3.20 Utilities and Service Systems

This section addresses utilities and service systems that could be affected by implementation of the proposed program—specifically, water supply systems, wastewater treatment systems, storm drainage, solid waste facilities and disposal, electrical facilities, oil and natural gas facilities, and communication systems. The geographic distribution and service providers, and relevant standards for utilities and service systems, are described below. This section is composed of the following subsections:

- Section 3.20.1, "Environmental Setting," describes the physical conditions in the program study area as they apply to utilities and service systems.
- Section 3.20.2, "Regulatory Setting," summarizes federal, State, and regional and local laws and regulations pertinent to evaluation of the proposed program's impacts on utilities and service systems.
- Section 3.20.3, "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 3.20.4, "Environmental Impacts and Mitigation Measures for NTMAs," discusses the environmental effects of the near-term management activities (NTMAs) and provides mitigation measures for significant environmental effects.
- Section 3.20.5, "Environmental Impacts, Mitigation Measures, and Mitigation Strategies for LTMAs," discusses the environmental effects of the long-term management activities (LTMAs), provides mitigation measures for significant environmental effects, and addresses conditions in which any impacts would be too speculative for evaluation (CEQA Guidelines, Section 15145).

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

For discussions of energy resources and uses; groundwater resources; surface water and supply resources; and fire protection services, emergency services/law enforcement, and schools, see Section 3.9, "Energy"; Section 3.11, "Groundwater Resources"; Section 3.13, "Hydrology"; and Section 3.17, "Public Services."

3.20.1 Environmental Setting

Information Sources Consulted

Sources of information used to prepare this section include the following:

- State laws pertaining to utilities and service systems (see the discussion of State regulations in Section 3.20.2, "Regulatory Setting," below)
- Online descriptions of the Central Valley Project (CVP) and State Water Project (SWP) (DWR 2010a, 2010b)
- The interactive Regulated Facilities Report Web site maintained by the State Water Resources Control Board (SWRCB) (2006)
- State databases that organize and track relevant utilities and service systems information

Geographic Areas Discussed

The study area for this analysis consists of the following areas:

- 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
- Sacramento and San Joaquin Valley watersheds
- SoCal/coastal CVP/SWP service areas

Utilities and service systems for all of these geographic areas are discussed together in this section because potential effects of the program on utilities and service systems would be the same throughout the study area. None of the management activities included in the proposed program would be implemented in the SoCal/coastal CVP/SWP service areas. In addition, implementation of the proposed program would not result in long-term reductions in water deliveries to the SoCal/coastal CVP/SWP 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 utilities and service systems 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.

Water Supply Systems

The study area contains hundreds of water agencies and special districts that provide municipal water services from a combination of surface water reservoirs and groundwater. These providers operate treatment and

distribution facilities to serve their customers; may control local water sources, such as groundwater wells; and may also contract for surface water deliveries through the SWP or through other water agencies or districts that operate storage and conveyance facilities. Water treatment and delivery infrastructure within the study area ranges from large aboveground and underground facilities, such as municipal surface water intakes and treatment plants and pipelines carrying water across the Central Valley from Hetch Hetchy Reservoir to the San Francisco Bay Area, to small agricultural water intakes and irrigation ditches. Water pipelines are typically buried underground, passing under rivers and streams in many locations, although sometimes they may be attached to bridges. Water for agricultural users is supplied by irrigation districts from both surface water and groundwater sources. Farmers and rural residents may also supply themselves directly from private groundwater wells. Section 3.11, "Groundwater Resources," discusses existing groundwater storage and production in the study area. Section 3.13, "Hydrology," discusses existing conditions related to surface water and supply.

Wastewater Treatment Systems

Wastewater (sewage and gray water) is managed, treated, and disposed of by counties, cities, water and utility districts, and private landowners. County and city governments manage public utility districts that manage, treat, and dispose of wastewater. Water districts consisting of regional and local utility and water service providers also may provide wastewater conveyance and treatment infrastructure. Finally, private leach fields, septic systems, and conveyance structures operate throughout the study area. Private facilities tend to be more common in rural areas that were historically less reliant on public providers, while most urbanized and developed areas are served by public systems.

Treatment systems with river discharges may directly abut State Plan of Flood Control levees or have pipelines that penetrate these levees. Many systems without river discharges (e.g., using evaporation ponds or seepage ponds) still benefit from the flood protection provided by the State Plan of Flood Control. Wastewater transmission pipelines are buried underground, passing under rivers and streams in many locations, although sometimes they may be attached to bridges.

The SWRCB maintains an online inventory of regulated wastewater treatment facilities (SWRCB 2006). Within the jurisdiction of the three regional water quality control boards (RWQCBs) that encompass the Central Valley, there are 527 regulated wastewater treatment facilities. Within the geographic areas that approximately correspond to the SoCal/coastal CVP/SWP service areas, there are 523 wastewater treatment facilities.

Storm Drainage

Stormwater, like wastewater, is managed by county, city, and other local entities. Public utility districts, reclamation districts, and water districts all manage stormwater. Some stormwater is managed by stormwater detention basins and urban storm drain systems that were specifically created for that purpose; other storm flows are managed by larger water conveyance and irrigation infrastructure, such as the conveyance facilities managed by water and reclamation districts that are used primarily to convey water for consumptive uses.

Stormwater systems include municipal storm drain networks that collect urban runoff and channel it to larger waterways, detention basins that provide stormwater holding capacity, and drainage and irrigation networks that also serve as water conveyance facilities. Where these facilities drain lands that are prone to flooding, stormwater conveyance capacity forms one aspect of the larger set of infrastructure that reduces flood risk because these systems transfer runoff from the landscape into waterways. Stormwater systems also collect urban runoff, which is often a source of pollutants that may affect water quality. Stormwater management is thus an important component of both water quality management and flood control.

Solid Waste Facilities and Solid Waste Disposal

Solid waste facilities are operated by private entities and public agencies that contract with public entities such as counties and cities for receipt of solid waste. In rural areas, some solid waste may be disposed of privately in private dumps and landfills that are not officially sanctioned, but that form part of the local capacity for solid waste management.

The California Department of Resources Recycling and Recovery (Cal Recycle) maintains databases of waste stream profiles for existing facilities (including remaining capacity and throughput) that describe identified and permitted landfills. Solid waste facilities regulated by Cal Recycle include not only landfills, but the following range of entities:

- Transformation facilities (facilities where waste is incinerated or otherwise converted in a manner that does not include composting)
- Composting facilities (locations where organic material is converted by composting)
- Disposal sites (locations where solid waste is placed in a landfill)
- Transfer sites (locations where material is sorted and transferred from one container or vehicle to another)

- Waste tire sites (locations that specialize in the disposal or management of used tires)

Pursuant to RWQCB regulations, Cal Recycle requires that solid waste facilities and disposal sites be located outside of 100-year floodplains and that measures to control flood risks be prepared and implemented as part of facility designs. However, many former (closed) solid waste facilities were developed before these regulations were in effect, and portions of these closed facilities are located within currently designated 100-year floodplains.

Electrical Facilities

Transmission lines, substations, and power plants are located throughout the study area. Electricity is supplied by various energy providers. The five largest utilities are Southern California Edison, Pacific Gas and Electric Company, Los Angeles Department of Water and Power, San Diego Gas & Electric Company, and Sacramento Municipal Utility District. Collectively these utilities supply approximately 50 percent of the state's total electricity consumption. The remaining consumption is supplied by other investor-owned and publicly owned utilities, rural electricity cooperatives, Native American utilities, and other electricity providers (CEC 2011). The Western Area Power Administration also owns and operates high-voltage transmission lines in the study area. Figure 3.20-1 shows the locations by type of electricity generating plants in the study area. Figure 3.20-2 shows the locations of major transmissions lines in the study area.

Natural Gas Facilities

Natural gas services and infrastructure are located throughout the study area. Natural gas pipelines are buried underground, passing under rivers and streams in many locations, although they may be attached to bridges in some cases. Figure 3.20-3 shows the locations of major natural gas pipelines in the study area. San Diego Gas & Electric Company, Southern California Gas Company, and Pacific Gas and Electric Company provide a collective total of 98 percent of the state's natural gas. Long Beach and Palo Alto are the only municipal utilities in California that operate city-owned utility services for natural gas customers (CEC 2009). Pipelines, storage areas, and compressor stations are located throughout the Sacramento and San Joaquin Valley and foothills, the Sacramento and San Joaquin Valley watersheds, and the SoCal/coastal CVP/SWP service areas. Natural gas discovered in the Sacramento Valley and the Delta has been developed into an important supply source and depot for underground storage. Gas fields, pipelines, and related infrastructure have also been developed throughout the SoCal/coastal CVP/SWP service areas. Natural gas infrastructure within the study area is owned by oil and gas companies, public utilities, and various independent leaseholders.

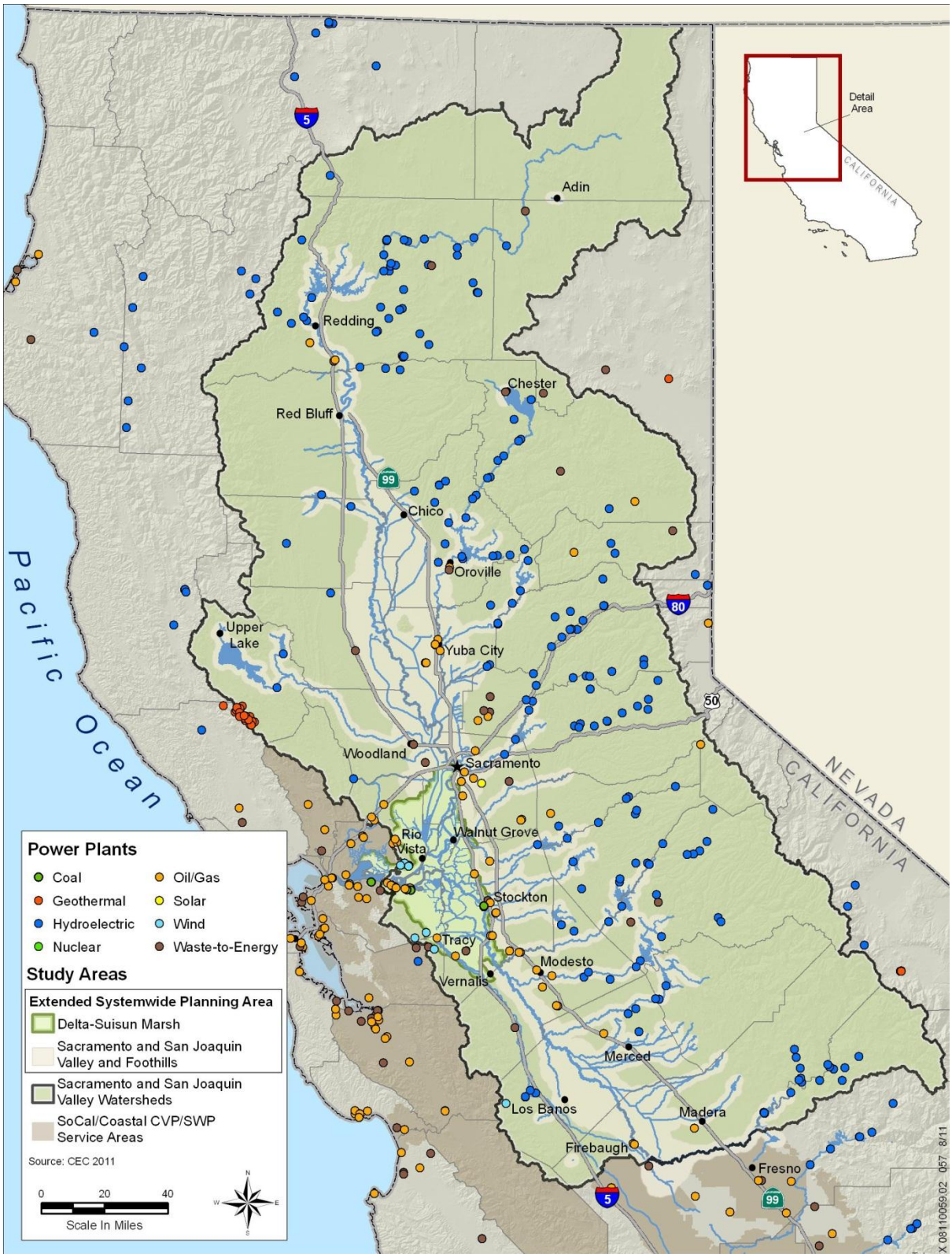

Figure 3.20-1. Power Plants Located in the Study Area

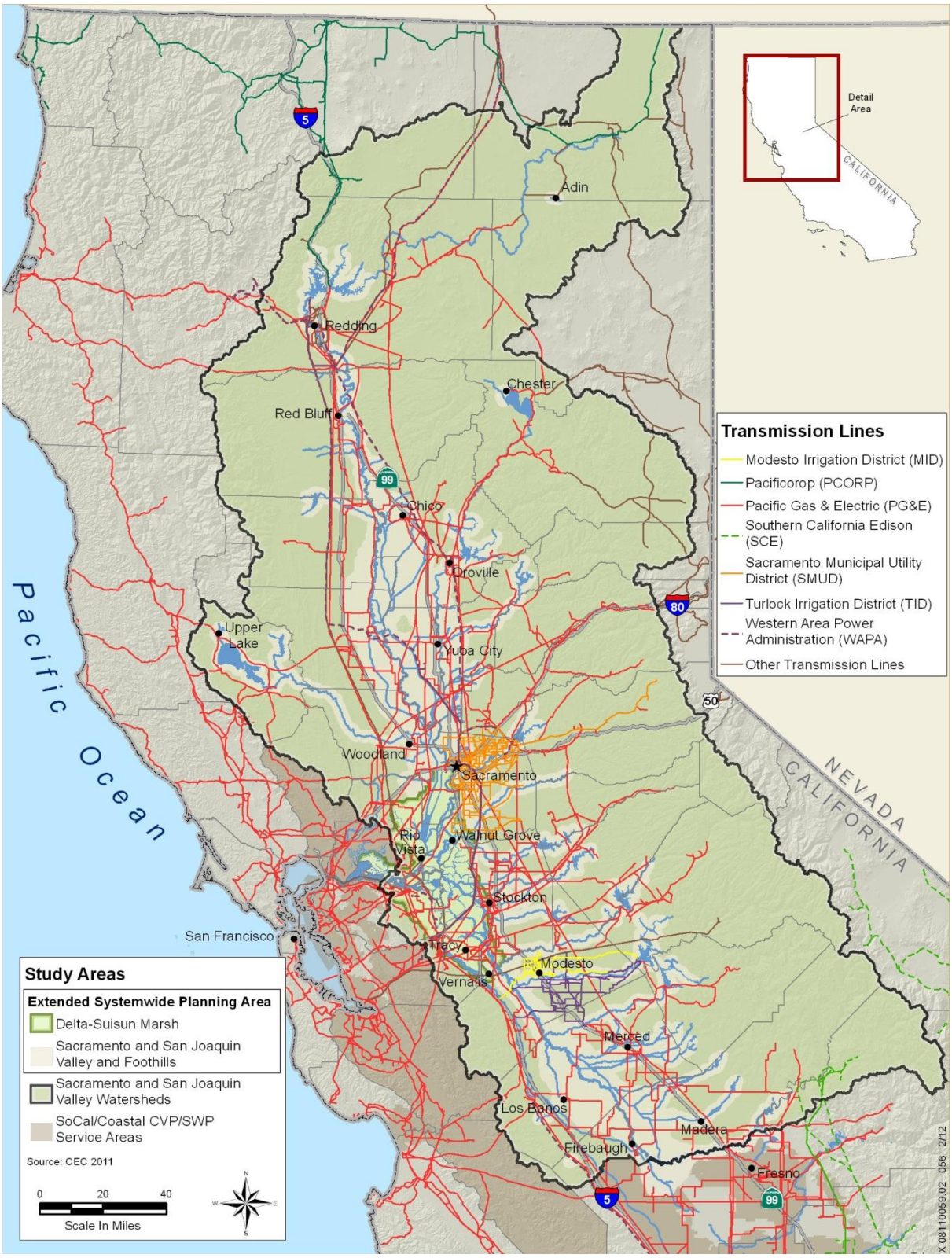

Figure 3.20-2. Major Electrical Transmission Lines Located in the Study Area

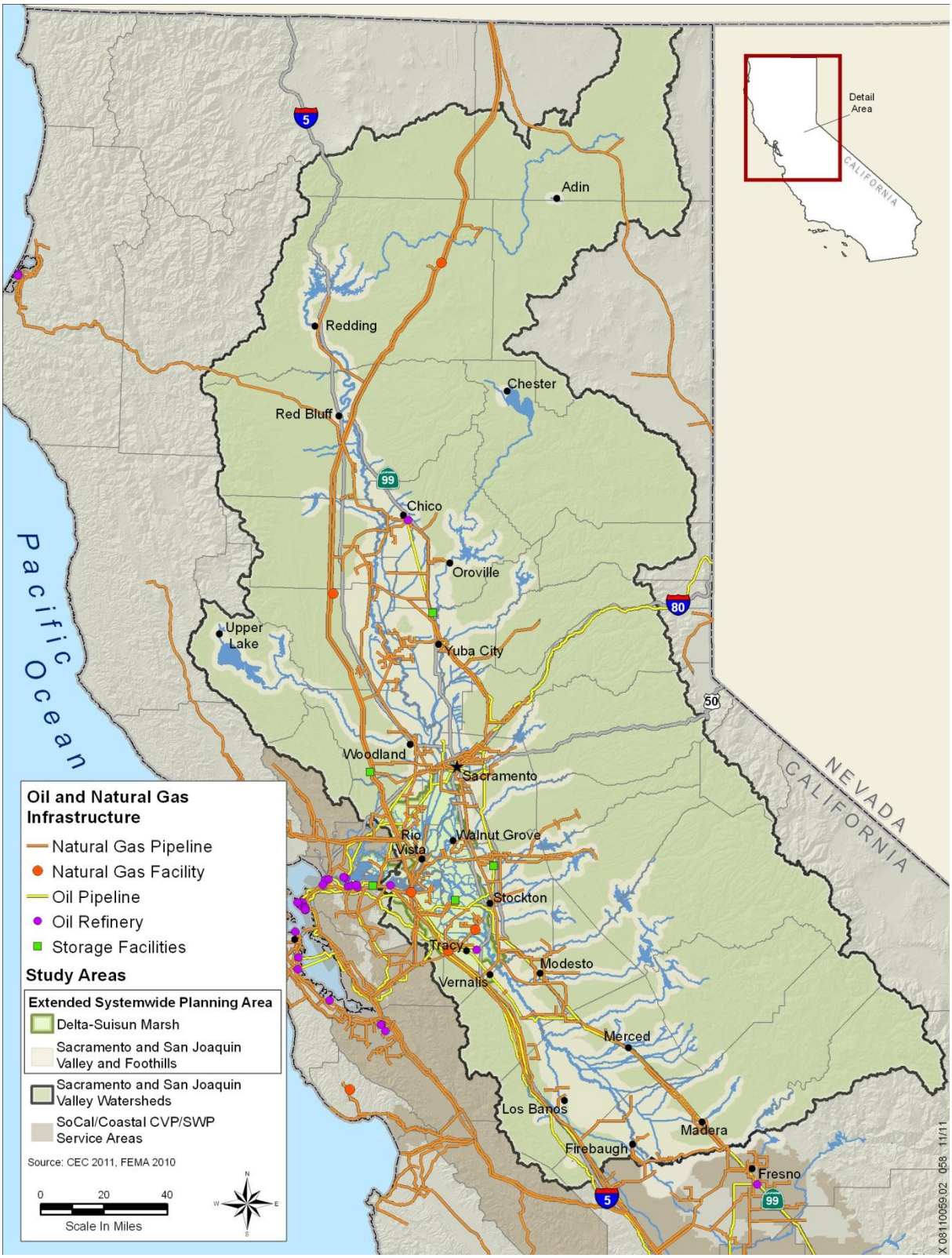

Figure 3.20-3. Major Oil and Natural Gas Infrastructure Located in the Study Area

Petroleum Facilities

Petroleum pipelines traverse the study area, carrying crude oil from production fields in the southern San Joaquin Valley to refineries in the San Francisco Bay Area and carrying refined product from the refineries across the Central Valley. These pipelines are buried underground, passing under rivers and streams in many locations, although they may be attached to bridges in some areas. Figure 3.20-3 shows the locations of major oil pipelines in the study area. Refineries are located outside of the Extended SPA. Abandoned oil pipelines are addressed in Section 3.12, "Hazards and Hazardous Materials."

Communication Systems

Communication systems located throughout the study area include underground fiber optic cable, telephone transmission lines (overhead and underground), and cellular towers owned or leased by telecommunications service providers. Large communication providers within the study area include AT&T, Frontier Communications, and various cellular providers.

Landline telephone service in the study area is provided by various commercial communications companies. The majority of the landline facilities are located in county- or city-owned rights-of-way and on private easements. Telecommunications lines are either copper wire or fiber optic cable and are routed overhead on utility poles and underground. Telephone lines are frequently attached to bridges when routed over rivers and lake inlets, although some are installed via directional boring under rivers.

In addition to landline service, a large number of communications towers have been constructed throughout the study area for cellular telephone service. Cellular towers have been erected along major travel corridors to meet emergency service objectives. Cellular service is available, to varying degrees, throughout the study area.

3.20.2 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 utilities and service systems. U.S. Army Corps of Engineers authorities related to Title 33, Sections 408 and 208.10 of the U.S. Code and authorizations related to the Central Valley Flood Protection Board are discussed in Section 3.13, "Hydrology."

Federal

The U.S. Office of Pipeline Safety is the federal safety authority responsible for ensuring the safe, reliable, and environmentally sound operation of the nation's pipeline transportation system. The Federal Energy Regulatory Commission regulates construction and abandonment of

pipelines, storage areas, and liquefied natural gas facilities, and is involved in permitting and licensing of electrical transmission facilities.

State

Water Quality Standards The SWRCB regulates water quality in coordination with the RWQCBs by, among other things, issuing discharge permits. The RWQCBs issue waste discharge requirements for major point-source discharges, such as municipal wastewater treatment plants and industrial facilities. The RWQCBs also issue and monitor enforcement actions when water quality standards are violated, and oversee activities necessary to address those enforcement actions.

California Public Utilities Commission The California Public Utilities Commission (CPUC) regulates utilities to establish safe and reliable utility service, protect consumers against fraud, provide service at reasonable costs, and promote a healthy economy in California. CPUC regulates privately owned natural gas, electric, telecommunications, water, railroad, rail transit, and passenger transportation companies (CPUC 2010).

California Independent System Operator Corporation The California Independent System Operator Corporation (California ISO) is a nonprofit public benefit corporation that manages the flow of electricity across the high-voltage, long-distance power lines in California. As the state's impartial grid operator, California ISO opens access to the wholesale power market and grants equal access to 25,865 circuit-miles of power lines to utilities and power generators. In addition to managing components of the electrical grid, California ISO undertakes long-term comprehensive transmission system planning and evaluates power plant proposals for integration into the electrical grid (California ISO 2012).

California Integrated Waste Management Act The California Integrated Waste Management Act of 1989 required all cities and counties to divert 25 percent of all solid waste from landfill facilities by January 1, 1995, and 50 percent by January 1, 2000. Each city must develop solid waste plans demonstrating compliance with this law. The plans must promote (in order of priority) source reduction, recycling and composting, and environmentally safe transformation and land disposal. Each solid waste management provider in California implements solid waste plans and recycling programs consistent with the requirements of this law. Handling of solid waste and disposal of nonhazardous wastes is regulated by Title 14, Chapter 3 of the California Code of Regulations.

Regional and Local

Each county and city in the study area has its own general plan policies and local ordinances. Although utilities and service systems are not required

elements of general plans, most cities and counties incorporate goals and policies related to utilities and service systems into various elements of the general plan or include an optional element related to public utilities. General plans typically assess the adequacy and availability of existing public utilities and identify the need for and potential locations of future utilities to serve growth planned for in the general plan.

At the local level, city and county statutes, ordinances, and general plan policies regulate the integration of wastewater and stormwater facilities with other land uses and the construction of land uses that increase storm flows (such as impermeable urban land uses). Local jurisdictions also develop their own standards on stormwater detention. Stormwater detention guidelines typically detail the storm event and hours of detention for which the facility will be designed, addressing the potential for stormwater runoff to contribute to flooding.

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.

3.20.3 Analysis Methodology and Thresholds of Significance

This section provides a program-level evaluation of the direct and indirect effects on utilities and service systems 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 utilities and service systems 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 3.20.4, "Environmental Impacts and Mitigation Measures for NTMAs," and Section 3.20.5, "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 LTMA, to determine whether these activities could result in impacts on utilities and service systems. 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 several 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

Most 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 public and private utilities and service systems. This analysis considers management activities that could disrupt operation of the infrastructure for utilities and service

systems; require service providers to modify or relocate such infrastructure; or otherwise increase demand for water, wastewater and drainage services and infrastructure, solid waste, natural gas, petroleum, electricity, and communications services.

Thresholds of Significance

The following applicable thresholds of significance have been used to determine whether implementing the proposed program would result in a significant impact. These thresholds of significance are based on Appendix G of the CEQA Guidelines, as amended. An impact on utilities and service systems is considered significant if implementation of the proposed program would do any of the following when compared against existing conditions:

- Exceed wastewater treatment requirements of the applicable RWQCB
- 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
- Require or result in the construction of new storm water drainage facilities or the expansion of existing facilities, the construction of which could cause significant environmental effects
- Result in a determination by the wastewater treatment provider that serves or may serve the project that it has inadequate capacity to serve the project's projected demand in addition to the provider's existing commitments
- Generate waste materials that would exceed the permitted capacity of local landfills
- Violate federal, State, and local statutes and regulations related to solid waste
- Degrade the level of service of a public utility or service system or result in substantial adverse physical effects associated with relocating utility infrastructure

Significance Thresholds Not Evaluated Further

The proposed program would not include new urban uses (e.g., residential, commercial land, or industrial uses) that would directly increase the demand for water, wastewater, and stormwater facilities and thus require new or expanded facilities to meet this demand. Issues related to demand for these utility services are not discussed further. The potential for CVFPP

management actions to affect demand for natural gas and electricity is addressed in Section 3.9, "Energy." These issues are not discussed further in this section.

Similarly, the potential for the proposed program to affect groundwater and surface water supplies is addressed in Section 3.11, "Groundwater Resources," and Section 3.13, "Hydrology," respectively. These issues are not discussed further in this section.

Any indirect effects on utility demand resulting from changes to development or growth patterns resulting from the proposed program are addressed in Subsection 6.1, "Growth-Inducing Impacts," in Chapter 6.0, "Other CEQA-Required Sections and Additional Material."

3.20.4 Environmental Impacts and Mitigation Measures for NTMAs

This section describes the physical effects of NTMAs on utilities and service systems. 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 Central Valley Flood Protection Board (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 UTL-1 (NTMA): ***Potential Disruption of Utility Service and Modification or Relocation of Utility Infrastructure from Project Construction Activities***

Construction-related activities, including grading and excavation, could encroach on multiple types of utility equipment and facilities: storm drains, irrigation lines, electric power lines, petroleum and natural gas pipelines, and communications systems. (See Section 3.20.1, "Environmental Setting," for a detailed discussion of existing utilities and service systems.) The extent and intensity of construction-related activities are unknown; however, these activities may require vertical and/or horizontal relocation of or cause damage to existing utility infrastructure, interrupt utility services, or otherwise affect the ability of service providers to quickly repair damage and/or restore interrupted service. Therefore, this impact would be **potentially significant**.

Mitigation Measure UTL-1 (NTMA): ***Verify Utility Locations, Coordinate with Utility Providers, Prepare and Implement a Response Plan, and Conduct Worker Training with Respect to Accidental Utility Damage***

Before construction begins, the project proponent and its primary contractors will coordinate with applicable regulatory agencies and utility providers to implement orderly relocation of utilities that need to be removed or relocated. The project proponent and its primary contractors will implement all of the following measures:

- The appropriate agencies and affected landowners will be notified of any potential interruptions in service.

- Before the start of construction, the locations of utilities will be verified through field surveys and the use of Underground Service Alert services. Any buried utility lines will be clearly marked in areas where construction activities would take place and on the construction specifications before any earth-moving activities begin.

- Many of the Board's encroachment permits for utility facilities contain conditions requiring the owner to remove and/or relocate the facility at the owner's expense if the utility interferes with the operations or integrity of the existing flood facility or future project. If necessary, infrastructure will be removed, relocated to more appropriate locations, or made flood resistant in coordination with all potential service providers known to have, or potentially having, utility infrastructure in the project area.

- If necessary, infrastructure will be flood-proofed (e.g., raised on piers) in coordination with all transmission providers known to have infrastructure in the project area.

- Before the start of construction, a response plan will be prepared to address the potential for accidental damage to a utility. The plan will identify chain-of-command rules for notifying authorities and appropriate actions and responsibilities to ensure the safety of the public and workers. The construction contractor will conduct worker education training on responding to situations when utility lines are accidentally damaged. The project proponent and its contractors will implement the response plan during construction activities.

- Utility relocations will be staged to minimize interruptions in service.

Implementing this mitigation measure would reduce Impact UTL-1 (NTMA) to a **less-than-significant** level.

Impact UTL-2 (NTMA): ***Potential Disruption of Utility Service and Modification or Relocation of Utility Infrastructure from Project Operation***

Without implementation of conveyance-related NTMAs, the risk of slope and seepage failures or overtopping would remain the same as under current conditions. Slope and seepage failures or overtopping could cause minor, localized flooding that could damage or interrupt utilities and service systems—specifically, storm drains, irrigation lines, domestic water lines, electric power lines, petroleum and natural gas pipelines, and communications systems. However, implementing conveyance-related NTMAs would reduce service disruptions by minimizing flood events that damage utility infrastructure and interrupt utility services. In addition, Cal Recycle requires that all regulated facilities be located outside floodplains, and solid waste facilities would not be affected by the proposed program. Therefore, this impact would be **beneficial**. No mitigation is required.

Impact UTL-3 (NTMA): ***Increased Generation of Solid Waste during Project Construction***

Construction associated with conveyance-related NTMAs would generate debris and waste in the short term. Construction-related sources of solid waste would consist of cleared vegetation and debris such as asphalt, concrete, pipes, and gravel.

Solid waste generated by construction activities could be disposed of via various means, depending on the type of material and local conditions:

- Hauling materials such as building demolition waste off-site to landfills
- Delivering materials such as concrete to recycling facilities
- Selling the materials (e.g., organic material could be sold to cogeneration facilities)

Excess earth materials (e.g., organic soils, roots, and grass from borrow sites) could be used for the reclamation of borrow sites or hauled off-site to a suitable disposal location. Hazardous materials encountered during the removal of residences and other structures (e.g., building materials containing lead paint or asbestos) would be disposed of in accordance with regulatory standards.

Construction activities would be temporary and short term, but could occur over periods of months during several consecutive years or any given year. The landfills to be used for disposal of construction-related waste would be determined by the construction contractor when construction begins, based on landfill capacity, types of waste, and other factors. The volume of solid waste that could be generated by short-term construction associated with conveyance-related NTMAs is unknown. However, only those landfills determined to have sufficient available capacity to accommodate construction disposal needs would be used. If the landfill closest to conveyance-related NTMAs were to lack sufficient capacity to accept construction-related solid waste, an alternate landfill would be identified. In addition, conveyance-related NTMAs would occur over various geographic locations; therefore, no one landfill would accept all construction-related solid waste associated with conveyance-related NTMAs. Therefore, this impact would be **less than significant**. No mitigation is required.

3.20.5 Environmental Impacts, Mitigation Measures, and Mitigation Strategies for LTMAs

This section describes the physical effects of LTMAs on utilities and service systems. 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 the 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.

Impact UTL-1 (LTMA): ***Potential Disruption of Utility Service and Modification or Relocation of Utility Infrastructure during Project Construction***

This impact would be similar to Impact UTL-1 (NTMA), described above. Construction-related activities could encroach on multiple types of utility equipment and facilities—specifically, storm drains, irrigation lines, electric power lines, water pipelines, petroleum and natural gas pipelines, and communications systems.

The extent and intensity of construction-related activities are unknown; however, these activities may require relocation of or cause damage to existing utility infrastructure, interrupt utility services, or otherwise affect the ability of service providers to quickly repair damage and/or restore interrupted service. This impact would be **potentially significant**.

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

Implementing this mitigation measure would reduce Impact UTL-1 (LTMA) to a **less-than-significant** level.

Impact UTL-2 (LTMA): ***Potential Disruption of Utility Service and Modification or Relocation of Utility Infrastructure during Project Operation***

This impact would be similar to Impact UTL-2 (NTMA), described above. In the period before implementation of conveyance-related LTMAs, the risk of slope and seepage failures or overtopping would remain the same as under current conditions; however, implementing conveyance-related LTMAs in the Extended SPA and Sacramento and San Joaquin Valley watersheds would reduce service disruptions by minimizing flood events that damage utility infrastructure and interrupt utility services. This impact would be **beneficial**. No mitigation is required.

Impact UTL-3 (LTMA): ***Increased Generation of Solid Waste during Project Construction***

This impact would be similar to Impact UTL-3 (NTMA). Construction associated with LTMA implementation would generate debris and waste in the Extended SPA and Sacramento and San Joaquin Valley watersheds. Construction-related sources of solid waste would consist of cleared vegetation; debris such as asphalt, concrete, pipes, and gravel; and potentially structural debris from agricultural structures and residences removed from the project footprint. The volume of solid waste that could be generated by construction activities is unknown; however, only those landfills determined to have sufficient available capacity to accommodate construction disposal needs would be used. No one landfill would accept all construction-related solid waste associated with LTMA implementation. 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 utilities and service systems 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 utilities and service systems.

This page left blank intentionally.