Appendix A: Summary of Available Water Supplies

Summary of Available Water Supplies

This appendix includes a summary of available water supplies for the Cross Valley Contractors and their potential exchange partners.

Cross Valley Contractors

The seven Central Valley Project (CVP) Cross Valley Contractors (Table 1) are geographically located within the Friant Division but receive their CVP water supplies from the Delta. Due to direct conveyance hurdles, Cross Valley Contractors obtain their CVP supplies either by direct delivery from the Cross Valley Canal or via transfers associated with exchange agreements with participating contractors pursuant to Article 5(a) of their water service contracts.

Table 1 Cross Valley Contractors

Contractor	Contract Number	Contract Quantity (acre-feet per year)
County of Fresno[1]	14-06-200-8292A-IR16	3,000
County of Tulare[2]	14-06-200-8293A-IR16	5,308
Hills Valley Irrigation District[3]	14-06-200-8466A-IR16	3,346
Kern-Tulare Water District[3]	14-06-200-8601A-IR16	40,000
Kern-Tulare Water District (from Rag Gulch Water District)[4]	14-06-200-8367A-IR16	13,300
Lower Tule River Irrigation District[3]	14-06-200-8237A-IR16	31,102
Pixley Irrigation District	14-06-200-8238A-IR16	31,102
Tri-Valley Water District[3]	14-06-200-8565A-IR16	1,142

[1]County of Fresno includes Fresno County Service Area #34
[2]County of Tulare includes the following subcontractors: Alpaugh Irrigation District, Atwell Water District, City of Lindsay[3], City of Visalia, Hills Valley Irrigation District[3], Saucelito Irrigation District[3], Smallwood Vineyards, Stone Corral Irrigation District[3], Strathmore Public Utility District, and Styrotek, Inc.
[3]Lower Tule River Irrigation District, Saucelito Irrigation District, Stone Corral Irrigation District, Tri-Valley Water District, Kern-Tulare Water District, Hills Valley Irrigation District, and City of Lindsay receive CVP water under more than one contract, either as Friant Division and/or Cross Valley Contractors.
[4]Kern Tulare Water District and Rag Gulch Water District consolidated on January 1, 2009.

As shown in Table 1, some of the Cross Valley Contractors are comprised of subcontractors. The following description characterizes each Cross Valley Contractor and associated subcontractor.

County of Fresno

The County of Fresno has a Cross Valley CVP water service contract for up to 3,000 acre-feet per year (AF/y) that is provided for municipal and industrial (M&I) purposes to specific developments within its CVP service area. County Service Area 34 (CSA 34) was formed to provide potable water to approximately 3,500 residential, commercial, and public facility water connections within the Millerton New Town Specific Plan Area. CSA 34 currently provides residential potable water to a population of over 700 and supplies surface to a golf course from its surface water supply contract including banking, transfers, or exchanges and a standby groundwater well. There is no agricultural demand within CSA 34. Within the next five years,

the development is on track to add four more subdivisions with an additional 698 residential water connections for a total of 955 residential water connections by 2022 (County of Fresno 2017).

CSA 34 draws their water directly from Millerton Lake after the County's Cross Valley CVP water supply has been exchanged with Arvin-Edison Water Storage District (Arvin-Edison) for Friant CVP water supplies. The County's Cross Valley 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 is comprised of 10 subcontractors – both agricultural and M&I. Of those 10 subcontractors, only five have routinely taken water deliveries via the Cross Valley Canal exchanges or through direct water purchases from Friant Division Contractors via the County of Tulare's interim contract in recent years. The County of Tulare's 5,308 AF Cross Valley CVP contract supply is divided among the 10 subcontractors as shown below:

- Alpaugh Irrigation District – 100 AF (agricultural)
- Atwell Island Water District – 50 AF (agricultural)
- City of Lindsay – 50 AF (M&I)
- City of Visalia – 300 AF (M&I)
- Hills Valley Irrigation District – 2,913 AF (agricultural)
- Saucelito Irrigation District – 100 AF (agricultural)
- Smallwood Vineyards – 400 AF (agricultural)
- Stone Corral Irrigation District – 950 AF (agricultural)
- Strathmore Public Utility District – 400 AF (M&I)
- Styrotek Inc. – 45 AF (M&I)

Alpaugh Irrigation District

Alpaugh Irrigation District (Alpaugh ID) is comprised of approximately 10,500 acres, of which 5,400 are irrigated. Groundwater is the primary water supply for the district. Alpaugh ID operates 18 wells and 3 regulating reservoirs that cover approximately 800 acres and have a maximum capacity of 4,000 AF. Alpaugh ID provides approximately 300 AF/y of potable groundwater to the Community of Alpaugh.

Alpaugh ID is a subcontractor with the County of Tulare for up to 100 AF/y of CVP water. Historically, Alpaugh ID has entered into exchange arrangements with Arvin-Edison. Friant CVP water is delivered to Alpaugh ID at milepost (MP) 102.69 (Deer Creek turnout) off the Friant-Kern Canal (FKC).

Alpaugh ID does not have any other contracts or water rights to surface water supplies. However, during wet years Alpaugh ID has been able to utilize excess water available in the Homeland Canal, which if not used, would flow into the historic Tulare Lake.

Atwell Island Water District

Atwell Island Water District (Atwell Island) is comprised of 7,136 acres, of which, 4,645 are irrigated. Atwell Island does not operate or maintain groundwater recharge or extraction facilities. Landowners must provide privately owned wells to sustain irrigation during periods when the district does not have surface water available. The district uses primarily surface water supplies when it is available and relies on groundwater only when surface water is unavailable. In wet years, Atwell Island purchases water supplies for use in the district in lieu of pumping groundwater.

In 1993, Atwell Island and Hills Valley Irrigation District (Hills Valley) entered into subcontracts with the County of Tulare for 954 AF/y each of the County's Cross Valley CVP water supply. Hills Valley later obtained Atwell Island's 904 AF/y under the agreement resulting in a reduction of Atwell Island's Cross Valley CVP water supply to 50 AF/y.

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 Nevada foothills. The City has a CVP Friant Division M&I water service contract (5-07-20-W0428) for up to 2,500 AF/y of Class 1[1] water. The City also receives up to 50 AF/y of Cross Valley CVP water under its subcontract with the County of Tulare. Lindsay obtains its CVP water supply from the FKC at the Honolulu Street turnout. The City's water treatment plant is at the same location and provides filtration, chemical additions, and chlorination.

City of Visalia

The city of Visalia, located in Tulare County, receives up to 400 AF/y of Cross Valley CVP water under its subcontract with County of Tulare. The City exchanges its Cross Valley CVP water supply for Hills Valley's Wutchumna Water rights from the Kaweah River. Hills Valley takes physical possession of the City's Cross Valley CVP water. However, this water is considered non-Project water and is applied to ineligible lands. The City 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.

Hills Valley Irrigation District

Hills Valley, located primarily in Fresno County with a small portion in Tulare County, is comprised of approximately 4,223 acres, of which 3,913 are irrigated permanent crops (Hills Valley Irrigation District 2017). Hills Valley has three regulating reservoirs: Anchor Reservoir (0.53 million gallons), American Reservoir (2.0 million gallons), and a 15 AF regulating reservoir. The district does not own groundwater extraction facilities; therefore, individual landowners must provide their own wells to sustain irrigation during periods when Hills Valley does not have surface water available. Hills Valley only serves water to agricultural users.

Hills Valley originally entered into a Cross Valley contract for up to 2,146 AF/y. In 1995, the contract amount was amended to 3,346 AF/y. Hills Valley also entered into subcontracts with

[1] Friant Division Class 1: The supply of water in or flowing through Millerton Lake which, subject to the contingencies described in the water service or repayment contracts, will be available for delivery from Millerton Lake and the Friant-Kern and Madera Canals as a dependable water supply during each Contract Year.

the County of Tulare for 954 AF/y and 1,100 AF/y, respectively. Hills Valley later acquired 904 AF/y from Atwell Island's subcontract with the County of Tulare. Hills Valley's total Cross Valley CVP water supply is up to 6,304 AF/y. Historically, the district has received its Cross Valley CVP water supplies through an exchange with Arvin-Edison.

1n 2012, Hills Valley became a Friant Division CVP contractor by receiving two partial assignments from Lewis Creek Water District (for up to 250 AF/y of Class 1 Friant water supplies) and Porterville Irrigation District (for up to 1,000 AF/y of Class 1 Friant water supplies). Hills Valley receives its CVP water supplies from its turnout off the FKC at MP 41.15L.

Saucelito Irrigation District

Saucelito Irrigation District (Saucelito) is comprised of 19,453 acres, of which 19,057 are irrigated. Deer Creek, an intermittent stream, crosses the District for about 5 miles from its southern boundary, but there are no District diversions off Deer Creek. Saucelito has a CVP Friant Division water service contract (I75r-2604D) for up to 21,200 AF/y of Class 1 and up to 32,800 AF/y of Class 2[2] water. 1n 2012, Saucelito received a partial assignment from Tea Pot Dome Water District (for up to 300 AF/y of Class 1 Friant water supplies). Saucelito also receives up to 100 AF/y of CVP water under its subcontract with County of Tulare. Saucelito obtains its CVP water supplies from four diversion points on the FKC between milepost (MP) 100.64 and 107.35 and the Deer Creek diversion at MP 102.69. The district has five individual water users that have rights in Poplar Irrigation Company of 9.5 shares at 55 AF per share from Mole Ditch. Saucelito has one recharge pond that covers approximately ½ acre. Deer Creek also provides groundwater recharge in wet years.

Smallwood Vineyards

Smallwood Vineyards has a subcontract with the County of Tulare for up to 400 AF/y of Cross Valley CVP water; however, the turnout where the water was previously received has been removed and no Cross Valley water supplies are delivered to this area under this contract.

Stone Corral Irrigation District

Stone Corral, located in Tulare County, is comprised of 6,495 acres, of which 5,470 acres are irrigated. Stone Corral has a Friant Division CVP contract (Contract No. 175r-2555D) for up to 10,000 AF/y of Class 1 water. The District also receives up to 950 AF/y of CVP water under its subcontract with County of Tulare. Stone Corral receives its CVP water from the FKC at MP 57.90, 59.33, 60.90 and 62.68. The District serves only agricultural water.

Strathmore Public Utility District

Strathmore Public Utility District (Strathmore) provides wastewater treatment for a population of approximately 1,900 in the city of Strathmore. Strathmore receives up to 400 AF/y of Cross Valley CVP water through its subcontract with the County of Tulare. The CVP water is diverted from Strathmore's turnout on the FKC and injected into a well to be used for blending with the

[2] Friant Division Class 2: The supply of water which can be made available subject to the contingencies described in the water service or repayment contract for delivery from Millerton Lake and the Friant-Kern and Madera Canals in addition to the supply of Class 1 water. Because of its uncertainty as to availability and time of occurrence, such water will be undependable in character and will be furnished only if, as, and when it can be made available.

wastewater before it reaches the headworks of the wastewater treatment plant. The treated water is temporarily stored in an onsite storage facility and is distributed to M&I customers.

Styrotek, Inc.

Styrotek, Inc. is located near the city of Delano and manufactures shipping containers. The company receives up to 45 AF/y of Cross Valley CVP water under its subcontract 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 Water District (Kern-Tulare), located on the eastern side of the San Joaquin Valley in Kern and Tulare Counties, is comprised of approximately 20,256 acres of which approximately 17,406 acres are irrigated (Kern-Tulare Water District 2015). The District does not supply M&I water.

Kern-Tulare has two Cross Valley Contracts (Contract Nos.14-06-200-8601A and 14-06-200-8367A) for a combined total of up to 53,300 AF/y. The District also has a Friant Division CVP contract (Contract No. I1r-1460A) with a Class 2 allocation for up to 5,000 AF/y. When available, the District also purchase other supplemental surface water supplies including, Friant Division Section 215[3] water, Class 1 and Class 2 water supplies from other Friant Contractors, State Water Project (SWP) water from Kern County Water Agency, and Kern River Water from the City of Bakersfield (Kern-Tulare Water District 2015).

Due to the variability of the surface water supplies, the District has invested significantly in groundwater banking and exchange programs. Surface water is captured when available and later utilized in years when the CVP allocation is insufficient to meet irrigation demands (Kern-Tulare Water District 2017).

Lower Tule River Irrigation District

Lower Tule River Irrigation District (Lower Tule), located on the eastern side of the San Joaquin Valley in Tulare County, is comprised of approximately 103,086 acres of which 84,169 acres are irrigated (Lower Tule River Irrigation District 2012). The District does not supply M&I water.

Currently, the water supply for landowners within the District is derived from groundwater, pre-1914 water rights on the Tule River (average annual supply of 70,000 AF), and surface water from its Friant Division CVP water service contract (Contract No. I75r-2771D) for up to 61,200 AF/y of Class 1 and 238,000 AF/y of Class 2 water supplies, as well as its Cross Valley CVP water service contract (Contract No. 14-06-200-8237A) for up to 31,200 AF/y (Lower Tule River Irrigation District 2012).

All groundwater pumping is done by landowners who utilize privately owned wells when surface water supplies are insufficient to meet demands (Lower Tule River Irrigation District 2012).

[3] Section 215 water is defined under Section 215 of the Reclamation Reform Act of 1982 (RRA), as unstorable irrigation water to be released due to flood control criteria or un-managed flood flows.

Lower Tule maintains and operates 18 recharge and regulating basins, covering approximately 4,500 acres. When excess surface water is available, Lower Tule uses the 18 groundwater recharge facilities to recharge the aquifer.

Pixley Irrigation District

Pixley Irrigation District (Pixley), located in Tulare County, is comprised of 69,571 acres, of which 59,283 are irrigated (Pixley Irrigation District 2012). The District's water supply is derived from the use of groundwater, surface water diverted from Deer Creek when available, and surface water from its Cross Valley CVP contract (Contract No. 14-06-200-8238A) for up to 31,102 AF/y. The District does not own or operate groundwater extraction facilities.

All groundwater pumping is done by landowners who utilize privately owned wells when surface water supplies are insufficient to meet demands (Pixley Irrigation District 2012). Pixley operates a conjunctive use program so that in wetter years surface water supplies are used to replenish groundwater levels through the Deer Creek channel, its unlined canal distribution system, and approximately 800 acres of groundwater recharge/regulating reservoirs (Pixley Irrigation District 2012).

Tri-Valley Water District

Tri-Valley Water District (Tri-Valley), located in eastern Fresno County, is comprised of approximately 2,284 acres, of which approximately 1,840 are irrigated (Tri Valley Water District 2016).

Currently, the water supply for landowners within the District is derived from groundwater and surface water from its Cross Valley CVP water service contract (Contract No. 14-06-200-8565A) for up to 1,142 AF/y as well as a Friant Division CVP water service contract (Contract No175r-2485D) for up to 400 AF/y of Class 1 water supplies. The District's provides its CVP water directly from the FKC through approximately seven miles of pipeline which is shared and operated by Orange Cove Irrigation District (Tri Valley Water District 2016).

The District does not own or operate any canals, recharge basins, regulating reservoirs, or groundwater extraction facilities. All groundwater pumping is done by landowners who utilize privately owned wells when surface water supplies are insufficient to meet demands; however, due to the proximity to the Sierra Nevada foothills, groundwater supplies are typically inadequate for agricultural uses (Tri Valley Water District 2016).

Potential Friant Division Exchange Partners

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. CVP water for these contractors comes from Millerton Lake via the FKC or the Madera Canal. Water conveyed to these contractors is categorized as Class 1 or Class 2 water depending on its reliability and allocation circumstances. As some of these contractors also include Cross Valley Contractors, only those that would participate as potential exchange partners are included in Table 2 below.

Table 2 Contract Quality of Friant Division Contractors

Contractor	Class 1 (AF/y)	Class 2 (AF/y)	Other Surface Supply (AF/y)
Arvin-Edison Water Storage District	40,000	311,675	Kern River
Delano-Earlimart Irrigation District	108,800	74,500	None
Exeter Irrigation District	11,100	19,000	None
Fresno Irrigation District	0	75,000	Kings River ~800,000
Garfield Water District	3,500	0	None
Ivanhoe Irrigation District	6,500	500	Wutchumna Water Company ~3,950 St. Johns River Cotton Creek
Kaweah Delta Water Conservation District[1]	1,200	7,400	Kaweah River Cottonwood Creek Cross Creek Kings River Tule River
Lewis Creek Water District	1,200	0	None
Lindmore Irrigation District	33,000	22,000	None
Lindsay-Strathmore Irrigation District	27,500	0	Wutchmna Water Company Stock ~5-45,000
Orange Cove Irrigation District	39,200	0	None
Porterville Irrigation District	15,000	30,000	Tule River ~12,900 average Porter Slough
Shafter-Wasco Irrigation District	50,000	39,600	None
Southern San Joaquin Municipal Utility District	97,000	45,000	None
Tea Pot Dome Water District	7,200	0	None
Terra Bella Irrigation District	29,000	0	None
Tulare Irrigation District	30,000	141,000	None

[1]Kaweah Delta Water Conservation District is comprised of four districts: Lakeside Irrigation Water District, Kings County Water District, Corcoran Irrigation District, and Tulare Irrigation District.

Potential Non-CVP Contractors

Below is a list of potential non-CVP exchange partners:

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

- North Kern Water Storage District
- Rosedale-Rio Bravo Water Storage District
- Semitropic Water Storage District
- Tulare Lake Basin Water Storage District

Some of these districts have sub-entities which may include CVP and/or SWP contractors as shown in Tables 3 through 7 below. Only those contractors that could participate as potential exchange partners (i.e., are located within the CVP Consolidated Place of Use) are included in the tables below.

In some cases, the diversions of non-CVP water from rivers, creeks and ditches, is based on the total runoff in any given hydrological season. The districts receive a percentage of the runoff and no specific limit exists to the total annual supply. The total amount of non-CVP water is difficult to quantify. Therefore, average water supplies are depicted.

Table 3 Deer Creek & Tule River Authority Contractors

Contractor	Class 1 (AF/y)	Class 2 (AF/y)	Other Surface Supply (AF/y)
Porterville Irrigation District	15,000	30,000	Tule River ~ 12,900 Porter Slough
Terra Bella Irrigation District	29,000	0	0

Note: Lower Tule, Pixley, Saucelito, and Stone Corral are also members.

Table 4 Kern County Water Agency Contractors

Contractor	Surface Water Supplies (AF/y)
Buena Vista Water Storage District	21,300 SWP Kern River
Cawelo Water District	45,000 AF/y SWP Poso Creek (wet years only) 27,000 Kern River Reclaimed oil field water Section 215 CVP water
Kern Delta Water District	Kings River Kaweah River
North Kern Water Storage District	SWP Kern River
Rosedale-Rio Bravo Water Storage District	SWP Kern River
Semitropic Water Storage District	SWP Poso Creek
West Kern Water District	SWP
Wheeler Ridge-Maricopa Water Storage District	SWP Local streams

Note: Belridge Water Storage District, Berrenda Mesa Water District, Henry Miller Water District, Lost Hills Water District, Tehachapi-Cummings Co. Water District, and Tejon-Castaic Water District are also members but are outside the Consolidated Place of Use and cannot participate in the Proposed Action.

Table 5 Kern Water Bank Authority Contractors

Contractor	Surface Water Supplies (AF/y)
Dudley Ridge Water District	SWP
Kern County Water Agency	SWP Kern River
Semitropic Water Storage District	SWP Poso Creek
Westside Mutual Water Company	SWP
Wheeler Ridge-Maricopa Water Storage District	SWP Local streams

Note: Tejon-Castaic Water District is also a member but is outside the Consolidated Place of Use and cannot participate in the Proposed Action.

Table 6 Kings River Conservation District Contractors

Contractor	Surface Water Supplies (AF/y)
Alta Irrigation District	Kings River
Burrel Ditch Company	Kings River via Murphys Slough
Clark's Fork Reclamation District No. 2069	Kings River
Consolidated Irrigation District	Kings River Section 215 CVP water
Corcoran Irrigation Company	Kings River via Lakelands Canal
Corcoran Irrigation District	Kings River
Crescent Canal Company	Kings River via Crescent Canal
Empire West Side Irrigation District	Kings River SWP
Fresno Irrigation District	Kings River Friant CVP
James Irrigation District	Kings River CVP
John Heinlen Mutual Water Company	Kings River
Kings County Water District	SWP Kings River Kaweah River Section 215 CVP water
Kings River Water District	Kings River Section 215 CVP water
Laguna Irrigation District	Kings River CVP
Lakeside Irrigation Water District	Kings River St. Johns River Cross Creek Section 215 CVP water
Last Chance Water Ditch Company	Kings River via Last Chance Ditch
Lemoore Canal and Irrigation Company	Kings River via Lemoore Canal
Liberty Canal Company	Kings River via Liberty Canal
Liberty Mill Race Company	Kings River via Murphys Slough
Liberty Water District	Kings River via Liberty Canal Section 215 CVP water
Lovelace Water Corporation	Kings River South Fork Canal and Tulare Lake Canal
Mid-Valley Water District	Kings River
Peoples Ditch Company	Kings River via operations of People's Weir
Raisin City Water District	Kings River
Riverdale Irrigation District	Kings River
Reed Ditch Company	Kings River via Murphys Slough
Southeast Lake Water Company	Kings River
Stratford Irrigation District	Kings River
Stinson Canal and Irrigation Company	Kings River via Stinson Canal
Tranquillity Irrigation District	Kings River CVP

Contractor	Surface Water Supplies (AF/y)
Tulare Lake Canal Company	Kings River via Tulare Lake Canal
Tulare Lake Reclamation District No. 761	Kings River SWP
Upper San Jose Water Company	Kings River

Note: Tejon-Castaic Water District is also a member but is outside the Consolidated Place of Use and cannot participate in the Proposed Action.

Table 7 Tulare Lake Basin Water Storage District Contractors

Contractor	Surface Water Supplies (AF/y)
Tulare Lake Basin Water Storage District	Kings River Tule River Kaweah River Kern River Deer Creek SWP
Angiola Water District	SWP (605, if available) 15,000 Kings River (5,145 average) 6,000 Tule River/Deer Creek (975 average) 60,000 Tulare Lake flooding (7,787 average)
Melga Water District	SWP Kings River Tule River Kaweah River Kern River

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