Chapter 13
Service Providers

13.1 Introduction

This chapter describes the environmental setting for service providers and the regulatory setting associated with service providers. It also evaluates environmental impacts on service providers that could result from the Lower San Joaquin River (LSJR) and southern Delta water quality (SDWQ) alternatives, and, if applicable, offers mitigation measures that would reduce significant impacts.

This chapter describes the potential impacts of the LSJR and SDWQ alternatives on service providers within the area of potential effects. The area of potential effects for service providers includes the plan area (the LSJR; the three eastside tributaries [the Stanislaus, Tuolumne, and Merced Rivers]; and the southern Delta) and the Central Valley Water (CVP) and State Water Project (SWP) exports and export service areas.

Service providers discussed in this chapter are providers of water for municipal, industrial, and agricultural uses, and providers of wastewater treatment. The service providers discussed in this chapter include: South San Joaquin Irrigation District (SSJID); Stockton East Water District (SEWD); Central San Joaquin Water Conservation District (CSJWCD); Turlock Irrigation District (TID); City and County of San Francisco (CCSF); Modesto Irrigation District (MID); City of Modesto; Merced Irrigation District (Merced ID); Stevinson Water District; Contra Costa Water District (Contra Costa WD); Deuel Vocational Institution (Deuel); Town of Discovery Bay Community Services District (Discovery Bay CSD); Mountain House Community Service District (Mountain House CSD); City of Manteca (City of Manteca); City of Stockton (Stockton); City of Tracy (Tracy); and service providers relying on exports. Other service-related impacts (e.g., solid waste, fire services, police services) were determined to be either less than significant or to have no impact and are addressed in Appendix B, *State Water Board's Environmental Checklist*. Impacts related to energy resources are addressed in Chapter 14, *Energy Resources and Climate Change*.

This chapter uses expected changes in water quality presented in Chapter 5, *Water Supply, Surface Hydrology, and Water Quality*, in the southern Delta as a result of the LSJR alternatives or SDWQ alternatives to determine if water quality would decrease such that it would affect a service provider's ability to provide water for domestic (i.e. residential, municipal, and industrial) purposes (water quality with respect to agricultural resources is discussed in Chapter 11, *Agricultural Resources*). This chapter uses results from the State Water Board's Water Supply Effects (WSE) model presented in Chapter 5 to determine the change in surface water diversions (i.e., surface water supplies) resulting from the LSJR alternatives and whether service providers would need to construct new or modified water supply treatment facilities or water supply infrastructure to compensate for any expected decrease. This chapter uses existing effluent discharge data to evaluate whether service providers would need to construct new or modified wastewater treatment facilities or wastewater infrastructure in the southern Delta as a result of responding to a change in wastewater treatment plant (WWTP) effluent limitations established by the Central Valley Regional Water Quality Control Board (Central Valley Water Board). The analysis in this chapter uses the WSE model results presented in Chapter 5 and Appendix F.1, *Hydrologic Modeling and Water*

Quality, to evaluate the changes to SJR inflow and whether there would be a potential decrease in exports that could impact service providers' water supply in the export service area.

Impacts of the LSJR and SDWQ alternatives on service providers are summarized in Table 13-1. Impacts related to LSJR Alternative 1 and SDWQ Alternative 1 (No Project) are presented in Chapter 15, *LSJR Alternative 1 and SDWQ Alternative 1 (No Project Alternative)*, and the supporting technical analysis is presented in Appendix D, *Evaluation of LSJR Alternative 1 and SDWQ Alternative 1 (No Project Alternative)*. Impacts related to methods of compliance are discussed in Appendix H, *Evaluation of Methods of Compliance*.

Table 13-1. Summary of Service Provider Impacts

Alternative	Summary of Impact(s)	Significance Determination
SP-1: Substantially degrade water quality for municipal drinking water purposes		
LSJR Alternative 1	See note. [1]	
LSJR Alternatives 2–4	The resulting inflow from the LSJR would not substantially modify the general historical range of salinity (0.2 dS/m–1.2 dS/m) in the southern Delta; therefore, a substantial degradation of water quality affecting service providers diverting drinking water from the southern Delta would not occur.	Less than significant
SDWQ Alternatives 2 and 3	The USBR Vernalis salinity requirement contained in the program of implementation would maintain the historical range of salinity in the southern Delta. Furthermore, the objectives would be under the upper limit for the secondary drinking water maximum contaminant level (MCL) for EC. Therefore, a substantial degradation of water quality affecting service providers diverting drinking water from the southern Delta would not occur .	Less than significant
SP-2: Require or result in the construction of new or expanded water treatment facilities or water supply infrastructure, the construction of which could cause significant environmental effects		
LSJR Alternative 1	See note. [1]	
LSJR Alternative 2	Surface water diversions would be similar to baseline conditions on the Stanislaus, Tuolumne, and Merced Rivers; therefore, it is not expected that service providers would construct or operate new water treatment facilities or water supply facilities or infrastructure.	Less than significant
LSJR Alternative 3	Surface water diversion reductions on the Tuolumne and Merced Rivers are expected to be approximately 20% and 17%, respectively; the reductions in surface water diversions on the Tuolumne and Merced Rivers could result in the construction of new or expanded water treatment facilities or water supply infrastructure, the construction of which could result in significant environmental effects. Surface water diversions on the Stanislaus River would be similar to baseline conditions; therefore, the construction of new or expanded water treatment facilities or water supply facilities would not occur.	Significant and unavoidable

Alternative	Summary of Impact(s)	Significance Determination
LSJR Alternative 4	Surface water diversion reductions on the Stanislaus, Tuolumne, and Merced Rivers are expected to be approximately 20%, 37%, and 31%, respectively; the reductions in surface water diversions could result in the construction of new or expanded water treatment facilities or water supply infrastructure, which could result in significant environmental effects.	Significant and unavoidable
SDWQ Alternative 1	See note. [1]	
SDWQ Alternatives 2 and 3	The USBR Vernalis salinity requirement contained in the program of implementation would not change and thus would maintain the general historical range of salinity in the southern Delta. Therefore, it is not expected that service providers would need to construct or modify water treatment or water supply facilities. Facilities that could be constructed as a result of wastewater treatment providers complying with new NPDES effluent limitations are discussed under SP-4	Less than significant
SP-3: Result in substantial changes to San Joaquin River inflows to the Delta such that insufficient water supplies would be available to service providers relying on CVP/SWP exports		
LSJR Alternative 1	See note. [1]	
LSJR Alternative 2	Annual average exports would not change from baseline conditions. In the months of February–June, average exports would be reduced by approximately 2% but would not cause insufficient water supplies to service providers relying on exports.	Less than significant
LSJR Alternatives 3 and 4	Annual average exports would not decrease from baseline conditions, nor would average exports decrease in the months of February–June; therefore, insufficient water supplies to service providers relying on exports would not occur.	Less than significant
SP-4: Require or result in the construction of new wastewater treatment facilities, expansion of existing facilities or infrastructure, the construction or operation of which could cause significant environmental effects		
LSJR Alternative 1	See note. [1]	
LSJR Alternatives 2–4	Wastewater treatment facilities and infrastructure associated with water supply facilities and infrastructure are discussed above under SP-2.	
SDWQ Alternative 1	See note. [1]	
SDWQ Alternative 2	Tracy and Stockton may need to construct new wastewater treatment facilities or expand existing facilities to comply with changes to NPDES effluent limitation implementing a 1.0 dS/m salinity objective set by the Central Valley Water Board. A change in baseline conditions with respect to Deuel Vocational Institution (Deuel) would not result from this alternative.	Significant and unavoidable

Alternative	Summary of Impact(s)	Significance Determination
SDWQ Alternative 3	The construction of new wastewater treatment facilities are not expected in order to comply with changes to NPDES effluent limitations implementing a 1.4 dS/m objective for salinity set by the Central Valley Water Board. This is because, with the exception of Deuel, their existing discharges are already below this objective. A change in baseline conditions with respect to Deuel would not result from this alternative.	Less than significant

Note:

[1] The No Project Alternative would result in implementation of flow objectives and salinity objectives identified in the 2006 Bay-Delta Plan. See Chapter 15, *LSJR Alternative 1 and SDWQ Alternative 1 (No Project Alternative)*, for the No Project impact discussion and Appendix D, *Evaluation of LSJR Alternative 1 and SDWQ Alternative 1 (No Project Alternative)*, for the No Project Alternative technical analysis.

dS/m = deciSiemens per meter

USBR = U.S. Bureau of Reclamation

NPDES = National Pollution Discharge Elimination System

13.2 Environmental Setting

This section characterizes -the plan area considered for the service providers impact analysis. Numerous service providers rely on the water bodies in the plan area for beneficial uses, such as irrigation and municipal and industrial supply. Services providers also use the water bodies as receiving waters in which to discharge treated wastewater effluent generated by residential, municipal, and industrial (i.e., domestic) uses in service districts in the plan area. The environmental setting provides information regarding the different service providers.

13.2.1 Lower San Joaquin River and Tributaries

Service providers that supply water for different uses (e.g., agricultural or municipal and industrial) primarily obtain their water from surface water diversions from the three eastside tributaries or from groundwater pumping. Surface water from the three eastside tributaries is the primary source of water for irrigation districts. Descriptions and characteristics of the irrigation districts are provided in Chapter 2, *Water Resources* (Sections 2.4.1, 2.4.2, and 2.4.3). The irrigation districts that are the primary surface water diverters have contracts or agreements with contracting water districts. These irrigation districts and the water districts that contract with them are listed in Table 13-2.

Table 13-2. Irrigation Districts and their Contracting Water Districts

Tributary River	Irrigation Districts (Primary Surface Water Diverters)	Contracting Water Districts (Water Users)
Stanislaus[1]	OID, SSJID	SEWD[2], CSJWCD, Tracy, Manteca, Lathrop, Ripon, Escalon
Tuolumne	MID, TID[3]	Modesto, CCSF[4]
Merced	Merced ID[5]	LeGrand Athlone Water District[6], El Nido Irrigation District[6], Stevinson Water District, Eastside Water District[7]

OID = Oakdale Irrigation District
SSJID = South San Joaquin Irrigation District
SEWD = Stockton East Water District
CSJWCD = Central San Joaquin Water Conservation District
MID = Modesto Irrigation District
TID = Turlock Irrigation District
CCSF = City and County of San Francisco
Merced ID = Merced Irrigation District

[1] U.S. Bureau of Reclamation (USBR) is contracted to provide surface water to OID, SSJID, SEWD and CSJWCD.

[2] SEWD provides water to CalWater Services Company and Stockton MUD. The County of San Joaquin receives less than 2,000 acre-feet per year (AFY) from SEWD.

[3] TID and MID customers primarily use water for agricultural irrigation.

[4] CCSF has agreements with MID and TID to provide carryover storage in New Don Pedro Reservoir. CCSF does not divert water directly from New Don Pedro Reservoir but owns the right to store up to 740 thousand acre-feet (TAF) of water in the reservoir. The 740-TAF water right is senior to TID and MID water rights. When Tuolumne River flows are less than the maximum flow, and TID and MID water rights are not fully satisfied, CCSF is still able to divert river flows upstream by transferring water to TID and MID (Environmental Defense 2004). The current CCSF demand for water is about 290 TAF.

[5] Merced ID is the primary water diverter on the Merced River. Merced ID uses the surface water from the Merced River primarily for agricultural irrigation.

[6] LeGrand Athlone Water District and El Nido Irrigation District are within the sphere of influence of Merced ID, and El Nido Irrigation District was incorporated into Merced ID service area prior to 2008 (AMEC 2008).

[7] Eastside Water District receives limited amounts of surface water from Merced ID only during wet years (Turlock Groundwater Basin Association 2008).

Irrigation districts in the plan area obtain the majority of their water supply from surface water diversions. The contracting water districts primarily rely on groundwater or a combination of groundwater and surface water. Table 13-3 identifies the primary water supplies of the different contracting water districts in the plan area. Figure 13-1 identifies the location of the water primary surface water diverters and contracting water districts.

Table 13-3. Contracting Water District Primary Water Supplies (acre-feet per year)

Irrigation Districts (Primary Surface Water Diverters)	Contracting Water Districts	Contracting Water Districts Surface Water	Contracting Water Districts Groundwater
OID and SSJID[1]	CSJWCD[2]	49,000 [3]	Primary source[3]
	SEWD[2]	30,000	5,475[5]/
		75,000 [4]	Primary source[6]
	Tracy	10,850 [5, 7]	500 [5]
	Manteca	5,745 [5, 8]	Primary source[9]
	Lathrop	1,090 [5]	2,564 [5]
	Ripon	2,000 [5, 10]	Primary source[9]
	Escalon	2,799 [11]	Primary source[9]
MID and TID	Modesto	30,647[5]	33,817 [5]
Merced ID	Stevinson Water District	26,400 [12]	Unknown
	LeGrand Athlone Water District	5,300 [12]	Unknown
	Eastside Water District	0 [13]	Primary source[13]

OID	= Oakdale Irrigation District	TID	= Turlock Irrigation District
SSJID	= South San Joaquin Irrigation District	CCSF	= City and County of San Francisco
SEWD	= Stockton East Water District	Merced ID	= Merced Irrigation District
CSJWCD	= Central San Joaquin Water Conservation District	USBR	= U.S. Bureau of Reclamation
		TAF	= thousand acre-feet
MID	= Modesto Irrigation District	AFY	= acre-feet per year

[1] SSJID and OID jointly hold contract rights with USBR to divert 600 TAF. The primary use of the surface water diversions in the SSJID and OID service areas is agriculture; however, there are some water district that are contracted with SSJID to provide water to municipal users.

[2] SEWD and CSJWD have a contract with USBR for a total of 155 TAF/y.

[3] The surface water diversion of 49,000 AFY is a firm supply; with an additional 31,000 AFY on an interim basis depending on availability for a total of 80,000 AFY. In past years demand was 30,000 AFY. CSJWCD estimate (1996) and projected (2030) water demand is approximately 159,000; therefore, its primary water source is groundwater (San Joaquin County Department of Public Works 2004.)

[4] SEWD is contracted with USBR, SSJID, and OID (SEWD 2011).

[5] Based on 2010 demand.

[6] SEWD estimate (1996) and projected (2030) water demand is approximately 189,000 AFY and 151,000 AFY; therefore, its primary source is groundwater (San Joaquin County Department of Public Works 2004.)

[7] City of Tracy also receives an additional 31,500 AFY from USBR via the CVP (SSJID 2011; City of Tracy 2011a).

[8] Manteca contractual supply is up to 11,500 AFY as needed (SSJID 2011).

[9] Escalon, Ripon, and Manteca's primary water supplies are groundwater and they have existing groundwater wells to supply existing demand (City of Escalon 2007; City of Manteca 2012; City of Ripon 2012).

[10] Ripon receives raw untreated surface water from SSJID (SSJID 2011).

[11] Escalon is contracted with SSJID to 2,799 AFY; however, in 2010, it used none of the surface water supplies (SSJID 2011).

[12] Average surface water deliveries for irrigation (AMEC 2008)

[13] Eastside Water District only receives limited amounts of surface water from Merced ID only during wet years (Turlock Groundwater Basin Association 2008).

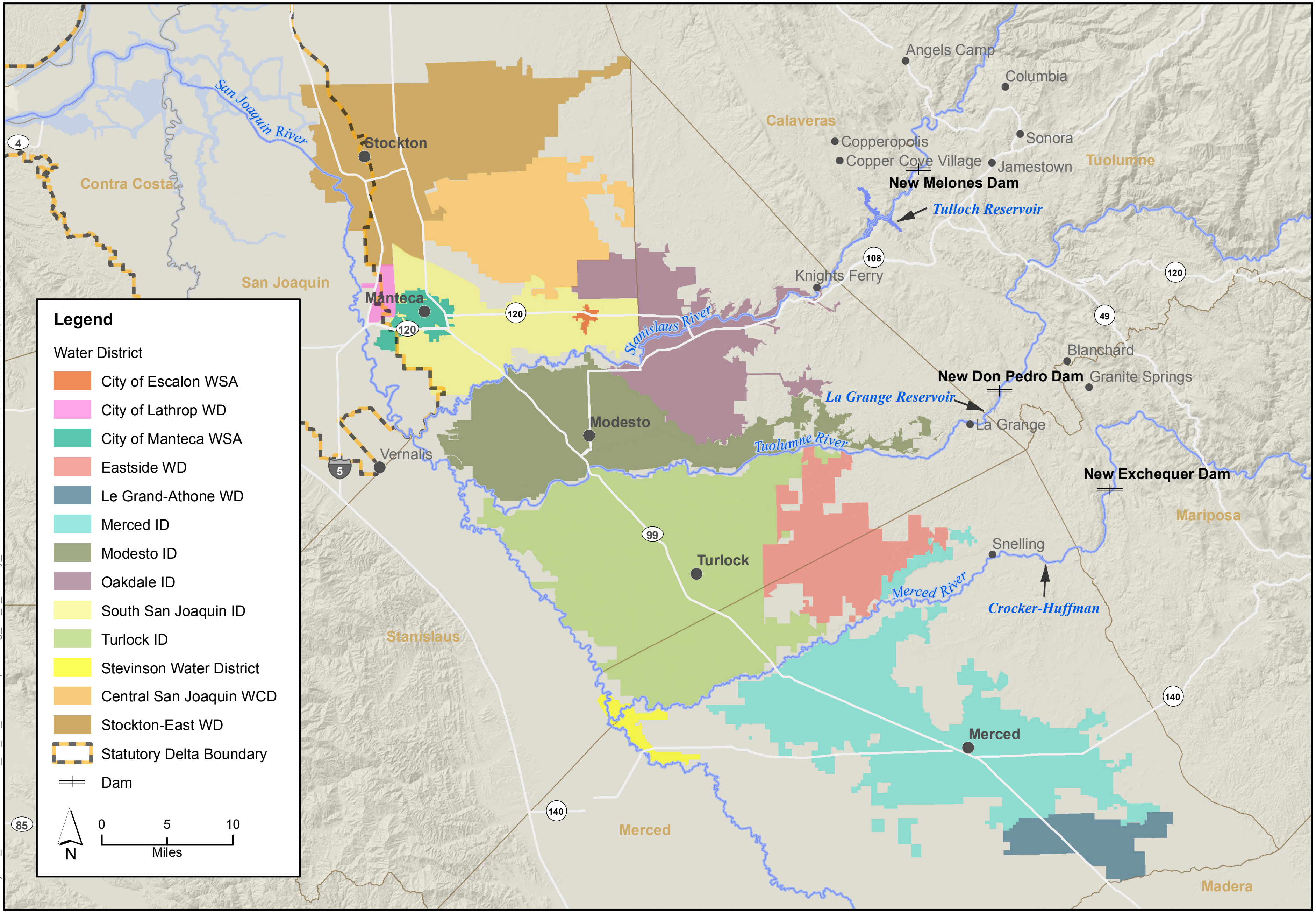

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Figure 13-1
Vicinity Map of Service Providers in Plan Area

13.2.2 Southern Delta

Many factors influence southern Delta water quality, such as the amount and salinity concentration of SJR flow entering the southern Delta at Vernalis; daily tidal action; CVP and SWP pumping operations; agricultural return flows; municipal wastewater discharges; and other influences. Chapter 2, *Water Resources* (Section 2.6) and Chapter 5, *Water Supply, Surface Hydrology, and Water Quality* (Section 5.2.7) also provide additional information regarding southern Delta hydrodynamics. The sections below summarize the information found in these two chapters and provide additional information that describes the southern Delta's water quality (salinity) objectives, the factors that affect its existing salinity, the WWTPs that discharge into the southern Delta and their effluent limitations, and the water suppliers that use the southern Delta as a source for drinking water.

Water Quality Objectives

The 2006 Bay-Delta Plan identifies specific water quality objectives for electrical conductivity (EC)[1], a primary indicator of salinity, for the southern Delta. These objectives are fully protective of agricultural beneficial uses and are set at 0.7 deciSiemens per meter (dS/m) during the summer irrigation season (April–August) and 1.0 dS/m during the winter irrigation season (September–March). Protection of agricultural beneficial uses is based on 100 percent protection of salt-sensitive bean and alfalfa crops (Appendix E, *Salt Tolerance of Crops in the Southern Sacramento–San Joaquin Delta*).

Existing Salinity

Salinity levels in the southern Delta are affected by complex hydrodynamics, including: inflow from the San Joaquin River (SJR) at Vernalis, land use activities (e.g., agriculture) and discharges in the southern Delta, the seasons, tidal action, the placement of temporary barriers to reduce the effects of tidal action, the position of the Delta cross channels, and outflow resulting from CVP and SWP exports.

The LSJR delivers water of relatively poor quality to the Delta, with agricultural drainage to the river being a major source of salts. Flow at Vernalis is typical of the inflow that the SJR contributes to the southern Delta. There is a strong relationship between the salinity concentrations at Vernalis and the salinity concentrations at Brandt Bridge and Old River at Middle River under most conditions (Appendix F.2, *Evaluation of Historical Flow and Salinity Measurements of the Lower San Joaquin River and Southern Delta)*. The salinity concentrations in the southern Delta typically increase slightly from agricultural drainage and treated effluent discharges to the southern Delta downstream of Vernalis. This is because the water diverted from and discharged back into southern Delta channels for agricultural purposes can increase southern Delta salinity.

Salinity also varies greatly in the southern Delta with the seasons and the tides. Winter salinity is mostly influenced by agricultural runoff, while fall salinities tend to be primarily influenced by seawater intrusion. The tides also influence the salinity by daily saltwater fluctuations. Generally, when temporary barriers are installed, tidal exchange is reduced, and salinity in the southern Delta

[1] EC is electrical conductivity, which is generally expressed in deciSiemens per meter (dS/m) in this chapter and document. Measuring EC assesses salinity, which is the concentration of dissolved salts (often expressed in parts per thousand or parts per million). Because salinity refers to salt concentration in the water, whereas EC values are the result of one measurement technique to assess salinity, both "EC" and the more general term "salinity" are used in this chapter.

during these lower flow periods can increase as a result of other sources (e.g., discharge of agricultural drainage, discharge of WWTPs). The temporary rock barriers (the Head of Old River Barrier [HORB], Middle River Barrier, and Grant Line Canal Barrier) are installed generally in fall (late September–November). The HORB reduces the normal diversion of SJR flow into Old River. When the rock barrier is installed, the majority of the LSJR flows north to the Stockton Deep Water Ship Channel. However, some of the LSJR flow is drawn through Turner Cut and Middle River and Victoria Canal toward the CVP and SWP pumping facilities. The volume of water exported at the CVP and SWP can modify salinity concentrations under high and low export scenarios. Higher freshwater flows originating from upstream rivers, agricultural drainage, and WWTP discharges generally reduce salinity because salinity is inversely proportional to flow in the southern Delta.

Despite the variable hydrodynamics described above, the measured EC values throughout the southern Delta indicate the monthly patterns of EC are generally below the existing salinity objectives (i.e., 0.7 deciSiemens per meter [dS/m] during the summer irrigation season [April–August] and 1.0 dS/m during the winter irrigation season [September–March]). The monthly increases in downstream salinity are greatest when the LSJR flow is low because dilution of agricultural drainage and municipal discharge will be less when the LSJR flow is low. Appendix F.2 describes the historical EC values at Vernalis and the interior compliance stations. There have been periodic exceedances in recent dry years at one or more of these southern Delta monitoring stations, but high salinity is not the general pattern. Based on the historical data, the salinity in the southern Delta is generally increased by a maximum of 0.2 dS/m above the Vernalis salinity. The existing salinity in the southern Delta generally ranges between 0.2 dS/m and 1.2 dS/m across all months of the year. Compliance with salinity objectives at Vernalis has been consistently achieved over the past 15 years. On average, salinity increases by 0.050 dS/m between Vernalis and Brandt Bridge (Chapter 5, *Water Supply, Surface Hydrology, and Water Quality*, and Appendix F.2). The historical salinity increase between Vernalis and Old River at Tracy Boulevard is greater, averaging about 0.150 dS/m, with several monthly increases of more than 0.200 dS/m. Thus, when salinity at Vernalis is at the Vernalis EC objective, the salinity in the southern Delta is generally maintained between 0.7 dS/m and 1.2 dS/m (based on the historical monthly EC record).

Wastewater Dischargers

Existing WWTPs discharge treated wastewater effluent into the southern Delta and are considered point sources under the Clean Water Act (33 U.S.C., § 1362(14)). Because treated wastewater effluent is a source of salt, these dischargers influence southern Delta salinity. There are six WWTPs that discharge into or are in the vicinity of the southern Delta, all of which are required to comply with effluent limitations established by National Pollution Discharge Elimination System (NPDES) permits (see Section 13.3.1). These WWTPs, their receiving water bodies, and their total permitted discharge rates are listed in Table 13-4. Figure 2-10 shows the locations of WWTPs, compliance station locations, and nearby drinking water supply intakes.

Table 13-4. Wastewater Treatment Plants with Discharges in the Southern Delta

WWTP Facility	Current NPDES Permit Order Number	Receiving Water	Permitted Discharge (mgd)
Tracy[1]	R5-2007-0036-01	Old River	16
Deuel	R5-2008-0164	Paradise Cut and Old River	0.62
Manteca[2]	R5-2009-0095	San Joaquin River	17.5
Stockton	R5-2008-0154	San Joaquin River	55
Mountain House CSD[3]	R5-2007-0039	Old River	5.4
Discovery Bay CSD	R5-2008-0179-01	Old River	2.1

WWTP = Wastewater Treatment Plant
mgd = million gallons per day
NPDES = National Pollutant Discharge Elimination System
CSD = Community Service District

1 Amended by Order No. R5-2011-0012. In accordance with *City of Tracy v. State Water Board,* the southern Delta salinity objectives are no longer applied to Tracy's discharge. Current capacity of Tracy's WWTP is 10.8 mgd, but there are plans to expand to 16.0 mgd within the permit term.

2 The Manteca Wastewater Quality Control Facility is currently designed for a discharge of 9.87 mgd but plans to expand to 17.5 mgd.

3 The Mountain House CSD is currently designed for a discharge rate of 3 mgd but plans to expand to 5.4 mgd within the permit term.

Overall, the WWTPs have only a small effect on southern Delta salinity (Appendix C, *Technical Report on the Scientific Basis for Alternative San Joaquin River Flow and Southern Delta Salinity Objectives*, and Appendix F.2, *Evaluation of Historical Flow and Salinity Measurements of the Lower San Joaquin River and Southern Delta*). For example, Tracy's discharge has limited effects on the overall salinity in the southern Delta compared to other sources of salinity in the area (e.g., water from agricultural activities and groundwater accretions). Under the assumed ambient EC of 0.7 dS/m in August, the effect of Tracy's discharge at 16 million gallons per day (mgd) would increase overall EC by 0.011 dS/m and 0.003 dS/m in August, under high and low export pumping scenarios, respectively. The permitted maximum salinity loads from the Tracy, Deuel, and Mountain House CSD to the salinity load entering at the Head of Old River indicates that the salt load from point sources in this part of the southern Delta is a small percentage of the salt load entering from upstream. The salinity from wastewater discharges is generally exported at the CVP Jones Pumping Plant and SWP Banks Pumping Plant.

These WWTPs have effluent limitations that are established through the NPDES permits and waste discharge requirements (WDRs) issued by the Central Valley Water Board (see Section 13.3.1). These effluent limitations are set by discharge permits for a wide variety of constituents, such as salt, and regulate the quality of the treated effluent discharged from the WWTPs. Except for Deuel[2], the EC effluent limits for the WWTPs are currently based on facility performance to ensure salinity levels do not increase. Generally, the WWTPs of the southern Delta are in compliance with the current EC effluent limitations. The discharge permits also require the preparation of a salinity management plan (Harder pers. comm.; Martin pers. comm.). Table 13-5 identifies annual average EC of each WWTP. Table 13-6 identifies the average EC April–August and the remainder of the year.

2 The EC effluent limits for Deuel are based on the 2006 Bay-Delta Plan water quality objectives for salinity, not on facility performance.

Table 13-7 is a summary of southern Delta WWTPs' compliance with NPDES salinity requirements and salinity management plans.

Table 13-5. Southern Delta Wastewater Treatment Plan Salinity (EC) Effluent Data

Facility	2011 Annual Average EC Effluent (μmhos/cm)	2011 Annual Average EC Effluent (dS/m)
Tracy	1,187[1]	1.200
Deuel	No data in CIWQS[2]	No data in CIWQS[2]
Manteca	782[3]	0.800
Stockton	1,041[4]	1.000
Mountain House CSD	685[5]	0.700
Discovery Bay CSD	2,177[6]	2.200

Source: CIWQS 2011.

EC = electrical conductivity (salinity)
μmhos/cm = micromhos per centimeter
dS/m = deciSiemens per meter
CIWQS = California Integrated Water Quality System Project
CSD = Community Service District

Numbers presented in dS/m were rounded.

1 Based on weekly samples from January 4, 2011–November 28, 2011.

2 No data on CIWQS, so the determination is based on recent ACLC R5-2011-0575, which reported an average monthly EC value of 2,260 μmhos/cm on January 31, 2011 and 2,570 μmhos/cm on February 28, 2011.

3 Based on monthly samples from January 7, 2011–November 2, 2011.

4 Based on weekly samples from January 4, 2011–November 11, 2011.

5 Based on monthly samples from January 5, 2011–November 2, 2011.

6 Based on bi-weekly samples from January 5, 2011–November 16, 2011.

Table 13-6. Southern Delta Wastewater Treatment Plant Salinity (EC) Effluent Data April–August and Remainder of the Year (dS/m [µmhos/cm])

	2011 April–August	2011 Jan– Mar, Sept–Dec
Facility	Average EC Effluent (dS/m [µmhos/cm])	Average EC Effluent (dS/m [µmhos/cm])
Tracy	1.200 [1,201]	1.200 [1,174]
Deuel	No data in CIWQS[1]	No data in CIWQS
Manteca	0.800 [793]	0.800 [774]
Stockton	1.000 [1,054]	1.000 [1,031]
Mountain House CSD	0.700 [660]	0.700 [712]
Discovery Bay CSD	2.200 [2,180]	2.200 [2,175]

Source: CIWQS 2011.
EC = electrical conductivity (salinity)
dS/m = deciSiemens per meter
µmhos/cm = micromhos per centimeter
CIWQS = California Integrated Water Quality System Project
CSD = Community Service District
Conversion is 1 dS/m = 1000 µmhos/cm. Numbers presented in dS/m were rounded.
[1] No data in CIWQS, so the determination is based on recent ACLC R5-2011-0575, which reported an average monthly EC value of 2.300 dS/m (2,260 µmhos/cm) on January 31, 2011 and 2.600 dS/m (2,570 µmhos/cm) on February 28, 2011.

Table 13-7. Current Southern Delta Wastewater Treatment Plant Compliance Status with National Pollutant Discharge Elimination System (NPDES) Permit Special Provisions for Salinity Requirements

Facility	Requirements	Deadline	Compliance Status
Tracy	Salinity Plan, PPP	December 23, 2007	Submitted Salinity Plan June 4, 2008, Revision of Dec 2007 version; Annual Salinity Best Practicable Treatment and Control Evaluation Reports Feb 2, 2009, and Feb 8, 2010; Draft Salinity PPP Report March 11, 2010
Deuel	Not required[1]	NA	NA
Manteca	Site-Specific Salinity Study, Revised PPP	July 8, 2010[2] April 2010	Submitted Work Plan in July 2010; Revised PPP on April 1, 2010
Stockton	Salinity Plan, update PPP	June 12, 2009	Submitted Salinity Plan in June 2009; Salinity Progress Report November 2011
Mountain House CSD	Salinity Plan, PPP	Jan 23, 2008	Submitted Salinity Reduction Progress Reports May 26, 2009, and May 21, 2010
Discovery Bay CSD	Salinity Plan, PPP	August 4, 2008	Submitted Salinity Plan; WW Master Plan Section 15–Salinity Reduction (Oct 2011)

PPP = Pollution Prevention Plan
CSD = Community Service District
WW = Wastewater
[1] The Deuel NPDES permit does not require the discharger to prepare a salinity management plan.
[2] Investigation to be completed by October 8, 2012.

Some service providers (i.e., WWTPs) are currently planning to modify existing facilities to reduce salinity loads. Of the six WWTPs discussed herein, two have made efforts or are working toward reducing salinity concentrations in their source water supplies, four are implementing pretreatment programs to reduce water softener use among water users, and three are either proposing to construct or are already operating a reverse osmosis (RO) treatment system. Table 13-8 summarizes the salinity reduction efforts of the various WWTPs.

Table 13-8. Proposed Salinity Reduction Efforts of Southern Delta Wastewater Treatment Plant (WWTP) Dischargers

WWTP Facility	Proposed Salinity Reduction Efforts		
	Source Water	Pretreatment Program	WWTP Desalination
Tracy	Addition of freshwater from New Melones Reservoir to groundwater supplies Construction of an Aquifer Storage and Recovery (ASR) well pilot project; permanent ASR is anticipated based on pilot project	Reduction in water softeners	Currently proposing a desalination plant (RO treatment); released public initial study/mitigated negative declaration (IS/MND) for the Tracy Desalination and Green Energy Project in April 2012
Deuel	No plans for changes to groundwater supplies	No pretreatment program, and none required	Constructed an RO groundwater treatment system with brine concentrator in 2010
Manteca	No plans for changes to 50% surface water from SSJID and 50% groundwater	Reduction in water softeners	No plans for desalination at WWTP
Stockton	Implementing Delta Water Supply Project for conjunctive use planned for 2012	Reduction in water softeners and TDS from industries	No plans for desalination at WWTP, but proposes to replace alum with polymer, submit inflow and infiltration study to identify salinity sources and loads, and implement Capital Improvement Energy Plan to meet salinity limitations
Mountain House CSD	No plans for changes to surface water from Clifton Court Forebay	Reduction in water softeners	No plans for desalination at WWTP
Discovery Bay CSD	--	--	Evaluated feasibility of constructing RO treatment system in 2010 Wastewater Master Plan

WWTP = Wastewater treatment plant
RO = Reverse osmosis
SSJID = South San Joaquin Irrigation District
TDS = Total dissolved solids
CSD = Community Service District

Each of the current dischargers to the southern Delta is described below, including characteristics of the WWTP, salinity requirements, recorded violations in 2011, and currently implemented salinity control measures.

City of Tracy

Tracy discharges tertiary treated wastewater into Old River, which is a tributary to the SJR and Clifton Court Forebay, a drinking water source for Southern California (Central Valley Water Board 2008b). The current NPDES discharge permit (Order No. R5-2007-0036-01) covers the main domestic wastewater treatment facility and an industrial pretreatment facility, including pretreated wastewater from the Leprino Foods Company (Leprino), a local cheese manufacturer (Central Valley Water Board 2011). All wastewater is discharged from Discharge Point 001 to Old River, located 3.5 miles north of the WWTP at the junction of Paradise Cut, Tom Paine Slough, Salmon Slough, and Sugar Cut Slough (Figure 2-10). The nearest compliance monitoring station is station P-12 (Old River at Tracy Boulevard Bridge), approximately 4 miles west (downstream) of the discharge point (Central Valley Water Board 2007a). The nearest drinking water intakes are the CVP and SWP, which are approximately 10 miles downstream of the discharge (Central Valley Water Board 2007a).

Tracy's treated wastewater effluent is high in salt partly due to the municipal water supply and from significant salt loading from Leprino. Although Leprino provides preliminary treatment of its wastewater to reduce the high organic loading typical of food processing waste, no specific pretreatment is provided to reduce the high salt loading.

Tracy does not currently have EC effluent limitations; however, it still monitors for EC, as required by its NPDES permit, and has initiated salinity reduction efforts. Tracy's 2011 weekly wastewater discharge data submitted to the Central Valley Water Board indicates the average monthly EC values range from 1.1 to 1.3 dS/m, with an annual average of 1.2 dS/m. Tracy submitted a salinity reduction plan in 2008 that describes the approach to identify, evaluate, and implement measures to reduce salinity in the effluent discharge and meet the interim salinity goal. Tracy also submitted a salinity best practicable treatment or control evaluation (BPTC) and salinity pollution prevention plan (PPP) in compliance with NPDES permit requirements.

Salinity Reduction Efforts

Source Water Supplies: Historically, the largest source of salinity in Tracy's wastewater effluent was the groundwater used as a potable water supply for the community. Tracy has obtained surface water potable supplies to replace the use of groundwater. Groundwater usage has reduced from 7,176 acre-feet (AF) in 2004 to 1,327 AF in 2009. As a result, there has been a reduction of approximately 5,000 tons of salt per year (Bayley pers. comm.). Additionally, Tracy is contracted with SSJID to receive water from New Melones Reservoir, and this additional water contributes to the reduction of salinity in the effluent (Tracy Press 2011). Additionally, Tracy completed construction of an Aquifer Storage and Recovery (ASR) well pilot project in 2012. The Central Valley Water Board must approve pilot tests on injection of drinking water into the groundwater basin. The permanent ASR project is planned for 2013 upon completion of environmental review. Tracy successfully commenced a pilot project to store surplus surface water supplies in the Semitropic Water Storage District in Kern County (Marshall pers. comm. 2012a).

Salinity Pretreatment Program: Replacing some groundwater with surface water for source water supplies has reduced the need for salt-based, self-regenerating water softeners, which contribute additional salinity to wastewater. These water softeners contribute to salinity because as they reduce hardness ions (e.g., calcium and magnesium), they produce a byproduct of a concentrated solution of the hardness ions and chloride that is discharged to the WWTP. This discharge increases the salinity of the wastewater entering the WWTP and the overall salinity of the treated effluent discharged from the WWTP. According to Tracy, there has been an observable significant decrease in the salinity of the wastewater effluent due to a reduction in the use of water softeners (City of Tracy 2008).

Desalination at the WWTP: Tracy is upgrading the WWTP to improve treatment and expand capacity. The treatment system capacity will be expanded from 10.8 mgd to 16 mgd through a four-phase expansion. In order to increase discharge capacity, Tracy is planning to construct a second outfall, Discharge Point 002, approximately 800 feet downstream of Discharge Point 001. Tracy is currently proposing to build a desalination plant. Tracy released a public draft of the initial study and mitigated negative declaration (IS/MND) for the Tracy Desalination and Green Energy Project in December 2011 and final document in April 2012 (State Clearinghouse Number 2011122004).

Deuel Vocational Institution

The California Department of Corrections and Rehabilitation's (CDCR) current NPDES permit (Order No. R5-2008-0164) authorizes treated effluent discharges from the Deuel Vocational Institution. Deuel has general population housing for more than 3,700 inmates. Treated effluent is discharged into the Deuel Drain, which is tributary to Paradise Cut and Old River (Central Valley Water Board 2008b). The western end of Paradise Cut discharges to Old River

Table 13-9 summarizes the WWTP NPDES permit enforcement orders showing violations of EC effluent limitations occurring during the existing NPDES permit term. Deuel has had 16 violations of its daily and monthly average EC effluent limitations since the existing NPDES permit was issued. These violations are potentially attributed to a malfunction of the RO and Brine Concentrator systems used by the facility to reduce the salinity of the groundwater supply.

Table 13-9. Recent Wastewater Treatment Plant National Pollution Discharge Elimination System Permit Enforcement Orders for the Deuel Vocational Institution

Enforcement Order for EC Violation	Dates of Noncompliance	Description
Cease and Desist (R5-2008-0165-01) as amended by Administrative Civil Liability Complaint (ACLC) (R5-2010-0010)	NA	Established new interim daily EC limit of 3.000 dS/m (3,000 µmhos/cm) effective until Dec 31, 2010
ACLC (R5-2009-0571)	April 30, 2009	1 violation of daily EC limit of 3.000 dS/m (3,000 µmhos/cm)
ACLC (R5-2010-0526)	Aug 31, 2009–Feb 28, 2010	1 violation of monthly EC limit of 0.700 dS/m (700 µmhos/cm); 3 violations of monthly EC limit of 0.700 dS/m (700 µmhos/cm)
ACLC (R5-2010-0549)	April 30, 2010–Aug 31, 2010	5 violations of monthly EC limit of 0.700 dS/m (700 µmhos/cm)
ACLC (R5-2011-0575)	Sept 30, 2010–Feb 28, 2011	6 violations of monthly EC limit of 1.000 dS/m (1,000 µmhos/cm)

EC = electrical conductivity (salinity)
dS/m = deciSiemens per meter
µmhos/cm = micromhos per centimeter
Conversion is 1 dS/m = 1000 µmhos/cm.

Salinity Reduction Efforts

Source Water Supplies: Source water for Deuel comes from four onsite groundwater wells. The groundwater is treated prior to use via a RO system. Approximately 8,000 gallons per day of brine solution are removed and deposited to four evaporation ponds. Despite efforts to reduce salinity using this system, the facility continues to violate its effluent limitations; therefore, modifications to this facility are likely needed.

Salinity Pretreatment Program: Deuel does not have a pretreatment program because the only source of wastewater is the prison, and it does not treat industrial wastewater.

City of Manteca

Manteca's current NPDES permit (Order No. R5- 2009-0095) regulates tertiary treated effluent discharges from Manteca and surrounding areas and a portion of Lathrop. Manteca discharges part of its treated effluent to irrigated fields. The remaining treated effluent is discharged to the SJR just upstream of the Mossdale EC monitoring station and SJR at Brandt Bridge (C-6) (Central Valley Water Board 2009). The discharge is approximately 20 miles from the nearest drinking water intake (Central Valley Water Board 2009). Manteca receives municipal wastewater and wastewater from a produce washing and processing facility (Eckert Cold Storage). However, the food processing wastewater is only discharged to land and enters the facility through a separate collection system.

After the issuance of Manteca's former (2004) NPDES permit (Order No. R5-2004-0028), which included seasonal effluent limits for EC of 1.0 dS/m (September–March) and 0.7 dS/m (April–August), Manteca petitioned the State Water Board to amend the 0.7 dS/m effluent limit. On March, 16, 2005, the State Water Board adopted Water Quality Order (WQO) 2005-005, which removed the 0.7 dS/m EC effluent limit. In October 2009, the Central Valley Water Board adopted Manteca's current NPDES permit (Order No. R5-2009-0095) that again included seasonal effluent limits for EC of 1.0 dS/m (September–March) and 0.7 dS/m (April –August)[3]. Since Manteca could not consistently comply with the 0.7 dS/m limitation, the Central Valley Water Board also adopted a time schedule order (No. R5-2009-0096), allowing Manteca until October 2014 to achieve compliance with the seasonal 0.7 dS/m effluent limitation. The time schedule order also requires Manteca to update its salinity PPP, initially developed in 2005. Manteca submitted a revised PPP in April 2010. Manteca's 2011 weekly wastewater discharge data submitted to the Central Valley Water Board shows that the average monthly EC values range from 0.7dS/m to 0.8 dS/m September–March, with an annual average of 0.8 dS/m.

The NPDES Permit also requires Manteca to conduct a site-specific study to determine the appropriate EC and total dissolved solids (TDS) levels to protect the beneficial use of agricultural supply for the most salt-sensitive crops in areas irrigated with groundwater in the vicinity of the WWTP. Manteca submitted a site-specific salinity study work plan to the Central Valley Water Board in July 2010. The final investigation report is due October 2012 (Central Valley Water Board 2009).

Salinity Reduction Efforts

Source Water Supplies: Manteca's and Lathrop's groundwater supplies, and, consequently, their wastewater and treated effluent, have a high salt content. A portion of Manteca's water supply is pumped from groundwater wells with an EC level range of 0.3 dS/m to 0.6 dS/m. Starting in 2005, Manteca substituted a portion of its groundwater supply with surface water from the SSJID such that Manteca's water supplies are currently comprised of 50 percent surface water. Manteca is currently evaluating the possibility of installing salinity-removal technologies at some or all of its groundwater wells (City of Manteca 2010).

Salinity Pretreatment Program: A source of wastewater salinity is self-regenerating water softeners (City of Manteca 2010). In recent years, Manteca's water supply has reduced its water hardness by obtaining different source water (e.g., surface water), but the use of water softeners has not decreased significantly because most water softener systems were installed in homes prior to the water hardness reduction. In the 2010 PPP, Manteca proposed to launch an education campaign to encourage residents to switch from standard self-regenerating water softeners to high-efficiency water softeners or an exchange tank system.

There are several Manteca commercial and industrial wastewater generators that participate in the current wastewater pretreatment processes and have undertaken efforts to reduce salinity. For example, the wastewater from Eckert Cold Storage has been separated into two wastewater streams, one for the food-processing and one for all other wastewater, thus reducing salinity discharged into the SJR.

Desalination at the WWTP: In 2009, the State Water Board directed the Central Valley Water Board to amend Manteca's NPDES permit to include an EC limit in compliance with the objectives in the 2006 Bay-Delta Plan (WQO 2009-003). The Central Valley Water Board issued Order No. R5-2009-

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[3] Although the State Water Board removed the 0.7 dS/m EC limit in Manteca's 2004 NPDES permit, the Central Valley Water Board implemented the 0.7 dS/m EC limit again due to a subsequent State Water Board Order for the City of Tracy Wastewater Treatment Plant (WQO 2009-003).

0095 imposing seasonal limits of 0.7 dS/m EC for April–August and 1.0 dS/m EC for September–March. Manteca has not proposed to modify its facilities for salt removal.

City of Stockton

Stockton's current NPDES permit (Order No. R5-2008-0154) regulates tertiary treated effluent discharges from Stockton, the Port of Stockton, and surrounding urbanized San Joaquin County areas. The treated effluent is discharged to the SJR approximately 8 miles downstream from the SJR at Brandt Bridge compliance station (C-6) (Central Valley Water Board 2008c). There are no known drinking water intakes in the vicinity of the discharge (Central Valley Water Board 2008c). Stockton's 2011 weekly wastewater discharge data submitted to the Central Valley Water Board show average monthly EC values range from 0.9 to 1.1 dS/m, with an annual average 1.0 dS/m.

Stockton submitted a PPP to the Central Valley Water Board in 2005 and a draft salinity plan in June 2009. The average annual effluent is approximately 1.1dS/m as stated in the 2011 salinity plan progress report based on effluent data collected from January to October 2010. These effluent data demonstrate compliance with the average annual salinity effluent limitation of 1.3 dS/m.

Salinity Reduction Efforts

Source Water Supplies: Stockton's existing water supply originates from groundwater wells, groundwater delivered by the California Water Service Company, and surface water delivered by SEWD from the Stanislaus and Calaveras Rivers. The average EC of the groundwater sources is approximately 0.5 dS/m (city wells) and approximately 0.4 dS/m (California Water Service wells), compared to 0.1 dS/m for surface water sources (City of Stockton 2009). The Delta Water Supply Project (DWSP) will provide a new supplemental surface water supply in 2012 (City of Stockton 2011a).

Salinity Pretreatment Program: The extent of water softener use by Stockton residences is unknown (City of Stockton 2009). Stockton works with industrial dischargers within its service area to reduce TDS concentrations as part of its standard pretreatment program (City of Stockton 2009).

Desalination at the WWTP: Stockton is in the process of modifying the treatment plant to reduce salinity generated by alum (a chemical used to consolidate, and hence aid in the removal of, salt during the wastewater treatment process). It also will submit an inflow and infiltration study to the Central Valley Water Board as part of the capital improvement program to identify specific methods of reducing EC and TDS loads (City of Stockton 2011a).

Mountain House Community Services District

The Mountain House CSD's NPDES permit (Order No. R5-2007-0039) covers the discharge of tertiary treated effluent from the community of Mountain House in San Joaquin County into Old River (Central Valley Water Board 2007b). The Jones Pumping Plant is located 4.5 miles west (downstream) of the discharge. Mountain House CSD's 2011 monthly effluent limitation is 1.4 dS/m. The district's 2011 weekly wastewater discharge data submitted to the Central Valley Water Board indicate average monthly EC values range from approximately 0.5dS/m to 0.8 dS/m, with an annual average of 0.7 dS/m.

Salinity Reduction Efforts

Source Water Supplies: Mountain House CSD's source water is surface water from the Clifton Court Forebay, which has an EC of less than 0.3 dS/m (Central Valley Water Board 2007b).

Salinity Pretreatment Program: Mountain House CSD is required to implement a pretreatment program as specified in the current NDPES permit. Mountain House CSD continues to discourage the use of water softeners within its service area as part of its pretreatment program.

Desalination at the WWTP: Mountain House CSD currently does not operate a desalination system at the WWTP, nor does it plan to construct one.

Discovery Bay CSD

Discovery Bay CSD's NPDES permit (Order No. R5-2008-0179-01) regulates secondary treated discharges from the town of Discovery Bay to Old River (Central Valley Water Board 2008a). The Town of Discovery Bay owns the Discovery Bay WWTP, which serves approximately 16,000 people. Discovery Bay CSD's nearest compliance monitoring station is Clifton Court Forebay (2006 Bay-Delta Plan Station C-9). Bay-Delta Station C-9 is one of the four southern Delta salinity compliance stations and very little, if any, discharge from Discovery Bay CSD reaches the southern Delta (Marshall pers. comm. 2012b). However, because it is located within the southern Delta, it is included here as part of baseline conditions. The nearest drinking water intake is CCWD's Old River Intake for Los Vaqueros Reservoir. Average monthly EC values range from approximately 2.0dS/m to 2.3 dS/m, with an annual average of 2.2 dS/m**.**

Salinity Reduction Efforts

Source Water Supplies: Discovery Bay CSD currently does not have any plans to change the source of its water supplies.

Salinity Pretreatment Program: Discovery Bay CSD current does not have any plans to implement a salinity pretreatment program.

Desalination at the WWTP: According to the *Discovery Bay Wastewater Treatment Master Plan* (2010), an RO treatment facility would be constructed to meet an effluent EC goal of 1.0 dS/m. However, because of the estimated high costs, high energy usage, and associated environmental impacts, the Discovery Bay CSD concluded in the master plan that RO treatment would only be constructed and used if mandated by the State (Discovery Bay CSD 2010).

Water Suppliers

Drinking water supply intakes are located in the southern Delta. These include the Jones and Banks pumping plants of the Central Valley Project (CVP) and State Water Project (SWP), respectively, and the intakes for CCWD.

CVP and SWP

As described in Chapter 2, *Water Resources* (Section 2.6.2), and Chapter 5, *Water Supply, Surface Hydrology, and Water Quality* (Sections 5.2.7 and 5.3.2), CVP and SWP export pumping is subject to 2006 Bay-Delta Plan objectives, which are implemented through D-1641. Both the CVP and the SWP have maximum permitted pumping rates. Delta outflow requirements may limit export pumping if the combined Delta inflow is not enough to satisfy both the in-Delta agricultural diversions and CVP and SWP pumping. The Coordinated Operations Agreement (COA) governs the CVP and SWP share in reservoir releases and Delta pumping.

Contra Costa Water District

The CCWD diverts water from the southern and central Delta for drinking water supplies to eastern and central Contra Costa County. As described in Chapter 2, *Water Resources*, CCWD has four surface water intakes: Mallard Slough Intake, Rock Slough Pumping Plant #1, Old River Intake near State Route (SR) 4, and the Victoria Canal Intake. Old River and Victoria Canal Intakes are located immediately north–northwest of the SDWA boundary (Figure 2-10). The Mallard Slough Intake and Rock Slough Intake are located further west and closer to the ocean. The Old River Intake is the largest intake operated and accounts for the majority of surface water diverted to CCWD (CCWD and USBR 2008.)

CCWD's rights to divert water from the Delta integrate CCWD's operations with the coordinated operations of the CVP and SWP. CCWD has a contract with USBR for the delivery of 195,000 acre-feet per year (AFY) of CVP water for municipal and industrial uses and agricultural users in the CCWD service area. The water delivered under the contract may be diverted at the Rock Slough and Old River intakes at any time of the year. CCWD also has a water right for the Los Vaqueros Project that allows water to be diverted from Old River to Los Vaqueros Reservoir November–June during excess conditions in the Delta as defined in D-1629. CCWD also has a license and permit for diversions at Mallard Slough for up to 26,780 AFY. Therefore, when CCWD operates within the terms of its CVP contract and water rights permits, it does so in conjunction with all other water supply interests (CCWD and USBR 2008).

CCWD's intakes are located in the western Delta where the effects of seawater intrusion are more pronounced. Generally, CCWD's intakes experience relatively fresh conditions in the late winter and early spring, and salinity increases in summer and fall as conditions become drier and regulatory standards governing Delta operations shift. This pattern can vary depending on hydrology (CCWD and USBR 2008). Use of the Mallard Slough Intake is generally restricted due to salinity concentrations because it experiences more tidal fluctuations as a result of its location. Water quality conditions have restricted diversions from Mallard Slough (an average of 3,100 AFY) with no diversions available in dry years. When Mallard Slough supplies are used, CVP diversions at Rock Slough are reduced by an equivalent amount. The Victoria Canal Intake allows CCWD the flexibility to divert water with lower salinity and allows seasonal operations shifts between diversions. The seasonal variation in salinity between Old River/Rock Slough and Victoria Canal allows CCWD to divert predominantly in winter and spring from Old River. In the late summer, as salinity begins to rise, Victoria Canal salinity is generally lower than Old River salinity and remains lower until Delta outflow increases and Delta salinity improves (usually in December). Thus, CCWD typically diverts water in the summer and fall from Victoria Canal (CCWD and USBR 2008).

13.3 Regulatory Setting

13.3.1 Federal

Relevant federal programs, policies, plans, or regulations related to service providers are described below.

Safe Drinking Water Act

The Safe Drinking Water Act (42 U.S.C., § 300f et seq.), originally passed by Congress in 1974 and amended in 1986 and 1996, was established to protect public health by regulating the nation's public drinking water supply. In addition to drinking water itself, the act requires the protection of its sources, such as rivers, lakes, reservoirs, springs, and groundwater wells. The act authorizes the USEPA to set national health-based standards for drinking water, such as maximum contaminant levels (MCLs), to protect against contaminants that may adversely affect public health. In California, the Department of Public Health (DPH) implements the Safe Drinking Water Act.

Clean Water Act

In 1972, Congress enacted amendments to the Federal Water Pollution Control Act, which, as amended in 1977, is commonly known as the Clean Water Act (CWA) (33 U.S.C., §1251 et seq). The objective of the CWA is to "restore and maintain the chemical, physical, and biological integrity" of the nation's waters (*Id*., §1251(a)). The Clean Water Act focuses on point sources and nonpoint sources of pollution. To protect water quality, the CWA provides for both water quality standards, which establish the beneficial uses and the water quality criteria based on such uses, and effluent limitations, which restrict the quantities, rates, and concentrations of specified substances discharged from point sources. For California, USEPA has delegated the responsibility to implement portions of the CWA, including water quality control planning and control programs, to the State Water Board and the nine regional water quality control boards.

CWA Section 402 regulates discharges to surface waters through the NPDES program, which is administered by USEPA. In California, the State Water Board, through the regional water boards, implements the NPDES program in lieu of USEPA (see related discussion of the Porter-Cologne Water Quality Control Act in Section 13.3.2). The NPDES program provides for both general permits (those that cover a number of similar or related activities) and individual permits. Typically, NPDES permits are reissued every 5 years. WWTPs are required to obtain individual NPDES permits that contain specific requirements limiting discharge pollutants for the discharge of treated wastewater. NPDES permits also require dischargers to monitor their wastewater to ensure treated effluent meets all permitted requirements. The Central Valley Water Board has jurisdiction over wastewater discharges within the plan area.

13.3.2 State

Relevant state programs, policies, plans, or regulations related to service providers are described below.

California Urban Water Management Planning Act

The California Urban Water Management Planning Act requires urban water suppliers[4] to initiate planning strategies to ensure the appropriate level of reliability in their water service sufficient to meet the needs of the various categories of customers during normal, dry, and multiple dry water years. To do this, they must prepare an urban water management plan (UWMP) every 5 years. The intent of the UWMP is to present information about water supply, water usage, recycled water, and water use efficiency programs in a contracting water district's service area. The UWMP also serves as a resource for planners and policy makers over a 25-year planning time frame.

California Code of Regulations, Title 23

Title 23 of the California Code of Regulations contains the State Water Board's regulations. Section 106 identifies it is the policy of the State that the use of water for domestic purposes is the highest use, with irrigation being the next highest use.

Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act of 1969 established the State Water Board and divided the state into nine regional basins, each with its own regional water board. The State Water Board is the primary state agency responsible for protecting the quality of the state's surface water and groundwater supplies.

Porter-Cologne authorizes the State Water Board to draft state policies regarding water quality. It also authorizes the State Water Board to issue waste discharge requirements for discharges to state waters. The State Water Board, or one of the nine regional water boards, adopts water quality control plans (WWQPs, or basin plans) for the protection of water quality within a specific area. A basin plan must do the following.

- Identify the beneficial uses of the water to be protected.
- Establish water quality objectives for the reasonable protection of the beneficial uses.
- Establish an implementation program to achieve the water quality objectives.

In most cases, water quality objectives are not directly enforceable. In order to ensure their implementation, water quality objectives usually are implemented through WDRs, NPDES permits, or water right permits and licenses. WQCPs are updated every 3 years.

2006 Bay-Delta Plan

The 2006 Bay-Delta Plan was adopted by the State Water Board in December of 2006 following a review of the 1995 Bay-Delta Plan. The 2006 Bay-Delta Plan identifies beneficial uses of the Bay-Delta, water quality objectives (for flow and salinity) for the reasonable protection of those beneficial uses, and a program of implementation for achieving the water quality objectives. The flow objectives on the LSJR are included in Table 3 in the 2006 Bay-Delta Plan and are implemented through D-1641. However, the Vernalis Adaptive Management Program (VAMP) was authorized in lieu of meeting the water quality objectives until December 2011. Additionally, the plan requires that USBR release flows from New Melones to maintain EC at Vernalis. The salinity objectives are the maximum 30-day running average (monthly average) of mean daily EC (0.700 dS/m [700 µmhos/cm] April–August and 1.0 dS/m [1,000 µmhos/cm] September–March for all water year types) (State Water Board 2006).

The 2006 Bay-Delta Plan includes salinity objectives for the protection of agriculture in the southern Delta at the four compliance locations: SJR at Vernalis (C-10), SJR at Brandt Bridge (C-6), Old River near Middle River (C-8), and Old River at Tracy Road Bridge (P-12). The 2006 Bay-Delta Plan clarifies that the numeric objectives are not just applicable at the compliance monitoring locations, but they also apply to the receiving waters of WWTP discharge: "unless otherwise indicated, water quality objectives cited for a general area, such as for the southern Delta, are applicable for all locations in that general area, and compliance locations will be used to determine compliance with the cited objectives." (State Water Board 2006.)

The existing objective for chloride concentration (related to salinity) is a year-round maximum mean daily chloride concentration of 250 milligrams/liter (mg/L) measured at five Delta intake facilities, of which CCWD's Pumping Plant No. 1 is one, for the reasonable protection of municipal beneficial uses. This is consistent with USEPA's secondary MCL for chloride. Additionally, a maximum daily chloride concentration of 150 mg/L (measured either at Pumping Plant No. 1 or the SJR at the Antioch Water Works Intake) is included in the 2006 Bay-Delta Plan for the reasonable protection of industrial uses. A water quality goal for bromides (related to salinity) is set at 0.15 mg/L.

Water Quality Control Plan (Basin Plan) for the Sacramento and San Joaquin River Basins

The Central Valley Regional Water Quality Control Board's *Water Quality Control Plan for the Sacramento and San Joaquin River Basins* (Basin Plan) was last updated in 2011 by the Central Valley Water Board. It was amended in 2004 for the control of salt and boron discharges into the LSJR (Resolution No. R5-2004-0108). The *Draft Final Staff Report* (Central Valley Water Board 2004) states that the amendment is intended to implement a total maximum daily load (TMDL) for salt and boron in the LSJR. The waste load allocations in the amendment are concentration limits set equal to the EC water quality objectives for the LSJR at the Airport Way Bridge near Vernalis. The dischargers affected by the amendment are the Cities of Modesto and Turlock. The Central Valley Water Board implements the Basin Plan by issuing WDR or NPDES permits for wastewater discharges. Southern Delta dischargers have been issued NPDES permits for treated discharges and are listed in Table 13-4.

The Basin Plan incorporates, by reference, the California Department of Public Health (DPH) numerical drinking water maximum contaminant levels (MCLs). The incorporation of the MCLs, which apply to treated drinking water systems regulated by DPH, makes the MCLs also applicable to ambient receiving water with respect to the regulatory programs administered by the regional water boards.

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[4] Urban water suppliers are defined as suppliers that have 3,000 or more water connections.

California Drinking Water Standards

The California drinking water standards are based on federal standards, which are listed in title 22 of the California Code of Regulations and administered by DPH. California MCLs, components of drinking water standards, are found in title 22, Chapter 15, Division 4. Salinity can affect the taste, corrosivity, and other non-health-related characteristics of drinking water supplies. Drinking water has a recommended secondary MCL for specific conductance (i.e., salinity) of 0.900 dS/m (900 µmhos/cm), with an upper MCL of 1.600 dS/m (1,600 µmhos/cm), and a short-term MCL of 2.200 dS/m (2,200 µmhos/cm). Specific conductance concentrations lower than the secondary MCL are more desirable to a higher degree of consumers. The secondary MCL can be exceeded and is deemed acceptable to approach the upper MCL if it is neither reasonable nor feasible to provide more suitable waters. In addition, concentrations ranging up to the short-term MCL are acceptable only for existing community water systems on a temporary basis.

State Water Board Sources of Drinking Water Policy (Resolution No. 88-63)

The Sources of Drinking Water Policy (Resolution No. 88-63) established state policy that regional water boards must consider all surface water and groundwater, with certain exceptions, as suitable or potentially suitable for municipal or domestic supply. The policy defines the following three categories of waters potentially eligible for an exception from the designation and protection of a water source for municipal or domestic supply.

- Water bodies with high salinity (defined as TDS >3,000 mg/L), that either have naturally high contaminant levels that cannot reasonably be treated using either best management practices (BMPs) or best economically achievable treatment practices, or produce too low yield (<200 gallons per day).
- Waters designed or modified to treat wastewaters (domestic or industrial wastewater, process water, stormwater, mining discharges, or agricultural drainage), provided that such systems are monitored to ensure compliance with all relevant water quality objectives.
- Groundwater aquifers regulated as geothermal energy-producing sources or aquifers that have been exempted administratively by federal regulations for the purpose of underground injection of fluids associated with the production of hydrocarbon or geothermal energy.

13.3.3 Regional or Local

Relevant regional or local programs, policies, plans, or regulations related to service providers are described below. Although local policies, plans, or regulations are not binding on the State of California, below is a description of relevant ones.

Agricultural Water Management Plans

Several of the irrigation districts have prepared agricultural water management plans (AWMPs), in which they've identified methods for dealing with water supply shortages. Table 13-10 describes methods that are common throughout all of the irrigation district AWMPs for addressing surface water shortages.

Table 13-10. Irrigation District Methods for Addressing Surface Water Shortages

Irrigation District	Conjunctive Use	Reduction in Surface Water Allotments	Allowable Internal Transfers	Groundwater Used for Permanent Crops	Holds Carryover Surface Water for Crops	All Shortages Managed with GW	Fair and Equitable Distribution	USBR Responsible for Shortages
SSJID	NA	NA	X	NA	NA	NA	X	X
OID	NA	NA	NA	X	NA	NA	X	X
SEWD	NA	NA	NA	NA	NA	NA	NA	X
TID	X	X	X	X	NA	NA	X	NA
MID	NA	NA	NA	X	X	NA	NA	NA
Merced ID	NA	NA	NA	NA	NA	X	X	NA

Sources: SSJID 2011; SEWD 2001; City of Stockton 2011b; TID 1999; MID 1999; Eastside Water District 2003; Merced ID 2003; City of Merced 2001.

NA = Not Applicable

Urban Water Management Plans

Urban water management plans (UWMP) are prepared by California's urban water suppliers to support their long-term resource planning and ensure adequate water supplies are available to meet existing and future water demands. Below is a brief summary of information contained in the UWMPs that are available for SSJID and MID and for entities that are contracted directly with the irrigation districts to receive surface water.

SSJID

SSJID is contracted to provide surface water to SEWD and Tracy, Manteca, Lathrop, Ripon, and Escalon. SSJID's water comes from three sources: the Stanislaus River, groundwater pumping by SSJID and private land owners, and irrigation return flows from neighboring districts. The primary water supply is surface water diversions from the Stanislaus River. The majority of water users in the service area are agricultural, but the cities contracted with SSJID do serve municipal and urban users. SSJID projects it will have adequate supplies to meet water demands in normal years through 2030 (dependent upon the certainty of the available water supply, which is dependent upon each year's hydrology and regulatory uncertainty). SSJID would experience water shortages under single dry year conditions through 2030 that could not be compensated by conservation and only minimal shortages under multiple dry year conditions through 2030 that could likely be compensated by conservation (SSJID 2011).

SEWD

SEWD's primary source of water is surface water. Approximately 52,000 AFY comes from New Hogan Reservoir, and approximately 75,000 AFY comes from New Melones Reservoir. In addition, 30,000 AFY is transferred by SSJID. SEWD primarily serves urban users through CalWater Service Agency and Stockton MUD with surface water. SEWD also serves approximately 300 agricultural users with a combination of surface water and groundwater. SEWD maintains two groundwater wells which are only pumped to supplement demand during dry years. The UWMP includes the existing and projected water demands associated with these water users. The UWMP identifies that deficiencies in water supply would occur under normal, single dry, and multiple dry years and would be offset by additional groundwater pumping from urban retailers and the DWSP (SEWD 2011).

City of Tracy

Tracy obtains water from both surface and groundwater sources. The amount of water that Tracy uses from each source varies year to year based on contractual agreements, annual precipitation, and city policy (City of Tracy 2011a). Currently, Tracy's maximum allocated water supply amounts to 31,500 AFY from its USBR contractual entitlements to CVP water. Approximately 4,000 AF of which comes from groundwater pumping (City of Tracy 2011a). Tracy anticipates that it has sufficient water supply to meet the water demand through 2035 during normal years. During single dry and multiple dry years, however, the city expects it is likely to experience a supply deficit in 2020 and 2025 (City of Tracy 2011a).

City of Ripon

Ripon last prepared an UWMP in 2003 and updated it in 2011 to meet new state standards. Ripon has an agreement with SSJID to receive 2,000 AFY, with a gradual increase to 6,000 AFY by 2030 (SSJID 2011).

City of Modesto and MID

Modesto relies on a conjunctive water use strategy with two primary sources: groundwater and surface water from the Tuolumne River purchased from MID. During normal water years, MID delivers 33,600 AFY of water to the City of Modesto. This amount is projected to increase to 67,000 AFY by 2035. The City of Modesto and MID project that water demand will be met 100 percent of the time with the water supply in normal, single dry, and multiple dry years, through 2035. In general, projected demand is expected to be met through additional groundwater pumping (City of Modesto and MID 2010).

General Plans

City and county general plans can contain policies governing service providers, specifically with respect to water supply and wastewater. The goals and policies governing service providers within the plan area are addressed in the applicable county general plans. Although local general plans are not binding on the State of California, relevant provisions of these county general plans are outlined below.

Stanislaus County

Goals and policies addressing water services and groundwater resources are presented in the *Stanislaus County General Plan Conservation and Open Space Element* (Stanislaus County 1995). These include: monitoring groundwater quality, preventing reduction of groundwater levels, and incorporating water conservation strategies into new development.

Merced County

Goals and policies addressing water services are presented in the *Public Facilities Element* and the *Water Element* of the planning commission public review draft of the *2030 Merced County General Plan* (Merced County 2011). The policies support the adequate provision of utilities to the residents of Merced County and ensure a reliable water supply sufficient to meet the existing and future needs of the county by implementing groundwater recharge projects, demonstrating sufficient water supply for new development, and investing in additional surface water storage opportunities.

San Joaquin County

Objectives and policies addressing water services and groundwater resources are presented in the *Resources Element* of San Joaquin County's general plan (San Joaquin County 1992). The objectives include obtaining sufficient supplemental water supplies to meet all municipal and agricultural needs; protecting groundwater resources from overdraft; and preventing water supply contamination. The policies discuss maintaining water quality and managing water resources such that conjunctive use and other groundwater and surface water management practices are undertaken.

Contra Costa County

Goals and policies addressing water services are presented in the *Contra Costa County General Plan Public Facilities/Service Element* section on water services (Contra Costa County 2005). These policies include assurance of meeting regulatory standards for water delivery, water storage, and emergency water supplies to residents. The general plan identifies goals of ensuring potable water availability in quantities sufficient to serve existing and future residents and ensuring that new development pays the costs related to the need for future increased water system capacity.

City of Tracy

The *Tracy General Plan Public Facilities and Services Element* contains policies stating that the approval of a new development is conditioned on the availability of sufficient wastewater collection and treatment capacity to service the proposed development. In addition, new development shall fully fund the cost of wastewater treatment and disposal facilities. Tracy's general plan contains objectives and policies generally stating that the City shall meet the demands of future development with adequate water supply and infrastructure. Policies also state that the City shall establish water demand reduction standards for new development (City of Tracy 2011c).

City of Stockton

The *2035 Stockton General Plan* contains policies that discuss the need for proper facility sizing to meet long-term needs, wastewater reuse, and protection of critical infrastructure. It also contains policies that reflect the City's need for facilities able to meet long-term demands (City of Stockton 2007).

City of Manteca

Goals and policies addressing water services and wastewater services are presented in the *City of Manteca's General Plan Public Facilities and Service Element* (City of Manteca 2003). Goals include maintaining existing target level of services for water delivery to residents and meeting the needs of existing and projected development. Policies to support the goals include principally relying on groundwater resources in the near term, developing new water sources as necessary to serve new development, ensuring water quality and preventing contamination, and developing and implementing water conservation measures.

City of Lathrop

Section D of the *Comprehensive General Plan for the City of Lathrop* provides guidance for the elimination of deficiencies in existing utility services and obstacles to the expansion of utility services to adequately serve existing and future development (City of Lathrop 2004). This guidance includes: developing and maintaining existing groundwater resources within city limits, participating in the South County Surface Water Supply Project, converting agricultural water entitlements, and obtaining rights to other water sources in the region.

City of Escalon

Goals and policies identified in the City of Escalon's general plan are meant to address the community need for public service and facilities (City of Escalon 2005). These goals and policies are meant to develop services and facilities, such as those for water supply, as the city grows and to plan for the future increase in demand for such services.

City of Ripon

Goals and policies identified in the *City of Ripon's General Plan Land Use and Growth Accommodations Element* are meant to address groundwater resources and water conservation as they relate to water supply (City of Ripon 2006). These include: monitoring the existing groundwater conditions and supply, identifying and securing available sources of supplemental surface water for replacement or recharge of groundwater, and promoting water conservation.

13.4 Impact Analysis

This section lists the thresholds used to define impacts on service providers. It describes the methods of analysis and the approach to determine the significance of impacts on service providers. It also identifies impacts that are not evaluated further in the impact discussion. The impact discussion describes the changes to baseline resulting from the alternatives and incorporates the thresholds for determining whether those changes are significant. Measures to mitigate (i.e., avoid, minimize, rectify, reduce, eliminate, or compensate for) significant impacts accompany the impact discussion, where appropriate.

13.4.1 Thresholds of Significance

The thresholds for determining the significance of impacts for this analysis are based on the State Water Board's Environmental Checklist in Appendix A of the board's CEQA regulations (Cal. Code Regs., tit. 23, §§ 3720–3781) and the Environmental Checklist in Appendix G of the State CEQA Guidelines. The thresholds derived from the checklist(s) have been modified, as appropriate, to meet the circumstances of the alternatives (Cal. Code Regs., tit. 23, § 3777, subd. (a)(2)). Service provider impacts were determined to be potentially significant (see Appendix B, *State Water Board's Environmental Checklist* in this SED) and, therefore, are discussed in the analysis. Impacts would be significant if the LSJR or SDWQ alternatives result in any of following conditions.

- Substantially degrade water quality for municipal drinking water sources.
- Require or result in the construction of new or expanded water treatment facilities or water supply infrastructure, the construction of which could cause significant environmental effects.

- Result in substantial changes to SJR inflows to the Delta such that insufficient water supplies would be available to service providers relying on CVP and SWP exports.
- Require or result in the construction of new wastewater treatment facilities, expansion of existing facilities, or infrastructure, the construction of which could cause significant environmental effects.

As described Appendix B, *State Water Board's Environmental Checklist,* the LSJR and SDWQ alternatives would result in either no impact or less-than-significant impacts on the following related to service providers and, therefore, are not discussed within this chapter.

- Exceed wastewater treatment salinity requirements of the applicable regional water quality control board.
- Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed.
- Require or result in the construction of new stormwater drainage facilities or 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 the provider has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments.
- Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs.
- Comply with federal, state, and local statutes and regulations related to solid waste.

13.4.2 Methods and Approach

LSJR Alternatives

The LSJR alternatives are expected to alter the inflow of the LSJR into the southern Delta, this in turn, could influence the water quality of the southern Delta such that municipal drinking water sources could be affected. The potential impacts of the LSJR alternatives on existing drinking water sources in the southern Delta are evaluated quantitatively using the expected change in inflow from the LSJR predicted by the Water Supply Effects (WSE) model and the simulated effects on salinity values in the southern Delta. This information is presented in detail in Chapter 5, *Water Supply, Surface Hydrology, and Water Quality*, Tables 5-29a–c, in Appendix F.1, *Hydrologic and Water Quality Modeling* presents salinity changes under each of the LSJR alternatives and Appendix F.2, *Evaluation of Historical Flow and Salinity Measurements of the Lower San Joaquin River and Southern Delta* presents historic salinity data. In general, these tables show increases in salinity under LSJR Alternative 2 as a result of some lower flows during some years and overall decreases in salinity under LSJR Alternative 3 and 4 as a result of increase in inflow to the southern Delta under these alternatives. This information is used to identify whether the salinity in the southern Delta would result in a substantial degradation to water quality such that municipal drinking water sources could be affected (SP-1).

Under the LSJR alternatives, it is expected that river flows would be altered February–June in the plan area. The water potentially available to service providers for surface water diversions is expected to be reduced depending on the alternative. Thus, new or expanded water treatmentfacilities or water supply infrastructure to accommodate potential surface water reductions could be needed. Results from the WSE model were used to estimate the potential surface water diversion reductions on each of the three eastside tributaries (Chapter 5, Table 5-21, and Chapter 9, *Groundwater Resources*, Table 9-9). Average surface water diversions on the Stanislaus River would be reduced approximately 1 percent and 21 percent under LSJR Alternatives 3 and 4, respectively, when compared to baseline (Chapter 5, Table 5-21). Average surface water diversions on the Tuolumne would be reduced approximately 1 percent, 20 percent, and 37 percent under LSJR Alternatives 2, 3, and 4, respectively, when compared to baseline (Chapter 5, Table 5-21). Average surface water diversions on the Merced River would be reduced approximately 2 percent, 17 percent, and 31 percent under LSJR Alternatives 2, 3, and 4, respectively, when compared to baseline (Chapter 5, Table 5-21). The extent to which service providers are affected by a reduction in surface water diversions is a function of their ability to use existing alternative supplies (e.g., groundwater) or develop alternative water supplies. These surface water diversion reductions are then compared to service providers' reliance on surface water or groundwater as characterized in Table 13-3. The reductions are considered within the general context of water supply agreements and contracts to qualitatively determine whether service providers may need new or expanded water supply treatment facilities or water supply infrastructure (SP-2).

This chapter provides a programmatic-level analysis of the impacts on service providers and refers to Appendix H, *Evaluation of Methods of Compliance* (Section H.2), with respect to environmental impacts caused by service provider actions associated with various methods of compliance. Potential impacts on service providers or that result from service provider actions associated with the LSJR alternatives depend upon the specific compliance methods and mitigation selected by the service providers responsible for implementing site-specific projects, most of which are public agencies subject to their own CEQA obligations. Service providers may choose any method of compliance described in Appendix H, or a combination of methods, or they may identify another method of compliance if it complies with the requirements of the revised objectives. Potential new water supply facilities or infrastructure are described in Appendix H and include substitution of surface water with groundwater, aquifer storage and recovery, and recycled water sources (Sections H.2.2, H.2.3, and H.2.4).

Changes to LSJR inflow into the southern Delta resulting from the LSJR alternatives could change exports to service providers in the export service areas (i.e., CVP and SWP contractors). This is because some of the inflow from the LSJR is exported at the CVP and SWP pumps to the export service areas. Results from the WSE model were used to estimate the potential impacts on the CVP and SWP exports under LSJR Alternatives 2, 3 and 4 February–June. This was done by first evaluating the rules (e.g., National Marine Fisheries Service biological opinion Stanislaus River reasonably prudent alternative, including Action 3.1.3) under which the exports operate. Then the increment of export pumping each month was determined by examining baseline conditions using CALSIM that are controlling (limiting) exports to obtain a total of pumping for February–June. The potential change in export pumping under the LSJR alternatives was estimated by selecting the most likely limiting factor each month. Appendix F.1 (Section F.1.6) describes the methodology and presents the detailed results of the changes in exports in Tables F.1-22b, F.1-23h, F.1-24b, and F.1-25b. These changes are summarized below.

- For LSJR Alternative 2, the change would be 0 percent of baseline average annual exports and -2 percent of baseline February–June exports.

- For LSJR Alternative 3, the change would be +1 percent of baseline average annual exports and +4 percent of baseline February–June exports.
- For LSJR Alternative 4, the change would be +3 percent of baseline average annual exports and +10 percent of baseline February–June exports.

These changes are used in this chapter to qualitatively discuss whether there would be insufficient water supplies to service providers relying on exports (SP-3).

SDWQ Alternatives

The potential impacts of the SDWQ alternatives on existing drinking water sources in the southern Delta are evaluated qualitatively. The general range of historical salinity levels in the southern Delta presented in Chapter 5, *Water Supply, Surface Hydrology, and Water Quality* (Tables 5-29a–c), Appendix F.2, *Evaluation of Historical Flow and Salinity Measurements of the Lower San Joaquin River and Southern Delta*, and Section 13.2.2 are used to identify whether the salinity in the southern Delta increase from historical concentrations and result in a degradation of the water quality of drinking water (SP-1).

The SDWQ alternatives would amend the southern Delta salinity objectives identified in the 2006 Bay-Delta Plan. The 2006 Bay-Delta Plan established salinity objectives to protect beneficial uses, specifically agricultural uses in the southern Delta. Because the objective is set to protect a beneficial use (i.e., agriculture), the Central Valley Water Board can use the plan to establish discharge permits for point-source dischargers under the Clean Water Act. The discharge permits can require equal or higher water quality than stated in the water quality objectives. The potential impacts of the SDWQ alternatives on WWTPs are evaluated qualitatively (SP-4). The average annual effluent EC data, existing regulatory effluent limitations, and evaluation of enforcement orders are used to qualitatively discuss whether service providers could meet the objectives of the SDWQ alternatives. The Central Valley Water Board has determined the discharge from Discovery Bay CSD does not have reasonable potential to cause or contribute to an exceedance of the 2006 Bay-Delta Plan water quality objectives in Old River or the southern Delta (Marshall pers. comm. 2012a). This is because of the large dilution in Old River and the good quality of water in Old River coming down from the Sacramento River (Marshall pers. comm. 2012a). Thus, Discovery Bay CSD can comply with the water quality objectives and does not need effluent limits based on the 2006 Bay-Delta Plan water quality objectives (Marshall pers. comm. 2012a). Therefore, Discovery Bay CSD is not included in the analysis in Section 13.4.3.

This chapter provides a programmatic-level analysis of the impacts on service providers and refers to Appendix H, *Evaluation of Methods of Compliance* (Section H.3), with respect to environmental impacts caused by service provider actions associated with various methods of compliance. Service providers may choose any method of compliance described in Appendix H, or a combination of methods, or they may identify another method of compliance if it complies with the requirements of the revised objectives. Potential new water supply facilities or infrastructure are described in Appendix H and include the following: new source water supplies including new or expanded infrastructure to support such supplies; salinity pretreatment programs; and, desalination, including new or expanded salinity removal facilities at existing WWTPs (Sections H.3.1, H.3.2, H.3.3).[5]

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[5] The City of Tracy finalized and adopted an Initial Study/Mitigated Negative Declaration for the Tracy Desalinization and Green Energy Project in April of 2012 (City of Tracy 2011b; 2012). Impact determinations from this document are incorporated herein. This document identified available and feasible mitigation necessary to

13.4.3 Impacts and Mitigation Measures

SP-1: Substantially degrade water quality for municipal drinking water purposes

LSJR Alternative 1: No Project

The No Project Alternative would result in implementation of flow objectives identified in the 2006 Bay-Delta Plan. See Chapter 15, *LSJR Alternative 1 and SDWQ Alternative 1 (No Project Alternative)*, for the No Project impact discussion and Appendix D, *Evaluation of LSJR Alternative 1 and SDWQ Alternative 1 (No Project Alternative)*, for the No Project Alternative technical analysis.

LSJR Alternative 2: 20% Unimpaired Flow (Less than significant)

Salinity is a concern for service providers diverting drinking water from the southern Delta. Because drinking water effects associated with salinity are considered to be related to taste and not harmful to human health, secondary drinking water MCLs are established for EC as summarized in Section 13.3.2. As discussed in Chapter 5, *Water Supply, Surface Hydrology, and Water Quality*, the WSE model predicts that inflows from the LSJR may be reduced in some years February–June, which is expected to lead to a slight increase in salinity in the southern Delta. The median EC value at Vernalis, Brandt Bridge, and Old River at Tracy Boulevard would increase by less than 0.037 dS/m (Chapter 5, Table 5-29a–c), which is a very small increase (i.e., less than 5 percent of the recommended secondary MCL [0.9 dS/m or 900 µmhos/cm]). The historical range of salinity in the southern Delta (i.e., 0.2 dS/m–1.2 dS/m) would be maintained even with the some of the expected reduced inflows under LSJR Alternative 2. Therefore, it is not anticipated that LSJR Alternative 2 would substantially degrade water quality such that it would result in more exceedances of the secondary MCL or impact service providers diverting drinking water with respect to the quality of water in the southern Delta. Impacts would be less than significant.

LSJR Alternative 3 and LSJR Alternative 4: 40% Unimpaired Flow and 60% Unimpaired Flow (Less than significant)

Inflows from the LSJR to the southern Delta are expected to increase February–June and be maintained the rest of the year. Additional water into the southern Delta under LSJR Alternative 3 or LSJR Alternative 4 is not expected to substantially degrade the existing water quality of the southern Delta. Additional inflow would provide additional assimilative capacity to receiving waters for constituents (e.g., salinity) and in general reduce the salinity in the southern Delta (Chapter 5, Tables 5-29a–c. Impacts would be less than significant.

SDWQ Alternative 1: No Project

The No Project Alternative would result in implementation of salinity objectives identified in the 2006 Bay-Delta Plan. See Chapter 15, *LSJR Alternative 1 and SDWQ Alternative 1 (No Project Alternative)*, for the No Project impact discussion and Appendix D, *Evaluation of LSJR Alternative 1 and SDWQ Alternative 1 (No Project Alternative)*, for the No Project Alternative technical analysis.

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reduce potentially significant environmental effects to Aesthetics, Agriculture, Air Quality, Biological Resources, Cultural Resources, Geology and Soils, Hydrology and Water Quality, Hazards and Hazardous Materials, and Land Use and Planning. With the implementation of mitigation measures, impacts to these resources were determined by the City to be reduced to less than significant.

SDWQ Alternative 2: 1.0 dS/m Salinity (Less than significant)

Salinity is a concern for service providers diverting drinking water from the southern Delta. Because drinking water effects associated with salinity are considered to be related to taste and not harmful to human health, secondary drinking water MCLs are established for EC as summarized in Section 13.3.2. The upper limit for secondary drinking water MCL for EC (1.6 dS/m) is greater than the SDWQ Alternative 2 objective (1.0 dS/m). SDWQ Alternative 2 is only slightly greater than the lower limit of the secondary drinking water MCL (0.9 dS/m). As identified in Section 13.2.2, baseline salinity in the southern Delta is between 0.2 dS/m and 1.2 dS/m during all months of the year, and the salinity at Vernalis has a strong relationship with the salinity of the southern Delta. SDWQ Alternative 2 would require that the salinity be maintained at Vernalis and maintained at or below the objectives in the southern Delta. Thus, it is expected the southern Delta would experience salinity levels similar to, if not the same as, baseline conditions (i.e., 0.2 dS/m–1.2 dS/m). Therefore, SDWQ Alternative 2 is not expected to substantially degrade water quality, and service providers diverting water for domestic purposes would not be impacted by the quality of water in the southern Delta under this alternative. Impacts would be less than significant.

SDWQ Alternative 3: 1.4 dS/m Salinity (Less than significant)

Impacts associated with water suppliers in the southern Delta would generally be the same as those discussed under SDWQ Alternative 2. The upper limit for secondary drinking water MCL for EC (1.6 dS/m) is greater than SDWQ Alternative 3 at 1.4 dS/m. Furthermore, SDWQ Alternative 3 would require that the salinity objective be maintained at Vernalis and maintained at or below the objectives in the southern Delta. This would maintain the historical range of salinity in the southern Delta (i.e., 0.2 dS/m–1.2 dS/m). Therefore, SDWQ Alternative 3 is not expected to substantially degrade water quality, and service providers diverting water for domestic purposes would not be impacted by the quality of water in the southern Delta under this alternative. Impacts would be less than significant.

SP-2: Require or result in construction of new or expanded water treatment facilities or water supply infrastructure, the construction of which could cause significant environmental effects

LSJR Alternative 1: No Project

The No Project Alternative would result in implementation of flow objectives identified in the 2006 Bay-Delta Plan. See Chapter 15, *LSJR Alternative 1 and SDWQ Alternative 1 (No Project Alternative)*, for the No Project impact discussion and Appendix D, *Evaluation of LSJR Alternative 1 and SDWQ Alternative 1 (No Project Alternative)*, for the No Project Alternative technical analysis.

LSJR Alternative 2: 20% Unimpaired Flow (Less than significant)

Results of the WSE model indicate that service providers diverting surface water from the Stanislaus, Tuolumne, and Merced Rivers would generally be able to divert similar surface water amounts at similar times under LSJR Alternative 2 when compared to baseline (Chapter 5, Table 5-21 and WS-1). The Stanislaus River currently experiences flows that are approximately 40 percent of the average unimpaired flow. Therefore, 20 percent unimpaired flow on the Stanislaus would not reduce surface water diversions when compared to baseline because the 20 percent unimpaired required for the river would be less than the existing 40 percent average of unimpaired flow. The Tuolumne and Merced Rivers currently experience flows that are approximately 20 percent of the average unimpaired flow. It is anticipated that surface water diversions on the Tuolumne and Merced Rivers would be similar to baseline water diversions with yearly variation. Service providers identified in Table 13-3 are expected to receive similar surface water supplies as they do under baseline conditions. Because it is expected service providers would have sufficient sources of surface water, it is not expected they would need to construct new or expanded water treatment facilities or water supply infrastructure. Impacts would be less than significant.

LSJR Alternative 3: 40% Unimpaired Flow (Significant and unavoidable)

WSE model results predict that service providers diverting Stanislaus River surface water would experience similar surface water diversions under LSJR Alternative 3 when compared to baseline (Chapter 5, Table 5-21 and WS-1). This is because the Stanislaus River currently experiences flows that are approximately 40 percent of the average unimpaired flow. Therefore, LSJR Alternative 3 is not expected to result in reduced water supplies to service providers relying on Stanislaus River surface water diversions (e.g., CSJWCD, SEWD, Tracy, Manteca, Lathrop, Ripon, Escalon), and impacts would be less than significant.

WSE model results predict surface water diversions would be reduced as a result of LSJR Alternative 3 on the Tuolumne and Merced Rivers (Chapter 5, Table 5-21 and WS-1). This is because the flow on these two rivers is expected to increase from 20 percent of the average unimpaired flow to 40 percent of the average unimpaired flow. It is expected surface water diversions would be reduced to accommodate this increase.

The extent to which service providers' surface water supplies could be reduced is a function of the mechanisms by which they receive the water (e.g., water rights or contracts), existing policies, regulations, and the type of water use they supply. Water supply contracts between irrigation districts and contracting water districts have provisions that dictate when and how much surface water contracting water districts receive. For example, contracts can require the irrigation district to supply the full contracted amount of surface water to the contracting water districts at all times, including during drought or water restricted periods. Some irrigation districts have policies in place that may require curtailment of contracting water district's water supply during periods of surface water reduction (see Table 13-10). Although California recognizes water for domestic purposes is the highest use of water and the next highest use is for irrigation (Cal. Code Regs., tit. 23 § 106), this policy does not necessarily mean that the water supply for domestic uses cannot be modified. Furthermore, if contracting water districts that supply domestic uses are receiving water through contracts with irrigation districts, then these uses would not necessarily be protected by this statute.

The extent to which service providers are affected by a reduction in surface water diversions is a function of their abilities to develop alternative water supplies or rely on their current existing alternative supplies (e.g., groundwater). The irrigation districts rely on surface water diversions as their primary water supply and the City of Modesto currently relies on surface water diversions to meet more than half of its water demand (Table 13-3). If surface water diversions were reduced on the Merced and Tuolumne Rivers these service providers would likely be affected; therefore, it is expected they may need to construct or expand new water treatment facilities or water supply infrastructure in order to accommodate the reduction in surface water supplies. New Don Pedro Reservoir, on the Tuolumne River, includes seasonal storage in the CCSF upstream reservoirs and water banking between TID, MID, and CCSF (Table 13-2 and Chapter 5, *Water Supply, Surface Hydrology and Water Quality*, Section 5.2.4). LSJR Alternative 3 would consider and accommodate the prior allocation of Tuolumne River water rights and upstream diversion. Some portion of the increased release flows from New Don Pedro Reservoir could be shared by CCSF. This may require changing the water bank account but would not likely interfere with the CCSF diversions because its share of water rights is usually greater than the aqueduct diversions. Therefore, it is not expected that CCSF would need to construct or expand new water treatment facilities or water supply infrastructure.

It is anticipated that some service providers that receive surface water from the Tuolumne and Merced Rivers (e.g., irrigation districts and the City of Modesto,) may experience a reduction in surface water supplies as a result of LSJR Alternative 3. The reduction in surface water supply may require these service providers to construct new or expanded water treatment facilities or water supply infrastructure. As described in Appendix H, *Evaluation of Methods of Compliance* (Section H.1 and H.2), identifying the exact nature of the new or expanded facilities needed by service providers to augment potentially reduced surface water diversions is speculative. However, it is anticipated the facilities could include the following.

- New or expanded groundwater well(s) and distribution infrastructure (e.g., underground pipes).
- New or expanded conjunctive groundwater use program(s), which could use available capacity in unlined canals and agricultural fields that are out of production to recharge groundwater basins.
- New or expanded facilities at existing WWTPs and distribution infrastructure (e.g., underground pipes) to increase the supply of recycled water as a possible source of water.

Depending on the location and particular construction and operational requirements, construction of the new or modified facilities as described above could result in environmental impacts on resources detailed in Appendix H (Section H.2.2 and Table H-7; Section H.2.3 and Table H-9; and Section H.2.4 and Table H-10) and on resources such as those listed below.

- Air quality and greenhouse gases, as a result of emissions generated by construction equipment and construction trips.
- Biological resources, as a result of potential dust, noise, or possible removal of special-status biological species if special-status species are present.
- Cultural resources, as a result of excavation, grading, and other soil-disturbing activities, if construction takes place in an area moderately or highly sensitive to cultural resources.
- Geology, as a result of potential erosion or construction on unstable soils.
- Water quality, as a result of runoff associated with dust control or other construction activities, or as a result of potential construction material spills, such as of lubricants or fuel.
- Hazards, as a result of handling hazardous materials during construction.
- Noise, as a result of the use of construction equipment within proximity to potential sensitive receptors (e.g., residences).
- Traffic, as a result of the use of construction equipment and construction workers.

Depending on the location and particular construction and operational requirements, operation of new or modified facilities could result in environmental impacts on resources detailed in Appendix H (Section H.2.2 and Table H-7; Section H.2.3 and Table H-9; and Section H.2.4 and Table H-10) and resources such as those listed below.

- Aesthetics, as a result of operational lighting or blocking of views if views are designated and present and sensitive receptors are designated and present.
- Air quality and greenhouse gases, as a result of increased energy demand.
- Water quality, as a result of the need to treat new water source(s).
- Hazards, as a result of handling materials (e.g., chlorine) potentially needed to treat new water source(s).
- Noise, as a result of new equipment operating within proximity to potential sensitive receptors (e.g., residences).

Because the surface water diversions on the Tuolumne and Merced Rivers would be reduced, potentially requiring service providers to construct new or expanded water treatment facilities or water supply infrastructure, impacts would be significant. As described in Appendix H, new or modified water treatment or water supply facilities or infrastructure constructed and operated would be under the jurisdiction of the service providers performing the action or the jurisdiction of the local agency where the new or modified facility is located. The activities described above (e.g., new or expanded conjunctive groundwater use programs) are anticipated to either be discretionary actions and/or meet the definition of a project for CEQA (State CEQA Guidelines, §§ 15377–15378). If the activities are not discretionary actions and/or do not meet the definition of a project under CEQA, then it is presumed there would be very limited environmental impacts such that they would not rise to the level of causing potentially significant environmental impacts necessitating environmental documentation (e.g., mitigated negative declaration, environmental impact report). The decision-making body of the lead agency (e.g., service provider or local agency) would approve discretionary action(s) associated with any new or modified facilities or infrastructure. The approval of new or modified facilities would require the preparation and approval of a CEQA document identifying project-specific details and specific resource analyses of potentially significant impacts. The CEQA document would disclose any project-specific, potentially significant environmental impacts resulting from new or modified facilities. As part of this process, the decision-making body would be responsible (not the State Water Board) for implementing mitigation measures or BMPs if project-specific environmental impacts deemed potentially significant.

Although the exact scope, scale, and extent of environmental impacts cannot be determined because identifying the exact nature of the new or expanded facilities is speculative, Table H-24 in Appendix H lists possible mitigation measures that would likely reduce potentially significant impacts on environmental resources as a result of construction and operation of new or modified facilities or infrastructure. For example, potentially significant environmental impacts due to construction may be mitigated through design, timing, and construction BMPs. Infrastructure could be designed to have minimal impact on the surrounding environment (e.g., pipelines could be buried under existing roads). Construction-timing mitigation measures may include scheduling such that work in surface waters, if needed, takes place after aquatic species have migrated out of the area. BMPs for construction activities could include the use of erosion prevention practices near surface waters.

An SED must identify feasible mitigation measures for each significant environmental impact identified in the SED. (Cal. Code Regs., tit. 23, § 3777(b)(3)). CEQA does not grant agencies new, discretionary powers independent of the powers granted to the agencies by other laws. (Pub. Resources Code, § 21004; Cal. Code Regs., tit. 14, § 15040.) Accordingly, a mitigation measure may be legally infeasible if the lead agency does not have the discretionary authority to implement it.

(Pub. Resources Code, § 21004; Cal. Code Regs., tit. 14, § 15040.) Since the State Water Board would not be responsible for constructing or operating any of the new or modified facilities or infrastructure, because any new or modified water supply facilities or infrastructure would not be under the jurisdiction of the State Water Board, it is not feasible for the State Water Board to implement possible mitigation measures listed in Table H-24. In order to reduce significant impacts identified above to existing service providers the State Water Board would have to require lower flows under LSJR Alternative 3 on the Merced and Tuolumne Rivers. Evaluating the effects of lower flows on the different rivers is part of other alternatives (i.e., LSJR Alternatives 1 and 2) and is separately considered in this document. Requiring lower flows to reduce impacts cannot be independently applied under LSJR Alternative 3 as a mitigation measure because requiring lower flows would be inconsistent with the terms of LSJR Alternative 3 (i.e., requiring 40 percent of unimpaired flow on the Merced and Tuolumne Rivers). Therefore, there is no feasible mitigation the State Water Board can implement to reduce environmental impacts on service providers and resulting from the need for new or modified facilities or infrastructure. Impacts would remain significant and unavoidable.

LSJR Alternative 4: 60% Unimpaired Flow (Significant and unavoidable)

WSE model results predict surface water diversions would be reduced as a result of LSJR Alternative 4 on all three eastside tributaries. This is because the flow on the Tuolumne and Merced Rivers is expected to increase from 20 percent of the average unimpaired flow to 60 percent of the average unimpaired flow, and flow on the Stanislaus River is expected to increase from 40 percent of the average unimpaired flow to 60 percent of the average unimpaired flow. As discussed above under LSJR Alternative 3, the extent to which service providers' surface water supplies could be reduced is a function of the mechanism by which they receive the water (e.g., water rights, contracts, etc.), existing policies and regulations, and the type of water use they supply. The extent to which service providers are affected by a reduction in surface water diversions is a function of their abilities to use existing alternative supplies (e.g., groundwater) or develop alternative water supplies. Service providers that currently use groundwater (e.g., CSJWCD, SEWD, Manteca, Ripon, and Escalon) as their primary source would be expected to continue to use groundwater. Service providers that currently use surface water supplies as a significant source of water supply could experience reductions in surface water supplies (e.g., irrigation districts, Tracy, Modesto) similar to impacts described above for LSJR Alternative 3. Impacts would be significant.

As discussed above under LSJR Alternative 3 and detailed in Appendix H, *Evaluation of Methods of Compliance,* identifying the exact physical facility modifications or new facilities or infrastructure needed by service providers to augment potentially reduced surface water diversions is speculative; however, the facilities or infrastructure could include those identified above in LSJR Alternative 3 (i.e., new or expanded groundwater well(s), new or expanded conjunctive groundwater use, new or expanded facilities at existing WWTPs to supply recycled water). Depending on the new or modified facility or infrastructure type, location, and particular operational requirements, construction, or operation of the facilities or infrastructure as described above under LSJR Alternative 3 could result in environmental impacts on resources, such as air quality, biological resources, cultural resources, water quality, hazards, or transportation and traffic. Any new or modified facilities or infrastructure would be under the jurisdiction of the service providers performing the action or the jurisdiction of the local agency in which the new or modified facility is located. The activities described above (e.g., new or expanded facilities at WWTPs) are anticipated to either be discretionary actions and/or meet the definition of a project for CEQA (State CEQA Guidelines, §§ 15377–15378). If they are not discretionary actions and/or do not meet the definition of a project under CEQA, then it is presumed there would be very limited environmental impacts such that they would not rise to the level of causing potentially significant impacts necessitating environmental documentation (e.g., mitigated negative declaration, environmental impact report). As part of this process, the decision-making body (e.g., board of the service provider or municipality) would implement mitigation measures or BMPs if project-specific environmental impacts were deemed potentially significant. Although the exact scope, scale, and extent of environmental impacts cannot be determined, Table H-24 in Appendix H lists possible mitigation measures that would likely reduce potentially significant impacts on environmental resources as a result of construction and operation of new or modified facilities.

An SED must identify feasible mitigation measures for each significant environmental impact identified in the SED. (Cal. Code Regs., tit. 23, § 3777(b)(3)). CEQA does not grant agencies new, discretionary powers independent of the powers granted to the agencies by other laws. (Pub. Resources Code, § 21004; Cal. Code Regs., tit. 14, § 15040.) Accordingly, a mitigation measure may be legally infeasible if the lead agency does not have the discretionary authority to implement it. (Pub. Resources Code, § 21004; Cal. Code Regs., tit. 14, § 15040.) Since the State Water Board would not be responsible for constructing or operating any of the new or modified facilities or infrastructure, because any new or modified water supply facilities or infrastructure would not be under the jurisdiction of the State Water Board, it is not feasible for the State Water Board to implement possible mitigation measures listed in Table H-24. In order to reduce significant impacts identified above to existing service providers, the State Water Board would have to require lower flows under LSJR Alternative 4 on the Merced, Tuolumne, and Stanislaus Rivers. Evaluating the effects of lower flows on the different rivers is part of other alternatives (i.e., LSJR Alternatives 1 and 2) and is separately considered in this document. Requiring lower flows to reduce water supply impacts cannot be independently applied under LSJR Alternative 4 as a mitigation measure because requiring lower flows would be inconsistent with the terms of LSJR Alternative 4 (i.e., requiring 60 percent of unimpaired flow on the Merced, Tuolumne, and Stanislaus Rivers). Therefore, there is no feasible mitigation the State Water Board can implement to reduce environmental impacts on service providers and those resulting from the need for new or modified facilities or infrastructure. Impacts would remain significant and unavoidable.

SDWQ Alternative 1: No Project

The No Project Alternative would result in implementation of salinity objectives identified in the 2006 Bay-Delta Plan. See Chapter 15, *LSJR Alternative 1 and SDWQ Alternative 1 (No Project Alternative)*, for the No Project impact discussion and Appendix D, *Evaluation of LSJR Alternative 1 and SDWQ Alternative 1 (No Project Alternative)*, for the No Project Alternative technical analysis.

SDWQ Alternatives 2 and 3: 1.0 dS/m Salinity and 1.4 dS/m Salinity (Less than significant)

The historical range of salinity in the southern Delta is expected to be maintained under SDWQ Alternatives 2 and 3. Therefore, it is not anticipated that service providers supplying drinking water from the southern Delta would need to construct or modify water treatment facilities or water supply infrastructure. Impacts would be less than significant.

SP-3: Result in substantial changes to San Joaquin River inflows to the Delta such that insufficient water supplies would be available to service providers relying on CVP/SWP exports

LSJR Alternative 1: No Project

The No Project Alternative would result in implementation of flow objectives identified in the 2006 Bay-Delta Plan. See Chapter 15, *LSJR Alternative 1 and SDWQ Alternative 1 (No Project Alternative)*, for the No Project impact discussion and Appendix D, *Evaluation of LSJR Alternative 1 and SDWQ Alternative 1 (No Project Alternative)*, for the No Project Alternative technical analysis.

LSJR Alternative 2: 20% Unimpaired Flow (Less than significant)

Modeling results of LSJR Alternative 2 indicate a reduction in the overall distribution of flow February–June on the Stanislaus River. Therefore, less flow overall from the Stanislaus would enter the LSJR. The overall distribution of flow February–June on the Tuolumne and Merced Rivers would be approximately 20 percent of the average unimpaired flow, and the inflow into the LSJR from these two rivers would be similar to baseline conditions (currently approximately 20 percent of the average unimpaired flow). Therefore, there would be a slight reduction in LSJR flow entering the southern Delta during this time as a result of the reduction in flows from the Stanislaus River February–June. This reduction in flows would result in an approximate 2 percent reduction in average exports when compared to the baseline flow of February–June. However, the annual average for exports would not change under LSJR Alternative 2 when compared to baseline. Because this is within normal variation of the exports and is such a small reduction when compared to baseline exports, it is not expected that service providers relying on exports would experience insufficient water supplies. Impacts would be less than significant.

LSJR Alternative 3: 40% Unimpaired Flow (Less than significant)

Modeling results of LSJR Alternative 3 indicate a slight increase in inflow into the southern Delta from the LSJR. This slight increase in flows would result in an approximate 5 percent change in exports when compared to the baseline average February–June exports and an annual average change of 1 percent. Because this change would not reduce the volume of exported water, it is not expected that service providers relying on exports would experience insufficient water supplies. Impacts would be less than significant.

LSJR Alternative 4: 60% Unimpaired Flow (Less than significant)

Modeling results of LSJR Alternative 4 indicate an increase in inflow into the southern Delta from the LSJR. This increase in flows would result in an approximate 10 percent change in exports when compared to the baseline February–June average exports and an annual average change of 3 percent. Because this change would not reduce the volume of exported water, it is not expected that service providers relying on exports would experience insufficient water supplies. Impacts would be less than significant.

SP-4: Require or result in the construction of new wastewater treatment facilities, expansion of existing facilities or infrastructure, the construction or operation of which could cause significant environmental effects

LSJR Alternative 1: No Project

The No Project Alternative would result in implementation of flow objectives identified in the 2006 Bay-Delta Plan. See Chapter 15, *LSJR Alternative 1 and SDWQ Alternative 1 (No Project Alternative)*, for the No Project impact discussion and Appendix D, *Evaluation of LSJR Alternative 1 and SDWQ Alternative 1 (No Project Alternative)*, for the No Project Alternative technical analysis.

LSJR Alternative 2, LSJR Alternative 3, and LSJR Alternative 4: 20% Unimpaired Flow, 40% Unimpaired Flow, and 60% Unimpaired Flow

Wastewater treatment facilities and infrastructure associated with water supply facilities and infrastructure are discussed above under SP-2.

SDWQ Alternative 1: No Project

The No Project Alternative would result in implementation of salinity objectives identified in the 2006 Bay-Delta Plan. See Chapter 15, *LSJR Alternative 1 and SDWQ Alternative 1 (No Project Alternative)*, for the No Project impact discussion and Appendix D, *Evaluation of LSJR Alternative 1 and SDWQ Alternative 1 (No Project Alternative)*, for the No Project Alternative technical analysis.

SDWQ Alternative 2: 1.0 dS/m Salinity (Significant and unavoidable)

Some service providers are currently planning to modify existing facilities. Of the six WWTPs discussed herein, two have made efforts or are working toward reducing salinity concentrations in their source water supplies, four are implementing pretreatment programs to reduce water softener use among water users, and three are either proposing to construct or are already operating a RO treatment system. Table 13-8 summarizes the salinity reduction efforts of the various WWTPs. These activities would be expected to reduce the salinity in the treated effluent discharged into the southern Delta by the service providers. Fixing existing RO systems or upgrading existing facilities would be expected to reduce salts more, when compared to other efforts such as educational programs or salt pretreatment programs. However, the total effect of these various projects to the southern Delta water quality depends on many variables, such as the type of activity, salt content of the source water, and operating efficiency of the activity.

The 2011 average annual ECs for WWTPs were generally very close to or just over 1.0 dS/m. Table 13-11 identifies the average EC for each WWTP and their potential ability to comply with SDWQ Alternative 2 based on the violations documented to date and the 2011 average EC data.

Table 13-11. Southern Delta Wastewater Treatment Plant 2011 (Jan–Nov) Annual Average EC Effluent Data and Potential to Comply with SDWQ Alternative 2 EC Objective

WWTP Facility	2011 (Jan–Nov) Annual Average EC Effluent (dS/m)	2011 (Jan–Nov) Annual Average EC Effluent (µmhos/cm)	Potential to Comply with SDWQ Alternative 2 Objective? (Y/N)
Tracy	1.200	1,187	N
Deuel	No data in CIWQS	No data in CIWQS	N
Manteca	0.800	782	Y
Stockton	1.000	1,041	N
Mountain House CSD	0.700	685	Y

See Table 13-6 for sources and additional information.
EC = electrical conductivity (salinity)
WWTP = Wastewater treatment plant
dS/m = deciSiemens per meter
µmhos/cm = micromhos per centimeter
CIWQS = California Integrated Water Quality System
CSD = Community Services District
Conversion is 1 dS/m = 1000 µmhos/cm. Numbers presented in dS/m were rounded.

Mountain House CSD and Manteca would be expected to comply with a 1.0 dS/m salinity objective because their average EC values are currently below 1.0 dS/m, and they have not had any violations in the past. Because it is anticipated that these two WWTPs would not exceed wastewater treatment requirements under SDWQ Alternative 2, they are not likely to need additional facilities to comply with SDWQ Alternative 2. Deuel currently has an NPDES permit with an EC standard based on the 2006 Bay-Delta plan EC objective. They have previously violated the permit standards. The past and current violations are potentially attributed to a malfunction of the RO and brine concentrator systems used by the facility to reduce the salinity of the groundwater supply. SDWQ Alternative 2 would not change the permit standards for Deuel and thus would not increase the number of existing violations, increase the salinity of the discharge at Deuel, or change the existing RO and brine concentrator facilities. Therefore, it is expected Deuel would continue to have exceedances of the permit requirements and continue to violate their permit under SDWQ Alternative 2. Therefore, a change in baseline conditions is not expected with respect to Deuel.

Tracy and Stockton currently have EC averages that are slightly over 1.0 dS/m; therefore, they would likely have some exceedances of the wastewater treatment requirements under SDWQ Alternative 2. It is anticipated that these service providers may exceed effluent limitations if the limitations are set at the water quality objective proposed under SDWQ Alternative 2. As described in Appendix H, *Evaluation of Methods of Compliance* (Section H.1 and H.3), it is anticipated modifications could include the following.

- New or expanded infrastructure to support new source water supplies, which could include canals, underground pipelines, and obtaining water transfers from one location to another to supply the new source water.
- New or expanded salinity pretreatment programs relying on industrial facility pretreatment or residential program(s), which could include modifications to existing industrial facilities such that waste is treated prior to discharge in the sewer system or a residential program educating people to remove water softeners.

- New or expanded salinity removal facilities at existing WWTPs (e.g., RO), which could include modifications to existing wastewater treatment plants such that salinity is removed from the treated effluent prior to discharge, which lowers the overall amount of salinity in the treated effluent.

Depending on the type of facility, location, and particular operational requirements, construction of the facilities described above could result in environmental impacts on resources as described in Appendix H (Section H.3.1 and Table H-12; Section H.3.2 and Table H-15; and Section H.3.3 and Table H-17) and on resources such as those listed below.

- Air quality and greenhouse gases, as a result of construction equipment emissions and construction trips.
- Biological resources, as a result of dust, noise, or possible removal of sensitive biological species if present.
- Cultural resources, as a result of excavation, grading, and other soil disturbing activities, if construction takes place in a moderately or highly sensitive area to cultural resources.
- Geologic resources, as a result of erosion or constructing in unstable soils.
- Hazards, as a result of handling hazardous material during construction such as lubricants or diesel.
- Water quality, as a result of potentially generating runoff associated with dust control or other construction activities.
- Noise, as a result of the use of construction equipment if sensitive receptors (e.g., residences) are located within close proximity of the WWTP.
- Traffic, as a result of the use of construction equipment and construction workers.

Depending on the type of facility, location, and particular operational requirements, operation of new or modified facilities could result in environmental impacts on resources as detailed in appendix H (Section H.3.1 and Table H-12; Section H.3.2 and Table H-15; and Section H.3.3 and Table H-17) and on resources such as those listed below.

- Aesthetics, as a result of operational lighting.
- Air quality and greenhouse gases, as a result of operational emissions associated with salt removal techniques.
- Hazardous materials, as a result of an increase in hazardous materials on site associated with salt removal techniques.
- Noise, as a result of new equipment operating within proximity to sensitive receptors (e.g., residences).
- Traffic, as a result of an increase in employees to operate the new equipment or equipment modifications.

Therefore, since WWTPs may not be able to meet a new NPDES effluent limitation based on SDWQ Alternative 2, the construction and operation of new or modified wastewater treatment facilities or infrastructure is expected and impacts would be significant.

New or modified wastewater treatment facilities or infrastructure would be under the jurisdiction of the service providers performing the action or the jurisdiction of the local agency in which the new or modified facility or infrastructure is located. The activities described above (e.g., new or expanded facilities at WWTPs) are anticipated to either be discretionary actions and/or meet the definition of a project for CEQA (State CEQA Guidelines, §§ 15377–15378). If they are not discretionary actions and/or do not meet the definition of a project under CEQA, then it is presumed there would be very limited environmental impacts such that they would not rise to the level of causing potentially significant environmental impacts necessitating environmental documentation (e.g., mitigated negative declaration, environmental impact report). As part of this process, the decision-making body (e.g., board of the service provider or municipality) would implement mitigation measures or BMPs if project-specific environmental impacts were deemed potentially significant. Although the exact scope, scale, and extent of potentially significant environmental impacts cannot be determined, Table H-24 in Appendix H lists possible mitigation measures that would likely reduce potentially significant impacts on environmental resources as a result of construction and operation of new or modified facilities or infrastructure. For example, potentially significant environmental impacts due to construction may be mitigated through design, timing, and construction BMPs. Facilities could be designed to have minimal impact on the surrounding environment (e.g., pipelines could be buried under existing roads). Construction-timing mitigation measures may include scheduling such that work in surface waters, if needed, would take place after aquatic species have migrated out of the area. BMPs for construction activities could include the use of straw bales to prevent erosion near surface waters.

As discussed above under SP-2, the State Water Board would not be responsible for constructing or operating any of the new or modified facilities or infrastructure. Because any new or modified facilities would not be under the jurisdiction of the State Water Board, there is no feasible mitigation the State Water Board can implement to reduce potentially significant environmental impacts resulting from new or modified facilities. Impacts would remain significant and unavoidable.

SDWQ Alternative 3: 1.4 dS/m Salinity (Less than significant)

Table 13-12 identifies the average EC for each WWTP and each one's potential ability to comply with SDWQ Alternative 3 without new or modified facilities, based on past violation information and 2011 EC data.

Table 13-12. Current Southern Delta Wastewater Treatment Plant 2011 (Jan–Nov) Annual Average EC Effluent Data and Potential to Comply with SDWQ Alternative 3 EC Objective

WWTP Facility	2011 (Jan–Nov) Annual Average EC Effluent (dS/m)	2011 (Jan–Nov) Annual Average EC Effluent (µmhos/cm)	Potential to Comply with SDWQ Alternative 3 Objective? (Y/N)
Tracy	1.200	1,187	Y
Deuel	No data in CIWQS	No data in CIWQS	N
Manteca	0.800	782	Y
Stockton	1.000	1,041	Y
Mountain House CSD	0.700	685	Y

See Table 13-6 for sources and additional information.
EC = electrical conductivity (salinity)
WWTP = Wastewater treatment plant
dS/m = deciSiemens per meter
µmhos/cm = micromhos per centimeter
CIWQS = California Integrated Water Quality System
CSD = Community Services District
Conversion is 1 dS/m = 1000 µmhos/cm. Numbers presented in dS/m were rounded.

All of the service providers, except for Deuel, would be expected to be able to comply with SDWQ Alternative 3 without new or modified facilities based on the average EC data for 2011 and previous EC violations. Deuel currently has EC averages that are more than double that of SDWQ Alternative 3 and has had past EC violations. As discussed above under SDWQ Alternative 2, Deuel has an NPDES permit with an EC standard based on the 2006 Bay-Delta plan EC objective. They have previously violated the permit standards. The past and current violations are potentially attributed to a malfunction of the RO and brine concentrator systems used by the facility to reduce the salinity of the groundwater supply. SDWQ Alternative 3 would not change the permit standards for Deuel and thus would not increase the number of existing violations or increase the salinity of the discharge at Deuel. Therefore, a change in baseline conditions is not expected with respect to Deuel. Because no additional service providers are expected to require modifications or new facilities other than Deuel, impacts would be less than significant.

13.5 Cumulative Impacts

13.5.1 Definition

Cumulative impacts are defined in the State CEQA Guidelines (Cal. Code Regs., tit. 14, § 15355) as “two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts.” A cumulative impact occurs from “the change in the environment which results from the incremental impact of the project when added to other closely related past, present, and reasonably foreseeable future projects. Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time” (14 Cal. Code Regs., § 15355 (b)).

Consistent with the State CEQA Guidelines (Cal. Code Regs., tit. 14, § 15130, subd. (a)), the discussion of cumulative impacts in this chapter focuses on significant and potentially significant cumulative impacts. The State CEQA Guidelines (14 Cal. Code. Regs., § 15130(b)) state the following:

> The discussion of cumulative impacts shall reflect the severity of the impacts and their likelihood of occurrence, but the discussion need not provide as great detail as is provided for the effects attributable to the project alone. The discussion should be guided by the standards of practicality and reasonableness, and should focus on the cumulative impact to which the identified other projects contribute rather than the attributes of other projects which do not contribute to the cumulative impact.

13.5.2 Past, Present Actions, and Reasonably Foreseeable Future Projects

Chapter 16, *Cumulative Impact Summary, Growth-Inducting Effects, and Irreversible Commitment of Resources*, includes a list of past, present, and reasonably foreseeable future projects considered for the cumulative analysis.

Present and reasonably foreseeable future projects are projects that are currently under construction, approved for construction, or in final stages of formal planning. These projects were identified by reviewing available information regarding planned projects and are summarized in Chapter 16. Past, present, and reasonably foreseeable future projects related to service providers or that could affect service providers are listed in Chapter 16 and include the following.

- Almond 2 Power Plant
- Bay Area Water Quality and Supply Reliability Program
- Bay Delta Conservation Plan and Alternative Delta Conveyance Facilities
- City of Stockton Delta Water Supply Project
- City of Tracy Connection to the South San Joaquin Irrigation District
- City of Tracy Desalinization and Green Energy Project
- Contra Costa Alternative Intake Project
- Delta-Mendota Canal Recirculation Project
- Eastern San Joaquin Integrated Conjunctive Use Program
- Farmington Groundwater Recharge Project
- Grasslands Bypass Project
- Los Vaqueros Reservoir Expansion Project
- Modesto Regional Water Treatment Plan Phase II
- National Pollutant Discharge Elimination System (NPDES) permit amendments for City of Manteca
- NPDES permit amendments for City of Stockton
- NPDES permit renewal for the City of Tracy
- NPDES permit renewal for the Mountain House Community Services District

- Regional Surface Water Supply Project
- San Joaquin River Salinity Management Plan
- San Joaquin Water Quality Project Selenium TMDL
- San Luis Reservoir Low Point Improvement Project
- Semitropic Groundwater Banking program
- Stockton East Water District Dr. Joe Waidhofer Water Treatment Plant Expansion
- South County Water Supply Project
- South San Joaquin Irrigation District and Stockton East Water District water transfer agreement
- South San Joaquin Irrigation District increased surface water agreements/sales to municipalities and associated infrastructure
- Update to Bay-Delta Water Quality Control Plan: Phase II

13.5.3 Significance Criteria

Two significance criteria must be met for an environmental consequence to have a significant cumulative impact: (1) the effect must make a cumulatively considerable incremental contribution to an overall cumulative impact, and (2) the overall cumulative impact (considering past, present, and reasonably foreseeable future projects) must be significant. (See Cal. Code Regs., tit. 14, §§ 15064, 15065, 15130.) The cumulative analysis uses the impact threshold topics discussed in the impact analysis (i.e., degrading water quality for municipal drinking water purposes; resulting in construction of new or expanded water treatment facilities or infrastructure or wastewater treatment facilities or infrastructure; and substantial changes to inflows such that insufficient water supplies would be available to service providers relying on CVP and SWP exports).

13.5.4 Mitigation Measures for Significant Cumulative Impacts

As specified by Section 15130 of the State CEQA Guidelines (2012), the analysis of cumulative impacts will examine feasible options for mitigating or avoiding a project's contribution to any significant cumulative effects. With some projects, the only feasible mitigation for cumulative impacts may be the adoption of ordinances or regulations rather than the imposition of conditions on a project-by-project basis. Mitigation measures to reduce an alternative's contribution to significant cumulative effects is presented below where feasible and appropriate.

13.5.5 Cumulative Impact Analysis

Methodology

Cumulative impacts on service providers can result from the combined demand of the alternatives with past, present, and reasonably foreseeable future projects on the service providers for which the alternatives may have impacts. The methodology used to analyze cumulative impacts associated with service providers qualitatively describes the cumulative impacts expected from past, present, and reasonably foreseeable projects and then determines whether the LSJR or SDWQ alternatives have a cumulatively considerable impact when included with the past, present, and reasonably foreseeable future projects impacts. Where appropriate, the cumulative analysis is combined for various alternatives.

Geographic Scope

The geographic scope of the cumulative impact analysis depends on the service area of service providers. The geographic scope for service provider cumulative impacts is the same as that described above for the alternatives described in Section 13.1.

Analysis

LSJR Alternatives

The combined effects of the past and present projects have increased the need for surface water within the plan area over time. Service providers are planning for and have identified future surface water sources for municipal and agricultural uses. The projects listed above would be required to be consistent with specific goals, objectives, policies, and implementation measures of the respective county's general plan (or local jurisdiction guidance) where they are proposed. General plans and other regulatory requirements, as described in Section 13.3, provide guidance and regulation for the provision of services within the respective jurisdiction and service district. Though past, current, and future projects may result in additional demands on service providers, the regulatory framework that governs each county (or local jurisdiction) is expected to reduce and control impacts on service providers.

The combined effects of past, present and reasonably foreseeable future projects are not expected to substantially degrade water quality. Many of the projects listed above are meant to improve water quality in the three eastside tributaries, LSJR, and southern Delta (e.g., Grasslands Bypass Project, San Joaquin River Salinity Management Plan, San Joaquin Water Quality Project Selenium TMDL, Salt and Boron TMDL). In addition, many of the projects listed above are meant to improve the drinking water quality of drinking water sources (e.g., Modesto Regional Water Treatment Plant Phase II, Regional Surface Water Supply Project, Stockton East Water District water treatment plant expansion, City of Stockton Delta Water Supply Project). Therefore, past, present, and reasonably foreseeable future projects would not result in cumulatively considerable or significant effects.

Surface water diversions under LSJR Alternative 2 would be similar to those under baseline conditions, thus service providers would not experience an insufficient water supply. Furthermore, LSJR Alternative 2 is expected to result in inflow from the LSJR into the southern Delta that maintains the historical range of salinity in the southern Delta. Therefore, it is not expected water quality would substantially degrade such that drinking water sources would be affected. The incremental contribution of LSJR Alternative 2 would not be cumulatively considerable, and impacts would be less than significant.

LSJR Alternative 3 and 4 would involve reducing diversions on the Stanislaus, Tuolumne, or Merced Rivers. The service providers (e.g., Ripon, Escalon, and Merced) that currently rely solely on groundwater have reasonably foreseeable future plans and projects to obtain surface water deliveries from irrigation districts as a means of flexibility and reliability. The reduction in surface water diversions as a result of LSJR Alternatives 3 and 4 would reduce the ability of these service providers to obtain surface water. Furthermore, service providers that rely on larger amounts of surface water deliveries to supplement existing groundwater supplies (e.g., SEWD, Modesto) could experience a reduction in surface water deliveries. Additionally, these service providers are also planning on obtaining additional surface water and could be restricted in their ability to do so under LSJR Alternatives 3 and 4. If new or modified facilities or infrastructure are required, they would be carried out as part of individual projects associated with the service providers and could result in potentially significant environmental impacts. As discussed above in Section 13.4.3 (SP-2), the new or expanded water supply treatment facilities or water supply infrastructure are anticipated to qualify as a discretionary action and/or meet the definition of a project for CEQA (State CEQA Guidelines, §§ 15377–15378). If they are not a discretionary action and/or do not meet the definition of a project under CEQA, then it is presumed there would be very limited environmental impacts such that they would not rise to the level of causing potentially significant environmental impacts necessitating environmental documentation (e.g., mitigated negative declaration, environmental impact report). The decision-making body of the lead agency (e.g., service provider or local agency) would approve discretionary action(s) associated with any new or modified facilities or infrastructure. The approval of new or modified facilities would require the preparation and approval of a CEQA document identifying project-specific details and specific resource analyses of potentially significant impacts. The CEQA document would disclose any project-specific, potentially significant environmental impacts resulting from new or modified facilities. As part of this process, the decision-making body would be responsible (not the State Water Board) for implementing mitigation measures or BMPs if project-specific environmental impacts are deemed potentially significant (Table H-24 identifies possible mitigation measures). Since the LSJR Alternatives would likely result in the construction or operation of new water supply treatment facilities or water supply infrastructure, the incremental cumulative contribution of LSJR Alternatives 3 and 4 to service providers would be significant, and when combined with past, present, and reasonably foreseeable future projects, LSJR Alternatives 3 and 4 would result in a significant cumulative impact. As described above in Section 13.4.3, since the State Water Board would not be responsible for constructing or operating any of the new or modified facilities or infrastructure, and because any new or modified water supply facilities or infrastructure would not be under the jurisdiction of the State Water Board, it is not feasible for the State Water Board to implement possible mitigation measures listed in Table H-24. In order to reduce the above-mentioned significant impacts on existing service providers, the State Water Board would have to require lower flows under LSJR Alternative 3 on the Merced and Tuolumne Rivers. Evaluating the effects of lower flows on the different rivers is part of other alternatives (i.e., LSJR Alternatives 1 and 2) and is separately considered in this document. Requiring lower flows to reduce impacts cannot be independently applied under LSJR Alternative 3 as a mitigation measure to reduce cumulative impacts because requiring lower flows would be inconsistent with the terms of LSJR Alternative 3 (i.e., requiring 40 percent of unimpaired flow on the Merced and Tuolumne Rivers). Therefore, there is no feasible mitigation the State Water Board can implement to reduce environmental impacts on service providers resulting from the need for new or modified facilities or infrastructure. Therefore, there is no feasible mitigation to reduce this cumulative impact.

SDWQ Alternatives

The combined effects of past, present, and reasonably foreseeable future projects would be expected to maintain or improve water quality in the southern Delta. Specifically, the various TMDLs and revisions to the NPDES permits would likely improve water quality in the southern Delta. Generally, the TMDL projects and Upper SJR restoration projects are expected to increase the volume of water and improve water quality to the LSJR, thereby potentially reducing the salinity at Vernalis. Upper SJR restoration would generally be expected to increase the SJR flows upstream of the Merced River and might also increase the flows at Vernalis. It is expected the existing monthly salt loads would be diluted by this increased Upper SJR flow, and the salinity at Vernalis would be reduced accordingly. Thus, it is expected the salinity objective may be met at the Vernalis compliance station more often than at present, and overall salinity in the southern Delta would be expected to be reduced. The Bay Delta Conservation Plan (BDCP) may lead to reductions in export salinity and allow the Delta-Mendota Canal Recirculation to become feasible (i.e., Vernalis salinity decreases, and with additional export capacity, project water could be released to the SJR during low flow periods). Agricultural productivity has declined in the southern Delta, which could generally lead to a reduction of salinity inputs into the southern Delta water. Furthermore, many of the projects listed above are meant to improve the treated effluent discharged from wastewater treatment plants (e.g., Almond 2 Power Plant, City of Tracy Desalinization and Green Energy Project). As described above, under the LSJR alternatives, though past, current, and future projects may result in additional demands on service providers, the regulatory framework that governs each county (or local jurisdiction) is expected to reduce and control impacts on service providers. Therefore, past, present, and reasonably foreseeable future projects have not had cumulatively considerable or significant effects on service providers.

SDWQ Alternatives 2 and 3 are expected to maintain the historical range of salinity in the southern Delta. Therefore, it is not expected water quality would substantially degrade such that drinking water sources would be affected in the southern Delta. The incremental contribution of SDWQ Alternatives 2 and 3 would not be cumulatively considerable, and impacts would be less than significant.

Under SDWQ Alternative 2, it is expected that some of the service providers (e.g., Tracy or Stockton) would not be able to meet effluent limitations if the effluent limitations are set by the Central Valley Water Board to match the SDWQ Alternative 2 objective (i.e., 1.0 dS/m). Therefore, it can be expected that wastewater treatment requirements set by the Central Valley Water Board may be exceeded. Potential new facilities or modifications to existing facilities that would be carried out as part of individual projects associated with the service providers could result in potentially significant environmental impacts. Individual projects would be required to comply with CEQA and mitigate any potentially significant effects to less than significant or make a determination of overriding considerations if significant impacts could not be mitigated. However, since the SDWQ Alternatives would likely result in the construction or operation of new water supply treatment facilities or water supply infrastructure, the incremental cumulative contribution of SDWQ Alternative 2 to service providers would be significant, and when combined with past, present, and reasonably foreseeable future projects, SDWQ Alternative 2 would result in a significant cumulative impact. As described above in Section 13.4.3 (SP-4), the activities described (e.g., new or expanded facilities at WWTPs) are anticipated to either be discretionary actions and/or meet the definition of a project for CEQA (State CEQA Guidelines, §§ 15377–15378). If they are not discretionary actions and/or do not meet the definition of a project under CEQA, then it is presumed there would be very limited environmental impacts such that they would not rise to the level of causing potentially significant environmental impacts necessitating environmental documentation (e.g., mitigated negative declaration, environmental impact report). As part of this process, the decision-making body (e.g., board of the service provider or municipality) would implement mitigation measures or BMPs if project-specific environmental impacts were deemed potentially significant (Table H-24 in Appendix H lists possible mitigation measures that would likely reduce potentially significant impacts on environmental resources as a result of construction and operation of new or modified facilities or infrastructure). The State Water Board would not be responsible for constructing or operating any of the new or modified facilities or infrastructure. Because any new or modified facilities would not be under the jurisdiction of the State Water Board, there is no feasible mitigation the State Water Board can implement to reduce potentially significant environmental impacts resulting from new or modified facilities. Therefore, there is no feasible mitigation to reduce this cumulative impact.

Under SDWQ Alternative 3, it is expected that the only service provider that might not be able to meet effluent limitations if the effluent limitations are set by the Central Valley Water Board to match the SDWQ Alternative 3 objective (i.e., 1.4 dS/m) is Deuel. However, Deuel is currently exceeding wastewater treatment requirements set by the Central Valley Water Board. Furthermore, it is not expected that SDWQ Alternative 3 would increase the number of exceedances by Deuel or further degrade the quality of the treated effluent discharged by Deuel. Therefore, potential new facilities or modifications to existing facilities are not expected as a result of SDWQ Alternative 2. The incremental cumulative contribution of SDWQ Alternatives 3 to service providers would not be significant, and when combined with past, present, and reasonably foreseeable future projects, SDWQ Alternatives 3 would not result in a significant cumulative impact.

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