

# Chapter 3      **Affected Environment; Environmental Consequences; and Avoidance, Minimization, and/or Mitigation Measures**

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## **3.0      Introduction**

The purpose of this introduction is to describe the organization and approach for this Environmental Impact Statement (EIS). This EIS has been prepared to comply with the requirements of the National Environmental Policy Act (NEPA). Caltrans is the federal lead agency under NEPA pursuant to 23 U.S.C. 327, 49 U.S.C. 303. This EIS has been prepared based on the President's Council on Environmental Quality's (CEQ's) NEPA regulations (40 Code of Federal Regulations [CFR] 1500 to 1508); and U.S. Department of Transportation's Environmental Impact and Related Procedures (23 CFR 771). The intent of the preparers of this document is to provide the reader with a clear description of the environmental analysis conducted for the project within the framework of applicable regulations.

Caltrans is the lead agency for the preparation of this EIS under NEPA for the proposed action because they have determined that the whole of the proposed action may result in a significant overall impact on the quality of the human environment. FHWA's responsibility for environmental review, consultation, and any other action required in accordance with applicable Federal laws for this project is being carried out by Caltrans under its assumption of responsibility pursuant to the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) (23 USC 327).

The NEPA evaluation for this document is contained in Chapters 3, Affected Environment; Environmental Consequences; and Avoidance, Minimization, and/or Mitigation Measures. In most instances, the affected environment, or environmental setting, reflects the physical environmental conditions in the project area at the time the NEPA Notice of Intent (NOI) was published, per the requirements of NEPA. Since 2000, the conditions in the corridor have continually evolved, and the EIS and supporting technical reports have been updated to reflect current conditions. Additional field reviews and/or research were conducted for biological resources, visual resources, land use, traffic, noise, air quality, and hydrology/water quality.

As part of the scoping and environmental analysis conducted for the project, the following environmental issues were considered but no adverse impacts were identified. Consequently, there is no further discussion regarding these issues in this document.

- Timberlands: There are no timberlands located in the project corridor.
- Wild and Scenic Rivers: There are no wild and scenic rivers in the project corridor.

### **3.0.1 Cumulative Impact Analysis**

Potential cumulative impacts of the project and impact assessment under NEPA are described in each technical section of Chapter 3. The requirements of each law relative to cumulative analysis are described below. In addition, this section identifies the approach used for the cumulative analysis throughout Chapter 3. As shown throughout the chapter, there are no cumulative impacts associated with any of the four build alternatives.

#### **3.0.1.1 Requirements for Cumulative Impact Analysis**

Under NEPA, a cumulative impact is the impact on the environment that results from the incremental impact of the project when added to other past, present, and reasonably foreseeable future projects regardless of what agency (federal or nonfederal) or person undertakes such other actions. Cumulative impacts can result from individually minor, but collectively significant, actions taking place over a period of time (40 CFR § 1508.7).

A cumulative impact includes the total effect on a natural resource, ecosystem, or human community due to past, present, and reasonably foreseeable future activities or actions of federal, non-federal, public, and private entities. Cumulative impacts may also include the effects of natural processes and events, depending on the specific resource in question. Cumulative impacts include the total of all impacts to a particular resource that have occurred, are occurring, and will likely occur as a result of any action or influence, including the direct and indirect impacts of a federal activity. Accordingly, there may be different levels of cumulative impacts on different environmental resources.

#### **3.0.1.2 Approach to Cumulative Impact Analysis**

Cumulative impacts are impacts on the environment that result from the incremental impact of a proposed project together with the impacts of other past, present and reasonably foreseeable future projects. Cumulative impacts can result from individually minor but collectively significant impacts taking place over a period of time.

Cumulative impacts on resources in the project area may result from the impacts of the transportation project together with other past, present, and reasonably foreseeable projects such as residential, commercial, industrial, and other development, as well as from agricultural activities and the conversion to more intensive types of agricultural cultivation. Such land use activities may result in cumulative effects on a variety of natural resources such as species and their habitats, water resources, and air quality. Additionally, they can also contribute to cumulative impacts on the urban environment such as changes in community character, traffic volume and patterns, increased noise, housing availability, and employment.

Cumulative impacts are best evaluated at a geographic scale that reflects their extent and likelihood of occurrence, such as a watershed or air shed, and must not be artificially limited to jurisdictional boundaries. Additionally, different resources may have different cumulative impact areas.

A definition of cumulative impacts under NEPA can be found in 40 CFR, Section 1508.7 of the CEQ Regulations.

The analysis of cumulative impacts includes information regarding other projects which have been recently completed or are in the planning stages. The existing and proposed projects listed below have been included in this analysis because they either are close to the corridor or could affect regional resources.

- **Leisure Town Road Overcrossing and Interchange at I-80, City of Vacaville.** The City of Vacaville and Caltrans replaced the existing Leisure Town Road/I-80 overcrossing with a new bridge structure similar to the Allison/I-80 overcrossing. This project is located at the end of Leisure Town Road outside the project limits for Alternative B, Alternative C, and Alternative D. Potential resources affected by the overcrossing project include traffic and visual resources.
- **Al Patch Park, City of Vacaville.** The City of Vacaville constructed a 34.3-acre sports complex consisting of five lighted softball fields, a lighted football field surrounded by an all-weather track, a playground/tot lot area, group picnic shelters, off-street parking, batting cages, and a single-story building complex housing a food concession area and restrooms. The park is located on the northwest corner of Peabody Road and California Drive.
- **Elmira Road Widening—Peabody Road to Allison Drive, City of Vacaville.** The City of Vacaville is acquiring right-of-way to widen the north side of Elmira Road between Peabody Road and Allison Drive.
- **Fairfield-Vacaville Multimodal Train Station, City of Fairfield (Sphere of Influence).** This station is planned as a multimodal transportation hub for the Capitol Corridor intercity passenger train service and for feeder bus systems serving the train station. Also, the Fairfield/Suisun Short-Range Transit Plan projects that an additional route to the northern part of Fairfield would be needed. The Fairfield-Vacaville Multimodal Train Station was identified in the Solano County Rail Facility Plan as one of three priority projects. This rail station would be located at the corner of Peabody Road and Cement Hill/Vanden Road, a major intersection along the corridor. Each of the four build alternatives includes roadway segments adjacent to the site of the proposed train station. Resources potentially affected by the train station would be similar to those described for the Jepson Parkway Project. However, all four build alternatives have been designed to accommodate the train station.

**Technology Park, City of Fairfield.** Vanden Road travels through an area designated in the City of Fairfield General Plan for an 800-acre technology park. It should be noted that the actual development area of Technology Park is expected to result in about 310 acres due to environmental constraints relating to wetlands. Similar to the Jepson Parkway Project, development of the Technology Park could impact biological resources, traffic, and visual resources.

- **Travis Air Force Base expansion, City of Fairfield.** Vanden Road travels through an area to be reserved for expansion of Travis Air Force Base. Similar to the development of the Technology Park, the Air Base expansion could impact biological resources, traffic, and visual resources.
- **Petersen Ranch, City of Suisun.** Petersen Ranch is a 153-acre residential development adjacent to Walters Road between Bella Vista Drive and East Tabor Avenue. Resources potentially affected by Petersen Ranch include visual, biological resources, and traffic.
- **Villages at Fairfield Residential Development, City of Fairfield.** The Villages at Fairfield residential development is located on approximately 440 acres in the northeastern area of the City of Fairfield, north of Air Base Parkway between Claybank Road and Peabody Road. The corridor is adjacent to the Woodlake Estates residential development to the west, and adjacent to the Goldridge residential development to the east. The Villages at Fairfield includes approximately 2,400 housing units, a commercial shopping center, an elementary school, two neighborhood parks, a portion of the Fairfield Linear Park, and associated public facilities, roadways and utilities. The Villages project could impact traffic, biological resources, and visual resources.
- **Solano Countywide Bicycle Plan.** A continuous bike path is proposed along Leisure Town Road, Vanden Road, Cement Hill Road, and Walters Road. Each of these roadways is included in one or more of the project alternatives. The updated Countywide Bicycle Plan describes bikeways along the corridor as priority projects. Implementation of the bike path could impact biological resources along the alignment.
- **Improvements to the I-80/I-505 Interchange.** Caltrans is preparing a project study report for improvements to the I-80/I-505 interchange in Vacaville. The report focuses on improvements that address existing weave conditions of traffic entering and exiting these roadways from local on- and off-ramps. Implementation of the plan could impact traffic, visual quality, noise, air quality, and biological resources.
- **High-Occupancy Vehicle (HOV) Lane on I-80.** The Metropolitan Transportation Commission's (MTC) Regional Transportation Plan (RTP) and the Solano Comprehensive Transportation Plan include a HOV lane on I-80 in Solano County. The segment between the I-80/I-680/SR 12 interchange and Air Base Parkway is not operational. The segment between Air Base Parkway and I-505 is in early planning stages.
- **Improvements to the I-80/I-680/SR-12 Interchange.** Caltrans, in cooperation with the Solano Transportation Authority (STA), is proposing to improve the I-80/I-680/SR 12 Interchange. Two alternatives are being considered to meet the long-term traffic and safety demands of the project area. Caltrans has prepared a Draft Environmental Impact Report/Environmental Impact Statement (EIR/EIS) for the proposed project.
- **I-80/North Texas Street Interchange and Manuel Campos Parkway Extension.** The City of Fairfield will improve the I-80/North Texas Street interchange by widening the existing bridge over I-80 from two to four lanes and reconstructing the I-80 eastbound ramps. Manuel Campos

Parkway would extend from this interchange to Cement Hill Road, connecting to the Jepson Parkway at either Walters Road or Peabody Road. Manuel Campos Parkway would be a major east-west arterial. Implementation of this project could impact biological resources, air quality, traffic, noise, water quality, and, visual resources.

### 3.0.2 Section Organization

Each section of this chapter discusses a specific resource area (e.g., air quality, land use) and generally includes the following sections:

- **Regulatory Setting:** This section lists federal, State, and local policies, regulations, and standards that apply to the resource area, as well as applicable federal, State, and local agencies. For example, Section 3.15.6, Invasive Species, lists Executive Order 13112 (Invasive Species), the California Department of Food and Agriculture’s invasive plant species list, and the California Invasive Plant Council’s plant species list.
- **Affected Environment:** This section describes the existing project site and study area conditions with respect to the resource area. For example, Section 3.15.6, Invasive Species, lists potential invasive species that would occur in the biological study area, including the potential for infestation by specific species at particular locations.
- **Impacts (Including Permanent, Temporary, Direct, Indirect, and Cumulative):** This section first describes the technical methodology for impact assessment. If models were used to assess impacts, the models are described in this section, in addition to other technical tools. It also discusses the adverse effects of the project with respect to the resource area. Each impact discussion begins with a summary comparing the impacts of each alternative, and then continues to describe each alternative in detail. For example, in Section 3.3, Farmlands/Agricultural Lands, Impact FA-1 is followed by a description of the impacts under Alternatives A to E, respectively.

The following codes are used to identify the environmental issues discussed in this section:

- LU – Land Use
  - GR – Growth
  - FA – Farmlands/Agricultural Lands
  - CI – Community Impacts
  - UT – Utilities/Emergency Services
  - VIS – Visual/Aesthetics
  - CR – Cultural Resources
  - TRA – Traffic and Transportation/  
Pedestrian and Bicycle Facilities
  - HYD – Hydrology and Floodplains
  - WQ – Water Quality and Stormwater  
Run-Off
  - GEO – Geology, Soils, and Seismicity
  - HAZ – Hazardous Waste and Materials
  - AQ – Air Quality
  - N – Noise
  - BR – Biological Environment
- **Avoidance, Minimization, and/or Mitigation Measures:** This section lists measures that shall be sought to reduce all negative project impacts.

### 3.0.3 Overview and Terminology of Impacts and Mitigation Measures

Impacts are identified as permanent, temporary, direct, or indirect effects (the terms *effects* and *impacts* are synonymous).<sup>1</sup> Under NEPA, effects include ecological, aesthetic, historic, cultural, economic, social, and health effects, whether they are direct, indirect, or cumulative. Effects may also include those resulting from actions that may have both beneficial and detrimental effects, even if on balance the agency believes that the overall effect would be beneficial (40 CFR 1508.8). For the purposes of this analysis, these terms are defined as follows:

- **Permanent impacts** are irreversible changes and changes that would occur from operation of the proposed action.
- **Temporary impacts** would occur only during the construction period of the proposed action.
- **Direct impacts** would occur within the project footprint or temporary construction areas. Direct impacts are caused by the proposed action and occur at the same time and place (40 CFR 1508.8).
- **Indirect impacts** would be caused by the proposed action and would occur later in time or farther removed in distance, but would still be reasonably foreseeable. Indirect impacts may include growth-inducing and other effects related to induced changes in the pattern of land use, population density, or growth rate, as well as related effects on air, water, and other natural systems, including ecosystems (40 CFR 1508.8).
- **Cumulative impacts**, according to the NEPA regulations, occur as a result of the incremental impact of the project when added to other past, present, and reasonably foreseeable future projects, regardless of what agency (federal or nonfederal) or person undertakes the other projects. Cumulative impacts can result from individually minor, but collectively significant, projects taking place over a period of time (40 CFR 1508.7).
- **Mitigation measures** are recommended to reduce, avoid, or eliminate the negative effects of the proposed project. For each impact identified as being significantly adverse, this document suggests mitigation measures to reduce or eliminate the negative effect of the proposed project.

### 3.0.4 Background Technical Studies

The following technical studies have been prepared for the Jepson Parkway Project and form the basis for the analysis in the following resource sections. These technical studies are incorporated by reference and are available for public review at STA's and Caltrans offices. As reflected below, the technical reports were updated as needed to reflect current conditions in the corridor. These reports are also listed in Appendix G.

- España Geotechnical Consulting. 2005. Initial Site Assessment for the Proposed Jepson Parkway Project, Solano County, California. July. Prepared for Jones & Stokes, Sacramento, CA. Roseville, CA.

<sup>1</sup> California Department of Transportation (Caltrans). 2010. Environmental Impact Statement Annotated Outline. As Revised: May 2010. Available: <<http://www.dot.ca.gov/ser/forms.htm>>

- PBS&J. 2007. Updated Transportation/Circulation Impacts Report: Jepson Parkway Project. November. Prepared for Solano Transportation Authority Prepared for Solano Transportation Authority and the California Department of Transportation.
- Jones & Stokes. 2005. Visual Resources Technical Report: Jepson Parkway Project. September. (Updated by PBS&J, March 2008) Sacramento, CA. Prepared for Solano Transportation Authority and the California Department of Transportation.
- Jones & Stokes. 2005. Hydrology and Water Quality Technical Report: Jepson Parkway Project. August. Sacramento, CA. (Addendum by PBS&J, March 2011) Prepared for Solano Transportation Authority and the California Department of Transportation.
- PBS&J. 2008. Updated Air Quality Technical Report: Jepson Parkway Project. May. Updated by PBS&J, February 2011. Prepared for Solano Transportation Authority and the California Department of Transportation.
- PBS&J. 2008. Updated Noise Study Technical Report: Jepson Parkway Project. May (Revised October 2008). Prepared for Solano Transportation Authority and the California Department of Transportation.
- PBS&J. 2010. Noise Abatement Decision Report (NADR): Jepson Parkway Project. November. Prepared for Solano Transportation Authority and the California Department of Transportation.
- Jones & Stokes. 2005. Delineation of Waters of the United States: Jepson Parkway Project. October. Sacramento, CA. Prepared for Solano Transportation Authority and the California Department of Transportation.
- Jones & Stokes. 2006. Historic Property Survey Report: Jepson Parkway Project. January. Sacramento, CA. Prepared for Solano Transportation Authority and the California Department of Transportation.
- Jones & Stokes. 2006. Natural Environment Study: Jepson Parkway Project. February. (Updated by PBS&J, December 2007 and August 2009) Sacramento, CA. Prepared for Solano Transportation Authority and the California Department of Transportation.
- Trott, R. 2006. Community Impact Assessment: Jepson Parkway Project. February. (Updated by PBS&J, April 2008) (Addendum by PBS&J, August 2009) Sacramento, CA. Prepared for Solano Transportation Authority and the California Department of Transportation.
- Trott, R. 2006b. Relocation Impact Report: Jepson Parkway Project. February. (Updated by PBS&J, December 2007) Sacramento, CA. Prepared for Solano Transportation Authority and the California Department of Transportation.
- PBS&J. 2008. Mobile Source Air Toxics Analysis. January. Prepared for Solano Transportation Authority and the California Department of Transportation.
- Ninyo & Moore. 2008. Updated Initial Site Assessment Jepson Parkway Project. April. Prepared for PBS&J, San Francisco, CA.

- PBS&J. 2008. Updated Location Hydraulic Study Jepson Parkway Project. March. (Addendum by PBS&J, March 2011) Prepared for Solano Transportation Authority and the California Department of Transportation.
- PBS&J. 2009. Biological Assessment: Jepson Parkway Project, Solano County, California. March. Prepared for Solano Transportation Authority and the California Department of Transportation.
- PBS&J. 2009 Jepson Parkway Project Biological Assessment for NOAA Fisheries No Effect Documentation Prepared for Environmental Impact Statement. March. Prepared for Solano Transportation Authority and the California Department of Transportation.
- Project Level PM2.5 Conformity Documentation, February 2011.