

Application of Criteria for a Project of Air Quality Concern

Project Title: US 101 Express Lanes Project

Project Summary for Air Quality Conformity Task Force Meeting: December 6, 2012

Description

- Project will convert existing High-Occupancy Vehicle (HOV) lanes on US Highway 101 (US 101) to High-Occupancy Toll (HOT) lanes (hereafter known as express lanes)
- To address existing and forecasted future HOV lane congestion, US 101 would be widened to include a second express lane between the East Dunne Avenue interchange in Morgan Hill and the Santa Clara/San Mateo County line just north of the Oregon Expressway/Embarcadero Road interchange in Palo Alto
- The project would convert the US 101/State Route (SR) 85 HOV direct connectors in Mountain View to express lane connectors and restripe the northern 1.1 mile of SR 85
- The project would also install new signage, striping, vehicle detection sensor units, and dynamic message signs

Background

- Technical studies are in preparation to support NEPA process for Initial Study/Environmental Assessment (IS/EA)
- Public review for IS/EA is scheduled for February 2013

Evaluation of Project with Regard to “Project of Air Quality Concern” (40 CFR 93.123(b)(1))

(i) New or expanded highway projects with significant number/increase in diesel vehicles?

- AADT and truck counts for the US 101 corridor exceeds “125,000 AADT/8% trucks” threshold both with and without project
- Project would not expand/increase capacity for diesel vehicles—large trucks restricted from using HOV and express lanes by California Vehicle Code Section 21655(b)
- Operational improvements would benefit mixed-flow lanes that diesel vehicles use

(ii) Affects intersections at LOS D, E, or F with a significant number of diesel vehicles? —Not Applicable

(iii) New bus and rail terminals and transfer points?—Not Applicable

(iv) Expanded bus and rail terminals and transfer points?—Not Applicable

(v) Affects areas identified in PM₁₀ or PM_{2.5} implementation plan as site of violation?

- No state implementation plan for PM_{2.5} (due by December 2012)
- Therefore, not identified in plan as an area of potential violation

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| | | | | |
|---|---|-----------------------------|--|-------|
| RTIP ID# 230662 | | | | |
| TIP ID# SCL110002, SCL110002 (TIP Amendment 11-25) | | | | |
| Air Quality Conformity Task Force Consideration Date December 6, 2012 | | | | |
| <p>Project Description (<i>clearly describe project</i>) Santa Clara Valley Transportation Authority (VTA), in cooperation with the California Department of Transportation (Caltrans), proposes to convert the existing High-Occupancy Vehicle (HOV) lanes along the United States Highway 101 (US 101) to High-Occupancy Toll (HOT) lanes (hereafter known as express lanes) and add a second express lane in each direction on northbound and southbound US 101. The express lanes will allow HOVs and eligible clean air vehicles to continue to use the lanes for free and eligible single-occupant vehicles (SOVs) to pay a toll. The project will also convert the US 101/State Route (SR) 85 HOV direct connectors in Mountain View to express lane connectors and restripe the northern 1.1 mile of SR 85 to introduce a buffer separating the mixed flow lanes from the express lane and connecting the SR 85 express lanes to the US 101 express lanes. The project would be implemented between the East Dunne Avenue interchange in Morgan Hill and the Santa Clara/San Mateo County line just north of the Oregon Expressway/Embarcadero Road interchange in Palo Alto (see Figures 1 and 2). The project length is 36.55 miles on US 101 and 1.1 miles on SR 85, for a total of 37.65 miles (Figure 1).</p> <p>US 101 typically has 4 lanes in each direction, including 3 mixed-flow lanes and 1 HOV lane with auxiliary lanes in some locations. The project consists of converting the existing HOV lane along both northbound and southbound US 101 into an express lane and widening the freeway to add a second express lane for the majority of the corridor. The project also proposes to build new express lanes in the northbound direction between East Dunne Avenue and the existing HOV lane at Cochrane Road, and in the southbound direction between Burnett Avenue and Cochrane Road. The project would also install new signage, striping, vehicle detection sensor units, and dynamic message signs. The project would require limited right-of-way and Temporary Construction Easements (TCE).</p> | | | | |
| Type of Project: Change to existing State highway | | | | |
| County Santa Clara | Narrative Location/Route & Postmiles On US 101 from PM 16.0 to 52.55. The project limits also include PM 23.0 to 24.1 on SR 85, to allow for striping and signage modifications to connect the SR 85 express lanes to the US 101 express lanes. Caltrans Projects – EA# 04-2G7100 | | | |
| Lead Agency: Santa Clara Valley Transportation Authority (VTA) | | | | |
| Contact Person Roy Molseed | Phone# 408 321-5784 | Fax# 408 321-5787 | Email Roy.molseed@vta.org | |
| Federal Action for which Project-Level PM Conformity is Needed (<i>check appropriate box</i>) | | | | |
| Categorical Exclusion (NEPA) | X EA or Draft EIS | FONSI or Final EIS | PS&E or Construction | Other |
| Scheduled Date of Federal Action: December 2012 | | | | |
| NEPA Delegation – Project Type (<i>check appropriate box</i>) Not applicable | | | | |
| Exempt | Section 6004 – Categorical Exemption | X | Section 6005 – Non-Categorical Exemption | |

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| Current Programming Dates <i>(as appropriate)</i> | | | | |
|--|-------------------------|---------------|--------------|------------|
| | PE/Environmental | ENG | ROW | CON |
| Start | October 2010 | January 2013 | January 2014 | June 2014 |
| End | December 2012 | December 2013 | March 2014 | July 2016 |

Project Purpose and Need (Summary): *(please be brief)*

Purpose

The purpose of the project is to:

- Manage traffic congestion in the most congested HOV segments of the freeway 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 the US 101 and SR 85 corridors.

Need

The proposed project is needed for the following reasons:

- High transportation demand in several segments of the mixed-flow lanes causes substantial congestion and reduced speeds in these lanes. During the peak periods (6 AM to 9 AM and 3 PM to 6 PM), US 101 cannot accommodate all of the traffic demand in the corridor, causing “bottlenecks” in mixed-flow lanes at many freeway segments. As a result, there are segments of US 101 where the mixed-flow lanes function below the posted speed limit of 65 mph.
- In addition to the congestion in the mixed-flow lanes, drivers in the HOV lane also experience delays in some HOV segments of US 101 between SR 85 in San Jose and the Oregon Expressway/Embarcadero Road interchange in Palo Alto. 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
- Traffic conditions are expected to worsen in the future with continued development in the region and along US 101 within the project limits. Over the next 25 years, Santa Clara County is predicted to grow by over 500,000 residents and 400,000 jobs, increases of 27.5 and 45.6 percent, respectively. Over the same period, the County expects to increase the capacity of the roadway system by 5 to 6 percent. Traffic on US 101 is also projected to increase in the form of both regional trips and local trips to and from locations along the US 101 corridor.
- The existing US 101 cross section with limited inside and outside widening provides the opportunity to construct a second HOV/express lane. A second lane would provide congestion relief for both the HOV and mixed-flow lanes by allowing SOVs to pay a toll to use the express lane facility.

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Surrounding Land Use/Traffic Generators *(especially effect on diesel traffic)*

US 101 passes through the cities of Gilroy, Morgan Hill, San Jose, Santa Clara, Sunnyvale, Mountain View, and Palo Alto (Figure 2). The US 101 corridor is bordered by residential, commercial and industrial development throughout most of the project limits.

The project would not change land uses in any way that would result in additional diesel truck traffic to or from the study area. The proposed express lanes would not serve trucks.

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Brief summary of assumptions and methodology used for conducting analysis *(please keep this concise – specifics may include date of when traffic counts were conducted, studies where truck percentages were derived)*

Traffic volumes for the peak period along the freeway mainline and the ramps were derived primarily from the Caltrans Census 24-hour traffic volumes (2007-2010) database; however, data from new project-specific counts, PeMS, and the VTA Ramp Metering Study were taken into consideration for Existing Year 2009. DKS performed project-specific counts on March through April 2011. Annual average daily traffic (AADT) presented below represent both directions of US 101.

Daily truck volumes were based on the truck percentage data for US 101 within the study area for Existing Year 2009, derived from the 2009 Caltrans Annual Average Daily Truck Traffic Database. The report listed average daily truck percentage at 10 locations in the study area.

The US 101 corridor was broken into six major segments as follows: (1) Dunne Avenue to SR 85, (2) SR 85 to E. Capitol Expressway, (3) E. Capitol Expressway to I-880, (4) I-880 to Lawrence Expressway, (5) Lawrence Expressway to SR 85, and (6) SR 85 to Oregon Expressway/ Embarcadero Road. For these segments, the truck traffic volumes during peak periods for Opening Year (2015) No Build and Build scenarios as well as Horizon Year (2035) No Build and Build scenarios were obtained using the model developed for the US 101 Express Lanes study (which includes peak periods only), and extrapolated to daily volumes.

Opening Year: If facility is a highway or street, Build and No Build LOS, AADT, % and # trucks, truck AADT of proposed facility

Year 2015

| Segment | | No Build AADT | | Build AADT | |
|-----------------|---------------------------------|---------------|--------|------------|--------|
| From | To | Total | Trucks | Total | Trucks |
| Dunne Ave. | SR 85 | 139,000 | 10,400 | 145,000 | 10,600 |
| SR 85 | E. Capitol Expy | 142,000 | 12,800 | 149,000 | 13,100 |
| E. Capitol Expy | I-880 | 205,000 | 12,300 | 218,000 | 12,700 |
| I-880 | Lawrence Expy | 177,000 | 8,900 | 191,000 | 9,300 |
| Lawrence Expy | SR 85 | 167,000 | 6,700 | 179,000 | 7,200 |
| SR 85 | Oregon Expy/ Embarcadero Rd. | 214,000 | 9,600 | 225,000 | 10,200 |

Source: Total AADT from CDM Smith Nov. 14, 2012

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RTP Horizon Year / Design Year: If facility is a highway or street, Build and No Build LOS, AADT, % and # trucks, truck AADT of proposed facility

Year 2035

| Segment | | No Build AADT | | Build AADT | |
|-----------------|---------------------------------|---------------|--------|------------|--------|
| From | To | Total | Trucks | Total | Trucks |
| Dunne Ave. | SR 85 | 185,000 | 13,900 | 197,000 | 14,500 |
| SR 85 | E. Capitol Expy | 176,000 | 15,800 | 186,000 | 16,400 |
| E. Capitol Expy | I-880 | 234,000 | 14,000 | 250,000 | 14,800 |
| I-880 | Lawrence Expy | 216,000 | 10,800 | 236,000 | 11,800 |
| Lawrence Expy | SR 85 | 198,000 | 7,900 | 218,000 | 8,800 |
| SR 85 | Oregon Expy/ Embarcadero Rd. | 256,000 | 11,500 | 272,000 | 12,300 |

Source: Total AADT from CDM Smith Nov. 14, 2012

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Opening Year: If facility is an interchange(s) or intersection(s), Build and No Build cross-street AADT, % and # trucks, truck AADT

Not applicable

RTP Horizon Year / Design Year: If facility is an interchange (s) or intersection(s), Build and No Build cross-street AADT, % and # trucks, truck AADT

Not applicable

Opening Year: If facility is a bus, rail or intermodal facility/terminal/transfer point, # of bus arrivals for Build and No Build, % and # of bus arrivals will be diesel buses

Not applicable

RTP Horizon Year / Design Year: If facility is a bus, rail or intermodal facility/terminal/transfer point, # of bus arrivals for Build and No Build, % and # of bus arrivals will be diesel buses

Not applicable

Describe potential traffic redistribution effects of congestion relief (*impact on other facilities*)

The proposed project would increase capacity for HOVs and allow solo drivers to pay a toll to use HOV lanes during AM and PM peak periods. The project would not result in adverse traffic effects elsewhere in the transportation network.

The traffic analysis (URS 2012) shows that the project would result in the following operational improvements:

1. The greatest difference between demands in Build over No Build volumes occurs in the northbound AM and southbound PM peak periods. The express lanes have very little impact on total corridor demand in the uncongested times of the day.
2. The additional demand on US 101 is the result of less traffic exiting at intermediate interchanges and more traffic entering the highway due to the additional capacity.
3. The US 101 Express Lanes will reduce the volumes on the direct connectors to the SR 85 Express Lanes slightly, since traffic will have the option to use an improved US 101. An exception is the northbound SR 85 to northbound US 101 direction, where the express connection in the morning peak period remains an attractive routing by helping toll-paying traffic bypass the ramp meter in the general purpose lanes.
4. The central portion of the study area, south of I-880 is forecasted to be extremely congested, especially in the morning peak period. The location of access points away from congested areas to allow sufficient weaving distance may reduce the effective time savings of the project.

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Comments/Explanation/Details *(please be brief)*

The proposed project is in a nonattainment area for federal PM_{2.5} standards. Therefore, according to 40 CFR Part 93, a hotspot analysis is required for conformity purposes. However, the EPA does not require hot spot analyses, qualitative or quantitative, for projects that are not listed in 40 CFR Section 93.123(b)(1) as a project of air quality concern (POAQC). Five types or categories of projects qualify as a POAQC. The following discussion evaluates whether the proposed project falls into any of these five POAQC categories.

The project is not expected to cause or contribute to an exceedance of PM_{2.5} air quality standards for the following reasons:

1. It is not a new or expanded highway project that would have a significant number of or increase in the number of diesel vehicles (40 CFR Section 93.123(b)(1)(i)).

→ The proposed express lanes do not allow use by trucks. The majority of diesel trucks are restricted from using either HOV or HOT lanes, even for passing, by California Vehicle Code Section 21655(b).

→ By increasing the efficiency of unused HOV lane capacity, the project would improve congestion and reduce idling in the mixed-flow lanes that the trucks use. Due to these improvements in efficiency, there would be a slight increase in truck AADT between No Build and Build in both opening year (2015) and horizon year (2035).

→ A qualitative hot spot analysis was performed and concluded that compared with the No Build Alternative, the Build Alternative would result in a net decrease in PM_{2.5} emissions over the life of the project.

2. The project does not affect any intersections (40 CFR Section 93.123(b)(1)(ii)).

3. It is not a new bus or rail terminal or transfer point (40 CFR Section 93.123(b)(1)(iii)).

4. It is not an expansion of an existing bus or rail terminal or transfer point (40 CFR Section 93.123(b)(1) (iv)).

5. There is no state implementation plan for PM_{2.5}, and the project area is therefore not identified in an implementation plan as an area of potential violation (40 CFR Section 93.123(b)(1)(v)).

Therefore, the proposed project meets the Clean Air Act requirements and 40 CFR 93.116 without any explicit hotspot analysis. The proposed project would not create a new, or worsen an existing, PM_{2.5} violation.

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URS | Caltrans
US 101 Express Lanes Project

Figure 1
Project Location and Regional Setting

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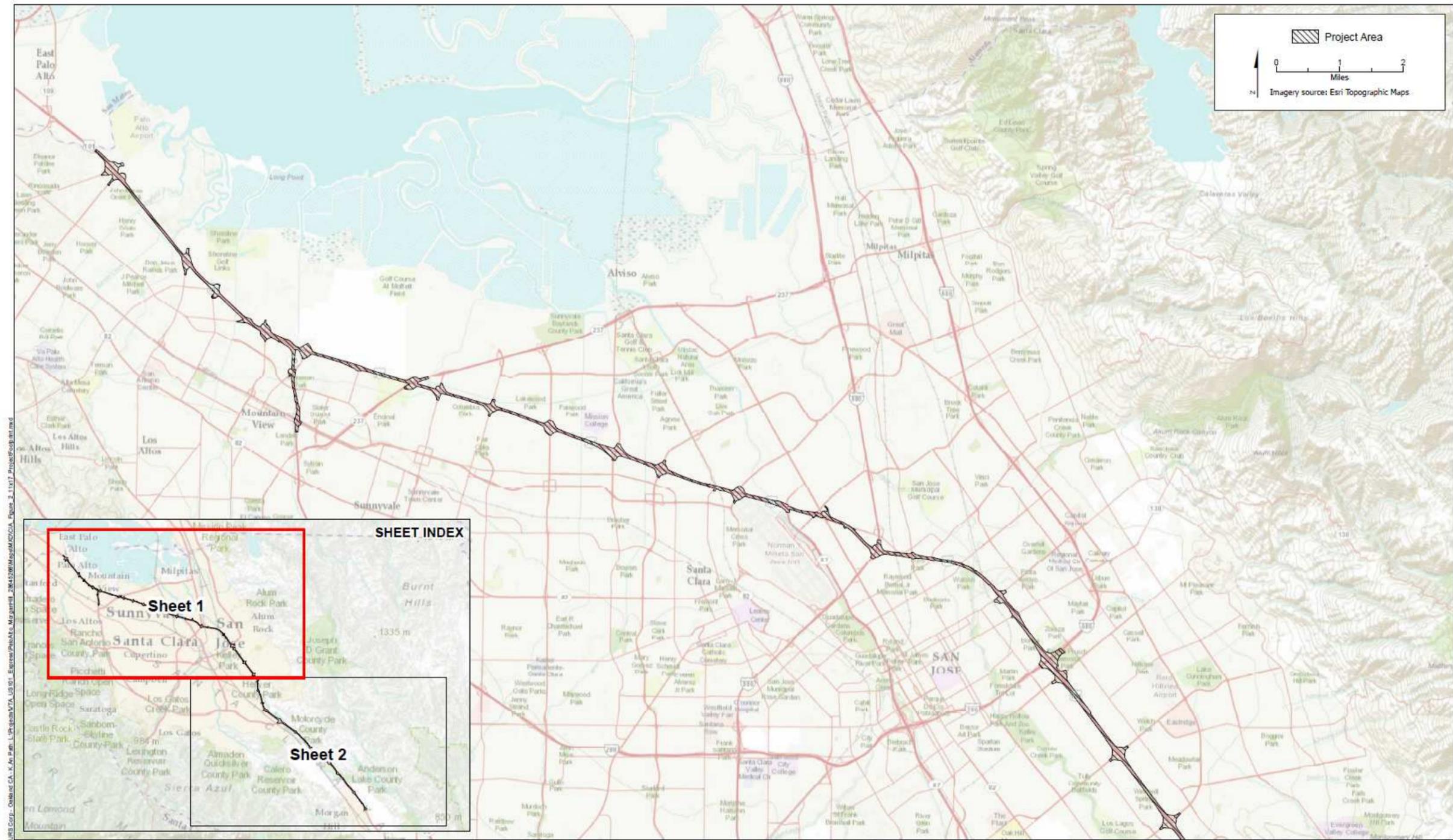


Figure 2, Sheet 1
Project Area

