# 3.19 Transportation and Traffic

This section describes transportation resources (roads, evacuation routes, rail lines, public transit systems, ports, and airports) that could be affected by implementation of the proposed program. All of these systems enable movement of goods and services, thus contributing to economic activity that is dependent on a functional transportation network. This section is composed of the following subsections:

- Section 3.19.1, "Environmental Setting," describes the physical conditions in the study area as they apply to transportation resources.
- Section 3.19.2, "Regulatory Setting," summarizes federal, State, and regional and local laws and regulations pertinent to evaluation of the proposed program's impacts on transportation resources.
- Section 3.19.3, "Analysis Methodology and Thresholds of Significance," describes the methods used to assess the environmental effects of the proposed program and lists the thresholds used to determine the significance of those effects.
- Section 3.19.4, "Environmental Impacts and Mitigation Measures for NTMAs," discusses the environmental effects of near-term management activities (NTMAs) and identifies mitigation measures for significant environmental effects.
- Section 3.19.5, "Environmental Impacts, Mitigation Measures, and Mitigation Strategies for LTMAs," discusses the environmental effects of long-term management activities (LTMAs) and identifies mitigation measures for significant environmental effects.

NTMAs and LTMAs are described in detail in Section 2.4, "Proposed Management Activities."

## 3.19.1 Environmental Setting

### *Geographic Areas Discussed*

Transportation resources are discussed only for the following geographic area within the study area:

- Extended systemwide planning area (Extended SPA) divided into the Sacramento and San Joaquin Valley and foothills, and the Sacramento–San Joaquin Delta (Delta) and Suisun Marsh

Transportation serves the built environment with facilities that cross and serve all geographic areas in the study area. The impact analysis focuses on transportation resources contained within or passing through the Extended SPA because most impacts are expected to result from construction within these project areas. Many of the transportation resources discussed within the Sacramento and San Joaquin Valley and the Delta continue into the Sacramento and San Joaquin Valley watersheds, where impacts are less likely. Some of the LTMAs are expected to take place in either the Sacramento or San Joaquin Valley watershed, but the watershed areas have fewer transportation resources and population centers. Furthermore, none of the management activities included in the proposed program would be implemented in the SoCal/coastal Central Valley Project/State Water Project (CVP/SWP) service areas, and program implementation would not result in long-term reductions in water deliveries to these service areas (see Section 2.6, "No Near- or Long-Term Reduction in Water or Renewable Electricity Deliveries"). Given these conditions, little to no effect on transportation resources is expected in the portion of the SoCal/coastal CVP/SWP service areas located outside of the Sacramento and San Joaquin Valley and foothills and the Sacramento and San Joaquin Valley watersheds. Therefore, those geographic areas are not discussed in detail in this section.

This section focuses on existing transportation systems within the Extended SPA and describes the major freeways, highways, levee roads, lifeline routes, rail lines, public transit systems, ports, deep water shipping channels, and airports. Only ports and airports that hold regional significance and deal with the import and export of goods are discussed. The transportation resources that support the entire Extended SPA are described first. Transportation resources that only serve a specific area are discussed in their respective areas: Sacramento Valley and foothills, San Joaquin Valley and foothills, and the Delta and Suisun Marsh. See Figure 3.19-1 for the major roads and rail lines, Figure 3.19-2 for the major California Department of Transportation (Caltrans) lifeline routes, and Figure 3.19-3 for the major ports and airports in the Extended SPA.

Roads are generally classified into freeways, State routes, expressways, and arterials. In the Sacramento and San Joaquin valleys, levee roads and the bridges that cross the waterways to connect communities are important to the residents who use them. Lifeline routes have been established to provide a functioning transportation network in case of emergency for the movement of emergency supplies and the evacuation of people from the affected area. This section discusses the freeways, State routes, levee roads, and lifeline routes in the study area:

- **Freeways** are operated and maintained by Caltrans. These facilities are designed as high-volume, high-speed facilities (generally 65 miles per hour (mph) or faster) for intercity and regional traffic. Access to these facilities is limited, and in some cases on- and off-ramps are metered during peak-hour periods to reduce congestion caused by merging cars and trucks. The maximum capacity of a freeway is typically 2,250–2,400 vehicles per hour per lane, depending on the maximum speed for the road (TRB 2009). Traffic is typically at its worst in urban areas where there is a higher density of on-ramps and off-ramps per mile than in rural areas.

- **State routes** typically are four- to six-lane high-speed facilities (generally 55 mph or faster) that have a primary purpose of connecting local and county transportation systems with those outside the region. These roadways are under the jurisdiction of Caltrans. The maximum capacity of a State route is typically 1,900–2,200 vehicles per hour per lane, depending on the maximum speed for the road (TRB 2009). Traffic conditions for State routes are similar to those for freeways.

- **Levee roads** are built atop levees in areas where flood risk is considered significant or permanent waterways are on either side of the levee. Networks of bridges connect these levee roads. In some areas, levee roads are the only public roadways. The maximum capacity of a levee road is more variable than that of either a highway or State route. Levee roads are typically undivided, one lane in each direction; they may have close radius curves and narrow lanes or shoulders, or even obstructions in the shoulder that affect a driver's sight distance. Based on these variables, the vehicle capacity can vary from 200 to 1,800 vehicles per hour per lane (TRB 2009). Because levee roads are often located in rural areas, they tend to have fewer traffic congestion issues than highways and State routes that connect major metropolitan areas; however, some levee road segments can be heavily used commuter routes with high a.m.- and p.m.-peak-hour traffic volumes. Other factors such as periodic use by slow-moving harvest machinery or special events in rural communities (e.g., festivals, heavy tourist use on holiday weekends) can also contribute to temporary traffic congestion on some levee roads.

- **Lifeline routes** are roads that are critical to emergency response activities. These roads must be available immediately after a major event and remain available for movement of emergency supplies and evacuation of people from the affected area. The focus is on highly critical routes that allow immediate movement into or through a region.


**Figure 3.19-1. Major Roads and Rail Lines in the Study Area**


**Figure 3.19-2. Major Caltrans Lifeline Routes in the Study Area**

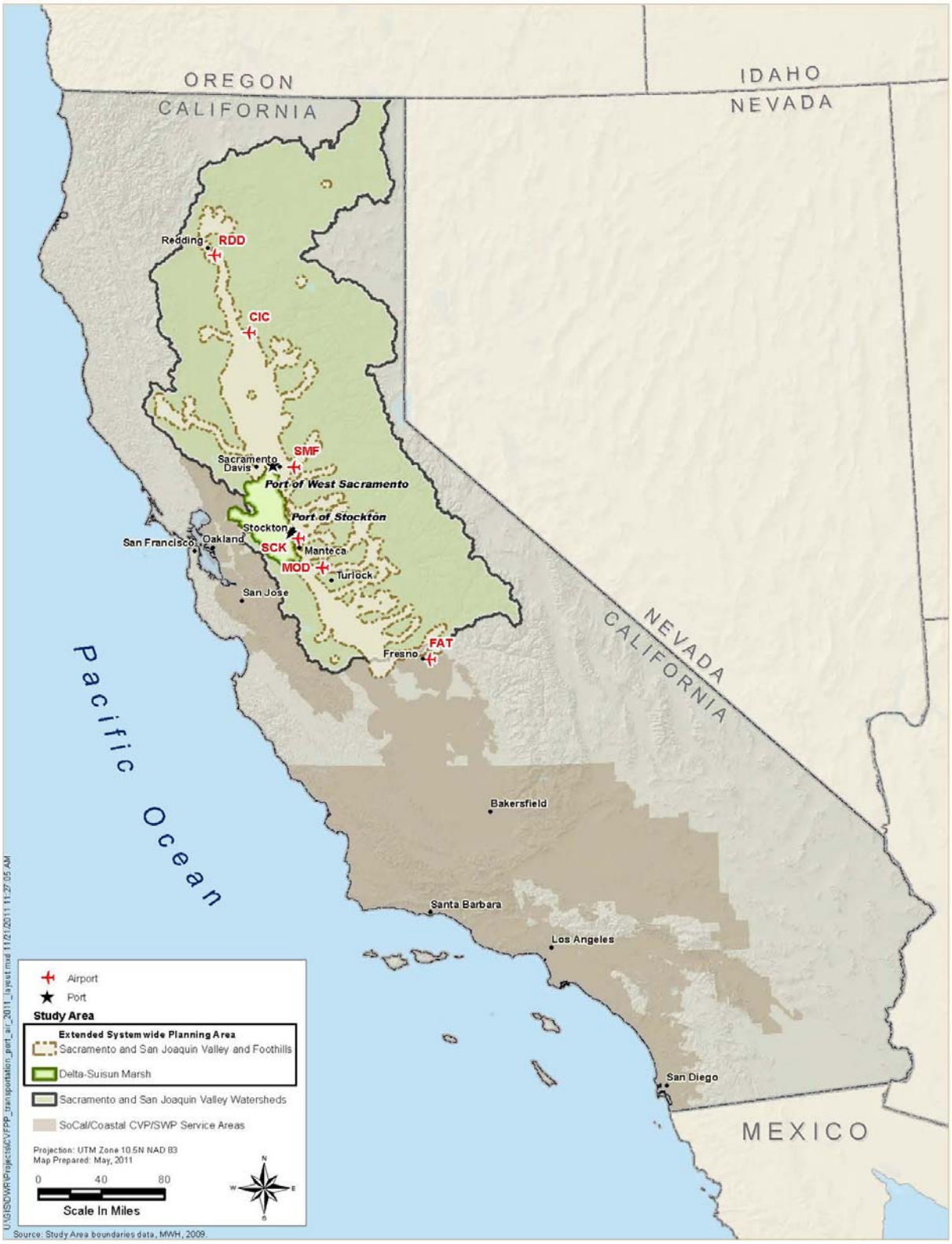


**Figure 3.19-3. Major Ports and Airports in the Extended Systemwide Planning Area**

### *Extended Systemwide Planning Area*

Transportation resources that cross and serve the entire Extended SPA are discussed below. For transportation resources that individually serve the Sacramento and San Joaquin Valley and foothills and the Delta and Suisun Marsh, see the following discussions of each geographic area.

Four major freeways and State routes, two commercial freight railways, and two national passenger transportation systems serve the Extended SPA, supporting the bulk of regional movement of passengers, goods, and services (Figure 3.19-1).

- **Interstate 5**—Interstate 5 (I-5) is the major north-south route linking the entire West Coast of the United States. It operates as a local, regional, and interstate freeway, and is a major trucking route for many of the goods transported throughout the West Coast. I-5 is classified as a lifeline route (Figure 3.19-2).

- **Interstate 80**—Interstate 80 (I-80) is one of the major east-west routes linking the entire United States. Running from San Francisco to New York City. I-80 operates as a local, regional, and interstate freeway and serves as a major trucking route for many of the goods transported throughout the county. I-80 is classified as a lifeline route (Figure 3.19-2).

- **State Route 99**—State Route 99 (SR 99) is a major north-south route that runs along the length of both the Sacramento and San Joaquin Valleys, east of I-5. SR 99 serves as a trucking route and provides access between many Sacramento and San Joaquin Valley cities and communities.

- **U.S. Highway 50**—U.S. Highway 50 (U.S. 50) is an east-west route that begins in Sacramento and continues across the country, ending in Ocean City, Maryland. The highway runs south of I-80 and operates as a local and regional highway.

- **Levee Roads**—Public and private levee roads are located throughout the Sacramento and San Joaquin Valleys, with a large concentration of them in the Delta. Particularly in the Delta, levees surround and protect numerous islands or tracts (e.g., Empire Tract), and levee roads and bridges connect the islands. In many cases, these levee roads and bridges are the only means of travel from one island to another. Some levee roads are owned in fee by the Central Valley Flood Protection

Board (Board), while others are utilized by easements with the property owner.

- **Union Pacific Railroad**—The Union Pacific Railroad (UPRR) is one of the major freight carriers on the West Coast. Within the study area, UPRR rail lines serve the San Francisco Bay region to Monterey, and run east through the Sacramento and San Joaquin Valley areas into the Sierra Nevada foothills and mountains. From central to southern California, UPRR has two major north-south routes that roughly parallel the Coast Ranges and the east side of the Sacramento and San Joaquin valleys. Many tracks are shared by UPRR and other rail carriers, as discussed below.

- **Burlington Northern Santa Fe**—The Burlington Northern Santa Fe Railway (BNSF) serves the entire study area and exclusively provides freight service. BNSF and UPRR share tracks in certain places within the study area.

- **Amtrak**—Amtrak is a national passenger rail and bus carrier with stations located throughout the United States. Amtrak does not own the tracks on which it operates, but uses the UPRR and BNSF rails in the study area through mutual agreements. Daily passenger service provided by Amtrak serves east-west routes from the Sacramento region into the San Francisco Bay area, north-south inland and along the coast, and between the Sacramento and San Joaquin valleys, with stations typically based in larger communities.

- **Greyhound**—Greyhound is the largest bus service in the United States and provides regional service throughout the Sacramento and San Joaquin valleys. Most major cities in the United States have a Greyhound bus station. Greyhound buses run along major highways, including I-5, I-80, SR 99, and U.S. 50. Greyhound serves both large and small communities and provides service to many communities not served by rail.

**Sacramento Valley and Foothills** For the Sacramento Valley and foothills, I-5 and SR 99 are the major north-south routes and I-80 and U.S. 50 are the major east-west routes. A majority of the State routes listed below link up with and break away from I-5, I-80, SR 99, and U.S. 50 (Figure 3.19-1). Below is a listing of major routes within the Sacramento Valley and foothills and the areas those routes serve.

- Interstate 505 (I-505) connects I-5 and I-80.

- SRs 162, 36, 273, 299, and 151 serve the area west of I-5 in Shasta, Tehama, and Glenn counties.

- SRs 44, 36, 32, and 70 serve the area east of I-5 in Shasta, Tehama, and Butte counties.

- SRs 20 and 16 serve the area west of I-5 in Colusa and Yolo counties.

- SRs 32, 45, 162, 20, and 113 serve the area east of I-5 and west of SR 99 in Tehama, Glenn, Colusa, Sutter, and Yolo counties.

- SRs 20, 70, 65, 16, and 104 serve the area east of SR 99 in Butte, Yuba and Sacramento counties.

- SRs 12 and 113 serve the area north of the Sacramento River in Sacramento and Solano counties.

Several public transit agencies serve the Sacramento Valley and foothills. The largest is Sacramento Regional Transit, which provides both bus and light rail services to the Sacramento metropolitan area. Several other transit systems, listed below, provide only bus services to cities and communities in the Sacramento Valley and foothills.

- **Tehama Rural Area Express**—Regional service connecting Red Bluff, Corning, Los Molinos, Gerber, Tehama, and places in between

- **Redding Area Bus Authority**—Local service in the greater Redding metropolitan area

- **Glenn Ride Bus Service**—Regional Service from Chico to Willows, with stops at Artois, Orland, and Hamilton City

- **Butte Regional Transit**—Local service in Chico, Oroville, and Paradise, with other travel to communities throughout Butte County

- **Yolobus**—Regional service connecting Sacramento, Davis, Woodland, Vacaville, and Winters

Three commercial passenger airports operate in the Sacramento Valley and foothills; of these, Sacramento International Airport (standard airport abbreviation SMF) has the highest flight volume. The other two airports are Redding Municipal Airport (RDD), just south of Redding, and Chico Municipal Airport (CIC), north of Chico (Figure 3.19-3).

**San Joaquin Valley and Foothills** I-5 and SR 99 are the major north-south routes in the San Joaquin Valley and foothills, with several State routes branching off of both roads (Figure 3.19-1). Listed below are major routes within San Joaquin Valley and foothills.

- SRs 12, 4, 120, and 88 serve the area east of SR 99 in Sacramento and San Joaquin counties.
- SRs 132, 4, and 165 serve the area west of SR 99 in Contra Costa and Stanislaus counties.
- SRs 132, 108, and 120 serve the area east of SR 99 in Stanislaus County.
- SRs 140, 180, 41, 145, and 65 serve the area east of SR 99 in Merced, Madera, and Fresno counties.
- SRs 152, 165, 140, 59, 33, 180, 41, and 145 serve the area east of I-5 and west of SR 99 in Merced, Madera, and Fresno counties.
- SR 152 serves the area west of I-5 in Merced and Fresno counties.

In addition, several locally based bus-only public transit systems, listed below, operate within the San Joaquin Valley and foothills; of these, the Fresno Area Express is the largest.

- **San Joaquin Regional Transit**—Local service within the Stockton metropolitan area, with regional service reaching to Lodi, Tracy, Manteca, Ripon, Lathrop, Escalon, Modesto, and Sacramento
- **Modesto Area Express**—Local service within the Modesto metropolitan area, with regional service to Dublin and Manteca
- **Stanislaus Regional Transit**—Regional service between Modesto, Oakdale, Riverbank, Merced, Turlock, and Gustine
- **Merced County Transit**—Local service in Merced and Los Banos, with regional service between Merced, Los Banos, Hilmar, Turlock, Delhi, Livingston, and Atwater
- **Fresno Area Express**—Local service throughout the Fresno metropolitan area, with service in Fresno, Pinedale, and Clovis
- **Madera Area Express**—Local service throughout the city of Madera

- **Chowchilla Area Transit Express**—Local service throughout the city of Chowchilla

- **Madera County Connection**—Regional service between the cities and communities of Madera, Chowchilla, Fairmead, La Vina, Ripperdan, Eastin Arcola, Madera Ranchos, Coarsegold, Oakhurst, and North Fork

Three commercial passenger airports operate in the San Joaquin Valley and foothills; of these, Fresno-Yosemite International Airport (FAT) has the highest flight volume. The other two airports are Modesto City-County Airport (MOD) and Stockton Metropolitan Airport (SCK) (Figure 3.19-3).

#### *Delta and Suisun Marsh*

I-5 passes through the eastern portion of the Delta and Suisun Marsh area, and many east-west routes link up with and break away from I-5 (Figure 3.19-1). Below is a listing of major routes within the Delta and Suisun Marsh and the areas those routes serve.

- SRs 133, 45, and 160 serve the area west of SR 99 and east of I-5 in Yolo and Solano counties.

- SRs 16, 113, 12, and 160 serve the area west of I-5 in Yolo and Solano counties.

- SRs 12 and 4 both cut across the entirety of the study region from I-5 to the west end of the Delta and Suisun Marsh.

- SRs 160 and 120 and Interstates 580 and 205 serve and connect areas within both San Joaquin and Contra Costa counties.

In addition, two locally based bus-only public transit system, listed below, operates within the Delta and Suisun Marsh.

- **Fairfield/Suisun Transit**—Local service within Fairfield and Suisun City, with regional service to Vacaville, Dixon, Davis, Sacramento, Benicia, El Cerrito, Pleasant Hill, and Walnut Creek

- **South County Transit**—Daily regional service is provided connecting the cities of Lodi, Galt, Elk Grove and Isleton.

Two major ports are located within the Delta and Suisun Marsh (Figure 3.19-3). The Port of West Sacramento and Port of Stockton handle bulk items that are produced within the Sacramento and San Joaquin valleys, such as agricultural products and raw materials used in construction. The two inland ports both have dedicated deep water ship channels (30 feet and

35 feet deep, respectively) for large cargo ships. No major airports operate within the Delta and Suisun Marsh area.

### 3.19.2 Regulatory Setting

The following text summarizes federal, State, and regional and local laws and regulations pertinent to evaluation of the proposed program's impacts on transportation resources.

#### *Federal and State*

Caltrans has authority over all State highways and rights-of-way, and is the State transportation agency for managing federal highway monies that are distributed to California. Project funding priorities are programmed in the State Transportation Improvement Program, which is updated based on State, regional, and local input. Caltrans also sets desired level of service (LOS) standards for the State highway system; plans for future increases in use, including estimated capacity requirements; and as appropriate and funding is available, plans and develops needed changes to California's transportation infrastructure. Caltrans's authority and role with respect to the proposed program are as follows:

- Review applications and issue required encroachment permits for any work within a State highway right-of-way.

- Review and may comment on:

    - Construction-related traffic and how it may affect the State highway system

    - Disruption, interruption, or displacement of the State highway system

    - Operations-related traffic from the program that could affect congestion

#### *Regional and Local*

On a regional level, transportation system planning is coordinated by the local metropolitan planning organizations (MPOs) and the councils of governments (COGs). The Sacramento Area Council of Governments is the only MPO in the Extended SPA that serves multiple counties; each of the remaining counties has either a COG or an MPO. With input from cities and counties, COGs and MPOs update their metropolitan transportation plans or regional transportation plans to identify needed long-range improvements for highways, local roads, bicycle facilities, and transit. Funding for the highest priority improvements is updated in each COG's and MPO's transportation improvement program.

At the local and regional levels, city and county governments also define existing transportation facilities, future transportation goals, plans, and projected improvements to the transportation system in their general plans, specifically in the Transportation and Circulation Element. In addition to plans for infrastructure improvements, the general plans identify desired LOS for roadways and intersections. These local LOS criteria are typically used to define impacts and significance. Local zoning and ordinances implement the general plan criteria, and set specific standards for transportation facility design. Should a place-based project be defined and pursued as part of the proposed program, and should the CEQA lead agency be subject to the authority of local jurisdictions, the applicable county and city policies and ordinances would be addressed in a project-level CEQA document as necessary. Similar to the State requirements, crossing of or changes to a local or regional road or conducting work within the local right-of-way require an encroachment permit from the affected county or city. The local transportation agencies, including county and city public works departments, would approve any changes to their transportation facilities or networks associated with project actions.

### 3.19.3 Analysis Methodology and Thresholds of Significance

This section provides a program-level evaluation of the direct and indirect effects on transportation resources (roads, evacuation routes, rail lines, public transit systems, ports, and airports) of implementing management actions included in the proposed program. These proposed management actions are expressed as NTMAs and LTMAs. The methods used to assess how different categories of NTMAs and LTMAs could affect transportation resources are summarized in “Analysis Methodology”; thresholds for evaluating the significance of potential impacts are listed in “Thresholds of Significance.” Potential effects related to each significance threshold are discussed in Section 3.19.4, “Environmental Impacts and Mitigation Measures for NTMAs,” and Section 3.19.5, “Environmental Impacts, Mitigation Measures, and Mitigation Strategies for LTMAs.”

#### *Analysis Methodology*

Impact evaluations were based on a review of the management actions proposed under the CVFPP, expressed as NTMAs and LTMAs in this PEIR, to determine whether these actions could result in impacts on transportation resources. NTMAs and LTMAs are described in more detail in Section 2.4, “Proposed Management Activities.” The overall approach to analyzing the impacts of NTMAs and LTMAs and providing mitigation is summarized below and described in detail in Section 3.1, “Approach to Environmental Analysis.” NTMAs are evaluated at a greater level of specificity than LTMAs for the following reasons:

- NTMAs are better defined and less conceptual than LTMAs, are more likely to be implemented in the short term (within the first 5 years after approval of the CVFPP), and are generally less complex.
- NTMAs have more secure funding sources than LTMAs.
- Environmental impacts of NTMAs can generally be evaluated more accurately than impacts of LTMAs.

NTMAs can consist of any of the following types of activities:

- Improvement, remediation, repair, reconstruction, and operation and maintenance of existing facilities
- Construction, operation, and maintenance of small setback levees
- Purchase of easements and/or other interests in land
- Operational criteria changes to existing reservoirs that stay within existing storage allocations
- Implementation of the vegetation management strategy included in the CVFPP
- Initiation of conservation elements included in the proposed program
- Implementation of various changes to DWR and Statewide policies that could result in alteration of the physical environment

All other types of CVFPP activities fall within the LTMA category. However, NTMA-type activities (e.g., remediation of existing levees) would continue to be implemented in the CVFPP study area into the longer term time frame of the LTMAs.

NTMAs are evaluated using a typical "impact/mitigation" approach. Where impact descriptions and mitigation measures identified for NTMAs also apply to LTMAs, they are also attributed to LTMAs, with modifications or expansions as needed.

Implementation of the proposed program would result in construction-related, operational, and maintenance-related impacts on transportation resources—roads, evacuation routes, rail lines, public transit systems, ports, and airports. Land use changes and induced growth would be the primary mechanisms by which long-term effects could occur. The effects of land use changes are discussed in Section 3.14, "Land Use and Planning," and

the effects of induced growth are discussed in Section 6.1, "Growth-Inducing Impacts."

### *Thresholds of Significance*

For the purpose of this analysis, the following applicable thresholds of significance have been used to determine whether implementing the proposed project would result in a significant impact. These thresholds of significance are based on Appendix G of the CEQA Guidelines, as amended. A transportation and traffic impact is considered significant if implementation of the proposed program would do any of the following:

- 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 nonmotorized 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

- For long-term traffic impacts, conflict with an applicable congestion management program, including but not limited to LOS standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways

- For temporary traffic impacts, cause an increase of 50 or more trucks, 100 passenger vehicles, or an equivalent combination of vehicles per hour in the peak direction during the peak hour at any roadway intersection (i.e., Institute of Transportation Engineers (ITE)–recommended threshold)

- 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

- Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)

- Result in inadequate emergency access

- Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities

In addition, the following threshold of significance is used to assess transportation and traffic impacts on water transit based on potential impacts on the deep water shipping channels.

- Result in a modification to a deep water shipping channel that would substantially decrease the capacity for commercial shipping

***Thresholds of Significance Not Evaluated Further***

Changes to air traffic patterns are not evaluated further because they are not expected to be affected by the proposed management actions. Although some management actions may occur near an airport, it is unlikely that such actions would affect the airport's operations. The program does not include any provisions for increasing the number of housing units or businesses that would create a larger demand for airport use. Also, because airport operations would not be affected, no changes to air traffic patterns are expected, thus not resulting in an increased safety hazard.

Impacts on deep water shipping channels are not evaluated further because the proposed program would not include activities that would alter the capacity of these facilities. Although levees along established ship channels may be improved, the proposed program would not materially reduce the depth, width, or functionality of ship channels within these levees. In addition, completion of a rigorous permitting process would be required to alter deep water shipping channels or use them during construction. The U.S. Coast Guard, the responsible agency for deep water shipping channels, requires that full use of these channels be maintained. The proponent of any action that would require modifying a deep water shipping channel or using it for construction must consult with the U.S. Coast Guard to minimize any impacts that may occur.

Construction activities would have a temporary effect on traffic. Once constructed, flood system facilities are generally passive, generating only minimal levels of traffic for operations and maintenance purposes. LOS standards established for roads by county congestion management agencies are intended to regulate long-term traffic increases or changes in traffic patterns that result from the development of facilities such as businesses and residences. Because construction activities would not generate traffic or change traffic patterns over the long term, LOS standards are not considered in this evaluation of construction traffic effects. Instead, consideration of the ITE-recommended threshold is considered more appropriate for temporary construction impacts. This issue is not evaluated further.

### 3.19.4 Environmental Impacts and Mitigation Measures for NTMAs

This section describes the physical effects of NTMAs on transportation resources. Long-term effects of operations and maintenance activities on transportation resources would be minimal and less than significant; therefore, these effects are not discussed further. For each impact discussion, the environmental effect is determined to be either less than significant, significant, potentially significant, or beneficial compared to existing conditions and relative to the thresholds of significance described above. These significance categories are described in more detail in Section 3.1, "Approach to Environmental Analysis."

Feasible mitigation measures are identified to address impacts identified as significant or potentially significant. The specificity of the mitigation measures is consistent with the broad, program-level nature of the CVFPP and the parallel program-level analysis in this PEIR. Mitigation measures identified in this PEIR would be applied as appropriate to specific future projects implemented under the CVFPP. Actual implementation, monitoring, and reporting of the PEIR mitigation measures would be the responsibility of the project proponent for each site-specific project. For those projects not undertaken by, or otherwise subject to the jurisdiction of, DWR or the Board, the project proponent generally can and should implement all applicable and appropriate mitigation measures. The project proponent is the entity with primary responsibility for implementing specific future projects and may include DWR; the Board; reclamation districts; local flood control agencies; and other federal, State, or local agencies. Because various agencies may ultimately be responsible for implementing (or ensuring implementation of) mitigation measures identified in this PEIR, the text describing mitigation measures below does not refer directly to DWR but instead refers to the "project proponent." This term is used to represent all potential future entities responsible for implementing, or ensuring implementation of, mitigation measures.

**Impact TRN-1 (NTMA):** ***Temporary Increases in Traffic from Construction Activities***

No NTMA would permanently increase traffic on any local or State road system. However, construction activities associated with NTMAs have the potential to temporarily increase traffic in the areas adjacent to construction zones and along any haul routes. Construction and ground-disturbing activities also may require construction workers to drive to site locations and trucks to deliver and remove fill and debris. Examples of such NTMAs are a levee remediation project requiring additional fill material to strengthen levees, a channel improvement project that may require removal

of large quantities of sediment, or any type of new levee construction. The construction period is typically longer and more complex for these types of actions than for other actions that require less earth moving, and these actions may require more construction workers and trucks to move into and out of the area.

Some projects would use local borrow or disposal sites, and would not involve substantial on-highway transport of fill. Also, some project sites would have multiple access routes, so the construction traffic would not all be concentrated on a single roadway. Further, truck trips would seldom occur at the same time as employee commute trips, because employees must be present at the project site to operate the haul trucks and receive deliveries of materials.

For the initial screening of temporary project effects on traffic, ITE recommends examining an impact further when the impact involves an increase of 50 or more trucks, 100 passenger vehicles, or an equivalent combination of vehicles per hour in the peak direction during the peak hour at any roadway intersection (ITE 1989). For purposes of this analysis, impacts of project-generated traffic may be considered substantial if the amount of project-generated vehicle trips would exceed any of these thresholds.

Program activities that require the transport of very large quantities of fill material for construction, or the removal of very large amounts of sediment, may increase local traffic levels above these thresholds. Examples of recent projects involving transport of a very large amount of fill include the San Joaquin River Restoration Program's Reach 2B, Mendota Pool Bypass, and Reach 4B improvements, which combined would require an estimated total of 7,428,200 cubic yards of fill material. Typically, one truck can haul 10–20 cubic yards per load. Assuming an average load of 14 cubic yards, this particular project was assumed to require 530,586 truck trips. Spread over an estimated 660 workdays, a corresponding 804 truck trips per workday would be needed to construct these projects simultaneously. If these truck trips would be evenly distributed throughout a 10-hour workday, the example project would require approximately 80 truck trips per hour during the morning and afternoon or evening peak-hour periods during construction, thereby exceeding the ITE threshold.

Another example is the Three Rivers Levee Improvement Authority's Feather River Levee Repair Project. Alternative 1 of that project would involve transporting 1.6 million cubic yards of fill. The traffic analysis for Alternative 1 concluded that approximately 84,910 truck trips would take place over roughly 20 months encompassing two construction seasons,

resulting in an average of approximately 4,250 truck round trips per month, or about 190–200 per workday (assuming 22 workdays per month). For that alternative, these trips would be spread out both over the workday and geographically. Therefore, it was not anticipated that truck traffic would exceed the ITE threshold of 50 trucks per hour in the peak direction during the peak hour at any individual roadway intersection. Further, the combination of commute traffic and haul truck traffic for Alternative 1 was not expected to exceed the equivalent threshold for a mix of passenger vehicles and trucks during a peak hour in a peak direction at a single intersection. Alternatives 2 and 3 for the Feather River Levee Repair Project involved larger amounts of fill, but only some of that fill required on-highway transport, resulting in the same conclusion of a less-than-significant impact under the ITE threshold.

It is not currently anticipated that any of the NTMAs would require transport of fill material at the scale of these two example projects. However, because the nature and scope of the NTMAs is currently uncertain, this impact would be **potentially significant**.

**Mitigation Measure TRN-1 (NTMA):** ***Implement Measures to Reduce Construction Traffic***

To minimize impacts on traffic circulation and roadway capacity, including emergency vehicle access, the project proponent will implement the following measures:

- Require construction contractors to limit truck trips to less than 50 trips per hour on any affected roadway during the morning and afternoon or evening peak-hour periods, if feasible.

- Before construction of major projects that could exceed this threshold, prepare a traffic management plan that identifies the number of truck trips, time of day for truck arrivals and departures, limits on the number of truck trips, and traffic circulation control measures. Control measures typically include advertising planned lane closures, installing warning signage, providing a flagperson to direct traffic flows when needed, and implementing methods to maintain continued access by emergency vehicles. During project construction, access to existing land uses will be maintained at all times where feasible, with detours used as necessary during road closures.

- Submit the traffic management plan to the appropriate city or county public works, fire, police, and sheriff’s departments for comments.

- Implement the traffic management plan and feasible recommendations by the appropriate departments.

If truck trips are limited to no more than 50 trips during the morning and afternoon or evening peak-hour periods, implementation of this mitigation measure would reduce this impact to a less-than-significant level. Given the relatively small to moderate size of the reasonably anticipated NTMAs, implementing this mitigation measure would reduce Impact TRN-1 (NTMA) to a **less-than-significant** level.

**Impact TRN-2 (NTMA):** ***Removal or Temporary Disruption of Current Transportation Infrastructure***

Transportation infrastructure may be removed or its use may be temporarily disrupted as a result of several NTMAs. Some roads, rail lines, or bicycle paths may need to be completely or temporarily closed to accommodate construction activities.

Management activities to rehabilitate or construct channels and levees or to purchase easements are among the NTMAs that may require removal or temporary disruption of transportation infrastructure. Of particular concern are activities that would take place either on or near a levee road that is the sole or major transportation route for traffic in a given area, or on or near a railway. Rehabilitating current channels and levees may temporarily disrupt the use of levee roads and rail lines. Similarly, newly constructed levees may need to either cross or follow a road or rail line, thus temporarily disrupting their use, even though all efforts would be made to avoid such effects. In some cases, a solution to maintain current access levels might not be feasible, and a temporary or permanent detour would need to be used.

Removal or temporary disruption of current transportation infrastructure in the study area could cause traffic to relocate to alternative routes. Such relocation of traffic may create unacceptable traffic conditions as defined by the applicable plan, ordinance, or policies of the local transportation agency, including unacceptable LOS. Although it is anticipated that such situations would be rare, because the nature and scope of the NTMAs is currently uncertain, this impact would be **potentially significant**.

**Mitigation Measure TRN-2 (NTMA):** ***Provide Detours for Closed or Disrupted Routes***

If the effects of a project on roadways will be temporary, the project proponent will provide easily recognizable detour signs and prepare and implement a traffic management plan to minimize traffic, including bicycle

impacts, in consultation with the local transportation agency. If management actions require removal of transportation infrastructure, efforts will be undertaken to make sure that a convenient transportation alternative option is available for travel. For effects on rail lines, the project proponent will work with the respective rail owner to maintain maximum use of the line.

Given the nature and scale of the reasonably anticipated NTMAs and the temporary nature of most impacts, implementing this mitigation measure would reduce Impact TRN-2 (NTMA) to a **less-than-significant** level.

**Impact TRN-3 (NTMA):** ***Increased Hazards due to Construction and Temporary Design Feature***

Construction activities may require temporary lane reductions or changes to roadway alignments to accommodate contractor work areas. Signs and flagpersons would be placed, and other warning and temporary traffic control measures would be followed to reduce and control traffic speeds in construction zones to acceptable levels, based on roadway conditions. Advance notice of lane reductions or changes to roadway alignments would be posted before and during construction to advise motorists of these changes. With implementation of these standard contractor requirements and enforcement of speed limits in construction zones, this impact would be **less than significant**. No mitigation is required.

**Impact TRN-4 (NTMA):** ***Closure or Reduction in Capacity of an Emergency Response or Evacuation Route***

NTMAs may require the temporary or permanent closure or partial closure of roads. Many of the management actions are tied to levees where both response and evacuation routes are limited. Standard procedures require that both emergency response and evacuation routes be preserved at all times. Because of the potential for emergency response or evacuation routes to be affected, this impact would be **potentially significant**.

**Mitigation Measure TRN-4 (NTMA):** ***Minimize Effects of Reduction or Closure of an Emergency Response or Evacuation Route***

Before the start of construction, all emergency response agencies will be consulted to determine the impacts of the project on their emergency response and evacuation routes. If routes cannot be maintained, then the passage blockage will occur during periods of minimum demand, such as by working at night or maintaining emergency evacuation routes during periods of most likely use (flood season).

Under standard procedures, both emergency response and evacuation routes must be maintained at all times. Because these routes would be kept accessible in the event of an emergency, implementing this mitigation measure would reduce Impact TRN-4 (NTMA) to a **less-than-significant** level.

**Impact TRN-5 (NTMA):** ***Conflict with Adopted Policies, Plans, or Programs regarding Public Transit, Bicycle, or Pedestrian Facilities***

Constructing new levees and purchasing easements may interfere with local agencies' adopted plans for bicycle and pedestrian facilities. Current bicycle and pedestrian master plans may not have been able to take into account the new levees and flood easements that the program is proposing. However, improvements to bicycle and pedestrian facilities can often be integrated into levee or flood easement projects, thus allowing current use of the facilities to continue. Project proponents would be expected to consult with appropriate local agencies to minimize impacts of NTMAs on future agency plans for bicycle and pedestrian infrastructure. Specifically, to allow agencies to revise their policies, plans, or programs, project proponents would either add design features to the NTMAs or provide input on agency plans for flood projects so that agencies could revise their current policies, plans, or programs and continue to fully build out their master plans. This impact would be **less than significant**. No mitigation is required.

### 3.19.5 Environmental Impacts, Mitigation Measures, and Mitigation Strategies for LTMAs

This section describes the physical effects of LTMAs on transportation resources. LTMAs include a continuation of activities described as part of NTMAs and all other actions included in the proposed program, and consist of all of the following types of activities:

- Widening floodways (through setback levees and/or purchase of easements)
- Constructing weirs and bypasses
- Constructing new levees
- Changing operation of existing reservoirs
- Achieving protection of urban areas from a flood event with 0.5 percent risk of occurrence
- Changing policies, guidance, standards, and institutional structures

- Implementing additional and ongoing conservation elements

Actions included in LTMAs are described in more detail in Section 2.4, "Proposed Management Activities."

Impacts and mitigation measures identified above for NTMAs would also be applicable to many LTMAs and are identified below. The NTMA impact discussions and mitigation measures are modified or expanded where appropriate to address conditions unique to LTMAs. The same approach to future implementation of mitigation measures described above for NTMAs and the use of the term "project proponent" to identify the entity responsible for implementing mitigation measures also apply to LTMAs.

In addition, in some cases, LTMAs could have impacts and require mitigation measures not previously addressed in the discussion of NTMAs, and sufficient information is available for these LTMAs to use the same impact/mitigation discussion approach used for NTMAs. In these cases, additional impacts and mitigation measures specific to LTMAs are provided.

**Impact TRN-1 (LTMA):** ***Temporary Increases in Traffic from Construction Activities***

This impact would be similar to Impact TRN-1 (NTMA), described above. As described for NTMAs, no permanent impacts on traffic would occur; however, construction activities for some types of LTMAs (channel and levee remediation, new channel and levee construction) have the potential to substantially increase traffic in the areas adjacent to construction zones and along any haul routes. Construction-related activity for additional LTMAs, such as floodway widening, may also substantially increase traffic levels temporarily on nearby routes.

For the reasons described under Impact TRN-1 (NTMA), this impact would be **potentially significant**.

**Mitigation Measure TRN-1 (LTMA):** ***Implement Mitigation Measure TRN-1 (NTMA)***

For small to medium-sized construction projects, implementing this mitigation measure would reduce Impact TRN-1 (LTMA) to a less-than-significant level. However, for very large construction projects, limiting the number of peak-hour truck trips to no more than 50 trips may not be feasible relative to the construction schedule for maximum efficiency and

public safety. Therefore, Impact TRN-1 (LTMA) would be **potentially significant and unavoidable**.

**Impact TRN-2 (LTMA):** ***Removal or Temporary Disruption of Current Transportation Infrastructure***

This impact would be similar to Impact TRN-2 (NTMA), described above. Some roads, rail lines, or bicycle paths may have to be completely or partially closed to accommodate construction activities, and completing certain management activities may require that transportation infrastructure be removed entirely. Examples include the levee roads in areas where levees would be set back and opportunities are not available to replace the functions of the current levee roads.

Management activities to rehabilitate or construct channels and levees or to purchase easements are among the LTMAs that may require temporary disruption of transportation infrastructure, or in limited cases, complete removal. Such infrastructure may also be affected by floodway widening. For all of these types of LTMAs, construction may have to occur on top of existing transportation infrastructure. These activities are most likely to occur in rural areas with large areas of agricultural and open space lands, but transportation infrastructure may exist in these areas. If any major transportation corridors or local roads are present where an LTMA would be implemented, a permanent detour may need to be created for the road or rail line segment that may be lost.

It is anticipated that such situations would be rare. However, because the nature and scope of the LTMAs is currently uncertain, and because some LTMAs could cause transportation infrastructure to be removed or disrupted for a substantial period of time, this impact would be **potentially significant**.

**Mitigation Measure TRN-2 (LTMA):** ***Implement Mitigation Measure TRN-2 (NTMA)***

For most LTMAs, implementing this mitigation measure would reduce Impact TRN-2 (LTMA) to a less-than-significant level. However, for projects where long-term or permanent detours or alternate routes could be required, or where such detours or alternate routes may be infeasible, Impact TRN-2 (LTMA) would be **potentially significant and unavoidable**.

**Impact TRN-3 (LTMA):** ***Increased Hazards due to Construction and Temporary Design Feature***

This impact is similar to Impact TRN-3 (NTMA), described above. Construction activities may require temporary lane reductions or changes to roadway alignments to accommodate contractor work areas. Signs and flagpersons would be placed and other warning and temporary traffic control measures would be followed to reduce and control traffic speeds in construction zones to acceptable levels, based on roadway conditions. Advance notice of lane reductions or changes to roadway alignments would be posted before and during construction to advise motorists of these changes. With implementation of these standard contractor requirements and enforcement of speed limits in construction zones, this impact would be **less than significant**. No mitigation is required.

**Impact TRN-4 (LTMA):** ***Closure or Reduction in Capacity of an Emergency Response or Evacuation Route***

This impact would be similar to Impact TRN-4 (NTMA), described above. Standard procedures require that the preservation of both emergency response and evacuation routes should be maintained at all times. Because of the potential for such routes to be affected, this impact would be **potentially significant**.

**Mitigation Measure TRN-4 (LTMA):** ***Implement Mitigation Measure TRN-4 (NTMA)***

Under standard procedures, both emergency response and evacuation routes must be maintained at all times. Because these routes would be kept accessible in the event of an emergency, implementing this mitigation measure would reduce Impact TRN-4 (LTMA) to a **less-than-significant** level.

**Impact TRN-5 (LTMA):** ***Conflict with Adopted Policies, Plans, or Programs regarding Public Transit, Bicycle, or Pedestrian Facilities***

This impact would be similar to Impact TRN-5 (NTMA), described above. Widening floodways may interfere with local agencies' adopted plans for bicycle and pedestrian facilities. However, improvements to bicycle and pedestrian facilities can often be integrated into levee or flood easement projects, thus allowing use of the facility to continue after construction. Project proponents would consult with appropriate local agencies to minimize impacts of LTMAs on future agency plans for bicycle and pedestrian infrastructure. Specifically, to allow agencies to revise their policies, plans, or programs, project proponents would either add design

features to the LTMAs or provide input on agency plans for flood projects so that agencies could revise their current policies, plans, or programs and continue to fully build out their master plans. This impact would be **less than significant**. No mitigation is required.

#### *LTMA Impact Discussions and Mitigation Strategies*

The impacts of the proposed program's NTMAs and LTMAs related to transportation resources and the associated mitigation measures are thoroughly described and evaluated above. The general narrative descriptions of additional LTMA impacts and mitigation strategies for those impacts that are included in other sections of this draft PEIR are not required for transportation resources.