of the APE.

The records search indicates the entire project area and the surrounding region have been extensively studied over the past four decades. Over 430 cultural studies have been completed within a ¼- mile radius of the project.

A search of the temporary construction easements between SR 87 and I-880 identified 27 previously unevaluated buildings within the architectural APE. Of those 27 buildings, 11 are over 45 years of age. Archival research was conducted at the San Jose State University Library and online to review historical documentation associated with these 11 buildings.

Field Survey and Subsurface Testing Results

A substantial portion of the APE is paved and/or has been previously surveyed. Accessible portions of the APE were surveyed by archaeologists in May, June, July, and November 2012 and March 2013. The archaeologists examined the previously recorded sites that were accessible within the portion of the APE in the right-of-way. No previously unrecorded archaeological sites were identified in the APE as a result of the surface survey.

In February 2013, 11 buildings within the architectural APE that are over the age of 45 were surveyed and recorded by an architectural historian. All 11 buildings were found ineligible for listing in the NRHP. The other previously unrecorded built environment resources present within the APE meet the stipulations and criteria of the Section 106 PA, Attachment 4 - Properties Exempt from Evaluation and were not evaluated for eligibility for listing in the NRHP or CRHR.

In April and May 2013, Extended Phase One (XPI) field investigations were conducted within the project APE to determine the presence/absence, nature, depth, and lateral extent of any intact archaeological deposits and intact paleosols[7]; refine the sensitivity analysis for buried archaeological resources; and determine if intact cultural deposits were present in two previously recorded site boundaries.

Subsurface testing was conducted within two prehistoric sites to determine whether intact cultural deposits extend into areas potentially affected by the project. Based on the results of the subsurface testing and other available information, it was determined that the sites do not extend into the US 101 right-of-way, and although both sites are within the APE, neither would be affected by the proposed project. No cultural resources were identified during subsurface testing.

Native American Consultation

The Native American Heritage Commission (NAHC) was contacted on July 13, 2012 to request a search of the Sacred Lands File for sacred lands or other cultural properties of significance to Native Americans within or near the APE. The NAHC responded on August 9, 2012 with a

[7] A soil horizon from the geologic past, usually buried beneath the rocks or recent soil horizons.

faxed letter stating that the "record search of the sacred land file has failed to indicated the presence of Native American cultural resources" in the APE. The NAHC recommended contacting Native American individuals and organizations who may have concerns about the project or knowledge of cultural resources in the APE.

On September 12, 2012, VTA sent letters and e-mails describing the project, with maps depicting the APE, to the Native American individuals on the list provided by the NAHC. VTA placed follow-up phone calls on October 6, 2012. As a result of feedback received, VTA followed up with an additional individual.

On March 15, 2013, information was sent to all identified Native American individuals describing the project's soil testing program. Native American monitoring of the testing program was advised as a result of this consultation, and a Native American was retained to monitor the field testing program.

On August 8, 2013 and August 27, 2013, VTA placed follow-up phone calls to inform the Native American contacts of the results of the soil testing and the preparation of a treatment plan. Comments were received from five people. These commenters requested to have a qualified Native American monitor the construction and include the treatment plan in the cultural resource documents. (At the time phone calls were made, it was assumed that a treatment plan would be necessary. However, changes to the engineering have negated a need for a treatment plan, allowing the project to proceed with standard mitigation measures.)

On June 27, 2014, Caltrans sent a follow-up letter describing a finding of no historic properties affected with implementation of standard mitigation measures to Native American individuals previously contacted.

Archaeological and Historic Architectural Resources

Twenty-two cultural resources—19 archaeological sites and 3 combined archaeological/built environment resources—are present within the APE. Of the 22 cultural resources within the APE, 10 have previously been found eligible for listing in the NRHP pursuant to the criteria set forth in 36 CFR 60.4d and, therefore, are also eligible for listing in the CRHR. The remaining 12 resources have not been evaluated for listing in the NRHP or CRHR by this project or prior projects. However, two of these resources were determined to be exempt from evaluation during the initial identification phase of this project and the 10 other resources will be considered eligible for inclusion to the NRHP pursuant to Stipulation VIII.C.3 of the Section 106 PA, Attachment 5, and will be protected by the establishment of ESA buffers.

Research efforts identified three built historic properties within the architectural history APE, each with an historical archeological component, which had been previously listed on the NRHP pursuant to the criteria set forth in 36 CFR 60.4d. They are also listed on the CRHR. The Fishers Coyote Ranch, Stevens Ranch, and the Twin Oaks Dairy were all found eligible for the NRHP January 10, 1977. Because of the passage of 36 years the properties were reevaluated for eligibility to the NRHP. The reevaluation found that no changes have taken place that would impact the eligibility of either the Fishers Coyote Ranch or the Stevens Ranch property. Both remain eligible for the NRHP as built and, archaeological resources. On reexamination of the Twin Oaks Diary it was noted that all of the buildings once associated with this property have been removed; as such the property was reevaluated and found to be no longer eligible as a built resource. The Twin Oaks Diary was not reevaluated for its archaeological potential; it remains eligible as an archaeological resource. The Department submitted the cultural resources studies to the SHPO for concurrence on the built environment eligibility determinations on May 21, 2014. SHPO concurred with these findings on June 17, 2014. The 11 buildings within the architectural APE that are over the age of 45 were found ineligible for listing in the NRHP and CRHR.

2.1.5.3 Environmental Consequences

There are 22 cultural resources within the APE, ten of which have been found eligible for listing in the NRHP and CRHR pursuant to the criteria set forth in 36 CFR 60.4d and PRC Section 5024. The remaining 12 resources have not yet been evaluated for listing in the NRHP or CRHR. One has been evaluated as ineligible as a built resource but still has archaeological potential.

No construction would take place in any of the previously determined eligible or unevaluated sites, and no surface deposits related to the sites were identified during the field surveys. In order to protect historic properties from any construction related activities a SHPSR and ESA Action Plan were generated that detail information on implementing the conditions and protocols attached to the ESAs. Therefore, the cultural resources finding for this project is No Adverse Effect with Standard Conditions – Environmentally Sensitive Areas (ESAs). The Caltrans Headquarters Cultural Studies Office approved the ESA Action Plan on November 20, 2014.

The project would not cause a substantial adverse change to a historical or archaeological resource as defined by CEQA, or affect or use any Section 4(f) historic resource.

2.1.5.4 Avoidance, Minimization and/or Mitigation Measures

The proposed project has been modified to avoid and minimize project-related impacts to cultural resources in consultation with professionally qualified staff (archaeologists and architectural historians), SHPO and interested Native American groups. Excavation of archaeological sites was minimized and testing for buried deposits was constrained to reduce impacts to archaeological sites.

To ensure avoidance of all previously determined eligible and unevaluated sites, the sites will be designated as ESAs for the duration of the project in accordance with the requirements set forth in the *Environmentally Sensitive Area Action Plan* (URS 2014j). The requirements include delineating ESAs on all project plans, conducting a preconstruction meeting with construction personnel to ensure that ESAs are properly understood, and coordinating/monitoring ESA installation by the contractor. In addition, an archaeologist will conduct field reviews of the ESAs to ensure that they remain intact and are not compromised.

If cultural materials are discovered during construction, all earth-moving activity within and around the immediate discovery area will be diverted until a qualified archaeologist can assess the nature and significance of the find.

If human remains are discovered, State Health and Safety Code Section 7050.5 states that further disturbances and activities shall stop in any area or nearby area suspected to overlie remains, and the County Coroner contacted. Pursuant to CA PRC Section 5097.98, if the remains are thought to be Native American, the coroner will notify the NAHC, which will then notify the Most Likely Descendent (MLD). At this time, the person who discovered the remains will contact the District Environmental Branch so that they may work with the MLD on the respectful treatment and disposition of the remains. Further provisions of PRC 5097.98 are to be followed as applicable.

2.2 Physical Environment

2.2.1 Hydrology and Floodplain

The following discussion is based on the *Location Hydraulic Study Report* (WRECO 2013a) and the *Location Hydraulic Study Report Addendum* (WRECO 2014a) for the proposed project, which were approved in July 2013 and February 2014, respectively.

2.2.1.1 Regulatory Setting

Executive Order (EO) 11988 (Floodplain Management) directs all federal agencies to refrain from conducting, supporting, or allowing actions in floodplains unless it is the only practicable alternative. The Federal Highway Administration requirements for compliance are outlined in 23 CFR 650 Subpart A.

To comply, the following must be analyzed:

- The practicability of alternatives to any longitudinal encroachments.
- Risks of the action.
- Impacts on natural and beneficial floodplain values.
- Support of incompatible floodplain development.
- Measures to minimize floodplain impacts and to preserve/restore any beneficial floodplain values affected by the project.

The base floodplain is defined as "the area subject to flooding by the flood or tide having a one percent chance of being exceeded in any given year." An encroachment is defined as "an action within the limits of the base floodplain."

2.2.1.2 Affected Environment

The proposed project crosses 12 major waterways, one of which, Coyote Creek, is crossed four times for a total of 15 crossings. Eleven of these crossings are bridges, and the remaining four are culverts. The total watersheds of the 12 major waterways are approximately 870 square miles. Waterways (or creeks, streams, and river crossings) within the project limits include Matadero Creek, Adobe Creek, Permanente Creek, Stevens Creek, Sunnyvale West Channel (Mathilda Channel), Sunnyvale East Channel, Calabazas Creek, San Tomas Aquino Creek, Guadalupe River, Lower Silver Creek, Upper Silver Creek, and Coyote Creek. 29 areas of the project corridor are in Federal Emergency Management Agency (FEMA) delineated floodplains. These areas are shown in Figures 2.2.1-1 through 2.2.1-3.

FEMA Flood Insurance Rate Maps (FIRMs) categorize these floodplains into different flood hazard zones. Several portions of US 101 fall within the 100-year floodplain. In the southern portion of the project corridor, eight of nine floodplain areas of Coyote Creek are mapped as having the potential to cover part or all of US 101 during the one percent annual chance flood. Other floodplains along US 101 in the vicinity of Alum Rock Boulevard, Airport Boulevard, North First Street, the US 101/SR 87 interchange, West Trimble Road, Lafayette Street, San Tomas Expressway, North Fair Oaks Avenue, and Lawrence Expressway have the potential to inundate US 101 during the one percent annual chance storm. A 100-year floodplain caused by high tides from San Francisco Bay covers northbound and southbound US 101 from the Embarcadero Road interchange to the Rengstorff Avenue interchange. The Embarcadero Road, Oregon Expressway, San Antonio Road, Rengstorff Avenue, and Old Middlefield Way interchanges could have areas of traffic disruption because the streets in question could be inundated during the one percent annual chance storm event.

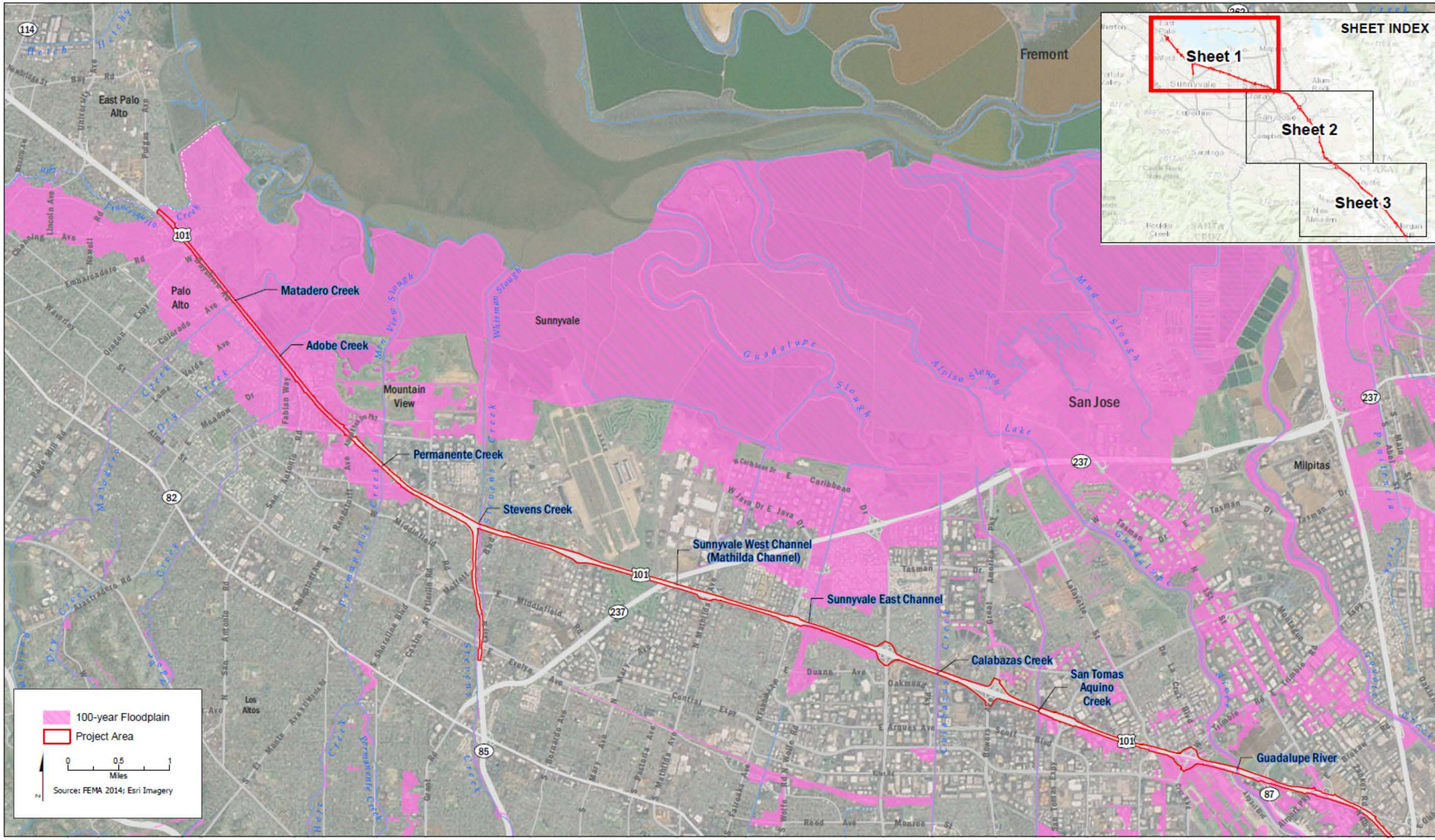

Figure 2.2.1-1: Waterways and Floodplains in the Project Area (Sheet 1 of 3)

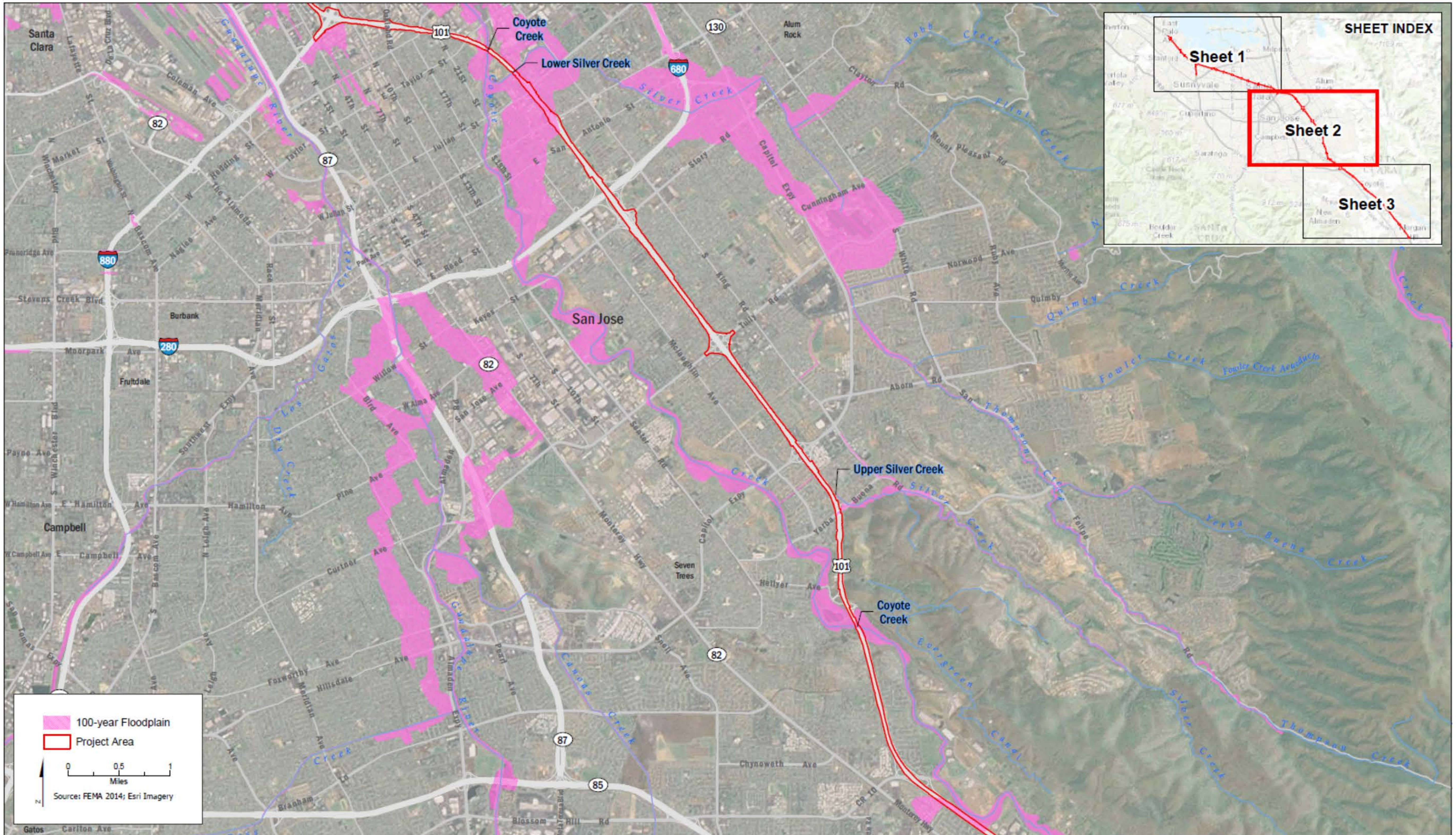

Figure 2.2.1-1: Waterways and Floodplains in the Project Area (Sheet 2 of 3)

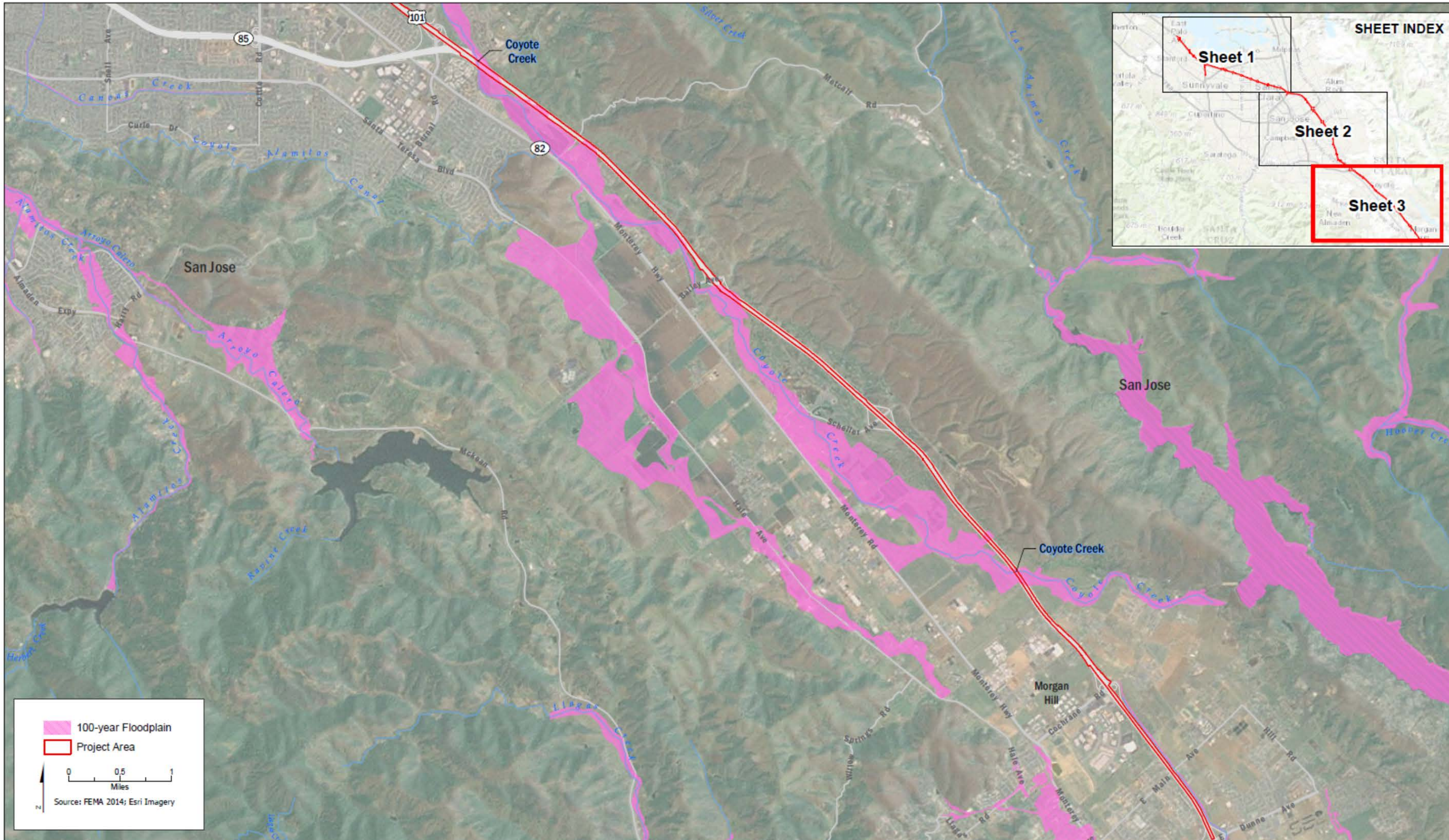

Figure 2.2.1-1: Waterways and Floodplains in the Project Area (Sheet 3 of 3)

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2.2.1.3 Environmental Consequences

Longitudinal Encroachment

As defined by FHWA, a longitudinal encroachment is an action within the limits of the base floodplain that is longitudinal to the normal direction of the floodplain. The project does not constitute a longitudinal encroachment of the base floodplain. With the exception of portions of Coyote Creek, the project would be perpendicular to all creek crossings. Coyote Creek generally runs parallel to US 101 and crosses US 101 four times within the project limits; however, the project would not add fill decreasing the flow area in the Coyote Creek floodplains. Elsewhere, existing structures such as median barriers that could restrict flood flows would be replaced with new structures, but the existing flow characteristics would not change and, therefore, would not constitute a longitudinal encroachment. As the project would not cause longitudinal encroachments into the base floodplain there would be no impacts to this resource.

Risks of the Action

Of the 29 floodplains shown on Figure 2.2.1-1, eight are not within areas of roadway widening or re-grading and would not be affected by the project. Of the remaining 21 floodplains, 4 are at locations where all widening would take place in the median, 11 are at locations where all widening would take place on the outside (along the right-hand shoulder), and 6 are at locations where widening would take place both inside (toward the median) and outside (along the right-hand shoulder). For locations with inside widening only, the project would not substantially raise the roadway grade (insignificant fill in the floodplain); therefore, floodplain impacts would be minimal. For locations with both inside and outside widening, floodplain impacts would also be minimal because the existing grade would not substantially change (insignificant fill in the floodplain) or the widening would be within cut areas (no fill in the floodplain). That is, for all areas where there would be fill within the floodplains, the fill would not significantly raise the grade or significantly decrease the flow area, and the areas of fill are insignificant compared to the overall floodplain areas. Therefore, the project would not result in significant increases in water surface elevations. The project would maintain the existing roadway profile. The effects to the floodplain would be minimal because of the relatively minor increases in impervious area compared to the total watershed areas.

Most of the project channel crossings lie in areas that are not susceptible to hydromodification due to watershed composition or because of the area downstream of the project lies in tidally influenced areas. The remaining channels are considered susceptible and would be analyzed in detail during the design phase of the project.

Natural and Beneficial Floodplain Values

Various areas within the project limits have natural and beneficial floodplain values. These areas include waters of the U.S., potential wetlands, and riparian areas. No work is anticipated to take place in waters of the U.S. or wetlands. The project would have minimal impacts to isolated cattail wetlands that would be considered waters of the state (0.06 acre; see Section 2.3.2.3). The project would not adversely affect natural and beneficial floodplain values.

Incompatible Floodplain Development

This project would not support incompatible floodplain development. The project would only include widening of the existing highway and would not create new access to developed or undeveloped land.

2.2.1.4 Avoidance, Minimization and/or Mitigation Measures

The proposed project has been designed to avoid and minimize encroachments and impacts to the maximum extent practicable. With implementation of the avoidance and minimization measures described in Section 2.2.2.4 and 2.3.2.4, the project would avoid impacts. Measures to address the minor increase in impervious surface that would result from the project are described in Section 2.2.2.4. No additional avoidance, minimization, and/or mitigation measures are required.

2.2.2 Water Quality and Storm Water Runoff

This section is based on the *Water Quality Study Report* (WRECO 2013b) and the *Water Quality Study Report Addendum* (WRECO 2014b), which were approved in May 2013 and February 2014, respectively. Hydrology and floodplains are discussed in Section 2.2.1.

2.2.2.1 Regulatory Setting

Federal Requirements: Clean Water Act

In 1972, Congress amended the Federal Water Pollution Control Act, making the addition of pollutants to the waters of the United States (U.S.) from any point source[8] unlawful unless the discharge is in compliance with a National Pollutant Discharge Elimination System (NPDES) permit. This act and its amendments are known today as the Clean Water Act (CWA). Congress has amended the act several times. In the 1987 amendments, Congress directed dischargers of storm water from municipal and industrial/construction point sources to comply with the NPDES permit scheme. The following are important CWA sections:

- Sections 303 and 304 require states to issue water quality standards, criteria, and guidelines.
- Section 401 requires an applicant for a federal license or permit to conduct any activity that may result in a discharge to waters of the U.S. to obtain certification from the state that the discharge would comply with other provisions of the act. This is most frequently required in tandem with a Section 404 permit request (see below).
- Section 402 establishes the NPDES, a permitting system for the discharges (except for dredge or fill material) of any pollutant into waters of the U.S. Regional Water Quality Control Boards (RWQCB) administer this permitting program in California. Section 402(p) requires permits for discharges of storm water from industrial/construction and municipal separate storm sewer systems (MS4s).
- Section 404 establishes a permit program for the discharge of dredge or fill material into waters of the United States. This permit program is administered by USACE.

[8] A point source is any discrete conveyance such as a pipe or a man-made ditch.

The goal of the CWA is "to restore and maintain the chemical, physical, and biological integrity of the Nation's waters."

The USACE issues two types of 404 permits: General and Standard permits. There are two types of General permits; Regional permits and Nationwide permits. Regional permits are issued for a general category of activities when they are similar in nature and cause minimal environmental effect. Nationwide permits are issued to allow a variety of minor project activities with no more than minimal effects.

Ordinarily, projects that do not meet the criteria for a Nationwide Permit may be permitted under one of the USACE's Standard permits. There are two types of Standard permits: Individual permits and Letters of Permission. For Standard permits, the USACE decision to approve is based on compliance with U.S. Environmental Protection Agency's (U.S. EPA's) Section 404 (b)(1) Guidelines (U.S. EPA CFR 40 Part 230), and whether the permit approval is in the public interest. The Section 404(b)(1) Guidelines were developed by the U.S. EPA in conjunction with the USACE, and allow the discharge of dredged or fill material into the aquatic system (waters of the U.S.) only if there is no practicable alternative which would have less adverse effects. The Guidelines state that the USACE may not issue a permit if there is a least environmentally damaging practicable alternative (LEDPA) to the proposed discharge that would have lesser effects on waters of the U.S. and not have any other significant adverse environmental consequences. According to the Guidelines, documentation is needed that a sequence of avoidance, minimization, and compensation measures has been followed, in that order. The Guidelines also restrict permitting activities that violate water quality or toxic effluent[9] standards, jeopardize the continued existence of listed species, violate marine sanctuary protections, or cause "significant degradation" to waters of the U.S. In addition, every permit from the USACE, even if not subject to the Section 404(b)(1) Guidelines, must meet general requirements. See 33 CFR 320.4.

State Requirements: Porter-Cologne Water Quality Control Act

California's Porter-Cologne Act, enacted in 1969, provides the legal basis for water quality regulation within California. This act requires a "Report of Waste Discharge" for any discharge of waste (liquid, solid, or gaseous) to land or surface waters that may impair beneficial uses for surface and/or groundwater of the state. It predates the CWA and regulates discharges to waters of the state. Waters of the state include more than just waters of the U.S., like groundwater and surface waters not considered waters of the U.S. Additionally, it prohibits discharges of "waste" as defined, and this definition is broader than the CWA definition of "pollutant." Discharges under the Porter-Cologne Act are permitted by Waste Discharge Requirements (WDRs) and may be required even when the discharge is already permitted or exempt under the CWA.

The State Water Resources Control Board (SWRCB) and RWQCBs are responsible for establishing the water quality standards (objectives and beneficial uses) required by the CWA and regulating discharges to ensure compliance with the water quality standards. Details about water quality standards in a project area are included in the applicable RWQCB Basin Plan. In California, Regional Boards designate beneficial uses for all water

[9] The U.S. EPA defines "effluent" as "wastewater, treated or untreated, that flows out of a treatment plant, sewer, or industrial outfall."

body segments in their jurisdictions and then set criteria necessary to protect these uses. As a result, the water quality standards developed for particular water segments are based on the designated use and vary depending on that use. In addition, the SWRCB identifies waters failing to meet standards for specific pollutants. These waters are then state-listed in accordance with CWA Section 303(d). If a state determines that waters are impaired for one or more constituents and the standards cannot be met through point source or non-point source controls (NPDES permits or WDRs), the CWA requires the establishment of Total Maximum Daily Loads (TMDLs). TMDLs specify allowable pollutant loads from all sources (point, non-point, and natural) for a given watershed.

State Water Resources Control Board and Regional Water Quality Control Boards

The SWRCB administers water rights, sets water pollution control policy, and issues water board orders on matters of statewide application, and oversees water quality functions throughout the state by approving Basin Plans, TMDLs, and NPDES permits. RWCQBs are responsible for protecting beneficial uses of water resources within their regional jurisdiction using planning, permitting, and enforcement authorities to meet this responsibility.

<u>National Pollutant Discharge Elimination System (NPDES) Program</u>

Municipal Separate Storm Sewer Systems (MS4)

Section 402(p) of the CWA requires the issuance of NPDES permits for five categories of storm water discharges, including Municipal Separate Storm Sewer Systems (MS4s). An MS4 is defined as “any conveyance or system of conveyances (roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, human-made channels, and storm drains) owned or operated by a state, city, town, county, or other public body having jurisdiction over storm water, that is designed or used for collecting or conveying storm water.” The SWRCB has identified the Department as an owner/operator of an MS4 under federal regulations. The Department’s MS4 permit covers all Department rights-of-way, properties, facilities, and activities in the state. The SWRCB or the RWQCB issues NPDES permits for five years, and permit requirements remain active until a new permit has been adopted.

The Department’s MS4 Permit (i.e. Caltrans General Permit) (Order No. 2012-0011-DWQ) was adopted on September 19, 2012 and became effective on July 1, 2013. The permit has three basic requirements:

1. The Department must comply with the requirements of the Construction General Permit (see below);
2. The Department must implement a year-round program in all parts of the state to effectively control storm water and non-storm water discharges; and
3. The Department storm water discharges must meet water quality standards through implementation of permanent and temporary (construction) Best Management Practices (BMPs), to the Maximum Extent Practicable, and other measures as the SWRCB determines to be necessary to meet the water quality standards.

To comply with the permit, the Department developed the Statewide Storm Water Management Plan (SWMP) to address storm water pollution controls related to highway planning, design, construction, and maintenance activities throughout California. The SWMP assigns responsibilities within the Department for implementing storm water management procedures and practices as well as training, public education and participation, monitoring and research, program evaluation, and reporting activities. The SWMP describes the minimum procedures and practices the Department uses to reduce pollutants in storm water and non-storm water discharges. It outlines procedures and responsibilities for protecting water quality, including the selection and implementation of BMPs. The proposed project would be programmed to follow the guidelines and procedures outlined in the latest SWMP to address storm water runoff. The project team will evaluate co-operation with local municipalities to identify off-site stormwater treatment/hydromodification control if there is not sufficient space within the Caltrans right-of-way.

Construction General Permit

Construction General Permit (Order No. 2009-009-DWQ) as amended by 2010-0014 DWQ, adopted on November 16, 2010, became effective on February 14, 2011. The permit regulates storm water discharges from construction sites that result in a disturbed soil area of one acre or greater, and/or are smaller sites that are part of a larger common plan of development. By law, all storm water discharges associated with construction activity where clearing, grading, and excavation result in soil disturbance of at least one acre must comply with the provisions of the General Construction Permit. Construction activity that results in soil disturbances of less than one acre is subject to this Construction General Permit if there is potential for significant water quality impairment resulting from the activity as determined by the RWQCB. Operators of regulated construction sites are required to develop storm water pollution prevention plans; to implement sediment, erosion, and pollution prevention control measures; and to obtain coverage under the Construction General Permit.

The 2009 Construction General Permit separates projects into Risk Levels 1, 2, or 3. Risk levels are determined during the planning and design phases, and are based on potential erosion and transport to receiving waters. Requirements apply according to the Risk Level determined. For example, a Risk Level 3 (highest risk) project would require compulsory storm water runoff pH and turbidity monitoring, and before construction and after construction aquatic biological assessments during specified seasonal windows. Aquatic biological assessments are only required for Risk Level 3 projects with more than 30 acres of soil disturbance. For all projects subject to the permit, applicants are required to develop and implement an effective Storm Water Pollution Prevention Plan (SWPPP).[10] In accordance with the Department's Standard Specifications, a Water Pollution Control Plan (WPCP) is necessary for projects with disturbed soil area less than one acre.

[10] The SWPPP is a document that addresses water pollution control for construction projects. The SWPPP describes potential sources of storm water pollution, discusses activities associated with construction, and identifies Best Management Practices (BMPs) to reduce storm water pollution.

Section 401 Permitting

Under Section 401 of the CWA, any project requiring a federal license or permit that may result in a discharge to Waters of the United States and Waters of the State must obtain a 401 Certification, which certifies that the project would be in compliance with state water quality standards. The most common federal permits triggering 401 Certification are CWA Section 404 permits issued by the USACE. The 401 permit certifications are obtained from the appropriate RWQCB, dependent on the project location, and are required before the USACE issues a 404 permit.

In some cases, the RWQCB may have specific concerns with discharges associated with a project. As a result, the RWQCB may issue a set of requirements known as WDRs under the State Water Code (Porter-Cologne Act) that define activities, such as the inclusion of specific features, effluent limitations, monitoring, and plan submittals that are to be implemented for protecting or benefiting water quality. WDRs can be issued to address both permanent and temporary discharges of a project.

2.2.2.2 Affected Environment

Water resources in the Santa Clara Valley include both surface and groundwater features and supplies. The majority of the project alignment is in San Francisco Bay RWQCB jurisdiction. The southernmost portion of the project, from East Dunne Avenue to Cochrane Road, is in Central Coast RWQCB jurisdiction. Surface water includes local reservoirs and imported water from statewide reservoirs, the California Water Project, and federal Central Valley Project. Groundwater resources derive from rainfall as well as recharge from the surface water sources.

Surface Water Resources

The project corridor crosses 12 major waterways, one of which, Coyote Creek, is crossed four times for a total of 15 crossings. Surface waters in the project corridor consist of Matadero Creek, Adobe Creek, Permanente Creek, Stevens Creek, Sunnyvale West Channel (Mathilda Channel), Sunnyvale East Channel, Calabazas Creek, San Tomas Aquino Creek, Guadalupe River, Lower Silver Creek, Upper Silver Creek, and Coyote Creek. All of these waters eventually drain into San Francisco Bay.

Receiving water bodies include the 12 waterways listed above as well as Llagas Creek. A small portion of US 101 runoff drains to Madrone Channel, an engineered ditch that parallels US 101 south of the project limits. Madrone Channel flows south toward Llagas Creek and eventually into Monterey Bay.

Portions of the project corridor are in areas susceptible to hydromodification.[11] Most of the channel crossings in the project corridor lie in areas that are not susceptible to

[11] Hydrograph modification (commonly known as hydromodification) is the alteration of natural stream hydrology by human activity. For example, an increase in impervious area can decrease infiltration and increase storm water runoff, which in turn can increase downstream erosion to unlined channels.

hydromodification due to watershed composition, or because the creeks drain to tidally influenced areas or lined channels.

Groundwater Resources

The majority of the proposed project is in the Santa Clara Valley groundwater basin and Santa Clara sub-basin of the San Francisco Bay Hydrologic Region. The Santa Clara Valley groundwater basin is bordered by the Diablo Range on the east and the Santa Cruz Mountains on the west. The Santa Clara sub-basin extends from Coyote Narrows at Metcalf Road to Santa Clara County's northern boundary.

A small portion at the southern end of the project area lies in the Gilroy-Hollister Valley groundwater basin and Llagas area sub-basin. The Gilroy-Hollister Valley basin lies between the Diablo Range to the east and the Gabilan Range and the Santa Cruz Mountains to the west. The Llagas sub-basin extends from Cochrane Road near Morgan Hill in the north to the Pajaro River in the south.

The Santa Clara Valley Water District (SCVWD) operates several percolations ponds for recharging groundwater facilities. The channels in the project area with off-stream recharge facilities are Stevens Creek, Guadalupe River, and Coyote Creek. The SCVWD manages the Santa Clara Valley groundwater basin and part of the Gilroy-Hollister Valley groundwater basin to ensure that sufficient water is present to enable the owners of wells to withdraw the water they need without causing land subsidence. Various measures are implemented by the SCVWD to protect the quality of groundwater.

A groundwater study was performed within the US 101 corridor based on historic boring data, as-built information, and current topography and geologic information. The study found that groundwater depths vary considerably over the project corridor, from as little as 4 feet below ground surface near the northern segment of the project to 75 feet below ground surface near the Bernal Road crossing. The section of US 101 between Metcalf Road and Blossom Hill Road generally had the deepest groundwater of the locations studied.

According to the Urban Water Management Plan (SCVWD 2010), the overall groundwater quality in Santa Clara County is very good, and water quality objectives are achieved in most wells. The SCVWD monitors groundwater quality to assess current conditions and identify trends or areas of special concern. Wells are monitored for major ions, such as calcium and sodium, nutrients such as nitrate, and trace elements such as iron. Wells are also monitored for man-made contaminants, such as organic solvents.

2.2.2.3 Environmental Consequences

Short-Term (Construction) Impacts

During construction, the Build Alternative has the potential for temporary water quality impacts due to grading activities and vegetation removal, which can increase erosion. Untreated storm water runoff from the project may transport pollutants to nearby creeks and storm drains. Storm water runoff drains into the creeks listed in Section 2.2.2.2 and eventually discharges to lower South San Francisco Bay or Monterey Bay. Generally, as the disturbed soil areas increase, the potential for temporary water quality impacts also increases. The proposed project has an estimated disturbed soil area of 220 acres. Based on the acres of disturbed soil, the project has the potential for water quality impacts during construction.

Fueling or maintenance of construction vehicles could occur within the project area during construction, thus, there is risk of accidental spills or releases of fuels, oils, or other potentially toxic materials. An accidental release of these materials may pose a threat to water quality if contaminants enter storm drains, open channels, or surface water bodies. The magnitude of the impact from an accidental release depends on the amount and type of material spilled.

Project excavation work would mostly consist of bridge widening and abutment modification and roadbed construction for the new express lanes. Preliminary geotechnical information indicates that groundwater appears to be deep and there is a low risk for groundwater to be encountered except if installing foundations for overhead signs, toll structures, abutment construction for US 101 bridge widening, or other excavation that would extend below the seasonal high water table.

The project does not propose to widen US 101 bridges over creeks or conduct excavation in creeks. Temporary creek diversions would not be necessary.

No impacts to streams or riparian habitats within the project area are anticipated.

Potential temporary impacts to water resources would be avoided or minimized with the implementation of the BMPs described in Sections 2.2.2.4 and 2.3.2.4.

Long-Term (Permanent) Impacts

Street and highway storm water runoff has the potential to affect receiving water quality. The nature of these impacts depends on the uses and flow rate or volume of the receiving water, rainfall characteristics, and street or highway characteristics. Heavy metals associated with vehicle tire and brake wear, oil and grease, and exhaust emissions are the primary pollutants associated with transportation corridors.

Generally, highway storm water runoff has the following pollutants: total suspended solids, nitrate nitrogen, total Kjeldahl nitrogen, phosphorous, ortho-phosphate, copper, lead and zinc (Caltrans 2003). Some sources of these pollutants are natural erosion, phosphorus from tree leaves, combustion products from fossil fuels, and the wearing of brake pads and tires. There are no known existing treatment BMPs along US 101 within the project limits to treat roadway runoff; therefore, the water quality of the receiving water bodies would still be affected by highway runoff without the project.

The project would increase impervious area and potentially increase the volume and velocity of storm water runoff to receiving water bodies, and increase the pollutants in the storm water, referred to as pollutant loading. The added impervious area is directly related to the potential permanent water quality impacts and is estimated to be approximately 61 acres. Out of these 61 acres, runoff from approximately 54 acres of the impervious area would be added to water bodies that discharge to San Francisco Bay, and runoff from approximately 7 acres would be added to a water body (Madrone Channel) that ultimately discharges to Monterey Bay. There would be a total of 124.79 acres of re-worked impervious surface area, which would contribute runoff comparable to the runoff generated by the current US 101 facility.

The increase in storm water runoff volume would potentially increase the export of pollutants to receiving waters both in quantity and speed of the delivery. The project treatment and hydromodification strategy is to maximize and promote infiltration and metering or detaining flows prior to discharge to a receiving waterbody or to an MS4. The use of treatment BMPs would help to minimize or avoid the export of pollutants of concern to receiving waters. The threshold for treatment of more than 1 acre of new and reworked pavement could be considered as a threshold for significance.

The use of treatment BMPs (detention and infiltration) would help to minimize or avoid the export of pollutants of concern to groundwater resources, considering the relatively low groundwater levels within the project area. In addition, groundwater resources in the area do not represent a “sole source aquifer” (meaning that groundwater is not the only source of domestic water), and groundwater is treated prior to municipal use.

2.2.2.4 Avoidance, Minimization, and/or Mitigation Measures

The proposed ESAs include designated biological habitats, wetlands and other waters of the U.S. and the state. Measures would be employed to prevent construction material or debris from entering surface waters or their channels. BMPs for erosion control would be implemented and in place prior to, during, and after construction in order to ensure that no silt or sediment enters surface waters.

The project has the potential to encounter groundwater during installation of foundations for overhead signs, toll structures, bridge abutments, or other excavation that extends below the seasonal high water table. Early discussion will be initiated with the Department’s Branch of Water Pollution Control regarding the handling and disposal of this water. Project-specific WDRs may be required from the RWQCB if substantial dewatering is needed. Active Treatment Systems may be used during construction work to treat groundwater encountered prior to discharge to water bodies in order to minimize the impacts to water quality.

The Department would require its contractors to implement a SWPPP to address the temporary water quality impacts resulting from the construction activities associated with this project. The SWPPP will describe potential sources of storm water pollution, discuss activities associated with construction, and identify BMPs to reduce storm water pollution. The SWPPP must also be in compliance with the goals and restrictions identified in the San Francisco Bay and Central Coast RWQCBs’ Basin Plans.

In addition, permanent erosion control BMPs would be addressed as part of project design. Feasible short-term (construction) and long-term (permanent) BMPs for the project are described below. Refer to the *Water Quality Study Report* (WRECO 2013b) and the *Water Quality Study Report Addendum* (WRECO 2014b) for more detail on avoidance and minimization measures.

Short-Term (Construction) BMPs

Adverse impacts can occur during construction-related activities. Soil erosion, especially during heavy rainfall, can increase the suspended solids, dissolved solids, and organic pollutants in storm water runoff generated within the project area. Potential temporary impacts to water quality can be prevented or minimized by implementing standard BMPs recommended for a particular construction activity.

Erosion control measures will be applied to all exposed areas during construction, including the trapping of sediments within the construction area through the placing of barriers, such as silt fences, at the perimeter of downstream drainage point or through the construction of temporary detention basins. The project will also implement other methods of minimizing erosion impacts, including hydromulching (spraying mulch mixed with liquid to help it adhere to the ground) and/or limiting the amount and length of exposure of graded soil.

Approved erosion control BMPs are described in the Department's Project Planning and Design Guide (Caltrans 2010). Temporary erosion control and water quality measures will be defined in detail in the Erosion Control and Water Pollution Control design sheets prepared for the project, which will also include the specifications for the SWPPP.

Temporary erosion control BMPs would be necessary for the Construction General Permit and the Statewide Permit and will be detailed during the PS&E phase. Table 2.2.2-2 lists the suggested minimum measures that would be considered. Furthermore, during construction, the contractor would be required to detail in the SWPPP the actual in-field implementation of BMPs, plus amend the SWPPP as necessary to match field conditions and phasing of the project. Refer to the *Water Quality Study Report* (WRECO 2013b) and the *Water Quality Study Report Addendum* (WRECO 2014b) for more detail on avoidance and minimization measures.

Table 2.2.2-1: Minimum Requirements for Temporary BMPs

Category	Minimum Requirements
Soil Stabilization	Move In/Move Out (Temporary Erosion Control)
	Temporary Cover
	Temporary Fence (Type ESA)
Sediment Control	Temporary Fiber Rolls
	Temporary Silt Fence
	Temporary Gravel Bag Berm
	Temporary Check Dams
	Temporary Drainage Inlet Protection
Tracking Control	Temporary Construction Entrances/Exits
	Street Sweeping
Non-Storm Water Management	All other anticipated non-storm water management measures are covered under the Job Site Management.
Waste Management and Materials Pollution Control	Temporary Concrete Washout Facilities
	All other anticipated waste management and materials pollution control measures are covered under Job Site Management.
Construction Site Management	Spill prevention and control, materials management, stockpile management, waste management, hazardous waste management, contaminated soil, concrete waste, sanitary and septic waste and liquid waste.
	Water control and conservation, illegal connection and discharge detection and reporting, vehicle and equipment cleaning, vehicle and equipment fueling and maintenance, material and equipment used over water, structure removal over or adjacent to water, paving, sealing, saw cutting and grinding operations, thermoplastic striping and pavement markers, concrete curing and concrete finishing.
	Training of employees and subcontractors, and proper selection, deployment and maintenance of construction site BMPs.
Sampling and Monitoring	Sampling and monitoring during a qualified storm event.

Long-Term (Permanent) BMPs

The project would increase impervious area and therefore potentially increase the volume and velocity of storm water to receiving waters. To comply with the Statewide Permit (Order No. 2012-0011-DWQ), the Department would take measures to reduce, to the maximum extent practicable, pollutant loadings from the facility once construction is complete. The permit stipulates that permanent measures that control pollutant discharges must be considered and implemented for all new or reconstructed facilities. Permanent control measures located within the Department's right-of-way reduce pollutants in storm water runoff from the roadway. These measures reduce the suspended particulate loads, and thus pollutants associated with the particulates, from entering waterways. The measures would be incorporated into the final engineering design or landscape design of the project and would take into account expected runoff from the roadway. This category of water quality control measures can be identified as including both design pollution prevention and treatment BMPs.

The following design pollution prevention BMPs are proposed for this project:

- Permanent erosion control measures applied to all new or exposed slopes in consideration of downstream effects;
- Preservation of existing vegetation;
- Proper design of drainage facilities to handle concentrated flows; and
- Slope and surface protection systems.

The proposed project is a major reconstruction project that directly or indirectly discharges to a surface water body and creates more than one acre of impervious surfaces, thus treatment BMPs are being considered. Based on preliminary treatment analysis, the feasible treatment BMPs for the project are biofiltration strips, infiltration devices, Austin sand filters, and detention devices.

Potential treatment BMP locations are limited due to the following site conditions: side slopes in cuts, steep slopes, retaining/sound walls, and vector control considerations. As such, the treatment of all newly created impervious areas is not currently feasible without further design efforts. Further detailed drainage and storm water design efforts will be made during the design phase to achieve the required treatment of impervious area.

In addition to treatment BMPs, the project would incorporate BMPs to maintain or restore pre-project hydrology to the levels that would satisfy hydromodification requirements per the Santa Clara Valley Urban Runoff Pollution Prevention Program (SCVURPPP). The measures could include structural measures, such as underground detention, and nonstructural measures, through the modification of proposed treatment BMPs to accommodate flow and volume control.

2.2.3 Geology/Soils/Seismic/Topography

The following discussion is based on the *Preliminary Geotechnical Report* (URS 2013c) for the proposed project, which was completed in July 2013.

2.2.3.1 Regulatory Setting

For geologic and topographic features, the key federal law is the Historic Sites Act of 1935, which establishes a national registry of natural landmarks and protects "outstanding examples of major geological features." Topographic and geologic features are also protected under the California Environmental Quality Act (CEQA).

This section also discusses geology, soils, and seismic concerns as they relate to public safety and project design. Earthquakes are prime considerations in the design and retrofit of structures. The Department's Office of Earthquake Engineering is responsible for assessing the seismic hazard for Department projects. Structures are designed using the Department's Seismic Design Criteria (SDC). The SDC provides the minimum seismic requirements for highway bridges designed in California. A bridge's category and classification would determine its seismic performance level and which methods are used for estimating the seismic demands and structural capabilities. For more information, please see the Department's Division of Engineering Services, Office of Earthquake Engineering, Seismic Design Criteria.

2.2.3.2 Affected Environment

Site Geology

The project corridor is on the western margin of the Santa Clara Valley within the San Francisco Bay block, in the central portion of the Coast Ranges geomorphic province of California. Northwest-to-southeast-trending valleys and ridges characterize the regional morphology of the Coast Ranges geomorphic province. These topographic features are controlled by folds and faults that resulted from the collision of the Farallon and North American plates and subsequent predominantly strike-slip faulting along the San Andreas fault system between the Pacific and North American plates. The San Francisco Bay block is a relatively stable seismic block bounded by the San Andreas and the Hayward faults to the west and east, respectively.

The project corridor is south of San Francisco Bay. The profile along the project corridor varies from depressed sections as much as 20 feet below surrounding development to embankments as high as 34 feet. Development in the project area includes the freeway, numerous overcrossings and undercrossing structures, roadway interchanges and freeway interchanges and bridges over creeks, rivers and railroad crossings. The project corridor is underlain predominantly by thick, unconsolidated, interbedded alluvial and fluvial deposits of clay, silt, sand and gravel. Bay Mud deposits are also present at the northern end of the alignment along US 101 in the vicinity of Charleston Slough. Bedrock is exposed near the surface in the southeastern portion of the project along US 101.

Geologic Hazards

Surface Fault Rupture

The closest active faults to the project corridor are the San Andreas, Hayward, Calaveras, Silver Creek, Cascade and Monte Vista faults (Caltrans 2007b). The San Andreas, Hayward, and Calaveras faults parallel the project corridor and are 14 miles west, 5.5 miles east, and 8 miles east, respectively. Silver Creek fault crosses the project corridor twice south of the I-880 interchange. Cascade fault is approximately 5 miles southwest of the northern portion of the project corridor. Monte Vista fault is approximately 6.5 miles southwest of the northern portion of the project corridor.

The California Geological Survey (2010) has produced maps showing faults with known Holocene activity that pose a potential surface rupturing hazard. The San Andreas, Hayward, and Calaveras faults are considered active faults; however the Monte Vista, Silver Creek, and Cascade faults are not. The project corridor does not cross any faults considered to be active by the California Geological Survey or USGS. The project corridor crosses the Silver Creek fault, but available geologic data indicate the most recent episode of ground surface rupture on these faults predated Holocene time and may have been pre-late Pleistocene. The likelihood of ground surface rupture on these faults is considered low. Therefore, a surface rupture is not expected to occur in the project corridor.

Earthquake Shaking

The intensity of ground shaking is dependent upon the size of the earthquake, the distance of the epicenter from the site, the direction that the earthquake propagates along the fault, and the site geologic conditions. The short distance to the San Andreas fault and other more distant active faults creates a high risk for ground shaking from fault movement. The San Andreas fault is the largest active fault in California and is responsible for the largest known earthquake in Northern California, the 1906 San Francisco earthquake (Wallace 1990). In the Bay Area, the main trace of the San Andreas fault forms a linear depression along the Peninsula, occupied by the Crystal Springs and San Andreas Lake reservoirs. The Hayward fault is part of the San Andreas fault system and extends from east of San Jose to San Pablo Bay. It is considered the most likely source of the next major earthquake in the Bay Area (Working Group on California Earthquake Probabilities 2003). The San Andreas fault also produced the 1989 magnitude 6.9 Loma Prieta earthquake (USGS 2012a). The overall probability of an magnitude 6.7 or greater earthquake in the Greater Bay Area in the next 30 years is 63 percent; for the San Andreas fault, the probability is 21 percent (USGS 2012b).

Liquefaction and Lateral Spreading

Liquefaction is a process by which water-saturated sediment temporarily loses strength and acts as a fluid. This condition is caused by cyclic loading during an earthquake. The soil type most susceptible to liquefaction is loose, cohesionless, granular soil below the water table and within about 50 feet of the ground surface. Liquefaction can result in loss of foundation support and settlement of overlying structures, ground subsidence and translation due to lateral spreading, lurch cracking, and differential settlement of affected deposits. Lateral spreading occurs when a layer liquefies at depth and causes horizontal movement or displacement of the overburden mass toward a free face such as a stream bank or excavation, or toward an open body of water.

In a regional study of the nine-county San Francisco Bay Area region for the U.S. Geological Survey (USGS), Witter et al. (2006) mapped the liquefaction susceptibility of the site soils in the project vicinity. ABAG published a liquefaction susceptibility map in 2004 (ABAG 2004) based on mapping in the USGS Open File Report by Knudsen et al. (2000). The maps indicate the project corridor generally contains soils with moderate liquefaction susceptibility, with the exception of the following:

- Low – southernmost portion of the project corridor in Morgan Hill

- High to very high – younger fluvial deposits where larger drainages cross the alignment, such as Coyote Creek, Guadalupe River, and San Tomas Aquino Creek
- Very high – north end of the project alignment along US 101 between San Antonio Road and Oregon Expressway, where the alignment is underlain by unconsolidated to semi-consolidated alluvial deposits

All US 101 bridge widening locations have moderate liquefaction potential, except for Coyote Road undercrossing, where the liquefaction susceptibility is high to very high.

Subsidence and Settlement

Subsidence is a gradual settling or sudden sinking of the ground surface. Subsidence typically occurs as a result of subsurface fluid extraction (e.g., groundwater, petroleum) or compression of soft, geologically young sediments. Groundwater extraction for high volume municipal and agricultural use has the potential to cause future ground subsidence in the region. No known areas of subsidence are present in the area. No active petroleum wells are present within miles of the project corridor (California Division of Oil, Gas, and Geothermal Resources 2009). In addition, there was no reported subsidence in the vicinity of a groundwater extraction system installed for mitigating subsurface contamination at the former Fairchild Semiconductor site in south San Jose.

Settlement can occur quickly when soil is loaded by a structure or by the placement of fill on top of soil; and it can also occur when soil pore pressures, increased by vertical loading, gradually dissipate over time. Since no extensive fill loads are expected for this project, the potential impact and hazards of consolidation settlement due to embankment loading are considered low.

Groundwater Depth

The subsurface conditions along most of the southern alignment consist primarily of dense sand and gravels with interbeds of stiff clays and silts, and groundwater levels at locations other than creek crossings are generally more than 30 feet in depth.

Near the northern end of the project, between approximately SR 237 and Embarcadero Road, layers of soft to stiff silty clay were encountered from ground surface to depths of 20 to 30 feet below ground surface. Groundwater was measured in this area at depths ranging from about 3 to 28 feet.

2.2.3.3 Environmental Consequences

The project corridor is within 15 miles of two Alquist-Priolo Earthquake Fault Zones,[12] the San Andreas and Hayward faults. The project corridor crosses two mapped faults (the Silver Creek and Cascade faults); however, the likelihood of ground surface rupture on this fault is considered low. The project corridor does not cross any faults considered to be active by the California Geological Survey or USGS. The proposed project would not increase the exposure of people or structures to potential substantial adverse effects from fault rupture.

[12] Earthquake Fault Zones are mapped regulatory zones around active faults. Municipalities cannot permit the construction of most types of structures for human occupancy over active faults in mapped Earthquake Fault Zones.

The proposed project is in a seismically active area and has a reasonably high potential to experience strong earthquake shaking in the future. The potential exists for people or structures to be exposed to substantial adverse effects from seismic ground shaking. The project would not add new bridges or ramp structures to US 101; however, five bridges on US 101 would be modified as described in Section 1.3.1.8. Project-related structures would be limited to overhead signs, toll structures, and lighting. Standard Department design measures would avoid or minimize the potential for adverse seismic effects to project-related structures. The risk for people or structures to be adversely affected from seismic ground shaking would be the same with the existing condition and the No Build Alternative.

Maps indicate that soils in the project corridor generally have a moderate potential for liquefaction. In areas around large drainages such as Coyote Creek, Guadalupe River and San Tomas Aquino Creek, and along US 101 between San Antonio Road and Oregon Expressway, liquefaction susceptibility was mapped as high to very high.

Standard foundations of single cast-in-drilled-hole piles are considered feasible to support overhead signs and toll structures. In the southern portion of the project alignment, some of the proposed locations of overhead signs could encounter groundwater within standard plan pile depths, requiring site-specific considerations during final design.

In the northern end of the project, between approximately SR 237 and Embarcadero Road, layers of soft to stiff silty clay were encountered from the ground surface to depths of 20 to 30 feet below ground surface. Groundwater was measured in this area at depths ranging from about 3 to 28 feet. In consideration of these soft to stiff clays, a non-standard foundation for overhead signs may be required in these areas.

2.2.3.4 Avoidance, Minimization, and/or Mitigation Measures

The Department's design and construction guidelines incorporate engineering standards that address seismic risks. Project elements would be designed and constructed to meet seismic design requirements for ground shaking and ground motions, as determined for the project vicinity and site conditions (liquefaction, settlement, and corrosion). No further measures are needed to address seismic risks.

Additional geotechnical subsurface and design investigations would be performed during the final project design and engineering phase. The investigations would include site-specific evaluation of subsurface conditions, including the potential for liquefaction and lateral spreading at the location of proposed foundation features.

2.2.4 Paleontology

This section summarizes the *Paleontological Identification Report* (PIR; URS 2012b) and *Paleontological Evaluation Report and Mitigation Plan* (PER/PMP; URS 2013d) prepared for the proposed project and completed in November 2012 and January 2013, respectively.

2.2.4.1 Regulatory Setting

Paleontology is a natural science focused on the study of ancient animal and plant life as it is preserved in the geologic record as fossils. A number of federal statutes specifically address paleontological resources, their treatment, and funding for mitigation as a part of federally authorized projects. The following laws apply to this project:

- 23 USC 1.9(a) required that the use of federal-aid funds must be in conformity with federal and state law.
- 23 USC 305 authorizes the appropriation and use of federal highway funds for paleontological salvage as necessary by the highway department of any state, in compliance with 16 USC 431-433 above and state law.
- Under California law, paleontological resources are protected by CEQA.

2.2.4.2 Affected Environment

The project area is mapped as containing Mesozoic igneous and metamorphic rocks, overlain by the Pliocene/Pleistocene Santa Clara Formation, which is in turn overlain by Pleistocene and Holocene alluvial sediments (Dibblee 1973; Helley et al. 1994). Generally, the northern half of the project corridor crosses surficial Holocene deposits. The southern half of the project corridor crosses surface exposures of the igneous and metamorphic rocks, the Santa Clara Formation, and both Pleistocene alluvium and Holocene units.

Extensive geological borings in the Santa Clara Valley indicate that fluvial deposits including the Santa Clara Formation and both Pleistocene and Holocene alluvium have a combined depth of approximately 330 to 1,315 feet below the surface (Stanley et al. 2002:14, 20). Deeper formations are not discussed as the maximum potential project impact is 50 feet below the surface.

The Department uses a three-part scale to characterize paleontological sensitivity, consisting of no potential, low potential, and high potential (Caltrans 2012). The scale generally correlates with the likelihood for a geologic unit to contain significant vertebrate, invertebrate, or plant fossils. The probability of finding significant fossils in a project area can be broadly predicted from previous records of fossils recovered from the geologic units in and/or adjacent to the study area. In most cases, decisions about how to best manage paleontological resources must be based on these categories of sensitivity, because the presence or absence of paleontological resources cannot be known until construction excavation is under way.

Research conducted for the PER/PMP (URS 2013d) indicates that Pleistocene alluvial fan deposits and the Pliocene/Pleistocene Santa Clara Formation have yielded invertebrate and vertebrate fossil finds. No fossil finds are known from any other formations in the project corridor. An archival records search conducted by the University of California Museum of Paleontology (UCMP) indicated that no fossils have been found in the project corridor; however, three fossil localities were identified within 2 miles of the project corridor.

Based on these results, the Pleistocene alluvial fan deposits and the Santa Clara Formation are ranked as high paleontological sensitivity according to the Department scale. All other formations in the project corridor are ranked as low paleontological sensitivity.

2.2.4.3 Environmental Consequences

Road widening, grading, and trenching for utilities and storm water components may affect Pleistocene alluvial fan deposits and the Santa Clara Formation where those geologic units are exposed at or near the surface. Grading and trenching may reveal fossils or fossil assemblages. Significance of any fossils would need to be assessed after recovery and identification. These areas would require full-time paleontological monitoring.

Drilling for various project components may potentially affect Pleistocene alluvial fan deposits and the Santa Clara Formation where those units are overlain by more recent sediments of unknown depths. Drilling would be conducted using truck-mounted rotary drills. This type of tool may rotate out fossil bones or other materials, but the specimens will lack context, depth/elevation, formation identification, and other elements that are critical to demonstrating scientific significance. Therefore, the potential to recover fossils that meet significance criteria is low. A paleontologist should be on call to respond if a fossil is recovered from drilling and to perform subsequent work to determine whether it can be identified and meets significance criteria.

Significant impacts to paleontological resources are not anticipated since grading, trenching, and drilling would disturb a relatively small area within sensitive formations. However, due to the presence of sensitive geologic formations monitoring and, if necessary, fossil recovery, identification, and curation will be performed in accordance with the PER/PMP. No other project components have the potential to affect paleontological resources.

2.2.4.4 Avoidance, Minimization, and/or Mitigation Measures

The presence or absence of paleontological resources usually cannot be known until project construction is under way. Due to the presence of sensitive geologic formations within the project limits, a Paleontological Mitigation Plan (URS 2013d) was prepared to address potential discoveries during project construction.

Implementation of the following resource stewardship measures would avoid potential impacts to sensitive paleontological resources, if present. Caltrans Standard Specification 14-7.02 will be a construction contract requirement, which states:

- If paleontological resources are discovered at the job site, do not disturb the material and immediately:

  1. Stop all work within a 60-foot radius of the discovery
  2. Protect the area
  3. Notify the Engineer

  The Department investigates and modifies the dimensions of the protected area if necessary. Do not move paleontological resources or take them from the job site. Do not resume work within the specified radius of the discovery until authorized.

- Include a specification in the construction contract stating that paleontological monitoring will occur in accordance with the Paleontological Mitigation Plan, which details where and when monitoring is required.
- Update and finalize the Paleontological Mitigation Plan once project design is nearly complete. The final plan will be implemented during construction.

The above measures would reduce potential impacts to paleontological resources by allowing for the recovery of fossil remains and associated specimen data and corresponding geologic and geographic site data that otherwise might be lost.

Paleontological monitors and other staff will meet the qualifications outlined under preparer qualifications in the Department Standard Environmental Reference, Volume 1, Chapter 8 (Caltrans 2008).

The estimated cost of paleontological monitoring and tasks related to fossil recovery, processing, and curation is approximately $450,000. No permits are anticipated to be needed for monitoring or fossil recovery.

2.2.5 Hazardous Waste/Materials

The following discussion is based on the *Initial Site Assessment* (ISA; URS 2012c) for the proposed project, which was completed in August 2012.

2.2.5.1 Regulatory Setting

Hazardous materials, including hazardous substances and wastes, are regulated by many state and federal laws. Statutes govern the generation, treatment, storage, and disposal of hazardous materials, substances, and waste, and also the investigation and mitigation of waste releases, air and water quality, human health and land use.

The primary federal laws regulating hazardous wastes/materials are the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA) and the Resource Conservation and Recovery Act of 1976 (RCRA). The purpose of CERCLA, often referred to as “Superfund”, is to identify and clean up abandoned contaminated sites so that public health and welfare are not compromised. The RCRA provides for “cradle to grave” regulation of hazardous waste generated by operating entities. Other federal laws governing hazardous waste include:

- Community Environmental Response Facilitation Act (CERFA) of 1992
- Clean Water Act
- Clean Air Act
- Safe Drinking Water Act
- Occupational Safety and Health Act (OSHA)
- Atomic Energy Act
- Toxic Substances Control Act (TSCA)
- Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA)

In addition to the acts listed above, Executive Order (EO) 12088, *Federal Compliance with Pollution Control Standards*, mandates that necessary actions be taken to prevent and control environmental pollution when federal activities or federal facilities are involved.

California regulates hazardous materials, waste, and substances under the authority of the CA Health and Safety Code and is also authorized by the federal government to implement RCRA in the state. California law also addresses specific handling, storage, transportation, disposal, treatment, reduction, cleanup and emergency planning of hazardous waste. The Porter-Cologne Water Quality Control Act also restricts disposal of wastes and requires clean-up of wastes that are below hazardous waste concentrations but could impact ground and surface water quality. California regulations that address waste management and prevention and clean up contamination include Title 22 Division 4.5 Environmental Health Standards for the Management of Hazardous Waste, Title 23 Waters, and Title 27 Environmental Protection.

Worker and public health and safety are key issues when addressing hazardous materials that may affect human health and the environment. Proper management and disposal of hazardous material is vital if it is encountered, disturbed during, or generated during project construction.

2.2.5.2 Affected Environment

The *Initial Site Assessment* (URS 2012c) was conducted to review available information on the study area to identify potential risks and determine whether soil, groundwater, or other testing would be needed. The ISA evaluated the following information:

- An Environmental Data Resources, Inc. (EDR) environmental information database search for known potential hazardous materials sites, including underground storage tanks (USTs), landfills, hazardous waste generation, treatment, storage, and disposal facilities, and subsurface contamination within a study area extending up to 1 mile from the project area (the right-of-way and adjacent areas within the project limits). This EDR report covered the entire proposed project corridor;
- A review of two existing ISAs that address portions of the study area (project area plus a 1-mile radius);
- A site reconnaissance of the project area and the surrounding area conducted from points of public access, including freeways and adjacent ramps, and a drive-by survey of the surrounding and adjacent properties, conducted on August 4 and 5, 2011;
- A review of available historical aerial photographs and topographic maps covering the project area and adjacent areas; and
- A review of available files from the Envirostor and Geotracker web-based databases maintained by the California Department of Toxic Substances Control (DTSC) and San Francisco Bay RWQCB to obtain additional information on sites identified in the EDR report within or near the project area, and showing potential for environmental impacts to the soils and/or groundwater of the project area.

2.2.5.3 Environmental Consequences

The assessment did not identify any potential hazardous materials sites within the project area. Sixteen potential hazardous materials sites were identified outside, but within 1 mile of the project area. Eleven of the sites were identified through environmental database searches, two were found through reviews of historical reports and a site reconnaissance, and three were found through a review of the City of Mountain View record of contaminated sites. The 16 sites included a PG&E substation and industrial and commercial properties. Based on a review of existing data, additional investigation is recommended if dewatering is planned downgradient (downstream of groundwater flow) of 15 of the 16 sites, in conjunction with the site investigation for aerially deposited lead (ADL). The 16 sites are described in Table 2.2.5-1, below.

Hazardous waste site records indicate that corrective actions including groundwater treatment and soil cleanup have been conducted or are ongoing at most of the hazardous materials sites identified adjacent to the project limits and that natural remediation may have occurred since previous remediation actions. However, the risk of encountering contamination from these sites during project construction remains medium to high.

In addition to the facilities and sites listed above, construction activities could increase the risk of exposure to airborne contaminants from materials in roadway structures, buildings, and surface soils. Thermoplastic paint used for roadway striping in the project limits, particularly yellow paint, may contain high levels of lead. Soils adjacent to US 101 may contain naturally occurring asbestos or pesticides from previous agricultural land uses, and some of these areas may experience soil disturbance as part of the project. The presence of US 101 within the project limits for several decades indicates that exposed soil in the immediate vicinity is likely contaminated with ADL. Exposure to airborne contaminants from these materials could affect safety and health.

Gasoline, diesel fuel, oil, and lubricants for construction equipment are typically used, handled, and stored by contractors on roadway construction projects. In all construction projects there is a potential for the accidental release of fuels or lubricants from construction equipment or vehicles. Specific risks related to this type of release have not been identified for the proposed project. Contractors are required to handle hazardous materials in accordance with applicable laws, including health and safety requirements. Acutely hazardous materials would not be used or stored within the project limits during project construction.

The project would not create a significant new hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials. During construction, some lane closures could be required, but full freeway closures are not expected to be necessary; therefore, substantial impacts to emergency response or evacuation would be avoided.

Table 2.2.5-1: Potential Hazardous Materials Sites

Owner or Occupant/Address	Description	Further Investigation Recommended
1 - East Charleston Business Park 2513 East Charleston Road, Mountain View, CA 94043	This site is an office complex where groundwater monitoring and remediation is on-going. Contaminants of concern include trichloroethylene (TCE) and other halogenated compounds, and volatile organic compounds (VOCs)	If dewatering is planned downgradient of this property (to be determined during final design phase), groundwater samples should be collected to evaluate whether known contaminant releases would affect project construction activities.
2 - CTS Printex Corporation Plymouth and Colony Streets, Mountain View, CA 94043	CTS Printex Corp manufactured printed circuit boards from 1966-1985 at this site, but is currently not active. Contaminants of concern include acid waste water containing copper, lead, and organic wastes containing trichloroethane (TCA), TCE and other solvents. In October 1986 California Department of Public Health certified closure of the facility. The company is pumping water and discharging to Mountain View sanitary sewer. The company continues to monitor to define plume of contaminated ground water. The RWQCB issued a cleanup and abatement order in March 1987.	If dewatering is planned downgradient of this property (to be determined during final design phase), groundwater samples should be collected to evaluate whether the known contaminant releases would affect project construction activities.
3A - Teledyne Semiconductors Inc. 1300 Terra Bella Avenue, Mountain View, CA 94043 **3B - Spectra-Physics Inc.** 1250 West Middlefield Road, Mountain View, CA 94042	Semiconductors were manufactured here since 1962. The site has used a variety of toxic chemicals, primary chlorinated organic solvents which contaminate ground water. Investigation in June 1984 revealed that contaminants migrated to the north and affected approximately 50 private domestic wells. Teledyne is planning on pumping the contaminated ground water in the upper aquifer to the surface for subsequent treatment. Spectra-Physics manufactured electronic and gas lasers. Soil and groundwater samples collected contained TCE, TCA, and 1,2- dichloroethylene (DCE). In February 1990, Spectra Physics installed vapor extraction system to reduce influence of contaminants in the soil. The Teledyne National Priorities List (NPL) site is being managed in conjunction with the Spectra-Physics NPL site, as the contaminant plumes have merged.	If dewatering is planned downgradient of this property (to be determined during final design phase), groundwater samples should be collected to evaluate whether the known contaminant releases would affect project construction activities.
4 - Valley Oil Company 785 Yuba Drive, Mountain View, CA	Potential presence of petroleum hydrocarbons and VOCs in soil and/or groundwater.	If dewatering is planned downgradient of this property (to be determined during final design phase), groundwater samples should be collected to evaluate whether the known petroleum and/or VOC releases would affect project construction activities.
5 - Montwood Corporation 1615 Plymouth Street, Mountain View	Potential presence of petroleum hydrocarbons and VOCs in soil and/or groundwater.	If dewatering is planned downgradient of this property (to be determined during final design phase), groundwater samples should be collected to evaluate whether the known petroleum and/or VOC releases would affect project construction activities.

Table 2.2.5-1: Potential Hazardous Materials Sites

Owner or Occupant/Address	Description	Further Investigation Recommended
6 - Peery & Arrillaga 1098 Alta Avenue, Mountain View	Potential presence of petroleum hydrocarbons and VOCs in soil and/or groundwater.	If dewatering is planned downgradient of this property (to be determined during final design phase), groundwater samples should be collected to evaluate whether the known petroleum and/or VOC releases would affect project construction activities.
7 - Caltrans Maintenance Yard Old Middlefield Way at southbound US 101 on-ramp	This is a Caltrans maintenance yard where vehicle fueling and maintenance operations may take place.	If dewatering is planned downgradient of this property (to be determined during final design phase), groundwater samples should be collected to evaluate whether potential releases of chemicals found in groundwater beneath the site (such as TCE) would affect project construction activities.
8 - Former Moffett Field Naval Air Station Moffett Field, Mountain View, CA 94035	Currently on the NPL. The major contaminants in groundwater are volatile organic compounds. Facilities at these sites have used a variety of toxic chemicals, primarily chlorinated organic solvents, which contaminated a common groundwater basin. The U.S. EPA intends to apply an area-wide approach to the problem as well as take site-specific action as necessary.	If dewatering is planned adjacent to this property (to be determined during final design phase), groundwater samples should be collected to evaluate whether the known contaminant releases would affect project construction activities.
9 - Vacant 870 Leong Drive, Mountain View, CA 94043	Former Denny's restaurant. There was no file indication that a release of hazardous materials has occurred at the site and contamination appears to be the result of various off-site sources. Potential contaminants of concern include chlorinated hydrocarbons and TCE. Groundwater beneath the site is contaminated with chlorinated VOCs.	If dewatering is planned downgradient of this property (to be determined during final design phase), groundwater samples should be collected to evaluate whether the known contamination would affect project construction activities.

Table 2.2.5-1: Potential Hazardous Materials Sites

Owner or Occupant/Address	Description	Further Investigation Recommended
10A - Intel Corporation/ Memory and High Speed Logic 365 Middlefield Road, Mountain View, CA 94040 **10B - Fairchild Semiconductor**464 Ellis Street, Mountain View **10C - NEC Electronics America Inc.** 365 Middlefield Road, Mountain View, CA, 94040 **10D – Siemens/ Sobrato** 455 East Middlefield Road, Mountain View, CA **10E** – **Raytheon Company** 350 Ellis Street, Mountain View **10F – NEC Electronics** 501 Ellis Street, Mountain View **10G – General Semiconductor /Mitsubishi Silicon America, formerly Siltec** 405 National Avenue, Mountain View	Volatile organic compounds (TCE, DCE, and vinyl chloride) have been detected in soil and shallow groundwater at the site and in shallow groundwater downgradient of the site. Since 1982 Intel has been pumping and treating the groundwater. This is part of the Middlefield, Ellis, Whisman (MEW) Study Area joint NPL cleanup site. Site believed to be currently occupied by Opcode, World Energy Labs, and Skywatch Energy. **Fairchild Semiconductor:** This is part of the MEW Study Area joint NPL cleanup site. Potential presence of petroleum hydrocarbons and VOCs in soil and/or groundwater. **NEC Electronics:** This is part of the MEW Study Area joint NPL cleanup site. Potential presence of petroleum hydrocarbons and VOCs in soil and/or groundwater. **Siemens/Sobrato:** This is part of the MEW Study Area joint NPL cleanup site. Potential presence of petroleum hydrocarbons and VOCs in soil and/or groundwater. **Raytheon Company:** This is part of the MEW joint NPL cleanup site. Potential presence of petroleum hydrocarbons and VOCs in soil and/or groundwater. **NEC Electronics:** This is part of the MEW Study Area joint NPL cleanup site. Potential presence of petroleum hydrocarbons and VOCs in soil and/or groundwater. **General Semiconductor /Mitsubishi Silicon America, formerly Siltec:** This is part of the MEW Study Area joint NPL cleanup site. Potential presence of petroleum hydrocarbons and VOCs in soil and/or groundwater.	If dewatering is planned downgradient of these properties (to be determined during final design phase), groundwater samples should be collected to evaluate whether the known contaminant releases would affect project construction activities.
11 - National Semiconductor 2900 Semiconductor Drive, Santa Clara, CA 95051	National Semiconductor Corp manufactures (or manufactured) electronic equipment at a plant in Santa Clara. The facility occupies about 50 acres and is surrounded by residential, industrial, and commercial business areas. Monitoring wells on the site are contaminated with vinyl chloride, TCE, 1,1-DCE resulting from leaking underground tanks. Contamination has migrated off-site affecting drinking water wells located within 3 miles of the facility. Currently on the Final NPL.	If dewatering is planned downgradient of this property (to be determined during final design phase), groundwater samples should be collected to evaluate whether the known Petroleum and/or contaminant releases would affect project construction activities.

Table 2.2.5-1: Potential Hazardous Materials Sites

Owner or Occupant/Address	Description	Further Investigation Recommended
12 - Hellwig Family Limited 1301 Laurelwood Road, Santa Clara, CA 95054	Contaminants of concern included: diesel, fuel oxygenates, gasoline, and MTBE. September 2011 site closure request submitted to Santa Clara County Department of Environmental Health (Low Risk Groundwater Fuel Release Case).	No further investigation recommended. Request listing as Low Risk Groundwater Fuel Release Case; site located downgradient of US 101.
13 - DTG Operations Inc. 2251 Airport Boulevard, San Jose, CA 95131	Potential contaminants of concern include: gasoline, and other petroleum products. Possible sources of contamination are above ground fuel storage tanks, car washes, and likely oil-water separator. Soil samples have revealed recoverable petroleum hydrocarbons.	If dewatering is planned downgradient of this property (to be determined during final design phase), groundwater samples should be collected to evaluate whether the known Petroleum and/or contaminant releases would affect project construction activities.
14 - Action Forklift 1441 Terminal Avenue, San Jose, CA 95112	Potential contaminant of concern: Gasoline, including benzene. The soil vapor samples data indicate the presence of a wide range of hydrocarbon compounds in shallow soil vapor. None of the detected chemicals exceeded available commercial/industrial environmental screening levels. Site information is from PIERS' "Report of Additional Phase II Site Investigation" dated October 27, 2008.	If dewatering is planned adjacent to this property (to be determined during final design phase), groundwater samples should be collected to evaluate whether the known petroleum and/or other contaminant releases would affect project construction activities.
15 - Safety Kleen Corporation 1147 10th Street, San Jose, CA 95112	Potential contaminants of concern are solvents although documentation of leak was not available. As of 2009, the site remains open with no other regulatory agency oversight activities being conducted by RWQCB. The site is listed as a SLIC, AST, Historic UST, and RCRA-SQG with known soil impacts from solvents. Groundwater impacts are unknown.	If dewatering is planned downgradient of this property (to be determined during final design phase), groundwater samples should be collected to evaluate whether the known contaminant releases would affect project construction activities.
16- PG&E Substation Intersection of Metcalf Road and US 101	Large electrical substation.	If dewatering is planned downgradient of this property (to be determined during final design phase), groundwater samples should be collected to evaluate whether potential releases of chemicals found at sites with transformers (such as PCBs) would affect project construction activities.

Notes: AST = aboveground storage tank; CRWQCB=California Regional Water Quality Control Board; DCE = dichloroethylene; ESLs = environmental screening levels; LUST= leaking underground storage tank; MEW= Middlefield-Ellis-Whisman Study Area; MTBE = Methyl tert-butyl ether; NPL= National Priorities List; PCBs = polychlorinated biphenyls; SLIC = spills, leaks, investigations and cleanup; TCA = trichloroethane; TCE= trichloroethylene; U.S. EPA = U.S. Environmental Protection Agency; UST = underground storage tank; VOCs = volatile organic compounds

2.2.5.4 Avoidance, Minimization, and/or Mitigation Measures

Fifteen sites identified in Table 2.2.5-1 are recommended for further investigation due to the potential presence of petroleum hydrocarbons, solvents, and ADL in soil and/or groundwater. The following measures will be included with the project to identify the presence and extent of potential hazardous materials.

- Prior to excavation of surface soils, soil samples will be collected and analyzed for lead, pesticides, volatile organic compounds (VOCs), and polychlorinated biphenyls (PCBs).
- Deep soil and rock media will be sampled for naturally occurring asbestos throughout the project corridor at locations associated with the placement of electronic signs.
- For project excavations that extend to groundwater, groundwater sampling, analysis, and characterization will be conducted prior to construction. Treatment and disposal options for extracted groundwater will be determined prior to dewatering operations.
- If soil excavation is planned near properties where petroleum hydrocarbons or chlorinated compounds may be present, soil and groundwater will be sampled, tested, and characterized.
- Soil sampling for ADL is recommended where surface soils will be excavated along US 101.
- Contaminated soil, groundwater, and other hazardous materials will be properly characterized and disposed of at an appropriate facility per applicable regulations.

The costs for sampling, testing, special handling, and disposal of potentially hazardous materials are unknown at this stage of preliminary design and environmental review. It is estimated that sampling and analysis could take 4 to 6 weeks, and costs could range from $300,000 to $400,000 or more depending on the number of samples collected, the laboratory analyses used, and the quantity of material that requires special disposal. The costs for special handling of removed contaminated materials would be estimated during final design.

2.2.6 Air Quality

This section summarizes the *Air Quality Impact Assessment* and *Mobile Source Air Toxics* technical reports (URS 2014f, g) for the proposed project, approved in January 2014.

2.2.6.1 Regulatory Setting

The Federal Clean Air Act, as amended, is the primary federal law that governs air quality while the California Clean Air Act is its companion state law. These laws, and related regulations by the United States Environmental Protection Agency (U.S. EPA) and California Air Resources Board (ARB), set standards for the concentration of pollutants in the air. At the federal level, these standards are called National Ambient Air Quality Standards (NAAQS). NAAQS and state ambient air quality standards have been established for six transportation-related criteria pollutants that have been linked to potential health concerns: carbon monoxide (CO), nitrogen dioxide (NO_2), ozone, particulate matter, which is broken down for regulatory purposes into particles of 10 micrometers or smaller (PM_{10}) and particles of 2.5 micrometers and smaller ($PM_{2.5}$), and sulfur dioxide (SO_2). In addition, national and state standards exist for lead and state standards exist for visibility reducing particles, sulfates, hydrogen sulfide (H_2S), and vinyl chloride. In addition, national and state standards exist for lead (Pb) and state standards exist for visibility reducing particles, sulfates, hydrogen sulfide, and vinyl chloride. The NAAQS and state standards are set at levels that protect public health with a margin of safety, and are subject to periodic review and revision. Both state and federal regulatory schemes also cover toxic air contaminants (air toxics); some criteria pollutants are also air toxics or may include certain air toxics in their general definition.

Federal air quality standards and regulations provide the basic scheme for project-level air quality analysis under the National Environmental Policy Act (NEPA). In addition to this environmental analysis, a parallel "Conformity" requirement under the Federal Clean Air Act also applies.

Conformity

The conformity requirement is based on Federal Clean Air Act Section 176(c), which prohibits the U.S. Department of Transportation and other federal agencies from funding, authorizing, or approving plans, programs or projects that do not conform to State Implementation Plans (SIP) for attaining the NAAQS. "Transportation Conformity" applies to highway and transit projects and takes place on two levels: the regional—or planning and programming—level and the project level. The proposed project must conform at both levels to be approved.

Conformity requirements apply only in nonattainment and "maintenance" (former nonattainment) areas for the NAAQS, and only for the specific NAAQS that are or were violated. U.S. EPA regulations at 40 CFR 93 govern the conformity process. Conformity requirements do not apply in unclassifiable/attainment areas for NAAQS and do not apply at all for state standards regardless of the status of the area.

Regional conformity is concerned with how well the regional transportation system supports plans for attaining the NAAQS for carbon monoxide, nitrogen dioxide, ozone , particulate matter, and in some areas (although not in California) sulfur dioxide. California has attainment or maintenance areas for all of these transportation-related "criteria pollutants" except sulfur dioxide, and also has a nonattainment area for lead; however, lead is not currently required by the Federal Clean Air Act to be covered in transportation conformity analysis. Regional conformity is based on emission analysis of RTPs and Federal Transportation Improvement Programs (FTIPs) that include all transportation projects planned for a region over a period of at least 20 years for the RTP) and 4 years (for the TIP). RTP and FTIP conformity uses travel demand and emission models to determine whether or not the implementation of those projects would conform to emission budgets or other tests at various analysis years showing that requirements of the Clean Air Act and the SIP are met. If the conformity analysis is successful, the Metropolitan Planning Organization, FHWA, and Federal Transit Administration (FTA), make determinations that the RTP and FTIP are in conformity with the SIP for achieving the goals of the Federal Clean Air Act. Otherwise, the projects in the RTP and/or FTIP must be modified until conformity is attained. If the design concept, scope, and "open-to-traffic" schedule of a proposed transportation project are the same as described in the RTP and FTIP, then the proposed project meets regional conformity requirements for purposes of project-level analysis.

Conformity analysis at the project-level includes verification that the project is included in the regional conformity analysis and a "hot-spot" analysis if an area is "nonattainment" or "maintenance" for carbon monoxide and/or particulate matter. A region is "nonattainment" if one or more of the monitoring stations in the region measures a violation of the relevant standard, and the U.S. EPA officially designates the area nonattainment. Areas that were previously designated as nonattainment areas but subsequently meet the standard may be officially redesignated to attainment by U.S. EPA and are then called "maintenance" areas. "Hot-spot" analysis is essentially the same, for technical purposes, as CO or particulate matter analysis performed for NEPA purposes. Conformity includes some specific procedural and documentation standards for projects that require a hot-spot analysis. In general, projects must not cause the "hot-spot" related standard to be violated, and must not cause an increase in the number and severity of violations in nonattainment areas. If a known CO or particulate matter violation is located in the project vicinity, the project must include measures to reduce or eliminate the existing violation(s) as well.

2.2.6.2 Affected Environment

The project area is in the San Francisco Bay Area Air Basin, which does not attain federal standards for ozone and $PM_{2.5}$. For state standards, which are more stringent than federal, the region does not attain the ozone, $PM_{2.5}$, or PM_{10} standards. Table 2.2.6-1 shows the applicable standards and attainment status of criteria pollutants in the project area.

Due to its topographic diversity, the meteorology and climate of the Bay Area is often described in terms of different subregions and their microclimates. The proposed project is in the Santa Clara Valley subregion, as defined by the Bay Area Air Quality Management District (BAAQMD).

The Santa Clara Valley is bordered by San Francisco Bay to the north and by mountains to the east, south, and west. Temperatures are warm on summer days and cool on summer nights, winter temperatures are fairly mild. At the northern end of the valley, mean maximum temperatures are in the low 80s during the summer and the high 50s during the winter. Mean minimum temperatures range from the high 50s in the summer to the low 40s in the winter. Further inland, where the moderating effect of the Bay is not as strong, temperature extremes are greater. For example, in San Martin, 27 miles south of the San Jose International Airport, temperatures can be more than 10 degrees warmer on summer afternoons and more than 10 degrees cooler on winter nights than mean temperatures in the valley.

Table 2.2.6-1: State and National Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards[1]		National Standards[2]	
		Concentration	Attainment Status	Concentration[3]	Attainment Status
Ozone (O_3)	8 Hour	0.070 ppm (137 µg/m^3)	N[9]	0.075 ppm (157 µg/m^3)	N[4]
	1 Hour	0.09 ppm (180 µg/m^3)	N		See Footnote 5
Carbon Monoxide (CO)	8 Hour	9.0 ppm (10 mg/m^3)	A	9 ppm (10 mg/m^3)	A[6]
	1 Hour	20 ppm (23 mg/m^3)	A	35 ppm (40 mg/m^3)	A
Nitrogen Dioxide (NO_2)	1 Hour	0.18 ppm (339 µg/m^3)	A	0.100 ppm (see Footnote 11)	U
	Annual Arithmetic Mean	0.030 ppm (57 µg/m^3)	NA	0.053 ppm (100 µg/m^3)	A
Sulfur Dioxide (SO_2) (see Footnote 12)	24 Hour	0.04 ppm (105 µg/m^3)	A	0.14 ppm (365 µg/m^3)	A
	1 Hour	0.25 ppm (655 µg/m^3)	A	0.075 ppm (196 µg/m^3)	A
	Annual Arithmetic Mean	NA	NA	0.030 ppm (80 µg/m^3)	A
Particulate Matter (PM_{10})	Annual Arithmetic Mean	20 µg/m^3	N[7]	NA	NA
	24 Hour	50 µg/m^3	N	150 µg/m^3	U
Particulate Matter - Fine ($PM_{2.5}$)	Annual Arithmetic Mean	12 µg/m^3	N[7]	12 µg/m^3	A
	24 Hour	NA	NA	35 µg/m^3 (see Footnote 10)	N
Sulfates	24 Hour	25 µg/m^3	A	NA	NA
Lead (see Footnote 13)	Calendar Quarter	NA	NA	1.5 µg/m^3	A
	30 Day Average	1.5 µg/m^3	NA	NA	A
	Rolling 3 Month Average	NA	NA	0.15 µg/m^3	See Footnote 14
Hydrogen Sulfide	1 Hour	0.03 ppm (42 µg/m^3)	U	NA	NA
Vinyl Chloride (chloroethene)	24 Hour	0.010 ppm (26 µg/m^3)	NIA	NA	NA
Visibility Reducing particles	8 Hour (10:00 to 18:00 PST)	See Footnote 8	U	NA	NA

Sources: BAAQMD 2013; U.S. EPA 2013

Notes: A=Attainment, N=Nonattainment, NIA= No Information Available, U=Unclassified; mg/m^3=milligrams per cubic meter; ppm=parts per million; µg/m^3=micrograms per cubic meter, NA=Not Applicable, PST=Pacific Standard Time

1. California standards for ozone, carbon monoxide (except Lake Tahoe), sulfur dioxide (1-hour and 24-hour), nitrogen dioxide, suspended particulate matter - PM_{10}, and visibility reducing particles are values that are not to be exceeded. The standards for sulfates, Lake Tahoe carbon monoxide, lead, hydrogen sulfide, and vinyl chloride are not to be equaled or exceeded. If the standard is for a 1-hour, 8-hour or 24-hour average (i.e., all standards except for lead and the PM_{10} annual standard), then some measurements may be excluded. In particular, measurements are excluded that CARB determines would occur less than once per year on the average. The Lake Tahoe CO standard is 6.0 ppm, a level one-half the national standard and two-thirds the state standard.

2. National standards shown are the "primary standards" designed to protect public health. National standards other than for ozone, particulates and those based on annual averages are not to be exceeded more than once a year. The 1-hour ozone standard is attained if, during the most recent 3-year period, the average number of days per year with maximum hourly concentrations above the standard is equal to or less than one. The 8-hour ozone standard is attained when the 3-year average of the 4th-highest daily concentrations is 0.075 ppm or less. The 24-hour PM_{10} standard is attained when the 3-year average of the 99th percentile of monitored concentrations is less than 150 µg/m^3. The 24-hour $PM_{2.5}$ standard is attained when the 3-year average of 98th percentiles is less than 35 µg/m^3. Except for the National particulate standards, annual standards are met if the annual average falls below the standard at every site. The National annual standard for PM_{10} is met if the 3-year average falls below the standard at every site. The annual $PM_{2.5}$ standard is met if the 3-year average of annual averages spatially-averaged across officially designed clusters of sites falls below the standard.

3. National air quality standards are set by U.S. EPA at levels determined to be protective of public health with an adequate margin of safety.

4. Final designations effective July 20, 2012.

5. The National 1-hour ozone standard was revoked by U.S. EPA on June 15, 2005.

6. In April 1998, the Bay Area was redesignated to attainment for the National 8-hour carbon monoxide standard.

7. In June 2002, CARB established new annual standards for $PM_{2.5}$ and PM_{10}.

8. Statewide VRP Standard (except Lake Tahoe Air Basin): Particles in sufficient amount to produce an extinction coefficient of 0.23 per kilometer when the relative humidity is less than 70 percent. This standard is intended to limit the frequency and severity of visibility impairment due to regional haze and is equivalent to a 10-mile nominal visual range.

9. The 8-hour State ozone standard was approved by CARB on April 28, 2005, and became effective on May 17, 2006.

10. U.S. EPA lowered the 24-hour $PM_{2.5}$ standard from 65 µg/m^3 to 35 µg/m^3 in 2006. U.S. EPA designated the Bay Area as nonattainment of the $PM_{2.5}$ standard on October 8, 2009. The effective date of the designation is December 14, 2009 and the Air District has 3 years to develop a plan, called a State Implementation Plan (SIP), that demonstrates the Bay Area will achieve the revised standard by December 14, 2014. The SIP for the new $PM_{2.5}$ standard must be submitted to the U.S. EPA by December 14, 2012.

11. To attain this standard, the 3-year average of the 98th percentile of the daily maximum 1-hour average at each monitor within an area must not exceed 0.100 ppm (effective January 22, 2010).

12. On June 2, 2010, the U.S. EPA established a new 1-hour SO2 standard, effective August 23, 2010, which is based on the 3-year average of the annual 99th percentile of 1-hour daily maximum concentrations. The existing 0.030 ppm annual and 0.14 ppm 24-hour SO2 NAAQS however must continue to be used until 1 year following U.S. EPA initial designations of the new 1-hour SO2 NAAQS. U.S. EPA expects to designate areas by June 2012.

13. ARB has identified lead and vinyl chloride as 'toxic air contaminants' with no threshold level of exposure below which there are no adverse health effects determined.

14. National lead standard, rolling 3-month average: final rule signed October 15, 2008. Final designations effective December 31, 2011.

Winds in the valley are greatly influenced by terrain, resulting in a prevailing flow that roughly parallels the valley's northwest-southeast axis. A north-northwesterly sea breeze flows through the valley during the afternoon and early evening, and a light south-southeasterly flow occurs during the late evening and early morning. In the summer, the southern end of the valley sometimes becomes a "convergence zone," when air flowing from the Monterey Bay is channeled northward into the southern end of the valley and meets with the prevailing north-northwesterly winds.

Wind speeds are greatest in the spring and summer and weakest in the fall and winter. Nighttime and early morning hours frequently have calm winds in all seasons, while summer afternoons and evenings are quite breezy. Strong winds are rare and are associated mostly with winter storms.

The air pollution potential of the Santa Clara Valley is high. High summer temperatures, stable air, and mountains surrounding the valley combine to promote ozone formation. In addition to local sources of pollution, ozone precursors from San Francisco, San Mateo, and Alameda counties are carried by prevailing winds to the Santa Clara Valley. The valley tends to channel pollutants to the southeast. In addition, on summer days with low-level inversions, ozone can be recirculated by southerly drainage flows in the late evening and early morning and by the prevailing northwesterly winds in the afternoon. A similar recirculation pattern occurs in the winter, affecting levels of CO and particulate matter.

Pollution sources are plentiful and complex in this subregion. The Santa Clara Valley has a high concentration of industry at the northern end in the Silicon Valley. Some of these industries are sources of air toxics as well as criteria air pollutants. In addition, Santa Clara Valley's large population and many work-site destinations generate the highest mobile source emissions of any subregion in the San Francisco Bay Area Air Basin (BAAQMD 2011).

2.2.6.3 Environmental Consequences

Air quality issues relate to a range of different pollutants for which individual regulatory standards exist. The evaluation of air quality impacts addressed in this section focuses on the project's conformity with the regional air quality framework and the project's potential to result in an adverse impact to the region's compliance with the relevant standards.

Regional Air Quality Conformity

The proposed project is listed in the MTC's 2013 financially constrained RTP (Reference Number 240466; ABAG and MTC 2013), which was found to conform by the MTC on July 18, 2013. FHWA made a regional conformity determination on August 12, 2013.

The project is also included in MTC's financially constrained 2013 Transportation Improvement Program (TIP; ID Number SCL110002). The MTC's 2013 TIP was found to conform by FHWA on August 12, 2013.

The design concept and scope of the proposed project is consistent with the project description in the 2013 RTP and the 2013 TIP, and the assumptions of the MTC's regional emissions analysis. The project is in conformity with the SIP and will not otherwise interfere with timely implementation of any Transportation Control Measures in the applicable SIP.

Permanent Impacts

Evaluation of Potential for Traffic-Related CO Impacts

Traffic-related CO effects were evaluated to determine whether the project would cause or contribute to any new localized CO violations. The CO impacts analysis followed the procedures in *Transportation Project-Level Carbon Monoxide Protocol* (CO Protocol; Garza, Graney, and Sperling 1997).

A modeling analysis for CO impacts was completed for two locations along the US 101 mainline for the Build and No Build Alternatives using the traffic volumes obtained from the traffic analysis (CDMSmith 2013). The California Line Source (CALINE4) model was used for the analysis, following the guidelines contained in Appendix D of the CO Protocol.

The highest, most conservative traffic volume between AM and PM peak volumes at these locations was used in the model. Other locations that would be potentially affected by the proposed project are not expected to experience CO concentrations higher than the highest predicted among these two locations. The assumptions used in the hot-spot analysis are consistent with those used in the regional emissions analysis.

Table 2.2.6-2 summarizes the 2015 and 2035 traffic volumes at congested mainline segments evaluated in the traffic analysis (CDMSmith 2013). Peak-hour travel demand volumes are presented as they represent the worst-case traffic conditions.

Table 2.2.6-2: Traffic Volumes at Congested Mainline Sections, No Build and Build Alternatives

Segments	Volume per hour			
	No Build (Opening Year, 2015)	Build (Opening Year, 2015)	No Build (Horizon Year, 2035)	Build (Horizon Year, 2035)
US 101, Dunne Avenue to SR 85 (AM)	12,351	12,678	14,937	16,045
US 101, Capitol Expressway to I-880 (AM)	13,945	15,025	16,405	18,374

Notes:
AM = peak AM travel volumes

Emission factors for the vehicles were obtained by running the EMFAC2011 model for Santa Clara County. Background CO concentrations were added to the CALINE4 modeled concentration increases to generate total CO concentrations. Table 2.2.6-3 presents the worst-case CO concentrations for the No Build and Build Alternatives in both the opening year (2015) and the horizon year (2035).

Table 2.2.6-3: CALINE4 CO Modeling Results for No Build and Build Alternatives, Including Background

Segment	No Build Alternative CO Concentration (ppm) 1-hour	No Build Alternative CO Concentration (ppm) 8-hour	Build Alternative CO Concentration (ppm) 1-hour	Build Alternative CO Concentration (ppm) 8-hour
Opening Year (2015)				
US 101, Dunne Avenue to SR 85 (AM)	5.20	4.00	5.10	3.93
US 101, Capitol Expressway to I-880 (AM)	3.90	3.09	3.70	2.95
Horizon Year (2035)				
US 101, Dunne Avenue to SR 85 (AM)	4.30	3.37	4.20	3.30
US 101, Capitol Expressway to I-880 (AM)	3.40	2.74	3.30	2.67

Notes:

- NAAQS for 1-hour CO is 35 ppm and CAAQS for 1-hour CO is 20 ppm. NAAQS and CAAQS for 8-hour CO is 9 ppm.
- 1-hour and 8-hour background concentrations were obtained from San Jose – Jackson Street station (158 East Jackson St., San Jose, CA 95112).
- 1-hour background concentration was recorded in 2010–2012 and was found to be 2.6 ppm.
- 8-hour background concentration was recorded in 2010–2012 and was found to be 2.18 ppm.
- A persistence factor of 0.7 was used to convert modeled 1-hour CO concentration to 8-hour CO concentration.

A project is considered to have significant impacts if it results in CO concentrations that exceed the 1-hour average state standard of 20 ppm, the 1-hour average federal standard of 35 ppm and/or the 8-hour average standard of 9.0 ppm. As shown in Table 2.2.6-3, the maximum predicted concentrations (including background) at the selected segments are below these standards for both alternatives. These results support the conclusion that the proposed project will not cause or contribute to any new localized CO violations, at least through the project study year and RTP planning year of 2040.

Qualitative Particulate Matter “Hot Spot” Analysis

A particulate matter hot-spot analysis is required for transportation projects that are funded or approved by the FHWA or the FTA, in Federal nonattainment or maintenance areas for PM_{10} or $PM_{2.5}$, and determined to be a Project of Air Quality Concern (POAQC) as defined in Title 40 CFR Part 93. The proposed project is in an area that is unclassified for the Federal PM_{10} standards, so a PM_{10} hot-spot analysis is not required for project-level conformity purposes.

The U.S. EPA designated the San Francisco Bay Area Air Basin as a Federal nonattainment area for the 35 µg/m^3 $PM_{2.5}$ standard, effective December 14, 2009. Therefore, the project was evaluated in accordance with Title 40 CFR Part 93.

Interagency consultation with the Air Quality Conformity Task Force conducted in November and December 2012 identified the project as a potential POAQC. A $PM_{2.5}$ hot spot analysis was completed for the project (URS 2012d). As project construction would not last more than five years at any individual location, the hot spot analysis did not include estimates for construction-related $PM_{2.5}$ emissions. On December 6, 2012 , the Task Force concurred that the project meets the hot spot requirements in 40 CFR 93.116 and 93.126 for $PM_{2.5,}$ and that the project will not cause or contribute to a new violation of the federal $PM_{2.5}$ air quality standards. Confirmation was provided, dated December 7, 2013 (MTC 2012; included in Appendix E).

The project will conform to the SIP, including the localized impact analysis conducted with interagency consultation required by 40 CFR 93.116 and 93.123.

Public comment was requested regarding the information in the Project Assessment Form for $PM_{2.5}$ Interagency Consultation and the Task Force's determination (Appendix E). No comments were received related to air quality conformity during the public review and comment period for the IS/EA. The final determination on project-level conformity was issued by FHWA on April 20, 2015, and is included in Appendix E.

Ozone

The BAAQMD adopted the 2010 Clean Air Plan to plan for and achieve compliance with the federal and state ozone standards. This project will not interfere with the plan and will provide transportation benefits that reduce pollutant emissions, including precursors to the formation of ozone, by improving traffic operations and efficiency. This project is included in the Bay Area region's RTP, which has undergone regional evaluation for conformity with federal air quality standards, including ozone.

Mobile Source Air Toxics

In addition to the criteria air pollutants for which standards exist, the U.S. EPA also regulates air toxics. Most air toxics originate from human-made sources, including on-road mobile sources. Mobile source air toxics (MSATs) are a subset of the air toxics defined by the Clean Air Act. Some toxic compounds are present in fuel and are emitted to the air when fuel evaporates or passes through the engine unburned. Other toxics are emitted from the incomplete combustion of fuels or as secondary combustion products. Metal air toxics also result from engine wear or impurities in oil or gasoline. EPA identified seven compounds from mobile sources with significant contributions to the national and regional-scale cancer risk drivers in their 1999 National Air Toxics Assessment (EPA 2010).These are acrolein, benzene, 1,3-butadiene, diesel particulate matter (DPM), diesel exhaust and organic gases, specifically formaldehyde, naphthalene, and polycyclic organic matter (POM).

This section includes a basic quantitative analysis of the likely MSAT emission impacts of the proposed project. Available technical tools do not enable prediction of the project-specific health impacts of the emission changes associated with the No Build and Build Alternatives. Evaluating the environmental and health impacts from MSATs on a proposed highway project would involve several key elements, including emissions modeling, dispersion modeling (in order to estimate ambient concentrations resulting from the estimated emissions), exposure modeling (in order to estimate human exposure to the estimated concentrations), and final determination of health impacts based on the estimated exposure. Each of these steps is encumbered by technical shortcomings or uncertain science that prevents a more complete determination of the MSAT health impacts of the proposed project.

US 101 in the Mountain View segment of the project limits already has traffic volumes exceeding 150,000 Annual Average Daily Traffic (AADT), and SR 85 is projected to have volumes exceeding 150,000 by 2035. The project proposes to convert the existing HOV lanes on US 101 to express lanes and add a second express lane in each direction. Therefore, a quantitative MSAT analysis was performed using the Department's program CT-EMFAC5. The purpose of the quantitative analysis was to identify and compare the potential differences among the priority MSAT emissions from the project alternatives. CT-EMFAC5 is a California-specific analysis tool for modeling MSAT emissions using the latest version of the California Mobile Source Emission and Inventory model, EMFAC2011. The CT-EMFAC5 model forecasts emissions for all of the priority MSATs.

To perform the CT-EMFAC5 modeling, composite emission factors for the project were obtained for Santa Clara County, using 2009 as the analysis year for existing conditions, 2015 for opening year and 2035 for design year. Traffic data for existing conditions (2009), opening year (2015), and the design year (2035) were obtained from CDMSmith. Based on these input parameters, CT-EMFAC5 was used to estimate DPM, benzene, acrolein, acetaldehyde, formaldehyde, 1,3-butadiene, naphthalene, and polycyclic organic matter (POM) emissions.

For the Build and No Build Alternatives considered in the IS/EA, the CT-EMFAC5 modeling indicated the amount of MSATs emitted would be proportional to the vehicle miles traveled, or VMT, if other variables such as fleet mix remain the same. The estimated VMT in the local area for the Build Alternative would be slightly higher because it includes an additional, or second, express lane for the majority of the corridor. Results of the analysis are listed in Table 2.2.6-4 below.

For the Build Alternative in the opening year (2015), emissions would increase compared to the No Build Alternative by 3 percent for DPM and 1 percent for benzene, and would decrease for the other MSATs (formaldehyde, butadiene, acrolein, acetaldehyde, naphthalene, and POM). In 2035, the MSAT emissions for DPM, butadiene, benzene, acrolein, and POM would increase for the Build Alternative compared to the No Build Alternative by 3 to 13 percent. However, the MSAT emissions for the other pollutants (formaldehyde, acetaldehyde, and naphthalene) would decrease for the Build Alternative compared to the No Build Alternative by 1 to 11 percent.

Table 2.2.6-4: MSAT Emissions for Existing Conditions and 2015/2035 No Build and Build Alternatives

	DPM	Formaldehdye	Butadiene	Benzene	Acrolein	Acetaldehyde	Naphthalene	POM
2009 Existing	1.01E-01	4.36E-02	7.11E-03	5.08E-02	1.58E-03	1.66E-02	3.04E-03	7.38E-04
2015 No Build	6.06E-02	2.64E-02	4.02E-03	2.24E-02	8.94E-04	9.18E-03	1.80E-03	3.46E-04
2015 Build	4.41E-02	1.90E-02	2.91E-03	1.63E-02	6.46E-04	8.34E-03	1.76E-03	3.41E-04
2015 % difference between Build and No Build	3%	-8%	-2%	1%	-2%	-9%	-2%	-2%
2035 No Build	2.81E-02	2.39E-02	2.23E-03	1.93E-02	4.71E-04	1.03E-02	2.28E-03	**3.93E-04**
2035 Build	3.18E-02	2.19E-02	2.30E-03	2.01E-02	4.95E-04	9.18E-03	2.26E-03	4.01E-04
2035 % difference between Build and No Build	13%	-9%	3%	4%	5%	-11%	-1%	2%

DPM = diesel particulate matter; POM = polycyclic organic matter

The emissions for both the Build Alternative and No Build Alternative in 2035 are much smaller than for existing conditions, even with the increase in VMT. U.S. EPA's national control programs are projected to reduce MSAT emissions by 72 percent by 2020. Compared to existing conditions, MSAT emissions with the Build Alternative would be 42 to 61 percent lower in 2015, and 26 to 69 percent lower in 2035. Therefore, the project is not expected to affect sensitive receptors near the US 101 corridor. The magnitude of the U.S. EPA-projected reductions is so great (even after accounting for VMT growth) that MSAT emissions in the study area are likely to be lower in the future in nearly all cases. As such, the risk of health impacts would be reduced substantially by year 2035 as compared to existing conditions. The results of the evaluation show that some MSAT emissions (DPM, butadiene, benzene, acrolein, and POM) would be higher for the Build in comparison to the No Build Alternative in future years associated with the change in traffic volumes, but both alternatives would have substantially lower MSAT emissions than existing conditions and would not have an overall adverse impact.

Naturally Occurring Asbestos and Structural Asbestos

Soils adjacent to US 101 and SR 85 within the project limits may contain naturally occurring asbestos (California Department of Conservation 2000). No project activities would disturb structures that potentially contain asbestos.

Construction Impacts

The construction period for this project is estimated at approximately four years. No significant earthmoving or cut and fill operations are anticipated with this project. Because construction activities would not last for more than five years at one general location, construction-related emissions do not need to be included in regional and project-level conformity analysis (40 CFR 93.123(c)(5)).

Construction is a source of dust emissions that can have temporary impacts on local air quality (i.e., exceedances of the state air quality standards for PM_{10} and $PM_{2.5}$). Construction emissions would result from heavy equipment use, off-road equipment, and vehicle traffic. Concentrations of the pollutants emitted would vary at any given location depending on the rate of emissions, proximity of the equipment to a location, and the prevailing weather conditions.

Combustion emissions from construction equipment may also create a temporary impact on local air quality. Such equipment is typically diesel-fueled and can contribute NO_x, ROG, PM_{10}, and CO emissions during the construction period.

Although construction activities are considered to be typically short-term or temporary in duration, BAAQMD requires projects to quantify their construction emissions and compare the total daily average emissions to significance thresholds. The proposed project would involve standard construction techniques and require large-scale construction equipment and labor-intensive activities. The project is anticipated to involve four stages of construction, which are summarized below:

- Stage one would include inside widening of US 101 in the median area, which involves shifting traffic to the outside, restriping the existing freeway for the traffic shift, and placing K-rail in preparation of the work. Median widening includes construction of retaining walls and median barriers; inside widening of undercrossing structures; drainage; grading; and all infrastructure work (toll structures, overhead signs, etc.).

- Stage two would include outside widening of US 101, which involves shifting traffic to the inside, restriping the existing freeway for the traffic shift, and placing K-rail in preparation of the outside widening work. Outside widening includes construction of retaining walls and median barriers; abutment modifications; outside widening of undercrossing structures; drainage; and grading.
- Stage three would include ramp widening which involves shifting traffic, restriping the ramps, and placing K-rail in preparation of the ramp work. Ramp widening would include construction of retaining walls and median barriers; drainage; and grading.
- Stage four would include the overlay (as needed) and the final striping for the express lane facility.

If daily average emissions of construction-related criteria air pollutants or precursors would not exceed any of the construction significance thresholds, the project would result in a less-than-significant impact to air quality. If daily average emissions of construction-related criteria air pollutants or precursors would exceed any applicable significance thresholds, the proposed project would result in a significant impact to air quality and would require mitigation measures for emission reductions (BAAQMD 2011). Standard construction air quality control measures are described in Section 2.2.6.4.

The expected emissions resulting from project construction were analyzed using the Sacramento Metropolitan Air Quality Management District's Roadway Construction Emissions Model (Version 7.1.2) with conservative assumptions regarding the duration and scope of construction.[13] The Roadway Construction Emissions Model Version 7.1.2 uses equipment data and emission factors from OFFROAD2011 and EMFAC2011. As shown in Table 2.2.6-5, the project's construction-related emissions (without any mitigation measures) would be above the BAAQMD CEQA thresholds of significance for construction-related activities for one pollutant, NO_x. All other pollutants either do not have a BAAQMD threshold or the predicted emissions do not exceed the threshold.

[13] The Sacramento Metropolitan Air Quality Management District's Roadway Construction Emissions Model is the standard model used to estimate construction emissions for San Francisco Bay Area roadway projects in the state right-of-way.

Table 2.2.6-5: Unmitigated Construction-Related Emission Estimates for the Build Alternative

	ROG	NOx	CO	PM_{10} Dust	PM_{10} Exhaust	$PM_{2.5}$ Dust	$PM_{2.5}$ Exhaust	CO_2
Construction (tons/day)	0.011	0.1265	0.057	0.1415	0.006	0.0295	0.005	14.381
BAAQMD CEQA Threshold (tons/day)	0.027	0.027	NA	BMP	0.041	BMP	0.027	NA

Notes: The BAAQMD Adopted Air Quality CEQA Thresholds of Significance (May 2011) do not establish numerical thresholds for certain types of emissions; rather, they call for implementing Best Management Practices (BMPs) as control measures. Control measures are presented in Section 4.
On March 5, 2012 the Alameda County Superior Court issued a judgment finding that the BAAQMD had failed to comply with CEQA when it adopted the thresholds. The court issued a writ of mandate ordering the BAAQMD to set aside the thresholds and cease dissemination of them until the BAAQMD had complied with CEQA. The BAAQMD appealed the Alameda County Superior Court's decision, and the judgment was reversed on August 13, 2013. The court held that BAAQMD's adoption of the 2010 thresholds was not subject to prior environmental review under CEQA. BAAQMD has not released updated guidance since this ruling, so the current BAAQMD recommendation of determining appropriate air quality thresholds of significance based on substantial evidence will be followed. For the purposes of this project, the 2011 CEQA thresholds will be used for the analysis, since the scientific evidence behind the thresholds is still valid.
NA: Not available.

Since the daily average emissions of construction-related criteria air pollutants or precursors would exceed the applicable threshold of significance listed above, the project would implement the mitigation measures listed in Section 2.2.6.4.

These mitigation measures would reduce the daily construction emissions to below the applicable thresholds of significance, as shown in Table 2.2.6-6. Since the mitigated daily average emissions would be below the thresholds, the project would not contribute to significant cumulative impacts.

Table 2.2.6-6: Mitigated Construction-Related Emission Estimates for the Build Alternative

	ROG	NOx	CO	PM_{10} Dust	PM_{10} Exhaust	$PM_{2.5}$ Dust	$PM_{2.5}$ Exhaust	CO_2
Construction (lbs/day)	7	53	46	85	3	3	18	9,206
BAAQMD CEQA Threshold (lbs/day)	54	54	NA	BMP	82	BMP	54	NA

NA: Not available.

Climate Change

Climate change is analyzed at the end of this chapter. Neither the U.S. EPA nor FHWA has issued explicit guidance or methods to conduct project-level greenhouse gas analysis. As stated on FHWA's climate change website (http://www.fhwa.dot.gov/hep/climate/index.htm), climate change considerations should be integrated throughout the transportation decision-making process—from planning through project development and delivery. Addressing climate change mitigation and adaptation up front in the planning process will aid decision-making and improve efficiency at the program level, and will inform the analysis and stewardship needs of project-level decision-making. Climate change considerations can easily be integrated into many planning factors, such as supporting economic vitality and global efficiency, increasing safety and mobility, enhancing the environment, promoting energy conservation, and improving the quality of life.

Because there have been more requirements set forth in California legislation and Executive Orders on climate change, the issue is addressed in a separate CEQA discussion at the end of this chapter and may be used to inform the NEPA decision. The four strategies set forth by FHWA to lessen climate change impacts do correlate with efforts that the state has undertaken and is undertaking to deal with transportation and climate change; the strategies include improved transportation system efficiency, cleaner fuels, cleaner vehicles, and reduction in the growth of vehicle hours traveled.

2.2.6.4 Avoidance, Minimization, and/or Mitigation Measures

The Department's Special Provisions and Standard Specifications will include the requirement to minimize or eliminate dust through the application of water or dust palliatives. Control measures will be implemented as specified in Standard Specifications, Section 14-9.01 "Air Pollution Control" and Section 14-9.02 "Dust Control." Temporary construction-related impacts to air quality will be avoided or minimized through implementation of the following measures:

- Cover all trucks hauling soil, sand, and other loose materials or require all trucks to maintain at least 2 feet of freeboard (siding that extends above the load).
- Pave, apply water daily, or apply (nontoxic) soil stabilizers on all unpaved access roads, parking areas and staging areas at construction sites.
- Sweep daily (with water sweepers) all paved access roads, parking areas, and staging areas at construction sites.
- Hydroseed or apply (nontoxic) soil stabilizers to inactive construction areas (previously graded areas inactive for 10 days or more).
- Enclose, cover, water twice daily or apply (nontoxic) soil binders to exposed stockpiles (dirt, sand, etc.)
- Install sandbags or other erosion control measures at active construction areas to prevent silt runoff to public roadways.
- Replant vegetation in disturbed areas as quickly as possible.

In addition, pollutant emissions in construction equipment exhaust can be mitigated by the following:

- Keeping engines properly tuned;
- Limiting idling;
- Avoiding unnecessary concurrent use of equipment;
- Using solar and battery powered signal boards;
- Limiting the construction activities to no more than 30 percent of total activities at any given time; and

- Using post-combustion control technology (such as diesel oxidation catalysts) that will reduce NO_x emissions by at least 15 percent.

2.2.7 Noise

The following summarizes the *Noise Study Report* (Illingworth and Rodkin 2013) and the *Noise Abatement Decision Report* (URS 2013e) for the project, which were approved in May 2013 and July 2013, respectively.

2.2.7.1 Regulatory Setting

The National Environmental Policy Act (NEPA) of 1969 and the California Environmental Quality Act (CEQA) provide the broad basis for analyzing and abating highway traffic noise effects. The intent of these laws is to promote the general welfare and to foster a healthy environment. The requirements for noise analysis and consideration of noise abatement and/or mitigation, however, differ between NEPA and CEQA.

California Environmental Quality Act

CEQA requires a strictly baseline versus build analysis to assess whether a proposed project will have a noise impact. If a proposed project is determined to have a significant noise impact under CEQA, then CEQA dictates that mitigation measures must be incorporated into the project unless those measures are not feasible. The CEQA noise analysis is included at the end of this section.

Table 2.2.7-1: Noise Abatement Criteria

Activity Category	NAC, Hourly A-Weighted Noise Level, $L_{eq}(h)$ [2]	Description of Activity Category
A	57 (Exterior)	Lands on which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose.
B[1]	67 (Exterior)	Residential.
C[1]	67 (Exterior)	Active sport areas, amphitheaters, auditoriums, campgrounds, cemeteries, day care centers, hospitals, libraries, medical facilities, parks, picnic areas, places of worship, playgrounds, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, recreation areas, Section 4(f) sites, schools, television studios, trails, and trail crossings.
D	52 (Interior)	Auditoriums, day care centers, hospitals, libraries, medical facilities, places of worship, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, schools, and television studios.
E	72 (Exterior)	Hotels, motels, offices, restaurants/bars, and other developed lands, properties, or activities not included in A–D or F.
F	No NAC—reporting only	Agriculture, airports, bus yards, emergency services, industrial, logging, maintenance facilities, manufacturing, mining, rail yards, retail facilities, shipyards, utilities (water resources, water treatment, electrical, etc.), and warehousing.
G	No NAC—reporting only	Undeveloped lands that are not permitted.

Source: Caltrans 2011c
[1] Includes undeveloped lands permitted for this activity category.
[2] The $L_{eq[h]}$ activity criteria values are for impact determination only and are not design standards for noise abatement measures. All values are A-weighted decibels (dBA).

National Environmental Policy Act and 23 CFR 772

For highway transportation projects with FHWA (and the Department, as assigned) involvement, the Federal-Aid Highway Act of 1970 and the associated implementing regulations (23 CFR 772) govern the analysis and abatement of traffic noise impacts. The regulations require that potential noise impacts in areas of frequent human use be identified during the planning and design of a highway project. The regulations include noise abatement criteria (NAC) that are used to determine when a noise impact would occur. The NAC differ depending on the type of land use under analysis. For example, the NAC for residences (67 A-Weighted decibels [dBA]) is lower than the NAC for commercial areas (72 dBA). Table 2.2.7-1 lists the noise abatement criteria for use in the NEPA 23 CFR 772 analysis.

Figure 2.2.7-1 lists the noise levels of common activities to enable readers to compare the actual and predicted highway noise levels discussed in this section with common activities.

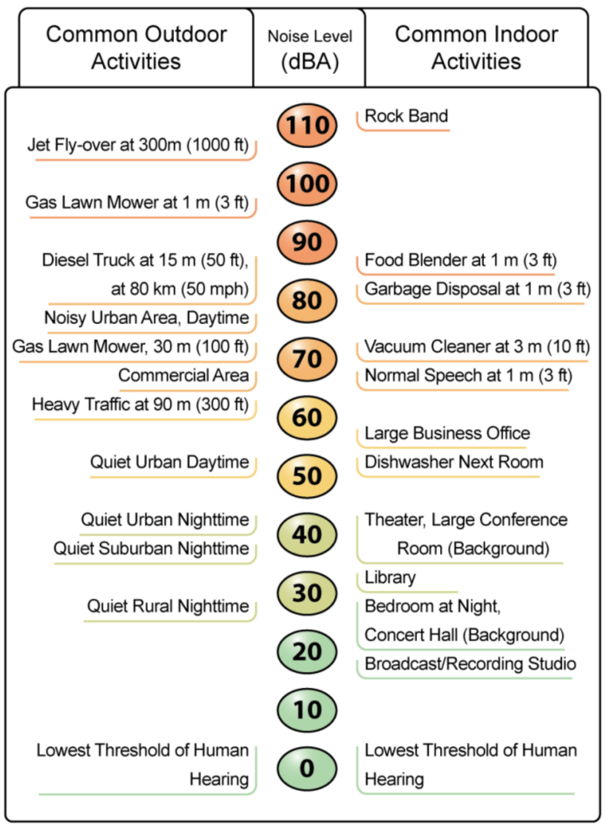

Figure 2.2.7-1: Noise Levels of Common Activities

According to the Department's *Traffic Noise Analysis Protocol for New Highway Construction and Reconstruction Projects, May 2011* (Protocol; Caltrans 2011c), a noise impact occurs when the predicted future noise level with the project substantially exceeds the existing noise level (defined as a 12 dBA or more increase) or when the future noise level with the project approaches or exceeds the NAC. Approaching the NAC is defined as coming within 1 dBA of the NAC.

If it is determined that the project will have noise impacts, then potential abatement measures must be considered. Noise abatement measures that are determined to be reasonable and feasible at the time of final design are incorporated into the project plans and specifications. This document discusses noise abatement measures that would likely be incorporated in the project.

The Department's Protocol sets forth the criteria for determining when an abatement measure is reasonable and feasible. Feasibility of noise abatement is basically an engineering concern. A minimum 7 dBA reduction in the future noise level must be achieved for an abatement measure to be considered feasible. Other considerations include topography, access requirements, other noise sources and safety considerations. The reasonableness determination is basically a cost-benefit analysis. Factors used in determining whether a proposed noise abatement measure is reasonable include: residents' acceptance and the cost per benefited residence.

2.2.7.2 Affected Environment

The existing noise environment throughout the project corridor varies by location depending on site characteristics such as proximity to US 101 and intersecting highways (SR 85, SR 87, SR 237, I-880, and I-280/680), the relative elevation of US 101 with respect to sensitive land uses,[14] and any intervening structures or barriers. Single-family and multi-family residences (Category B land uses), active recreational areas (Category C land uses), schools (Category D land uses), churches (Category D land uses), and hotels/motels (Category E land uses) are located along the project corridor. These land uses vary in their sensitivity to highway noise and are ranked by the "activity category" listed in Table 2.2.7-1. Noise abatement criteria for these land uses are listed in Table 2.2.7-1 by activity category.

Existing Noise Barriers

The study area has existing noise barriers in the form of sound walls along parts of US 101 and along SR 85 in the project area. To better characterize the noise environment and existing barriers along the 37.65-mile project corridor, the study area was divided into 16 segments. The segments, existing barriers, and land uses by activity category are summarized in Table 2.2.7-2 and shown in Appendix F.

[14] Land uses where people could be affected by highway noise are referred to as noise-sensitive land uses. Specific locations where people could be affected by highway noise are referred to sensitive receptors.

Table 2.2.7-2: Noise Study Area Summary by Segment

Segment	Segment Description	Existing Barrier Heights (feet)	Land Uses by Activity Category
1	US 101 – Oregon Expressway to SR 85 (Palo Alto and Mountain View)	10–16	B, C and D
2	US 101 – SR 85 (North) to SR 237 (Mountain View and Sunnyvale)	8–15	B, C and E
3	US 101 – SR 237 to Lawrence Expressway (Sunnyvale)	7–15	B and E
4	US 101 – Lawrence Expressway to San Tomas/Montague Expressway (Sunnyvale and Santa Clara)	12	B, C and E
5	US 101 – San Tomas/Montague Expressway to SR 87 (Santa Clara and San Jose)	None	C and E
6	US 101 – SR 87 to I-880 (San Jose)	None	E
7	US 101 – I-880 to East Taylor Street (San Jose)	7–12	B
8	US 101 – East Taylor Street to I-280 (San Jose)	10–14	B and C
9	US 101 – I-280 to Tully Road (San Jose)	12–13	B and C
10	US 101 – Tully Road to East Capitol Expressway (San Jose)	7–14	B, C and E
11	US 101 – East Capitol Expressway to Hellyer Avenue (San Jose)	10–16	B and C
12	US 101 – Hellyer Avenue to Blossom Hill Road (San Jose)	7–15	B and C
13	US 101 – Blossom Hill Road to SR 85 (San Jose)	7–12	B
14	US 101 – SR 85 (South) to Bailey Avenue (San Jose)	12	B, C and E
15	US 101 – Bailey Avenue to Cochrane Road (San Jose and Morgan Hill)	10	B and C
16	US 101 – Cochrane Road to Tennant Avenue (Morgan Hill)	7–9	B and E

Notes:
Existing barrier locations are shown in Appendix F.
Activity category descriptions are provided in Table 2.2.7-1.

Noise Study

In February, March, and April 2012, noise measurements were conducted to document the noise environment at sensitive land uses along the project corridor. Measurements were also conducted along US 101 in April 2008 for the US 101 Auxiliary Lanes Project (EA 4A330K; Illingworth and Rodkin 2008) and updated and validated for the US 101 Express Lanes Project in early December 2011. The measurement locations for each study were chosen to accurately represent areas of Category B land uses that would potentially benefit from lower future noise levels. The sites were also selected to minimize interference (barking dogs, pool pumps, or air conditioning units) from noise sources other than freeway traffic. Table 2.2.7-3 lists all noise measurement locations for the proposed project.

Table 2.2.7-3: Noise Study Measurement Locations

Receptor ID	Segment	Location	Activity Category (NAC)
Long -Term Noise Measurement Locations			
LT-1	2	In front of 159 Fairchild Avenue (Fairchild Apartments), Mountain View.	Long-term measurements are used for model calibration of short-term measurements, therefore, no noise abatement criteria are applied
LT-2	3	Adjacent to 836 Ahwanee Avenue (Sun Ridge Apartments), Mountain View.	
LT-3	3	Rear yard of 856 San Ramon Avenue, Sunnyvale.	
LT-4	4	San Tomas Aquino Creek Trail, Santa Clara.	
LT-5	5	Pool area of La Quinta Inn, San Jose.	
LT-6	8	Rear yard equivalent of 75 North 31st Street, San Jose.	
LT-7	8	Cul-de-sac of Sunny Court, San Jose.	
LT-8	9	Rear yard at 1442 Dornoch Avenue, San Jose.	
LT-9	11	Rear yard of 1337 Isengard Court, San Jose.	
LT-10	12	Rear yard of 4885 Snow Drive, San Jose.	
LT-11	13	Rear yard of 139 Mosswell Court, San Jose.	
LT-12	13	Rear yard of 148 Flintwell Court, San Jose.	
LT-13	14	Rear yard of 251 Crestridge Court, San Jose.	
LT-14	15	Coyote Creek Golf Course, San Jose.	
Short -Term Noise Measurement Locations			
ST-1	2	Pool area of Ramada Inn, Mountain View.	E(72)
ST-2	2	In front of 235 Fairchild Drive, Mountain View.	B(67)
ST-3	2	Offices at 323 Fairchild Drive, Mountain View.	Calibration Point
ST-4	2	Corner of Clyde Avenue and Fairchild Drive, Mountain View.	Calibration Point
ST-5	3	Courtyard of Staybridge Suites, Sunnyvale.	E(72)
ST-6	3	Pool area of Quality Inn & Suites, Sunnyvale.	E(72)
ST-7	3	Pool area of Ahwanee Apartment Complex, Sunnyvale.	B(67)
ST-8	3	Pool area of Weddell Apartments, Sunnyvale.	B(67)
ST-9	3	Pool area of Florina Apartments, Sunnyvale.	B(76)
ST-10	3	Common area of Eden Roc Apartments, Sunnyvale.	B(67)
ST-11	3	5800 Ahwanee Avenue, Sunnyvale.	B(76)
ST-12	3	Fair Oaks Mobile Lodge, Sunnyvale.	B(67)
ST-13	3	Parking lot of Americas Best Value Inn, Sunnyvale.	E(72)
ST-14	3	Pool area of Sunridge Apartments, Sunnyvale.	B(67)
ST-15	3	Rear yard of 648 Lakewood Drive, Sunnyvale.	Calibration Point
ST-16	3	In front of 662 North Ahwanee Terrace, Sunnyvale.	B(67)
ST-17	3	Common area of 662 North Ahwanee Terrace, Sunnyvale.	B(67)
ST-18	3	In front of 624 South Ahwanee Terrace, Sunnyvale.	B(67)
ST-19	3	In front of 798 East Ahwanee Avenue, Sunnyvale.	B(67)
ST-20	3	Adjacent to 880 San Mateo Court, Sunnyvale.	B(67)
ST-21	3	Behind 835 San Pier Court, Sunnyvale.	B(67)
ST-22	3	In front of 831 San Saba Court, Sunnyvale.	B(67)

Table 2.2.7-3: Noise Study Measurement Locations

Receptor ID	Segment	Location	Activity Category (NAC)
ST-23	3	In front of 1033 Amador Avenue, Sunnyvale.	B(67)
ST-24	3	Rear yard of 672 Lakewood Drive, Sunnyvale.	B(67)
ST-25	3	Rear yard of 742 Lakewood Drive, Sunnyvale.	B(67)
ST-26	3	Rear yard of 794 Lakewood Drive, Sunnyvale.	B(67)
ST-27	3	Rear yard of 848 Lakewood Drive, Sunnyvale.	B(67)
ST-28	3	Rear yard of 216 Velvetlake Drive, Sunnyvale.	B(67)
ST-29	4	Common area of Avalon Silicon Valley Apartments, Sunnyvale.	B(67)
ST-30	4	East common area of Avalon Silicon Valley Apartments, Sunnyvale.	B(67)
ST-31	4	Common area of 1235 Wildwood Avenue, Sunnyvale.	B(67)
ST-32	4	Rear yard equivalent of 397 Socorro Avenue, Sunnyvale.	B(67)
ST-33	4	Pool area of Residence Inn Marriot, Sunnyvale	E(72)
ST-34	4	Courtyard of Plaza Suites, Santa Clara.	E(72)
ST-35	4	Pool area of Ramada Inn, Sunnyvale.	E(72)
ST-36	4	Adjacent to San Tomas Aquino Creek Trail, Santa Clara.	C(67)
ST-37	5	Pool area of Biltmore Hotel, Santa Clara.	E(72)
ST-38	5	Guadalupe River Trail, San Jose.	C(67)
ST-39	6	Common area of office buildings on Gateway Place, San Jose.	E(72)
ST-40	6	Pool area of Fairfield Inn and Suites, San Jose.	E(72)
ST-41	6	Pool area of San Jose Airport Garden Hotel, San Jose.	E(72)
ST-42	7	Common area of 723 Pavilion Loop, San Jose.	B(67)
ST-43	7	Luna Park on Berryessa Road, San Jose.	B(67)
ST-44	7	Common area of apartments on Luna Park Drive, San Jose.	B(67)
ST-45	7	In front of 895 North Bayshore Road West, San Jose.	B(67)
ST-46	7	Common area of 855 North Bayshore Road West, San Jose.	B(67)
ST-47	7	Front yard of residences at North Bayshore Road West and East Mission, San Jose.	B(67)
ST-48	7	Rear yard equivalent of 988 North 17th Street, San Jose.	B(67)
ST-49	7	Pool area of Palm Court Apartments, San Jose.	B(67)
ST-50	8	Watson Park, San Jose.	C(67)
ST-51	8	Townhomes along Destino Circle, San Jose.	B(67)
ST-52	8	Adjacent to Hacienda Creek Senior Apartments, San Jose.	B(67)
ST-53	8	In front of 321 East Court, San Jose.	B(67)
ST-54	8	Rear yard equivalent of 1494 View Drive, San Jose.	B(67)
ST-55	8	Parking lot of Five Wounds School, San Jose.	C(67)
ST-56	8	Rear yard equivalent of 1459 East San Fernando Street, San Jose.	B(67)
ST-57	8	Rear yard equivalent of 1457 Whitton Avenue, San Jose.	B(67)
ST-58	8	Rear yard equivalent of 1503 Shortridge Avenue, San Jose.	B(67)
ST-59	8	Rear yard equivalent of 1490 South 31st Street, San Jose.	B(67)
ST-60	8	Common area between 229 and 225 Rayos Del Sol Drive, San Jose.	B(67)

Table 2.2.7-3: Noise Study Measurement Locations

Receptor ID	Segment	Location	Activity Category (NAC)
ST-61	8	In front of 1463 Sunny Court, San Jose.	B(67)
ST-62	8	Rear yard of 237 South 31st Street, San Jose.	B(67)
ST-63	8	Common area of Fairway Apartments, San Jose.	B(67)
ST-64	8	In front of 155 Virginia Place, San Jose.	B(67)
ST-65	8	Common area of Bonita Place Townhomes, San Jose.	B(67)
ST-66	9	Between 1388 and 1389 Sunbeam Circle, San Jose.	B(67)
ST-67	9	Side yard of 1369 Sunbeam Circle, San Jose.	B(67)
ST-68	9	Rear yard equivalent of 1121 Terilyn Avenue, San Jose.	B(67)
ST-69	9	Rear yard equivalent of 1505 Scotty Street, San Jose.	B(67)
ST-70	9	In front of 1334 Crucero Drive, San Jose.	B(67)
ST-71	9	Common area of apartments at 1390 Crucero Drive, San Jose.	B(67)
ST-72	9	Apartments at the end of Dubert Lane, San Jose.	B(67)
ST-73	9	Front yard of 1634 Midfield Avenue, San Jose.	B(67)
ST-74	9	In front of 1820 Midfield Avenue, San Jose.	B(67)
ST-75	9	Rear yard of 1441 Taper Court, San Jose.	B(67)
ST-76	9	In front of 1442 Joe Dimaggio Court, San Jose.	B(67)
ST-77	9	Common area of 1886 Midfield Avenue, San Jose.	B(67)
ST-78	9	Rear yard of 1382 Sunnycrest Circle, San Jose.	B(67)
ST-79	9	Common area of Valley Palms Apartments at 2155 Lanai Avenue, San Jose.	B(67)
ST-80	9	Rear yard of 1526 Denali Way, San Jose.	B(67)
ST-81	9	Nisich Park, San Jose.	C(67)
ST-82	10	Common area of 1430 Zachary Way, San Jose.	E(72)
ST-83	10	Pool area of Motel 6 at 2560 Fontaine Road, San Jose.	E(72)
ST-84	10	Rear yard of 1320 Mayhew Court, San Jose.	B(67)
ST-85	10	Common area equivalent of Casa Real Apartments, San Jose.	B(67)
ST-86	10	Rear yard equivalent of 1473 Freni Court, San Jose.	B(67)
ST-87	10	Rear yard of 1318 Pellier Court, San Jose.	B(67)
ST-88	10	Rear yard of 1326 Kane Court, San Jose.	B(67)
ST-89	10	Park on Plumas Drive, San Jose.	C(67)
ST-90	10	Rear yard of 1390 Delano Court, San Jose.	B(67)
ST-91	10	Rear yard equivalent of 1540 Aldrich Way, San Jose.	B(67)
ST-92	10	Rear yard equivalent of 1546 Barberry Court, San Jose.	B(67)
ST-93	10	Rear yard equivalent of 1503 Aborn Road, San Jose.	B(67)
ST-94	10	Rear yard of 3070 Brandywine Drive, San Jose.	B(67)
ST-95	11	Rear yard of 1331 Erinwood Court, San Jose.	B(67)
ST-96	11	Rear yard equivalent of mobile homes along Rio De Plata, San Jose.	B(67)
ST-97	11	Rear yard of 1365 Cotterell Drive, San Jose.	B(67)
ST-98	11	Rear yard of 3787 Polton Place Way, San Jose.	B(67)

Table 2.2.7-3: Noise Study Measurement Locations

Receptor ID	Segment	Location	Activity Category (NAC)
ST-99	11	Rear yard of 1393 Crailford Court, San Jose.	B(67)
ST-100	11	Ramblewood Elementary School, San Jose.	C(67)
ST-101	11	Rear yard of 3615 Bridal Place Court, San Jose.	B(67)
ST-102	11	Rear yard equivalent of 3689 Ivy Canyon Court, San Jose.	B(67)
ST-103	11	Rear yard of 1260 Wentworth Way, San Jose.	B(67)
ST-104	11	Equivalent to rear yard equivalent of 4062 McLaughlin Avenue, San Jose.	B(67)
ST-105	11	Adjacent to 3812 Dove Hill Road, San Jose.	B(67)
ST-106	11	Adjacent to 3700 Dove Road, San Jose.	B(67)
ST-107	12	Picnic area of Hellyer County Park, San Jose.	C(67)
ST-108	12	Side yard equivalent of 4823 Nicole Court, San Jose.	B(67)
ST-109	12	Rear yard of 4830 Snow Drive, San Jose.	B(67)
ST-110	12	Front of 4898 Snow Drive, San Jose.	B(67)
ST-111	12	Rear yard of 4947 Fontanelle Place, San Jose.	B(67)
ST-112	12	Rear yard of 318 Fontanelle Place, San Jose.	B(67)
ST-113	12	Rear yard of 5034 Snow Drive, San Jose.	B(67)
ST-114	12	Rear yard of 5150 Snow Drive, San Jose.	B(67)
ST-115	12	Backyard of 406 Fontanelle Drive, San Jose.	B(67)
ST-116	12	Rear yard of 5157 Pebbletree Court, San Jose.	B(67)
ST-117	12	Rear yard of 429 Lionwood Place, San Jose.	B(67)
ST-118	12	Rear yard of 5273 Pebbletree Way, San Jose.	B(67)
ST-119	12	Rear yard of residence on Great Oaks Drive, San Jose.	B(67)
ST-120	12	Rear yard of 428 Century Oaks Way, San Jose.	B(67)
ST-121	12	Rear yard of 5360 Great Oaks Drive, San Jose.	B(67)
ST-122	12	Adjacent to 54a Calle Pintada, San Jose.	B(67)
ST-123	12	Rear yard of 445 Century Cross Court, San Jose.	B(67)
ST-124	12	Cul-de-sac of Calle Gaviota, San Jose.	B(67)
ST-125	13	Rear yard of 5428 Demerest Lane, San Jose.	B(67)
ST-126	13	Rear yard of 5476 Demerest Lane, San Jose.	B(67)
ST-127	13	Rear yard of 133 Casswell Court, San Jose.	B(67)
ST-128	13	Rear yard of 127 Dunwell Court, San Jose.	B(67)
ST-129	13	Rear yard of 164 Southsun Court, San Jose.	B(67)
ST-130	13	Rear yard of 121 Meadwell Court, San Jose.	B(67)
ST-131	13	Rear yard equivalent of 109 Tennant Avenue, San Jose.	B(67)
ST-132	14	Rear yard of 404 Birkhaven Place, San Jose.	B(67)
ST-133	14	Pool area of 449 Danna Court, San Jose.	B(67)
ST-134	14	Coyote Creek Trail near Parkway Lakes, San Jose.	C(67)
ST-135	14	Rear yard of 7032 Basking Ridge Avenue, San Jose.	B(67)
ST-136	14	Rear yard of 7406 Basking Ridge Avenue, San Jose.	B(67)
ST-137	14	Parkway Fishing Lakes, San Jose.	C(67)

Table 2.2.7-3: Noise Study Measurement Locations

Receptor ID	Segment	Location	Activity Category (NAC)
ST-138	14	Parkway Fishing Lakes, San Jose.	C(67)
ST-139	14	Setback of residence along Malech Road, San Jose.	Calibration Point
ST-140	15	Coyote Creek Trail, south of Bailey Avenue on-ramp, San Jose.	C(67)
ST-141	14	Coyote Creek Trail west of US 101, San Jose.	B(67)
ST-142	15	Patio area of Coyote Creek Golf Course, San Jose.	C(67)
ST-143	15	Rear yard equivalent of 19490 Vista De Lomas, Morgan Hill.	Calibration Point
ST-144	15	Rear yard equivalent of 825 Burnett Avenue, Morgan Hill.	B(67)
ST-145	15	Front of 740 Peebles Avenue, Morgan Hill.	B(67)
ST-146	16	Rear yard of 17900 Laurel Road, Morgan Hill.	B(67)
ST-147	16	Rear yard equivalent of 1790 Condit Road, Morgan Hill.	B(67)
ST-148	16	Rear yard of 17406 Walnut Grove Drive, Morgan Hill.	B(67)
ST-149	16	Adjacent to 1115 Diana Avenue, Morgan Hill.	B(67)
ST-150	16	Rear yard of 17382 Walnut Grove Drive, Morgan Hill.	B(67)
ST-151	16	Front of 17355 Walnut Grove Drive, Morgan Hill.	B(67)
ST-152	16	Pool area of Executive Inn Suites, Morgan Hill.	E(72)
ST-153	16	Rear yard of 16370 Saint John Court, Morgan Hill.	B(67)

Noise measurement sites are depicted in Appendix F. Existing noise levels at each measurement location are listed by segment in Section 2.2.7.3.

Following established methods for a traffic noise study, the short-term and long-term measurements, together with the measured traffic conditions, vehicle mix, and site-specific geographical information were used to determine future noise levels in the project area. Calculated and measured noise levels were compared to assess any differences, to calibrate or validate the FHWA's Traffic Noise Model (TNM) for use in determining noise levels with and without the project, and to consider any applicable noise abatement measures.

Section 2.2.7.3 discusses the receptor locations where existing and/or future noise levels were estimated to approach or exceed the NAC.

2.2.7.3 Environmental Consequences

The proposed project would construct two express lanes on US 101. As the proposed project would essentially add a through lane on US 101 between SR 85 in Mountain View and SR 85 in southern San Jose, it would qualify as a Type I project as defined in 23 CFR 772.7. Noise abatement must be considered for Type I projects if the project is predicted to result in a traffic noise impact. This section describes the results of the noise impact assessment.

A noise impact assessment was performed for the peak noise period, which is not necessarily the hour with peak traffic volumes. Congestion results in slower speeds, which substantially reduces traffic noise levels. The loudest hour is typically an hour where traffic flows freely at or near-capacity conditions. The loudest hour varies throughout the project corridor based on location, proximity to other freeways, relative elevation of roadways and receptor locations, and intervening structures or barriers.

Traffic Noise Modeling

Traffic volume inputs for the traffic noise model were taken from the traffic projections developed for this project (CDMSmith 2012). Free-flowing capacity traffic conditions were used for the traffic noise modeling of existing and future noise levels where demand volumes exceeded capacity. Under this assumption, Level of Service C traffic volumes were used, which correspond with the following traffic volumes:

- 1,800 vehicles per hour per lane for general purpose lanes;
- 1,500 vehicles per hour per lane for HOV lanes;
- 1,400 vehicles per hour per lane for express lanes;
- 1,000 vehicles per hour per lane for auxiliary lanes; and
- 1,000 vehicles per hour per lane for freeway ramps.

Traffic mix information (percentage of truck classes versus autos) reported by the Department was used for existing and future scenarios expected by 2035. All freeway traffic was modeled at 65 mph for autos and light trucks, 60 mph for medium trucks and heavy trucks, and 45 mph for all on- and off-ramps.

Noise Level Predictions

Noise levels were predicted for all measurement locations within the 16 study segments (Segments 1 to 16 on US 101). The study segments and land uses by activity category are discussed below. Noise impacts were identified for outdoor use areas as well by the number of affected units, or receptors.[15] Noise levels are based on the adjusted model results, using worst-case traffic conditions (in terms of noise generation) for the future No Build and Build scenarios. Overall, the project would result in a 0 to 3 dBA increase in noise levels. This is not considered a substantial project-related noise level increase with regard to the Department's Protocol (meaning it would be less than 12 dBA, as described in Section 2.2.7.1). A 3-decibel increase in the noise level is barely perceptible to the human ear (Caltrans 2011c).

Some locations are predicted to experience noise levels that approach or exceed the NAC. Noise levels for existing, future No Build, and future Build conditions at those locations, as well as potential noise abatement, are described in Section 2.2.7.4 and Table 2.2.7-4.

Segment 1: US 101—Oregon Expressway to SR 85. This segment contains residences (Category B), Greer Park (Category C), and the Emerson School and the Girls' Middle School (Category D) located southwest of US 101 from Oregon Expressway to San Antonio Road and from Rengstorff Avenue to Shoreline Boulevard.

[15] For residential (Category B) land uses, each single-family or multi-family dwelling unit counts as one receptor. Category C, D, and E land uses are assigned numbers of receptors based on site-specific criteria that are described in the Protocol.

The locations predicted to approach or exceed the NAC are listed below and depicted in Appendix F:

- Single-family residences on Leghorn Street (R27 and R27A) and multi-family residences on Plymouth Street (R29) adjacent to southbound US 101 south of North Rengstorff Avenue;
- A residential neighborhood on Spring Street adjacent to southbound US 101 on-ramp from Old Middlefield Road (R34, R35, and R36);
- Sterling Park residential development along West Bayshore Road (R24); and
- Greer Park (R20 and R21).

Ten- to sixteen-foot noise barriers shield the majority of these land uses, except for Greer Park, the Emerson School, and the Girls' Middle School. Five noise barriers (SW1–SW5) were evaluated in 2008 to abate noise impacts as part of the US 101 Auxiliary Lanes Project Noise Study Report (Illingworth and Rodkin 2008) and were analyzed for the US 101 Express Lanes Project as SWA through SWE.

Segment 2: US 101—SR 85 to SR 237. This segment contains residences (Category B) and baseball fields at Moffett Federal Airfield and Sunnyvale Golf Course (Category C).

The locations predicted to approach or exceed the NAC are described below and depicted in Appendix F:

- Single-family residences located south of US 101 between SR 85 and Ellis Street (ST-2 and LT-1);
- Sunnyvale Municipal Golf Course (R-4a and R-4b); and
- Baseball fields at Moffett Federal Airfield located north of US 101 (R-2a and R-2b).

The existing noise barrier that currently shields residences located south of US 101 between SR 85 and Ellis Street is already at the maximum allowable height. As a result, additional noise abatement was not considered for residences represented by receptors ST-2 and LT-1. However, noise abatement in the form of new barriers was considered to shield the golf course and baseball fields.

Segment 3: US 101—SR 237 to Lawrence Expressway. This segment contains residences (Category B), places of worship (Category D), and hotels and motels (Category E).

The locations predicted to approach or exceed the NAC are described below and depicted in Appendix F:

- America's Best Value Inn (ST-13);
- Single- and multi-family residences located north and south of US 101 between North Fair Oaks Avenue and Lawrence Expressway (ST-19, ST-20, ST-21, ST-22, ST-24, ST-25, ST-26 and ST-27); and
- Sun Ridge Apartments located south of US 101 between SR 237 and Fair Oaks Avenue (LT-2).

No exterior uses were identified at the America's Best Value Inn (ST-13); therefore, noise abatement was not considered for this location. The existing noise barriers that shield residences located south of US 101 between Mathilda Avenue and Lawrence Expressway (SB Walls 2 and 3) are already at the maximum allowable heights. As a result, additional noise abatement was not considered at impacted receptors (LT-2, ST-19, ST-20, ST-21, and ST-22) in these areas. Single and multi-family residences located north of US 101 between North Fair Oaks Avenue and Lawrence Expressway are shielded by an existing 12-foot high wall. Noise abatement in the form of a replacement sound wall was considered.

Segment 4: US 101—Lawrence Expressway to San Tomas/Montague Expressway. This segment contains residences (Category B) and the San Tomas Aquino Creek Trail (Category C).

The locations predicted to approach or exceed the NAC are described below and depicted in Appendix F:

- Avalon Silicon Valley Apartments (ST-30);
- First-row[16] single-family residences along Wildwood Avenue north of US 101 (ST-32); and
- San Tomas Aquino Creek Trail (LT-4).

Existing 12-foot high noise barriers currently shield the Avalon Silicon Valley Apartments (SB Wall 4) and the residences along Wildwood Avenue (NB Wall 20). A barrier does not currently shield the San Tomas Aquino Creek Trail. Noise abatement in the form of new and replacement sound walls was considered.

Segment 5: US 101—San Tomas/Montague Expressway to Guadalupe/SR 87. This segment contains the Guadalupe River Trail (Category C) and La Quinta Inn (Category E). No Category B land uses are located within this segment.

The locations predicted to approach or exceed the NAC are described below and depicted in Appendix F:

- Guadalupe River Trail (ST-38 and R-38a).

A barrier does not currently shield the Guadalupe River Trail. Noise abatement in the form of a new sound wall was considered.

Segment 6: US 101—SR 87 to I-880. This segment contains airport hotels (Category E). No Category B land uses are located within this segment. All noise sensitive receptors are predicted to experience future Build Alternative noise levels that are more than 10 dBA below the NAC. As a result, noise abatement was not considered in this area.

Segment 7: US 101—I-880 to East Taylor Street. This segment contains residences (Category B).

The locations predicted to approach or exceed the NAC are described below and depicted in Appendix F:

[16] The first row of structures from the noise sources being studied, in this case, US 101.

- First-row residences south of US 101 between Oakland Road and Taylor Street (ST-44, ST-45, ST-47, and ST-49).

Many of these noise sensitive uses are currently shielded by existing 8- to 12-foot high sound walls. Noise abatement in the form of new and replacement sound walls was considered.

Segment 8: US 101—East Taylor Street to I-280. This segment contains residences (Category B), Five Wounds School, and several churches (Category C).

The locations predicted to approach or exceed the NAC are described below and depicted in Appendix F:

- Watson Park (R-50a, R-50b, and R-50c);
- Rancho Del Pueblo Golf Course (R-64a);
- Five Wounds School (ST-55); and
- First-row single- and multi-family residences on northbound and southbound sides of US 101 (ST-51, ST-52, ST-53, ST-54, ST-57, ST-58, ST-59, ST-60, ST-62, ST-64, LT-6 and R-62a).

Watson Park is not currently shielded by an existing barrier. The remaining Category B and C land uses are shielded by existing 10- to 14-foot high barriers. Noise abatement in the form of new and replacement sound walls was considered for these areas.

Segment 9: US 101—I-280 to Tully Road. This segment contains residences (Category B), and the Fair Swim Center (Category C).

The locations predicted to approach or exceed the NAC are described below and depicted in Appendix F:

- First row residences (ST-68, ST-69, ST-70, ST-71, ST-72, ST-73, ST-74, ST-76, ST-77, and LT-8).

With the exception of ST-68, which is representative of single family residences located along the northbound off-ramp to Story Road, all of these noise sensitive uses are currently shielded by existing 12- to 16-foot high sound walls. Noise abatement in the form of new and replacement barriers was considered.

Segment 10: US 101—Tully Road to East Capitol Expressway. This segment contains residences (Category B), a park on Plumas Drive (Category C) and a motel (Category E).

The locations predicted to approach or exceed the NAC are described below and depicted in Appendix F:

- First-row single-family residences located southwest of US 101 (ST-88, ST-90, and ST-94); and
- Single- and multi-family residences located northeast of US 101 (ST-85, ST-86, ST-91, and ST-93).

The noise sensitive receptors are currently shielded by existing 7- to 13-foot high sound walls. Noise abatement in the form of replacement barriers was considered.

Segment 11: US 101—East Capitol Expressway to Hellyer Avenue. This segment contains residences (Category B), the Ramblewood Elementary School and Hellyer County Park (Category C).

The locations predicted to approach or exceed the NAC are described below and depicted in Appendix F:

- Single-family residences located east of US 101 between Yerba Buena Road and Hellyer Avenue (ST-105, R-105a, R-105b, R-105c, and R-106a).

These residences are elevated above the freeway and are not shielded by an existing noise barrier. Noise abatement in the form of new noise barriers was considered.

Segment 12: US 101—Hellyer Avenue to Blossom Hill Road. This segment contains residences (Category B), the Samuel Stipe Elementary School and Hellyer County Park (Category C).

The locations predicted to approach or exceed the NAC are described below and depicted in Appendix F:

- First-row single-family residences located along Snow Drive, west of US 101 and south of Hellyer County Park (ST-109 and ST-113);
- First-row single-family homes located west of US 101 along Great Oaks Drive (ST-119 and ST-121);
- First-row single-family homes located east of US 101 between Fullerton Drive and the on-ramp from Silver Creek Valley Road (ST-115, ST-117, ST-118, and ST-120).

These residences are shielded by existing barriers that are already at the maximum allowable height. Therefore, noise abatement was not considered.

Segment 13: US 101—Blossom Hill Road to SR 85/Bernal Road. This segment contains residences (Category B).

The locations predicted to approach or exceed the NAC are described below and depicted in Appendix F:

- First-row single-family residences located west of US 101 along Silver Leaf Road (ST-128, ST-130, LT-11, and LT-12); and
- Coyote Creek Trail (R-127a and R-128a).

These residences are shielded by an existing 12-foot high sound wall. Coyote Creek Trail is not currently shielded by a noise barrier. Noise abatement in the form of new and replacement barriers was considered.

Segment 14: US 101—SR 85/Bernal Road to Bailey Avenue. This segment contains residences (Category B), the Coyote Creek Trail and the Parkway Fishing Lakes (Category C).

The locations predicted to approach or exceed the NAC are described below and depicted in Appendix F:

- Single-family residences located east of US 101 and north of Bailey Road (R-139b and R-139c).

There is one existing 14-foot high sound wall. Noise abatement in the form of new and replacement barriers was considered.

Segment 15: US 101—Bailey Avenue to Cochrane Road. This segment contains residences (Category B), the Coyote Creek Trail and the Coyote Creek Golf Club (Category C).

The locations predicted to approach or exceed the NAC are described below and depicted in Appendix F:

- Coyote Creek Golf Course (LT-14, R-142a, R-142b, R-142c, and R-142d);
- Single-family residences located on both sides of US 101 near Burnett Avenue (R-143a, R-143b, ST-144, R-144a, and ST-145).

These noise sensitive areas are not shielded by existing barriers. Noise abatement in the form of sound walls was considered.

Segment 16: US 101—Cochrane Road to Tennant Avenue. This segment contains residences (Category B) and hotels and motels (Category E).

The locations predicted to approach or exceed the NAC are described below and depicted in Appendix F:

- Single-family residences throughout this segment (ST-146, R-146a, ST-147, ST-148, R-148a, R-149a, ST-150, and ST-153).

There are two existing noise barriers, with heights of 7 and 9 feet. Noise abatement in the form of new or replacement noise sound walls was considered for these residences.

2.2.7.4 Avoidance, Minimization, and Abatement Measures

<u>**Traffic Noise Abatement Evaluation**</u>

Receptors that exceed either state or federal thresholds must be evaluated for potential abatement/mitigation measures. Noise abatement is considered only where frequent human use occurs and where a lowered noise level would be of benefit. Noise abatement must be predicted to provide a 5 decibel (dB) minimum reduction at an impacted receptor to be considered feasible by the Department (i.e., the barrier would provide a noticeable noise reduction). Additionally, the Protocol acoustical design goal states that the noise barrier must provide at least 7 dB of noise reduction at one or more benefited receptors. Noise abatement measures that provide noise reduction of more than 5 dB are encouraged as long as they meet the reasonableness guidelines. The cost is based on a current allowance per benefited receptor of $55,000. Potential noise abatement measures identified in the Protocol include:

- Avoiding the project impact by using design alternatives, such as altering the horizontal and vertical alignment of the project;
- Constructing noise barriers;
- Using traffic management measures to regulate types of vehicles and speeds;
- Acquiring property to serve as a buffer zone; and/or

- Acoustically insulating Activity Category D land uses (such as auditoriums, day care centers, hospitals, and libraries).

The chosen abatement type for this project would be the construction of sound walls. A preliminary noise abatement analysis was conducted to identify the feasibility of constructing or replacing noise barriers to reduce traffic noise levels.

Table 2.2.7-4 summarizes the results of the noise abatement analysis for each study area segment that had representative receptors where future noise levels would approach or exceed the NAC (described in Section 2.2.7.3). The table lists noise levels with and without the project, the corresponding sound walls that were studied to provide noise abatement for those receptors, the wall heights analyzed, and the predicted noise levels at each receptor if the walls were constructed. For each sound wall that met the Protocol acoustical design goal (at least 7 dB of noise reduction at one or more benefited receptors), the table also identifies the total reasonableness allowance for each sound wall and the estimated construction cost. The potential sound wall locations are depicted in Appendix F.

Segment 6 is not included in Table 2.2.7-4 because the noise study indicates that no receptors in that segment would have future noise levels that would approach or exceed the NAC. Segment 12 is not included in Table 2.2.7-4 because receptors that would have future noise levels that approach or exceed the NAC are already protected by a 16-foot sound wall (the maximum allowable height).

Of the 21 new and 28 modified sound walls analyzed, 12 had at least one wall height that would meet the noise reduction design goal of a 7 dB noise reduction at a minimum of one receptor location. The total reasonableness allowance[17] for each feasible sound wall ranged from $55,000 to $495,000, depending on the wall height and number of benefited receptors. In all cases, the estimated construction costs[18] of the walls well exceeded the combined reasonableness allowance for the benefited receptors.

None of the sound walls evaluated meet both the feasibility and reasonableness criteria described at the beginning of Section 2.2.7.1, therefore no noise abatement is proposed. However, the final decision on the noise abatement will be made upon completion of the project design and the public involvement processes.

[17] Total reasonableness allowance was calculated based on the allowance of $55,000 per benefited receptor, which is set by the Protocol.

[18] Estimated construction cost was calculated based on the square footage of the analyzed wall multiplied by an estimated construction cost of $100 per square foot. The estimated construction cost ranges based on the length and height of the analyzed wall.

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Table 2.2.7-4: Noise Abatement Analysis Results

Segment 1: US 101—Oregon Expressway to SR 85

***Sound Wall ID*:** Receptor ID and Location	Noise Level (dBA) Existing	Noise Level (dBA) Predicted without Project[1]	Noise Level (dBA) Predicted with Project[2]	Predicted Noise Level (dBA) w/Abatement (by wall height [ft]) 8	10	12	14	16	Total Reasonableness Allowance	Construction Cost	Reasonable and Feasible?
SWA											
R20 – Greer Park	69	70	70	67	65	64	63	63	$220,000	$960,000 – $1,280,000	No
R21 – Greer Park	67	69	69	65	64	62	61	61			
SWB											
R24[3] – West Bayshore Road	66	66	66	a	a	a	a	66	NA	NA	No
R25[3] – Fallen Leaf Street	61	61	61	a	a	a	a	61			
SWC											
R27 – Leghorn Street	73	74	74	68	67	65	64	63	$220,000	$800,000 – $1,280,000	No
R27A – Leghorn Street	73	74	74	68	66	65	64	63			
SWD											
R29 – Plymouth Street	67	68	68	b	b	b	67	66	NA	NA	No
SWE											
R34 – Spring Street	68	68	68	c	c	66	65	64	NA	NA	NA
R35 – Spring Street	68	68	68	c	c	66	65	64			
R36 – Spring Street	67	68	68	c	c	67	65	64			

Notes:

Shaded cells indicate that wall height does not meet the 7dB noise reduction goal and is therefore not considered reasonable.

a – Already protected by a 14-foot sound wall

b – Already protected by a 12-foot sound wall

c – Already protected by a 10-foot sound wall

1 – Assumes construction of the US 101 Auxiliary Lanes Project (EA 4A330K)

2 – Assumes construction of the US 101 Auxiliary Lanes Project (EA 4A330K) and SR 85 Express Lanes Project (EA 4A7900)

3 – Noise levels assume the presence of a 14-foot noise barrier constructed as part of the Classics at Sterling Park Residential Development along the southbound right-of-way for US 101, extending from approximately Station 77+50 to 89+25

NA – Not applicable; noise reduction goal not met, so construction cost not estimated

Segment 2: US 101—SR 85 to SR 237

Sound Wall ID: Receptor ID and Location	Noise Level (dBA) Existing	Noise Level (dBA) Predicted without Project	Noise Level (dBA) Predicted with Project	Predicted Noise Level (dBA) w/Abatement (by wall height [ft]) 8	10	12	14	16	Total Reasonable-ness Allowance	Construction Cost	Reasonable and Feasible?
SW1 (new wall)											
R-4a – Sunnyvale Golf Course	76	77	78	70	68	67	66	65	$385,000	$2,520,000 – $5,040,000	No
R-4b – Sunnyvale Golf Course	68	68	71	65	64	62	62	61			
SW2 (new wall)											
R-2a – Moffett Airfield	65	66	68	66	65	65	64	63	NA	NA	No
R-2b – Moffett Airfield	65	65	67	66	66	65	65	64			

Notes:
Shaded cells indicate that wall height does not meet the 7dB noise reduction goal and is therefore not considered reasonable.
NA – Not applicable; noise reduction goal not met, so construction cost not estimated

Segment 3: US 101—SR 237 to Lawrence Expressway

Sound Wall ID: Receptor ID and Location	Noise Level (dBA) Existing	Noise Level (dBA) Predicted without Project	Noise Level (dBA) Predicted with Project	Predicted Noise Level (dBA) w/Abatement (by wall height [ft]) 8	10	12	14	16	Total Reasonable-ness Allowance	Construction Cost	Reasonable and Feasible?
NB Wall 21 (increase height of existing wall)											
ST-15 – Lakewood Drive	64	64	65	[a]	[a]	[a]	63	62	NA	NA	No
ST-24 – Lakewood Drive	65	65	66	[a]	[a]	[a]	65	64			
ST-25 – Lakewood Drive	65	65	66	[a]	[a]	[a]	65	64			
ST-26 – Lakewood Drive	67	67	68	[a]	[a]	[a]	67	66			
ST-27 – Lakewood Drive	65	65	66	[a]	[a]	[a]	65	63			
ST-28 – Velvetlake Drive	60	60	61	[a]	[a]	[a]	60	59			

Notes:
Shaded cells indicate that wall height does not meet the 7dB noise reduction goal and is therefore not considered reasonable.
a – Already protected by 12- foot sound wall
NA – Not applicable; noise reduction goal not met, so construction cost not estimated

Segment 4: US 101—Lawrence Expressway to San Tomas/Montague Expressway

Sound Wall ID: Receptor ID and Location	Noise Level (dBA) Existing	Noise Level (dBA) Predicted without Project	Noise Level (dBA) Predicted with Project	Predicted Noise Level (dBA) w/Abatement (by wall height [ft]) 8	10	12	14	16	Total Reasonable-ness Allowance	Construction Cost	Reasonable and Feasible?
SW3a (new wall)											
LT-4 – San Tomas Aquino Creek Trail	74	74	75	69	69	67	67	67	$55,000	$990,000 - $1,320,000	No
SW3b (new wall)											
R-36a – San Tomas Aquino Creek Trail			74	69	68	67	66	66	$55,000	$1,146,000 - $1,528,000	No
NB Wall 20 (*increase height of existing wall*)											
ST-31 – Wildwood Avenue	57	57	58	a	a	a	56	55	NA	NA	No
ST-32 – Socorro Avenue	68	68	69	a	a	a	68	67			
SB Wall 4 (increase height of existing wall)											
ST-29 – Avalon Silicon Valley Apartments	53	53	54	a	a	a	54	53	NA	NA	No
ST-30 – Avalon Silicon Valley Apartments	69	69	70	a	a	a	69	69			

Notes:
Shaded cells indicate that wall height does not meet the 7dB noise reduction goal and is therefore not considered reasonable.
a – Already protected by 12-foot sound wall
NA – Not applicable; noise reduction goal not met, so construction cost not estimated

Segment 5: US 101—San Tomas/Montague Expressway to SR 87

Sound Wall ID: Receptor ID and Location	Noise Level (dBA) Existing	Noise Level (dBA) Predicted without Project	Noise Level (dBA) Predicted with Project	Predicted Noise Level (dBA) w/Abatement (by wall height [ft]) 8	10	12	14	16	Total Reasonable-ness Allowance	Construction Cost	Reasonable and Feasible?
SW4 (new wall)											
ST-38 – Guadalupe River Trail	69	69	70	67	67	66	65	65	NA	NA	No

Notes:
Shaded cells indicate that wall height does not meet the 7dB noise reduction goal and is therefore not considered reasonable.
NA – Not applicable; noise reduction goal not met, so construction cost not estimated

Segment 7: US 101—Interstate 880 to East Taylor Street

Sound Wall ID: Receptor ID and Location	Noise Level (dBA) Existing	Predicted without Project	Predicted with Project	Predicted Noise Level (dBA) w/Abatement (by wall height [ft]) 8	10	12	14	16	Total Reasonable-ness Allowance	Construction Cost	Reasonable and Feasible?
SW5 (new wall)											
ST-49 – Palm Court Apartments	76	76	76	70	69	68	67	67	$55,000	$675,000 – $1,080,000	No
SB Wall 5 and SB Wall 6 (increase height of existing walls)											
ST-42 – Pavilion Loop	64	64	65	a	a	63	62	62	NA	NA	No
ST-44 – Luna Park Drive	67	67	68	a	a	65	64	64			
ST-48 – North 17th Street	61	61	62	a	a	62	62	61			
SB Wall 7 and SB Wall 8 (increase height of existing walls)											
ST-45 – North Bayshore Road West	65	65	66	a	a	66	65	64	NA	NA	No
ST-46 – North Bayshore Road West	60	60	61	a	a	61	60	59			
ST-47 – Residences Bayshore Road West and East Mission	67	67	68	a	a	68	67	66			

Notes:
Shaded cells indicate that wall height does not meet the 7dB noise reduction goal and is therefore not considered reasonable.
a – Already protected by a 7- to 12-foot sound wall
NA – Not applicable; noise reduction goal not met, so construction cost not estimated

Segment 8: US 101—East Taylor Street to Interstate 280

Sound Wall ID: Receptor ID and Location	Noise Level (dBA) Existing	Predicted without Project	Predicted with Project	Predicted Noise Level (dBA) w/Abatement (by wall height [ft]) 8	10	12	14	16	Total Reasonable-ness Allowance	Construction Cost	Reasonable and Feasible?
SW6 (new wall)											
ST-50 – Watson Park	64	64	65	61	61	59	59	59	$330.000 – $440,000	$1,600,000 – $2,560,000	No
R-50a – Watson Park	69	69	69	64	63	63	62	61			
R-50b – Watson Park	70	70	70	65	63	63	62	61			
R-50c – Watson Park	64	64	66	62	61	60	60	60			
R-50d – Watson Park	62	62	63	60	59	58	58	57			
SB Wall 9 (increase height of existing wall)											
ST-52 – Hacienda Creek Senior Apartments	67	67	67	a	a	a	67	67	NA	NA	No
ST-53 – East Court	67	67	68	a	a	a	67	66			
SB Wall 10 (increase height of existing wall)											
ST-55 – Five Wounds School	70	70	71	a	a	70	69	68	NA	NA	No
SB Wall 11 (increase height of existing wall)											

Segment 8: US 101—East Taylor Street to Interstate 280

Sound Wall ID: Receptor ID and Location	Noise Level (dBA) Existing	Predicted without Project	Predicted with Project	Predicted Noise Level (dBA) w/Abatement (by wall height [ft]) 8	10	12	14	16	Total Reasonable-ness Allowance	Construction Cost	Reasonable and Feasible?
ST-56 – East San Fernando Street	63	63	65	a	a	a	63	62	NA	NA	No
ST-57 – Whitton Avenue	65	65	66	a	a	a	65	64			
SB Wall 13 (increase height of existing wall)											
ST-60 – Rayons Del Sol Drive	65	65	66	a	a	a	64	63	NA	NA	No
NB Wall 14 (increase height of existing wall)											
ST-64 – 155 Virginia Place	67	67	68	a	a	66	65	64	NA	NA	No
NB Wall 15 (increase height of existing wall)											
ST-62 – South 31st Street	68	68	69	a	a	68	67	66	NA	NA	No
R-62a – South 31st Street	67	67	68	a	a	66	65	64			
NB Wall 16 (increase height of existing wall)											
ST-58 – Shortridge Avenue	66	66	68	a	a	a	67	67	NA	NA	No
ST-59 – South 31st Street	69	69	70	a	a	a	70	69			
NB Wall 17 (increase height of existing wall)											
ST-54 – View Drive	66	66	67	a	a	a	66	65	NA	NA	No
LT-6 – North 31st Street	72	72	73	a	a	a	71	69			
NB Wall 18 (increase height of existing wall)											
ST-51 – Destino Circle	65	66	66	a	a	a	a	66	NA	NA	No

Notes:
Shaded cells indicate that wall height does not meet the 7dB noise reduction goal and is therefore not considered reasonable.
a – Already protected by a 10- to 14-foot sound wall
NA – Not applicable; noise reduction goal not met, so construction cost not estimated

Segment 9: US 101—Interstate 280 to Tully Road

Sound Wall ID: Receptor ID and Location	Noise Level (dBA) Existing	Noise Level (dBA) Predicted without Project	Noise Level (dBA) Predicted with Project	Predicted Noise Level (dBA) w/Abatement (by wall height [ft]) 8	10	12	14	16	Total Reasonable-ness Allowance	Construction Cost	Reasonable and Feasible?
SW7 (increase height of existing wall)											
ST-68 – Terilyn Avenue	67	67	67	65	65	65	65	65	NA	NA	No
SB Walls 16 and 17 (increase height of existing walls)											
ST-66 – Sunbeam Circle	59	60	60	a	a	a	59	59	NA	NA	No
ST-67 – Sunbeam Circle	62	62	63	a	a	a	62	61			
ST-70 – Crucero Drive	67	67	68	a	a	a	67	66			
ST-71 – Crucero Drive	67	67	68	a	a	a	67	66			
ST-72 – Dubert Lane	66	66	67	a	a	a	67	65			
ST-74 – Midfield Avenue	67	67	68	a	a	a	67	67			
ST-75 – Taper Court	62	62	62	a	a	a	62	62			
ST-78 – Sunnycrest Circle	62	62	62	a	a	a	62	62			
ST-81 – Nisich Park	60	60	61	a	a	a	60	59			
LT-8 – Dornoch Avenue	66	66	67	a	a	a	66	65			
NB Walls 11 and 12 (increase height of existing walls)											
ST-69 – Scotty Street	68	68	68	a	a	a	68	67	NA	NA	No
ST-73 – Midfield Avenue	67	67	68	a	a	a	67	66			
ST-76 – Joe Dimaggio Court	67	67	68	a	a	a	67	66			
ST-77 – Midfield Avenue	67	67	68	a	a	a	68	67			
ST-79 – Valley Palms Apartments	59	59	60	a	a	a	59	59			
ST-80 – Denali Way	64	64	65	a	a	a	65	64			

Notes:
Shaded cells indicate that wall height does not meet the 7dB noise reduction goal and is therefore not considered reasonable.
a – Already protected by a 12- to 13-foot sound wall
NA – Not applicable; noise reduction goal not met, so construction cost not estimated

Segment 10: US 101—Tully Road to East Capitol Expressway

Sound Wall ID: Receptor ID and Location	Noise Level (dBA) Existing	Noise Level (dBA) Predicted without Project	Noise Level (dBA) Predicted with Project	Predicted Noise Level (dBA) w/Abatement (by wall height [ft]) 8	10	12	14	16	Total Reasonable-ness Allowance	Construction Cost	Reasonable and Feasible?
NB Wall 9 (increase height of existing wall)											
ST-93 – Aborn Road	68	68	68	67	66	65	64	64	NA	NA	No
NB Wall 10 (increase height of existing wall)											
ST-85 – Casa Real Apartments	67	67	67	a	a	a	67	66	NA	NA	No
ST-86 – Freni Court	66	66	67	a	a	a	66	66			
ST-91 – Aldrich Way	67	67	68	a	a	a	67	66			
ST-92 – Barberry Court	63	63	63	a	a	a	63	62			
SB Walls 18 and 19 (increase height of existing walls)											
ST-82 – Zachary Way	66	66	67	a	a	a	66	66	NA	NA	No
ST-84 – Mayhew Court	64	64	65	a	a	a	64	63			
ST-87 – Pellier Court	64	64	65	a	a	a	64	63			
ST-88 – Kane Court	67	67	68	a	a	a	67	66			
ST-89 – Park on Plumas Drive	60	60	61	a	a	a	61	60			
ST-90 – Delano Court	66	66	66	a	a	a	66	65			
ST-94 – Brandywine Drive	65	65	66	a	a	a	65	64			

Notes:
Shaded cells indicate that wall height does not meet the 7dB noise reduction goal and is therefore not considered reasonable.
a – Already protected by a 13-foot sound wall
NA – Not applicable; noise reduction goal not met, so construction cost not estimated

Segment 11: US 101—East Capitol Expressway to Hellyer Avenue

Sound Wall ID: Receptor ID and Location	Noise Level (dBA) Existing	Noise Level (dBA) Predicted without Project	Noise Level (dBA) Predicted with Project	Predicted Noise Level (dBA) w/Abatement (by wall height [ft]) 8	10	12	14	16	Total Reasonable-ness Allowance	Construction Cost	Reasonable and Feasible?
SW8 (new wall)											
ST-105 – Dove Road	76	77	77	77	77	77	77	77	NA	NA	No
R-105a – Unnamed Road	74	75	76	75	75	74	73	72			
R-105b – Unnamed Road	70	70	71	71	70	70	70	69			
R-105c – Unnamed Road	74	75	75	75	75	75	75	74			
SW9 *(new wall)*											
R-106a – Unnamed Road	65	66	66	65	63	62	61	60	NA	NA	No

Notes:
Shaded cells indicate that wall height does not meet the 7dB noise reduction goal and is therefore not considered reasonable.
NA – Not applicable; noise reduction goal not met, so construction cost not estimated

Segment 13: US 101—Blossom Hill Road to SR 85/Bernal Road

Sound Wall ID: Receptor ID and Location	Noise Level (dBA)			Predicted Noise Level (dBA) w/Abatement (by wall height [ft])					Total Reasonable-ness Allowance	Construction Cost	Reasonable and Feasible?
	Existing	Predicted without Project	Predicted with Project	8	10	12	14	16			
SW18 (new wall)											
R-127a – Coyote Creek Trail	73	74	75	70	69	66	65	64	$110,000	$2,216,000 - $4,432,000	No
R-128a – Coyote Creek Trail	76	78	78	71	70	67	66	65			
SB Wall 31 (increase height of existing wall)											
ST-127 – Casswell Court	63	64	65	a	a	a	64	63	NA	NA	No
ST-128 – Dunwell Court	65	67	67	a	a	a	66	65			
ST-129 – Meadwell Court	63	64	65	a	a	a	64	63			
ST-130 – Meadwell Court	65	66	67	a	a	a	66	66			
ST-131 – Tennant Avenue	62	64	64	a	a	a	63	62			
LT-11 – Mosswell Court	64	65	66	a	a	a	64	63			
LT-12 – Flintwell Court	65	66	67	a	a	a	66	64			

Notes:
Shaded cells indicate that wall height does not meet the 7dB noise reduction goal and is therefore not considered reasonable.
a – Already protected by 12-foot sound wall
NA – Not applicable; noise reduction goal not met, so construction cost not estimated

Segment 14: US 101—SR 85/Bernal Road to Bailey Avenue

Sound Wall ID: Receptor ID and Location	Noise Level (dBA)			Predicted Noise Level (dBA) w/Abatement (by wall height [ft])					Total Reasonable-ness Allowance	Construction Cost	Reasonable and Feasible?
	Existing	Predicted without Project	Predicted with Project	8	10	12	14	16			
SW10 (new wall)											
R-139b – Bailey Road	66	66	68	65	65	65	64	64	NA	NA	No
R-139c – Bailey Road	66	66	67	65	65	64	64	63			

Notes:
Shaded cells indicate that wall height does not meet the 7dB noise reduction goal and is therefore not considered reasonable.
NA – Not applicable; noise reduction goal not met, so construction cost not estimated

Segment 15: US 101—Bailey Avenue to Cochrane Road

Sound Wall ID: Receptor ID and Location	Noise Level (dBA) Existing	Noise Level (dBA) Predicted without Project	Noise Level (dBA) Predicted with Project	Predicted Noise Level (dBA) w/Abatement (by wall height [ft]) 8	10	12	14	16	Total Reasonable-ness Allowance	Construction Cost	Reasonable and Feasible?
SW11 (new wall)											
ST-142 – Coyote Creek Golf Course	54	55	56	55	54	54	53	53	$385,000	$12,292,000 – $14,048,000	No
R-142a – Coyote Creek Golf Course	65	66	66	63	63	62	61	61			
R-142b – Coyote Creek Golf Course	65	66	67	66	65	63	62	62			
R-142c – Coyote Creek Golf Course	67	68	69	65	64	63	62	61			
LT-14 – Coyote Creek Golf Course	68	68	69	68	66	64	63	63			
SW12 (new wall)											
R-142d – Coyote Creek Golf Course	68	69	70	69	68	68	68	67	NA	NA	No
R-142e – Coyote Creek Golf Course	63	64	65	64	64	63	62	62			
R-142f – Coyote Creek Golf Course	59	60	60	59	59	59	58	58			
SW13 (new wall)											
ST-144 – Burnett Avenue	67	68	69	64	63	62	61	60	$440,000 – $495,000	$2,920,000 – $5,840,000	No
R-144a – Burnett Avenue	74	74	75	67	66	66	65	64			
ST-145 – Peebles Avenue	67	67	68	63	62	61	61	60			
R-145a – Peebles Avenue	62	63	64	61	60	59	59	58			
SW14 (new wall)											
R-143a – Burnett Avenue	67	68	69	67	67	67	67	67	NA	NA	No
R-143b – Burnett Avenue	71	72	73	70	70	69	68	68			

Notes:
Shaded cells indicate that wall height does not meet the 7dB noise reduction goal and is therefore not considered reasonable.
NA – Not applicable; noise reduction goal not met, so construction cost not estimated

Segment 16: US 101—Cochrane Road to Tennant Avenue

Sound Wall ID: Receptor ID and Location	Noise Level (dBA) Existing	Noise Level (dBA) Predicted without Project	Noise Level (dBA) Predicted with Project	Predicted Noise Level (dBA) w/Abatement (by wall height [ft]) 8	10	12	14	16	Total Reasonable-ness Allowance	Construction Cost	Reasonable and Feasible?
SW15 (new wall)											
ST-146 – Laurel Road	69	69	70	68	67	65	65	64	$440,000 – $495,000	$2,504,000 – $5,008,000	No
R-146a – Laurel Road	77	77	77	70	67	66	64	64			
ST-148 – Walnut Grove Drive	70	71	71	71	71	71	71	71			
R-148a – English Walnut Court	77	77	77	70	69	67	66	65			
SW16 (new wall)											
ST-147 – Condit Road	71	71	72	69	68	67	65	65	$110,000	$1,568,000 – $1,792,000	No
SW17 (new wall)											
ST-149 – Diana Avenue	63	64	64	63	63	62	61	61	NA	NA	No
R-149a – East Main Avenue	70	71	71	69	68	67	67	67			
SB Wall 33 (increase height of existing wall)											
ST-148 – Walnut Grove Drive	70	71	71	70	69	68	68	-	NA	NA	No
ST-150 – Walnut Grove Drive	68	68	69	68	66	65	64	-			
SB Wall 34 (increase height of existing wall)											
ST-153 – Saint John Court	67	67	67	66	65	63	62	61	NA	NA	No

Notes:
Shaded cells indicate that wall height does not meet the 7dB noise reduction goal and is therefore not considered reasonable.
NA – Not applicable; noise reduction goal not met, so construction cost not estimated

Construction Noise Measures

Work taking place within the Department right-of-way is not subject to local noise ordinances; however, the Department will work with the contractor to meet local requirements where feasible. The cities of Palo Alto, Mountain View, Sunnyvale, Santa Clara, San Jose, Morgan Hill, and Gilroy and Santa Clara County have ordinances or General Plan polices that define construction activities and noise during specified daytime hours and on weekends.

Construction noise would primarily result from the operation of heavy construction equipment and arrival and departure of heavy-duty trucks. The highest maximum instantaneous noise levels would result from special impact tools such as impact pile drivers used to install the piles that would support the overhead signs, and impact hammers for pavement cracking. FHWA's Roadway Construction Noise Model (RCNM) was used to calculate the maximum and average noise levels anticipated during each phase of construction. This construction noise model includes representative sound levels for the most common types of construction equipment and the approximate usage factors of such equipment that were developed based on an extensive database of information gathered during the construction of the Central Artery/Tunnel Project in Boston, Massachusetts (CA/T Project or "Big Dig"). The usage factors represent the percentage of time that the equipment would be operating at full power. Vehicles and equipment anticipated during each phase of construction were input into RCNM to calculate noise levels at a distance of 100 feet. Table 2.2.7-5 presents the construction noise levels calculated for each major phase of the project. In some instances, maximum instantaneous noise levels are calculated to be slightly lower than hourly average noise levels. This occurs because maximum instantaneous noise levels generated by multiple pieces of construction equipment are not likely to occur at the same time. Hourly average noise levels resulting from multiple pieces of construction equipment would be additive resulting in slightly higher calculated noise levels. Noise generated by construction equipment drops off at a rate of 6 dB per doubling of distance.

Table 2.2.7-5: Construction Equipment Noise Levels at 100 feet

Construction Phase	Maximum Noise Level (L_{max}, dBA)	Hourly Average Noise Level ($L_{eq[h]}$, dBA)
Demolition	84	78
Earthwork	76	78
Paving	79	79
Pavement Cracking (Crack and Seat Operations)	87	83
Structures (with Pile Driving)	95	89
Structures (without Pile Driving)	77	78

Noise generated by project-related construction activities would be temporary and concentrated in specific areas over a period of several days to a few weeks. The majority of project construction activities would take place in the freeway median or adjacent the existing freeway lanes. The majority of residential receptors that are near the freeway are protected or shielded by existing noise barriers ranging up to 16 feet in height. In general, temporary construction noise levels at receptors nearest to the project alignment would not be substantially higher than existing hourly average traffic noise levels on US 101 (52 to 79 dBA $L_{eq[h]}$). However, certain temporary construction techniques such as pile driving could generate high, impulsive noise levels that exceed existing traffic noise levels and noise level limits established by local jurisdictions.

The following measures will be implemented to minimize or reduce the potential for noise impacts resulting from project construction:

- Limit pile driving activities to daytime hours only.
- Equip all internal combustion engine driven equipment with intake and exhaust mufflers that are in good condition and appropriate for the equipment.
- Use “quiet” air compressors and other “quiet” equipment where such technology exists.
- Prohibit unnecessary idling of internal combustion engines within 100 feet of residences.
- Avoid staging of construction equipment within 200 feet of residences and locate all stationary noise-generating construction equipment, such as air compressors, portable power generators, or self-powered lighting systems as far practical from noise sensitive residences.
- Require all construction equipment to conform to Section 14-8.02, Noise Control, of the latest Department Standard Specifications.
- Require the contractor to prepare a detailed construction plan identifying the schedule for major noise-generating construction activities and distribute this plan to adjacent noise-sensitive receptors. The construction plan should also list the construction noise reduction measures identified in this section.

2.2.7.5 CEQA Noise Analysis

The significance of a noise impact under CEQA is evaluated based on the difference between the baseline noise level and Build noise level. This assessment entails looking at the setting of the noise impact and how large or perceptible any noise increase would be in the given area.

The noise analysis described in Section 2.2.7.3 considered the noise setting of several receptor locations along the project corridor, which are identified by development type in Section 2.2.7.2 and by specific location in Appendix F. The analysis found that the differences between the baseline noise level and Build noise level ranged from 0 to 3 dBA. An increase of 3 dBA is considered to be barely detectable to the human ear. Therefore, under CEQA, changes in traffic noise from the project would not result in a significant impact. (As described in Section 2.2.7.4, however, noise abatement has been considered under NEPA and 23 CFR 772.)

2.3 Biological Environment

2.3.1 Natural Communities

This section is summarized from the *Natural Environment Study* (URS 2014a) for the proposed project, which was approved in March 2014.

2.3.1.1 Regulatory Setting

This section of the document discusses natural communities of concern. The focus of this section is on biological communities, not individual plant or animal species. This section also includes information on wildlife corridors and habitat fragmentation. Wildlife corridors are areas of habitat used by wildlife for seasonal or daily migration. Habitat fragmentation involves the potential for dividing sensitive habitat and thereby lessening its biological value.

Habitat areas that have been designated as critical habitat under the Federal Endangered Species Act (FESA) are discussed below in the Threatened and Endangered Species (Section 2.3.5). Wetlands and Other Waters of the U.S. and State are also discussed below (Section 2.3.2).

2.3.1.2 Affected Environment

A biological study area (BSA) was established to evaluate the effects of the proposed project on natural communities and other biological resources. The BSA extends beyond the project footprint to include all areas that could be directly or indirectly affected by project construction activities, including paved roadway surfaces, landscaped and non-landscaped vegetation, wetlands and waters including rivers, creeks and culverted waters (waters in pipes or waterways that flow under a road), disturbed land such as gravel/dirt and bare ground, and developed land including buildings and other structures on US 101. More than 75 percent of the BSA contains pavement, urban development, and landscaping. The remaining 25 percent contains naturally occurring (non-landscaped) vegetation, half of which is ruderal California annual grassland.

Parts of the US 101 Express Lanes Project lie within an area addressed in the 2001 U.S. Fish and Wildlife Service (USFWS) *Biological Opinion for the US 101 Widening, SR 85/US 101 South Interchange, Riparian and Wetland Consolidated Biological Mitigation, Bailey Avenue Extension/US 101 Interchange, and Coyote Valley Research Park projects* (USFWS 2001; # 1-1-01-F-186). As a condition for approval of the group of projects considered in the Biological Opinion (BO), the USFWS recommended that a regional Habitat Conservation Plan/Natural Communities Conservation Plan (HCP/NCCP) be developed. In June 2004, Santa Clara County, the City of San Jose, VTA, and the SCVWD signed a Memorandum of Understanding to develop a regional HCP/NCCP. In addition to addressing potential impacts of the projects addressed in the 2001 BO, the HCP/NCCP would help to offset the cumulative and indirect effects of regional development and infrastructure projects on listed species (County of Santa Clara 2012).

The *Final Santa Clara Valley Habitat Conservation Plan/Natural Communities Conservation Plan* was released for public review in August 2012 and was implemented in October 2013. The proposed US 101 Express Lanes Project is a covered project in the HCP/NCCP. The proposed project will follow the conditions and mitigation ratios specified in the HCP/NCCP if feasible.

<u>Vegetation Communities</u>

The BSA is highly developed with commercial, industrial, and residential areas. Undeveloped areas and roadsides contain several naturally occurring (non-landscaped) vegetation communities, a large portion of which is ruderal California annual grassland that is dominated by invasive weed species such as yellow star thistle (*Centaurea solstitialisis*) and black mustard (*Brassica nigra*), annual exotic grasses including Italian ryegrass (*Lolium multiflorum*), annual fescue (*Vulpia myuros*), slender wild oats (*Avena fauta*), and ripgut brome (*Bromus diandrus*). Landscaped areas are present in almost all intersection cloverleafs and along the sides of the freeway within the BSA. The landscaped areas are dominated by various native, non-native or horticulturally derived tree or shrub species.

Serpentine Grasslands

Other than vegetation associated with wetlands and waters, serpentine grasslands are the only natural community in the BSA considered uncommon or a community of special concern. Approximately 7.47 acres of serpentine grasslands were identified in the BSA along both sides of US 101 south of Metcalf Road, in places where US 101 cuts through the lower hillsides on the east side of the Santa Clara Valley between San Jose and Morgan Hill.

Serpentine grasslands develop on serpentine soils derived from minerals high in magnesium and iron but extremely low in calcium and other nutrients. The high concentration of magnesium relative to calcium is the most characteristic feature of serpentine soils. The harsh soil conditions thwart colonization by invasive plants and allow native plants adapted to serpentine soils to thrive. These soils support an unusually diverse and intact native plant community compared to other annual grasslands in California. Serpentine grasslands also support a variety of endemic[19] plants and animals. Among the native plants present in the serpentine grasslands in the BSA are dwarf plantain (*Plantago erecta*) and purple owl's clover (*Castilleja densiflora*), which are host plants for the endemic bay checkerspot butterfly (*Euphydryas editha bayensis*). Another plant species found in the BSA is the smooth lessingia (*Lessingia micradenia* var. *glabrata*), a CNPS list 1B.2 species[20] that grows on serpentine soils or outcrops and can occur near roadsides. Other plant species found in the serpentine grasslands were California buckwheat (*Erigonum fasciculatum*), golden yarrow (*Eriophyllum confertiflorum*), and South Coast Range morning glory (*Calystegia collina* ssp. *venusta*).

Serpentine grasslands are considered imperiled by California Department of Fish and Wildlife (CDFW) and ranked G2 and S2.2 by the Global and State ranking system.[21]

Fish Passage

California Senate Bill 857 requires the Department to survey highway system culverts on coastal streams where migratory fish are currently or were historically present and take related actions to systematically review and remediate barriers to fish passage related to transportation projects. Fish passage was evaluated at the four stream crossings in the BSA where anadromous fish[22] occur: Stevens Creek, Guadalupe River, San Tomas Aquino and Coyote Creek. No visible passage barriers were evident during field surveys, and no fish passage barriers are identified at these crossings in the Calfish California Fish Passage Database (CDFG 2010a). Therefore, the existing creek crossings appear to be completely passable to anadromous fish.

Wildlife Movement Corridors

Coyote Valley is an important wildlife linkage between the Diablo Range and Santa Cruz Mountains (Spencer *et al.* 2010). Suitable dispersal habitat for mammal, reptile, and amphibian

[19] Endemic species are only found in a particular location or habitat.
[20] The CNPS list 1B.2 ranking indicates the plant is rare throughout its range, and 20 to 80 percent of occurrences are threatened.
[21] The rankings of G2 and S2 indicate that the vegetation community is limited to 2,000 to 10,000 acres within both its global and state range. The 0.2 in S2.2 indicates that the community is considered threatened at the state level.
[22] Anadromous fish are born in freshwater, migrate to the ocean, and return to spawn in freshwater. Salmon and steelhead are examples of anadromous fish.

species is present on the east side of US 101 between Yerba Buena Road and Coyote Road and between Silver Creek Valley Road and SR 85, and on both sides of US 101 between SR 85 and East Dunne Avenue.

Animals may move under US 101 via overcrossing and undercrossing structures and bridges such as the Coyote Creek Golf Drive overcrossing, Coyote Creek golf course utility facility undercrossing, and Coyote Creek bridges. Animals known to move through this area include mountain lion (*Puma concolor*), bobcat (*Lynx rufus*), American badger (*Taxidea taxus*), and black-tailed deer (*Odocoileus hemionus columbianus*) (Bay Area Open Space Council 2011, The Conservation Lands Network 2012). An analysis of camera trap studies conducted as part of the De Anza College Wildlife Corridor Technician Program between 2008 and 2011 showed that a large variety of wildlife species actively use this area to move through Coyote Valley. These species range from small, herbaceous ground dwellers to larger carnivores such as mountain lions (Phillips et al. 2012). Culverts that collect water from the east side of US 101 and drain to the west side of the freeway south of the SR 85/US 101 interchange in San Jose also provide movement corridors for wildlife including California red-legged frog (CRLF; *Rana draytonii*) and California tiger salamander (CTS; *Ambystoma californiense*).

The creeks and riparian corridors that pass beneath US 101 provide habitat for a variety of wildlife. These areas are abundant in insects and other invertebrates that are food for fish, amphibians, reptiles, mammals, and birds. Wildlife may use the creeks and riparian areas as movement corridors to other specific aquatic or terrestrial habitats. Anadromous fish such as Central California Coast steelhead (*Oncorhynchus mykiss*) use the creeks that cross the BSA to migrate to spawning habitat or out-migrate to San Francisco Bay.

2.3.1.3 Environmental Consequences

Vegetation Communities

Roadway and bridge widening, construction of signs and toll antennas, and associated utility work in the project area could result in approximately 76.72 acres of permanent impacts to naturally occurring vegetation. Vegetation clearing, soil compaction in construction access and staging areas, and equipment storage would result in temporary impacts to vegetation, predominantly to ruderal disturbed vegetation. Replacement planting required due to the impacts of roadway construction would be implemented within two years of the project and would minimize impacts to natural communities.

Serpentine Grasslands

Roadway widening would permanently affect up to 0.12 acre of serpentine grasslands on the east side of US 101 at the Coyote Ranch Road overcrossing and between Coyote Ranch Road and Bailey Avenue. Although additional serpentine grassland areas are present south of Metcalf Road, these areas will be fenced off and avoided with ESA fencing.

ESA provisions may include, but are not limited to, the use of temporary orange fencing to delineate the proposed limit of work in areas adjacent to sensitive resources, or to delineate and exclude sensitive resources from potential construction impacts.

Indirect effects to serpentine grasslands could occur from project-related nitrogen oxide emissions. Serpentine soils along with associated habitats and species are highly susceptible to increases in localized nitrogen levels. Studies have shown that nitrogen deposition on serpentine grasslands has the potential to alter the chemical composition of associated serpentine soils, making them more susceptible to invasion from non-serpentine species such as Italian rye grass (*Lolium multiforum*) and soft brome (*Bromus hordeaceous*) (Weiss 1999; Huenneke et al. 1990; County of Santa Clara 2012).

Fish Passage

The project would not introduce barriers to fish passage.

Wildlife Movement Corridors

Wildlife species are known to use the culverts that run under US 101 south of the SR 85/US 101 interchange in San Jose. In some areas, the culvert openings are between US 101 and the right-of-way fencing. Construction activities will not result in the extension of existing culverts or the installation of new culverts. As a result, wildlife movement through the culverts will not be impeded and in some areas movement will be facilitated through the removal of debris.

Project construction activities would include modifications to overcrossings and undercrossing structures along US 101. These activities may result in an increase in localized noise disturbance. Construction activities may also result in short-term partial closures of local roads that cross under US 101 at these locations. These closures may last a few hours per day. Effects associated with the widening of the overcrossing and undercrossing structures may temporarily deter wildlife species from using these structures for relatively short time periods; however, the project would not permanently prevent wildlife species from using the overcrossing and undercrossing structures to move under US 101.

The project would not affect creeks and riparian corridors that pass beneath US 101; therefore, the project would not affect the movement of California Coast steelhead or other fish migrating through the BSA.

Although the project would result in an increase in impermeable surfaces and a decrease in the vegetation in the median, implementation of the proposed avoidance and minimization measures in Section 2.3.1.4 will minimize effects to wildlife movement through the Coyote Valley. Installation of modified median barriers would not prevent wildlife species from moving over US 101. In areas where culvert openings occur within the right-of-way, directional fencing would be installed to prevent entrapment of wildlife species and create a safe passage through which they can move under US 101. The project would maintain overcrossing and undercrossing structures and bridges, such as Coyote Creek Golf Drive overcrossing, Coyote Creek golf course utility facility undercrossing, and Coyote Creek bridges and culverts to allow wildlife species to continue moving under US 101.

2.3.1.4 Avoidance, Minimization, and/or Mitigation Measures

Vegetation Communities

A project landscaping plan will be developed during final design. The plan will include areas that were temporarily disturbed during construction, where feasible. Plantings would be completed within two years of the project.

Tree removal would occur during the non-nesting season for raptors and migratory birds (September 1 to January 31) to avoid impacts to birds that are protected under the Migratory Bird Treaty Act (MBTA) and California Fish and Game Code. If tree removal must take place during the nesting season (February 1 to August 31), all trees and suitable habitat would be surveyed by a Caltrans approved biologist. Vegetation would be preserved where no construction is planned.

Serpentine Grasslands

To avoid and minimize potential effects to serpentine grasslands, the following conservation measure, in addition to the general avoidance and minimization measures described in Section 2.2.2.4, will be implemented in active ground disturbance and construction areas in the areas identified below.

- Preconstruction surveys for serpentine grasslands will be conducted during the spring before construction begins in San Jose on the east side of US 101 from Yerba Buena Road to Coyote Road and from Silver Creek Valley Road to SR 85, and on both sides of US 101 from SR 85 to East Dunne Avenue in San Jose and Morgan Hill. To the extent possible, a 5-foot buffer would be placed around the serpentine grasslands using ESA fencing prior to the start of construction to avoid any direct impacts to this sensitive habitat.

Mitigation Measure 1: Compensatory mitigation for direct effects to serpentine grasslands would be provided through payment of a serpentine fee to the HCP/NCCP. Compensatory mitigation for indirect effects to serpentine grasslands for project contributions to nitrogen oxide emission increases would be provided through payment of a nitrogen deposition fee to the HCP/NCCP.

Fish Passage

No avoidance, minimization, or mitigation measures are needed.

Wildlife Movement Corridors

Although construction activities would have a minimal effect on existing wildlife movement corridors, the HCP/NCCP requires that covered transportation projects include design modifications to minimize impacts to wildlife movements within the HCP study area. On November 7, 2012 representatives from Caltrans, CDFW, and VTA met to discuss potential design modifications. During this meeting, Caltrans and VTA agreed to include median barriers designed to “allow wildlife to cross under or over the barrier in the event they become trapped in the right-of-way (pg. 6-26, Santa Clara County 2012).”

Final design of the median barriers will include a combination of wildlife passageways, such as Caltrans Type S and Type M barriers, which would minimize impacts to wildlife movement over and under US 101. To deter wildlife species from crossing over US 101 in areas where a split profile may present a hazard to wildlife species, the top of the new median barriers will include deterrent features, such as fencing or other tall features mounted on top of the new median barriers.

Where possible, the right-of-way fence will be modified near the opening of existing culverts to allow for the safe passage of wildlife species from the culverts to adjacent open areas. “Directional fencing” will be installed to direct wildlife into and out of the culverts through which they can safely pass under US 101. In areas of disrepair, the right-of-way fence will be fixed to prevent wildlife species from entering the right-of-way and US 101. To further facilitate wildlife movement, blocked culverts will be cleaned of existing debris and sediment. Where possible, the area around the culvert openings will be revegetated to camouflage the opening.

The Department will be responsible for the long term maintenance of the culverts with the right-of-way, as is currently the case.

The actual specifications of these project features will be determined during project design.

2.3.2 Wetlands and Other Waters of the United States and State

This section is summarized from the *Jurisdictional Delineation* (URS 2014h) and the *Natural Environment Study* (URS 2014a) for the proposed project, which were approved in February and March 2014, respectively. The Jurisdictional Delineation was sent to USACE on February 14, 2014 and will be approved by the USACE in its jurisdictional determination letter, anticipated to arrive during the design phase of the project.

2.3.2.1 Regulatory Setting

Wetlands and other waters are protected under a number of laws and regulations. At the Federal level, the Federal Water Pollution Control Act, more commonly referred to as the Clean Water Act (CWA; 33 USC 1344), is the primary law regulating wetlands and waters. One purpose of the CWA is to regulate the discharge of dredged or fill material into waters of the U.S., including wetlands. Waters of the U.S. include navigable waters, interstate waters, territorial seas and other waters that may be used in interstate or foreign commerce. To classify wetlands for the purposes of the CWA, a three-parameter approach is used that includes the presence of hydrophytic (water-loving) vegetation, wetland hydrology, and hydric soils (soils subject to saturation/inundation). All three parameters must be present, under normal circumstances, for an area to be designated as a jurisdictional wetland under the CWA.

Section 404 of the CWA establishes a regulatory program that provides that discharge of dredged or fill material cannot be permitted if a practicable alternative exists that is less damaging to the aquatic environment or if the nation’s waters would be significantly degraded. The Section 404 permit program is run by the U.S. Army Corps of Engineers (USACE) with oversight by the United States Environmental Protection Agency (U.S. EPA).

The USACE issues two types of 404 permits: General and Standard permits. There are two types of General permits: Regional permits and Nationwide permits. Regional permits are issued for a general category of activities when they are similar in nature and cause minimal environmental effect. Nationwide permits are issued to allow a variety of minor project activities with no more than minimal effects.

Ordinarily, projects that do not meet the criteria for a Nationwide Permit may be permitted under one of USACE’s Standard permits. There are two types of Standard permits: Individual permits and Letters of Permission. For Standard permits, the USACE decision to approve is based on compliance with U.S. EPA’s Section 404(b)(1) Guidelines (U.S. EPA 40 CFR Part 230), and whether permit approval is in the public interest. The Section 404 (b)(1) Guidelines were developed by the U.S. EPA in conjunction with the USACE, and allow the discharge of dredged or fill material into the aquatic system (waters of the U.S.) only if there is no practicable alternative which would have less adverse effects. The Guidelines state that the USACE may not issue a permit if there is a least environmentally damaging practicable alternative (LEDPA) to the proposed discharge that would have lesser effects on waters of the U.S., and not have any other significant adverse environmental consequences.

The Executive Order for the Protection of Wetlands (EO 11990) also regulates the activities of Federal agencies with regard to wetlands. Essentially, this EO states that a federal agency such as the FHWA and/or the Department, as assigned, cannot undertake or provide assistance for new construction located in wetlands unless the head of the agency finds: 1) that there is no practicable alternative to the construction and 2) the proposed project includes all practicable measures to minimize harm.

At the state level, wetlands and waters are regulated primarily by the SWRCB, the RWQCBs, and the CDFW. In certain circumstances, the Coastal Commission (or BCDC) may also be involved. Sections 1600-1607 of the California Fish and Game Code require any agency that proposes a project that will substantially divert or obstruct the natural flow of or substantially change the bed or bank of a river, stream, or lake to notify the CDFW before beginning construction. If CDFW determines that the project may substantially and adversely affect fish or wildlife resources, a Lake or Streambed Alteration Agreement will be required. CDFW jurisdictional limits are usually defined by the tops of the stream or lake banks, or the outer edge of riparian vegetation, whichever is wider. Wetlands under jurisdiction of the USACE may or may not be included in the area covered by a Streambed Alteration Agreement obtained from the CDFW.

The RWQCBs were established under the Porter-Cologne Water Quality Control Act to oversee water quality. Discharges under the Porter-Cologne Act are permitted by Waste Discharge Requirements (WDRs) and may be required even when the discharge is already permitted or exempt under the CWA. In compliance with Section 401 of the CWA, the RWQCBs also issue water quality certifications for activities which may result in a discharge to waters of the U.S. This is most frequently required in tandem with a Section 404 permit request. Section 2.2.2.1 contains additional water quality permitting details.

2.3.2.2 Affected Environment

Approximately 4.27 acres of potentially jurisdictional waters of the U.S. were identified in the BSA (3.24 acres of other waters of the U.S. and 1.03 acres of wetlands). The potentially jurisdictional features include perennial and intermittent streams, some of which contain wetlands in their channels. Approximately 0.09 acre of non-jurisdictional (isolated) waters of the U.S. were identified in the BSA. Two historic features were investigated and determined to no longer be present in the BSA. Table 2.3.2-1 lists the potentially jurisdictional and non-jurisdictional wetlands and other waters of the U.S. in the BSA.

The BSA contains 6,740.41 linear feet of culverts or other engineered structures that are conveyed entirely underground within the BSA. These features could not be measured in the field due to lack of access and lack of entry permission (most extended far beyond the boundaries of the BSA); however, they convey waters of the U.S. through the BSA and are, therefore, potentially jurisdictional features. Table 2.3.2-2 provides the lengths of the potentially culverted waters of the U.S. in the BSA that were not delineated.

An additional 0.09 acre of waters of the State were identified in the BSA. Because these features do not have connectivity to traditional navigable waters, they may be considered isolated based on guidance from the Rapanos decision. As a result, these features are not considered waters of the U.S. The previously discussed waters of the U.S. are also considered waters of the State. Table 2.3.2-3 lists additional the waters of the State delineated in the BSA.

Table 2.3.2-1: Potentially Jurisidictional Waters of the United States in the Biological Study Area

Feature Type and Label	Delineated Acres	Structure Type	Construction Activity
Other Waters of the United States			
CWUS-1: Permanente Creek – culverted water	0.06	Culvert	None
WUS-1: Coyote Creek	0.41	Bridge	None
WUS-2: Ephemeral drainage	0.04	NA	None
WUS-3: Intermittent drainage – canal	0.08	NA	None
WUS-4: Intermittent stream	<0.01	NA	None
WUS-5: Ephemeral drainage	<0.01	NA	None
WUS-6: Ephemeral drainage	<0.01	NA	None
WUS-7: Ephemeral drainage	<0.01	NA	None
WUS-8: Ephemeral drainage	<0.01	NA	None
WUS-9: Ephemeral drainage	<0.01	NA	None
WUS-10: Ephemeral drainage	<0.01	NA	None
WUS-11: Intermittent stream	0.01	NA	None
WUS-12: Coyote Creek	0.37	Bridge	None
WUS-13: Ephemeral drainage to Coyote Creek	0.03	NA	None
WUS-14: Coyote Creek	0.31	Bridge	None
WUS-15: Intermittent drainage ditch	<0.01	NA	None
WUS-16: Ephemeral drainage ditch	<0.01	NA	None
WUS-17: Silver Creek	0.20	Bridge	None
WUS-18: Coyote Creek	0.22	Bridge	None
WUS-19: Guadalupe River	0.55	Bridge	None
WUS-20: San Tomas Aquino Creek	0.14	Bridge	None
WUS-21: Calabazas Creek – intermittent drainage – concrete canal	0.08	Bridge	None
WUS-22: Mathilda Channel	0.05	Bridge	None
WUS-23: Stevens Creek	0.17	Bridge	None
WUS-24: Stevens Creek	0.13	Bridge	None
WUS-25: Intermittent stream	0.01	NA	None
WUS-26: Intermittent stream	0.02	NA	None
WUS-27: Ephemeral drainage	0.01	NA	None
WUS-28: Ephemeral drainage	0.01	NA	None
WUS-29: Ephemeral drainage	0.01	NA	None
WUS-30: Ephemeral drainage	<0.01	NA	None
WUS-31: Intermittent stream	0.01	NA	None
WUS-32: Ephemeral drainage	<0.01	NA	None
WUS-33: Intermittent stream	<0.01	NA	None
WUS-34: Matadero Creek	0.15	Bridge	None
WUS-35: Adobe Creek	0.15	Bridge	None
WUS-36: Permanente Creek	0.02	Bridge	None
Other Waters of the U.S. Subtotal	**3.24**		
Wetlands of the United States			
WWUS-1: Cattail wetland – in drainage ditch	0.02	NA	None
WWUS-2: Cattail wetland – in canal	0.01	NA	None
WWUS-3: Cattail wetland – perennial in-stream	0.04	NA	None
WWUS-4: Cattail wetland – in-stream wetland	<0.01	NA	None
WWUS-5: Freshwater marsh - perennial wetland	0.06	NA	None
WWUS-6: Coyote Creek – perennial	0.05	NA	None

Table 2.3.2-1: Potentially Jurisidictional Waters of the United States in the Biological Study Area

Feature Type and Label	Delineated Acres	Structure Type	Construction Activity
in-stream wetland			
WWUS-7: Coyote Creek – perennial in-stream wetland	0.44	NA	None
WWUS-8: Cattail-willow wetland – drains to Coyote Creek	0.20	NA	None
WWUS-9: Cattail-willow wetland – in ditch	0.01	NA	None
WWUS-10: Seasonal wetland – bulrush - to Guadalupe River	0.02	NA	None
WWUS-11: Cattail-bulrush wetland – perennial in-stream – Guadalupe River	0.04	NA	None
WWUS-12: Perennial freshwater wetland	0.14	NA	None
WWUS-13: Perennial freshwater wetland cattail	<0.01	NA	None
Wetlands Subtotal	**1.03**		
Total Wetlands and Waters of the United States	**4.27**		

Source: URS Field Survey 2012

Notes:

CWUS = culverted waters of the United States
WUS = other waters of the United States
WWUS = wetland waters of the United States

NA = no associated structure

Table 2.3.2-2: Potential Culverted Waters of the U.S. in the BSA (Not Delineated)

Feature Type	Estimated Linear Feet	Structure Type	Construction Activity
CWUS-2: Culverted Waters	213.17	Culvert	None
CWUS-3: Culverted Waters	257.14	Culvert	None
CWUS-4: Culverted Waters	260.65	Culvert	None
CWUS-5: Culverted Waters	878.95	Culvert	None
CWUS-6: Culverted Waters	742.96	Culvert	None
CWUS-7: Culverted Waters	322.56	Culvert	None
CWUS-8: Culverted Waters	266.97	Culvert	None
CWUS-9: Culverted Waters	325.87	Culvert	None
CWUS-10: Culverted Waters	342.84	Culvert	None
CWUS-11: Culverted Waters	955.80	Culvert	None
CWUS-12: Culverted Waters	316.62	Culvert	None
CWUS-13: Culverted Waters	331.78	Culvert	None
CWUS-14: Culverted Waters	353.01	Culvert	None
CWUS-15: Culverted Waters	443.84	Culvert	None
CWUS-16: Culverted Waters	247.95	Culvert	None
CWUS-17: Culverted Waters	280.71	Culvert	None
CWUS-18: Culverted Waters	199.59	Culvert	None
Total Potential Culverted Waters of the United States	**6,740.41**		

Source: USGS 2013

Notes:
The length in linear feet for each feature was estimated based on aerial maps and the NHD.

CWUS = culverted waters of the United States

Table 2.3.2-3: Additional Waters of the State[1] in the Biological Study Area

Feature Type	Delineated Acres	Structure Type	Construction Activity
NJ-WL-1 Cattail wetland - isolated	0.02	NA	Roadway widening
NJ-WL-2 Seasonal wetland - drainage ditch – isolated	0.01	NA	None
NJ-WL-3 Cattail-bulrush wetland ditch – isolated	0.02	NA	None
NJ-WL-4 Seep-fed cattail wetland – isolated	0.03	NA	Roadway widening
NJ-WL-5 Seep-fed cattail wetland – isolated	0.01	NA	Roadway widening
Total	**0.09**	NA	

Source: URS Field Survey 2012

Notes:

1. Water of the State also includes the Waters of U.S. noted in Tables 2.3.2-1 and 2.3.2-2.

NJ-WL = non-jurisdictional wetland

2.3.2.3 Environmental Consequences

Permanent and Temporary Impacts

No permanent or temporary impacts are anticipated to potentially jurisdictional waters of the U.S. The project would not affect culverts that are conveyed entirely underground within the BSA. Roadway widening would permanently affect 0.06 acre of waters of the State (Table 2.3.2-4).

Table 2.3.2-4: Impacts to Waters of the State

Feature Type	Acres		
	Permanent	**Temporary**	**Total Impacts**
NJ-WL-1 Cattail wetland, isolated	0.02	0.00	0.02
NJ-WL-4 Seep-feed cattail wetland, isolated	0.03	0.00	0.03
NJ-WL-5 Seep-feed cattail wetland, isolated	0.01	0.00	0.01
Total	**0.06**	**0.00**	**0.06**

NJ-WL-1 is an isolated cattail wetland in a drainage ditch east of US 101 and north of Hellyer Avenue. Isolated cattail wetlands NJ-WL-4 and NJ-WL-5, which are located in the median area along the US 101 northbound off-ramp to Oakland Road, are fed from seep water from the adjacent hillside.

The project could also have temporary indirect effects on waters of the U.S. and state if construction-related discharges occur.

Impacts on Functions and Values

Potentially jurisdictional waters of the U.S. and State in the BSA function as intermittent, ephemeral, and perennial streams, drainages, and roadside ditches. The proposed project would not have substantial adverse impacts on drainage or flood control capacity values, as described in Section 2.2.1.3.

Construction activities could cause temporary impacts to water quality. These impacts would be avoided or minimized with implementation of BMPs such as the measures listed below.

2.3.2.4 Avoidance, Minimization, and/or Mitigation Measures

Avoidance and Minimization

Upon completion of the project, all areas that have been temporarily affected will be restored to approximately their original condition. Measures will be employed to prevent construction material or debris from entering surface waters or their channels. BMPs for erosion control will be implemented and will be in place prior to, during, and after construction to avoid silt or sediment entering surface waters. The proposed measures and BMPs are listed below.

All proposed construction will be limited to the defined project area. ESAs adjacent to the project area will be identified on contract plans and discussed in the Special Provisions of the project specifications. The ESAs will include areas designated in the environmental document and biological reports as wetlands, waters, and/or habitats that potentially support listed species and have been specifically identified to avoid during construction. ESA provisions may include, but are not limited to, the use of temporary orange fencing to delineate the proposed limit of work in areas adjacent to sensitive resources, or to delineate and exclude sensitive resources from potential construction impacts. Contractor encroachment into ESAs will be prohibited (including the staging/operation of heavy equipment or casting of excavation materials). ESA provisions will be implemented as a first order of work and remain in place until all construction is completed.

The potential for adverse effects to water quality will be avoided by the implementation of a Water Pollution Control Plan that meets the standards and objectives to minimize water pollution impacts set forth in Section 7-1.01G of the Standard Specifications. The Department's erosion control BMPs will be used to minimize wind- or water-related erosion. A Storm Water Pollution Prevention Plan (SWPPP) will be developed for the project and will comply with the Statewide Storm Water Management Plan (SWMP). The SWMP includes guidance for design staff to include provisions in construction contracts to include measures to protect sensitive areas and to prevent and minimize storm water and non-storm water discharges. The project will implement general Waste Discharge Requirements (WDRs) issued by the RWQCB. In addition, the project will incorporate applicable measures specified in the Santa Clara Valley HCP/NCCP (County of Santa Clara 2012). These BMPs include, but are not limited to, the following measures:

- Prior to construction, wetlands located in the project area will be fenced off using ESA fencing. Placement of the ESA fencing will occur under the supervision of a Caltrans approved biologist. The fencing will be placed 5 feet away from each wetland feature.
- Appropriate erosion control measures will be used to reduce siltation and runoff of contaminants into wetlands and adjacent, ponds, streams, or riparian woodland/scrub. The contractor will not be allowed to stockpile brush, loose soils, or other debris material on stream banks. Only native plant species will be used in erosion control or revegetation seed mix. Any hydroseed mulch used for revegetation must also be certified weed-free. Dry-farmed straw will not be used, and certified weed-free straw will be required where erosion control straw is used. Filter fences and mesh will be of material that will not entrap reptiles and amphibians. Erosion-control measures will be placed between a water or wetland and the outer edge of the project site (County of Santa Clara 2012).
- All off-road construction equipment will be cleaned of potential noxious weed sources (mud, vegetation) before entry into the project area. Equipment will be considered free of soil, seeds, and other such debris when a visual inspection does not disclose such material. Disassembly of equipment components or specialized inspection tools is not required.
- Vehicles and equipment will be parked on pavement, existing roads, or specified staging areas.
- Trash generated by covered activities will be promptly and properly removed from the site (County of Santa Clara 2012).
- No construction or maintenance vehicles will be refueled within 200 feet of wetlands and ponds unless a bermed and lined refueling area is constructed and hazardous material absorbent pads are available in the event of a spill (County of Santa Clara 2012).
- Equipment storage, fueling, and staging areas will be sited on disturbed areas or on non-sensitive non-native grassland land cover types when these sites are available to minimize

risk of direct discharge into riparian areas or other sensitive land cover types (County of Santa Clara 2012).

- All temporarily disturbed areas, such as staging areas, will be returned to pre-project or ecologically improved conditions within one year of the completing construction or the impact will be considered permanent. Alternatively, if active restoration is used to restore the site within five years and the restoration is successful, the impact will be considered temporary (County of Santa Clara 2012).

Compensatory Mitigation

The project would have no impacts on potentially jurisdictional waters of the U.S. in the BSA or culverted waters that are conveyed entirely underground within the BSA.

Mitigation Measure 2: Compensatory mitigation for permanent impacts of 0.06 acre of waters of the State will be provided through payment of an in-lieu fee to the HCP/NCCP. If mitigation through the HCP/NCCP is not feasible for impacts to waters of the state, off-site mitigation will be implemented in coordination with the RWQCB.

2.3.3 Plant Species

This section is summarized from the *Natural Environment Study* (URS 2014a) for the proposed project, which was completed in March 2014.

2.3.3.1 Regulatory Setting

The USFWS and CDFW have regulatory responsibility for the protection of special-status plant species. “Special-status” species are selected for protection because they are rare and/or subject to population and habitat declines. Special-status is a general term for species that are provided varying levels of regulatory protection. The highest level of protection is given to threatened and endangered species; these are species that are formally listed or proposed for listing as endangered or threatened under the FESA and/or the California Endangered Species Act (CESA). Please see Threatened and Endangered Species (Section 2.3.5) in this document for detailed information about these species.

This section of the document discusses all the other special-status plant species, including CDFW fully protected species and species of special concern, USFWS candidate species, and California Native Plant Society (CNPS) rare and endangered plants.

The regulatory requirements for FESA can be found at 16 USC Section 1531, et seq. See also 50 CFR Part 402. The regulatory requirements for CESA can be found at California Fish and Game Code, Section 2050, et seq. Department projects are also subject to the Native Plant Protection Act, found at California Fish and Game Code Section 1900-1913, and the California Environmental Quality Act (CEQA), CA Public Resources Code, Sections 2100-21177.

2.3.3.2 Affected Environment

Lands in the BSA are generally disturbed, urbanized, and dominated by non-native or landscape species, as described in Section 2.3.1.2.

A California Natural Diversity Database (CNDDB) check indicated that several rare or sensitive plants have been recorded within 1 mile of the BSA (CDFG 2012, CDFW 2013), including several occurrences in the BSA. The CNPS Inventory of Rare and Endangered Plants of California 6th Edition and online inventory (CNPS 2001, 2012) and the USFWS lists (USFWS 2012, 2013) were also consulted. Based on those sources and the geographic ranges of various sensitive species, 39 special-status plant species were evaluated for potential to occur in the BSA.

Rare plant surveys of the BSA were conducted in March, May, and July 2012. Three CNPS-listed species were observed south of the SR 85/US 101 interchange in San Jose in areas that coincided with serpentine grasslands (discussed in Section 2.3.1):

- Mt. Hamilton fountain thistle (*Cirsium fontinale var. campylon*; CNPS 1B.1[23]) – A perennial herb that occurs on serpentine seeps in chaparral, cismontane woodland, and valley foothill grasslands at elevations between 330 and 2,900 feet. This species blooms between February and October (CNPS 2012).
- Smooth lessingia (*Lessingia micradenia var. glabrata*; CNPS 1B.2[24]) – An annual herb that occurs on serpentine soils, often along roadsides at elevations below 1,000 feet. This species has a limited range in Santa Clara County (CNPS 2012).
- Most beautiful jewel-flower (*Streptanthus albidus ssp. peramoenus*; CNPS 1B.2) – An annual herb that occurs on serpentine soils commonly found in chaparral, cismontane woodland, and valley and foothill grassland areas at elevations from 300 to 3,300 feet. This species blooms between March and October (CNPS 2012).

The CNDDB shows occurrences of four other non-federal or state listed serpentine species within one mile of the BSA (CDFG 2012), in the same area of serpentine grasslands south of the SR 85/US 101 interchange in San Jose. However, none of the four plants—San Francisco collinsia *(Collinsia multicolor)*, Loma Prieta hoita *(Hoita strobilina)*, fragrant fritillary *(Fritillaria liliacea)*, and woodland woolythreads *(Monolopia gracilens)*—were observed during field surveys.

Elsewhere, vegetation in the project area is dominated by urban landscaping and/or invasive non-native species, with native plants restricted to limited areas along US 101 and riparian habitat associated with overpasses at certain stream crossings.

2.3.3.3 Environmental Consequences

The project will affect 0.12 acre of serpentine grassland areas on both sides of US 101 south of the SR 85/US 101 interchange in San Jose.

As discussed in Section 2.3.1.2, project construction has the potential to increase nitrogen deposition within serpentine areas, which could make these areas more susceptible to invasion from non-serpentine plant species. These serpentine plant species would not be able to out-compete invasive annual grasses (County of Santa Clara 2012). Changes in serpentine habitat due to alterations in nitrogen levels have the potential to result in a loss of these species over time.

[23] The CNPS list 1B.1 ranking indicates the plant is rare throughout its range, and over 80 percent of occurrences are threatened.

[24] The CNPS list 1B.2 ranking indicates the plant is rare throughout its range, and 20 to 80 percent of occurrences are threatened.

2.3.3.4 Avoidance, Minimization, and/or Mitigation Measures

Impacts to these serpentine plant species will be avoided and minimized with the implementation of the following measures.

- If construction begins during the blooming period when these species are identifiable, then:
  - Preconstruction surveys will be conducted no more than two days prior to the start of ground disturbing activities on the east side of US 101 from Yerba Buena Road to Coyote Road and from Silver Creek Valley Road to SR 85, and on both sides of US 101 from SR 85 to East Dunne Avenue in San Jose and Morgan Hill.
  - If these species are present within the limits of construction, to the extent possible, a 5-foot buffer will be placed around the listed plant species using ESA fencing prior to the start of construction to avoid any direct impacts to the plants.
- If construction is planned to start before or after the listed plant species' blooming periods, additional surveys will be done during the blooming periods when these species are identifiable.

Compensatory Mitigation

Mitigation Measure 3: Compensatory mitigation for indirect impacts to Mt. Hamilton fountain thistle, smooth lessingia, most beautiful jewel-flower, Loma Prieta hoita, and fragrant fritillary from potential increases in nitrogen oxide emissions will be provided through payment of serpentine and nitrogen deposition fees to the Santa Clara Valley HCP/NCCP. San Francisco collinsia and woodland woolythreads are not covered under the HCP/NCCP nor are they state or federally listed species. Compensatory mitigation is not required for impacts to these CNPS-listed species.

2.3.4 Animal Species

This section is summarized from the *Natural Environment Study* (URS 2014a) for the proposed project, which was completed in March 2014.

2.3.4.1 Regulatory Setting

Many state and federal laws regulate impacts to wildlife. The USFWS, the National Oceanic and Atmospheric Administration's National Marine Fisheries Service (NOAA Fisheries Service), and the California Department of Fish and Wildlife (CDFW) are responsible for implementing these laws. This section discusses potential impacts and permit requirements associated with animals not listed or proposed for listing under the federal or state Endangered Species Act. Species listed or proposed for listing as threatened or endangered are discussed in Section 2.3.5 below. All other special-status animal species are discussed here, including CDFW fully protected species and species of special concern, and USFWS or NOAA Fisheries candidate species.

Federal laws and regulations relevant to wildlife include the following:

- National Environmental Policy Act;
- Migratory Bird Treaty Act (MBTA); and
- Fish and Wildlife Coordination Act.

State laws and regulations relevant to wildlife include the following:

- California Environmental Quality Act;
- Sections 1600–1603 of the California Fish and Game Code; and
- Sections 4150 and 4152 of the California Fish and Game Code.

2.3.4.2 Affected Environment

The aquatic, upland, wetland, and riparian areas of the BSA may provide habitat for mammals, birds, small reptiles, amphibians and invertebrates. Wildlife in the section of the BSA north of Yerba Buena Road in San Jose is largely composed of species that are adapted to and/or tolerant of urban landscapes and disturbances that characterize this heavily developed and disturbed area. Wildlife species may include those associated with the vegetation community (described above) or migratory species that pass through the BSA. The creeks and riparian areas that cross the BSA may serve as movement corridors between other less urbanized habitats. Wildlife may also use aquatic habitats in the BSA for part of their life history.

Upland riparian areas surrounding the creeks and wetlands that pass beneath US 101 provide habitat for many wildlife species including Pacific treefrog (*Pseudacris regilla*), common garter snake (*Thamnophis sirtalis*), snowy egret (*Egretta thula*), great blue heron (*Ardea herodias*), marsh wren (*Cistothorus palustris*), and song sparrow (*Melospiza melodia*). The creeks provide aquatic habitat for fish including Sacramento sucker (*Catostomus occidentalis occidentalis*), California roach (*Hesperoleucus symmetricus*), prickly sculpin (*Cottus asper*), and bluegill (*Lepomis macrochirus*).

The grasslands and coyote brush habitats in San Jose on the east side of US 101 from Yerba Buena Road to Coyote Road and from Silver Creek Valley Road to SR 85, and on both sides of US 101 from SR 85 to East Dunne Avenue, provide habitat for a variety of burrowing mammals including ground squirrel (*Spermophilus beecheyi*), California vole (*Microtus californicus*), and pocket gopher (*Thomomys bottae*), and foraging habitat for raptors including white-tailed kite (*Elanus leucurus*), red-tailed hawk (*Buteo jamaicensis*), and American kestrel (*Falco sparverius*). The southern part of the project area is also dispersal and upland habitat for amphibian and reptile species including western fence lizard (*Sceloporus occidentalis*) and gopher snake (*Pituophis catenifer*). Other larger mammals that may use these habitats include black-tailed jackrabbit (*Lepus californicus*), black-tailed deer (*Odocoileus hemionus*), and bobcat (*Lynx rufus*).

Special-status animals with potential to occur in the BSA are described below.

Western Pond Turtle

Northwestern pond turtle (*Actinemys marmorata marmorata*) and southwestern pond turtle (*Clemmys marmorata pallida*) are subspecies of the Western pond turtle *(Actinemys marmorata)*. Both subspecies are listed as California species of special concern by the CDFW. No focused surveys were conducted for this species, and it was not observed during field visits. The CNDDB shows western pond turtle occurrences just north of Metcalf Road between US 101 and Monterey Road, at Coyote Creek along US 101 just south of Hellyer Avenue, and at the old quarry pits at Coyote Creek Parkway at the Guadalupe River north of US 101. Potential aquatic habitat is available for this species in percolation ponds, wetlands, and riparian areas within and adjacent to the BSA.

Western pond turtles nest in sunny upland areas including grasslands and grazed areas near aquatic habitats. Therefore, there is some, albeit marginal, potential for turtles to enter and/or use the BSA for nesting in upland grassland areas along the east side of US 101 between Yerba Buena Road and Coyote Road, between Silver Creek Valley Road and the SR 85 interchange, and on both sides of US 101 from the SR 85 interchange to East Dunne Avenue.

Special-Status Birds

The special-status birds with potential to occur in the BSA are western burrowing owl (*Athene cunicularia hypugea*), nesting raptors protected under California Fish and Game Code Section 3503.5, and migratory birds protected under the MBTA and California Fish and Game Code Sections 3513.

Western Burrowing Owl

Western burrowing owl, a state species of special concern, has been recorded in several locations within 1 mile of the BSA, including at the Baylands Park adjacent to US 101 in Palo Alto, at the Moffett Field Naval Air Station adjacent to US 101 at the SR 237 interchange, at San Jose Norman Y. Mineta Airport adjacent to US 101 at the SR 87 interchange, and on the north side of Cochrane Road northeast of US 101 in Morgan Hill.

No individual burrowing owls or signs of burrowing owl nests were seen during the field surveys. The BSA in the vicinity of Moffett Field does not provide suitable nesting or foraging habitat for burrowing owls. The BSA near the San Jose Norman Y. Mineta Airport contains ruderal disturbed areas on the west side of US 101 and on the north side of Trimble Boulevard that could provide foraging and nesting habitat for burrowing owls. Elsewhere in the BSA, open grassland areas along US 101 may provide potential burrowing owl foraging and possibly nesting habitat.

Potential nesting and foraging habitat outside the BSA is in the Moffett Field runway areas, the open fields north of Manila Drive (which borders the north side of US 101 between the SR 237 and Ellis Street interchanges), in the perimeter grasslands and runway areas at the San Jose Norman Y. Mineta Airport (near the US 101/De La Cruz Boulevard-Trimble Road interchange) and the open grasslands adjacent to the Caltrans right-of-way south of the SR85/US 101 interchange in San Jose.

Nesting Raptors

The trees and shrubs in the BSA may provide nesting, foraging, and roosting habitat for nesting raptors protected under the MBTA and California Fish and Game Code Section. The CDFW range map for the white-tailed kite (*Elanus leucurus*, a California fully protected species) indicates that the BSA is in the species' year-round range (CWHR 2000). The American peregrine falcon (*Falco peregrinus anatum*, a California fully protected species) may occasionally forage in the BSA; however, the species is not known to breed in the project vicinity (CDFG 2010b). Marginally suitable foraging habitat for the northern harrier (*Circus cyaneus;* a state species of special concern) is present in the BSA but the species is not known in the area (CDFG 2010b). Oak woodlands and riparian corridors in and adjacent to the BSA may provide potential foraging habitat for Cooper's hawk (*Accipiter cooperii;* a state species of special concern). Other potential nesting raptors in the BSA include the red-tailed hawk and sharp-shinned hawk. Threats to all of these species include habitat fragmentation, nesting failure due to disturbance, and loss of foraging habitat.

Although potential nesting habitat for raptors in the BSA is marginal, there is potential for nesting raptors to be present in and adjacent to the BSA during construction.

Migratory Birds

The MBTA and Fish and Game Code makes it unlawful at any time, by any means, or in any manner, to pursue, hunt, take, capture, or kill migratory birds. The law applies to the removal of nests (such as swallow nests on bridges) occupied by migratory birds during the breeding season.

The list of migratory birds comprises many different bird species, including many common species. Therefore, it is likely that the BSA will have several species of migratory birds at one time. Four species in particular, the great egret (*Ardea alba*), the snowy egret (*Egretta thula*), the great blue heron (*Ardea herodias*), and the black swift (*Cypseloides niger;* a state species of special concern) may forage in the BSA. No migratory birds were observed nesting in the BSA during the field visits. Focused nesting surveys were not conducted during the reconnaissance field surveys; however, potential nesting locations in the BSA include roadside trees, dense shrubs, riparian corridors, human-made structures along the margins of the US 101 corridor and in the median areas. Old nests were observed under the overpass at Coyote Creek Golf Drive. Migratory birds nesting along the project corridor will likely be tolerant of the disturbances and noise associated with the freeway and the surrounding urban area. Migratory birds could nest in the BSA during project construction.

Bats

Three bat species have the potential to be present in the BSA: pallid bat *(Antrozous pallidus),* hoary bat *(Lasiurus cinereus),* and yuma myotis *(Myotis yumanensis).* The pallid bat is designated as a species of special-concern by the CDFW. In addition, the Western Bat Working Group (WBWG)[25] has designated the pallid bat as a "high priority" species and the hoary bat and yuma myotis as "medium priority" and "low priority" species, respectively. The priority status reflects a bat species' risk of imperilment and priority level for funding, planning, and conservation actions (WBWG 2007).

During the reconnaissance surveys, no roosting bats or signs of roosting bats were observed. Potential roosting sites are present in the trees and human-made structures in the BSA.

2.3.4.3 Environmental Consequences

Western Pond Turtle

The project would have no permanent effects on potential aquatic habitat for western pond turtle. All proposed construction work in the Coyote Creek area would be on paved roadways, in freeway median areas, or within the right-of-way outside of creek crossings. Construction activities could permanently affect up to 10.42 acres and temporarily affect up to 23.34 acres of potential upland dispersal habitat. With implementation of the measures listed in Section 2.3.5.4 (under "California Red-Legged Frog"), direct impacts to western pond turtles are not anticipated.

[25] The Western Bat Working Group is composed of agencies, organizations, and individuals interested in bat research, management, and conservation. The group includes representatives from 13 western states, the provinces of British Columbia and Alberta, and Northern Mexico (WBWG 2013).

Special-Status Birds

Western Burrowing Owl

Potential foraging and nesting habitat in the BSA is present near the airport in ruderal disturbed areas on the west side of US 101 and on the north side of Trimble Road. Although project construction will directly affect a portion of the ramp loops immediately adjacent to US 101 in that area, no impacts will occur within the open fields that contain potential burrowing owl habitat.

Western burrowing owls may also use the open grassland along US 101 south of the SR85/US 101 interchange in San Jose for foraging and nesting habitat. Construction activities in this area could permanently affect up to 10.42 acres and temporarily affect up to 23.34 acres of potential foraging and nesting habitat located in the Caltrans right-of-way. With implementation of the measures listed in Section 2.3.4.4, no direct impacts to burrowing owl individuals, active nests, or nesting activities are anticipated. Temporary loss of foraging and nesting habitat due to project construction noise would be minimal compared to the amount of foraging and nesting habitat available in the project vicinity.

Nesting Raptors and Migratory Birds

No direct impacts to nesting raptors or migratory birds are anticipated with implementation of the avoidance and minimization measures listed in Section 2.3.4.4. Potential impacts to nesting raptor and migratory bird species, if present in the BSA, would include temporary loss of foraging habitat. However, loss of habitat would be minimal compared to the amount of foraging habitat available in the project vicinity, and would be related to temporary displacement due to construction noise.

It is not anticipated that project construction will produce a substantial increase in the amount of noise or activity in the BSA. Implementation of the avoidance and minimization measures listed in Section 2.3.4.4 would prevent any disturbance of nesting activities. Permanent impacts to nesting raptors and migratory birds (including take of individuals, nestlings or eggs) are not anticipated.

Bats

Project construction could temporarily disturb marginally suitable roosting and nesting sites for special-status and high-priority bat species, specifically on the underside of bridges. The project would not contribute to permanent habitat fragmentation or loss of roosting or foraging habitat. Implementation of the measure described in Section 2.3.4.4 would minimize disturbance to roosting bats.

2.3.4.4 Avoidance, Minimization, and/or Mitigation Measures

Western Pond Turtle

Although it is unlikely that this species would be present in the project area, the avoidance and minimization measures described in Section 2.3.5.4 (under “California Red-Legged Frog”) would also avoid and minimize potential adverse effects to western pond turtle habitat. No additional mitigation is required.

Special-Status Birds

Western Burrowing Owl

Implementation of the following measures would avoid and minimize impacts to western burrowing owls and their habitat in and adjacent to the BSA.

- Preconstruction surveys will be conducted in all suitable habitat to document the presence or absence of western burrowing owls, particularly in areas within 250 feet of construction activity. The surveys will conclude no more than two days prior to construction.
- If evidence of western burrowing owls is found during the breeding season surveys (February 1 to August 31), all nest sites that could be disturbed by the project will be avoided during the remainder of the breeding season. A buffer zone will be established around the site. Construction may occur inside the buffer zone during the breeding season if the nest is not disturbed and a monitoring plan is developed in coordination with CDFW.
- During the non-breeding season, a buffer zone will be established around occupied burrows. Construction activities will be allowed within the buffer zone if the following criteria are met:
- – A Caltrans approved biologist will monitor the owls for three days prior to construction and during construction.
- – If there is a change in owl foraging behavior in response to construction activities, these activities will cease within the buffer zone.
- – If the owls are gone for at least one week, then a Caltrans approved biologist may excavate usable burrows to prevent owls from re-occupying the site.
- If construction continues from the breeding season into the non-breeding season, and a buffer zone is in place, a Caltrans approved biologist may reduce the size of the buffer zone around the active burrow. Monitoring will continue as long as the burrow remains active.

Although it is unlikely that this species would be present in the project area, the avoidance and minimization measures described above would also avoid and minimize potential adverse effects to western burrowing owl habitat. No additional mitigation is required.

Nesting Raptors

Implementation of the following measures would prevent impacts to nesting raptors and their habitat in and adjacent to the BSA.

- Preconstruction surveys for raptors and appropriate nesting habitat will be conducted within 300 feet of the construction area no more than 15 days prior to ground disturbing activities including tree removal activities in the BSA. If an active nest is found, the nest tree will be protected by establishing a 300-foot buffer zone using ESA fencing. The protective fencing will be maintained in place until the end of the breeding season or until the young have fledged, as determined by a Caltrans approved biologist.

- A Caltrans approved biologist will conduct weekly monitoring to evaluate the nest for potential disturbances associated with construction activities. Construction within the buffer is prohibited until the Caltrans approved biologist determines the nest is no longer active.
- If an active nest is found after construction begins, construction activities in the vicinity of the nest will stop until a Caltrans approved biologist has evaluated the nest and established the appropriate buffer around the nest. If establishment of the buffer is not feasible, CDFW will be contacted for further avoidance and minimization guidelines.

Migratory Birds

Implementing the following measures, in conjunction with the measures for nesting raptors described above, would avoid or minimize potential effects to migratory birds and their habitat in and adjacent to the BSA. The measures below would be implemented for construction work during the nesting season (February 1 through August 31).

- A Caltrans approved biologist will conduct preconstruction surveys for nesting migratory birds in the project area no more than two days prior to the start of ground disturbing activities including tree removal activities in the BSA. Because the start of construction activities will be staggered within the project footprint, preconstruction surveys will be conducted before the start of ground disturbing activities at each construction location. If preconstruction surveys indicate the presence of migratory bird nests where activities would directly result in bird injury or death, CDFW will be consulted to determine the appropriate buffer area to be established around the birds until the chicks fledge.
- Unless otherwise instructed by CDFW, 50-foot buffers will be established around active migratory bird nests where project activities would directly result in bird injury or death. The size of the buffer may vary for different species and will be determined in coordination with CDFW. A Caltrans approved biologist will delineate the buffer using ESA fencing, pin flags, and/or yellow caution tape. The buffer zone will be maintained around all active nest sites until the young have fledged and are foraging independently. In the event that an active nest is found after the completion of preconstruction surveys and after construction begins, all construction activities will be stopped until a Caltrans approved biologist has evaluated the nest and erected the appropriate buffer around it.
- If an active nest is found in an area after construction begins, construction activities in the vicinity of the nest will stop until a Caltrans approved biologist has evaluated the nest and established the appropriate buffer around the nest. If establishment of the buffer is not feasible, CDFW will be contacted for further avoidance and minimization guidelines.
- If construction takes place during the nesting season, exclusion netting may be necessary at structures in areas of known seasonal nesting.

Bats

Disturbance of bats is of particular concern during the maternity roosting season (April 15 through August 31), when bats are likely to raise young. The following measures will be implemented to avoid and minimize potential adverse effects on special-status and high-priority bats.

- No more than two weeks prior to the start of ground disturbing activities, a Caltrans approved biologist will survey the trees and man-made structures in the BSA for evidence of bat roosts (e.g., bat guano). If bat roosts are located during preconstruction surveys, construction avoidance and minimization measures will be applied. If new bat roosts are located in construction areas that cannot be avoided, the roosts will be flagged and avoided during construction. To the extent possible, night work will be limited in areas where roosts are observed.
- If construction takes place during the nesting season, exclusion netting or other temporary barriers may be necessary at structures in areas of known seasonal nesting.
- Where new bat roosts have formed and the avoidance measures listed above cannot be achieved, provision of replacement structures may be developed.

2.3.5 Threatened and Endangered Species

This section is summarized from the *Natural Environment Study* (URS 2014a) and *Biological Assessment* (URS 2014i) for the proposed project, which were completed in March 2014.

2.3.5.1 Regulatory Setting

The primary federal law protecting threatened and endangered species is the Federal Endangered Species Act (FESA): 16 USC Section 1531, et seq. See also 50 CFR Part 402. This act and later amendments provide for the conservation of endangered and threatened species and the ecosystems upon which they depend. Under Section 7 of this act, Federal agencies, such as FHWA, are required to consult with the USFWS and NOAA Fisheries Service to ensure that they are not undertaking, funding, permitting, or authorizing actions likely to jeopardize the continued existence of listed species or destroy or adversely modify designated critical habitat. Critical habitat is defined as geographic locations critical to the existence of a threatened or endangered species. The outcome of consultation under Section 7 may include a Biological Opinion with an Incidental Take statement, a Letter of Concurrence and/or documentation of a No Effect finding. Section 3 of the FESA defines take as “harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect or any attempt at such conduct.”

California has enacted a similar law at the state level, the California Endangered Species Act (CESA), California Fish and Game Code, Section 2050 et seq. CESA emphasizes early consultation to avoid potential impacts to rare, endangered, and threatened species and to develop appropriate planning to offset project caused losses of listed species populations and their essential habitats. The CDFW is the agency responsible for implementing CESA. Section 2081 of the California Fish and Game Code prohibits “take” of any species determined to be an endangered species or a threatened species. Take is defined in Section 86 of the California Fish and Game Code as “hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill.” CESA allows for take incidental to otherwise lawful development projects; for these actions an incidental take permit is issued by the CDFW. For species listed under both the FESA and CESA requiring a Biological Opinion under Section 7 of the FESA, the CDFW may also authorize impacts to CESA species by issuing a Consistency Determination under Section 2080.1 of the California Fish and Game Code.

2.3.5.2 Affected Environment

Federal and State Consultation Process

USFWS species records were reviewed at the outset of the biological studies for the project and periodically thereafter, most recently in April 2015. The CNDDB (CDFG 2015) and CNPS online Inventory of Rare and Endangered Vascular Plants of California (CNPS 2012) were used to identify state-listed threatened and endangered species. Biologists conducted floristic-level surveys, wildlife surveys, and habitat assessments of the BSA in October 2011, and February, March, May, and July 2012.

As a result of a review of the USFWS species list, species occurrence databases and literature, the rare plant survey, and the reconnaissance-level wildlife habitat assessments, the species listed in Table 2.3.5-1 were considered to have potential to occur in the BSA.

Table 2.3.5-1: Threatened and Endangered Species Considered in the Biological Study Area

Common Name	Scientific Name	Status
Invertebrate		
Bay checkerspot butterfly	*Euphydryas editha bayensis*	Federal threatened
Amphibians		
California tiger salamander (CTS)	*Ambystoma californiense*	Federal and state threatened
California red-legged frog (CRLF)	*Rana draytonii*	Federal threatened, California species of special concern
Fish		
Steelhead – Central California Coast Distinct Population Segment (DPS)	*Oncorhynchus mykiss*	Federal threatened
Plants		
Coyote ceanothus	*Ceanothus ferrisiae*	Federal endangered, CNPS List 1B.1
Santa Clara Valley dudleya	*Dudleya setchellii*	Federal endangered, CNPS List 1B.1
Metcalf Canyon jewel-flower	*Streptanthus albidus* ssp.*albidus*	Federal endangered, CNPS List 1B.1

Endangered species consultation with the USFWS and/or NOAA Fisheries is necessary when a project has the potential to affect federally listed species and/or destroy or adversely modify designated critical habitat. The proposed project has the potential to affect six federally listed special-status animal and plant species: bay checkerspot butterfly, California red-legged frog (CRLF), California tiger salamander (CTS), coyote ceanothus, Santa Clara Valley dudleya, and Metcalf Canyon jewel-flower. The Department, as assigned by the FHWA, initiated Section 7 consultation with the USFWS in March 2014 by submitting a Biological Assessment (BA) that addresses potential effects to these species. The USFWS issued a Biological Opinion on March 10, 2015 (08ESMF00-2014-F-0534-2; see Appendix E).

While the Central California Coast DPS steelhead is a federally listed species with potential to occur in the BSA, it is not discussed further because the project does not include any in-water work and would not impact the Central California Coast DPS. The proposed project does not have the potential to affect species under the jurisdiction of NOAA Fisheries.

Endangered species consultation with the CDFW is necessary when a project may result in the take of a state-listed species. The proposed project has the potential to take CTS. The Department will consult with CDFW to obtain an incidental take permit for impacts to CTS.

Based on the review of the USFWS species list, species occurrence databases and literature, the rare plant survey, and the reconnaissance-level wildlife habitat assessments, the species listed in Table 2.3.5-2 were determined to have no potential to be impacted by the proposed project. The proposed project would have no effect on these species.

Table 2.3.5-2: Threatened and Endangered Species with No Potential for Impacts from the Proposed Project

Common Name	Scientific Name
Birds	
California black rail	*Laterallus jamaicencis coturniculus*
California clapper rail	*Rallus longirostris obsoletus*
California least tern	*Sterna antillarum browni*
Least Bell's vireo	*Vireo bellii pusillus*
Marbled murrelets	*Brachyramphus marmoratus*
Short-tailed albatross	*Phoebastria (=diomeda) albatrus)*
Southwestern willow flycatcher	*Empidonax traillii extimus*
Western snowy plover	*Charadrius nivosus* ssp. *nivosus*
Invertebrates	
Bay checkerspot butterfly	*Euphydryas editha bayensis*
Conservancy fairy shrimp	*Branchinecta conservatio*
Longhorn fairy shrimp	*Branchinecta longiantenna*
Mission blue butterfly	*Icaricia icarioides missionensis*
Myrtle's silverspot butterfly	*Speyeria zerene myrtleae*
Vernal pool shrimp	*Branchinecta lynchi*
Vernal pool tadpole shrimp	*Lepidurus packardi*
Fish	
Chinook salmon-Central Valley spring run Evolutionarily Significant Unit (ESU)	*Oncorhynchus tshawytscha*
Chinook salmon- Sacramento River winter run ESU	*Oncorhynchus tshawytscha*
Coho salmon-Central California Coast ESU	*Oncorhynchus kisutch*
Delta smelt	*Hypomesus transpacificus*
Green sturgeon Distinct Population Segment (DPS)	*Acipenser medirostris*
Steelhead - Central California Coast DPS	*Oncorhynchus mykiss*
Steelhead - Central Valley DPS	*Oncorhynchus mykiss*
Steelhead – Northern California DPS DPS	*Oncorhynchus mykiss*
Steelhead - South Central California DPS	*Oncorhynchus mykiss*
Tidewater goby	*Eucyclogobius newberryi*
Reptiles	
Alameda whipsnake	*Masticophis lateralis euryxanthus*
San Francisco garter snake	*Thamnophis sirtalis tetrataenia*
Mammals	
Salt-marsh harvest mouse	*Reithrodontomys raviventris*
San Joaquin kit fox	*Vulpes macrotis mutica*
Plants	
Antioch dunes evening primrose	*Oenothera deltoides ssp. howellii*
California seablite	*Suaeda californica*
Calistoga allocarya	*Plagiobothrys strictus*
Contra Costa goldfields	*Lasthenia conjugens*
Contra Costa wallflower	*Erysimum capitatum var. angustatum*
Fountain thistle	*Cirsium fontinale* var. *fontinale*
Hickman's potentilla	*Potentilla hickmanii*
Large-Flowered fiddleneck	*Amsinckia grandiflora*

Marin dwarf-flax (=western flax)	*Hesperolinon congestum*
Marsh Sandwort	*Arenaria paludicola*
Menzies' wallflower	*Erysimum menziesii)*
Palmate-Bracted bird's beak	*Cordylanthus palmatus*
Robust spineflower	*Chorizanthe robusta* var. *robusta*
San Francisco lessingia	*Lessingia germanorum (=l.g.* var. *germanorum)*
San Francisco popcorn flower	*Plagiobothrys diffusus*
San Mateo thornmint	*Acanthomintha duttonii*
San Mateo woolly sunflower	*Eriophyllum latilobum*
Santa Cruz tarplant	*Holocarpha macradenia*
Tiburon paintbrush	*Castilleja affinis* ssp. *neglecta*
Two-fork clover	*Trifolium amoenum*
White-rayed pentachaeta	*Pentachaeta bellidiflora*

Species Addressed in Consultation

California Red-Legged Frog (CRLF)

The CNDDB search identified several CRLF occurrences within 1 mile of the BSA, south of the SR 85/US 101 interchange in San Jose and mostly on the east side of US 101. The closest CNDDB occurrence was recorded approximately 0.15 mile east of the BSA.

Field surveys were completed for the proposed project. During the October 2011 survey, a CRLF individual was sighted near the BSA at a pond approximately 100 feet west of the Coyote Creek crossing at the SR 85/US 101 interchange in San Jose. Several adult and juvenile sub-adults CRLF were also observed in oversized culverts that transported water under US 101 into small riparian areas dominated by willows and cattails. During the wetland delineation, an adult CRLF was observed in a seep-fed wetland on the northbound side of US 101 south of the US 101/Bailey Avenue intersection, approximately 100 feet from the end of the project area. The wetland is composed of Mt. Hamilton fountain thistle, nutsedge, and white hedge nettle. The wetland is approximately 0.25 miles southwest of a stock pond (CNDDB occurrence 76429) used by breeding CRLF (CDFW 2013). Although larval CRLF were not observed, if the period of time when the wetland is saturated coincides with the CRLF breeding period, these features may be potential aquatic habitat.

California red-legged frog moving along US 101 from these areas could move into the project area. Annual grassland near US 101 south of Coyote Creek could provide upland dispersal habitat for the species despite the nearby roadways and housing developments. Riparian communities located adjacent to the annual grasslands may provide suitable aquatic and riparian habitat for the species. Although current traffic conditions on US 101 impose a major barrier to CRLF movement over US 101, CRLF may move under US 101 via the existing culverts.

The BSA is outside of designated critical habitat for CRLF, as defined in the March 2010 revised critical habitat designation (USFWS 2010). CRLF critical habitat Unit SCT-1 is approximately 1.3 miles from the BSA, in the Diablo range east of US 101 near Metcalf Road and San Felipe Road.

California Tiger Salamander (CTS)

The CNDDB search identified several CRLF occurrences within 1 mile of the BSA south of the SR 85/US 101 interchange in San Jose. The closest CNDDB occurrence was recorded approximately 0.15 mile east of the BSA.

Field surveys were completed for the proposed project. Suitable aquatic habitat for CTS was not observed in the BSA during reconnaissance-level surveys. However, CTS have been observed in the project vicinity (CDFG 2012). Suitable aquatic habitat for CTS was observed in oversized culverts adjacent to the right-of-way fence between Bailey Avenue and Cochrane Road. Although juvenile and larval CTS were not observed, if the period of time when the wetland is saturated coincides with the CTS breeding period, these features may be potential aquatic habitat. The closest known breeding habitat is at three stock ponds within 0.55 mile of the project area on the east side of US 101 (CDFW 2013; Bettelheim 2013). Because no barriers are present, CTS moving along US 101 from these areas could move into the project area. The annual grasslands on both sides of US 101 in the BSA contain ground squirrel burrows and could provide some marginal dispersal habitat despite nearby roadways and housing developments. Although current traffic conditions on US 101 impose a major barrier to CTS movement over US 101, CTS may move under US 101 via the existing culverts.

The presence of CTS in the BSA is inferred. This inference is based on the known occurrences within 1.24 miles of the BSA, the proximity of the BSA to known breeding habitat, and connectivity of the breeding habitat to suitable dispersal habitat in the BSA.

The BSA is outside of designated critical habitat for CTS. The East Bay Region Critical Habitat Unit 7 is approximately 1.5 miles from the BSA and the East Bay Region Critical Habitat Unit 8 is approximately 2.7 miles from the BSA (USFWS 2005b). The proposed project would not affect designated or proposed critical habitat for CTS.

Bay Checkerspot Butterfly

The CNDDB reports occurrences of bay checkerspot butterfly within a 1-mile radius of the BSA. Bay checkerspot butterflies were not observed during reconnaissance surveys. However, several clusters of the bay checkerspot butterfly’s primary and secondary host plants, dwarf plantain and purple owl’s clover, were observed on both sides of US 101 south of the SR 85/US 101 interchange in San Jose. The clusters extend from just south of the PG&E substation on the southbound side of US 101 to an area approximately 4,500 feet north of the southernmost Coyote Creek crossing on the northbound side of US 101. Dwarf plantain and purple owl’s clover are associated with serpentine grasslands and soils which occur along US 101 south of the SR 85/US 101 interchange in San Jose.

The BSA is outside of designated critical habitat for the bay checkerspot butterfly. The closest known designated critical is 0.03 mile from the project area (USFWS 2008).

Coyote Ceanothus

During the March 2012 surveys, a single coyote ceanothus was observed just south of the Yerba Buena Road interchange, on the east side of US 101. The closest historical record of coyote ceanothus is approximately 0.6 mile northeast of Burnett Avenue. Although no other coyote ceanothus plants were observed during the field surveys, suitable serpentine habitat is present on the east side of US 101 from Yerba Buena Road to Coyote Road and from Silver Creek Valley Road to SR 85, and on both sides of US 101 from SR 85 to East Dunne Avenue.

Santa Clara Valley Dudleya

Although serpentine grasslands were identified in the BSA, Santa Clara Valley dudleya and the rocky outcrops that serve as habitat for the species were not identified in reconnaissance surveys of the BSA. However, several rock outcrop areas were visible adjacent to the BSA. The closest known occurrence of Santa Clara Valley dudleya is south of Metcalf Road, approximately 400 feet away from the pavement, on the east side of US 101 across from a PG&E substation.

Metcalf Canyon Jewel-Flower

Although areas of serpentine soils were identified during surveys of the BSA, the Metcalf Canyon jewel-flower was not observed. The closest recorded occurrence is south of Metcalf Road, approximately 230 feet from the edge of pavement on the east side of the road across from Coyote Ranch.

2.3.5.3 Environmental Consequences

California Red-Legged Frog

During the October 2011 reconnaissance-level surveys, cattail and cattail willow wetlands were observed in culverts adjacent to the right-of-way fence line. These areas are considered potential aquatic habitat for CRLF. These areas will be fenced using ESA fencing and avoided during construction. No permanent or temporary effects to potential CRLF aquatic habitat would occur.

As discussed above, current traffic conditions on US 101 impose a major barrier to CRLF movement over US 101. As a result, the minimal outside widening along US 101 in the Coyote Creek area will not create a new movement barrier over US 101. Although construction activities may temporarily limit CRLF movement along or underneath US 101, permanent impacts to CRLF movement through the Coyote Creek area will not occur as a result of the project.

Construction activities could permanently affect up to 10.42 acres of upland dispersal habitat in San Jose on the east side of US 101 from Yerba Buena Road to Coyote Road and from Silver Creek Valley Road to SR 85, and on both sides of US 101 from SR 85 to East Dunne Avenue. The potentially affected dispersal habitat consists of coast live oak woodland, coast live oak-walnut woodland, coyote brush scrub, Fremont cottonwood forest and riparian forest, introduced perennial grassland, ruderal California annual grassland, ruderal disturbed areas, and landscaped vegetation.

Although a retaining wall would be installed in the median of US 101 between Cochrane Road and Bailey Avenue and the median would be widened, this area is not considered habitat for CRLF. The median is either paved or a highly disturbed mosaic of ruderal grassland and dirt with a median barrier separating the northbound and southbound lanes.

Other ground disturbance activities such as staging, clearing, and grubbing could temporarily affect up to 23.34 acres of potential upland dispersal habitat.

Exclusion fencing and the other measures described in Section 2.3.5.4 would avoid and minimize adverse effects to potential dispersal habitat. Areas that are temporarily disturbed would be restored to pre-project conditions. However, if CRLF are present on the east side of US 101 from Yerba Buena Road to Coyote Road and from Silver Creek Valley Road to SR 85, and on both sides of US 101 from SR 85 to East Dunne Avenue during project construction, take under FESA could occur in the form of harassment, injury, mortality, habitat loss and degradation, construction-related disturbance, or capture and relocation. Based on the impacts to upland dispersal habitat and potential for take of individual CRLF, Caltrans concludes the project “may affect, is likely to adversely affect” CRLF under FESA.

California Tiger Salamander

Although potential aquatic habitat for CTS was observed in oversized culverts adjacent to the right-of-way fence between Bailey Avenue and Cochrane Road, no permanent or temporary effects to potential CTS aquatic habitat would occur. These areas will be fenced off using ESA fencing and avoided.

Similar to CRLF, current traffic conditions on US 101 impose a major barrier to CTS movement over US 101. As result, the minimal outside widening along US 101 in the Coyote Creek area will not create a new movement barrier over US 101. Although construction activities may temporarily limit CTS movement along or underneath US 101, permanent impacts to CTS movement through the Coyote Creek area will not occur as a result of the project.

Construction activities could permanently affect up to 10.42 acres of potential CTS dispersal habitat in San Jose on the east side of US 101 from Yerba Buena Road to Coyote Road and from Silver Creek Valley Road to SR 85, and on both sides of US 101 from the US 101/SR 85 interchange in San Jose to East Dunne Avenue in Morgan Hill. The potentially affected dispersal habitat consists of coast live oak woodland, coast live oak-walnut woodland, coyote brush scrub, Fremont cottonwood forest and riparian forest, introduced perennial grassland, ruderal California annual grassland, ruderal disturbed areas, and landscaped vegetation.

Although the median would be widened in this section of US 101, this area is not considered habitat for CTS. The median is either paved or a highly disturbed mosaic of ruderal grassland and dirt with K-rail separating the northbound and southbound lanes.

Other ground disturbance activities from staging, clearing and grubbing could temporarily affect 23.34 acres of potential upland dispersal habitat.

Exclusion fencing and the other measures described in Section 2.3.5.4 would avoid and minimize adverse effects to potential dispersal habitat for CTS. Areas that are temporarily disturbed would be restored to pre-project conditions. However, if CTS are present during project construction on the east side of US 101 from Yerba Buena Road to Coyote Road and from Silver Creek Valley Road to SR 85, and on both sides of US 101 from SR 85 to East Dunne Avenue, take under FESA could occur in the form of injury, mortality, harassment, dispersal habitat loss and degradation, construction-related disturbance, and capture and relocation. Potential take under CESA, which would include injury or mortality to individuals, could occur as a result of the project. Based on the impacts to upland dispersal habitat and potential for take of individual CTS, Caltrans concludes the project “may affect, is likely to adversely affect” CTS under FESA. Potential take under CESA, which would include injury or mortality to individuals, could occur as a result of the project.

Bay Checkerspot Butterfly

The bay checkerspot butterfly’s primary host plant, dwarf plantain, and secondary host plants, purple owl’s clover and exserted Indian paintbrush (*Castilleja exserta*), are associated with serpentine grasslands. Since the bay checkerspot butterfly’s life history is directly tied to the dwarf plantain, and to a lesser extent the purple owl’s clover and exserted Indian paintbrush, alterations in serpentine grasslands could have an adverse effect on existing populations.

Construction activities could permanently affect up to 0.12 acre of serpentine grasslands on either side of US 101 that contain suitable habitat for the dwarf plantain, purple owl’s clover and exserted Indian paintbrush. Although additional serpentine grassland areas containing the bay checkerspot butterfly's host plants are present on both sides of US 101 to the south of the SR 85/US 101 interchange in San Jose, these areas will be fenced off with ESA fencing and avoided.

As discussed in Section 2.3.1.2, project construction has the potential to increase nitrogen deposition within serpentine areas, which could make these areas more susceptible to invasion from non-serpentine plant species. Since the bay checkerspot butterfly's life history is directly tied to serpentine-dependent host plants (dwarf plantain, purple owl's clover, and exserted Indian paintbrush), alterations in serpentine grasslands could have an indirect adverse effect on existing bay checkerspot butterfly populations.

In late fall, winter, and spring, various life stages of the butterfly are susceptible to impacts from dust related to project construction. Insects breathe through respiratory openings that can become clogged with dust. Impacts are most severe within a few hundred feet of the area where the dust is produced. Dust production along the entire section of US 101 south of Yerba Buena Road will be minimized by using dust control measures such as watering.

The bay checkerspot butterfly could be present in the project construction area on the east side of US 101 from Yerba Buena Road to Coyote Road and from Silver Creek Valley Road to SR 85, and on both sides of US 101 from SR 85 to East Dunne Avenue. During field surveys, the primary and one of the secondary host plants (dwarf plantain and purple owl's clover) for the butterfly were observed along US 101 south of Metcalf Road, including in areas that would be directly affected by construction activities. Construction activities could result in the direct take of the bay checkerspot butterfly through "crushing of [the host plant] as well as larvae, pupae, and eggs" (USFWS 2008, pg. 50428). In addition, vehicular strikes could result in "an unknown amount of mortality and injury to bay checkerspot butterfly" (USFWS 1998, pg. II-195, in USFWS 2008).

The project has the potential to affect a small number of host plants, and a low potential to affect individuals. Based on this conclusion, Caltrans concludes the project "may affect, is likely to adversely affect" the bay checkerspot butterfly under FESA.

Coyote Ceanothus, Santa Clara Valley Dudleya, and Metcalf Canyon Jewel-Flower

Construction activities could permanently affect up to 0.12 acre of serpentine grasslands on either side of US 101 that contain suitable habitat for the coyote ceanothus and Metcalf Canyon jewel-flower. If these species occur within the project footprint during construction, direct take of these species may occur.

Because serpentine rocky outcrops are not present within the BSA, direct effects to the Santa Clara Valley dudleya are not expected to occur.

As discussed in Section 2.3.1.2, project construction could indirectly affect serpentine grassland habitat for these plants as a result of increases in nitrogen deposition, making these areas more susceptible to invasion from non-serpentine plant species. Therefore, Caltrans concludes the project "may affect, is likely to adversely affect" coyote ceanothus, Santa Clara Valley dudleya, and Metcalf Canyon jewel-flower.

2.3.5.4 Avoidance, Minimization, and/or Mitigation Measures

Avoidance and Minimization

California Red-Legged Frog

To avoid and minimize potential effects to CRLF and their habitat, the following conservation measures, in addition to the general avoidance and minimization measures described in Section 2.3.2.4, will be implemented in all active ground disturbance and construction areas east side of US 101 from Yerba Buena Road to Coyote Road and from Silver Creek Valley Road to SR 85, and on both sides of US 101 from the US 101/SR 85 interchange in San Jose to East Dunne Avenue in Morgan Hill.

Potential habitat for CTS also exists in the same areas where CRLF habitat has been identified; therefore, the following measures would also apply to CTS.

- Construction will occur during the dry season (June 15 to October 15).
- Prior to any construction on US 101 south of the SR 85/US 101 interchange in San Jose, a USFWS- and CDFW-approved biologist will conduct an education program for construction personnel. At a minimum, the training will include a description of CRLF and CTS and their habitats; the potential occurrence of these species in the project area; an explanation of the status of these species and protection under the FESA; the measures to be implemented to conserve listed species and their habitats as they relate to the work site; and boundaries in which construction may occur. A fact sheet conveying this information will be prepared and distributed to all construction crews and project personnel entering the project area. Upon completion of the program, personnel will sign a form stating that they attended the program and understand all of the avoidance and minimization measures and implications of the FESA.
- Only USFWS- and CDFW-approved biological monitors will implement the monitoring duties outlined in the BO including delivery of the Worker Environmental Awareness Training Program.
- A USFWS- and CDFW-approved biologist will be present during removal of vegetation and ground disturbance activities in areas along US 101 south of the SR 85/US 101 interchange in San Jose to monitor activities and examine the site for CRLF and CTS. After vegetation removal, the biologist will check the exclusion fencing as necessary to ensure that it remains intact throughout the construction period. Through communication with the Resident Engineer or their designee, the biologist may stop work if deemed necessary for any reason to prevent the mortality or injury of a CRLF or CTS and will advise the Resident Engineer or designee on how to proceed accordingly. If a CRLF or CTS is found, work within a 50-foot radius will be halted, and the USFWS will be notified immediately. Work in the area will not resume until the CRLF or CTS is relocated to a suitable site by the biologist in conformance with approved USFWS protocol.
- No more than two days prior to the start of ground disturbing activities, focused preconstruction surveys for CRLF and CTS will be completed by a USFWS- and CDFW-approved biologist in all suitable upland dispersal habitat areas within the project footprint. If CRLF or CTS are found during focused preconstruction surveys, the USFWS

will be contacted within one working day, and work activities along US 101 in suitable upland dispersal habitat will be suspended until the CRLF or CTS is relocated to a suitable site in conformance with approved USFWS protocol.

- Wildlife exclusion fencing will be installed around CRLF and CTS habitat prior to any construction during the dry season (June 15 through October 15), when CRLF and CTS are not actively dispersing or foraging. The exclusion fencing would be placed 10 feet from the edge of pavement along US 101, south of the SR 85/US 101 interchange in San Jose. The physical placement of the fence will be supervised by a USFWS- and CDFW-approved biologist. This will ensure a complete barrier around the construction area to prevent any wandering CRLF or CTS from entering the area. The fencing will remain in place until all project activities in the vicinity of suitable upland dispersal habitat are completed.
- To prevent CRLF or CTS from becoming entangled or trapped in erosion control materials, plastic monofilament netting (erosion control matting) or similar material will not be used for erosion control. Acceptable erosion control substitutes include matting made of coconut coir (a fiber made from coconut husks) or tackified hydroseeding compounds (seeds and mulch mixed with a tacky substance to keep the mixture in place).
- To prevent inadvertent entrapment of CRLF, CTS, and other wildlife species during construction, all excavated, steep-walled holes or trenches more than 1-foot deep will either be covered with plywood or similar materials at the end of each work day or one or more escape ramps constructed of earth full or wooden planks will be installed. The USFWS- and CDFW-approved biologist will inspect all holes and trenches before holes and trenches are filled. Materials left on-site overnight will be inspected by the USFWS- and CDFW-approved biologist before they are subsequently moved, capped and/or burred. If at any time a listed species is discovered, the Resident Engineer and the USFWS- and CDFW-approved biologist will be notified immediately. If necessary, the USFWS- and CDFW-approved biologist will capture and relocate them to a suitable area outside the project area.
- The USFWS- and CDFW-approved biologist will take all precautions to prevent spread of amphibian diseases when handling the listed species. Implementation of measures to minimize the spread of disease and non-native species will follow the current Wildlife Agency protocols (e.g., *Revised Guidance on Site Assessments and Field Surveys for the California Red-legged Frog: Appendix B, Recommended Equipment Decontamination Procedures* [USFWS 2005a]).
- All organic matter should be removed from nets, traps, boots, vehicle tires and all other surfaces that have come into contact with ponds, wetlands, or potentially contaminated sediments. Items should be washed with a 5 percent bleach solution and rinsed with clean water before leaving each study site. Used cleaning materials (liquids, etc.) should be disposed of safely, and if necessary, taken off site for proper disposal. Used disposable gloves should be retained for safe disposal in sealed bags (County of Santa Clara 2012).
- Rodenticides and herbicides will be utilized in such a manner to prevent primary or secondary poisoning of listed species, and depletion of prey populations on which they depend. All uses of such compounds will observe label and other restrictions mandated

by the U.S. Environmental Protection Agency (U.S. EPA), California Department of Pesticide Regulation, and other appropriate State and Federal regulations, as well as additional project-related restrictions deemed necessary by the USFWS or the CDFW.

- To avoid injury or death of a CRLF or CTS, no firearms will be allowed in the BSA except for those carried by authorized security personnel, or local, State, or Federal law enforcement officials.
- To prevent harassment, injury, or mortality of a CRLF or CTS, or destruction of their refuge areas, no pets will be permitted in the BSA.

California Tiger Salamander

The avoidance and minimization measures listed for CRLF would serve to avoid and minimize potential impacts to potential CTS and their habitat. The construction contractor will be required to implement the measures above for any ground-disturbing construction in San Jose on the east side of US 101 from Yerba Buena Road to Coyote Road and from Silver Creek Valley Road to SR 85, and on both sides of US 101 from SR 85 to East Dunne Avenue. Preconstruction surveys will be conducted for CTS. The exclusion fencing will be designed and constructed in a way to keep both CTS and CRLF from entering the construction area. Worker training will include familiarizing construction personnel with both species. Implementation measures to minimize the spread of disease and non-native species will follow current Wildlife Agency protocols (e.g., *Interim Guidance on Site Assessment and Field Surveys for Determining Presence or a Negative Finding of the California Tiger Salamander* [USFWS 2003]) and other best available science (County of Santa Clara 2012).

Bay Checkerspot Butterfly

To avoid and minimize potential effects to the bay checkerspot butterfly, the following conservation measures, in addition to the avoidance and minimization measures described in Sections 2.3.1.3 and 2.3.2.4, will be implemented in all active ground disturbance and construction areas in San Jose on the east side of US 101 from Yerba Buena Road to Coyote Road and from Silver Creek Valley Road to SR 85, and on both sides of US 101 from the US 101/SR 85 interchange in San Jose to East Dunne Avenue in Morgan Hill.

- Before construction commences, a preconstruction survey for the primary and secondary host plants (dwarf plantain, purple owl's clover and exserted Indian paintbrush) will be conducted to determine the presence and extent of the plants within the BSA. These should be conducted in coordination with the preconstruction survey for serpentine grasslands within this same area. To the extent possible, host plants that are present in the limits of construction will be fenced off prior to construction using ESA fencing (including a 5-foot buffer) to avoid any direct or indirect impacts to bay checkerspot butterfly. The preconstruction survey will be conducted during the host plants' blooming period, when the plants are identifiable.
- To avoid impacts to dispersing adult butterflies, construction activities south of Yerba Buena Road will not occur during the flight period. The flight period generally begins in March and lasts into early May (County of Santa Clara 2012).
- During ground-disturbing construction activities, the construction contractor will implement dust control measures including regular watering of exposed soils to reduce the amount of dust and particulate matter in the air. The control measures will be

consistent with the Department Standard Specifications, Section 14-9.01 (Air Pollution Control) and Section 14-9.02 (Dust Control).

Coyote Ceanothus, Santa Clara Valley Dudleya, and Metcalf Canyon Jewel-Flower

The following conservation measure, in addition to the measures discussed in Sections 2.3.1.3 and 2.3.2.4, will avoid and minimize potential effects to coyote ceanothus and Metcalf Canyon jewel-flower.

- If construction is starts during the blooming period when coyote ceanothus and Metcalf Canyon jewel-flower are identifiable, then:
  – Preconstruction surveys will be conducted no more than two days prior to the start of ground disturbing activities on the east side of US 101 from Yerba Buena Road to Coyote Road and from Silver Creek Valley Road to SR 85, and on both sides of US 101 from SR 85 to East Dunne Avenue in San Jose and Morgan Hill.
  – If coyote ceanothus or Metcalf Canyon jewel-flower are present within the limits of construction, to the extent possible, a 5-foot buffer will be placed around the listed plant species using ESA fencing prior to the start of construction to avoid any direct impacts to the plants.
- If construction is planned to start before or after the listed plant species' blooming periods, additional surveys will be done during the blooming periods when the coyote ceanothus and Metcalf Canyon jewel-flower are identifiable.

Because habitat for the Santa Clara Valley dudleya is not present within the BSA, avoidance and minimization measures are not proposed.

Compensatory Mitigation

Mitigation Measure 4: Compensatory mitigation for impacts to CRLF and CTS will be provided through payment of an in-lieu fee to the HCP/NCCP.

Mitigation Measure 5: Compensatory mitigation for impacts to the bay checkerspot butterfly, coyote ceanothus, and Metcalf Canyon jewel-flower will be provided through payment of the serpentine fee and nitrogen deposition fee to the Santa Clara Valley HCP/NCCP.

2.3.6 Invasive Species

This section is summarized from the *Natural Environment Study* (URS 2014a) for the proposed project, which was completed in October 2012.

2.3.6.1 Regulatory Setting

On February 3, 1999, President William J. Clinton signed Executive Order (EO) 13112 requiring federal agencies to combat the introduction or spread of invasive species in the United States. The order defines invasive species as "any species, including its seeds, eggs, spores, or other biological material capable of propagating that species, that is not native to that ecosystem whose introduction does or is likely to cause economic or environmental harm or harm to human health." Federal Highway Administration (FHWA) guidance issued August 10, 1999 directs the use of the state's invasive species list maintained by the California Invasive Species Council to define the invasive plants that must be considered as part of the National Environmental Policy Act (NEPA) analysis for a proposed project.

2.3.6.2 Affected Environment

The BSA supports a number of non-native species, some of which are non-native but not invasive and some of which are both non-native and invasive. Species found in the BSA that are exotic but not invasive include a variety of palm trees, weeping bottlebrush (*Callistemon viminalis*), and Peruvian pepper trees (*Schinus molle*) that were planted along the roadway. The BSA also includes extensive stands of non-native blue gum eucalyptus (*Eucalyptus globulus*) that were planted along US 101.

Invasive species in the BSA include non-natives that are deemed high risk by the California Invasive Plant Council. These include English ivy (*hedera helix*), yellow star thistle (*Centuarea solstitialus*), jubata grass (*Cortaderia jubata*), and sweet fennel (*Foeniculum vulgare*). Yellow star thistle was particularly prevalent along the corridor on both sides of US 101 between San Jose and Morgan Hill, along with non-natives deemed of moderate risk by the California Invasive Plant Council: black mustard (*Brassica nigra*), soft brome (*Bromus hordaceous*), Italian ryegrass (*Lolium multiflorum*), and Italian thistle (*Carduus pycnocephalus*).

2.3.6.3 Environmental Consequences

None of the identified species on the California list of noxious weeds is currently used by the Department for erosion control or landscaping. However, project construction activities could have the potential to inadvertently spread these species.

2.3.6.4 Avoidance, Minimization, and/or Mitigation Measures

In compliance with the Executive Order on Invasive Species, EO 13112, and subsequent guidance from the Federal Highway Administration, the landscaping and erosion control included in the project will not use species listed as noxious weeds. The following measures will also reduce the spread of invasive non-native plant species and minimize the potential for construction disturbance to decrease palatable vegetation for wildlife to the greatest degree possible:

- No disposal of soil and plant materials will be allowed from areas that support invasive species to areas dominated by native vegetation;
- Resident Engineers will be educated on weed identification and the importance of controlling and preventing the spread of identified invasive non-native species; and
- Gravel and/or fill material to be placed in relatively weed-free areas will come from weed-free sources. Certified weed-free imported materials (or rice straw in upland areas) will be used.

2.4 Cumulative Impacts

2.4.1 Regulatory Setting

Cumulative impacts are those that result from past, present, and reasonably foreseeable future actions, combined with the potential impacts of this proposed project. A cumulative effect assessment looks at the collective impacts posed by individual land use plans and projects. Cumulative impacts can result from individually minor but collectively substantial impacts taking place over a period of time.

Cumulative impacts to resources in the project area may result from residential, commercial, industrial, and highway development, as well as from agricultural development and the conversion to more intensive agricultural cultivation. These land use activities can degrade habitat and species diversity through consequences such as displacement and fragmentation of habitats and populations, alteration of hydrology, contamination, erosion, sedimentation, disruption of migration corridors, changes in water quality, and introduction or promotion of predators. They can also contribute to potential community impacts identified for the project, such as changes in community character, traffic patterns, housing availability, and employment.

California Environmental Quality Act (CEQA) Guidelines, Section 15130, describes when a cumulative impact analysis is necessary and what elements are necessary for an adequate discussion of cumulative impacts. The definition of cumulative impacts under CEQA can be found in Section 15355 of the CEQA Guidelines. A definition of cumulative impacts under the National Environmental Policy Act (NEPA) can be found in 40 CFR, Section 1508.7 of the Council on Environmental Quality (CEQ) Regulations.

2.4.2 Cumulative Impact Analysis

The cumulative impact analysis focuses on the resources that the project may affect. According to the Department's eight-step approach for developing a cumulative impact analysis, if the project would not result in impacts on a resource, it could not contribute to a cumulative impact. The impact used in the cumulative impact analysis is the net impact: the project impact minus proposed avoidance, minimization, and/or mitigation measures. For resource areas where the impact would be fully offset by the proposed avoidance, minimization, and/or mitigation measures, the project would not contribute to cumulative impacts.

The proposed project would not have any net impacts on any resources. All potential impacts will be minimized through the proposed avoidance, minimization, and/or mitigation measures presented in Chapter 2. Because no impacts have been identified as potentially significant, the project would not result in cumulative impacts.

2.5 Climate Change (CEQA)

Climate change refers to long-term changes in temperature, precipitation, wind patterns, and other elements of the earth's climate system. An ever-increasing body of scientific research attributes these climatological changes to greenhouse gas (GHG) emissions, particularly those generated from the production and use of fossil fuels.

While climate change has been a concern for several decades, the establishment of the Intergovernmental Panel on Climate Change (IPCC) by the United Nations and World Meteorological Organization in 1988 has led to increased efforts devoted to GHG emissions reduction and climate change research and policy. These efforts are primarily concerned with the emissions of GHGs generated by human activity including carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), tetrafluoromethane, hexafluoroethane, sulfur hexafluoride (SF_6), HFC-23 (fluoroform), HFC-134a (s, s, s, 2-tetrafluoroethane), and HFC-152a (difluoroethane).

In the U.S., the main source of GHG emissions is electricity generation, followed by transportation. In California, however, transportation sources (including passenger cars, light-duty trucks, other trucks, buses, and motorcycles make up the largest source of GHG-emitting sources. The dominant GHG emitted is CO_2 mostly from fossil fuel combustion.

There are typically two terms used when discussing the impacts of climate change: "Greenhouse Gas Mitigation" and “Adaptation”. “Greenhouse Gas Mitigation” is a term for reducing GHG emissions to reduce or offset the impacts of climate change. “Adaptation" refers to the effort of planning for and adjusting to impacts resulting from climate change (such as adjusting transportation design standards to withstand more intense storms and higher sea levels)[26].

There are four primary strategies for reducing GHG emissions from transportation sources: 1) improving the transportation system and operational efficiencies, 2) reducing travel activity, 3) transitioning to lower GHG-emitting fuels, and 4) improving vehicle technologies/efficiency. To be most effective, all four strategies should be pursued cooperatively. [27]

2.5.1 Regulatory Setting

State

With the passage of several pieces of legislation including state Senate and Assembly bills and Executive Orders, California launched an innovative and proactive approach to dealing with GHG emissions and climate change.

Assembly Bill 1493 (AB 1493), Pavley, Vehicular Emissions: Greenhouse Gases, 2002: This bill requires the California Air Resources Board (ARB) to develop and implement regulations to reduce automobile and light truck GHG emissions. These stricter emissions standards were designed to apply to automobiles and light trucks beginning with the 2009-model year.

Executive Order (EO) S-3-05 (June 1, 2005): The goal of this EO is to reduce California’s GHG emissions to: 1) year 2000 levels by 2010, 2) year 1990 levels by 2020 and 3) 80 percent below the year 1990 levels by 2050. In 2006, this goal was further reinforced with the passage of Assembly Bill 32.

Assembly Bill (AB 32), Nunez and Pavley, The Global Warming Solutions Act of 2006 : AB 32 sets the same overall GHG emissions reduction goals as outlined in EO S-3-05, while further mandating that ARB create a scoping plan and implement rules to achieve “real, quantifiable, cost-effective reductions of greenhouse gases.”

Executive Order S-20-06 (October 18, 2006): This order establishes the responsibilities and roles for the Secretary of the California Environmental Protection Agency (Cal/EPA) and state agencies with regard to climate change.

Executive Order S-01-07 (January 18, 2007): This order set forth the low carbon fuel standard for California. Under this EO, the carbon intensity of California’s transportation fuels is to be reduced by at least 10 percent by 2020.

Senate Bill 97 (SB 97) Chapter 185, 2007, Greenhouse Gas Emissions: This bill required the Governor's Office of Planning and Research (OPR) to develop recommended amendments to the

[26] http://climatechange.transportation.org/ghg_mitigation/
[27] http://www.fhwa.dot.gov/environment/climate_change/mitigation/

California Environmental Quality Act (CEQA) Guidelines for addressing GHG emissions. The amendments became effective on March 18, 2010.

Senate Bill 375 (SB 375), Chapter 728, 2008, Sustainable Communities and Climate Protection: This bill requires the California Air Resources Board (CARB) to set regional emissions reduction targets from passenger vehicles. The Metropolitan Planning Organization for each region must then develop a "Sustainable Communities Strategy" (SCS) that integrates transportation, land-use, and housing policies to plan for the achievement of the emissions target for their region.

Senate Bill 391 (SB 391) Chapter 585, 2009 California Transportation Plan: This bill requires the State's long-range transportation plan to meet California's climate change goals under AB 32.

Federal

Although climate change and GHG reduction are a concern at the federal level, currently no regulations or legislation have been enacted specifically addressing GHG emissions reductions and climate change at the project level. Neither the United States Environmental Protection Agency (U.S. EPA) nor the Federal Highway Administration (FHWA) has issued explicit guidance or methods to conduct project-level GHG analysis.[28] FHWA supports the approach that climate change considerations should be integrated throughout the transportation decision-making process–from planning through project development and delivery. Addressing climate change mitigation and adaptation up front in the planning process will assist in decision-making and improve efficiency at the program level, and will inform the analysis and stewardship needs of project-level decision-making. Climate change considerations can be integrated into many planning factors, such as supporting economic vitality and global efficiency, increasing safety and mobility, enhancing the environment, promoting energy conservation, and improving the quality of life.

The four strategies outlined by FHWA to lessen climate change impacts correlate with efforts that the state is undertaking to deal with transportation and climate change; these strategies include improved transportation system efficiency, cleaner fuels, cleaner vehicles, and reduction in travel activity.

Climate change and its associated effects are also being addressed through various efforts at the federal level to improve fuel economy and energy efficiency, such as the "National Clean Car Program" and EO 13514 - *Federal Leadership in Environmental, Energy and Economic Performance*.

Executive Order 13514 (October 5, 2009): This order is focused on reducing greenhouse gases internally in federal agency missions, programs and operations, but also directs federal agencies to participate in the Interagency Climate Change Adaptation Task Force, which is engaged in developing a national strategy for adaptation to climate change.

U.S. EPA's authority to regulate GHG emissions stems from the U.S. Supreme Court decision in *Massachusetts v. EPA* (2007). The Supreme Court ruled that GHGs meet the definition of air pollutants under the existing Clean Air Act and must be regulated if these gases could be

[28] To date, no national standards have been established regarding mobile source GHGs, nor has U.S. EPA established any ambient standards, criteria or thresholds for GHGs resulting from mobile sources.

reasonably anticipated to endanger public health or welfare. Responding to the Court's ruling, U.S. EPA finalized an endangerment finding in December 2009. Based on scientific evidence it found that six greenhouse gases (carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride) constitute a threat to public health and welfare. Thus, it is the Supreme Court's interpretation of the existing Act and EPA's assessment of the scientific evidence that form the basis for EPA's regulatory actions. U.S. EPA in conjunction with NHTSA issued the first of a series of GHG emission standards for new cars and light-duty vehicles in April 2010.[29]

The U.S. EPA and the National Highway Traffic Safety Administration (NHTSA) are taking coordinated steps to enable the production of a new generation of clean vehicles with reduced GHG emissions and improved fuel efficiency from on-road vehicles and engines. These next steps include developing the first-ever GHG regulations for heavy-duty engines and vehicles, as well as additional light-duty vehicle GHG regulations.

The final combined standards that made up the first phase of this national program apply to passenger cars, light-duty trucks, and medium-duty passenger vehicles, covering model years 2012 through 2016. The standards implemented by this program are expected to reduce GHG emissions by an estimated 960 million metric tons and 1.8 billion barrels of oil over the lifetime of the vehicles sold under the program (model years 2012-2016).

On August 28, 2012, U.S. EPA and NHTSA issued a joint Final Rulemaking to extend the National Program for fuel economy standards to model year 2017 through 2025 passenger vehicles. Over the lifetime of the model year 2017-2025 standards this program is projected to save approximately four billion barrels of oil and two billion metric tons of GHG emissions.

The complementary U.S. EPA and NHTSA standards that make up the Heavy-Duty National Program apply to combination tractors (semi-trucks), heavy-duty pickup trucks and vans, and vocational vehicles (including buses and refuse or utility trucks). Together, these standards will cut greenhouse gas emissions and domestic oil use significantly. This program responds to President Barack Obama's 2010 request to jointly establish greenhouse gas emissions and fuel efficiency standards for the medium- and heavy-duty highway vehicle sector. The agencies estimate that the combined standards will reduce CO_2 emissions by about 270 million metric tons and save about 530 million barrels of oil over the life of model year 2014 to 2018 heavy duty vehicles.

2.5.1.1 Project Analysis

An individual project does not generate enough GHG emissions to significantly influence global climate change. Rather, global climate change is a cumulative impact. This means that a project may contribute to a potential impact through its *incremental* change in emissions when combined with the contributions of all other sources of GHG.[30] In assessing cumulative impacts, it must be determined if a project's incremental effect is "cumulatively considerable" (CEQA Guidelines Sections 15064(h)(1) and 15130). To make this determination the incremental impacts of the

[29] http://www.c2es.org/federal/executive/epa/greenhouse-gas-regulation-faq

[30] This approach is supported by the AEP: *Recommendations by the Association of Environmental Professionals on How to Analyze GHG Emissions and Global Climate Change in CEQA Documents* (March 5, 2007), as well as the South Coast Air Quality Management District (Chapter 6: The CEQA Guide, April 2011) and the U.S. Forest Service (Climate Change Considerations in Project Level NEPA Analysis, July 13, 2009).

project must be compared with the effects of past, current, and probable future projects. To gather sufficient information on a global scale of all past, current, and future projects to make this determination is a difficult, if not impossible, task.

The AB 32 Scoping Plan mandated by AB 32 includes the main strategies California will use to reduce GHG emissions. As part of its supporting documentation for the Draft Scoping Plan, the ARB released the GHG inventory for California (forecast last updated: October 28, 2010). The forecast is an estimate of the emissions expected to occur in 2020 if none of the foreseeable measures included in the Scoping Plan were implemented (see Figure 2.5.1-1). The base year used for forecasting emissions is the average of statewide emissions in the GHG inventory for 2006, 2007, and 2008.

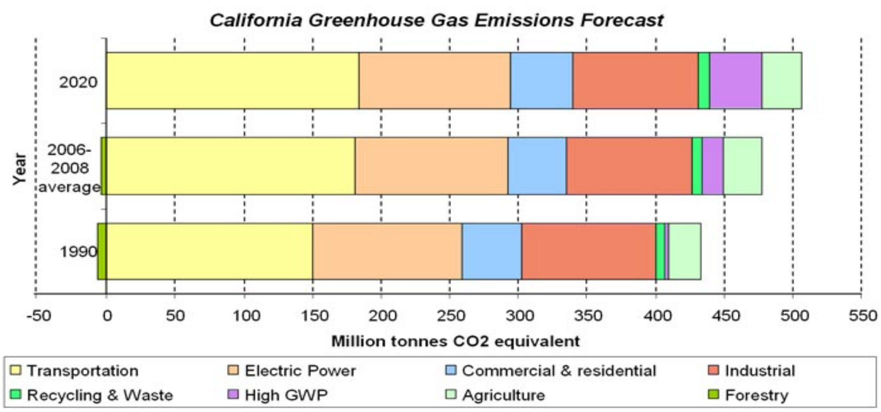

Figure 2.5.1-1: California Greenhouse Gas Forecast

Source: http://www.arb.ca.gov/cc/inventory/data/forecast.htm

The Department and its parent agency, the Transportation Agency, have taken an active role in addressing GHG emission reduction and climate change. Recognizing that 98 percent of California's GHG emissions are from the burning of fossil fuels and 40 percent of all human made GHG emissions are from transportation, the Department has created and is implementing the Climate Action Program that was published in December 2006.[31]

One of the main strategies in the Department's Climate Action Program to reduce GHG emissions is to make California's transportation system more efficient. The highest levels of CO_2 from mobile sources, such as automobiles, occur at stop-and-go speeds (0-25 miles per hour) and speeds over 55 miles per hour; the most severe emissions occur from 0-25 miles per hour (see Figure 2.5.1-2 below). To the extent that a project relieves congestion by enhancing operations and improving travel times in high congestion travel corridors ,GHG emissions, particularly CO_2, may be reduced.

[31] Caltrans Climate Action Program is located at the following web address: http://www.dot.ca.gov/hq/tpp/offices/ogm/key_reports_files/State_Wide_Strategy/Caltrans_Climate_Action_Program.pdf

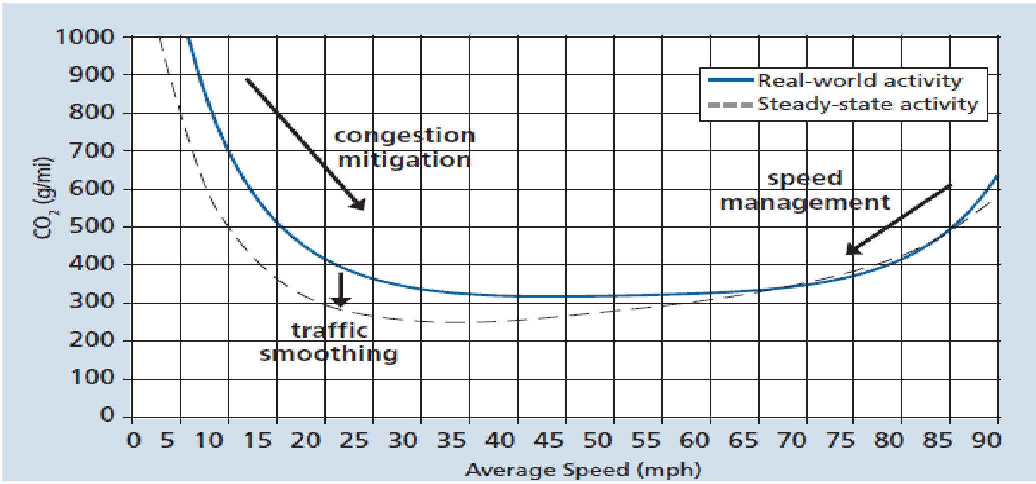

Figure 2.5.1-2: Effect of Traffic Operation Strategies in Reducing On-Road CO_2 Emissions

The project focuses on managing traffic flow by reducing or avoiding delays that currently impact US 101 operations in Santa Clara County. The project considers improvements in speeds even with increased capacity on US 101 as well as increased speeds and decreased traffic volumes on the surrounding non-highway roads (compared to the No Build Alternative). Reductions in delays would also reduce emissions, including CO_2.

The project is included in the *Plan Bay Area*, the most recent RTP for the San Francisco Bay Area, which contains adopted strategies for greenhouse gas emissions from transportation sources. Specifically, TIP reference number 230550, “Climate Initiatives Program” is an adopted five-year program for the Bay Area region involving outreach and education (especially the Bay Area Spare the Air Days), promotion of transit, incentives and implementation tools for carpools, and for transit priorities. These programs reduce VMT through encouragement of non-driving alternative education and incentives. The adopted TIP also demonstrates that the region would remain below all approved “vehicle emission budgets” through the RTP study years (5 year increments from 2015 through 2040).

GHG emissions, represented as CO_2 equivalent (CO_2e)[32] emissions, were estimated using the latest EMFAC model (EMFAC2011) for vehicles in Santa Clara County for existing (2009), No Build (2015), Build (2015), No Build (2035), and Build (2035) conditions. The VMT, associated speeds, and CO_2e emissions for years 2009, 2015, and 2035 are presented in Table 2.5.1-1. The speeds used in the emissions model and shown in Table 2.5.1-1 represent the worst-case peak hour speeds. The VMT and emissions for the Build Alternative in 2015 and 2035 include the predicted increased traffic for both the conversion of the HOV lane to an express lane use, and the addition of a second express lane for most of the corridor.

[32] Because different GHGs have different individual global warming potential (GWP) values, CO_2e is used to represent the equivalent amount of CO_2 that would have the same total GWP as the given mixture of GHGs.

Table 2.5.1-1: Annual GHG Emissions

Scenario	Worst Case Peak Hour Speeds (mph)	Annual VMT	Annual CO_2e emissions (tonnes/yr)
Existing (2009)	40	2,006,663,369	854,873
No Build (2015)	34	2,215,043,933	2,841,870
Build (2015)	42	2,361,803,950	2,580,166
No Build (2035)	20	2,661,725,366	2,718,944
Build (2035)	24	2,908,991,248	1,732,414

Notes: The EMFAC 2011 model was run for Santa Clara County for year 2009, 2015 and 2035.

The annual VMT for the opening year (2015) and horizon year (2035) would increase throughout the corridor for the Build scenario compared to the No Build scenario. However, the traffic analysis estimates that the average speeds would increase for the Build scenario compared to No Build. The improvement in vehicle efficiencies due to the increased speeds with the Build Alternative would result in a decrease in GHG emissions compared to the No Build Alternative. Both the Build and No Build Alternatives in opening year and horizon year would have higher GHG emissions than existing conditions.

It should be noted that the numbers in Table 2.5.1-1 are not necessarily an accurate reflection of what the true GHG emissions would be because GHG emissions are dependent on other factors that are not part of the model such as the fuel mix, rate of acceleration, and the aerodynamics and efficiency of the vehicles. EMFAC model emission rates are only for GHG emissions that are directly emitted from vehicles by the combustion of fuel. The emission rates do not account for indirect life-cycle emissions associated with the production and distribution of the fuel and fuel additives like ethanol prior to combustion in the vehicle. The GHG emissions presented above are only useful for a comparison among the existing, No Build, and Build scenarios and should not be considered independently. Future Build GHG emissions in opening year and horizon year would increase compared to existing conditions. However, the GHG emissions are expected to decrease when comparing the future Build to the future No Build emissions in the opening year and horizon year.

Construction Emissions

GHG emissions for transportation projects can be divided into those produced during construction and those produced during operations. Construction GHG emissions include emissions produced as a result of material processing, emissions produced by on-site construction equipment, and emissions arising from traffic delays due to construction. Construction GHG emissions for the overall project, including the proposed additional lanes, were estimated as described in Section 2.2.6 Air Quality (see results in Table 2.2.6-4). Unmitigated construction activities were estimated to generate a total of 6,314 tonnes of CO_2 over the duration of construction. These emissions would be produced at different levels throughout the construction phase; their frequency and occurrence can be reduced through innovations in plans and specifications and by implementing better traffic management during construction phases.

In addition, with innovations such as longer pavement lives, improved traffic management plans, and changes in materials, the GHG emissions produced during construction can be mitigated to some degree by longer intervals between maintenance and rehabilitation events. Measures to reduce construction emissions are listed in Section 2.2.6.4 and include maintenance of construction equipment and vehicles, limiting of construction vehicle idling time, and scheduling and routing of construction traffic to reduce engine emissions.

CEQA Conclusion

While the proposed project would result in a slight increase in GHG emissions during construction, the project is not anticipated to result in any increase in operational GHG emissions. While it is Caltrans determination that in the absence of further regulatory or scientific information related to GHG emissions and CEQA significance, it is too speculative to make a significance determination regarding the project's direct impact and its contribution on the cumulative scale to climate change. Caltrans is firmly committed to implementing measures to help reduce GHG emissions. These measures are outlined in Section 2.5.1.2.

2.5.1.2 Greenhouse Gas Reduction Strategies

The Department continues to be involved on the Governor's Climate Action Team as the ARB works to implement Executive Orders S-3-05 and S-01-07 and help achieve the targets set forth in AB 32. Many of the strategies the Department is using to help meet the targets in AB 32 come from then-Governor Arnold Schwarzenegger's Strategic Growth Plan for California. The Strategic Growth Plan targeted a significant decrease in traffic congestion below 2008 levels and a corresponding reduction in GHG emissions, while accommodating growth in population and the economy. The Strategic Growth Plan relies on a complete systems approach to attain CO_2 reduction goals: system monitoring and evaluation, maintenance and preservation, smart land use and demand management, and operational improvements as shown in Figure 2.5.1-3: The Mobility Pyramid.

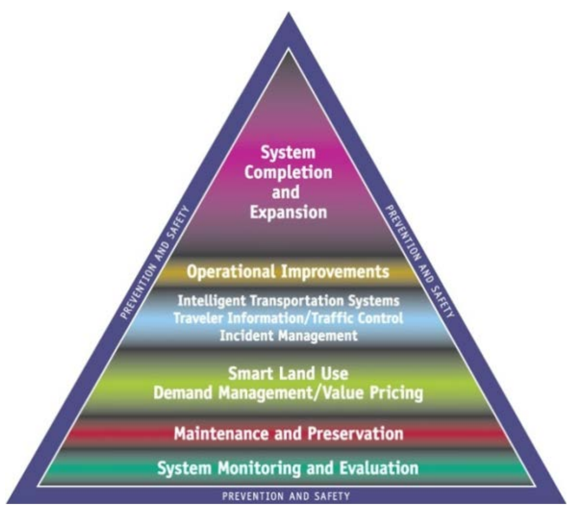

Figure 2.5.1-3: The Mobility Pyramid

The Department is supporting efforts to reduce vehicle miles traveled by planning and implementing smart land use strategies: job/housing proximity, developing transit-oriented communities, and high-density housing along transit corridors. The Department works closely with local jurisdictions on planning activities, but does not have local land use planning authority. The Department assists efforts to improve the energy efficiency of the transportation sector by increasing vehicle fuel economy in new cars, light and heavy-duty trucks; the

Department is doing this by supporting ongoing research efforts at universities, by supporting legislative efforts to increase fuel economy, and by participating on the Climate Action Team. It is important to note, however, that control of fuel economy standards is held by the U.S. EPA and ARB. The Department is also working towards enhancing the State's transportation planning process to respond to future challenges. Similar to requirements for regional transportation plans under Senate Bill (SB) 375 (Steinberg 2008), SB 391(Liu 2009) requires the State's long-range transportation plan to meet California's climate change goals under Assembly Bill (AB) 32.

The California Transportation Plan is a statewide, long-range transportation plan to meet our future mobility needs and reduce GHG emissions. The California Transportation Plan defines performance-based goals, policies, and strategies to achieve our collective vision for California's future, statewide, integrated, multimodal transportation system.

The purpose of the California Transportation Plan is to provide a common policy framework that will guide transportation investments and decisions by all levels of government, the private sector, and other transportation stakeholders. Through this policy framework, the California Transportation Plan 2040 will identify the statewide transportation system needed to achieve maximum feasible GHG emission reductions while meeting the State's transportation needs.

Table 2.5.1-2 summarizes the Departmental and statewide efforts that the Department is implementing in order to reduce GHG emissions. More detailed information about each strategy is included in the Climate Action Program at the Department (Caltrans 2006).

Caltrans Director's Policy 30 (DP-30) Climate Change (June 22, 2012): is intended to establish a Department policy that will ensure coordinated efforts to incorporate climate change into Departmental decisions and activities.

Caltrans Activities to Address Climate Change (April 2013)[33] provides a comprehensive overview of activities undertaken by Caltrans statewide to reduce greenhouse gas emissions resulting from agency operations.

The following measures will also be included in the project to reduce the GHG emissions and potential climate change impacts from the project:

- The Department and the CHP are working with regional agencies to implement intelligent transportation systems (ITS) to help manage the efficiency of the existing highway system. ITS is commonly referred to as electronics, communications, or information processing used singly or in combination to improve the efficiency or safety of a surface transportation system.
- Energy efficient construction and design elements will be considered during final design, such as energy efficient lighting.

[33] http://www.dot.ca.gov/hq/tpp/offices/orip/climate_change/projects_and_studies.shtml

Table 2.5.1-2: Climate Change/CO_2 Reduction Strategies

Strategy	Program	Partnership		Method/Process	Estimated CO_2 Savings Million Metric Tons (MMT)	
		Lead	Agency		2010	2020
Smart Land Use	Intergovernmental Review (IGR)	Caltrans	Local governments	Review and seek to mitigate development proposals	Not Estimated	Not Estimated
	Planning Grants	Caltrans	Local and regional agencies & other stakeholders	Competitive selection process	Not Estimated	Not Estimated
	Regional Plans and Blueprint Planning	Regional Agencies	Caltrans	Regional plans and application process	0.975	7.8
Operational Improvements & Intelligent Transportation System (ITS) Deployment	Strategic Growth Plan	Caltrans	Regions	State ITS; Congestion Management Plan	0.07	2.17
Mainstream Energy & GHG into Plans and Projects	Office of Policy Analysis & Research; Division of Environmental Analysis	Interdepartmental effort		Policy establishment, guidelines, technical assistance	Not Estimated	Not Estimated
Educational & Information Program	Office of Policy Analysis & Research	Interdepartmental, CalEPA, ARB, CEC		Analytical report, data collection, publication, workshops, outreach	Not Estimated	Not Estimated
Fleet Greening & Fuel Diversification	Division of Equipment	Department of General Services		Fleet Replacement B20 B100	0.0045	0.0065 0.45 0.0225
Non-vehicular Conservation Measures	Energy Conservation Program	Green Action Team		Energy Conservation Opportunities	0.117	0.34
Portland Cement	Office of Rigid Pavement	Cement and Construction Industries		2.5 % limestone cement mix 25% fly ash cement mix > 50% fly ash/slag mix	1.2 0.36	4.2 3.6
Goods Movement	Office of Goods Movement	CalEPA, ARB, BT&H, MPOs		Goods Movement Action Plan	Not Estimated	Not Estimated
Total					2.72	18.18

Notes: ARB = California Air Resources Board, BT&H = Business, Transportation and Housing, CalEPA = California Environmental Protection Agency, CEC = California Energy Commission, MMT = million metric tons, MPOs = Metropolitan Planning Organizations

2.5.1.3 Adaptation Strategies

"Adaptation strategies" refer to how the Department and others can plan for the effects of climate change on the state's transportation infrastructure and strengthen or protect the facilities from damage. Climate change is expected to produce increased variability in precipitation, rising temperatures, rising sea levels, variability in storm surges and intensity, and the frequency and intensity of wildfires. These changes may affect the transportation infrastructure in various ways, such as damage to roadbeds from longer periods of intense heat; increasing storm damage from flooding and erosion; and inundation from rising sea levels. These effects will vary by location and may, in the most extreme cases, require that a facility be relocated or redesigned. There may also be economic and strategic ramifications as a result of these types of impacts to the transportation infrastructure.

At the federal level, the Climate Change Adaptation Task Force, co-chaired by the White House Council on Environmental Quality (CEQ), the Office of Science and Technology Policy (OSTP), and the National Oceanic and Atmospheric Administration (NOAA), released its interagency task force progress report on October 28, 2011[34], outlining the federal government's progress in expanding and strengthening the Nation's capacity to better understand, prepare for, and respond to extreme events and other climate change impacts. The report provides an update on actions in key areas of federal adaptation, including: building resilience in local communities, safeguarding critical natural resources such as freshwater, and providing accessible climate information and tools to help decision-makers manage climate risks. Climate change adaptation must also involve the natural environment as well. Efforts are underway on a statewide level to develop strategies to cope with impacts to habitat and biodiversity through planning and conservation. The results of these efforts will help California agencies plan and implement mitigation strategies for programs and projects.

On November 14, 2008, then-Governor Arnold Schwarzenegger signed EO S-13-08 which directed a number of state agencies to address California's vulnerability to sea level rise caused by climate change. This EO set in motion several agencies and actions to address the concern of sea level rise.

In addition to addressing projected sea level rise, the California Natural Resources Agency (Resources Agency) was directed to coordinate with local, regional, state and federal public and private entities to develop The California Climate Adaptation Strategy (Dec 2009)[35], which summarizes the best-known science on climate change impacts to California, assesses California's vulnerability to the identified impacts, and outlines solutions that can be implemented within and across state agencies to promote resiliency.

The strategy outline is in direct response to EO S-13-08 that specifically asked the Resources Agency to identify how state agencies can respond to rising temperatures, changing precipitation patterns, sea level rise, and extreme natural events. Numerous other state agencies were involved in the creation of the Adaptation Strategy document, including the California Environmental Protection Agency (CalEPA); Business, Transportation and Housing; Health and Human Services; and the Department of Agriculture. The document is broken down into strategies for different sectors that include: Public Health; Biodiversity and Habitat; Ocean and Coastal Resources; Water Management; Agriculture; Forestry; and Transportation and Energy Infrastructure. As data continues to be developed and collected, the state's adaptation strategy will be updated to reflect current findings.

The National Academy of Science was directed to prepare a Sea Level Rise Assessment Report to recommend how California should plan for future sea level rise. The report was released in June 2012 and included:

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[34] http://www.whitehouse.gov/administration/eop/ceq/initiatives/adaptation
[35] http://www.energy.ca.gov/2009publications/CNRA-1000-2009-027/CNRA-1000-2009-027-F.PDF

- Relative sea level rise projections for California, Oregon and Washington taking into account coastal erosion rates, tidal impacts, El Niño and La Niña events, storm surge and land subsidence rates;
- The range of uncertainty in selected sea level rise projections;
- A synthesis of existing information on projected sea level rise impacts to state infrastructure (such as roads, public facilities and beaches), natural areas, and coastal and marine ecosystems; and
- A discussion of future research needs regarding sea level rise.

In 2010, interim guidance was released by The Coastal Ocean Climate Action Team (CO-CAT) as well as the Department as a method to initiate action and discussion of potential risks to the states infrastructure due to projected sea level rise. Subsequently, CO-CAT updated the Sea Level Rise guidance to include information presented in the National Academies Study.

All state agencies that are planning to construct projects in areas vulnerable to future sea level rise are directed to consider a range of sea level rise scenarios for the years 2050 and 2100 to assess project vulnerability and, to the extent feasible, reduce expected risks and increase resiliency to sea level rise. Sea level rise estimates should also be used in conjunction with information on local uplift and subsidence, coastal erosion rates, predicted higher high water levels, storm surge and storm wave data.

An assessment of sea level rise was performed for the proposed project. Sea level rise effects have been evaluated and mapped by the California Natural Resources Agency and California Energy Commission through the Cal-Adapt program, which identifies an area of risk of possible future inundation along US 101 from approximately San Francisquito Creek in Palo Alto to the North Rengstorff Avenue interchange (California Energy Commission 2014). This same area has also been identified as at risk by the San Francisco Bay Shoreline Study, in preparation by the USACE with the Santa Clara Valley Water District and California Coastal Conservancy (USACE 2014). The Shoreline Study is evaluating flood management projects that will reduce flood risk, restore South Bay wetlands, and provide related recreational and public access benefits. The mapped area of risk is approximately within the 100-year floodplain shown on Figure 2.2.1-1 in Section 2.2.1.

In the area mapped at risk, the proposed US 101 Express Lanes Project would primarily consist of installation of three overhead signs, lighting related to the signs, restriping, and tolling equipment in the southbound lane. There would be no pavement widening in this area. These proposed project elements are considered a relatively minimal investment. The project changes (overhead signs, lighting, restriping, and tolling equipment) would have no effect on drainage or surface water runoff within the area of estimated future sea level rise, and therefore no effect on flood elevations. Given these minor changes to the existing highway, incorporating additional changes to US 101 to address future sea level rise for the freeway facility overall is considered beyond the scope of the proposed project, and would introduce additional adverse environmental impacts. As noted above, the area at risk is currently under study by the USACE with the Santa Clara Valley Water District and the California Coastal Conservancy to identify and recommend flood management projects in Santa Clara County for future Federal funding. Capital improvement projects are also being identified by local agencies, including a San Francisquito

Creek Joint Powers Authority flood control study, and City of Mountain View capital improvement planning for flood control.

Executive Order S-13-08 also directed the Business, Transportation, and Housing Agency to prepare a report to assess vulnerability of transportation systems to sea level affecting safety, maintenance and operational improvements of the system and economy of the state. The Department continues to work on assessing the transportation system vulnerability to climate change, including the effect of sea level rise.

Currently, the Department is working to assess which transportation facilities are at greatest risk from climate change effects. However, without statewide planning scenarios for relative sea level rise and other climate change effects, the Department has not been able to determine what change, if any, may be made to its design standards for its transportation facilities. Once statewide planning scenarios become available, the Department will be able review its current design standards to determine what changes, if any, may be needed to protect the transportation system from sea level rise.

Climate change adaptation for transportation infrastructure involves long-term planning and risk management to address vulnerabilities in the transportation system from increased precipitation and flooding; the increased frequency and intensity of storms and wildfires; rising temperatures; and rising sea levels. The Department is an active participant in the efforts being conducted in response to EO S-13-08 and is mobilizing to be able to respond to the National Academy of Science Sea Level Rise Assessment Report.

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Chapter 3 Comments and Coordination

Early and continuing coordination with the general public and public agencies is an essential part of the environmental process. It helps planners determine the necessary scope of environmental documentation and the level of analysis required, and identify potential impacts and avoidance, minimization and/or mitigation measures and related environmental requirements. Agency consultation and public participation for this project have been accomplished through a variety of formal and informal methods, including project development team (PDT) meetings, interagency coordination meetings, and public outreach. This chapter summarizes the results of the Department's efforts to fully identify, address, and resolve project-related issues through early and continuing coordination.

3.1 Public Scoping and Participation

VTA began seeking public input on express lanes for US 101 and SR 85 in Santa Clara County in 2004. A primary focus of the public outreach has been fairness and equity issues of charging tolls for express lane use. A study prepared for VTA during early express lane planning, *Assessing the Equity Implications of HOT Lanes* (Weinstein and Sciara 2004) examines these issues and provides strategies to address equity concerns, including public outreach and education, documentation of equity analysis in project planning, and project design elements and approaches that increase equity in express lane benefits and costs (VTA 2008).[36]

In 2008, VTA conducted a research, public outreach, and education program to gauge public sentiment about the adoption of express lanes. The program consisted of polling and interviewing approximately 750 Santa Clara County citizens, including 681 SR 85 and US 101 users, four focus groups of HOV users and solo drivers who use SR 85, 13 one-on-one interviews with community stakeholders, and 10 one-on-one interviews with VTA managers and staff. Section 6 of the Silicon Valley Express Lanes Program Implementation Assessment and Plan (VTA 2008)[37] provides additional information about the program and public perceptions and concerns about the express lanes.

Focus group participants were screened to reflect diversity in the ethnicity, income and education level, age, sex, and commute patterns of the general population in Santa Clara County (SA Opinion Research 2008). The program found the following:

- In focus groups, concerns about a "Lexus Lane"[38] initially divided survey respondents evenly. However, once more information was given and project benefits were explained, respondents were more likely to view the project favorably.
- The dedication of toll revenues to other improvements in the corridor, including public transit improvements, was identified by focus group participants as the number one benefit.

[36] Available on VTA's Web site at http://www.vta.org/projects-and-programs/highway/express-lanes-communications.
[37] Available on VTA's Web site at http://www.vta.org/projects-and-programs/highway/express-lanes-communications
[38] A term used by those who claim that express lanes lanes provide congestion relief to motorists of a higher socioeconomic class.

- Fifty-eight percent of those surveyed thought that dual use (combining HOVs and toll-paying SOVs in the same facility) is an efficient approach to relieving traffic congestion.
- Focus group participants reported they could see how the general public might benefit from express lanes, through public transit improvements, better air quality, and improved quality of life from less congestion.
- Respondents from all income levels surveyed said they would use the lanes (VTA 2008).[39]

Public input on the project was solicited during the review period for this IS/EA, as discussed further in Section 3.3.

3.2 Consultation and Coordination

3.2.1 Public Events and Other Outreach

3.2.1.1 Early Project Engineering Phase

In 2008 through 2010, VTA outreach staff participated in five public events and made presentations about the express lanes projects to business, environmental, and community groups as described below (VTA 2008, 2010):

- **Public events (2008)**

– Silicon Valley Leadership Group's "Clean and Green" Conference

– Santa Teresa Citizen Action Group Community Festival in south San Jose

– "Let the Children Play" Concert in downtown San Jose

– San Jose Mariachi Festival in downtown San Jose

– Japantown Festival in San Jose

- **Presentations and meetings**

– Mineta Transportation Institute (San Jose State University; 4/16/08)

– California Highway Patrol (7/14/08)

– Sierra Club, Loma Prieta Chapter meeting (9/22/08)

– Employee Transportation Coordinator meeting (Moffett Park Business and Transportation Association; 9/25/08)

– Contra Costa County Transportation Authority Board of Directors meeting (10/15/08)

– Silicon Valley Leadership Group (12/02/08)

– Silicon Valley Chamber of Commerce (12/02/08)

– Board of Directors meeting for the Moffett Park Business and Transportation Association (12/08/08)

[39] A detailed description of the focus group findings is available on VTA's Web site at http://www.vta.org/projects-and-programs/highway/express-lanes-communications

- TransForm (Transportation and Land Use Coalition) regional meeting (3/18/09)
- Transportation Authority of Marin County meeting (4/28/09)
- Solano County Transportation Authority meeting (6/04/09)
- Transportation Research Board poster presentation (Washington D.C.; 1/10/10)
- Northern California Conference of Minority Transportation Officials (4/23/10)
- South Bay Transportation Officials Association (6/10/10)
- Presentations to VTA Standing and Advisory committees that include elected officials from municipalities in the proposed project corridor (multiple dates)

3.2.1.2 Preliminary Engineering and Environmental Approval Phase

Starting in 2013, while engineering and environmental studies were under way, VTA held meetings at the following locations introducing the US 101, SR 85 and SR 237 Express Lanes projects.

- Old Mountain View Neighborhood Association, Mountain View (1/14/13): VTA presented an overview of the SR 85 and US 101 Express Lane projects to 10 people from the community and steering committee. The attendees asked questions about how the express lanes would be enforced, if the tolls are by distance, and how far they have to drive to enter the express lanes. The commuters were generally receptive to the express lanes; other people expressed concerns about local ramp access to and from the lanes.
- Saratoga City Council Meeting, Saratoga (1/16/13): VTA presented an overview of the Silicon Valley Express Lanes Program to the Saratoga City Council and 25 members of the public. The city council members asked questions about freeway noise, how the projects are funded, if there will be improvements to local signal intersections, and how the express lane tolls are determined.
- West Valley Mayors and Managers, Cupertino (1/23/13): VTA presented an overview of the SR 85 and US 101 Express Lanes projects to city managers and city council members from the Cities of Los Gatos, Saratoga, Cupertino, Monte Sereno, and Campbell. The attendees asked questions about express lane operation and funding, and the project timeline.
- VTA-sponsored outreach meeting, VTA River Oaks, San Jose (1/31/13): VTA presented an overview of the SR 85 and US 101 Express Lanes projects to groups including Urban Habitat, Working Partnerships, SPUR, and Transform. One attendee asked if the Sierra Club had been contacted in regard to the projects.
- San Jose City Council District 2 Meeting, San Jose (2/4/13): VTA presented an overview of the SR 85 and US 101 Express Lanes projects to the attendees. The public asked questions about how toll revenue would be spent, the cost per person per year, and if toll revenue would be invested in transit projects. Several people expressed concerns that VTA did not reach out to the public early enough and about the allocation of money to express lanes projects rather than transit.
- Silicon Valley Transportation Summit 2013, San Jose (2/23/13): This event was a forum for organizations, agencies, and Santa Clara residents to discuss transportation and land

use planning options. VTA hosted a table and passed out project fact sheets for the SR 85 and US 101 Express Lanes projects. One attendee expressed the opinion that the lanes encourage cheaters because the CHP cannot properly monitor the lanes.

- San Jose City Council District 5 Meeting, San Jose (3/27/13): VTA presented an overview of the Silicon Valley Express Lanes Program to the District 5 City Council and members of the public. The public asked questions about the cost of express lanes, where to get the FasTrak toll tags, and the cost of toll tags.
- Berryessa Citizens Advisory Council, San Jose (6/10/13): VTA presented an overview of the Silicon Valley Express Lanes Program to attendees. The public asked questions about express lane enforcement, access to express lanes from specific interchanges, and whether FasTrak toll tags could be used in more than one vehicle.
- Monte Loma Neighborhood Association, Mountain View (6/17/13): VTA presented an overview of the Silicon Valley Express Lanes Program to attendees. The public seemed familiar with VTA and transportation issues in general, but asked questions about the use of FasTrak toll tags, the cost of express lanes, and the funding and construction of the express lanes projects.
- San Jose Kiwanis Club, San Jose (9/16/13): VTA presented an overview of the Silicon Valley Express Lanes Program to attendees. The public asked questions about the price the express lanes, how the FasTrak toll tags work, and the reason for which the planned lanes will not all be general purpose lanes.
- TransForm Silicon Valley Transportation Summit 2014 (2/28/14): This event was a forum for organizations, agencies, and Santa Clara residents to discuss transportation and land use planning options. VTA hosted a table and passed out project fact sheets for various VTA projects including the SR 85 and US 101 Express Lanes projects. Over 350 people attended the forum, and numerous questions were answered by VTA representatives and panelists.
- North County Local Projects Open House, Mountain View (4/9/14): This event was an open house to provide updates on active projects in the northern portion of Santa Clara County, including the Silicon Valley Express Lanes Program. The public asked questions about the selection of the express lanes corridors, hours of operation for the express lanes, and whether other express lanes projects are being considered.
- 18th Annual A-La-Cart Art and Wine Festival, Mountain View (5/3/14 and 5/4/14): This event was a community art festival in downtown Mountain View. VTA provided information about the Silicon Valley Express Lanes program to approximately 550 people over the two day festival. The public asked questions about how tolling functioned in the express lanes, impacts to current carpool lane users, and the project schedule.

3.2.2 Consultation and Coordination with Public Agencies

3.2.2.1 Federal Agencies

- U.S. Fish and Wildlife Service (USFWS): A USFWS species list was obtained on September 16, 2011 and used to identify target species for reconnaissance-level surveys for terrestrial plants and animals. Updated species lists were obtained periodically, most recently on April 24, 2015 (Appendix E). The Department, as assigned by the FHWA, initiated Section 7 consultation with the USFWS in March 2014 by submitting a BA to address potential project effects on California red-legged frog, California tiger salamander, bay checkerspot butterfly, Coyote ceanothus, Santa Clara dudleya, and Metcalf Canyon jewel-flower (Section 2.3.5). USFWS issued a Biological Opinion on March 10, 2015 (08ESMF00-2014-F-0534-2; see Appendix E).

- Federal Highway Administration (FHWA): FHWA issued a project-level conformity determination on April 20, 2015.

3.2.2.2 Tribal Entities

Native American consultation is described in Section 2.1.5.2.

3.2.2.3 State Agencies

- State Historic Preservation Officer (SHPO): The project's cultural resource studies were submitted to the SHPO on May 21, 2014 for concurrence on the eligibility determinations of 11 built resources to the National Register of Historic Places and the reexamination of 3 historic properties under Criterion C. The SHPO concurred with Caltrans determinations on June 17, 2014.
- California Native American Heritage Commission (NAHC): NAHC was contacted on July 13, 2012 to request a search of the Sacred Lands File for sacred lands or other cultural properties of significance to Native Americans within or near the APE. The NAHC responded on August 9, 2012 with a faxed letter stating that the "record search of the sacred land file has failed to indicated the presence of Native American cultural resources" in the APE. The NAHC recommended contacting Native American individuals and organizations who may have concerns about the project or knowledge of cultural resources in the APE.

3.2.2.4 Regional Agencies

- Bay Area Air Quality Conformity Task Force: Interagency consultation with the Air Quality Conformity Task Force conducted in November and December 2012 identified the project as a potential POAQC. A $PM_{2.5}$ hot spot analysis was completed for the project (URS 2012d). On December 6, 2012 , the Task Force concurred that the project meets the hot spot requirements in 40 CFR 93.116 and 93.126 for $PM_{2.5}$, and that the project will not cause or contribute to a new violation of the federal PM2.5 air quality standards. Confirmation was provided, dated December 7, 2013.

  During the public review and comment period for the IS/EA, public comments were requested regarding the information in the Project Assessment Form for $PM_{2.5}$ Interagency Consultation and the Task Force's determination (see Appendix E). No comments were received regarding conformity. Following the close of the public review and comment period an air quality conformity report was submitted to FHWA. FHWA issued a project-level conformity determination on April 20, 2015 (see Appendix E).

- San Francisco Bay Regional Water Quality Control Board: A joint *Application for 401 Water Quality Certification and/or Report of Waste Discharge* and National Pollutant

Discharge Elimination System permit application will be submitted during project design. A Notice of Intent and Storm Water Pollution Prevention Plan will be prepared and submitted before construction begins.

3.3 Circulation, Review, and Comment on the Draft Environmental Document

VTA and Caltrans circulated the IS/EA for public review and comment from January 12, 2015, to February 26, 2015. Each of the agencies and individuals listed in Chapter 5 received printed or electronic copies of the document or mailers with information about the public meetings for the project and a link to the IS/EA on the Caltrans District 4 environmental documents website. In addition, mailers were sent to all addresses within 0.25 mile of the project corridor. The mailer was translated into five languages (Spanish, Vietnamese, Korean, Chinese and Tagalog). A copy of the IS/EA was made available at the San Jose, Morgan Hill, Mountain View, Palo Alto, Santa Clara and Sunnyvale public library reference shelves for public review. Also, the meeting notice was posted on the VTA website (www.vta.org/expresslanes), VTA blog post (http://bit.ly/1wcm47a), VTA Facebook page, VTA Twitter account, and on the VTA web page for the project (http://www.vta.org/projects-andprograms/vta-express-lanes-us-101-express-lanes-project). An email was also sent to 1,500 recipients on the VTA.gov email list.

The Notice of Availability was placed in the following newspapers on the following days: local English-language newspapers (*Gilroy Dispatch*, January 16, 2015, *Los Altos Town Crier*, January 14, 2015, *Mercury News*, January 12, 2015, *Morgan Hill Times*, January 16, 2015, *Mountain View Voice*, January 16, 2015, *Palo Alto Post*, January 14, 2015, *Santa Clara Weekly*, January 14, 2015 and *Sunnyvale Sun*, January 16, 2015); and foreign-language newspapers that serve the project corridor (*El Observador*, January 16, 2015—Spanish, *Korea Daily Times*, January 16, 2015—Korean, *Philippines Today*, January 14, 2015—Tagalog, *Sing Tao Daily*, January 16, 2015—Chinese, and *Viet Nam*, December 30, 2015—Vietnamese).

Three open house public meetings were held for the proposed project. Fact sheets were available in English, Spanish, Vietnamese, Korean, Chinese and Tagalog.

- The first public meeting was held on Thursday, January 22, 2015, from 5:30 p.m. to 7:30 p.m. at the Mountain View City Council Chambers, 500 Castro Street, Mountain View, CA. Thirteen members of the public attended, as well as a reporter from the *Mountain View Voice.*
- The second public meeting was held on Wednesday, January 28, 2015, from 6 p.m. to 8 p.m. at the VTA Downtown Customer Service Center, 55-A W. Santa Clara Street, San Jose, CA. Fourteen members of the public attended.
- The third public meeting was held on Wednesday, February 4, 2015, from 5:30 p.m. to 7:30 p.m. at the Southside Community Center, 5585 Cottle Road, San Jose, CA. Thirteen members of the public attended.

In total, 30 public comments were submitted during the comment period by postal mail, e-mail and comment cards collected at the public meetings. Appendix J presents the public comments on the IS/EA and the project team’s responses.

Chapter 4 List of Preparers

This document and related technical studies were prepared under the supervision of the State of California Department of Transportation, District 4. The Project Development Team (PDT) was responsible for oversight of the project and was comprised of representatives from the Department and VTA.

Key PDT Members Involved in Project Management

- Dina El-Tawansy, Project Manager, Caltrans District 4
- Nick Saleh, District Division Chief and former Project Manager, Caltrans District 4
- Tung Ly, Office Chief, Caltrans District 4, Design
- David Salladay, Former Office Chief, Caltrans District 4, Design
- Hassan Nikzad, Senior Transportation Engineer, Caltrans District 4, Design
- Caroline Pineda, Transportation Engineer, Caltrans District 4, Design
- Mike Thomas, Design Coordinator, Caltrans Headquarters
- Larry Moore, District 4 Design Reviewer, Caltrans Headquarters
- Cristin Hallissy, District Branch Chief, Caltrans District 4, Office of Environmental Analysis
- Lam Trinh, Project Manager, Santa Clara Valley Transportation Authority
- Tom Fitzwater, Environmental Manager, Santa Clara Valley Transportation Authority
- Roy Molseed, Senior Environmental Planner, Santa Clara Valley Transportation Authority
- Chris Metzger, Former Highway Program Manager, Santa Clara Valley Transportation Authority
- Gene Gonzalo, Highway Program Manager, Santa Clara Valley Transportation Authority
- Ann Calnan, Senior Environmental Planner, Santa Clara Valley Transportation Authority
- Lauren Bobadilla, Senior Environmental Planner, Santa Clara Valley Transportation Authority
- Ramsey Hissen, Principal in Charge and Engineering Project Manager, URS Corporation
- Ramesh Sathiamurthy, Engineering Project Manager, URS Corporation
- Shabnam Yari, Project Engineer, URS Corporation
- Sarah Christensen, Deputy Project Manager, URS Corporation
- Jeff Zimmerman, Senior Environmental Manager, URS Corporation
- Amy Havens, Environmental Manager, URS Corporation
- Kendall Webster, Environmental Manager, URS Corporation

- Lynn McIntyre, Environmental Manager, URS Corporation
- Lan Ho, Project Engineer, URS Corporation

Individuals Involved in Department Oversight of the Environmental Studies

- Ngoc Bui, Associate Environmental Planner – Reviewed Environmental Document and Community Impact Assessment
- Sean Poirier, Associate Environmental Planner – Reviewed Environmental Document
- Ronald Karpowicz, Engineering Geologist – Reviewed Paleontological Identification Report, Paleontological Evaluation Report and Mitigation Plan
- Glenn Kinoshita, District Branch Chief Air/Noise Studies – Reviewed Noise and Air Quality
- Lissa McKee, Office Chief, Office of Cultural Resources Studies – Reviewed Historic Property Survey Report and Archaeological Survey Report
- Elizabeth Krase Greene, Branch Chief (Built Resources/Architectural History), Office of Cultural Resources Studies – Reviewed Historic Property Survey Report
- Kathryn Rose, Branch Chief (Archaeology), Office of Cultural Resource Studies – Reviewed Historic Property Survey Report
- Brett Rushing, Senior Environmental Planner/Archaeologist – Reviewed Historic Property Survey Report
- Benjamin Harris, Associate Archaeologist, Co-Principal Investigator, Historical Archaeology – Reviewed Historic Property Survey Report and Cultural Resources section
- Andrew Hope, Principal Architectural Historian – Reviewed Historical Resources Evaluation Report
- Frances Schierenbeck, Principal Architectural Historian – Reviewed Historical Resources Evaluation Report and Cultural Resources section
- Steve Harris – Environmental Planner, Natural Resources, Reviewed Biological Assessment, Natural Environment Study, and Biology section
- Thomas Packard, Landscape Associate – Reviewed Visual Impact Assessment and Visual/Aesthetics section
- Bryan Walker, Senior Landscape Architect – Reviewed Visual Impact Assessment
- Stuart Kirkham – Senior Environmental Planner, Reviewed Biological Assessment, Natural Environment Study, Jurisdictional Delineation
- Frances Malamud-Roam– Senior Environmental Planner, Reviewed Biological Assessment, Natural Environment Study, Jurisdictional Delineation
- Myla Ablog –Environmental Planner, Reviewed Biological Assessment, Natural Environment Study, Jurisdictional Delineation

- Menghsi Hung – Office of Geotechnical Design, Reviewed Preliminary Geotechnical Report
- Ray Boyer – Branch Chief, Reviewed Initial Site Assessment
- Lance Hall – Senior Traffic Engineer, Reviewed Traffic

Individuals Involved in Technical Studies and Environmental Document Preparation

The following consulting team staff members were responsible for the preparation of the environmental technical studies and the environmental document:

- Daisy Allen, URS Corporation, M.U.R.P., Urban and Regional Planning. Contribution: Final environmental document preparation.
- Joe Bandel, URS Corporation, B.S., Wildlife, Fish and Conservation Biology. Contribution: Jurisdictional Delineation preparation.
- Sarah Christensen, URS Corporation, M.S. Transportation Management, B.S. Civil Engineering. Contribution: Preparation of project report and civil design project manager.
- Catherine Clark, URS Corporation, M.P.P. Environmental Public Policy. Contribution: Draft and Final environmental document preparation.
- Sherri Gust, Cogstone Resource Management Inc. Contribution: Preparation of Paleontological Evaluation Report/Paleontological Mitigation Plan.
- Amy Havens, URS Corporation, B.S., Ecology. Contribution: Environmental Document and technical report preparation and review.
- Kathleen Kubal, URS Corporation, M.A., Cultural Resource Management. Contribution: Preparation of Geoarchaeological study, Extended Phase One Study Report, and review of the Archaeological Survey Report and Historic Property Survey Report.
- Michael Larson, URS Corporation, M.A, Geology. Contribution: Preliminary Geotechnical Report preparation.
- Lynn McIntyre, URS Corporation, B.A., Journalism. Contribution: Environmental Document preparation/review, technical report review.
- Jay Rehor, URS Corporation, M.A., Cultural Resource Management. Contribution: Review of geoarchaeological study and Extended Phase One Study Report.
- Nicole Rucker, URS Corporation, M.S, Environmental Sciences; B.S., Biology. Contribution: Natural Environment Study, Biological Assessment, and Jurisdictional Delineation preparation.
- Avanti Tamhane, URS Corporation, M.S., Environmental Analysis and Decision Making; B.S., Chemical Engineering. Contribution: Air Quality Impact Assessment and Mobile Source Air Toxics Report preparation.
- Nancy Sikes, Cogstone Resources Management Inc. Contribution: Preparation of the Archaeological Survey Report and Data Recovery Plan.
- Michael Thill, Illingworth & Rodkin, B.S., Environmental Studies. Contribution: Noise Study Report.

- Patrick Walz, URS Corporation, B.S., Civil Engineering. Contribution: Initial Site Assessment preparation.
- Jeff Zimmerman, URS Corporation, B.S., Conservation of Natural Resources. Contribution: Environmental Project Manager.

Chapter 5 Distribution List

The following agencies, organizations, and individuals received printed or electronic copies of this document. Agency names marked with an asterisk (*) received copies through the State Clearinghouse.

Federal Agencies

Director
National Marine Fisheries Services
777 Sonoma Avenue, Room 325
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Regulatory Division Chief, Jane M. Hicks
United States Army Corps of Engineers
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Executive Director, Wayne White
United States Fish and Wildlife Service
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U. S. EPA, Region 9
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State Agencies

Executive Director
Office of Planning and Research
State Clearinghouse
1400 Tenth Street
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California Department of Conservation*
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Sacramento, CA 95814

Director
California Department of Fish and Wildlife*
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State Historic Preservation Officer
Office of Historic Preservation*
1725 23rd Street, Suite 100
Sacramento, CA 95816

California Department of Parks and Recreation*
Natural Resources Division
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California Department of Water Resources*
Central Valley Flood Protection Board
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Sacramento, CA 95821

California Department of Water Resources*
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Sacramento, CA 95811

California Resources Agency*
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California Department of Resources
Recycling and Recovery
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Sacramento, CA 95812

California State Water Resources Control Board*
Division of Water Quality
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Sacramento, CA 95812

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WRECO 2012 Storm Water Data Report for the US 101 Express Lanes Project, Santa Clara County, California. US 101 PM 16.00/52.55; SR 85 PM 23.0/R24.1, EA 04-2G7100. Prepared for the California Department of Transportation. Approved September 2012.

WRECO 2013a Location Hydraulic Study Report for the US 101 Express Lanes Project, Santa Clara County, California. US 101 PM 16.00/52.55; SR 85 PM 23.0/R24.1, EA 04-2G7100. Prepared for the California Department of Transportation. Approved July 2013.

WRECO 2013b Water Quality Study Report for the US 101 Express Lanes Project, Santa Clara County, California. US 101 PM 16.00/52.55; SR 85 PM 23.0/R24.1, EA 04-2G7100. Prepared for the California Department of Transportation. Approved May 2013.

WRECO 2014a Location Hydraulic Study Report Addendum for the US 101 Express Lanes Project, Santa Clara County, California. US 101 PM 16.00/52.55; SR 85 PM 23.0/R24.1, EA 04-2G7100. Prepared for the California Department of Transportation. Approved February 2014.

WRECO 2014b Water Quality Study Report Addendum for the US 101 Express Lanes Project, Santa Clara County, California. US 101 PM 16.00/52.55; SR 85 PM 23.0/R24.1, EA 04-2G7100. Prepared for the California Department of Transportation. Approved February 2014.

WRECO 2014c Storm Water Data Report Addendum for the US 101 Express Lanes Project, Santa Clara County, California. US 101 PM 16.00/52.55; SR 85 PM 23.0/R24.1, EA 04-2G7100. Prepared for the California Department of Transportation. Approved February 2014.

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Appendix A CEQA Checklist

Supporting documentation of all California Environmental Quality Act (CEQA) checklist determinations is provided in Chapter 2 of this Initial Study/Environmental Assessment (IS/EA). Documentation of "No Impact" determinations is provided at the beginning of Chapter 2. Discussion of all impacts, avoidance, minimization, and/or mitigation measures are found under the appropriate topic headings in Chapter 2.

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CEQA Environmental Checklist

Dist.-Co.-Rte.	PM/PM	E.A.
04-SCL-101 **04-SCL-85**	**PM 16.00/52.55** **PM 23.0/R24.1**	**2G7100**

This checklist identifies physical, biological, social and economic factors that might be affected by the proposed project. In many cases, background studies performed in connection with the projects indicate no impacts. A NO IMPACT answer in the last column reflects this determination. Where there is a need for clarifying discussion, the discussion is included either following the applicable section of the checklist or is within the body of the environmental document itself. The words "significant" and "significance" used throughout the following checklist are related to CEQA, not NEPA, impacts. The questions in this form are intended to encourage the thoughtful assessment of impacts and do not represent thresholds of significance.

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
I. AESTHETICS: Would the project:				
a) Have a substantial adverse effect on a scenic vista	☐	☐	☐	☒
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway	☐	☐	☐	☒
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	☐	☐	☒	☐
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☐	☒	☐
II. AGRICULTURE AND FOREST RESOURCES: In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment Project; and the forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the project:				
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☐	☒
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☒

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	☐	☐	☐	☒
d) Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☒
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	☐	☐	☐	☒

III. AIR QUALITY: Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☐	☒
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	☐	☐	☒	☐
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non- attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	☐	☐	☒	☐
d) Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☒	☐
e) Create objectionable odors affecting a substantial number of people?	☐	☐	☒	☐

IV. BIOLOGICAL RESOURCES: Would the project:

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☒	☐	☐
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or US Fish and Wildlife Service?	☐	☒	☐	☐

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☐	☒	☐
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☐	☒	☐
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☐	☒
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☐	☒

V. CULTURAL RESOURCES: Would the project:

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?	☐	☐	☒	☐
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	☐	☐	☒	☐
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☐	☒	☐
d) Disturb any human remains, including those interred outside of formal cemeteries?	☐	☐	☐	☒

VI. GEOLOGY AND SOILS: Would the project:

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:	☐	☐	☒	☐
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42?	☐	☐	☒	☐
ii) Strong seismic ground shaking?	☐	☐	☒	☐
iii) Seismic-related ground failure, including liquefaction?	☐	☐	☒	☐

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
iv) Landslides?	☐	☐	☐	☒
b) Result in substantial soil erosion or the loss of topsoil?	☐	☐	☒	☐
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	☐	☐	☒	☐
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	☐	☐	☐	☒
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	☐	☐	☐	☒

VII. GREENHOUSE GAS EMISSIONS: Would the project:

a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

An assessment of the greenhouse gas emissions and climate change is included in the body of environmental document. While Caltrans has included this good faith effort in order to provide the public and decision-makers as much information as possible about the project, it is Caltrans determination that in the absence of further regulatory or scientific information related to GHG emissions and CEQA significance, it is too speculative to make a significance determination regarding the project's direct and indirect impact with respect to climate change. Caltrans does remain firmly committed to implementing measures to help reduce the potential effects of the project. These measures are outlined in the body of the environmental document.

VIII. HAZARDS AND HAZARDOUS MATERIALS: Would the project:

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☐	☒
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☐	☒	☐
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☐	☒

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☐	☒
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☒	☐
h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	☐	☐	☐	☒

IX. HYDROLOGY AND WATER QUALITY: Would the project:

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Violate any water quality standards or waste discharge requirements?	☐	☐	☒	☐
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	☐	☐	☐	☒
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?	☐	☐	☒	☐
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?	☐	☐	☒	☐
e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	☐	☐	☒	☐
f) Otherwise substantially degrade water quality?	☐	☐	☒	☐

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	☐	☐	☐	☒
h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?	☐	☐	☒	☐
i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	☐	☐	☐	☒
j) Inundation by seiche, tsunami, or mudflow	☐	☐	☐	☒
X. LAND USE AND PLANNING: Would the project:				
a) Physically divide an established community?	☐	☐	☐	☒
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☐	☒
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	☐	☐	☐	☒
XI. MINERAL RESOURCES: Would the project:				
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☐	☒
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	☐	☐	☐	☒
XII. NOISE: Would the project result in:				
a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☐	☒	☐
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☒	☐
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☒	☐

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☒	☐
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☒	☐
) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☒	☐
XIII. POPULATION AND HOUSING: Would the project:				
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	☐	☒
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒
XIV. PUBLIC SERVICES:				
a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:	☐	☐	☐	☒
Fire protection?	☐	☐	☐	☒
Police protection?	☐	☐	☐	☒
Schools?	☐	☐	☐	☒
Parks?	☐	☐	☐	☒
Other public facilities?	☐	☐	☐	☒

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
XV. RECREATION:				
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☐	☒
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	☐	☐	☐	☒
XVI. TRANSPORTATION/TRAFFIC: Would the project:				
a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?	☐	☐	☒	☐
b) Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county Transportation Commission for designated roads or highways?	☐	☐	☒	☐
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	☐	☐	☐	☒
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☐	☒
e) Result in inadequate emergency access?	☐	☐	☐	☒
f) Conflict with adopted policies, plans or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?	☐	☐	☐	☒
XVII. UTILITIES AND SERVICE SYSTEMS: Would the project:				
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	☐	☐	☐	☒
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☐	☒

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☒	☐
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	☐	☐	☐	☒
e) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☐	☐	☒
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	☐	☐	☐	☒
g) Comply with federal, state, and local statutes and regulations related to solid waste?	☐	☐	☐	☒

XVIII. MANDATORY FINDINGS OF SIGNIFICANCE

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	☐	☐	☒	☐
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	☐	☐	☒	☐
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☐	☒	☐

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Appendix B Resources Evaluated Relative to the Requirements of Section 4(f)

This section of the document discusses parks, recreational facilities, wildlife refuges and historic properties found within or next to the project area that do not trigger Section 4(f) protection because either: 1) they are not publicly owned, 2) they are not open to the public, 3) they are not eligible historic properties, 4) the project does not permanently use the property and does not hinder the preservation of the property, or 5) the proximity impacts do not result in constructive use.

Public Parks, Recreational Areas, and Wildlife Refuges

Public parks, recreational areas, and wildlife refuges are present within one-quarter mile of the project area, as shown in Table B-1 below.

Table B-1: Public Parks, Recreational Areas, and Wildlife Refuges Within One-Quarter Mile of the Project Area

Description of Recreation Resource	Explanation
Palo Alto	
John Lucas Greer Park. Multi-use, 22-acre district park that includes a playground and a skateboard park. The park is adjacent to southbound US 101 just south of the Oregon Expressway/Embarcadero Road interchange.	Project activities would not take place within the boundary of John Lucas Green Park. The project would not require permanent or temporary closure of this park.
Baylands Preserve. 1,940-acre preserve also known as John Fletcher Byxbee Recreation Area. The preserve includes fifteen miles of multi-use trails, an interpretive center, a golf course, and an athletic center. The preserve is adjacent to northbound US 101 between Oregon Expressway/Embarcadero Road interchange and San Antonio Road interchange.	Project activities would not take place within the boundary of the Baylands Preserve. the project would not require permanent or temporary closure of this park.
Trails and Bridges. The Adobe Creek Loop, the Bay Trail, and the Bay to Ridge Trail are adjacent to US 101 (City of Palo Alto 2011). The Adobe Creek Loop is a 5-mile long trail within the Bayland Preserve. The Bay to Ridge pedestrian trail crosses over US 101 by bridge just south of the Oregon Expressway/Embarcadero Road interchange. The Bay Trail runs between US 101 and the Baylands preserve and continues both north and south. Bicycle paths are proposed adjacent to the project, including two trails that would cross over the project corridor by bridges at Matadero Creek and Adobe Creek, respectively, to connect with the Bay Trail.	Project activities would not take place within the boundaries of these trails, or existing bridges spanning over creeks. Temporary or permanent closures of bicycle or pedestrian trails are not anticipated.
Mountain View	
Shoreline Park. 700-acre park with a saltwater lake, golf course, ten miles of trails, and tidal marshes and salt ponds. Shoreline Park is less than one-quarter mile from US 101 at Amphitheatre Parkway.	Project activities would not take place within the boundary of Shoreline Park. The project would not require permanent or temporary closure of this park.
Whisman Park and School. City park with tennis courts, a baseball field, and soccer fields. The park provides access to the Stevens Creek Trail.	Project activities would not take place within the boundary of Whisman Park and School. The project would not require permanent or temporary closure of this park and school.
Creekside Park. City park adjacent to SR 85, including a children's play area and access to the Stevens Creek Trail.	Project activities would not take place within the boundary of Creekside Park. The project would not require permanent or temporary closure of this park.

Table B-1: Public Parks, Recreational Areas, and Wildlife Refuges Within One-Quarter Mile of the Project Area

Description of Recreation Resource	Explanation
Trails and Bridges. The Stevens Creek Trail is a 4.8-mile multi-use trail that extends south from its connection to the Bay Trail in Shoreline Park. The Stevens Creek Trail crosses under US 101 at the SR 85/US 101 interchange and a portion of the Stevens Creek Trail runs parallel to the project corridor along SR 85 between Terra Bella Avenue and Sleeper Avenue (City of Mountain View 2004). Several bicycle paths or routes intersect the project corridor by bridge or undercrossing, such as at Middlefield Road, Evelyn Avenue, and East Dana Street (City of Mountain View 2010). Proposed bike routes that would intersect the project corridor are at Moffett Boulevard and Dale Avenue.	Project activities would not take place within the boundaries of these trails or at the bridges spanning over Stevens Creek. Temporary or permanent closures of bicycle or pedestrian trails are not anticipated.
Sunnyvale	
Sunnyvale Municipal Golf Course. The Sunnyvale Golf Course is an 18-hole golf course adjacent to US 101 between Clyde Avenue and Mary Avenue at the SR 237 interchange.	Project activities would not take place within the boundary of the Sunnyvale Municipal Golf Course. The project would not require permanent or temporary closure of this golf course.
John W. Cristian Greenbelt. 2.7-mile long park including a pedestrian and bike path. The greenbelt passes through Orchard Garden Park, Lakewood Park and School, and Fairwood Park and School, which collectively have tennis courts, play structures, benches, tables and lawns. This park is within one-quarter mile of northbound US 101 between SR 237 interchange and Great America Parkway interchange.	Project activities would not take place within the boundaries of John W. Cristian Greenbelt, Orchard Garden Park, Lakewood Park and School, or Fairwood Park and School. The project would not require permanent or temporary closure of these parks.
Santa Clara	
Trails and Bridges. The San Tomas Aquino Creek Trail intersects the project corridor between Great American Parkway/Bowers Avenue and Montague Expressway. The San Tomas Aquino Creek Trail provides a 4 mile walking, running and bicycling trail extending from the San Francisco Bay Trail in the north to Cabrillo Avenue in the south.	Project activities would not take place within this trail or at the bridge spanning over the San Tomas Aquino Creek. Temporary or permanent closures of bicycle or pedestrian trails are not anticipated
San Jose	
Coyote Creek Parkway. Coyote Creek Parkway is a 15-mile scenic parkway that runs along Coyote Creek. The northern portion of the parkway is a paved, multi-use trail. An equestrian trail runs parallel to the paved trail south of Metcalf Road.	Project activities would not take place within the boundary of Coyote Creek Parkway. The project would not require permanent or temporary closure of this park or trail.
Hellyer County Park. Hellyer Park is a 354-acre urban park that intersects with Coyote Creek Parkway at Hellyer Avenue and includes picnic areas, an Olympic size outdoor Velodrome and Cottonwood Lake. The park is adjacent to southbound US 101 between Yerba Buena Road and Coyote Road	Project activities would not take place within the boundary of Hellyer County Park. The project would not require permanent or temporary closure of this park.
Field Sports Park. Field Sports Park is a county-owned firing range features that provides opportunities for trap and skeet, as well as rifle and pistol shooting. The park is approximately one-quarter mile east of northbound US 101 between Metcalf Road and Baily Avenue interchanges.	Project activities would not take place within the boundary of Field Sports Park. The project would not require permanent or temporary closure of this park.
Motorcycle County Park. A county owned park that Offers areas and tracks for All Terrain Vehicles (ATVs), All Terrain Cycles (ATCs), and motocross. The park also includes 18 miles of trails.	Project activities would not take place within the boundary of Motorcycle Park. the project would not require permanent or temporary closure of this park.
Watson Park. 26-acre city park including a playground, soccer field, basketball courts, and dog area. The park is adjacent to southbound US 101 between East Taylor Street overcrossing and McKee Road interchange.	Project activities would not take place within the boundary of Watson Park. The project would not require permanent or temporary closure of this park.

Table B-1: Public Parks, Recreational Areas, and Wildlife Refuges Within One-Quarter Mile of the Project Area

Description of Recreation Resource	Explanation
Emma Prusch Farm Park. Emma Prusch Farm Park is a 47-acre park and farm that includes two community gardens, fruit orchards, a Plant Science Center, butterfly gardens and lawns for picnicking. The park is adjacent to northbound US 101 between the I-280 interchange and Story Road.	Project activities would not take place within the boundary of Emma Prusch Farm Park. The project would not require permanent or temporary closure of this park.
Trails and Bridges. Paved, multi-use trails that intersect the project corridor by bridge or undercrossing are the Upper Guadalupe River Trail, and the Coyote Creek Trail.	No project activities would take place at the Upper Guadalupe River Trail undercrossing or at any of the Coyote Creek Trail undercrossings. No project activities will take place at bridges spanning over creeks. Temporary or permanent closures of bicycle or pedestrian trails are not anticipated.
Morgan Hill	
Trails and Bridges. Several bicycle paths or routes intersect the project corridor by bridge or undercrossing, such as at Cochrane Road, East Main Street, and East Dunne Avenue (City of Morgan Hill 2008). In addition, a proposed bike route at Burnett Avenue would intersect the project corridor.	No project activities would take place at Cochrane Road, West Main Street, or East Dunne Avenue undercrossings. Temporary or permanent closures of bicycle or pedestrian trails are not anticipated.

Permanent or temporary project-related activities would not take place within any of these resources, nor would there be proximity impacts that might substantially impair their use. Therefore the project would not affect or “use” these resources and the provisions of Section 4(f) are not triggered.

Cultural Resources

As noted in Sections 2.1.5.2 and 2.1.5.3, ten cultural resources in the Area of Potential Effect (APE) were evaluated and determined eligible for listing in the National Register of Historic Places (NRHP) and the California Register of Historic Resources (CRHR) by prior studies.

Three of the ten cultural resources were determined eligible based on their potential to yield additional data and for features of their architecture and/or construction. One of the resources was demolished or removed during the construction of US 101, and it was later determined to be eligible only because of its data potential, therefore it is exempt from consideration under Section 4(f). Two of these resources are considered potential Section 4(f) properties.

The remaining cultural resource was determined eligible based on its potential to yield additional data and its association with Lope Yñigo, one of the very few California Native Americans who obtained their own land grants. This resource is also considered a potential Section 4(f) property.

The three potential Section 4(f) properties in the APE will be protected by an ESA established and enforced in accordance with the Section 106 PA. The project will not permanently acquire any portion of these three properties, nor would any construction activities be considered temporary occupancy or constructive use as defined by Section 4(f). The project would therefore not affect or “use” any Section 4(f) property and the provisions of Section 4(f) are not triggered.

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Appendix C Title VI Policy Statement

STATE OF CALIFORNIA—BUSINESS, TRANSPORTATION AND HOUSING AGENCY EDMUND G. BROWN Jr., Governor

DEPARTMENT OF TRANSPORTATION
OFFICE OF THE DIRECTOR
P.O. BOX 942873, MS-49
SACRAMENTO, CA 94273-0001
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March 2013

NON-DISCRIMINATION
POLICY STATEMENT

The California Department of Transportation, under Title VI of the Civil Rights Act of 1964 and related statutes, ensures that no person in the State of California shall, on the grounds of race, color, national origin, sex, disability, religion, sexual orientation, or age, be excluded from participation in, be denied the benefits of, or be otherwise subjected to discrimination under any program or activity it administers.

For information or guidance on how to file a complaint based on the grounds of race, color, national origin, sex, disability, religion, sexual orientation, or age, please visit the following web page: http://www.dot.ca.gov/hq/bep/title_vi/t6_violated.htm.

Additionally, if you need this information in an alternate format, such as in Braille or in a language other than English, please contact the California Department of Transportation, Office of Business and Economic Opportunity, 1823 14th Street, MS-79, Sacramento, CA 95811. Telephone: (916) 324-0449, TTY: 711, or via Fax: (916) 324-1949.

MALCOLM DOUGHERTY
Director

"Caltrans improves mobility across California"

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Appendix D Traffic Modeling Results

Table D-1 Peak Hour Travel Conditions, 2015 Northbound AM and PM, No Build and Build

Northbound - Mainline Segment Description		2015 AM peak hour (7 to 8 AM)								2015 PM peak hour (5 to 6 PM)							
		General Purpose				HOV/Express				General Purpose				HOV/Express			
Description of Segment Limits	*Express Lane Start, End, Access Zones*	No Build		Build		No Build (HOV)		Build (Express)		No Build		Build		No Build (HOV)		Build (Express)	
		Vol	LOS	Vol	LOS	Vol	LOS	Vol	LOS	Vol	LOS	Vol	LOS	Vol	LOS	Vol	LOS
South of Tennant Off		5418	D	5423	D					3280	B	3311	B				
Tennant Off - Tennant Loop On		4958	D	4970	D					2953	B	2954	B				
Tennant Loop On - Tennant Diagonal On		5590	D	5644	C					3396	B	3397	B				
Tennant Diagonal On - Dunne Off		5591	F	5720	D					3442	C	3443	C				
Dunne Off - Dunne NB On/EXP Lane Start		5154	F	5394	D					3031	B	2999	B				
	Dunne NB On/ EXP Lane Start – Dunne SB On	5677	F	6083	D			839	A	3250	B	3286	B			192	A
	Dunne SB On - Cochrane Off	6374	E	6713	D			1010	B	3442	C	3266	B			153	A
	Cochrane Off - Cochrane NB On/Dual EXP Lane Start	5748	D	6057	C			1363	C	3026	B	2661	B			303	A
	Cochrane NB On/Dual EXP Lane Start - Cochrane SB On	5479	E	4758	D	955	B	2001	B	3625	C	3306	B	239	A	491	A
	Cochrane SB On - Access End	5356	D	4440	C	1512	C	2746	B	3471	C	3320	B	565	A	649	A
Access End - Coyote Creek Off		5356	D	4381	C	1512	C	2785	C	3471	C	3314	C	565	A	648	**B**
Coyote Creek Off - Coyote Creek On		5230	D	4364	C	1618	C	2754	C	3252	B	3304	B	771	B	651	A
Coyote Creek On - Bailey Off		5274	D	4413	C	1598	C	2748	C	3277	B	3343	B	792	B	650	A
Bailey Off - Bailey On		5121	D	4235	C	1575	C	2730	C	3174	B	3267	B	804	B	650	A
Bailey On - Access Start		5591	D	4719	D	1583	C	2712	C	3590	B	3684	**C**	812	B	650	A
	Access Start - SR 85 HOV Connector Off	5591	C	4716	C	1583	B	2675	**C**	3590	B	3654	B	812	A	675	A
SR85 HOV Connector Off - SR 85 GP Connector Off		4948	C	4719	C	758	A	1526	**C**	3614	B	3653	B	388	A	416	A
SR 85 GP Connector Off - Bernal Off		4074	C	3788	C	772	B	1526	**C**	2179	B	2052	A	379	A	417	A
Bernal Off - Bernal NB On		3533	C	3284	B	809	B	1520	**C**	2031	A	1883	A	382	A	415	A
Bernal NB On - Bernal SB On		4180	B	3941	B	816	B	1520	**C**	2692	B	2868	B	384	A	415	A

Table D-1 Peak Hour Travel Conditions, 2015 Northbound AM and PM, No Build and Build

Northbound - Mainline Segment Description		2015 AM peak hour (7 to 8 AM)								2015 PM peak hour (5 to 6 PM)							
		General Purpose				HOV/Express				General Purpose				HOV/Express			
Description of Segment Limits	*Express Lane Start, End, Access Zones*	No Build		Build		No Build (HOV)		Build (Express)		No Build		Build		No Build (HOV)		Build (Express)	
		Vol	LOS	Vol	LOS	Vol	LOS	Vol	LOS	Vol	LOS	Vol	LOS	Vol	LOS	Vol	LOS
Bernal SB On - Coyote Off		4350	C	4164	C	862	B	1511	**D**	2914	B	3102	B	400	A	413	A
Coyote Off - Blossom Hill EB On		3821	D	3707	C	902	B	1500	**D**	2603	B	2757	B	422	A	413	A
Blossom Hill EB On - Blossom Hill WB On		4744	F	4923	D	995	B	1501	**D**	3786	C	4083	C	458	A	410	A
Blossom Hill WB On - Access Start		4891	F	5551	D	1225	C	1498	**D**	4052	C	4473	C	577	A	411	A
	Access Start - Access End	4891	F	4722	D	1225	C	2326	C	4052	C	4302	C	577	A	580	A
Access End - Hellyer Off		4891	F	4708	C	1225	C	2339	B	4052	C	4304	C	577	A	576	A
Hellyer Off - Hellyer On		4422	F	4641	D	1356	C	2337	B	3856	C	4161	C	646	A	578	A
Hellyer On - Yerba Buena Off		4989	F	5648	D	1461	D	2336	B	4496	C	4830	**D**	673	A	580	A
Yerba Buena Off - Capitol Off		4728	F	5408	D	1426	D	2335	B	4288	C	4440	C	540	A	575	A
Capitol Off - Yerba Buena On		4375	F	5010	D	1407	E	2327	B	3356	C	3446	C	523	A	575	A
Yerba Buena On - Capitol Loop On		4292	F	5544	D	1713	F	2317	B	3716	C	3823	C	553	A	575	A
Capitol Loop On - Capitol Diagonal On		4444	F	5917	C	1590	F	2316	B	4421	C	4115	B	290	A	573	A
Capitol Diagonal On - Tully Off		5274	F	7127	D	1375	F	2315	B	5642	D	5570	D	379	A	573	A
Tully Off - Access Start		4775	F	6194	E	1069	F	2308	B	4790	D	6060	D	501	A	573	A
	Access Start - Access End	4775	F	5322	D	1069	C	3177	C	4790	D	4779	D	501	A	616	A
Access End - Tully NB Loop On		4775	F	5287	D	1069	C	3190	C	4790	D	4782	D	501	A	612	A
Tully NB Loop On - Tully NB Diagonal On		5908	F	6618	D	1244	C	3189	C	5462	C	5486	C	531	A	612	A
Tully NB Diagonal On - I-280/I-680 Off		6531	F	7428	D	1325	D	3191	C	6489	D	6616	D	637	A	615	A
I-280/I-680 Off - Story Rd Off		4054	F	4458	C	1388	C	3185	C	2990	B	3217	B	754	A	615	A
Story Off - Access Start		3865	F	4302	C	1519	C	3184	C	2531	B	2768	B	791	A	616	A
	Access Start - Access End	3865	F	4380	C	1519	E	3112	D	2531	B	2809	B	791	A	573	A
Access End - Story On		3865	F	4353	D	1519	E	3120	C	2531	B	2818	B	791	A	566	A
Story On - I-280/I-680 SB On		4543	F	5018	E	1449	D	3117	C	3940	C	4055	C	625	A	567	A

Table D-1 Peak Hour Travel Conditions, 2015 Northbound AM and PM, No Build and Build

Northbound - Mainline Segment Description		2015 AM peak hour (7 to 8 AM)								2015 PM peak hour (5 to 6 PM)							
		General Purpose				HOV/Express				General Purpose				HOV/Express			
Description of Segment Limits	*Express Lane Start, End, Access Zones*	No Build		Build		No Build (HOV)		Build (Express)		No Build		Build		No Build (HOV)		Build (Express)	
		Vol	LOS	Vol	LOS	Vol	LOS	Vol	LOS	Vol	LOS	Vol	LOS	Vol	LOS	Vol	LOS
I-280/I-680 SB On - Santa Clara Off		5567	F	6216	F	1549	E	3118	C	4454	B	4685	**C**	740	A	568	A
Santa Clara Off - Access Start		5286	F	5802	F	1558	F	3121	D	3730	B	3994	B	772	A	568	A
	Access Start - McKee Off	5286	F	5473	F	1558	F	3509	E	3730	B	3995	B	772	A	567	A
	McKee Off - Access End	4363	F	4652	F	1592	E	3140	E	3007	B	3382	B	761	A	437	A
Access End - Santa Clara On		4363	F	4662	F	1592	E	3132	E	3007	B	3382	B	761	A	437	A
Santa Clara On - McKee On		5106	F	5432	F	1567	D	3130	C	3366	C	3803	C	819	B	437	A
McKee On - Oakland Off		5558	F	6048	F	1677	D	3128	C	3736	C	4363	C	995	A	438	A
Oakland Off - Oakland On		5103	F	5400	E	1483	D	3133	C	3487	C	3840	C	749	A	441	A
Oakland On - I-880 NB Off		6096	F	6641	E	1502	D	3139	C	4259	C	4658	C	768	A	442	A
I-880 NB Off - I-880 NB On		4835	F	5066	D	1413	D	3134	C	2733	A	3046	**B**	614	A	441	A
I-880 NB On - I-880 SB Off		5530	F	5779	C	1433	E	3131	C	3309	B	3609	B	608	A	440	A
I-880 SB Off - Bayshore Off		4720	F	4928	D	1524	D	3132	C	2660	A	3013	**B**	616	A	441	A
Bayshore Off - Bayshore On		4253	F	4634	E	1689	E	3128	C	2442	B	2847	B	637	A	441	A
Bayshore On - Brokaw Off		5315	F	5502	F	1506	D	3127	C	2880	B	3233	B	586	A	443	A
Brokaw Off - Access Start		4566	F	4689	F	1559	D	3128	D	2318	B	2723	B	608	A	442	A
	Access Start - N 1st St On	4566	F	4745	F	1559	D	3046	D	2318	B	2554	B	608	A	613	A
	N 1st St On - E Brokaw Rd On/Access End	4726	F	5135	F	1692	D	2934	D	2584	B	2843	B	656	A	640	A
E Brokaw Rd On/Access End - De La Cruz Off		5342	F	5767	F	1708	D	2934	C	3561	B	3896	B	667	A	642	A
De La Cruz Off - SR 87/Guadalupe On		4144	F	4248	F	1755	D	2935	C	2885	B	3346	B	800	B	641	A
SR 87/Guadalupe On - De La Cruz NB On		5395	F	5320	F	1754	D	2930	C	4382	C	4929	**D**	915	B	642	A
De La Cruz NB On - Access Start		5796	F	5582	F	1638	D	2926	C	4480	C	5169	C	1033	B	645	A
	Access Start - De La Cruz SB On	5796	F	5429	F	1638	D	3072	C	4480	C	4917	**E**	1033	B	769	A

Table D-1 Peak Hour Travel Conditions, 2015 Northbound AM and PM, No Build and Build

Northbound - Mainline Segment Description		2015 AM peak hour (7 to 8 AM)								2015 PM peak hour (5 to 6 PM)							
		General Purpose				HOV/Express				General Purpose				HOV/Express			
Description of Segment Limits	*Express Lane Start, End, Access Zones*	No Build		Build		No Build (HOV)		Build (Express)		No Build		Build		No Build (HOV)		Build (Express)	
		Vol	LOS	Vol	LOS	Vol	LOS	Vol	LOS	Vol	LOS	Vol	LOS	Vol	LOS	Vol	LOS
	De La Cruz SB On - Montague Off/Access Extension	6062	F	6363	F	1597	E	2371	C	5053	E	5836	**F**	1070	C	704	A
	Montague Off/Access Extension - Access End	5338	F	4973	D	1401	E	2371	C	3793	E	4494	C	1043	C	704	A
Access End - Montague On		5338	D	4977	D	1401	C	2370	B	3793	C	4492	C	1043	B	705	A
Montague On - Great America Off		6936	E	6494	D	1290	C	2370	B	5607	D	6416	D	1075	B	707	A
Great America Off - Great America NB On		5837	E	5351	D	1237	C	2370	B	4658	C	5409	**D**	1020	B	709	A
Great America NB On - Great America SB On/Access Start		5915	E	5410	E	1192	C	2371	B	4934	D	5663	D	979	B	709	A
	Access Start - Access End	5987	F	6047	F	1204	C	1845	B	5516	D	6522	D	1067	B	575	A
Access End/Lawrence Off - Lawrence NB On		4953	F	4675	F	1215	C	1989	B	4214	C	4750	**D**	985	B	789	A
Lawrence NB On - Lawrence SB On		5430	F	5161	F	1215	C	1991	B	4720	D	5226	D	957	B	789	A
Lawrence SB On - Fair Oaks Off/Access Start		5885	F	5758	F	1403	C	1988	B	5046	C	5584	C	1002	B	790	A
	Access Start - Fair Oaks On	5048	F	5101	F	1611	E	1899	B	4255	C	4696	**D**	899	B	714	A
	Fair Oaks On - Access End	5873	F	5966	F	1246	D	1653	B	4856	D	5176	D	770	B	704	A
Access End - EXP Lane Drop		5873	F	5920	F	1246	D	1645	B	4856	D	5169	D	770	B	705	A
EXP Lane Drop - Mathilda NB Off			F		F		D		D		D		D		B		A
Mathilda NB Off - Mathilda NB On		5301	F	5306	F	1219	D	1642	D	4600	D	4895	D	772	B	705	A
Mathilda NB On - Mathilda SB Off		5618	F	5635	F	1209	D	1642	C	4880	D	5187	D	786	B	706	A
Mathilda SB Off - SR 237 Off		5107	F	4977	F	1146	C	1640	**D**	4106	C	4256	C	775	B	708	A
SR 237 Off - SR 237 On		4643	F	4478	F	1117	C	1639	**D**	3258	B	3361	B	758	A	708	A
SR 237 On - Ellis Off/Access Start		5239	F	5131	F	1104	C	1640	**E**	4299	C	4402	C	764	B	714	B
	Ellis Off/Access Start - Access End	4874	F	4948	F	1090	C	1408	**D**	4000	C	4138	C	760	A	649	**B**
Access End - Ellis On		4874	F	4906	F	1090	C	1400	C	4000	C	4146	C	760	A	647	A

Table D-1 Peak Hour Travel Conditions, 2015 Northbound AM and PM, No Build and Build

Northbound - Mainline Segment Description		**2015 AM peak hour (7 to 8 AM)**								**2015 PM peak hour (5 to 6 PM)**							
		General Purpose				**HOV/Express**				**General Purpose**				**HOV/Express**			
Description of Segment Limits	***Express Lane Start, End, Access Zones***	**No Build**		**Build**		**No Build (HOV)**		**Build (Express)**		**No Build**		**Build**		**No Build (HOV)**		**Build (Express)**	
		Vol	**LOS**	**Vol**	**LOS**	**Vol**	**LOS**	**Vol**	**LOS**	**Vol**	**LOS**	**Vol**	**LOS**	**Vol**	**LOS**	**Vol**	**LOS**
Ellis On - Moffett Off		4900	F	4990	F	1070	D	1401	C	4627	D	4744	D	736	A	651	A
Moffett Off - Moffett On		4794	F	4769	F	987	D	1401	C	4353	C	4414	**D**	677	A	652	A
Moffett On - Shoreline Off/Access Start		5152	F	5093	F	929	C	1399	C	4694	C	4703	C	629	A	655	A
Shoreline Off - SR 85 On		4505	F	4389	F	945	B	1399	**C**	3978	C	4045	C	656	A	654	A
SR 85 On - SR 85 HOV Connector On		6197	F	5952	F	949	B	1400	**C**	5321	C	5303	C	668	A	656	A
SR 85 HOV Connector On - Middlefield Off		6153	F	5905	F	1595	B	2474	**C**	5342	C	5302	C	1051	A	1064	A
Middlefield Off - Shoreline On		5647	F	5378	F	1588	B	2475	**C**	4178	B	4138	B	1051	A	1065	A
Shoreline On - Rengstorff NB Off		5392	F	6043	F	2432	D	2472	C	4973	C	5082	C	1197	A	1067	A
Rengstorff NB Off - Rengstorff SB Off		5178	F	5818	F	2349	D	2472	C	4888	C	5023	C	1218	A	1067	A
Rengstorff SB Off - Rengstorff On		5605	F	5634	E	1834	B	2472	**C**	4726	D	4777	D	1137	A	1069	A
Rengstorff On - San Antonio Off		6391	E	6130	D	1544	B	2462	**C**	5683	D	5685	C	1109	A	1073	A
San Antonio Off - San Antonio On		5840	D	5494	D	1499	B	2460	**C**	5148	D	5197	D	1167	A	1074	A
	San Antonio On - EXP Lane End/Dual HOV Lane End	6895	D	7030	D	1145	A	1623	**B**	6438	D	6308	D	1016	A	1109	A
EXP Lane End/Dual HOV Lane End - Oregon/Embarcadero Off		6895	D	7376	D	1145	B	1264	**C**	6438	D	6350	D	1016	B	1085	B
Oregon/Embarcadero Off - Oregon/Embarcadero On		5835	D	6115	D	1093	B	1267	**C**	5121	D	5091	D	1128	B	1134	B
North of Oregon/Embarcadero		6764	D	7024	D	1051	B	1247	**C**	6782	D	6716	D	1155	C	1196	C

Shaded cell letters indicate improved LOS with the Build condition compared to No Build.
Boldfaced indicates where LOS with the Build condition decreases compared to No Build.

Table D-2 Peak Hour Travel Conditions, 2015 Southbound AM and PM, No Build and Build

Southbound - Mainline Segment Description		2015 AM peak hour (7 to 8 AM)								2015 PM peak hour (5 to 6 PM)							
		General Purpose				HOV/Express				General Purpose				HOV/Express			
Description of Segment Limits	Express Lane Start, End, Access Zones	No Build		Build		No Build (HOV)		Build (Express)		No Build		Build		No Build (HOV)		Build (Express)	
		Vol	LOS	Vol	LOS	Vol	LOS	Vol	LOS	Vol	LOS	Vol	LOS	Vol	LOS	Vol	LOS
University On - Ore/Embarcadero Off		7587	E	7592	E	1275	C	1281	C	4794	F	5099	F	1636	F	1752	F
Ore/Embarcadero Off - Ore/Embarcadero On		5578	E	5591	**F**	1314	C	1289	C	3648	F	4066	F	1681	E	1788	E
	Oregon/Embarcadero On - SB San Antonio Off	7137	F	7203	F	1474	B	1446	B	4910	F	5405	F	1780	B	1894	**D**
	SB San Antonio Off - NB San Antonio Off	6669	E	6747	D	1474	B	1678	B	4237	F	4809	F	1780	B	2291	**D**
	NB San Antonio Off -Access End	5959	E	5850	**F**	1727	B	1911	B	4183	F	4039	F	1861	B	2688	**D**
Access End - Charleston On		6669	E	5952	**F**	1474	B	1761	B	4237	F	4063	F	1780	B	2679	**D**
Chareston On - Rengstorff Off		6344	E	6262	E	1727	B	1760	B	5292	F	5123	F	1861	B	2679	**C**
Rengstorff Off - Rengstorff On		5650	E	5709	E	1665	B	1758	B	4926	F	4819	F	1868	B	2680	**C**
Rengstorff On - Middlefield On		5983	E	5859	E	1502	B	1746	B	5747	E	5474	E	1634	B	2684	**C**
Middlefield On - SB Shoreline Off		6573	D	6444	D	1492	B	1742	B	6373	D	6102	D	1637	B	2686	**C**
SB Shoreline Off - HOV Connector US101 SB To SR85 SB Off		6164	D	6053	D	1468	B	1739	B	5990	D	5750	C	1630	B	2689	**C**
HOV Connector US101 SB To SR85 SB Off - SB SR85 Off		6168	D	6052	C	1189	C	1214	C	6016	C	5748	C	1062	B	1561	**D**
SB SR85 Off - Shoreline On		4985	D	4998	D	1031	B	1210	**C**	3952	C	3533	C	922	B	1563	**D**
NB Shoreline On (Diagonal) - Moffett Off		5601	D	5450	D	805	B	1209	**C**	5219	D	4615	C	724	B	1568	**D**
Moffett Off- Moffett On		5544	E	5489	D	885	B	1206	**C**	5189	D	4694	D	809	B	1569	**D**
Moffett On- Ellis Off/Access Start		5486	E	5529	D	965	B	1203	**C**	5159	D	4774	D	894	B	1570	**D**
	Ellis Off/Access Start- Ellis On/Access End	5198	D	5190	D	962	B	1074	**C**	5323	D	4500	D	927	B	1686	**D**
Ellis On/Access End - EB SR237 Off		5198	D	5361	D	908	B	1059	**C**	5323	D	5081	D	983	B	1685	**D**
EB SR237 Off- EB SR237 On		3514	C	3695	C	900	B	1056	**C**	3681	C	3544	C	972	B	1683	**D**
EB SR237 On - Mathilda Off		4419	C	4624	C	900	B	1053	**C**	4544	C	4405	C	972	B	1686	**D**
Mathilda Off - SB Mathilda On (Loop)		4133	C	4346	C	915	B	1050	**C**	4076	C	3970	C	981	B	1688	**D**

Table D-2 Peak Hour Travel Conditions, 2015 Southbound AM and PM, No Build and Build

Southbound - Mainline Segment Description		2015 AM peak hour (7 to 8 AM)								2015 PM peak hour (5 to 6 PM)							
		General Purpose				HOV/Express				General Purpose				HOV/Express			
Description of Segment Limits	*Express Lane Start, End, Access Zones*	No Build		Build		No Build (HOV)		Build (Express)		No Build		Build		No Build (HOV)		Build (Express)	
		Vol	LOS	Vol	LOS	Vol	LOS	Vol	LOS	Vol	LOS	Vol	LOS	Vol	LOS	Vol	LOS
SB Mathilda On (Loop) - NB Mathilda On (Diagonal)/Access Start		4292	C	4505	C	915	B	1050	B	5133	C	5060	C	981	B	1688	**D**
	NB Mathilda On (Diagonal)/Access Start - SB Fair Oaks Off (Diagonal)/Access End	4673	D	4985	D	898	B	947	A	5562	D	5325	D	1084	B	2099	B
SB Fair Oaks Off (Diagonal)/Access End - SB Fair Oaks On (Loop)		4344	C	4672	**D**	898	B	942	A	4959	D	4769	D	1084	C	2158	B
SB Fair Oaks On (Loop) - NB Fair Oaks Off (Loop)		4485	C	4855	C	944	B	942	A	5344	D	5181	D	1198	C	2158	B
NB Fair Oaks Off (Loop) - NB Fair Oaks On (Diagonal)		4405	D	4796	D	944	B	941	A	5175	D	5046	D	1198	C	2155	B
NB Fair Oaks On (Diagonal) - SB Lawr. Expy Off		4744	D	5190	D	968	B	940	A	5491	D	5287	D	1106	C	2153	B
SB Lawr. Expy Off - SB Lawr. Expy On (Loop)		4203	C	4523	**D**	897	B	935	A	4282	C	3908	**D**	1005	B	2148	B
SB Lawr. Expy On (Loop) - NB Lawr. Expy On (Diagonal)		4523	D	4895	D	952	B	930	A	4597	D	4289	D	1051	B	2146	B
NB Lawr. Expy On (Diagonal) - G.A. Off/Access Start		5035	D	5537	C	1027	B	926	A	5165	D	4970	D	1067	C	2142	B
	G.A. Off/Access Start- SB G.A.On (Loop)/Access End	4473	D	4907	D	997	B	942	A	4540	D	3836	**F**	1031	B	2667	**C**
SB G.A. On (Loop) - NB G.A. On (Diagonal)		4640	D	5087	D	1023	B	938	A	5166	D	4547	**F**	1147	C	2664	C
NB G.A. On (Diagonal) - Mont. Expy Off		4803	C	5262	C	1026	B	936	A	5682	D	5144	**F**	1182	C	2661	C
Mont. Expy Off - Mont. Expy On		3931	C	4307	C	980	B	928	A	4274	D	3777	**F**	1192	C	2654	C
	Mont. Expy On (Diagonal)/Access Start - De La Cruz Off	4800	D	5256	D	893	B	768	A	5307	F	4872	F	1564	D	3040	D
	De La Cruz Off - Access End	4563	D	5026	D	893	B	766	A	4905	F	4463	F	1564	D	3038	D
Access End - De La Cruz On (Loop)		4549	D	5020	D	900	B	764	A	4894	F	4469	F	1613	D	3037	C
De La Cruz On (Loop) - De La Cruz Off (Loop)		4805	D	5287	D	908	B	765	A	5445	F	5297	F	1588	D	3036	C
De La Cruz Off (Loop) - De La Cruz On (Diagonal)		4325	D	4844	D	856	B	765	A	5353	F	5150	E	1546	D	3036	C
De La Cruz On (Diagonal) - Guadalupe\SR87 Off		5117	C	5499	C	787	B	761	A	7341	E	7030	D	1461	C	3033	C

Table D-2 Peak Hour Travel Conditions, 2015 Southbound AM and PM, No Build and Build

Southbound - Mainline Segment Description		2015 AM peak hour (7 to 8 AM)								2015 PM peak hour (5 to 6 PM)							
		General Purpose				HOV/Express				General Purpose				HOV/Express			
Description of Segment Limits	Express Lane Start, End, Access Zones	No Build		Build		No Build (HOV)		Build (Express)		No Build		Build		No Build (HOV)		Build (Express)	
		Vol	LOS	Vol	LOS	Vol	LOS	Vol	LOS	Vol	LOS	Vol	LOS	Vol	LOS	Vol	LOS
Guadalupe\SR87 Off - 1st\Brokaw Off		3600	C	3976	C	762	B	758	A	5048	D	4699	D	1356	C	3027	C
1st\Brokaw Off - Access Start		2642	B	2994	B	762	B	757	A	4205	C	3899	C	1326	D	3026	C
	Access Start - Access End	2793	B	3089	B	586	A	652	A	4393	C	3880	C	1126	C	3031	C
Access End - Bayshore On		2865	B	3083	B	524	A	650	A	4476	C	3861	C	1053	C	3037	C
Bayshore On - SB I-880 Off		3642	B	3841	B	478	A	646	A	5679	E	4980	**F**	1046	C	3038	C
SB I-880 Off - SB I-880 On (Loop)		3277	B	3474	B	478	A	646	A	5043	F	4335	F	1046	D	3040	C
SB I-880 On (Loop) - NB I-880 Off		4444	B	4593	B	470	A	646	A	5714	F	5463	F	1439	E	3042	C
NB I-880 Off - NB I-880 On (Diagonal)		3787	C	3892	C	470	A	645	A	5376	F	5048	F	1439	E	3040	C
NB I-880 On (Diagonal) - Oakland Off		4227	B	4427	B	576	A	644	A	5878	F	6008	F	1658	E	3037	C
Oakland Off - Oakland On/Access Start		3529	C	3859	C	694	A	643	A	4512	F	4799	F	1911	F	3027	C
	Oakland On Access Start - Access End	3958	C	4315	C	829	B	751	A	6058	F	5879	E	1648	D	3175	D
Access End - McKee Off		3887	C	4300	C	883	B	747	A	6062	F	5874	E	1641	D	3177	D
McKee Off- Santa Clara Off		3623	C	3869	C	689	B	746	A	5716	D	5096	D	1268	C	3178	**D**
Santa Clara Off- McKee On		3406	C	3632	C	682	A	743	A	5157	D	4413	C	1181	C	3177	**D**
McKee On - Santa Clara On		4282	C	4451	C	629	A	742	A	6506	D	5544	C	932	B	3172	**D**
Santa Clara On - I-280\680 Off		5018	C	5223	C	670	A	740	A	7388	E	6644	D	1093	B	3173	**D**
I-280\680 Off - Story Off		3448	C	3744	C	742	B	735	A	5331	D	4672	D	1208	C	3185	**D**
	Story Off/Access Start - Access End	2953	B	3335	**C**	773	B	704	A	3915	C	3556	C	1204	C	2825	C
Access End - Story On		2927	B	3333	**C**	695	B	699	A	3970	C	3572	C	1010	C	2819	C
Story On - I-280/680 On		3770	C	4078	C	694	A	697	A	4947	D	4443	D	1064	B	2819	**C**
I-280/680 On - Tully Off		6507	C	6893	C	772	B	694	A	8302	D	7911	D	1178	C	2822	C
	Tully Off/Access Start - Tully On (Loop)/Access End	5164	C	5572	C	772	B	712	A	6402	D	5706	D	1178	C	2202	B

Table D-2 Peak Hour Travel Conditions, 2015 Southbound AM and PM, No Build and Build

Southbound - Mainline Segment Description		2015 AM peak hour (7 to 8 AM)								2015 PM peak hour (5 to 6 PM)							
		General Purpose				HOV/Express				General Purpose				HOV/Express			
Description of Segment Limits	*Express Lane Start, End, Access Zones*	No Build		Build		No Build (HOV)		Build (Express)		No Build		Build		No Build (HOV)		Build (Express)	
		Vol	LOS	Vol	LOS	Vol	LOS	Vol	LOS	Vol	LOS	Vol	LOS	Vol	LOS	Vol	LOS
Tully On (Loop)/Access End - Tully On (Diagonal)		5578	C	5830	C	659	A	731	A	7225	C	7438	**D**	820	B	1583	B
Tully On (Diagonal) - Capitol Expy Off		5862	B	6147	B	689	A	727	A	7666	C	7931	C	863	B	1581	B
Capitol Expy Off - Capitol Expy On (Loop)		4594	C	4762	C	580	A	721	A	5220	C	5576	C	685	A	1580	**B**
Capitol Expy On (Loop) - Capitol Expy On (Diagonal)		5102	C	5262	C	580	A	719	A	5717	C	6073	C	685	B	1580	B
Capitol Expy On (Diagonal) - Yerba Buena Off		5500		5756		697		718		6127		6567		793		1579	
Yerba Buena Off - Yerba Buena On		4870	D	5217	D	777	B	716	A	5124	D	5446	D	854	B	1584	B
Yerba Buena On - Hellyer Off		5286	D	5667	D	803	B	709	A	5561	D	5859	D	818	B	1581	B
Hellyer Off - Hellyer On		4873	D	5253	D	781	B	708	A	4987	D	5116	D	787	B	1580	B
Hellyer On -Access Start		4907	C	5371	**D**	869	B	705	A	5057	D	5258	D	867	B	1582	B
	Access Start - Access End	4882	C	5348	**D**	884	B	702	A	5040	D	5697	D	882	B	1091	A
Access End - Blossom Hill Off		4849	C	5356	**D**	892	B	666	A	5023	D	5854	D	901	B	979	B
Blossom Hill Off - WB Blossom Hill On (Loop)		3763	C	4267	C	869	B	662	A	3550	C	4293	C	869	B	980	B
WB Blossom Hill On (Loop) - EB Blossom Hill On (Diagonal)		4072	C	4546	C	849	B	660	A	3852	C	4563	C	842	B	981	B
EB Blossom Hill On (Diagonal) - NB SR85 Off		4492	C	4785	B	658	B	656	A	4312	C	4835	C	664	B	986	B
NB SR85 Off - Bernal Off		4105	B	4395	B	658	A	652	A	4001	B	4485	B	664	A	991	**B**
Bernal Off - SB SR85 GP/Bernal On		3323	B	3624	**C**	666	A	648	A	3310	B	3705	**C**	669	A	996	**B**
SB SR85 GP/Bernal On - SR85 HOV Direct Connector On/Access Start		4587	B	4943	B	740	A	645	A	5240	B	5700	B	817	A	999	**B**
SR85 HOV Direct Connector ON/Access Start - Access End		4575	C	4832	C	970	B	991	A	5641	D	5642	D	1612	C	2251	B
Access End - Bailey Off		4536	C	4810	C	982	B	986	A	5661	D	5639	D	1585	C	2252	B
Bailey Off - Bailey On		4282	C	4526	C	936	B	970	A	5267	C	5077	C	1444	C	2266	B
Bailey On - Coyote Creek Off		4363	C	4579	C	906	B	956	A	5454	D	5230	D	1414	C	2286	B

Table D-2 Peak Hour Travel Conditions, 2015 Southbound AM and PM, No Build and Build

Southbound - Mainline Segment Description		2015 AM peak hour (7 to 8 AM)								2015 PM peak hour (5 to 6 PM)							
		General Purpose				HOV/Express				General Purpose				HOV/Express			
Description of Segment Limits	*Express Lane Start, End, Access Zones*	No Build		Build		No Build (HOV)		Build (Express)		No Build		Build		No Build (HOV)		Build (Express)	
		Vol	LOS	Vol	LOS	Vol	LOS	Vol	LOS	Vol	LOS	Vol	LOS	Vol	LOS	Vol	LOS
Coyote Creek Off - Coyote Creek On		4288	C	4493	C	901	B	948	A	5422	D	5199	D	1405	C	2291	B
Coyote Creek On - Access Start		4290	C	4498	C	890	B	940	A	5459	D	5206	D	1379	C	2300	C
	Access Start - Access End	5123	C	4812	C		B	576	A	6838	D	6190	D		C	1299	C
Access End - Cochrane Off		5111	C	4807	C		B	574	A	6831	D	6120	D		D	1300	C
Cochrane Off - WB Cochrane On (loop)		4106	C	3820	C			570	A	5805	D	4868	**F**			1299	C
WB Cochrane On (Loop) - EB Cochrane On (Diagonal)		4166	C	3880	C			568	A	5933	D	4907	**F**			1303	C
EB Cochrane On (Diagonal) - EL End		4406	C	4120	C			566	**C**	6540	E	5460	**F**			1301	C
EL End - Dunne Off		4384	C	4654	B					6534	E	6709	**F**				
Dunne Off - Dunne On		3828	C	4097	C					5640	D	5864	**F**				
Dunne On - Tennant Off		4226	C	4488	C					6193	E	6394	E				
Tennant Off- Tennant On		3807	C	4071	C					5396	D	5604	D				
Tennant On - End of Network		4073	C	4335	C					5969	D	6172	D				

Shaded cell letters indicate improved LOS with the Build condition compared to No Build.
Boldfaced indicates where LOS with the Build condition decreases compared to No Build.

Table D-3 Peak Hour Travel Conditions, 2035 Northbound AM and PM, No Build and Build

Northbound - Mainline Segment Description		**2035 AM peak hour (7 to 8 AM)**								**2035 PM peak hour (5 to 6 PM)**							
		General Purpose				**HOV/Express**				**General Purpose**				**HOV/Express**			
Description of Segment Limits	***Express Lane Start, End, Access Zones***	**No Build**		**Build**		**No Build (HOV)**		**Build (Express)**		**No Build**		**Build**		**No Build (HOV)**		**Build (Express)**	
		Vol	**LOS**	**Vol**	**LOS**	**Vol**	**LOS**	**Vol**	**LOS**	**Vol**	**LOS**	**Vol**	**LOS**	**Vol**	**LOS**	**Vol**	**LOS**
South of Tennant Off		5262	D	5384	D	1658	C	1557	C	3259	B	3562	**C**	954	B	645	A
Tennant Off - Tennant Loop On		4641	C	4744	C	1595	C	1525	C	2810	B	3132	B	933	B	650	A
Tennant Loop On - Tennant Diag On		5412	C	5515	C	1470	C	1438	C	3394	B	3718	B	859	B	590	A
Tennant Diag On - Dunne Off		5533	D	5612	D	1437	C	1488	C	3478	C	3766	C	837	B	596	A
Dunne Off - Dunne NB On/EXP Lane Start		4859	D	5035	D	1542	C	1491	C	2812	B	3166	B	857	B	605	A
	Dunne NB On/ EXP Lane Start - DunneSB On	5408	D	5911	D	1706	C	1335	**D**	3199	B	3731	**C**	894	B	481	B
	Dunne SB On - Cochrane Off	6076	D	6427	**E**	1682	D	1443	D	3483	C	3913	C	832	B	516	B
	Cochrane Off - Cochrane NB On/Dual EXP Lane Start	5383	D	5722	**E**	1703	D	1512	D	2841	B	3117	B	899	B	758	B
	Cochrane NB On/Dual EXP Lane Start- Cochrane SB On	6423	E	6185	E	1848	D	1931	C	3986	C	4050	C	966	B	1076	B
	Cochrane SB On - Access End	6427	E	5710	D	1832	D	2962	C	4109	C	3500	C	1045	B	1807	B
Access End - Coyote Creek Off		6427	E	5665	D	1832	D	2997	C	4109	C	3490	C	1045	B	1813	B
Coyote Creek Off - Coyote Creek On		5731	F	5620	D	1727	F	2997	C	4083	C	3493	C	1049	B	1809	B
Coyote Creek On - Bailey Off		5397	F	5615	E	1757	F	2987	C	4141	C	3541	C	1035	B	1807	B
Bailey Off - Bailey On		4552	F	4821	F	1594	F	2987	C	4011	C	3435	C	1036	B	1798	B
Bailey On - Access Start		4283	F	4691	F	1566	F	2985	C	4473	C	3914	C	1023	B	1792	B
	Access Start - SR 85 HOV Connector Off	4283	F	4234	F	1566	C	2825	**E**	4473	B	3841	B	1023	A	1848	**B**
SR85 HOV Connector Off - SR 85 GP Connector Off		3241	F	3918	F	773	D	1344	C	4276	B	3844	B	349	A	1076	**B**
SR 85 GP Connector Off - Bernal Off		2408	F	3066	F	775	C	1344	C	2335	B	2164	B	368	A	1073	**B**
Bernal Off - Bernal NB On		2002	F	2409	F	794	B	1344	**C**	2123	B	1953	A	388	A	1079	**B**
Bernal NB On - Bernal SB On		2212	F	2729	F	795	D	1345	C	3509	B	3360	B	349	A	1079	**B**
Bernal SB On - Coyote Off		1959	F	2392	F	797	C	1356	C	3698	C	3692	C	480	A	1076	**B**
Coyote Off - Blossom Hill EB On		1592	F	1833	F	806	B	1353	**C**	3124	B	3146	B	512	A	1074	**C**

Table D-3 Peak Hour Travel Conditions, 2035 Northbound AM and PM, No Build and Build

Northbound - Mainline Segment Description		2035 AM peak hour (7 to 8 AM)								2035 PM peak hour (5 to 6 PM)							
		General Purpose				HOV/Express				General Purpose				HOV/Express			
Description of Segment Limits	*Express Lane Start, End, Access Zones*	No Build		Build		No Build (HOV)		Build (Express)		No Build		Build		No Build (HOV)		Build (Express)	
		Vol	LOS	Vol	LOS	Vol	LOS	Vol	LOS	Vol	LOS	Vol	LOS	Vol	LOS	Vol	LOS
Blossom Hill EB On - Blossom Hill WB On		1738	F	2200	F	804	B	1353	C	4462	C	4590	C	579	A	1073	C
Blossom Hill WB On - Access Start		2034	F	2356	F	806	C	1361	C	4837	D	5102	D	683	A	1077	C
	Access Start - Access End	2034	F	1917	F	806	C	1646	C	4837	D	4563	C	683	A	1610	B
Access End - Hellyer Off		2034	F	1810	F	806	C	1564	B	4837	D	4562	C	683	A	1607	B
Hellyer Off - Hellyer On		2026	F	1711	F	813	B	1569	B	4542	D	4347	C	760	B	1606	B
Hellyer On - Yerba Buena Off		2233	F	1902	F	816	C	1568	B	4892	D	5205	D	782	A	1606	B
Yerba Buena Off - Capitol Off		2230	F	1887	F	782	D	1567	B	4689	D	4823	D	605	A	1599	B
Capitol Off - Yerba Buena On		2077	F	1779	F	786	D	1573	B	3440	C	3425	C	564	A	1598	B
Yerba Buena On - Capitol Loop On		1883	F	1951	F	1179	F	1578	B	3870	C	3980	C	598	A	1594	B
Capitol Loop On - Capitol Diag On		2211	F	2149	F	941	F	1579	B	4637	C	4503	C	311	A	1594	B
Capitol Diag On - Tully Off		3075	F	2498	F	555	A	1586	B	5929	D	5949	E	463	A	1595	B
Tully Off - Access Start		2777	F	2342	F	636	A	1589	B	5054	D	5072	F	561	A	1596	B
	Access Start - Access End	2777	F	1983	F	636	A	1949	C	5054	D	4930	F	561	A	1695	B
Access End - Tully NB Loop On		2777	F	2038	F	636	A	1898	B	5054	D	5013	F	561	A	1575	B
Tully NB Loop On - Tully NB Diag On		3361	F	2727	F	956	B	1902	B	5795	D	5773	F	600	A	1578	B
Tully NB Diag On - I-280/I-680 Off		3866	F	3446	F	1075	F	1905	B	6694	D	6901	E	832	B	1577	B
I-280/I-680 Off - Story Rd Off		2417	F	2349	F	1028	D	1902	B	3336	B	3581	C	912	B	1583	B
Story Off - Access Start		2314	F	2246	F	1029	D	1904	B	2899	B	3140	B	911	B	1584	B
	Access Start - Access End	2314	F	1973	F	1029	E	2180	D	2899	B	3307	C	911	B	1411	B
Access End - Story On		2314	F	2340	F	1029	E	1847	B	2899	B	3318	E	911	B	1398	A
Story On - I-280/I-680 SB On		2590	F	2820	F	981	D	1849	B	4674	D	4908	E	725	B	1399	A
I-280/I-680 SB On - Santa Clara Off		3486	F	3873	F	1048	D	1852	B	5318	C	5718	C	885	B	1402	A
Santa Clara Off - Access Start		3319	F	3630	F	1057	E	1856	B	4351	B	4725	C	914	B	1401	A

Table D-3 Peak Hour Travel Conditions, 2035 Northbound AM and PM, No Build and Build

Northbound - Mainline Segment Description		2035 AM peak hour (7 to 8 AM)								2035 PM peak hour (5 to 6 PM)							
		General Purpose				HOV/Express				General Purpose				HOV/Express			
Description of Segment Limits	*Express Lane Start, End, Access Zones*	No Build		Build		No Build (HOV)		Build (Express)		No Build		Build		No Build (HOV)		Build (Express)	
		Vol	LOS	Vol	LOS	Vol	LOS	Vol	LOS	Vol	LOS	Vol	LOS	Vol	LOS	Vol	LOS
	Access Start - McKee Off	3319	F	3348	F	1057	E	2178	C	4351	B	4725	**C**	914	B	1386	A
	McKee Off - Access End	2682	F	2497	F	1129	E	2349	C	3380	B	3886	**C**	839	B	1129	A
Access End - Santa Clara On		2682	F	2505	F	1129	E	2331	C	3380	B	3884	**C**	839	B	1129	A
Santa Clara On - McKee On		3064	F	2804	F	1111	D	2331	B	3907	C	4471	C	905	B	1129	A
McKee On - Mabury Off		3451	F	3402	F	1496	F	2331	B	4502	C	5222	C	1036	B	1130	A
Mabury Off - Mabury On		3145	F	3016	F	1470	F	2337	B	4211	C	4751	**D**	898	B	1130	A
Mabury On - Oakland Off		3844	F	3675	F	1500	F	2342	B	5004	C	5449	**E**	875	B	1133	A
Oakland Off - Oakland On		3657	F	3432	F	1458	F	2342	B	4325	D	4916	D	1031	B	1135	A
Oakland On - I-880 NB Off		4827	F	4403	F	1373	F	2350	B	5152	B	5783	**C**	1060	B	1140	A
I-880 NB Off - I-880 NB On		4051	F	3601	F	1198	E	2355	B	3716	B	4111	B	829	B	1139	A
I-880 NB On - I-880 SB Off		4909	F	4321	F	1200	E	2357	B	4297	B	4675	B	817	B	1140	A
I-880 SB Off - Bayshore Off		4491	F	3938	F	1187	D	2359	B	3497	B	3960	B	816	B	1142	A
Bayshore Off - 4th St On		3564	F	3236	F	1296	D	2358	B	2549	B	3041	B	834	B	1143	A
4th St On - Brokaw Off		3754	F	3604	F	1346	F	2362	C	2997	B	3409	B	741	A	1141	A
Brokaw Off - Access Start			F		F		F		C		B		B		A		A
	Access Start - N 1st St On	3754	F	3339	F	1346	E	2604	C	2997	B	2936	B	741	A	1618	**B**
	N 1st St On - E Brokaw Rd On/Access End	4158	F	3844	F	1323	C	2445	C	3375	C	3279	**D**	843	B	1742	B
E Brokaw Rd On/Access End - De La Cruz Off		4894	F	4466	F	1329	D	2449	C	4839	D	4501	**F**	878	B	1744	B
De La Cruz Off - SR 87/Guadalupe On		3801	F	3406	F	1344	C	2452	C	3745	C	3636	**F**	1144	B	1748	B
SR 87/Guadalupe On - De La Cruz NB On		5049	F	4768	F	1337	C	2457	C	5268	E	5053	**F**	1288	C	1751	B
De La Cruz NB On - Access Start		5375	F	5056	F	1239	C	2467	C	5231	E	5250	**F**	1522	C	1755	B
	Access Start - De La Cruz SB On	5375	F	4868	F	1239	C	2623	C	5231	F	4869	F	1522	C	2107	B

Table D-3 Peak Hour Travel Conditions, 2035 Northbound AM and PM, No Build and Build

Northbound - Mainline Segment Description		2035 AM peak hour (7 to 8 AM)								2035 PM peak hour (5 to 6 PM)							
		General Purpose				HOV/Express				General Purpose				HOV/Express			
Description of Segment Limits	*Express Lane Start, End, Access Zones*	No Build		Build		No Build (HOV)		Build (Express)		No Build		Build		No Build (HOV)		Build (Express)	
		Vol	LOS	Vol	LOS	Vol	LOS	Vol	LOS	Vol	LOS	Vol	LOS	Vol	LOS	Vol	LOS
	De La Cruz SB On - Montague Off/Access Extension	5665	F	5755	F	1201	D	1953	C	5595	F	5949	F	1502	E	1874	B
	Montague Off/Access Extension - Access End	4363	F	3960	F	1092	D	1934	C	4051	F	4217	C	1282	E	1875	B
Access End - NB Montague On		4363	F	3839	F	1092	C	1934	B	4051	C	4222	C	1282	C	1872	B
NB Montague On - SB Montague On		5022	F	4516	F	1005	C	1935	B	5252	C	5373	C	1228	C	1871	B
SB Montague On - Great America Off		5853	F	5338	F	1033	B	1939	B	6373	D	6796	D	1282	C	1872	B
Great America Off - Great America NB On		4959	F	4542	F	1036	C	1944	B	5336	D	5641	D	1180	C	1873	B
Great America NB On - Great America SB On/Access Start		5021	F	4565	F	1001	C	1950	B	5580	E	5930	D	1196	B	1875	B
	Access Start - Access End	5165	F	5313	F	1023	C	1387	B	5937	E	7127	D	1334	C	1530	B
Access End/Lawrence Off - Lawrence NB On		4299	F	4063	F	1038	C	1421	A	4658	C	5001	**D**	1130	B	1970	B
Lawrence NB On - Lawrence SB On		4686	F	4494	F	1047	C	1425	A	5245	D	5542	D	1088	B	1972	B
Lawrence SB On - Fair Oaks Off/Access Start		4962	F	5045	F	1281	C	1436	A	5579	C	5898	C	1123	B	1972	B
	Access Start - Fair Oaks On	4374	F	4528	F	1397	F	1446	A	4525	C	4817	**D**	1105	B	1691	B
	Fair Oaks On - Access End	4878	F	5274	F	1246	E	1276	A	5272	D	5357	D	881	B	1675	B
Access End - EXP Lane Drop		4878	F	5157	F	1246	E	1280	A	5272	D	5350	C	881	B	1672	B
EXP Lane Drop - Mathilda NB Off			F		F		E		C		D		C		B		**D**
Mathilda NB Off - Mathilda NB On		4007	F	4212	F	1229	E	1282	C	4915	D	4879	D	890	B	1671	**D**
Mathilda NB On - Mathilda SB Off		4412	F	4577	F	1189	F	1284	C	5228	C	5202	C	895	B	1672	**C**
Mathilda SB Off - SR 237 Off		4905	F	4888	F	992	D	1287	C	5382	C	5310	C	845	B	1670	**D**
SR 237 Off - SR 237 On		4384	F	4349	F	962	C	1291	C	4012	C	3717	C	831	B	1669	**D**
SR 237 On - Ellis Off/Access Start		4956	F	5030	F	960	C	1292	C	5256	F	5181	E	1013	B	1669	**D**
	Ellis Off/Access Start - Access End	4577	F	4580	F	956	C	1324	**D**	4769	F	4761	E	1046	C	1489	**D**
Access End - Ellis On		4577	F	4556	F	956	C	1313	C	4769	F	4796	F	1046	C	1493	C

Table D-3 Peak Hour Travel Conditions, 2035 Northbound AM and PM, No Build and Build

Northbound - Mainline Segment Description		2035 AM peak hour (7 to 8 AM)								2035 PM peak hour (5 to 6 PM)							
		General Purpose				HOV/Express				General Purpose				HOV/Express			
Description of Segment Limits	*Express Lane Start, End, Access Zones*	No Build		Build		No Build (HOV)		Build (Express)		No Build		Build		No Build (HOV)		Build (Express)	
		Vol	LOS	Vol	LOS	Vol	LOS	Vol	LOS	Vol	LOS	Vol	LOS	Vol	LOS	Vol	LOS
Ellis On - Moffett Off		4809	F	4710	F	889	C	1314	C	5471	F	5599	F	1030	C	1492	C
Moffett Off - Moffett On		4644	F	4487	F	841	C	1315	C	5159	F	5020	E	908	C	1490	C
Moffett On - Shoreline Off/Access Start		5022	F	4817	F	788	B	1315	**C**	5760	E	5534	D	819	B	1489	**C**
Shoreline Off - SR 85 On		4438	F	4219	F	800	B	1313	**C**	5025	F	4759	D	857	B	1486	**C**
SR 85 On - SR 85 HOV Connector On		6144	F	5681	F	801	B	1313	**C**	6442	F	5998	D	870	B	1487	**C**
SR 85 HOV Connector On - Middlefield Off		6146	F	5653	F	1492	B	2622	**C**	6454	F	6001	D	1408	A	2302	**B**
Middlefield Off - Shoreline On		5614	F	5161	F	1479	B	2620	**C**	5043	E	4358	C	1404	A	2299	**B**
Shoreline On - Rengstorff NB Off		5262	F	6064	F	2429	D	2622	C	5097	F	5423	D	2177	C	2302	B
Rengstorff NB Off - Rengstorff SB Off		5063	F	5860	F	2314	D	2624	C	4980	F	5326	D	2147	D	2303	B
Rengstorff SB Off - Rengstorff On		5566	F	5641	E	1750	B	2627	**C**	5157	F	4901	D	1731	B	2304	B
Rengstorff On - San Antonio Off		6364	E	6169	D	1477	B	2627	**C**	6287	F	6007	C	1681	B	2299	B
San Antonio Off - San Antonio On		5805	D	5557	D	1422	A	2626	**C**	5909	E	5414	D	1514	B	2291	B
San Antonio On - End of Buffer		6906	D	6364	D	1133	A	2630	**C**	7398	E	6645	D	1238	A	2295	**B**
	End of Buffer - End of Express Lanes	6906	D	6674	D	1133	A	2305	**C**	7398	E	6754	D	1238	A	2185	**B**
End of Express Lanes - HOV Lane Drop		6906	D	6924	D	1133	A	2025	**B**	7398	E	7126	D	1238	A	1712	**B**
HOV Lane Drop - Oregon/Embarcadero Off		6906	D	7107	**E**	1133	B	1824	**C**	7398	D	7488	**E**	1238	C	1463	B
Oregon/Embarcadero Off - Oregon/Embarcadero On		5917	D	6314	**E**	1085	B	1510	**D**	6200	E	6305	E	1266	C	1388	C
North of Oregon/Embarcadero		7056	D	7483	D	1044	B	1450	**C**	7860	D	7930	D	1285	C	1456	C

Shaded cell letters indicate improved LOS with the Build condition compared to No Build.
Boldfaced indicates where LOS with the Build condition decreases compared to No Build.

Table D-4 Peak Hour Travel Conditions, 2035 Southbound AM and PM, No Build and Build

Southbound - Mainline Segment Description		2035 AM peak hour (7 to 8 AM)								2035 PM peak hour (5 to 6 PM)							
		General Purpose				HOV/Express				General Purpose				HOV/Express			
Description of Segment Limits	*Express Lane Start, End, Access Zones*	No Build		Build		No Build (HOV)		Build (Express)		No Build		Build		No Build (HOV)		Build (Express)	
		Vol	LOS	Vol	LOS	Vol	LOS	Vol	LOS	Vol	LOS	Vol	LOS	Vol	LOS	Vol	LOS
Start of Network - Oregon\Embarcadero Off		6873	F	6928	F	1620	E	1689	D	2687	F	3322	F	1419	F	1409	F
Oregon\Embarcadero Off - Oregon\Embarcadero On/Access Start		5190	F	5282	F	1579	D	1691	D	1978	F	2615	F	1409	F	1400	D
	Oregon\Embarcadero On/Access Start - SB San Antonio Off (Diagonal)	6732	D	6814	D	1663	B	1772	C	2818	F	3551	F	1572	C	1543	F
	SB San Antonio Off (Diagonal) - San Antonio On (Diagonal)	6184	E	5277	D	1593	B	2775	C	2402	F	1617	F	1388	C	2931	F
	San Antonio On (Diagonal) - Access End	6436	D	5577	C	1612	B	2768	C	2196	F	1839	F	1360	C	2867	F
Access End - Rengstorff Off		6264	D	5560	D	1754	B	2760	C	3252	F	2724	F	1426	E	2736	F
Rengstorff Off - Rengstorff On		5583	E	4964	D	1783	B	2757	C	2646	F	2427	F	1750	E	2760	F
Rengstorff On - Middlefield On		6173	E	5509	D	1650	B	2738	C	3218	F	2631	F	1666	D	2845	F
Middlefield On - Shoreline Off		7086	E	6407	D	1637	B	2736	C	4321	F	3651	F	1597	E	2870	F
Shoreline Off - SR85 HOV Connector Off		6709	D	6063	D	1614	B	2731	C	4201	F	3382	F	1525	C	2895	F
SR85 HOV Connector Off - SR85 GP Off		6719	D	6058	C	1113	C	1607	D	3871	F	3375	F	1486	F	1509	F
SR85 GP Off - Shoreline On		5106	D	4768	D	977	B	1608	D	2334	F	2207	F	1494	F	1527	F
Shoreline On - Moffett Off		5676	D	5315	C	946	B	1605	D	2791	F	2941	F	1471	F	1548	F
Moffett Off - Moffett On		5401	D	5056	D	1036	B	1603	D	2628	F	2797	F	1434	F	1556	F
Moffett On - Ellis Off/Access Start		5862	E	5744	D	1126	C	1601	D	3163	F	3289	F	1397	F	1564	F
Ellis Off/Access Start - Ellis On/Access End		5574	E	5454	E	920	B	1457	C	3012	F	3016	F	1371	F	1689	F
Ellis On/Access End - EB SR237 Off		5806	E	5716	E	960	B	1450	C	3707	F	3688	F	1287	F	1659	D
EB SR237 Off - EB SR237 On		3984	C	3961	C	989	B	1445	C	2665	F	2686	F	1183	E	1656	D
EB SR237 On - SB Mathilda Off		4927	C	4902	C	989	B	1442	C	3195	F	3484	F	1183	D	1656	D
SB Mathilda Off - SB Mathilda On (Loop)		4552	D	4492	D	978	B	1440	C	2739	F	3179	F	1249	C	1657	D
SB Mathilda On (Loop) - NB Mathilda On		4722	C	4665	C	978	B	1440	C	3067	F	3757	F	1249	C	1657	D

Table D-4 Peak Hour Travel Conditions, 2035 Southbound AM and PM, No Build and Build

Southbound - Mainline Segment Description		2035 AM peak hour (7 to 8 AM)								2035 PM peak hour (5 to 6 PM)							
		General Purpose				HOV/Express				General Purpose				HOV/Express			
Description of Segment Limits	*Express Lane Start, End, Access Zones*	No Build		Build		No Build (HOV)		Build (Express)		No Build		Build		No Build (HOV)		Build (Express)	
		Vol	LOS	Vol	LOS	Vol	LOS	Vol	LOS	Vol	LOS	Vol	LOS	Vol	LOS	Vol	LOS
(Diagonal)/Access Start																	
	NB Mathilda On (Diagonal)/Access Start - SB Fair Oaks Off (Diagonal)/Access End	5276	D	5284	D	978	B	1560	B	3268	F	3431	F	1254	D	2473	C
SB Fair Oaks Off (Diagonal)/Access End - SB Fair Oaks On (Loop)		4905	D	4857	D	1024	B	1607	B	3072	F	3189	F	1223	C	2350	C
SB Fair Oaks On (Loop) - NB Fair Oaks Off (Loop)		5209	D	5163	D	1028	B	1605	B	3454	F	3582	F	1225	C	2350	C
NB Fair Oaks Off (Loop) - NB Fair Oaks On (Diagonal)		5095	D	5058	D	1028	B	1599	B	3346	F	3480	F	1225	C	2354	C
NB Fair Oaks On (Diagonal) - SB Lawr. Expy Off		5411	D	5492	D	1089	B	1593	B	3633	F	3656	F	1119	E	2358	C
SB Lawr. Expy Off - SB Lawr. Expy On (Loop)		4860	D	4790	D	1013	B	1592	B	2856	F	2791	F	1199	D	2361	C
SB Lawr. Expy On (Loop) - NB Lawr. Expy On (Diagonal)		5297	D	5367	D	1094	B	1593	B	3167	F	3314	F	1208	E	2360	C
NB Lawr. Expy On (Diagonal) - G.A. Off/Access Start		5886	D	6020	D	1124	C	1590	B	3740	F	3995	F	1205	F	2359	C
	G.A. Off/Access Start - SB G.A.On (Loop)	5205	D	5120	D	1147	C	1737	B	3295	F	2987	F	1338	D	2935	D
	SB G.A.On (Loop) - Access End	5487	D	5424	C	1158	C	1736	B	3697	F	3402	F	1361	D	2932	D
Access End - NB G.A.On (Diagonal)		5431	E	5416	D	1215	C	1731	B	3672	F	3383	F	1385	D	2931	C
NB G.A.On (Diagonal) - Mont. Expy Off		5661	C	5771	C	1220	C	1727	B	4423	F	4159	F	1428	D	2928	C
Mont. Expy Off - Mont. Expy On (Loop)		4483	D	4432	C	1176	C	1720	B	3165	F	2895	F	1466	D	2932	C
Mont. Expy On (Loop) - Mont. Expy On (Diagonal)/Access Start		4974	C	4838	C	1065	B	1720	B	3984	F	3845	F	1478	E	2935	D
	Mont. Expy On (Diagonal)/Access Start - De La Cruz Off	5549	E	5771	E	1216	C	1553	B	4529	F	4483	F	1734	F	3254	E
	De La Cruz Off - Access End	4825	D	4917	D	1167	C	1550	B	4182	F	4027	F	1679	F	3256	E
Access End - SB De La Cruz On (Loop)		4859	D	4915	D	1241	C	1547	B	4053	F	4020	F	1750	F	3256	D
SB De La Cruz On (Loop) - NB De La Cruz On (Diagonal)		5096	D	5204	C	1044	B	1545	B	4859	F	4820	F	1518	F	3256	D
NB De La Cruz On (Diagonal) - Guadalupe\SR87 Off		6452	D	6328	D	909	B	1541	B	7224	E	6774	E	1303	C	3255	**D**

Table D-4 Peak Hour Travel Conditions, 2035 Southbound AM and PM, No Build and Build

Southbound - Mainline Segment Description		2035 AM peak hour (7 to 8 AM)								2035 PM peak hour (5 to 6 PM)							
		General Purpose				HOV/Express				General Purpose				HOV/Express			
Description of Segment Limits	*Express Lane Start, End, Access Zones*	No Build		Build		No Build (HOV)		Build (Express)		No Build		Build		No Build (HOV)		Build (Express)	
		Vol	LOS	Vol	LOS	Vol	LOS	Vol	LOS	Vol	LOS	Vol	LOS	Vol	LOS	Vol	LOS
Guadalupe\SR87 Off - 1st\Brokaw Off		4689	D	4582	D	891	B	1530	B	5078	D	4691	D	1230	C	3255	**D**
1st\Brokaw Off - Access Start		3580	C	3453	C	874	B	1529	B	4329	C	3961	C	1222	C	3251	**D**
	Access Start - 4th\Zanker Off	3649	C	4018	C	805	B	945	A	4443	C	4498	C	1107	C	2700	C
	4th\Zanker Off - Access End	3063	B	3369	**C**	677	A	871	A	4047	C	4048	C	1020	B	2657	**C**
Access End - 4th\Zanker On		3132	B	3357	**C**	604	A	871	A	4178	C	4043	C	876	B	2663	**C**
4th\Zanker On - SB I-880 Off		4476	C	4680	C	585	A	869	A	4898	C	4757	C	851	B	2660	**C**
SB I-880 Off - SB I-880 On (Loop)		4078	B	4322	**C**	585	A	869	A	4324	C	4171	B	851	B	2660	**C**
SB I-880 On (Loop) - NB I-880 Off		5434	C	5718	C	605	A	868	A	5860	C	5736	C	855	B	2661	**C**
NB I-880 Off - NB I-880 On (Diagonal)		4738	C	4816	C	605	A	867	A	5429	D	5317	**E**	855	B	2662	**C**
NB I-880 On (Diagonal) - Oakland Off		5270	B	5472	B	690	A	866	A	6676	C	6630	**D**	943	B	2662	**C**
Oakland Off - Oakland On/Access Start		4607	C	4870	C	814	B	862	A	5243	F	5491	F	1515	D	2665	C
	Oakland On/Access Start - Taylor\Mabury Off	5209	C	5349	C	929	B	1088	B	6194	F	6285	F	1793	E	3077	E
	Taylor\Mabury Off - Taylor\Mabury On/Access End	4636	D	4842	D	1009	B	1101	B	6029	F	5848	E	1619	D	3078	**E**
Taylor\Mabury On/Access End - McKee Off		4921	C	5245	C	1086	B	1098	A	6568	D	6437	D	1584	D	3080	C
McKee Off - Santa Clara Off		4588	D	4731	D	863	B	1096	A	6021	D	5424	D	1204	C	3080	**D**
Santa Clara Off - McKee On		4172	C	4314	C	858	B	1096	A	5257	D	4584	C	1173	C	3081	**D**
McKee On - Santa Clara On		5389	C	5494	C	773	B	1094	A	6603	D	5711	C	955	B	3080	**D**
Santa Clara On - I-280\680 Off		6593	D	6818	D	907	B	1093	A	7617	E	7142	E	1263	C	3087	**D**
I-280\680 Off - Story Off/Access Start		4510	D	4790	D	1008	B	1091	A	5419	D	5114	D	1324	C	3095	**D**
	Story Off/Access Start - Access End	3722	C	3900	C	1042	B	1274	A	4079	D	4090	D	1285	C	2773	C
Access End - Story On		3718	C	3900	C	937	B	1273	A	4090	D	4092	**E**	1162	C	2778	C
Story On - I-280/680 On		4688	D	4783	D	944	B	1271	A	4999	F	4997	E	1334	C	2781	C
I-280/680 On - Tully Off/Access Start		7692	D	7892	D	1052	B	1266	A	8362	E	8529	D	1404	C	2789	C

Table D-4 Peak Hour Travel Conditions, 2035 Southbound AM and PM, No Build and Build

Southbound - Mainline Segment Description		2035 AM peak hour (7 to 8 AM)								2035 PM peak hour (5 to 6 PM)							
		General Purpose				HOV/Express				General Purpose				HOV/Express			
Description of Segment Limits	*Express Lane Start, End, Access Zones*	No Build		Build		No Build (HOV)		Build (Express)		No Build		Build		No Build (HOV)		Build (Express)	
		Vol	LOS	Vol	LOS	Vol	LOS	Vol	LOS	Vol	LOS	Vol	LOS	Vol	LOS	Vol	LOS
	Tully Off/Access Start - Tully On (Loop)/Access End	6195	D	6247	D	1075	B	1461	B	6299	D	7119	D	1270	C	1917	B
Tully On (Loop)/Access End - Tully On (Diagonal)		6762	C	6598	C	854	B	1457	B	7231	C	7683	**D**	891	B	1921	B
Tully On (Diagonal) - Capitol Expy Off		7066	C	6938	C	885	B	1455	B	7794	D	8290	C	903	B	1929	B
Capitol Expy Off - Capitol Expy On (Loop+Diagonal)		5360	C	5041	C	758	B	1446	B	5389	C	5983	**D**	677	A	1935	**B**
Capitol Expy On (Loop) - Capitol Expy On (Diagonal)		6000	C	5695	C	758	B	1443	B	6011	C	6615	**D**	677	B	1935	B
Capitol Expy On (Diagonal) - Yerba Buena Off		6435		6342		981		1439		6518		7236		815		1935	
Yerba Buena Off - Yerba Buena On		5709	D	5747	D	1095	C	1439	B	5310	D	6082	**E**	894	B	1937	B
Yerba Buena On - Hellyer Off		6179	E	6234	E	1075	C	1435	B	5776	D	6501	**E**	851	B	1941	B
Hellyer Off - Hellyer On		5626	D	5604	D	1045	B	1431	B	5177	D	5757	D	817	B	1940	B
Hellyer On - Access Start		5743	D	5773	D	1088	B	1426	A	5316	D	5996	D	925	B	1933	B
	Access Start - Access End	5729	D	5860	D	1092	B	1295	A	5308	D	6276	D	945	B	1606	A
Access End - Blossom Hill Off		5697	D	5944	D	1089	B	1207	B	5305	D	6456	D	952	B	1481	**C**
Blossom Hill Off - WB Blossom Hill On (Loop)		4548	C	4727	C	1058	B	1205	B	3744	C	4872	C	920	B	1483	**C**
WB Blossom Hill On (Loop) - EB Blossom Hill On (Diagonal)		4899	C	5134	**D**	1047	B	1202	B	4233	C	5352	**D**	913	B	1490	**C**
EB Blossom Hill On (Diagonal) - NB SR85 Off		5505	D	5550	C	818	B	1197	**C**	5021	C	5937	C	735	B	1492	**C**
NB SR85 Off - Bernal Off		5100	C	5139	C	818	B	1193	**C**	4674	C	5534	**F**	735	A	1494	**C**
Bernal Off - SB SR85 GP/Bernal On		3894	C	3855	C	804	B	1189	**C**	3718	C	4280	**F**	767	A	1495	**C**
SB SR85 GP/Bernal On - SR85 HOV Direct Connector On/Access Start		5498	C	5356	B	900	B	1183	**C**	5764	C	6994	**F**	926	B	1497	**C**
	SR85 HOV Direct Connector On/Access Start - Access End	5598	C	5228	C	1371	A	1965	**B**	6273	D	6451	**F**	2004	C	3067	C
Access End - Bailey Off		5602	D	5189	C	1303	C	1939	B	6492	E	6469	C	1828	D	3049	C
Bailey Off - Bailey On		5246	D	4819	C	1270	C	1934	B	5982	D	5922	D	1774	D	3054	C

Table D-4 Peak Hour Travel Conditions, 2035 Southbound AM and PM, No Build and Build

Southbound - Mainline Segment Description		2035 AM peak hour (7 to 8 AM)								2035 PM peak hour (5 to 6 PM)							
		General Purpose				HOV/Express				General Purpose				HOV/Express			
Description of Segment Limits	*Express Lane Start, End, Access Zones*	No Build		Build		No Build (HOV)		Build (Express)		No Build		Build		No Build (HOV)		Build (Express)	
		Vol	LOS	Vol	LOS	Vol	LOS	Vol	LOS	Vol	LOS	Vol	LOS	Vol	LOS	Vol	LOS
Bailey On - Coyote Creek Off		5357	D	4909	C	1248	C	1913	B	6261	D	6081	D	1675	C	3067	C
Coyote Creek Off - Coyote Creek On		5281	D	4828	C	1214	C	1897	B	6247	D	6069	D	1664	C	3068	C
Coyote Creek On - Access Start		5284	D	4824	C	1213	B	1892	B	6289	D	6088	D	1651	C	3081	C
	Access Start - Access End	5348	D	5808	C	1105	B	851	B	6357	D	7655	D	1620	C	1508	C
Access End - Cochrane Off		5134	D	5792	C	1333	B	850	B	6123	E	7652	D	1871	D	1505	C
Cochrane Off - WB Cochrane On (Loop)		3971	C	4263	C	1333	B	850	B	5443	D	6130	**F**	1871	C	1505	C
WB Cochrane On (Loop) - EB Cochrane On (Diagonal)		4062	C	4341	C	962	B	841	B	5584	D	6247	**F**	1451	C	1507	C
EB Cochrane On (Diagonal) - EL End		4326	C	4651	C	1005	B	837	B	6080	E	6877	**F**	1635	C	1514	**D**
	EL End - Dunne Off	4453	C	4501	C	851	B	962	B	6209	E	6451	E	1511	C	1943	**D**
Dunne Off - Dunne On		3694	C	3974	C	814	B	735	A	5326	D	6029	**F**	1423	C	1453	**D**
Dunne On - Tennant Off		4241	C	4392	C	794	B	807	A	6022	E	6559	E	1463	C	1389	C
Tennant Off - Tennant On		3687	C	3834	C	798	B	827	B	5197	D	5830	D	1429	C	1325	C
Tennant On - End of Network		3985	C	4080	C	809	B	843	B	5764	D	6291	D	1436	C	1396	C

Shaded cell letters indicate improved LOS with the Build condition compared to No Build.
Boldfaced indicates where LOS with the Build condition decreases compared to No Build.

Appendix E Consultation and Coordination

This appendix includes the following consultation and correspondence regarding the proposed project.

- Summary of December 6, 2012 Air Quality Conformity Task Force Meeting for US 101 Express Lanes Project.
- The Department's March 19, 2015 transmittal of the air quality conformity analysis to FHWA, and request for FHWA project-level conformity determination.
- FHWA's April 20, 2015 Air Quality Conformity Determination.
- USFWS species list (April 24, 2015).
- The Department's March 12, 2014 transmittal of the BA to initiate Section 7 consultation with USFWS.
- USFWS' March 10, 2015 transmittal of the BO to conclude Section 7 consultation with The Department.
- The Department's February 14, 2014 transmittal of the JD to USACE for concurrence.

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Summary of Air Quality Conformity Task Force Meeting and Qualitative PM 2.5 Hot Spot Analysis for US 101 Express Lanes Project

The proposed project is located in the San Francisco Bay Area Air Basin, which does not attain National Ambient Air Quality Standards (NAAQS) for particulate matter 2.5 microns in diameter or less ($PM_{2.5}$). Therefore, in order for the proposed project to be approved, it must demonstrate conformity with the State Implementation Plans (SIP) for attaining the NAAQS. In order to achieve this, it must comply with the 2006 EPA Final Transportation Conformity Rule (71 Federal Register 12468).

On December 6, 2012, the Air Quality Conformity Task Force determined that the proposed project met the hot spot requirements in 40 CFR 93.116 and 93.126 for $PM_{2.5}$ and was required to prepare a $PM_{2.5}$ Hot Spot Analysis. The Air Quality Conformity Task Force further determined that based on the $PM_{2.5}$ Hot Spot Analysis the project would not cause or contribute to a new violation of the federal $PM_{2.5}$ air quality standards and would conform to the SIP.

The $PM_{2.5}$ Hot Spot Analysis evaluated the proposed project's impact on $PM_{2.5}$ as compared to the No Build Alternative. The analysis evaluated pollutant trends within the air basin and ambient PM trends within the project area, and the differences in truck traffic between the No Build and Build Alternatives. The analysis concluded that total emissions along the freeway would increase slightly in 2015 due to a minor shift in traffic to the freeway from other routes but would decrease in 2035 with the Build Alternative due to travel time savings, decreases in hours of delay, and improvements in the average network speed when compared to the No Build Alternative.

The $PM_{2.5}$ Hot Spot Analysis was available for review with the technical studies for the US 101 Express Lanes. Electronic copies of the PM2.5 Hot Spot Analysis can also be viewed online at http://www.dot.ca.gov/dist4/envdocs.htm. To review minutes from the December 6, 2012 Air Quality Conformity Task Force meeting, please visit: http://apps.mtc.ca.gov/meeting_packet_documents/agenda_1992/6a_AQCTF_Meeting_Notes_Summary_-_120612.pdf.

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FHWA Air Quality Conformity Request and Determination

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DEPARTMENT OF TRANSPORTATION
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FAX (510) 286-5903
TTY 711
www.dot.ca.gov

Serious drought.
Help save water!

March 19, 2015

Mr. Jack Lord
U.S. Department of Transportation
Federal Highway Administration
650 Capitol Mall, Suite 4-100
Sacramento, CA 95814

Attention: Joseph Vaughn

RE: US Highway 101 Express Lanes Project (EA 2G7100/0412000459)

Dear Mr. Vaughn:

The California Department of Transportation (the Department) requests that the Federal Highway Administration issue a project-level conformity determination for the US Highway 101 Express Lanes Project (EA# 2G7100; IS# 0412000459). The project would construct an express lane facility on US 101 from East Dunne Avenue in Morgan Hill to the Santa Clara/San Mateo County line in Palo Alto (Post Miles 16.00 to 52.00). The project would also restripe the northern 1.1 miles of SR 85 in Mountain View (Post Miles 23.0 to R24.1). The project is in an area that is designated non-attainment for Ozone and $PM_{2.5}$. Details of the analysis are contained in the enclosed Air Quality Impact Assessment report and related materials.

The project area is subject to regional conformity analysis requirements. The attached conformity analysis demonstrates that the project is listed in the Metropolitan Transportation Commission (MTC's) conforming Regional Transportation Plan, Plan Bay Area (Project Reference Number 240466) and MTC's financially constrained 2015 Transportation Improvement Program (ID Number SCL110002). Therefore, the project meets regional conformity requirements for a project-level conformity determination.

The project area is subject to project-level hot-spot analysis requirements for CO and $PM_{2.5}$. The attached conformity analysis shows that hot-spot analysis requirements listed in 40 CFR 93.116 and 123 are met.

Interagency Consultation and public involvement requirements related to $PM_{2.5}$ have been completed in accordance with the *Transportation Conformity Guidance for Qualitative Hot-spot Analyses in PM2.5 and PM10 Nonattainment and Maintenance Areas* (U.S.

EPA, 3/29/2006). Interagency Consultation concluded on December 6, 2012. The Interagency Consultation partners concurred that the project is not exempt from conformity analysis requirements, and that the project is a potential Project of Concern for $PM_{2.5}$ as defined at 40 CFR 93.123(b)(1) and the *Guidance*. A hot-spot analysis was prepared which shows that the project is not likely to cause or contribute to, or worsen, localized violation of the $PM_{2.5}$ standard. The Interagency Consultation partners concurred on December 6, 2012 that the detailed analysis used the appropriate analysis procedures and latest planning assumptions, and that the conclusions were correct.

Public involvement included advertising the availability of the conformity analysis for at least 45 days beginning on January 12, 2015. No public comments were received regarding the conformity analysis.

This project has been assigned to the Department under 23 USC 327 (NEPA Assignment) and the proposed approval date of the final NEPA document is expected this Spring 2015, and we are assuming a 30-day review period ending about April 20, 2015. We would appreciate your assistance with providing a conformity determination prior to that date.

If you have any questions regarding this conformity analysis, please contact Ray Boyer at (510) 286-5668 or ray.boyer@dot.ca.gov.

Sincerely,

Ray Boyer

Allen Baradar, P.E.
District Office Chief
Office of Environmental Engineering
Division of Planning and Engineering

c:

Enclosures:
US 101 Exp Hot Spot Analysis.pdf
AQ Conformity Task Force Determination_120712.pdf
AQCTF_Meeting_Notes_Summary_-_120612.pdf
Public Comment – local newspaper and library advertisement.pdf
Public Meeting Minutes.pdf
Air Quality Impact Assessment.pdf
RTP and TIP Listings.pdf

U.S. Department of Transportation
Federal Highway Administration

Federal Highway Administration
California Division

650 Capitol Mall, Suite 4-100
Sacramento, CA 95814
(916) 498-5001
(916) 498-5008 (fax)

April 20, 2015

In Reply Refer To:
HDA-CA

Mr. Bijan Sartipi
District Director
California Department of Transportation,
District 4
P.O. Box 23660, Oakland, CA 94623-0660

Attention: Ray Boyer

SUBJECT: Project Level Conformity Determination for the 101 Express Lanes Project (SCL110002)

Dear Mr. Sartipi:

On March 19, 2015, the California Department of Transportation (Caltrans) submitted to the Federal Highway Administration (FHWA) a complete request for a project level conformity determination for the 101 Express Lanes Project. The project is in an area that is designated Non-Attainment or Maintenance for Carbon Monoxide (CO), Ozone and Particulate Matter (PM 2.5).

The project level conformity analysis submitted by Caltrans indicates that the project-level transportation conformity requirements of 40 CFR Part 93 have been met. The project is included in the Metropolitan Transportation Commission's (MTC) current Regional Transportation Plan (RTP) and Transportation Improvement Program (TIP), as amended. The design concept and scope of the preferred alternative have not changed significantly from those assumed in the regional emissions analysis.

As required by 40 CFR 93.116 and 93.123, the localized PM analyses are included in the documentation. The analyses demonstrate that the project will not create any new violations of the standards or increase the severity or number of existing violations.

Based on the information provided, FHWA finds that the 101 Express Lanes project conforms with the State Implementation Plan (SIP) in accordance with 40 CFR Part 93.

If you have any questions pertaining to this conformity finding, please contact Joseph Vaughn at (916) 498-5346 or by email at Joseph.Vaughn@dot.gov.

Sincerely,

For: Vincent P. Mammano
Division Administrator

USFWS Species List

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United States Department of the Interior

FISH AND WILDLIFE SERVICE
Ventura Fish and Wildlife Office
2493 PORTOLA ROAD, SUITE B
VENTURA, CA 93003
PHONE: (805)644-1766 FAX: (805)644-3958

Consultation Code: 08EVEN00-2015-SLI-0225 April 24, 2015
Event Code: 08EVEN00-2015-E-01133
Project Name: US-101 Express Lanes Project

Subject: List of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

To Whom It May Concern:

The enclosed list identifies species listed as threatened and endangered, species proposed for listing as threatened or endangered, designated and proposed critical habitat, and species that are candidates for listing that may occur within the boundary of the area you have indicated using the U.S. Fish and Wildlife Service's (Service) Information Planning and Conservation System (IPaC). The species list fulfills the requirements under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 et seq.). Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the species list should be verified after 90 days. We recommend that verification be completed by visiting the IPaC website at regular intervals during project planning and implementation for updates to species lists following the same process you used to receive the enclosed list. Please include the Consultation Tracking Number in the header of this letter with any correspondence about the species list.

Due to staff shortages and excessive workload, we are unable to provide an official list more specific to your area. Numerous other sources of information are available for you to narrow the list to the habitats and conditions of the site in which you are interested. For example, we recommend conducting a biological site assessment or surveys for plants and animals that could help refine the list.

If a Federal agency is involved in the project, that agency has the responsibility to review its proposed activities and determine whether any listed species may be affected. If the project is a major construction project*, the Federal agency has the responsibility to prepare a biological assessment to make a determination of the effects of the action on the listed species or critical habitat. If the Federal agency determines that a listed species or critical habitat is likely to be adversely affected, it should request, in writing through our office, formal consultation pursuant to section 7 of the Act. Informal consultation may be used to exchange information and resolve conflicts with respect to threatened or endangered species or their critical habitat prior to a written request for formal consultation. During this review process, the Federal agency may engage in planning efforts but may not make any irreversible commitment of resources. Such a commitment could constitute a violation of section 7(d) of the Act.

Federal agencies are required to confer with the Service, pursuant to section 7(a)(4) of the Act, when an agency action is likely to jeopardize the continued existence of any proposed species or result in the destruction or adverse modification of proposed critical habitat (50 CFR 402.10(a)). A request for formal conference must be in writing and should include the same information that would be provided for a request for formal consultation. Conferences can also include discussions between the Service and the Federal agency to identify and resolve potential conflicts between an action and proposed species or proposed critical habitat early in the decision-making process. The Service recommends ways to minimize or avoid adverse effects of the action. These recommendations are advisory because the jeopardy prohibition of section 7(a)(2) of the Act does not apply until the species is listed or the proposed critical habitat is designated. The conference process fulfills the need to inform Federal agencies of possible steps that an agency might take at an early stage to adjust its actions to avoid jeopardizing a proposed species.

When a proposed species or proposed critical habitat may be affected by an action, the lead Federal agency may elect to enter into formal conference with the Service even if the action is not likely to jeopardize or result in the destruction or adverse modification of proposed critical habitat. If the proposed species is listed or the proposed critical habitat is designated after completion of the conference, the Federal agency may ask the Service, in writing, to confirm the conference as a formal consultation. If the Service reviews the proposed action and finds that no significant changes in the action as planned or in the information used during the conference have occurred, the Service will confirm the conference as a formal consultation on the project and no further section 7 consultation will be necessary. Use of the formal conference process in this manner can prevent delays in the event the proposed species is listed or the proposed critical habitat is designated during project development or implementation.

Candidate species are those species presently under review by the Service for consideration for Federal listing. Candidate species should be considered in the planning process because they may become listed or proposed for listing prior to project completion. Preparation of a biological assessment, as described in section 7(c) of the Act, is not required for candidate species. If early evaluation of your project indicates that it is likely to affect a candidate species, you may wish to request technical assistance from this office.

Only listed species receive protection under the Act. However, sensitive species should be considered in the planning process in the event they become listed or proposed for listing prior to project completion. We recommend that you review information in the California Department of Fish and Wildlife's Natural Diversity Data Base. You can contact the California Department of Fish and Wildlife at (916) 324-3812 for information on other sensitive species that may occur in this area.

[*A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2) (c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.]

Attachment

Official Species List

Provided by:

Ventura Fish and Wildlife Office
2493 PORTOLA ROAD, SUITE B
VENTURA, CA 93003
(805) 644-1766

Expect additional Species list documents from the following office(s):

Sacramento Fish and Wildlife Office
FEDERAL BUILDING
2800 COTTAGE WAY, ROOM W-2605
SACRAMENTO, CA 95825
(916) 414-6600

Consultation Code: 08EVEN00-2015-SLI-0225
Event Code: 08EVEN00-2015-E-01133

Project Type: Transportation

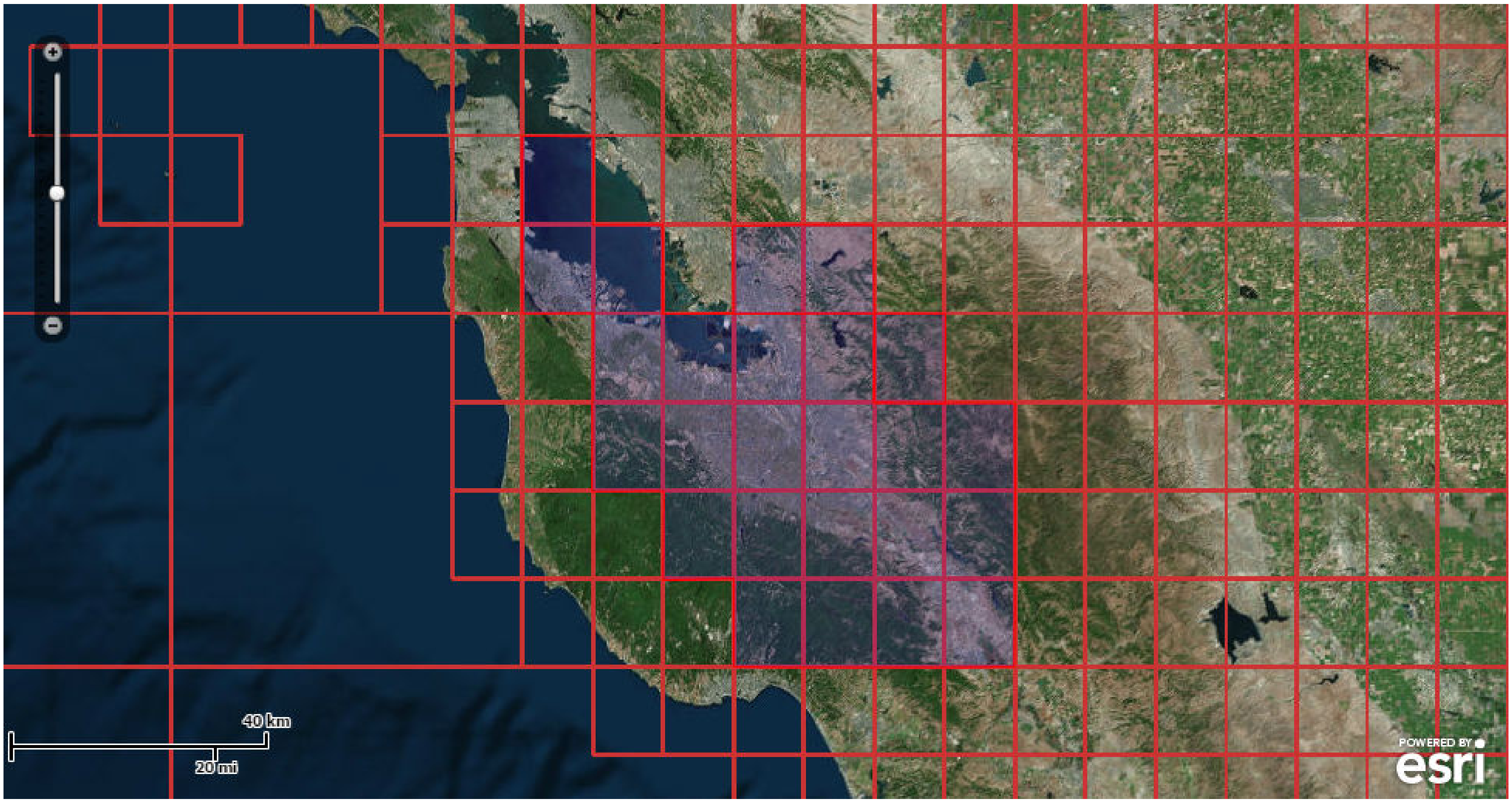
Project Name: US-101 Express Lanes Project
Project Description: Express Lanes Project

Please Note: The FWS office may have modified the Project Name and/or Project Description, so it may be different from what was submitted in your previous request. If the Consultation Code matches, the FWS considers this to be the same project. Contact the office in the 'Provided by' section of your previous Official Species list if you have any questions or concerns.

United States Department of Interior
Fish and Wildlife Service

Project name: US-101 Express Lanes Project

Project Location Map:



Project Coordinates: MULTIPOLYGON (((-122.12418496 37.49879614, -122.12419226 37.49924327, -122.08262377 37.49933375, -122.12418496 37.49879614)), ((-121.6243039 37.37414658, -121.71612197 37.37434592, -121.74996 37.3749337, -121.74996 37.48794429, -121.74984113 37.50005806, -121.6243039 37.5003313, -121.6243039 37.37414658)), ((-122.12419226 37.49924327, -122.1248685 37.4992418, -122.12517633 37.55956694, -122.12419226 37.49924327)), ((-121.74984113 37.50005806, -121.74996 37.5000578, -121.74996 37.5003313, -121.89003276 37.49975293, -122.08262377 37.49933375, -121.9998626 37.5004043, -122.0012359 37.6228723, -121.8755798 37.6250477, -121.7518969 37.6249712, -121.7498228 37.5019257, -121.74984113 37.50005806)), ((-122.12517633 37.55956694, -122.12570507 37.59197839, -122.1255188 37.6266792, -122.12517633 37.55956694)), ((-122.12570507 37.59197839, -122.1262054 37.49877, -122.12418496 37.49879614, -122.1241848 37.4987861, -121.89003276 37.49975293, -121.74996 37.5000578, -121.74996 37.48794429, -121.751074 37.3744218, -121.71612197 37.37434592, -121.6243039 37.372751, -121.6243039 37.37414658, -121.4997618 37.3738762, -121.4990843 37.2498981, -121.5004441 37.0012941, -121.6233536

36.999649, -121.7497018 37.000219, -121.8732979 36.9996706, -121.9989541 37.0013157, -121.9992976 37.1255804, -122.1249537 37.1233905, -122.1235804 37.2497546, -122.2518171 37.2486813, -122.2497572 37.5007782, -122.3748525 37.4993677, -122.3760688 37.7496249, -122.2490394 37.7485391, -122.2499229 37.6246042, -122.1262448 37.6250638, -122.12570507 37.59197839)))

Project Counties: Alameda, CA | San Francisco, CA | San Mateo, CA | Santa Clara, CA | Santa Cruz, CA

Endangered Species Act Species List

There are a total of 28 threatened or endangered species on your species list. Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species. Critical habitats listed under the **Has Critical Habitat** column may or may not lie within your project area. See the **Critical habitats within your project area** section further below for critical habitat that lies within your project. Please contact the designated FWS office if you have questions.

Amphibians	**Status**	**Has Critical Habitat**	**Condition(s)**
California Tiger Salamander *(Ambystoma californiense)* Population: U.S.A. (Central CA DPS)	Threatened	Final designated	
California red-legged frog *(Rana draytonii)* Population: Entire	Threatened	Final designated	
Santa Cruz Long-Toed salamander *(Ambystoma macrodactylum croceum)* Population: Entire	Endangered		
Birds			
California Clapper rail *(Rallus longirostris obsoletus)* Population: Entire	Endangered		
California Least tern *(Sterna antillarum browni)*	Endangered		
Least Bell's vireo *(Vireo bellii pusillus)* Population: Entire	Endangered	Final designated	

Marbled murrelet *(Brachyramphus marmoratus)* Population: CA, OR, WA	Threatened	Final designated	
Southwestern Willow flycatcher *(Empidonax traillii extimus)* Population: Entire	Endangered	Final designated	
western snowy plover *(Charadrius nivosus ssp. nivosus)* Population: Pacific coastal pop.	Threatened	Final designated	
Conifers and Cycads			
Santa Cruz cypress *(Cupressus abramsiana)*	Endangered		
Fishes			
Tidewater goby *(Eucyclogobius newberryi)* Population: Entire	Endangered	Final designated	
Flowering Plants			
Ben Lomond spineflower *(Chorizanthe pungens var. hartwegiana)*	Endangered		
Ben Lomond wallflower *(Erysimum teretifolium)*	Endangered		
Marsh Sandwort *(Arenaria paludicola)*	Endangered		
Menzies' wallflower *(Erysimum menziesii)*	Endangered		
Monterey gilia *(Gilia tenuiflora ssp. arenaria)*	Endangered		

Monterey spineflower *(Chorizanthe pungens var. pungens)*	Threatened	Final designated	
Santa Cruz tarplant *(Holocarpha macradenia)*	Threatened	Final designated	
Scotts Valley Polygonum *(Polygonum hickmanii)*	Endangered	Final designated	
Scotts Valley spineflower *(Chorizanthe robusta var. hartwegii)*	Endangered	Final designated	
White-Rayed pentachaeta *(Pentachaeta bellidiflora)*	Endangered		
Insects			
Mount Hermon June beetle *(Polyphylla barbata)* Population: Entire	Endangered		
Ohlone tiger beetle *(Cicindela ohlone)*	Endangered		
Smith's Blue butterfly *(Euphilotes enoptes smithi)* Population: Entire	Endangered		
Zayante Band-Winged grasshopper *(Trimerotropis infantilis)*	Endangered	Final designated	
Mammals			
San Joaquin Kit fox *(Vulpes macrotis mutica)* Population: U.S.A(CA)	Endangered		
Southern Sea otter *(Enhydra lutris nereis)*	Threatened		
Reptiles			

San Francisco Garter snake *(Thamnophis sirtalis tetrataenia)* Population: Entire	Endangered		

Critical habitats that lie within your project area

The following critical habitats lie fully or partially within your project area.

Amphibians	Critical Habitat Type
California Tiger Salamander *(Ambystoma californiense)* Population: U.S.A. (Central CA DPS)	Final designated
California red-legged frog *(Rana draytonii)* Population: Entire	Final designated
Birds	
Marbled murrelet *(Brachyramphus marmoratus)* Population: CA, OR, WA	Final designated
western snowy plover *(Charadrius nivosus ssp. nivosus)* Population: Pacific coastal pop.	Final designated
Flowering Plants	
Santa Cruz tarplant *(Holocarpha macradenia)*	Final designated
Scotts Valley Polygonum *(Polygonum hickmanii)*	Final designated
Scotts Valley spineflower *(Chorizanthe robusta var. hartwegii)*	Final designated

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Transmittal of the BA to USFWS

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DEPARTMENT OF TRANSPORTATION
DISTRICT 4
OFFICE OF BIOLOGICAL SCIENCES AND PERMITS
111 GRAND AVENUE
P. O. BOX 23660, MS: 8E
OAKLAND, CA 94623-0660
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www.dot.ca.gov

Flex your power!
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March 12, 2014

Dr. Jennifer Norris, Field Supervisor
U.S. Fish and Wildlife Service
Endangered Species Division
Sacramento Fish and Wildlife Office
2800 Cottage Way, Room W-2605
Sacramento, CA 95825

04-SCL-101 PM, 16.00-52.55
EA 04-2G710
Proj. ID 04-1200-0459

Attn: John Cleckler

Dear Dr. Norris:

Pursuant to section 7 of the Endangered Species Act (16 U.S.C.A. Sec. 1531 et seq), the California Department of Transportation (Caltrans) is hereby initiating formal consultation with the United States Fish and Wildlife Service (Service) on California red-legged frog, California tiger salamander, and for bay checkerspot butterfly on the proposed US Route 101 Express Lanes Project, Santa Clara County, California. Caltrans is providing a Biological Assessment (BA) to address the effects associated with the proposed project to the coyote ceanothus *(Ceanothus ferrisae),* Santa Clara Valley dudleya (*Dudleya setchellii*), and Metcalf Canyon jewel-flower (*Streptanthus albidus* ssp. *albidus*), California red-legged frog (*Rana draytonii*) (CRLF), a federally listed threatened species; California tiger salamander (*Ambystoma californiense*) (CTS), a federally listed threatened species; and the bay checkerspot butterfly (*Euphydryas editha bayensis*), a federally listed-threatened species. Caltrans is initiating consultation as part of its National Environmental Policy Act (NEPA) assignment of federal responsibilities by the Federal Highway Administration (FHWA), under the Moving Ahead for Progress in the 21st Century Act (MAP-21) effective October 1, 2012, and pursuant to 23 USC 327.

The project proposes to convert the existing High-Occupancy Vehicle (HOV) lanes along US 101 to High-Occupancy Toll (HOT) lanes (hereafter known as express lanes). A second express lane would be added in each direction on US 101 within the project limits from the East Dunne Avenue interchange in Morgan Hill to the Santa Clara/San Mateo County line just north of the Oregon Expressway/Embarcadero Road interchange in Palo Alto. The project length is 36.55 miles on US 101 and 1.1 miles on SR 85, for a total of 37.65 miles. Project construction is scheduled to begin in 2014 and be completed by 2016.

Caltrans has completed an environmental review of the Project action area and has concluded that the **proposed action may affect, and is likely to adversely affect** the continued existence of the CRLF, CTS, bay checkerspot butterfly, coyote ceanothus, Santa Clara Valley dudleya, and Metcalf Canyon jewel-flower. There is no federally designated critical habitat for these species in or near the Project action area. Caltrans has determined that the Project will not affect any other listed species under the Service's authority.

If you have any questions regarding this submittal please contact Myla Ablog, Project Biologist, at (510) 286-5651, or Frances Malamud-Roam, Senior Environmental Planner, at (510) 286-5602.

Sincerely,

Hardeep S. Takhar
Acting Office Chief
Office of Biological Sciences and Permits

cc: John Cleckler, USFWS

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USFWS Biological Opinion

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United States Department of the Interior

FISH AND WILDLIFE SERVICE
Sacramento Fish and Wildlife Office
2800 Cottage Way, Suite W-2605
Sacramento, California 95825-1846

In Reply Refer to:
FF08ESMF00-
2014-F-0534-2

Ms. JoAnn Cullom
California Department of Transportation
Environmental Division, MS-8E
111 Grand Avenue
Oakland, California 94612

MAR 10 2015

Ann Calnan
Santa Clara Valley Transportation Authority
3331 North First Street
Building B-2
San Jose, California 95134

Subject: Section 7 Consultation for the United States Route 101 Express Lanes Project, Santa Clara County, California (Caltrans EA 2G7100)

Dear Ms. Cullom and Ms. Calnan:

This letter is in response to the California Department of Transportation's (Caltrans) March 12, 2014, request for consultation with the U.S. Fish and Wildlife Service (Service) on the proposed United States Route (US) 101 Express Lanes Project in Santa Clara County, California.

The project description portion of the consultation package was considered complete on November 21, 2014, following the Service's review of additional project information provided by the Caltrans and the Santa Clara Valley Transportation Authority (VTA). The Service issued a draft consultation on January 27, 2015 (Service File #FF08ESMF00-2014-F-0534-1) and received comments from Caltrans/VTA regarding the draft on February 23, 2015.

At issue are the effects of the proposed project on the threatened bay checkerspot butterfly (*Euphydryas editha bayensis*), threatened Central Distinct Population of the California tiger salamander (*Ambystoma californiense*) (Central California tiger salamander), and threatened California red-legged frog (*Rana draytonii*). This response has been prepared in accordance with section 7 of the Endangered Species Act of 1973, as amended (16 U.S.C. § 1531 *et seq.*)(Act).

According to the March 2014, Biological Assessment (BA) submitted along with the request, the purpose of the project is to decrease traffic congestion with a combination of converting high-occupancy vehicle (HOV) lanes to HOV/toll-fee express lanes and the addition of HOV/express lanes. The proposed project includes an action area both within and outside the Santa Clara Valley Habitat Plan (SCVHP) Permit Area (Figure 1). As partners for the overall project, Caltrans is acting as the Federal nexus regarding the action area outside the Permit Area, and VTA is engaged as a SCVHP permittee and plan participant for the remainder of the action. The SCVHP covered portion of the proposed project is referred to in Table 2-6 of the SCVHP Land Use and Covered Activities chapter (available at http://www.scv-habitatagency.org/DocumentCenter/Home/View/124) as the *U.S. 101 HOV/HOT lane (western study area boundary to Cochrane Road)* highway project.

The portions of the proposed project that are within the SCVHP Permit Area do not require a separate biological opinion, because they have been covered under the internal section 7 biological opinion for the SCVHP. For completeness, the entire action is described herein.

The Service concurs with Caltrans' determination that the proposed project activities outside the SCVHP Permit Area are not likely to adversely affect the endangered coyote ceanothus (*Ceanothus ferrisae*), endangered Santa Clara Valley dudleya (*Dudleya setchellii*), endangered Metcalf Canyon jewel-flower (*Streptanthus albidus* ssp. *albidus*), bay checkerspot butterfly, Central California tiger salamander, or California red-legged frog because: (1) the actions are confined within the previously disturbed Caltrans' right-of-way; (2) the proposed work will be confined to areas within or immediately adjacent to existing hardscape; (3) the proposed project will not result in the loss of listed species habitat; (4) the construction corridor is immediately adjacent to urban development which is not likely occupied by listed wildlife or plants; (5) the action area does not include activities in water crossings; and (6) increases in nitrogen deposition likely to affect serpentine grassland species, such as the bay checkerspot butterfly, are addressed through the formal consultation for the remainder of the project. In addition, the action area for this portion of the project does not include designated critical habitat for listed species.

Construction on the overall project is anticipated to begin in 2015 and conclude in 2018. Construction will be completed in four stages. A description of the activities associated with the construction in and out of the SCVHP Permit Area follows.

Post-construction clean-up and restoration for the overall project include the following:

1. Disturbed areas and staging areas will be cleaned up and recontoured to original grade. Permanent erosion control, including soil stabilization measures such as hydroseeding and coir netting will be applied to all temporarily affected areas within the project footprint to minimize erosion after construction. All construction-related materials, including exclusion and project boundary fencing, will be removed after construction, site clean-up, and restoration activities are complete.

2. Vegetation and trees removed by construction operations within the project limits will be replaced according to Caltrans policy. Appropriate native species will be used to the maximum extent possible, and trees, shrubs, and groundcover will be selected for drought tolerance and disease resistance. Mulch will be applied to planted areas to reduce weed growth, conserve moisture, and minimize maintenance operations. Reclaimed water is not available for irrigation along the project corridor. Re-vegetation will take place under a separate landscape contract after completion of the roadway construction contract. The landscape contract will be funded by the parent project and will include a 3-year plant establishment period.

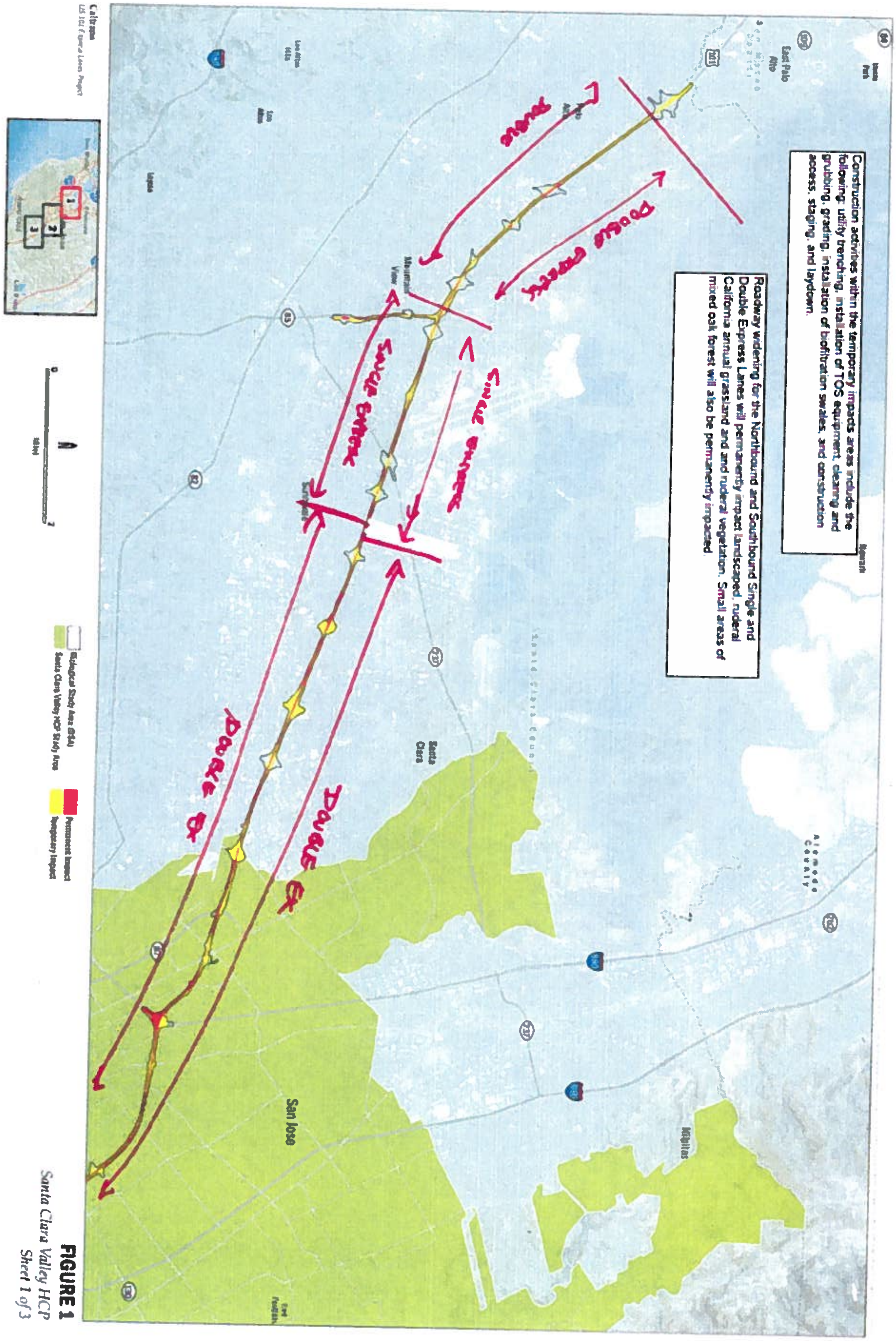

FIGURE 1
Santa Clara Valley HCP
Sheet 1 of 3

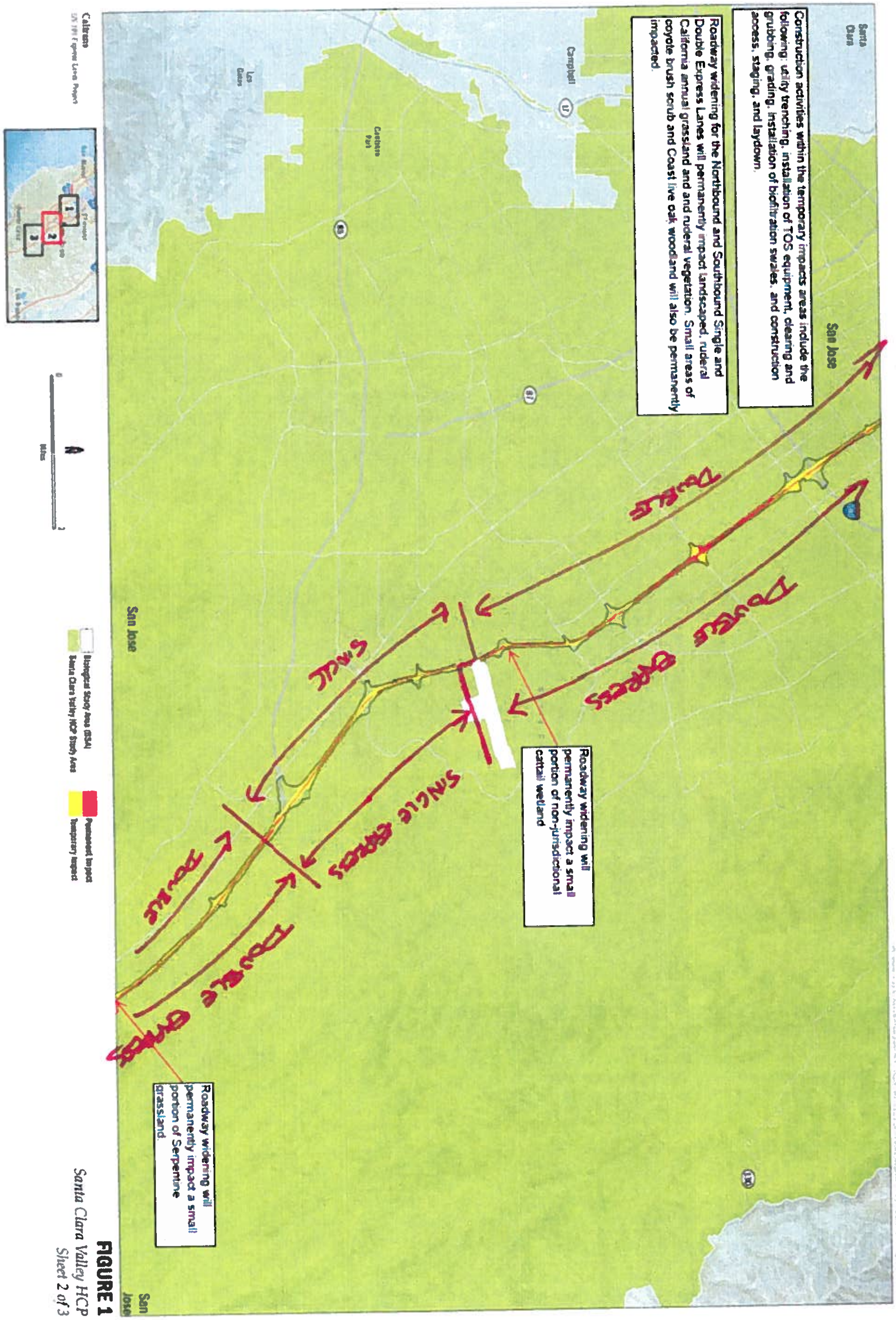

FIGURE 1
Santa Clara Valley HCP
Sheet 2 of 3

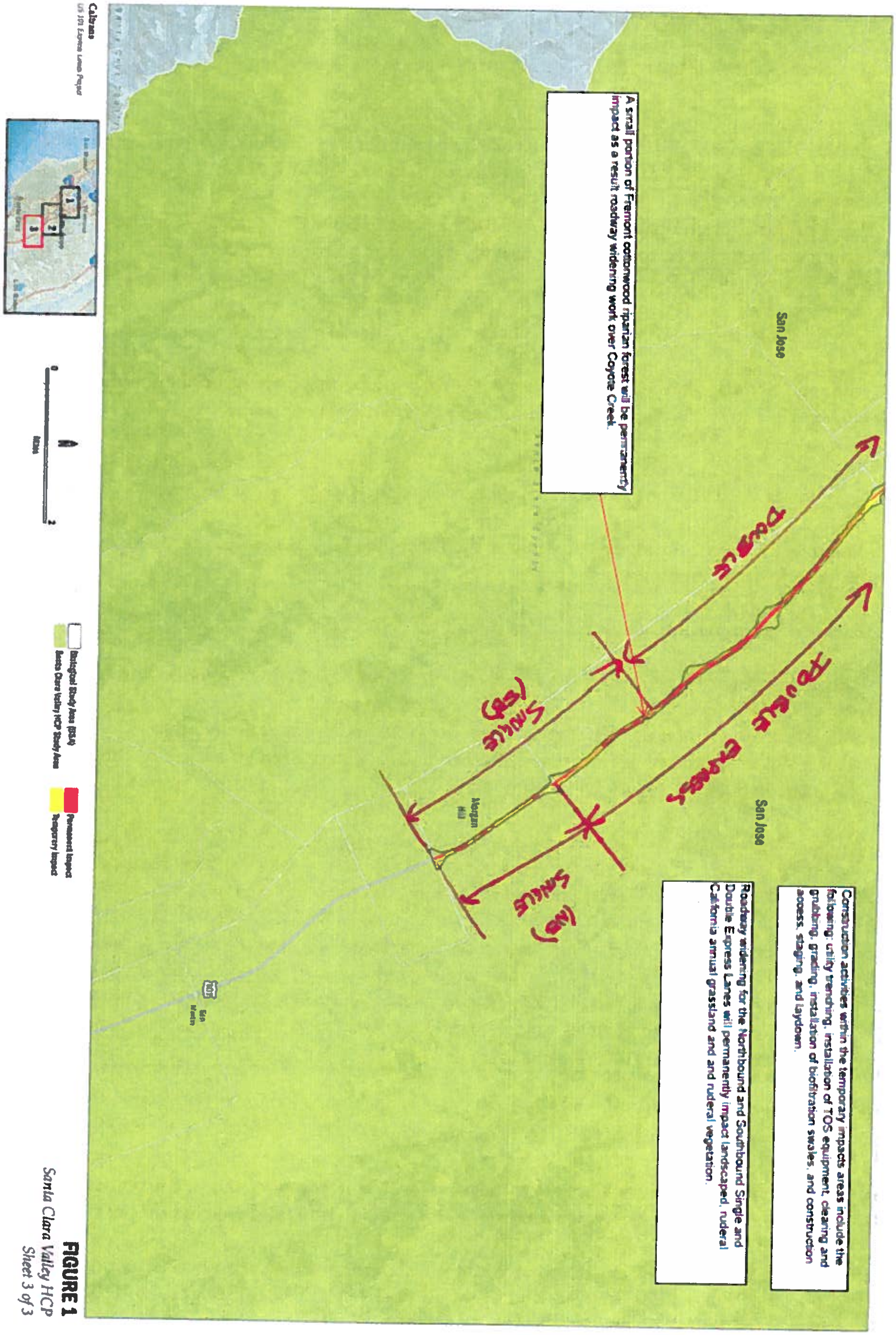

FIGURE 1
Santa Clara Valley HCP
Sheet 3 of 3

Outside the SCVHP Permit Area

The project actions outside the SCVHP Permit Area include the following:

1. A continuous approximately 11.5-mile segment of US 101 from the Santa Clara Valley County line at the San Francisquito Creek Bridge in the City of Palo Alto, east to railroad crossing adjacent to the Lafayette Street overcrossing in the City of San Jose.

2. An approximately 1.1 mile segment of SR 85 from the US 101 Interchange in the City of Mountain View, south to the southern end of the Central Expressway overcrossing in the Santa Clara Valley HCP Permit Area (refer to http://www.hcpmaps.com/habitat/).

Activities within this portion of the project include:

1. Widening the roadway for approximately 4.7 miles along the existing US 101 shoulder between Mathilda Avenue, and south of the railroad crossing (start of SCVHP Permit Area).

2. The addition of auxiliary lanes in both directions between the approximately 1.39-mile segment of US 101 from Lawrence Expressway to the Great American Parkway.

3. The modification of bridge abutments at the Lawrence Expressway overcrossing and the Bowers Avenue overcrossing.

4. Pavement striping throughout.

5. The installation of overhead signs and tolling devices in the highway median throughout.

6. The installation of Traffic Operations Systems (TOS) equipment including traffic monitoring stations, closed circuit television cameras, cabinets, and controllers adjacent to the road shoulder throughout. Work will include trenching and installation of associated conduits.

7. The construction of biofiltration swales at the interchanges of US 101 with San Antonio Road, Rengstorff Avenue, Moffett Boulevard, SR 237, Fair Oaks Avenue, Mathilda Avenue, Lawrence Expressway, Great American Parkway, and Montague Expressway.

There will be no construction at existing creek crossings. Access and staging will be located within the highway roadway, including areas within the interchanges. Construction equipment is likely to include asphalt pavers, asphalt rollers, backhoes, compacters, compressors, concrete pumps, dozers, dump trucks, excavators, flatbed trucks, graders, ready mix trucks, soil compactors, sweepers, trenchers, water trucks, and contractor vehicles.

<u>Conservation Measures</u>
Caltrans will implement the following conservation measures.

1. General avoidance and minimization measures will be communicated to the contractor through the use of special provisions included in the contract bid solicitation package.

2. A copy of this letter will be included in the solicitations for design and construction of the proposed action. Under the direction of the Resident Engineer or designee, the primary contractor will implement all of the requirements and obligations included in this letter as

they relate to construction activities, and will educate and inform all other contractors involved in the project.

3. The contractor will be required to build the project per the *Plans, Specifications and Estimates*, which will be consistent with the project description. This includes implementation of the proposed Best Management Practices (BMPs) and avoidance and minimization measures.

4. The Resident Engineer or designee will be responsible for implementing the provisions and measures described in this letter. The Resident Engineer or designee will maintain a copy of this letter on-site whenever construction is taking place. The Resident Engineer's or designee's name and telephone number will be provided to the Service at least thirty (30) calendar days prior to groundbreaking at the project.

5. To the extent practicable, nighttime construction will be minimized. Lighting of the proposed project site during nighttime hours will be minimized to the maximum extent practicable except when necessary for construction, driver, or pedestrian safety.

6. Imported fill material will be non-toxic according to Caltrans standards.

7. Project plans will clearly indicate the locations of project boundary fencing adjacent to wetlands, waters of the United States, and other areas where access or disturbance is prohibited on a temporary or permanent basis. The fencing will be removed only when all construction equipment is removed from the site. No project activities will occur outside the construction area.

8. Construction activities, including vehicle equipment operation, will be limited to the project footprint.

9. Project employees will be provided with written guidance governing vehicle use, speed limits on unpaved roads, fire prevention, and other hazards.

10. Caltrans standard BMPs, a Water Pollution Control Plan, and a Storm Water Pollution Prevention Plan will be implemented. These plans will include, but are not limited to, the following:

    a. Prior to construction, wetlands located in the project footprint will be fenced off using project boundary fencing. The fencing will be placed under the supervision of a Service-approved biologist. The fencing will be placed 5 feet away from each wetland feature.

    b. Appropriate erosion control measures will be used to reduce siltation and runoff of contaminants into wetlands and adjacent, ponds, streams, or riparian woodland/scrub habitat. The contractor will not be allowed to stockpile brush, loose soils, or other debris material on stream banks. Only native plant species will be used in erosion control or revegetation seed mix. Any hydroseed mulch used for revegetation will also be certified weed-free. Dry-farmed straw will not be used, and certified weed-free straw will be required where erosion control straw is to be used. Filter fences and mesh will be of a material that will not entrap reptiles and amphibians. Erosion-control measures will be placed between a water body or wetland and the outer edge of the project site.

c. All off-road construction equipment will be cleaned of potential noxious weed sources (mud, vegetation) before entry into the project footprint. Equipment will be considered free of soil, seeds, and other such debris when a visual inspection does not disclose such material. Disassembly of equipment components or specialized inspection tools is not required.

d. Vehicles and equipment will be parked on pavement, existing roads, or specified staging areas when not in use.

e. No construction or maintenance vehicles will be refueled within 200 feet of wetlands and ponds unless a bermed and lined refueling area is constructed and hazardous material absorbent pads are available in the event of a spill.

f. Equipment storage, fueling, and staging areas will be sited on disturbed areas or on non-sensitive non-native grassland land cover types when these sites are available to minimize risk of direct discharge into riparian areas or other sensitive land cover types.

g. All temporarily disturbed areas, such as staging areas, will be returned to pre-project or ecologically improved conditions within one year of completing construction or the impact will be considered permanent.

The project action area outside the SCVHP Permit Area includes suitable California red-legged frog habitat. However, the Service concurs with the determination that the described action outside the SCVHP Permit Area is not likely to adversely affect the California red-legged frog because the proposed activities, including staging and access, will be confined to the Caltrans right-of-way. The adjacent area is heavily urbanized and no work will occur over or within the drainage crossings where the California red-legged frog has the potential to occur. The implementation of standard Caltrans best management practices to protect water quality will further reduce the risk of discharge into these aquatic habitats and their associated riparian corridor.

SCVHP Covered Activity

The action area within the SCVHP Permit Area includes a 25.41-mile segment of the US 101 freeway corridor from south of the railroad crossing adjacent to the Lafayette Street overcrossing in San Jose to East Dunne Avenue in the City of Morgan Hill.

Activities within this portion of the project include:

1. Widening the roadway for approximately 10.84 miles along the US 101 median from the SR 85 Interchange in San Jose to south of East Dunne Avenue.

2. Widening the roadway for approximately 12.63 miles along the existing US 101 shoulder between the railroad crossing (start of SCVHP Permit Area) south to Blossom Hill Road.

3. Widening bridges along US 101 at the Yerba Buena Road undercrossing, Coyote Road undercrossing, Bernal Road undercrossing, Golf Course undercrossing, and Coyote Creek Golf Drive undercrossing.

4. Modification of bridge abutments at the SR 87/US 101 seperations, 10th Street overcrossing, North San Jose Union Pacific Railroad overcrossing, Julian Street/McKee Road

overcrossing, Santa Clara Street overcrossing, San Antonio Street overcrossing, and Tully Road overcrossing.

5. Construction of retaining walls for approximately 5.53 miles in the US 101 road median from Bailey Avenue to south of Cochrane Road.

6. Construction of retaining walls along the widened US 101 road shoulder at the Brokaw/North 1st Street, Interstate 880, and Yerba Buena Road interchanges.

7. Pavement striping throughout.

8. New overhead signs and tolling devices will be installed along the highway median within the project limits.

9. Installation of TOS equipment including traffic monitoring stations, closed circuit television cameras, cabinets, and controllers adjacent to the road shoulder. Installation will include trenching and installation of associated conduits.

10. Construction of biofiltration swales at the De La Cruz Boulevard, SR 87, McKee Road, Interstate 280/Interstate 680, Hellyer Avenue, Bernal Road, Coyote Creek Golf Drive, and East Dunne Avenue interchanges.

There will be no construction at existing creek crossings. Access and staging will be located within the highway right-of-way, including areas within the interchanges. Construction equipment is likely to include asphalt pavers, asphalt rollers, backhoes, compacters, compressors, concrete pumps, dozers, dump trucks, excavators, flatbed trucks, graders, ready mix trucks, soil compactors, sweepers, trenchers, water trucks, and contractor vehicles.

As part of the site preparation, exclusion fencing will be installed along:

1. The east side of US 101 between Yerba Buena Road and Coyote Road;

2. The east side of US 101 between Silver Creek Valley Road and SR 85; and

3. Both sides of US 101 between SR 85 and East Dunne Avenue.

Vegetation removal will occur within the project footprint on:

1. The east side of US 101 from Yerba Buena Road to Coyote Road; and

2. On both sides of US 101 from SR 85 to East Dunne Avenue.

This response is based on: (1) the March 2014 BA; (2) additional project information received on September 26 and November 14, 2014; (3) the August 2012 Final Santa Clara Valley Habitat Plan (available at http://www.scv-habitatagency.org/178/Final-Habitat-Plan); and (4) other information available to the Service.

The following provisions will be implemented for the covered activity. The referenced conditions below are described in Chapter 6 of the SCVHP document (available at http://www.scv-habitatagency.org/DocumentCenter/Home/View/128).

1. VTA complies with all Conditions appropriate for the proposed project:

   a. Condition 1. Avoid Direct Impacts on Legally Protected Plant and Wildlife Species.

   b. Condition 2. Incorporate Urban-Reserve System Interface Design Requirements.

   c. Condition 3. Maintain Hydrologic Conditions and Protect Water Quality.

   d. Condition 6. Design and Construction Requirements for Covered Transportation Projects.

   e. Conditions 11. Stream and Riparian Setbacks.

   f. Condition 12. Wetland and Pond Avoidance and Minimization.

   g. Condition 13. Serpentine and Associated Covered Species Avoidance and Minimization.

   h. Condition 15. Western Burrowing Owl.

   i. Condition 20. Avoid and Minimize Impacts to Covered Plant Occurrences.

2. VTA pays all applicable development fees to the Implementing Entity prior to implementing the covered activity. The estimated development fees for the project are listed in Table 1 and amount to $624,520.41. The fee amount is based on the Habitat Plan fee schedule as of August 2014. The fee schedule is adjusted annually. The fee amount may be adjusted based on various factors, including changes in impact acreage and project scheduling.

Table 1. SCVHP Development Fee Calculation

Habitat Plan Fee Type	Permanent habitat loss (acres)	Fee per acre	Total	Temporary habitat loss (acre)	Fee per acre x fee multiplication factor	Total	**TOTAL**
Land Cover Fee							
Fee Zone A (Ranchlands and Natural Lands)	13.08	$17,028.00	$222,726.24	5.29	$17,028.00 x 0.04	$3,603.12	**$226,329.36**
Fee Zone B (Agricultural and Valley Floor Lands)	22.90	$11,806.00	$270,357.40	40.17	$11,806.00 x 0.04	$18,969.88	**$289,327.28**
Fee Zone C (Small Vacant Sites Under 10 Acres)	0.46	$4,313.00	$1,983.98	0.50	$4,313.00 x 0.04	$86.26	**$2,070.24**
Wetland Fee							
Willow Riparian Forest and Mixed Riparian	0.42	$142,838.00	$59,991.96	1.61	$142,838.00	$9,198.77	**$69,190.05**
Seasonal Wetlands	0.06	$383,238.00	$22,994.28	0	0	0	**$22,994.28**
Serpentine Fee	0.12	$55,410.00	$6,649.20	0	0	0	**$6,649.20**
Nitrogen Deposition Fee	2,000*	$3.98	$7,960.00	0	0	0	**$7,960.00**
Burrowing Owl Fee							
TOTAL							**$624,520.41**

* new daily vehicle trips

If the provisions listed above are met, take of the bay checkerspot, Central California tiger salamander, and California red-legged frog resulting from the proposed project will be authorized through the SCVHP's incidental take permit (Fish and Wildlife Permit No.: TE-94345A-0). The effects to listed species that would result from the issuance of this incidental take permit were analyzed in the Services April 2013 *Intra-Service Biological Opinion on the Issuance of a Section 10(a)(1)(B) Incidental Take Permits for the Santa Clara Valley Habitat Conservation Plan/Natural Community Conservation Plan.*

The SCVHP requires specific avoidance and minimization measures for covered activities that have the potential to affect SCVHP covered species, sensitive habitats, natural communities, and jurisdictional wetlands and other waters in Santa Clara County. Therefore, VTA will implement all protection measures for the affected species as set forth in the SCVHP.

In addition to avoidance and minimization measures, the SCVHP utilizes a variety of development-based fess to fund mitigation that will offset losses of land cover types, covered species habitat, and other biological values. VTA will pay all applicable development fees as listed in Table 1 to the Santa Clara Valley Habitat Agency as identified and described in Chapter 9.4.1 of the SCVHP (available at http://www.scv-habitatagency.org/DocumentCenter/Home/View/131).

Conservation Measures

In addition to the above provisions, Caltrans/VTA have proposed and will implement the following conservation measures.

1. General avoidance and minimization measures will be communicated to the contractor through the use of special provisions included in the contract bid solicitation package.

2. A printed copy of the California Department of Fish and Wildlife (CDFW) Incidental Take Permit for Central California tiger salamander will be provided to the Service at least twenty (20) working days prior to the date of initial groundbreaking for the proposed action.

3. A copy of this letter will be included in the solicitations for design and construction of the proposed action. Under the direction of the Resident Engineer or designee, the primary contractor will implement all of the environmental obligations as they relate to construction activities, and will educate and inform all other contractors involved in the project as to the requirements of those obligations.

4. The contractor will be required to build the project per the *Plans, Specifications and Estimates*, which will be consistent with the project description. This includes implementation of the proposed BMPs and avoidance and minimization measures.

5. The Resident Engineer or designee will be responsible for implementing the provisions and appropriate measures. The Resident Engineer or designee will maintain a copy of the associated environmental regulatory documents on-site whenever construction is taking place. The Resident Engineer's or designee's name and telephone number will be provided to the Service at least thirty (30) calendar days prior to groundbreaking at the project.

6. A post-construction compliance report will be submitted to the Sacramento Fish and Wildlife Office and Bay-Delta Regional Office of CDFW within sixty (60) calendar days following each year of construction or within sixty (60) calendar days of any break in construction activity lasting more than sixty (60) calendar days. This report will detail (i) dates that construction occurred; (ii) pertinent information concerning the success of the project in meeting avoidance, minimization and other conservation measures; (iii) an explanation of failure to meet such measures, if any; (iv) known project effects on federally

listed species, if any; (v) occurrences of incidental take; (vi) documentation of employee environmental education; and (vii) other pertinent information.

7. To the extent practicable, nighttime construction will be minimized. Lighting of the proposed project site during nighttime hours will be minimized to the maximum extent practicable except when necessary for construction, driver, or pedestrian safety.

8. Prior to initiation of the proposed action, the qualifications of the biological monitor(s) will be submitted to Service and CDFW for approval. Such approved biologists are hereafter referred to as the "Service-approved biologist(s)."

9. Service-approved biologist(s) will conduct pre-construction surveys to examine the action area for occurrences of special-status wildlife species. In the event that occupied burrows, nests, dens, or other habitats are found, the Service-approved biologist(s) will adhere to the appropriate measures and procedutes. If the situation is otherwise unique, the Service-approved biologist will discuss the situation with a Caltrans biologist who will contact the Service and CDFW to determine how to avoid or relocate the resident animal(s).

10. All construction personnel will attend a mandatory environmental education program delivered by the Service-approved biologist prior to working on the project site. The program will focus on the conservation measures that are relevant to each employee's job duties and will include an explanation as how to best avoid take of the listed species. The program will include an explanation of regulations protecting the listed species as well as the importance of compliance with the environmental measures. Distributed materials may include wallet-sized cards with a distinguishing photograph of the listed species, compliance reminders, and relevant contact information. Documentation of the training, including attendee sign-in sheets, will be kept on file and made available to the Service upon request. An outline of the program will be submitted to the Coast-Bay Branch Chief in the Sacramento Fish and Wildlife Office within twenty (20) working days prior to the initial onset of construction activities. Documentation of the training, including sign-in sheets, will be kept on file and available on request.

11. Vegetation removal and cut-and-fill operations will be limited to the minimum necessary. Trees, snags, shrubs, other vegetation, woody debris, and un-compacted forest litter will be protected to the maximum extent practicable. When possible, trees or shrubs that interfere with construction will be pruned or topped, but not removed.

12. Imported fill material will be non-toxic according to Caltrans standards.

13. Project plans will clearly indicate the locations of project boundary fencing adjacent to wetlands, waters of the United States, and other areas where access or disturbance is prohibited on a temporary or permanent basis. The fencing will be removed only when all construction equipment is removed from the site. No project activities will occur outside the construction area.

14. Construction activities, including vehicle equipment operation, will be limited to the project footprint.

15. Before the onset of vegetation clearing, construction personnel will be informed about the importance of avoiding ground-disturbing activities outside the designated construction

work area. The Resident Engineer, with support from qualified engineers, compliance specialists, and the Service-approved biologists, will monitor construction activities to avoid any disturbance of sensitive resources outside the action area.

16. Project employees will be provided with written guidance governing vehicle use, speed limits on unpaved roads, fire prevention, and other hazards.

17. To eliminate attracting predators of the Central California tiger salamander, California red-legged frog, or other federally listed species, all food-related trash items such as wrappers, cans, bottles, and food scraps will be disposed of in closed containers and removed as necessary from the project footprint.

18. To avoid harassment, injury, or death of a federally-listed wildlife species, no pets or firearms will be allowed in the project footprint, except firearms carried by authorized security personnel, or law enforcement officials.

19. Caltrans standard BMPs, a Water Pollution Control Plan, and a Storm Water Pollution Prevention Plan will be implemented. These plans will include, but are not limited to, the following:

    a. Prior to construction, wetlands located in the project footprint will be fenced off using project boundary fencing. The fencing will be placed under the supervision of a Service-approved biologist. The fencing will be placed 5 feet away from each wetland feature.

    b. Appropriate erosion control measures will be used to reduce siltation and runoff of contaminants into wetlands and adjacent, ponds, streams, or riparian woodland/scrub habitat. The contractor will not be allowed to stockpile brush, loose soils, or other debris material on stream banks. Only native plant species will be used in erosion control or revegetation seed mix. Any hydroseed mulch used for revegetation will also be certified weed-free. Dry-farmed straw will not be used, and certified weed-free straw will be required where erosion control straw is to be used. Filter fences and mesh will be of material that will not entrap reptiles and amphibians. Erosion-control measures will be placed between a water body or wetland and the outer edge of the project site.

    c. All off-road construction equipment will be cleaned of potential noxious weed sources (mud, vegetation) before entry into the project footprint. Equipment will be considered free of soil, seeds, and other such debris when a visual inspection does not disclose such material. Disassembly of equipment components or specialized inspection tools is not required.

    d. Vehicles and equipment will be parked on pavement, existing roads, or specified staging areas when not in use.

    e. No construction or maintenance vehicles will be refueled within 200 feet of wetlands and ponds unless a bermed and lined refueling area is constructed and hazardous material absorbent pads are available in the event of a spill.

    f. Equipment storage, fueling, and staging areas will be sited on disturbed areas or on non-sensitive non-native grassland land cover types when these sites are available to minimize risk of direct discharge into riparian areas or other sensitive land cover types.

g. All temporarily disturbed areas, such as staging areas, will be returned to pre-project or ecologically improved conditions within one year of completing construction or the impact will be considered permanent.

If implemented as described in the project description, the proposed project activities within the SCVHP Permit Area comply with the applicable conditions required by the SCVHP.

Unless new information reveals effects of the proposed project that may affect listed species in a manner or to an extent not considered; or the project is modified in a manner that causes an effect to the listed species that was not considered; or a new species or critical habitat is designated that may be affected by the proposed action, no further action pursuant to the Act, is necessary.

If you have questions concerning this letter, please contact John Cleckler, Caltrans Liaison (*john_cleckler@fws.gov*) or Ryan Olah, Coast-Bay Division Chief (*ryan_olah@fws.gov*), at the letterhead address, (916) 414-6600, or by e-mail.

Sincerely,

Cay C. Goude

Cay C. Goude
Assistant Field Supervisor

cc:
Melissa Escaron, California Department of Fish and Wildlife, Napa, California
Frances Malamud-Roam and Myla Ablog, Caltrans District 4, Oakland, California

Transmittal of the JD to USACE

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Appendix F Major Project Features, and Noise Receptors and Barriers

The attached plans show the proposed project limits, areas of proposed inside and outside pavement widening, auxiliary lanes, and the locations of the noise receptors and existing and modeled noise barriers analyzed in Section 2.2.7.

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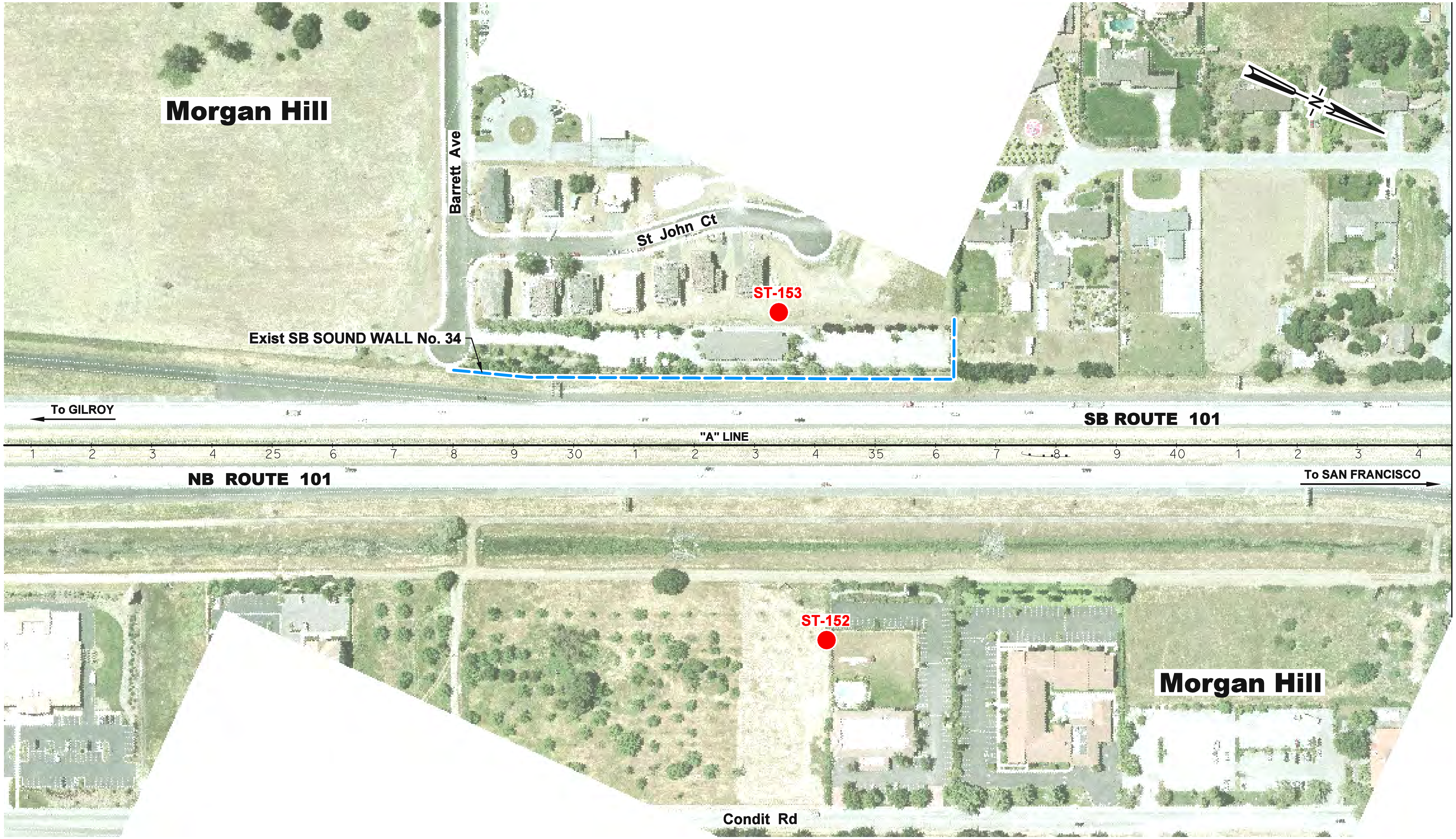


SEE SHEET No. 2

LEGEND:

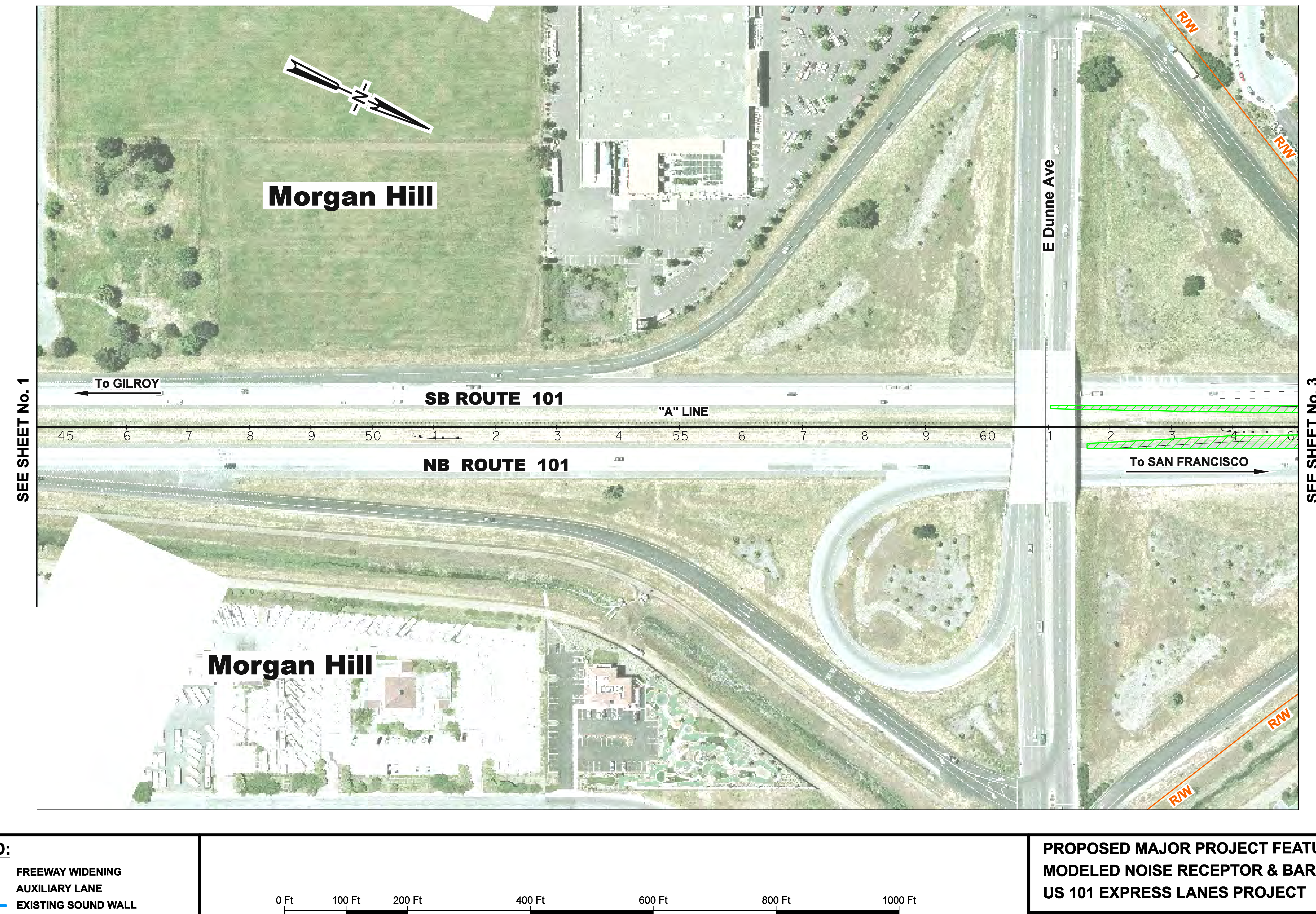
- FREEWAY WIDENING
- AUXILIARY LANE
- EXISTING SOUND WALL
- MODELED SOUND WALL
- NOISE RECEPTOR LOCATION

0 Ft 100 Ft 200 Ft 400 Ft 600 Ft 800 Ft 1000 Ft

PROPOSED MAJOR PROJECT FEATURES AND MODELED NOISE RECEPTOR & BARRIER LOCATIONS US 101 EXPRESS LANES PROJECT

DATE: 10/3/2014

SHEET 1 OF 80

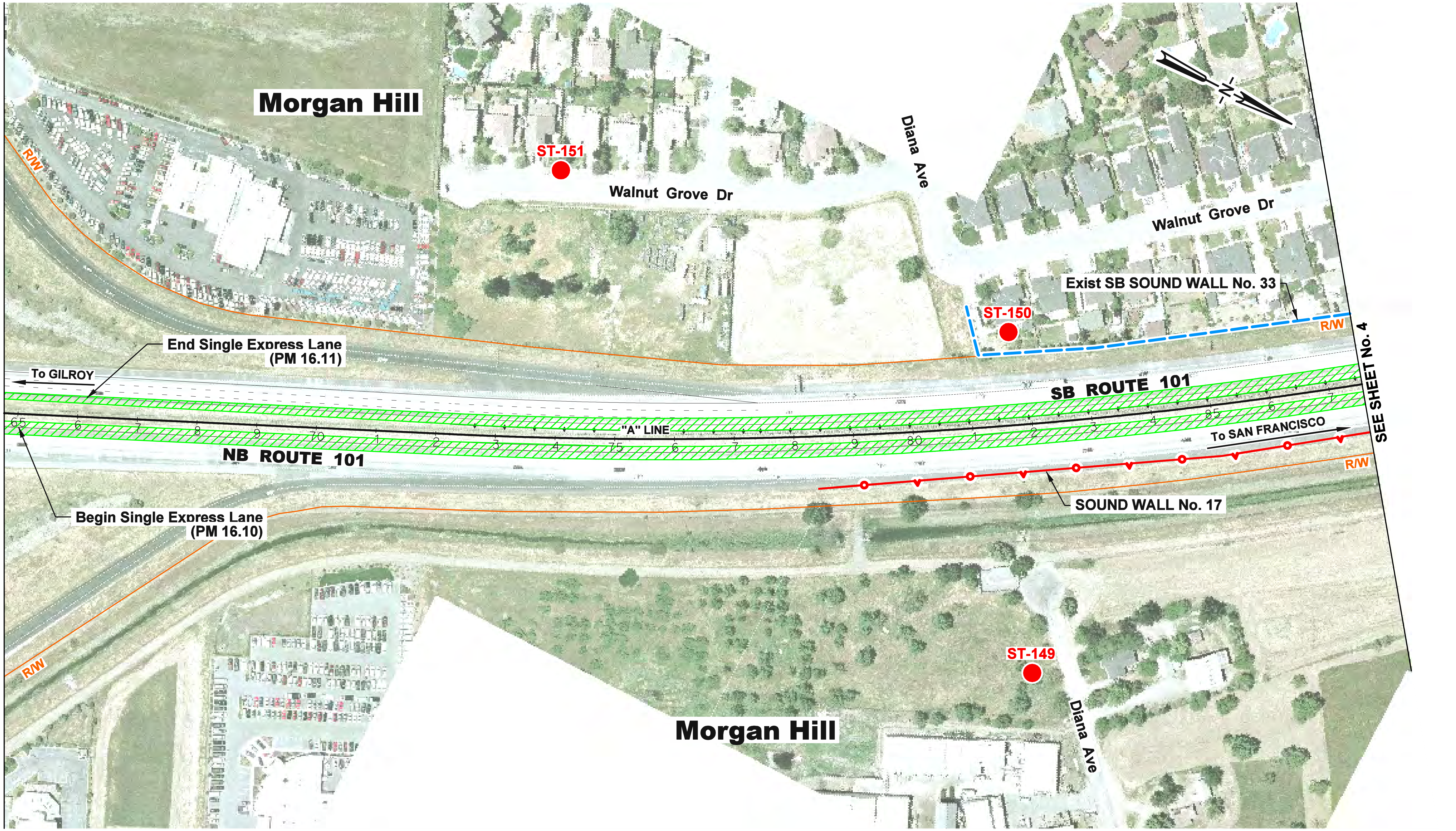


LEGEND:

- FREEWAY WIDENING
- AUXILIARY LANE
- EXISTING SOUND WALL
- MODELED SOUND WALL
- NOISE RECEPTOR LOCATION

PROPOSED MAJOR PROJECT FEATURES AND MODELED NOISE RECEPTOR & BARRIER LOCATIONS US 101 EXPRESS LANES PROJECT

DATE: 10/3/2014



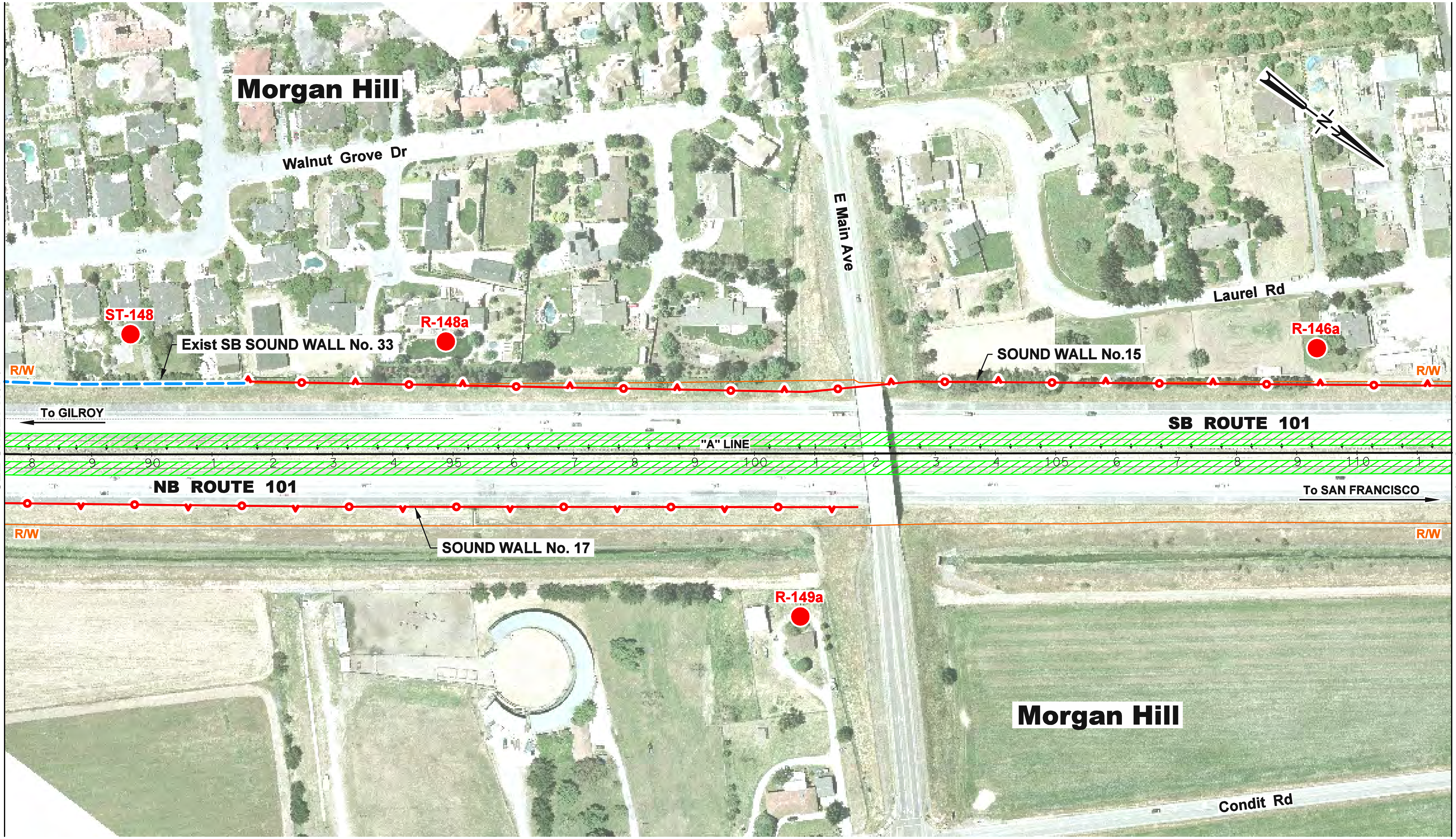
LEGEND:

- FREEWAY WIDENING
- AUXILIARY LANE
- EXISTING SOUND WALL
- MODELED SOUND WALL
- NOISE RECEPTOR LOCATION

PROPOSED MAJOR PROJECT FEATURES AND MODELED NOISE RECEPTOR & BARRIER LOCATIONS US 101 EXPRESS LANES PROJECT

DATE: 10/3/2014

SHEET 3 OF 80



LEGEND:

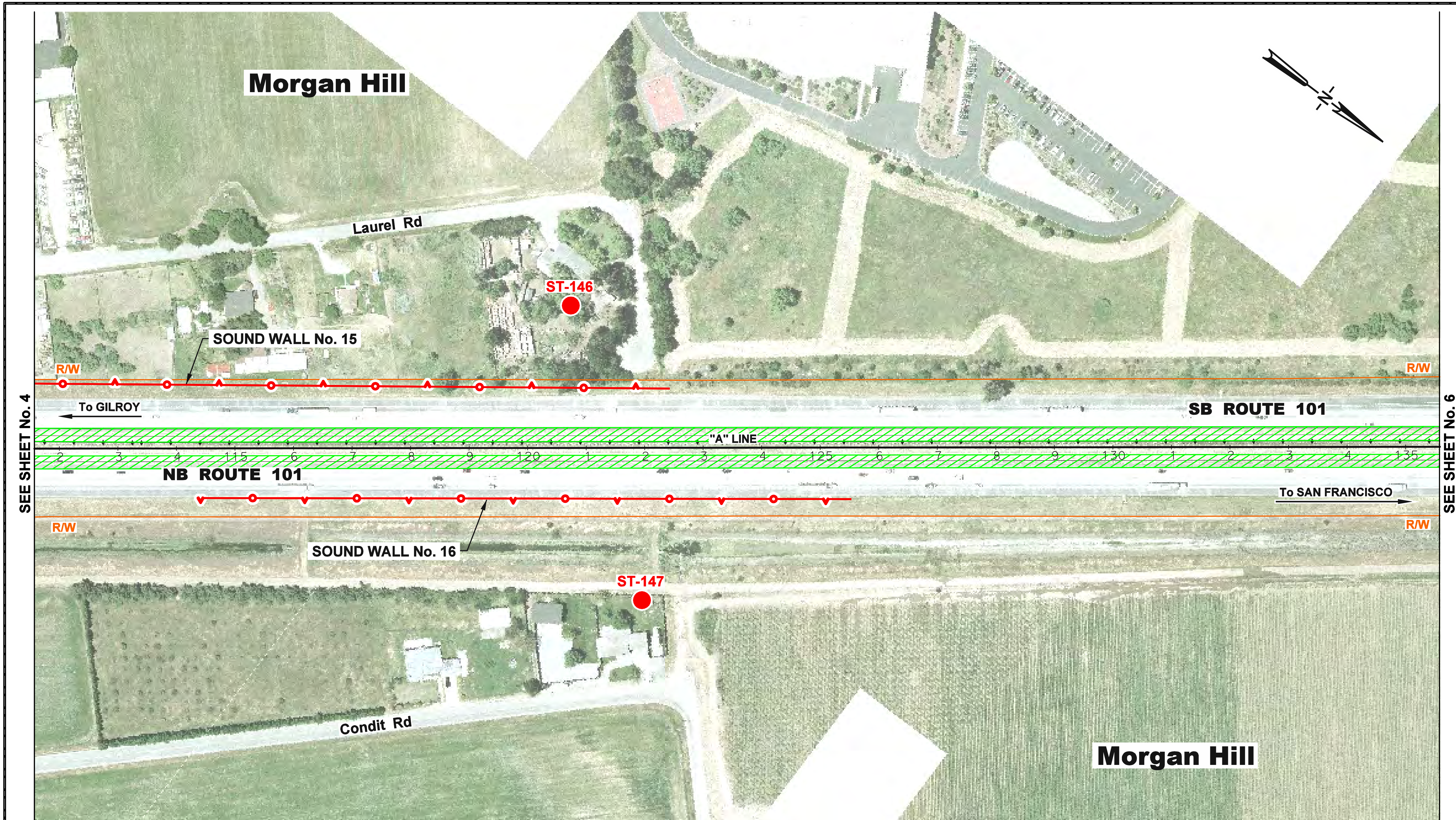
- FREEWAY WIDENING
- AUXILIARY LANE
- EXISTING SOUND WALL
- MODELED SOUND WALL
- NOISE RECEPTOR LOCATION

0 Ft 100 Ft 200 Ft 400 Ft 600 Ft 800 Ft 1000 Ft

PROPOSED MAJOR PROJECT FEATURES AND MODELED NOISE RECEPTOR & BARRIER LOCATIONS US 101 EXPRESS LANES PROJECT

DATE: 10/3/2014

SHEET 4 OF 80



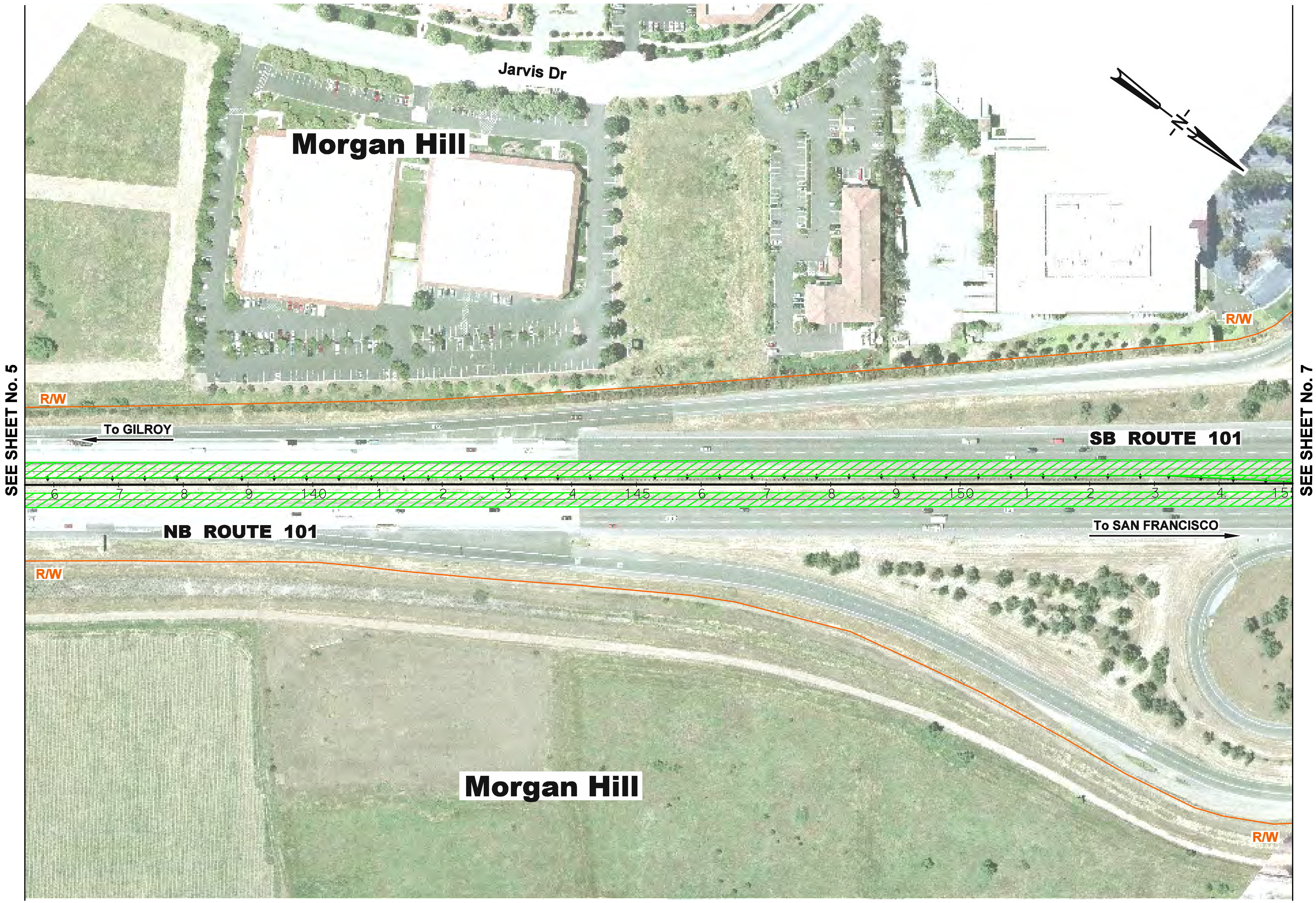
LEGEND:

- FREEWAY WIDENING
- AUXILIARY LANE
- EXISTING SOUND WALL
- MODELED SOUND WALL
- NOISE RECEPTOR LOCATION

0 Ft 100 Ft 200 Ft 400 Ft 600 Ft 800 Ft 1000 Ft

PROPOSED MAJOR PROJECT FEATURES AND MODELED NOISE RECEPTOR & BARRIER LOCATIONS US 101 EXPRESS LANES PROJECT

DATE: 10/3/2014



LEGEND:

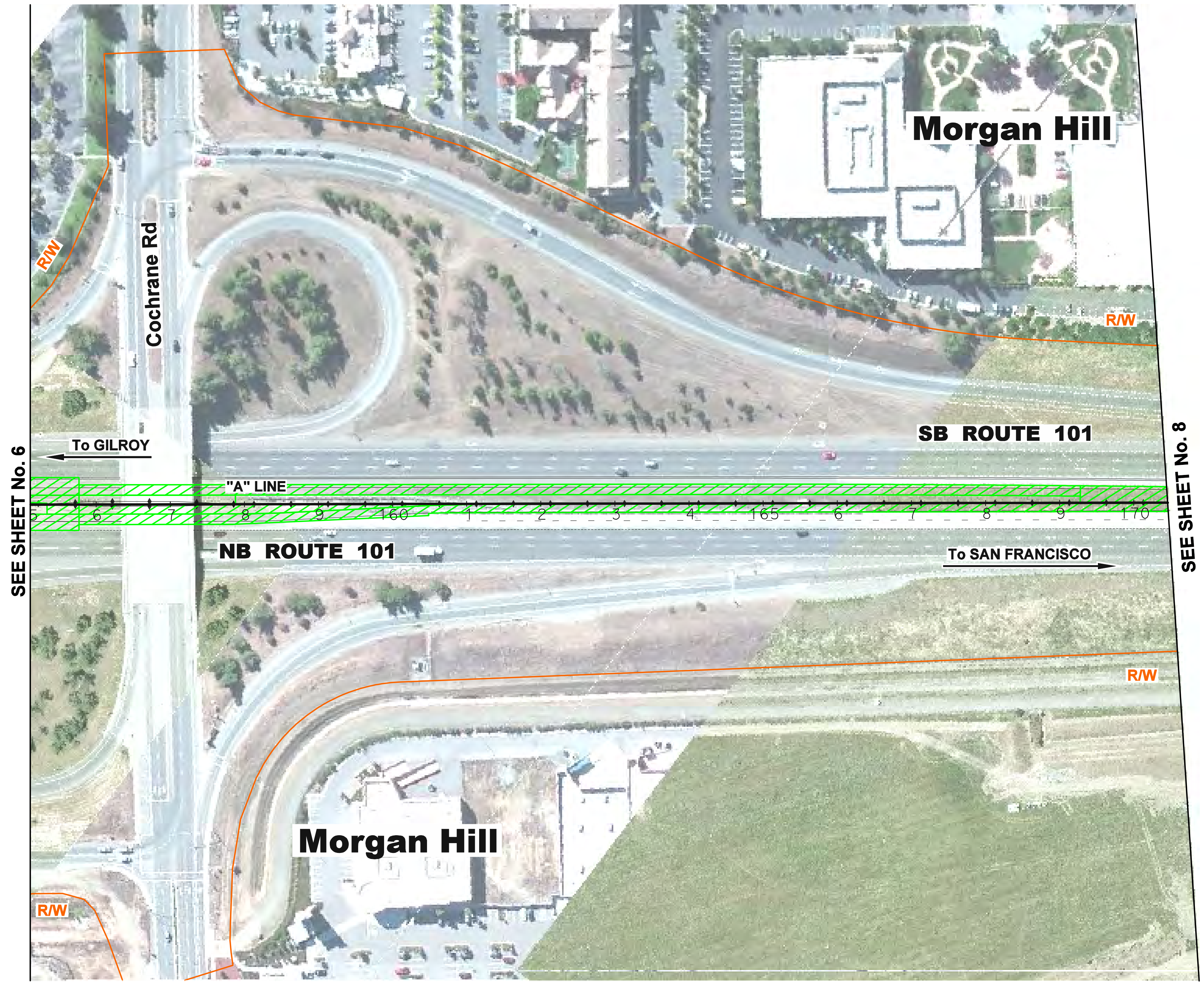
- FREEWAY WIDENING
- AUXILIARY LANE
- EXISTING SOUND WALL
- MODELED SOUND WALL
- NOISE RECEPTOR LOCATION

0 Ft 100 Ft 200 Ft 400 Ft 600 Ft 800 Ft 1000 Ft

PROPOSED MAJOR PROJECT FEATURES AND MODELED NOISE RECEPTOR & BARRIER LOCATIONS US 101 EXPRESS LANES PROJECT

DATE: 10/3/2014

SHEET 6 OF 80



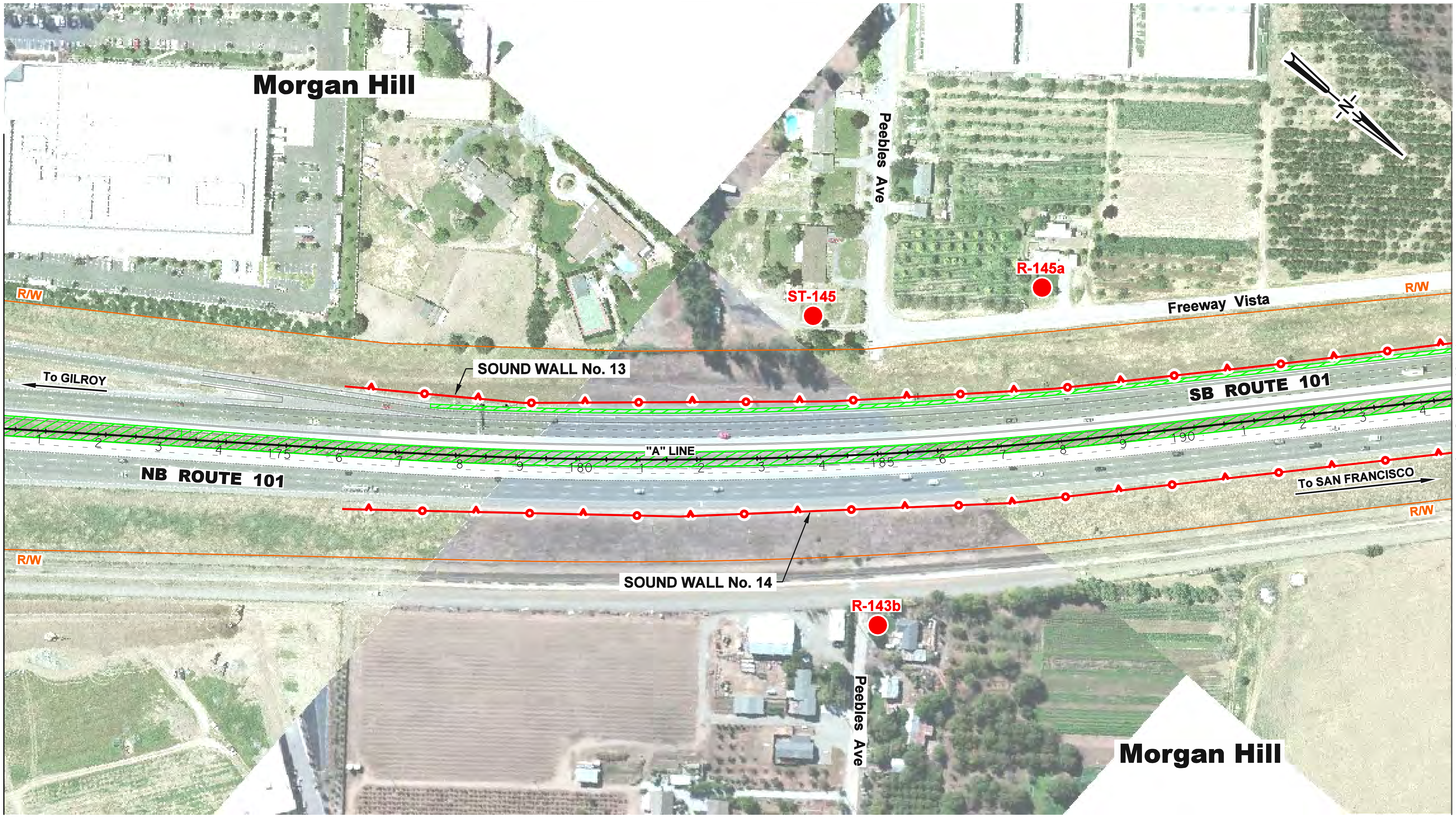
LEGEND:

- FREEWAY WIDENING
- AUXILIARY LANE
- EXISTING SOUND WALL
- MODELED SOUND WALL
- NOISE RECEPTOR LOCATION

0 Ft 100 Ft 200 Ft 400 Ft 600 Ft 800 Ft 1000 Ft

PROPOSED MAJOR PROJECT FEATURES AND MODELED NOISE RECEPTOR & BARRIER LOCATIONS US 101 EXPRESS LANES PROJECT

DATE: 10/3/2014



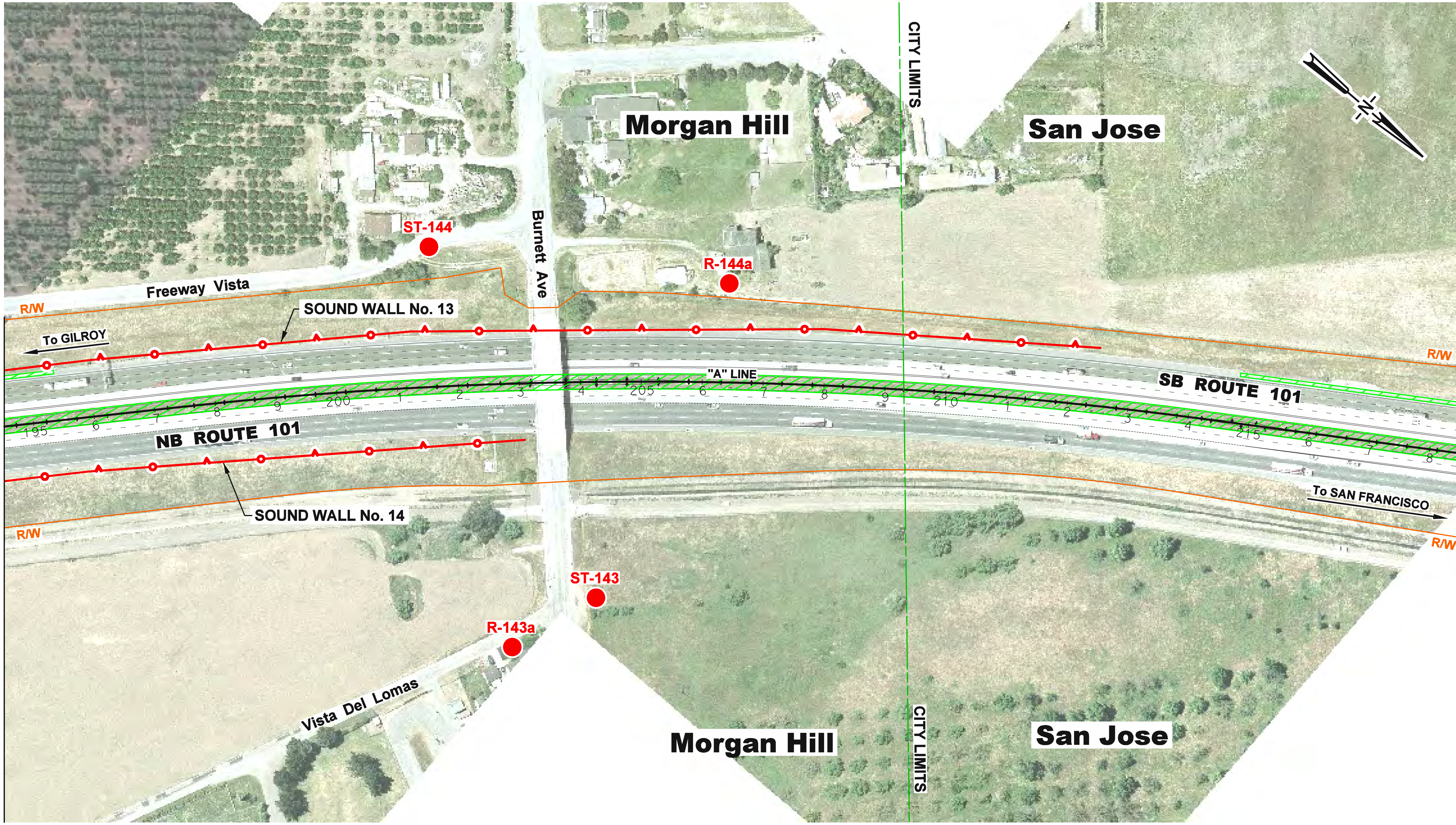
LEGEND:

- FREEWAY WIDENING
- AUXILIARY LANE
- EXISTING SOUND WALL
- MODELED SOUND WALL
- NOISE RECEPTOR LOCATION

0 Ft 100 Ft 200 Ft 400 Ft 600 Ft 800 Ft 1000 Ft

PROPOSED MAJOR PROJECT FEATURES AND MODELED NOISE RECEPTOR & BARRIER LOCATIONS US 101 EXPRESS LANES PROJECT

DATE: 10/3/2014



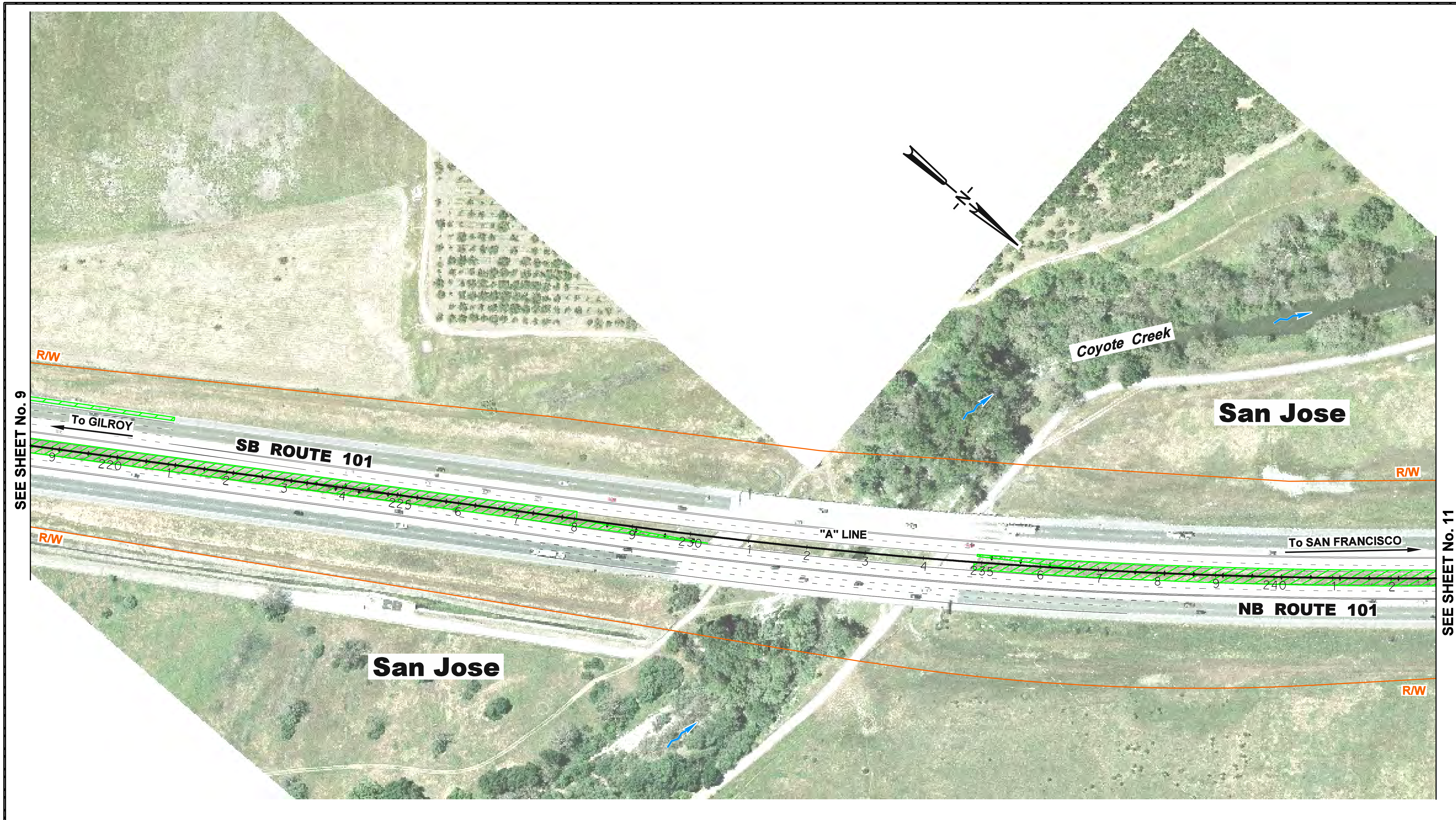
LEGEND:

- FREEWAY WIDENING
- AUXILIARY LANE
- EXISTING SOUND WALL
- MODELED SOUND WALL
- NOISE RECEPTOR LOCATION

0 Ft 100 Ft 200 Ft 400 Ft 600 Ft 800 Ft 1000 Ft

PROPOSED MAJOR PROJECT FEATURES AND MODELED NOISE RECEPTOR & BARRIER LOCATIONS US 101 EXPRESS LANES PROJECT

DATE: 10/3/2014



LEGEND:

- FREEWAY WIDENING
- AUXILIARY LANE
- EXISTING SOUND WALL
- MODELED SOUND WALL
- NOISE RECEPTOR LOCATION

0 Ft 100 Ft 200 Ft 400 Ft 600 Ft 800 Ft 1000 Ft

PROPOSED MAJOR PROJECT FEATURES AND MODELED NOISE RECEPTOR & BARRIER LOCATIONS US 101 EXPRESS LANES PROJECT

DATE: 10/3/2014

SHEET 10 OF 80

LEGEND:

- FREEWAY WIDENING
- AUXILIARY LANE
- EXISTING SOUND WALL
- MODELED SOUND WALL
- NOISE RECEPTOR LOCATION

0 Ft 100 Ft 200 Ft 400 Ft 600 Ft 800 Ft 1000 Ft

PROPOSED MAJOR PROJECT FEATURES AND MODELED NOISE RECEPTOR & BARRIER LOCATIONS US 101 EXPRESS LANES PROJECT

DATE: 10/3/2014

LEGEND:

- FREEWAY WIDENING
- AUXILIARY LANE
- EXISTING SOUND WALL
- MODELED SOUND WALL
- NOISE RECEPTOR LOCATION

0 Ft 100 Ft 200 Ft 400 Ft 600 Ft 800 Ft 1000 Ft

PROPOSED MAJOR PROJECT FEATURES AND MODELED NOISE RECEPTOR & BARRIER LOCATIONS US 101 EXPRESS LANES PROJECT

DATE: 10/3/2014

LEGEND:

- FREEWAY WIDENING
- AUXILIARY LANE
- EXISTING SOUND WALL
- MODELED SOUND WALL
- NOISE RECEPTOR LOCATION

PROPOSED MAJOR PROJECT FEATURES AND MODELED NOISE RECEPTOR & BARRIER LOCATIONS US 101 EXPRESS LANES PROJECT

DATE: 10/3/2014

SHEET 13 OF 80

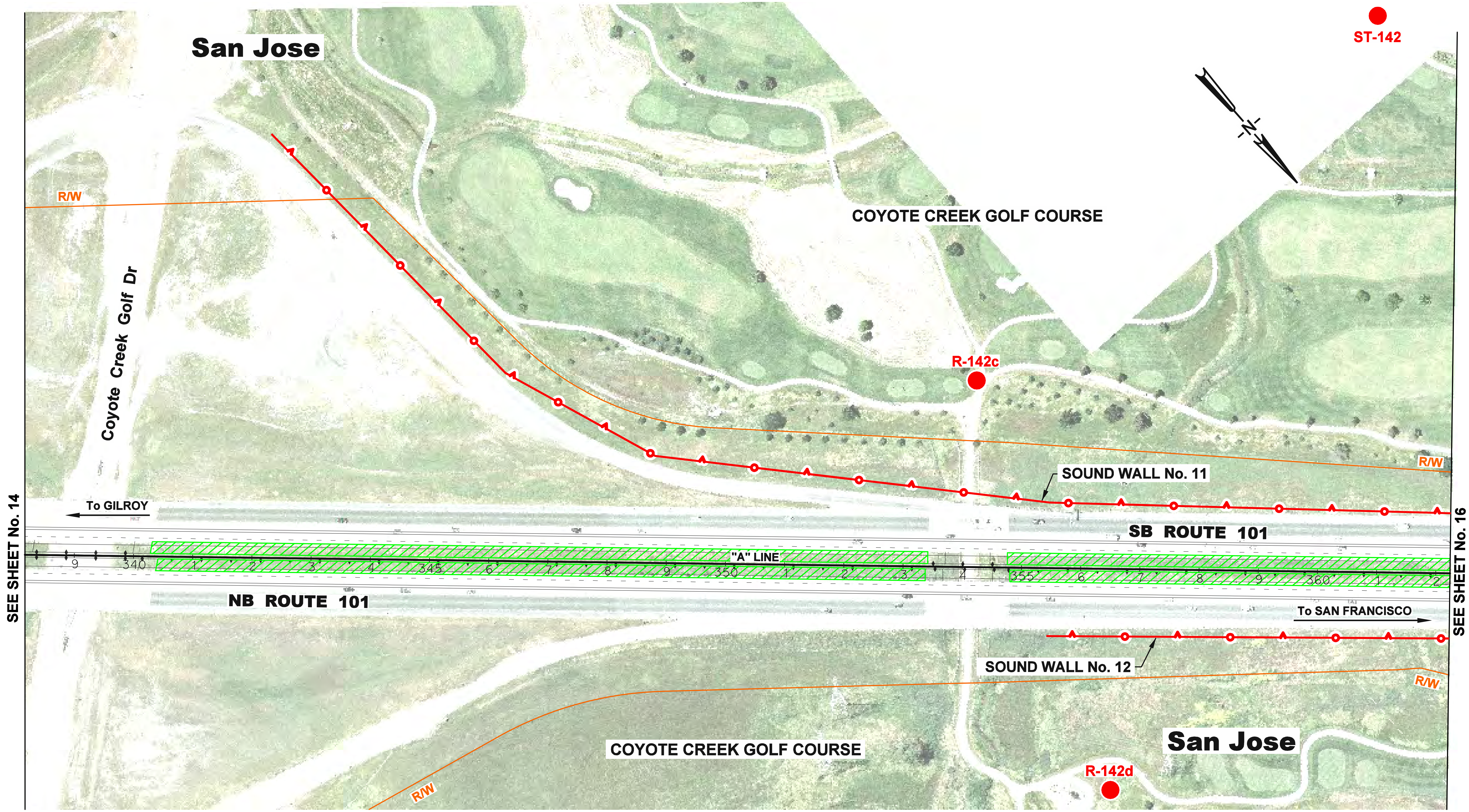
LEGEND:

- FREEWAY WIDENING
- AUXILIARY LANE
- EXISTING SOUND WALL
- MODELED SOUND WALL
- NOISE RECEPTOR LOCATION

0 Ft 100 Ft 200 Ft 400 Ft 600 Ft 800 Ft 1000 Ft

PROPOSED MAJOR PROJECT FEATURES AND MODELED NOISE RECEPTOR & BARRIER LOCATIONS US 101 EXPRESS LANES PROJECT

DATE: 10/3/2014



LEGEND:

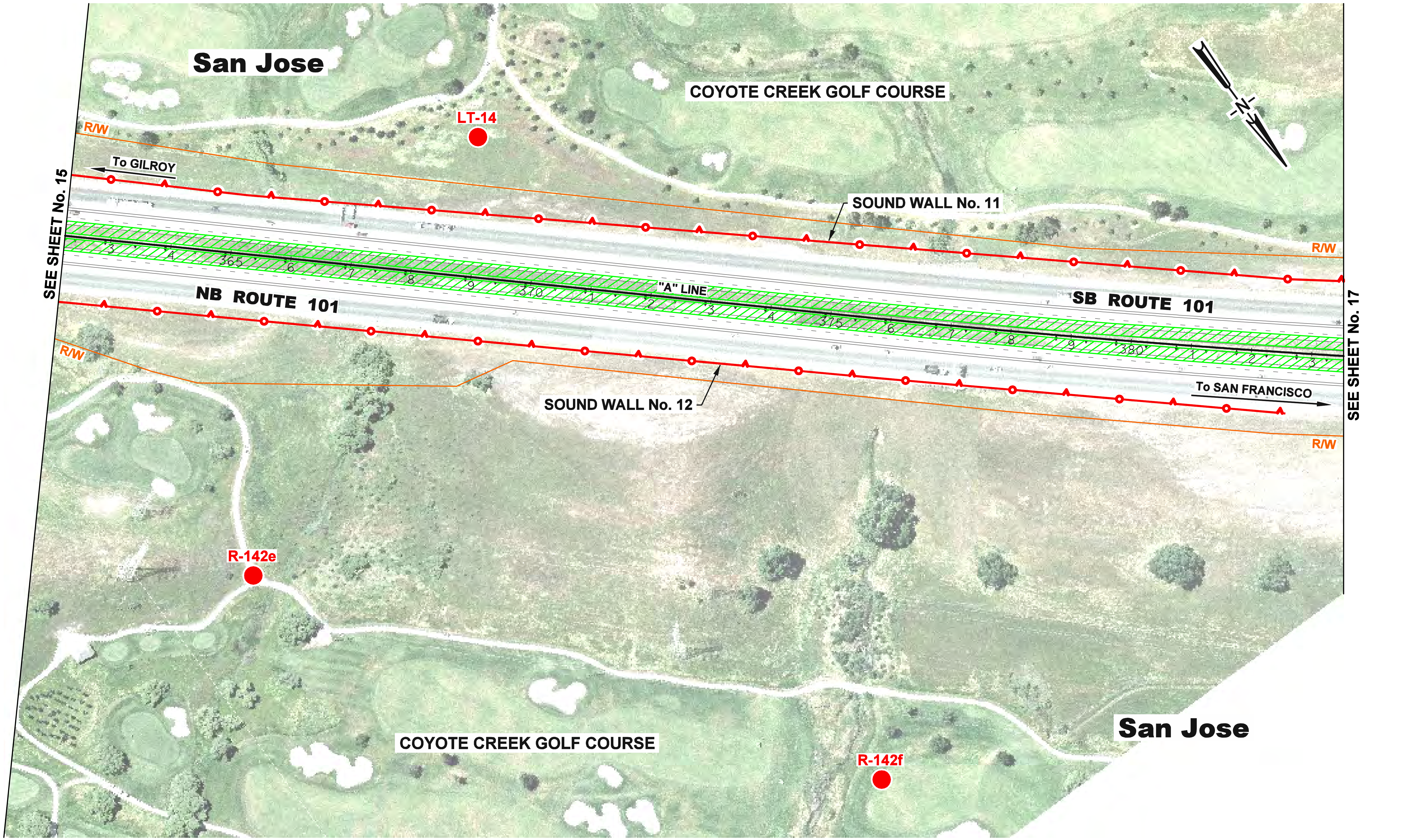
FREEWAY WIDENING
AUXILIARY LANE
EXISTING SOUND WALL
MODELED SOUND WALL
NOISE RECEPTOR LOCATION

0 Ft 100 Ft 200 Ft 400 Ft 600 Ft 800 Ft 1000 Ft

PROPOSED MAJOR PROJECT FEATURES AND MODELED NOISE RECEPTOR & BARRIER LOCATIONS
US 101 EXPRESS LANES PROJECT

DATE: 10/3/2014

SHEET 15 OF 80



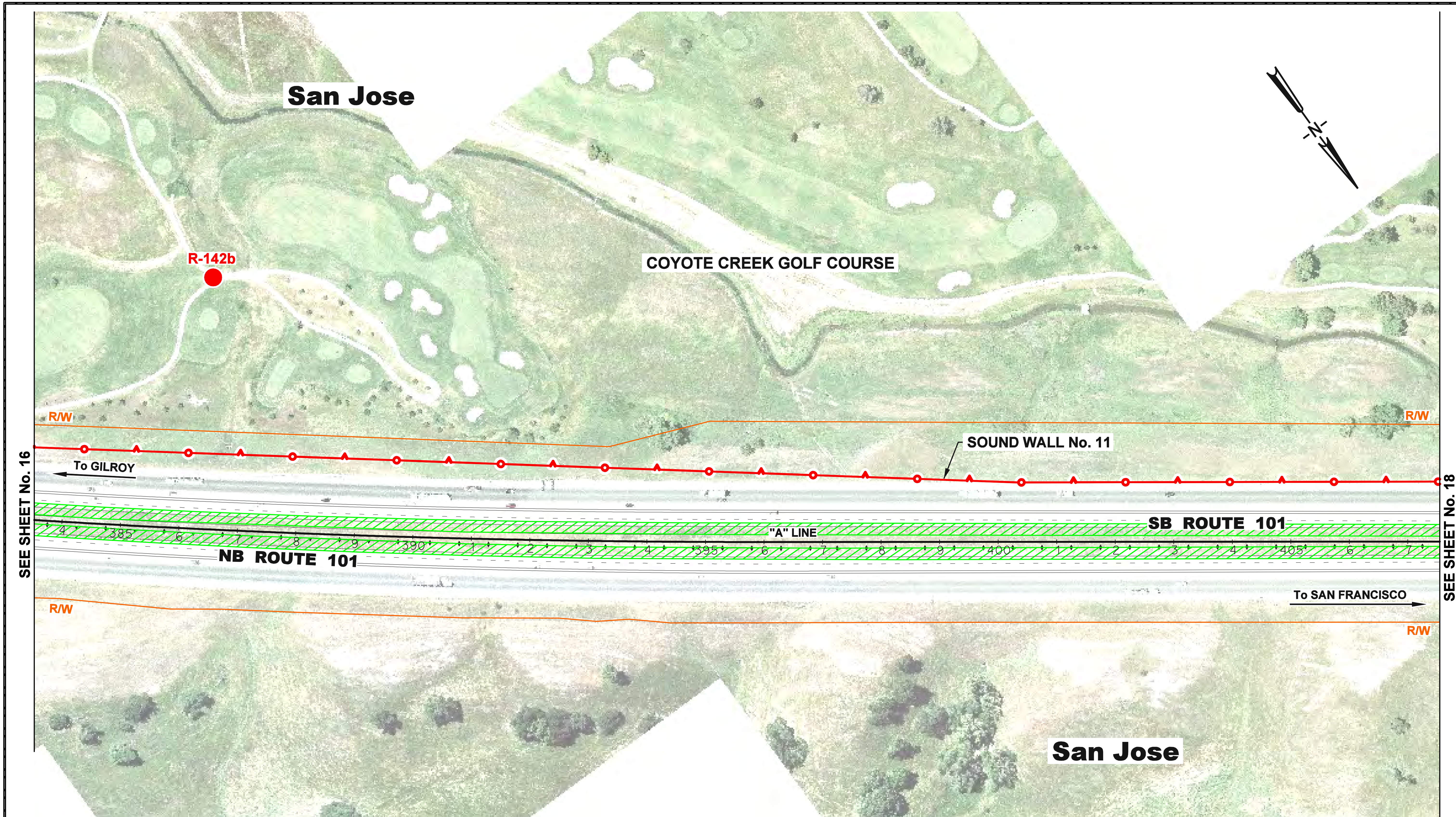
LEGEND:

- FREEWAY WIDENING
- AUXILIARY LANE
- EXISTING SOUND WALL
- MODELED SOUND WALL
- NOISE RECEPTOR LOCATION

0 Ft 100 Ft 200 Ft 400 Ft 600 Ft 800 Ft 1000 Ft

PROPOSED MAJOR PROJECT FEATURES AND MODELED NOISE RECEPTOR & BARRIER LOCATIONS US 101 EXPRESS LANES PROJECT

DATE: 10/3/2014



LEGEND:

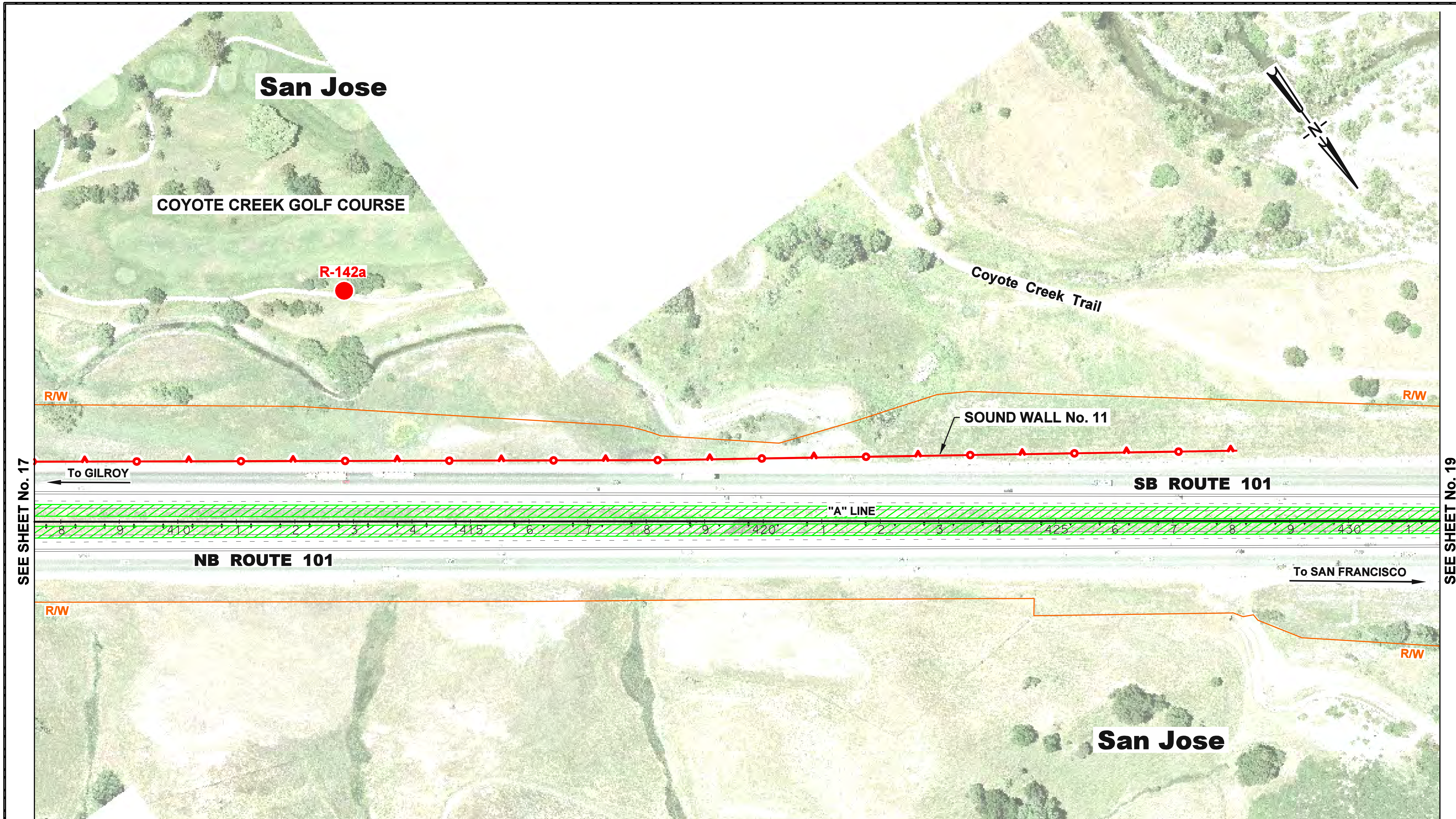
- FREEWAY WIDENING
- AUXILIARY LANE
- EXISTING SOUND WALL
- MODELED SOUND WALL
- NOISE RECEPTOR LOCATION

0 Ft 100 Ft 200 Ft 400 Ft 600 Ft 800 Ft 1000 Ft

PROPOSED MAJOR PROJECT FEATURES AND MODELED NOISE RECEPTOR & BARRIER LOCATIONS US 101 EXPRESS LANES PROJECT

DATE: 10/3/2014

SHEET 17 OF 80



LEGEND:

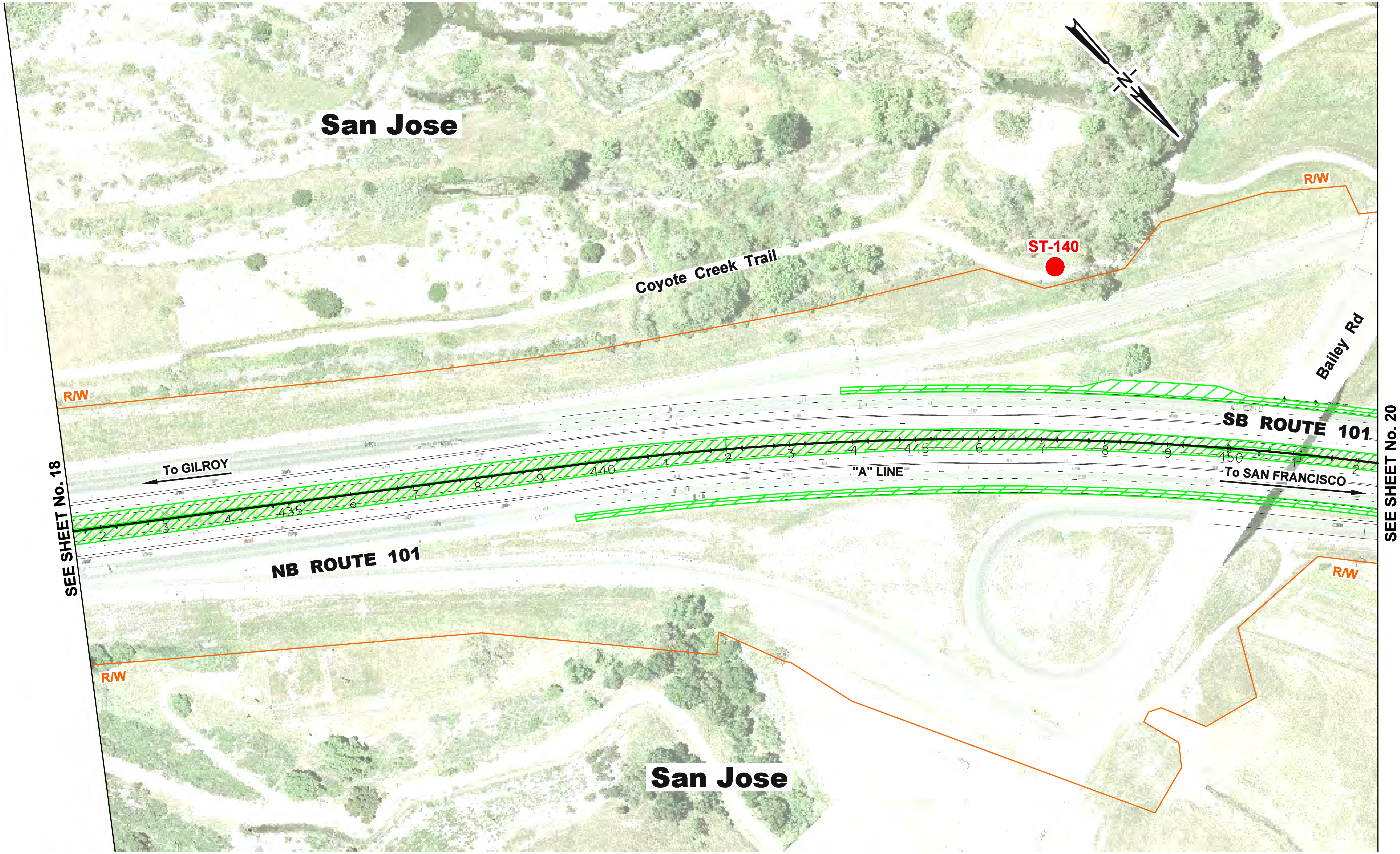
- FREEWAY WIDENING
- AUXILIARY LANE
- EXISTING SOUND WALL
- MODELED SOUND WALL
- NOISE RECEPTOR LOCATION

0 Ft 100 Ft 200 Ft 400 Ft 600 Ft 800 Ft 1000 Ft

PROPOSED MAJOR PROJECT FEATURES AND MODELED NOISE RECEPTOR & BARRIER LOCATIONS US 101 EXPRESS LANES PROJECT

DATE: 10/3/2014

SHEET 18 OF 80



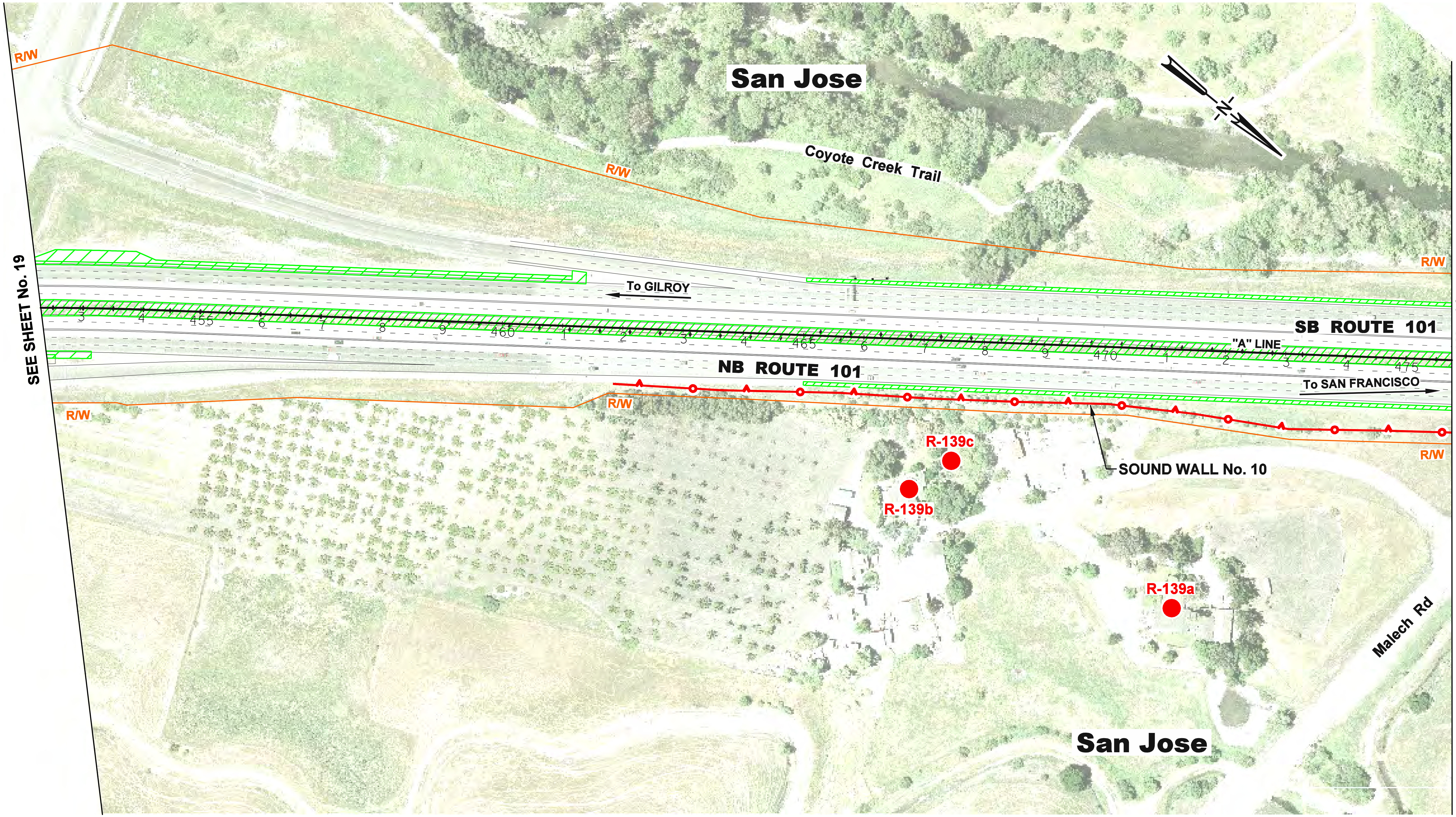
LEGEND:

- FREEWAY WIDENING
- AUXILIARY LANE
- EXISTING SOUND WALL
- MODELED SOUND WALL
- NOISE RECEPTOR LOCATION

0 Ft 100 Ft 200 Ft 400 Ft 600 Ft 800 Ft 1000 Ft

PROPOSED MAJOR PROJECT FEATURES AND MODELED NOISE RECEPTOR & BARRIER LOCATIONS US 101 EXPRESS LANES PROJECT

DATE: 10/3/2014



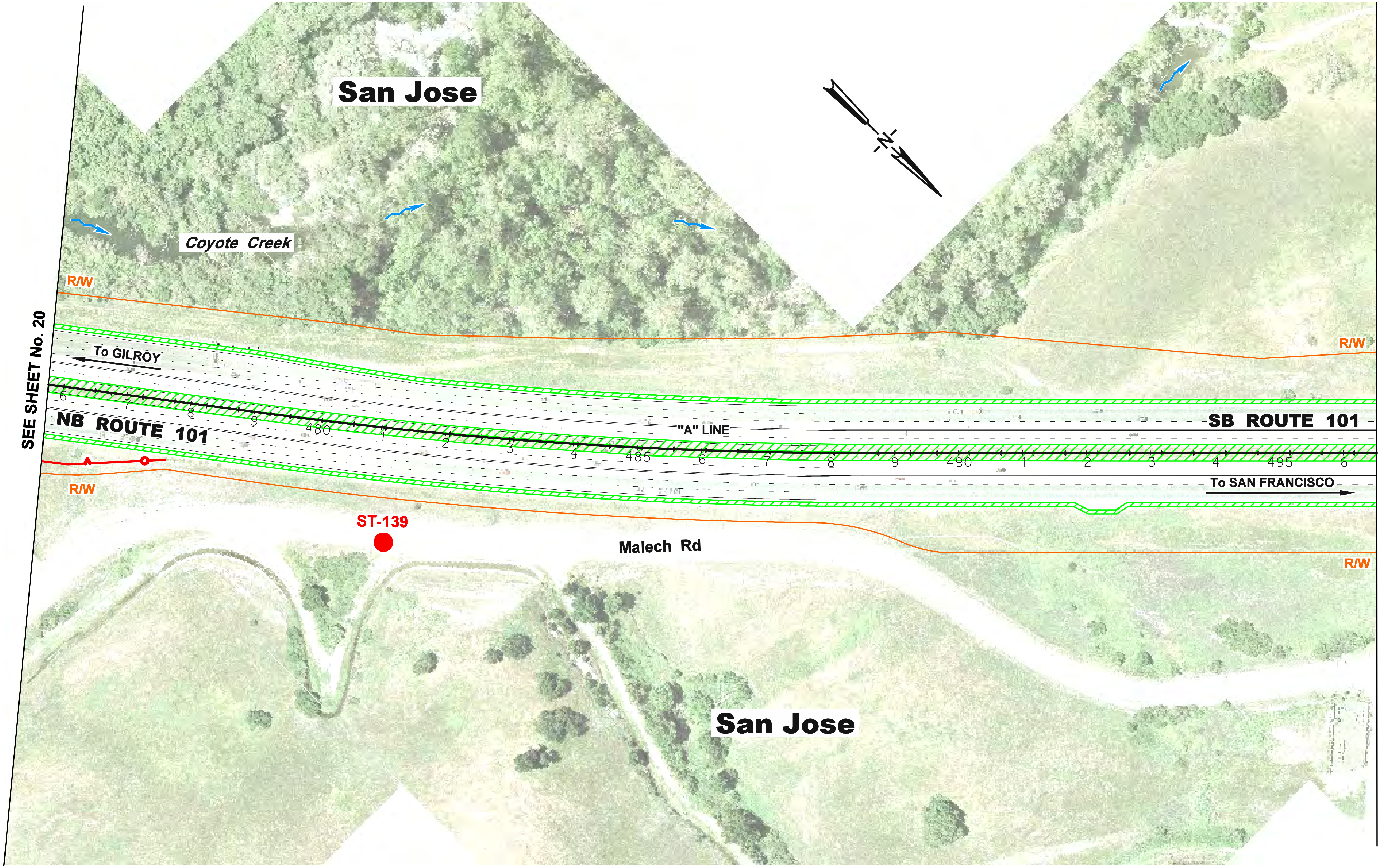
LEGEND:

- FREEWAY WIDENING
- AUXILIARY LANE
- EXISTING SOUND WALL
- MODELED SOUND WALL
- NOISE RECEPTOR LOCATION

0 Ft | 100 Ft | 200 Ft | 400 Ft | 600 Ft | 800 Ft | 1000 Ft

PROPOSED MAJOR PROJECT FEATURES AND MODELED NOISE RECEPTOR & BARRIER LOCATIONS US 101 EXPRESS LANES PROJECT

DATE: 10/3/2014



LEGEND:

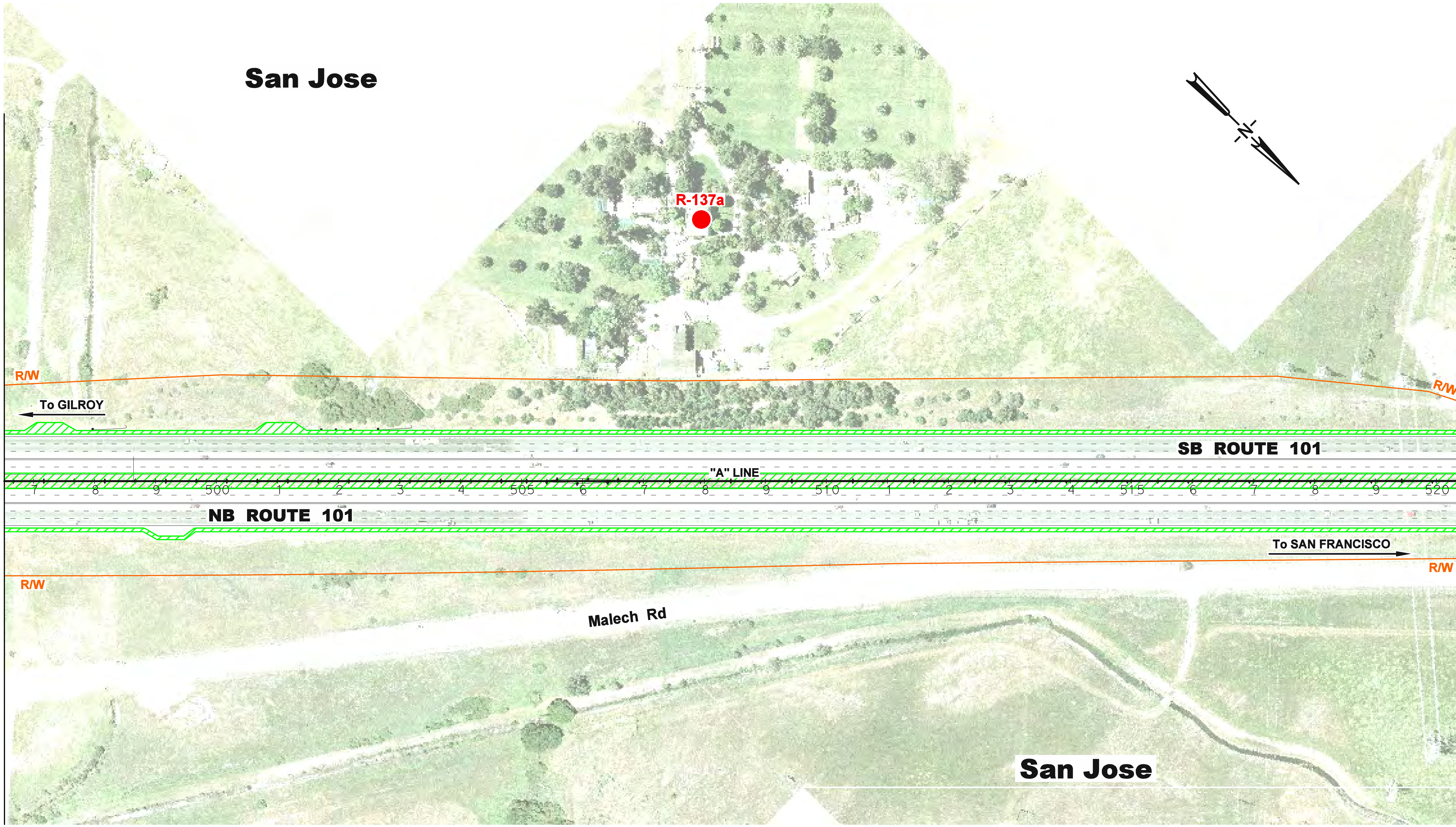
- FREEWAY WIDENING
- AUXILIARY LANE
- EXISTING SOUND WALL
- MODELED SOUND WALL
- NOISE RECEPTOR LOCATION

0 Ft 100 Ft 200 Ft 400 Ft 600 Ft 800 Ft 1000 Ft

PROPOSED MAJOR PROJECT FEATURES AND MODELED NOISE RECEPTOR & BARRIER LOCATIONS US 101 EXPRESS LANES PROJECT

DATE: 10/3/2014

SEE SHEET No. 21



SEE SHEET No. 23

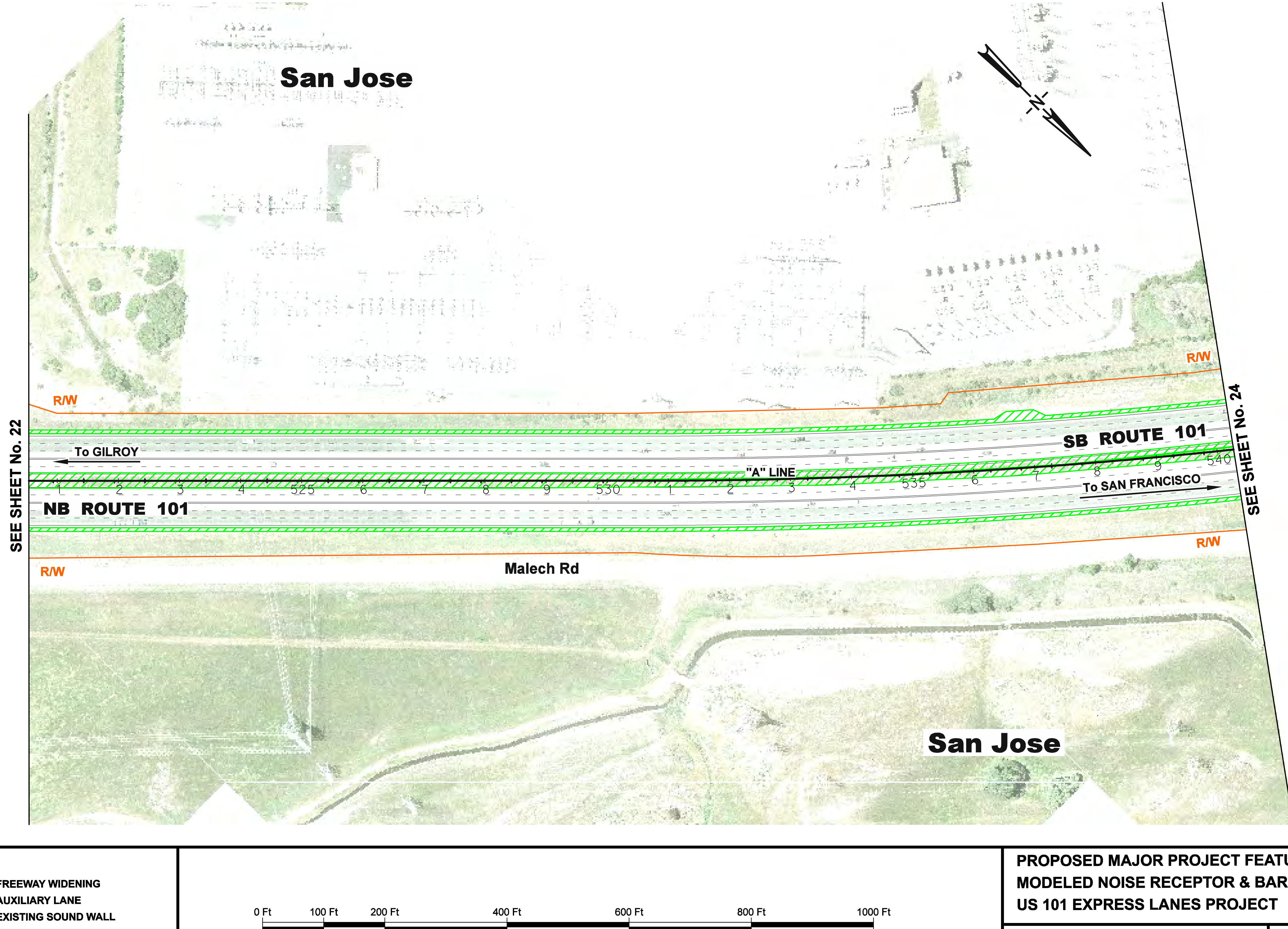
LEGEND:

- FREEWAY WIDENING
- AUXILIARY LANE
- EXISTING SOUND WALL
- MODELED SOUND WALL
- NOISE RECEPTOR LOCATION

0 Ft 100 Ft 200 Ft 400 Ft 600 Ft 800 Ft 1000 Ft

PROPOSED MAJOR PROJECT FEATURES AND MODELED NOISE RECEPTOR & BARRIER LOCATIONS US 101 EXPRESS LANES PROJECT

DATE: 10/3/2014

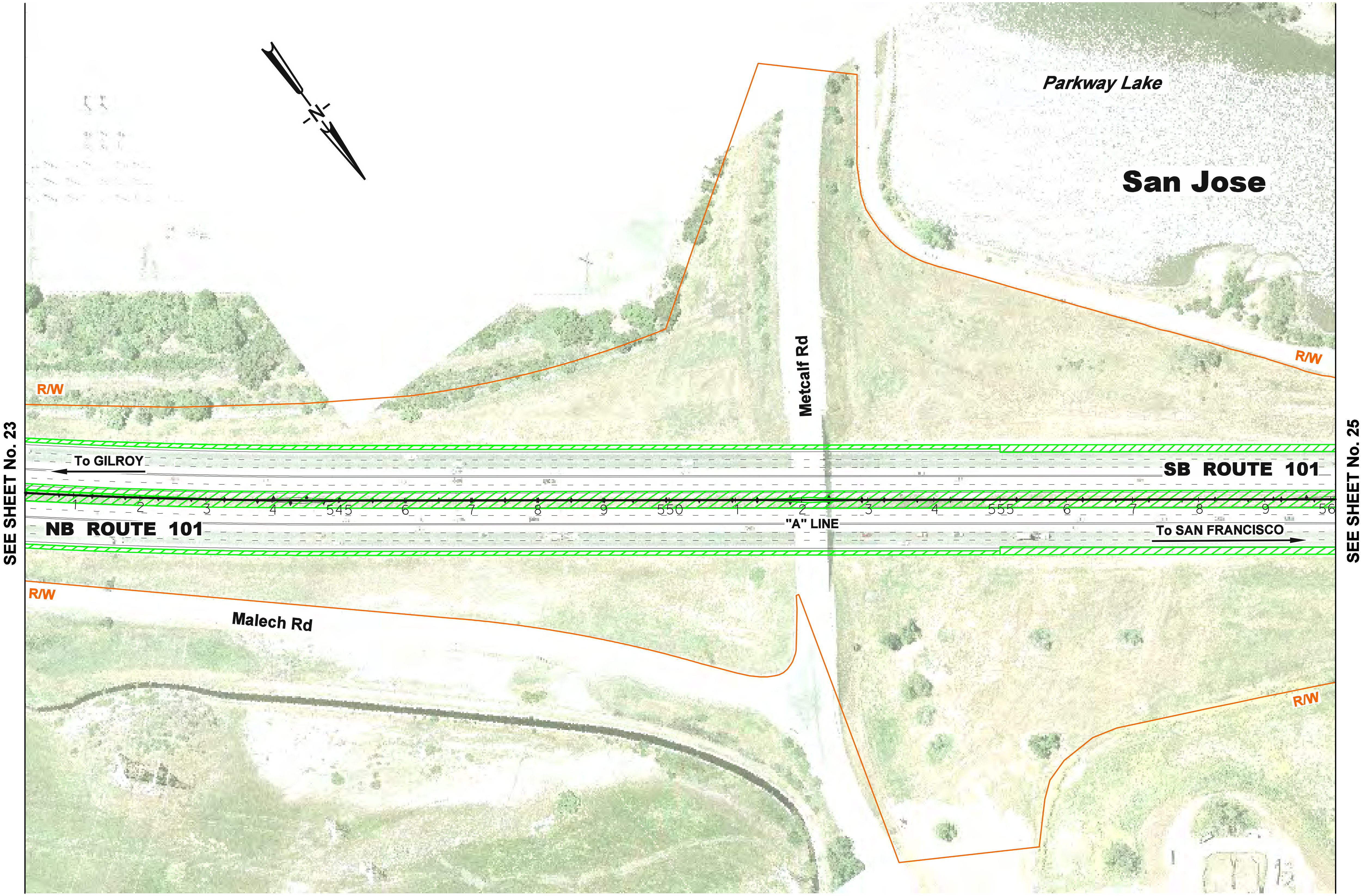


LEGEND:

- FREEWAY WIDENING
- AUXILIARY LANE
- EXISTING SOUND WALL
- MODELED SOUND WALL
- NOISE RECEPTOR LOCATION

PROPOSED MAJOR PROJECT FEATURES AND MODELED NOISE RECEPTOR & BARRIER LOCATIONS US 101 EXPRESS LANES PROJECT

DATE: 10/3/2014



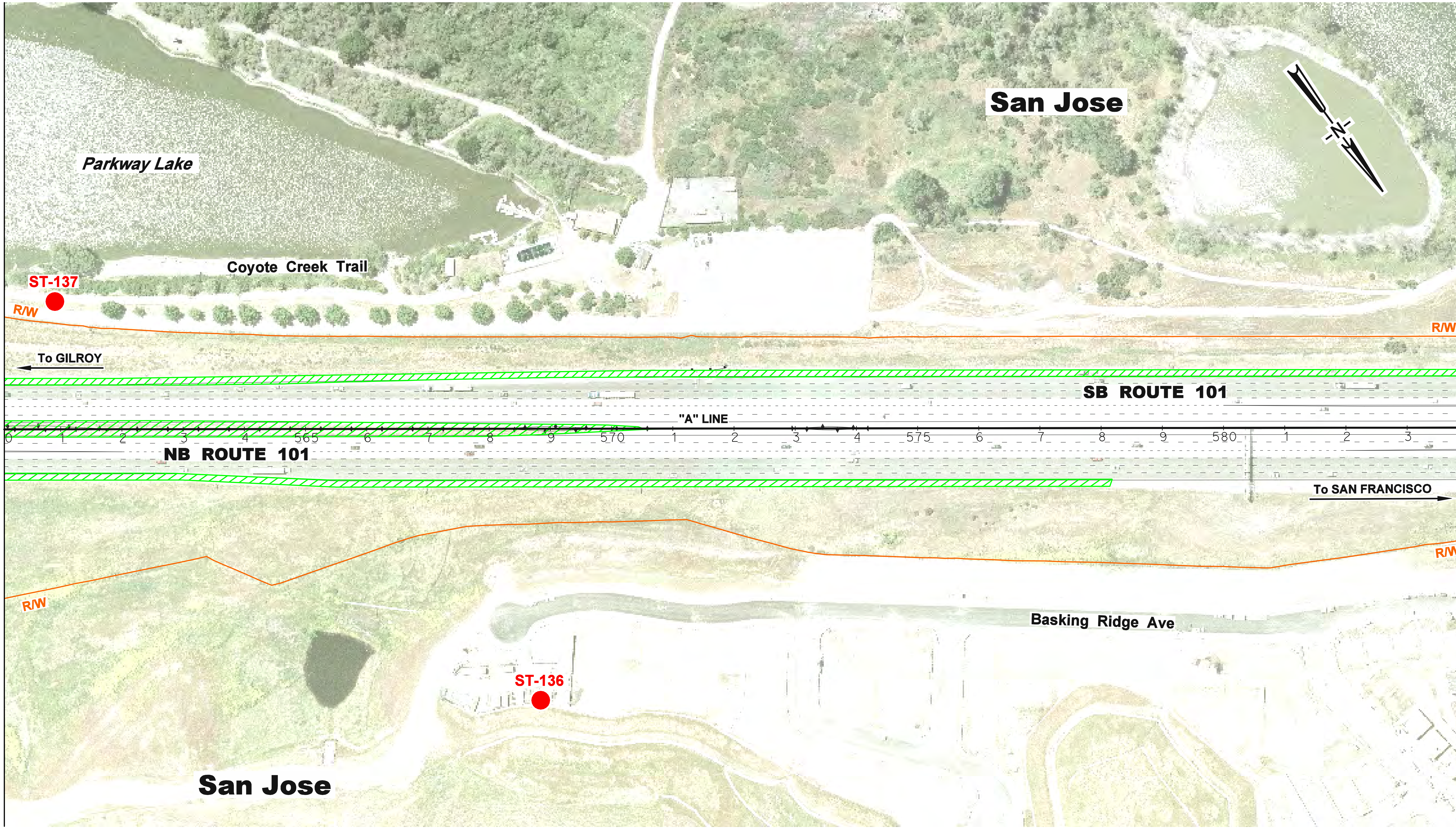
LEGEND:

- FREEWAY WIDENING
- AUXILIARY LANE
- EXISTING SOUND WALL
- MODELED SOUND WALL
- NOISE RECEPTOR LOCATION

0 Ft 100 Ft 200 Ft 400 Ft 600 Ft 800 Ft 1000 Ft

PROPOSED MAJOR PROJECT FEATURES AND MODELED NOISE RECEPTOR & BARRIER LOCATIONS US 101 EXPRESS LANES PROJECT

DATE: 10/3/2014



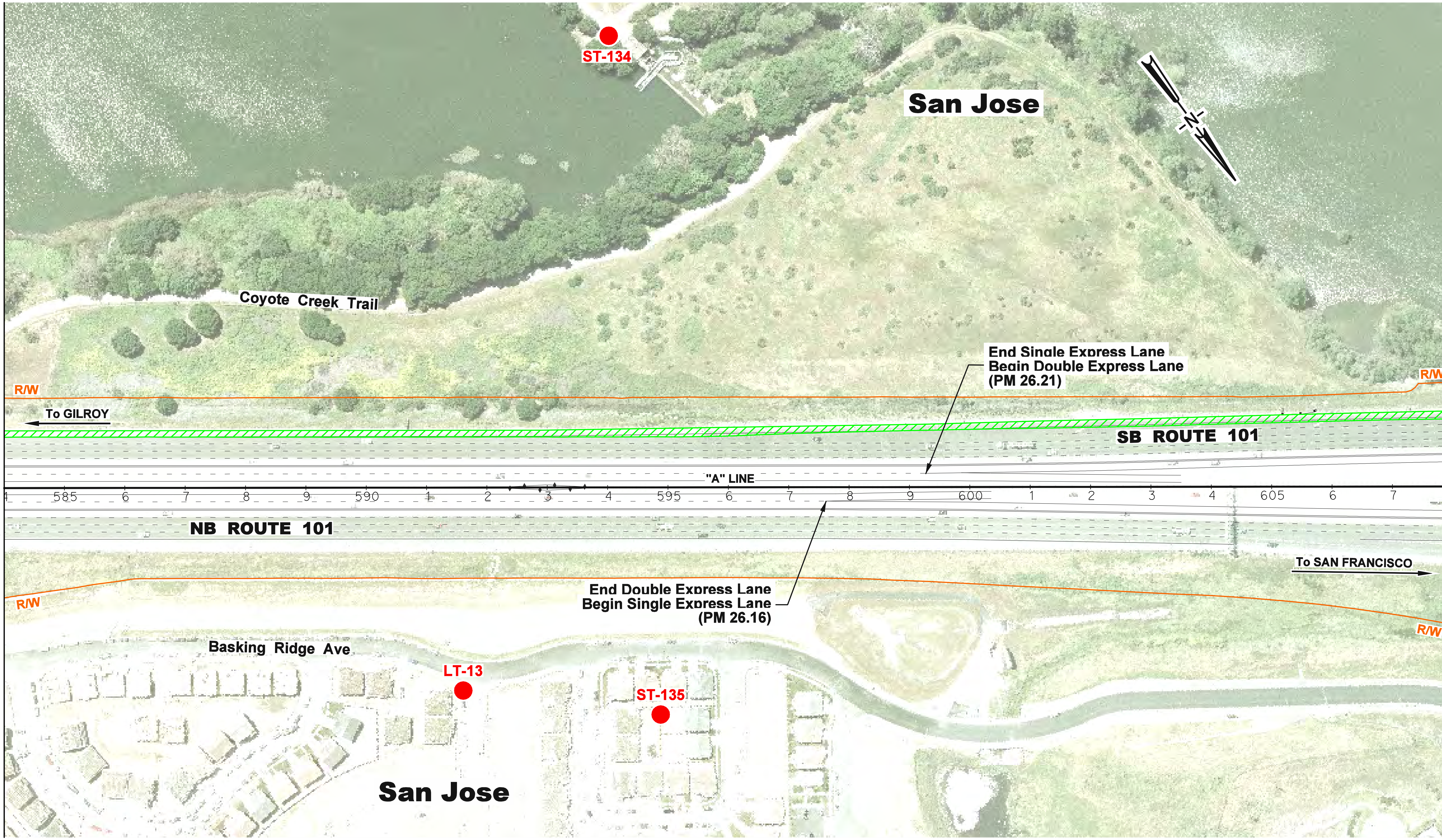
LEGEND:

- FREEWAY WIDENING
- AUXILIARY LANE
- EXISTING SOUND WALL
- MODELED SOUND WALL
- NOISE RECEPTOR LOCATION

0 Ft 100 Ft 200 Ft 400 Ft 600 Ft 800 Ft 1000 Ft

PROPOSED MAJOR PROJECT FEATURES AND MODELED NOISE RECEPTOR & BARRIER LOCATIONS US 101 EXPRESS LANES PROJECT

DATE: 10/3/2014



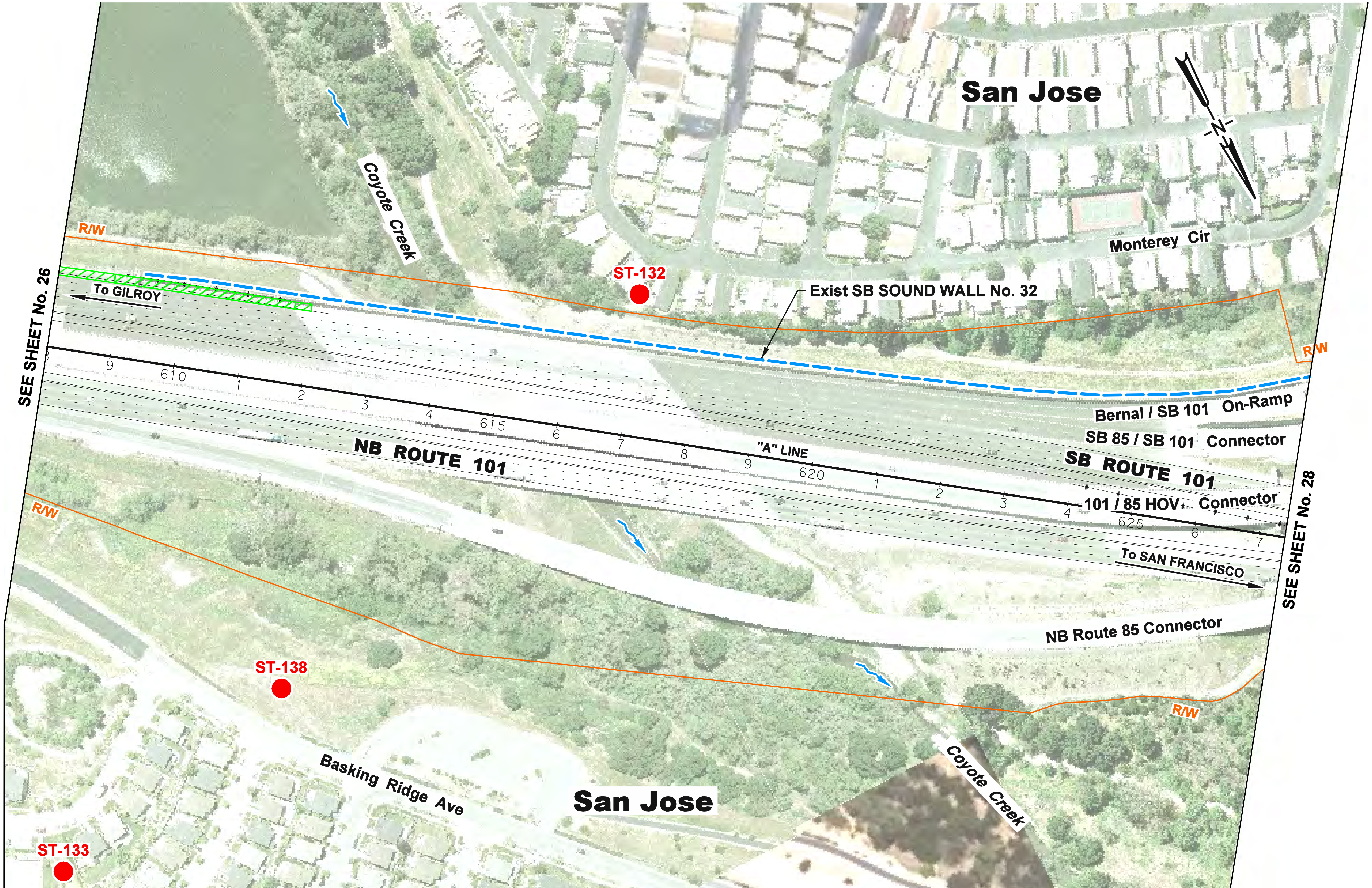
LEGEND:

- FREEWAY WIDENING
- AUXILIARY LANE
- EXISTING SOUND WALL
- MODELED SOUND WALL
- NOISE RECEPTOR LOCATION

0 Ft 100 Ft 200 Ft 400 Ft 600 Ft 800 Ft 1000 Ft

PROPOSED MAJOR PROJECT FEATURES AND MODELED NOISE RECEPTOR & BARRIER LOCATIONS US 101 EXPRESS LANES PROJECT

DATE: 10/3/2014



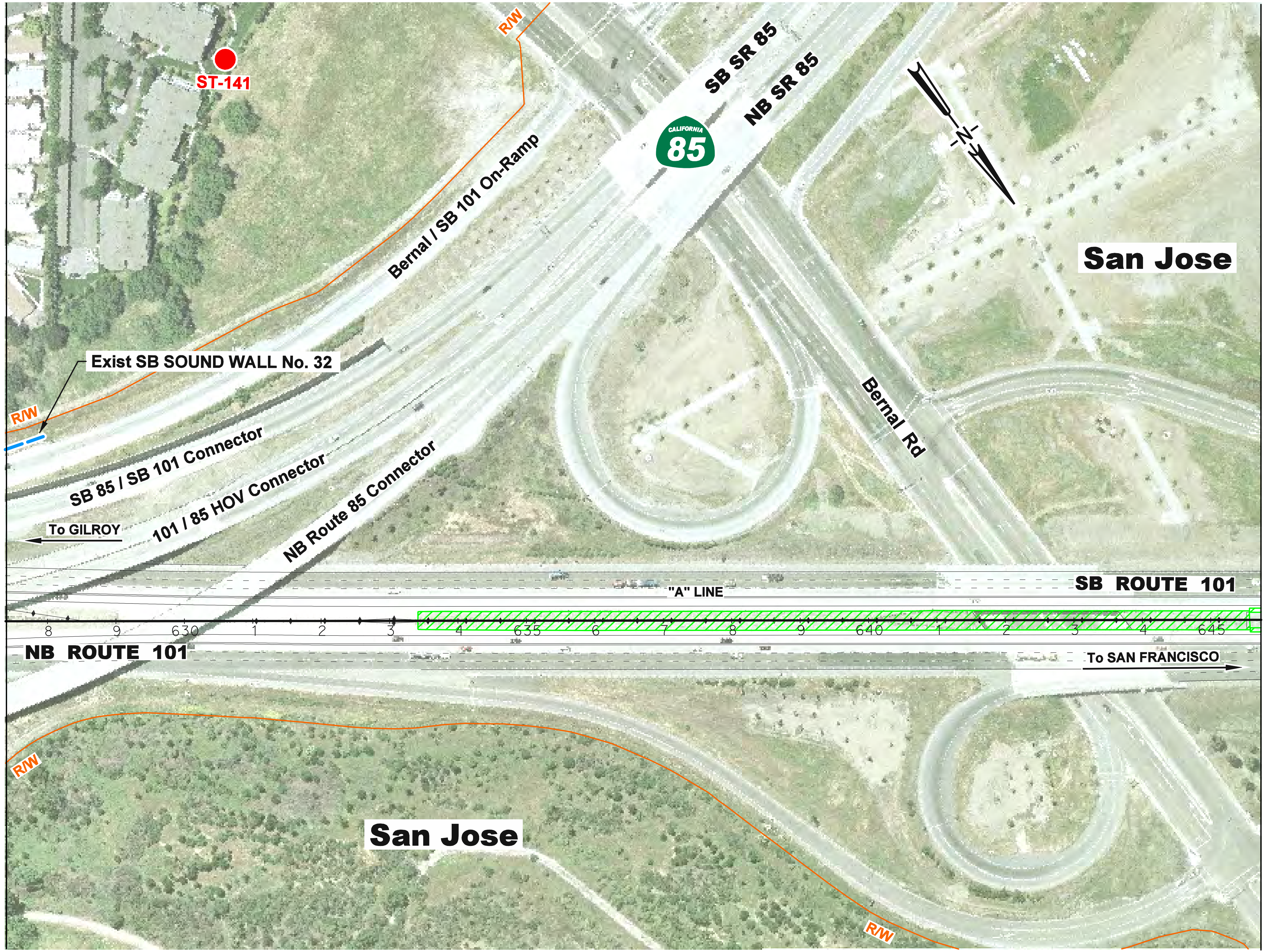
LEGEND:

- FREEWAY WIDENING
- AUXILIARY LANE
- EXISTING SOUND WALL
- MODELED SOUND WALL
- NOISE RECEPTOR LOCATION

0 Ft 100 Ft 200 Ft 400 Ft 600 Ft 800 Ft 1000 Ft

PROPOSED MAJOR PROJECT FEATURES AND MODELED NOISE RECEPTOR & BARRIER LOCATIONS US 101 EXPRESS LANES PROJECT

DATE: 10/3/2014



LEGEND:

- FREEWAY WIDENING
- AUXILIARY LANE
- EXISTING SOUND WALL
- MODELED SOUND WALL
- NOISE RECEPTOR LOCATION

0 Ft 100 Ft 200 Ft 400 Ft 600 Ft 800 Ft 1000 Ft

PROPOSED MAJOR PROJECT FEATURES AND MODELED NOISE RECEPTOR & BARRIER LOCATIONS US 101 EXPRESS LANES PROJECT

DATE: 10/3/2014

SEE SHEET No. 28

SEE SHEET No. 30

LEGEND:

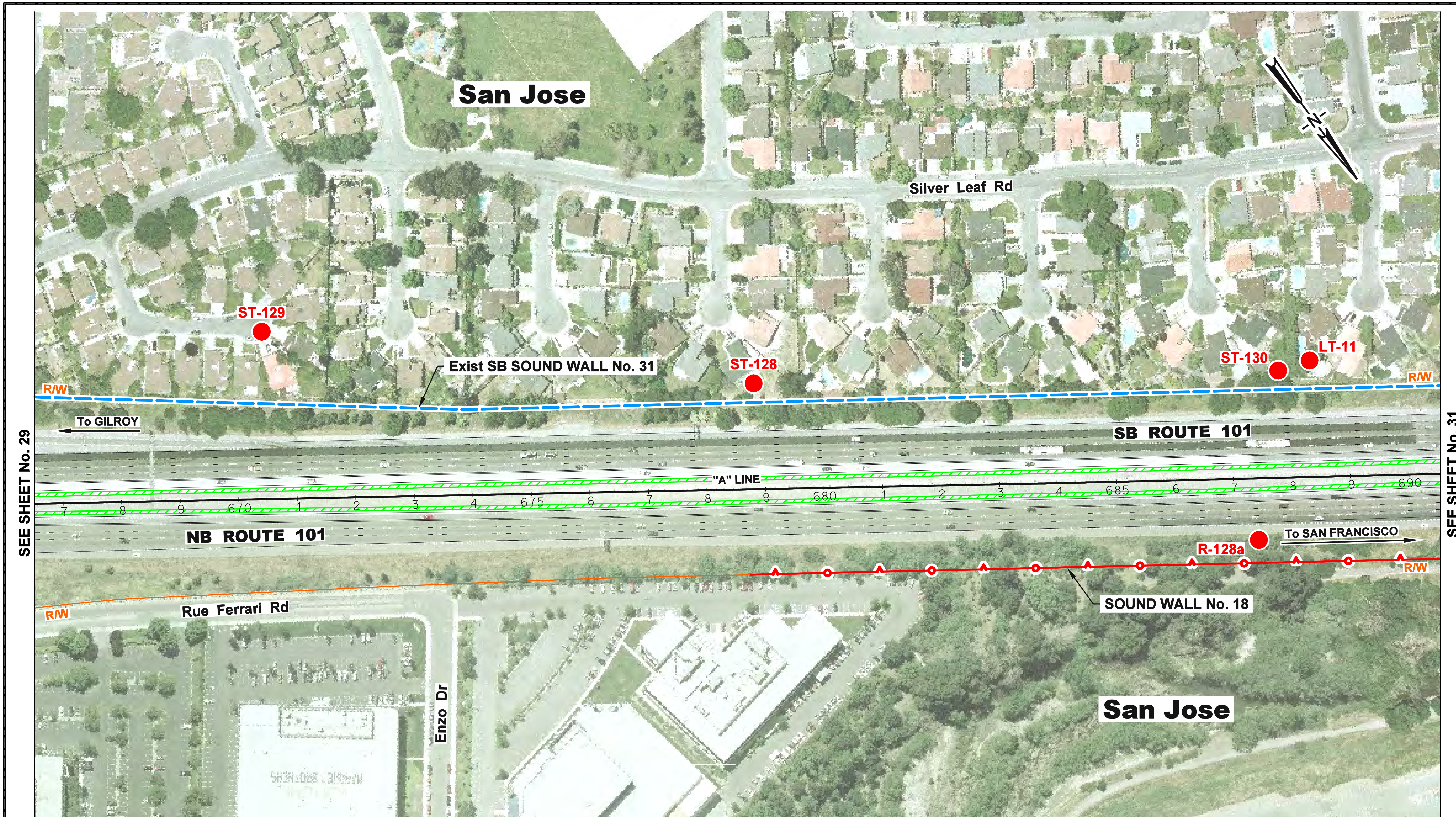
- FREEWAY WIDENING
- AUXILIARY LANE
- EXISTING SOUND WALL
- MODELED SOUND WALL
- NOISE RECEPTOR LOCATION

0 Ft | 100 Ft | 200 Ft | 400 Ft | 600 Ft | 800 Ft | 1000 Ft

PROPOSED MAJOR PROJECT FEATURES AND MODELED NOISE RECEPTOR & BARRIER LOCATIONS US 101 EXPRESS LANES PROJECT

DATE: 10/3/2014

SHEET 29 OF 80



LEGEND:

- FREEWAY WIDENING
- AUXILIARY LANE
- EXISTING SOUND WALL
- MODELED SOUND WALL
- NOISE RECEPTOR LOCATION

0 Ft 100 Ft 200 Ft 400 Ft 600 Ft 800 Ft 1000 Ft

PROPOSED MAJOR PROJECT FEATURES AND MODELED NOISE RECEPTOR & BARRIER LOCATIONS US 101 EXPRESS LANES PROJECT

DATE: 10/3/2014

LEGEND:

- FREEWAY WIDENING
- AUXILIARY LANE
- EXISTING SOUND WALL
- MODELED SOUND WALL
- NOISE RECEPTOR LOCATION

0 Ft 100 Ft 200 Ft 400 Ft 600 Ft 800 Ft 1000 Ft

PROPOSED MAJOR PROJECT FEATURES AND MODELED NOISE RECEPTOR & BARRIER LOCATIONS US 101 EXPRESS LANES PROJECT

DATE: 10/3/2014

SHEET 31 OF 80

LEGEND:

- FREEWAY WIDENING
- AUXILIARY LANE
- EXISTING SOUND WALL
- MODELED SOUND WALL
- NOISE RECEPTOR LOCATION

0 Ft | 100 Ft | 200 Ft | 400 Ft | 600 Ft | 800 Ft | 1000 Ft

PROPOSED MAJOR PROJECT FEATURES AND MODELED NOISE RECEPTOR & BARRIER LOCATIONS US 101 EXPRESS LANES PROJECT

DATE: 10/3/2014

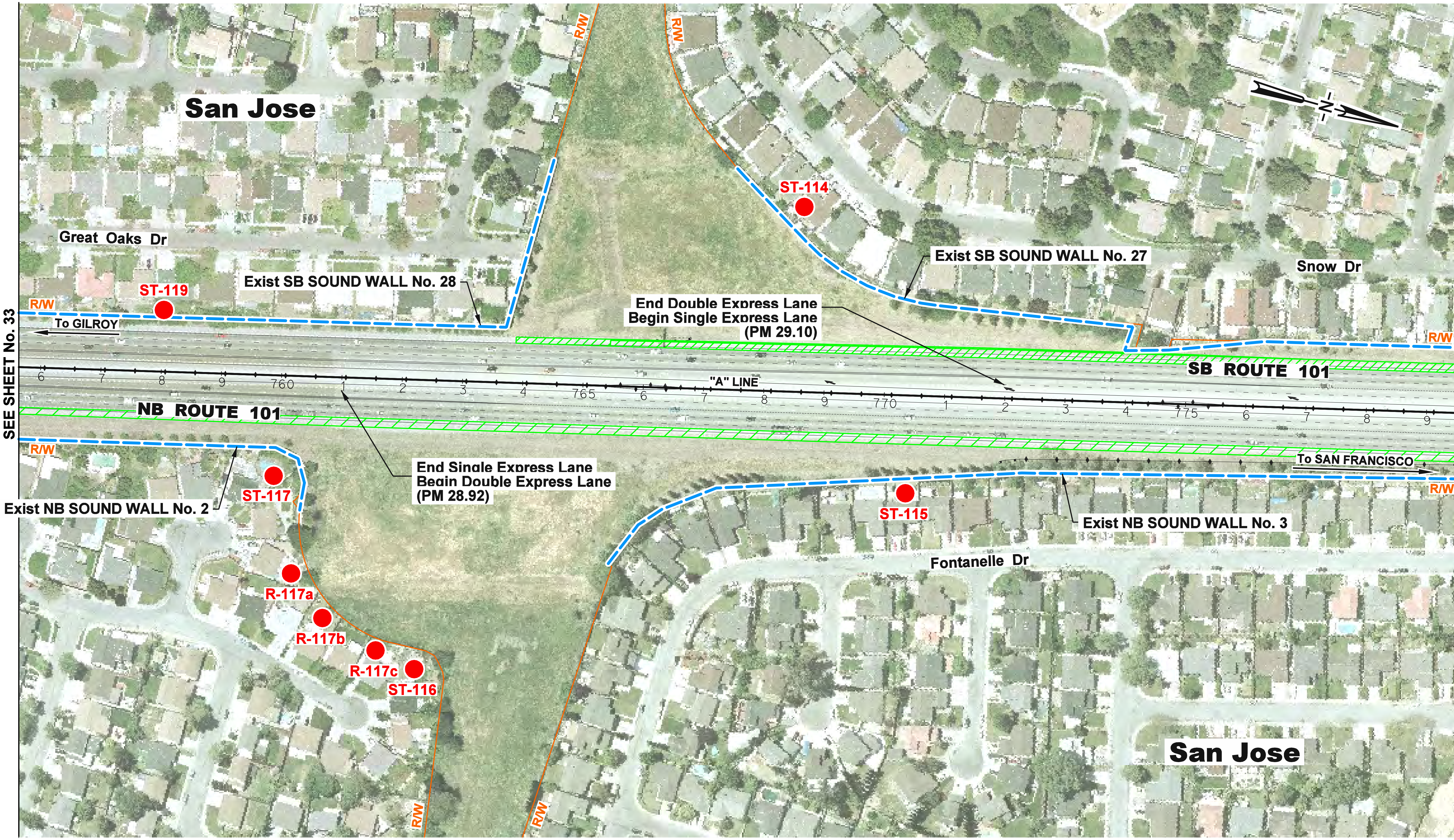
LEGEND:

- FREEWAY WIDENING
- AUXILIARY LANE
- EXISTING SOUND WALL
- MODELED SOUND WALL
- NOISE RECEPTOR LOCATION

0 Ft 100 Ft 200 Ft 400 Ft 600 Ft 800 Ft 1000 Ft

PROPOSED MAJOR PROJECT FEATURES AND MODELED NOISE RECEPTOR & BARRIER LOCATIONS
US 101 EXPRESS LANES PROJECT

DATE: 10/3/2014



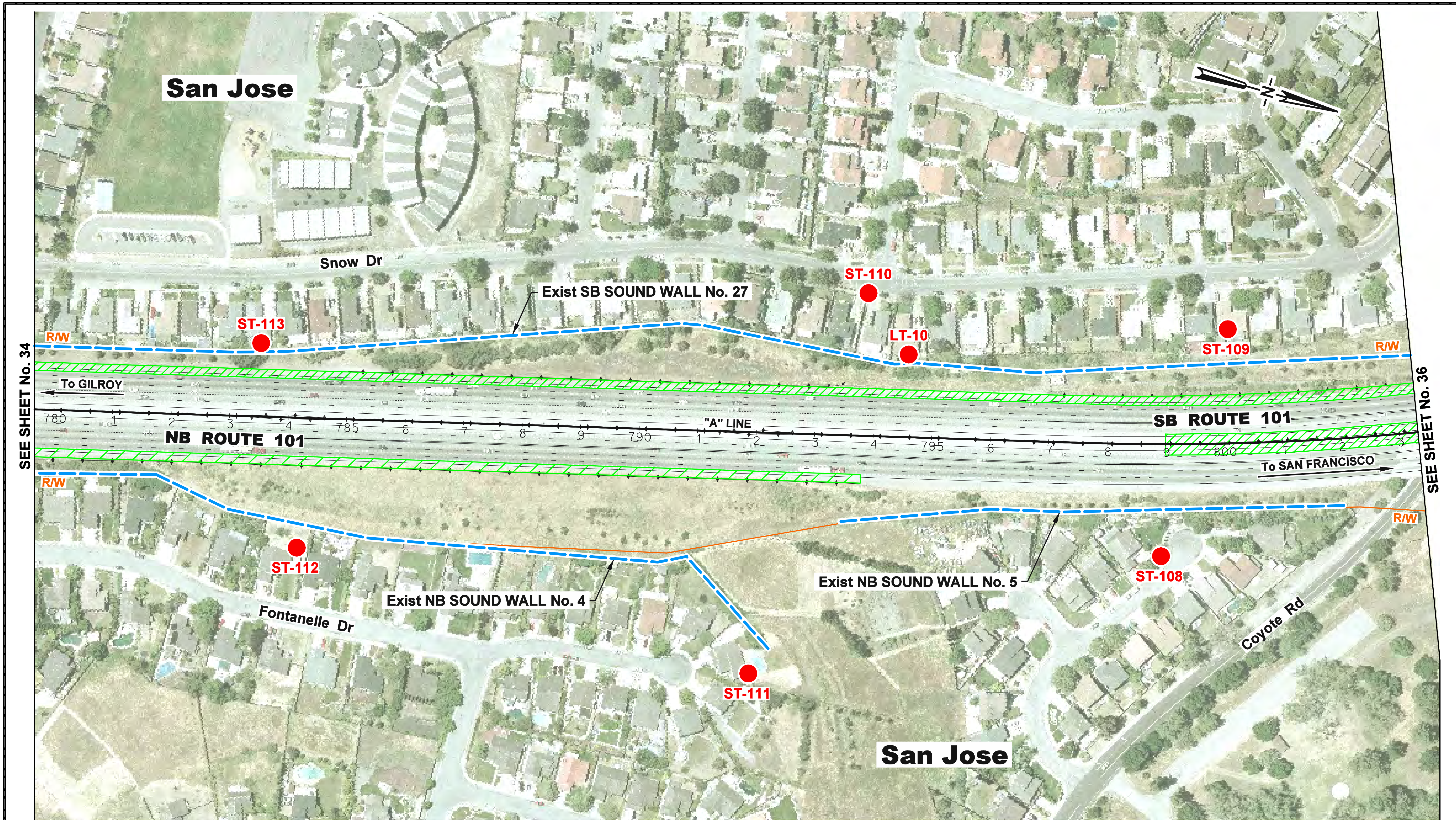
LEGEND:

- FREEWAY WIDENING
- AUXILIARY LANE
- EXISTING SOUND WALL
- MODELED SOUND WALL
- NOISE RECEPTOR LOCATION

PROPOSED MAJOR PROJECT FEATURES AND MODELED NOISE RECEPTOR & BARRIER LOCATIONS US 101 EXPRESS LANES PROJECT

DATE: 10/3/2014

SHEET 34 OF 80



LEGEND:

- FREEWAY WIDENING
- AUXILIARY LANE
- EXISTING SOUND WALL
- MODELED SOUND WALL
- NOISE RECEPTOR LOCATION

PROPOSED MAJOR PROJECT FEATURES AND MODELED NOISE RECEPTOR & BARRIER LOCATIONS US 101 EXPRESS LANES PROJECT

DATE: 10/3/2014

LEGEND:

- FREEWAY WIDENING
- AUXILIARY LANE
- EXISTING SOUND WALL
- MODELED SOUND WALL
- NOISE RECEPTOR LOCATION

0 Ft 100 Ft 200 Ft 400 Ft 600 Ft 800 Ft 1000 Ft

PROPOSED MAJOR PROJECT FEATURES AND MODELED NOISE RECEPTOR & BARRIER LOCATIONS US 101 EXPRESS LANES PROJECT

DATE: 10/3/2014

SHEET 36 OF 80

LEGEND:

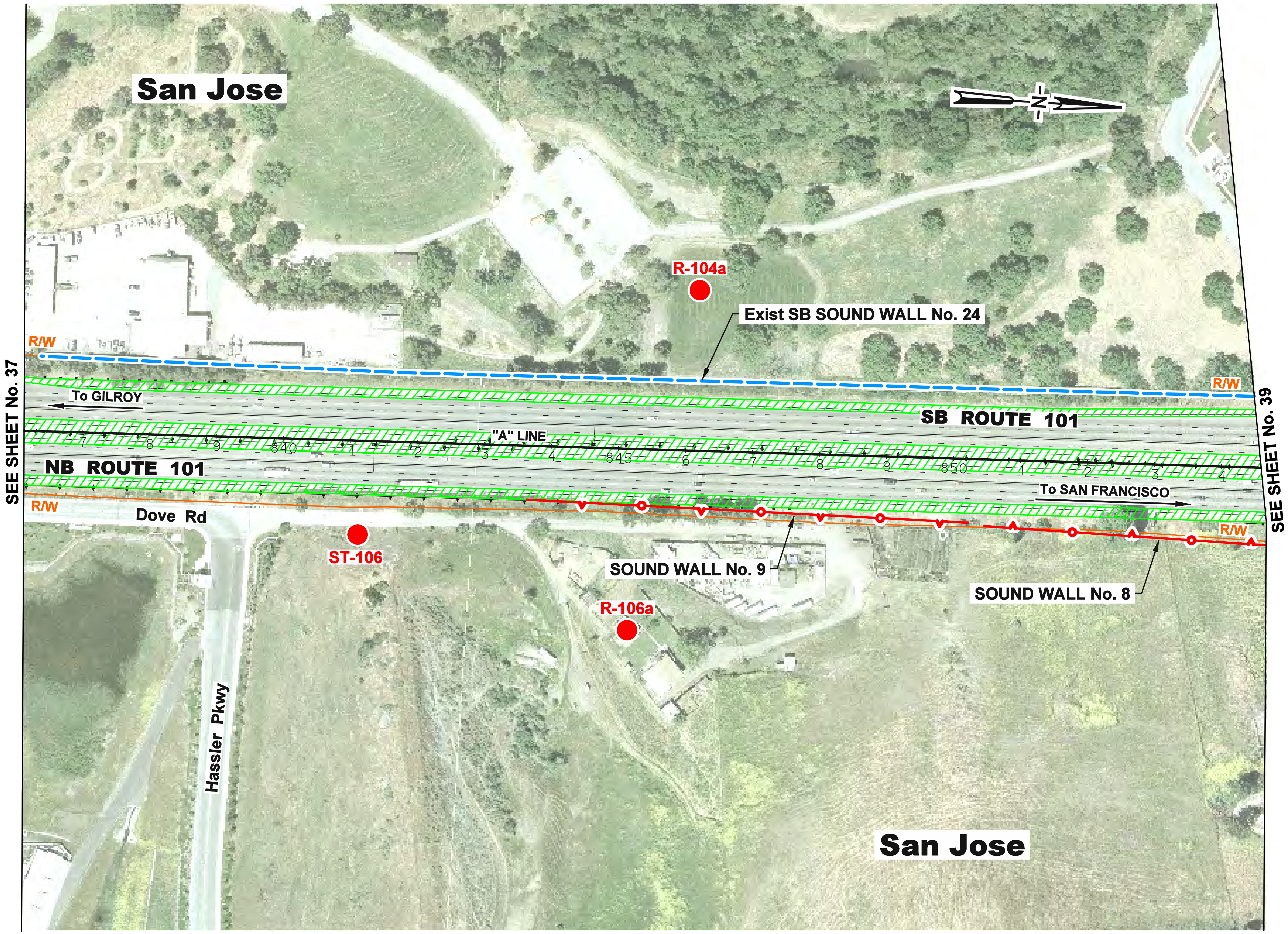
- FREEWAY WIDENING
- AUXILIARY LANE
- EXISTING SOUND WALL
- MODELED SOUND WALL
- NOISE RECEPTOR LOCATION

0 Ft 100 Ft 200 Ft 400 Ft 600 Ft 800 Ft 1000 Ft

PROPOSED MAJOR PROJECT FEATURES AND MODELED NOISE RECEPTOR & BARRIER LOCATIONS US 101 EXPRESS LANES PROJECT

DATE: 10/3/2014

SHEET 37 OF 80



LEGEND:

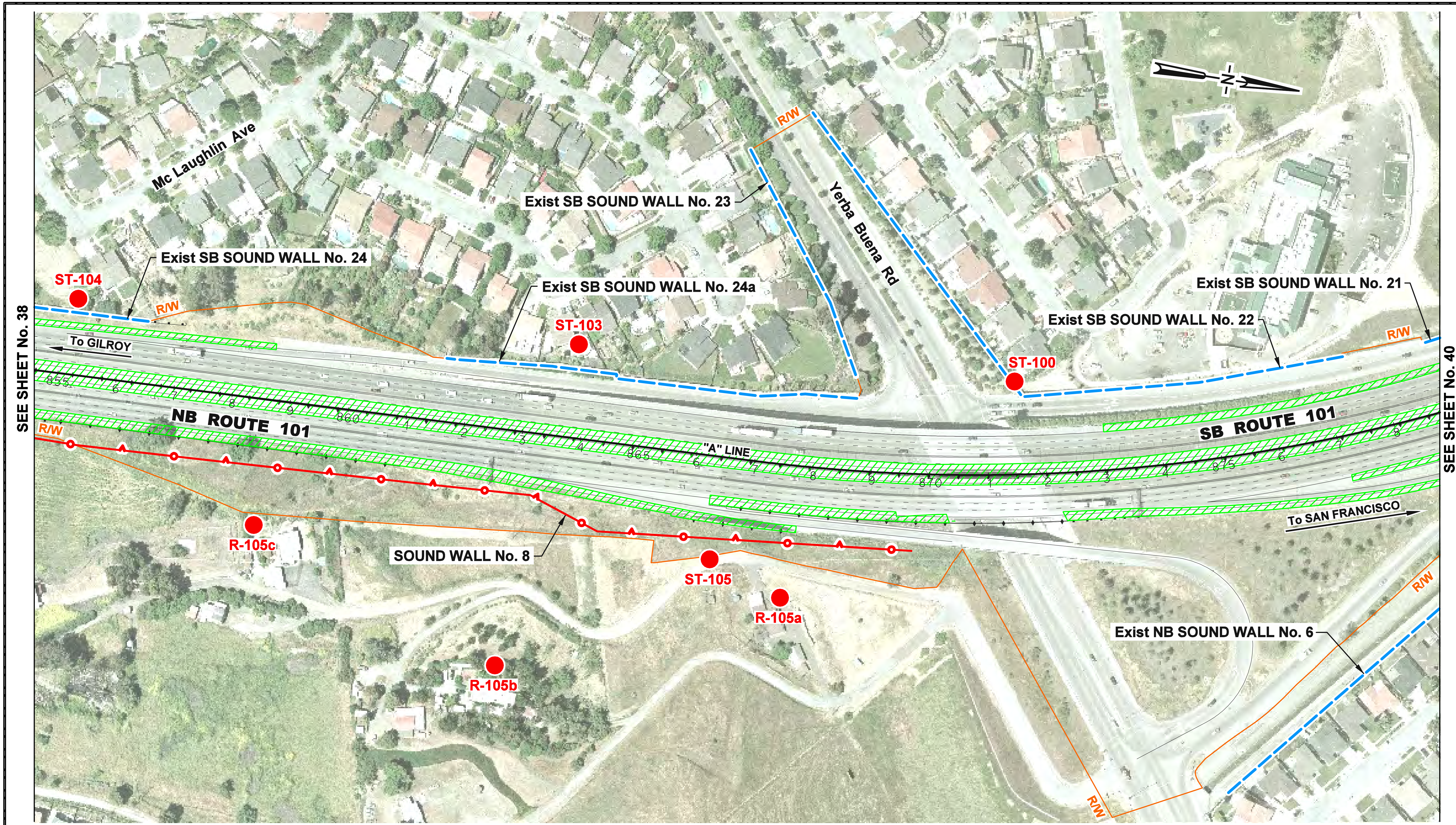
- FREEWAY WIDENING
- AUXILIARY LANE
- EXISTING SOUND WALL
- MODELED SOUND WALL
- NOISE RECEPTOR LOCATION

0 Ft 100 Ft 200 Ft 400 Ft 600 Ft 800 Ft 1000 Ft

PROPOSED MAJOR PROJECT FEATURES AND MODELED NOISE RECEPTOR & BARRIER LOCATIONS US 101 EXPRESS LANES PROJECT

DATE: 10/3/2014

SHEET 38 OF 80



LEGEND:

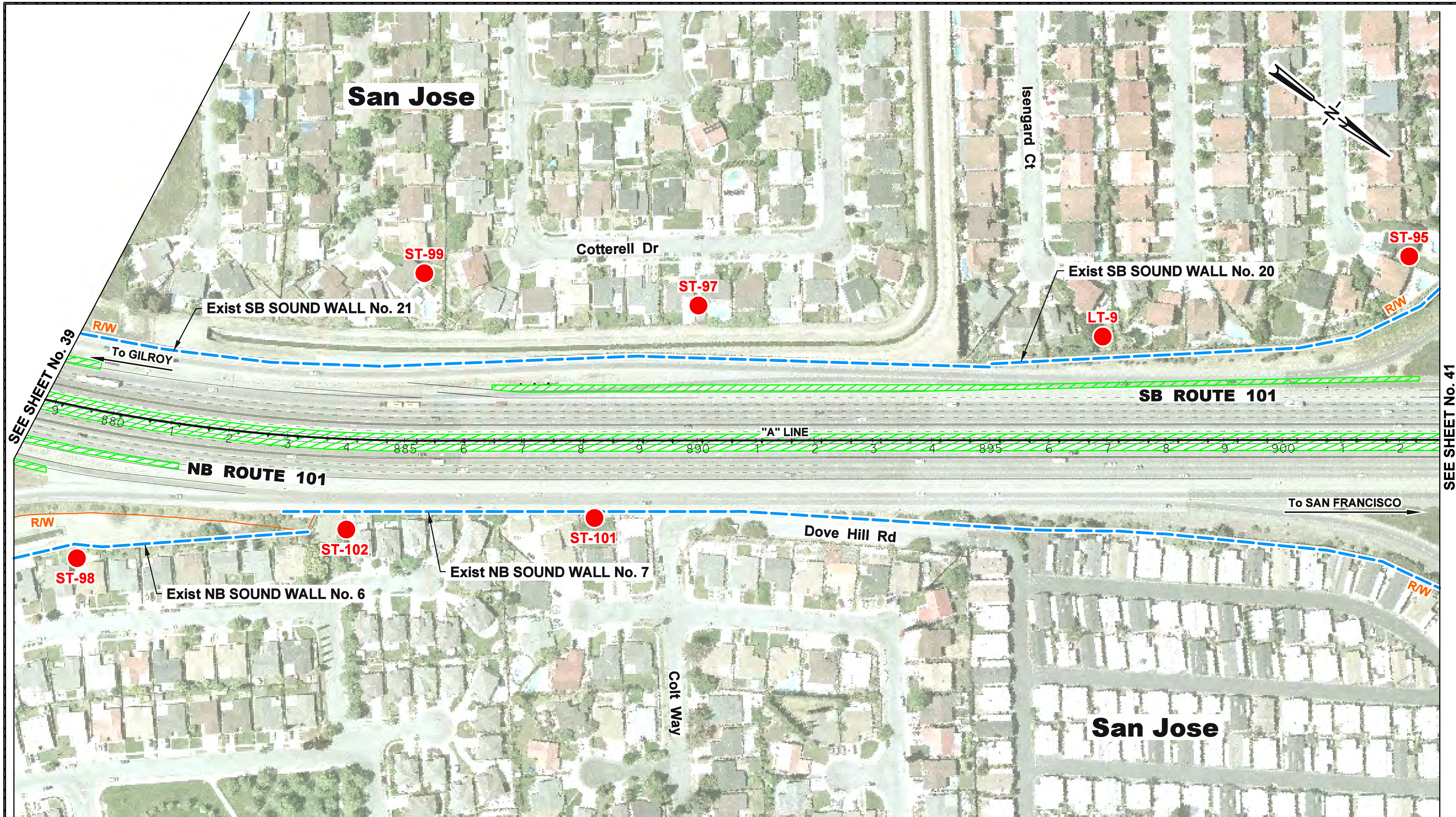
- FREEWAY WIDENING
- AUXILIARY LANE
- EXISTING SOUND WALL
- MODELED SOUND WALL
- NOISE RECEPTOR LOCATION

0 Ft | 100 Ft | 200 Ft | 400 Ft | 600 Ft | 800 Ft | 1000 Ft

PROPOSED MAJOR PROJECT FEATURES AND MODELED NOISE RECEPTOR & BARRIER LOCATIONS
US 101 EXPRESS LANES PROJECT

DATE: 10/3/2014

SHEET 39 OF 80



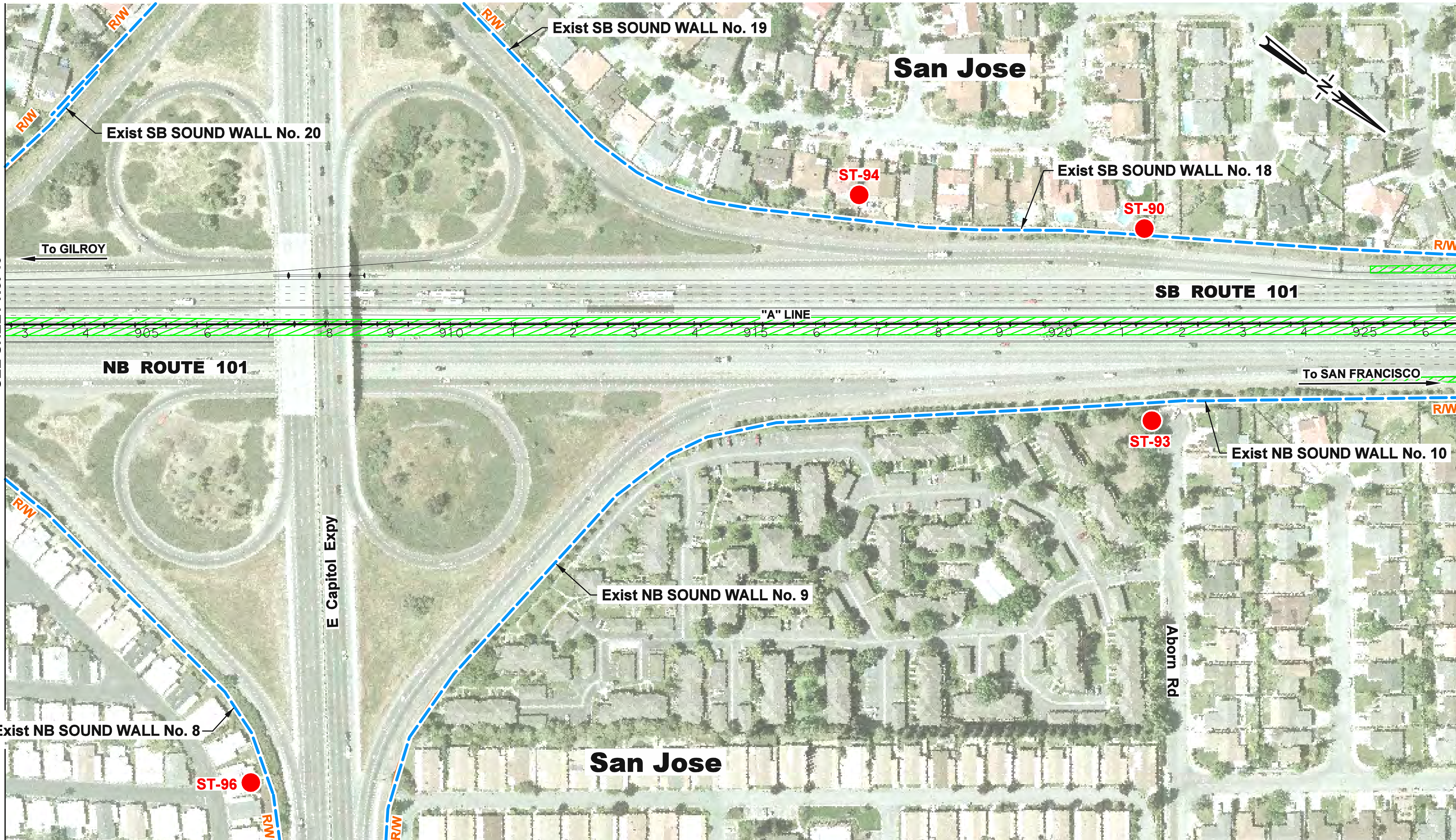
LEGEND:

- FREEWAY WIDENING
- AUXILIARY LANE
- EXISTING SOUND WALL
- MODELED SOUND WALL
- NOISE RECEPTOR LOCATION

0 Ft 100 Ft 200 Ft 400 Ft 600 Ft 800 Ft 1000 Ft

PROPOSED MAJOR PROJECT FEATURES AND MODELED NOISE RECEPTOR & BARRIER LOCATIONS US 101 EXPRESS LANES PROJECT

DATE: 10/3/2014



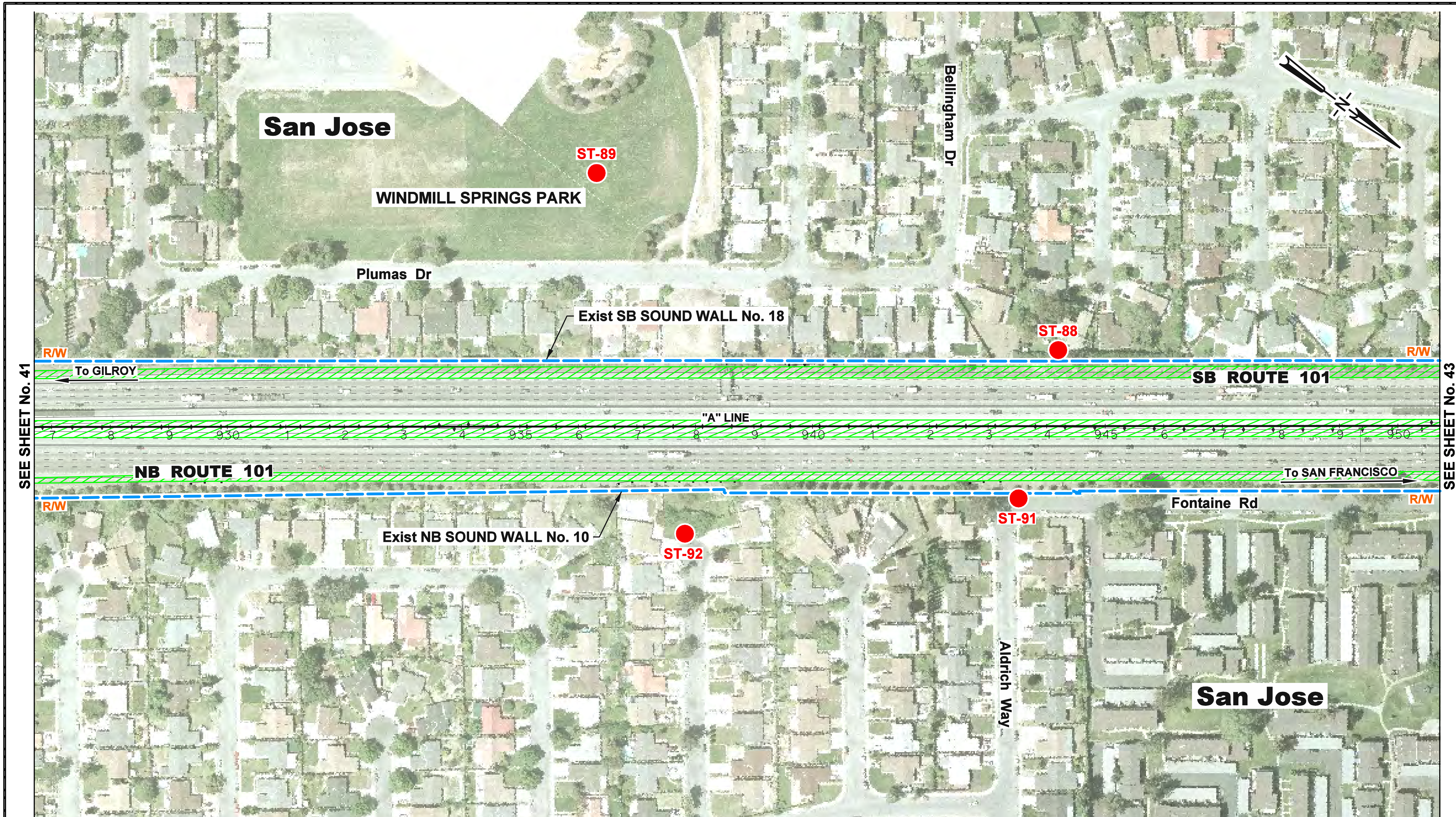
LEGEND:

- FREEWAY WIDENING
- AUXILIARY LANE
- EXISTING SOUND WALL
- MODELED SOUND WALL
- NOISE RECEPTOR LOCATION

0 Ft | 100 Ft | 200 Ft | 400 Ft | 600 Ft | 800 Ft | 1000 Ft

PROPOSED MAJOR PROJECT FEATURES AND MODELED NOISE RECEPTOR & BARRIER LOCATIONS US 101 EXPRESS LANES PROJECT

DATE: 10/3/2014



LEGEND:

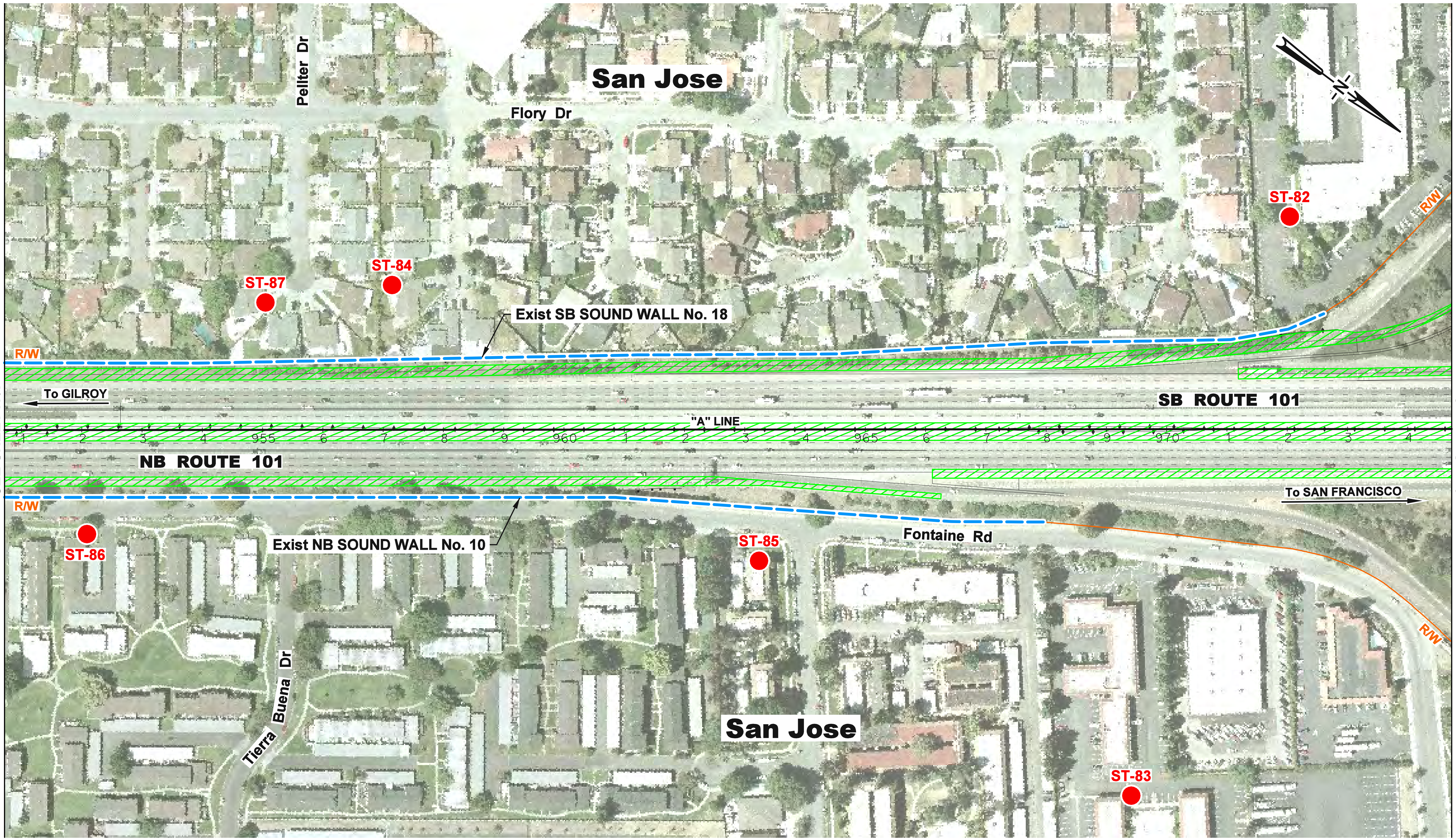
- FREEWAY WIDENING
- AUXILIARY LANE
- EXISTING SOUND WALL
- MODELED SOUND WALL
- NOISE RECEPTOR LOCATION

0 Ft 100 Ft 200 Ft 400 Ft 600 Ft 800 Ft 1000 Ft

PROPOSED MAJOR PROJECT FEATURES AND MODELED NOISE RECEPTOR & BARRIER LOCATIONS US 101 EXPRESS LANES PROJECT

DATE: 10/3/2014

SHEET 42 OF 80



LEGEND:

- FREEWAY WIDENING
- AUXILIARY LANE
- EXISTING SOUND WALL
- MODELED SOUND WALL
- NOISE RECEPTOR LOCATION

0 Ft 100 Ft 200 Ft 400 Ft 600 Ft 800 Ft 1000 Ft

PROPOSED MAJOR PROJECT FEATURES AND MODELED NOISE RECEPTOR & BARRIER LOCATIONS US 101 EXPRESS LANES PROJECT

DATE: 10/3/2014

LEGEND:

- FREEWAY WIDENING
- AUXILIARY LANE
- EXISTING SOUND WALL
- MODELED SOUND WALL
- NOISE RECEPTOR LOCATION

0 Ft 100 Ft 200 Ft 400 Ft 600 Ft 800 Ft 1000 Ft

PROPOSED MAJOR PROJECT FEATURES AND MODELED NOISE RECEPTOR & BARRIER LOCATIONS US 101 EXPRESS LANES PROJECT

DATE: 10/3/2014

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LEGEND:

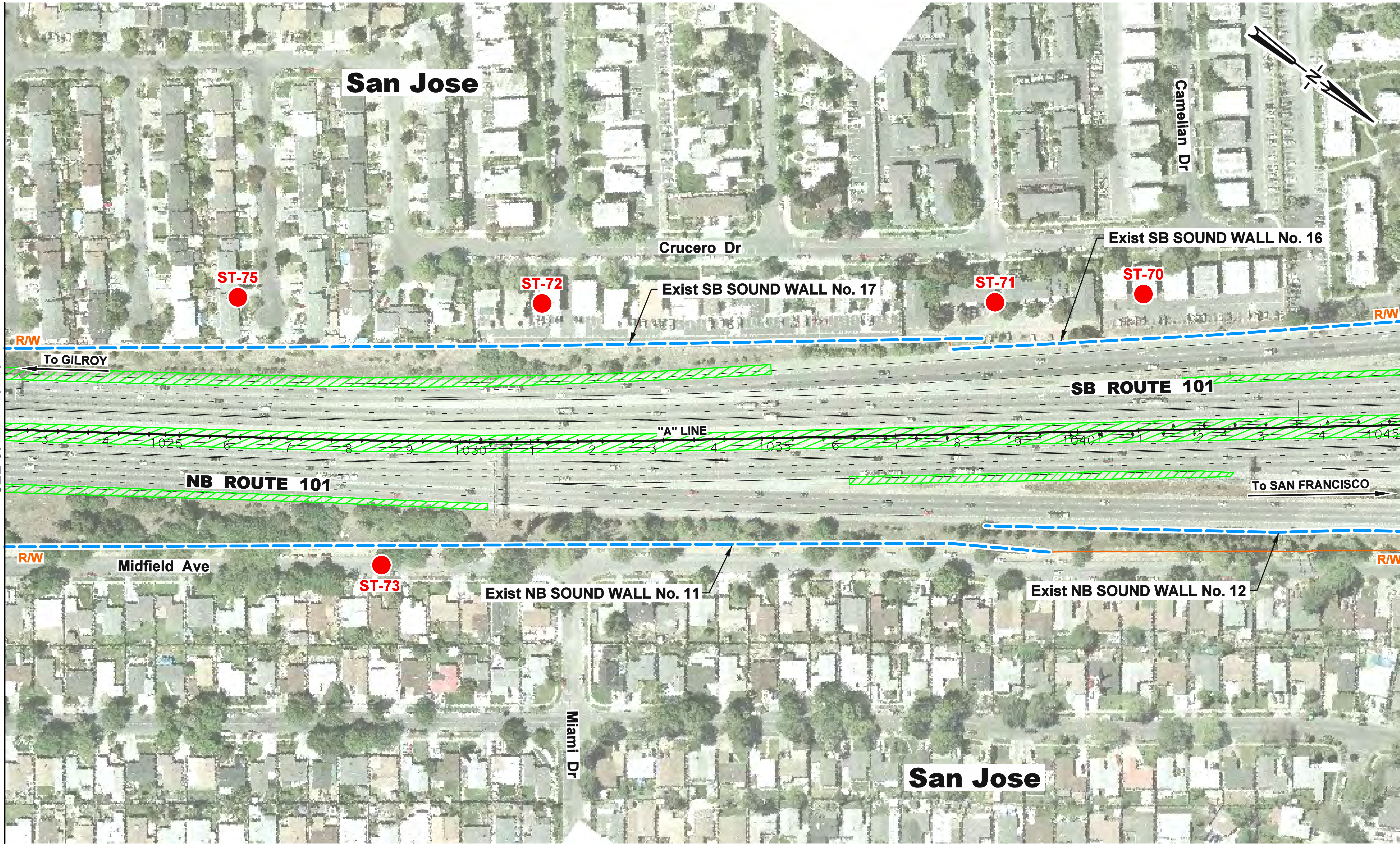
- FREEWAY WIDENING
- AUXILIARY LANE
- EXISTING SOUND WALL
- MODELED SOUND WALL
- NOISE RECEPTOR LOCATION

0 Ft 100 Ft 200 Ft 400 Ft 600 Ft 800 Ft 1000 Ft

PROPOSED MAJOR PROJECT FEATURES AND MODELED NOISE RECEPTOR & BARRIER LOCATIONS US 101 EXPRESS LANES PROJECT

DATE: 10/3/2014

SEE SHEET No. 45



SEE SHEET No. 47

LEGEND:

- FREEWAY WIDENING
- AUXILIARY LANE
- EXISTING SOUND WALL
- MODELED SOUND WALL
- NOISE RECEPTOR LOCATION

0 Ft 100 Ft 200 Ft 400 Ft 600 Ft 800 Ft 1000 Ft

PROPOSED MAJOR PROJECT FEATURES AND MODELED NOISE RECEPTOR & BARRIER LOCATIONS US 101 EXPRESS LANES PROJECT

DATE: 10/3/2014

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SEE SHEET No. 46

SEE SHEET No. 48

LEGEND:

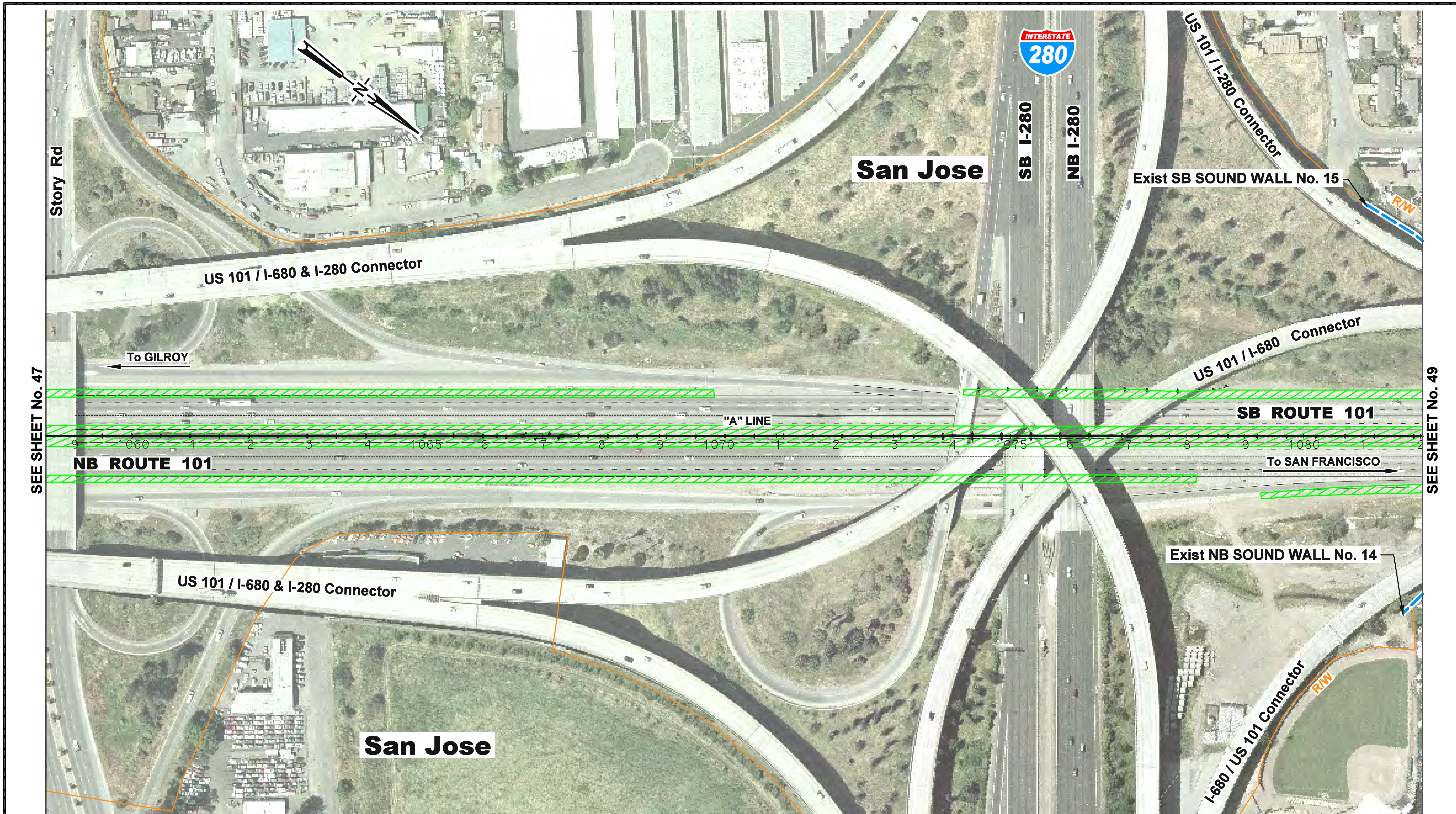
- FREEWAY WIDENING
- AUXILIARY LANE
- EXISTING SOUND WALL
- MODELED SOUND WALL
- NOISE RECEPTOR LOCATION

0 Ft 100 Ft 200 Ft 400 Ft 600 Ft 800 Ft 1000 Ft

PROPOSED MAJOR PROJECT FEATURES AND MODELED NOISE RECEPTOR & BARRIER LOCATIONS US 101 EXPRESS LANES PROJECT

DATE: 10/3/2014

SHEET 47 OF 80



LEGEND:

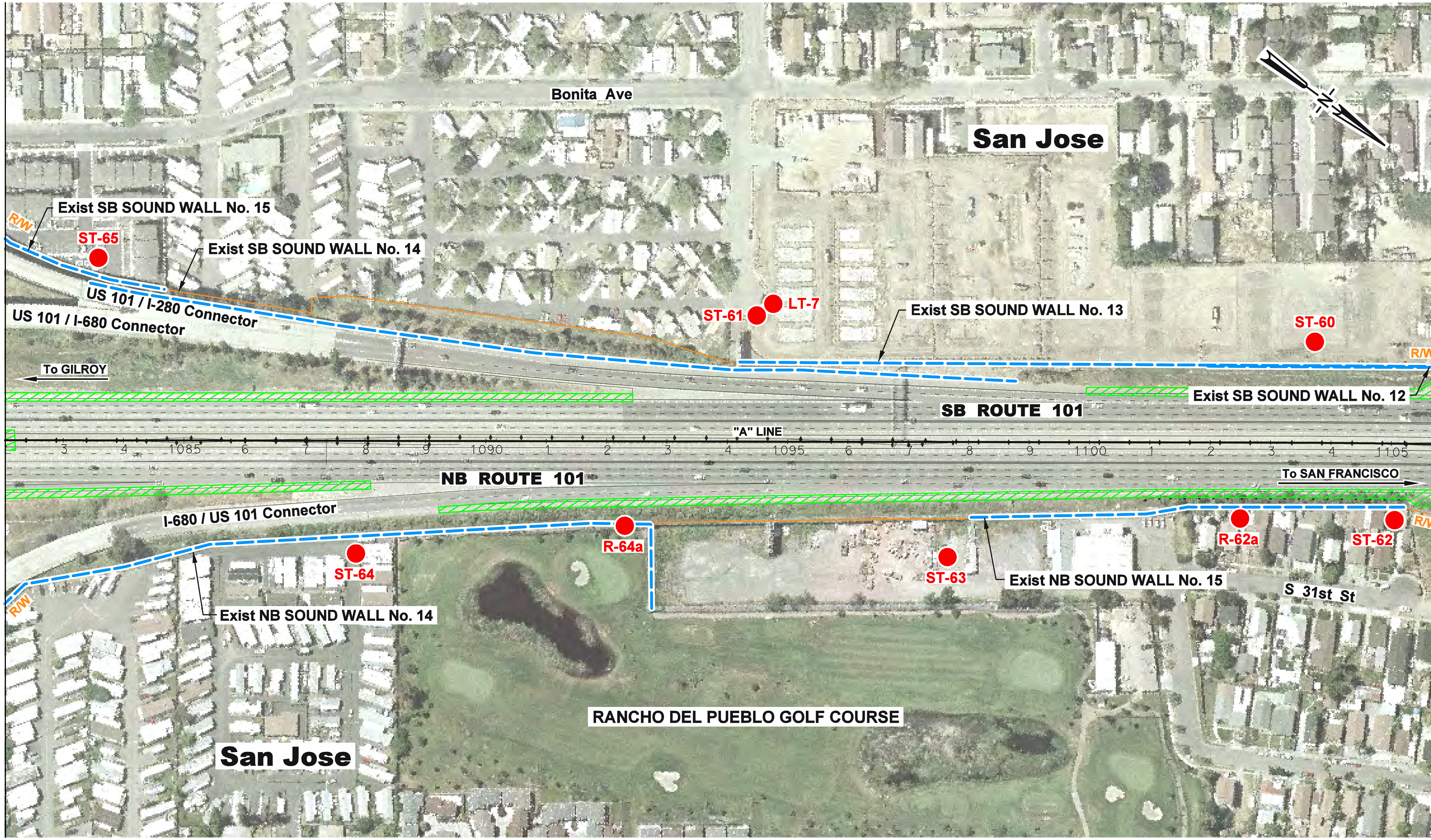
- FREEWAY WIDENING
- AUXILIARY LANE
- EXISTING SOUND WALL
- MODELED SOUND WALL
- NOISE RECEPTOR LOCATION

0 Ft 100 Ft 200 Ft 400 Ft 600 Ft 800 Ft 1000 Ft

PROPOSED MAJOR PROJECT FEATURES AND MODELED NOISE RECEPTOR & BARRIER LOCATIONS US 101 EXPRESS LANES PROJECT

DATE: 10/3/2014

SHEET 48 OF 80



LEGEND:

- FREEWAY WIDENING
- AUXILIARY LANE
- EXISTING SOUND WALL
- MODELED SOUND WALL
- NOISE RECEPTOR LOCATION

PROPOSED MAJOR PROJECT FEATURES AND MODELED NOISE RECEPTOR & BARRIER LOCATIONS US 101 EXPRESS LANES PROJECT

DATE: 10/3/2014

LEGEND:

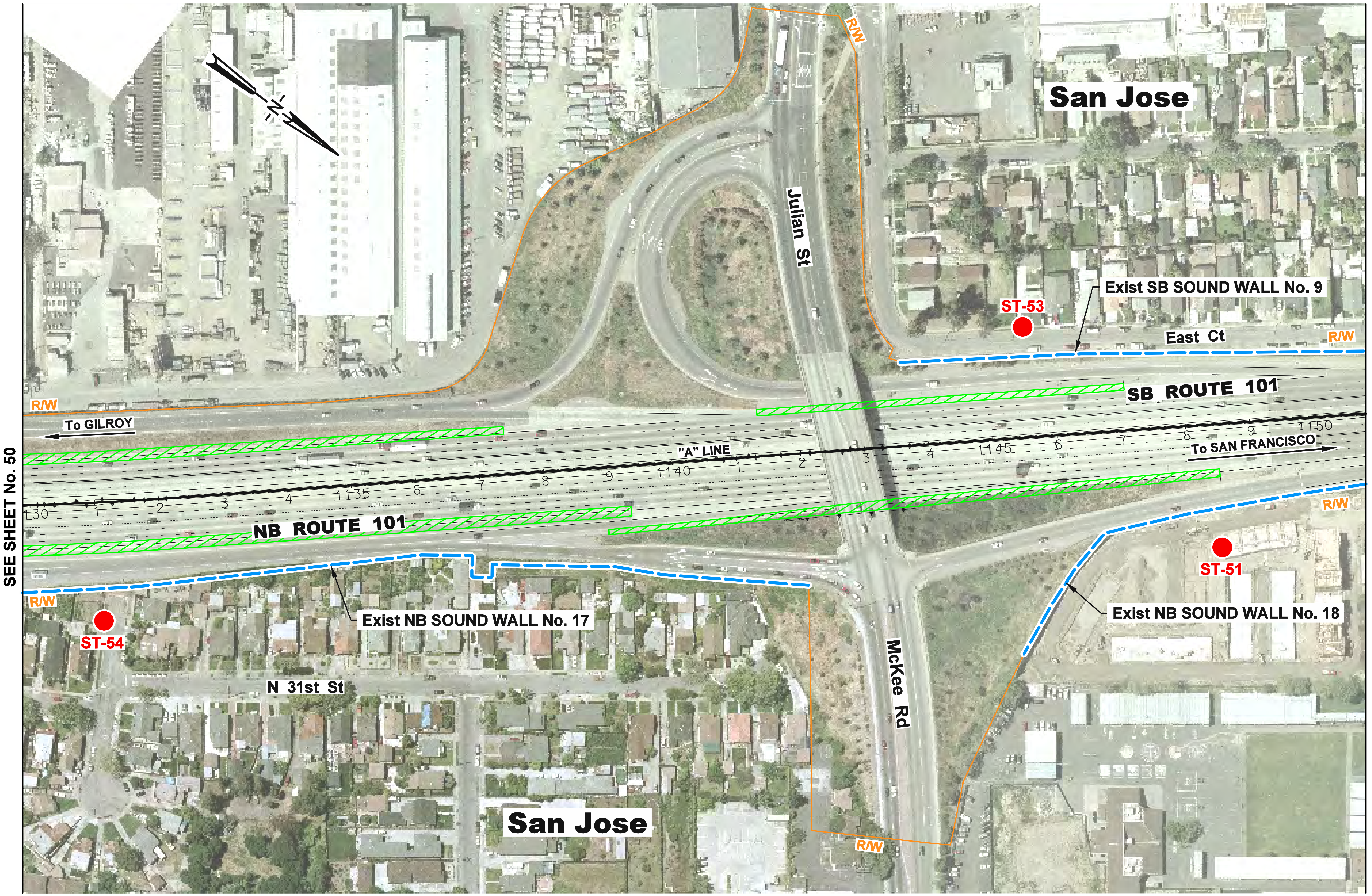
- FREEWAY WIDENING
- AUXILIARY LANE
- EXISTING SOUND WALL
- MODELED SOUND WALL
- NOISE RECEPTOR LOCATION

0 Ft 100 Ft 200 Ft 400 Ft 600 Ft 800 Ft 1000 Ft

PROPOSED MAJOR PROJECT FEATURES AND MODELED NOISE RECEPTOR & BARRIER LOCATIONS US 101 EXPRESS LANES PROJECT

DATE: 10/3/2014

SHEET 50 OF 80



LEGEND:

- FREEWAY WIDENING
- AUXILIARY LANE
- EXISTING SOUND WALL
- MODELED SOUND WALL
- NOISE RECEPTOR LOCATION

0 Ft 100 Ft 200 Ft 400 Ft 600 Ft 800 Ft 1000 Ft

PROPOSED MAJOR PROJECT FEATURES AND MODELED NOISE RECEPTOR & BARRIER LOCATIONS US 101 EXPRESS LANES PROJECT

DATE: 10/3/2014

LEGEND:

- FREEWAY WIDENING
- AUXILIARY LANE
- EXISTING SOUND WALL
- MODELED SOUND WALL
- NOISE RECEPTOR LOCATION

0 Ft 100 Ft 200 Ft 400 Ft 600 Ft 800 Ft 1000 Ft

PROPOSED MAJOR PROJECT FEATURES AND MODELED NOISE RECEPTOR & BARRIER LOCATIONS US 101 EXPRESS LANES PROJECT

DATE: 10/3/2014

LEGEND:

- FREEWAY WIDENING
- AUXILIARY LANE
- EXISTING SOUND WALL
- MODELED SOUND WALL
- NOISE RECEPTOR LOCATION

0 Ft 100 Ft 200 Ft 400 Ft 600 Ft 800 Ft 1000 Ft

PROPOSED MAJOR PROJECT FEATURES AND MODELED NOISE RECEPTOR & BARRIER LOCATIONS US 101 EXPRESS LANES PROJECT

DATE: 10/3/2014

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LEGEND:

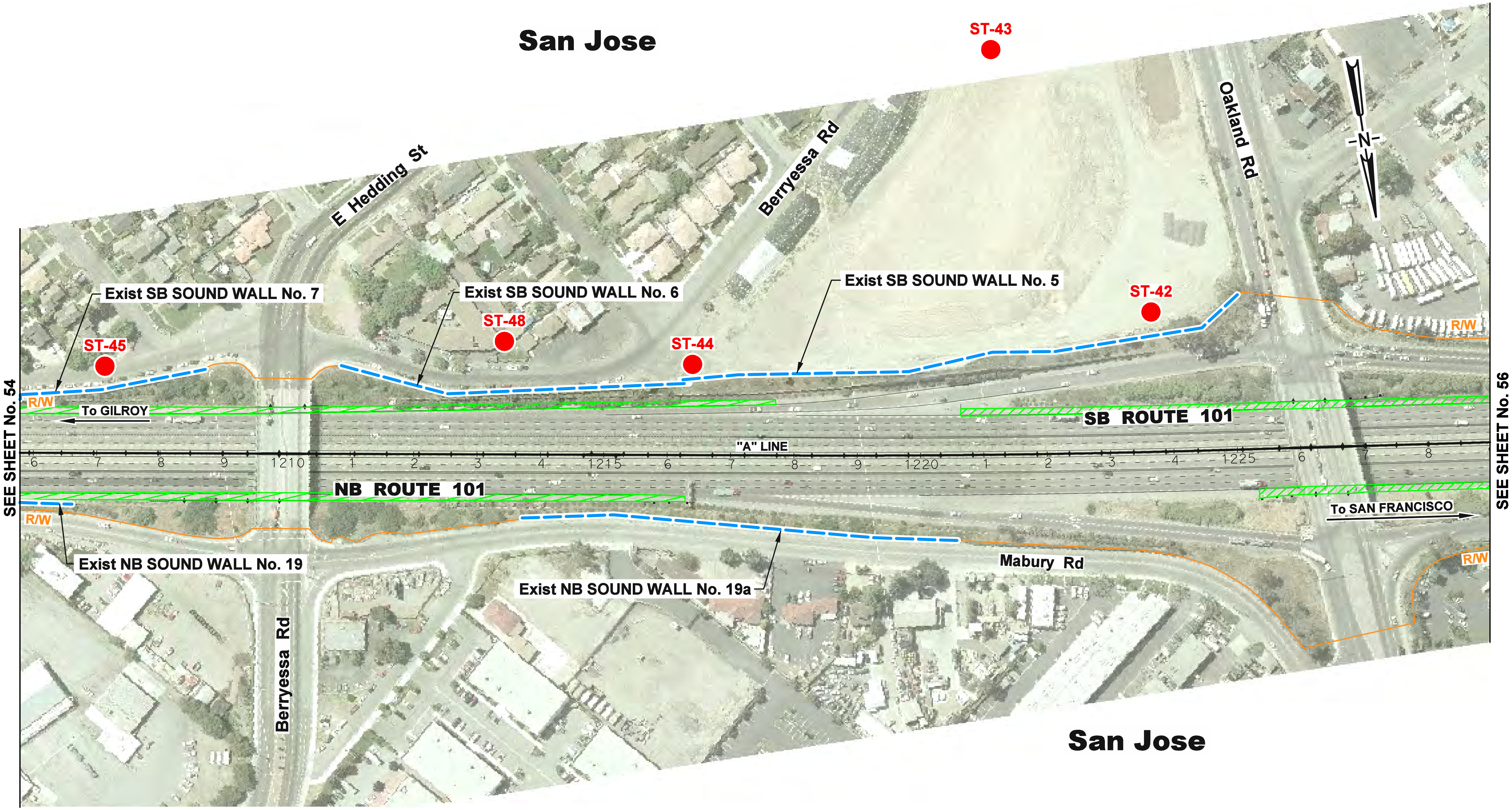
- FREEWAY WIDENING
- AUXILIARY LANE
- EXISTING SOUND WALL
- MODELED SOUND WALL
- NOISE RECEPTOR LOCATION

0 Ft | 100 Ft | 200 Ft | 400 Ft | 600 Ft | 800 Ft | 1000 Ft

PROPOSED MAJOR PROJECT FEATURES AND MODELED NOISE RECEPTOR & BARRIER LOCATIONS US 101 EXPRESS LANES PROJECT

DATE: 10/3/2014

SHEET 54 OF 80



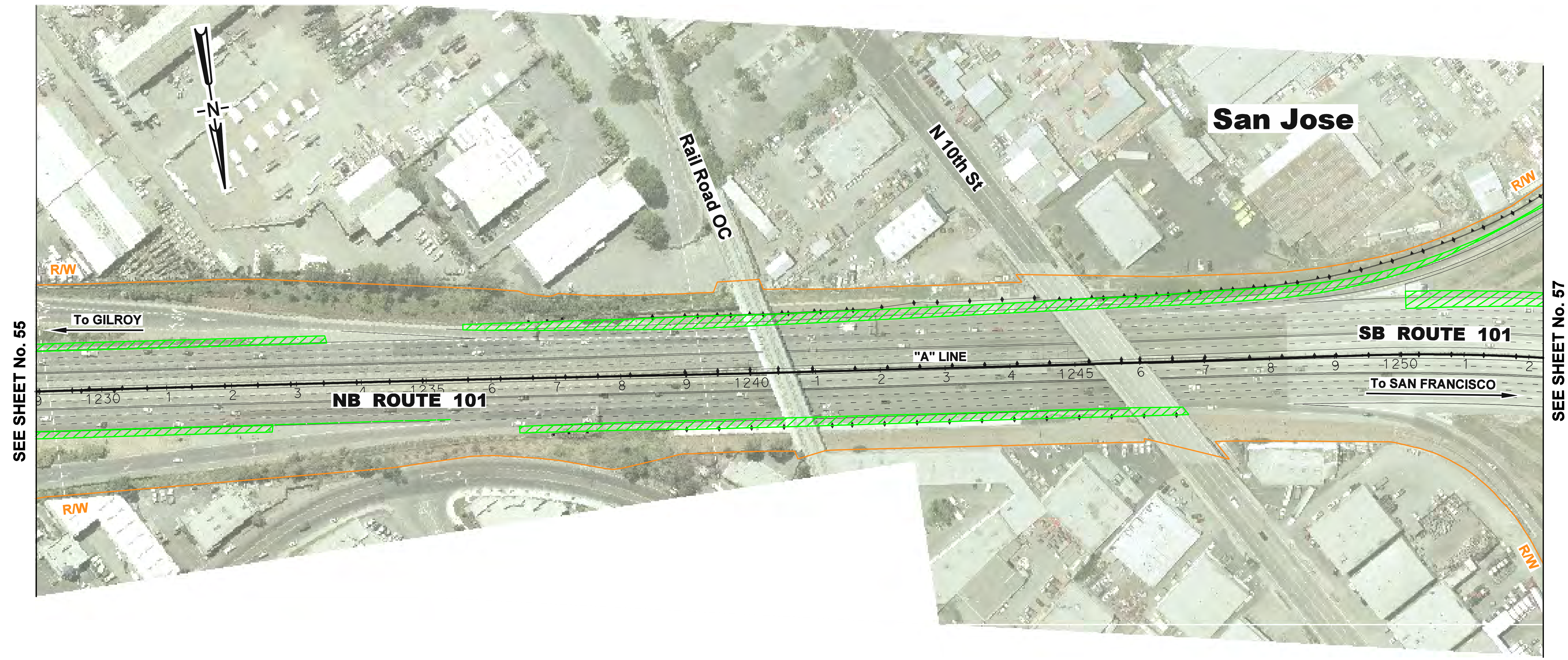
LEGEND:

- FREEWAY WIDENING
- AUXILIARY LANE
- EXISTING SOUND WALL
- MODELED SOUND WALL
- NOISE RECEPTOR LOCATION

0 Ft 100 Ft 200 Ft 400 Ft 600 Ft 800 Ft 1000 Ft

PROPOSED MAJOR PROJECT FEATURES AND MODELED NOISE RECEPTOR & BARRIER LOCATIONS US 101 EXPRESS LANES PROJECT

DATE: 10/3/2014



San Jose

LEGEND:

- FREEWAY WIDENING
- AUXILIARY LANE
- EXISTING SOUND WALL
- MODELED SOUND WALL
- NOISE RECEPTOR LOCATION

0 Ft | 100 Ft | 200 Ft | 400 Ft | 600 Ft | 800 Ft | 1000 Ft

PROPOSED MAJOR PROJECT FEATURES AND MODELED NOISE RECEPTOR & BARRIER LOCATIONS US 101 EXPRESS LANES PROJECT

DATE: 10/3/2014

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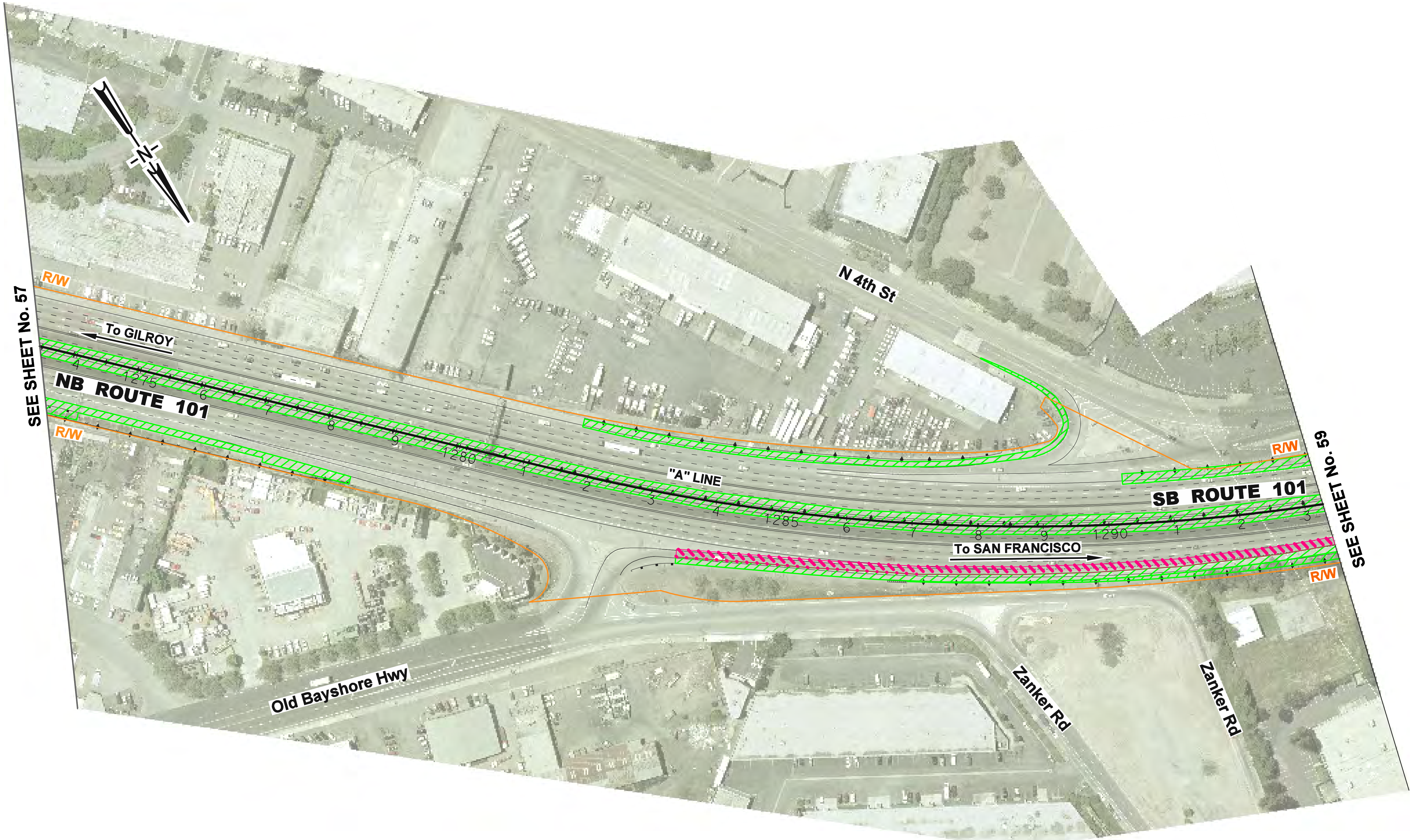
LEGEND:

- FREEWAY WIDENING
- AUXILIARY LANE
- EXISTING SOUND WALL
- MODELED SOUND WALL
- NOISE RECEPTOR LOCATION

0 Ft | 100 Ft | 200 Ft | 400 Ft | 600 Ft | 800 Ft | 1000 Ft

PROPOSED MAJOR PROJECT FEATURES AND MODELED NOISE RECEPTOR & BARRIER LOCATIONS US 101 EXPRESS LANES PROJECT

DATE: 10/3/2014



SEE SHEET No. 57
SEE SHEET No. 59

LEGEND:

- FREEWAY WIDENING
- AUXILIARY LANE
- EXISTING SOUND WALL
- MODELED SOUND WALL
- NOISE RECEPTOR LOCATION

0 Ft 100 Ft 200 Ft 400 Ft 600 Ft 800 Ft 1000 Ft

PROPOSED MAJOR PROJECT FEATURES AND MODELED NOISE RECEPTOR & BARRIER LOCATIONS US 101 EXPRESS LANES PROJECT

DATE: 10/3/2014

LEGEND:

- FREEWAY WIDENING
- AUXILIARY LANE
- EXISTING SOUND WALL
- MODELED SOUND WALL
- NOISE RECEPTOR LOCATION

0 Ft | 100 Ft | 200 Ft | 400 Ft | 600 Ft | 800 Ft | 1000 Ft

PROPOSED MAJOR PROJECT FEATURES AND MODELED NOISE RECEPTOR & BARRIER LOCATIONS US 101 EXPRESS LANES PROJECT

DATE: 10/3/2014

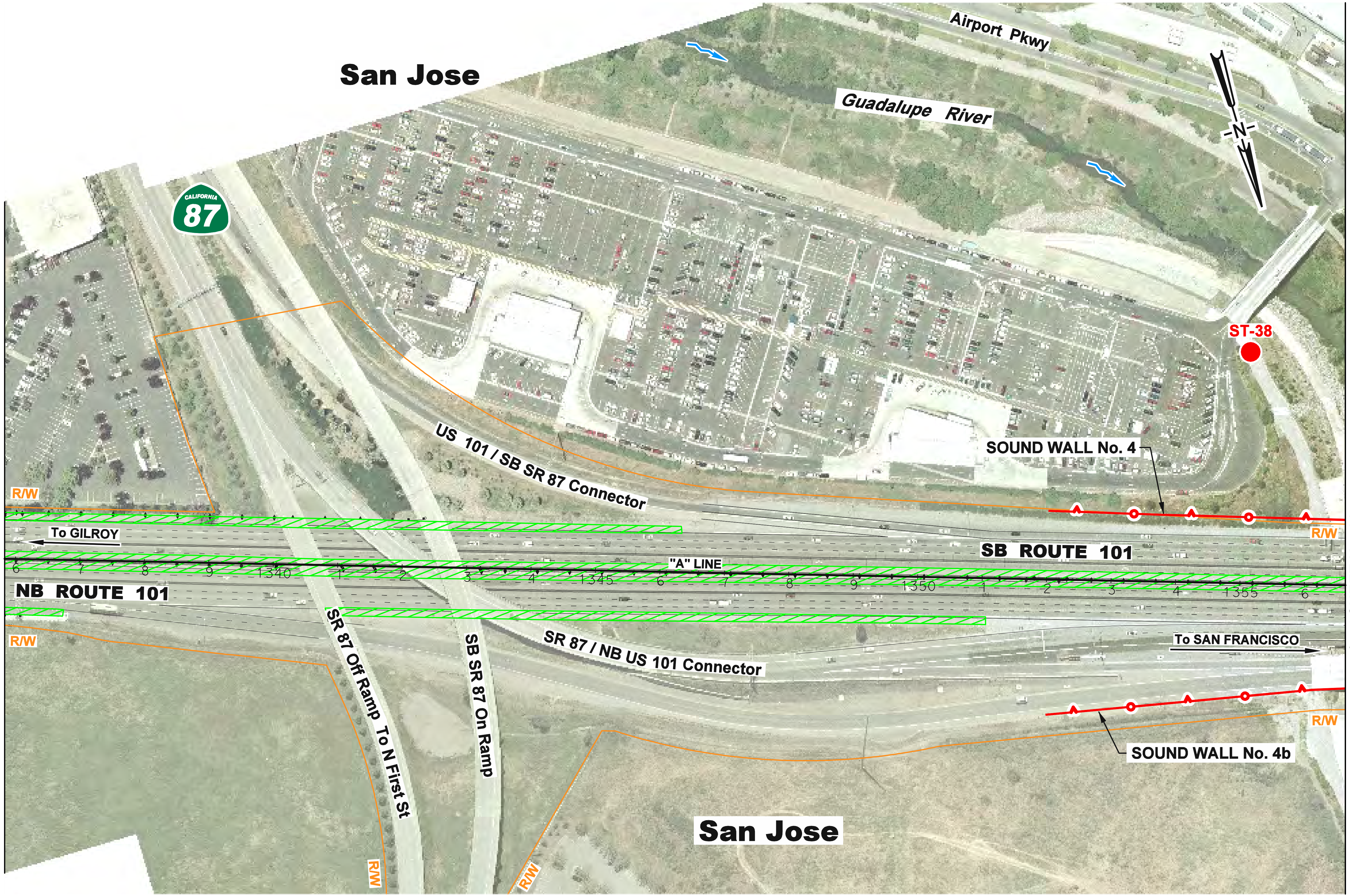
LEGEND:

- FREEWAY WIDENING
- AUXILIARY LANE
- EXISTING SOUND WALL
- MODELED SOUND WALL
- NOISE RECEPTOR LOCATION

0 Ft | 100 Ft | 200 Ft | 400 Ft | 600 Ft | 800 Ft | 1000 Ft

PROPOSED MAJOR PROJECT FEATURES AND MODELED NOISE RECEPTOR & BARRIER LOCATIONS US 101 EXPRESS LANES PROJECT

DATE: 10/3/2014



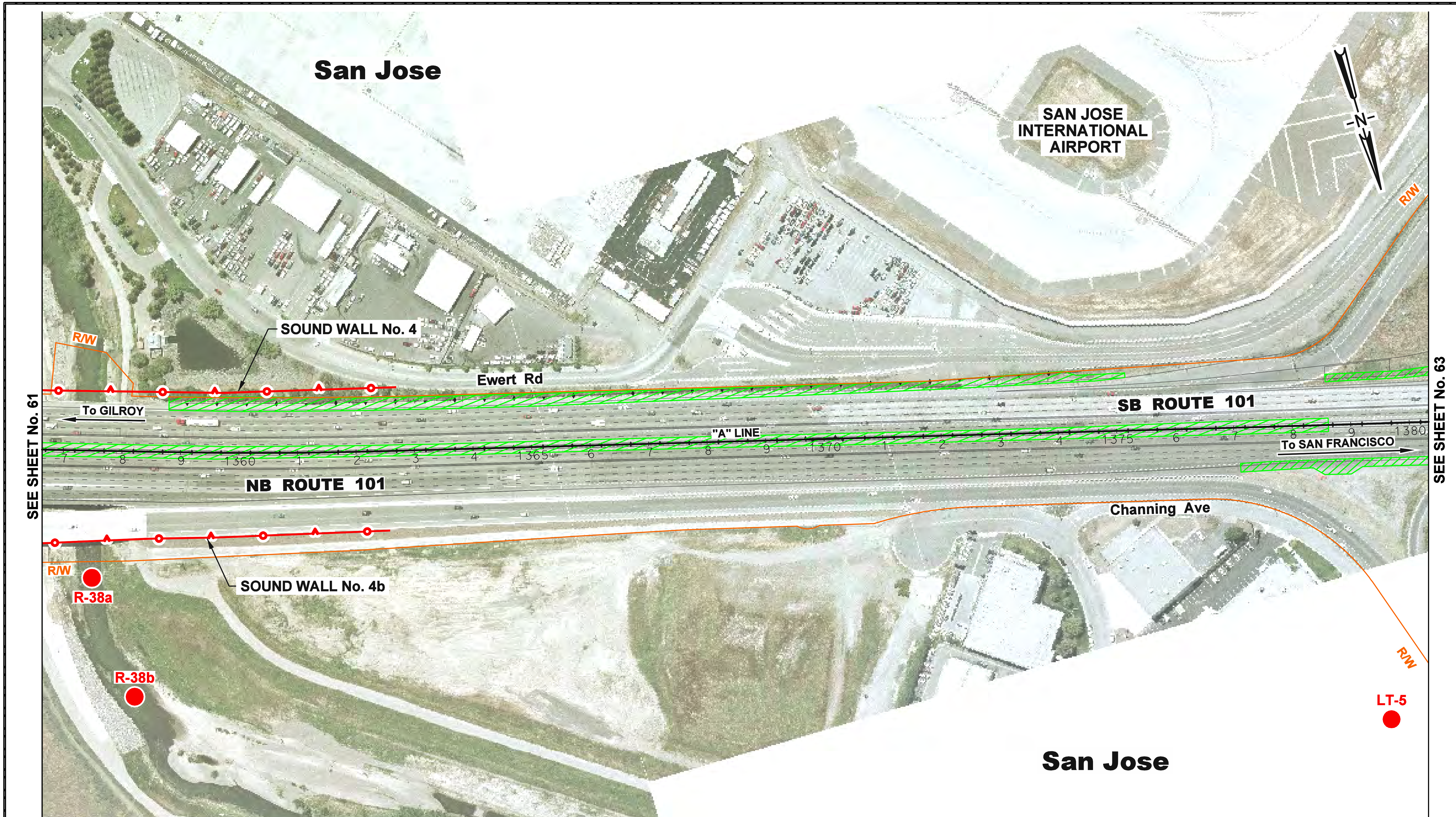
LEGEND:

- FREEWAY WIDENING
- AUXILIARY LANE
- EXISTING SOUND WALL
- MODELED SOUND WALL
- NOISE RECEPTOR LOCATION

0 Ft | 100 Ft | 200 Ft | 400 Ft | 600 Ft | 800 Ft | 1000 Ft

PROPOSED MAJOR PROJECT FEATURES AND MODELED NOISE RECEPTOR & BARRIER LOCATIONS US 101 EXPRESS LANES PROJECT

DATE: 10/3/2014

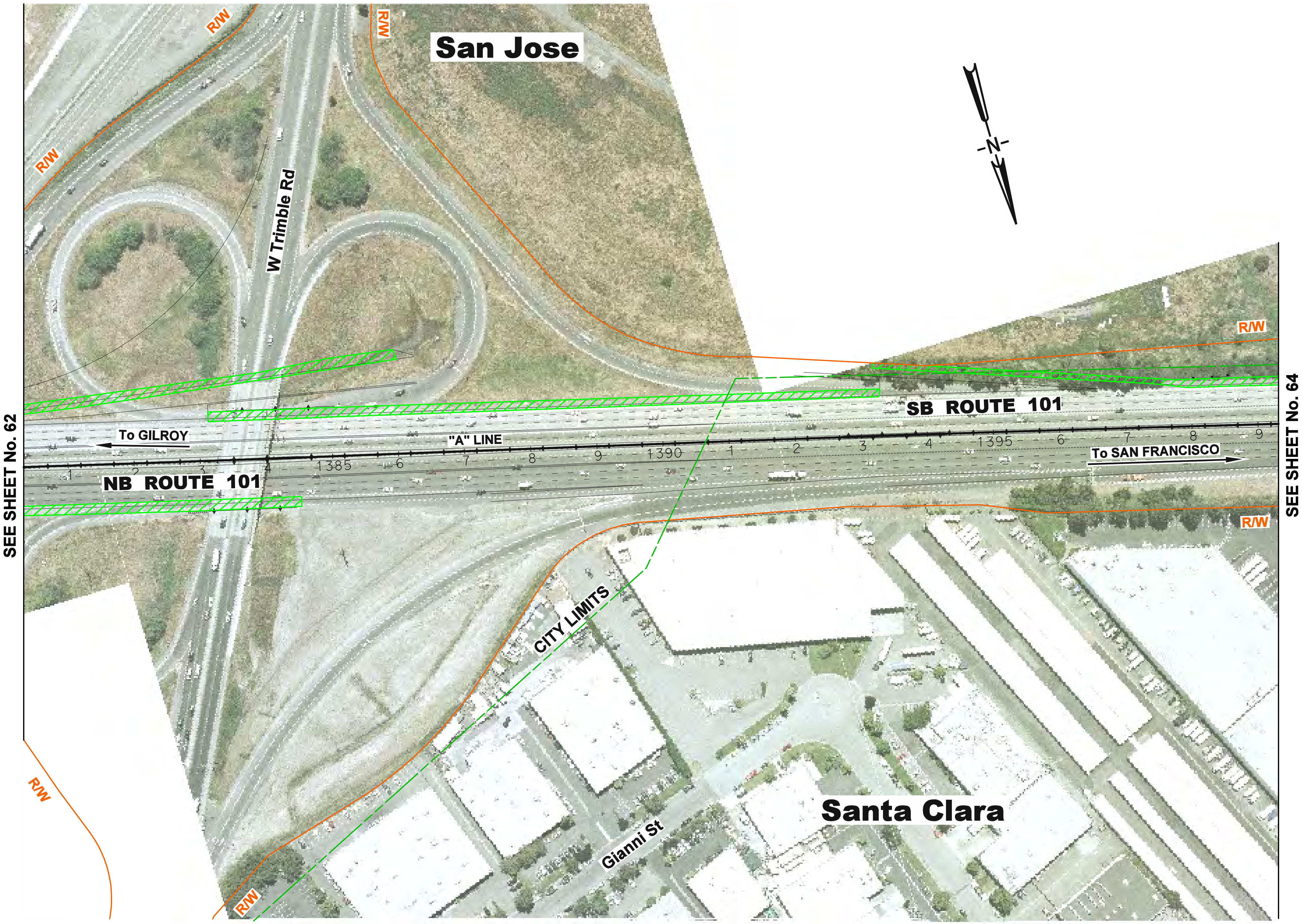


LEGEND:

- FREEWAY WIDENING
- AUXILIARY LANE
- EXISTING SOUND WALL
- MODELED SOUND WALL
- NOISE RECEPTOR LOCATION

PROPOSED MAJOR PROJECT FEATURES AND MODELED NOISE RECEPTOR & BARRIER LOCATIONS US 101 EXPRESS LANES PROJECT

DATE: 10/3/2014



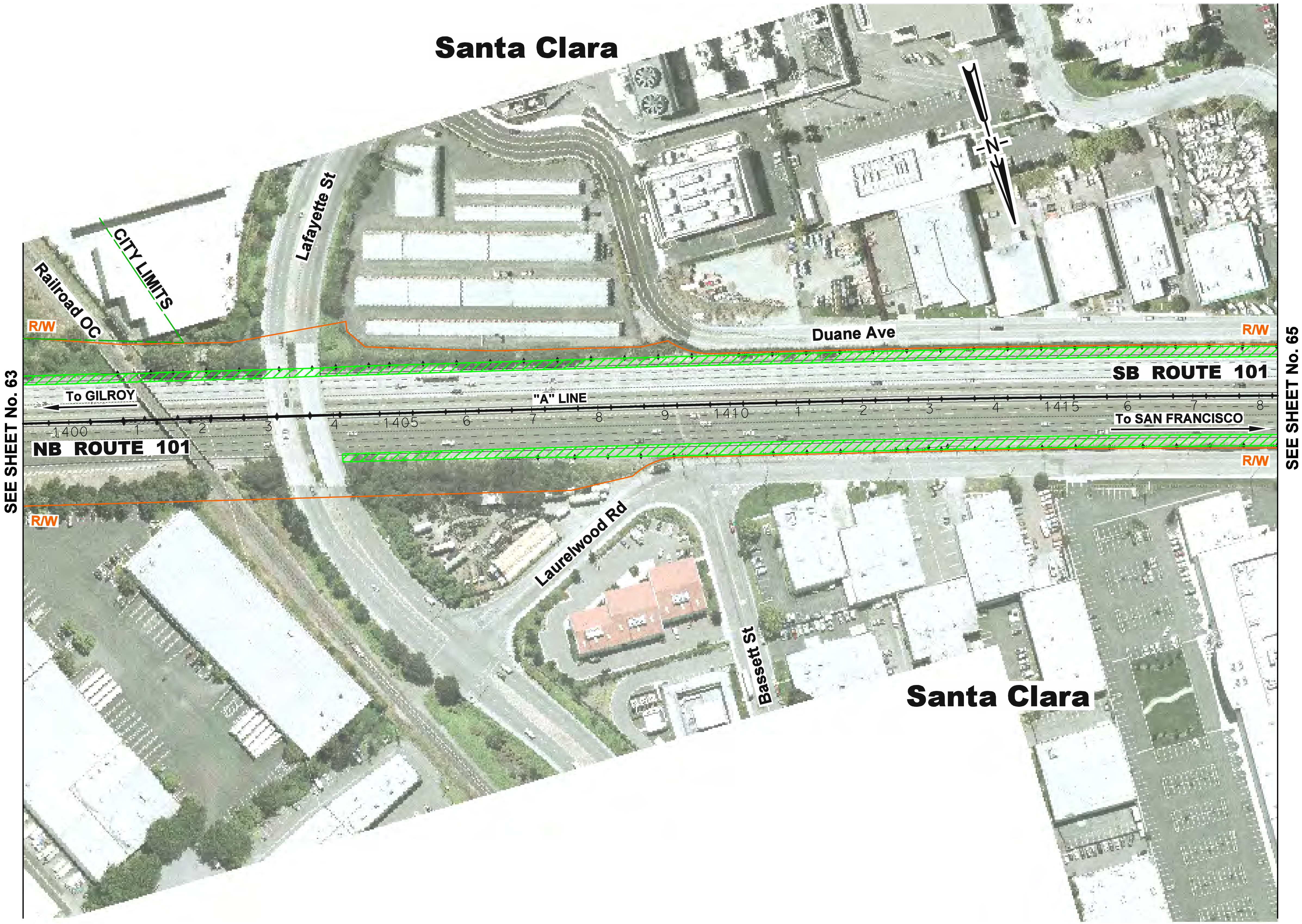
LEGEND:

- FREEWAY WIDENING
- AUXILIARY LANE
- EXISTING SOUND WALL
- MODELED SOUND WALL
- NOISE RECEPTOR LOCATION

0 Ft 100 Ft 200 Ft 400 Ft 600 Ft 800 Ft 1000 Ft

PROPOSED MAJOR PROJECT FEATURES AND MODELED NOISE RECEPTOR & BARRIER LOCATIONS US 101 EXPRESS LANES PROJECT

DATE: 10/3/2014



LEGEND:

- FREEWAY WIDENING
- AUXILIARY LANE
- EXISTING SOUND WALL
- MODELED SOUND WALL
- NOISE RECEPTOR LOCATION

0 Ft 100 Ft 200 Ft 400 Ft 600 Ft 800 Ft 1000 Ft

PROPOSED MAJOR PROJECT FEATURES AND MODELED NOISE RECEPTOR & BARRIER LOCATIONS US 101 EXPRESS LANES PROJECT

DATE: 10/3/2014

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LEGEND:

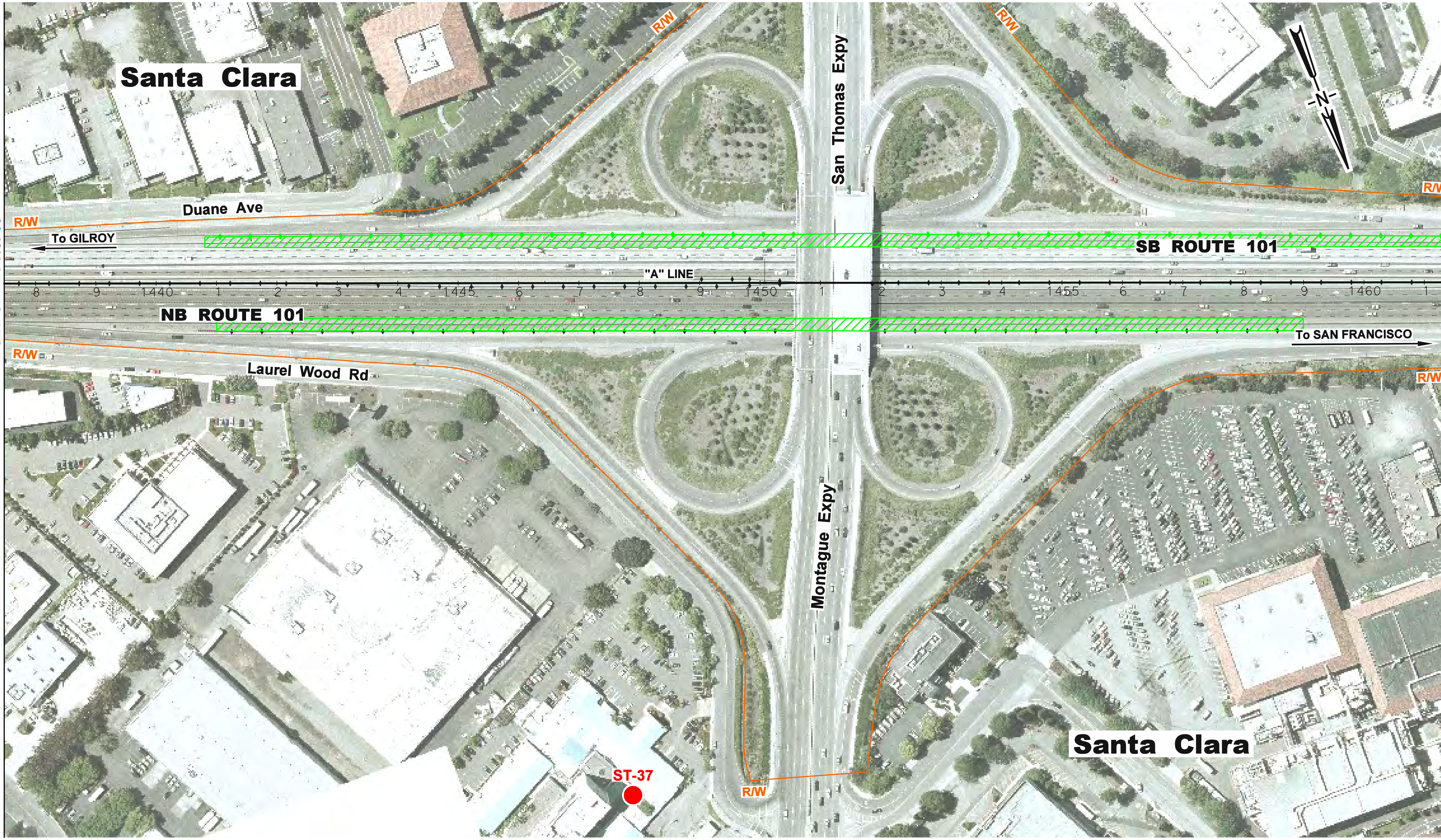
- FREEWAY WIDENING
- AUXILIARY LANE
- EXISTING SOUND WALL
- MODELED SOUND WALL
- NOISE RECEPTOR LOCATION

0 Ft 100 Ft 200 Ft 400 Ft 600 Ft 800 Ft 1000 Ft

PROPOSED MAJOR PROJECT FEATURES AND MODELED NOISE RECEPTOR & BARRIER LOCATIONS US 101 EXPRESS LANES PROJECT

DATE: 10/3/2014

SEE SHEET No. 65



SEE SHEET No. 67

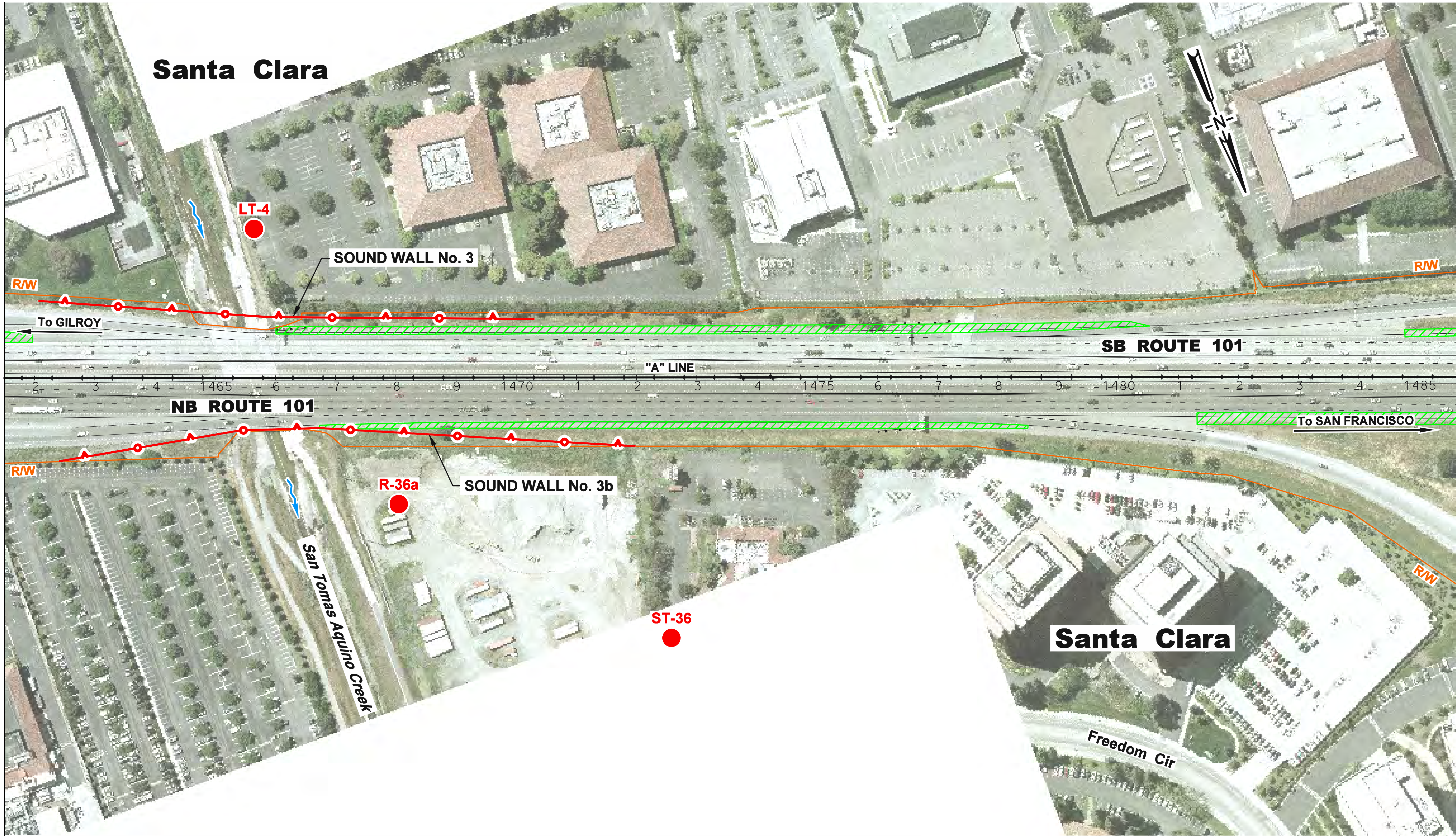
LEGEND:

- FREEWAY WIDENING
- AUXILIARY LANE
- EXISTING SOUND WALL
- MODELED SOUND WALL
- NOISE RECEPTOR LOCATION

0 Ft | 100 Ft | 200 Ft | 400 Ft | 600 Ft | 800 Ft | 1000 Ft

PROPOSED MAJOR PROJECT FEATURES AND MODELED NOISE RECEPTOR & BARRIER LOCATIONS US 101 EXPRESS LANES PROJECT

DATE: 10/3/2014



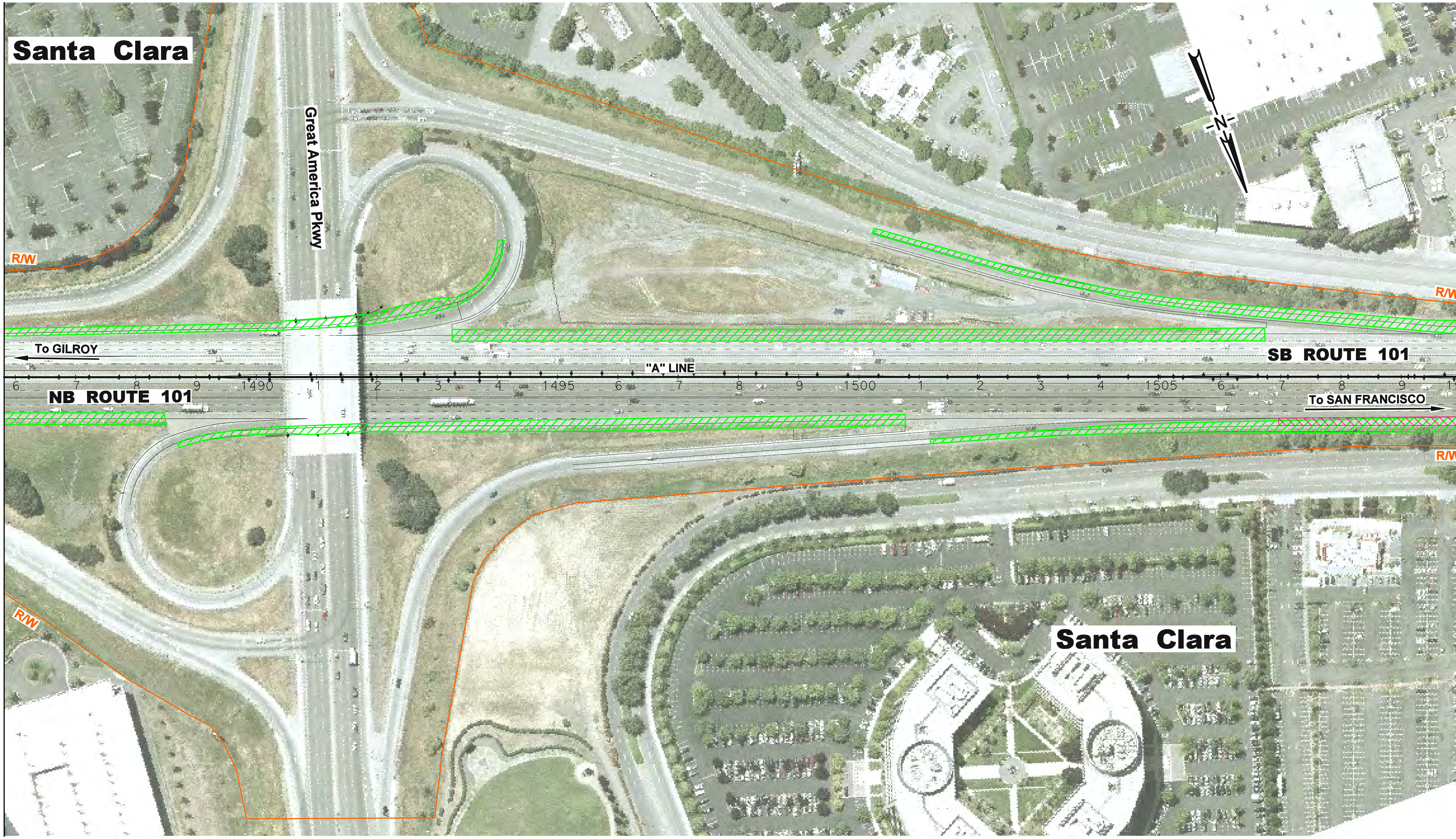
LEGEND:

- FREEWAY WIDENING
- AUXILIARY LANE
- EXISTING SOUND WALL
- MODELED SOUND WALL
- NOISE RECEPTOR LOCATION

PROPOSED MAJOR PROJECT FEATURES AND MODELED NOISE RECEPTOR & BARRIER LOCATIONS
US 101 EXPRESS LANES PROJECT

DATE: 10/3/2014

SHEET 67 OF 80



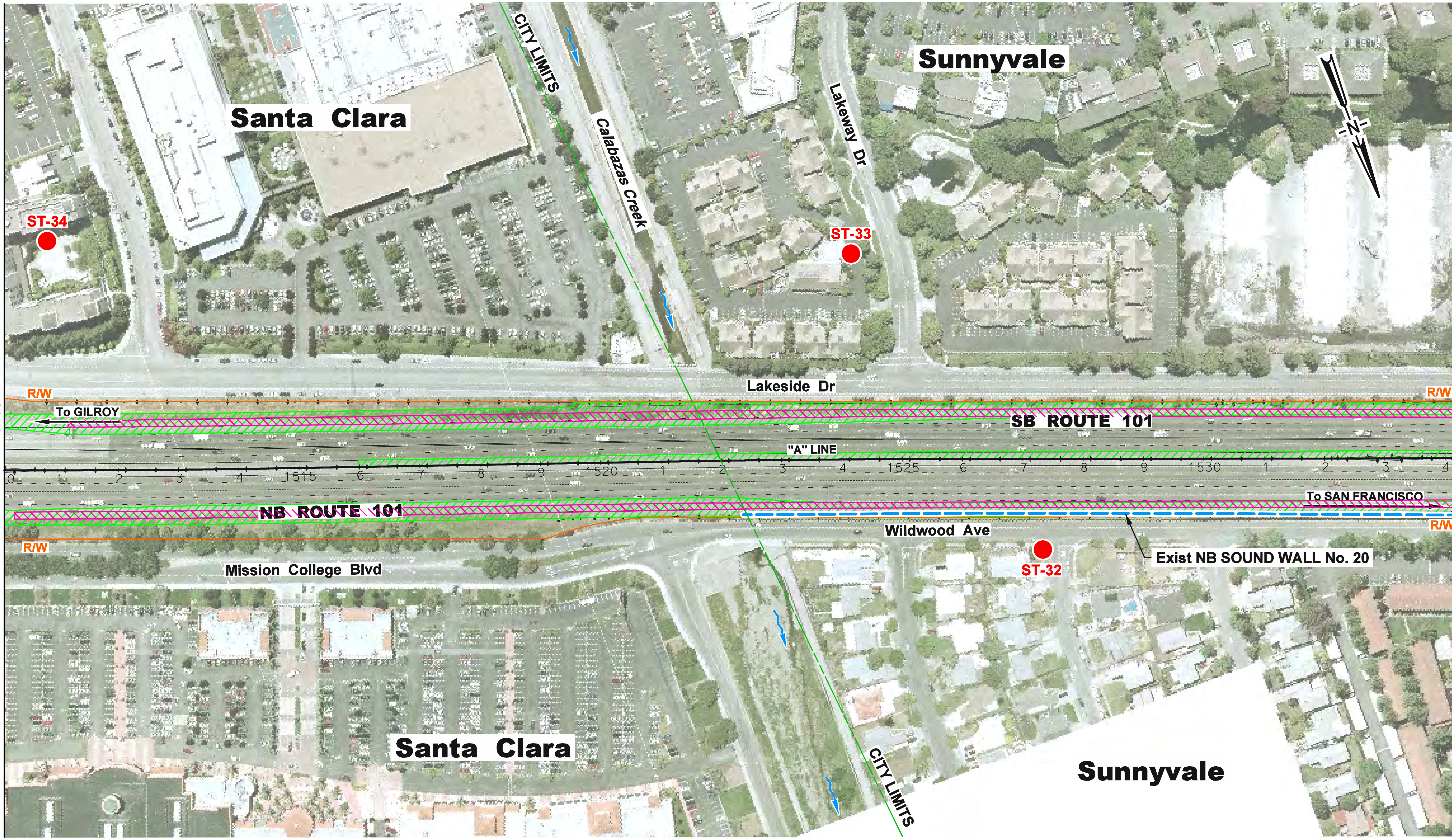
LEGEND:

- FREEWAY WIDENING
- AUXILIARY LANE
- EXISTING SOUND WALL
- MODELED SOUND WALL
- NOISE RECEPTOR LOCATION

0 Ft 100 Ft 200 Ft 400 Ft 600 Ft 800 Ft 1000 Ft

PROPOSED MAJOR PROJECT FEATURES AND MODELED NOISE RECEPTOR & BARRIER LOCATIONS US 101 EXPRESS LANES PROJECT

DATE: 10/3/2014



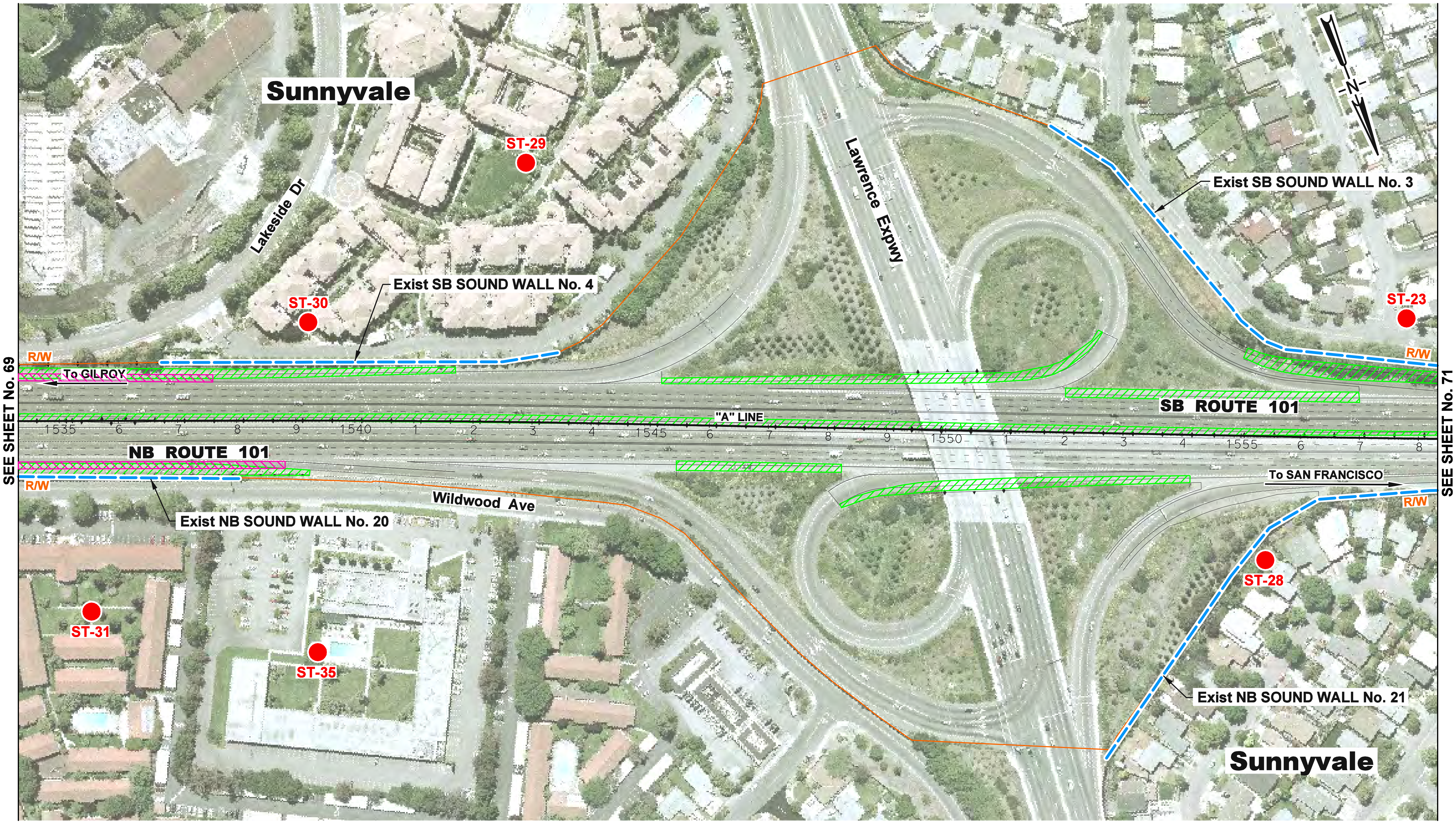
LEGEND:

- FREEWAY WIDENING
- AUXILIARY LANE
- EXISTING SOUND WALL
- MODELED SOUND WALL
- NOISE RECEPTOR LOCATION

0 Ft | 100 Ft | 200 Ft | 400 Ft | 600 Ft | 800 Ft | 1000 Ft

PROPOSED MAJOR PROJECT FEATURES AND MODELED NOISE RECEPTOR & BARRIER LOCATIONS US 101 EXPRESS LANES PROJECT

DATE: 10/3/2014



LEGEND:

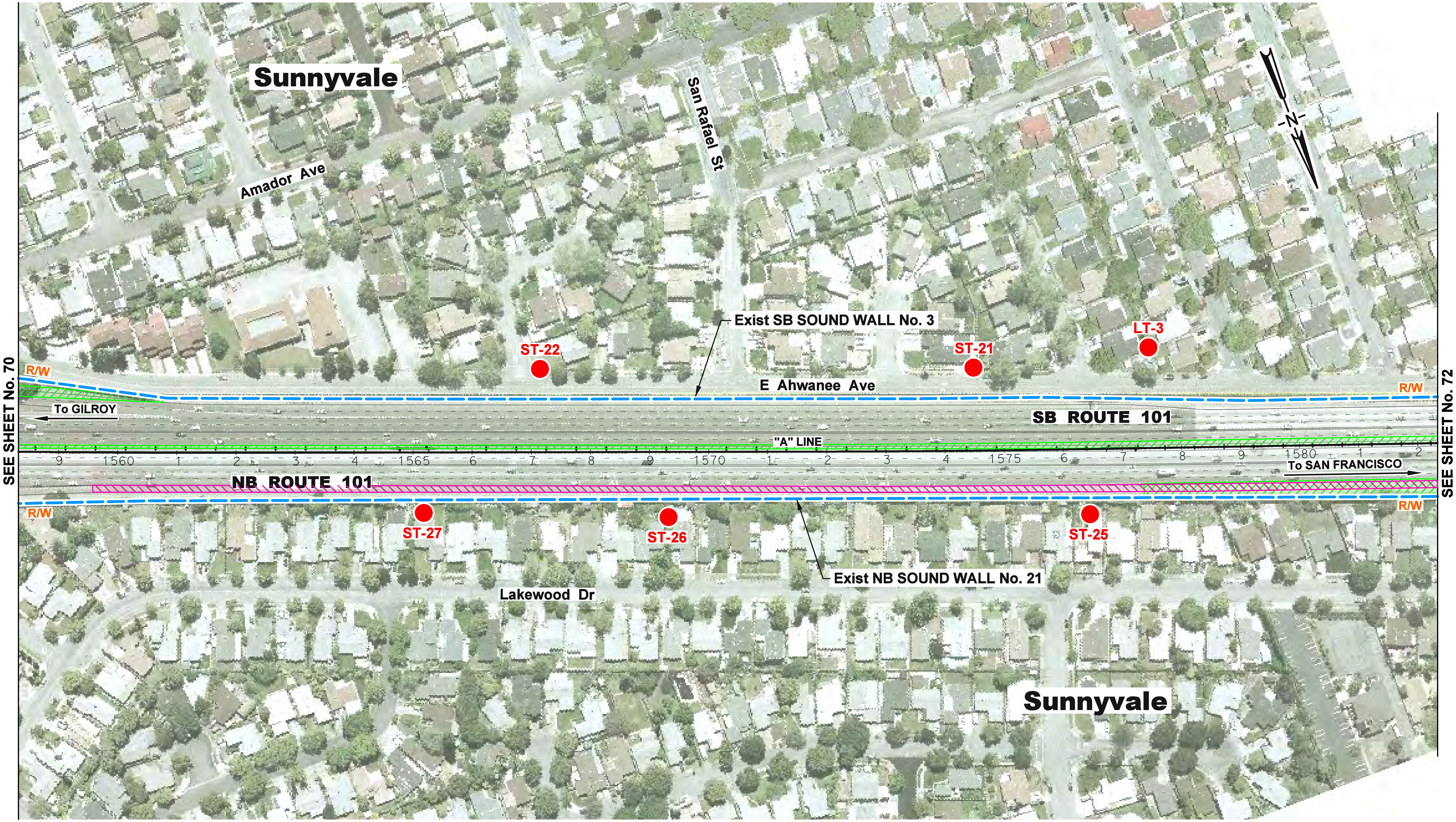
- FREEWAY WIDENING
- AUXILIARY LANE
- EXISTING SOUND WALL
- MODELED SOUND WALL
- NOISE RECEPTOR LOCATION

0 Ft 100 Ft 200 Ft 400 Ft 600 Ft 800 Ft 1000 Ft

PROPOSED MAJOR PROJECT FEATURES AND MODELED NOISE RECEPTOR & BARRIER LOCATIONS US 101 EXPRESS LANES PROJECT

DATE: 10/3/2014

SHEET 70 OF 80



LEGEND:

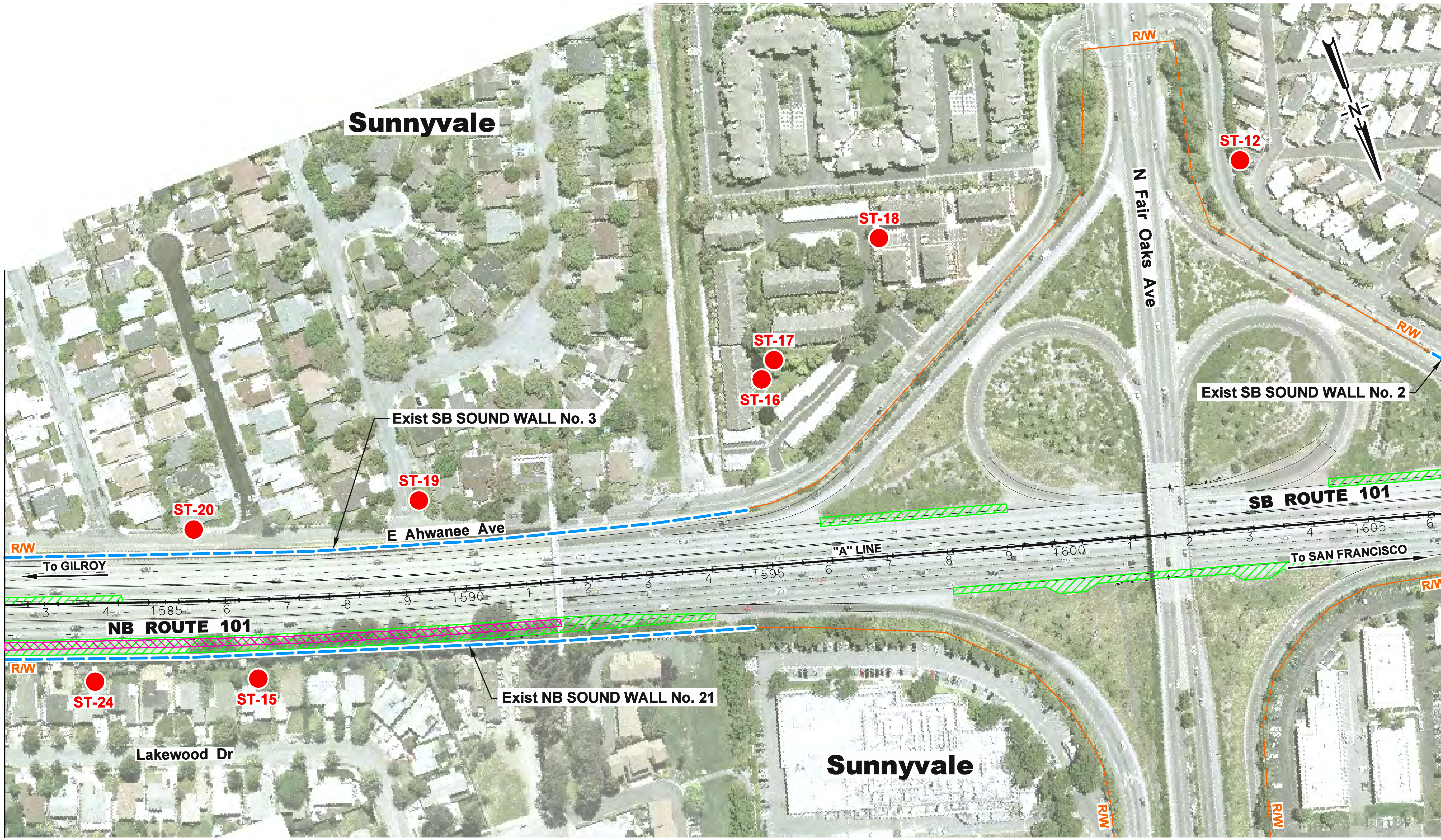
- FREEWAY WIDENING
- AUXILIARY LANE
- EXISTING SOUND WALL
- MODELED SOUND WALL
- NOISE RECEPTOR LOCATION

0 Ft 100 Ft 200 Ft 400 Ft 600 Ft 800 Ft 1000 Ft

PROPOSED MAJOR PROJECT FEATURES AND MODELED NOISE RECEPTOR & BARRIER LOCATIONS US 101 EXPRESS LANES PROJECT

DATE: 10/3/2014

SHEET 71 OF 80



LEGEND:

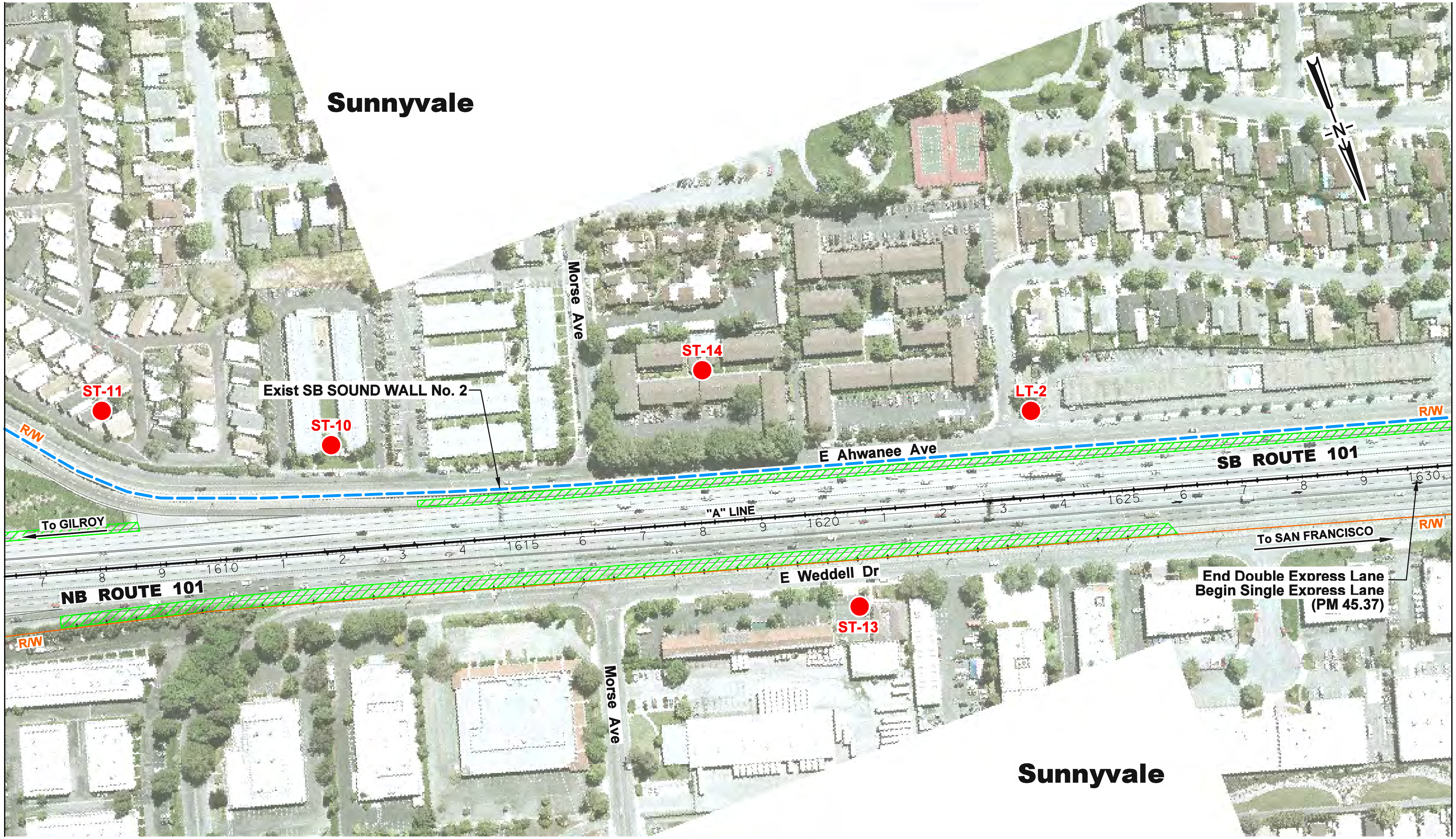
- FREEWAY WIDENING
- AUXILIARY LANE
- EXISTING SOUND WALL
- MODELED SOUND WALL
- NOISE RECEPTOR LOCATION

0 Ft 100 Ft 200 Ft 400 Ft 600 Ft 800 Ft 1000 Ft

PROPOSED MAJOR PROJECT FEATURES AND MODELED NOISE RECEPTOR & BARRIER LOCATIONS US 101 EXPRESS LANES PROJECT

DATE: 10/3/2014

SEE SHEET No. 72



SEE SHEET No. 74

LEGEND:

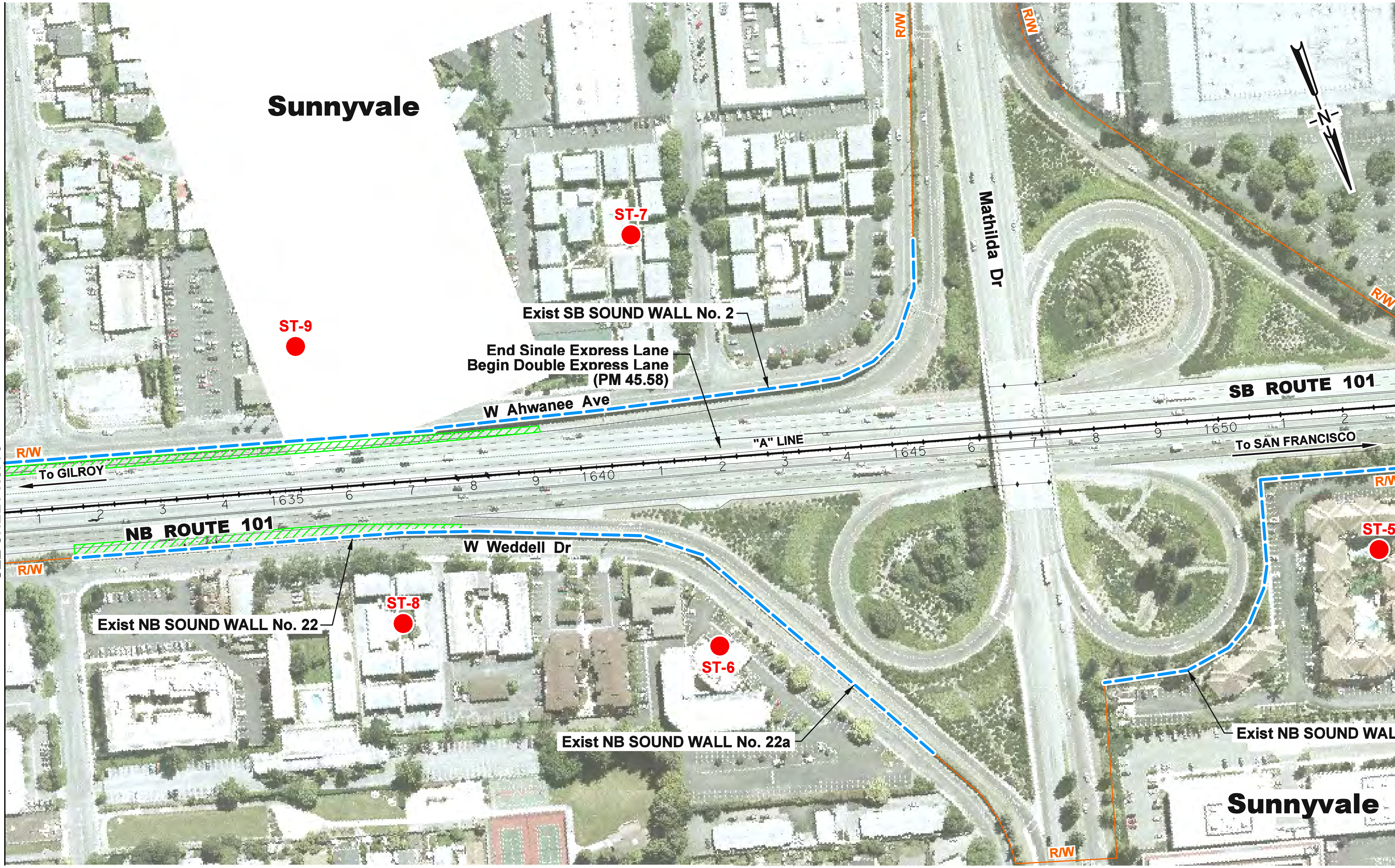
- FREEWAY WIDENING
- AUXILIARY LANE
- EXISTING SOUND WALL
- MODELED SOUND WALL
- NOISE RECEPTOR LOCATION

0 Ft | 100 Ft | 200 Ft | 400 Ft | 600 Ft | 800 Ft | 1000 Ft

PROPOSED MAJOR PROJECT FEATURES AND MODELED NOISE RECEPTOR & BARRIER LOCATIONS US 101 EXPRESS LANES PROJECT

DATE: 10/3/2014

SHEET 73 TO 80



LEGEND:

- FREEWAY WIDENING
- AUXILIARY LANE
- EXISTING SOUND WALL
- MODELED SOUND WALL
- NOISE RECEPTOR LOCATION

0 Ft 100 Ft 200 Ft 400 Ft 600 Ft 800 Ft 1000 Ft

PROPOSED MAJOR PROJECT FEATURES AND MODELED NOISE RECEPTOR & BARRIER LOCATIONS US 101 EXPRESS LANES PROJECT

DATE: 10/3/2014

SHEET 74 OF 80

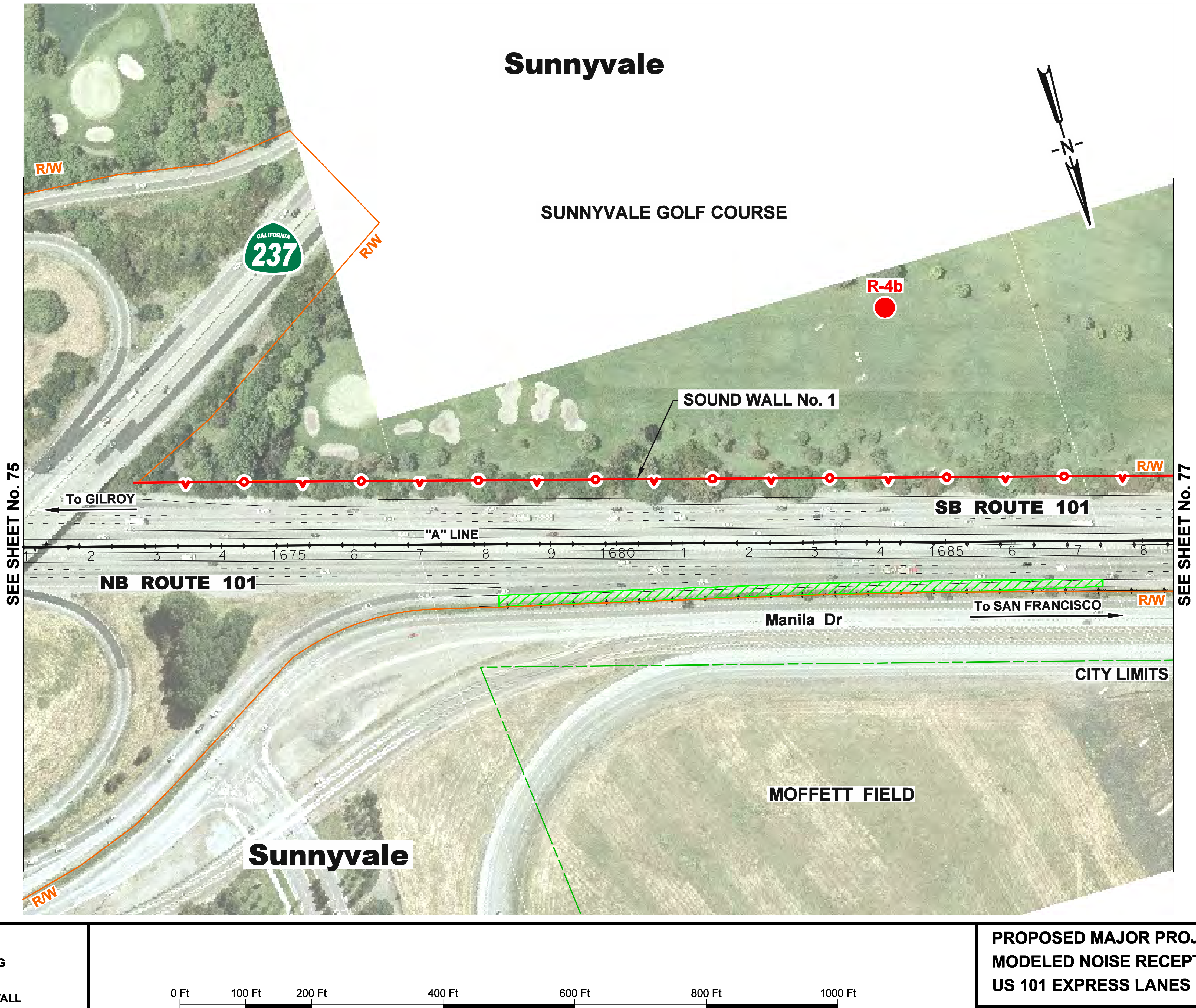
LEGEND:

- FREEWAY WIDENING
- AUXILIARY LANE
- EXISTING SOUND WALL
- MODELED SOUND WALL
- NOISE RECEPTOR LOCATION

0 Ft 100 Ft 200 Ft 400 Ft 600 Ft 800 Ft 1000 Ft

PROPOSED MAJOR PROJECT FEATURES AND MODELED NOISE RECEPTOR & BARRIER LOCATIONS US 101 EXPRESS LANES PROJECT

DATE: 10/3/2014



LEGEND:

- FREEWAY WIDENING
- AUXILIARY LANE
- EXISTING SOUND WALL
- MODELED SOUND WALL
- NOISE RECEPTOR LOCATION

PROPOSED MAJOR PROJECT FEATURES AND MODELED NOISE RECEPTOR & BARRIER LOCATIONS US 101 EXPRESS LANES PROJECT

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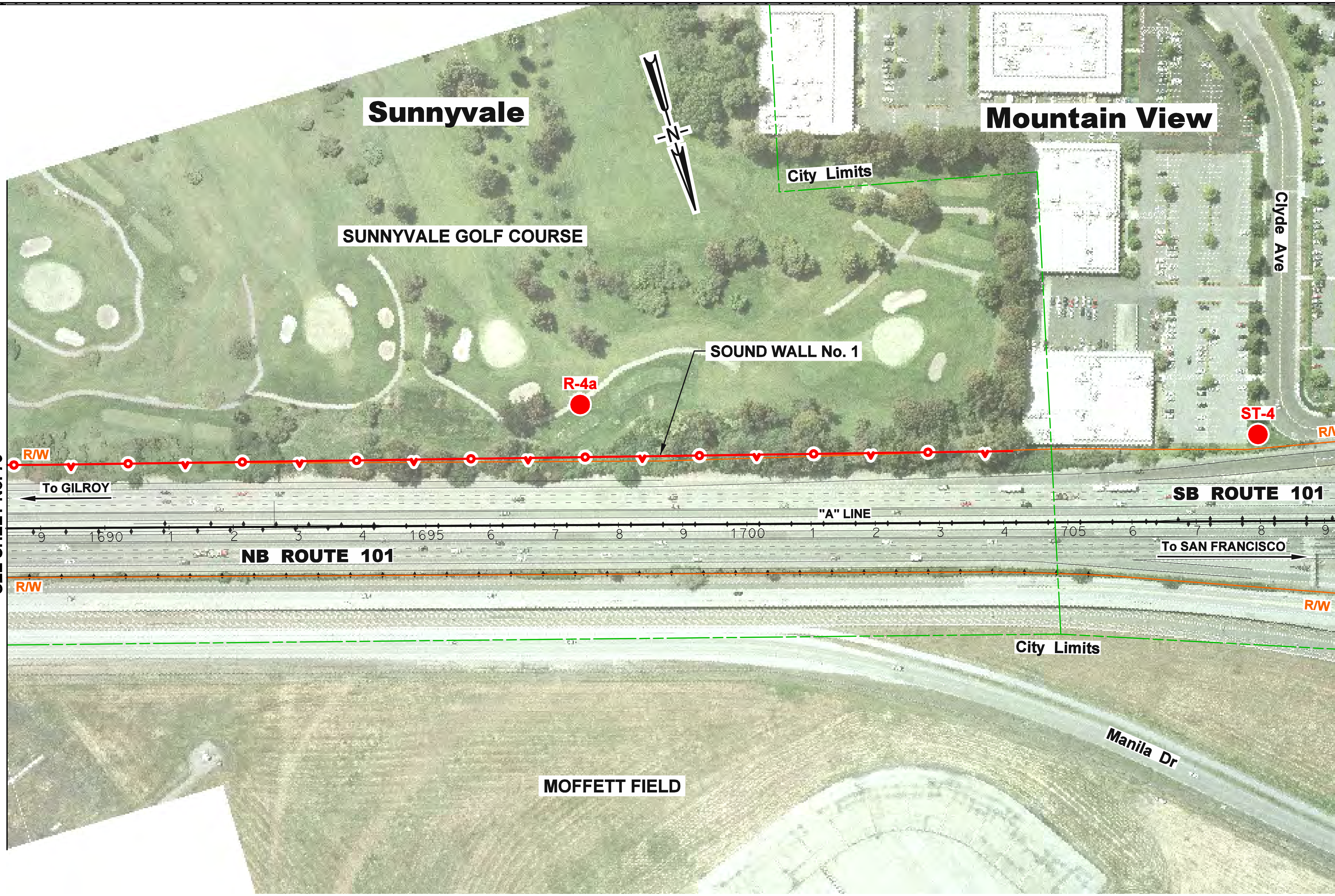


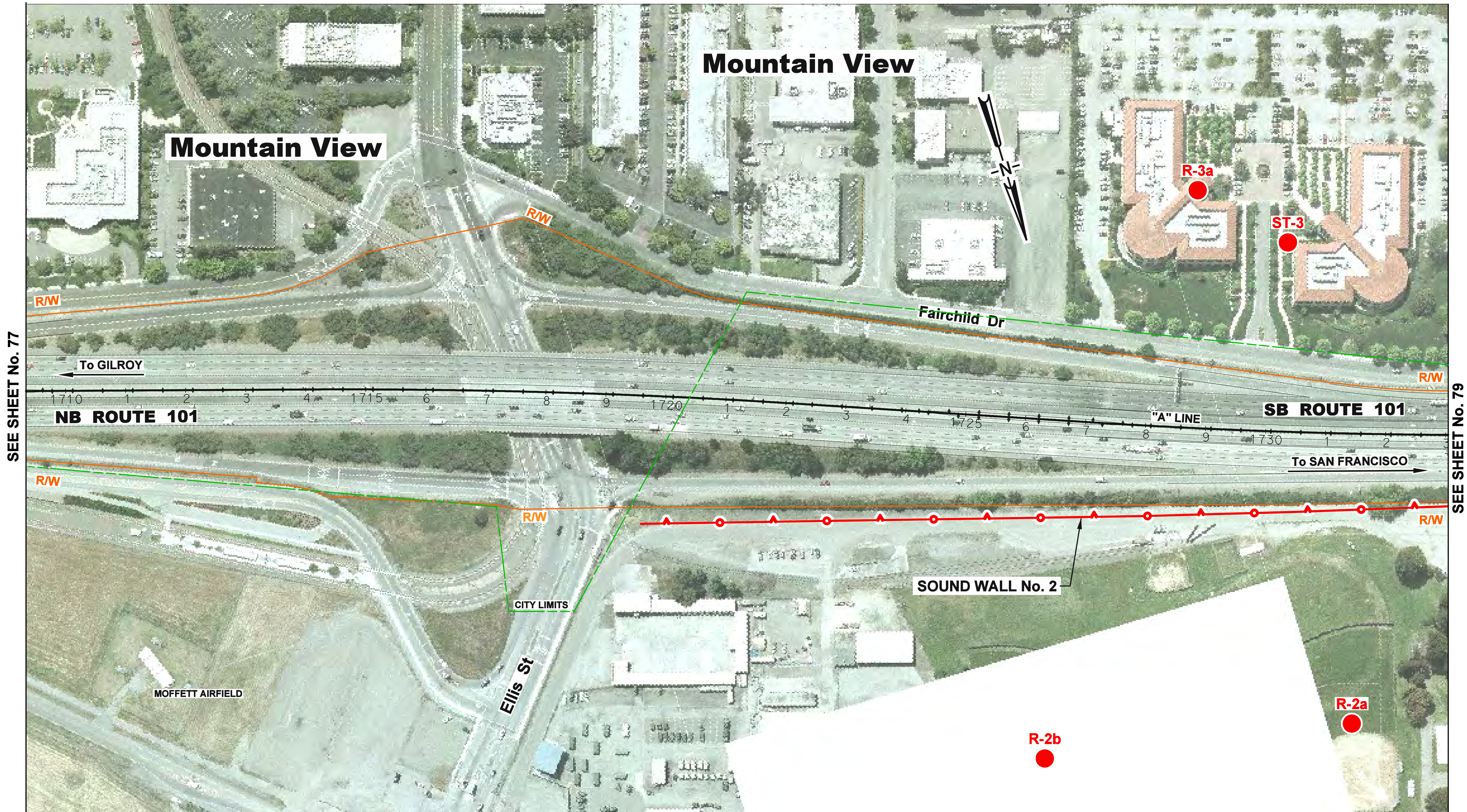
LEGEND:

- FREEWAY WIDENING
- AUXILIARY LANE
- EXISTING SOUND WALL
- MODELED SOUND WALL
- NOISE RECEPTOR LOCATION

0 Ft | 100 Ft | 200 Ft | 400 Ft | 600 Ft | 800 Ft | 1000 Ft

PROPOSED MAJOR PROJECT FEATURES AND MODELED NOISE RECEPTOR & BARRIER LOCATIONS US 101 EXPRESS LANES PROJECT

DATE: 10/3/2014



LEGEND:

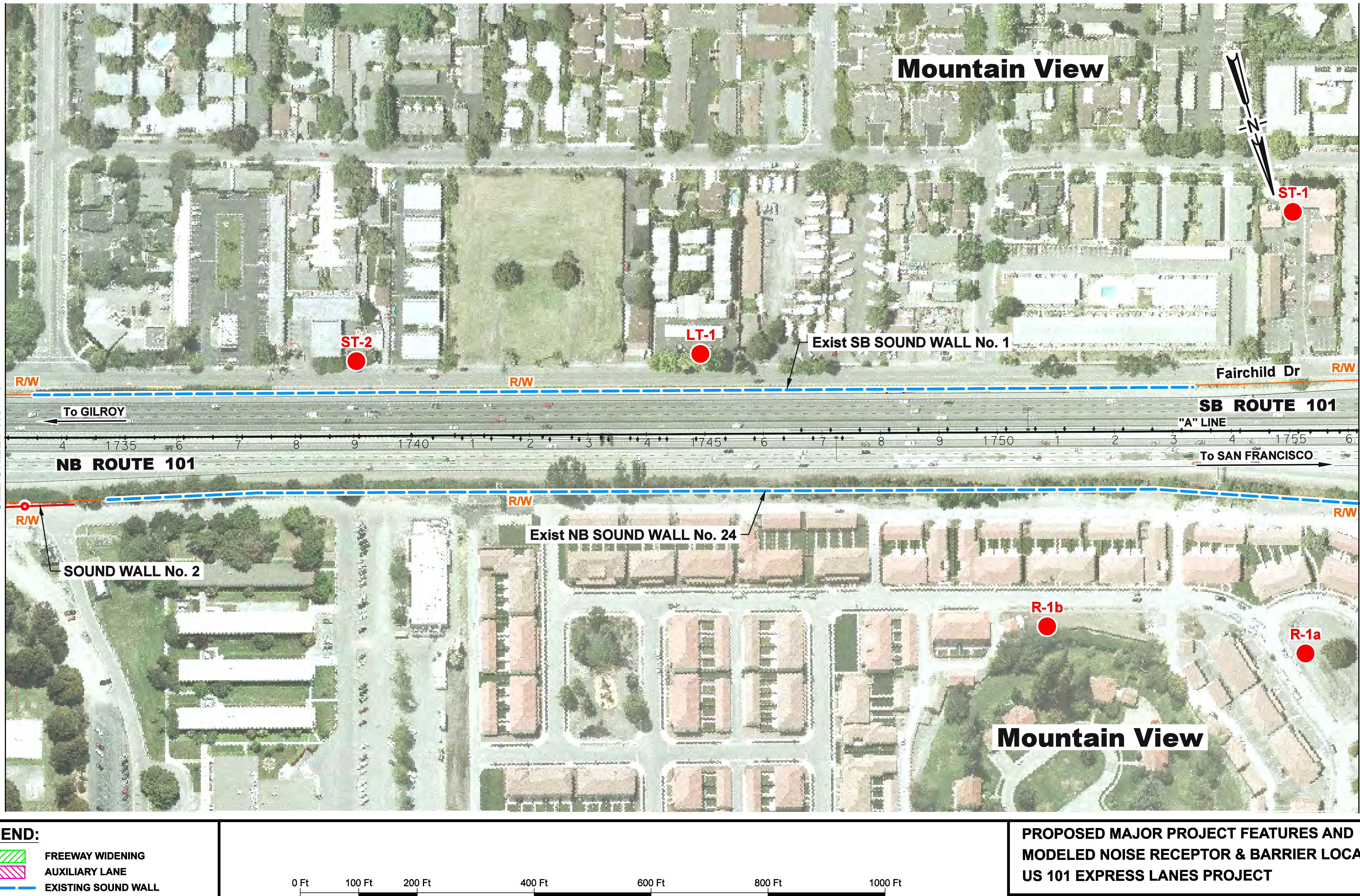
- FREEWAY WIDENING
- AUXILIARY LANE
- EXISTING SOUND WALL
- MODELED SOUND WALL
- NOISE RECEPTOR LOCATION

0 Ft | 100 Ft | 200 Ft | 400 Ft | 600 Ft | 800 Ft | 1000 Ft

PROPOSED MAJOR PROJECT FEATURES AND MODELED NOISE RECEPTOR & BARRIER LOCATIONS US 101 EXPRESS LANES PROJECT

DATE: 10/3/2014

SHEET 78 OF 80

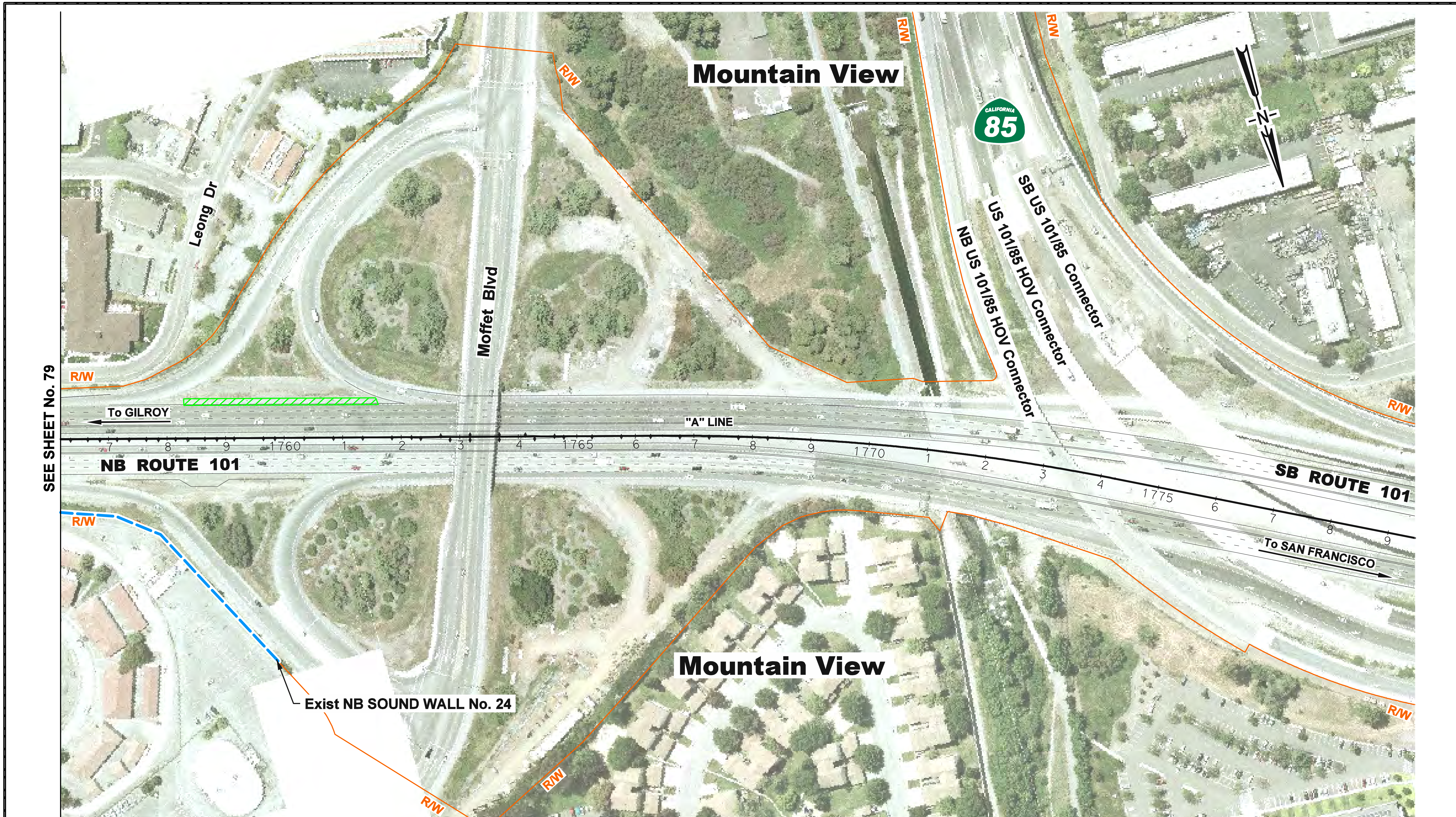


LEGEND:

- FREEWAY WIDENING
- AUXILIARY LANE
- EXISTING SOUND WALL
- MODELED SOUND WALL
- NOISE RECEPTOR LOCATION

PROPOSED MAJOR PROJECT FEATURES AND MODELED NOISE RECEPTOR & BARRIER LOCATIONS US 101 EXPRESS LANES PROJECT

DATE: 10/3/2014



LEGEND:

- FREEWAY WIDENING
- AUXILIARY LANE
- EXISTING SOUND WALL
- MODELED SOUND WALL
- NOISE RECEPTOR LOCATION

0 Ft 100 Ft 200 Ft 400 Ft 600 Ft 800 Ft 1000 Ft

PROPOSED MAJOR PROJECT FEATURES AND MODELED NOISE RECEPTOR & BARRIER LOCATIONS US 101 EXPRESS LANES PROJECT

DATE: 10/3/2014

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Appendix G Environmental Commitment Record

Table G-1: Summary of Minimization and/or Mitigation Measures

Minimization and/or Mitigation Measure	Page Reference in IS/EA	Responsible Party	Timing
Visual/Aesthetics			
Aesthetic treatment will be provided in the design of retaining walls.	Section 2.1.4.4	VTA	Final Design
Develop a project landscaping plan during final design. The plan will include areas that were temporarily disturbed during construction, where feasible. Plantings would be completed within two years of project construction.	Section 2.1.4.4	Department Landscape Design	Final design, Post-Construction
Vegetation would be preserved, and protective measures employed, where no construction is planned.	Section 2.1.4.4	VTA, Construction Contractor	Preconstruction, Construction
Flood lighting for night work would be placed and adjusted such that light is cast downward and confined to the immediate work area.	Section 2.1.4.4	VTA, Construction Contractor	Construction
Cultural Resources			
Cultural ESAs exist on this project. The conditions, procedures and protocols of the cultural ESAs is outlined in the ESA Action Plan that will be included in the RE Pending File. The cultural ESA will adhere to the Caltrans 2010 Standard Special Provisions (SSP – 14-1.02A) and will be delineated on construction plans as part of the final bid solicitation package	Section 2.1.5.4	Caltrans Archaeologist, VTA, Resident Engineer, Construction Contractor	Final design, construction
As per Caltrans 2010 Standard Special Provision 14-2.02 if cultural materials are unearthed during construction, work will be halted in the area until a qualified archaeologist can assess the find.	Section 2.1.5.4	VTA, Resident Engineer, Construction Contractor	Final design, construction
An archaeologist will conduct field reviews of the ESAs to ensure that they remain intact and are not compromised.	Section 2.1.5.4	Department, VTA, and Construction Contractor	Final design, construction
Limit all construction to the defined project area. ESAs adjacent to the project area will be identified on contract plans and discussed in the Special Provisions. Contractor encroachment into ESAs will be prohibited (including the staging/operation of heavy equipment or casting of excavation materials). ESA provisions will be implemented as a first order of work and remain in place until all construction is completed.	Section 2.1.5.4	VTA, Resident Engineer, Construction Contractor	Final design, construction
If cultural materials are discovered during construction, divert all earth-moving activity within and around the immediate discovery area until a qualified archaeologist can assess the nature and significance of the find.	Section 2.1.5.4	VTA, Resident Engineer, Construction Contractor	Construction
Contact the County Coroner if human remains are discovered and stop disturbances and activities in any area or nearby area suspected to overlie remains. Follow provisions of California Public Resources Code Section 5097.98 as applicable.	Section 2.1.5.4	VTA, Resident Engineer, Construction Contractor	Construction

Table G-1: Summary of Minimization and/or Mitigation Measures, continued

Minimization and/or Mitigation Measure	Page Reference in IS/EA	Responsible Party	Timing
Water Quality and Storm Water Runoff			
Initiate early consultation with the Department's Branch of Water Pollution Control regarding the handling and disposal of groundwater encountered during construction.	Section 2.2.2.4	VTA, Construction Contractor	Final design
Prepare a SWPPP that would include storm water BMPs applicable to construction of the proposed project. The SWPPP must also comply with the goals and restrictions identified in the San Francisco RWQCB's Basin Plan.	Section 2.2.2.4	VTA, Construction Contractor	Final design
Implement short-term (construction) and long-term (permanent) BMPs outlined in the statewide Department SWMP and in IS/EA Section 2.2.2.4.	Section 2.2.2.4	VTA, Construction Contractor	Final design, construction
Incorporate BMPs to maintain or restore pre-project hydrology in accordance with hydromodification requirements per the SCVURPPP. For the outfalls susceptible to hydromodification impacts, evaluate increase in impervious surface by using computer modeling and by evaluating a watershed for cumulative effects from impervious surface and pollutant runoff.	Section 2.2.2.4	VTA, Resident Engineer	Project design
Geology and Soils			
Design and construct project elements to meet seismic design requirements for ground shaking and ground motions, as determined for the project vicinity and site conditions (liquefaction, settlement, and corrosion).	Section 2.2.3.4	VTA, Construction Contractor	Final design
Perform additional geotechnical subsurface and design investigations during final project design and engineering phase, including site-specific evaluation of subsurface conditions (such as potential for liquefaction and lateral spreading) at the location of proposed foundation features.	Section 2.2.3.4	VTA	Final design
Paleontology			
Include Caltrans Standard Specification 14-7.02 in the construction contract requirement.	Section 2.2.4.4	VTA	Final design
Include a specification in the construction contract stating that paleontological monitoring will occur in accordance with the Paleontological Mitigation Plan.	Section 2.2.4.4	VTA	Preconstruction
Update and finalize the Paleontological Mitigation Plan for implementation during construction.	Section 2.2.4.4	VTA	Final design
Hazardous Waste and Materials			
Further investigation of the sites identified in IS/EA Table 2.2.5-1 is recommended due to the potential presence of petroleum hydrocarbons, solvents, and ADL in soil and/or groundwater.	Section 2.2.5.4	VTA	Final design
For project excavations that extend to groundwater, conduct groundwater sampling, analysis, and characterization before construction commences. Determine treatment and disposal options for extracted groundwater prior to any dewatering of excavations.	Section 2.2.5.4	VTA	Final design
If soil excavation is planned near properties where petroleum hydrocarbon-impacted soils may be present, sample, test, and characterize the soil.	Section 2.2.5.4	VTA	Final design
If soil excavation is planned near properties where chlorinated compounds may be present, sample, test, and characterize the soil and groundwater for chlorinated compounds.	Section 2.2.5.4	VTA, Construction Contractor	Final design

Table G-1: Summary of Minimization and/or Mitigation Measures, continued

Minimization and/or Mitigation Measure	Page Reference in IS/EA	Responsible Party	Timing
Where surface soils will be excavated, sample and test for lead, pesticides, VOCs, and PCBs.	Section 2.2.5.4	VTA, Construction Contractor	Final design
Perform soil sampling for naturally occurring asbestos at several locations throughout the project site from deeper soil samples associated with the placement of signs.	Section 2.2.5.4	VTA, Construction Contractor	Final design
Soil sampling for ADL is recommended where surface soils will be excavated along US 101.	Section 2.2.5.4	VTA, Construction Contractor	Final design
Properly characterize and dispose of contaminated soil, groundwater, and other hazardous materials at an appropriate facility per applicable regulations.	Section 2.2.5.4	VTA, Construction Contractor	Final design (testing), construction (disposal)
Air Quality			
Cover all trucks hauling soil, sand, and other loose materials or require all trucks to maintain at least 2 feet of freeboard (siding that extends above the load).	Section 2.2.6.4	VTA, Construction Contractor	Construction
Pave, apply water daily, or apply (nontoxic) soil stabilizers on all unpaved access roads, parking areas and staging areas at construction sites.	Section 2.2.6.4	VTA, Construction Contractor	Construction
Sweep daily (with water sweepers) all paved access roads, parking areas, and staging areas at construction sites.	Section 2.2.6.4	VTA, Construction Contractor	Construction
Hydroseed or apply (nontoxic) soil stabilizers to inactive construction areas (previously graded areas inactive for 10 days or more).	Section 2.2.6.4	VTA, Construction Contractor	Construction
Enclose, cover, water twice daily or apply (nontoxic) soil binders to exposed stockpiles (dirt, sand, etc.)	Section 2.2.6.4	VTA, Construction Contractor	Construction
Install sandbags or other erosion control measures at active construction areas to prevent silt runoff to public roadways.	Section 2.2.6.4	VTA, Construction Contractor	Construction
Replant vegetation in disturbed areas as quickly as possible.	Section 2.2.6.4	VTA, Department	Construction
Noise			
Limit pile driving activities to daytime hours only.	Section 2.2.7.4	VTA, Resident Engineer, Construction Contractor	Final design, construction
Equip all internal combustion engine driven equipment with intake and exhaust mufflers that are in good condition and appropriate for the equipment.	Section 2.2.7.4	VTA, Resident Engineer, Construction Contractor	Final design, construction
Prohibit unnecessary idling of internal combustion engines within 100 feet of residences.	Section 2.2.7.4	VTA, Resident Engineer, Construction Contractor	Final design, construction
Use “quiet” air compressors and other “quiet” equipment where such technology exists.	Section 2.2.7.4	VTA, Resident Engineer, Construction Contractor	Final design, construction

Table G-1: Summary of Minimization and/or Mitigation Measures, continued

Minimization and/or Mitigation Measure	Page Reference in IS/EA	Responsible Party	Timing
Avoid staging of construction equipment within 200 feet of residences and locate all stationary noise-generating construction equipment, such as air compressors, portable power generators, or self-powered lighting systems as far practical from noise sensitive residences.	Section 2.2.7.4	VTA, Resident Engineer, Construction Contractor	Final design, construction
Require all construction equipment to conform to Section 14-8.02, Noise Control, of the latest Department Standard Specifications.	Section 2.2.7.4	VTA, Resident Engineer, Construction Contractor	Final design, construction
Prepare a detailed construction plan identifying the schedule for major noise-generating construction activities and distribute this plan to adjacent noise-sensitive receptors. The construction plan should also list the construction noise reduction measures identified in this section.	Section 2.2.7.4	Construction contractor	Final design, construction
Natural Communities			
Develop a project landscaping plan during final design. The plan will include areas that were temporarily disturbed during construction, where feasible. Trees would be plated within two years of the project.	Section 2.3.1.4	Department Landscape Design	Final design
Remove trees before the start of the nesting season for raptors and migratory birds (February 1) to avoid impacts to birds that are protected under the MBTA.	Section 2.3.1.4	VTA, Construction Contractor	Preconstruction
Preserve vegetation where no construction is planned.	Section 2.3.1.4	VTA, Construction Contractor	Preconstruction, Construction
Preconstruction surveys for serpentine grasslands will be conducted during the spring before construction begins in San Jose on the east side of US 101 from Yerba Buena Road to Coyote Road and from Silver Creek Valley Road to SR 85, and on both sides of US 101 from SR 85 to East Dunne Avenue in San Jose and Morgan Hill. To the extent possible, a 5-foot buffer would be placed around the serpentine grasslands using ESA fencing prior to the start of construction to avoid any direct impacts to this sensitive habitat.	Section 2.3.1.4	VTA, Construction Contractor	Preconstruction
Compensatory mitigation for direct effects to serpentine grasslands would be provided through payment of a serpentine fee to the HCP/NCCP. Compensatory mitigation for indirect effects to serpentine grasslands for project contributions to nitrogen oxide emission increases would be provided through payment of a nitrogen deposition fee to the HCP/NCCP.	Section 2.3.1.4	VTA	Final design

Table G-1: Summary of Minimization and/or Mitigation Measures, continued

Minimization and/or Mitigation Measure	Page Reference in IS/EA	Responsible Party	Timing
Wetlands and Other Waters of the United States			
Limit all construction to the defined project area. ESAs adjacent to the project area will be identified on contract plans and discussed in the Special Provisions. ESA provisions may include, but are not limited to, the use of temporary orange fencing to delineate the proposed limit of work in areas adjacent to sensitive resources, or to delineate and exclude sensitive resources from potential construction impacts. Contractor encroachment into ESAs will be prohibited (including the staging/operation of heavy equipment or casting of excavation materials). ESA provisions will be implemented as a first order of work and remain in place until all construction is completed.	Section 2.3.2.4	VTA, Resident Engineer, Construction Contractor	Final design, construction
Develop and implement a SWPPP.	Section 2.3.2.4	VTA, Resident Engineer, Construction Contractor	Final design
Fence off wetlands in the project area using ESA fencing. The fencing will be placed 5 feet away from each wetland feature.	Section 2.3.2.4	VTA, Construction Contractor	Preconstruction
Use appropriate erosion control measures to reduce siltation and runoff of contaminants into wetlands and adjacent, ponds, streams, or riparian woodland/scrub. The contractor will not be allowed to stockpile brush, loose soils, or other debris material on stream banks. Only native plant species will be used in erosion control or revegetation seed mix. Any hydroseed mulch used for revegetation must also be certified weed-free. Dry-farmed straw will not be used, and certified weed-free straw will be required where erosion control straw is to be used. Filter fences and mesh will be of material that will not entrap reptiles and amphibians. Erosion-control measures will be placed between a water or wetland and the outer edge of the project site.	Section 2.3.2.4	VTA, Construction Contractor	Final design, preconstruction, construction
Clean all off-road construction equipment of potential noxious weed sources (mud, vegetation) before entry into the project area. Equipment will be considered free of soil, seeds, and other such debris when a visual inspection does not disclose such material. Disassembly of equipment components or specialized inspection tools is not required.	Section 2.3.2.4	Construction Contractor	Construction
Park vehicles and equipment on pavement, existing roads, or specified staging areas.	Section 2.3.2.4	Construction Contractor	Construction
Promptly and properly remove trash from the site.	Section 2.3.2.4	Construction Contractor	Construction
Do not refuel construction or maintenance vehicles within 200 feet of wetlands and ponds unless a bermed and lined refueling area is constructed and hazardous material absorbent pads are available in the event of a spill.	Section 2.3.2.4	Construction Contractor	Construction

Table G-1: Summary of Minimization and/or Mitigation Measures, continued

Minimization and/or Mitigation Measure	Page Reference in IS/EA	Responsible Party	Timing
Place equipment storage, fueling, and staging areas in disturbed areas or on non-sensitive nonnative grassland land cover types, when these sites are available, to minimize risk of direct discharge into riparian areas or other sensitive land cover types.	Section 2.3.2.4	Construction Contractor	Construction
Return all temporarily disturbed areas, such as staging areas, to pre-project or ecologically improved conditions within 1 year of the completing construction or the impact will be considered permanent. Alternatively, if active restoration is used to restore the site within 5 years and the restoration is successful, the impact will be considered temporary.	Section 2.3.2.4	VTA, Resident Engineer, Construction Contractor	Construction, post construction
Compensatory mitigation for permanent impacts of 0.06 acre of waters of the State will be provided through payment of an in-lieu fee to the HCP/NCCP. If mitigation through the HCP/NCCP is not feasible for impacts to waters of the state, off-site mitigation will be implemented in coordination with the RWQCB.	Section 2.3.2.4	VTA	Final design
Plant Species			
If construction begins during the blooming period, preconstruction surveys will be conducted for serpentine plant species no more than two days prior to the start of ground disturbing activities on the east side of US 101 from Yerba Buena Road to Coyote Road and from Silver Creek Valley Road to SR 85, and on both sides of US 101 from SR 85 to East Dunne Avenue in San Jose and Morgan Hill.	Section 2.3.3.4	VTA	Prior to construction
If serpentine plant species are present within the limits of construction, to the extent possible, a 5-foot buffer will be placed around the listed plant species using ESA fencing prior to the start of construction to avoid any direct impacts to the plants.	Section 2.3.3.4	VTA	Prior to construction
If construction is planned to start before or after the serpentine plant species' blooming period, additional surveys will be done during the blooming periods when these species are identifiable.	Section 2.3.3.4	VTA	Prior to construction
Compensatory mitigation for indirect impacts to Mt. Hamilton fountain thistle, smooth lessingia, Loma Prieta hoita, and fragrant fritillary and most-beautiful jewel-flower from potential increases in nitrogen oxide emissions will be provided through payment of serpentine and nitrogen deposition fees to the Santa Clara Valley HCP/NCCP.	Section 2.3.3.4	VTA	Final design

Table G-1: Summary of Minimization and/or Mitigation Measures, continued

Minimization and/or Mitigation Measure	Page Reference in IS/EA	Responsible Party	Timing
Animal Species			
Preconstruction surveys will be conducted in all suitable habitat to document the presence or absence of western burrowing owls, particularly in areas within 250 feet of construction activity. The surveys will conclude no more than two days prior to construction.	Section 2.3.4.4	VTA	Prior to construction
If evidence of western burrowing owls is found during the breeding season surveys (February 1 to August 31), all nest sites that could be disturbed by the project will be avoided during the remainder of the breeding season. A buffer zone will be established around the site. Construction may occur inside the buffer zone during the breeding season if the nest is not disturbed and a monitoring plan is developed in coordination with CDFW.	Section 2.3.4.4	VTA	Prior to construction
During the non-breeding season, a buffer zone will be established around occupied burrows.	Section 2.3.4.4	VTA	Prior to construction
Preconstruction surveys for raptors and appropriate nesting habitat will be conducted within 300 feet of the construction area no more than 15 days prior to ground disturbing activities including tree removal activities in the BSA. If an active nest is found, the nest tree will be protected by establishing a 300-foot buffer zone using ESA fencing. The protective fencing will be maintained in place until the end of the breeding season or until the young have fledged, as determined by a Caltrans approved biologist.	Section 2.3.4.4	VTA	Prior to construction
Have a Caltrans approved biologist conduct weekly monitoring to evaluate nests for potential disturbances associated with construction activities. Construction within the buffer is prohibited until the Caltrans approved biologist determines the nest is no longer active.	Section 2.3.4.4	VTA, Resident Engineer, Construction Contractor	Construction
If an active nest is found after construction begins, stop construction activities in the vicinity of the nest until a Caltrans approved biologist has evaluated the nest and established the appropriate buffer around the nest. If establishment of the buffer is not feasible, contact CDFW for further avoidance and minimization guidelines.	Section 2.3.4.4	VTA, Resident Engineer, Construction Contractor	Construction
During the nesting season (February 1 through August 31), have a Caltrans approved biologist conduct preconstruction surveys for nesting migratory birds in the project area no more than three days prior to the start of ground disturbing activities in the BSA. If preconstruction surveys indicate the presence of any migratory bird nests where activities would directly result in bird injury or death, a buffer zone of 50 feet will be placed around the nest.	Section 2.3.4.4	VTA	Prior to construction

Table G-1: Summary of Minimization and/or Mitigation Measures, continued

Minimization and/or Mitigation Measure	Page Reference in IS/EA	Responsible Party	Timing
During the nesting season (February 1 through August 31), 50-foot buffers will be established around active migratory bird nests where project activities would directly result in bird injury or death. The size of the buffer may vary for different species and will be determined in coordination with CDFW. A Caltrans approved biologist will delineate the buffer using ESA fencing, pin flags, and/or yellow caution tape. The buffer zone will be maintained around all active nest sites until the young have fledged and are foraging independently. In the event that an active nest is found after the completion of preconstruction surveys and after construction begins, all construction activities within a 50-foot radius will be stopped until a Caltrans approved biologist has evaluated the nest and erected the appropriate buffer around it.	Section 2.3.4.4	VTA	Construction
If an active nest is found in an area after construction begins, construction activities in the vicinity of the nest will stop until a Caltrans approved biologist has evaluated the nest and established the appropriate buffer around the nest. If establishment of the buffer is not feasible, CDFW will be contacted for further avoidance and minimization guidelines. If construction takes place during the nesting season, exclusion netting may be necessary at structures in areas of known seasonal nesting.	Section 2.3.4.4	VTA	Prior to construction
No more than two weeks prior to the start of ground disturbing activities, have a Caltrans approved biologist survey the trees and man-made structures in the BSA for evidence of bat roosts (e.g., bat guano). If bat roosts are located during preconstruction surveys, the roosts will be flagged and avoided during construction.	Section 2.3.4.4	VTA	Prior to construction
Threatened and Endangered Species			
Limit construction to the dry season (June 15 to October 15) in all active ground disturbance and construction areas along US 101 south of the SR 85/US 101 interchange in San Jose.	Section 2.3.5.4	VTA, Resident Engineer, Construction Contractor	Final design, construction
Prior to any construction on US 101 south of the SR 85/US 101 interchange in San Jose, a USFWS- and CDFW-approved biologist will conduct an education program for construction personnel. At a minimum, the training will include a description of CRLF and CTS and their habitats; the potential occurrence of these species in the project area; an explanation of the status of these species and protection under the FESA; the measures to be implemented to conserve listed species and their habitats as they relate to the work site; and boundaries in which construction may occur. A fact sheet conveying this information will be prepared and distributed to all construction crews and project personnel entering the project area. Upon completion of the program, personnel will sign a form stating that they attended the program and understand all of the avoidance and minimization measures and implications of the FESA.	Section 2.3.5.4	VTA, Resident Engineer, Construction Contractor	Final design, construction

Table G-1: Summary of Minimization and/or Mitigation Measures, continued

Minimization and/or Mitigation Measure	Page Reference in IS/EA	Responsible Party	Timing
Only USFWS- and CDFW-approved biological monitors will implement the monitoring duties outlined in the BO including delivery of the Worker Environmental Awareness Training Program.	Section 2.3.5.4	VTA, Resident Engineer, Construction Contractor	Final design, construction
A USFWS- and CDFW-approved biologist will be present during removal of vegetation and ground disturbance activities in areas along US 101 south of the SR 85/US 101 interchange in San Jose to monitor activities and examine the site for CRLF and CTS. After vegetation removal, the biologist will check the exclusion fencing as necessary to ensure that it remains intact throughout the construction period. Through communication with the Resident Engineer or their designee, the biologist may stop work if deemed necessary for any reason to prevent the mortality or injury of a CRLF or CTS and will advise the Resident Engineer or designee on how to proceed accordingly. If a CRLF or CTS is found, work within a 50-foot radius will be halted, and the USFWS will be notified immediately. Work in the area will not resume until the CRLF or CTS is relocated to a suitable site by the biologist in conformance with approved USFWS protocol.	Section 2.3.5.4	VTA, Construction Contractor	Preconstruction
No more than two days prior to the start of ground disturbing activities, focused preconstruction surveys for CRLF and CTS will be completed by a USFWS- and CDFW-approved biologist in all suitable upland dispersal habitat areas within the project footprint. If CRLF or CTS are found during focused preconstruction surveys, the USFWS will be contacted within one working day, and work activities along US 101 in suitable upland dispersal habitat will be suspended until the CRLF or CTS is relocated to a suitable site in conformance with approved USFWS protocol.	Section 2.3.5.4	VTA, Construction Contractor	Preconstruction
Wildlife exclusion fencing will be installed around CRLF and CTS habitat prior to any construction during the dry season (June 15 through October 15), when CRLF and CTS are not actively dispersing or foraging. The exclusion fencing would be placed 10 feet from the edge of pavement along US 101, south of the SR 85/US 101 interchange in San Jose. The physical placement of the fence will be supervised by a USFWS- and CDFW-approved biologist. This will ensure a complete barrier around the construction area to prevent any wandering CRLF or CTS from entering the area. The fencing will remain in place until all project activities in the vicinity of suitable upland dispersal habitat are completed.	Section 2.3.5.4	VTA, Resident Engineer, Construction Contractor	Construction
To prevent CRLF or CTS from becoming entangled or trapped in erosion control materials, plastic monofilament netting (erosion control matting) or similar material will not be used for erosion control. Acceptable erosion control substitutes include matting made of coconut coir (a fiber made from coconut husks) or tackified hydroseeding compounds (seeds and mulch mixed with a tacky substance to keep the mixture in place).	Section 2.3.5.4	VTA, Construction Contractor	Final design, construction

Table G-1: Summary of Minimization and/or Mitigation Measures, continued

Minimization and/or Mitigation Measure	Page Reference in IS/EA	Responsible Party	Timing
To prevent inadvertent entrapment of CRLF, CTS, and other wildlife species during construction, all excavated, steep-walled holes or trenches more than 1-foot deep will either be covered with plywood or similar materials at the end of each work day or one or more escape ramps constructed of earth full or wooden planks will be installed. The USFWS- and CDFW-approved biologist will inspect all holes and trenches before holes and trenches are filled. Materials left on-site overnight will be inspected by the USFWS- and CDFW-approved biologist before they are subsequently moved, capped and/or burred. If at any time a listed species is discovered, the Resident Engineer and the USFWS- and CDFW-approved biologist will be notified immediately. If necessary, the USFWS- and CDFW-approved biologist will capture and relocate them to a suitable area outside the project area.	Section 2.3.5.4	VTA, Construction Contractor	Construction
The USFWS- and CDFW-approved biologist will take all precautions to prevent spread of amphibian diseases when handling the listed species. Implementation of measures to minimize the spread of disease and non-native species will follow the current Wildlife Agency protocols (e.g., *Revised Guidance on Site Assessments and Field Surveys for the California Red-legged Frog: Appendix B, Recommended Equipment Decontamination Procedures* [USFWS 2005a]).	Section 2.3.5.4	VTA, Construction Contractor	Construction
All organic matter should be removed from nets, traps, boots, vehicle tires and all other surfaces that have come into contact with ponds, wetlands, or potentially contaminated sediments. Items should be washed with a 5 percent bleach solution and rinsed with clean water before leaving each study site. Used cleaning materials (liquids, etc.) should be disposed of safely, and if necessary, taken off site for proper disposal. Used disposable gloves should be retained for safe disposal in sealed bags (County of Santa Clara 2012).	Section 2.3.5.4	VTA, Construction Contractor	Construction
Rodenticides and herbicides will be utilized in such a manner to prevent primary or secondary poisoning of listed species, and depletion of prey populations on which they depend. All uses of such compounds will observe label and other restrictions mandated by the U.S. Environmental Protection Agency, California Department of Pesticide Regulation, and other appropriate state and federal regulations, as well as additional project-related restrictions deemed necessary by the USFWS or the CDFW.	Section 2.3.5.4	VTA, Construction Contractor	Construction
No firearms will be allowed in the BSA except for those carried by authorized security personnel, or local, state, or federal law enforcement officials.	Section 2.3.5.4	VTA, Construction Contractor	Construction
No pets will be permitted in the BSA.	Section 2.3.5.4	VTA, Construction Contractor	Construction

Table G-1: Summary of Minimization and/or Mitigation Measures, continued

Minimization and/or Mitigation Measure	Page Reference in IS/EA	Responsible Party	Timing
Before construction commences, a preconstruction survey for the primary and secondary host plants (dwarf plantain, purple owl's clover and exserted Indian paintbrush) will be conducted to determine the presence and extent of the plants within the BSA. These should be conducted in coordination with the preconstruction survey for serpentine grasslands within this same area. To the extent possible, host plants that are present in the limits of construction will be fenced off prior to construction using ESA fencing (including a 5-foot buffer) to avoid any direct or indirect impacts to bay checkerspot butterfly. The preconstruction survey will be conducted during the host plants' blooming period, when the plants are identifiable.	Section 2.3.5.4	VTA, Construction Contractor	Preconstruction
To avoid impacts to dispersing adult butterflies, construction activities south of Yerba Buena Road will not occur during the flight period. The flight period generally begins in March and lasts into early May (County of Santa Clara 2012).	Section 2.3.5.4		
During ground-disturbing construction activities, the construction contractor will implement dust control measures including regular watering of exposed soils to reduce the amount of dust and particulate matter in the air. The control measures will be consistent with Caltrans Standard Specifications, Section 14-9.01 (Air Pollution Control) and Section 14-9.02 (Dust Control).	Section 2.3.5.4	VTA	Preconstruction
If construction is starts during the blooming period when coyote ceanothus and Metcalf Canyon jewel-flower are identifiable, then preconstruction surveys will be conducted no more than two days prior to the start of ground disturbing activities on the east side of US 101 from Yerba Buena Road to Coyote Road and from Silver Creek Valley Road to SR 85, and on both sides of US 101 from SR 85 to East Dunne Avenue in San Jose and Morgan Hill.	Section 2.3.5.4	VTA, Construction Contractor	Construction
Fence off Metcalf Canyon jewel-flower plants that are present in the limits of construction prior to construction using ESA fencing (including an approximate 5-foot buffer).	Section 2.3.5.4	VTA, Construction Contractor	Construction
If construction is planned to start before or after the listed plant species' blooming periods, additional surveys will be done during the blooming periods when the coyote ceanothus and Metcalf Canyon jewel-flower are identifiable.	Section 2.3.5.4	VTA	Preconstruction
Compensatory mitigation for impacts to CRLF and CTS will be provided through payment of an in-lieu fee to the HCP/NCCP. Compensatory mitigation for impacts to the bay checkerspot butterfly, coyote ceanothus, and Metcalf Canyon jewel-flower will be provided through payment of the serpentine fee and nitrogen deposition fee to the Santa Clara Valley HCP/NCCP.	Section 2.3.5.4	VTA	Final design

Table G-1: Summary of Minimization and/or Mitigation Measures, continued

Minimization and/or Mitigation Measure	Page Reference in IS/EA	Responsible Party	Timing
Invasive Species			
Do not use species listed as noxious weeds in project landscaping and erosion control.	Section 2.3.5.4	VTA, Construction Contractor	Construction
No disposal of soil and plant materials should be allowed from areas that support invasive species to areas dominated by native vegetation.	Section 2.3.5.4	VTA, Resident Engineer, Construction Contractor	Construction
Resident Engineers should be educated on weed identification and the importance of controlling and preventing the spread of identified invasive nonnative species.	Section 2.3.5.4	VTA	Construction
Gravel and/or fill material to be placed in relatively weed-free areas should come from weed-free sources. Certified weed-free imported materials (or rice straw in upland areas) will be used.	Section 2.3.5.4	VTA, Construction Contractor	Construction

Appendix H List of Acronyms

AADT	average annual daily traffic
AB	Assembly Bill
ABAG	Association of Bay Area Governments
ACS	American Community Survey
ADL	aerially deposited lead
APE	Area of Potential Effects
ARB	California Air Resources Board
ARPA	Archaeological Resources Protection Act of 1979
ASR	Archaeological Survey Report
BAAQMD	Bay Area Air Quality Management District
BATA	Bay Area Transit Authority
BCDC	Bay Conservation and Development Commission
BMP	Best Management Practice
BSA	Biological Study Area
CalEPA	California Environmental Protection Agency
Caltrans	California Department of Transportation
CDFG	California Department of Fish and Game
CDFW	California Department of Fish and Wildlife
CEQ	Council on Environmental Quality
CEQA	California Environmental Quality Act
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act of 1980
CERFA	Community Environmental Response Facilitation Act of 1992
CESA	California Endangered Species Act
CFR	Code of Federal Regulations
CHP	California Highway Patrol
CH_4	Methane
CHRIS	California Historical Resources Information System
CNPS	California Native Plant Society
CNDDB	California Natural Diversity Database
CO	Carbon Monoxide

CO_2	Carbon Dioxide
CPS	Central Processing System
CRHR	California Register of Historical Resources
CRLF	California red-legged frog
CTS	California tiger salamander
CWA	Clean Water Act
dB	decibel
dBA	A-weighted decibels
Department	California Department of Transportation
DMV	Department of Motor Vehicles (California)
DPM	diesel particulate matter
DSA	Disturbed Soil Area
DTSC	Department of Toxic Substances Control
EDR	Environmental Data Resources, Inc
EJ	Environmental Justice
EO	Executive Order
ESA	Environmentally Sensitive Area
FEMA	Federal Emergency Management Agency
FESA	Federal Endangered Species Act
FHWA	Federal Highway Administration
FIFRA	Federal Insecticide, Fungicide, and Rodenticide Act
FIRMs	Flood Insurance Rate Maps
FONSI	Finding of No Significant Impact
FTA	Federal Transit Administration
FTIP	Federal Transit Improvement Programs
GHG	greenhouse gas
H_2S	hydrogen sulfide
HCP	Habitat Conservation Plan
HCP/NCCP	Habitat Conservation Plan/Natural Communities Conservation Plan
HFCs	hydrofluorocarbons
HOT	high occupancy toll
HOV	high occupancy vehicle
HPSR	Historic Property Survey Report

HRER	Historical Resources Evaluation Report
I-	Interstate
ILEV	Inherently Low Emission Vehicles
IPCC	Intergovernmental Panel on Climate Change
ISA	Initial Site Assessment
IS/EA	Initial Study/Environmental Assessment
ITS	intelligent transportation systems
LED	Light-emitting diode
LEDPA	least environmentally damaging practicable alternative
LOS	Level of Service
MBTA	Migratory Bird Treaty Act
MLD	most likely descendent
MND	Mitigated Negative Declaration
MPO	Metropolitan Planning Organization
mph	miles per hour
MS4	municipal separate storm sewer systems
MSAT	Mobile Source Air Toxic
MTC	Metropolitan Transportation Commission
N_2O	Nitrous Oxide
NAAQS	National Ambient Air Quality Standards
NAC	Noise Abatement Criteria
NAHC	Native American Heritage Commission
NEPA	National Environmental Policy Act
NHTSA	National Highway Traffic Safety Administration
NHPA	National Historic Preservation Act of 1966
NO_2	Nitrogen Dioxide
NOAA	National Oceanic and Atmospheric Administration
NPDES	National Pollutant Discharge Elimination System
NRHP	National Register of Historic Places
NPL	national priorities list
NWIC	Northwest Information Center
O_3	ozone
OPR	Office of Planning and Research

OSHA	Occupational Safety and Health Act
OSTP	Office of Science and Technology Policy
PA	Programmatic Agreement
PCB	Polychlorinated biphenyls
PER/PMP	Paleontological Evaluation Report/Paleontological Mitigation Plan
PFCs	perfluorocarbons
PDT	project development team
PG&E	Pacific Gas and Electric
PIR	Paleontological Identification Report
PM	post mile
$PM_{2.5}$	particles of 2.5 micrometers and smaller
PM_{10}	particles of 10 micrometers and smaller
POAQC	Project of Air Quality Concern
POM	polycyclic organic matter
ppm	parts per million
PS&E	Plans, Specifications and Estimates
PSR/PDS	Project Study Report/Project Development Support
PRC	Public Resources Code
RCRA	Resource Conservation and Recovery Act of 1976
RCSC	Regional Customer Service Center
RTP	regional transportation plan
RWQCB	Regional Water Quality Control Board
SB	southbound
SCL	Santa Clara
SCVURPPP	Santa Clara Valley Urban Runoff Pollution Prevention Program
SCVWD	Santa Clara Valley Water District
SCS	sustainable communities strategy
SDC	seismic design criteria
SF_6	Sulfur hexaflouride
SHPO	State Historic Preservation Officer
SHPSR	Supplemental Historic Property Survey Report
SIP	State Implementation Plan
SO_2	sulfur dioxide

SOV	single-occupant vehicle
SR	State Route
SSP	standard special provision
SWPPP	Storm Water Pollution Prevention Plan
SWRCB	State Water Resources Control Board
SWMP	Statewide Storm Water Management Plan
TCE	temporary construction easement
TDM	Traffic Demand Alternative
TIP	Transportation Improvement Programs
TMDL	Total Maximum Daily Load
TMP	Transportation Management Plan
TOS	Traffic Operations Systems
TSCA	Toxic Substances Control Act
TSM	Traffic Systems Management
UCMP	University of California Museum of Paleontology
U.S.	United States
US 101	United States Highway 101
USACE	U.S. Army Corps of Engineers
USC	United States Code
U.S. EPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
UST	underground storage tank
VMT	vehicle miles traveled
VOCs	volatile organic compounds
vph	vehicles per hour
VTA	Santa Clara Valley Transportation Authority
WBWG	Western Bat Working Group
WDR	Waste Discharge Requirements
WPCP	Water Pollution Control Plan
XPI	Extended Phase I

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Appendix I List of Technical Studies

Archaeological Survey Report (URS 2014c)

Air Quality Impact Assessment (URS 2014f)

Biological Assessment (URS 2014i)

Community Impact Assessment (URS 2012a)

Forecasted Travel Demand Technical Memorandum (CDMSmith 2012)

Extended Phase I (XPI) Study (URS 2014d)

Historic Property Survey Report (URS 2014b)

Supplemental Historic Property Survey Report (URS 2014k)

Historical Resources Evaluation Report (URS 2014e)

Environmentally Sensitive Area Action Plan (URS 2014j)

Initial Site Assessment (URS 2012c)

Jurisdictional Delineation (URS 2014h)

Location Hydraulic Study (WRECO 2013a)

Location Hydraulic Study Addendum (WRECO 2014a)

Mobile Source Air Toxics (URS 2014g)

Natural Environment Study (URS 2014a)

Paleontological Identification Report (URS 2012b)

Paleontological Evaluation Report and Mitigation Plan (URS 2013d)

$PM_{2.5}$ Hot Spot Analysis (URS 2012d)

Preliminary Geotechnical Report (URS 2013c)

Noise Abatement Decision Report (URS 2013e)

Noise Study Report (Illingworth and Rodkin 2013)

Storm Water Data Report (WRECO 2012)

Storm Water Data Report Addendum (WRECO 2014c)

Supplement to the Visual Impact Assessment (URS 2013b)

Traffic Operations Analysis Report (DKS and URS 2014)

Visual Impact Assessment (URS 2013a)

Water Quality Study Report (WRECO 2013b)

Water Quality Study Report Addendum (WRECO 2014b)

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Appendix J Comments on the Draft IS/EA

Table of Contents

J.1 Introduction to Comments and Responses

In January and February 2015, the Santa Clara Valley Transportation Authority (VTA), in cooperation with the California Department of Transportation (Department), circulated the *US 101 Express Lanes Project Initial Study with Proposed Negative Declaration/Environmental Assessment* (IS/EA) for public review. This appendix presents a description of the public review process; public comments received by postal mail, e-mail and comment cards; and the responses to those comments.

J.1.1 Comment Period

VTA and the Department circulated the IS/EA for public review and comment from January 12, 2015, to February 26, 2015. Each of the agencies and individuals listed in Chapter 5 received printed or electronic copies of the document or mailers with information about the public meetings for the project and a link to the IS/EA on the Caltrans District 4 environmental documents website. In addition, mailers were sent to all addresses within 0.25 mile of the project corridor. The mailer was translated into five languages (Spanish, Vietnamese, Korean, Chinese and Tagalog). A copy of the IS/EA was made available at the San Jose, Morgan Hill, Mountain View, Palo Alto, Santa Clara and Sunnyvale public library reference shelves for public review. Also, the meeting notice was posted on the VTA website (www.vta.org/expresslanes), VTA blog post (http://bit.ly/1wcm47a), VTA Facebook page, VTA Twitter account, and on the VTA web page for the project (http://www.vta.org/projects-andprograms/vta-express-lanes-us-101-express-lanes-project). An email was also sent to 1,500 recipients on the VTA gov email list.

The Notice of Availability was placed in the following newspapers on the following days: local English-language newspapers (*Gilroy Dispatch*, January 16, 2015, *Los Altos Town Crier*, January 14, 2015, *Mercury News*, January 12, 2015, *Morgan Hill Times*, January 16, 2015, *Mountain View Voice*, January 16, 2015, *Palo Alto Post*, January 14, 2015, *Santa Clara Weekly*, January 14, 2015 and *Sunnyvale Sun*, January 16, 2015); and foreign-language newspapers that serve the project corridor (*El Observador*, January 16, 2015—Spanish, *Korea Daily Times*, January 16, 2015—Korean, *Philippines Today*, January 14, 2015—Tagalog, *Sing Tao Daily*, January 16, 2015—Chinese, and *Viet Nam*, December 30, 2015—Vietnamese).

Three open house public meetings were held for the proposed project. Fact sheets were available in English, Spanish, Vietnamese, Korean, Chinese and Tagalog.

- The first public meeting was held on Thursday, January 22, 2015, from 5:30 p.m. to 7:30 p.m. at the Mountain View City Council Chambers, 500 Castro Street, Mountain View CA. Thirteen members of the public attended, as well as a reporter from the *Mountain View Voice.*
- The second public meeting was held on Wednesday, January 28, 2015, from 6 p.m. to 8 p.m. at the VTA Downtown Customer Service Center, 55-A W. Santa Clara Street, San Jose CA. Fourteen members of the public attended.
- The third public meeting was held on Wednesday, February 4, 2015, from 5:30 p.m. to 7:30 p.m. at the Southside Community Center, 5585 Cottle Road, San Jose CA. Thirteen members of the public attended.

Additional information about the public meetings is provided in IS/EA Section 3.2.

In total, 30 public comments were submitted during the comment period by postal mail, e-mail and comment cards collected at the public meetings.

J.1.2 Responses to Comments

Local agencies and members of the public submitted comments. Each comment letter, e-mail, comment card, or note that was received was reviewed and substantive comments were identified. Responses to each comment are organized and presented in the following sections of Appendix J:

- J.2, Comments from Local Agencies
- J.3, Comments from Individuals

To locate a comment, comment response, or commenter, see the Table of Contents.

There were no text changes to the IS/EA resulting from the public comments.

J.2 Comments from Local Agencies

Comment 1 Michael A. Fuller, City Of Mountain View

CITY OF MOUNTAIN VIEW

PUBLIC WORKS DEPARTMENT
500 Castro Street • Post Office Box 7540 • Mountain View • California • 94039-7540
650-903-6311 • Fax 650-962-8503

February 26, 2015

Sean Poirier
Department of Transportation, District 4
P.O. Box 23660, MS-8B
Oakland, CA 94623-0660

RE: INITIAL STUDY WITH PROPOSED MITIGATED NEGATIVE DECLARATION/ENVIRONMENTAL ASSESSMENT FOR THE UNITED STATES HIGHWAY 101 EXPRESS LANES

Dear Mr. Poirier:

The City of Mountain View appreciates the opportunity to review the California Department of Transportation (Caltrans) regarding the November 2014 Initial Study with Proposed Mitigated Negative Declaration/Environmental Assessment that has been prepared for the United States Highway 101 Express Lanes Project.

1 The City has no comment on the Initial Study and requests that Caltrans continue to provide updates to the City.

Sincerely,

for Michael A. Fuller
Public Works Director

Response to Comment 1

Thank you for reviewing the document. The City will continue to be notified of future actions or information released on this project and invited to participate in Project Development Team (PDT) meetings in the design phase.

Comment 2 Shahla Yazdy, City Of Palo Alto

From: Yazdy, Shahla [mailto:Shahla.Yazdy@CityofPaloAlto.org]
Sent: Thursday, February 26, 2015 1:47 PM
To: Poirier, Sean@DOT
Cc: Rius, Rafael
Subject: Comments on the 101 Express Lanes project- IS/EA

Sean,

Below please find comments from the City Of Palo Alto on the IS/EA for the above project.

Highway 101 Express Lanes Project Report Comments:

. The southbound express lane starts approximately 0.5 miles south of Oregon Expressway/Embarcadero Road interchange in Palo Alto.

2-1

a. Vehicles coming from Oregon/Embarcadero On-Ramps may have an issue getting into the express lane since the express lane opens just half a mile south of the interchange.

b. This may cause more congestion since people will try to enter the freeway and immediately cut across three lanes to get into Express Lanes, otherwise they have to wait for next opening at Ellis Avenue Interchange. Consider extending a longer transition area giving a longer weaving area for vehicles from Oregon Expressway to enter the Express Lanes.

c. The report also noted that the express lane segment from Oregon Expressway/Embarcadero Road interchange to start of express lane is expected to operate at speeds below 45 mph and at LOS F in three of four hours during the pm peak periods for build 2035 conditions.

i. This can be due to various factors; high demands, congestion in general purpose lanes, and the high volume of weaving as SOVs enter the express lane and HOVs with destinations within the first buffered segment exit.

2-2

d. Based on the report analysis, there were no indications of negative effects to the on/off-ramps that feed from Palo Alto into US 101 southbound direction. Although the congestion that is created due to start of express lane may have some impact on the On-Ramps but should not be significant enough to cause queues and spill over onto local Palo Alto Streets.

e. Based on the tables provided (Tables 5-1 to 5-4) for On/Off-Ramp volumes there does not seem to be a significant growth in demand due to addition of express lanes near Palo Alto. The demand increases further downstream outside of Palo Alto. (This applies to both northbound and southbound ramps.)

. The northbound direction, the express lane ends about a mile south of Oregon Expressway/Embarcadero Road interchange.

2-3

a. This will cause a weave to happen from that point to interchange off-ramps. Since many daily commuters will try to stay in express lane for as long as possible and then cut over three to four lanes to get into the exit lane.

b. This may cause congestion from drivers cutting others off to get into their exit lanes.

2-4

c. Also per the report, additional lanes are being added throughout US 101 from Dunne Avenue all the way up to Embarcadero Off-Ramp so more vehicles are being pushed out and onto the segment north of Express Lane end point. The express lane at the north portion of the project is two lanes when it ends and converts into two

2-4

HOV lanes followed by a lane drop of one HOV lane.

i. The report identified that this will cause a new bottleneck upstream after the Express lane ends, since more vehicles will be pushed out of the system from increase capacity to US 101 NB

1. The new bottleneck can be reduced by adjusting prices for express lane to reduce the amount of vehicles reaching this point.
2. The increase in congestion near the interchange of Oregon/Embarcadero may result in delays to the Northbound On-Ramps, although it should not be significant.

Shahla Yazdy
Transportation Project Engineer
City of Palo Alto
650.617.3151

Response to Comment 2

2-1

The project has not undergone final design. The design that was evaluated in the IS/EA includes a 2-foot-wide double-line striped buffer zone for the express lanes. The striped buffer zone would have gaps in multiple locations where vehicles can enter and exit the express lanes (called access points). The location of the access points was determined based on geometry, safety, environmental, operational, and policy requirements. Access points are designed to:

- Serve freeway-to-freeway interchanges, expressways, major arterials and local streets;
- Maintain a proper distance between access points and ramps to avoid undesirable movements and minimize congestion;
- Respond to general purpose lane bottlenecks by avoiding weaving conflicts between express lanes and general purpose lanes.

The proposed express lane access points will be further refined during detailed project design. In addition, Section 1.3.1.1 notes the Bay Area Express Lane network plans 550 miles of express lanes that are open access (via continuous access striping) except where access is limited with buffer striping or double solid striping where necessary, based on the previously mentioned design criteria.

The southbound express lane is currently designed to be continuous access until north of the Rengstorff Avenue Interchange, where it would then be separated by a buffer zone. Therefore, vehicles coming from Oregon Expressway would have about 1.9 miles of weaving distance to enter and exit the express lanes before the buffer zone striping begins. This distance is greater than the Department's minimum weaving distance of 3,200 feet (0.6 mile). As a result, additional congestion from drivers making lane changes is not expected.

2-2

Your reading of the analysis is correct. The existing condition operates at the same LOS as the proposed 2035 year condition with increased traffic volume.

Conditions in the general-purpose (GP) lanes are the primary determinant of operations on the on-ramps, not those in the express lanes. For both the No Build and Build Alternatives, the general purpose lanes are expected to operate at LOS F. As such, the project is not expected to significantly change conditions on the on-ramps. The Oregon/Embarcadero ramp is expected to be congested with long queues under both No Build and Build Alternatives.

The tables referenced (Tables D-1 to D-4) indicate that the off-ramps in Palo Alto are expected to experience little, if any, change with the project, while demand at the on-ramps is expected to increase. Consistent with the comment, travel demand on the freeway mainline increases upstream and downstream of Palo Alto (not just downstream).

2-3

Please see response to Comment 2-1 for a general description of express lane design and operation. The project proposes to terminate the express lane buffer separation to allow for a smooth transition. The weaving distance from the northbound express lane egress to the Oregon Expressway/Embarcadero Road off-ramp is 5,600 feet. This provides slightly more than a mile for drivers to make lane changes. For comparison, the minimum design for weaving distance is 3,200 feet. As a result, additional congestion from drivers making lane changes is not expected with this weaving distance.

2-4

The dynamic pricing methodology described in Section 1.3.1.2 of the IS/EA would be implemented for express lanes based on the level of congestion and traffic demand, and will be adjusted to maintain free-flowing traffic. This is consistent with the commenter's recommendation.

J.3 Comments from Individuals

Comment 3 Anonymous

From: Customer.Service
Sent: Thursday, February 26, 2015 9:20 PM
To: Perez, Lucas
Subject: VTA Information

You have a new contact me message

Description: From:
3 I do not want toll lanes on 101.
2/26/2015

Response to Comment 3

The commenter's opposition to the project is noted.

Comment 4 Anonymous

From: Customer.Service
Sent: Thursday, February 26, 2015 9:21 PM
To: Perez, Lucas
Subject: VTA Information

You have a new contact me message

Description: From:
4 Let me get this straight we get to pay again for something our taxes have already paid for?Wow how much control does our government want of us, what's next, telling us what day we can drive? When will this end?
2/26/2015

Response to Comment 4

The commenter's opposition to the project is noted. Use of the express lanes is optional, and no driver would be required use the express lanes and pay the toll. Unlike taxes, which are paid by everyone, the tolls are user fees for single occupancy vehicles (SOVs) only. Tolling SOVs for express lane use is a way to improve roadway congestion without imposing additional gas taxes, sales taxes, or motor vehicle registration fees. Unlike express lanes, such additional taxes and fees place the burden of congestion relief on taxpayers who do not necessarily use the project corridor, or in the case of sales tax, do not necessarily drive.

Comment 5 Anonymous

YOUR OPINION COUNTS

Date: 12/4/2015 Name of Project: U.S. 101

I have a question/comment about: EXPRESS LANE PROJECT.

PLEASE INCLUDE ME IN ANY EMAIL MESSAGES REGARDING THIS PROJECT

I would like more information about:

- [ ] Design Features
- [ ] Community Meetings
- [x] Funding
- [ ] Property Acquisition
- [ ] Environmental Effects
- [x] Schedule
- [ ] Construction Impacts
- [ ] Other:

Thank you for your comments. If you would like us to respond or be included in our mailing list, please fill out the information below. You may also call the Community Outreach Line at (408) 321-7575. Thank you for your interest.

Name

Address

City: State: Zip:

Response to Comment 5

Commenter did not include name, address, or email address so we cannot add this individual to the project contact database.

Comment 6 Bergstrom, Thomas

Nuria Fernandez GM/CEO of VTA
3331 North First Street
San Jose, CA 95112

Dear Nuria Fernandez GM/CEO of VTA,

6-1 After reading about the Hy 237 toll lane and the adding of more toll lanes to 101, I was dumbfounded by the lack real solutions to our congestion problems. In addition, driving or riding is expensive enough and too add more tolls will not help.

Reasons Against Tolled Fast Lanes
1. According to the Mercury News, these existing toll lanes are already over crowded and thus, defeat their purpose of relieving congestion. (See attached.)

6-2 2. Tolls for fast lanes are biased. Poorer people will not choose them and they become 2nd class citizens. Thus, these fast lanes smack of Unequal Due Process.

6-3 3. Finally, the added traffic confusion will cause more accidents. Switching the lane from HOV to HOT is distracting the driver from the road. You never make drivers play hippity-hop on the road.

6-4 Alternative Solutions to Traffic Congestion

- Get more cars off the road. Ask the state and local municipalities to give workers income and property tax breaks to move closer to work.
- Ask the state to give companies tax deductions for moving expenses for each worker who moves to the same city as their work place.
- Ask the state and local municipalities to build more affordable housing (1br = $1400/mo) and start rent control in the Bay Area through municipal legislation.
- Ask the state to increase the state gas tax by 50 cents or more per gallon.
- Add motorcycle lanes and encourage more people to ride 2 and 3 wheeled vehicles.
- Add more park and ride bussing options.
- Ask the state to add an electric car recharge fee or extra registration fee to recoup loss of gas taxation.
- Ask the state to give huge incentives for people to buy small cars and small SUVs.
- Ask the state to ban the sale of large vehicles to residential customers which in reality would physically allow more vehicles on the road.

Note, I understand that your hands are tied to civil engineering projects, but your board can make a strong case to the state and local governments to use cheaper social engineering solutions. I would like to hear your alternatives and you should know that this letter will be shared with Rep. J. Spears, Sen. Jerry Hill, the SF Chronicle, and KRON4.

Best regards,
Thomas Bergstrom
2130 Valerga Dr, #6, Belmont, CA 94002 : 650-284-6120

When toll lanes at Highway 237 and I-880 become too popular, paying drivers are booted out

By Gary Richards grichards@mercurynews.com San Jose Mercury News
Posted:Mon Feb 03 01:01:00 MST 2014

MercuryNews.com

Express lanes were supposed to ease congestion by letting solo drivers pay their way into the fast lane, but now they're becoming a victim of their own success -- by congesting the fast lane.

As a result, toll-paying drivers are being booted out of the express lane at Highway 237 and Interstate 880 for as much as an hour a day in an attempt to make the fast lane fast again.

Those willing to pay as much as $5 to speed through one of the Bay Area's most gridlocked interchanges are irritated to see signs consigning them to the slow lanes, saying it adds 15 to 20 minutes to their commute.

"It is frustrating," grumbled Jonathan Quist, of Pleasanton, who has used the toll lanes since they opened in 2012. "The times that it says 'HOV ONLY' seem pretty arbitrary and unpredictable."

With the Bay Area economy improving, increased afternoon traffic has turned northbound 880 into a mess between 237 and Mission Boulevard. So far, it hasn't been so bad in the morning going in the other direction, or on the Bay Area's only other express lane, on I-680 south along the Sunol Grade.

But when speeds drop below 45 mph in the eastbound 237 express lane, or traffic jams up downstream on northbound I-880, the toll is raised to $5. If that fails to unclog the problem, the ban on solo drivers goes into place.

Federal rules require that traffic in diamond lanes go at least 45 mph, for fear that lower speeds would discourage carpooling and make congestion worse.

Electronic signs flash an "HOV ONLY" message, meaning only high-occupancy vehicles of two or more people. Motorcyclists and those with certain alternative fuel vehicles can continue to use the lanes for free.

"A reversion to HOV-only operation is not unexpected," said John Goodwin of the Metropolitan Transportation Commission. "It certainly can be expected to come up again, whether on the 880-237 express lanes or elsewhere."

Despite the hiccups, the popularity of paying a toll to beat traffic is surging. There are roughly 3,000 first-time FasTrak users each month in the express lanes at 237-880 and as many as 14,000 repeat toll-paying customers overall a month, an increase of 4,000 in less than two years.

The growing number of FasTrak users means more money that can be spent on road improvements. The Valley Transportation Authority is on pace to rake in $1.2 million this fiscal year in tolls, up from $1 million last year. This money could be used to extend the express lanes farther west on 237.

Nearly 300 miles of toll lanes are coming to the Bay Area by the end of the decade. Express lanes will open on I-580 next year, and they could be in use by 2020 on Highway 101, Highway 85, I-880 and I-80, as well as approaches to the San Mateo and Dumbarton bridges. Much of I-680 could get express lanes after that.

Where there is room, a second carpool lane may be built to handle both carpoolers and paying customers. That's the plan on 101 and on a segment of 85 between Highway 87 and I-280.

Transportation officials have begun discussing a second carpool lane at 237-880, but that would be years down the road.

Kathy Hair, of Alamo, notes glumly that to her, the cutoff of the pay lane means an extra 20 minutes on the road.

"The logic of this escapes me," she said.

Contact Gary Richards at 408-920-5335.

Response to Comment 6

6-1

The commenter’s opposition to the project is noted. Please also refer to response to Comment 4 with regards to paying tolls.

The Mercury News article cited in the comment summarizes challenges on the I-880 and SR-237 express lanes. The article explains that once traffic speeds drop below 45 miles per hour in the eastbound SR 237 or northbound I-880 express lanes, the toll is raised to $5.00, and if congestion persists, the express lane is reverted to high-occupancy vehicle (HOV) only. During these times, even if single occupancy vehicle (SOV) travelers are willing to pay the toll, they must exit into the general traffic lanes. This is the same way express lanes would be operated under the project as proposed.

Express lanes continue to prioritize carpool and HOV travelers followed by SOV only when the capacity is available. The toll on an express lane is adjusted based on changing speed and traffic density. Per Title 23, USC, Section 166(d)(2), HOV lanes must maintain a speed of at least 45 miles per hour. Unfortunately, at times on the I-880 and SR 237 corridors discussed in the article, the number of SOVs willing to pay the maximum toll of $5.00 is too high to maintain the 45 mph speed minimum, and therefore those lanes must revert at times to HOV-only lanes. As stated in the article, “where there is room, a second carpool lane may be built to handle both carpoolers and paying customers.” The project incorporates two express lanes along most sections of the project corridor in order to reduce the likelihood of congestion problems in these lanes.

6-2

The issue of equity or fairness in charging tolls is one that the Department and VTA take very seriously. Section 2.1.1 of the IS/EA describes low-income populations in the project area and addresses whether charging express lane tolls places an unfair burden on these populations. Data from existing express lanes in California and other parts of the U.S. show that low-income drivers are using express lanes, appreciate the opportunity to use express lanes when needed, and appear to place particular value on reliable travel times compared with middle-income or high-income drivers who may have more schedule flexibility (see Federal Highway Administration (FHWA). Income-Based Equity Impacts of Congestion Pricing—A Primer http://ops.fhwa.dot.gov/publications/fhwahop08040/cp_prim5_04.htm. August 2, 2013).

Also, although express lane tolls represent a different economic choice to low-income drivers versus middle- and high-income drivers, the choice does not place a disproportionate burden on low-income drivers because express lane use is voluntary.

Express lanes are first and foremost HOV lanes, with priority use for HOVs. Carpools, busses, and other HOVs would continue to use the express lanes for free. If the lanes become congested, tolls would be increased to discourage congestion in the express lanes, or the toll signs would be changed to read “HOVs only” and only HOVs would be allowed in the lanes.

6-3

Section 1.3.1.5 of the IS/EA notes that the new express lane(s) would continue to accommodate HOV vehicles without charge. Therefore, in essence, the new express lanes would function as HOV lanes during existing permitted HOV times.

Additionally, a traffic safety analysis was conducted for the project that addressed infrastructure modifications, the US 101 corridor baseline (i.e. existing) safety performance, and anticipated changes in operating conditions, especially lane changing and weaving. The analysis identified safety measures, including striping, signing, and lighting that will be implemented as part of the detailed project design. The project in most cases provides a weaving distance greater than the Caltrans minimum weaving distance of 3,200 feet (0.6 mile). These safety countermeasure recommendations are incorporated into the project to address potential safety concerns.

6-4

This comment provides a number of suggestions for relieving traffic congestion. Neither VTA nor the Department have the authority to levy taxes or fees, other than charge fees for the voluntary use of the proposed express lanes in accordance with California Streets and Highways Code 149.6. Most of the suggestions listed would require approval by the California Legislature and Governor, or a ballot measure approved by a majority or supermajority of California or regional voters.

The suggestion for more park-and-ride and transit options can be carried out by the Department and/or VTA. Park and ride lots and transit services are currently provided in many areas of Santa Clara County and could be expanded in the future based on demonstrated need. These would provide some additional traffic benefits and travel choices and would complement the project. The project would not preclude these options from being added in the corridor. By themselves, the options proposed would not meet the purpose and need of the project and would therefore not be an effective alternative to the project.

Comment 7-1 Brasher, Bob

From: bbrasher@sbcglobal.net
Sent: Wednesday, January 28, 2015 2:37 PM
To: Poirier, Sean@DOT
Cc: bbrasher@sbcglobal.net
Subject: *** 101 Express Lanes

Dear Mr. Poirier,

7-1 I have reviewed the US 101 Express Lanes project designs. Given these designs, the engineers seemed to be very challenged to find the best solution.

At this point, I seemed to be more advanced than anyone in the effort of finding the best solution. In that, I have discovered problems with the current design. I would like to assist in creating the best design for the US 101 Express Lanes Project.

Could I assist in creating the Express Lanes designs?

Sincerely,
Bob Brasher

Response to Comment 7-1

The Department is responsible for all facilities in the State's highway network, and modifications to the State's facilities must follow a process established and completed by trained Department personnel, or qualified companies that are selected by Department or regional and local agencies such as the VTA.

Comment 7-2 Brasher, Bob

From: bbrasher@sbcglobal.net
Sent: Friday, January 30, 2015 2:20 PM
To: Poirier, Sean@DOT
Cc: bbrasher@sbcglobal.net
Subject: *** 101 Express Lanes Congestion

Dear Mr. Poirier,

7-2 On US 101, does anyone anticipate that congestion will create problems when attempting to enter and exit the Express Lanes?

If nobody anticipates any problems entering and exiting the Express Lanes, how are the problems avoided?

Sincerely,
Bob Brasher

Response to Comment 7-2

Please see the responses to Comment 2-1 and 6-3. Currently, the HOV lanes can be accessed at any time by a driver leaving the HOV lanes and entering the general purpose lanes. Under existing conditions, heavy congestion in the general purpose lanes and faster traffic in the HOV lanes requires a driver to safely change lanes with adequate spacing or distance when merging. This situation can occur for any freeway with HOV or Express Lanes.

Comment 8 Chatty, Omar

From: Omar Chatty [mailto:omarchatty@mindspring.com]
Sent: Friday, February 27, 2015 12:00 AM
To: Poirier, Sean@DOT
Subject: US 101 Express Lanes Project EA

Hello Sean,

My comments and concerns are:

8-1 I oppose the concept and implementation of additional Express HOTT lanes. SOV drivers need the additional mixed use lanes in order to reduce congestion and GHG pollution.

8-2 The EA must do more to consider motor vehicle accident and injury on this 37.65 mile stretch before, and, if implemented afterwards, including time delay aggregation due to the increased accidents.

Human behavior impacts must be considered in the restricted SOV mixed use lanes, road rage and violations of the line.

Omar Chatty
San Jose

Response to Comment 8

8-1

The commenter's opposition to the project is noted.

As stated in Section 1.2.1 of the IS/EA, this project has two purposes:

- Manage traffic in the congested segments of US 101 between the Dunne Avenue interchange in Morgan Hill and the Oregon Expressway/Embarcadero Road interchange in Palo Alto.
- Maintain consistency with provisions defined in Assembly Bill (AB) 2032 (2004) and AB 574 (2007) (which amended California Streets and Highways Code Sections 149.6-149.8) to implement express lanes in an HOV lane system in Santa Clara County, as well as with the US 101 South Corridor System Management Plan.

Expanding the highway to include additional general purpose lanes might support the first purpose but not the second purpose. As described in Section 1.3.5.3 of the IS/EA, the project team did consider adding an additional general purpose lane. However, this option was not considered further because it would not relieve congestion in the HOV lane or encourage more HOV use to reduce congestion.

The project would convert the existing HOV lane to an express lane and would add a second express lane in portions of the US 101 corridor, thus serving both project purposes. As described in Section 2.5 of the IS/EA, the traffic analysis demonstrates that the project would reduce congestion and therefore would lower greenhouse gas emissions compared to the No Build Alternative (see Table 2.5.1-1).

8-2

Please see the response to Comment 2-1 and 6-3 regarding express lane operation and safety analysis. The Traffic Safety Analysis Report prepared as part of the Traffic Operations Policy Directives for this project included safety and collision analysis and identified safety measures, including striping, signing, lighting and weaving distance that will be implemented as part of the detailed project design. In addition, as noted in Section 1.3.1.1 of the IS/EA, California Highway Patrol (CHP) enforcement and observation areas will be developed to allow CHP enforcement of the express lanes.

Comment 9-1, 9-2 Crawford, Myron

From: Myron Crawford [Mcrawford@bergvc.com]
Sent: Friday, January 16, 2015 10:39 PM
To: Poirier, Sean@DOT
Subject: Objections To Toll Roads/Toll Express Lanes US 101

BERG & BERG ENTERPRISES, INC.
10050 Bandley Drive
Cupertino, CA 95014-2188
(408) 725-7633 - fax (408) 725-1626
mcrawford@bergvc.com

1/13/15

Sean Poirier
California Department of Transportation
Office of Environmental Analysis
P O Box 23660, MS-8B
Oakland, CA 94623
Email: sean.poirier@dot.ca.gov
Ph xxx xxx xxxx Fax xxx xxx xxxx

Reference: US 101 Express Lanes Project

Subject: Objections To Toll Roads/Toll Express Lanes
Objections To Fee Charges During Non Commute Hours
Allowing Single Occupancy Vehicles In HOV Lanes Is Contrary To Common Sense
Objections To Express Lane Double Lines

Sean,

9-1

Objections To Toll Roads
We strenuously object to toll roads/toll express lanes

a. **First of all you have additional and unnecessary infrastructure and administration to exact fees for partial toll roads. Raise the gas tax or tell the governor to apportion a percentage of the Cap and Trade carbon penalties to building and maintaining highways. The citizens of this state and this nation deserve free use of the highways, roads and streets.**
b. **You underutilize the infrastructure, if you want to have high occupancy commute lanes, then have them but don't keep the ordinary citizen from using those lanes during non commute hours and don't force them to have to pay for using HOV lanes in non commute hours.**
c. **When you cordon off commute/express lanes with double white lines making it illegal to cross over and utilize the HOV lanes in non commute hours you do the following:**
   c.1 Expose citizens to more traffic congestion, more fuel consumption and lost time versus the single occupancy drivers that can afford the express lanes.
   c.2 You cause more congestion in traffic because express lane vehicles have to enter and exit at certain points. As an example these entry exit points are causing delays and congestion every day at I680 and Mission Blvd in south Fremont everyday.
   c.3 You increase the possibility of accidents due to the weave sections.

Allowing Single Occupancy Vehicles In HOV Lanes Is Contrary To Common Sense and Stated Public Policy

a. **All along we have been told that HOV lanes increase the lane carrying capacity and cut congestion by having more than one occupant in the vehicles.**
b. **Now you allow single occupancy electric vehicles into the HOV lanes on the premise that they are zero emission or low emission. This is simply not true the electric vehicles are not zero emission and are using electricity generated from a mix of fossil fuel powered electrical generation. All electric vehicles do is change the point at which the emissions and pollutants are generated. Allowing the single occupancy electric vehicles into the HOV lanes for any reason is contrary to the premise of having HOV lanes in the first place which**
9-2 **is supposed to be a decrease in traffic congestion and you flaunt that premise in our faces.**

Its time to make the electrical vehicles pay their own way:

a. **Terminate the State and Federal tax credits for purchase of electrical vehicles.**
b. **What could be more ludicrous and insulting to the tax payers and US unemployed workers than granting a tax credit for buying a Japanese or Korean vehicle!!!!**
c. **Institute a mileage registration fee instead of a tax so all vehicles pay their own way on the highways and streets.**

Our highways are in terrible shape, pot holed condition and CalTrans should be ashamed for letting that happen. The outside north bound lane condition in I680 is unforgivable. Do what you were mandated to do, design, build and maintain the streets, roads and freeways and keep the freeways free.

Thank you,

Myron Crawford

Cc:

Response to Comment 9-1, 9-2

9-1

The commenter's opposition to toll roads is noted.

Express lanes prioritize HOV drivers while providing SOV drivers choice. While revenues collected from currently underutilized capacity on the freeway would be used to support transportation improvements and transit projects within the corridor, the project's purpose is to manage traffic along the corridor. The existing general purpose lanes remain open to use at all times without a fee; only the express lanes require a fee from SOVs during peak times, and use of the express lanes is voluntary.

The comment is correct that the expenditure of Cap and Trade penalties is determined by the Governor (and state legislature); however, it is not an option that can be considered by the VTA or the Department for this project.

SOVs would pay a toll to use the express lanes during posted commute hours only. During non-commute hours, the lanes would be open to all traffic without a fee.

The commenter is correct that the project design that has been advanced to date will have a double (2-foot-wide) lane marking between access zones, and it will restrict lane entry and exit to designated access points. This change will be different from the current HOV lanes, which allow unrestricted access to and from the lanes. Note that as stated in the IS/EA Section 1.3.1.1, although the project described in the IS/EA is a limited access system, additional evaluation of open access options will be considered in the final design. Please see the response to Comment 2-1 for a description of the placement of access points and operations of express lanes.

Additionally, a traffic safety analysis was conducted for the project that addressed infrastructure modifications, the US 101 corridor baseline (i.e. existing) safety performance, and anticipated changes in operating conditions, especially lane changing and weaving. The analysis identified safety measures, including striping, signing, and lighting that will be implemented as part of the detailed project design. These safety countermeasure recommendations are incorporated into the project to address potential safety concerns.

9-2

VTA and the Department are committed to maintaining travel benefits for carpools and other HOVs. Express lanes continue to prioritize carpool and HOV travelers followed by SOVs only when the capacity is available.

In addition, the project would maintain travel time benefits for HOVs. Electronic sensors in the roadway will continually monitor traffic in the express lanes, and as described in IS/EA Section 1.3.1.3, tolls will be adjusted on a real-time basis to keep traffic flowing smoothly (45 mph or higher). If the lanes become congested, tolls will be increased to deter SOVs from entering the lanes, or the toll signs will be changed to read “HOVs only” and only HOVs will be allowed in the lanes. This is to ensure that the lanes meet the minimum 45 mph average operating speed and levels of service for HOVs discussed in Section 1.2.2.1. Regardless of the level of congestion, HOV drivers will always be able to use the express lanes for free.

With regards to electric vehicles in the HOV or express lanes, Assembly Bill 2013 (effective January 1, 2015) authorized the California Department of Motor Vehicles to issue more decals for HOV lane use. Neither VTA nor the Department has the authority to set the HOV lane or express lane rules.

The commenter is correct that drivers of electric vehicles receive tax credits for their vehicle purchase. As noted, electric vehicles are also currently allowed in HOV lanes any time with no charge. This comment touches on state and federal policy which is outside the scope of this project.

The commenter also touches on the issue of electric vehicles not paying gas tax, which may impact funding for roads. This suggestion does not pertain to the project and it is not within the Department’s control to change legislation.

Highway road maintenance is a top priority for the Department. This express lanes project has been enabled by specific legislation that allows for express lanes and does not include road maintenance. Completion of the project is separate from and would not preclude regular road maintenance throughout the Department's jurisdiction.

Comment 9-3 Crawford, Myron

From: Myron Crawford [Mcrawford@bergvc.com]
Sent: Tuesday, January 20, 2015 6:18 PM
To: Poirier, Sean@DOT
Subject: Objections To Toll Roads/Toll Express Lanes US 101 - We pay too much is taxes now DO NOT EVEN THINK ABOUT TOLLS FOR NEW HOV LANES

Sean

9-3 It is particularly frustrating that not only do we have to put up with bad roads, streets and highways in California but we have the 3rd highest income tax in the United Sates, we also have the 2nd highest sales tax rate and to that you are adding a carbon tax onto gasoline and virtually every product that produces carbon in California. Some states may have a slightly higher sales tax rate or slightly higher income tax rate but the other States that have a tax rate as high or higher than California have a significantly lower rate on one of the other taxes. Of all the states California has the highest of all taxes when you consider the combined income and sales tax. In addition add on the highest property tax-property valuation, gasoline tax, carbon offset taxes and the result is we are the most heavily taxed state in the union. See the table below:
And now you want to add toll express lanes, enough, enough, we have had enough, you can add the HOV lanes but do not even think about making them toll roads.

The Governor needs to fund the necessary road construction with the carbon tax. Do not spend the carbon tax on affordable housing. Every dollar invested in highway infrastructure returns $5 in commercial and user benefits. If you build and maintain the infrastructure people will have the jobs to acquire housing without the States help.

State	Income Tax	Sales Tax	Combined
California	10.55%	9.08%	19.63%
Hawaii	11.00%	4.5%	15.50%
Tennessee	6.00%	9.44%	15.44%
Oregon	11.00%	0%	11.00%
Washington	0%	6.5 to 9.5%	9.50%

Tennessee only taxes dividends and interest not wages

Response to Comment 9-3

The commenter's opposition to the project is noted.

The commenter touches on the issue of high taxes in California. The comparative state to state tax rate is beyond the scope of this environmental document. Neither VTA nor the Department has the authority to levy taxes. Please see response to Comment 4 for additional information on the operation of the express lanes.

This comment also states an opinion about California's tax rates and expenditure of AB32 revenues. As stated in the response to Comment 9-1, the expenditure of Cap and Trade penalties is determined by the Governor and state legislature and is not within the power of VTA or the Department.

Comment 10 Dominguez, M

From: m dominguez [mmerenque@gmail.com]
Sent: Thursday, January 29, 2015 10:12 AM
To: Poirier, Sean@DOT
Subject: Hy 101

10 Hello. Please add my name to your study regarding the Highway 101 expansion sound wall. My concern is on the corner of Walnut Grove and Diane in Morgan Hill, there is not an adequate fence which backs up to the freeway. I guess the home builder did not realize how easily a child or pet can wander onto the freeway there. A sound wall is definitely needed. Thank you. El Toro neighborhood resident.

Response to Comment 10

The commenter's information has been added to the project contact database for project updates.

The commenter is requesting a physical barrier on the freeway at the corner of Walnut Grove and Diane Avenue in Morgan Hill to prevent people and animals from entering the freeway. The Department right-of-way does include a chain link fence at this location. According to the Department's Traffic Safety Manual, a clear recovery zone of 20-30 feet is also recommended to give errant vehicles space to recover. Approximately 30 feet of clear recovery zone is present at this location. The Department may install a guardrail in addition to the clear recover zone if it is warranted based on the run-off-road collision history, roadway alignment, or operating conditions. The project does not currently include a guardrail at this location, but the decision will be made by Department Engineers during project final design. In addition, the project team will consider other options such as rumble strips and will continuously evaluate all other safety issues during final design to help alert and prevent errant drivers from exiting the clear recovery zone.

A sound wall is not primarily designed to serve as a physical barrier to prevent movement onto and off of the freeway. A sound wall is recommended as abatement when a project has predicted future noise levels that would substantially exceed the existing levels or would approach/exceed the Noise Abatement Criteria (NAC), provided the sound wall is deemed feasible and reasonable. Sound walls in this area are discussed in the response to Comment 11-1.

Comment 11-1 Drake, Al

From: Al Drake [adrake@nvidia.com]
Sent: Tuesday, January 20, 2015 2:48 PM
To: Poirier, Sean@DOT
Subject: 101 express lanes thru morgan hill

Hi Sean ,

11-1 Im Al Drake, I live at 870 Black Walnut Court which backs up to the southbound 101 property line south of the east main overpass. I was wondering whats in the plan for the shoulder of the freeway in this project? Are we going to get sound-walls? I sure hope so. This directly affects my family. Its already a steady 78db @ 80' in my back yard. Im interested to see whats in the plan and if I can help mitigate the increased noise from the construction and future traffic.

I look forward to your reply.
Thanks,

Al Drake

Response to Comment 11-1

As part of the preparation of the IS/EA, a Noise Study Report and a Noise Abatement Decision Report were prepared. The results of these reports are described in Section 2.2.7. Three potential sound walls were studied near this property. Two were along northbound US 101 and one was along southbound US 101. None of these met the requirements to include a sound wall, for the following reasons:

The closest sound measurements to the commenter's property were taken at 17406 Walnut Grove Drive (in the rear yard). The highest noise level recorded at this location was 70 decibels, and the predicted future level was 71 decibels, which exceeds the criteria for consideration of traffic noise abatement. Therefore, the noise study evaluated the potential benefit of an approximately 3,130-foot long soundwall on the western side of US 101 (including your property) as shown in Appendix F on Sheet 4 (sound wall 15). The area studied extended from the end of the existing sound wall at Diane Avenue to Laurel Road.

Sound walls of various heights were modeled to estimate how many homes would have benefitted (receiving 5 dBA or higher reduction), and how much the evaluated wall would cost. The required procedures mandate that the cost of the construction of the wall meet an estimated "reasonableness" cost determined by how many homes benefit, as explained in the Noise Study for this project. The estimated construction cost for this wall was $2.5 million, and the number of benefited residences did not achieve the minimum criteria. Therefore, the noise abatement decision was that the wall studied (sound wall 15) did not meet the criteria for recommendation. The number of benefitting receptors was not great enough to warrant the cost of installation.

Comment 11-2 Drake, Al

YOUR OPINION COUNTS

Date: 2-4-15 Name of Project: 101 PROJECT

I have a question/comment about:

SB SHOULDER IMPROVEMENTS FOR 101 IN MH.

2 CARS THRU my FENCE LAST YEAR (ONE FATILITY) (ONE STOLEN) NEED A RAIL!

I would like more information about:

- [x] Design Features
- [ ] Community Meetings
- [ ] Funding
- [ ] Property Acquisition
- [ ] Environmental Effects
- [ ] Schedule
- [ ] Construction Impacts
- [ ] Other: ______

Thank you for your comments. If you would like us to respond or be included in our mailing list, please fill out the information below. You may also call the Community Outreach Line at (408) 321-7575. Thank you for your interest.

Name: AL DRAKE

Address: 870 BLACK WALNUT CT

City: MORGAN HILL State: CA Zip: 95037

Phone: 408 544 0568 Best time to call: DAY

Fax: ______ E-mail: ADRAKE3@AOL.COM

0806-6409

SANTA CLARA Valley Transportation Authority

Response to Comment 11-2

Your request to add a safety rail at this location was preliminarily evaluated by the project team and considered by the Department. As noted in the response to Comment 10, The Department Traffic Safety Manual describes the standards used to determine the placement of guardrails. In this location, a preliminary evaluation indicates the distance between the edge of traveled way and the fence in the residential section of Morgan Hill is more than the minimum 30 feet of clear recovery zone width (the minimum separation distance normally considered). Therefore, a guardrail would not normally be placed here, but will be considered given the incidents identified in your comment. In addition, the project team is considering other options such as a rumble strip to help alert and prevent errant drivers from exiting the clear recovery zone. Also, all safety issues will be evaluated continuously during final project design.

Comment 12 Drake, Patricia

From: Pat Drake [mailto:pdrake@ocsnet.net]
Sent: Saturday, February 14, 2015 10:09 AM
To: Poirier, Sean@DOT
Subject: 101 Express Lane South

I am the home owner of property at 870 Black Walnut Ct., Morgan Hill which backs up to 101 between E. Main and E. Dunne. I have concerns regarding the widening of the highway in that portion due to the increase in noise levels and the safety of my property. I was told that the sound level was surveyed in the area and did not justify a sound wall. I believe it was taken near the E. Main Street overpass which would probably deflect some of the sound. The area adjacent to my property is totally flat and open. I have owned the property 14 years and certainly have seen an increase of traffic and noise and suspect that the added lane will add more to both.

12 This past year ,alone, there were 2 accidents on my property. One, a stolen car and the driver escaped and was never apprehended to my knowledge. Unfortunately, the 2nd accident was a fatality. (not a nice sight for your family to experience in their backyard} My wooden fence with "steel posts" and VTA's short "chain link" fence did not stop either car from coming through on to my property. I feel that the addition of another lane will increase traffic and cause a higher noise level due to speed and, needless to say, increase the hazard to my property and life of my family.

I am requesting that you investigate further my concerns and consider addition of a sound wall and barriers along that portion of the 101 Express Project.

Patricia Drake
(408) 612-4661

Response to Comment 12

The commenter's request for further review of a guardrail and/or sound wall is noted. Several requests were received from the properties located adjacent to southbound US 101 between E. Main Street and E. Dunne Avenue for sound walls and additional barriers. Even though neither is part of the preliminary project design, these requests, along with all safety issues, will be re-examined by the project team as part of the project's final design process. As part of the preparation of the IS/EA, a Noise Study Report and a Noise Abatement Decision Report were prepared. The results of these reports are described in Section 2.2.7. Please see the response to Comment 11-1 regarding the existing noise conditions and the decision-making process for a sound wall at this location and the response to Comment 11-2 regarding a guardrail or other physical barrier along the Department's right-of-way at this location. For clarification purposes, note that the Department, not VTA, is the owner/operator of the US 101 and the chain link fence. Please also note that as shown on Appendix F Sheet 4, only widening into the median would occur in this area on both northbound and southbound US 101. No widening on the shoulders would occur as part of the project in this area, and therefore the travel lanes on the outside of the freeway would not move closer to your residence.

Comment 13 Dyer, Sonia

YOUR OPINION COUNTS

Date: 2/4/15 Name of Project: 101

I have a question/comment about: WHAT CAN BE DONE TO REDUCE CONSTRUCTION NOISE AT NIGHT – BEEPING AS TRUCKS BACK UP

I would like more information about:

- ❑ Design Features
- ☑ Community Meetings
- ❑ Funding
- ❑ Property Acquisition
- ❑ Environmental Effects
- ☑ Schedule
- ❑ Construction Impacts
- ❑ Other:

Thank you for your comments. If you would like us to respond or be included in our mailing list, please fill out the information below. You may also call the Community Outreach Line at (408) 321-7575. Thank you for your interest.

Name Sonia Dyer

Address 1315 Mardene Ct

City: SJ State: CA Zip 95121

Phone: Best time to call:

Fax: E-mail:

0806-6409

SANTA CLARA Valley Transportation Authority

Response to Comment 13

As described in Section 2.2.7.4 of the IS/EA, noise generated by project-related construction activities would be temporary and would be concentrated in specific areas over a period of several days to a few weeks. Moreover, construction noise levels would generally be at or below the existing freeway noise levels with the exception of certain temporary construction techniques such as pile driving. It is not possible to prohibit beeping as trucks back up, as this is an important required construction safety measure. However, the following additional noise reduction measures will be implemented and were included in the IS/EA document:

- Equip all internal combustion engine driven equipment with intake and exhaust mufflers that are in good condition and appropriate for the equipment.
- Use “quiet” air compressors and other “quiet” equipment where such technology exists.
- Prohibit unnecessary idling of internal combustion engines within 100 feet of residences.
- Avoid staging of construction equipment within 200 feet of residences and locate all stationary noise-generating construction equipment, such as air compressors, portable power generators, or self-powered lighting systems as far as practical from noise sensitive residences.
- Require all construction equipment to conform to Section 14-8.02, Noise Control, of the latest Department Standard Specifications.
- Require the contractor to prepare a detailed construction plan identifying the schedule for major noise-generating construction activities and distribute this plan to adjacent noise sensitive receptors.

Comment 14 fjryan60@yahoo

From: Customer.Service
Sent: Thursday, February 26, 2015 9:22 PM
To: Perez, Lucas
Subject: VTA Information

You have a new contact me message

Description: From: fjryan60@yahoo.com
14 I do not want toll lanes on 101. Use gas tax money to improve roads & add an extra lanes between Morgan Hill & Gilroy.
2/26/2015

Response to Comment 14

The commenter’s opposition to the project is noted.

With regards to road improvements, highway road maintenance is a top priority for the Department. This express lanes project has been enabled by AB 2032 and AB 574 that allows for express lanes and does not include funding for road maintenance. Completion of the project is separate from and would not preclude regular road maintenance throughout the Department's jurisdiction.

This comment also states an opinion about expenditures of gas tax revenues. As stated in the response to Comment 9-1, the expenditure of Cap and Trade penalties (AB 32 revenue) is determined by the Governor and state legislature and is not within the power of VTA or the Department.

With regard to adding a lane to US 101 between Morgan Hill and Gilroy, the project team performed a series of traffic studies along the US 101 corridor and determined that express lanes would be effective in reducing congestion between East Dunne Avenue in Morgan Hill and the Oregon Expressway/Embarcadero Road interchange in Palo Alto. While this project does not include additional express lanes or general purpose lanes south of Morgan Hill, it does not preclude their development in another project. In fact, additional express lanes are planned on US 101 between Morgan Hill and SR-25 in Gilroy and are included in both VTA's Valley Transportation Plan (VTP) 2040 and MTC's Bay Area Plan/RTP.

Comment 15 Hassuneh, Saad

From: Saad Hassuneh [mailto:shassuneh@gmail.com]
Sent: Friday, February 06, 2015 1:39 PM
To: Poirier, Sean@DOT
Subject: US 101 Exp Ln project

Hi Sean,

15 I live in San Jose, and I commute every day on US 101 starting from Hellyer Exit in south San Jose to Santa Clara, and some times to Sunnyvale. I don't use the HOV lane. My primary concern is construction delays, which will mean more stop and go traffic, and more hit on fuel expenses and possibly more gas use leading to more pollution. Not to mention the additional daily stress of slower traffic.

So what plans are we putting in place to reduce construction delays.?

Best regards
Saad Hassuneh

Response to Comment 15

As described in Section 2.1.3.2 of the IS/EA, project construction would require full ramp or partial freeway lanes and shoulder closures to allow for freeway improvements, utility work, restriping, and installation of overhead signs. For this reason, as noted in Section 1.3.1.9, project construction would take place at night, on weekends and during non-peak weekday hours. During construction, some lane and ramp closures would be required, but full freeway closures are not expected. Construction or lane closures during commute hours are not anticipated.

The project includes preparation of a traffic management plan (TMP) during final design to minimize traffic disruptions from project construction. With the TMP, no substantial adverse construction impacts are anticipated.

Comment 16 Heirtzler, Fenton

From: Fenton Heirtzler [mailto:fentonh@gmail.com]
Sent: Sunday, February 22, 2015 2:05 PM
To: community.outreach@vta.org; Poirier, Sean@DOT
Subject: Community Outreach (ExpressLanes101 project)

Dear Mr. Poirier and Mr. Molseed,

I realize that my comments are being written after the deadline for their submission, but would nevertheless appreciate if they could be taken into consideration.

16-1 The yellow information sheet which was sent to my address at 1034 Colorado Avenue, Palo Alto indicates that two express lanes would be implemented in each direction of travel. There is currently only one express lane in each direction. At the same time, the number of lanes for "normal" travel would remain the same.

Does this imply that Route 101 would be widened by two lanes?

16-2 If so, then it is not credible to claim that this "will not significantly affect the quality of the environment", because:

1. This will increase the number of cars on the road, and hence the amount of air and noise pollution produced per square foot or mile. There are already numerous studies throughout the world which demonstrate this correlation.

2. This will increase the amount of concrete or asphalt in the area, which definitely lowers the quality of life.
3. It does nothing to encourage car drivers to switch from using their personal vehicles to public transportation.
4. Increasing the average speed on Route 101 will also increase the number of traffic fatalities.

It is surprising to read that Caltrans and the VTA could reach any other conclusion, unless one assumes that the individuals who reached this decision do not physically live near to Route 101.

Sincerely

Dr. Fenton Heirtzler

Response to Comment 16

16-1

The project will add an HOV lane between Cochrane Road and East Dunne Avenue at the southern extent of the project, and convert the extended and existing HOV lane into an express lane. In addition, a new lane would be added in the median of the freeway in each direction from Cochrane Road (Morgan Hill) to SR 85 (San Jose) and from Blossom Hill Road (San Jose) to North Fair Oaks Avenue (Sunnyvale). Limited portions of the freeway would be widened to accommodate this extra lane, but that is planned south of the US101/SR 85 interchange in Mountain View. North of the US101/SR85 interchange to approximately Oregon Expressway/Embarcadero Road interchange, there are two existing HOV lanes in each direction that were recently constructed and opened to public in August 2014. The project proposes to convert these two existing HOV lanes to express lanes. Appendix F shows all of the locations where the freeway would be widened.

16-2

The environmental document was written according to the standards set forth in the National Environmental Policy Act, the California Environmental Quality Act, the Department's Standard Environmental Reference, and all applicable federal, state, and local regulations listed throughout the document.

1) In Sections 2.2.6 and 2.2.7, the air quality and noise impacts directly and indirectly related to the project are evaluated.

   An Air Quality Impact Assessment, Mobile Source Air Toxics Assessment and a Particulate Matter "hot spot" Analysis were conducted and determined the project would not cause or contribute to a violation of the federal or state air quality standards. The project would make a minor contribution to air toxics but would not result in an adverse impact.

   As part of the preparation of the IS/EA, a Noise Study Report and a Noise Abatement Decision Report were prepared. The results of these reports are described in Section 2.2.7. The noise analysis found that the project would result in a 0-3 decibel increase in noise levels along the project corridor. Places where the noise level would exceed the NAC level thresholds were evaluated for noise abatement. Twenty-one new and 28 modified sound walls were considered for the project, but in all cases, the estimated construction cost exceeded the reasonableness allowance ($55,000 per receptor) based on the number of identified benefitting receptors for each wall.

2) As noted in Section 1.3.1, the project would utilize the existing freeway boundaries to add a second express lane to portions of US 101 and SR 85. Please refer to Appendix F to review all of the locations where the freeway would be widened both on the shoulder and in the median.

3) The project was listed in the Regional Transportation Plan and satisfies the purpose and need described in Section 1.2 of reducing congestion and being consistent with AB 2032 and AB 574. AB 574 stipulates that revenue collected from the express lanes will be used to support transportation improvements and transit projects within the corridor. The project does not preclude public transportation plans already in place or that will be developed in the future. Carpoolers and HOVs (including vanpools, city busses, and

shuttles) maintain priority use of the express lanes. Providing reliable travel speeds for these vehicles is an important part of encouraging their use.

4) A traffic safety analysis was conducted for the project that addressed infrastructure modifications, the US 101 corridor baseline (i.e. existing) safety performance, and anticipated changes in operating conditions, especially lane changing and weaving. The analysis identified safety measures, including those for striping, signing, and lighting that will be implemented as part of the detailed project design. These safety measures have been discussed in Section 1.3.1 Build Alternative. These safety countermeasure recommendations are incorporated into the project to address potential safety concerns.

Comment 17 Hill, Bekah

From: Bekah Hill [1bekah.hill@gmail.com]
Sent: Tuesday, January 20, 2015 7:14 PM
To: Poirier, Sean@DOT
Subject: Sound Wall on 101

Hello,

17 We received an announcement in the mail regarding the expansion of the 101 between San Jose and Cochrane. The community has brought up some concerns regarding a sound wall and I'm interested in some facts. What are the effectiveness of sound walls? For example how many decibels are eliminated by a sound wall? When graffiti occurs what is the procedure in place to deal with this in a timely manner? Any information that you have to help me make an informed decision are much appreciated.

Thank you for your time,
Bekah Hill

Sent from my iPhone

Response to Comment 17

In general, a sound wall that is tall enough to break the line of sight to the highway can achieve a 5 dBA noise level reduction; after breaking the line of sight, sound walls can achieve about 1.5 dBA of additional noise level reduction for each meter of height[1]. The Department will recommend a sound wall as abatement for noise impacts if it would provide at least 7 decibels of noise reduction and cost less than $55,000 per receptor benefiting from the wall. The report evaluated 21 new sound walls and 28 modified sound walls as abatement but in all cases the estimated construction cost exceeded the reasonableness allowance ($55,000 per receptor) for the number of identified benefitting receptors for each wall.

The US 101 freeway right-of-way is fenced, and the Department's maintenance routinely responds to graffiti incidents, however, it is not preventable. It should be noted that there are no

[1] http://www.fhwa.dot.gov/environment/noise/noise_barriers/design_construction/keepdown.cfm

new sound walls proposed as part of the project and the project does not preclude regular maintenance of existing walls. Maintenance service requests for graffiti removal can be submitted using the form located here: http://www.dot.ca.gov/hq/maint/msrsubmit/.

Comment 18 Holmes, Don

From: Don Holmes [holmesdon@charter.net]
Sent: Tuesday, January 20, 2015 12:42 PM
To: Poirier, Sean@DOT
Cc: Diane Holmes
Subject: sound wall on HWY 101 in Morgan Hill betwwen Cocoran and Tennant

18 I appreciate your effort to explore the possibility of a sound wall. We need it desperately. The noise is so great it keeps us awake at night. At times it is much louder than other times. Wind, moisture, humidity?? Perhaps a large wall similar to that just constructed at the new development at the RT 85 Cottle Rd. exit. I watched, *How It's Made* and observed that a sound wall is specially constructed to prohibit sound. Hopefully we'd get this to dampen the unreasonable noise.

Regards, don holmes

Response to Comment 18

This comment requests evaluation of a sound wall in Morgan Hill between Cochrane Road and Tennant Avenue. As part of the preparation of the IS/EA, a Noise Study Report and a Noise Abatement Decision Report were prepared. The results of these reports are described in Section 2.2.7. The area from Cochrane Road to the project terminus at E. Duanne Avenue was evaluated during the noise analysis for this project and did not meet the minimum criteria for effective noise reduction at a reasonable cost. Please refer to the response to Comment 11-1 regarding the sound wall evaluation, and response to Comment 13 regarding construction noise.

Comment 19 Kuang, Lin

From: Lin Kuang [mailto:linkwong@gmail.com]
Sent: Tuesday, February 03, 2015 9:14 PM
To: Poirier, Sean@DOT
Subject: Objection to auxiliary lines of 101 in sunnyvale

Hi 101 expansion project staff,

19-1 I am a citizen that lives in Carolina Ave. in Sunnyvale, and the current dust and noise caused by 101 has been effecting my baby (5 months old) and my toddler (5 year old). Both of them have respirational issues due to the dust. And the noise of 101 has been keeping us from opening the windows in our home. I can't imaging the even bigger negative impact that the 101 auxiliary lines will bring.

19-2 To better use the tax payers money, I think the south bay transportation agency should consider building public transportations (such as bart, and bullet trains) for the local cities, rather than keeping expanding 101. Because more lines in 101 will just encourage more cars to be on it, and it won't solve the congestion issues.

I hope you will sincerely consider my opinion.

Sincerely yours,
Lin

Response to Comment 19

19-1

The commenter's opposition to the project is noted.

Project-related changes to air quality were fully evaluated in the Air Quality Impact Assessment, Mobile Source Air Toxics Assessment and a Particulate Matter "hot spot" Analysis and summarized in Section 2.2.6. The air quality analyses accounted for existing background emissions as well as for changes in future traffic patterns with and without the project. The project would generally decrease delays and increase speeds during peak periods, as some drivers shift from the general purpose lanes to the express lanes. The reduction in delays would also reduce idling, which tends to be associated with high vehicle emissions. The project would not increase emissions or concentrations of criteria pollutants that would result in air quality standard violations. In addition, the Mobile Source Air Toxics (MSAT) analysis concluded that emissions for both the Build and No Build Alternatives are projected to be much lower in 2035 than the existing conditions because the U.S. Environmental Protection Agency's (EPA) national control programs are projected to reduce MSAT emissions by 72 percent by the year 2020.

Carolina Avenue is located along Segment 3 of the project, where the existing noise barriers that shield residences from the highway are already at the maximum allowable height. As described in Section 2.2.7.3, the project would result in a 0 to 3-decibel increase in noise levels. In some places along the project, the noise level would exceed the federal NAC level set for the local land use. However, as shown on Appendix F Sheet 72, Carolina Avenue in Sunnyvale is behind existing sound wall No. 21. The closest measurement taken to your property was ST-15. The existing worst-hour noise level recorded at this location was 64 decibels. The project would increase noise at this location by 1 decibel. This does not exceed the federal noise level for the land use (single and multi-family housing) Category B.

Outside widening would occur near this location to accommodate an auxiliary lane to serve the North Fair Oaks Avenue exit so construction noise is anticipated. Please see the response to Comment 13 for a description of mitigation measures the project would include limiting nighttime construction noise.

19-2

VTA and the Department agree that long term alleviation of congestion in this area will include both public transportation projects and highway improvement projects such as express lanes. The project would not restrict consideration of other mass transportation and/or transit options. VTA is actively involved with multiple public transportation projects in the area, such as the BART Silicon Valley Project, LRT double-tracking to Mountain View, Caltrain Electrification and an overall increase in service as part of the Transit Service Plan currently in development for the next two years. For more information, see: http://www.vta.org/.

The express lanes can be implemented using the existing right-of-way. Express lanes would offer immediate congestion relief along the US 101 corridor during a time when funding to advance major projects is limited. In addition, express lanes continue to prioritize carpool and HOV travelers followed by SOV only when the capacity is available. Providing reliable travel times to carpools, vanpools, shuttles, and busses would continue to incentivize HOVs.

Comment 20 Lukich, Rhonda

From: Rhonda Lukich [rlukich@gmail.com]
Sent: Tuesday, January 20, 2015 10:27 AM
To: Poirier, Sean@DOT
Subject: Question on U.S. 101 Express Lanes Project

Hi Sean,

20 Thanks for taking the time today to try and identify where my property lies in relation to the above project. Unfortunately, I'm unable to find it on your maps and just want to know for future reference where it is in relation to it and if there will be any impact. I don't think there will be but I need to know.

If you could look into it and send me something that gives me the answer I would appreciate it.

My property is at 640 Commercial Street, San Jose, CA

Thank you.

Rhonda Lukich
503789-8763

Response to Comment 20

The commenter's property is near the Oakland Road overcrossing of US 101, adjacent to the Oakland Road northbound on-ramp. It appears on map sheet 56 of 80 in Appendix F of the IS/EA.

There is no planned right-of-way change at this location. There will be minor pavement widening of the US 101 outside travel lanes to accommodate an additional express lane in the median. The widening will generally be less than a lane width on the freeway. Your property is north of the freeway, and the Oakland Road on-ramp next to your property gradually descends to merge with the freeway lanes. There is an existing retaining wall along this ramp that varies in height up to 10 or more feet high. This retaining wall will not be changed. There will be temporary construction work in this area, within the state right-of-way. No work would occur on your property.

Comment 21 mrandmrsmr@earthlink

From: Customer.Service
Sent: Thursday, February 26, 2015 9:08 PM
To: Perez, Lucas
Subject: VTA Information

You have a new contact me message

21 Description: From: mrandmrsmr@earthlink.net NO on toll road and extending hours for HOA Lanes. This will cause more bottlenecking and how will service vehicles get to their destinations in a timely manner.
2/26/2015

Response to Comment 21

The commenter's opposition to the project is noted. Please see the response to Comment 2-1 for a description of the operation of express lanes. Express lanes would continue to prioritize carpool and HOV travelers followed by SOV only when the capacity is available during commute times. In addition, express lanes, like HOV lanes, continue to allow emergency vehicles to use the lanes for free in accordance with California Vehicle Code Section 23301.5. Note that existing HOV lanes operate from 5 – 9 AM and 3 – 7 PM on weekdays. Express lane hours will be the same as existing HOV lane hours.

Comment 22 Shannon, Sean

From: Sean Shannon [sean1965@gmail.com]
Sent: Wednesday, January 28, 2015 7:30 PM
To: Poirier, Sean@DOT
Subject: United States Highway 101 Express Lanes Project Draft Alternatives Section 1.3.5

Hello Mr. Poirier,

I am a resident of south San Jose and a daily commuter to Mountain View. I read the project draft and my questions deal with the consideration of alternatives mentioned in section 1.3.5 as well as other alternatives.

It appears that primary purpose of the project is to reduce congestion over the next twenty years on 101 and to improve freeway speeds during peak periods.

Question 1. Why is this purpose worth the project cost estimated at $0.5B ? I'm not asking why does it cost that much, but what is the cost in revenues for the two alternatives.

Q2. For each alternative in 1.3.5, are there computer simulations that we can view online that demonstrate mathematically the effectiveness of each proposal along with assumptions?

22-1 Q3. Who is on the committee that decided on the alternatives? What are their credentials? Were they reviewed by an independent body such as a university or a high-tech company?

Q4. From my physics coursework in college, in principle, the best solution is to do as little as possible. This to me means that expanding the number of lanes is not a good idea. It also doesn't scale. In 20 years, we can't add another two lanes, etc. When does it all end?

Alternatives for not expanding the number of lanes that I did not see in 1.3.5 that I think should be considered are:
Q4a. Convert lane 2 to an HOV lane, reducing the general purpose lanes by one. This would entice further people to use ride sharing. It also scales, as these HOV lanes get congested, we convert the next lane to HOV. This would be a lot cheaper than the proposed because presumably you would just need to change the striping and signage. But more so, it scales and tells the public that this is the direction we're going, more HOV lanes, less single riding, no more new lanes, no more new freeways. By adding lanes, you confuse the populace by saying we can always expand.

Q4b. Same as Q4a but make both lanes HOT. This would allow some SOV drivers to use the lanes while increasing revenue.

Q4c. Make the center barrier movable, like the Golden Gate Bridge. You could start at the common choke points like 101/87. This would increase lanes as you need it and would optimize all lanes in both direction, increasing the total utilzation rate of the roadway.

Q4d. Dynamic speed limits. On each overpass, display a changing speed limit that optimizes traffic flow, anticipates bottlenecks ahead of time so the flow of traffic can dynamically be mitigated.

22-2 Q5. Here are some other ideas and concerns:

1

22-2 Q5a. As a diamond lane user that has to exit at 237 from 101 North, I have to cross many lanes of traffic, I think this is termed weaving, to get there. The plan should have more exits from the diamond lane to lessen weaving.

Q5b. The other real weaving challenge is De La Cruz to 87 south bound. With cars simultaneously trying to get from 101 to 87, De La Cruz to 87, De La Cruz to 101 and the carpool lane. I think something creative needs to be done to channel people to their destination so there isn't a chance of an accident and is a chronically slow spot after 2pm. I don't think the proposal will resolve that situation. How about an underpass under the airport like Seattle?

Q5c. The path from Morgan Hill to Palo Alto for a driver should not require any lane changes. By not consistently having the same HOT configuration, you make it tricky for drivers. It should be simple.

OK, sorry for the long winded email, Sitting on 101 gives you time to think about these things. I appreciate your efforts and your time.

Regards,

Sean Shannon

Response to Comment 22

22-1

With regard to cost, the project is expected to cost $431 million to construct. It does not have a specific revenue goal, but AB 2032 requires revenue collected from the express lanes would be used to support transportation improvements and transit projects within the corridor. There would not be any revenue associated with the No Build Alternative.

A video simulation of the project is not available online. Predictive traffic models were used, and the results are viewable on-line in the Traffic Operations Analysis Report that is at the link below. Future traffic volumes were predicted for both the Build and No Build Alternatives using VTA's county travel demand model with Association of Bay Area Governments "Projections 2009" demographic projection data, the latest information available at the time the environmental studies were initiated. The future traffic forecast was then used in a micro-simulation model to evaluate traffic operations and determine LOS, delay, bottleneck, vehicle-hours travelled and vehicle-miles travelled. Please see Appendix D for LOS and traffic volume output from this model. The Traffic Operations Analysis Report can be viewed at: http://www.dot.ca.gov/dist4/documents/101_express_lane_project/101_exp_lanes_toar_final.pdf

The project development team reviewed alternatives and decided to pursue environmental review for the two alternatives presented in the IS/EA. The team is comprised of VTA and the Department in consultation with all of the cities and counties that overlap the project, as well as consulting engineers and environmental specialists working under their direction.

The commenter's opposition to adding additional lanes to US 101 is noted. A response to each of the commenter's suggestions regarding project alternatives is described below.

The commenter suggests converting one of the general purpose lanes into an HOV lane. The freeway typically has three general purpose lanes and one HOV lane. With this alternative, the freeway would have two HOV lanes and two general purpose lanes in each direction. This alternative was not considered because it would not be consistent with the legislation (AB 2032 and AB 574) authorizing the express lane system in Santa Clara County (as described in Section 1.2.1). In addition, an HOV lane-only alternative would not provide an option to allow drivers the flexibility to pay for use of the lanes at times when there is available capacity to accommodate more vehicles during peak periods while still maintaining minimum operating LOS. Moreover, converting a general purpose lane to HOV-only would reduce general purpose lane capacity by 33%, and the lane conversion would not result in a high enough shift from single-occupancy vehicles to carpools in the short term to offset this reduced capacity in the general purpose lanes. This would likely cause operational problems and a substantial travel time increase for general purpose lane users while the HOV lanes are under utilized. Please see the response to Comment 2-1 for a detailed description of express lane operation. The dynamic pricing allows for SOVs to use the express lanes when capacity is available.

The commenter also suggests converting two of the general purpose lanes into express lanes. This description, where the existing HOV lane and one of the existing general purpose lanes are converted to express lanes, would create two express lanes in each direction. This is similar to the project evaluated in the IS/EA except that in this alternative there would be two general purpose lanes rather than three. As described above, reducing the number of general purpose lanes would likely cause a substantial travel time increase for general purpose lane users. The commenter is correct in noting the lanes will always provide HOV use, and would allow SOV drivers to use the lanes for a fee as long as the flow of traffic is functioning at acceptable levels.

The commenter suggests a movable center barrier that would allow extra lanes when needed. A movable center barrier requires substantial investment in redesign of the median, and in the equipment and personnel to operate and maintain the barrier on a daily basis for the long term. A movable center barrier would also necessitate removal of uneven road beds and overcrossing columns in the median. For these reasons it would not be a feasible alternative.

The commenter suggests dynamic speed limits. Dynamic speed limits, also called “variable speed limits,” is an Active Transportation Demand Management (ATDM) strategy the Department is exploring. A pilot project is under construction and will be evaluated for the I-80 Integrated Corridor Management project between the Bay Bridge and Carquinez Bridge in Alameda and Contra Costa Counties, also known as the I-80 SMART Corridor project. The Washington State Department of Transportation is also evaluating this strategy on the I-5 and SR-520 corridors in the Seattle metropolitan area.

The variable speed limits strategy, while an effective measure to mitigate incident-related congestion, is not expected to be as effective for relief of capacity-related congestion as experienced on the US 101 corridor evaluated in this IS/EA. The project would enhance corridor capacity by adding two express lanes, which cannot be achieved by variable speed limits.

22-2

The commenter suggests creating more express lane exits to prevent additional weaving. On northbound US 101, the project would have an access point between approximately Lawrence Expressway and Mathilda Avenue, about a mile south of the Route 237 exit. This allows for about a mile which is greater than the minimum weaving distance of 3200 feet. Please see the response to Comment 2-1 for additional information on the design of access points. Also note that as mentioned in the IS/EA Sections 1.3.1 and 1.3.1.1, although the project included in the draft IS/EA is a limited access system, additional evaluation will be considered in the design phase to maintain open access as much as feasible.

In addition, a traffic safety analysis was conducted for the project that addressed infrastructure modifications, the US 101 corridor baseline (i.e. existing) safety performance, and anticipated changes in operating conditions, especially lane changing and weaving. The analysis identified safety measures, including striping, signing, and lighting that will be implemented as part of the detailed project design. These safety countermeasure recommendations are incorporated into the project to address potential safety concerns.

The proposed express lane access points are included in the IS/EA on Figure 1.3-2. In the southbound direction, there would be an access point between Montague Expressway and De La Cruz Boulevard. Within this area, the project would add an additional express lane. This would allow express lane traffic on US 101 to use the innermost (added) lane, while the adjacent existing HOV lane would accommodate drivers that are seeking to exit or enter the lanes. This would be an improvement over the existing situation where there is only one lane to accommodate HOV drivers, and no options for HOV drivers to get around a vehicle, or vehicles, that have slowed and queued while attempting a lane change into or out of the HOV lane.

Projects are planned at the De La Cruz Boulevard interchange and SR 87 that will improve southbound US 101. The US 101/De La Cruz Interchange Improvements Project proposes to replace the existing structure with a new interchange which includes a new southbound loop on-ramp from De La Cruz Boulevard with two mixed-flow lanes (no HOV bypass lane). The southbound diagonal on-ramp will become 3 lanes, consisting of one HOV bypass lane and two mixed flow lanes. The existing southbound off-ramp connecting to northbound De La Cruz Boulevard will be removed to reduce the weaving in this area and traffic will be redirected to a southbound diagonal off-ramp as part of a new partial cloverleaf interchange configuration. The southbound US 101 to SR 87 off-ramp will be widened to a double-lane off-ramp. This double lane off-ramp is more likely to be implemented in the near term than other improvements for congestion relief in the vicinity. These projects should help alleviate traffic congestion on southbound US 101.

The comment suggests consideration of an underpass at the San Jose International Airport. An underpass would involve a realignment of the freeway and a very complex design and high cost, would likely have drainage issues in this area of the Bay, would potentially introduce construction conflicts with airport operations, and is not considered a feasible alternative.

With regard to the express lane configuration throughout the corridor, the double express lanes configuration is not continuous throughout the entire corridor due to physical constraints, ROW impacts, and traffic demand. Some areas were not predicted by traffic forecasting and analysis to have as high a demand as others, and in some cases a single express lane would be adequate to limit congestion and achieve acceptable LOS.

Comment 23 shr83@verizon

From: VTA Customer Service <customer.service@vta.org>
Sent: Thursday, February 26, 2015 9:36 PM
To: lucas.perez@vta.org
Subject: VTA Information

You have a new contact me message

Description: From: shzr83@verizon.net
23 I oppose this plan because it narrows the width of cars to travel in these "express lanes"; the vta is coerce citizen into compact cars. This is not practical for families and commercial traffic. This will cause negative consequences to our state economy.
2/26/2015

Response to Comment 23

The commenter's opposition to the project is noted. The project would involve changing the width of the US 101 general purpose lanes in some areas, from 12 feet to 11 feet, with the exception of the far right lane which is 12-feet wide and designed to accommodate semi-trucks and oversize loads. 11-foot lanes are common in freeway design, where exceptions have been allowed. This is consistent with the operation of the existing HOV lanes.

Comment 24 Singh, Ranjan

From: Ranjan Singh [ranjan.singh@gmail.com]
Sent: Tuesday, January 20, 2015 11:21 AM
To: Poirier, Sean@DOT
Subject: HWY 101 Express Lanes Expansion project

Hi Sean,

24 I was referred to you by Cody at the VTA regarding the environmental study of the 101 expansion through Morgan Hill.

I know this issue has been raised in the past by other with various people, but the noise is already beyond the 65 decibel limit I think it was for quite some time now. An expansion allows for more cars and noise. As it is, the trucks shake and rattle our homes and the noise has gotten worse over the years.

The residents including myself that live near the 101 want a soundwall to offset the current and what will be the increased noise. Were any studies done regarding noise? Is there a plan for a soundwall?

Thank you,
Rj

Response to Comment 24

While the commenter did not provide their property address, several comments were received from Morgan Hill residents regarding freeway noise. Please see the response to comment 11-1 for a detailed description of the process for determining sound wall abatement. The commenter can also refer to the maps in Appendix F of the IS/EA and find the nearest noise receptor location shown. The results of the noise measurements for that location can be found in the Noise Study Report available at http://www.dot.ca.gov/dist4/documents/101_express_lane_project. Please also see the response to Comment 13 for a description of avoidance and minimization measures that would be included to limit construction noise.

Comment 25 Sonderegger, Aaron Duke

From: Duke Sonderegger [adsonderegger@gmail.com]
Sent: Tuesday, January 20, 2015 1:57 PM
To: Poirier, Sean@DOT
Subject: Hwy 101 sound walls in Morgan Hill

To whom it may concern,

25 As a resident I would like it known that I am vehemently opposed to any type if sound walls along the Morgan Hill portion of the Hwy 101 corridor. I feel that any type of sound walls would destroy the views in the coyote valley as well as visually cut our small town in two.

Thank you,
Aaron Duke Sonderegger

Response to Comment 25

The commenter's opposition to sound walls is noted. This project does not include the addition of any sound walls.

Comment 26 Stallman, Jim

From: Jim Stallman [mailto:2jimstallman@gmail.com]
Sent: Wednesday, February 04, 2015 8:32 AM
To: Poirier, Sean@DOT
Cc: lauren.ledbetter@vta.org
Subject: Comment submittal 101 Hot SCC

Santa Clara County VTA HWY101 HOT Lanes Project – comment submittal

26 Please amend Table S-1 to add the following to the Traffic/Transportation item Mitigation Measures:
"Construct or provide funding for VTA listed Across Barrier Connection (ABC) gap closure projects for the Santa Clara County Bicycle Network Plan along the project corridor in accordance with Caltrans (State) Policy."

Summary

Table S-1: Summary of Impacts and Avoidance, Minimization, and/or Mitigation Measures

Affected Resource	Potential Impact: No Build Alternative	Potential Impact: Build Alternative	Avoidance, Minimization, and/or Mitigation Measures	Section Reference in IS/EA
Environmental Justice	None.	The project would not cause disproportionately high and adverse effects on minority or low-income populations.	None required.	2.1.1.3
Utilities/ Emergency Services	None.	Utility relocations within the right-of-way are anticipated due to the outside widening. Emergency services access would be maintained throughout project construction.	The project's Transportation Management Plan (TMP) will address temporary lane closures during construction. No further measures are needed.	Section 2.1.2.3
Traffic and Transportation/ Pedestrian and Bicycle Facilities	For the AM northbound peak commute direction in 2015 and increasingly in 2035, primary bottlenecks including at De La Cruz and San Tomas/Montague, and Rengstorff and San Antonio, would cause significant congestion in the general purpose lanes. HOV lane congestion would occur around Moffett to Fair Oaks and 1st to Hellyer as a result of high HOV volumes and congestion in the general purpose lanes. For the PM southbound peak commute direction, congestion is expected at primary bottlenecks between the Rengstorff on-ramp and Middlefield on-ramp, De La Cruz on-ramp and SR-87 off-ramp, and Old Oakland on-ramp and McKee off-ramp in 2015. HOV lane speeds would drop below 50 MPH at a few locations due to congestion in the general purpose lanes. Congestion in the HOV and general purpose lanes is expected to be worse in 2035.	The project provides for additional capacity during critical peak periods. It would reduce (improve) corridor travel times and congestion delays, especially in the northbound peak AM commute period in 2015. It would continue to provide improved benefits through 2035 in comparison to the No Build Alternative, but there would be some highway segments that have reduced levels of service as a result of increased demand/traffic that uses the corridor.	None required.	Section 2.1.3.3

US 101 Express Lanes Project i November 2014

	Effective Date:	October 2008
	Supersedes:	DD-64 (03-26-01)
TITLE	Complete Streets - Integrating the Transportation System	

POLICY

The California Department of Transportation (Department) provides for the needs of travelers of all ages and abilities in all planning, programming, design, construction, operations, and maintenance activities and products on the State highway system. The Department views all transportation improvements as opportunities to improve safety, access, and mobility for all travelers in California and recognizes bicycle, pedestrian, and transit modes as integral elements of the transportation system.

The Department develops integrated multimodal projects in balance with community goals, plans, and values. Addressing the safety and mobility needs of bicyclists, pedestrians, and transit users in all projects, regardless of funding, is implicit in these objectives. Bicycle, pedestrian, and transit travel is facilitated by creating "complete streets" beginning early in system planning and continuing through project delivery and maintenance and operations. Developing a network of "complete streets" requires collaboration among all Department functional units and stakeholders to establish effective partnerships.

ARTICLE 2 New Corridors

Criteria for New Corridors

Section 888.2 of the S&H Code states that Caltrans will incorporate nonmotorized transportation facilities into the design of freeways on the State Highway System along corridors where nonmotorized facilities do not exist, upon a finding that such facilities: (1) would conform to the California Recreational Trails System Plan or (2) would (following a public hearing) conform to the nonmotorized transportation master plans of local agencies; would not duplicate existing or proposed routes; and would enhance community interests.

Public Hearing Requirements

When designing a new freeway, the project engineer (PE) must determine if nonmotorized facilities or reasonable, safe, and convenient alternate routes exist or are proposed within the corridor. The findings must be discussed as part of the regular public hearing for the project or at a separate public hearing to comply with the requirements of Section 888.2 of the S&H Code.

For projects past the regular public hearing stage, local agencies should be contacted to determine their desires regarding nonmotorized transportation facilities. If a local agency requests nonmotorized facilities to be included in the project, Caltrans must conduct a public hearing. It is important to note that if Caltrans defers inclusion of nonmotorized facilities until after the freeway is completed, it may still be required to include the facilities at a later date, under the provisions of Sections 887.6 or 887.8 of the S&H Code.

Public Hearing Process

The public hearing process, if separately accomplished, should follow normal procedures, as specified in Chapter 11 – Public Hearing. At the hearing it is

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Chapter 31 – Nonmotorized Transportation Facilities
Section 2 – Application

important to fully discuss and document the relationship of the freeway project and its nonmotorized transportation facilities to the California Recreational Trails Plan, the local agencies' nonmotorized master plans or bicycle transportation plans, and the regional agencies' Regional Transportation Plan.

Financing

Nonmotorized facilities constructed under Section 888.2 of the S&H Code are financed with State highway funds.

ARTICLE 3 Cooperative Projects

Request by Public Agency

Section 887.6 of the S&H Code states that:

> Upon the request of a public agency, the department may enter into an agreement with the agency for the construction and maintenance of nonmotorized transportation facilities which generally follow a state highway right-of-way where the department has determined that the facility will increase the safety and convenience of bicyclists.

Location Guidelines

The facility may be inside or outside of the highway right-of-way. The PE should document the availability of reasonable, safe, and convenient alternate routes and the relationship of the project to the local agencies' nonmotorized master plans or bicycle transportation plans and the regional agencies' Regional Transportation Plan.

State Funding Contribution

Section 887.6 of the S&H Code further states that:

> The department's contribution, if any, to the cost of constructing the nonmotorized facilities shall be based upon a finding that the traffic safety or capacity of the highway will be increased. The agreements may provide for the handling and accounting of funds, the acquisition of right-of-way, maintenance, and any other phase of the project.

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Part 3 – Specific Project Development Procedures

ARTICLE 4 State Projects

Caltrans Initiation

Section 887.8 of the S&H Code states that Caltrans may construct and maintain nonmotorized transportation facilities approximately paralleling State highways after consulting with the law enforcement agency having jurisdiction over the highway.

State Funding

If Caltrans determines that a nonmotorized facility approximately paralleling the highway would increase traffic safety or traffic capacity on the highway, Caltrans pays for the construction and maintenance of the nonmotorized facility.

Types of State Projects

Examples of State-funded projects include:

- A bikeway in an area where a freeway constructed prior to 1976 severed or destroyed a major nonmotorized route
- Striping and signing a State highway shoulder as a bikeway—or constructing a separate path—to provide continuity to a local or regional bikeway system
- Widening a State highway shoulder to improve safety and convenience for nonmotorized users

Response to Comment 26

This comment refers to the Santa Clara County Bicycle Plan, which has planned corridors throughout the county, some of which cross US 101 (at local street undercrossings and overcrossings). The proposed express lanes would only affect the freeway, by adding express lanes and tolling equipment within the freeway's fenced ROW. Existing local street crossings with bicycle and pedestrian facilities will not be affected by the project. The project would have no adverse effect on any of these facilities, and consequently no mitigation is necessary.

There is a formal process for projects to be included in the Bicycle Expenditure Program (BEP) or Valley Transportation Plan (VTP). Any proposed/planned project will need a public agency sponsor and sufficient planning studies must have been completed to define the project extents (i.e., what will be built where and costs).

Comment 27 Sutton, Jim

From: jsutton@alumni.stanford.edu [mailto:jsutton@alumni.stanford.edu] **On Behalf Of** Jimmy Sutton
Sent: Tuesday, January 13, 2015 2:58 PM
To: Poirier, Sean@DOT
Cc: Gary Richards
Subject: Re: US 101 Express Lanes Project

Sean, thanks for the information.

27-1 I have what I consider to be significant concerns about this project (as I currently understand it), but I don't understand how to actually have those concerns addressed. For example, why were only build and no-build options considered? Perhaps a better option would be to expand the HOV lanes without tolling and limiting access. Also, there seems to be no financial analysis; where would I find that? Where are the negative environmental impacts considered?

27-2 For example, let me use the SR-85 ExpressLane project as an example--only because it is a bit further down the road (so to speak), but it appears the problems are the same. For example, I regularly commute on SR-85 to/from Saratoga Ave either to I-280 or to SR-17. Yet the SR-85 plan will essentially preclude my use of the ExpressLanes on SR-85 (24 hours/day, 365 days/year) because of the planned severe limitations on access to/egress from the ExpressLanes. This will severely impact my travel times, fuel usage, and emissions production. The US-101 documents seem to show the exact same shortcomings, with long stretches of US-101 where travelers will be forced to use the non-ExpressLanes where they would currently validly use the HOV lanes.

27-3 In a larger sense, it seems this is a project which has a life of it's own and cannot be derailed. For example, on the US-101 project, there is already a plan to go ahead with the project when there has been no chance for public comment and, apparently, the plan is to go ahead without any response to public comments.

Again, going back to SR-85, I understand there has been no response to the public comments made long ago on the EIR--but we appear to be moving full speed ahead. It appears the plan for US-101 is to exactly repeat that process. It is very frustrating that public servants seem be proceeding in the absence of public input and responses.

How do we have our concerns heard and addressed?

Jim Sutton
408-741-8173
14231 Hilltop Way
Saratoga, CA 95070

Response to Comment 27

27-1

Alternatives other than the Build and No Build were considered, and the decision-making for eliminating them from further evaluation is presented in Section 1.3.5 of the IS/EA.

The project would "expand" the HOV lanes as express lanes and would allow HOV use without a fee. In sections of US 101 where an additional lane is proposed, that additional lane will always be available for HOV use.

The IS/EA focuses on the changes and environmental impacts related to the project and alternatives, and avoidance, minimization or mitigation for any impacts. A financial analysis is not required as an element of the IS/EA, and is not normally included. Any preliminary financial evaluations of the project would be available through VTA during the final design phase. A Community Impact Assessment completed for the project in 2012 did analyze potential economic effects of the project on low-income populations. This study found that although there are communities in the study area with a substantial population of low-income residents, the choice to use the express lanes is voluntary and therefore, would not result in disproportionately high and adverse effects to low-income populations.

Potential environmental impacts are described and evaluated in the Environmental Consequences section for each resource (e.g., Air, Noise, Water Quality, etc.) and are listed in the executive summary (see Section S in the front of the IS/EA).

27-2

The commenter is correct in noting the similarities in project design between the express lanes proposed for SR-85 and the express lanes proposed for portions of US 101. Please see the response to Comment 2-1 for a detailed description of express lane operation, particularly with regard to access points. Restricting access reduces weaving, thereby improving travel speeds and reducing safety hazards. Also note that as mentioned in the IS/EA Sections 1.3.1 and 1.3.1.1, although the project included in the draft IS/EA is a limited access system, additional evaluation will be considered in the design phase to maintain open access as much as feasible.

27-3

The Department and VTA have proceeded with this project to the point of preliminary engineering design, environmental assessment, and public review, in accordance with established guidelines and following all federal and state procedures. There were outreach efforts to local groups and stakeholders for many months prior to the release of the Draft IS/EA for review and comment. There was extensive notification and advertisements in newspapers to announce the meetings and review period, and where and how one could review the IS/EA. Three public meetings were held to receive comments and address questions, and comments were accepted via email for the entire duration of the public comment period. All public comments received on the

Draft IS/EA are responded to in the Final IS/EA. These steps and review process are summarized in Section 3 of the IS/EA. The project development process only proceeds after all comments have been adequately addressed and considered.

The preliminary design and environmental review process for the US 101 Express Lanes project are expected to be completed in 2015. These documents require extensive review by the Department and VTA to ensure that all comments are responded to, and that all environmental effects have been adequately evaluated and addressed. The project can only be approved after all comments have been adequately addressed and the Department's reviews are complete.

Comment 28 Turner, Walter

From: Gloria Barron [GBarron@sunnyvale.ca.gov]
Sent: Tuesday, February 03, 2015 4:28 PM
To: Poirier, Sean@DOT
Cc: Manuel Pineda
Subject: United States Highway 101 Express Lanes Project

Hi Sean,

The following comments were received by the City of Sunnyvale by Mr. Turner. Not sure if he had already sent them to you:

28 This transportation project, located along a 52.55 mile stretch of U.S. Highway 101, between Gilroy and Palo Alto, in Santa Clara County, California, impacts about 37.65 miles of this freeway with the intent to construct a new lane in each direction, widen bridges, add a secondary High Occupancy Vehicle (HOV) lane, create High Occupancy Toll (HOT) lanes, install automatic toll collection systems, median signage, signaling systems, closed circuit television (CCTV) security surveillance systems, and light fixtures, among other features estimated to cost $433 million. I am opposed to this project since it creates another transportation "tax" revenue collection stream through the introduction of High Occupancy Toll (HOT) lanes and intends to introduce more costly road building schemes that diverts scarce financial resources when better alternatives are available. (Truncated version.) Finally, the No Build Alternative is the best option and this project should be "abandoned" with no further funds going towards any aspect to create additional High Occupancy Vehicle (HOV) lanes or High Occupancy Toll (HOT) lanes. It's an unnecessary extravagance and is wrong public policy. Thank you for taking the time to consider my thoughts and ideas on this important matter. Sincerely, Walter B. Turner Sunnyvale, California

Thank you,

Gloria

Response to Comment 28

The commenter's opposition to the project is noted. The express lanes do not represent a single solution to the problem of congestion along the 101 corridor. Rather, the project allows for a reliable travel time option for drivers to use. As described in Section 2.1.3.2, the Traffic Operations Analysis Report for the project found that the Build Alternative would reduce congestion by improving LOS and reducing travel time in the northbound AM peak, compared to the No Build Alternative. The project directly results from California Assembly Bills 2032

(2004) and 574 (2007), which specifically authorized VTA and the Department to implement express lanes in freeway corridors in Santa Clara County, as discussed in Section 1.2.1 of the IS/EA. The legislation stipulates that revenue collected from the express lanes will be used to support transportation improvements and transit projects within the corridor. The project does not preclude funding of other public transportation projects in the future. The No Build Alternative would not meet the purpose and need and traffic congestion would continue to persist as future growth and travel demand increase.

Comment 29 Wu, Sunny

From: Sunny Wu [mailto:sunny.c.wu@gmail.com]
Sent: Tuesday, February 03, 2015 9:19 PM
To: Poirier, Sean@DOT
Subject: It will bring little benefit to solve the congestion

Hi 101 expansion project staff,

29-1 I live in 802 Carolina Ave. in Sunnyvale. Both of the kids at my home have respirational issues due to the dust generated by traffic in 101. And the noise of 101 has also been keeping us from opening our windows at home.

29-2 To better use the tax payers money to solve the traffic congestions, I urge the south bay transportation agency to consider building public transportations (such as bart and bullet trains as cities like New York and Tokyo do) in the neighborhood cities, rather than keeping expanding 101. Because more lines in 101 will just encourage more cars to be on it, and it won't solve the congestion issues.

Sincerely yours,
Sunny

Response to Comment 29

29-1

See response to Comment 19-1 regarding the project's impact on air quality and noise levels on Carolina Avenue in Sunnyvale.

29-2

See response to Comment 19-2 regarding funding for public transportation and the project's impact on congestion.

Comment 30 Zhang, By

From: BY [byzhang@gmail.com]
Sent: Monday, January 19, 2015 11:49 PM
To: Poirier, Sean@DOT
Subject: Questions regarding US 101 Express Lanes Project

Hi Sean,

30-1 We live in Palo Alto, close to 101 and Oregon Expressway. I'm still reading the documents on dot.ca.gov, but so far have some quick questions.
1) There are two HOV lanes in 101 close to Oregon expressway already, will both of they be converted to HOT lanes, or will you add new lanes there?

30-2 2) In many reports (e.g. http://dot.ca.gov/dist4/documents/101_express_lane_project/101_express_lanes_air_quality_impact_assessment.pdf), they assume the VMT will increase with express lanes, but in the noise study report (http://dot.ca.gov/dist4/documents/101_express_lane_project/101_express_lanes_noise_study_report.pdf), it assume the express lane has 1400 vehicles per hour which is less than the 1500 vehicles per hour for HOV lanes. Is it reasonable?

Thanks,
-B

Response to Comment 30

30-1

Both HOV lanes along US 101 close to the Oregon Expressway would be converted from HOV lanes to express lanes. The express lanes would begin/end south of Matadero Creek (0.6 miles south of Oregon Expressway interchange). New lanes would not be added in this area. The express lanes would function the same for HOV drivers as the existing HOV lanes but would allow SOV use only when capacity is available.

30-2

The traffic conditions in the air quality and noise studies do use different vehicle per hour inputs, following established guidance and the traffic modeling to estimate worst-case air and noise levels for the future design year (2035 for this project). The air quality study relies on the peak hour or daily conditions that occur at maximum volumes, and the travel speeds associated with those volumes. This usually represents the peak traffic or commute periods. The noise study is different, because the maximum noise level from freeway traffic generally occurs when the highest density of expected traffic is traveling at the speed limit, which is not the peak commute period on a congested freeway such as US 101. Essentially, cars and trucks traveling at low speeds are not as noisy as when traveling at high speeds.

For the noise study, 1500 vehicles per hour (VPH) was assumed to represent the highest volume traveling at the speed limit for a single HOV lane (the No Build Alternative). 1400 VPH was assumed to represent the highest volume traveling at the speed limit for each of the express lanes and reflects the conditions with the project.