5.17 UTILITIES AND SERVICE SYSTEMS

NOTE TO READER: This section of the Partial Recirculated Draft Environmental Impact Report (RDEIR) includes an updated analysis of potential water supply impacts. This section was revised to provide an updated analysis regarding an alternative water supply during water shortages associated with a multiple dry year event. This section of the RDEIR includes only the discussion related to water supply impacts. Portions of this section, such as wastewater treatment and solid waste, not included in this RDEIR remain unchanged from the 2017 Draft EIR.

This section of the RDEIR addresses the proposed project's potential impacts on water service. The analysis in this section is partially based on information provided in the *Water Demand Evaluation* prepared for this project prepared by Tully & Young (April 2017) which is provided in Appendix RDEIR C-1, WATER DEMAND EVALUATION, as well as updated information regarding the feasibility of alternative water supply options included in the analysis below. Refer to Section 5.18, ENERGY CONSUMPTION, for an assessment of anticipated project electrical and natural gas demands. The following analysis of the potential environmental impacts related to water service is also derived from the following sources and agencies:

- Available literature and other publicly available information from affected utility providers.
- Bella Vista Water District. *Urban Water Management Plan Update 2015*. December 2016.
- Shasta County. *Shasta County General Plan*. September 2004.

The following section provides baseline information on, and evaluates potential impacts on, water service practices and policies related to the proposed project. Environmental, regulatory settings and mitigation measures to reduce significant impacts, where applicable, are provided.

5.17.1 ENVIRONMENTAL SETTING

This section discusses the existing conditions related to water service in the project area.

WATER SERVICE

The proposed project is located within the established service area of the Bella Vista Water District (BVWD). BVWD is located northeast of the City of Redding in western Shasta County (County). BVWD encompasses approximately 34,360 acres (54 square miles) generally extending from Churn Creek Road on the west, the community of Palo Cedro on the southeast, the community of Mountain Gate on the northwest, and Salt Creek at State Route 299 (SR-299) on the northeast.

BVWD was formed on June 4, 1957 to provide agricultural and domestic water to the area northeast of the City of Redding. BVWD's water supply comes from two sources, the Sacramento River (under a water service contract with the United States Bureau of Reclamation [USBR]) and five deep groundwater wells that draw from the Redding Area Groundwater Basin, Enterprise Sub-basin located along the southerly boundary of BVWD. The water system consists of five tanks, nine pumping plants, the main treatment plant, five wells, and over 200 miles of pipeline from 4-inch to 54-inch in diameter. All of the water is pumped at least once, and much of it is pumped through at least two pumping stations.

All water delivered by BVWD to its customers is treated to the same standards, regardless of whether the water is used for domestic or agricultural purposes. BVWD currently operates under Domestic Water Supply Permit No. 01-02-08(P) 002 through the California Division of Drinking Water (DDW), formerly California Department of Public Health (CDPH).

Surface water is pumped from the Sacramento River at the Wintu Pumping Plant, which is outside of BVWD's boundary on the north side of the river below Hilltop Drive. From the Wintu Pumping Plant water is sent to a surge tank and then to the Water Treatment Plant (WTP) located on Canby Road immediately northeast of the Mount Shasta Mall. River water is first treated with chlorine at the Wintu Pumping Plant and then filtered at the WTP utilizing in-line pressure filters. Polymer is used at the WTP to aid the filtration process.

Treatment of groundwater at BVWD's five wells consists of oxidation of iron and manganese using chlorine, followed by absorption of the iron and manganese oxides in pressure filters.

BVWD contains Shasta College and Simpson University, four elementary schools, Foothill High School, and Mountain View Middle School. In addition to residential, rural, commercial, and public institutional customers, BVWD serves water to agricultural and aquaculture customers, which use the water for growing strawberries, grapes, fruit and nut trees, alfalfa, pasture, vegetables, and a few fish farms.

Surface Water

As discussed above, surface water is provided by the Sacramento River. BVWD entered into a long-term renewal contract with the USBR that authorizes BVWD to divert from the Sacramento River a specified quantity of the water supply created by the Central Valley Project (CVP).[1] The contract allows BVWD to divert up to 24,578 acre-feet per year (AFY) of CVP water for agricultural (irrigation) and municipal and industrial (M&I) purposes, subject to shortages pursuant to USBR's M&I Shortage Policy. The percent reduction is applied to the historical average of BVWD's actual M&I water usage over the prior three unconstrained water years. Agricultural use can be reduced by as much as 100 percent in shortage years. The contract is effective through February 28, 2030. The contract includes a permanent assignment of 578 acre-feet (AF) of CVP water from Shasta County Water Agency.

BVWD has a long-term transfer agreement with the Anderson-Cottonwood Irrigation District Transfer Agreement for 1,536 AFY of CVP water, subject to shortage curtailment. The agreement is effective through February 28, 2045. Anderson-Cottonwood Irrigation District sells and transfers the water under its USBR Sacramento River Settlement Contract for diversion of CVP water from the Sacramento River. This transfer is available to BVWD between April 1 and October 31.

The McConnell Foundation has a USBR contract to receive 5,100 AFY of CVP water each year, without any shortage provision curtailment. The District could request to purchase water from the McConnell Foundation in the future if needed to supplement its supply. However, BVWD does not presently plan to purchase water from the McConnell Foundation in non-shortage years.

Redding Area Groundwater Basin

BVWD is located in the northern area of the Redding Area Groundwater Basin, Enterprise Sub-basin

[1] Letter from Bella Vista Water District (BVWD), dated March 24, 2016.

(Groundwater Basin Number 5-6.04) and Millville Sub-basin (Groundwater Basin Number 5-6.05), which contains the main water-bearing geologic units in the northern Sacramento Valley.

BVWD joined the Shasta County Water Agency, City of Redding, City of Shasta Lake, and several other local agencies as a member of the Redding Area Water Council (RAWC). The RAWC is a consortium of public agencies. The RAWC prepared the Coordinated AB 3030 Groundwater Management Plan (GMP) for the Redding Area Groundwater Basin in 1998 and updated it in 2007. The California Department of Water Resources (DWR) does not identify the Redding Area Groundwater Basin as being over-drafted nor expected to become over-drafted. The purposes of the GMP are to avoid or minimize conditions that adversely affect groundwater availability and quality in the Plan area and to develop a management program that addresses data collection and protects and enables reasonable use of the groundwater resources of the Redding Area Groundwater Basin. The Redding Area Groundwater Basin is 510 square miles with a usable capacity of 5.5 million AF.

The Enterprise Sub-basin is 95 square miles and has a safe yield of 332 AFY. The Enterprise Sub-basin comprises the portion of the Redding Area Groundwater Basin bound on the west and southwest by the Sacramento River, on the north by the Klamath Mountains, and on the east by Little Cow Creek and Cow Creek. Annual precipitation within the Basin ranges from 29 to 41 inches, increasing to the north. Recharge to the principal aquifer formation is mostly by infiltration of stream flows. Infiltration of applied water and stream flows, and direct infiltration of precipitation are the main sources of recharge in the sub-basin.

Groundwater levels fluctuate seasonally approximately 5 to 10 feet, and for the semi-confined wells, between 10 and 15 feet for normal and dry years. Measurements of groundwater have shown levels start dropping in early spring and continue to decline through the summer until early September. Groundwater levels rise during the rainy season, reaching maximum levels typically in February.

Groundwater Production

BVWD currently has five groundwater wells located along the southerly boundary of BVWD. There is a wide variation in quantity pumped year to year due to variable operation. Operation of these wells has been limited to drought periods when surface water (CVP water) turbidity exceeds economically feasible treatment parameters, periods when either the Wintu Pump Station or BVWD's WTP have been down for maintenance and/or construction, and during peak demands in the summer when BVWD has difficulties maintaining water levels in the four million-gallon (MG) tank. Overall, when all five wells are in operation, they can collectively produce up to 4,200 AF annually. BVWD plans to expand groundwater production into the future by constructing a new well every 10 years starting in 2020. Each well is expected to increase groundwater by 810 AF annually per well.[2]

Water Use

Water demands served by BVWD are primarily agricultural and domestic (residential, rural, commercial, and public institutional). Residential connections comprise the majority of customers for BVWD. It is assumed that the number of residential and rural connections will continue to increase over time. Although these categories make up the majority of connections, agricultural properties cover more land and typically consume more water per connection. It is assumed that as development encroaches on agricultural properties and water deliveries become more expensive and less reliable, agricultural

[2] BVWD. *Urban Water Management Plan Update 2015*, footnote 3, Table 6-5, p. 67.

connections will decrease over time, being replaced by single-family residential and rural customers. The number of active connections in 2015 is summarized in Table 5.17-1, ACTIVE CONNECTIONS, below.

Table 5.17-1
ACTIVE CONNECTIONS

Use	Connections	% of Total Connections
Residential	3,931	64.3%
Aquacultural	5	0.1%
Agricultural	194	3.2%
Rural	1,637	26.8%
Commercial	291	4.8%
Public Institutional	57	0.9%
Total	**6,115**	**100%**

Source: BVWD. *Urban Water Management Plan Update 2015*. Table 4-1, page 27. December 2016.

Water Supply

TABLE 5.17-2, SUMMARY OF WATER SUPPLY SOURCES, shows the available water supplies for BVWD during normal water years.

Table 5.17-2
SUMMARY OF WATER SUPPLY SOURCES

Water Supply Sources	Projected Supply (AFY)				
	2020	2025	2030	2035	2040
U.S. Bureau of Reclamation[1]	24,578	24,578	24,578	24,578	24,578
Groundwater[2]	5,010	5,010	5,820	5,820	6,630
Anderson-Cottonwood Irrigation District	1,536	1,536	1,536	1,536	1,536
Total	**31,124**	**31,124**	**31,934**	**31,934**	**32,744**

Source: BVWD. *Urban Water Management Plan Update 2015.* Table 6-5, page 67. December 2016.
Notes:
1. BVWD's contract with USBR provides up to 24,578 AFY of CVP water. Actual supplies are subject to restrictions for environmental flows, drought and the CVP M&I Shortage Policy.
2. Groundwater wells are currently only used to supplement surface water in short and long-term shortages. 4,200 AFY is estimated to be the maximum capacity of the existing wells. Additional groundwater wells are planned for construction every 10 years starting in 2020 increasing groundwater by 810 AFY per well.

Normal and Dry-Year Supply Reliability

BVWD depends on its long-term contract to purchase water from the USBR and their groundwater wells. As a water provider that is predominantly reliant upon the CVP, BVWD is subject to significant water supply uncertainty and shortages due to dry hydrologic conditions, compounded by operational and regulatory constraints both directly and indirectly related to the Federal Endangered Species Act (FESA). The water supply reliability goal of BVWD is to meet 100 percent of demand in normal years.

Table 5.17-3, NORMAL YEAR SUPPLY AND DEMAND, shows the anticipated supply and demand for BVWD during an average year through year 2040. As indicated in Table 5.17-3, BVWD is anticipated to have a surplus of between 7,847 AF and 9,204 AF through 2040. The supply and demand totals in Table 5.17-3 include agricultural use.

Table 5.17-3
NORMAL YEAR SUPPLY AND DEMAND

	2020	2025	2030	2035	2040
Supply Totals	24,290	24,960	26,470	27,203	28,779
Demand Totals	16,363	17,113	17,897	18,718	19575
Difference	7,927	7,847	8,573	8,485	9,204

Source: BVWD. *Urban Water Management Plan Update 2015.* Table 7-3, page 74. December 2016.

During single dry year conditions, BVWD's water supplies are projected to be insufficient to meet demand. As shown in Table 5.17-4, SINGLE DRY YEAR SUPPLY AND DEMAND, this shortfall is projected to exceed 7,000 AF. The agricultural amounts were maintained to show the impact of a multiple-dry year for the consideration of the supplemental supply program BVWD offers to agricultural customers. Groundwater would be used during water shortage years to make up a portion of the difference.

Table 5.17-4
SINGLE DRY YEAR SUPPLY AND DEMAND

	2020	2025	2030	2035	2040
Supply Totals	10,122	10,246	11,185	11,320	12,271
Demand Totals	16,363	17,113	17,897	18,718	19,575
Difference	-6,241	-6,867	-6,712	-7,398	-7,304

Source: BVWD. *Urban Water Management Plan Update 2015.* Table 7-4, page 75. December 2016.

During a multiple-dry year period, USBR allotments for Manufacturing and Industrial (M&I) use can be reduced by 50 percent or more and agricultural allotments can be reduced to zero percent. Table 5.17-5, SUPPLY AND DEMAND COMPARISON – MULTIPLE-DRY YEAR, provides an estimate of the projected multiple-dry year supply and demand totals.

Table 5.17-5
SUPPLY AND DEMAND COMPARISON – MULTIPLE-DRY YEAR

	Water Use	2020	2025	2030	2035	2040
Multiple-Dry Year First Year Supply	Supply Totals	16,652	16,995	18,164	18,540	19,743
	Demand Totals	16,363	17,113	17,897	17,718	19,575
	Difference	289	-118	267	-178	168
Multiple-Dry Year Second Year Supply	Supply Totals	17,189	17,677	18,997	19,530	20,898
	Demand Totals	16,363	17,113	17,897	18,718	19,575
	Difference	826	564	1,100	812	1,325
Multiple-Dry Year Third Year Supply	Supply Totals	16,617	17,078	18,371	18,875	20,213
	Demand Totals	16,363	17,113	17,897	18,718	19,575
	Difference	245	-35	474	157	638

Source: BVWD. *Urban Water Management Plan Update 2015.* Table 7-5, page 75. December 2016.

Drought Condition Conservation and Contingencies. As mentioned above, the USBR contract allows BVWD to divert up to 24,578 AFY of CVP water for agricultural (irrigation) and M&I use; however, the water allocation is subject to shortages pursuant to USBR's M&I Shortage Policy (herein referenced as "Shortage Policy"). When a "Condition of Shortage" is issued by the USBR, CVP water allocation to BVWD is reduced based on the historical average of BVWD's actual municipal and industrial water usage[3]. This percent reduction in CVP contract water available to BVWD is calculated based on BVWD's prior three

[3] "Condition of Shortage" is defined in the USBR water service contract as "…a condition respecting the CVP during any year (March 1 through February of the following year) such that the USBR Contracting Officer is unable to deliver sufficient water to meet the contract total."

years of receiving 100 percent CVP contracted water allocation. Regarding agricultural allocations, such water can be reduced by as much as 100 percent during a "Condition of Shortage" period. The "Condition of Shortage" associated with the CVP water supply has also been influenced by regulatory actions and court rulings associated with Biological Opinions issued under FESA. These regulatory actions and court rulings have reduced the water supply available to CVP water service contractors, which includes BVWD[4].

All BVWD customers, both existing and any new development within BVWD's service area, are subject to BVWD's rules, regulations and policies which include adopted shortage measures. BVWD adopted a Water Shortage Contingency Plan (WSCP), by Resolution 15-04, on March 23, 2015. The purpose of Resolution 15-04 was to establish a municipal and industrial WSCP in order to conserve the available water supply and protect the integrity of water supply facilities with particular regard for domestic water use, sanitation, and fire protection while at the same time protecting and preserving public health, welfare, and safety.[5] Resolution 15-04 identifies five "stages" of water shortages; each stage contains 19 customer actions that apply to all customers. Table 5.17-6, WATER SHORTAGE CONTINGENCY PLAN STAGES, defines theses stages and provides a synopsis of outdoor watering reductions and construction related watering reductions.

Table 5.17-6
WATER SHORTAGE CONTINGENCY PLAN STAGES[1]

<table>
<tr><th>Stage</th><th>Water Supply</th><th>Percent of Normal</th><th>Outdoor Watering Reductions</th><th>Construction Watering Reductions</th></tr>
<tr><td>Stage 1</td><td>Normal Supply</td><td>85% - 100%</td><td rowspan="2">1. Limited to between one hour before sunset and one hour after sunrise.
2. "Smart" irrigation systems set to specified percent of evapotranspiration rate.
3. Limited to efficient irrigation systems (i.e., drip irrigation, rain sensors).</td><td>No restrictions</td></tr>
<tr><td>Stage 2</td><td>Moderate Shortage</td><td>70% - 85%</td><td rowspan="4">Construction meters monitored for efficient water use.</td></tr>
<tr><td>Stage 3</td><td>Severe Shortage</td><td>50% - 70%</td><td rowspan="3">1. Reductions listed from Stages 1 and 2.
2. Limited to specified number of days allowed for outdoor watering.
3. No potable water to be used within 48 hours after measurable rainfall.</td></tr>
<tr><td rowspan="2">Stage 4</td><td>Extreme Shortage: Short-Term[2]</td><td>30% - 70%</td></tr>
<tr><td>Extreme Shortage: Long-Term[3]</td><td>30% - 50%</td></tr>
<tr><td rowspan="2">Stage 5</td><td>Critical Shortage: Short-Term[2]</td><td>Less than 30%</td><td rowspan="2">No outdoor watering allowed</td><td rowspan="2">No construction watering allowed</td></tr>
<tr><td>Extreme Shortage: Long-Term[3]</td><td>Less than 30%</td></tr>
</table>

Source: Bella Vista Water District. *Resolution 15-04: A Resolution of the Board of Directors of the Bella Vista Water District Adopting a Municipal and Industrial Water Shortage Contingency Plan.* March 23, 2015.
Notes:
[1] This table focuses on stage definition and summarized outdoor and construction watering restrictions. Refer to Appendix RDEIR C-1 of this RDEIR for details regarding outdoor and construction water use and the complete list of water shortage customer actions.
[2] A short-term declaration is for water shortage conditions expected for a duration of 45 days or less.
[3] A long-term declaration is for water shortage conditions expected for a duration of more than 45 days.

In accordance with the adopted WSCP, the BVWD Board amended the shortage level from Stage 3 to Stage 1 on April 25, 2016. Stage 1 requires public institutional customers to reduce water use by 5 to 15 percent and reduce the amount of water used for landscape irrigation by 10 to 20 percent. As noted

[4] Bella Vista Water District. *Urban Water Management Plan*. May 2015. Note: Copy of the 2015 *Urban Water Management Plan* is available at the Shasta County Department of Resource Management during normal business hours (M-F, 8:00 am – 5:00 pm).
[5] Letter from BVWD, dated March 24, 2016.

previously, BVWD was in a Stage 3 – Severe Water Shortage. Stage 3 requires public institutional customers to reduce water use by 25 percent, reduce landscape irrigation to 3 nights per week, and reduce the amount of water used for landscape irrigation by 25 percent.[6] Conservation efforts are still in effect as identified in "Consumer Actions by Shortage Stage" table that identifies water conservation measures. Resolution 15-04 and all 19 customer actions applicable to each stage are provided in Appendix RDEIR C-1, WATER DEMAND EVALUATION, of this RDEIR.

5.17.2 REGULATORY SETTING

FEDERAL

Federal Clean Water Act

The federal Clean Water Act (CWA) 33 USC§ 1251 et seq. places the primary responsibility for the control of surface water pollution and for planning the development and use of water resources with the states. Although the CWA does establish certain guidelines for the states to follow in developing their programs, it also allows the U.S. Environmental Protection Agency (USEPA) to withdraw control from states with inadequate implementation mechanisms.

The CWA requires National Pollutant Discharge Elimination System (NPDES) permits for discharges of pollutants from a point source to navigable waters of the United States (Section 402; (33 USC §1342 et seq.). A "discharge" can include any addition of a pollutant to navigable waters, including lakes, rivers, streams, bays, the ocean, dry stream beds, wetlands, and storm sewers that are tributary to any surface water body. (33 USC§ 1362 et seq.)

STATE

California Department of Water Resources (DWR)

DWR is responsible for the preparation of the California Water Plan and the management of State's surface water and groundwater resources. DWR also oversees the California Water Project and the regulation and protection of dams. Other DWR functions include assisting local agencies in preparation of their Urban Water Management Plans (UWMPs) and reviewing the plans to ensure compliance with the Urban Water Management Act.

State Water Resources Control Board (SWRCB)

The State Water Resources Control Board (SWRCB) was established in 1967 to administer state water rights and water quality functions. The SWRCB and its nine Regional Water Quality Control Boards administer water rights and enforce pollution control standards throughout the state. The SWRCB is responsible for granting water rights through the appropriation process following public hearings and appropriate environmental review by applicants and responsible agencies. In granting water rights permits, the SWRCB must consider all beneficial uses, including water for downstream human and environmental needs. In addition to granting water rights, the SWRCB also issues water quality related certification to developers of water projects under Section 401 of the CWA.

[6] Ibid.

The SWRCB and RWQCBs issue NPDES permits in lieu of direct issuance by the USEPA, subject to review and approval by the USEPA Regional Administrator (USEPA Region 9). The terms of these NPDES permits implement pertinent provisions of the CWA and its implementing regulations, including pre-treatment, sludge management, effluent limitations for specific industries, and anti-degradation. In general, the discharge of pollutants is to be eliminated or reduced as much as practicable so as to achieve the CWA's goal of "fishable and swimmable" navigable waters. All NPDES permits issued by the RWQCBs include Waste Discharge Requirements (WDRs) issued under the authority of the California Porter-Cologne Water Quality Control Act, discussed below.

California Water Code

California's primary statute governing water quality and water pollution issues with respect to both surface waters and groundwater is the Porter-Cologne Water Quality Control Act of 1970 (California Water Code § 13000 et seq.) (Porter-Cologne Act). The Porter-Cologne Act grants the State Water Resources Control Board (SWRCB) and each of the nine RWQCBs power to protect water quality and is the primary vehicle for implementation of California's responsibilities under the federal Clean Water Act. The Porter-Cologne Act grants the SWRCB and the RWQCBs authority and responsibility to adopt water quality control plans and policies, to regulate discharges to surface and groundwater, to regulate waste disposal sites and to require cleanup of discharges of hazardous materials and other pollutants. The Porter-Cologne Act also establishes reporting requirements for unauthorized discharges of soils, hazardous substances, sewage, and oil or petroleum product, among others.

Each RWQCB must formulate and adopt one or more water quality control plans (Basin Plan) for its region. The regional plans are to conform to the policies set forth in the Porter-Cologne Act and established by the SWRCB policy. The Porter-Cologne Act also provides that a RWQCB may include within its regional plan water discharge prohibitions applicable to particular conditions, areas, or types of waste.

The California Water Code also requires urban water suppliers within the state to prepare and adopt Urban Water Management Plans (UWMPs) for submission to DWR. The UWMPs, which must be filed every five years, must satisfy the requirements of the Urban Water Management Planning Act (UWMPA) of 1983, including amendments that have been made to the UWMPA and other applicable regulations. The UWMPA requires urban water suppliers servicing more than 3,000 connections or supplying more than 3,000 acre-feet (AF) of water annually, to prepare a UWMP. The proposed project is within the area governed by Bella Vista Water District’s 2015 UWMP.

Senate Bill 610 – Water Supply Assessment

Senate Bill (SB) 610 and SB 221 are companion measures that seek to promote more collaborative planning among local water suppliers and cities and counties. They require that water supply assessments occur early in the land use planning process for all large-scale development projects. If groundwater is the proposed supply source, the required assessments must include detailed analyses of historic, current, and projected groundwater pumping and an evaluation of the sufficiency of the groundwater basin to sustain a new project’s demands. They also require an identification of existing water entitlements, rights, and contracts and a quantification of the prior year’s water deliveries. SB 610 applies to projects that meet the following criteria:

- A proposed residential development of more than 500 dwelling units.

- A proposed shopping center or business establishment employing more than 1,000 persons or having more than 500,000 square feet of floor space.
- A proposed commercial office building employing more than 1,000 persons or having more than 250,000 square feet of floor space.
- A proposed hotel or motel, or both, having more than 500 rooms.
- A proposed industrial, manufacturing, or processing plant, or industrial park planned to house more than 1,000 persons, occupying more than 40 acres of land, or having more than 650,000 square feet of floor area.
- A mixed-use project that includes one or more of the projects specified above.
- A project that would demand an amount of water equivalent to, or greater than, the amount of water required by a 500 dwelling unit project.

SB 610 amended Public Resources Code Section 21151.9 to provide that whenever a city or county decides that a project meets any of the above criteria, it must comply with Section 10910 et seq. of the Water Code. Section 10910 et seq. of the Water Code was also amended by SB 610 to require a city or county to coordinate the CEQA analysis with the water agency proposed to serve the project. Section 10910 et seq. requires a city or county to identify any public water system that may supply water to a proposed project. The city or county must ask each of these water providers to indicate whether its "total projected water supplies available during normal, single dry, and multiple dry water years during a 20-year projection will meet the projected water demand associated with the proposed project, in addition to the public water system's existing and planned future uses, including agricultural and manufacturing uses." If the city or county does not receive this information from the water provider, it must provide the water supply assessment itself. The proposed project is not subject to SB 610 and therefore a water supply assessment is not required.

Sustainable Groundwater Management Act of 2014

In 2014, California enacted the Sustainable Groundwater Management Act (SGMA; Water Code Section 10720 et seq.). SGMA, and related amendments to California law, require that all groundwater basins designated as high or medium priority in the DWR California Statewide Groundwater Elevation Monitoring (CASGEM) Program, and that are subject to critical overdraft conditions, must be managed under a new Groundwater Sustainability Plan (GSP) or a coordinated set of GSPs, by January 31, 2020. High or medium priority basins that are not subject to a critical overdraft must be regulated under one or more GSPs by 2022. Almost all of the northern Sacramento Valley basin, including portions of the Enterprise Basin, which includes the project area, have been designated as high priority under the CASGEM program[7]. Where GSPs are required, one or more local Groundwater Sustainability Agencies (GSAs) must be formed to implement applicable GSPs. A GSA has the authority to require registration of groundwater wells, measure and manage extractions, require reports and assess fees, and to request revisions of basin boundaries, including establishing new sub-basins. GSAs must be formed for high and medium priority basins by June 2017.

Each GSP must include a physical description of the covered basin, such as groundwater levels, groundwater quality, subsidence, information on groundwater-surface water interaction, data on historical and projected water demands and supplies, monitoring and management provisions, and a description of how the plan will affect other plans, including city and county general plans. The DWR must adopt regulations for the preparation of a GSP by January 2016. As defined by the SGMA, “sustainable

7 https://water.ca.gov/Programs/Groundwater-Management/Basin-Prioritization

groundwater management" means that groundwater use within basins managed by a GSP will not cause any of the following "undesirable results:" (a) chronic lowering of groundwater levels (not including overdraft during a drought, if a basin is otherwise managed); (b) significant and unreasonable reductions in groundwater storage; (c) significant and unreasonable seawater intrusion; (d) significant and unreasonable degradation of water quality; (e) significant and unreasonable land subsidence; and (f) surface water depletions that have significant and unreasonable adverse impacts on beneficial uses (Water Code Section 10721(w)).

California Model Water Efficient Landscape Ordinance

The Water Conservation in Landscaping Act was enacted in 2006, requiring the California Department of Water Resources (DWR) to update the Model Water Efficient Landscape Ordinance (MWELO).[8] In 2009, the Office of Administrative Law (OAL) approved the updated MWELO, which required a retail water supplier or a county to adopt the provisions of the MWELO by January 1, 2010, or enact its own provisions equal to or more restrictive than the MWELO provisions.[9]

In response to the Governor's executive order dated April 1, 2015, (EO B-29-15), DWR updated the MWELO and the California Water Commission approved the adoption and incorporation of the updated State standards for MWELO on July 15, 2015.[10] The changes included a reduction to 55 percent for the maximum amount of water that may be applied to a landscape for residential projects, which effectively reduces the landscape area that can be planted with high water use plants. The MWELO applies to all types of new construction with a landscape area greater than 500 square feet (sf) (the prior MWELO applied to landscapes greater than 2,500 sf).[11] For residential projects, the coverage of high water use plants is reduced due to the new 55 percent water maximum and turf is limited. Shasta County has yet to adopt a MWELO provision but does require that planned projects submit landscaping plans.[12] The County will require landscaping plans to comply with MWELO as required by law.[13]

It is difficult to predict the ultimate impact of the MWELO requirements on future water demand. While the requirement is for development of a landscape design plan that uses plants and features that are estimated to use no more than 55 percent of ETo (the MWELO's residential landscaping requirement), some provision must be made for the inherent tendency to over-water even with irrigation controllers installed, piecemeal changes in landscape design, and reductions in irrigation efficiency through product use.[14]

In addition to MWELO, BVWD also has water conservation measures it continually encourages to limit water waste and promote conservation, which will be updated to reflect the newly mandated state-wide prohibitions authorized under the Governor's Executive Order B-37-16.[15]

[8]Gov. Code §§ 65591-65599

[9] California Code of Regulations (CCR), Tit. 23, Div. 2, Ch. 27, Sec. 492.4. The MWELO provides the local agency discretion to calculate the landscape water budget assuming a portion of landscape demand is met by precipitation, which would further reduce the outdoor water budget.

[10] These updated changes have been incorporated into California Code of Regulations (CCR), Tit. 23, Div. 2, Ch. 27, Sec. 490-495.

[11] CCR Tit. 23, Div. 2, Ch. 27, Sec. 490.1.

[12] Shasta County Code 17.84.040 – H.

[13] Copies of County Certification of MEWLO compliance of landscaping plans are a condition of service from Bella Vista Water District. March 24, 2016 Bella Vista Water District Comment Letter, Requirement 1g.

[14] Shasta County will be responsible for reviewing and approving the proposed project's landscape plan as part of its authorities authorized under the MWELO provisions and as a condition of service from Bella Vista Water District.

[15] Executive Order B-37-16 (issued in May 2016) includes a directive for the State Water Resources Control Board to permanently prohibit a defined set of practices that waste potable water.

California Drought Regulations

Beginning in January 2014, Governor Jerry Brown issued three Executive Orders (EOs), B-26-14, B-28-14, and B-29-15, regarding water supply, water demand, and water use within the State during severe drought conditions. EO B-29-15, issued April 1, 2015, sets limitations not only for existing land uses and water supply systems, but also for new construction. Some of these restrictions include:

- The Water Board shall prohibit irrigation with potable water of ornamental turf on public street medians. (EO B-29-15, Save Water, Action #6)
- The Water Board shall prohibit irrigation with potable water outside of newly constructed homes and buildings that is not delivered by drip or microspray systems. (EO B-29-15, Save Water, Action #7)
- The California Energy Commission (CEC) shall adopt emergency regulations establishing standards that improve the efficiency of water appliances, including toilets, urinals, and faucets available for sale and installation in new and existing buildings. (EO B-29-15, Increase Enforcement Against Water Waste, Action #16)

In addition, EO B-29-15 requires that DWR update the State Model Water Efficient Landscape Ordinance through expedited regulation by the end of 2015. This ordinance will increase water efficiency standards for new and existing landscapes through more efficient irrigation systems, greywater usage, onsite storm water capture, and by limiting the portion of landscapes that can be covered in turf (EO B-29-15, Increase Enforcement Against Water Waste, Action #11).

On November 13, 2015, Governor Brown issued EO B-36-15, which upheld the previous EOs, and directs the SWRCB to extend urban water use restrictions through October 31, 2016 based on drought conditions known through January 2016. The SWRCB issued Emergency Regulations on February 2, 2016, in compliance with EO B-36-15. These emergency regulations maintain the current tiers of required water reductions; however, additional adjustments in response to stakeholders' equity concerns were included in the Emergency Regulations.

In addition, DWR and the USBR have finalized the 2016 Drought Contingency Plan that outlines State Water Project and Central Valley Project operations from February through November 2016. The 2016 Drought Contingency Plan was developed in coordination with staff from State and federal agencies. The 2016 Drought Contingency Plan communicates overarching goals for 2016 water management and the potential operations needed to achieve those goals.

On May 9, 2016, Governor Brown issued EO B-37-16, which upheld the previous EOs, and directs local agencies to provide new permanent water use targets for each urban water supplier and concrete improvements to drought preparedness. Local agencies are required to publicly disclose the projections and calculations used to determine their conservation standards, and to continue monthly water conservation reporting. EO B-37-16 calls for wise water use and less water waste to become permanent changes to prepare for more frequent and persistent periods of limited water supply.

LOCAL

Shasta County General Plan

The Water Resources subsection of the Shasta County *General Plan* contains policies regarding septic systems, while the Public Facilities subsection of the Shasta County *General Plan* contains policies regarding public services, including public utilities such as wastewater treatment and solid waste. These policies are intended to provide guidance on operating and maintaining public utilities and service systems so as to ensure adequate water supply and prevent contamination of water resources from wastewater treatment systems, septic systems, and waste disposal sites. In addition, these policies also provide for compatibility with solid waste disposal sites and adjacent land uses. The following *General Plan* policies are applicable to the proposed project:

Section 6.6 – Water Resources

- *Policy W-b.* Septic systems, waste disposal sites, and other sources of hazardous or polluting materials shall be designed to prevent contamination to streams, creeks, rivers, reservoirs, or groundwater basins in accordance with standards and water resource management plans adopted by the County.

- *Policy W-c.* All proposed land divisions and developments in Shasta County shall have an adequate water supply of a quantity and a quality for the planned uses. Project proponents shall submit sufficient data and reports, when requested, which demonstrate that potential adverse impacts on the existing water users will not be significant. The reports for land divisions shall be submitted to the County for review and acceptance prior to a completeness determination of a tentative map. This policy will not apply to developments in special districts which have committed and documented, in writing, the ability to provide the needed water supply.

- *Policy W-d*. The potential for cumulative water quality impacts resulting from widespread use of septic systems in poorly suited soil areas shall be periodically evaluated by the County for the need to provide greater monitoring and possible changes to applicable sewage disposal standards.

5.17.3 THRESHOLDS OF SIGNIFICANCE

SIGNIFICANCE CRITERIA

In accordance with State *CEQA Guidelines*, the effects of a project are evaluated to determine whether they would result in a significant adverse impact on the environment. An EIR is required to focus on these effects and offer mitigation measures to reduce or avoid any significant impacts that are identified. The criteria used to determine the significance of impacts may vary depending on the nature of the project. According to Appendix G of the State *CEQA Guidelines*, the proposed project would result in a significant impact related to water service if it would:

- *Not have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years.* Refer to Impact 5.17-4.

Based on these standards, the effects of the proposed project have been categorized as either a "*less than significant"* impact or a "*potentially significant"* impact. Mitigation measures are recommended for potentially significant impacts. If a potentially significant impact cannot be reduced to a less than significant level through the application of mitigation, it is categorized as a "*significant and unavoidable"* impact.

5.17.4 POTENTIAL IMPACTS AND MITIGATION MEASURES

METHODOLOGY

The potential impacts of the proposed project were evaluated qualitatively by comparing the anticipated project effects on water service with existing conditions. The evaluation is based on professional judgment, an analysis of project consistency with the goals and polices of the Shasta County *General Plan*, and the significance criteria established by Appendix G of the State *CEQA Guidelines*, which the County has determined to be appropriate criteria for this RDEIR. The findings from the *Water Demand Evaluation* (Tully & Young, 2017) have also been referenced when determining potential impacts of the proposed project. Further information in this section is based on, but not limited to, the County's *General Plan*, available literature, and other publicly available information from the affected agencies and utility providers. In accordance with CEQA, the effects of a project are evaluated to determine if they would result in a significant adverse impact on the environment.

Water service is analyzed below and, as appropriate, impacts discussions are separated and evaluated under the heading of *Short-Term Construction* or *Long-Term Operation*. Mitigation measures directly correspond with an identified impact.

IMPACT 5.17-4	***Would sufficient water supplies be available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?***

Significance: Potentially Significant Impact.

Impact Analysis: The primary water supply for BVWD is through a 25-year renewable contract with the USBR for water supply from the CVP, which entitles BVWD to 24,578 acre-feet annually[16]. CVP water furnished to BVWD is allocated and managed in accordance with the USBR's Shortage Policy and BVWD has adopted Resolution 15-04, which establishes a municipal and industrial Water Shortage Contingency Plan (WSCP) in order to conserve the available water supply and protect the integrity of BVWD water supply facilities. The proposed project would generate demand for water during both short-term construction and long-term operation. The increase in water demand that could exceed BVWD's water supply as a result of the proposed project is analyzed below.

[16] Although BVWD's current contract (Contract 14-06-200-85A-LTR1 between the USBR and BVWD) expires March 1, 2030, the contract includes specific clauses allowing for the renewal of successive periods of 40 years each. In addition, BVWD's current contract is an extension of prior contracts with successive service that began in April 1964.

Short-Term Construction

Refer to Impact 5.17-2 in the 2017 DEIR. Water for construction would be supplied via water trucks. Water would be used for purposes of dust control during grading and construction, as well as for minor activities such as washing of construction equipment and vehicles.

For purposes of identifying incremental water demands, construction water is assumed to be 2 acre-feet per year (this is about 600,000 gallons – or over 150 fill-ups of a 4,000-gallon water truck per year).[17] The proposed project is anticipated to be operating at full capacity and fully built within 15 years of breaking ground, therefore construction water is only included in the initial years of the project.

Existing water supplies would be adequate to meet the water demand needs during the construction phase and no new water infrastructure would be required for construction purposes. As such, new or expanded water supply entitlements would not be required in support of construction activities. Impacts would be *less than significant*.

Long-Term Operation

As stated above, SB 610 and SB 221 are companion measures that seek to promote more collaborative planning among local water suppliers and cities and counties. They require that water supply assessments occur early in the land use planning process for all large-scale development projects. If groundwater is the proposed supply source, the required assessment must include detailed analyses of historic, current, and projected groundwater pumping and an evaluation of the sufficiency of the groundwater basin to sustain a new project's demands. They also require identification of existing water entitlements, rights, and contracts and a quantification of the prior year's water deliveries. As stated above, the proposed project does not meet any "project" thresholds outlined in Senate Bill 610; however, a *Water Demand Evaluation* was prepared to estimate the additional water demands of the project and to analyze the water supply elements of Senate Bill 610 (refer to Appendix RDEIR C-1, WATER DEMAND EVALUATION).

Water Demand (Use). Residential unit demand reflects two distinct uses: indoor use and outdoor use. The design of the proposed project calls for 166 lots ranging from 1.19 to 6.81 acres, consisting of single-family homes with individual landscaping (limited to 5,000 square feet within the building envelope). The indoor and outdoor components are ultimately combined into a total unit demand factor for residential uses. Residential unit demand factors are represented as the quantity of water in acre-feet per dwelling unit (DU) per year.

- *Indoor Residential Demand.* The dwelling units are estimated to use 0.15 acre-feet per year (AFY) for indoor water demand for primary residences, and 0.28 AFY for the 15 lots with both primary and secondary units. This indoor unit demand factor is based upon an assumed value of 55 gallons per capita (i.e., per person) per day (gpcd), with an assumed average occupancy rate of 2.5 people per home for primary residences, and 2 people per home for the secondary units.[18] The assumed per-person rate of 55 gallons per day is derived from California Water Code Section 10608.20(b)(2)(A), which states a value of 55 gpcd be used for estimating indoor residential use targets. When multiplied, the per-person use results in a per-dwelling unit demand of 0.15 AFY

[17] Tully & Young. *Water Supply Evaluation for Tierra Robles Project*. April 26, 2017.
[18] The occupancy rate is the average single family occupancy rate for Shasta County (2.5) per the California Department of Finance census data available from "E-5 Population and Housing Estimates for Cities, Counties, and the State, 2011-2016 with 2010 Census Benchmark" available at: http://www.dof.ca.gov/Forecasting/Demographics/Estimates/E-5/.

for the 166 single family homes,[19] and 0.12 AFY for the 15 accessory dwelling units. This indoor use value has been confirmed through analyses of residential water meter data and is reflective of new suburban single-family dwelling units and older homes retrofitted with new water efficient fixtures and appliances.[20]

- *Outdoor Residential Demand.* Outdoor demands for the proposed project are calculated based on regulations defined under the County's landscape ordinance discussed previously. The ordinance does not provide a specific calculation methodology for estimating landscape water demands, so for the purposes of this memorandum the MWELO method is used. The MWELO provides for determining the Maximum Applied Water Allowance (MAWA) where the maximum is determined as 55 percent of the reference evapotranspiration for the area.

  A primary factor in this calculation is evapotranspiration (ET). The methodology directs the use of ET from a reference crop, such as maintained grass – a value referred to as ETo. For the proposed project, the ETo value used is 56.22 inches per year.[21] The landscape area is the other primary factor. As noted previously, the proposed project has specified building envelopes for each lot, and is limiting irrigated landscaping to 5,000 square feet within each envelope. This value is used to estimate the overall MAWA, which represents a conservative upper limit for outdoor residential demands. For the 15 lots that will also include an accessory dwelling unit, the 5,000 square-foot landscape area is reduced by 1,500 square feet to reflect the footprint of the accessory dwelling unit and anticipated hardscapes such as extended driveway and patio areas. Based on the MAWA, maximum permissible water demands per standard lot is 0.29 AFY.[22] For the 15 lots with accessory dwelling units, the maximum demand is estimated to be 0.21 AFY.

Taking the indoor and outdoor factors into account, Table 5.17-7, RESIDENTIAL UNIT WATER DEMAND FACTORS, provides the total estimated per-lot water demand for the proposed project. Combined, each lot is estimated to use 0.45 AFY for lots with only a primary residence, and 0.48 AFY for the 15 lots with accessory dwelling units.

Table 5.17-7
RESIDENTIAL UNIT WATER DEMAND FACTORS

Water Demand Category by Dwelling Unit (DU) Type	Indoor Factor	Outdoor Factor	Total Demand Factor (AF/DU)
Residential Home	0.15	0.29	0.45
Residential Home with Secondary Unit	0.28	0.21	0.48

Source: Tully & Young. *Water Supply Evaluation for Tierra Robles Project*. April 26, 2017.

The proposed project demand represents the demand for water at the project location (e.g., at the customer's location). To fully represent the demand, distribution system losses must also be included. Often, distribution system losses represent water that is lost due to system leaks, fire protection, unauthorized connections, and inaccurate meters. Essentially, this is the water that is produced by BVWD that does not make its customers – either as a real loss or an apparent loss (e.g. such as may result when

[19] Indoor demand for primary units = 2.5 people/house x 55 gallons per-person, per day x 365 days = 50,188 gallons/dwelling unit/year = 0.15 acre-feet/dwelling unit/year

[20] With the increasingly stringent requirements of building codes as well as water and energy efficiency codes, it is likely that the actual indoor demand of the proposed project may be below the stated 0.15 af/yr value. Recently, the Governor issued Executive Order B-37-16 that, among other orders, directed state agencies to develop new urban water use targets including a standard for indoor residential per-capita water use. These new targets are to "build upon the existing state law" that requires a 20% reduction in urban water use by 2020 – which includes the suggested 55 gallons-per-person per day planning guidance.

[21] California Department of Water Resources reference ETo map zone 14.

[22] MAWA formula = 56.22 inches X 0.62 X 0.55 X 5,000 sf = 95,855 gallons = 0.29 acre-feet

a customer meter underreports actual use). In most instances, the predominant source of distribution system losses is from leaks that inevitably exist throughout the many miles of pipes and fitting that bring water to BVWD's customers.

BVWD utilizes a 6 percent loss factor to be representative of non-revenue water based on its historical data. This value is used to represent the additional water the BVWD must treat, convey and deliver to assure the proposed project's customer demands are satisfied. As shown in Table 5.17-8, ESTIMATED POTABLE WATER DEMAND, non-revenue demand is estimated to be approximately 5 AFY.

Taking the outdoor, indoor, and loss factors into account, Table 5.17-8, provides the total estimated water demand for the proposed project through year 2040. The proposed project would require an initial 2 AFY of water for construction and then an initial 41 AF operational water between year 2020 and year 2025. As shown in Table 5.17-8, the proposed project is estimated to have a total annual water demand of approximately 80 AFY by year 2030. The 80 AFY is expected to occur within 10 years following project initiation.

Table 5.17-8
ESTIMATED POTABLE WATER DEMAND

	Unit Count or Acreage					Demand Factor	Demand (af/yr)				
Category	**2020**	**2025**	**2030**	**2035**	**2040**	**(af/yr or af/ac)**	**2020**	**2025**	**2030**	**2035**	**2040**
Residential											
Rural Residential (indoor)	0	73	151	151	151	0.15	0	11	23	23	23
Rural Residential (outdoor)	0	73	151	151	151	0.29	0	21	44	44	44
With Secondary Unit (indoor)	0	7	15	15	15	0.28	0	2	4	4	4
With Secondary Unit (outdoor)	0	7	15	15	15	0.21	0	1	3	3	3
						Residential Total	*0*	*36*	*75*	*75*	*75*
Other Project Demands											
Median Landscaping	20	46	46	46	46	n/a	(Met with Recycled Water)				
Wastewater Facility	0	1	1	1	1	0.10	(Nominal, Not Included)				
Construction Water	1	1	0	0	0	2	2	2	0	0	0
						Non-Residential Total	*2*	*2*	*0*	*0*	*0*
						Indoor Subtotal	0	13	27	27	27
						Outdoor Subtotal	2	25	48	48	48
						Project Subtotal	*2*	*38*	*75*	*75*	*75*
						Indoor Non-Revenue Water 6%	0	1	2	2	2
						Outdoor Non-Revenue Water 6%	0	2	3	3	3
						Total Indoor	0	14	29	29	29
						Total Outdoor	2	27	51	51	51
						Total Proposed Project Demand	**2**	**41**	**80**	**80**	**80**

Source: Tully & Young. *Water Supply Evaluation for Tierra Robles Project*. April 26, 2017.

Compliance with EO B-29-15 and EO B-37-16. As mentioned above in Section 5.17.2, REGULATORY SETTING, EO B-29-15 was established with the goal of achieving a statewide reduction in potable urban water usage of 25 percent relative to water use in 2013. EO B-36-15 directed the SWRCB to extend of urban water use restrictions through October 31, 2016, although many of the directives have become permanent water-efficiency standards and requirements. The EO includes specific directives which set strict limits on water usage in the State. EO B-37-16 emphasizes wise water use and less water waste to become permanent requirements in order to prepare for more frequent and persistent periods of limited water supply.

In addition, the maximum allowable flowrates for fittings and fixtures, including the following, have recently been updated in response to the Governor's EO B-29-15 and EO B-37-16:

- Toilets - 1.28 gallons per flush,
- Showers - 2 gallons per minute (gpm) at 80 pounds per square inch (psi) of water pressure,
- Bathroom faucets - 1.2 gpm at 60 psi,
- Kitchen faucets - 1.8 gpm at 60 psi,
- Common area bathroom faucets - 0.5 gpm at 60 psi, and
- Urinals - 0.125 gallons per flush.

EO B-29-15 directives 5, 7, 11, and 16, which are upheld in EO B-36-15 and EO B-37-16, and EO B-37-16 directive 4, are applicable, directly or indirectly, to the proposed project. The proposed project's compliance with the California Health and Safety Code, California Plumbing Code, California Energy Commission's proposed Appliance Efficiency Regulations, and with BVWD's rules, regulations and policies which include adopted shortage measures as amended, modified, or superseded, would result in building features that would address indoor and outdoor water efficiency measures, and would ensure that the project would comply with EO B-29-15 and EO B-37-16, in addition to the other federal, State, and local laws and regulations.

Water Supply Availability Normal-Year (Average) Conditions. As discussed above, Table 5.17-2, SUMMARY OF WATER SUPPLY SOURCES, shows that BVWD obtains water supplies from three sources during normal years: USBR, Anderson-Cottonwood Irrigation District, and groundwater. Table 5.17-3, NORMAL SUPPLY AND DEMAND, shows that BVWD anticipates a water surplus of in excess of 7,874 AFY and 9,204 AFY through year 2040 (i.e., more supply than demand) during average rainfall years.

The overall water demand for BVWD is derived from the BVWD's *Urban Water Management Plan Update 2015*, and provides an in-depth discussion regarding its customer types and determinations of overall demand based on historic trends and projected growth. BVWD anticipates "residential" customers will grow at a 0.9% annual rate from average use values calculated for the period 1995 to 2015 (refer to Table 5.17-9, PROJECTED DEMANDS FROM BVWD'S 2015 UWMP, below). The average use values are also provided in the table.

Table 5.17-9
PROJECTED DEMANDS FROM BVWD'S 2015 UWMP

Use Type	Water Demand (AFY)					
	1995-2015 Avg.	2020	2025	2030	2035	2040
Residential	2,858	3,282	3,432	3,589	3,754	3,926
Rural	2,223	2,552	2,669	2,791	2,919	3,053
Commercial	572	657	687	719	752	786
Public/Institutional	949	1,089	1,139	1,191	1,246	1,303
Construction	16	18	19	20	21	22
Agriculture	5,702	6,547	6,847	7,161	7,489	7,832
Aquaculture	634	727	761	796	832	870
Unmetered	323	371	388	406	424	444
Losses	970	1,114	1,165	1,218	1,274	1,332
Total	**14,247**	**16,357**	**17,107**	**17,891**	**18,711**	**19,568**

Source: Tully & Young. *Water Supply Evaluation for Tierra Robles Project*. April 26, 2017.

The proposed project, considered rural residential by BVWD, is considered to be represented within the growth reflected in the *Urban Water Management Plan Update 2015*. Specifically, the rural classification is expected to grow approximately 830 AF by 2040, or approximately 40 AF per year. Given the proposed

project's estimated demand of 80 AF at build-out, it is considered to represent about 10% of the overall growth in this category of over 800 AF.

New development within BVWD's service area is not considered part of the USBR's water delivery baseline until such time the development's water use have existed for three 100-percent CVP water allocation years. Although the proposed project is not included within the existing water delivery baseline, the project's water use is assumed in the *Urban Water Management Plan Update 2015* water demand projections and surplus water is available to serve the project's 80 AFY water demand under normal-year (average) conditions through year 2040. Therefore, the proposed project water demand would be met and would not contribute to negative impacts on the availability of water for BVWD's existing and other planned future uses under normal-year (average) conditions. Therefore, no water supply mitigation is required for normal-year (average) conditions. In addition, implementation of **MM 5.17-4a** would ensure water efficient features are incorporated into the project design by requiring written verification be provided to the County regarding facility compliance with applicable water efficiency design standards required by the California Uniform Building Code and the BVWD. Impacts would be *less than significant* for normal-year (average) conditions.

Water Supply Availability Dry-Year Conditions. As shown in Table 5.17-4, SINGLE DRY YEAR SUPPLY AND DEMAND, and Table 5.17-5, SUPPLY AND DEMAND COMPARISON – MULTIPLE-DRY YEAR, BVWD water supplies are projected to be insufficient to meet existing and projected water demands under a multiple-dry year period. Although this supply deficit decreases in the second and third dry years, the deficit maintains a water supply shortage of several thousand acre-feet. The additional demand of 80 AFY of water would further impact dry-year water supplies within BVWD's service area and, as a result of not being included within BVWD's existing water delivery baseline, would be served with water supplies calculated and distributed based on allocations established prior to the project. Therefore, absent the delivery of a supplemental water supply to BVWD during dry-year periods, the proposed project would utilize water that would otherwise be available to existing BVWD customers and further exacerbate dry-year water shortages.

To mitigate this effect, the proposed project would be required to provide an alternative water supply during dry-year conditions until such time as the proposed project's demands have existed for three 100-percent water allocation years and are included in BVWD's baseline water demand. Implementation of **MM 5.17-4b** requires the project applicant to identify and implement an Agreement to augment (i.e., supply) BVWD dry-year water supplies until such time as the proposed project's water demands have existed for three 100-percent CVP water allocation years delivered by USBR. Water supplies would be a minimum of 90 percent of the project's prior year water use[23].

In advance of establishing the Tierra Robles Community Services District (TRCSD) or the Tierra Robles Homeowners Association (HOA), the project applicant has identified a potential water supply to provide to BVWD during defined shortage conditions to address mitigation measure **MM 5.17-4b**. The water supply described in detail here would be secured through an Agreement with BVWD concurrent with establishment of the TRCSD or the HOA, with that new entity being the responsible party as to be described in the Agreement with BVWD.

The water supply would be available to BVWD on an annual basis during identified shortage conditions in a quantity that represents a minimum of 90 percent of the Proposed Project's prior year water usage.

[23] A dry-year water supply augmentation amount of 90 percent of the prior year's water demand accounts for a minimum 10 percent water conservation target the project and other BVWD customers would be subject to (based on the prior year's water use).

Shortage conditions shall be defined to exist when BVWD has been notified by the USBR that it will receive less than a 100 percent (full) allocation of its CVP water supplies for the coming delivery season, as that determination has been announced by USBR on or around April 15th of each year.

Proposed Source of Supplemental Water Supply

The project applicant has identified a water supply that meets the conditions described in MM 5.17-4b. This section describes the proposed supplemental dry-year supply and evaluates its feasibility and functionality for purposes of satisfying the mitigation measure.

As represented in several attachments referenced throughout this section, the project applicant has facilitated discussions between Clear Creek Community Services District (CCCSD_ and BVWD for the periodic transfer of a portion of CCCSD's annually available CVP water supply allocation from CCCSD to BVWD.

As detailed in Appendix RDEIR C-2 of this RDEIR, CCCSD would make available for transfer a portion of its CVP allocation in a requested year, not to exceed 100 acre-feet. CCCSD would meet its own customer needs otherwise met by the CVP supply by pumping groundwater through one of three existing, certified drinking water wells.

The source of the transfer water is a contractual entitlement under a CVP water service contract between USBR and CCCSD. BVWD also is a CVP water service contractor in the same area of origin as CCCSD, and therefore the transfer will be conducted in accordance with Section 3405(a)(1)(M) of the Central Valley Project Improvement Act (CVPIA) along with other applicable criteria relating to the substitution of groundwater by CCCSD.

The CVP water to be transferred would originate at Trinity Lake, be diverted through Carr Tunnel into Whiskeytown Reservoir, then, rather than being diverted through the Muletown Conduit to CCCSD, would be released into the Sacramento River after flowing through the Spring Creek and Keswick Powerplants. This water would then be diverted at BVWD's screened diversion located on the Sacramento River within the Redding city limits. No new or additional diversion or conveyance infrastructure would be necessary.

Because absent the transfer, CCCSD would use this portion of its CVP allocation to meet its own customer needs, it will pump groundwater from the Redding Area Groundwater Basin - Anderson (Department of Water Resources designated as Basin 5-006.03) in equivalent annual volumes. The timing of pumping, however, may vary from the timing of when CCCSD would have otherwise taken delivery of its CVP supply as CCCSD will manage its remaining CVP allocation in a transfer year along with its groundwater pumping in a manner that best suits its operational and customer needs.

The annual transfer of up to 100 acre-feet of CCCSD's CVP allocation will need to be approved by USBR. This approval may occur annually, with CCCSD and BVWD requesting the approval from USBR as currently occurs by several CVP contractors in the Sacramento Valley under the provisions of USBR's Accelerated Water Transfer and Exchange Program for Sacramento Valley Central Valley Project Contractors (U.S. Bureau of Reclamation's Finding of No Significant Impact FONSI 16-01-NCAO, May 2016).

Authorization to Pursue

A letter sent from CCCSD to BVWD details the proposed transfer and outlining specific provisions. On June 17, 2020, at a regularly scheduled meeting, the CCCSD Board of Directors unanimously authorized its General Manager to participate in negotiations with BVWD to formulate the necessary agreement as detailed in the letter. A copy of the CCCSD meeting minutes is included as Appendix RDEIR C-2 of the RDEIR.

At a regularly scheduled meeting on June 22, 2020, the BVWD Board of Directors also authorized its General Manager to enter into negotiations with CCCSD in response to the letter. A copy of the BVWD meeting minutes is included as Appendix RDEIR C-3 to this RDEIR.

Analysis of Supply Feasibility

The feasibility of the proposed CCCSD transfer of CVP water during shortage conditions to BVWD for its use depends on (1) the reliability of CCCSD's CVP supply to be available to transfer, (2) the potential impacts to local groundwater conditions underlying CCCSD when groundwater is substituted for the CVP supply, and (3) the approval procedures for a transfer of CVP supply among CVP contractors. These factors are addressed in the analysis that follows.

Clear Creek Community Services District Water Supplies

CCCSD has at least two secure water supplies available to meet its municipal and industrial (M&I) and agricultural (Ag) water needs. In some conditions, CCCSD has further augmented these supplies through water transfers, as determined appropriate by its Board of Directors. The primary supplies include:

- CVP Water Service Contract for 15,300 acre-feet
- Three State-permitted, 1500 gpm drinking water wells

CVP Water Service Contract

CCCSD holds a contractual entitlement for water under the water service contract with USBR for 15,300 acre-feet of water for agricultural and municipal and industrial purposes (Contract# 14-06-200-489-A-LTR1). Like all CVP water service contracts, CCCSD's CVP supply can be constrained on an annual basis, where the allocated quantity is based upon the delivered quantity during the prior three years of 100% allocations. This is the same condition faced by BVWD and resulting in the shortage concern being addressed by MM 5.17-4b.

Table 5.17-10, CLEAR CREEK CSD CVP DELIVERIES provides the historic delivery records for CCCSD's use of CVP water supplies, as recorded between authorized M&I and Ag customers. All CVP water diverted to serve CCCSD's CVP contract is treated to drinking water standards at a water plant located at the base of the Whiskeytown Reservoir dam, whether the water will serve M&I or Ag needs. The separation of M&I and Ag in Table 5.17-10 associates with CCCSD's operations, deliveries and billing. The total CVP deliveries indicate the general demand in a 100% allocation condition, such as 2017, in contrast to the limited availability of CVP water under CVP shortage conditions, such as 2014 through 2016. However, even during the 5% allocation condition of 2015, CCCSD still had an allocation of 578 acre-feet of CVP project water supplies. If such a condition were to repeat, the up-to 100 acre-feet transferred to BVWD could still be accommodated, with the CCCSD demand met instead with increased pumping from its existing municipal water wells.

Table 5.17-10
CLEAR CREEK CSD CVP DELIVERIES

	CVP Deliveries (acre-feet/year)		
	AG	M&I	Total
2014	157	1,388	1,545
2015	0	578	578
2016	250	466	716
2017	1,518	1,946	3,464
2018	1,635	2,424	4,058
2019	1,548	2,239	3,787

Source: Clear Cree CSD
Notes: CSD = Community Services District
CVP = California Water Project
AG = Agricultural water use
M&I = Municipal and Industrial water use

Drinking Water Wells

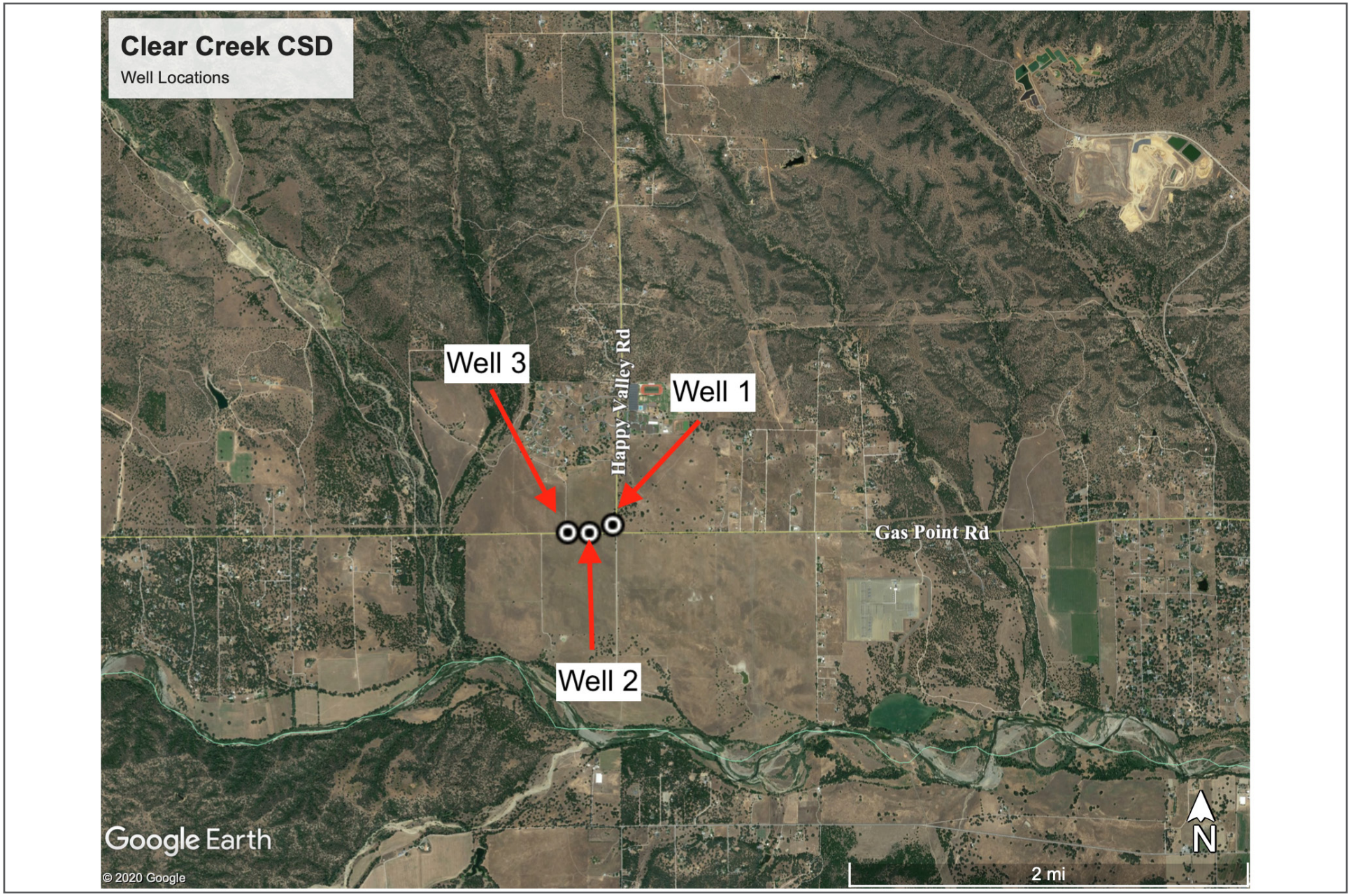
CCCSD drilled three municipal service wells in the 1990's. All three wells are maintained in an active status as certified through the State of California's Division of Drinking Water, with CCCSD regularly conducting required testing to maintain the status and availability for these wells to meet potable water needs. FIGURE 5.17-1, CLEAR CREEK CSD WELL LOCATIONS MAP, shows the location of the CCCSD wells.

During the CVP allocation reductions experienced in 2014, 2015 and 2016, the CCCSD utilized one of the three potable well sites to augment supplies to meet its customer needs while the other two remained in stand-by status. During transfer years, CCCSD will either continue utilizing its one well for a longer period of the year or will also utilize one of the additional permitted wells to be determined based upon customer need, operational considerations, and other appropriate factors. TABLE 5.17-11, CLEAR CREEK CSD HISTORIC GROUNDWATER PUMPING presents the historic pumping by CCCSD at its three municipal wells.

Table 5.17-11
CLEAR CREEK CSD HISTORIC GROUNDWATER PUMPING

	Well Pumping (acre-feet/year)		
	AG	M&I	Total
2014	28	122	150
2015	221	303	524
2016	33	147	180
2017	0	0	0
2018	0	0	0
2019	0	0	0

Source: Clear Cree CSD
Notes: CSD = Community Services District
CVP = California Water Project
AG = Agricultural water use
M&I = Municipal and Industrial water use



SOURCE: Google Earth, 2020

N.T.S.

Clear Creek CSD Well Locations Map

Figure 5.17-1

Figure 5.17-2, CLEAR CREEK CSD MONTHLY GROUNDWATER PUMPING presents the monthly pumping during each of these years. As evident from the figure, most of the pumping occurred during fall 2014 through spring 2015, then again in fall of 2015 through spring 2016. This historic pumping occurred using only one of CCCSD's three available production wells.

While CCCSD has additional well capacity to help address shortage conditions, during the most recent CVP shortage conditions, CCCSD chose to also purchase surface water from a local water right holder – as a less-expensive solution than further operating its production wells. This additional surface water was used as a supplemental source for CCCSD in 2014, 2015 and 2016, as shown in FIGURE 5.17-3, CLEAR CREEK CSD ANNUAL DELIVERY BY SOURCE.

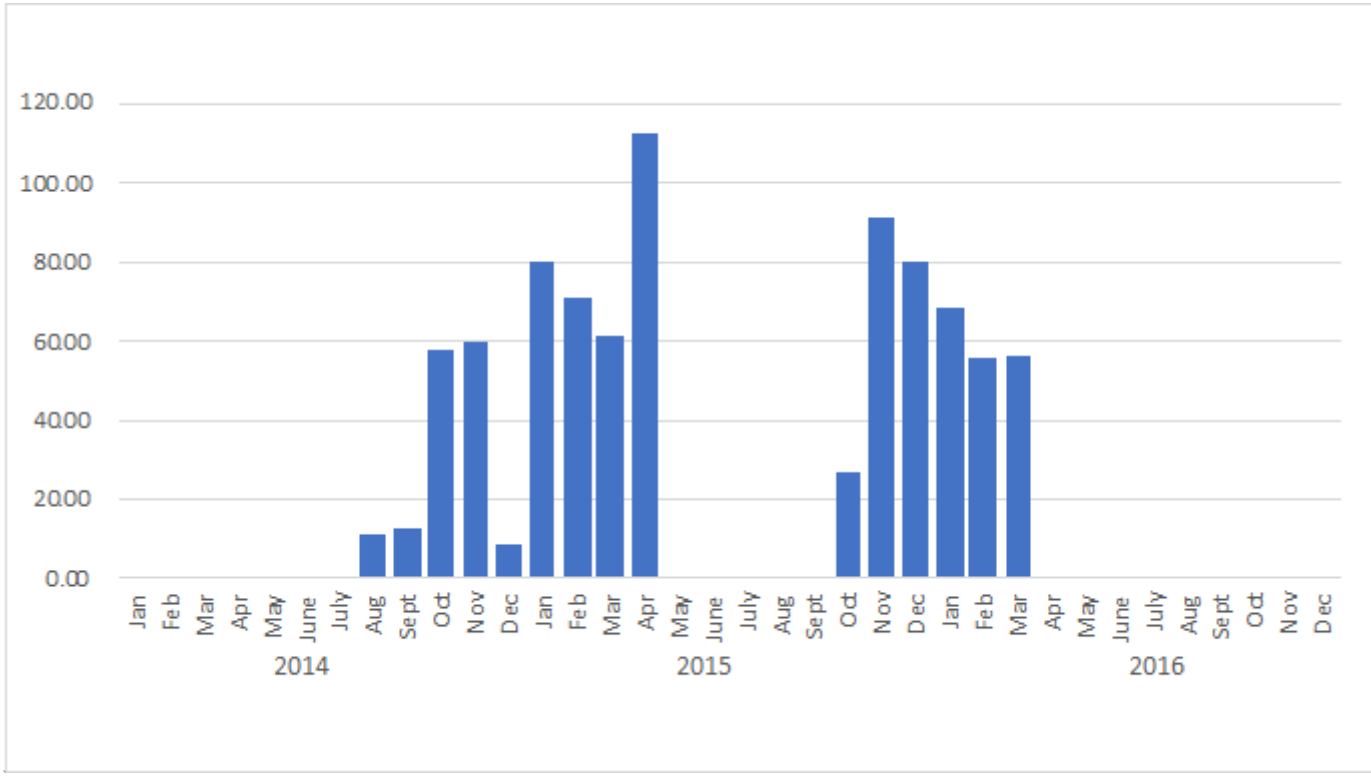
Groundwater Conditions in Sub-basin

The proposed supply provided to BVWD relies on CCCSD increasing reliance on the local groundwater basin and transferring an increment of its CVP allocation to BVWD. The ability for the local groundwater basin to support the planned short-term additional pumping by CCCSD is dependent on the current and historic conditions of the basin from which the CCCSD wells extract. CCCSD overlies the Anderson Sub-basin as defined by DWR Bulletin 118 (Basin 5-006.03). The Anderson Sub-basin and the neighboring Enterprise Sub-basin (Basin 5-6.04) are currently combined within the Enterprise Anderson Groundwater Sustainability Agency (EAGSA) which is preparing a Groundwater Sustainability Plan (GSP) pursuant to the Sustainable Groundwater Management Act (SGMA). The GSP is required to be submitted to the State by January 31, 2022. Information on the basin and details regarding the GSP are available at the EAGSA website, including a draft GSP chapter describing the Anderson Sub-basin settings.[24]

While the publicly available chapters of the GSP as of early September 2020 do not yet include a definition of the basin's sustainable capacity, the long-term trends presented in the draft basin settings can inform an evaluation of the ability for CCCSD to periodically increase its pumping by up to 100 acre-feet annual. Specifically, the draft description of the Anderson Sub-basin includes the following:

> "Historical groundwater-level records for the Anderson Sub-basin indicate groundwater levels have been relatively consistent, generally without long-term trends of increasing or decreasing groundwater levels, as indicated by the hydrographs for wells 29N/04W-02P01 and 30N/05W-02Q01 (Figure 3-14). However, some well locations in the Anderson Sub-basin exhibit spatial and temporal variability with groundwater levels generally increasing at location 30N/04W-23G01 and decreasing groundwater levels at 29N/04W-523 04R03. Groundwater levels in 30N/04W-23G01 have generally increased from approximately 385 feet elevation during the 1976-1977 drought to nearly 400 feet elevation in 2011. Recent groundwater levels (since 2013) show declines during the recent dry and critical water years. Conversely, groundwater levels at location 29N/04W-04R03 indicate longer-term declining groundwater levels. Groundwater levels at 29N/04W-04R03 have generally decreased from approximately 450 feet elevation in 1970 to approximately 440 feet elevation in 2004. Groundwater levels in 29N/05W-11A02 have been more variable over time, increasing from approximately 450 feet elevation in the early 1970s to approximately 465 feet elevation in 1985, at which point groundwater levels remained relatively consistent until the two droughts

[24] City of Redding https://www.cityofredding.org/departments/public-works/eagsa, Accessed September 6, 2020

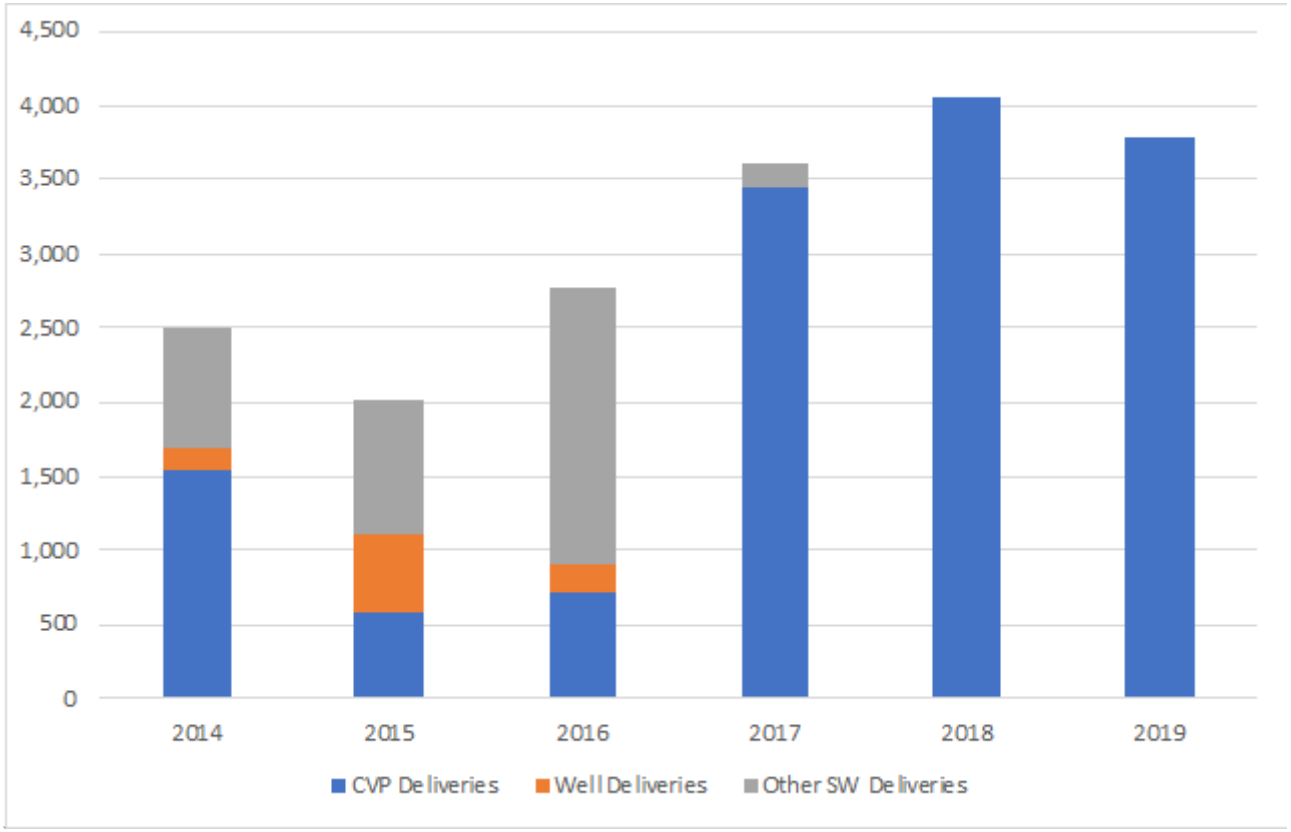


SOURCE: Clear Creek Community Services District, 2020

N.T.S.

Clear Creek CSD Monthly Groundwater Pumping

Figure 5.17-2



SOURCE: Clear Creek Community Services District, 2020

N.T.S.

Clear Creek CSD Annual Delivery by Source

Figure 5.17-3

> between 2007 and 2015, when groundwater levels decreased to approximately 455 feet elevation."[25])

FIGURE 5.17-4, GROUNDWATER LEVELS ADJACENT TO CLEAR CREEK CSD WELLS presents an excerpt of the draft GSP's hydrographs for wells in proximity to the CCCSD wells shown in Figure 5.17-1. As noted upon inspection, the wells in the Anderson Sub-basin have been stable for several decades. Specifically, the hydrograph for Well 29N/05W-11A02 is from a location within a mile of the CCCSD production wells and shows long-term stability since the 1980's.

Further, the recent pumping by CCCSD (see Table 5.17-11, above), which has been as much as 500 acre-feet in 2015, has not had a notable effect on local groundwater conditions. While not modelled, it is unlikely that the periodic additional pumping of 100 acre-feet per year would change the conditions represented in the hydrographs for the following reasons:

- The historical trends of the groundwater hydrographs have shown minimal fluctuation in the groundwater elevations over time;
- Past use of the wells has resulted in pumping for only a portion of the year (4 to 5 months) allowing for groundwater recharge and not resulting in overdraft conditions; and
- Pumping 100-acre feet over the course of a year is not a substantial increase in the amount of groundwater relative to past groundwater pumping quantities.

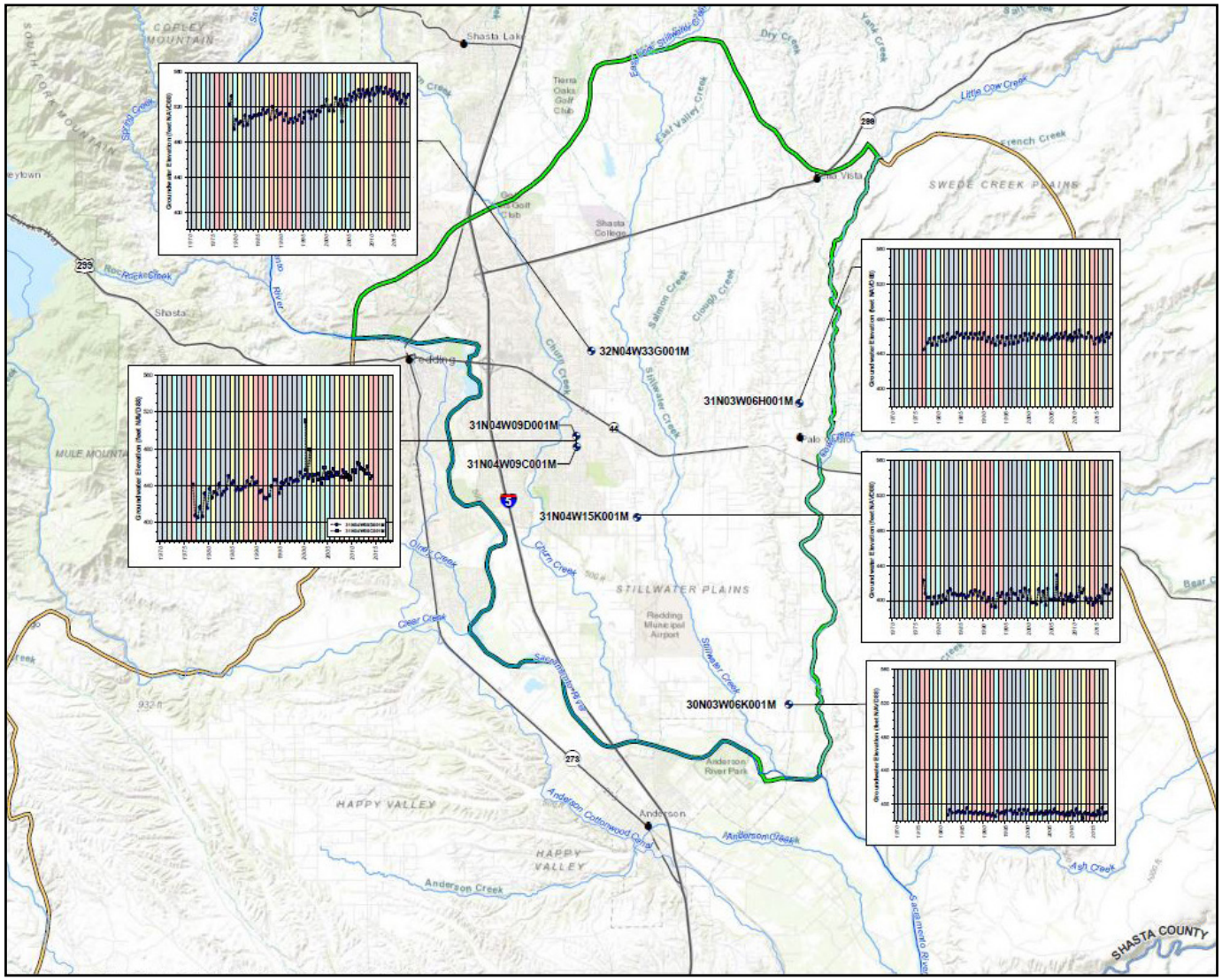
While no impacts to groundwater supply have been identified, it is recommended that the agreement between BVWD and CCCSD be conditioned distribute the pumping throughout a particular year, whereby month-to-month pumping would be negligible, as a way to further protect from any noticeable changes in groundwater levels.

Anticipated Transfer Process

Transferring a CVP allocation to another CVP contractor within the same watershed is subject to approval of USBR, whether as an annual or a longer-term transaction. USBR routinely approves annual transfers among CVP contractors in the Sacramento Valley as authorized under the Central Valley Project Improvement Act[26] ("CVPIA") and as evaluated in the *Accelerated Water Transfer and Exchange Program for Sacramento Valley Central Valley Project Contractors Environmental Assessment/Finding of No Significant Impact-Contract Years 2016-2020* (EA/FONSI) prepared in January 2016[27]. While this EA/FONSI covered the period 2016 through 2020, it replaced a prior EA/FONSI for the contract period 2011-2015 and prior 5-year periods. The relevant action evaluated by the EA/FONSI is reflected in the following excerpt:

> "Reclamation proposes to approve, subject to written consent, transfers or exchanges of Project water in the Sacramento Valley, pursuant to Section 3405(a) of the CVPIA, under an accelerated process. Approvals would be provided throughout the term of Contract

[25] Draft Anderson Subbasin Groundwater Sustainability Plan Chapter 3: Basin Setting p. 3-12 https://www.cityofredding.org/departments/public-works/eagsa
[26] Title XXXIV of the CVPIA of October 30, 1992, Section 3405(a)(1)(M)
[27] U.S. Bureau of Reclamation, https://www.usbr.gov/mp/nepa/includes/documentShow.php?Doc_ID=25686, Accessed July 27, 2020)



SOURCE: Draft Anderson Subbasin Chapter 3: Basin Setting, Figure 3-14: Select Hydrographs

N.T.S.

Groundwater Levels Adjacent to Clear Creek CSD Wells

Figure 5.17-4

> Years 2016 through 2020 (April 1, 2016, through February 28, 2021). Each transfer or exchange approved via the AWTP must be completed in the water or contract year for which the water is requested. However, subsequent approval(s) may be provided for the same or a similar transfer or exchange over the term of the AWTP." (EA/FONSI, p. 5).

Notable with the accelerated transfer program is Reclamation's written consent process, repeatable during the entire period of each EA/FONSI. Essentially, Reclamation requires the CVP contractor to submit a consent-request letter detailing the proposed transfer and undertakes a simplified review and approval process. USBR is anticipated to prepare and adopt an EA/FONSI for each subsequent 5-year contract period upon the expiration of the current EA/FONSI.

CVPIA Section 3405(a)(1)(M), allowing the CVP-to-CVP in watershed transfer of project water, specifically states: "Transfers between Central Valley Project contractors within countries, watersheds, or other areas of origin, as those terms are utilized under California law, shall be deemed to meet the conditions set forth in subparagraphs (A) and (I) of this paragraph." While this provision addresses many of the requirements for a transfer, Reclamation still has the obligation to review even a CVP-to-CVP transfer for three additional factors: (1) potential impacts to groundwater [Section 3405(a)(1)(J)], (2) potential impacts to the transferor's finances or operations [Section 3405(a)(1)(K)], and (3) potential significant affects to USBR's operations to meet fish and wildlife resource goals.

CCCSD's participation in the transfer through an agreement with BVWD and the project applicant would be anticipated to address the second factor such that there is no unreasonable impact to CCCSD's operations or finances. And, as described previously, because the transfer would involve CVP Project Water that would not otherwise be entering the Sacramento River and counted toward USBR's temperature control objectives if it were delivered to CCCSD, then released into the Sacramento River for diversion by BVWD, would have no effect on USBR operations to meet various fishery objectives.

However, to make the proposed CVP supply available to BVWD, CCCSD will rely on an equivalent increase in groundwater pumping to meet customer demands. Therefore, USBR will want to assure the substitution of groundwater, per Section 3405(a)(1)(J), will not impact local groundwater conditions. The information presented previously regarding the groundwater basin's current and historic conditions can represent a proxy for the evaluation that USBR will undertake upon such time as the transfer is proposed.

To further illustrate how the proposed supplemental water supply could be used to meet MM 5.17-4b, a sample operation is provided that simulates the historic 2015 conditions faced by CCCSD, modified to show the transfer of CVP water to BVWD and subsequent increased groundwater production by CCCSD. FIGURE 5.17-5, EXAMPLE INCREASED CLEAR CREEK CSD PUMPING SCENARIO, presents the historic condition compared to a proposed increase in groundwater production to make the CVP water supply available to BVWD.

In this example, the red numbers in the Well Pumping column show the amount acre-feet of groundwater that would be pumped over the course of four months during a dry year when additional water was needed by BVWD to serve the proposed project. In the CVP Delivery column, the red numbers show the reduction in CVP water that BVWD would pump from the Sacramento River. The reduction in CVP delivery water is equal to the amount of groundwater pumped by the CCCSD.

2015 Historic Condition

Year	Month	CVP Delivery			Well Pumping			Purchased			Total Delivered
		Ag	M&I	Total	Ag	M&I	Total	Ag	M&I	Total	
2015	Jan	0.00	0.00	0.00	21.90	58.50	80.40	0.00	0.00	0.00	80.40
	Feb	0.00	0.00	0.00	14.90	56.10	71.00	0.00	0.00	0.00	71.00
	Mar	0.00	43.67	43.67	54.05	7.19	61.24	0.00	0.00	0.00	104.91
	Apr	0.00	3.17	3.17	58.08	54.93	113.01	0.00	0.00	0.00	116.18
	May	0.00	0.00	0.00	0.00	0.00	0.00	57.69	126.62	184.31	184.31
	June	0.00	14.67	14.67	0.00	0.00	0.00	87.92	142.08	230.00	244.67
	July	0.00	55.76	55.76	0.00	0.00	0.00	122.67	127.33	250.00	305.76
	Aug	0.00	119.15	119.15	0.00	0.00	0.00	119.52	65.48	185.00	304.15
	Sept	0.00	176.32	176.32	0.00	0.00	0.00	66.00	0.00	66.00	242.32
	Oct	0.00	161.95	161.95	26.92	0.00	26.92	0.00	0.00	0.00	188.87
	Nov	0.00	0.49	0.49	25.56	65.75	91.31	0.00	0.00	0.00	91.80
	Dec	0.00	2.74	2.74	19.45	60.65	80.10	0.00	0.00	0.00	82.84
Annual Total		0.00	577.92	577.92	220.86	303.12	523.98	453.80	461.51	915.31	2017.21

Example with Transfer of 100 acre-feet of CVP Delivery to BVWD (changes shown in RED)

Year	Month	CVP Delivery			Well Pumping			Purchased			Total Delivered
		Ag	M&I	Total	Ag	M&I	Total	Ag	M&I	Total	
2015	Jan	0.00	0.00	0.00	21.90	58.50	80.40	0.00	0.00	0.00	80.40
	Feb	0.00	0.00	0.00	14.90	56.10	71.00	0.00	0.00	0.00	71.00
	Mar	0.00	43.67	43.67	54.05	7.19	61.24	0.00	0.00	0.00	104.91
	Apr	0.00	3.17	3.17	58.08	54.93	113.01	0.00	0.00	0.00	116.18
	May	0.00	0.00	0.00	0.00	0.00	0.00	57.69	126.62	184.31	184.31
	June	0.00	14.67	14.67	0.00	0.00	0.00	87.92	142.08	230.00	244.67
	July	0.00	**35.76**	35.76	0.00	**20.00**	20.00	122.67	127.33	250.00	305.76
	Aug	0.00	**89.15**	89.15	0.00	**30.00**	30.00	119.52	65.48	185.00	304.15
	Sept	0.00	**146.32**	146.32	0.00	**30.00**	30.00	66.00	0.00	66.00	242.32
	Oct	0.00	**141.95**	141.95	26.92	**20.00**	46.92	0.00	0.00	0.00	188.87
	Nov	0.00	0.49	0.49	25.56	65.75	91.31	0.00	0.00	0.00	91.80
	Dec	0.00	2.74	2.74	19.45	60.65	80.10	0.00	0.00	0.00	82.84
Annual Total		0.00	477.92	477.92	220.86	403.12	623.98	453.80	461.51	915.31	2017.21

SOURCE: Tully & Young, 2020

N.T.S.

Example of Increased Clear Creek CSD Pumping Scenario

Figure 5.17-5

How this works mechanically is CCCSD would pump 100-acre feet of groundwater from their existing wells over the course of multiple months during a dry year. This water would be transported through CCCSD's existing underground aqueduct from its facilities near the Whiskeytown Reservoir Dam and released into the Sacramento River just below the Keswick Dam northeast of city of Redding. BVWD would pump a commensurate amount of water from the Sacramento River from their existing intake station approximately 0.25-mile down river from the Sundial Bridge in Redding. No new facilities or infrastructure would be required to complete this transfer.

Therefore, based upon the information provided by the project applicant, the publicly available data regarding groundwater conditions, and historic use data provided by CCCSD, the proposed supplemental water supply would be a feasible method to address MM 5.17-4b.

Mitigation Measures:

MM 5.17-4a: Prior to issuance of a building permit, the project applicant shall provide written verification to the Shasta County Department of Resource Management of facility compliance with applicable water efficiency design standards required by the California Uniform Building Code.

MM 5.17-4b: Concurrent with the establishment of the Tierra Robles Community Services District or Tierra Robles Homeowners Association, the project applicant shall provide to the Shasta County Department of Resource Management documentation demonstrating that the applicant has secured an Agreement with BVWD to provide BVWD with adequate water supplies on an annual basis during identified shortage conditions in a quantity that represents a minimum of 90 percent of the project's prior year water usage. Shortage conditions shall be defined to exist when BVWD has been notified by the USBR that it will receive less than a 100 percent (full) allocation of its CVP water supplies for the coming delivery season, as that determination has been announced by USBR as of April 15th of each year. The augmenting water supplies shall be made available to BVWD through the Agreement until such time as BVWD has completed three years of full CVP water allocation after commencement of operations at the project site. For any shortage condition that occurs after three years of full CVP allocation, the project applicant shall no longer be required to provide BVWD with augmenting water supplies, but the project applicant shall then be fully subjected to the shortage provisions administered by BVWD to all its customers. The project applicant shall demonstrate that any water supply provided to BVWD under the Agreement satisfies all CEQA and NEPA compliance requirements, as well as any other permitting or regulatory approvals, as may be associated with a water supply identified in the Agreement.

Level of Significance After Mitigation: Impacts would be *less than significant* with mitigation incorporated.

5.17.5 CUMULATIVE SETTING, IMPACTS, AND MITIGATION MEASURES

IMPACT 5.17-8 ***Implementation of the proposed project would contribute to cumulative demands for domestic water.***

Significance: Potentially Significant Impact.

Cumulative Setting: Cumulative impacts are two or more individual impacts that, when considered together, are considerable or that compound or increase other environmental impacts. The proposed project's contribution to an increased need for water service is considered in the context of other past, present, and reasonably foreseeable future projects in the area. If constructed, these projects would cumulatively contribute to impacts on water service; however, public agencies and utilities are given an opportunity to respond to an inquiry for information regarding the potential increase in demand for their services. Development fees, if applicable, would be assessed on a project-specific basis to mitigate any increased demand on water service.

Water Supply Availability Normal-Year (Average) Conditions. As noted in Impact 5.17-4, adequate water supplies are available from BVWD to serve the proposed project and uses within the BVWD's service area under normal wet year conditions. Implementation of **MM 5.17-4a** would ensure the proposed project includes water efficient features as required by current design standards. Cumulative water supply demand under normal-year conditions are considered *less than significant*.

Water Supply Availability Dry-Year Conditions. During multiple-dry years, there would be insufficient water to meet demands within the BVWD service area, with or without the proposed project. As discussed in Impact 5.17-4, above, when USBR declares a "Condition of Shortage", the Shortage Policy sets forth an available volume for BVWD based upon the BVWD's actual diverted water supply (also known as baseline volume) during the prior three years when BVWD water allocations were 100 percent. Until such time as the proposed project's demands are able to be included in the BVWD's baseline quantities, the proposed project would be required to provide an alternative water supply to BVWD, a minimum of 90 percent of the project's prior year water use, during shortage conditions. Implementation of mitigation measure **MM 5.17-4b** requires that the project applicant identify and implement an Agreement with BVWD to augment BVWD water supplies during dry years to off-set the proposed project's water demand.

Once the proposed project has met the requirements to be considered within the BVWD water delivery baseline, then the proposed project, along with all other existing customers included in the water baseline, would be subject to all BVWD Water Supply Contingency Plan measures. As previously discussed, the proposed project is considered rural residential by BVWD and is represented within the growth reflected in the *Urban Water Management Plan Update 2015*. Specifically, the rural classification water demand is expected to grow to approximately 830 AF by 2040, or approximately 40 AFY. Given the proposed project's estimated demand of 80 AFY at build-out, it is considered to represent about 10% of the overall growth in this category of over 800 AF.

The proposed project would not combine with other past, present, or reasonably foreseeable future projects within BVWD with respect to water supply and demand because the proposed project is within BVWD's anticipated demand projections, would mitigate its dry-year water demand until included within BVWD's water delivery baseline, and would be subject to all water conservation requirements mandated

by BVWD. Similar to that of the proposed project, other future projects within BVWD's service area would be required to demonstrate that adequate water supplies are available at the time when development is proposed, consistent BVWD requirements and SB 610, as applicable. Cumulative water service impacts are considered *less than significant*.

Mitigation Measures: Implement **MM 5.17-4a** and **MM 5.17-4b**.

Level of Significance After Mitigation: Implementation of mitigation measures identified for this proposed project, combined with adherence with applicable County, BVWD, and other local utility purveyor design and development standards on a project-by-project basis, would serve to reduce potential cumulative water service impacts to *less than significant* levels.