Appendix A

Description of Contractors and Exchange Partners

Summary of Cross Valley Contractors

The following description characterizes each Cross Valley Contractor and associated subcontractor:

County of Fresno

The County of Fresno has a water service contract (Contract No. 14-06-200-8292A-IR15) for up to 3,000 acre-feet per year (AFY) that is provided for municipal and industrial (M&I) uses to specific developments within its CVP service area. The County draws its water directly from Millerton Lake after its Delta supply has been exchanged for Friant supplies with Arvin-Edison Water Storage District (Arvin-Edison). The County's CVP water supplies have been administered by Arvin-Edison for the last 20 years pursuant to an agreement between the County and Arvin-Edison.

County of Tulare

The County of Tulare has a water service contract (Contract No. 14-06-200-8293A-IR15) for up to 5,308 AFY of water. The County of Tulare is comprised of 10 subcontractors (both agricultural and M&I) and all are located in the same geographical area as the Friant Division Contractors. Of the 10 subcontractors, only five have routinely taken water deliveries via the County of Tulare's contract in recent years. The County of Tulare's CVP contract supply is divided among the 10 subcontractors as shown below:

- Alpaugh Irrigation District (Alpaugh) – up to 100 AFY (agricultural)
- Atwell Island Water District (Atwell Island) – up to 50 AFY (agricultural)
- City of Lindsay – up to 50 AFY (M&I)
- City of Visalia – up to 300 AFY (M&I)
- Fransinetto Farms LLC – up to 400 AFY (agricultural)
- Hills Valley Irrigation District (Hills Valley) – up to 2,913 AFY (agricultural)
- Saucelito Irrigation District (Saucelito) – up to 100 AFY (agricultural)
- Stone Corral Irrigation District (Stone Corral) – up to 950 AFY (agricultural)
- Strathmore Public Utility District (Strathmore) – up to 400 AFY (M&I)
- Styro-Tek, Inc. – up to 45 AFY (M&I)

These subcontractors divert their water from the Friant-Kern Canal (FKC) after their Cross Valley Delta supply has been exchanged for Friant supplies (see Appendix B for a description of exchange mechanisms). In certain years, only a portion or none of the Cross Valley CVP water is pumped and conveyed, therefore, they purchase water on the open market to make up for deficits.

Alpaugh Irrigation District

Alpaugh is located in Tulare County approximately 15 miles south of Corcoran and 15 miles northwesterly of Delano, California. Alpaugh is comprised of approximately 10,500 acres, of which 5,400 are irrigated. CVP water from Millerton Lake is delivered to Alpaugh via the Deer Creek diversion located at milepost (MP) 102.67R on the FKC.

Groundwater provides the primary water supply. Alpaugh operates 18 wells, 3 regulating reservoirs, and maintains 60 miles of domestic water pipelines. Two of the deep wells, provide approximately 300 AFY of potable water supply to the Community of Alpaugh. Collectively, the regulating reservoirs cover approximately 800 acres and have a maximum capacity of 4,000 AF. Alpaugh does not have any other contracts or water rights for surface water supplies. However, during wet years Alpaugh has been able to utilize excess waters available in the Homeland Canal located on the westerly side, which if not used, would flow into the historic Tulare Lake.

Atwell Island Water District

Atwell Island is located in Kings and Tulare Counties approximately 1 ½ miles south of the Community of Alpaugh. Atwell Island is comprised of 7,136 acres, of which, 4,645 are irrigated. In 1978, Atwell Island entered into a long-term contract with Reclamation for 1,055 AFY of CVP water from the Delta that was later terminated. In 1993, Atwell Island and Hills Valley entered into a contract with the County of Tulare for CVP water. Under this contract, both Atwell Island and Hills Valley receive up to 954 AFY of CVP water from the Delta. In recent years, Atwell Island's 954 AFY has been reduced to 50 AFY as Hills Valley has obtained 904 AFY of Atwell Island's contractual water supply.

Atwell Island operates an in lieu conjunctive use program. In wet years, Atwell Island purchases surface water supplies for use in lieu of pumping groundwater. Atwell Island primarily uses surface water supplies when it is available and relies on groundwater only when surface water is unavailable. Atwell Island does not operate or maintain groundwater recharge or extraction facilities. Landowners must provide privately owned wells to sustain irrigation during periods when Atwell Island does not have surface water available. Atwell Island serves only agricultural users.

City of Lindsay

The City of Lindsay is located on the east side of the San Joaquin Valley in Tulare County near the base of the Sierra foothills and has falling grade from east to west. Lindsay is located approximately 12 miles east of Tulare and State Highway 99, approximately 11 miles north of Porterville and 15 miles southeast of Visalia. The City of Lindsay has a CVP Friant Division water service contract (Contract No. 5-07-20-W0428) for up to 2,500 AFY of Class 1 water. The City also receives up to 50 AFY of CVP water through its contract with the County of Tulare. Lindsay obtains its CVP water from the FKC at the Honolulu Street turnout. Their water treatment plant is at the same location and provides filtration, chemical additions and chlorination.

City of Visalia

The city of Visalia is located in Tulare County and is approximately 28.58 square miles with a population of approximately 102,000. Visalia exchanges up to 400 AFY of its available CVP water for a portion of Hills Valley's Wutchumna Water rights water from the Kaweah River. Hills Valley takes physical possession of the CVP water but this water is considered non-Project water and is applied to ineligible lands. Visalia takes physical possession of the Kaweah (Wutchumna) River water which is characterized as Project water. This water is conveyed through the Persian Ditch Company facilities and is applied to golf courses.

Fransinetto Farms

Fransinetto Farms receives up to 255 AFY of CVP water under its contract with County of Tulare.

Hills Valley Irrigation District

Hills Valley is located in Fresno County about 20 miles east of Fresno and 5 miles north of Orange Cove. A small portion of the Hills Valley is located in Tulare County. Hills Valley is comprised of approximately 4,319 acres, of which, 3,602 are irrigated acres. Hills Valley's distribution system is comprised of approximately 11 miles of pipeline. Hills Valley has a Cross Valley CVP water service contract (Contract No. 14-06-200-8446A-IR15) for up to 3,346 AFY and is also a subcontractor with the County of Tulare. In 2013, Hills Valley received two partial assignments for Friant Division water supplies from Porterville Irrigation District (1,000 AFY of Class 1 water) and Lewis Creek Water District (250 AFY Class 1 water).

Hills Valley does not have any groundwater extraction facilities; therefore, landowners must provide their own wells to sustain irrigation during periods when surface water supplies are inadequate. Hills Valley has constructed three regulating reservoirs to manage water supplies but has limited conjunctive use capability as they are located near the foothills of the Sierra Nevada Mountains with a relatively low aquifer storage capacity.

Saucelito Irrigation District

Saucelito is located in Tulare County, approximately 10 miles southwest of Porterville, two miles south of Poplar, eight miles east of Tipton and five miles west of Terra Bella. Saucelito has a CVP Friant Division water service contract (Contract No. 175r-2604D) for up to 21,200 AFY of Class 1 water and up to 32,800 AFY of Class 2 water from Millerton Lake. In 2013, Saucelito was assigned 300 AFY of Tea Pot Dome Water District's Friant Division Class 1 water supply. Saucelito also has a contract with the County of Tulare for up to 100 AFY of its CVP Delta water supply. Saucelito obtains its CVP water supplies from 4 diversion points on the FKC between MP 11.64 and 107.35 and the Deer Creek diversion at MP 102.69.

Saucelito provides irrigation water to over 19,057 acres of annual and permanent crops in Tulare County. Flood irrigation has and continues to be the principle method of on-farm irrigation. In recent years, nearly all the irrigated lands have been graded and laser leveled to increase the distribution uniformity of applied irrigation water. Water users with permanent crops continue to install drip and micro-sprinkler systems. Additionally, all farms have installed and operate tailwater return systems. Saucelito does not own any groundwater extraction facilities; therefore, landowners must provide their own wells to sustain irrigation during periods when Saucelito does not have enough surface water available.

Stone Corral Irrigation District

Stone Corral is located in Tulare County, approximately 30 miles southeast of Fresno and 10 miles north-northeast of Visalia. Stone Corral is comprised of 6,488 acres, of which 5,470 acres are irrigated. Stone Corral supplies irrigation water through 27 miles of pipeline. Stone Corral has a CVP Friant Division water service contract (Contract No. 175r-2555D) for up to 10,000 AFY of Class 1 water. Stone Corral also receives up to 950 AFY of CVP water through its contract with the County of Tulare. The safe yield for groundwater supply in Stone Corral is

approximately 3,200 AFY. Stone Corral obtains CVP water from the FKC at MP 57.90, 59.33, 60.90 and 62.68.

Strathmore Public Utility District

Strathmore provides wastewater treatment for a population of approximately 1,900 in the city of Strathmore. Strathmore's CVP water is diverted from its turnout on the FKC and injected into a well to be used for blending with the wastewater before it reaches the headworks of the wastewater treatment plant. Strathmore coordinates its diversions in a manner to minimize impacts to agricultural users along the FKC. The CVP water is typically diverted by Strathmore during times of wet seasons and high flows when water turbidity is increased allowing for less chemicals used to coagulate and treat the wastewater. The treated water is temporarily stored in an onsite storage facility and is distributed to its M&I customers.

Styrotek, Inc.

Styrotek, Inc. is located near the city of Delano and manufactures shipping containers. The company receives up to 45 AFY of CVP water under its contract with the County of Tulare. The CVP water is used in the cooling process after the container molds are heated and formed. A portion of the water evaporates or is reclaimed for use in boilers.

Kern-Tulare Water District (Kern-Tulare)

Kern-Tulare has two separate Cross Valley water service contracts for up to 53,300 AFY, its own contract (Contract No. 14-06-200-8601A-IR15 for 40,000 AF) and an assignment agreement from Rag Gulch Water District (Contract No. 14-06-200-8367A-IR15 for 13,300 AF). In 2012, Kern-Tulare received a partial assignment of 5,000 AFY of Southern San Joaquin Municipal Utility District's Friant Division Class 2 supply.

Kern-Tulare is located on the eastern side of the San Joaquin Valley in Kern and Tulare counties. Kern-Tulare provides irrigation water to over 19,000 acres of high-value permanent crops in Kern and Tulare counties. The current annual irrigation demand within Kern and Tulare Counties is approximately 53,000 AF, of which approximately 36,000 AF is provided from Kern-Tulare. The remaining approximately 17,000 AF demand is met by groundwater pumped by water users. At the present time, approximately 99 percent of irrigated lands are permanent plantings. The distribution system consists of four pumping plants located along the FKC, three regulating reservoirs, six re-lift pumping plants, and approximately 60 miles of buried pipelines. In addition, KTWD operates one pumping plant located in a Delano-Earlimart Irrigation District reservoir.

Lower Tule River Irrigation District

Lower Tule has a Cross Valley CVP water service contract (Contract No. 14-06-200-8237A) for up to 31,200 AFY from the Delta and a Friant Division water service contract (Contract No. I75r-2771D) for up to 61,200 AFY of Class 1 and 238,000 AFY of Class 2 Friant Division CVP water supplies. Additional surface water supplies include pre-1914 water right water from the Tule River with an average annual yield of 40,000 AF. This water is developed and stored behind Success Dam and delivered to Lower Tule via the Tule River and its distributaries. Lower Tule maintains and operates 12 recharge and regulating basins, covering approximately 3,000 acres. When excess surface water is available, Lower Tule uses the 12 groundwater

recharge facilities to recharge the aquifer. At present Lower Tule does not own or control groundwater extraction facilities. All groundwater pumping is done by landowners who utilize privately owned wells. Lower Tule has estimated an annual irrigation demand of approximately 346,500 AF. On average, the district supplies approximately 201,400 AFY of surface water leaving approximately 145,100 AFY of demand to be met by groundwater pumping. In 2012, Lower Tule completed construction of an Intertie Canal between its Wood Central Ditch and its Casa Blanca Canal. The new Intertie Canal allows Lower Tule to capture, use, and/or store otherwise unusable floodwater from the Tule River creating an additional source of water for use in portions of the District that previously only received CVP water.

Pixley Irrigation District (Pixley)

Pixley is located in Tulare County and comprises 69,550 acres, of which 48,302 are irrigated. Pixley has a Cross Valley CVP water service contract (Contract No. 14-06-200-8238A-IR15) for up to 31,200 AFY. Pixley obtains its CVP water supplies through Deer Creek from four turnouts on the FKC. PXID has 45 miles of unlined canals that convey water and provide groundwater recharge. An estimated 30 percent of the CVP supplies are "lost" through the unlined canals. However, the recharge to the groundwater is considered a beneficial use of this water. Pixley operates a conjunctive use program by supplying water to a portion of the irrigated lands and a portion for direct groundwater recharge through Deer Creek, the existing canal system, and approximately 330 acres of sinking/re-regulating basins owned or leased by Pixley. Pixley's water supply is derived from groundwater, diversions from Deer Creek, and CVP water. Pixley does not own or operate groundwater extraction facilities. However, groundwater is the primary water supply available to lands within Pixley and privately owned wells currently provide water to all irrigated lands within Pixley. Approximately 31,957 acres of lands rely totally on groundwater pumping for irrigation.

Tri-Valley Water District (Tri-Valley)

Tri Valley is comprised of 4,481 acres, of which, 1,812 are irrigable acres. The nearest town is Orange Cove. Tri Valley only serves agricultural water to seven growers and approximately 880 acres. Tri Valley does not provide groundwater. However all landowners have wells. Due to the proximity of Tri Valley to the Sierra foothills, groundwater supplies are typically inadequate. Wells tend to produce groundwater early in the growing season but produce very little in mid and late summer. The water distribution system is comprised of approximately seven miles of pipeline which is shared with Orange Cove Irrigation District (Orange Cove) landowners and operated by Orange Cove personnel. Tri Valley does not own or operate any canals, recharge basins, or regulating reservoirs.

Summary of Potential Exchange Partners

CVP Water Service Contracts South of the Delta

Friant Division CVP Contractors	M&I	Ag	CVP Division Unit	Contract Expiration Date
Arvin-Edison Water Storage District	●	●	Friant Div./Friant-Kern Canal	Indefinite
Delano-Earlimart Irrigation District	●	●	Friant Div./Friant-Kern Canal	Indefinite
Exeter Irrigation District	●	●	Friant Div./Friant-Kern Canal	Indefinite
Fresno Irrigation District	●	●	Friant Div./Friant-Kern Canal	Indefinite
Garfield Water District		●	Friant Div./Friant-Kern Canal	Indefinite
Ivanhoe Irrigation District	●	●	Friant Div./Friant-Kern Canal	Indefinite
Kaweah Delta Water Conservation District	●	●	Friant Div./Friant-Kern Canal	Indefinite
Lewis Creek Water District		●	Friant Div./Friant-Kern Canal	Indefinite
Lindmore Irrigation District	●	●	Friant Div./Friant-Kern Canal	Indefinite
Lindsay-Strathmore Irrigation District	●	●	Friant Div./Friant-Kern Canal	Indefinite
Lower Tule River Irrigation District		●	Friant Div./Friant-Kern Canal	Indefinite
Orange Cove Irrigation District	●	●	Friant Div./Friant-Kern Canal	Indefinite
Porterville Irrigation District		●	Friant Div./Friant-Kern Canal	Indefinite
Saucelito Irrigation District		●	Friant Div./Friant-Kern Canal	Indefinite
Shafter-Wasco Irrigation District	●	●	Friant Div./Friant-Kern Canal	Indefinite
Southern San Joaquin Municipal Utility District	●	●	Friant Div./Friant-Kern Canal	Indefinite
Stone Corral Irrigation District		●	Friant Div./Friant-Kern Canal	Indefinite
Tea Pot Dome Water District		●	Friant Div./Friant-Kern Canal	Indefinite
Terra Bella Irrigation District	●	●	Friant Div./Friant-Kern Canal	Indefinite
Tulare Irrigation District	●	●	Friant Div./Friant-Kern Canal	Indefinite
San Felipe Division CVP Contractors				
San Benito County Water District	●	●	San Felipe Div.	2027
Santa Clara Valley Water District	●	●	San Felipe Div.	2027
West San Joaquin Division CVP Contractors				
Pacheco Water District	●	●	West San Joaquin Div./San Luis Unit	2024
Panoche Water District	●	●	West San Joaquin Div./San Luis Unit	2017
San Luis Water District	●	●	West San Joaquin Div./San Luis Unit	2017
Westlands Water District	●	●	West San Joaquin Div./San Luis Unit	2016
Delta Division CVP Contractors				
Central California Irrigation District		●	Delta Div.	Indefinite
Fresno Sough Water District			Delta Div./Mendota Pool	Indefinite
James Irrigation District			Delta Div./Mendota Pool	Indefinite
Tranquility Irrigation District			Delta Div./Mendota Pool	Indefinite

CVP Water Service Contracts South of the Delta

Other Potential Non-CVP Exchange Partners

Buena Vista Storage District	Kern Water Bank Authority
Cawelo Water District	Kings County Water District
Consolidated Irrigation District	Kings River Conservation District
Corcoran Irrigation District	Lakeside Irrigation Water District
Deer Creek & Tule River Authority	Liberty Water District
Kern County Water Agency	North Kern Water Storage District
Kern Delta Water District	Tulare Lake Basin Water Storage District

Friant Division CVP Contractors

There are 32 Friant Division CVP contractors located on the eastern side of the San Joaquin Valley in Merced, Madera, Fresno, Tulare, Kings, and Kern Counties (see Table 6 in the EA). Of the 32 Friant Division CVP contractors, 23 have been identified as potential exchange partners, although others may be added later if additional contract assignments are executed.

Arvin-Edison Water Storage District

Arvin-Edison has a long-term water service contract (Contract No. 14-06-200-229AD) with Reclamation for up to 40,000 AF of Class 1 and 311,675 AF of Class 2 Friant Division CVP supplies. The Class 2 supply comprises a large portion of their contract allocation; however, this supply is highly variable depending on availability and hydrology. Arvin-Edison manages this supply by using an underlying groundwater reservoir to regulate water availability and to stabilize water reliability by percolating water through spreading basins in addition to water management programs (i.e. transfers/exchanges) with other water agencies outside its service area. Arvin-Edison takes Friant CVP water from their Intake Canal located at the terminus of the FKC and serves landowners within its district through 45 miles of lined canals and 170 miles of pipeline.

Arvin-Edison has historically made available a portion of its Friant Division CVP water supply to other CVP contractors located on the eastside of the San Joaquin Valley in exchange for alternate CVP supplies originating from the Delta, diverted and wheeled through the Aqueduct for ultimate delivery to Arvin-Edison. Due to a decrease in supply reliability, cost increases, and water quality concerns, several of these exchanges are no longer feasible to the extent they once were. As a result, it has been necessary for Arvin-Edison to identify and implement additional programs to manage its highly variable CVP water supplies.

Arvin-Edison facilities were primarily constructed in the 1960s and are based on the conjunctive use of surface water imported from the CVP, SWP, Kern River, including other supplies (i.e. flood flows) and groundwater resources that underlie Arvin-Edison. Arvin-Edison owns and operates spreading/percolation/recharge basins and groundwater extraction wells, which are used to supply previously banked groundwater to its landowners within its service area when surface water supplies are deficient. Arvin-Edison facilities (recharge and extraction) are also made available to other water agencies for their utilization through water management programs/agreements on a second priority basis.

Delano-Earlimart Irrigation District (Delano-Earlimart)
Delano-Earlimart is located in Tulare and Kern Counties on the eastern side of the San Joaquin Valley, approximately 10 miles from the Sierra foothills. Delano-Earlimart is comprised of 56,474 acres, of which 46,581 are irrigated. Delano-Earlimart has a long-term water service contact (Contract No. I75r-3327D) with Reclamation for up to 108,800 AFY of Class 1 and 574,500 AFY of Class 2 water for agricultural and M&I supplies. Delano-Earlimart recharges the groundwater during surplus "wet" years through operations with the White River channel, as well as, a small 5 acre recharge basin. In 1993, Delano-Earlimart purchased and developed an 80 acre parcel specifically for development into a groundwater recharge basin. This basin has five separate cells and dual methods for introducing water to each cell from either Delano-Earlimart's distribution system or from direct diversions out of White River.

Exeter Irrigation District (Exeter)
Exeter is located in Tulare County on the east side of the San Joaquin Valley, nine miles east of the City of Visalia. Exeter is comprised of approximately 15,184 acres, of which 12,700 are irrigated. The City of Exeter is located within the district; however, Exeter serves only agricultural water. Exeter has a long-term water service contract (Contract No. I75r-2508D) with Reclamation for up to 11,500 AFY of Class 1 and 19,000 AFY of Class 2 water. Exeter maintains two small balancing or regulating reservoirs with a capacity of less than one AF each.

Fresno Irrigation District (FID)
FID comprises some 245,000 acres, lies entirely within Fresno County and includes the rapidly growing Fresno-Clovis metropolitan area. FID is located entirely within Fresno County and has contracts for approximately 26 percent of the average runoff of the Kings River, its main supply. FID also has a long-term water service contract (Contract No. 14-06-200-1122D) with Reclamation for up to 75,000 AFY of Friant Division Class 2 water. FID delivers water to its customers through 800 miles of canals and pipelines. FID has a long-term Cooperative Agreement with the City of Fresno for their water utilization and conveyance. Total irrigated area in the District exceeds 150,000 acres. In a normal year, FID diverts approximately 500,000 AF of water and delivers most of that to agricultural users, although an increasing share of FID's water supply is used for groundwater recharge in the urban area. Depending upon hydrological conditions and Kings River flows, FID diverts water and allocates a proportional share of the water to its customers including the City of Fresno and Clovis.

FID has combined forces with the City of Fresno, the City of Clovis, the County of Fresno, and the Fresno Metropolitan Flood Control District in a cooperative effort to develop and implement a comprehensive surface and groundwater management program. The main goal of the program involves using flood control basins for recharge during the summer when the basins are not needed to control urban storm runoff. This program also contains elements designed to protect the quality of groundwater in the area.

Garfield Water District (Garfield)
Garfield is located in Fresno County on the east side of the San Joaquin Valley near the foothills of the Sierra Mountains with limited groundwater supply. Garfield is comprised of 1,750 acres, of which, 1,300 are irrigated acres. Garfield's distribution system is approximately 8 miles of pipeline. Garfield has a long-term water service contract (Contract No. 14-06-200-9421D) with

Reclamation for up to 3,500 AFY of Class 1 Friant water. Garfield has no other sources of surface water.

Ivanhoe Irrigation District (Ivanhoe)

Ivanhoe is located in Tulare County on the east side of the San Joaquin Valley approximately 50 miles southeast of Fresno and 8 miles northeast of Visalia. Ivanhoe is comprised of approximately 11,202 acres, of which 10,648 are irrigated. Ivanhoe owns 7.9 shares of Wutchumna Water stock equaling approximately 3,950 AF of water. Ivanhoe also has a long-term water service contract (Contract No. I75r-1809D) with Reclamation for up to 7,700 AFY of Class 1 and 7,900 AFY of Class 2 water. Ivanhoe's non-CVP water supplies are diverted from the Kaweah River through the Wutchumna Ditch to Ivanhoe's diversion facility and are co-mingled with its CVP water supply. Ivanhoe obtains its CVP water supplies through two turnouts on the FKC. The district's distribution system comprises approximately 48 miles of pipeline and three groundwater recharge areas. The three groundwater recharge areas cover approximately 15 acres and are used when surplus water is available. Approximately three miles of a portion of Cottonwood Creek is also used for recharge purposes. Ivanhoe does not own or operate groundwater extraction facilities. Therefore, landowners must provide their own wells to sustain irrigation during periods when Ivanhoe does not have surface water supplies available.

Lewis Creek Water District (Lewis Creek)

Lewis Creek is located on the east side of the San Joaquin Valley in Tulare County near the base of the Sierra foothills. Lewis Creek is comprised of approximately 1,235 acres, 1,200 acres of which are considered irrigable. Lewis Creek has a long-term water service contract (Contract No. 14-06-1911D) with Reclamation for up to 1,450 AFY of Class 1 Friant water. In 2014, Lewis Creek assigned 250 AFY of its Class 1 water to Hills Valley. Lewis Creek growers do have access to limited groundwater supplies that are supported by the regional importation of surface water. Growers have wells in addition to access to the District's surface water supplies. Lewis Creek does not own any recharge basins or groundwater wells. The distribution system begins at a headworks structure with a traveling water screen located at the turnout from the FKC. The distribution system consists of approximately 7.4 miles of 6- to 24-inch asbestos-cement pipeline with appurtenant valves, flow meters and farm delivery turnouts. LCWD has 42 farm delivery turnouts. All of the turnouts are metered.

Lindmore Irrigation District (Lindmore)

Lindmore is located in Tulare County at the base of the Sierra foothills. The District's northern boundary extends approximately 2 miles from Lindsay and extends approximately 1 ½ miles south of Strathmore. Lindmore is approximately 9 miles long and 10 miles wide and comprises 27,255 acres, of which 25,700 are irrigated. Lindmore has a long-term contract (Contract No. I75r-1635D) with Reclamation for up to 33,000 AFY of Class 1 and 22,000 AFY of Class 2 water. Lindmore operates a conjunctive use program to manage surface and groundwater supplies. Lindmore uses groundwater at the beginning of the growing season to warm the CVP water while filling Lindmore's pipeline system. This reduces maintenance costs and leaks in the concrete irrigation pipes due to contraction of cold water. Lindmore obtains its CVP water supplies from four turnouts on the FKC between MP 88.4 and 93.2. Lindmore's conveyance system consists of 123 miles of pipeline and five reservoirs ranging from 2.6 AF to 6.6 AF.

Lindsay-Strathmore Irrigation District (Lindsay-Strathmore)
Lindsay-Strathmore is located in Tulare County on the east side of the San Joaquin Valley. The District comprises 15,700 acres, of which 12,700 acres are irrigated to permanent crops. Lindsay-Strathmore's original imported water supply was from the Kaweah River through Lindsay-Strathmore's ownership of Wutchumna Water Company stock and 39 deep wells. These water supplies range from 5,000 to 14,000 AFY. Lindsay-Strathmore enters into Warren Act Contracts with Reclamation to transport this water to its boundaries via the FKC. The District's groundwater supply is limited to 18,000 AFY. Lindsay-Strathmore has a long-term water service contract (Contract No. I75r-1514D) with Reclamation for up to 27,500 AFY of Class 1 water. Lindsay-Strathmore obtains its CVP water supplies from its turnout at MP 85.56 of the FKC. The District's distribution system is approximately 115 miles of pipeline and three balancing reservoirs ranging from 200,000 gallons to 80 AF). Lindsay-Strathmore does not operate recharge areas or a conjunctive use program as it the District does not overlie a usable groundwater basin. However, Lindsay-Strathmore does operate 5 groundwater wells with a normal production of 1,750 gallons per minute, when surface water is not available. These wells are not utilized if surface water is available due to the high cost of pumping.

Lindsay-Strathmore contractually uses the conjunctive use capacity of the Tulare Irrigation District, a common stockholder in the Wutchumna Water Company, by delivering Lindsay-Strathmore's Kaweah River water through the Wutchumna Ditch to the Tulare Irrigation District turnout. Tulare Irrigation District either uses this water for irrigation (in lieu recharge) or direct sinking in their groundwater recharge basins. During "dry" years, Tulare Irrigation District's farmers utilize the groundwater delivered by Lindsay-Strathmore. Tulare Irrigation District returns surface water to Lindsay-Strathmore through either the FKC or through the Kaweah River system. Lindsay-Strathmore regularly transfers water to Lindmore, which borders LSID on the west. Approximately 2,500 AFY is transferred to Lindmore during normal water supply years.

Lower Tule River Irrigation District
See description under Cross Valley Contractors.

Orange Cove Irrigation District (Orange Cove)
Orange Cove is located in Fresno and Tulare Counties about 30 miles southeast of Fresno and 20 miles north of Visalia. Orange Cove consists of 28,000 acres, of which approximately 26,788 are irrigated. Orange Cove has a long-term water service contract (Contract No. I75r-1672D) with Reclamation for up to 39,200 AFY of Class 1 water. Orange Cove obtains their CVP water supplies from 15 diversion points on the FKC between MP 35.87 to 53.32. Orange Cove's distribution system is 105 miles of pipeline and one regulating reservoir with a capacity of 8 AF. The District does not supply any M&I water. Orange Cove does not operate groundwater wells or recharge facilities due to the existing groundwater conditions but does provide approximately 1.4 AF per acre of surface water supplies. A groundwater basin is almost non-existing under Orange Cove but the area immediately east of Smith Mountain and the area in the vicinity of Navelencia contain some basin water with a safe yield of less than 28,000 AFY. The majority of landowner wells in the District are located in this area. Therefore, the reminder of water supply needs for crops are made up from precipitation and groundwater pumping. The landowners in Orange Cove manage the groundwater supplies through conjunctive use practices. Orange Cove transfers unused water supplies out to other districts for storage and banking. The District has

been pursuing a long-term transfer program or groundwater banking program to balance water in wet and dry years.

Porterville Irrigation District (PID)

PID is located in Tulare County and is comprised of 17,400 acres, of which 13,061 are irrigated.

PID has a long-term water service contract (Contract No. I75r-4309D) with Reclamation for up to 16,000 AFY of Class 1 and 30,000 AFY of Class 2 water. PID obtains their CVP supplies from six diversion points on the FKC. PID also has an average annual entitlement of 12,900 AFY of water supply from the Tule River. PID owns the facilities of two improvement districts. Improvement District No. 1 consists of approximately four miles of pipeline and serves 854 acres. Improvement District No. 2 consists of 3.3 miles of open ditch and serves 1,266 acres. In addition to its owned facilities, PID has entered into agreements with Lower Tule and other entities to utilize non-District owned facilities to convey PID's water. Through an agreement between PID and Lower Tule, CVP water deliveries are conveyed through facilities owned or operated by Lower Tule within PID. These facilities consist of 13 miles of unlined canals.

PID also conveys both CVP supplies and Tule River water through facilities owned by the Porter Slough Ditch Company, the Hubbs-Miner Ditch Company, the Rhodes-Fine Ditch Company and the Gilliam-McGee Ditch Company. These facilities consist of approximately 13 miles of unlined ditch within PID. The facilities belonging to these companies are operated by PID under long-term agreements with the entities. PID operates two percolation basins but does not own storage facilities. It does, however, own a portion of the water conservation storage space within Success Reservoir. This storage space is used to store water rights water owned by ditch companies with which PID has operating agreements.

Saucelito Irrigation District

See description above under Cross Valley Contractors.

Shafter-Wasco Irrigation District (Shafter-Wasco)

Shafter-Wasco is located in Kern County about 20 miles northwest of Bakersfield. Currently, SWID is comprised of 38,766 acres, of which 32,000 are irrigated. Included within its boundaries are the cities of Shafter and Wasco covering approximately 2,400 acres. Shafter-Wasco has a long-term water service contract (Contract No. 14-06-200-4032D) with Reclamation for up to 50,000 AFY of Class 1 and 39,600 AFY of Class 2 water. The District does not have any other long-term surface water supplies. Shafter-Wasco provides water for agricultural use only. The District obtains its CVP water supplies from two turnouts on the FKC at MP 134.4 and 137.2. The distribution system is 0.3 miles of lined canals and 117 miles of pipeline. Shafter-Wasco does not own or operate any water storage facilities or groundwater extraction facilities. Landowners must provide wells to meet irrigation demands when the District does not have adequate surface water supplies available.

Southern San Joaquin Municipal Utility District (SSJMUD)

SSJMUD is located in Kern County, approximately 75 miles southeast of Fresno and 30 miles northwest of Bakersfield. The towns of Delano and McFarland are within its boundaries but are not serviced by SSJMUD. Currently, SSJMUD is comprised of approximately 61,000 acres, of which 47,000 are irrigated. SSJMUD has a long-term water service contract (Contract No. Ilr-

1460D) with Reclamation for up to 97,000 AFY of Class 1 and 50,000 AFY of Class 2 water. The District does not have other long-term surface water supplies. SSJMUD obtains its CVP water supplies from nine diversion points on the FKC between MP 119.6 and 130.4. The distribution system is 158 miles of pipeline. SSJMUD operates 11 regulating reservoirs that provide groundwater recharge. Poso Creek and other smaller foothill drainages provide groundwater recharge. SSJMUD does not own and operate groundwater production facilities. Landowners must provide well to irrigate during times when SSJMUD does not have surface water supplies available to meet irrigation demands.

Stone Corral Irrigation District

See description under Cross Valley Contractors.

Tea Pot Dome Water District (Tea Pot Dome)

Tea Pot Dome is located in southeastern Tulare County, approximately three miles south of Porterville. The District is comprised of 3,282 acres, and all are irrigated. Orange Cove has a long-term water service contract (Contract No. I75r-1672D) with Reclamation for up to 7,500 AFY of Class 1 water. In 2013, Tea Pot Dome assigned 300 AFY of its Friant Division Class 1 water supply to Saucelito. Tea Pot Dome does not have any other long-term surface water supplies. The District does not own or operate groundwater recharge or extraction facilities. Landowners pump small amounts of groundwater. Tea Pot Dome receives its CVP water supplies from its turnout on the FKC. The distribution system is 20 miles of pipeline.

Terra Bella Irrigation District (Terra Bella)

Terra Bella has a long-term water service contract (Contract No. I75r-2446D) with Reclamation for up to 29,000 AFY of Class 1 water for irrigation and municipal purposes. Terra Bella also has access to groundwater recharge basins at the confluence of the FKC and Deer Creek. In years when the Friant declaration meets or exceeds 100 percent Class 1, Terra Bella typically has water in excess of in-district demands and delivers that water to the groundwater recharge basins for future use. Only recharged CVP water is pumped for use within the District. No other groundwater is pumped by the District.

Terra Bella has also developed groundwater banking arrangements with other districts. Groundwater banking arrangements have enabled Terra Bella, a groundwater deficient district, to produce crops during drought years. In years when surplus amounts of water are available, Terra Bella transfers water to other districts for direct use, resale, or percolation through recharge basins. Terra Bella and Lower Tule have a long history of water exchanges. Terra Bella transfers water to Lower Tule and, in turn, Lower Tule transfers water to TBID in dry years.

Tulare Irrigation District (TID)

TID is located in western Tulare County on the eastside of the San Joaquin Valley. TID currently comprises of 70,000 acres, of which, approximately 62,000 are irrigated. TID has a long-term water service contract (Contract No. I75r-2485D) with Reclamation for up to 30,000 AFY of Class 1 and 141,000 AFY of Class 2 water. TID obtains its CVP water supplies from its turnout which is located approximately 14 miles northeast of the District Service Area. The water is conveyed in TID's Main Canal. Diversions into this Main Canal include water from the Kaweah and St. Johns River Branch. The Packwood Creek diversion system begins at the terminus of the Lower Kaweah River approximately 10 miles northeast of TID. The distribution

system includes 300 miles of unlined canals, ¼ mile of lined canal and 30 miles of pipeline. TID provides only agricultural water supplies and does not service the city of Tulare. Water for Tulare is extracted from the ground and furnished through City owned facilities.

TID has pre-1914 water rights on the Kaweah River for approximately 50,000 AFY of water. Water is also made available through share holdings in the following Kaweah River agencies: 1) Tulare Irrigation Company on both the Lower Kaweah Branch and the St. Johns Branch, Wutchumna Water Company on the Kawaeah River, 4) Persian Ditch Company, and 5) Consolidated Peoples Ditch Company. Groundwater recharge occurs from percolation in the canals and natural channels, recharge basins, and treated municipal and industrial effluent. TID has 12 groundwater recharge areas covering a total of 1,110 acres. TID does not operate extraction wells.

Other CVP Contractors, SWP Contractors, and non-CVP Contractors

Buena Vista Water Storage District (BVWSD)

BVWSD lies in the trough of the southern San Joaquin Valley in Kern County. The District lands are within a portion of the lower Kern River watershed, where historic runoff created the heavy clay soils from former swamp and overflow lands north of Buena Vista Lake. The area lies on the west side of the valley floor, about 16 miles west of the city of Bakersfield. The unincorporated town site of Buttonwillow (population 1,500) is situated in the geographical center; however, BVWSD does not supply any M&I water. The water service area contains 48,443 acres of agricultural land. Approximately 45,500 acres have been built-out and about 40,000 acres almost entirely field and row crops.

BVWSD service area is agricultural, with cotton, grain, sugar beets, and alfalfa as the principal crops. Cotton is the dominant crop, comprising about 85% of the annual cropping pattern. Total crop consumptive use peaked in the 1970s, averaging about 113,000 AF. In the past 10 years consumptive use has declined to about 105,000 AF.

In addition to Kern River water supplies BVWSD contracted with DWR via the Kern County Water Agency (KCWA) for an additional surface water supply in 1973. This contract provided for an annual firm supply of 21,300 AF and surplus supply of 3,750 AF. BVWSD has also been a historic user of surplus FKC flows to serve irrigation demands and for groundwater recharge programs.

BVWSD is geographically located adjacent to the California Aqueduct and low in elevation on the Kern River Fan. BVWSD's Kern River supply is thus delivered by gravity from its origin in the Sierra-Nevada Mountains north east of Lake Isabella. BVWSD is a member unit under KCWA. Other members of KCWA in the Bakersfield area also have contracted for State Water Project (SWP) water but must pump their supplies to their service areas upslope and to the east of the San Joaquin Valley via the Cross Valley Canal (CVC). These circumstances lend themselves to an exchange of BVWSD Kern River water for east side member units SWP water, thus avoiding or reducing energy use and resultant pumping costs. This process also frees up CVC capacity that would otherwise be necessary for transportation of east side member units of SWP water. In order to allow maximum benefit from these exchanges, BVWSD has increased its SWP capacity by construction of a three pipe siphon Aqueduct Turnout (BV-7) having a capacity of 300 cubic feet per second (cfs). The BVWSD Aqueduct capacity can now provide approximately 85-90% of peak system demand with a total flow capacity from the California Aqueduct of approximately 800 cfs. Although the exchange programs have provided benefits to BVWSD, salt loading is an issue since SWP water supplies carry more salinity than Kern River water. This influences the degree of exchange volume in particular years when salinity levels are greater.

BVWSD engages in water banking programs. These banking programs generally fall under two categories. The first category would be a program designed to return water to BVWSD during a dry year when supplies are restricted. The second category would be a program where BVWSD is providing a banking and extraction service for monetary payment or similar benefits.

BVWSD wet year supplies have afforded it the ability to enter into both categories of banking programs which in turn allow BVWSD to stretch its wet year supplies into dry year payback deliveries and thus help to balance required groundwater pumping. These programs also allow BVWSD to make more efficient use of its Kern River water supplies over the long term which in turn minimizes the loss of water from the critically overdrafted groundwater basin. BVWSD also engages in direct groundwater recharge programs. BVWSD Kern River supply is dependent on the hydrologic cycles as they occur regardless of crops demands. During dry years, landowners must provide the difference between crop demands and BVWSD allocated surface deliveries via groundwater pumping from individual wells. During wet years BVWSD is able to satisfy maximum crop demands that eliminates the use of landowner wells. Excess wet years are stored to maximize surface carryover use and followed by direct recharge, to the maximum extent possible to replenish the groundwater supply. The efficiency of managing this difference between crop demands and available water supplies ensures that BVWSD, as a whole, is in positive balance with the groundwater basin. The main recharge areas used by BVWSD below the Enos Lane are the Kern River Bypass Area, the Kern River channel, the Main Canal, the Outlet Canal, the Tule Elk Reserve area near Tupman, and the upper reach of the Kern River Flood Channel. Recharge capacity has nearly doubled in the Kern River Bypass Area due to improvements in the West Kern/Buena Vista banking program, and in the Tule Elk Reserve area via additional distribution facilities in sloughs and other low lying areas. In addition, BVWSD is a recharge participant in the KCWA Pioneer Project and shares a first priority access to the total recharge capacity for overdraft correction.

Historically, BVWSD stored its spring runoff flows within Buena Vista Lake until the lake bottom lands were freed from the storage right in exchange for conservation storage space in Lake Isabella. This storage space was purchased by the Kern River Interests upon construction of Isabella Dam by the U.S. Army Corps of Engineers. BVWSD owns 31.6% of the conservation storage space within the reservoir with flood control being the only overriding purpose. This affords a maximum storage increment of 172,000 AF of regulation space with a maximum winter carryover capability of 68,800 AF. BVWSD also retained storage rights within the cells of Buena Vista Lake with a yield, after losses, of approximately 25,000 AF. Pursuant to the Kern River Storage and Use of Water Agreement, BVWSD is afforded use of this facility for wet year storage of excess Kern River supplies. In addition, BVWSD, via agreement with Kern County maintains regulation storage use of 1,800 AF of space within Buena Vista Aquatic Recreation Area Lakes. Therefore, BVWSD has approximately 96,000 AF of surface storage space for regulation of its surface water supplies from one year to the next. These surface storage rights are very important to the efficient management of BVWSD's Kern River water rights since the April-July runoff period does not coincide with the crop irrigation requirement which occur in the January through March pre-irrigation and the June through September summer irrigation periods. The carryover capability with Isabella reservoir and BVWSD's SWP supply allow BVWSD to provide a surface water supply for the early pre-irrigation period even though BVWSD's Kern River supply normally does not begin until the Mar-August supply period. The reservoir also provides peaking capability and facilities other management practices such as the previously mentioned exchange, banking, and recharge activities

The Buena Vista Aquatic Recreational Area lakes provide the BVWSD with a very useful tool in the operational storage for regulation of both Kern River and SWP flows to the BVWSD as well

as some valuable surface storage. This facility receives the BVWSD's Kern River flow via the Alejandro Canal and SWP flow via turnout BV-3 while directing flows in the BVWSD's Outlet canal for use in the Buttonwillow service area. The lakes are also used to serve the Maples area and Henry Miller Water District per agreement with Kern County and upon arrangement with BVWSD.

Cawelo Water District (Cawelo)

Cawelo is located in the North-Central portion of Kern County and encompasses an area of nearly 45,000 acres. Cawelo's surface water supply is obtained primarily under two long-term contracts: a contract with KCWA for SWP water and a contract with the city of Bakersfield for Kern River water. Water from these two sources has accounted for 90% of Cawelo's surface water supplies. The District also purchases water from many other sources under short-term agreements as available. The imported surface water serves as a supplemental supply for irrigation within Cawelo. Approximately 65% of the irrigation demands within CWD have been satisfied with imported surface water deliveries. Cawelo does not serve M&I water. Individual landowner wells have contributed to the remainder of the water required to irrigate crops. Cawelo obtains surface water from other sources including diversions from Poso Creek when available, oil-field produced water, and CVP water through one-year temporary water service contracts when available.

St. Johns Water District

This District encompasses in part or in total of the Kaweah River water rights of Jennings Ditch Company, Modoc Ditch Company, Goshen Ditch Company, and St. Johns Ditch Company.

Kaweah Delta Water Conservation District (Kaweah Delta)

Kaweah Delta was formed in 1927, under the provisions of California state law known as the Water Conservation District Act of 1927, for the purpose of conserving and storing waters of the Kaweah River and for conserving and protecting the underground waters of the Kaweah Delta. Later the Water Conservation District Act, as well as the purpose of Kaweah Delta, was expanded to include power generation. Kaweah Delta is located in the south central portion of the San Joaquin Valley and lies in both Tulare and Kings Counties. It fully encompasses the growing cities of Visalia, Farmersville and Tulare. The population of the Kaweah Delta is currently estimated to be in excess of 150,000 people. The total area of Kaweah Delta is about 337,000 acres with approximately 255,000 acres located in western portion of Tulare County and the balance, or about 82,000 acres, in the northeastern portion of Kings County. Kaweah Delta is comprised of four districts that are entirely or partially within Kaweah Delta boundary and are listed below:

- Lakeside Irrigation Water District
- Kings County Water District
- Corcoran Irrigation District
- Tulare Irrigation District

Kaweah Delta lands are primarily agricultural, although the cities of Visalia and Tulare constitute significant areas of urbanization. Farmersville is the other incorporated area. Smaller unincorporated rural communities include Goshen, Ivanhoe, Waukena, and Guernsey. A high degree of agricultural development exists in the Kaweah Delta, with approximately 266,000 acres presently devoted to the production of a variety of irrigated crops, 3,200 acres idle or

fallow (including roads and canals), 13,000 acres in farmsteads, 23,300 acres undeveloped and approximately 31,500 acres of urbanized land. The principal crops are cotton, miscellaneous field crops, deciduous fruit and nut trees and alfalfa.

Kaweah Delta encompasses the alluvial fan of the Kaweah River, extending about 40 miles in a southwesterly direction from the foothills of the Sierra Nevada Mountains on the east to the center of the San Joaquin Valley in the vicinity of the Tulare Lake bed on the west. Kaweah Delta is generally bounded on the north and west by the service area of the Kings River and on the south by the service area of the Tule River.

Numerous public and private entities within Kaweah Delta's boundaries divert water from the Kaweah River and its distributaries. Nearly all of the lands served with Kaweah River water also use groundwater wells to supply irrigation water, primarily due to the erratic, relatively undependable, nature of flow on the Kaweah River. All M&I water uses within Kaweah Delta are supplied from groundwater.

Terminus Dam and Lake Kaweah, located on the Kaweah River about 3.5 miles to the east of Kaweah Delta, was completed in 1961 by the U.S. Army Corps of Engineers. This project was constructed for flood control purposes on the Kaweah River and to provide river control and water conservation for irrigation purposes. Kaweah Delta has a contract with the United States for repayment for the project costs allocated to water conservation. The reservoir currently holds about 143,000 AF, with construction underway to expand capacity to 183,300 AF.

Kaweah Delta and its sub-entities have historically received substantial quantities of water surplus to the needs of CVP Contractors. Over the past 50 years, an excess of 5 million AF of CVP water has been imported into Kaweah Delta. Kaweah Delta and the Kaweah River groundwater basin have experienced long-term groundwater overdraft estimated in 1972 to be 89,000 AF per year. Kaweah Delta is currently undergoing new studies of groundwater data to determine the extent and volume of groundwater overdraft within its boundaries. There are currently 40 recharge basins within Kaweah Delta covering approximately 5,000 acres. While Kaweah Delta owns and operates many of the groundwater recharge basins, it does not provide water-banking services for others.

Kern County Water Agency

KCWA comprises all of Kern County in the Southern San Joaquin Valley. KCWA holds the master contract with the State of California for SWP water supplies to 13 subcontracting water agencies (referred to as "Member Units") and Improvement District No. 4. Since 1968, the Member Units have received over 33 million AF of SWP water. KCWA Member Units include:

- Belridge Water Storage District
- Berrenda Mesa Water District
- Buena Vista Water Storage District
- Cawelo Water District
- Henry Miller Water District
- Kern Delta Water District
- Lost Hills Water District
- Rosedale-Rio Bravo Water Storage District
- Semitropic Water Storage District
- Tehachapi-Cummings County Water District
- Tejon-Castac Water District
- West Kern Water District

- Wheeler Ridge-Maricopa Water Storage District

The first deliveries of water from the SWP to Kern County began in 1968. KCWA has contracted to receive a maximum yearly supply of 1,000,949 AF of water. Of that amount, 134,000 AF is allocated to M&I use, and 866,949 AF is used for agricultural use. Water from the SWP reaches Kern County through the California Aqueduct which passes through the west side of Kern County before crossing the Tehachapi Mountains into Southern California. A portion of that water is brought to Bakersfield and other eastern portions of the San Joaquin Valley through a series of seven pumping stations in the 22-mile long CVC operated by the KCWA.

KCWA Member Units have access to the following potential sources of water that could be exchanged for CVP water supplies:

- SWP water – Accessed from turnouts along the California Aqueduct and subsequently from public and privately owned canals and pipelines that transport the water for use within Kern County.
- Kern River water – Accessed from existing turnouts and diversion points along the Kern River and related public and privately owned canals and pipelines that transport the water for use within Kern County, or through additional exchange to CVP surface water supplies.
- Poso Creek, Caliente Creek or other minor streams within Kern County – Existing points of diversion are within Cawelo, Semitropic Water Storage District, Kern Delta Water District, Henry Miller Water District, Arvin-Edison, and portions of Wheeler Ridge-Maricopa Water Storage District.
- Kaweah, Tule, St. Johns and Kings River water – Historically has been available to Kern County NLTC via diversion of flows at established points of diversion into the FKC and into the Kern River.
- Groundwater – Exchanges involving groundwater could occur virtually anywhere within the Kern area, including groundwater recharge and recovery facilities, which have access directly or through additional exchange to CVP surface water supplies.

Kern Delta Water District (Kern Delta)

Kern Delta is located in the southern portion of the CVP Service Area, directly south of City of Bakersfield, and west of Arvin-Edison. The District encompasses the historic Kern Lakebed. KDWD comprises of 129,000 acres which are primarily agricultural but also encompassing about 5,000 acres of residential and commercial land uses. Most urban areas are found in the north portion of Kern Delta, where the City of Bakersfield is slowly growing to the south. In addition, there is sparse urban development along the two major east-to-west roads (Panama Land and Taft Highway). Land use south of the City of Bakersfield is mainly agricultural (87%), but there are about 8,000 acres dedicated to petroleum extraction. Planned suburban and commercial development is generally focused on the areas immediately south of Bakersfield.

Major infrastructure in Kern Delta consists of two oil fields: the Ten-Section Oil Field on the west, south of Panama Lane, and a much smaller oil field just south of Panama Lane near the town Lamont at the eastern edge of Kern Delta. There are a number of oil and gas pipelines

running through Kern Delta and several major power line easements. The Arvin-Edison Canal runs through portions of the northern end of Kern Delta, connecting to five existing irrigation canals that serve Kern Delta growers. From west to east, these existing earth-lined canals are the Buena Vista, Stine, Farmers, Kern Island Main, Kern Island Central, and Eastside Canals.

Kern Water Bank Authority (KWBA)

KWBA is located in the southwestern San Joaquin Valley and occupies approximately 30 square miles (20,000 acres) of land in Kern County. The primary purpose of the KWBA is to recharge, store and recover water (water banking) in order to improve the water supply for its participants during periods of water shortages. It also conducts other activities that include farming and habitat management. The KWBA is a Joint Powers Authority comprised of six subcontracting water agencies, as listed below**:**

- Dudley Ridge Water District
- KCWA
- Semitropic Water Storage District
- Tejon-Castaic Water District
- Westside Mutual Water Company
- Wheeler-Ridge-Maricopa Water Storage District

All members of the KWBA have a contract, either directly or indirectly, for water from the SWP. KWBA provides the mechanism to help mitigate the various reliability problems inherent in the SWP. The District operates by recharging surplus water for direct groundwater recharge within recharge basins when it is plentiful. KWBA does not ownership of any of the water recharged onto the property. All water is owned by the participants purchasing and recharging the water to maintain balance of water supplies. As such, KWBA does not use its banked water for growing crops, although its member districts do use the water for farming within their districts.

The majority of KWBA land, 17,000 of the 20,000 acres were farmed intensively prior to 1991. Currently, the water conservation activities of the water bank are allowing re-establishment of intermittent wetland and upland habitat. The CVP water, if approved, would be delivered for recharge of the aquifer. KWBA receives FKC water via the CVC or the Kern River. Both the CVC and Kern River will then convey the water to the Kern Water Bank facilities for groundwater storage until needed by the Kern Water Bank participants. When the stored water is requested by the KWBA participants, the water can be pumped from the ground and delivered through the Kern Water Bank canal, CVC and the California Aqueduct directly or by exchange to the participant’s service areas so long as they are within the Place of Use boundaries as defined in Reclamation's water rights permits.

Kings County Water District (KCWD)

KCWD encompasses the northeastern portion of Kings County, from the Kings River on the north to approximately six miles south of Hanford. To the east, KCWD extends to the County's east boundary, and to the west it extends approximately 5 miles west of Hanford to the eastern edge of the City of Lemoore. KCWD is located in the east central part of the Kings River service area, and is entirely within Kings County. The City of Hanford, with a population of 38,000, lies near the center of KCWD. The total area of KCWD is 143,000 acres, of which

51,150 acres are also with the boundaries of Division 5 of the Kings River Conservation District; 82,610 acres are also within the boundaries of Kaweah Delta; and 9,240 acres are within the area where the two districts overlap. KCWD's population excluding City of Hanford is 25,000. Although, KCWD boundaries encompass the Cities of Hanford and a portion of Lemoore, KCWD does not supply any M&I water.

KCWD includes portions of the service areas of three major mutual ditch companies. People's Ditch Company and Last Chance Water Ditch Company both possess water rights on the Kings River, and Lakeside ditch Company holds water rights on the Kaweah River. KCWD boundary completely encompasses the area of the Lakeside Irrigation Water District, a California water district formed to administer the water rights and distribution system of the Lakeside Ditch Company stockholders, and acquire additional surface water supplies. KCWD also operates and maintains the Riverside Ditch, a conveyance system used to distribute KCWD and People's Ditch Company water.

KCWD has recharge basins that are located near the conveyance systems of the ditch companies in which they own stock. KCWD also uses Old Slough and river channels, and has a continuing program of purchasing and leasing property for groundwater recharge. KCWD currently has over 1,100 acres of artificial recharge area and also uses some 230 miles of unlined canals owned by the ditch companies that contributes to incidental recharge. The results of the recharge program are monitored by semiannual measurements of the groundwater level in 230 wells through a cooperative effort. The average of the measurements are taken in these wells each autumn. These measurements depict an erratic decline in groundwater levels. Since KCWD formation in 1954, the average depth to groundwater has gone from 37 feet to 74 feet measured in the autumn of 1997. The average yearly decline in groundwater levels is 0.86 feet per year since 1954. This equates to an annual average overdraft of 12,300 AFY. To counteract this overdraft, KCWD has practiced a conjunctive use of both surface and groundwater, plus the planned artificial recharge of the groundwater by importing available surplus water and flood release water from reservoirs on the San Joaquin, Kings, and Kaweah Rivers and placing it in recharge basins. KCWD practices appear to be producing positive results because the rate of decline in groundwater levels is less after 1954 than in years preceding formation of KCWD. KCWD efforts are enhanced by the cooperation of Last Chance, Peoples, Settlers, and Lakeside Ditch Companies that provide the conveyance system to these basins and help regulate the rate of recharge. Furthermore, they help distribute surface water purchased by KCWD to local farmers who would otherwise pump groundwater. Approximately 135,000 acres (nearly 95 percent) in KCWD is irrigated agriculture. Surface water supplies for irrigation come from diversions of the Kings and Kaweah Rivers, and from exchanges and purchases of CVP and SWP water. The supply of surface water is inconsistent, and ranges from a low of 30,000 AF in 1997 to a high of 327,000 AF in 1983. The estimated average surface supply is 150,000 AF. Due to inadequate surface water supplies, even in wet years, to meet the total demands for water within KCWD, groundwater is pumped through private wells owned by landowners to meet their individual needs. In addition, all the water requirements to meet M&I users is pumped. Approximately 282,500 AF of groundwater is pumped annually resulting in overdraft. This condition is expected to worsen as the urban population grows.

Lakeside Irrigation Water District (Lakeside)

Lakeside is located east of the city of Hanford and the northern portion is crossed by State Highway 198. The District is situated within KCWD, Kaweah Delta, and a portion within Kings River Conservation District. Lakeside is not represented by the above listed umbrella agencies. Lakeside is a member of the Mid-Valley Water Authority; however, Mid Valley Water Authority is not included as a participant in this Proposed Action. Lakeside consists of 31,917 acres.

Liberty Water District (Liberty)

Liberty is located in Fresno County south of the city of Caruthers and northerly of the cities of Riverdale and Laton and is bisected by Hwy 41. LWD comprises 21,189 acres and all are irrigated agriculture. Liberty has no M&I use.

North Kern Water Storage District (North Kern)

North Kern is situated in the San Joaquin Valley portion of Kern County and encompasses about 70,000 acres divided into two project areas: the 1950 North Kern Water Storage District project of about 60,000 acres and the 1979 Rosedale Ranch Improvement District project of about 10,000 acres. Both are fully developed to irrigated agriculture, with almonds and grapes accounting for about 50% of the cropped area and stone fruit and other permanent and annual crops comprising the remaining amount. North Kern is comprised of approximately 64,813 irrigated acres and about 74% is planted to permanent crops. Water supplies include Kern River, Poso Creek, oilfield waste water, and other smaller creeks.

The FKC bisects North Kern with less than 50% uphill of the FKC. There is a turnout on the North side of Poso Creek on the FKC. North Kern has a weir across Poso Creek on the Calloway Canal approximately 1-1/2 miles below the FKC. North Kern, in a program with Kern-Tulare constructed a turnout off 1 mile north of 7th Standard Road. In addition, North Kern has a pump station on the Calloway Canal at Kimberlina Road that is used to deliver water supplies to Shafter-Wasco via Shafter-Wasco's North Pipeline. The pump station can also allow water to flow into the Calloway Canal at this location. Norht Kern also has a gravity outlet on the Calloway Canal near the intersection of Cherry and Fresno Avenues that is used to deliver water supplies from the Shafter-Wasco South Pipeline into the Calloway Canal. Finally, water supplies delivered at the end of the FKC can be exchanged for Kern River supplies being delivered at lower elevations. The Kern River supplies intended for lower elevations are diverted into the District's higher elevation Beardsley Canal to be delivered to lands uphill of the FKC.

Rosedale-Rio Bravo Water Storage District (Rosedale-Rio Bravo)

Rosedale-Rio Bravo is located west of Bakersfield in Kern County. The District has a gross area of approximately 43,000 acres with a net estimate of 33,400 irrigated agricultural acres. Approximately 3,900 acres are fallow lands, 2,500 acres undeveloped lands and 1,100 acres of canals and recharge basins. Rosedale-Rio Bravo is primarily planted to alfalfa hay, almonds, grain, cotton and corn. All water coming into Rosedale-Rio Bravo has been used for groundwater recharge and overdraft correction. Rosedale-Rio Bravo does not serve M&I water.

Water was historically supplied from landowner wells pumping from the groundwater basin, with a small amount (an average about 15,000 AFY) of irrigation diversions to lands adjacent to the Rosedale-Rio Bravo's groundwater recharge project. Prior to operation of its groundwater

recharge project, pumping extractions exceeded the safe yield of the local groundwater supply, and a substantial overdraft in the range of 40,000 to 50,000 AFY occurred annually. As a result of this overdraft, groundwater levels were declining at a rate of 8 to 10 feet per year. In 1959, the Rosedale-Rio Bravo was formed to develop a groundwater recharge project to offset the overdraft. Construction of the recharge project was completed in 1962. The physical features of the project include facilities to divert waters from the Kern River and the joint use CVC into the Goose Lake Slough Channel, the channel itself and recharge basins. Rosedale-Rio Bravo has completed construction of additional recharge basins and now has a wetted area of approximately 840 acres available for groundwater recharge. Rosedale-Rio Bravo is also a recharge participant in the Pioneer Project, and as such, has first priority to 25% of the total recharge capacity. This provides an additional 50 cfs of recharge capacity. Rosedale-Rio Bravo acquires water for recharge purposes from the Kern River through a water service agreement with the city of Bakersfield, from the FKC of the CVP, as available, and from the SWP through a water supply contract with the KCWA. Water supplies from these three sources have averaged about 62,000 AFY for the years 1962 through 1999 or about 79% of the cumulative consumptive use during those years.

Semitropic Water Storage District (Semitropic)

Semitropic is located in north-central Kern County in the San Joaquin Valley, about 20 miles northwest of the City of Bakersfield. Semitropic was organized in 1958 to supply supplemental water within its boundaries. The total land area within Semitropic is approximately 221,000 acres (345 square miles), with about 143,000 acres (223 square miles) irrigated area. Semitropic initially contracted with KCWA, for an annual firm supply of 158,000 AF of SWP water and 25,100 AF per year of surplus water. Semitropic gave up 3,000 AF of supply to buy into Kern Water Bank and now has 155,000 AF annual firm supply of SWP water. This is used to irrigate approximately 42,300 acres in its Contract Water Service Area. Other water is available from the KCWA on an interruptible basis to deliver to other service areas totaling about 58,000 acres (consisting of a Conjunctive Surface Water/Groundwater Surface Area of about 28,500 acres and an In-Lieu Service Area of about 29,500 acres). Farmers in all the service areas maintain wells to supplement Semitropic supplies and protect against shortages. Nearly 42,700 acres rely exclusively on groundwater. Landowners within Semitropic apply approximately 480,000 AF of water of which, in a very good year 350,000 AF can be imported surface water with the remaining 130,000 AF applied in the groundwater service area. Approximately 72% of the land area in Semitropic is included in the Buttonwillow and Pond Poso Improvement Districts leaving 28% in the “unorganized area”. The “unorganized area” is a large, contiguous area in the northwest quarter of Semitropic. SWSD provides water banking and owns a portion of the Kern Water Bank. It should be noted that water banking for later (beyond one-year) is not included in this analysis and review process. SWSD also provides banking for conjunctive use for in-lieu storage to alleviate groundwater pumping. The Proposed Action could result in providing CVP water to Semitropic for the purpose of groundwater recharge or conjunctive use.

Tulare Lake Basin Water Storage District (Tulare Lake Basin)

Tulare Lake Basin has a service area of 185,800 acres and its boundaries include nearly the entire Tulare Lake Bed. The District is located southwest of the city of Corcoran in Kings County. All deliveries from Tulare Lake Basin are for agricultural purposes. Tulare Lake Basin manages Kings River South Fork water deliveries at Empire No. 2 Weir near Stratford

(immediately below State Route 41) in Kings County. Empire No. 2 Weir diverts Kings River water into the Tulare Lake, Kings River-South Fork and Blakeley canals which serve the Tulare Lake Bed. Tulare Lake Basin is a SWP contractor and is connected to the California Aqueduct by Lateral A and B. Despite its state contract, the Tulare Lake Bed units rely most heavily on Kings River water for irrigation purposes.

CVP water is conveyed to Tulare Lake Basin via the California Aqueduct or released into the Kings River, Kaweah River or Tule River from the FKC. While Tulare Lake Basin has no formal water banking facilities, it does practice conjunctive use.

The area served by Tulare Lake Basin remain vulnerable to occasional flooding and drought-caused water supply shortages. The result, economically and physically, is that the Tulare Lake Bed is farmed in large tracts upon which annual field crops are produced. Small farmers cannot endure the financial burdens of Tulare Lake Bed agricultural operations.

Kings River Conservation District (KCRD)

KCRD is a water resources and energy management agency located in the central San Joaquin Valley. Its boundaries include the entire service area of the Kings River – an area of approximately 1,100,000 acres, plus an additional area of approximately 140,000 acres outside of the Kings River service area. KRCD's mission is to provide flood protection, achieve a balanced and high quality water supply, and develop power resources within its boundaries. KRCD works with and coordinates the common interests of the following 35 entities:

- Alta Irrigation District
- Clark's Fork Reclamation District No. 2069
- Consolidated Irrigation District
- Corcoran Irrigation District
- Empire West Side Irrigation District
- Fresno Irrigation District
- James Irrigation District
- Kings County Water District
- Kings River Water District
- Laguna Irrigation District
- Lakeside Irrigation Water District
- Liberty Water District
- Mid-Valley Water District
- Raisin City Water District
- Riverdale Irrigation District
- Salyer Water District
- Stratford Irrigation District
- Tranquility Irrigation District
- Tulare Lake Basin Water Storage District
- Tulare Lake Reclamation District No. 761
- Burrel Ditch Company
- Corcoran Irrigation Company
- Crescent Canal Company
- John Heinlen Mutual Water Company
- Last Chance Water Ditch Company
- Lemoore Canal and Irrigation Company
- Liberty Canal Company
- Liberty Mill Race Company
- Lovelace Water Corporation
- Peoples Ditch Company
- Reed Ditch Company
- Southeast Lake Water Company
- Stinson Canal and Irrigation Company
- Tulare Lake Canal Company
- Upper San Jose Water Company