Fallbrook Public Utility District
2020 Urban Water Management Plan
(DRAFT)

Prepared by:

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Section 1 – Introduction and Lay Description

1.1 California Urban Water Management Planning Act

The California Water Code (CWC) requires all urban water suppliers within the state to prepare Urban Water Management Plans (UWMP) and update them every five years. These plans satisfy the requirements of the Urban Water Management Planning Act (Act) of 1983, including amendments that have been made to the Act. Sections 10610 through 10657 of the CWC detail the information that must be included in these plans, as well as who must prepare and submit them.

Prior water conservation plans, as well as urban and agricultural water management plans, have been developed and adopted by the Fallbrook Public Utility District's (FPUD or District) board of directors in 1981, 1985, 1991, 1995, 2000, 2005, 2010 and 2015.

This is the District's 2020 Urban Water Management Plan. It is an update to the District's 2015 Urban Water Management Plan, and it includes a description of the District's projected water resources that are necessary to provide water to its service area through the year 2045.

1.2 Lay Description

The District is a public water and wastewater utility that serves portions of the unincorporated community of Fallbrook, CA in northern San Diego County. Originally incorporated in 1922, over the years the District consolidated several small irrigation districts and eventually absorbed the Fallbrook Sanitary District (wastewater) in 1994. Today the District's water service area is 28,000 acres, encompassing a small downtown area (approximately 400 acres) and a mostly rural community. Historically, agriculture has been a defining characteristic of the community. In the early and mid-20th century, olives and citrus were prominent crops, while the late 20th century saw a proliferation of avocado production. Common crops in recent decades have shifted to include plant nurseries, cut flowers, wine grapes, and specialty fruit. Residential growth in the area has not expanded at the same pace as other San Diego and southern Riverside County communities due to limited larger vacant parcels for development and County general plan zoning.

1.2 Summary of Water Sources

FPUD is a water retailer and has historically purchased the majority of its water supplies from our two wholesalers, the San Diego County Water Authority (SDCWA or Water Authority), which is a member agency of the Metropolitan Water District of Southern California (Metropolitan). These wholesalers have addressed regional issues concerning San Diego County and Southern California water supplies in their own 2020 UWMPs. More information on their regional plans can

be found in their 2020 UWMPs. Starting in 2022 FPUD will bring online a new local supply project that will provide a substantial amount of local water and diminish the District's reliance on our wholesale suppliers. The wholesale water supplies received by FPUD are delivered to FPUD by the Water Authority and primarily consist of Colorado River and State Project Water Supplies. Although the Water Authority also has desalinated water as part of it's diversification, this water is not delivered to FPUD due to our location at the very North end of their service area. These supplies are discussed in detail in their respective UWMPs.

1.3 Other Projects to Maximize Resources and Minimize Imported Water

Projects the District is either using or pursuing to maximize local resources and minimize the need to import water include four projects: (1) the Santa Margarita Conjunctive-Use Project, (2) a cooperative agreement with Metropolitan to store surface water runoff in Lake Skinner in Temecula, (3) a potential collaborative effort with Camp Pendleton to develop indirect potable recharge within the lower Santa Margarita watershed, and (4) expanding the use of recycled water within the District's service area.

The Santa Margarita Conjunctive-Use Project will come online in 2022 and will provide approximately 4,200 acre feet per year (AFY) of new local water to FPUD. The project expands existing facilities at Camp Pendleton that store water in the groundwater aquifers beneath Camp Pendleton. The project is part of the settlement of water rights litigation between the United States and FPUD, and it will provide a reliable water supply, enabling the District to become more self-sustaining, with its own water sources, rather than relying exclusively on imported water for potable purposes. More information on this project can be found in Section 6.

The Lake Skinner agreement solves a decades-old water-rights problem for the District. FPUD has rights to collect water in the Santa Margarita River, but no has place to store it. Lake Skinner has the storage space, but no rights to the local water. The agreement enables FPUD to store run-off in Lake Skinner, and then the water is later delivered to FPUD, increasing FPUD's overall supply. Metropolitan benefits by collecting a "wheeling charge." FPUD expects to collect, on average, 300 acre-feet of "new" water per year from the river, with the majority available in wet years.

The District is also currently completing a feasibility study to evaluate increasing the yield of the project by using recycled water available on both Camp Pendleton and FPUD. It is anticipated that a project will eventually move forward using supplies available on Camp Pendleton and will provide roughly 1,700 AFY of additional supplies for FPUD.

Finally, the District recently completed a $25 million rehabilitation of its Fallbrook Water Reclamation Plant and a $2 million recycled water pipeline extension. The

pipeline extension expanded FPUD's recycled water deliveries. The primary customers for the expansion were four local plant nursery operations. More information on efforts to expand the local use of recycled water can be found in Section 6.

1.4 Demonstration of Consistency with the Delta Plan for Participants in Covered Actions

Those suppliers that anticipate participating in, or receiving water from, a proposed project (covered action) that involves transferring water through, exporting water from, or using water in the Delta, per California Code of Regulations, title. 23, Section 5003 can demonstrate consistency with the state's Delta Plan's policy to reduce reliance on the Sacramento-San Joaquin Delta (Delta). As an urban water supplier relying in part on the State Water Project, FPUD has demonstrated its reduced reliance on the Delta in its 2015 and 2020 UWMPs through adoption of Appendix A.

1.5 Demand Management or Water Conservation Measures

The District provides educational and programmatic resources to help water users in their efforts to understand and reduce water use. Operational practices and common sense prohibitions of water waste are also enforced, as mandated by state law. Public information efforts include communication efforts through a revamped District website, public relations materials and community events. A detailed discussion of the District's efforts towards water conservation can be found in Section 9 of this UWMP.

1.6 New Requirements

Five Consecutive Dry-Year Water Reliability Assessment –This is addressed in Chapters 4, 6, and 7.

Drought Risk Assessment (DRA) –Chapter 7 describes the FPUD DRA.

Seismic Risk –This is addressed in Chapter 8.

Water Shortage Contingency Plan (WSCP) –The WSCP is addressed in Chapter 8.

Groundwater Supplies Coordination –The Santa Margarita Conjunctive Use Project (SMRCUP) is described in Section 6.

Lay Description – Included in this Section.

Section 2 – Plan Preparation

2.1 Basis for Preparing a Plan

The California Water Code (CWC) requires all urban water suppliers within the state to prepare Urban Water Management Plans (UWMP) and update them every five years. These plans satisfy the requirements of the Urban Water Management Planning Act (Act) of 1983, including amendments that have been made to the Act. Subsequent assembly bills have amended the Act, particularly the significant SB X7-7 update, also known as the Water Conservation Act of 2009 or "20 x 2020," which added the requirement that agencies establish water use targets for 2015 and 2020 that would result in statewide savings of 20 percent by the year 2020. This plan also incorporates expected impacts of additional conservation legislation (SB 606 and AB 1668).

The UWMP Act states that water suppliers must provide a brief discussion of the applicability of Section 10617 of the California Water Code as it relates to their agency. That section defines an urban water supplier as an agency that provides water for more than 3,000 customers or supplies more than 3,000 acre-feet of water annually. By this definition, Fallbrook Public Utility District (FPUD or District) is an urban water supplier operating a Public Water System (PWS) and therefore is required to update and adopt a 2020 UWMP for submittal to the California Department of Water Resources.

The table below shows FPUD's total number of municipal connections and volume of potable water supplied in Calendar Year 2020.

Table 2-1 Retail Only: Public Water Systems

Public Water System Number	Public Water System Name	Number of Municipal Connections 2020	Volume of Water Supplied 2020
3710008	Fallbrook Public Utility District	9,270	8,403
	TOTAL	9,270	8,403

FPUD has updated its UWMP to satisfy the year 2020 requirements of the UWMP Act, including addressing the requirements of the Water Conservation Act of 2009. This 2020 UWMP describes the availability of water for normal, dry, and five consecutive dry-year scenarios. The UWMP also contains a Drought Risk Assessment (see Section 7). It also discusses water use, reclamation, and water-conservation activities. This UWMP concludes that the water supplies available to FPUD's customers are adequate over the next 25-year planning period.

2.2 Regional Planning

FPUD relies on imported water supplied by the regional wholesaler, the San Diego County Water Authority (SDCWA or Water Authority), which in turn relies, to some extent, on Metropolitan Water District of Southern California (Metropolitan). While in the past the majority of FPUD's potable water has been supplied by the aforementioned two agencies, starting in 2022, FPUD will begin production of its own local water supply. This new supply will help FPUD transition from being largely dependent on imported water purchases to having a significant portion of its potable water demand met through its own local water supply source, contributing to regional self-reliance. The District will continue to receive imported water to meet part of its supply needs. For more information on wholesale agencies water supply plans for FPUD, please reference the 2020 Urban Water Management Plans for the Water Authority and Metropolitan.

To better match the needs and priorities of its customers FPUD is also pursuing a governmental reorganization through the San Diego Local Agency Formation Commission (LAFCO) that, if approved, will allow FPUD to change its wholesale water provider from SDCWA to Eastern Municipal Water District (EMWD). As part of that process EMWD completed a supply reliability assessment to demonstrate it can reliably meet FPUD's water demands during dry years when Metropolitan has initiated its Water Shortage Allocation Plan through its access to MWD supplies. This process will take several years to complete and if successful it will be included in the District's 2025 UWMP. Because it is possible this process will not complete by 2025, the planning projections in this 2020 UWMP assume that Water Authority will continue to be the District's primary wholesale supplier.

2.3 Individual or Regional Planning and Compliance

FPUD's 2020 UWMP is based solely on the District's service area. Please refer to Table 2-2, below. However, the District has coordinated with appropriate regional agencies and constituents, including providing appropriate notifications as required.

The table below shows FPUD's Plan type.

Table 2-2 Retail Only: Plan Identification (Select One)	
X	Individual UWMP
	Regional UWMP (RUWMP)

2.4 Fiscal or Calendar Year and Units of Measure

FPUD's 2020 UWMP reports information on a calendar year, beginning with Calendar Year 2020. The District also uses acre-feet (AF) increments to report water usage throughout the Plan. Please refer to Table 2-3.

The table below identifies the type of agency.

Table 2-3 Agency Identification	
	Agency is a wholesaler
X	Agency is a retailer
Fiscal or Calendar Year (select one)	
X	UWMP Tables Are in Calendar Years
	UWMP Tables Are in Fiscal Years
If Using Fiscal Years Provide Month and Day that the Fiscal Year Begins (dd/mm)	
Units of Measure Used in UWMP	
Unit	Acre Feet (AF)

2.5 Coordination and Outreach

The UWMP Act requires that when a water supplier relies on a wholesale agency for a water supply, both suppliers are required to provide each other with information regarding projected water supply and demand.

The table below lists the wholesale suppliers with which the District has coordinated.

Table 2-4 Retail: Water Supplier Information Exchange
The retail supplier has informed the following wholesale supplier(s) of projected water use in accordance with CWC 10631.
Wholesale Water Supplier Name (Add additional rows as needed)
San Diego County Water Authority*

*The District is in a governmental reorganization process that if approved will result in FPUD purchasing wholesale water from Eastern Municipal Water District. Any changes in wholesale agencies will be reflected in the 2025 update to FPUD's UWMP.

The UWMP Act requires the District, to the extent practicable, to coordinate the preparation of its Plan with other appropriate agencies.

Coordination with Appropriate Agencies

CWC §10620(d)(3)

Each urban water supplier shall coordinate the preparation of its plan with other appropriate agencies in the areas, including other water suppliers that share a common source, water management agencies, and relevant public agencies, to the extent practicable.

While preparing the 2020 UWMP, the District coordinated its efforts with the Water Authority, EMWD, the nearby Rainbow Municipal Water District, the local chamber of commerce and library, San Diego County Department of Planning and Development, the San LAFCO, San Diego Association of Governments (SANDAG), the Santa Margarita River Watermaster, County Supervisor Jim Desmond's office, the Fallbrook Planning Group, the Marine Corps Base Camp Pendleton, and Mission Resource Conservation District (a watershed group). A copy of the notice that was sent out to the organizations listed above can be referenced in Appendix B. See Section 10 for more information. FPUD notified these entities at least 60 days in advance of the public hearing on the Plan, as required. Per California Water Code section 10642 FPUD has provided notice of the time and place of a hearing to any city or county within which the supplier provides water supplies.

COORDINATION WITHIN THE DISTRICT

District staff members met and coordinated the development of this 2020 UWMP. Those members included Noelle Denke, Public Affairs Specialist; Aaron Cook, Engineering Manager; Mick Cothran, Engineering Technician; and Jack Bebee, General Manager.

As a member agency of the Water Authority, District staff and board members receive updates from the Water Authority's staff and board on Water Authority Planning efforts. The District's general manager is a member of the Water Authority Board.

PUBLIC NOTICE AND HEARING

CWC §10642

Each urban water supplier shall encourage the active involvement of diverse social, cultural and economic elements of the population within the service area prior to and during the preparation of the plan. Prior to adopting a plan, the urban water supplier shall make the plan available for public inspection and hold a public hearing thereon. Prior to the hearing, notice of the time and place of the hearing shall be published… after the hearing the plan shall be adopted as prepared or as modified after the hearing.

PUBLIC PARTICIPATION

FPUD has encouraged community participation in its 2020 urban water management planning efforts through its board of directors. The board, which is made up of elected community representatives, has been actively involved since the first plan was developed in 1985. Additionally, public monthly meetings are held on the fourth Monday of each month at 4 p.m., giving the community an opportunity to provide input and participation in the urban water management planning effort.

Notices of public meetings are posted outside the district office and on the website. Copies of this plan are available at the local library, the district office and on the district's website at www.fpud.com.

PLAN ADOPTION

District staff prepared this update during the first and second quarters of 2021. The updated plan was adopted by the board of directors on June 28, 2021 and submitted to the California Department of Water Resources within 30 days of the board's approval and by July 1, 2021. This UWMP includes all information necessary to meet the requirements of the CWC.

A draft of this UWMP was presented to the Board of Directors at its regular monthly meeting on May 24th, 2021, at which time the board held a public hearing on the Plan. The Plan was made available for public review prior to final acceptance.

Section 3 – System Description

3.1 General Description and Land Uses Within Service Area

FPUD is a public entity, and its mission is to provide a safe and reliable supply of water to residents and customers in the Fallbrook area. The FPUD service area is rural and semirural in character with a historic agricultural identity. FPUD is unique from almost all of the other more urbanized Water Authority member agencies which have experienced rapid growth and economic development over the last 20-30 years. Many of FPUD's commercial agricultural customers have faced price increases in imported water supplies and have in many instances abandoned orchards or converted to less water-intensive land uses. In comparison to the more urbanized portions of San Diego County FPUD has a much less dense housing stock and smaller population with less household income than many of the urbanized portions of San Diego County, while serving a geographically large service area. Despite these challenges, FPUD has made cost effective and affordable investments in local supplies and water conservation that have improved its reliability and contributed to overall regional self-reliance.

General plan for land use

Fallbrook is an unincorporated community of San Diego County. As such, area land use is subject to regulation by the County Board of Supervisors. This is accomplished through the use of the County General Plan. As part of the General Plan, community plans were developed for each of the major unincorporated communities in the County. Each plan is designed to meet the specific needs of a community. The Fallbrook Community Plan (FCP), which is part of the County of San Diego General Plan, was originally adopted on Dec. 31, 1974 by the Board of Supervisors, adopted on Aug. 3 2011, and most recently amended in May of 2016. The FCP did not project land use for intermediate future years but rather produced an ultimate land-use plan. While the Community Plan specifies land use, it does not constitute zoning. All future zoning is legally required to be consistent with the adopted community goals and objectives presented in the FCP.

The following general goal has been adopted in the FCP: "Perpetuate the existing rural charm and village atmosphere while accommodating growth in such a manner that it will complement and not sacrifice the environment of our rustic, agriculturally oriented community."

The FCP attempts to fulfill this goal by limiting future multiple-use and high-density development to the designated town center and is referred to in the County General Plan as a "Country Town." Land outside the designated town center, extending to the community's boundaries, is intended for agricultural uses and rural, residential development and has parcel size limits of 1, 2, 4, or 8 acres, depending on topography and steepness of the land. Most population increase is occurring within the Country Town as land is developed into subdivisions and apartment units. Outside the Country Town, land subdivision has been occurring

gradually as 40- and 80-acre parcels are split up over many years down to the permissible minimum size of 2 or 4 acres. Based on the updated General Plan, larger parcels further from roads and utilities may be limited to minimum lot sizes, much larger than 2 to 4 acres. Agricultural land use has been undergoing a gradual shift from primarily avocados and citrus to a mixture of crops including other subtropical fruit and nut orchards such as macadamias, persimmons, kiwis, cherimoyas, grapes, dragon fruit, etc. In addition, ornamental flowers and commercial nurseries are increasing in prominence and will tend to preserve the agricultural orientation of the community. Decreases in agriculture, due to increasing water cost as well as development, are expected to slow and not decrease at the same rate they have over the last decade.

Conversion of land uses from purely agricultural use to rural residential is a function of agricultural economics, high water costs, and increasing land values, which are likely to continue to push some loss of agricultural properties in the District. As noted previously, a sizeable amount of agricultural acreage has been abandoned due to imported water price sensitivity and taken out of production with no foreseeable conversion plans.

For water planning purposes land use within FPUD's service area have been categorized as follows

- Single Family Residential
- Multi-Family Residential
- Commercial
- Institutional & Government
- Landscape
- Agriculture

These categorizations match the land use types tracked and forecasted by the San Diego Association of Governments (SANDAG). County of San Diego General Plan information and current data and land use projections from SANDAG were used in the development of FPUD's long range demand forecast and in characterizing and quantifying current water use and projecting future water use by land use category. The same data is used by the Water Authority in its water planning activities for its service area and by FPUD. FPUD coordinated with SANDAG and the Water Authority to provide current and projected land use data in this UWMP.

History and description of the District's service area

The first permanent recorded settlement in Fallbrook was in 1869, in the east area of the District, which later became Live Oak County Park. Agriculture has always been a major industry in the area. The first plantings were olives and citrus, which were replaced in the 1920s by avocados. Fallbrook is generally recognized as the "Avocado Capital of the World."

FPUD, originally consisting of about 500 acres, was incorporated on June 5, 1922. In 1927, the Fallbrook Irrigation District voted to dissolve and a portion of the former Irrigation District became part of FPUD, increasing the size of the District to 5,000 acres. Subsequently, a plan to develop water from the Bonsall basin of the San Luis Rey River was started and by 1946 three 1,000 gallon-per-minute wells were in operation. The District also obtained additional water from rights on the Santa Margarita River. Wells were added over the years until 1953 when, due to the generally over-drafted condition of the San Luis Rey River, the District was restricted from extracting water after April 1, 1954, when the average static water level in the Basin was greater than 18 feet below the surface of the ground.

The District became a founding member of Water Authority at its formation on June 9, 1944, and thus was eligible to receive a portion of the Colorado River water diverted by the Metropolitan. When Colorado River water became available in 1948, consumption within the District gradually increased to approximately 10,000 acre-feet per year by 1959. In 1978, Metropolitan augmented its supply system with water from the California State Water Project and began delivering both waters to San Diego County.

Use of Santa Margarita River water continued until 1969 when floods destroyed the District's diversion works. These facilities were not replaced because in 1968 a Memorandum of Understanding & Agreement was signed with the Federal Government to develop a two-dam and reservoir project on the river for the benefit of this District and the U.S. Marine Corps Base Camp Pendleton. This agreement was the culmination of 17 years of water rights litigation in the *U.S. vs. Fallbrook* case and the federally sponsored project was known as the Santa Margarita Project. Further discussion of this project can be found in Section 6 of this UWMP.

Annexations of the District

Significant expansions of the District service area took place in 1950 when it annexed the last remaining portion of the Fallbrook Irrigation District and in 1958 when the area to the north of the town on both sides of the Santa Margarita River annexed to the District. In May 1990, the registered voters of the De Luz Heights Municipal Water District, whose service area joins Fallbrook to the northwest, decided to dissolve their 17-year-old district and annex into FPUD's. This annexation added 11,789 acres (42% increase) to Fallbrook's service area; it increased water use by 25% as well as the number of service connections. The De Luz Heights Municipal Water District was a member agency of the Water Authority and Metropolitan, and relied on the same source of imported water except for three small wells, which had produced approximately 100 AF per year.

Currently, the District serves an area of 28,000 acres. Approximately 30% percent of the annual water deliveries are for agricultural use. This number is significantly lower than in prior years. The remainder is for municipal, residential, and industrial uses. Total growth in population over the past 20 years has been about 24%, or about 1.6% annually. It increased from a population of 28,200 in 1995 to a

population of 35,237 in 2020. Annual water consumption increased to a high of 19,597 acre-feet/year in 2007, then decreased to 8,403 in 2020. This decrease in water consumption was due to the drought and the watering restrictions placed on customers, as well as the increased cost of water.

District's Governance

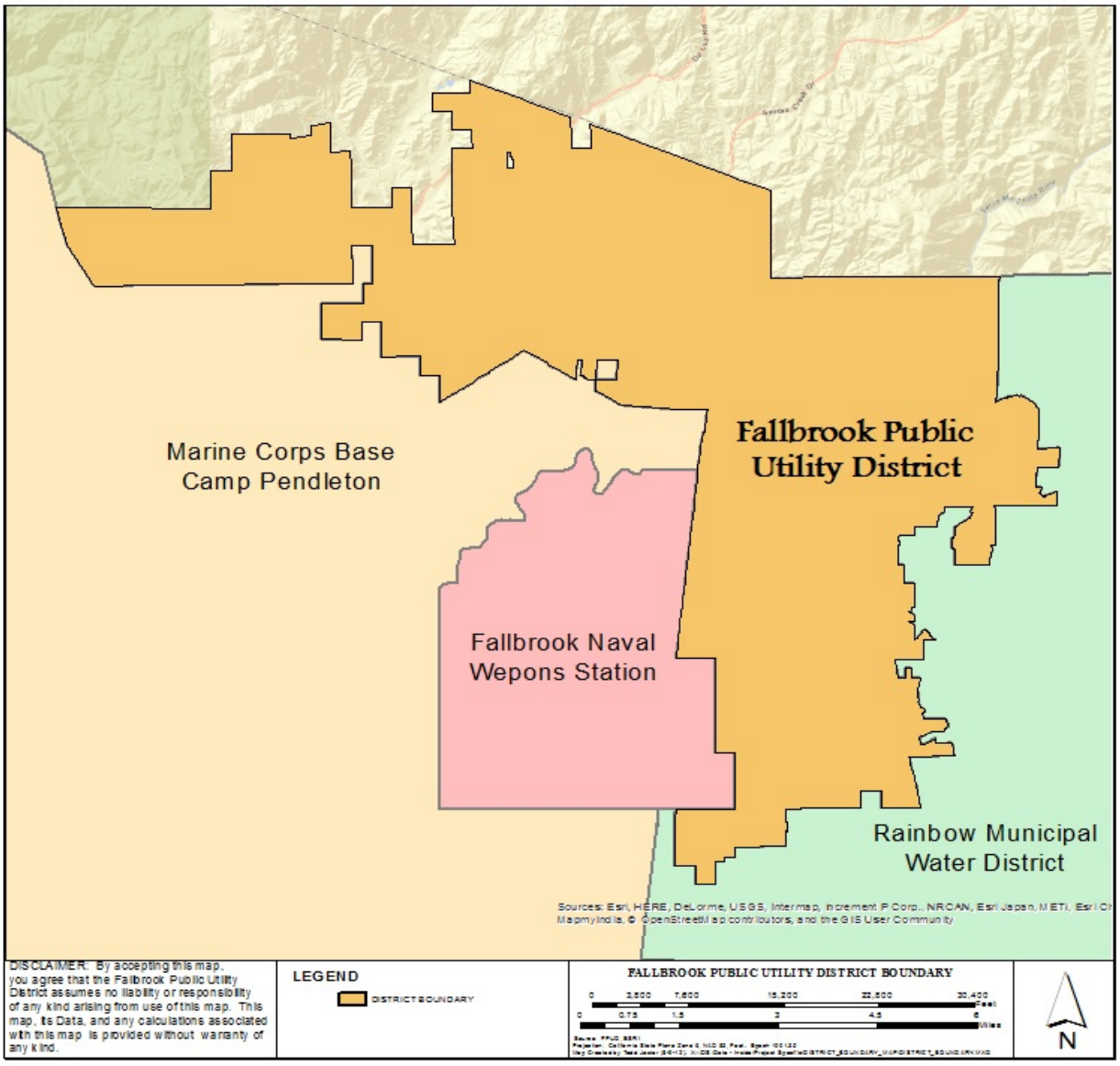
The FPUD board of directors is made up of five community members, elected by specific divisions within the District's service area. In March 2016, the board unanimously approved a resolution to change the method of election to territorial units and approved a map identifying those five territorial units. To run for office, a candidate must live in the area they are running to represent.

3.2 Service Area Boundary maps

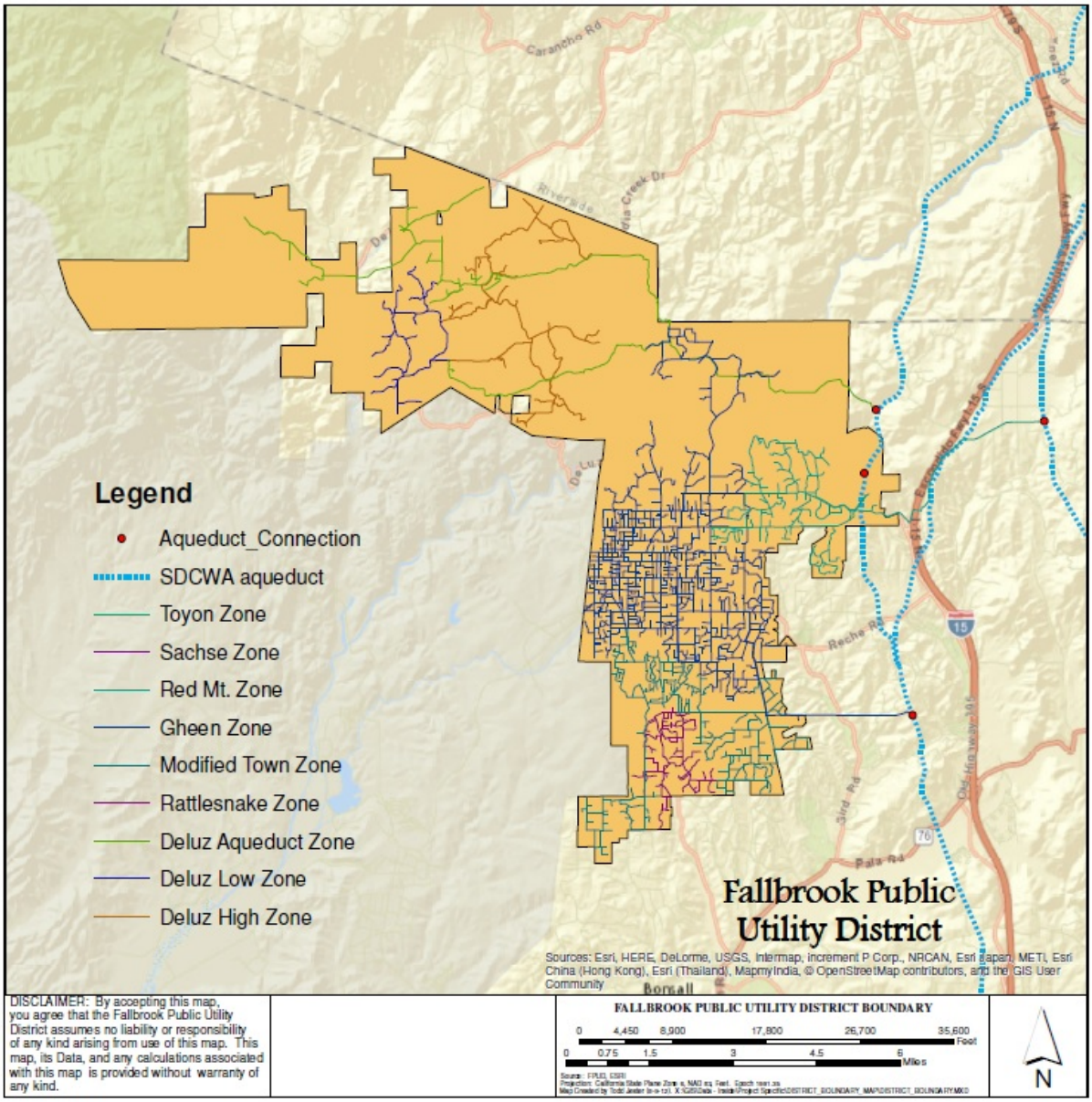
Description

Currently FPUD imports almost all of its potable water from the Water Authority, which takes delivery of most of its supplies from Metropolitan. Water Authority deliveries from Metropolitan include its own Colorado River supplies (discussed further in Section 6 of this UWMP) and purchases of Metropolitan supplies which are made up of a blend of State Water Project and Colorado River water. FPUD has four connections to the imported water system. Three of these connections are to pipelines owned by Metropolitan, and one connection is to a pipeline owned by Water Authority. The Water Authority currently purchases treated water from MWD that is treated at the Skinner Water Treatment Plant (WTP) and delivered to FPUD's aqueduct connections. Other current District water supplies include the Capra well (potable) and locally produced recycled water (non-potable). These sources are discussed in greater detail in Section 6 of this UWMP. FPUD's retail water distribution system is comprised of 270 miles of pipeline, 6,800 valves, an ultraviolet disinfection water treatment plant, nine steel reservoirs, a 300-million-gallon treated water reservoir, five pump stations, and plans for a groundwater treatment plant. District staff operates the system, and conducts all system maintenance and repairs. FPUD is at over 90% completion of an Advanced Metering Infrastructure (AMI) system upgrade that will enable real-time meter reading and provide customers with real-time water use in an effort to increase water use efficiency. If FPUDs requested Reorganization, which is not yet assumed for water supply planning purposes for this 2020 UWMP, is approved by LAFCO there will not be any changes to retail water distribution in FPUD's service area.

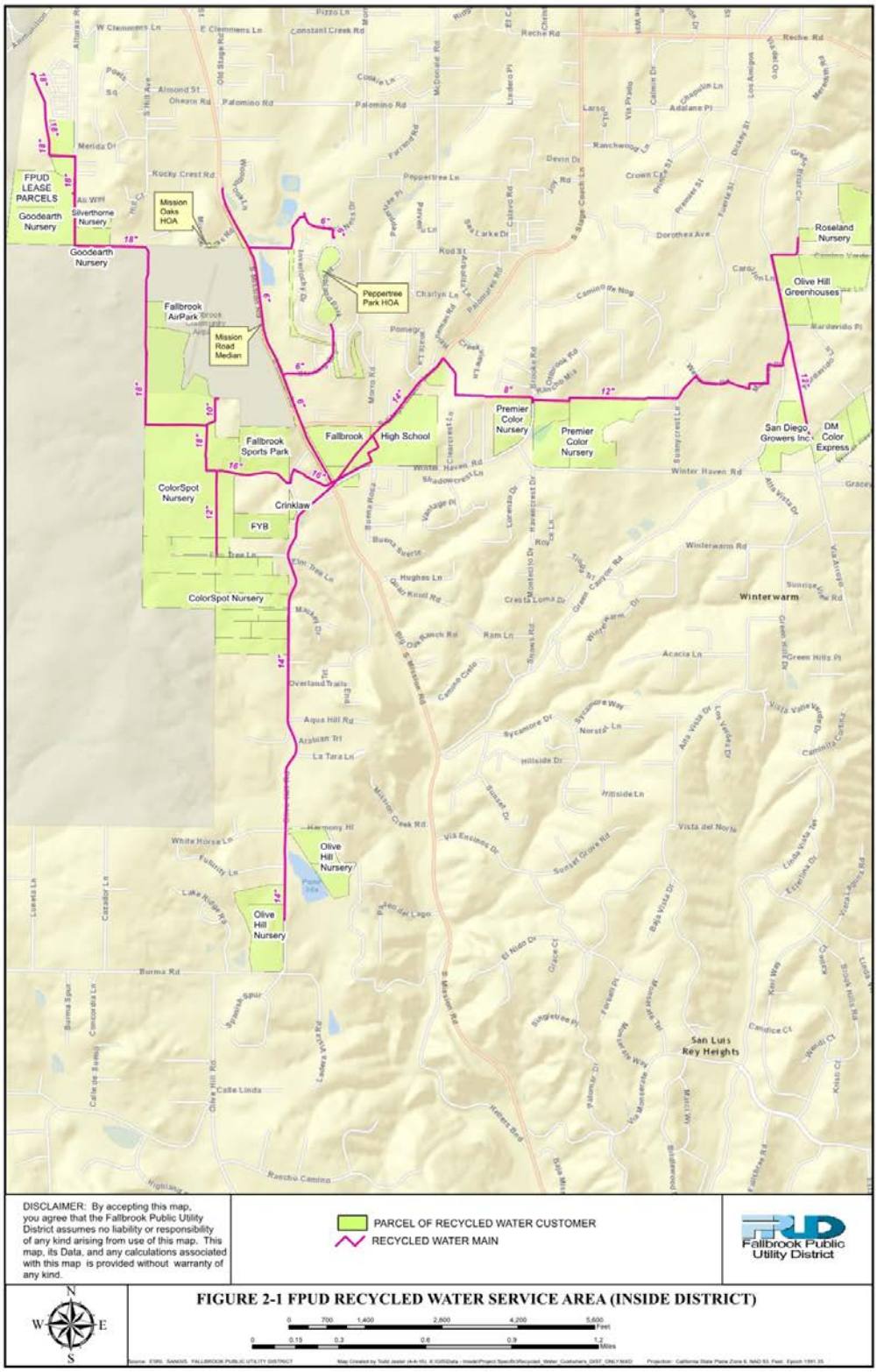
The map below shows FPUD's potable water service area boundaries with reference to Camp Pendleton and Rainbow Municipal Water District.



The map below shows FPUD's distribution system.

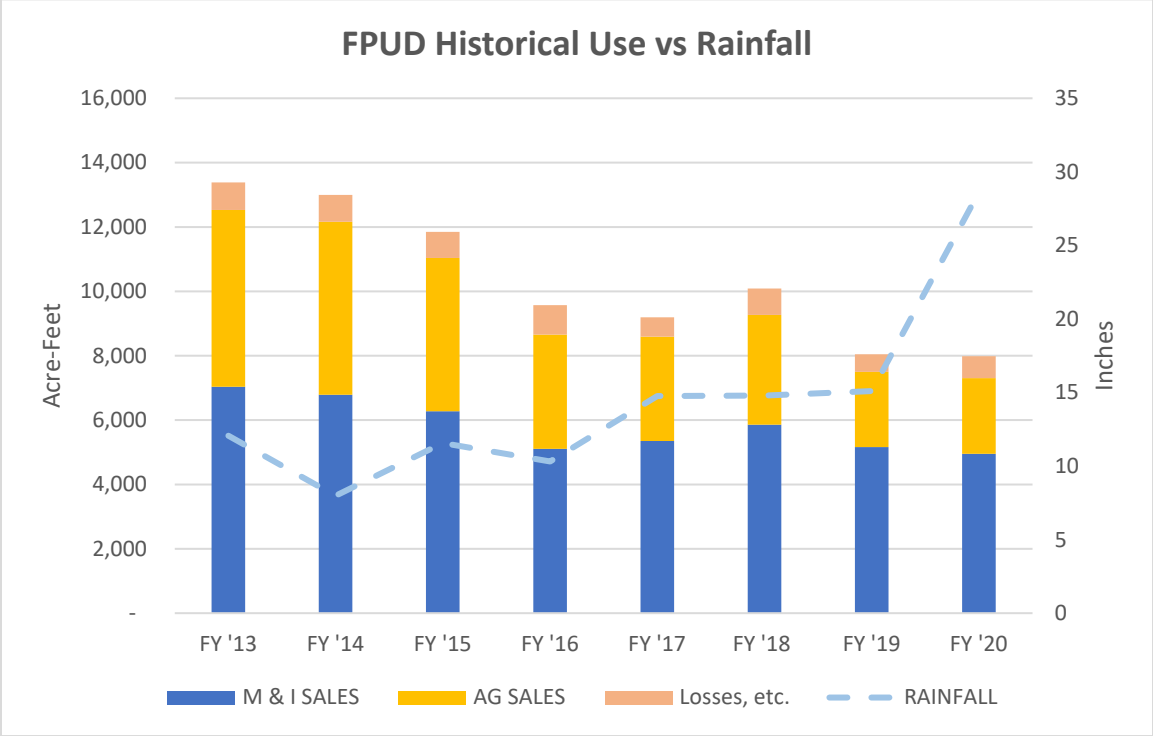


The map below shows FPUD's recycled water system.



3.3 Service Area Climate

The climatic conditions within FPUD's service area are characteristically mild Mediterranean with an average year-round temperature of 64 degrees. The average high temperature in Fallbrook is 76 degrees with the warmest summer temperature rarely higher than 100 degrees. Average winter nighttime temperature is 42 degrees and mostly frost-free.



Climate Change

Climate change, and its potential impacts on water demand and supply reliability is an important consideration for water utilities large and small. Because the District's imported supplies from the Colorado River and State Water Project are subject to climate change induced challenges to precipitation and snow melt patterns, the District's efforts to diversify its supply and the achievement of significant reduction in demand has made it more resilient to climate change. In recent years, the District has made considerable efforts to diversify water supplies, including the development of local groundwater from the Santa Margarita Conjunctive Use Project, and participation in the development of a local indirect potable recharge project in conjunction with Camp Pendleton. These projects are discussed in greater detail in Section 6 of this plan. Demand management measures, or water conservation, is also an important consideration for the District, and more information on conservation practices can be found in Section 9 of this plan. Because the primary vulnerability to climate change are the District's

imported water sources, in-depth scientific analysis was conducted by Metropolitan and the Water Authority in their respective 2020 UWMPs.

Metropolitan discusses the effects of Climate Change on its primary supplies, the Colorado River and State Water Project along with its climate related management activities in Section 2 of its 2020 Urban Water Management Plan. Metropolitan identifies the following risks associated with its supplies:

- Reduction in Sierra Nevada snowpack;
- Increased intensity and frequency of extreme weather events;
- Prolonged drought periods;
- Water quality issues associated with increase in wildfires;
- Changes in runoff pattern and amount; and
- Rising sea levels resulting in

    - o Impacts to coastal groundwater basins due to seawater intrusion;
    - o Increased risk of damage from storms, high-tide events, and the erosion of levees; and
    - o Potential pumping cutbacks on the SWP and Central Valley Project (CVP)

Metropolitan continues to incorporate current climate change science into its planning efforts, and evaluate a wide range of water management strategies. Mitigating the risks that climate change presents to water supply reliability has led Metropolitan to develop intensive technical and administrative review processes that results in adaptive plans that respond to uncertain future conditions. The foundation of Metropolitan's adaptation to climate change is through its use of expansive storage programs and its strong dedication to water use efficiency. Metropolitan's planning activities support its Board's principles of:

- Supporting reasonable, economically viable, and technologically feasible management,
- Strategies for reducing impacts on water supply,
- Supporting flexible "no regret" solutions that provide water supply and quality benefits while increasing the ability to manage future climate change impacts, and
- Evaluating staff recommendations regarding climate change and water resources under the California Environmental Quality Act (CEQA) to avoid adverse effects on the environment.

The Water Authority addressed the effects of Climate Change in its 2020 Urban Water Management Plan as it effects demand (Section 2.4.4) and the regions' sources of supply (Section 6.2.2). While the Water Authority's plan recognizes that "definitive projections on the timing and magnitude of climate change-initiated variations to local temperature and precipitation patterns are still forthcoming," references to bodies of research such as general circulation models (GCMs),

representative concentration pathways (RCPs), and Localized Constructed Analog (LOCA) climate projections discuss specific climate data, such as annual precipitation and temperature changes. The main focus of the Water Authority's analysis was the effect climate change can have on water demands. The Water Authority has adopted a qualitative evaluation approach that uses a manageable number of climate change scenarios to develop a range of potential demands.

The development of demand forecasts based on alternative climate scenarios for the Water Authority's service area began by selecting LOCA scenarios (combination of GCM and RCP) reflecting central tendencies and extremes of climate projections, specifically:

1. Relatively large increases in both average temperatures and precipitation (Warm/Wet)
2. Relatively large increases in average temperature and relatively large decreases in average precipitation (Warm/Dry)
3. Relatively small increases in average temperature and relatively large increases in precipitation (Cool/Wet)
4. Relatively small increases in average temperature and relatively large decreases in precipitation (Cool/Dry)
5. Moderate increases in average temperature and moderate changes in precipitation (Moderate)

The Water Authority analysis of the five climate scenarios concluded that there were no dramatic shifts in seasonal patterns of precipitation and average maximum daily temperature for the San Diego region were observed under any of the scenarios it analyzed. However, on average, annual amounts of precipitation tend to be more concentrated in the winter, with lesser proportions of total annual precipitation occurring in the spring and fall. Although rising temperatures and less precipitation will impact demand the results of the Water Authority's analysis suggest that more significant water demand impacts associated with the forecasted trend toward warmer and drier climate conditions may occur on a time-step beyond the 2020 UWMP planning horizon.

3.4 Service Area Population and Demographics

Service Area Population

Forecasted population for the FPUD service area is provided by the San Diego Association of Governments (SANDAG). The latest forecast conducted by SANDAG is its Series 14 forecast and is based on General Plan land use information and economic and demographic forecasting models. Table 3-1 below reflects SANDAG Series 14 population forecast for FPUD.

The table below shows population data.

Table 3-1 Retail: Population - Current and Projected						
Population Served	2020	2025	2030	2035	2040	2045*(opt)*
	35,237	34,143	35,323	37,110	38,190	38,943

DEMOGRAPHIC FACTORS AFFECTING WATER MANAGEMENT

Water usage has been steadily declining in FPUD's service area since its peak in 2007. Over the years, many large agricultural areas (especially in remote areas of the District's service area) have been left fallow, while some parcels that were previously agricultural have been converted to smaller residential properties. The conversion of agricultural properties to residential properties has not advanced at a pace to maintain water demands at historic levels. The cost of water has been an important driver in the dynamic of contracting water sales, affecting agricultural and residential water users alike.

Demographics

Based on the 2019 census (American Community Survey) the Fallbrook Census Designated Place (CDP) median household income was $63,244 in 2019. This is roughly 15% less than the median income in the state of $75,235 and 20% less that the median household income for San Diego County. The percent of person in poverty was 12.8% compared to 11.8% statewide and 10.1% for San Diego County. The lower income levels and higher poverty levels in the community make water affordability an ongoing challenge with the increasing cost of water and infrastructure replacement needs in the community.

The age distribution is summarized below

- Under five years: 7.4%
- Under 18 years: 23.8%
- 65 years and older: 17.8%

The 65 and older population is slightly higher than the statewide average of 14.8% and 14.5% for San Diego County which presents further challenges in increasing water costs with an older population on fixed incomes.

The community is 47.8% Hispanic or Latino and 45.6% White alone, not Hispanic or Latino, which are both higher percentages than California as a whole and San Diego county percentages of 34.1% and 45% respectively.

Agricultural water discount

Agricultural customers have the option of enrolling in a discount water program. The Permanent Special Agricultural Water Rate, or PSAWR, is offered through the Water Authority. The "Permanent" in PSAWR describes the Water Authority Board's decision to replace a similar program that ended in 2020 (Transitional Special Agricultural Water Rate). In order to qualify for the discount, agricultural customers must certify that the use of the water they purchase meets the following definition:

> *"the growing or raising, in conformity with recognized practices of husbandry, for the purposes of commerce, trade or industry, or agricultural, horticultural or floricultural products, and produced (1) for human consumption or for the market, or (2) for the feeding of fowl or livestock produced for human consumption or for the market, or (3) for the feeding of fowl or livestock for the purpose of obtaining their products for human consumption or for the market."*

In addition, PSAWR participants must be enrolled in one of four regional agricultural programs; Grower's List (pesticide use), Active Certified Producer (farmer's market certificate), Organic Producer (CFDA/USDA) or the San Diego Regional Water Quality Control Board General Agricultural Order Enrollment Program (Ag Order). By participating in the PSAWR program, *Ag customers* receive a discount off the price of water. In exchange for the discount, the customer *signs an agreement that in the event of a drought or emergency, service may be interrupted and mandatory reductions in water could occur. Further, if Metropolitan reduces deliveries to the Water Authority by a specific percentage, the PSAWR customer would be required to reduce their usage by that same percentage.*

The PSAWR discount is derived from two things: first, participants do not pay the full cost of San Diego County's emergency storage program, and second, participants do not pay any of the costs associated with the supplemental water supplies developed by the Water Authority. These supplemental supplies, such as the Bud Lewis Carlsbad Seawater Desalination Plant and the Imperial Irrigation District Transfer are more expensive. The PSAWR program is a discretionary program of the Water Authority and there are no guarantees that the Water Authority Board of Directors will continue the program indefinitely. Any cessation of PSAWR by the Water Authority would be expected to reduce agricultural water use.

FPUD also offers a locally administered agricultural water program called the Commercial Agricultural Water Program. Participation requirements include documentation of an agricultural operation's commercial sales and the cultivation

of at least one acre of agricultural area. Similar to PSAWR, participants agree to potential interruption if/when supply issues occur.

Detailed information about agricultural programs offered to FPUD ratepayers is available on the District's website at: https://www.fpud.com/agriculture-programs

Section 4 – Water Use Characterization

4.0 Water Use Characterization and Lay Description

This section will analyze factors that affect water demands within the District's service area. The late 20th Century and early 21st Century saw steady increases in water use in the Fallbrook area, particularly in the agricultural sector. By the late aughts, however, water demand trends began to shift. Drought, economic challenges associated with farming, and increasing water costs have collectively depressed agricultural water demands. The cost of water has also driven a decline in irrigation use by domestic and commercial properties, whether for landscaping, turf irrigation, or small scale fruit and vegetable production (often referred to as "home fruit"). On the whole, overall water demands within FPUD's service area in 2020 were less than 50% of historic highs.

Growth of new residential and other non-agricultural water demands in the FPUD service area is not expanding at the pace being seen in other urbanized portions of San Diego and Southern Riverside County communities. Considering the location of the District's service area is important to understanding the slow pace of development. Because Fallbrook is located some distance from major freeways, transportation lines or substantial commerce/job markets, there are inherent challenges to residential and commercial expansion. These unique land use and water use trends specific to FPUD's service area were incorporated in this plan's demand forecasting.

While traditional tree crop farming, such as avocados, may be on the decline due to price sensitivity and market conditions, the farming community in Fallbrook has demonstrated resilience by adjusting to new lower water use and higher value crops such as plant nurseries, wine grapes, specialty fruit, and cut flowers. These crops require less water than citrus and avocados. In addition, several plant nurseries have invested in diversifying their irrigation supplies by tying into FPUD's ever-expanding recycled water distribution system. Crop conversions are not expected to result in increased or stable agricultural water use, rather they are likely to further contribute to the current trend of reduced overall water use by agricultural water users.

Many water users have adapted to steadily increasing water costs by investing time and money in water management strategies. To assist with these needs, the District has implemented several programs such as irrigation audits and an automated meter system that can help catch water leaks early, and that allows rate payers to track their water use online. These programs and others will be discussed in further detail in Section 9, "Demand Management Measures."

4.1 Recycled versus Potable and Raw Water Demand

The District provides water and sewer services for portions of the rural town of Fallbrook. Sewer service is provided to approximately 5,000 sewer connections in an unincorporated area of about 6.6 miles. The remainder of customers in FPUD's service area are on septic systems. The District's Water Reclamation Plant treats an annual average of 1.6 million gallons per day (MGD) and has a capacity of 3.1MGD. The District recycles wastewater for irrigation.

In December 2015, the District completed a $25 million rehabilitation of its Water Reclamation Plant, including a $2 million recycled water pipeline extension and the construction of a small storage facility to normalize recycled water distribution. Although these improvements more than doubled recycled water production capacity from 600 acre-feet per year (AFY) to more than 1,700 AFY, actual recycled water demands have decreased as agricultural water users have switched to crops with lower water demands. In addition, in 2019 the District lost one of its largest recycled water users, CALTRANS. For nearly thirty years, FPUD recycled water was used to irrigate landscaping along highways 76 and I-5. The implementation of the Santa Margarita River Conjunctive Use Project (SMRCUP) will necessitate the use of the District's ocean outfall line for brine effluent from the SMRCUP water treatment plant along with excess recycled water produced at the Water Reclamation Plant. This brine/tertiary recycled water mixture will not be suitable for irrigation.

To maximize the local reuse of recycled water, the District is completing a feasibility study to evaluate increasing the yield of the SMRCUP by using recycled water available from both Camp Pendleton and FPUD for indirect potable recharge. If successful, this conceptual project will eventually move forward using supplies available on Camp Pendleton and will provide roughly 1,700 AFY of additional potable water supplies for FPUD.

In 2020, 99% of the potable water that entered the District's distribution system was purchased from the Water Authority as treated imported water. The Water Authority has its own Colorado River supplies and is a member agency and purchases wholesale water from Metropolitan. Metropolitan' sources include the State Water Project and the Colorado River. Starting in 2022, the District will begin local water production from the SMRCUP. The implementation of this project will signal a shift towards reduced reliance on imported water to satisfy the District's water demands. Instead, when combined with the District's water recycling program, a large portion of local demands will be satisfied by locally produced water.

FPUD does not currently purchase raw water.

4.2 Past, Current, and Projected Water Uses by Sector

4.2.1 Past Water Use

Prior to 2010 FPUD'S water use was characterized by a very large commercial agricultural sector that accounted for nearly 50% of the District's water use. Residential water use was characterized by large lot single family residences, commonly featuring home fruit orchards, and verdant landscapes that often had substantial irrigation requirements. The drought of 2008 and the concurrent increase in imported water prices saw the beginning of a major decline in agricultural and residential irrigation within the District. By the early 2010s, for many residential properties, the cost of water drove many water users to reduce consumption. While some took advantage of conservation programs such as rebates for turf removal or adopted drought tolerant landscaping practices (turf reduction, low water use plant material, high efficiency irrigation equipment), many water users simply eliminated irrigated areas, removed groves of tree crops and shut irrigation systems off. These factors were compounded with the drought of 2013-2016 which accelerated the reduction of the agricultural sector as well as greater water use efficiency by both remaining agricultural and existing residential customers served by FPUD. The reduction in agricultural water and the conservation savings realized by District residential customers allowed FPUD to more than meet its requirements under the 2014 and 2015 SWRCB Emergency Urban Water Conservation Regulation during this most recent drought and continue those savings to the current time.

Water use for the period of 2016-2020 has continued to see the stabilization of conservation gains made by Municipal & Industrial (M&I) customers and the continued decline in agricultural water use. This is evidenced by the continued decline in the District's gallons per capita per day (GPCD) water use between 2015 and 2020, when compared to its 20 by 2020 Baseline (see Section 5 of this UWMP). Water use factors, normalized for weather, were developed based on this period of time due to the stability of water use across all sectors as a predictor of future water use.

4.2.2 Current Water Use

All of FPUD's deliveries are metered, and their categorization by sector are consistent with DWR guidelines.

The table below shows actual demands for potable water in 2020

Table 4-1 Retail: Demands for Potable and Raw Water - Actual			
Use Type *(Add additional rows as needed)*	2020 Actual		
Use Drop down list *May select each use multiple times These are the only Use Types that will be recognized by the WUEdata online submittal tool*	Additional Description *(as needed)*	Level of Treatment When Delivered *Drop down list*	Volume
Single Family		Drinking Water	4052
Multi-Family		Drinking Water	612
Commercial	Includes Industrial	Drinking Water	453
Institutional/Governmental		Drinking Water	96
Landscape		Drinking Water	25
Agricultural irrigation		Drinking Water	2,319
Losses		Drinking Water	846
		TOTAL	8,403

FPUD does not have transfers, exchanges, sales to other agencies, surface water augmentation, wetlands or wildlife habitat, or other water uses. Losses in table 4.1 include all forms of non-revenue water. More detailed information regarding water loss is available in greater detail in the Fiscal Year 2020 AWWA Water Loss Audit, included in this plan as Appendix C.

4.2.2 Projected Water Use

Forecasting Methodology for Potable Water

FPUD has forecasted its water demand on a weather normalized basis using a land use based methodology consistent with DWR's Guidebook Appendix K recommendation that,

> "…a water supplier separate each of the six customer categories described in Water Code Section 10631(d)(1) into "existing" and "future" customers."

Develop Water Use Factors: The first step in this process is to develop a water use factor by land use category. That water use factor was developed based on FPUD's comprehensive customer meter database "Water History." This database contains all sectoral meter data by customer class for each month of the year. Using 100% of customer water use data for the period of Calendar Year 2016 through Calendar Year 2020 average annual water use factors were developed for

each sector that had meter data. There were no emergency water use restrictions in place, and no recessionary economic effects during this 5 year period.

Weather Normalize 5 year Average Water Use: During that five year period (2016-2020) FPUD's service area experienced three average rainfall years, one year slightly below average rainfall, and one year very below average rainfall. The two below average rainfall years were weather normalized by increasing their average annual water use factor for each sector by 7%. This factor was used by the Water Authority to adjust wet years to normal weather as provided in an email from Water Authority to Jack Bebee 12/16/20 and consistent with demand index developed by the Water Authority to adjust normal weather year to dry weather years. (SDCWA 2020 UWMP)

Incorporating Future Land Use Development: SANDAG Series 14 Demographic data was used to forecast the number of Single Family Residential (SFR) and Multi Family Residential (MFR) Dwelling Units (DUs) to be developed within FPUD's service area during the forecast period. SANDAG demographic data was also used to identify current Commercial, Institutional, and Governmental acreages. Due to the lack of information and resolution of SANDAG employment data on future Commercial or Institutional development within FPUD's service area that contained in the Fallbrook Community Planning area, the District based projections on overall anticipated trends within the commercial center of the District's service area. The FPUD commercial area is largely built-out, and new commercial development is anticipated to occur along the I-15 and SR-76 corridors outside the District service area. For this reason, those acreages were held constant for the forecast period.

SANDAG data on Agricultural acreage was used to quantify existing and future acreage and to incorporate reductions in future agricultural acreage.

Projecting Future Conservation: Estimates of both active and passive future savings have been incorporated into water use projections. In its 2020 UWMP the Water Authority projects demand for its member agencies including FPUD. The Water Authority applied the Alliance for Water Efficiency's Conservation Tracking Tool to derive both active and passive savings resulting from demand management programs. The Alliance for Water Efficiency Water Conservation Tracking Tool (AWE Tool) is listed in the DWR *2020 UWMP Guidebook* as an application to assist water purveyors in developing savings estimates (DWR 2020). This industry standard planning tool was used to provides granular estimates of existing and future "passive" or code-based water savings and "active" savings resulting from the implementation of demand management programs. Key water savings assumptions by the Water Authority are derived based on historical program efficiencies, current regional water savings assumptions that serve as the basis for regional incentives, and efficiency estimates by activity type that are contained in the AWE Tool library.

The Water Authority's projection estimates future active and passive conservation measures and deducts the amount from the Baseline forecast for each of its member agencies. (Refer SDCWA 2020 UWMP Section 2.4.2 for a detailed description of how savings were calculated). The Water Authority prepared an estimate of FPUD's future Active and Passive Conservation. FPUD used the percentage savings from the Water Authority estimate for Active and Passive conservation and subtracted those amounts from FPUD's land use based sectoral forecast. The Water Authority data provided FPUD with the basis for determining the percent Active and Passive conservation over the forecast period using the AWE Tool.

FPUD Conservation Percentages From SDCWA UWMP					
	2025	**2030**	**2035**	**2040**	**2045**
Percent Active Savings to Total Baseline Demand	3.72%	3.16%	2.94%	2.88%	2.42%
Percent Passive Savings to Total Baseline Demand	2.92%	3.72%	3.94%	4.46%	4.99%
Percent All Savings to Total Baseline Demand	6.63%	6.88%	6.87%	7.34%	7.42%

FPUD then applied the percent savings to its land use based demand forecast to derive its projection of demand with conservation

FPUD Potable Water Demand After Conservation					
	2025	**2030**	**2035**	**2040**	**2045**
Total Retail Demand	9,206	9,574	10,199	10,474	10,589
Active Savings	314	279	277	280	238
Passive Savings	246	328	372	433	490
Total Savings	560	607	649	713	728
Demand After Conservation	8,646	8,967	9,550	9,761	9,861

The percentage for future conservation was also applied to agricultural water use since the combination of extreme price sensitivity and access to water use efficiency programs has shown a similar to even larger decrease in agricultural demand as to what has been seen in FPUD's M&I customers. In fact there has been significant acreage of agricultural land taken out of production over the last several years within FPUD's service area directly related to price sensitivity. Agricultural customer sensitivity to the cost of water is not expected to change in the future, and remaining commercial agricultural acreage will have an economic incentive to be as water-efficient as possible. Even though the rate of reduction in agricultural water demand is expected to be less than what has been experienced over the last 10 years it is anticipated that water sales in this sector will continue to retract.

Effects of Climate Change on Demand: SDCWA's 2020 UWMP Section 2.4.4 details the analysis it conducted to assess climate change impacts to the demand

of its member agencies. Conclusions from SDCWA's analysis were that there were no dramatic shifts in seasonal precipitation patterns or average daily maximum temperatures resulting from the 5 different climate change scenarios that were run. SDCWA's analysis also noted that results of the scenarios indicated that effects on demand forecasts from climate change were likely occurring beyond the forecast period for the 2020 UWMP. Based on the results of the analysis conducted by SDCWA there was not a need to adjust the Baseline Water Use factors to reflect climate change in this UWMP.

Table 4-2 below shows water demands by sector through 2045

Table 4-2 Retail: Use for Potable & Non Potable Water - Projected

Use Type	Additional Description (as needed)	Projected Water Use* *Report To the Extent that Records are Available*				
Drop down list May select each use multiple times These are the only Use Types that will be recognized by the WUEdata online submittal tool		2025	2030	2035	2040	2045 (opt)
Add additional rows as needed						
Single Family		4,375	4,647	5,216	5,443	5,550
Multi-Family		653	719	740	742	741
Commercial	Includes Industrial	483	482	482	479	479
Institutional/Governmental		117	117	117	116	116
Landscape		25	25	25	25	25
Agricultural irrigation		2,233	2,220	2,212	2,196	2,190
Losses		759	759	759	759	759
TOTAL		8,645	8,969	9,551	9,760	9,860

**** Units of measure (AF, CCF, MG)** must remain consistent throughout the UWMP as reported in Table 2-3.*

Table 4-3 below shows total projected water demands for recycled & potable water through 2045

Table 4-3: Total Gross Water Use (Potable and Non-Potable)

	2020	2025	2030	2035	2040	2045
Potable Water, Raw, Other Non-Potable *from Tables 4-1 and 4-2*	8,403	8,645	8,969	9,551	9,760	9,860
Recycled Water Demand *from Table 6-4*	517	830	830	830	830	830
Optional Deduction of Recycled Water Put Into Long-Term Storage[1]	0	0	0	0	0	0
TOTAL WATER USE	8,920	9,475	9,799	10,381	10,590	10,690

1 Long-term storage means water that is placed into groundwater or surface storage that is not removed from storage in the same year. Supplier may deduct recycled water placed in long-term storage from their reported demand.

4.3 Distribution System Water Losses

Since 2015, the District has participated in the AWWA-assisted Water Loss Audit program, completing and submitting an annual "Water Loss Audit" to the Department of Water Resources using AWWA software and protocols laid out in the AWWA Manual 36; *"Water Los Audits and Loss Control Programs."* As part of this exercise, the District worked with an AWWA consultant to develop strategies to improve their water loss auditing procedures. In addition, the District has staff certified as a "Water Loss Audit Validator" who performs an annual peer review water audit validation (as required by State standards) with a neighboring water retailer. More detailed information regarding water loss is available in greater detail in the Fiscal Year 2020 AWWA Water Loss Audit, included in this plan as Appendix C.

The table below shows data from Water Loss Audits from the last five years:

Submittal Table 4-4 Retail: Last Five Years of Water Loss Audit Reporting	
Reporting Period Start Date (mm/yyyy)	Volume of Water Loss [1,2]
07/2015	752.5
07/2016	1032.3
07/2017	793.9
07/2018	599.1
07/2019	616.3

[1] Taken from the field "Water Losses" (a combination of apparent losses and real losses) from the AWWA worksheet. ***[2] Units of measure (AF, CCF, MG)** must remain consistent throughout the UWMP as reported in Table 2-3.*
NOTES:

4.4 Water Use for Lower Income Households

Retail water agencies are required to include the projected water use for lower income households in projected water demands. Table 4-5 illustrates that the projected water demands include low-income housing for single-family and multi-family residents. Data was derived from the Water Authority Preliminary Member Agency 2045 Demand Forecast.

The District included all projected future development including any projected lower income and multi-family developments in the projected water demands.

The table below shows low-income housing inclusion in water-use projections

Table 4-5 Retail Only: Inclusion in Water Use Projections	
Are Future Water Savings Included in Projections? (Refer to Appendix K of UWMP Guidebook) *Drop down list (y/n)*	Yes
If "Yes" to above, state the section or page number, in the cell to the right, where citations of the codes, ordinances, etc… utilized in demand projections are found.	See Section 4.4, page 18
Are Lower Income Residential Demands Included In Projections? *Drop down list (y/n)*	Yes

Section 5 – SB X7-7 Baselines, Targets, and 2020 Compliance

In 2009, the Water Conservation Act of 2009 adopted a novel demand management approach that set a conservation target for water agencies to achieve a 20% reduction in gallons per capita per day (GPCD) water use by the year 2020. This mandate is often referred to as "SBX7-7" or "20 by 2020." The target required a baseline GPCD to be calculated from one of several pre-established methodologies and time periods. This baseline GPCD would be used to calculate an interim target for 2015, and a 2020 target GPCD. Initial targets were included in water suppliers' 2010 Urban Water Management Plans. As part of the 2015 UWMP process, water suppliers calculated and reported an interim target GPCD reduction and were given the option to update or change the methodology used to calculate their final "SBX7-7" objective. FPUD met its interim target and chose to retain the original methodology used in the 2010 UWMP to calculate its 20 by 2020 target. Detailed information on mandates and calculations associated with reducing per capita water use can be found in the California Department of Water Resources' (DWR) *Methodologies for Calculating Baseline and Compliance Urban Per Capita Water Use (Methodologies)*. As this section will describe, water users in FPUD's service area have achieved a twenty percent reduction in per capita water use, and the District has complied with the Water Conservation Act of 2009.

5.1 Service Area Population

Population data for all of FPUD's SBX7-7 compliance calculations has been provided by the San Diego Association of Governments (SANDAG), which was pre-approved by the Department of Water Resources.

5.2 Gross Water Use

"Gross Water Use" includes water entering FPUD's distribution and excludes "Recycled Water" and "Net Storage." "Agricultural Water" is included in gross water-use volumes, pursuant to subdivision (f), Section 10608.24, of the CWC. Calendar year totals were drawn from FPUD records, and used to calculate 20 by 2020 targets.

5.3 Baseline Daily per Capita Water Use and 2020 Target

Utilizing "Method 1," SANDAG population data, and a 10-year baseline period starting in 1999, FPUD's baseline per capita per day water use was calculated as 467. The confirmed 2020 target was 374 gallons per capita per day.

The table below shows the baseline target summary.

Table 5-1 Baselines and Targets Summary *Retail Agency or Regional Alliance Only*					
Baseline Period	Start Year	End Year	Average Baseline GPCD*	2015 Interim Target *	Confirmed 2020 Target*
10-15 year	*1999*	*2008*	*467*	*421*	*374*
5 Year	*2003*	*2007*	*486*		
*All values are in Gallons per Capita per Day (GPCD)					

5.4 2020 Compliance Daily per Capita Water Use

FPUD is in compliance with its 2020 target of 374 GPCD, with an actual calculated 2020 gallons per capita per day water use of 213.

The table below shows the District's compliance.

Submittal Table 5-2: 2020 Compliance From SB X7-7 2020 Compliance Form *Retail Supplier or Regional Alliance Only*				
2020 GPCD			2020 Confirmed Target GPCD*	Did Supplier Achieve Targeted Reduction for 2020? Y/N
Actual 2020 GPCD*	2020 TOTAL Adjustments*	Adjusted 2020 GPCD* *(Adjusted if applicable)*		
213	*0*		*374*	*YES*
**All cells in this table should be populated manually from the supplier's SBX7-7 2020 Compliance Form and reported in Gallons per Capita per Day (GPCD)*				
NOTES:				

For additional information regarding FPUD's compliance with the Water Conservation Act of 2009, please reference the FPUD "SBX7-7 2020 Compliance Form" (Appendix D).

Section 6 – Water Supply Characterization

6.0 Introduction

This section will discuss the District's water supply portfolio, including locally produced groundwater and surface water sources, as well as imported water purchased from regional wholesale purveyors. This analysis informs the District's reliability analysis and risk assessments in Section 7. At the time of drafting this plan (spring 2021), the District is in the process of constructing facilities for the Santa Margarita River Conjunctive Use Project (SMRCUP), projected to be operational beginning in 2022 and which will yield approximately 4,200 acre feet per year (AFY) of raw brackish water from an underground aquifer on Camp Pendleton military base to the edge of the Pendleton/District boundary. This project will significantly reduce the District's reliance on imported water from State Water Project and Colorado River sources, by approximately 40% on average. To augment locally produced water supplies, the District will rely on regional wholesalers for additional water supplies.

6.1 Purchased or Imported Water

The District currently purchases wholesale water from the Water Authority as treated, potable water. Since 1991 the Water Authority has significantly diversified its water sources from its complete dependence on Metropolitan for imported water to multiple sources of imported and local supply. The Water Authority, is a party to the 2003 Colorado River Quantification Settlement Agreement (QSA) which incorporates the SDCWA-IID Water Transfer Agreement and conserved Colorado River water from the relining of the All American and Coachella Canals. These Colorado River supplies are delivered to the Water Authority by Metropolitan under an Exchange Agreement through Metropolitan's Colorado River Aqueduct (CRA) and Metropolitan's Skinner Service Area distribution and treatment facilities. In 2015 the Water Authority included its first local supply source through its water purchases from the Carlsbad Desalination Project.

A summary of projected normal years Water Authority supplies (AFY) that make up the balance of supplies from Section 4 of the SDCWA UWMP are included below:

Supply	2025	2030	2035	2040	2045
IID Transfer	200,000	200,000	200,000	200,000	200,000
Canal Lining	78,700	78,700	78,700	78,700	78,700
Carlsbad Desalination Plant	50,000	50,000	50,000	50,000	50,000
Total	328,700	328,700	328,700	328,700	328,700

Imported supplies from Metropolitan complete the Water Authority's supply portfolio. Because of the static amounts of the Water Authority's Colorado River and desalination core supplies, future growth in demand projected by the Water Authority will be met through purchased water from Metropolitan. As noted in the Water Authority's 2020 UWMP Metropolitan supply purchases are expected to account for approximately 15% of Water Authority normal year supplies in 2025 increasing to 22% in 2040 and 25% in 2045 (see SDCWA 2020 UWMP Table 9-1).

Metropolitan obtains its water from two sources: the Colorado River Aqueduct, which it owns and operates, and the State Water Project, with which Metropolitan has a water supply contract through the State of California. The wholesale water supplies received by FPUD are Colorado River and State Project Water Supplies that are part of Metropolitan and the Water Authority's supply mix and are discussed in detail in their UWMPs.

Colorado River supplies are governed by a complex series of laws and water rights between the seven states and the Republic of Mexico that make up the Upper and Lower basins. Per the *1931 Seven Party Agreement*, Metropolitan's annual Colorado River supply is 550,000 AF from its fourth priority within California's basic apportionment of 4.4 million AF. The primary challenges faced on the Colorado River are related to the allocation of water between the states and the impact of a changing climate on supply availability. Metropolitan has developed several programs to maintain the reliability of its Colorado River supplies and to maximize available capacity in the CRA. Metropolitan has relied on its land fallowing, storage, and exchange programs to increase its Colorado River supplies. Major programs include Metropolitan's Intentionally Created Surplus account in Lake Mead, interstate exchange program with the Southern Nevada Water Authority, Palo Verde Irrigation District Land Fallowing Program, and Imperial Irrigation District/Metropolitan Conservation Program. More detail on these Colorado River programs is found in Metropolitan's 2020 UWMP.

The reliability of Metropolitan's other major source of supply, the State Water Project (SWP), is limited by the level of State Water Project supply development, pumping restrictions due to state and federal environmental regulations, the effects of climate change, and hydrology. Since 2009, when the State of California passed SB X7-1, the Delta Reform Act the state has been focused on dual conveyance as the means to enhance reliability and predictability of SWP deliveries and achieve the legislatively mandated co-equal goals of water supply reliability and Delta ecosystem restoration. The current planned Delta Conveyance Project would work as a dual system with the existing waterway but would contain a single tunnel with two new intakes capable of conveying 6,000 cfs. DWR is preparing a draft Environmental Impact Report (EIR) to circulate to the public with a plan to finalize the EIR in 2023. Project permitting is expected to be completed in 2024.

To address SWP supply needs under dry, below-normal conditions caused by dry hydrologic conditions and regulatory restrictions, Metropolitan developed additional supplies from Central Valley storage and transfer programs. These programs along with in-region surface and groundwater storage allow Metropolitan to manage the variation in supplies due to hydrology. Metropolitan manages its storage portfolio by storing water during excess supply years to meet the region's needs when Metropolitan's imported water supplies are insufficient to meet annual needs, or if imported water facilities are damaged during a seismic event or other emergency

A summary of the projected available supplies for Metropolitan under normal weather year (AFY) from Metropolitan's UWMP Table 2-6 are included below:

Program	2025	2030	2035	2040	2045
In-Region Supplies and Programs	878,000	880,000	878,000	876,000	875,000
California Aqueduct	1,838,000	1,832,000	1,832,000	1,831,000	1,831,000
Colorado River Aqueduct	1,216,000	1,342,000	1,342,000	891,000	916,000
Capability of Current Programs	3,932,000	3,962,000	3,960,000	3,598,000	3,622,000

NOTE: Available supplies are in excess of demand on Metropolitan in each of the 5 year increments

Due to its unique rural setting, demographics, and agricultural customer profile FPUD differs greatly when compared to the rest of the Water Authority's predominantly urbanized service area. As an unincorporated mostly rural area under the land use jurisdiction of the County General Plan, the District has a much higher percentage of agricultural water use and lower population and housing density that create unique challenges for the District associated with the cost of water. To better match its service area and customer profile to its wholesale agency FPUD has initiated a legal process with the San Diego Local Agency Formation Commission (LAFCO) to switch wholesale water providers from the Water Authority to Eastern Municipal Water District (EMWD). The outcome of this process is uncertain so at this point the UWMP analysis is based on SDCWA as our current wholesale provider. EMWD has however completed a supply reliability assessment to demonstrate it can meet FPUD's wholesale water needs through available MWD supplies (see EMWD Supply and System Reliability Technical Memorandum February 12, 2020). It is anticipated that the legal process through LAFCO will take several years to complete, and if successful it will be included in the District's 2025 UWMP. Operationally, the configuration of water imported through Metropolitan aqueduct connections would not change from current configurations (the same meters would measure imported potable water from Metropolitan's treatment facility at Lake Skinner) and the reorganization as part of

EMWD will have no effect on FPUD's retail operations or its water supply planning or water use efficiency activities.

For more information on the Water Authority's, EMWD's, and Metropolitan's water supply plans, please reference their respective 2020 Urban Water Management Plans.

6.2 GROUNDWATER

WATER CODE SECTION 10631(B)(4)

If groundwater is identified as an existing or planned source of water available to the supplier, all of the following information:
(A) The current version of any groundwater sustainability plan or alternative adopted pursuant to Part 2.74 (commencing with Section 10720), any groundwater management plan adopted by the urban water supplier, including plans adopted pursuant to Part 2.75 (commencing with Section 10750), or any other specific authorization for groundwater management for basins underlying the urban water supplier's service area.
(B) A description of any groundwater basin or basins from which the urban water supplier pumps groundwater. For basins that a court or the board has adjudicated the rights to pump groundwater, a copy of the order or decree adopted by the court or the board and a description of the amount of groundwater the urban water supplier has the legal right to pump under the order or decree. For a basin that has not been adjudicated, information as to whether the department has identified the basin as a high- or medium-priority basin in the most current official departmental bulletin that characterizes the condition of the groundwater basin, and a detailed description of the efforts being undertaken by the urban water supplier to coordinate with groundwater sustainability agencies or groundwater management agencies listed in subdivision (c) of Section 10723 to maintain or achieve sustainable groundwater conditions in accordance with a groundwater sustainability plan or alternative adopted pursuant to Part 2.74 (commencing with Section 10720).
(C) A detailed description and analysis of the location, amount, and sufficiency of groundwater pumped by the urban water supplier for the past five years. The description and analysis shall be based on information that is reasonably available, including, but not limited to, historic use records.
(D) A detailed description and analysis of the amount and location of groundwater that is projected to be pumped by the urban water supplier. The description and analysis shall be based on information that is reasonably available, including, but not limited to, historic use records.

6.2.1 CURRENT GROUNDWATER USE - CAPRA WELL

The source of groundwater for the Capra Well is a small fractured-rock aquifer on District property in a localized watershed of Red Mountain below the District's Red Mountain Reservoir. Because this well is not located within a DWR, Bulletin 118 basin, it is not subject to the requirements of the Sustainable Groundwater

Management Act, such as a groundwater sustainability plan is not required, and one has not been adopted for this groundwater source. The groundwater source is not adjudicated, and the requirements do not apply to FPUD that the District must indicate the amount of water it has a right to pump from the well. District staff operates and maintains the pumping infrastructure, and monitors groundwater levels.

Table 6-1 below shows the volume of groundwater water pumped from Capra Well

Submittal Table 6-1 Retail: Groundwater Volume Pumped						
☐	Supplier does not pump groundwater. The supplier will not complete the table below.					
☐	All or part of the groundwater described below is desalinated.					
Groundwater Type ***Drop Down List*** *May use each category multiple times*	Location or Basin Name	2016*	2017*	2018*	2019*	2020*
Add additional rows as needed						
Fractured Rock	Capra Well	92.6	93.3	73.8	75.9	99.9
	TOTAL	93	93	74	76	100
**** Units of measure (AF, CCF, MG)*** *must remain consistent throughout the UWMP as reported in Table 2-3.*						
NOTES:						

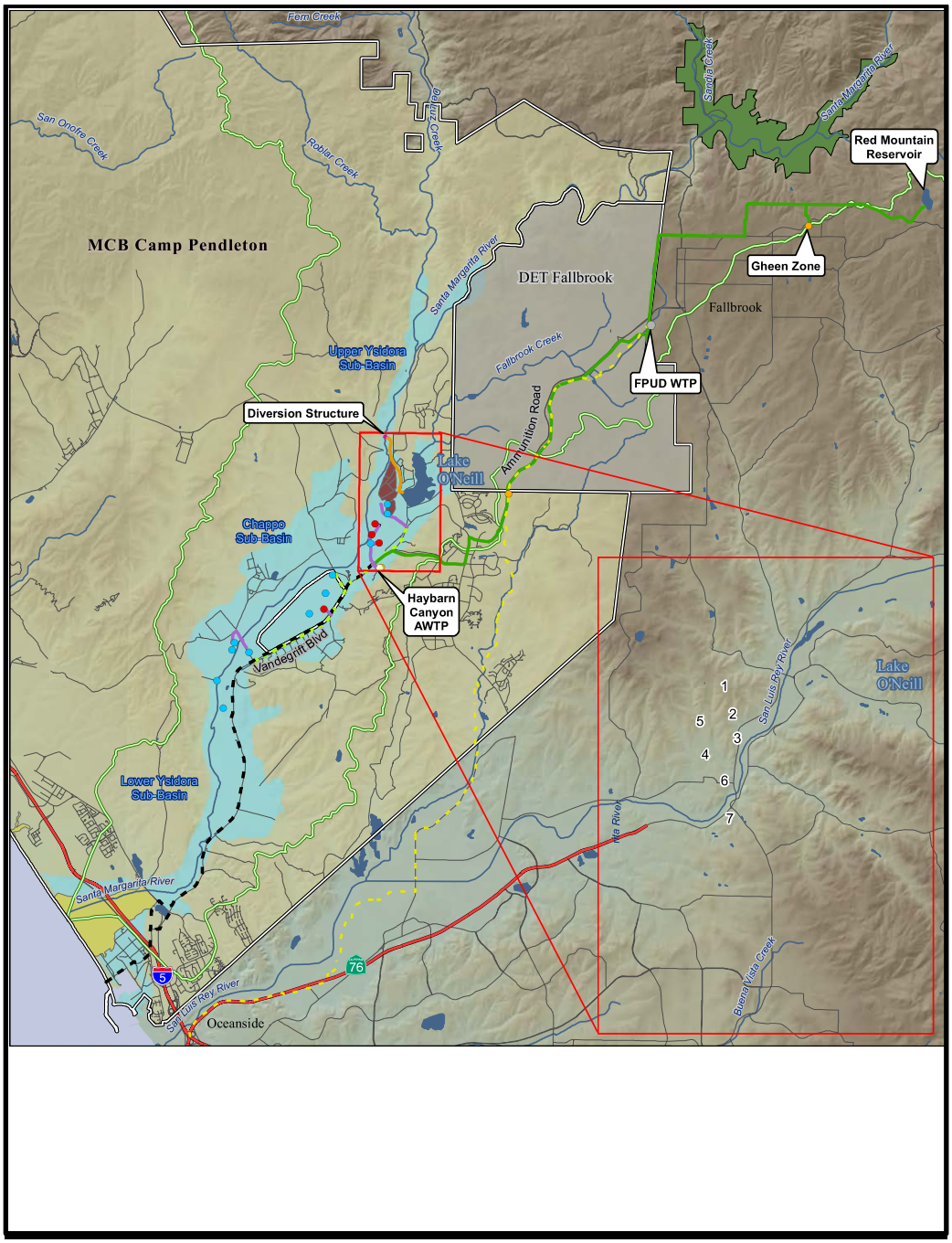
6.2.2 – Future Groundwater Use - Santa Margarita River Conjunctive Use Project, History and Background

In the past, Fallbrook produced water from the Santa Margarita River under a 2½ cfs direct diversion license from the state of California. Those facilities were destroyed by floods in 1969 and were not rebuilt. At that time, the state of California canceled the license for lack of use.

For more than 60 years the District has been attempting to develop a permanent local water supply on the Santa Margarita River. In 1948, water permits were obtained from the state for diversion and storage of 30,000 acre-feet. The federal government filed suit against the District in 1951 over water rights on the river to quit its title to the claimed rights accruing to Camp Pendleton.

In a move to settle the unresolved litigation from 1951, FPUD and Camp Pendleton are moving forward with the Santa Margarita River Conjunctive-Use Project. The project involves capturing surface water during storms and storing the surplus in an aquifer on Camp Pendleton. FPUD anticipates a reliable local water supply from this project of an average of 4,200 AF per year. At the time of drafting this plan (spring 2021) Pendleton had completed facilities to pump raw water from base/District boundary, and FPUD is currently constructing an advanced water treatment plant to desalinate the blended brackish groundwater extracted from the basin and distribution infrastructure to deliver this water to the Fallbrook community. Facilities are now in the final construction phase and the project will be operational in early 2022.

The map below illustrates the basin and facilities for the Santa Margarita River project.



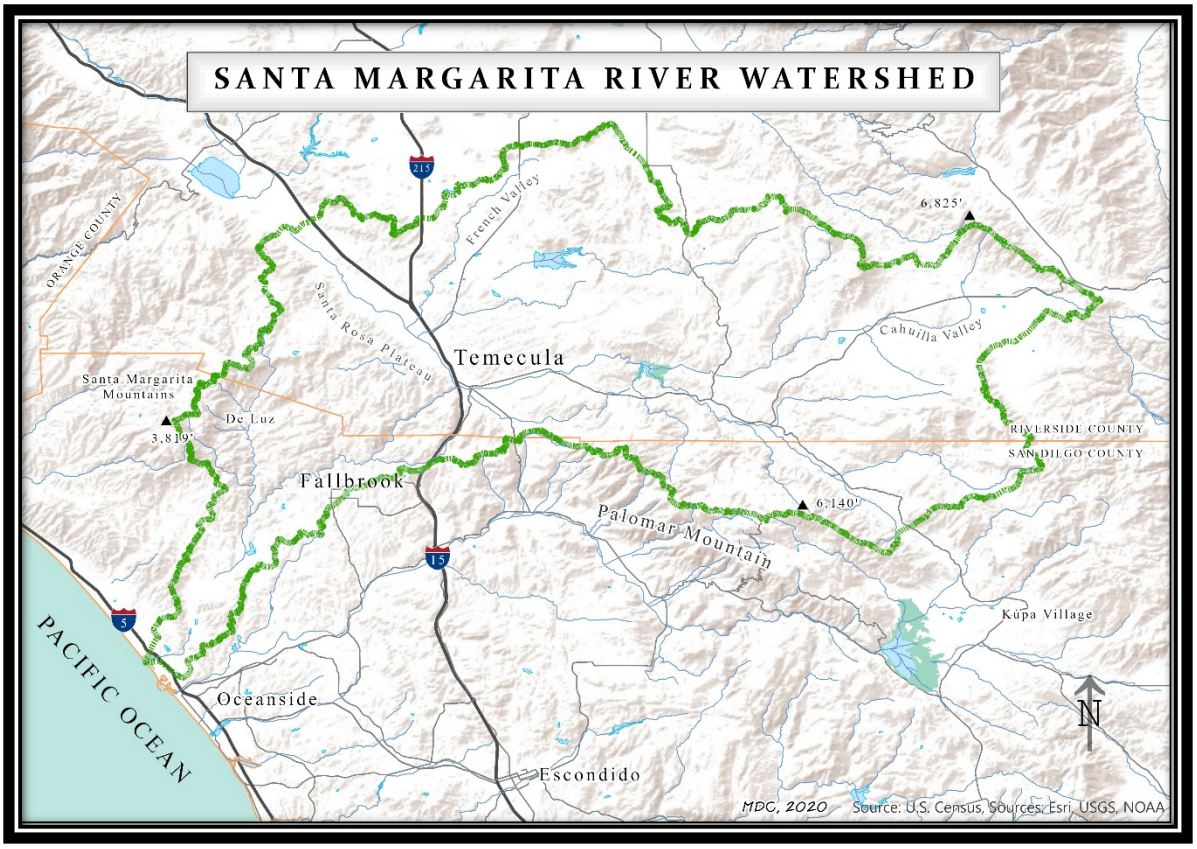
Since this is a future project, the District does not have any historical usage data it can report or provide on groundwater pumped from the Santa Margarita River Conjunctive Use project. However, extensive groundwater modeling was conducted during the preparation of environmental documentation for the project by Stetson Engineers. That analysis indicated that FPUD could expect higher than the average yield under certain hydrologic conditions. For conservative projection purposes, FPUD is using the expected average yield under dry weather conditions using groundwater modeling results for the 2011-2014 hydrology which included a record low 5% State Water Project Table A allocation

as the safe yield number for planning purposes in this update to the UWMP. The projected yield from this source is set forth in Table 6-9 below.

BASIN DESCRIPTION

Camp Pendleton is the designated monitoring entity for the Lower Santa Margarita Valley Groundwater Basin, which can be identified by name and sub-basin number, DWR Basin 9-04. Camp Pendleton collects and reports on groundwater levels in the basin. Camp Pendleton also has a Water Resources Plan that was prepared in 2011 that discusses aquifer protection and management.

Basin 9-04 was designated as a medium-priority basin, not subject to critical conditions of overdraft. In addition, the basin is adjudicated and overseen by a federally appointed watermaster, so an additional groundwater management plan does not need to be prepared pursuant to CWC section 10720.8(a)(17).



COURT ADJUDICATION

The Santa Margarita River Watershed, including the Santa Margarita Valley Groundwater Basin, is adjudicated in that the rights are established, but the amount of water is not quantified. The court retains continuing jurisdiction over the adjudication. There are three Interlocutory Judgments related to Fallbrook's rights and the Santa Margarita River. The Interlocutory Judgments include: Interlocutory Judgment 37 (IJ 37), Interlocutory Judgment 23 (IJ 23), and Interlocutory Judgment 24 (IJ 24). They can be referenced on the website for the United States

District Court, Southern District of California at this location: https://www.casd.uscourts.gov/SitePages/Fallbrook.aspx.

The Interlocutory Judgments can also be viewed in person at the FPUD office. The three Water Rights Permits, numbers 8511, 11357 and 15000B, that pertain to the conjunctive-use project can be viewed by entering the permit numbers on the State Water Resources Control Board website at: https://ciwqs.waterboards.ca.gov/ciwqs/ewrims/EWPublicTerms.jsp.

6.3 Surface Water

In 2005, the District relocated a surface water rights permit from the District property on the Santa Margarita River to a tributary of the River named Tucalota Creek, located in the upper Santa Margarita River Watershed. Tucalota creek drains directly into Lake Skinner. The District had a water rights permit but no mechanism for storage and diversion, and MWD had a mechanism for storage and diversion, but no water rights permit. By relocating the permit, the District could store and deliver imported water from Lake Skinner. In 2005, when the District finalized all the required approvals to receive local runoff water from Lake Skinner it was estimated that every ten years a large wet year would produce up to 10,000 AF of runoff so the average amount of water would be 1,000 AFY. Not all of the runoff into the lake is available to the District. There is an amount that must be released to protect downstream water rights and an amount that must be released based on environmental requirements. As a result, based on actual deliveries from MWD to the District from Lake Skinner, the amount of water available has been much less than projected. For conservative planning purposes, projected yield listed in this UWMP is 300 AFY, which is a figure based on a substantial wet-year yield, smoothed into an annual average.

6.4 Stormwater

The District does not use storm water as a source of potable or irrigation water.

6.5 Wastewater and Recycled Water

Water Code section – 10633
The plan shall provide, to the extent available, information on recycled water and its potential for use as a water source in the service area of the urban water supplier. The preparation of the plan shall be coordinated with local water, wastewater, groundwater, and planning agencies that operate within the supplier's service area.

Recycled Water Coordination
FPUD provides water and sewer services for portions of Fallbrook. The District has approximately 5,000 sewer connections in an unincorporated area of about 6.6 square miles. The remainder of customers in the District's service area is on a

septic system. Currently the wastewater treatment plant treats an average of 1.6 million gallons per day (MGD) and has a rated “design wet weather” capacity of 3.1 MGD.

WASTEWATER COLLECTION, TREATMENT AND DISPOSAL

The District’s collection system consists of 65 miles of sewer lines, 5 pumping stations and an 18-mile land-line to the ocean outfall in Oceanside. The wastewater treatment plant currently treats an average of 1.7 MGD and has a rated potential to treat 3.1 MGD. In 2020, the total wastewater collected and treated was 1,741 AF. The treatment plant treats all wastewater to the tertiary level, meeting recycled water standards; it is all, therefore, available for use in a recycled water project. In 2020, 1,186 AF of treated water was discharged to the Oceanside outfall. The wastewater collection and treatment system’s unit processes include preliminary treatment, grit removal, primary treatment, secondary treatment by activated sludge process, tertiary treatment and disinfection.

The wastewater treatment plant underwent a three-year rehabilitation and upgrade of the system, which was completed in 2016. The rehabilitation replaced all major mechanical equipment and ensured there were no single points of failure for the plant. This required constructing an additional secondary clarifier, new filters, new blowers, replacing the existing clarifier mechanism, a new aeration system and controls, improvements to the solids handling system, a complete rehabilitation of the electrical system, and a new SCADA system.

Table 6-2 below shows the volume of wastewater collected in 2020

Submittal Table 6-2 Retail: Wastewater Collected Within Service Area in 2020						
☐	There is no wastewater collection system. The supplier will not complete the table below.					
	Percentage of 2015 service area covered by wastewater collection system *(optional)*					
	Percentage of 2015 service area population covered by wastewater collection system *(optional)*					
Wastewater Collection			**Recipient of Collected Wastewater**			
Name of Wastewater Collection Agency	Wastewater Volume Metered or Estimated? *Drop Down List*	Volume of Wastewater Collected from UWMP Service Area 2020 *	Name of Wastewater Treatment Agency Receiving Collected Wastewater	Treatment Plant Name	Is WWTP Located Within UWMP Area? *Drop Down List*	Is WWTP Operation Contracted to a Third Party? *(optional)* *Drop Down List*
Fallbrook Public Utility District	Metered	1,741	Fallbrook Public Utility District	Fallbrook Public Utility District Treatment Plant No. 1	Yes	No
Total Wastewater Collected from Service Area in 2020:		1,741				
**** Units of measure (AF, CCF, MG)*** *must remain consistent throughout the UWMP as reported in Table 2-3* **.**						
NOTES:						

Table 6-3 below shows Wastewater Treatment and Discharge in 2020

Submittal Table 6-3 Retail: Wastewater Treatment and Discharge Within Service Area in 2020

No wastewater is treated or disposed of within the UWMP service area. The supplier will not complete the table below.

Wastewater Treatment Plant Name	Discharge Location Name or Identifier	Discharge Location Description	Wastewater Discharge ID Number *(optional)* [2]	Method of Disposal *Drop down list*	Does This Plant Treat Wastewater Generated Outside the Service Area?	Treatment Level *Drop down list*	2020 volumes [1] Wastewater Treated	Discharged Treated Wastewater	Recycled Within Service Area [3]	Recycled Outside of Service Area	Instream Flow Permit Requirement
Fallbrook Public Utility District Treatment Plant No. 1	Oceanside	Ocean Outfall		Ocean outfall	Yes	Tertiary	1,741	1,186	517	8	0
						Total	1,741	1,186	517	8	0

[1] **Units of measure (AF, CCF, MG)** must remain consistent throughout the UWMP as reported in Table 2-3.
[2] If the **Wastewater Discharge ID Number** is not available to the UWMP preparer, access the SWRCB CIWQS regulated facility website at https://ciwqs.waterboards.ca.gov/ciwqs/readOnly/CiwqsReportServlet?inCommand=reset&reportName=RegulatedFacility

NOTES:

RECYCLED WATER SYSTEM

FPUD's recycled water system consists of collected wastewater treated to the tertiary level. The recycled system's unit processes include preliminary treatment, grit removal, primary treatment, secondary treatment by activated sludge process, tertiary treatment and disinfection. This treated effluent is used for agriculture and irrigation purposes and the remainder is discharged to the ocean via our 18-mile ocean outfall. We have 29 recycled water meters over 19 recycled water user sites. Sixteen of the sites use recycled water for agricultural irrigation, 12 sites use recycled water for landscape irrigation, and one is a commercial recycled water hauler.

The District initiated recycled water development in 1990 by agreeing to supply the California Department of Transportation (CALTRANS) irrigation water for landscaping along Interstate 76 from the District's Ocean Outfall, which runs from the Wastewater Plant in Fallbrook to the ocean. The District has been producing and selling recycled water since 1994, when it absorbed the Fallbrook Sanitary District (FSD). The FSD began producing recycled water in 1991. A major component of the commitment to recycle was to enact an ordinance that requires recycled water and other non-potable water be used within the recycled water system's jurisdiction, and where it is technically and financially feasible. The use of potable water for irrigation or other non-potable uses is prohibited where recycled water is suitable and available within the District's service lines.

Approximately 70% of FPUD's recycled water is used for commercial agricultural purposes and 30% is used for landscape irrigation.

The most recent reporting year figures show that FPUD recycles an average of approximately 30% of our total plant flow. While recent upgrades to the FPUD

wastewater plant and recycled distribution which included the addition of recycled water storage the system could feasibly supply an increased demand for local water. The increase in beneficial use is limited by the available peak season wastewater supply and available and interested customers. In its 2020 Master Plan FPUD identified 430 acre feet per year of recycled water supply that would be available for expanded beneficial reuse. Potential customers have been identified that can be served by the additional supply and facility alternatives for distribution system expansion have been identified and are being evaluated for cost effectiveness. It should be noted that actual recycled usage in recent years has been lower than originally estimated in previous UWMPs, as shown in Table 6-5. This trend is a result of multiple factors, including the general decline in agricultural water use in the District's service area, the fiscal/geographic challenges associated with expanding a recycled water distribution system in a small, spread out rural community and the recent loss in 2019 of one of the District's largest recycled water users, CALTRANS (discussed in Section 4 of this plan). As a result, this report presents projected recycled water demands that have been adjusted down to a more conservative figure of 830 AFY.

FPUD's updated 2020 Master Plan provides more detailed information on recycled water use and expansion efforts within the District's service area, including discussion of projects such as specific recycled water distribution system expansions, and potential potable reuse projects. The Lower Santa Margarita Indirect Potable Recharge Pilot Project is currently in the conceptual phase, with a total budget of $1.4 million, with $687,500 of support from the San Diego Region Integrated Regional Water Management (IRWM). Further detail can be referenced in Chapter 2 of the 2020 Master Plan, "Reclaimed Water" (https://www.fpud.com/fpud-facilities-master-plan).

RECYCLED WATER BENEFICIAL USES

Every gallon of recycled water used within the service area reduces the need to purchase or develop other water supplies. Recycled water is also approximately 15% less expensive than potable water for the FPUD customer to buy. The District currently produces and sells recycled water for agricultural irrigation, primarily nurseries. FPUD also produces recycled water for landscape irrigation, including home-owners associations, sports fields, roadways and natural areas. All the recycled water is treated to the tertiary level.

In 2020, FPUD sold 517 AF of recycled water for agricultural irrigation and projects that amount is anticipated to increase to 830 AF by 2025 and thereafter. In 2020, the District sold 143 AF of recycled water for landscape irrigation and projects that amount to increase to 232 and thereafter. In 2020, the District sold 374 AF of recycled water for agricultural irrigation and projects that amount to increase to 598 AF in 2025 and thereafter.

Table 6-4 below shows current and projected recycled water

Submittal Table 6-4 Retail: Recycled Water Direct Beneficial Uses Within Service Area										
▭	Recycled water is not used and is not planned for use within the service area of the supplier. The supplier will not complete the table below.									
Name of Supplier Producing (Treating) the Recycled Water:	Fallbrook Public Utility District									
Name of Supplier Operating the Recycled Water Distribution System:	Fallbrook Public Utility District									
Supplemental Water Added in 2020 (volume) *Include units*	1.9 Acre Feet									
Source of 2020 Supplemental Water	Fallbrook Public Utility District (metered potable makeup water)									
Beneficial Use Type *Insert additional rows if needed.*	**Potential** Beneficial Uses of Recycled Water (Describe)	Amount of **Potential** Uses of Recycled Water (Quantity) *Include volume units*[1]	General Description of 2020 Uses	Level of Treatment *Drop down list*	2020[1]	2025[1]	2030[1]	2035[1]	2040[1]	2045[1] (opt)
Agricultural irrigation	Plant nurseries, etc	126 AF	Ag irrigation	Tertiary	374	598	598	598	598	598
Landscape irrigation (exc golf courses)	HOA common areas, roadway landscaping, etc	187 AF	Landscape irrigation	Tertiary	143	232	232	232	232	232
Golf course irrigation										
Commercial use										
Industrial use										
Geothermal and other energy production										
Seawater intrusion barrier										
Recreational impoundment										
Wetlands or wildlife habitat										
Groundwater recharge (IPR)										
Reservoir water augmentation (IPR)										
Direct potable reuse										
Other (Description Required)										
				Total:	517	830	830	830	830	830
				2020 Internal Reuse						
[1] ***Units of measure (AF, CCF, MG)*** *must remain consistent throughout the UWMP as reported in Table 2-3.*										
NOTES:										

Table 6-5 below shows projected vs. actual recycled water use

Submittal Table 6-5 Retail: 2015 UWMP Recycled Water Use Projection Compared to		
☐	Recycled water was not used in 2015 nor projected for use in 2020. The supplier will not complete the table below. If recycled water was not used in 2020, and was not predicted to be in 2015, then check the box and do not complete the table.	
Beneficial Use Type	**2015 Projection for 2020 [1]**	**2020 Actual Use [1]**
Insert additional rows as needed.		
Agricultural irrigation	770	374
Landscape irrigation (exc golf courses)	330	143
Golf course irrigation		
Commercial use		
Industrial use		
Geothermal and other energy production		
Seawater intrusion barrier		
Recreational impoundment		
Wetlands or wildlife habitat		
Groundwater recharge (IPR)		
Reservoir water augmentation (IPR)		
Direct potable reuse		
Other (Description Required)		
Total	1,100	517
[1] **Units of measure (AF, CCF, MG)** must remain consistent throughout the UWMP as reported in Table 2-3.		
NOTE:		

ACTIONS TO ENCOURAGE AND OPTIMIZE FUTURE RECYCLED WATER USE

FPUD has made recycled water available and its use is mandatory through a Recycled Water Ordinance adopted by the FPUD Board of Directors. A major component of the commitment to recycle was enacting an ordinance requiring recycled water be used where technically and financially feasible.

FPUD's Recycled Water Ordinance Article 19 details the requirements for the use of recycled water whenever feasible. Article 19 is attached in Appendix E.

The District is committed to the expansion of local recycled water use, and as discussed above is exploring projects such as expansions of the recycled water distribution system, and potential potable reuse projects. Similar to the 2016 expansion and upgrade of the water reclamation plant and the recent Lower Santa Margarita IPR Pilot Project, the District will make every effort to leverage grant funding to offset the costs associated with expanding recycled water use.

The District will also continue to take an innovative approach of providing assistance with recycled water permits to help new customers navigate through the complex permitting process and offset some of the initial retrofit costs. District staff will work with prospective and new recycled water users to make the planning implementation of new recycled water sites more efficient and cost effective.

Table 6-6 below shows methods for expanding recycled use

Submittal Table 6-6 Retail: Methods to Expand Future Recycled Water Use			
☐	Supplier does not plan to expand recycled water use in the future. Supplier will not complete the table below but will provide narrative explanation.		
	Provide page location of narrative in UWMP		
Name of Action	Description	Planned Implementation Year	Expected Increase in Recycled Water Use *
Add additional rows as needed			
Distribution System Expansion	New extensions of recycled water mainlines	Ongoing	200
New customer outreach	Outreach, trainings, site compliance assistance	Ongoing	100
Requirements for future development	Require new development to utilize recycled water for irrigation where applicable	Ongoing	13
		Total	313
***Units of measure (AF, CCF, MG)** must remain consistent throughout the UWMP as reported in Table 2-3.*			
NOTES:			

6.6 Desalinated Water Opportunities

FPUD does not have any desalinated water opportunities. The Water Authority began operating a 50-million gallon per day seawater desalination plant that began producing potable water in December 2015. The desalination plant reduces SDCWA requirements for imported water from MWD. The projected supplies from the facility are included in SDCWA's supply projections. Although this desalination plant produces local, renewable water, none of this water actually reaches the FPUD distribution system because FPUD's connections to the Water Authority are north of the where the desalinated water supply enters into the Water Authority's regional conveyance system so the water supply benefit to FPUD is limited to the reduction by SDCWA in overall MWD imported water needs and regionally to Metropolitan as it offsets an overall demand on it for imported supplies including during dry weather periods when supply availability is constrained .

For more information on this project, please refer to the Water Authority's 2020 Urban Water Management Plan.

6.7 Exchanges or Transfers

Water Code section 10631

(c) Describe the opportunities for exchanges or transfers of water on a short-term or long-term basis.

For the purpose of emergency supply in the event of leaks or maintenance, FPUD entered into an emergency exchange agreement with Rainbow Municipal Water District in 1986. Both agencies own and operate water pipeline systems connected to the Water Authority aqueduct and along a common boundary. Interconnections were constructed linking both agencies' systems for this emergency exchange purpose.

6.8 Future Projects

In addition to the Santa Margarita River Conjunctive Use Project, which is in the construction phase and is included in the long term water supply projection (described in detail in Section 6.2.2, "Future Groundwater Use"), another conceptual future water supply project for FPUD is the Lower Santa Margarita Water Supply Reliability Project. This is a joint project with Camp Pendleton to use recycled water supplies to increase the available supply in the Lower Santa Margarita Groundwater Basin. There is currently a feasibility and pilot study underway. The first phase is focused on developing an Indirect Potable Reuse Project using recycled supplies on Camp Pendleton. The first phase is projected to produce approximately 1,700 AFY of new supplies. Because of the conceptual nature of the Lower Santa Margarita Water Supply Reliability Project and the fact that it has not undergone environmental analysis under CEQA, the District is not including the potential annual production in its projection of future supplies. The next update of the UWMP in 2025 will reflect whether that project is considered to be feasible and cost effective for inclusion.

The table below shows expected future water supply projects

Submittal Table 6-7 Retail: Expected Future Water Supply Projects or Programs						
☐	No expected future water supply projects or programs that provide a quantifiable increase to the agency's water supply. Supplier will not complete the table below.					
☐	Some or all of the supplier's future water supply projects or programs are not compatible with this table and are described in a narrative format.					
	Provide page location of narrative in the UWMP					
Name of Future Projects or Programs	Joint Project with other suppliers?		Description (if needed)	Planned Implementation Year	Planned for Use in Year Type *Drop Down List*	Expected Increase in Water Supply to Supplier* *This may be a range*
	Drop Down List (y/n)	*If Yes, Supplier Name*				
Add additional rows as needed						
Lower Santa Margarita Supply Reliability Project - Phase 1	Yes	Marine Corps Base Camp Pendleton	Indirect Potable Reuse	2025	Average Year	1,700
***Units of measure (AF, CCF, MG)** must remain consistent throughout the UWMP as reported in Table 2-3.*						
NOTES: This is a pilot project that is currently in the conceptual phase						

6.9 Summary of Existing and Planned Sources of Water

In summary, FPUD's existing and future sources of water are a combination of purchased water from its water wholesalers; groundwater from the Capra Well; surface water from diversions into Lake Skinner; and recycled water produced by the District. Actual supplies for 2020 were 8,920 AF.

The table below shows actual supplies for 2020

Table 6-8 Retail: Water Supplies — Actual				
Water Supply		2020		
Drop down list *May use each category multiple times. These are the only water supply categories that will be recognized by the WUEdata online submittal tool*	Additional Detail on Water Supply	Actual Volume	Water Quality *Drop Down List*	Total Right or Safe Yield *(optional)*
Add additional rows as needed				
Purchased or Imported Water	San Diego County Water Authority	8,303	Drinking Water	
Groundwater	Capra Well	100	Drinking Water	
Groundwater	Santa Margarita Conjunctive Use Project	0	Drinking Water	
Surface water	Lake Skinner surface diversions	0	Drinking Water	
Recycled Water		517	Recycled Water	
	Total	8,920		0

FPUD's planned – or projected – sources of water through 2045 include; water purchased from its water wholesalers, groundwater from two local supply sources (the Capra Well and the Santa Margarita River Conjunctive-Use Project (2022)), indirect potable recharge from the Lower Santa Margarita Supply Reliability Project (currently in the planning phase, so not listed in tabling below), surface water diversions into Lake Skinner, and recycled water produced by the District. In times when locally produced water is less available, the District will rely on wholesale agencies to supply imported water. For more detailed information on the District's projected supply portfolio, please reference Table 6-9 below.

Table 6-9 below shows projected supplies through 2045

Submittal Table 6-9 Retail: Water Supplies — Projected											
Water Supply	Additional Detail on Water Supply	Projected Water Supply * Report To the Extent Practicable									
Drop down list May use each category multiple times. These are the only water supply categories that will be recognized by the WUEdata online submittal tool		2025		2030		2035		2040		2045 (opt)	
		Reasonably Available Volume	Total Right or Safe Yield (optional)	Reasonably Available Volume	Total Right or Safe Yield (optional)	Reasonably Available Volume	Total Right or Safe Yield (optional)	Reasonably Available Volume	Total Right or Safe Yield (optional)	Reasonably Available Volume	Total Right or Safe Yield (optional)
Add additional rows as needed											
Purchased or Imported Water	Purchase from wholesale agency	4,045		4,369		4,951		5,160		5,260	
Groundwater (not desalinated)	Santa Margarita Conjunctive Use Project	4,200		4,200		4,200		4,200		4,200	
Groundwater (not desalinated)		100		100		100		100		100	
Surface water (not desalinated)	Lake Skinner Diversion	300		300		300		300		300	
Recycled Water		830		830		830		830		830	
Total		9,475	0	9,799	0	10,381	0	10,590	0	10,690	0
***Units of measure (AF, CCF, MG)** must remain consistent throughout the UWMP as reported in Table 2-3.*											
NOTES: "Purchase or Imported Water" projected availability figures per SDCWA "Fallbrook PUD - Updated Draft Forecast of Demand on the Water Authority (AF)"; "Groundwater" sum of 100 AFY yield from Capra Well and 4,200 AFY projected average yield of the Santa Margarita Conjunctive Use Project; "Surface Water" 300 AFY projected potential yield from Tucalota Creek surface water availability; "Recycled Water" 830 AFY average annual recycled water availability per FPUD recycled water projected demands											

6.9 Energy Intensity

As mandated by Water Code 10631.2. (a), please reference the tables below for information on the District's energy use profile.

Table O-1B calculates energy intensity associated with potable water operations

Urban Water Supplier: *Fallbrook Public Utility District*

Water Delivery Product (If delivering more than one type of product use Table O-1C)

Retail Potable Deliveries

Table O-1B: Recommended Energy Reporting - Total Utility Approach				
Enter Start Date for Reporting Period	1/1/2020	Urban Water Supplier Operational Control		
End Date	12/30/2020			
☐ Is upstream embedded in the values reported?		Sum of All Water Management Processes	Non-Consequential Hydropower	
Water Volume Units Used	*AF*	Total Utility	Hydropower	Net Utility
Volume of Water Entering Process (volume unit)		*8403*	*0*	*8403*
Energy Consumed (kWh)		*658949*	*0*	*658949*
Energy Intensity (kWh/volume)		*78.4*	*0.0*	*78.4*

Quantity of Self-Generated Renewable Energy

kWh

Data Quality *(Estimate, Metered Data, Combination of Estimates and Metered Data)*

dropdown menu

Data Quality Narrative:

Source: San Diego Gas & Electric Invoices, usage sorted by facility type (Water, pumping, etc.)

Narrative:

Uses include but are not limited to; water disinfection, pumping, SCADA/telemetry, etc.

Table O-2 calculates energy intensity associated with recycled water operations as well as renewable solar energy produced by FPUD

Urban Water Supplier: *Fallbrook Public Utility District*

Table O-2: Recommended Energy Reporting - Wastewater & Recycled Water					
Enter Start Date for Reporting Period	1/1/2020	**Urban Water Supplier Operational Control**			
End Date	12/30/2020	**Water Management Process**			
Is upstream embedded in the values reported? ☐		Collection / Conveyance	Treatment	Discharge / Distribution	Total
Volume of Water Units Used	AF				
Volume of Wastewater Entering Process (volume units selected above)		*1741*	*1741*	*1186*	*1741*
Wastewater Energy Consumed (kWh)		*283454*	*2738611*	*0*	*3022065*
Wastewater Energy Intensity (kWh/volume)		*162.8*	*1573.0*	*0.0*	*1735.8*
Volume of Recycled Water Entering Process (volume units selected above)		*0*	*0*	*517*	*517*
Recycled Water Energy Consumed (kWh)		*0*	*0*	*185*	*185*
Recycled Water Energy Intensity (kWh/volume)		*0.0*	*0.0*	*0.4*	*0.4*

Quantity of Self-Generated Renewable Energy related to recycled water and wastewater operations

1,967,868 kWh

Data Quality *(Estimate, Metered Data, Combination of Estimates and Metered Data)*

Metered Data

Data Quality Narrative:

Source: FPUD operational records

Narrative:

FPUD owns two solar installations; atop shade structures at the District offices and an 8 acre solar installation at the WTP

Section 7 – Water Supply Reliability Assessment and Drought Risk Assessment

7.1 Introduction

This section will discuss the Fallbrook Public Utility District's planning efforts as they pertain to water supply reliability and mitigating the risks posed to water resources by drought conditions. Having reliable sources of water to meet customer demands during a variety of conditions is one of the principal responsibilities of an urban water supplier. The discussions laid out in the subsequent pages will analyze water supply reliability and drought risk, and demonstrate the District's ability to supply the water demands of its customers.

7.2 Water Service Reliability Assessment

Water Code section 10635(a)
Every urban water supplier shall include, as part of its urban water management plan, an assessment of the reliability of its water service to its customers during normal, dry, and multiple dry water years. This water supply and demand assessment shall compare the total water supply sources available to the water supplier with the long-term total projected water use over the next 20 years, in five-year increments, for a normal water year, a single dry water year, and a drought lasting five consecutive water years. The water service reliability assessment shall be based upon the information compiled pursuant to Section 1 0631, *including available data from state, regional, or local agency population projections within the service area of the urban water supplier.*

7.2.1 Constraints on Water Sources

Water Code section 10631
(b)(1) A detailed discussion of anticipated supply availability under a normal water year, single dry year, and droughts lasting at least five years, as well as more frequent and severe periods of drought, as described in the drought risk assessment. For each source of water supply, consider any information pertinent to the reliability analysis conducted pursuant to Section 10635, including changes in supply due to climate change.

Water Code Section 10634
The plan shall include information, to the extent practicable, relating to the quality of existing sources of water available to the supplier over the same five-year increments as described in subdivision (a) of Section 10631, and the manner in which water quality affects water management strategies and supply reliability.

Currently, FPUD relies on the San Diego County Water Authority (Water Authority) to source virtually 100% of its potable water. Under normal water year conditions, FPUD anticipates sourcing potable water from a combination of local groundwater,

local surface water, and purchases from the Water Authority. The Water Authority anticipates sufficient supplies for its member agencies during normal water year, single dry year, and five year consecutive drought conditions through 2045.

With the implementation of the Santa Margarita River Conjunctive Use Project (SMRCUP) FPUD will increase its resilience during single dry year and multiple dry year events. Historically, during these dry weather events the District relied on the Water Authority for 100% of its potable water supplies. SMRCUP will reduce FPUD's reliance on the Water Authority during single and multiple dry years and contribute to regional self-reliance. Under existing governmental organizational conditions as a member agency of the Water Authority, FPUD will obtain its supplemental potable supplies from the Water Authority to augment its local supplies during single and multiple dry years. The Water Authority has developed a diverse portfolio of imported and local supplies, storage, and supply management practices and as demonstrated in its 2020 UWMP, can provide a secure and consistent supply of water for its member agencies under all hydrologic conditions. Under the multiple dry-year scenario conducted by the Water Authority, seawater desalination and San Luis Rey water transfer supplies are based on contractual levels; recycled, brackish groundwater, and potable reuse yields are based on Water Authority member agency projected growth in these verifiable supplies; and surface and groundwater yields that are hydrologically influenced are based on 2011-2015 water use levels. As for its Colorado River supplies under the QSA the Water Authority's 2020 UWMP states that during dry years, when water availability is low, conserved water will be transferred under IID's Colorado River rights, which are among the most senior in the Lower Colorado River Basin. Without the protection of these rights, the Water Authority would suffer greater delivery cutbacks when supplies are limited from Metropolitan. Conserved water from the All American and Coachella Canals are guaranteed by Agreement for 77,700 AFY is to be available to the Water Authority each year. (For an analysis of the constraints regarding SDCWA supplies See SDCWA 2020 UWMP Section 9 Water Supply Reliability).

In the event the current application for Reorganization under review by the San Diego Local Agency Formation Commission (LAFCO) is approved and FPUD becomes a member agency of Eastern Municipal Water District (Eastern), FPUD will reevaluate its reliability in the 2025 UWMP update. FPUD's current supply reliability is dependent on the reliability of the amount of Metropolitan supplies purchased by the Water Authority and under the proposed Reorganization, FPUD's supplemental supplies will be more dependent on Metropolitan Water District of Southern California's (Metropolitan) supply reliability. Under both current organizational conditions and under the proposed Reorganization it is important to assess the reliability of Metropolitan's sources of supply, the State Water Project and the Colorado River, and their water management programs. Both of Metropolitan's core supply sources face regulatory, environmental, and climate change caused challenges.

The most significant challenges to the State Water Project supply are being addressed by attaining the state mandated co-equal goals of water supply reliability and ecosystem restoration in the Bay Delta through the DWR-led Delta Conveyance Project and EcoRestore, formerly known as the Bay Delta Conservation Plan. Consistent with Executive Order N-10-19, in early 2019, the state announced a new single tunnel project, which proposed a set of new diversion intakes along Sacramento River in the north Delta for SWP. In 2019 the California Department of Water Resources (DWR) initiated planning and environmental review for a single tunnel Delta Conveyance Project (DCP) to protect the reliability of State Water Project (SWP) supplies from the effects of climate change and seismic events, among other risks. DWR's current schedule for the DCP environmental planning and permitting extends through the end of 2024. DCP will potentially be operational in 2040 following extensive planning, permitting and construction. DWR estimates of SWP supply reliability in its 2019 Delivery Capability Report are based on existing facilities, and so do not include the proposed conveyance facilities that are part of the DCP. Since this UWMP uses DWR's 2019 Delivery Capability Report to estimate SWP supplies at 2040, any changes in SWP supply reliability that would result from the proposed DCP are not included in this UWMP. Metropolitan has also successfully incorporated south of Delta groundwater banking programs and surface storage to enhance its supplies when SWP allocations are low due to hydrologic and regulatory constraints.

Metropolitan's Colorado River supply has faced years of drought and challenges facing supply, especially during dry hydrologies relative to the available water for the seven Upper and Lower Basin states and the Republic of Mexico. Metropolitan has implemented specific Colorado River Programs that include conservation, land fallowing, transfer, and storage projects. The Water Authority's Colorado River water through its QSA supplies (see Section 6) contributes to the availability of Colorado River supply and regional self-reliance. In addition to the Water Authority's QSA supplies Metropolitan has implemented a number of Colorado River Management programs the more significant programs include:

Imperial Irrigation District/Metropolitan Water District Conservation Program
Under agreements executed in 1988 and 1989, Metropolitan has funded water efficiency improvements within IID's service area in return for the right to divert the water conserved by those investments. Through this program, IID has conserved an additional 105 TAF per year on average upon completion of program implementation.

Palo Verde Land Management, Crop Rotation, and Water Supply Program
In May 2004, Metropolitan's Board authorized a 35-year land management, crop rotation, and water supply program with PVID. Under the program, participating

farmers in PVID are paid to reduce their water use by not irrigating a portion of their land. This program provides up to 133 TAF of water to be available to Metropolitan in certain years.

Bard Seasonal Fallowing Program

In December 2019, Metropolitan's Board authorized a seven-year seasonal fallowing program with the Bard Water District. Under the program, participating farmers in Bard are paid to reduce their water use by not irrigating their land between the late spring and summer months. This program provides up to 6 TAF of water to be available to Metropolitan in certain years.

Lower Colorado River Supply Contract

In March 2007, Metropolitan, the City of Needles, and the United States Bureau of Reclamation (USBR) executed a Lower Colorado Water Supply Project contract. Under the contract, Metropolitan receives, on an annual basis, project water left unused by the project contractors along the River. Metropolitan received 9.5 TAF from this project in 2019 and will receive an estimated 8.8 TAF in 2020 based on the amount of water pumped and used by other project water users.

Lake Mead Storage Program

In May 2006, Metropolitan and the USBR executed an agreement for a demonstration program that allowed Metropolitan to leave conserved water in Lake Mead, for exclusive use by Metropolitan in later years, that Metropolitan would otherwise have used in 2006 and 2007. In December 2007, Metropolitan entered into agreements to set forth the rules under which "Intentionally Created Surplus" (ICS) water is developed, stored in, and delivered from Lake Mead. As of January 1, 2020, Metropolitan had a total of 866 TAF of Extraordinary Conservation ICS water in Lake Mead.

For a more detailed description of Metropolitan's Colorado River Management programs see Section 3.1 of its 2020 UWMP.

In its 2020 UWMP, Metropolitan is projecting that it will have potential surplus water available under the varying hydrologic conditions of single and multiple dry year conditions and will be able to meet the needs of its member agencies for imported water. Metropolitan has numerous dry-year supply options that may be exercised to provide adequate amounts of water over each year of the five-year drought period. Metropolitan's analysis shows that the region can provide reliable water supplies under both the single driest year and a drought period lasting five consecutive water years. In addition to those programs described above under Colorado River Water Management (including the Water Authority's QSA supplies) these dry year supplies include Metropolitan's Central Valley transfer and groundwater storage programs as well as its In-Region supply programs that

include surface water storage and groundwater storage within its service area. Metropolitan's supply program capability and availability result in an excess of supplies relative to projected demand, Metropolitan's 2020 UWMP shows that surpluses during the 5 consecutive dry year hydrology range from approximately 532 TAF in 2025 to 648 TAF in 2045 with a surplus high of 691 TAF in 2040. More detail on Metropolitan supplies and reliability can be found in its 2020 UWMP (http://mwdh2o.com/aboutyourwater/Planning-Documents).

7.2.2 Reliability by Type of Year

This reliability assessments discusses normal or average year conditions, single dry year conditions, and conditions in a five-year consecutive drought. Over the past 25 years, Fallbrook, the greater San Diego area, and urban southern California as a whole have experienced multiple periods of extended drought. Adapting policies and procedures to manage supplies and demand during these periods of scarcity has led local water agencies to understand the importance of diversifying the region's water supplies and improving regional self-reliance. The Water Authority and its member agencies, including FPUD, have made significant investments in diversifying water supplies, implementing water use efficiency, and refining water management practices to mitigate the ways drought effects supply and demand. To provide a more comprehensive shortage analysis, the dry-year demands in the following sections do not incorporate savings from extraordinary conservation during drought conditions.

Table 7-1 demonstrates increased available supplies during single dry-year, and multiple dry-year events.

Table 7-1 Retail: Basis of Water Year Data (Water Service Reliability Assessment)

Year Type	Base Year	Available Supplies if Year Type Repeats	
			Quantification of available supplies is not compatible with this table and is provided elsewhere in the UWMP
			Quantification of available supplies is provided in this table as either volume only, or percent only, or both.
		Volume Available	**% of Average Supply**
Average Year (T 7-2, 2025)	1986 - 2018	9,476	100%
Single Dry Year (SDY) (T 7-3, 2025)	2015	10,139	107%
Consecutive Dry Years 1st Year (1) 2026	2011 – 2015	10,240	108%
Consecutive Dry Years 2nd Year 2027	2011 – 2015	10,343	109%
Consecutive Dry Years 3rdYear 2028	2011 – 2015	10,447	110%
Consecutive Dry Years 4th Year 2029	2011 – 2015	10,551	111%
Consecutive Dry Years 5th Year 2030	2011 – 2015	10,656	112%
(1) Table 7-4, 2020			

* NOTES: Volume available is the maximum supply needed between 2025 and 2045, as shown in tables 7-2 through 7-4, below.

7.2.3 Supply and Demand Comparison

Water Code section §10635

(a) Every urban water supplier shall include, as part of its urban water management plan, an assessment of the reliability of its water service to its customers during normal, dry, and multiple dry water years. This water supply and demand assessment shall compare the total water supply sources available to the water supplier with the long-term total projected water use over the next 20 years, in five-year increments, for a normal water year, a single dry water year, and a drought lasting five consecutive water years. The water service reliability assessment shall be based upon the information compiled pursuant to Section 10631, including available data from state, regional, or local agency population projections within the service area of the urban water supplier.

Projecting supply and demand has many variables for FPUD and the Water Authority.

SDCWA Forecast

The Water Authority forecasts regional Municipal & Industrial demand within its service area using an econometric model first developed by the Army Corps of Engineers in the 1980s. The Municipal and Industrial Needs (MAIN) Model has been modified and refined by the Water Authority to meet its forecasting needs and to comply with a 1992 Memorandum between the Water Authority and the San Diego Association of Governments (SANDAG) to incorporate SANDAG demographic data into the model. The SDCWA Main model uses drivers such as household and employment projection along with historic water use provided by its member agencies and historic weather patterns to forecast demand. SDCWA MAIN also includes water pricing sensitivity data and conservation estimates that result in adjustments to long term water use trends. The Water Authority projects agricultural demand separately using current agricultural acreage and evapotranspiration based water use factors.

FPUD Demand Forecast

As described in Section 4, FPUD developed its own land use based demand forecast using the DWR 2020 UWMP Guidebook Appendix K as a guide and SANDAG demographic projections and data. FPUD's demand forecast is less than the projection the Water Authority developed for FPUD. FPUD coordinated its demand forecast with the Water Authority, but its locally-specific forecast better represents current and future trends for water use within the District's service area and differs with the Water Authority on the projections.

During normal water years, FPUD projects a diversified supply portfolio that includes purchases from the Water Authority, local water from the Santa Margarita Conjunctive Use Project (SMRCUP), local surface runoff at Lake Skinner, and locally produced recycled water.

During single-year and multiple-year drought events, demands increase, while some surface and groundwater supplies diminish. During dry year events, FPUD will likely rely on the Water Authority to meet potable water demands that cannot be met by its less reliable and hydrologically dependent supplies such as Lake Skinner surface water, groundwater pumped from the Capra Well, and amounts above the safe yield amount from the SMRCUP. While SDCWA and Metropolitan have water shortage allocation plans and methodologies, neither wholesaler is showing the need to implement those plans under the 5 consecutive drought year or single dry year conditions analyzed in their UWMPs. Both Metropolitan's and the Water Authority's respective 2020 UWMPs show no shortage conditions under dry year and multiple dry year conditions. The Water Authority's dry year supply projections include conservative assumptions regarding limited Metropolitan supplies and that the Water Authority will receive its preferential right based on Metropolitan's current method of calculating such rights through its Water Supply Allocation Plan. FPUD incorporates Water Authority's and Metropolitan's supply

projections to show no anticipated shortages within FPUD during normal, single-dry, and five-year consecutive drought years.

Table 7-2 shows FPUD's projected supplies and demands during normal conditions, in five-year increments through 2045. These projections include local potable and non-potable water supplies from groundwater and surface water projects, to be supplemented by purchases from the Water Authority. If there are any potential shortages in available supply they will be addressed through customer conservation actions as provided in FPUD's Water Shortage Contingency Plan.

Table 7-2 provides the normal water year supply and demand assessment

Table 7-2 Retail: Normal Year Supply and Demand Comparison					
	2025	2030	2035	2040	2045 *(Opt)*
Supply totals *(autofill from Table 6-9)*	9,476	9,477	10,390	10,591	10,691
Demand totals *(autofill from Table 4-3)*	9,476	9,477	10,390	10,591	10,691
Difference	0	0	0	0	0
NOTES: Remaining Potential Surplus will be handled through Management Actions.					

Table 7-3 shows FPUD's projected supplies and demands during single dry-year events in five-year increments through 2045. Dry year demand was increased by 7% based on the Water Authority's adjustment used in its 2020 UWMP (see SDCWA 2020 UWMP Section 9.4.3). Local surface and groundwater supplies are reduced during dry-year events and are not included in supply totals during dry-year projections. As noted in the Water Authority's 2020 UWMP, no shortages are anticipated within the Water Authority's service area in a single dry-year through 2045.

The table below shows single dry year supply and demand

Table 7-3 Retail: Single Dry Year Supply and Demand Comparison					
	2025	2030	2035	2040	2045 (Opt)
Supply totals	10,139	10,482	11,106	11,332	11,439
Demand totals	10,139	10,482	11.106	11,332	11,439
Difference	0	0	0	0	0

Table 7-4 shows FPUD's projected supplies and demands during five consecutive drought year events in five-year increments through 2045. Demand has been adjusted based on the Water Authority's factors for increasing demand during multiple dry years (SDCWA 2020 UWMP Section 9.4.2). That adjustment takes into account retail level extraordinary conservation and water management actions after the first year of the dry year period and increases demand by 1% in the each of the subsequent four consecutive years. Local surface and groundwater from the Capra Well are reduced during dry-year events, and are not included in supply totals during dry-year projections. As noted previously those supplies and amounts above the SMRCUP safe yield will be supplemented by the Water Authority. According to the Water Authority's 2020 UWMP, no shortages are shown during the five consecutive dry year analysis. If there were shortages, FPUD could mitigate those shortages through extraordinary water conservation actions and other supply management practices, consistent with its Water Shortage and Drought Contingency Plan (See Section 8)

The table below shows multiple dry year supply and demand

Table 7-4 Retail: Multiple Dry Years Supply and Demand Comparison						
		2025	2030	2035	2040	2045 (Opt)
First year	Supply totals	10,139	10,482	11,106	11,332	11,439
	Demand totals	10,139	10,482	11,106	11,332	11,439
	Difference	0	0	0	0	0
Second year	Supply totals	10,240	10586	11883	12,125	11,553
	Demand totals	10,240	10586	11883	12,125	11,553
	Difference	0	0	0	0	0
Third year	Supply totals	10,343	10692	12,715	12,974	11669
	Demand totals	10,343	10692	12,715	12,974	11669
	Difference	0	0	0	0	0
Fourth year *(optional)*	Supply totals	10,447	10,799	13605	13,882	11786
	Demand totals	10,447	10,799	13605	13,882	11786
	Difference	0	0	0	0	0
Fifth year *(optional)*	Supply totals	10,551	10,908	13,741	14,021	11903
	Demand totals	10,551	10,908	13,741	14,021	11903
	Difference	0	0	0	0	0
Sixth year *(optional)*	Supply totals					
	Demand totals					
	Difference	0	0	0	0	0

7.2.4 Management Tools and Options

Water Code section 10620
(f) An urban water supplier shall describe in the plan water management tools and options used by that entity that will maximize resources and minimize the need to import water from other regions.

Developing reliable local supplies of water is an integral aspect of FPUD's planning and management strategies. With the completion of the Santa Margarita River Conjunctive Use Project (SMRCUP) (see Section 6), the District plans to develop a local supply with a projected average annual yield of 4,200 Acre Feet per year. In addition, with Lake Skinner surface water (see Section 6), FPUD plans to capture an average of 300 Acre Feet per year of local water. Finally, plans to expand the recycled water service area and connect new services will further reduce the district's reliance on imported water (see Section 6).

Continuing efforts to promote education in water conservation within the District will reduce the waste of water, reduce the per capita consumption, and lessen FPUD's reliance on imported water. Further discussion of conservation measures can be found in Section 9 of this plan.

7.5 Drought Risk Assessment

Water Code Section 10635(b):
Every urban water supplier shall include, as part of its urban water management plan, a drought risk assessment for its water service to its customers as part of information considered in developing the demand management measures and water supply projects and programs to be included in the urban water management plan. The urban water supplier may conduct an interim update or updates to this drought risk assessment within the five-year cycle of its urban water management plan update. The drought risk assessment shall include each of the following:
(1) A description of the data, methodology, and basis for one or more supply shortage conditions that are necessary to conduct a drought risk assessment for a drought period that lasts five consecutive water years, starting from the year following when the assessment is conducted.
(2) A determination of the reliability of each source of supply under a variety of water shortage conditions. This may include a determination that a particular source of water supply is fully reliable under most, if not all, conditions.
(3) A comparison of the total water supply sources available to the water supplier with the total projected water use for the drought period.
(4) Considerations of the historical drought hydrology, plausible changes on projected supplies and demands under climate change conditions, anticipated regulatory changes, and other locally applicable criteria.

Water Code Section 10635(b) directs suppliers to prepare a Drought Risk Assessment (DRA) in their 2020 UWMP. In accordance with Water Code Section 10612, the DRA evaluation is based on the five driest consecutive years on record.

7.5.1 Data, Methods, and Basis for Water Shortage Condition

The District's primary potable water supplier is the Water Authority, particularly during dry year conditions. Thus, FPUD has based its DRA on the analysis conducted by the Water Authority in Section 9.6 of its 2020 UWMP. The Water Authority selected 2014 – 2018 as the historical period representing the driest consecutive years experienced in their service area. Those years represent the five-year period with the lowest local water supply production from surface and groundwater, the two local water supplies that are most susceptible to variation due to weather. Over that period, the combined annual production from those two sources ranged from a low of 21,245 AF to a high of 67,374 AF for the Water Authority's service area. It also represents low periods of availability of FPUD's local surface water and groundwater supplies.

The data used to calculate the SDCWA's supply capabilities under the scenario of five consecutive dry years is shown in Table 9-8 of the SDCWA 2020 UWMP. For each year, a comparison was made between available water supplies and water demands. For the SDCWA supplies which consist of QSA supplies and Carlsbad Desalination, no reduction in the availability over the five-year period is assumed due to the drought resilience of these supplies. Water Authority Colorado River supplies are assumed to be available at their contracted amounts and subject to superior Colorado River water rights that would not be impacted by shortage allocation. Carlsbad desalinated seawater supply is independent of the driest hydrology analyzed by the Water Authority and member agency supplies for recycling and brackish groundwater are not impacted by the dry weather analyzed as sufficient wastewater and groundwater levels are available to maintain the projected yields. More information on these supplies is provided in Section 4 of the SDCWA 2020 UWMP. For the SDCWA member agency supplies, imported surface water and groundwater are considered to be susceptible to variations in weather because both sources are dependent on annual rainfall and the hydrologic record provides a strong correlation to reduced run-off and recharge and surface water and groundwater yield during dry years. The volume of those supplies regionally varies over the five-year period from a low of 6,000 AFY to 51,000 AFY for surface water yield to a low of 13,000 AFY for groundwater yield to a high of 15,000 AFY based on actual production from 2014 – 2018. FPUD's surface water and groundwater supplies form the Capra Well are assumed to not be available. Additional information on SDCWA member agency supplies can be found in the SDCWA 2020 UWMP Section 5. For Metropolitan supplies, the Water Authority has projected surplus available supplies in connection with a "Preferential Right" to Metropolitan water under Section 135 of the Metropolitan Water District Act (MWD Act). The Preferential Right entitles member agencies to purchase an amount of Metropolitan water

that is determined based on payments the agency has made to Metropolitan in the past, which the agency can use for domestic and municipal purposes (actual demand) within the agency. FPUD's projections reflect that its demands for water can be met by available supplies in normal, single-dry, and five-year consecutive drought conditions; they do not show surplus conditions.

In terms of Metropolitan's supply, its DRA analysis identified 1988-1992 as the 5 driest years to analyze supply availability. For Metropolitan's DRA, these supply capabilities are further refined and presented annually for the years 2021 to 2025 by assuming a repeat of historic conditions from 1988 to1992. This historic five-year sequence represents the lowest water supply available for SWP supplies to Metropolitan. Also, as part of Metropolitan's DRA, the expected quantity of each water supply source for each year of the five-year drought was evaluated and included within the tabulated capability of each supply category. Metropolitan's near-term assessment reveals that its supply capabilities are expected to exceed its projected water use for years 2022, 2024, and 2025. However, estimates of projected water supply and use reveals that there could be a possible shortfall of core supplies in 2021 and 2023. This shortfall is largely triggered by the assumed repeat of the historical 1988 and 1990 low supply conditions from the SWP to predict supply availability for 2021 and 2023. Actual supply conditions or 2021 and 2023 may prove different from historic supply conditions. Metropolitan has in place a robust Water Shortage Contingency Plan and comprehensive shortage response planning that includes demand reduction measures and supply augmentation actions. For 2021 and 2023, the estimated shortage levels of 130 TAF and 157 TAF, respectively, are within 10% of water use for both years corresponding to Level 1 Shortage. Metropolitan's supply sources under the Colorado River, SWP, and what Metropolitan terms as In-Region supply categories are individually listed and discussed in detail in Metropolitan's 2020 UWMP Section 3. Future supply capabilities for each of these supply sources are also individually tabulated in Appendix 3, of Metropolitan's 2020 UWMP with consideration for plausible changes on projected supplies under climate change conditions, anticipated regulatory changes, and other factors as explained in Section 2.6 of Metropolitan's 2020 UWMP.

In calculating FPUD's local supplies during the same period analyzed by the Water Authority in its DRA, it was conservatively assumed that neither surface water for the Lake Skinner supply or groundwater from the Capra fractured rock well would be available. This is consistent with availability of these sources during the historic five dry year period. Projected dry year yield from the SMRCUP, scheduled to be operational in 2022, is based on extensive groundwater modeling conducted as part of the project's environmental review process, which identified estimated yield under the same five year dry hydrology analyzed by the Water Authority.

Once available supply was identified for the five driest year period, FPUD projected an increase in dry year water demand for that same period. As

described in Section 6, FPUD applied multipliers developed by SDCWA to conduct a dry year forecast for DRA purposes to stress test the reliability of FPUD's supplies. This dry year projection for DRA purposes does not assume extraordinary conservation measure and thus constitutes a conservative assumption in estimating demand. Table 7-5 below provides the multipliers used through the extended dry period.

Table 7-5 2021 – 2025 Dry Year Demand Projection Multipliers

	2021	2022	2023	2024	2025
Multiplier	108%	112%	116%	120%	125%

7.5.2 Drought Risk Assessment Individual Water Source Reliability

Under the Water Authority's DRA, it has supplies available to meet all the dry year demand needs of its member agencies. (See SDCWA 2020 UWMP Section 9.6 and Table 9-8). Metropolitan's near-term assessment reveals that its supply capabilities are expected to exceed its projected water use for years 2022, 2024, and 2025, and no water service reliability constraint is anticipated, and no shortfall mitigation measures are expected to be exercised. However, estimates of projected water supply and use reveal that there could be a possible shortfall of core supplies in 2021 and 2023. This shortfall is largely triggered by the assumed repeat of the historical 1988 and 1990 low supply conditions from the SWP to predict supply availability for 2021 and 2023. Metropolitan has in place a robust Water Shortage Contingency Plan and comprehensive shortage response planning that includes demand reduction measures and supply augmentation actions. For 2021 and 2023, the estimated shortage levels of 130 TAF and 157 TAF, respectively, are within 10% of water use for both years corresponding to a Level 1 Shortage. Metropolitan's Shortage Stage Level 1 response actions include takes from Storage, execution of Flexible Supplies, implementation of Voluntary Demand Reduction, and implementation of Metropolitan's Water Supply Allocation Plan. More information is available in Metropolitan's 2020 UWMP, Section 2.

Under the Water Authority's assumption that it has access to its total Preferential Right under a potential Metropolitan shortage, there are no projected shortages that would prevent FPUD from meeting its demand during the five year DRA period, and implementation of the WSCP is not required. In the event that Metropolitan triggers its Level 1 shortage in 2021 and 2023, depending on actions taken by the Water Authority at that time, FPUD may initiate its public information program to request voluntary water use efficiency actions be taken by its customers to reduce water use. No other WSCP actions would be required. In the event FPUD's application for Reorganization and transfer to Eastern Municipal Water District is approved during this period, the same limited WSCP actions would be contemplated under a Metropolitan Level 1 Shortage. For more

information on how Eastern analyzed the effect of implementation of Metropolitan's shortage allocation plan on FPUD see Eastern Reliability Report.

Table 7-6 below provides the DRA total water supply and use comparison, assuming that the next five years are a five-year consecutive drought and determines no potential shortages.

Table 7-6 DRA Reliability Analysis

2021	**Total**
Total Water Use	9,972
Total Supplies	9,972
Surplus/Shortfall w/o WSCP Action	0
Planned WSCP Actions (use reduction and supply augmentation)	
WSCP – Supply Augmentation benefit	0
WSCP – use reduction savings benefit	0
Revised Surplus/ (shortfall)	0
Resulting % Use Reduction from WSCP Action	0

2022	**Total**
Total Water Use	10,341
Total Supplies	10,341
Surplus/Shortfall w/o WSCP Action	0
Planned WSCP Actions (use reduction and supply augmentation)	
WSCP – Supply Augmentation benefit	0
WSCP – use reduction savings benefit	0
Revised Surplus/ (shortfall)	0
Resulting % Use Reduction from WSCP Action	0

2023	**Total**
Total Water Use	10,710
Total Supplies	10,710
Surplus/Shortfall w/o WSCP Action	0
Planned WSCP Actions (use reduction and supply augmentation)	
WSCP – Supply Augmentation benefit	0
WSCP – use reduction savings benefit	0
Revised Surplus/ (shortfall)	0
Resulting % Use Reduction from WSCP Action	0

2024	Total
Total Water Use	11,080
Total Supplies	11,080
Surplus/Shortfall w/o WSCP Action	0
Planned WSCP Actions (use reduction and supply augmentation)	
WSCP – Supply Augmentation benefit	0
WSCP – use reduction savings benefit	0
Revised Surplus/ (shortfall)	0
Resulting % Use Reduction from WSCP Action	0

2025	Total
Total Water Use	11,541
Total Supplies	11,541
Surplus/Shortfall w/o WSCP Action	0
Planned WSCP Actions (use reduction and supply augmentation)	
WSCP – Supply Augmentation benefit	0
WSCP – use reduction savings benefit	0
Revised Surplus/ (shortfall)	0
Resulting % Use Reduction from WSCP Action	0

7.5.3 Optional Planning Tool Workbook

DWR recommends but does not require the use of the Optional Planning Tool in conducting the DRA reliability analysis. Because the Water Authority and Metropolitan utilize their storage and conveyance systems to account for monthly and seasonal variations in their supplies, FPUD conducted its analysis on an annual basis. Although FPUD's SMRCUP operates on a seasonal basis and will experience below average yield during the dry years analyzed in the DRA, the fact that the Water Authority and Metropolitan manage their storage systems to meet actual member agency demand when it occurs does not require visibility at the monthly time step level. FPUD recently expanded its recycled water storage and with its available treatment capacity is able to meet the seasonal changes in recycled water demand. For this reason recycled water was also analyzed on an annual basis.

Section 8 – Water Shortage Contingency Plan (WSCP)

This document constitutes Fallbrook Public Utility District's (District or FPUD) Water Shortage Contingency Plan (WSCP), a detailed proposal for how the District intends to act in the case of an actual water shortage condition.

8.1 Water Supply Reliability Analysis

FPUD has reduced its per capita water use by 54% from its 20 X 2020 Baseline and is 43% under its official 2020 target GPCD. FPUD has a diverse and reliable supply portfolio that includes multiple local and imported sources of water. While FPUD is increasing its utilization of local water supplies, the District may rely to a greater extent on wholesale purveyors during dry periods when local supplies are less available. The most common issue for water supplies in Fallbrook, as is the case in much of the arid west, is drought.

The District's water wholesaler, the San Diego County Water Authority (Water Authority) and the Water Authority's wholesaler the Metropolitan Water District of Southern California (Metropolitan) have made substantial investments in supply reliability over many decades to ensure that the regions they serve have sufficient water supplies, even during periods when source waters are in shorter supply. The Water Authority and Metropolitan have reported regional information and methodologies in their 2020 Urban Water Management Plans, which contain comprehensive analysis regarding supply reliability. Strategies for the optimization of supply reliability include diverse portfolios of local and imported supplies, storage, and supply management practices. These water management strategies will enable the Water Authority and Metropolitan to adapt operational practices to meet water supply needs for their member agencies to ensure the reliable supply of water.

8.2 Annual Water Supply and Demand Assessment Procedures

Starting in 2022, each year FPUD will complete an "Annual Water Supply and Demand Assessment", which will be reported to the Department of Water Resources by July 1st. This review process will assess current conditions at that time, updating the District's supply profile (detailed in Section 6 of the District's UWMP) and demand projections (detailed in Section 4 of the District's UWMP).

Because FPUD's receives a significant portion of its potable supplies from the Water Authority, it will consider the Water Authority's Annual Assessment of its supply availability. The Water Authority first considers its core water supplies as part of the annual assessment. Included as part of consideration of the core supplies are the capabilities and constraints of the infrastructure used to deliver the core water supplies. Next, the Water Authority considers member agency projected water demands on the Water Authority to identify available supplies capable of meeting estimated demand. The Water Authority then evaluates its

storage assets to determine whether to supplement its core supplies with stored water. More detail on the Water Authority Assessment procedures is contained in Section 11.3.2 of its 2020 UWMP.

Because wholesale supplies purchased by the Water Authority from Metropolitan are an important element of the Annual Assessment, of note is Metropolitan's 2020 UWMP, Section 2.5, which outlines its procedures. In summary, Metropolitan's Annual Assessment determination will be based on considerations of available core water supplies, unconstrained water demand, planned water use, and infrastructure conditions. Metropolitan also considers the use of its in-region and out of-region stored water and other water management programs to supplement core water supplies The difference between projected core water supplies and anticipated unconstrained demand will be used to determine what, if any, shortage stage is expected under Metropolitan's Water Shortage Contingency Plan framework.

Data and Methodology

FPUD will take into account the Water Authority's and Metropolitan's Assessment of available supplies and FPUD's own local supply estimates. FPUD will use its excel based Water Demand Forecasting Model under current local hydrologic conditions to estimate unconstrained demand. Availability of FPUD local surface water and groundwater supplies has a strong correlation to past availability under similar hydrologic conditions. Groundwater modeling and updated monthly yield projections for the Santa Margarita River Conjunctive Use Project, a joint groundwater project operated by Camp Pendleton and FPUD that will go live in 2022, will provide the District with an accurate method of forecasting yield from the project. FPUD will also assess the ability of its distribution system and SMRCUP infrastructure to deliver all available supplies to its customers. If there are infrastructure constraints, FPUD will develop a plan to address those physical constraints in as expeditious a manner as possible.

When combined with results of the Water Authority and Metropolitan's Annual Assessments, FPUD will be able to complete a comprehensive analysis of its supply and demand balance and identify any shortfalls. If a gap is identified, FPUD will be able to determine the most appropriate actions to take under the WSCP.

Decision-Making Process

FPUD will prepare the written Annual Water Supply Assessment per DWR requirements and present the results of the Assessment to its Board of Directors prior to submission to DWR. Depending on the results of the Assessment and then-current conditions, FPUD may request action form its Board consistent with its WSCP and in advance of submission of the Annual Assessment to DWR.

8.3 Six Standard Water Shortage Stages

In the event of declared water shortages, Article 17 of the Administrative Code will be implemented. A copy is included in Appendix F. This plan includes both voluntary and mandatory rationing during water supply shortages, including specific response actions that align with six standard water shortage levels based on water supply conditions and shortages resulting from catastrophic supply interruptions.

As soon as a particular condition is declared to exist, the water conservation measures provided for under that condition would apply to all FPUD water service until a different condition is declared. The chart below indicates the six shortage levels that could be enacted by FPUD in the event of a declared shortage. A narrative summary is beneath the table and the complete text is in Appendix F.

The table below shows the six stages of our shortage plan

Submittal Table 8-1

Shortage Level	Percent Shortage Range	Shortage Response Actions (*Narrative description*)
1	Up to 10%	Normal
2	Up to 20%	Water Shortage Watch
3	Up to 30%	Water Shortage Alert
4	Up to 40%	Water Shortage Warning
5	Up to 50%	Water Shortage Critical Condition
6	>50%	Water Shortage Emergency Condition
NOTES:		

The first stage in the Water Shortage Contingency Plan is Level 1 “Normal” which is a stage that is in force at all times and prohibits water waste, encouraging up to 10% reduction in water demands. In this level, customers are asked to follow common-sense water conservation measures. These voluntary restrictions enforce using water wisely to ensure no water is wasted.

Level 2 “Water Shortage Watch” is enforced when local supply conditions and/or the District’s wholesalers notify the District that cutbacks are necessary, caused by water shortages or other reduction in supplies. During a “Water Shortage Watch”, reductions in consumer demands of up to 20% are required in order to have sufficient supplies available to meet anticipated demands.

Level 3 “Water Shortage Alert” applies when local supply conditions and/or the District’s wholesalers notify the District that due to increasing cutbacks are necessary, caused by water shortages or other reduction of supplies. During a

"Water Shortage Alert", reductions in consumer demands of up to 30% are required in order to have sufficient supplies available to meet anticipated demands.

Level 4 "Water Shortage Warning" applies when local supply conditions and/or the District's wholesalers notify the District that due to increasing cutbacks are necessary, caused by serious water shortages or other reduction of supplies. During a "Water Shortage Warning", reductions in consumer demands of up to 40% are required in order to have sufficient supplies available to meet anticipated demands.

Level 5 "Water Shortage Critical Condition" applies when local supply conditions and/or the District's wholesalers notify the District that due to increasing cutbacks are necessary, caused by critical water shortages or other reduction of supplies. During a "Water Shortage Critical Condition", reductions in consumer demands of up to 50% are required in order to have sufficient supplies available to meet anticipated demands.

Level 6 "Water Shortage Emergency Condition" applies when local supply conditions and/or the District's wholesalers notify the District that is has declared a water shortage emergency and requires a demand reduction of more than 50% in order for the District to have maximum supplies available to meet anticipated demands.

8.4 Water Shortage Response Actions

The following prohibitions apply to use of potable water and do not apply to reclaimed water or well water use. More detailed information is available in the complete text of Article 17 of the Administrative Code, in Appendix F.

The table below shows mandatory prohibitions

Table 8-2a Retail: Restrictions and Prohibitions on End Uses			
Stage	Restrictions and Prohibitions on End Users ***Drop down list*** *These are the only categories that will be accepted by the WUEdata online submittal tool*	Additional Explanation or Reference (optional)	Penalty, Charge or Other Enforcement?
Add additional rows as needed			
1	Landscape - Restrict or prohibit runoff from landscape irrigation		Yes
1	Other – Prohibit use of potable water for washing hard surfaces		Yes
1	Other – Require automatic shut-off hoses	No residential or commercial irrigation between 10am and 6pm	Yes
1	Water Features – Restrict water use for decorative water features, such as fountains, ponds, lakes and waterfalls	Must use re-circulated water	Yes
1	Other	Must use a positive shutoff nozzle to wash vehicles	Yes
1	CII – Lodging establishment must offer opt-out of linen service		Yes
1	CII – Restaurants may only serve water upon request		Yes
1	Other – Customers must repair leaks, breaks, and malfunctions in a timely manner	Within 120 hours	Yes
1	Other	Recycled or non-potable water use for construction when possible	Yes
2	Landscape – Limit landscape irrigation to specific times	Before 10am and after 6pm	Yes
2	Landscape – Limit irrigation to specific days	2 days per week	Yes
2	Other – Customers must repair leaks, breaks, and malfunctions in a timely manner	Within 72 hours	Yes

CONTINUED -- Table 8-2a Retail: Restrictions and Prohibitions on End Uses			
Stage	Restrictions and Prohibitions on End Users ***Drop down list*** *These are the only categories that will be accepted by the WUEdata online submittal tool*	Additional Explanation or Reference (optional)	Penalty, Charge or Other Enforcement?
Add additional rows as needed			
2	Landscape – Other landscape restriction or prohibition	No irrigation less than 48 hours after measurable precipitation	Yes
2	Other – Require automatic shut-off hoses		Yes
3	Landscape – Limit irrigation to one day per week	1 day per week	Yes
3	Other – Customers must repair leaks, breaks, and malfunctions in a timely manner	Within 48 hours	Yes
3	Other – Prohibit vehicle washing, except at facilities using recycled or recirculating water		Yes
4	Landscape – Prohibit all landscape irrigation	*For exemptions, see FPUD's Article 17, in Appendix F	Yes
4	Water Features – Restrict water use for decorative water features, such as fountains, ponds, lakes and waterfalls	Prohibited	Yes
4	Other – Customers must repair leaks, breaks, and malfunctions in a timely manner	Within 24 hours	Yes
5-6	Additional public communication and restrictions as determined by emergency conditions		Yes

* *Consumption reduction methods in lower stages apply at all higher levels*.

8.4.1 SUPPLY AUGMENTATION

The District owns and operates the Red Mountain Reservoir, which has a storage capacity of 1,200AF. During normal conditions, reservoir levels are kept below capacity, as the reservoir is used as a storage facility near one of the District's imported water aqueduct connections. In the event of an emergency supply shortage, FPUD could coordinate with Camp Pendleton (partner in the Santa Margarita Conjunctive Use Project) to increase the volume of stored water being pumped to augment local and imported supplies as needed. These modifications

would likely be implemented in concert with appropriate demand reduction measures to provide sufficient water supply to meet the community's demands.

The table below shows supply augmentation

Submittal Table 8-3: Supply Augmentation and Other Actions			
Shortage Level	Supply Augmentation Methods and Other Actions by Water Supplier ***Drop down list*** *These are the only categories that will be accepted by the WUEdata online submittal tool*	How much is this going to reduce the shortage gap? *Include units used (volume type or percentage)*	Additional Explanation or Reference *(optional)*
Add additional rows as needed			
5	Stored Emergency Supply	As needed (1,200 AF Capacity)	
NOTES:			

8.4.2 Demand Reduction

Water conservation measures are always in place in FPUD's service area, which promote end users to use water wisely and treat it as the precious resource that it is. The District offers many services to ratepayers that will be covered in Section 9, Demand Management Measures.

The table below shows demand reduction actions

Submittal Table 8-2b: Demand Reduction Actions				
Shortage Level	Demand Reduction Actions ***Drop down list*** *These are the only categories that will be accepted by the WUEdata online submittal tool. Select those that apply.*	How much is this going to reduce the shortage gap? *Include units used (volume type or percentage)*	Additional Explanation or Reference *(optional)*	Penalty, Charge, or Other Enforcement? ***For Retail Suppliers Only*** *Drop Down List*
Add additional rows as needed				
1	Expand Public Information Campaign	5-10%		No
1	Offer Water Use Surveys	5-10%		No
1	Offer Leak Detection Notifications (AMI)	5-10%		No
1	Offer online access to hourly water use (AMI)	5-10%		No
1	Landscape - Restrict or prohibit runoff from landscape irrigation	5-10%		Yes
1	Provide Rebates for Landscape Irrigation Efficiency	5-10%		No
1	Provide Rebates for Turf Replacement	5-10%		No
1	Provide Rebates on Plumbing Fixtures and Devices	5-10%		No
2	Implement or Modify Drought Rate Structure or Surcharge	10-30%		Yes
2	Moratorium or Net Zero Demand Increase on New Connections	<5%		No
2	Increase Water Waste Patrols	<5%		Yes
2-5	Decrease frequency of irrigations	5-20%		Yes
2-6	Other restrictions as specified in Article 17	5-50%		Yes
1-6	Autocall directives/messages as conditions require	N/A		No
NOTES:				

LANDSCAPE IRRIGATION

Key savings are found in restrictions and prohibitions on irrigation of landscape. The District has implemented several irrigation restrictions that increase in severity as water supply dictates need for increased conservation. For example, irrigation runoff is prohibited in all levels of the District's Administrative Code. Irrigation is

also prohibited during and for 48 hours after measurable rainfall within the District's service area.

Beginning in Level 2, landscape irrigation is limited to no more than two days per week during the months of June through October. Lawn watering and landscape irrigation is limited to using sprinklers for no more than 10 minutes per station. During the months of November through May, landscape irrigation is limited to no more than once per week. During extreme Santa Ana conditions, in which the temperature is greater than 80 degrees and there are strong easterly winds greater than 20 mph, one additional day per week of watering is allowed.

In Level 3, the allowance for one additional day of watering during extreme weather conditions is no longer allowed.

In Level 4, the requirement is to stop all landscape irrigation, except for crops and landscape products of commercial growers and nurseries.

COMMERCIAL, INDUSTRIAL AND INSTITUTIONAL (CII)

Commercial, Industrial and Institutional establishments have conservation restrictions that are mandatory in Level 1 and all subsequent levels. For example, restaurants only serve water to customers if requested and lodging establishments offer guests the option of opting out of linen service. More information can be found in Table 8-2a and Appendix F.

WATER FEATURES AND SWIMMING POOLS

To eliminate water waste, beginning with Level 1 and continuing into all subsequent levels, water use is restricted in ornamental fountains in that they may only be operated if they re-circulate their water. More information can be found in Table 8-2a and Appendix F.

DEFINING WATER FEATURES

Decorative water features would be defined as ornamental water fountains which can only be operated if they re-circulate their water. The District does not place any restrictions on swimming pools. Beginning with Level 3, customers must stop filling or re-filling ornamental lakes or ponds, except to the extent needed to sustain aquatic life. More information can be found in Table 8-2a and Appendix F.

OTHER

The District requires many conservation practices, beginning with Level 1 and extending to all subsequent levels, such as the washing down of paved surfaces, including sidewalks, is prohibited except when necessary to alleviate safety or sanitation hazards. More information can be found in Table 8-2a, Table 8-2b and Appendix F.

8.4.3 EMERGENCY ACTION PLAN & SEISMIC RISK ASSESSMENT

In the event of an emergency situation, the District's response will be coordinated by utilizing the agency's Emergency Action Plan, which is laid out in Article 20 of the Administrative Code, and included with this plan as Appendix I. This plan details the procedures that will allow District staff to quickly and efficiently respond to an emergency situation including events such as natural disasters or other events that may correspond with an emergency water shortage.

Seismic Risk Assessment

Aqueduct Reliability After A Seismic Event

FPUD currently relies on imported water supplied by SDCWA from the MWD Skinner WTP for the majority of it's imported water needs. This water moves from North to South along the first and second aqueduct. For the last 20 years, SDCWA has been implementing the Emergency Storage Project (ESP). The ESP is a system of new, existing and expanded reservoirs, pipelines and pump stations that will ensure that its member agencies receive a 75% Level of Service during a catastrophic earthquake that severs San Diego County form MWD's imported water system. SDCWA's ESP manages the risk of seismic events on the San Andreas, San Jacinto and Elsinore faults. The facilities to deliver ESP to FPUD are not in place, as there is a pump station and appurtenant facilities required to be constructed by SDCWA. It should be noted that SDCWA's planning documents for these facilities indicate that SDCWA will need to use MWD's aqueduct system to make ESP deliveries to FPUD.

Once facilities are constructed, FPUD's customers would be able to receive ESP water in a catastrophic emergency. FPUD's M&I customers would receive a 75% level of service while FPUD's PSAWR customers would be cut at twice the rate of non-TSAWR customers (for example, a 50% cutback compared to 25% for non-PSAWR customers). This lower level of reliability is in exchange for the discounted water rate PSAWR customers pay and in recognition that during an emergency outdoor irrigation water will be a low priority.

MWD has an Emergency Response Plan and emergency water storage for its member agencies and their sub-agencies. MWD maintains sufficient storage in its 800,000 acre foot Diamond Valley Lake and other storage reservoirs to provide a similar 75% Level of Service in the event of earthquakes on the San Andreas and San Jacinto earthquake faults that would sever the imported water conveyance system for the State Water Project and Colorado River. The difference between SDCWA and MWD emergency storage programs is that during a seismic event on the Elsinore Fault in southern Riverside County, service from MWD's treatment plants, reservoirs and local pipelines may be disrupted. The Elsinore Fault is considered the least active of the 3 earthquake faults listed above, and MWD in its Emergency Response Plan intends to

complete repairs on those facilities within 14 days of the seismic event and restore service to at least the 75% level. When facilities for SDCWA's ESP are completed it expects to provide emergency water for a 75% Level of Service to FPUD customers following the seismic event on the Elsinore Fault and the interruption of imported water deliveries. Additional details on how supplies could be provided from MWD pipelines without the ESP facilities was summarized in a report prepared by EMWD titled, *"Analysis of Eastern Municipal Water District's Water Supply and System Reliability with the Potential Annexation of Fallbrook Public Utility District and Rainbow Municipal Water District"* (prepared by EMWD, February 12, 2020". The findings of that report are summarized below.

FPUD and RMWD rely on the imported water that is transported through the San Diego Aqueduct operated by Metropolitan. Pipelines 4 and 5, which are part of this aqueduct system, cross the Elsinore Fault Zone in the Temecula Valley, with portions of the pipelines in areas with moderate to high liquefaction potential and may consequently be subject to disruption in the event of a major earthquake. However, Metropolitan maintains an emergency response plan for maintaining or quickly restoring service to its member agencies following a major earthquake or other catastrophic event.

The La Verne Shops, which include machine, fabrication, coating, and valve shops, are set up to provide emergency services for Metropolitan and their member agencies. The fabrication shop can roll pipe on a 24-hour-per-day basis and is able to fabricate two pipe sections up to 12 feet in diameter simultaneously. Metropolitan also maintains stockpiles and materials on hand, and has its own construction equipment and crews ready to mobilize as needed. Pre-selected urgent repair contractors can also provide additional construction support in case of an emergency. This emergency response plan and the ability to roll pipe at the La Verne shops expedited the emergency repairs necessary as a result of the Northridge earthquake, where Metropolitan was able to repair a line break on an eight-foot section of 84-inch pipe and restore service within 72 hours.

Maintaining these manufacturing and construction capabilities supports Metropolitan's efforts to efficiently operate and maintain its infrastructure and to expedite the repair of pipelines 4 and/or 5 should they be damaged in a major earthquake.

Metropolitan has also adopted a policy that allows for isolation of Metropolitan's system for the purpose of conveying potable water. This would allow either EMWD or Rancho California Water District (an agency covering much of the Temecula area that receives wholesale water service from EMWD and the Western Municipal Water District) to provide potable water through existing connections to the Metropolitan system to supply water to FPUD and RMWD in the event of an emergency.

FPUD Supply Reliability During A Seismic Event

FPUD has the ability to deliver water from either the first or second aqueduct, so the loss of a single pipeline will not inhibit FPUD's ability to provide imported water during an earthquake. In addition, starting in November 2021, FPUD will have access to its own local water supply and can utilize these supplies in the event that both aqueducts could not provide service. FPUD also has Red Mountain Reservoir that has a storage capacity of 1200 AF, which can provide service to the entire FPUD system.

To address the potential for 14 days with limited or no service in the event of an earthquake on the Elsinore Fault that resulted in loss of both the first and second aqueduct, FPUD customers will receive local water supply during an emergency from its Santa Margarita River Conjunctive Use Project (SMRCUP). FPUD is constructing the SMRCUP in partnership with U.S. Marine Corps Base Camp Pendleton to share local water in the Santa Margarita River through a groundwater storage and recovery project. Local supply from the SMRCUP will provide an additional layer of water supply reliability to the FPUD service area. The SMRCUP is planned to produce approximately 9 acre feet per day on average and can meet all the daily indoor health and safety of FPUD residents for the 14 day expedited repair period. Additional drinking water will be available from the SMRCUP, FPUD's Red Mountain Reservoir and other storage tanks to meet very limited irrigation needs of M&I and agricultural customers during this period as well.

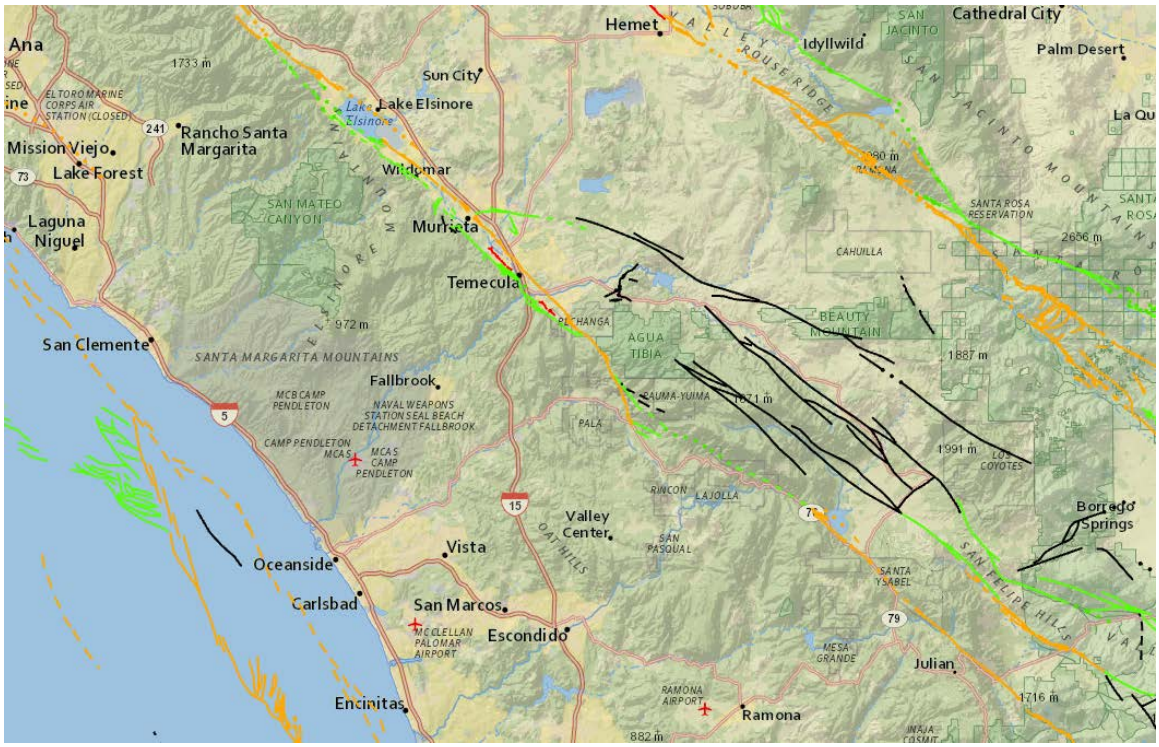
The table below reflects the Level of Service FPUD customers can expect during a catastrophic emergency as a member agency of SDCWA if all ESP facilities were in place or from existing MWD facilities.

	San Andreas & San Jacinto Faults		Elsinore Fault	
	M&I Level of Service	SAWR Level of Service	M&I Level of Service	SAWR Level of Service
SDCWA	75%	37%	75%	37%
MWD	75%	N/A	20 to 75%	N/A

**Range is based on MWD emergency planning for seismic event of Elsinore Fault is to expedite repairs to facilities in southern Riverside County to restore service within 14 days. Indoor Health and Safety water use minimum level of service from local supplies and storage for 14 day period. SDCWA plans to provide emergency deliveries with an earthquake on the Elsinore Fault

FPUD Facility Reliability During A Seismic Event

In addition the available supplies described above, the ability for FPUD facilities to maintain water supply operations during an earthquake is also an important consideration. There are no major fault lines with FPUD service territory or directly adjacent as shown in the figure below, but there are fault lines out in the ocean and outside of the District's service area closer to the community of Temecula.



Location of know Earthquake Fault lines in vicinity of Fallbrook

The most vulnerable water system facilities to Earthquakes are water storage facilities as the additional forces generated from movement of water in these facilities can result in damage to structures. In 2013, the District completed a Seismic Study of the District's reservoirs. Based on this study some reservoirs were removed from service and the operating levels were adjusted for others to meet the recommendations of the study to ensure the seismic integrity of the District's reservoirs.

The District also has developed an Emergency Action Plan (EAP) to assess risks associated with operating and maintaining the District's Red Mountain Reservoir. The purpose of the EAP is to reduce the risk of loss of human life or injury, and to minimize property damage in the event of a potential or actual emergency situation associated with Red Mountain Dam. These situations include, but are not limited to dam instability, sizable earthquakes, extreme storm events, major spillway releases, overtopping of the dam, outlet system failure, abnormal instrument readings, vandalism or sabotage, spillway gate failures, and failure of the dam. Emergency management authorities will use the information in this EAP to facilitate the implementation of their responsibilities. Local, county, and state authorities have coordinating plans in place to address local emergency operations and/or warnings and evacuations. Those plans are not reprinted in the EAP but maintained by the responsible agencies.

Finally, while the District owns and maintains nearly three hundred miles of water mains, below grade water pipelines have a low degree of potential damage given the distance from known fault lines and are not anticipated to experience significant damage during projected earthquake events.

Summary

The District has multiple sources of supply which results in a high degree of supply reliability during a wide variety of Earthquake scenarios. In addition the District has evaluated the reliability of it's infrastructure and taken necessary steps to ensure it's system remains operational during a seismic events.

8.4.4 Catastrophic Supply Interruption

In the event of short-term or prolonged water shortage, FPUD has several safeguards in place. FPUD's Red Mountain Reservoir holds over 1,000 AF of treated water, and the district can tap into it in emergencies. For example, in summer 2005 when the Skinner Filtration plant, which is owned by Metropolitan and serves treated water to the Water Authority as well as Riverside County, suffered a significant operational failure and was only operating at half capacity, FPUD was able to volunteer to take a 50% cut in potable water deliveries. FPUD customers didn't notice any reduced supply or water pressure changes, and the voluntary cutback was helpful to the region.

In the event of a power failure, FPUD also has emergency portable generators that can be used at Red Mountain Reservoir and several other facilities that would allow the district to pump potable water, at a reduced capacity, to De Luz and Toyon Heights, the two regions of the district's service area that are not served by the district's gravity-fed water distribution lines.

FPUD also entered into an exchange agreement with Rainbow Municipal Water District in 1986. Both agencies own and operate water pipeline systems connected to the Water Authority aqueduct and share a common boundary. In some areas of this common boundary, both agencies determined it may be more economical to serve property located in one district from the pipeline system of the other district. Two interconnections were constructed linking both agencies' systems for this exchange purpose, and for the purpose of emergency supply in the event of leaks or maintenance. Rancho California Water District is the only other adjacent water agency, but no opportunity for transfers or emergency connections exist.

When the Santa Margarita Conjunctive Use Project comes online in 2022, emergency operations will enable the District to work with Camp Pendleton to utilize local groundwater supplies to assist with emergency water shortage conditions.

Aqueduct Off – No water being Delivered

An earthquake or other cause might damage the aqueduct, requiring it to be shut down for an extended period of time and eliminating wholesale deliveries of potable water from the Water Authority. The Water Authority's $1.5 Billion Emergency Storage Project (ESP) was constructed to provide service to its member agencies in the event of a severe earthquake on the Elsinore and San Andreas faults that severed imported water delivery pipelines for an extended period of time. The ESP consists of new and expanded surface water reservoirs and conveyance facilities that would maintain a 75% level of service for its wholesale customers until repairs were made to reconnect the imported water aqueducts to Metropolitan's imported water system. Although the ESP has been completed since 2014 facilities to transport ESP water to FPUD during an emergency have not been constructed and FPUD is not capable of receiving ESP water during a seismic event that severs connections to Metropolitan's imported water delivery system.

In that scenario, FPUD would rely on plans and actions taken by Metropolitan to restore service and would utilize its available local supply, interconnections with other agencies, and stored water to maintain an appropriate level of service to its customers. Metropolitan's emergency storage requirements are based on the potential of a major earthquake on the San Andreas Fault that would damage all supply aqueducts isolating Southern California from its imported water sources. In 2019, Metropolitan and its member agencies completed a collaborative process to update the regional planning estimate of Metropolitan's Emergency Storage Objective. This emergency storage represents the amount of water that Metropolitan would store for the region in preparation for a catastrophic earthquake that would damage the aqueducts that transport imported water supplies to Southern California, including: the Colorado River Aqueduct, both the East and West branches of the California Aqueduct, and the Los Angeles Aqueduct. Although Metropolitan's planning assumes that there is not a simultaneous earthquake on the Elsinore Fault that would sever FPUD from Metropolitan facilities in southern Riverside County Metropolitan plans to expedite repairs and restoration of those facilities serving FPUD within 14 days. During the interim FPUD will utilize its local supplies and demand management measures until emergency supplies from Metropolitan are restored. For more detail on Metropolitan's seismic emergency preparedness refer to Metropolitan's 2020 UWMP Section 2 and Appendix 8.

The following are actions that will be taken by FPUD if an earthquake shuts down the imported water aqueducts.

1. Action to be taken: Notify management personnel as quickly as possible. Consider activation of Emergency Operations Center.

2. Work with Camp Pendleton to maximize available supplies from the Santa Margarita Conjunctive Use Project. Adjust output from the facility in coordination with Camp Pendleton to make up for lost supplies.
3. Determine the total flow into and out of the District's system and the amount of water in storage. Operate valves to maintain the water in the highest reservoirs wherever possible. Use the water from the low reservoirs first.

4. Make an attempt to determine how long the aqueduct will be out of service and how long the District's water must last. Make plans to terminate agricultural and other non-essential uses, as necessary.

5. Notify the public, *via electronic signage, Internet, , All-Call telephone message, media, CB radios, Ham Radio Operators (RACES), house-to-house notification, loudspeakers, media, radio, TV, etc.,* as to what condition and stage the District is currently in, and ration water, if necessary.

Earthquake

1. Consider activation of Emergency Operations Center. Have an alternative site in mind in case first choice of site is destroyed. Inventory existing equipment.

2. Notify customers, *via electronic signage, Internet, , All-Call telephone message, media, CB radios, Ham Radio Operators (RACES), house-to-house notification, loudspeakers, media, radio, TV, etc.*, that supply of water may be limited, especially if aqueduct is down, using telephone, CB radios, Ham Radio Operators (RACES), house-to-house notification, loudspeakers, radio, TV, etc.

3. Prepare a priority list for making repairs. Make sure there are ample copies of valve records, fire hydrant valves and regulator vaults available to make necessary shutdowns and turnoffs and in case assistance is required by other Districts or agencies, such as fire and sheriff's departments.

4. Check on auxiliary power available at treatment plants, pump and lift stations, and chlorination stations. Reroute water where necessary. Isolate broken main sections and repair as possible. Provide temporary lines if necessary.

5. Plan emergency usage and estimate water demand, quality and quantity, during and following earthquakes, taking into account the extent of damage and capability of system. Determine priorities for allocation of water.

Prior arrangements for earthquake preparedness:

1. Set up emergency assistance procedures with local suppliers and contractors for the supply equipment and/or supplies to the District. Devise a plan to obtain extra help, food, housing, etc. for District personnel if necessary.

2. Set up training programs, classroom lectures, maps, etc. The better and more complete the training, the less confusion and uncertainty when disaster strikes. Devise a plan, which clearly outlines who is to do what and when.

3. Initiate mutual-aid agreements and other arrangements with nearby agencies and districts.

4. Include in future design of tanks, pipelines, vaults, etc. earthquake-resistant materials and design criteria.

Major Water Outage

1. Notify key personnel (system operator and superintendent). Consider activation of Emergency Operations Center.

2. Divert water wherever possible to prevent property damage.

3. Isolate blowout (break) and determine extent of damage. Make provisions for fire protection. Contact the appropriate fire department.

4. Contact local contractors for help, if necessary.

5. Notify customers in affected areas, via electronic signage, Internet, , Call-Em-All telephone message, media, CB radios, Ham Radio Operators (RACES), house-to-house notification, loudspeakers, media, radio, TV, etc., about water outage and shut off meters, if necessary.

6. Divert water to other pipelines and loops, adjust valves to minimize water outage.

7. Repair blowout, flush lines and disinfect them.

8. Turn on meters and return system to normal operation.

No water in system

1. Notify management personnel as to the known areas of lack of water. Consider activation of Emergency Operations Center.

2. Providing the District has water in its system and is receiving water from the aqueduct, proceed to ascertain the reasons for no water being delivered. Repair or correct the cause of no water deliveries as soon as feasible.

3. If the aqueduct is off and the District's system is in operation, contact the Water Authority to identify the problem and determine when the system will be repaired. If necessary, notify the public, *via electronic signage, Internet, , All-Call telephone message, media, CB radios, Ham Radio Operators (RACES), house-to-house notification, loudspeakers, media, radio, TV, etc.*, of minimum water-use requirements. Make provisions for fire protection water, if possible.

Weather-related damage – Storms/High Winds/Tornado/Hurricanes

1. Notify management personnel of extent of damage insofar as it is possible to determine. Consider activation of Emergency Operations Center.

2. Check the District's system to determine the extent of damage. Be alert to the fact that high winds will probably be accompanied by flooding, which will cause further problems. Watch for downed trees and power lines that may serve the District's facilities.

3. Assist the inhabitants and other agencies wherever possible and as necessary. Protect District employees and crews from potential injuries.

8.5 Communication Protocols

Clear, efficient, and effective communication to District customers, the public, interested parties, and local, regional, and state governments is a key element of coordinating responses to adverse conditions, including a potential water shortage. The District has many tools at hand to communicate with ratepayers, including messaging on invoices, letter distribution, emails (approximately 50% of ratepayers), auto calls, website posts, Twitter and Facebook posts, press releases, and other local media outlets as available/needed.

Perhaps the most efficient means to communicate directly with the public during emergency situations is through auto calls. The District has increased this form of communication in recent years, especially to notify customers about current or predicted shortages, shortage response actions, or disruptions in water service. An auto call presents the opportunity to convey basic information about the situation at hand, while referring customers to a more centralized location for

information, such as the District website. Information to be disseminated on a website can be edited and updated in real time to present the best information available on an ongoing basis.

8.6 Compliance and Enforcement

Depending on the severity of the water shortage, and the level of shortage response that has been enacted, District staff will enforce compliance with water use restrictions. For example, during normal conditions or a "Level 1" shortage condition, if water wasting or run-off is observed, the District will issue a courtesy notice either via a phone call, in-person visit, or door hanger. Continued violation or failure to fix the problem will result in another notification. Unless specific arrangements are made with the General Manager to correct the situation, continued failure to fix the problem could result in a fine or increasing levels of fines, as determined by the General Manager and/or Board of Directors. Additional information on customer compliance, enforcement, appear, and exemption policies and procedures can be found in Article 17 of the District Administrative Code, attached hereto as Appendix D.

8.7 Legal Authorities

The District has the legal authority to implement and enforce its WSCP. California Constitution Article X, Section 2 and Water Code section 100 provide that water must be put to beneficial use, the waste or unreasonable use or unreasonable method of us of water shall be prevented, and the conservation of water is to be exercised with a view of the reasonable and beneficial use thereof in the interest of the people and the public welfare. Sections of Water Code Chapter 3 commencing with Section 350 of Division 1, provide the authority for the governing body of a water agency to declare a water shortage and to adopt and enforce water conservation restrictions. (Wat. Code §§ 350-359, 375-378.0.)

If necessary, the District shall declare a water shortage emergency in accordance with Water Code Chapter 3 of Division 1. Once having declared a water shortage, the District is provided with broad powers to implement and enforce regulations and restrictions for managing a water shortage. For example, Water Code Section 375(b) grants the District with the authority to set prices to encourage water conservation.

Under California law, including Water Code Chapters 3.3 and 3.5 of Division 1, Parts 2.55 and 2.6 of Division 6, Division 13, and Article X, Section 2 of the California Constitution, the District is authorized to implement the water shortage actions outlined in this WSCP. In water shortage cases, shortage response actions to be implemented will be at the discretion of the District and will be based on an assessment of the supply shortage, customer response, and need for demand reductions as outlined in this WSCP.

It is noted that upon proclamation by the Governor of a state of emergency under the California Emergency Services Act (Chapter 7 (commencing with Section 8550) of Division 1 of Title 2 of the Government Code) based on drought conditions, the state will defer to implementation of locally adopted water shortage contingency plans to the extent practicable.

The District will coordinate with regional and local water suppliers for which it provides water supply services for possible proclamation of a local emergency as necessary under California Government Code, California Emergency Services Act (Article 2, Section 8558).

Legal authority to enforce this WSCP is also specified in the District Administrative Code, Article 17,

> "California Water Code Sections 375 et seq. permit public entities which supply water at retail to adopt and enforce a water conservation program to reduce the quantity of water used by the people therein for the purpose of conserving the water supplies of such public entity. The Board of Directors hereby establishes a comprehensive water conservation program pursuant to California Water Code Sections 375 et seq., based upon the need to conserve water supplies and to avoid or minimize the effects of any future shortage."

8.8 Financial Consequences of WSCP

If FPUD were to encounter an extended water shortage, the financial result would be a reduced amount of water sold by FPUD to its customers. Since water bills are based on water consumption, the revenue received by the District would also be reduced, but the District collects the majority of fixed costs as a fixed monthly fee, so the revenue reduction is not directly proportional to reduced water use. Some additional administrative costs may also result from the implementation of the WSCP, including public outreach materials and staff time to prepare such materials and enforce the plan. In recent years, the District has streamlined important forms of public outreach, including auto calls and emails. These forms of communication have the advantages of quick delivery and minimal expense. To the extent possible, existing FPUD staff would be reallocated from other workloads to cover the administration tasks during a drought emergency.

Drought Rate Structures and Surcharges

FPUD uses a variety of mechanisms to mitigate reduced sales. During a declared shortage, FPUD implements tiered drought rates that encourage reductions in usage. These tiered drought rates would help reduce some potential financial effects of water shortages. In addition, lower sales do not have a proportional effect on the District's revenue because it collects 80% of the fixed costs of running the Water Operations in the District's fixed Monthly Operations Charge. The District's variable costs for acquiring and delivering the water to its customers would be

reduced proportionally to reduced usage. Some of the District's costs might be increased, such as additional staff time for monitoring water use or enforcing conservation policies. However, these efforts would more than likely be achieved by temporarily re-directing staff from other tasks. These changes in operation, therefore, would not be expected to cause a significant increase in the District's total expenditures.

USE OF FINANCIAL RESERVES

If the reduction were due to a short-term situation and the fixed costs recovery did not make up for the entire shortfall, the District could absorb any shortfall by drawing on its general fund reserves. After conditions returned to normal, the District would replenish its reserves.

The District's response would be more complex if the most significant drought reduction in consumption of 50% was expected to be permanent. The District would either need to raise rates or cut expenses to balance its budget. One way this rate increase could be accommodated would be to phase increases over a number of years. Two factors would mitigate the need for more immediate increases. First, the District's general fund reserves could be used to temporarily fill the gap between expenditures and revenues. Second, the shortfall mentioned above does not include increased costs of purchased water that would go to the Water Authority as they raise their rates, assuming the reduction was occurring across the region. The Water Authority would likely spread their rate increases over several years, allowing the District to do the same.

8.9 MONITORING AND REPORTING

Extensive monitoring and reporting procedures have been in place at FPUD for many years, and FPUD will continue these monitoring and reporting procedures to evaluate the effectiveness of this WSCP. All of FPUD's connections are metered, and FPUD analyzes water use in near real time through its automated metering program (AMI). Many water management records are maintained in a monthly format, but many of those records are assembled each month by Engineering, Operations, and Finance staff from more granular data. It is not uncommon for these raw datasets to be utilized to meet monitoring and reporting requirements as they arise (for example, ever-evolving State mandated reporting requirements). Other reports, such as [INSERT] are used by staff to refine and analyze internal operations in formats that are often presented to the District Board of Directors. In addition, District staff compiles data for external reports as needed for entities such as wholesale water agencies, state regulatory agencies, and trade organizations such as the American Water Works Association.

8.10 WATER SHORTAGE CONTINGENCY PLAN REFINEMENT PROCEDURES

While extensive work has gone into updating and preparing this Water Shortage Contingency Plan as part of the process of preparing the 2020 Urban Water

Management Plan, the WSCP shall be subject to continued reevaluation, review, and refinement. The implementation of the Santa Margarita Conjunctive Use Project will bring new operational benefits and complexities to water management that will be addressed in FPUD's 2025 Urban Water Management Plan. Procedures for systematically monitoring and evaluating the viability of the WSCP will include ongoing data collection as it pertains to water demands, water supply and the plan's ability to reduce demands to the extent defined in each of the stages of action, if implemented. While the intricacies of a particular water shortage condition may be varied and complex, the end goal of the WSCP is to have a framework in place to reduce demands according to water supply shortage conditions that may arise. Having an effective WSCP will require continuous refinement in the months and years to come.

8.11 Special Water Feature Distinction

The District's demand reduction measures define water features subject to restrictions to include decorative water features artificially supplied by the public water system such as fountains, ponds, lakes and waterfalls. Refer to Section 8.4 and Table 8-2.

8.12 Plan Adoption, Submittal and Availability

The District's shall make this WSCP available to its customers and applicable cities and the County no later than 30 days after adoption.

Section 9 – Demand Management Measures

Water Code section 10631(e)
Provide a description of the supplier's water demand management measures. This description shall include all of the following:
(1)(A) For an urban retail water supplier, as defined in Section 10608.12, a narrative description that addresses the nature and extent of each water demand management measure implemented over the past five years. The narrative shall describe the water demand management measure that the supplier plans to implement to achieve its water use targets pursuant to Section 10608.20.
(B) The narrative pursuant to this paragraph shall include descriptions of the following water demand management measures:
(i) Water waste prevention ordinances.
(ii) Metering.
(iii) Conservation pricing.
(iv) Public education and outreach.
(v) Programs to assess and manage distribution system real loss.
(vi) Water conservation program coordination and staffing support.
(vii) Other demand management measures that have a significant impact on water use as measured in gallons per capita per day, including innovative measures, if implemented.

Demand management, or water conservation, is integral to managing water resources in the arid west. If the efficient use of water is promoted and continually expanded, these savings can reduce or offset potential demand increases that might otherwise cause water demands to increase unsustainably as population and commerce expand over time. As discussed in other sections of this plan, the Fallbrook community has seen decreases in water demands for over a decade. While the main driver for these decreases is likely tied to increasing water rates and a shrinking agricultural community, drought mandated water use restrictions and cultural shifts in water use are also playing ongoing roles in the ways water is used. The Fallbrook Public Utility District provides educational and programmatic resources to help water users in their efforts to understand and reduce water use. Operational practices and common sense prohibitions of water waste are also enforced, as mandated by state law. Public information efforts include communication efforts through a revamped District website, public relations materials and community events. As a whole, this section will discuss the District's efforts towards demand management, including the nature and extent of each water demand management measure that FPUD has implemented over the past five years.

9.1 Existing Water Conservation Measures

District Educational & Programmatic Practices

One approach to promoting water conservation is to provide end users with a variety of educational and programmatic resources regarding their water use, and leaving them to utilize these resources to manage and reduce water use on their own. In an environment where water rates have seen steady increases for many years, end users are quick to recognize the financial savings associated with conserving water.

The most powerful water conservation tool that FPUD offers its ratepayers is access to hourly water use data, made possible by a recent shift to automated metering (AMI). At the time of preparing this plan, the District has exchanged over 90% of its meter population (water use in the District is 100% metered). The first AMI meters provided hourly water usage data for public users in 2017, and now the services are available to over 90% of District ratepayers, with full AMI meter exchanges set to be complete within the next two years. These new meters operate within a fixed network of radio towers and data collectors that record water use in hourly increments and continuously transfer this data to an online database. Water users have access to this data through a web portal, where they can review their water usage, and set up alerts that will notify them if water usage veers from established norms. AMI meters are also being used to send out leak alerts. The two principal categories of suspected leaks that are communicated to customers are burst leaks and continuous leaks. Notifications go out as soon as software algorithms identify a suspected leak. This accelerated notification process presents a profound paradigm shift from a more reactive method of communicating leaks through regular monthly meter reading and billing processes. AMI infrastructure allows the District to take a proactive approach to helping customers catch and repair leaks days after they begin, as opposed to weeks or even months.

Participation In Wholesale Agency Programs

As a member agency of San Diego County Water Authority (Water Authority) FPUD and therefore a sub-agency of the Metropolitan Water District of Southern California (Metropolitan), FPUD ratepayers are eligible for many water conservation rebates through Metropolitan's *SoCal Water$mart* website. The availability of specific programs changes as funding is available, but common programs include rebates for turf removal, high-efficiency appliances, plumbing fixtures and irrigation equipment. While upgrades may require matching investment from end users, the availability of these rebates can help jump start water conservation measures large and small. In 2018, the District utilized conservation funding from Metropolitan to work with volunteers and a local non-profit to remove 2,100 square feet of turf from a park in downtown Fallbrook with a significant permanent water savings.

In addition to *SoCal Water$mart*, Metropolitan allots funding for all of its member agencies to administer their own programs locally, (Member Agency Administered Program funding, or MAAP). FPUD, working through the Water Authority has utilized MAAP funding to develop two projects. In 2019, the District developed a pilot program that offered vouchers for free drought tolerant plants for ratepayers.

The plants themselves were produced in a partnership with a local plant nursery using locally produced recycled water. In 2020, FPUD utilized MAAP funding to build a water conservation demonstration garden at the entrance to the District offices. The garden serves as an example to the public of low water use plant choices and sustainable landscape management practices. The garden features donated and purchased drought tolerant plant material, including succulents and native plants, a dry stream bed, a 1,000 gallon rain barrel, signage that communicates principles of sustainability and water conservation and walkways and seating areas for rate payers to experience the garden.

In addition to the wholesale programs funded by Metropolitan through the Water Authority, FPUD and its ratepayers have participated in several regional water conservation programs administered by the Water Authority. Programs include enhanced rebates for turf removal and irrigation devices, and resources and reference materials for sustainable landscaping and water conservation practices. Agricultural customers are able to participate in sector-specific water use efficiency programs offered by the Mission Resource Conservation District (MRCD) under contract with the Water Authority. MRCD programs include landscape and home water use evaluations, and agricultural water management programs. Funding these programs is often a collaborative effort, including contributions from Metropolitan's MAAP funding, Proposition 84, and local administration and funding by the Water Authority and FPUD. Agricultural efficiency advice is also offered by the University of California Cooperative Extension which is also available to FPUD customers. FPUD would continue these programs if its application for Reorganization is approved and its wholesaler becomes Eastern Municipal Water District.

For more information on the wholesale educational and rebate programs available to FPUD please refer to SDCWA 2020 UWMP Section 3 and Metropolitan's 2002 RUWMP Section 3.4

9.1.1 Operations Practices & Water Waste Prevention

Existing Demand Management Measures for Retail Supplier

As a retail water supplier FPUD institutes several Demand Management Measures (DMMs) to reduce customer water use. FPUD has implemented DMMs over the past five years and will continue to make strides to curb the inefficient use of water, including prohibitions of end uses that waste water, and the participation in regional rebates and other programs through *SoCal Water $mart*. As an unincorporated community within San Diego County, new development within the FPUD service area is subject to review by the District as well as the building department at the County of San Diego. FPUD has participated in the review of the County's Model Water Efficient Landscape Ordinance (MWELO). The MWELO details restrictions on water use for new development, including Maximum Applied Water Allowance (MAWA) calculations for landscape water use.

Locally, FPUD's administrative code outlines prohibitions for water waste, which are addressed in greater detail in Section 8 of this plan. Complete descriptions of FPUD's prohibitions can be found in Article 17 of the FPUD administrative code Appendix F.

9.1.2 Water Loss Control

Monitoring and controlling water loss helps FPUD track and account for all water that enters the distribution system. Detailed records and understanding of losses helps the district assess how to allocate resources, minimize the volume of unbilled water and ensure that the system is operating within acceptable tolerances. FPUD retains a copy of the AWWA M36 Manual on *Water Audits and Loss Control Programs* (M36), and maintains detailed internal records. Data from these records is used to prepare an annual Water Loss Audit, which has been completed and submitted to the Department of Water Resources each year for the past five years.

FPUD also has a comprehensive pipeline replacement program that targets older pipelines with a history of leaks for replacement. The District has a pipeline replacement target of five thousand linear feet each year. These replacements will help reduce water losses from mainline breaks.

Since 2015, the District has participated in the AWWA-assisted Water Loss Audit program, completing and submitting an annual "Water Loss Audit" to the Department of Water Resources using AWWA software and protocols laid out in the M36. As part of this exercise, the District worked with an AWWA consultant to develop strategies to improve their water loss auditing procedures. In addition, the AWWA program trained District staff as a certified "Water Loss Audit Validator." This certification enables staff to perform an annual peer review of the District's annual water loss audit with neighboring water retailer, a process that confirms the validity of the report (as required by Department of Water Resources standards).

9.1.3 Metering With Commodity Rates For New Connections/Retrofits

FPUD is fully metered, and maintains detailed operating procedures to meter new service connections. Over the past five years, automated metering has been implemented for over 90% of District meters, and the remaining automated meters reading (AMR) will be phased out in the next two years. Meter reads are used to perform monthly billing, track and account for all meters, and execute programs for meter testing/repair/replacement.

9.1.4 Retail Conservation Pricing

Retail Water & Wastewater Service Rates

In 2017, the District worked with Raftelis Financial Consultants, Inc. (Raftelis) to provide and assemble a water, recycled water and wastewater "Rate Study Report". In addition to establishing a detailed methodology for setting rates, the report developed a sustainable financial plan and establish rates that are equitable and in compliance with Proposition 218 for wastewater (WW), water and recycled water (RW) services within the District's service area.
The major objectives of the study included the following:

1. Develop financial plans for the WW, Water and RW Funds to ensure financial sufficiency and funding for operation and maintenance, capital improvement, and capital replacement expenses;
2. Conduct a cost-of-service analysis for WW, water and RW services, and proportionately allocate the costs of providing service in accordance with Proposition 218;
3. Develop fair and equitable WW, water and RW rates for the different customer types and perform customer impact analysis;
4. Analyze the implications of drought on water demand and propose drought surcharges to recover the potential revenue losses;
5. Develop an administrative record that demonstrates the nexus between the District's costs and rates, in compliance with Proposition 218.

9.2 Public Information Practices

The District has many public information and school education programs in place. FPUD has a full-time public affairs representative who attends community group meetings, staffs booths at community events, implements education programs in schools, creates written materials and brochures, writes press releases and newsletters, and provides a speaker's bureau. In addition, other District employees including the general manager, assistant general manager, and key staff from engineering and customer service speak at public meetings, staff booths, and engage customers as appropriate in public hearings, etc.

In 2018, the District completed a comprehensive overhaul of the organization's website at http://www.fpud.com. Updates include more user friendly content that is easily updated and expanded by staff as needed. The site has become a hub for public information, with extensive links to District forms, billing and AMI meter platforms, detailed records of administrative documents, descriptions of practices and procedures, and water conservation programs as they are available.

9.2.1 Public Information Programs

FPUD has a comprehensive communications program to educate and inform its customers about the need to achieve water use efficiency and how they can seek help in reducing their water use. FPUD's dedicated public affairs representative, Noelle Denke, serves as a speaker's bureau, speaking at numerous community events each month. She also creates fliers and bill stuffers, and writes billing messages for monthly bills that provide information to promote water conservation measures. She produces a monthly ad in the local widely circulated and on-line Fallbrook Village News that serves as a mini-newsletter with current information on District news, rebates and conservation information. Giveaways such as shower timers, low-flow showerhead kits, faucet aerators, toilet-leak detection tablets, hose nozzles with shut-off valves, buckets, magnets, pens, coloring books and other items are advertised and given away free each month. Public Affairs also works with individual customers to help them secure conservation rebates through Metropolitan's *SoCal Water$mart* program. Public workshops and tours are held several times a year as changes and need dictate.

9.2.2 School Education Programs

FPUD's public affairs representative implements a robust school education program that includes working with elementary school students.

The District created a poster contest that involves about 18 to 20 classroom presentations per year. Fourth graders play an engaging "Water Bingo" game, then are asked to draw posters illustrating what "Be Water Smart" means to them. The contest garners about 300 entries per year. The top submissions are included in an annual calendar, and are then distributed free to District customers on a first-come, first-served basis. The artists themselves are recognized at a board meeting and their posters are displayed at the Fallbrook Library and in the District's board room hallway for one year. Their artwork also appears in newsletters, on the District website, and receives media attention.

Materials such as water conservation coloring books are distributed to schools, along with pencils with the District's logo and a conservation message.

Section 10 – Plan Adoption, Submittal, and Implementation

10.1 Inclusion of All 2020 Data

The 2020 Urban Water Management Plan includes all the water use and planning data for the entire year of 2020. The Fallbrook Public Utility District is completing this report on a fiscal year basis. Data and planning figures are projected through 2045.

10.2 Notice of Public Hearing

FPUD held a public hearing on the Plan at its Board of Directors monthly meeting on June 28th, 2021. The District notified applicable Cities and County agencies with letters at least 60 days in advance of the public hearing, held June 28th, 2021.

The table below lists the City and County entities that were notified

Table 10-1 Retail: Notification to Cities and Counties

City Name	60-day Notice	Notice of Public Hearing
Fallbrook Chamber of Commerce	Yes	Yes
Fallbrook Library	Yes	Yes
Fallbrook Planning Group	Yes	Yes
County Name	**60-day Notice**	**Notice of Public Hearing**
San Diego County	Yes	Yes
SANDAG	Yes	Yes
LAFCO	Yes	Yes
San Diego Dept of Planning and Land Use	Yes	Yes
County Supervisor Jim Desmond	Yes	Yes
Marine Corps Base Camp Pendleton	Yes	Yes
Rainbow Municipal Water District	Yes	Yes
Mission Resource Conservation District	Yes	Yes
Eastern Municipal Water District	Yes	Yes

San Diego County Water Authority	Yes	Yes

NOTICE TO THE PUBLIC

A public notice was placed in the display case at the entrance to the District offices 60 days in advance of the hearing, scheduled to occur on June 28th, 2021.

Copies of the public notices are included on the following pages.

Fallbrook Public Utility District

990 East Mission Road
Fallbrook, California
92028-2232
www.fpud.com
(760) 728-1125

May 18th, 2021

Re: UPDATE REGARDING FPUD DRAFT 2020 URBAN WATER MANAGEMENT PLAN & PUBLIC HEARING

To Whom It May Concern,

This letter is to inform you that the draft update of the Fallbrook Public Utility District's (FPUD, District) 2020 Urban Water Management Plan (UWMP) is now available for public review.

The District will hold a public hearing on **June 28th, 2021** (originally scheduled for May 24th, 2021). Final plan adoption by the FPUD Board of Directors and submittal to the California Department of Water Resources will take place by July 1st, 2021. The District is also considering updates to its Water Shortage Contingency Plan and an Addendum to its 2015 UWMP to demonstrate consistency with Delta Plan Policy to Reduce Reliance on the Delta Through Improved Regional Water Self-Reliance (CA Code Reg., tit. 23, §5003).

Drafts of the District's 2020 UWMP, Water Shortage Contingency Plan and the addendum to the 2015 UWMP are currently available for public review on the District's website at:
https://www.fpud.com/urban-water-managment-planning

The public hearing on June 28th, 2021 will discuss:

- 2020 UWMP
- Water Shortage Contingency Plan update (part of the 2020 UWMP)
- 2015 UWMP Addendum

The District invites you to submit comments and consult with the District regarding these updates. A follow up notice will be released establishing when the draft 2020 UWMP will be available for public review. Please contact Mick Cothran at 760-999-2721 or mickc@fpud.com if you have any questions, comments or input regarding the District's 2020 UWMP.

Thank you,

Aaron Cook
Engineering Manager

FALLBROOK PUBLIC UTILITY DISTRICT
BOARD OF DIRECTORS
NOTICE OF PUBLIC HEARING

NOTICE IS HEREBY GIVEN that a Public Hearing is scheduled for 4:00 p.m. on June 28th, 2021, at the Fallbrook Public Utility District, 990 East Mission Road, Fallbrook, California.

The purpose of the Public Hearing is to review and discuss the draft 2020 Urban Water Management Plan prepared by District staff prior to adoption at the June 28, 2021 regular board meeting and prior to submittal to the Department of Water Resources by July 1st 2021. The hearing will also discuss the adoption of the Water Shortage Contingency Plan, an Addendum to its 2015 UWMP to demonstrate consistency with Delta Plan Policy to Reduce Reliance on the Delta Through Improved Regional Water Self-Reliance (CA Code Reg., tit. 23, §5003) and updates to Article 17 of the District Administrative Code (Water Shortage Response Plan).

The draft 2020 Urban Water Management Plan, Water Shortage Contingency Plan, proposed Addendum to the 2015 Plan and updates to Article 17 of the District Administrative Code (Water Shortage Response Program) will be available for public review at the District offices at 990 East Mission Road, Fallbrook, California and online at: https://www.fpud.com/urban-water-management-planning

/s/ _____

Secretary, Board of Directors

Published: XXX
XXX

10.3 Adoption

The District's board of directors adopted the 2020 Urban Water Management Plan at the June 28, 2021 board meeting. Resolution 4884 is included on the following page.

10.4 Plan Submittal

Following final adoption, the District will submit the final Plan to the Department of Water Resources, the Fallbrook library, the State Library in Sacramento, and the City and County entities indicated in Table 10-1.

10.5 Public Availability

No later than 30 days after submitting the final Plan to the Department of Water Resources, the District will make it available to the public by placing a copy at the Fallbrook library, at the front desk of the District office, and it will be placed on the District website at www.fpud.com.

APPENDIX A
REPORTING ON REDUCED DELTA RELIANCE

APPENDIX A: REPORTING ON REDUCED DELTA RELIANCE

BACKGROUND

An urban water supplier that anticipates participating in or receiving water from a proposed project, such as a multiyear water transfer, conveyance facility, or new diversion that involves transferring water through, exporting water from, or using water in the Sacramento-San Joaquin Delta (Delta), should provide information in their 2015 and 2020 UWMPs that can then be used in the certification of consistency process to demonstrate consistency with Delta Plan Policy WR P1, Reduce Reliance on the Delta Through Improved Regional Water Self-Reliance (California Code Regulations, Title 23, §5003).1

Delta Plan Policy WR P1 is one of fourteen regulatory policies in the Delta Plan. The Delta Plan is a comprehensive, long-term, legally enforceable plan guiding how federal, state, and local agencies manage the Delta's water and environmental resources. The Delta Plan was adopted in 2013 by the Delta Stewardship Council (DSC). Delta Plan Policy WR P1 identifies urban water management plans (UWMP) as the tool to demonstrate consistency with the state policy that suppliers that carry out or take part in covered actions must reduce their reliance on the Delta. 2 The California Code of Regulations, Title 23, § 5003(c)(1), states that commencing in 2015, water suppliers that have done all of the following are contributing to reduced reliance on the Delta and improving regional self-reliance and are therefore consistent with Delta Plan Policy WR P1:

> (A) Completed a current Urban or Agricultural Water Management Plan (Plan) which has been reviewed by the California Department of Water Resources for compliance with the applicable requirements of Water Code Division 6, Parts 2.55, 2.6, and 2.8;
>
> (B) Identified, evaluated, and commenced implementation, consistent with the implementation schedule set forth in the Plan, of all programs and projects included in the Plan that are locally cost effective and technically feasible which reduce reliance on the Delta; and
>
> (C) Included in the Plan, commencing in 2015, the expected outcome for measurable reduction in Delta reliance and improvement in regional self-reliance. The expected outcome for measurable reduction in Delta reliance and improvement in regional self-reliance shall be reported in the Plan as the reduction in the amount of water used, or in the percentage of water used, from the Delta watershed. For the purposes of reporting, water efficiency is considered a new source of water supply, consistent with Water Code section 1011(a).

FPUD COMPLIANCE WITH WR P1

PROCESS TO DEMONSTRATE REDUCED RELIANCE ON DELTA

Over the last 10 years FPUD has significantly reduced its reliance on supplies originating the form the Delta through unprecedented reductions in water use mainly attributable to the diminishment of the commercial agricultural sector resulting from the impacts of two extended and severe droughts coupled with major increases in the cost of wholesale imported water. By 2015 FPUD reduced its projected normal year potable demand gpcd consumption rate by 19% from the 2010 baseline and by over 50% by 2020. Although water use efficiency savings were the predominant means of reduced reliance over the last ten years FPUD will bringing a new source of reliable local supply that will serve over 40% of FPUD's potable demand. The Santa Margarita River Conjunctive Use Project (SMR CUP) is under construction and will come online in 2022 and further contribute to regional self-reliance and reduce reliance on the Delta for FPUD.

As FPUD received almost all of its potable supplies from the Water Authority in both 2015 and 2020 it has conducted its analysis of reduced reliance on the Delta and consistency with WR P1 based on the Water Authority's 2020 UWMP which in turn uses Metropolitan's 2020 UWMP to demonstrate a percent reduction in State Water Project supplies. Consistent with Appendix C in the California Department of Water Resource's Draft UWMP Guidebook 20203 (DWR Guidebook), the Water Authority's analysis followed Steps 2 through 4 in the DWR Guidebook to document consistency with WR P1 and produce data and information covering the Water Authority's 2015 and 2020 UWMPs. FPUD analysis will also cover both its 2015 and 2020 UWMPs. For more detailed information on the Water Authority's consistency analysis see SDCWA 2020 UWMP Appendix J.

Table 1 – Source of Water Supply Data

Analysis Year	Data Source	
2010 (Baseline)	2005 UWMP	Page 8, Table 4, Table 26
2015	2010 UWMP	Page 21, Table 15
2020	2015 UWMP	Page 37 Table 6-9
2025, 2030, 2035, 2040, 2045	2020 UWMP	Section 6, Table 6-9

QUANTIFICATION OF TOTAL WATER SUPPLIES

FPUD Contributions To Regional Self Reliance

To demonstrate reduced reliance on the Delta, FPUD compared its projected Delta water use against a baseline. The baseline, shown in Table 2, was calculated by

taking the projected 2010 normal year water demand and adding projected water efficiency savings for 2010 (non-potable demand was the only water use efficiency that FPUD quantified in its 2005 UWMP) . Consistent with DWR's Guidebook, normal year water demands were used as a surrogate for normal year water supplies to help alleviate issues associated with instances where available water supplies exceed normal year water demands. In addition, consistent with the DWR Guidebook, actual water use was not used for the current year due to the influence of weather and other variables on water use. Rather, UWMP normal year potable water demand projections were used to represent current and future water use. As explained in the Guidebook Appendix C, water use efficiency savings must be added back to the normal year demands to represent demands without water use efficiency savings accounted for; otherwise the effect of water use efficiency savings on regional self-reliance would be overestimated. Table C-1 shows the results of this adjustment for FPUD. Supporting narratives and data are provided in Sections 4 and 6 of this UWMP and noted in Table 1 above. Tables C-2 and C-3 provide the basis for calculating FPUD's supplies that contribute to regional self-reliance.

Table C-1: Data Table for Determining WUE Supply

Service Area WUE Demands (AF)	**Baseline (2010)**	**2015**	**2020**	**2025**	**2030**	**2035**	**2040**	**2045 (Opt.)**
Demands without WUE	23,249	20,266	10,934	9,206	9,574	10,199	10,474	10,589
Non-Potable Demands	480	611	1100	830	830	830	830	830
Demands without WUE	23,729	20,877	12,034	10,036	10,404	11,029	11,304	11,419
Service Area Population	Baseline (2010)	2015	2020	2025	2030	2035	2040	2045 (Opt.)
	34,894	37,476	35,237	34,143	35,323	37,110	38,190	38,943
WUE Since Baseline (AF)	Baseline (2010)	2015	2020	2025	2030	2035	2040	2045 (Opt.)
Per Capita Water Use	640	520	298	259	261	264	264	261
Change in Per Capita Water Use from Baseline		120	342	381	379	376	376	379
Estimated WUE Since Baseline		4,676	12,532	13,527	13,921	14,510	14,932	15,348

Table C-2: Calculation of Total Water Supplies

Total Service Area Water Demands (AF)	Baseline (2010)	2015	2020	2025	2030	2035	2040	2045 (Opt.)
Water Demands with WUE	23729	20,877	12,034	10,036	10,404	11,029	11,304	11,419
WUE	0	4,676	12,532	13,527	13,921	14,510	14,932	15,348
Demands without WUE	23,279	25,553	24,566	23,563	24,325	25,539	26,236	26,767

Table C-3: Supplier Contribution to Regional Self-Reliance

Water Supplies Contributing to Regional Self-Reliance	Baseline (2010)	2015	2020	2025	2030	2035	2040	2045 (Opt.)
WUE		4,676	12,532	13,527	13,921	14,510	14,932	15,348
Water Recycling	480	594	517	830	830	830	830	830
Stormwater Capture and Use	0	0	0	0	0	0	0	0
Advanced Water Technologies	0	0	0	4200	4200	4200	4200	4200
Conjunctive Use	0	0	0	0	0	0	0	0
Local and Regional Water Supply and Storage	100	400	400	400	400	400	400	400
Other Programs and Projects	0	0	0	0	0	0	0	0
Water Supplies Contributing to Regional Self-Reliance	580	5,670	13,449	18,957	19,351	19,940	20,362	20,778
Service Area Water Demands w/o WUE	Baseline (2010)	2015	2020	2025	2030	2035	2040	2045 (Opt.)
Water Demands without WUE	23,279	25,553	24,566	23,563	24,325	25,539	26,236	26,767
Change in Regional Self Reliance	Baseline (2010)	2015	2020	2025	2030	2035	2040	2045 (Opt.)
Water Supplies Contributing to Regional Self-Reliance	580	5,670	13,449	18,957	19,351	19,940	20,362	20,778
Change in Water Supplies Contributing to Regional Self-Reliance		5,090	12,869	18,377	18,771	19,360	19,782	20,198
% Change in Regional Self-Reliance (As a Percent of Water Demand w/out WUE)	Baseline (2010)	2015	2020	2025	2030	2035	2040	2045 (Opt.)
Water Supplies Contributing to Regional Self-Reliance	0.0%	46%	112%	200%	198%	192%	192%	194%
Change in Water Supplies Contributing to Regional Self-Reliance		46%	112%	200%	198%	192%	192%	194%

DEMONSTRATION OF REDUCED RELIANCE ON WATER SUPPLIES FROM THE DELTA WATERSHED

In its 2020 UWMP the Water Authority uses Metropolitan's analysis of reduced reliance on Delta supplies to meet the requirements of Delta Plan, WR P1 subsection (c)(1)(C) which requires that water suppliers report the expected outcomes for measurable reductions in supplies from the Delta watershed either as an amount or as a percentage. Based on the methodology described in Guidebook Appendix C,

and consistent with the approach of this analysis in not including projects under development, this accounting does not include any supplies from potential future covered actions. Table C-4 shows the expected outcomes for reliance on supplies from the Delta watershed for Metropolitan's service area which include the Water Authority.

Table C-4: Calculation of Reliance on Water Supplies from Delta Watershed

Water Supplies from the Delta Watershed	Baseline (2010)	2015	2020	2025	2030	2035	2040	2045 (Opt.)
CVP/SWP Contract Supplies	1,472,000	1,029,000	984,000	1,108,670	1,108,670	1,108,670	993,980	993,980
Delta/Delta Tributary Diversions								
Other Water Supplies from the Delta Watershed	20,000	44,000	91,000	8,000	8,000	8,000	8,000	8,000
Total Water Supplies from the Delta Watershed	1,492,000	1,073,000	1,075,000	1,116,670	1,116,670	1,116,670	1,001,980	1,001,980
Service Area Water Demands w/o WUE	Baseline (2010)	2015	2020	2025	2030	2035	2040	2045 (Opt.)
Service Area Water Demands w/o WUE	5,493,000	5,499,000	5,219,000	4,598,000	4,737,000	4,877,000	4,981,000	5,100,000
Change in Supplies from the Delta Watershed	Baseline (2010)	2015	2020	2025	2030	2035	2040	2045 (Opt.)
Water Supplies from the Delta Watershed	1,492,000	1,073,000	1,075,000	1,116,670	1,116,670	1,116,670	1,001,980	1,001,980
Change in Water Supplies from the Delta Watershed		(419,000)	(417,000)	(375,330)	(375,330)	(375,330)	(490,020)	(490,020)
% Change in Supplies from the Delta Watershed (As a Percent of Water Demand w/out WUE)	Baseline (2010)	2015	2020	2025	2030	2035	2040	2045 (Opt.)
% of Water Supplies from the Delta Watershed	27,2%	19.5%	20.6%	24.3%	23.6%	22.9%	20.1%	19.6%
Change in % of Water Supplies from the Delta Watershed		-7.6%	-6.6%	-2.9%	-3.6%	-4.3%	-7.0%	-7.5%

The results shown in Table C-4 demonstrate that Metropolitan's service area is measurably reducing its Delta reliance. In the near-term (2025), the expected outcome for normal water year reliance on supplies from the Delta watershed decreased 3 percent from the 2010 baseline of 2025 normal water year retail demands; In the long-term (2045), normal water year reliance on supplies from the Delta

watershed decreased by just over 5. percent of 2045 normal water year retail demands. (MWD 2020 RUWMP Appendix 11 Table 11-2)

APPENDIX B
PUBLIC NOTICES

Fallbrook Public Utility District

990 East Mission Road
Fallbrook, California
92028-2232
www.fpud.com
(760) 728-1125

March 16th, 2021

Re: 60-DAY PUBLIC HEARING NOTICE – FPUD 2020 URBAN WATER MANAGEMENT PLAN

To Whom It May Concern,

This letter is to inform you that the Fallbrook Public Utility District (FPUD, District) is updating its Urban Water Management Plan (UWMP), in compliance with the Urban Water Management Planning Act and the Water Conservation Act of 2009, commonly referred to as SBX7-7. State law requires urban water suppliers to prepare and adopt an UWMP every five years. FPUD staff is currently producing a 2020 update to its UWMP, which will document FPUD's plans to ensure adequate water supplies to meet existing and future demands under varied conditions, including drought and water shortages.

Per California Water Code Division 6, Part 2.6 §10621, the intent of this letter is to notify a wide array of stakeholders in the area of FPUD's efforts to update their UWMP, including a (60) day notice of a public hearing that is scheduled for **May 24th, 2021**. Final plan adoption by the FPUD Board of Directors and submittal to the California Department of Water Resources will take place by July 1st, 2021. The District is also considering an Addendum to its 2015 UWMP to demonstrate consistency with Delta Plan Policy to Reduce Reliance on the Delta Through Improved Regional Water Self-Reliance (CA Code Reg., tit. 23, §5003). Drafts of the District's 2020 UWMP and the addendum to the 2015 UWMP will be available for public review on the District's website in spring 2021. The public hearing will discuss:

- 2020 UWMP
- Water Shortage Contingency Plan update (part of the 2020 UWMP)
- 2015 UWMP Addendum

The District invites you to submit comments and consult with the District regarding these updates. A follow up notice will be released establishing when the draft 2020 UWMP will be available for public review. Please contact Mick Cothran at 760-999-2721 or mickc@fpud.com if you have any questions, comments or input regarding the District's 2020 UWMP.

Thank you,

Aaron Cook
Engineering Manager

APPENDIX C
WATER LOSS AUDIT

AWWA Free Water Audit Software:
Reporting Worksheet

WAS v5.0

? Click to access definition
+ Click to add a comment

Water Audit Report for: Fallbrook Public Utility District (3710008)
Reporting Year: 2019-20 | 7/2019 - 6/2020

Please enter data in the white cells below. Where available, metered values should be used; if metered values are unavailable please estimate a value. Indicate your confidence in the accuracy of the input data by grading each component (n/a or 1-10) using the drop-down list to the left of the input cell. Hover the mouse over the cell to obtain a description of the grades

All volumes to be entered as: ACRE-FEET PER YEAR

To select the correct data grading for each input, determine the highest grade where the utility meets or exceeds all criteria for that grade and all grades below it.

<---------- Enter grading in column 'E' and 'J' ---------->

Master Meter and Supply Error Adjustments

WATER SUPPLIED

				Pcnt:	Value:	
Volume from own sources:	3	93.100	acre-ft/yr			acre-ft/yr
Water imported:	7	7,945.000	acre-ft/yr		9.100	acre-ft/yr
Water exported:	3	51.800	acre-ft/yr			acre-ft/yr
				Enter negative % or value for under-registration		
WATER SUPPLIED:		**7,977.200**	acre-ft/yr	Enter positive % or value for over-registration		

AUTHORIZED CONSUMPTION

Click here: ? for help using option buttons below

				Pcnt:	Value:	
Billed metered:	7	7,335.900	acre-ft/yr			
Billed unmetered:	n/a	0.000	acre-ft/yr			
Unbilled metered:	9	5.100	acre-ft/yr			
Unbilled unmetered:	5	19.943	acre-ft/yr		19.943	acre-ft/yr
AUTHORIZED CONSUMPTION:		**7,360.943**	acre-ft/yr			

Use buttons to select percentage of water supplied OR value

WATER LOSSES (Water Supplied - Authorized Consumption)

616.257 acre-ft/yr

Apparent Losses

				Pcnt:	Value:	
Unauthorized consumption:		19.943	acre-ft/yr	0.25%		acre-ft/yr

Default option selected for unauthorized consumption - a grading of 5 is applied but not displayed

Customer metering inaccuracies:	5	74.152	acre-ft/yr	1.00%		acre-ft/yr
Systematic data handling errors:	5	18.340	acre-ft/yr	0.25%		acre-ft/yr

Default option selected for Systematic data handling errors - a grading of 5 is applied but not displayed

Apparent Losses: **112.434** acre-ft/yr

Real Losses (Current Annual Real Losses or CARL)

Real Losses = Water Losses - Apparent Losses: **503.823** acre-ft/yr

WATER LOSSES: **616.257** acre-ft/yr

NON-REVENUE WATER

NON-REVENUE WATER: **641.300** acre-ft/yr

= Water Losses + Unbilled Metered + Unbilled Unmetered

SYSTEM DATA

Length of mains:	8	271.9	miles
Number of active AND inactive service connections:	8	9,262	
Service connection density:		34	conn./mile main
Are customer meters typically located at the curbstop or property line?		Yes	
Average length of customer service line:			(length of service line, beyond the property boundary, that is the responsibility of the utility)

Average length of customer service line has been set to zero and a data grading score of 10 has been applied

Average operating pressure:	7	116.6	psi

COST DATA

Total annual cost of operating water system:	10	$22,218,889	$/Year	
Customer retail unit cost (applied to Apparent Losses):	9	$6.15	$/1000 gallons (US)	
Variable production cost (applied to Real Losses):	5	$1,195.00	$/acre-ft	☐ Use Customer Retail Unit Cost to value real losses

WATER AUDIT DATA VALIDITY SCORE:

***** YOUR SCORE IS: 70 out of 100 *****

A weighted scale for the components of consumption and water loss is included in the calculation of the Water Audit Data Validity Score

PRIORITY AREAS FOR ATTENTION:

Based on the information provided, audit accuracy can be improved by addressing the following components:

1: Water imported
2: Customer metering inaccuracies
3: Variable production cost (applied to Real Losses)

APPENDIX D
20 BY 2020 COMPLIANCE

SB X7-7 2020 Compliance Form

The SB X7-7 2020 Compliance Form is for the calculation of 2020 compliance only. All retail suppliers must complete the SB X7-7 Compliance Form. Baseline and target calculations are done in the SB X 7-7 Verification Form.

The SB X7-7 Verification Form is for the calculation of baselines and targets and is a separate workbook from the SB X7-7 2020 Compliance Form. Most Suppliers will have completed the SB X7-7 Verification Form with their 2015 UWMP and do not need to complete this form again in 2020. See Chapter 5 Section 5.3 of the UWMP Guidebook for more information regarding which Suppliers must, or may, complete the SB X7-7 Verification Form for their 2020 UWMP. 2020 compliance calculations are done in the SB X7-7 2020 Compliance Form.

WUE Data Portal Entry Exceptions

The data from the tables below will not be entered into WUE Data Portal tables. These tables will be submitted as separate uploads, in Excel, to WUE Data Portal.

Process Water Deduction

SB X7-7 tables 4-C, 4-C.1, 4-C.2, 4-C.3, 4-C.4 and 4-D

A supplier that will use the process water deduction will complete the appropriate tables in Excel, submit them as a separate upload to the WUE Data Portal, and include them in its UWMP.

SB X7-7 Table 0: Units of Measure Used in 2020 UWMP* *(select one from the drop down list)*
Acre Feet
**The unit of measure must be consistent throughout the UWMP, as reported in Submittal Table 2-3.*
NOTES:

SB X7-7 Table 2: Method for 2020 Population Estimate	
Method Used to Determine 2020 Population (may check more than one)	
☐	**1. Department of Finance** (DOF) or **American Community Survey** (ACS)
☐	**2. Persons-per-Connection Method**
☐	**3. DWR Population Tool**
☑	**4. Other** DWR recommends pre-review
NOTES: San Diego Association of Governments (SANDAG)	

SB X7-7 Table 3: 2020 Service Area Population	
2020 Compliance Year Population	
2020	35,237
NOTES:	

SB X7-7 Table 4: 2020 Gross Water Use							
Compliance Year 2020	**2020 Volume Into Distribution System** *This column will remain blank until SB X7-7 Table 4-A is completed.*	**2020 Deductions**					**2020 Gross Water Use**
		Exported Water *	**Change in Dist. System Storage*** (+/-)	**Indirect Recycled Water** *This column will remain blank until SB X7-7 Table 4-B is completed.*	**Water Delivered for Agricultural Use***	**Process Water** *This column will remain blank until SB X7-7 Table 4-D is completed.*	
	8,403			-		-	**8,403**

*** Units of measure (AF, MG , or CCF)** must remain consistent throughout the UWMP, as reported in SB X7-7 Table 0 and Submittal Table 2-3.

NOTES:

SB X7-7 Table 5: 2020 Gallons Per Capita Per Day (GPCD)		
2020 Gross Water *Fm SB X7-7 Table 4*	**2020 Population** *Fm SB X7-7 Table 3*	**2020 GPCD**
8,403	35,237	**213**
NOTES:		

SB X7-7 Table 9: 2020 Compliance							
Actual 2020 GPCD[1]	Optional Adjustments to 2020 GPCD Enter "0" if Adjustment Not Used			TOTAL Adjustments[1]	Adjusted 2020 GPCD [1] *(Adjusted if applicable)*	2020 Confirmed Target GPCD [1, 2]	**Did Supplier Achieve Targeted Reduction for 2020?**
	Extraordinary Events[1]	Weather Normalization[1]	Economic Adjustment[1]				
213	-	-	-	-	213	374	**YES**

[1] *All values are reported in GPCD*

[2] ***2020 Confirmed Target GPCD*** *is taken from the Supplier's SB X7-7 Verification Form Table SB X7-7, 7-F.*

NOTES:

APPENDIX E
RECYCLED WATER ORDINANCE

Article 19. Recycled Water Program

Sec. 19.1 Declaration of Policy.

a. The Fallbrook Public Utility District (FPUD) operates and maintains a recycled water distribution system within its service area enabling it to provide disinfected tertiary treated recycled water for a variety of beneficial uses. The District shall require the use of recycled water in-lieu of potable water for irrigation or other non-potable uses where recycled water is suitable and available.

b. The beneficial use of recycled water is regulated by the California State Water Resources Control Board (SWRCB). California Water Code Section 13551 establishes a State policy to encourage the use of recycled water.

c. FPUD shall determine whether a potential service will be furnished with recycled water and/or potable water. The feasibility of recycled water service will be considered on a case-by-case basis and in accordance with applicable law.

Sec. 19.2 Statutory Requirements.

a. All onsite and public recycled water facilities must be consistent with and adhere to the requirements described in the following documents:

   1. FPUD Backflow and Cross-Connection Control Ordinance, Article 10.22

   2. FPUD Recycled Water Program, Article 19

   3. California Code of Regulations, Title 22, Division 4

   4. California Code of Regulations, Title 17, Division 1, Chapter 5, Subchapter 1, Group 4, Articles 1 and 2

   5. San Diego County Department of Environmental Health Recycled Water Program Requirements

   6. For Facilities Hauling Recycled Water: Engineering Report for the Installation of Hauled Recycled Water Fill Stations and Use of Hauled Recycled Water in the San Diego Region, San Diego County Water Authority, July 8, 2015

   7. All applicable Federal, State or local statutes, regulations and ordinances

Sec. 19.3 Approved Use.

a. These rules and regulations pertain to recycled water service to lands and/or improvements lying within the legal boundaries of the District unless otherwise stated. It is the intent of the District to provide recycled water service in accordance with these rules and regulations to all areas that recycled service is feasible. The District will work with existing potable water users to facilitate the conversion of existing facilities for recycled water use or the installation of facilities for a new recycled water use. All new developments will be evaluated for the feasibility of recycled water usage.

b. The uses of recycled water include only those uses approved by the District, local and State regulatory authorities and for which Title 22, California Code of Regulations provides treatment requirements. All potential applications of recycled water shall be reviewed and approved by the District prior to installation of facilities. Prior to approval and at its discretion, the District may set forth specific requirements as conditions for providing service and/or require specific prior approval from the appropriate regulatory agencies.

c. The facilities shall be constructed in accordance with the procedures and requirements of the District. No recycled water mains or connections to the recycled water mains shall be installed unless shown on approved drawings and approved by the District.

Sec. 19.4 Definitions.

b. Approved Backflow Prevention Assemblies.

A device/assembly approved by the State of California and the District which is installed to protect the potable water supply from contamination through backflow of a non-potable substance.

c. Artificial Lake.

A man-made lake, pond, lagoon, or other body of water that is used wholly or partly for landscape, scenic or non-contact recreational purposes.

d. Board.

The duly elected and constituted Board of Directors of the Fallbrook Public Utility District.

e. Cross-Connection.

Any unprotected actual or potential connection between any part of a water system used or intended to supply potable water and any source or system containing recycled or other water or substance that is not potable and not acceptable for human consumption.

f. Cross-Connection Control Specialist.

An individual who has a current American Water Works Association and/or American Backflow Prevention Association Specialist Certificate on file with the District

g. Designated User.

A recipient of recycled water service from the District.

h. District.

The Fallbrook Public Utility District, a duly constituted Public Agency of the State of California and located in San Diego County, California.

i. Greenbelt Areas.

Greenbelt areas include, but are not limited to, golf courses, playing fields, cemeteries, parks, and landscaping.

j. Hauled Recycled Water.

Recycled water use that complies with the San Diego County Water Authority publication "Engineering Report for the Installation of Hauled Recycled Water Fill Stations and Use of Hauled Recycled Water in the San Diego Region."

k. Industrial Process Water.

Water used by any industrial facility with process water requirements which includes, but is not limited to, rinsing, washing, cooling and construction.

l. Manager.

The duly appointed General Manager of the Fallbrook Public Utility District or their designee.

m. Non-Potable Water.

Water, which does not conform to federal, state and local standards for human consumption.

n. Non-Potable Water Distribution System.

A piping system intended for the delivery of non-potable water only, and which is maintained separate from any potable water distribution system.

o. Non-Potable Water Transmission Mains.

A piping system intended for the delivery of non-potable water only and which is maintained separate from any potable water distribution system and which is owned by the District.

p. Non-Potable Water Use Area.

The property of portion of property, which has been approved by the District for non-potable or recycled water service.

q. Notice of Determination.

The notice provided to a designated user by the District.

r. Off-Site Facilities.

Those facilities located off the user's site and under the control of the District, including the service meter and any backflow prevention assembly (ies) installed with the meter.

s. On-Site Facilities.

Facilities under the control of the customer beginning at the water meter and backflow prevention assembly if installed.

t. Potable Water.

Water furnished to the customer that is approved for human consumption and conforms to all federal, state and local requirements.

u. Recycled Water.

Water which as a result of filtration and disinfection of domestic wastewater is suitable for a direct beneficial use or a controlled use that otherwise would not occur.

v. Recycled Water Facilities.

Facilities used in the storage, pumping and conveyance of recycled water.

w. Recycled Water Service Connection.

The point of connection of the customer's recycled water line with the recycled water service main of the District which shall normally be the downstream end of the recycled water meter tailpiece.

x. Site Supervisor.

An individual who has taken a training course, normally four hours in length, that has been approved by State and local authorities and the District for the on-site use of recycled water.

Sec. 19.5 Administration.

a. Manager.

The District General Manager shall administer, implement, and enforce the provisions of this Article of the Administrative Code. Any duties imposed upon the General Manager may be delegated by him to persons in the employ of the District.

b. Recycled Water Master Plan.

The General Manager shall prepare and update a Recycled Water Master Plan. The Plan shall include, but not be limited to, actual and future planning for recycled water use.

c. Coordination among Agencies.

The District shall examine the potential for initiating a coordinated effort between the District and other public agencies. The purpose of this effort shall be to share in the production and utilization of recycled water.

d. Fees and Charges.

All fees and charges for the use of recycled water shall be established separately by the Board in Article 21 of the Administrative Code.

e. Payment for On-Site Facilities.

The Designated User shall pay for all on-site facilities, including backflow prevention assemblies that may be necessary to protect the health and safety of on-site residents or employees. The Designated User of recycled water shall comply with all requirements of applicable federal, state, and local statutes, ordinances and regulations. The cost of any investigations by District staff and/or regulatory authorities resulting from the misuse of recycled water shall be the responsibility of the Designated User.

Sec. 19.6 Suspension or Termination of User Service.

19.6.1 Recycled water service may be suspended or terminated at any time by the Manager. Reasons for suspension or termination shall include, but not be limited to, the following:

1. Failure by a Designated User to adhere to the provisions of this Article.

2. The lack of necessary procedures or facilities for protection of health, safety and welfare.

3. The discovery of a cross-connection between the on-site potable and non-potable water distribution system.

4. Changes in the use and/or footprint of the non-potable distribution system without District approval.

5. Recycled water service may also be subject to discontinuation of service for failure to pay any rates, fees and charges due to the DISTRICT in accordance with the DISTRICT's discontinuation procedures then in effect for non-residential service.

19.6.2 Procedure.

The suspension or termination procedure shall be as follows: Where the District determines that service should be suspended or terminated, a written notice shall be mailed by regular mail to the customer at least ten (10) calendar days prior to the date of proposed suspension or termination of services. This notice shall set forth the reasons for the suspension or termination of services. In the event the District determines an emergency condition prevails at the time the written notice of proposed suspension or termination is mailed to the customer, the District may immediately suspend recycled water service pending a determination of any appeal. If an emergency condition does not exist, the user shall have ten (10) calendar days to come into compliance with the written notice. Thereafter the District may commence suspension or termination procedures.

19.6.3 Appeals of the Suspension or Termination Notice.

The customer may appeal the determination of the District as follows:

Not later than ten (10) calendar days following the date upon which the District Manager forwards to the customer a Notice of Suspension or Termination the customer may appeal to the Board of Directors by submitting a written appeal to the Board Secretary.

The Board of Directors shall conduct a hearing concerning the proposed determination within thirty (30) calendar days of receipt of this written appeal. Within a reasonable time thereafter the Board of Directors shall render a decision which shall be final.

19.6.4 Prohibited Connections.

No person shall make any connection to the recycled water facilities of the District unless the District has executed a written Agreement with said person as Designated User of recycled water service in accordance with the provisions of the Article of the Administrative Code.

19.7 Implementation.

19.7.1 Designation of Users.

The intent of the District is to work cooperatively with users to facilitate the conversion of existing potable users or the installation of new recycled services. The District would execute a User Agreement with the potential Designated User to implement the provisions of this Article of the Administrative Code.

If the potential Designated User declines to voluntarily execute a User Agreement with the District, but the District determines that the potential Designated User would be a beneficial user of suitable and available recycled water supplies, the District may issue a Notice of Determination that a specific water user shall be a Designated User of recycled water. A general description of the obligations of the potential Designated User shall accompany this notification. A proposed schedule for implementation of the use of recycled water shall be included in this Notice.

19.7.2 Appeal.

The potential Designated User may file a Notice of Appeal with the District within thirty (30) calendar days after the Notice of Determination has been sent. Upon receipt of the Notice of Appeal the District Manager shall schedule a hearing of the appeal before the Board of Directors and provide notice in accordance with the rules of the District.

Following this hearing, the determination of the Board shall be final and binding.

19.7.3 Design and Construction of On-Site Facilities.

The Designated User shall provide and install, at no cost to the District, all on-site recycled water facilities. Recycled water facilities shall conform to State and local

statutes, ordinances, regulations and District requirements. The Designated User shall make, at no cost to the District, any modifications to the potable water system on the premises which are required by the District in order to permit the safe use of recycled water service. Such facilities shall include, but not be limited to, installation of approved backflow prevention assemblies. Specifications and record drawings of on-site recycled facilities shall be prepared and be available for inspection or use on the premises of the Designated User and at the District office.

19.7.4 Recycled Water Supervisor.

The Designated User shall designate a Site Supervisor and shall keep the District informed of the Site Supervisor's identity. The Site Supervisor shall have attended a Site Supervisor training class, be knowledgeable in the construction and operation of the recycled water system and any on-site uses of recycled water. The Site Supervisor should be familiar with federal, State and local guidelines, criteria, standards, rules and regulations governing the use of recycled water. The Site Supervisor shall be responsible for overseeing the recycled water service and maintaining the on-site facilities in conformance with the District's guidelines and regulations. The Site Supervisor shall be responsible for the prevention of any cross-connections between the recycled water system and the on-site potable system. Any actual or suspected cross-connections shall immediately be reported to the District.

19.7.5 Conversion of Existing Facilities.

Where a Designated User proposes a conversion of any existing potable water system to a recycled water system, a comprehensive investigation of the system including conversion plans shall be performed at the expense of the Designated User. The District shall review and approve the conversion plans before the potable system is converted to recycled water use.

19.7.6 User Agreement Form.

Upon the final determination by the District that a property, or a portion of the property, shall be served with recycled water the Designated User shall execute a User Agreement with the District to implement the provisions of this Article of the Administrative Code. The District shall provide a general form of the agreement. The District may refuse or terminate recycled water service if a signed User Agreement is not on file with the District.

19.8 Water Meter Requirement.

All recycled water used on any premises approved for recycled water service must be metered. The District shall be responsible for the enforcement of this requirement.

When a parcel is developed, if the parcel has the potential for future recycled use or is along a planned recycled line extension, the development must provide for facilities to utilize recycled water when available or pipeline extensions through the parcel at the time of project construction.

19.9 Public Safety Requirements.

19.9.1 General Requirements.

All sites shall comply with the County of San Diego's Department of Environmental Health Recycled Water Plan Checklist and Inspection Manual and all District rules and regulations for recycled water service.

19.9.2 Backflow Protection at the Service Meter.

All recycled water sites are required to prevent backflow into the public water supply. Backflow protection will be determined by the degree of hazard present on the Designated User's property. Sites that use recycled water for irrigation purposes as part of a dual plumbed system are required to install a double check valve assembly device on the potable water service connection. Recycled water sites that also use potable water must install a reduced pressure principle backflow prevention assembly at the potable water connection.

19.10 Truck Load Delivery of Recycled Water.

The San Diego County Water Authority publication "Engineering Report for the Installation of Hauled Recycled Water Fill Stations and Use of Hauled Recycled Water in the San Diego Region" shall be complied with by any user that has been certified by the District for hauling of recycled water.

19.11 Miscellaneous.

If any section, subsection, sentence, clause or phrase of the Article of the Administrative Code is for any reason held to be unconstitutional or invalid, such decision shall not affect the validity of the remaining portions of this Article of the Administrative Code. The Board of Directors hereby declares that it would have passed each section, subsection, sentence, clause or phrase thereof irrespective of the fact that any one or more sections, subsections, or sentences, clauses or phrases may be unconstitutional or invalid.

19.12 Non-Liability.

The District will not be responsible or liable for any suspension in service of, or failure to supply, recycled water, or for any damage or injury to person or property relating to the provision of recycled water.

ARTICLE 28 (Renumbered as Article 19 by Resolution 5006)
Program Adopted 2/94 Sec. 28.9 – Rev. 6/95 Sec. 28.1-28.4, 28.6, 28.9, 28.10 – Rev. 7/97 All Sections – Rev. 1/16 All Sections – Rev. 1/21

APPENDIX F
WATER SHORTAGE CONTINGENCY PLAN

Article 17. Water Shortage Contingency Plan.

Sec. 17.1 Declaration of Policy.

California Water Code Sections 375 et seq. permit public entities which supply water at retail to adopt and enforce a water conservation program to reduce the quantity of water used by the people therein for the purpose of conserving the water supplies of such public entity. The Board of Directors hereby establishes a comprehensive water conservation program pursuant to California Water Code Sections 375 et seq., based upon the need to conserve water supplies and to avoid or minimize the effects of any future shortage. Additionally, the California Water Code mandates that water agencies adopt a water shortage contingency plan (WSCP) as part of their Urban Water Management Plan (UWMP). The District WSCP is part of this Article 17 of the District's Administratove Code, and can be amended, as needed, outside of updating the District's UWMP. The District's WSCP is a detailed plan for how an urban water supplier, like the District, indtends to act in the case of any actual water shortage condition.

Sec. 17.1.1 PSAWR Reduction Program.

The San Diego County Water Authority Permanent Special Agricultural Water Program (PSAWR) provides discounted wholesale supply and treatment pricing for qualified agricultural users within its service area on the basis that participants receive non-firm, interruptible supply up to the maximum allowed per the SDCWA Program. During periods of water shortages imposed by the Metropolitan Water District (MWD), the SDCWA, or due to emergency situations, those customers who are participating in the PSAWR shall abide by the conditions set forth by SDCWA. Administration of the PSAWR Program is incorporated by reference in Article 10 of this Administrative Code.

Sec. 17.1.2 PSAWR Reduction Compliance.

When SDCWA imposes a mandatory use reduction, PSAWR customers must be prepared to reduce consumption by complying with a water allocation, or water use target. Water consumed during each billing period will be compared to the assigned target. Any use below the target will be accumulated and carried forward. The customer's cumulative use will be compared with the cumulative target, and any total usage above the target will be billed at the "above average" rates. This cumulative comparison will continue for the duration of the fiscal year. Below target usage "credits" will be carried forward until the cumulative target is exceeded, at which time, all cumulative "over target" use will be billed at the "above target" rates. The cumulative comparison process will start over in the next fiscal year.

Upon written request, customers shall reserve the right to "group" accounts and adjust, or "smooth", alloctations to facilitate compliance.

Sec. 17.2 Findings.

The Board of Directors finds and determines that a water shortage could exist as a result of a general regional water supply shortage due to increased demand or limited supplies.

The Board of Directors also finds and determines that the conditions prevailing within and in the vicinity of the District's service area require that the water resources available be put

to maximum beneficial use to the extent to which they are capable, and that the waste or unreasonable use, or unreasonable method of use, of water be prevented and that the conservation of such water encouraged with a view to the maximum reasonable and beneficial use thereof in the interests of the people of the Fallbrook Public Utility District and for the public welfare.

Sec. 17.3 Application.

The provisions of this Administrative Code shall apply to all water served to persons, customers, and property by the Fallbrook Public Utility District.

Sec. 17.4 Determination and Declaration by General Manager of Water Supply Conditions.

Based on local supply conditions and information provided by the District's wholesale water agency of water availability supplies, the Fallbrook Public Utility District General Manager (or in the General Manager's absence his designee) is hereby authorized and directed to implement the provisions of this Administrative Code. Additionally, the General Manager (or in the General Manager's absence, his designee) is hereby authorized to make minor and limited exceptions to prevent undue hardship or unreasonable restrictions, provided that water shall not be wasted or used unreasonably and the purpose of this Administrative Code can be accomplished. Any such exceptions shall be reported to the Board of Directors at the next meeting.

The General Manager (or in the General Manager's absence his designee) shall from time to time based upon all available data determine and declare whether the District's water supply is in the following condition and post a notice thereof in the District's lobby, website and publish said notice in the local newspaper.

WATER SHORTAGE RESPONSE LEVEL 1 - NORMAL CONDITIONS. The District's service area is in a semi-arid climate. Good water management practices dictate that water be used wisely and not wasted at any time to promote a consumer demand reduction of up to ten percent. Customers are required to follow the guidelines presented in Sec. 17.8.1. Under Normal Conditions, the District will provide public education and outreach efforts to emphasize public awareness of the need to always use water wisely and practice water conservation measures.

WATER SHORTAGE RESPONSE LEVEL 2 – WATER SHORTAGE WATCH CONDITION. This level applies when local supply conditions, and/or the District's wholesale water agency notifies the District that due to water shortage or other supply reductions, there is a reasonable probability there will be supply shortages and that a consumer demand reduction of up to twenty percent is required in order to ensure that sufficient supplies will be available to meet anticipated demands. The General Manager shall declare the existence of a Water Shortage Response Level 2 condition and take action to implement the Level 2 conservation practices identified in Sec. 17.8.2. During a Level 2 Water Shortage Watch Condition, the District may suspend consideration of annexations to its service area, and any service outside District boundaries.

The Board of Directors shall from time to time based upon all available data determine and declare whether the District's water supply is in one of the following conditions and post a notice thereof in the District's lobby, website and publish said notice in the local newspaper:

WATER SHORTAGE RESPONSE LEVEL 3 – WATER SHORTAGE ALERT CONDITION. This level applies when local supply conditions, and/or the District's wholesale water agency notifies the District that due to cutbacks caused by water shortages or other reduction in supplies, a consumer demand reduction of up to thirty percent is required in order to have sufficient supplies available to meet anticipated demands. The Board of Directors shall declare the existence of a Water Shortage Response Level 3 condition and implement the mandatory Level 3 conservation measures identified in Sec. 17.8.3. During a Level 3 Water Shortage Alert Condition the District may suspend consideration of annexations to its service, and any service outside District boundaries. Additionally, after following the procedures set out in Sec. 17.10, if the District Board of Directors adopts findings supporting a Water Shortage Emergency, pursuant to California Water Code section 350 et seq, the Board shall declare a Water Shortage Emergency, and the conditions set out in Sec. 17.10 shall apply.

WATER SHORTAGE RESPONSE LEVEL 4 – WATER SHORTAGE WARNING CONDITION. This level applies when local supply conditions, and/or the the District's wholesale water agency notifies the District that due to increasing cutbacks caused by water shortages or other reduction of supplies, a consumer demand reduction of up to forty percent is required in order to have sufficient supplies available to meet anticipated demands. The Board of Directors shall declare the existence of a Water Shortage Response Level 4 condition and implement the Level 4 conservation measures identified in Sec. 17.8.4. During a Level 4 Water Shortage Warning Condition the District may suspend consideration of annexations to its service area, and any service outside District boundaries. Additionally, after following the procedures set out in Sec. 17.10, if the District Board of Directors adopts findings supporting a Water Shortage Emergency, pursuant to California Water Code section 350 et seq, the Board shall declare a Water Shortage Emergency, and the conditions set out in Sec. 17.10 shall apply.

WATER SHORTAGE RESPONSE LEVEL 5 – CRITICAL CONDITION. This level applies when local supply conditions, and/or the the District's wholesale water agency notifies the District that due to increasing cutbacks caused by water shortages or other reduction of supplies, a consumer demand reduction of up to fifty percent is required in order to have sufficient supplies available to meet anticipated demands. The Board of Directors shall declare the existence of a Water Shortage Response Level 5 condition and implement the Level 5 conservation measures identified in Sec. 17.8.5. During a During a Level 5 Critical Condition, the District may suspend consideration of annexations to its service area, and any service outside District boundaries. Additionally, after following the procedures set out in Sec. 17.10, if the District Board of Directors adopts findings supporting a Water Shortage Emergency, pursuant to California Water Code section 350 et seq, the Board shall declare a Water Shortage Emergency, and the conditions set out in Sec. 17.10 shall apply.

WATER SHORTAGE RESPONSE LEVEL 6 – EMERGENCY CONDITION. This level applies when local supply conditions, and/or the District's wholesale water agency declares a water shortage emergency pursuant to California Water Code Section 350. A Level 6 Emergency Condition requires a demand reduction of greater than fifty percent in order for the District to have maximum supplies available to meet anticipated demands. During a Level 6 Emergency Condition the District may suspend consideration of annexations to its service area, and any service outside District boundaries. Additionally, after following the procedures set out in Sec. 17.10, if the District Board of Directors adopts findings supporting a Water Shortage Emergency, pursuant to California Water Code section 350

et seq, the Board shall declare a Water Shortage Emergency, and the conditions set out in Sec. 17.10 shall apply.

The General Manager is authorized to require submission of water use curtailment plans from those users having the largest effect on overall District consumption in order to protect the minimum supplies necessary to provide for public health, sanitation, and fire protection. Failure to provide curtailment plans in a timely manner or plans that do not meet the required cutbacks shall authorize the District to install flow restrictors at the meter or termination of service. However, the end of a Water Sortage Emergency pursuant to Water Code section 350 et seq., under any Response Level, shall be by the adoption of a resolution of the Board of Directors at any regular or special meeting held in accordance with State law.

Sec. 17.5 Implementation of Emergency Water Management Program.

California Water Code Sections 375 et seq. permit public entities which supply water at retail to adopt and enforce a water conservation program to reduce the quantity of water used by the people therein for the purpose of conserving the water supplies of such public entity.

At such time when the Board of Directors of the District finds and determines that by reason of an anticipated general water supply shortage, inadequate local or wholesale imported water supplies and/or distribution facilities of the Metropolitan Water District of Southern California exists, the Board may adopt and enforce a water conservation program to reduce the quantity of water used by the people therein for the purpose of conserving the water supplies of such public entity. Upon adoption of a water conservation program, the district shall provide notice to customers within (14) days of the Board's declaration of a water shortage. In addition, the Board may also find and determine that the conditions prevailing within and in the vicinity of the District's service area require that the water resources available be put to maximum beneficial use to the extent to which they are capable, and that the waste or unreasonable use, or unreasonable method of use, of water be prevented and that the conservation of such water encouraged with a view to the maximum reasonable and beneficial use thereof in the interests of the people within the Fallbrook Public Utility District service area and for the public welfare.

The General Manager shall determine the extent of the emergency conservation required in order for the District to prudently plan for and supply water to its customers. Thereafter, the General Manager may order that the requirements in this Article 17 be implemented or terminated in accordance with the applicable provisions of this Article of the Administrative Code. The declaration of a water emergency shall be made by public announcement and notice shall be published a minimum of three (3) consecutive times in a newspaper of general circulation and shall become effective immediately upon announcement.

The declaration shall be reported to the Board of Directors at its next regular meeting. The Board of Directors shall thereupon ratify the declaration or rescind the declaration, and may adopt such additional rules and regulations to limit water use during the emergency as it deems appropriate.

Sec. 17.6 Duration of Declaration.

As soon as a particular condition is declared to exist, the water conservation measures provided for herein for that condition shall apply to all District water service until a different condition is declared.

Sec. 17.7 Mandatory and Discretionary Use of Recycled Water.

Nothing in this Administrative Code shall prohibit or limit the use of recycled water for any purposes listed herein. No customer of the District shall make, cause, use or permit the use of potable water supplied by the District for construction grading on major subdivisions, paved surface cleaning, or greenbelt uses, including, but not limited to, cemeteries, playing fields, parks, and highway landscaped areas, when, following notice and a hearing, the District finds that recycled water is available under the following conditions:

1. The recycled water is of adequate quality and is available for use.

2. The recycled water may be furnished to such areas at a reasonable cost, equal to or less than the cost of supplying potable domestic water.

3. The State Department of Health Services has determined that such use would not be detrimental to public health.

4. The use of recycled water will not adversely affect downstream water rights, and will not degrade water quality.

Sec. 17.8 Water Conservation Stages.

During a Water Shortage Response Levels 1-6 condition, the water conservation measures and water use restrictions established by this Article 17 are mandatory and violations are subject to criminal, civil, and administrative penalties and remedies as specified in this Article.

Sec. 17.8.1 WATER SHORTAGE RESPONSE LEVEL 1 - NORMAL CONDITIONS.

During Normal Conditions, customers are required to use water wisely and to practice water conservation measures so that water is not wasted, and promote a consumer demand reduction of up to ten percent.

No water furnished by the District will be wasted. All water withdrawn from District facilities shall be put to reasonable beneficial use. District water users shall comply with the following water use prohibitions and conservation measures at all times:

1. Do not wash down paved surfaces, including but not limited to sidewalks, driveways, parking lots, tennis courts, or patios, except when it is necessary to alleviate safety or sanitation hazards.

2. Eliminate water waste resulting from inefficient landscape irrigation, such as runoff, low head drainage, or overspray, etc. Similarly, stop water flows onto non-targeted areas, such as adjacent property, non-irrigated areas, hardscapes, roadways, or structures.

3. Irrigate residential and commercial landscape before 10 a.m. and after 6 p.m. only.

4. Use a hand-held hose equipped with a positive shut-off nozzle or bucket to water landscaped areas, including trees and shrubs located on residential and commercial properties that are not irrigated by a landscape irrigation system.

5. Irrigate nursery and commercial grower's products before 10 a.m. and after 6 p.m. only. Watering is permitted at any time with a hand-held hose equipped with a positive shut-off nozzle, a bucket, or when a drip/micro-irrigation system/ equipment is used. Irrigation of nursery propagation beds is permitted at any time. Watering of livestock is permitted at any time.

6. Use re-circulated water to operate ornamental fountains.

7. Wash vehicles using a bucket and a hand-held hose with positive shut-off nozzle, mobile high pressure/low volume wash system, or at a commercial site that re-circulates (reclaims) water on-site. Avoid washing during hot conditions when additional water is required due to evaporation**.**

8. The irrigation with potable water of ornamental turf on public street medians is prohibited.

9. The application of potable water to outdoor landscapes during or within 48 hours of measurable rainfall is prohibited

10. The irrigation with potable water of landscapes outside of newly constructed homes and buildings in a manner inconsistent with regulations or other requirements established by the County of San Diego's Landscape Ordinance.

11. Serve and refill water in restaurants and other food service establishments only upon request.

12. Offer guests in hotels, motels, and other commercial lodging establishments the option of not laundering towels and linens daily.

13. Repair all water leaks within five (5) days of notification by the Fallbrook Public Utility District unless other arrangements are made with the General Manager.

14. Use recycled or non-potable water for construction purposes when available.

Sec. 17.8.2 WATER SHORTAGE RESPONSE LEVEL 2 – WATER SHORTAGE WATCH CONDITION.

During a Level 2 Water Shortage Watch condition, the District will increase its public education and outreach efforts to emphasize increased public awareness of the need to implement water conservation practices to ensure that no water is wasted, and promote a consumer demand reduction of up to twenty percent.

All persons using District water shall comply with Level 1 Normal

Conditions water conservation practices during a Level 2 Water Shortage Watch, as identified in Sec. 17.8.1.

Upon declaration of a Level 2 Water Shortage Watch condition, the District will suspend consideration of annexations to its service area except under the following circumstances:

1. The applicant provides substantial evidence of an enforceable commitment that water demands for the project will be offset prior to the provision of a new water meter(s) to the satisfaction of Fallbrook Public Utility District.

Sec. 17.8.3 WATER SHORTAGE RESPONSE LEVEL 3 – WATER SHORTAGE ALERT CONDITION.

During a Level 3 Water Shortage Alert condition, the District will increase its public education and outreach efforts to emphasize increased public awareness of the need to implement water conservation practices to ensure that no water is wasted, and promote a consumer demand reduction of up to thirty percent.

All persons using District water shall comply with Level 1 Normal Conditions and Level 2 Water Shortage Watch water conservation practices during a Level 3 Water Shortage Alert, as identified in Sec. 17.8.1 and 17.8.2, and shall also comply with the following additional conservation measures:

1. During the months of June through October, limit residential and commercial landscape irrigation to no more than two (2) days per week on a schedule established by the General Manager and posted by the Fallbrook Public Utility District. During the months of November through May, landscape irrigation is limited to no more than once per week on a schedule established by the General Manager and posted by the Fallbrook Public Utility District. During extreme Santa Ana conditions (temperature > 80 and easterly winds > 20 mph), one additional day per week of watering is allowed. This section shall not apply to commercial growers or nurseries. This provision does not apply to landscape irrigation systems using water efficient devices, including but not limited to: weather based controllers, drip/micro-irrigation systems and stream rotor sprinklers.

2. Limit lawn watering and landscape irrigation using sprinklers to no more than ten (10) minutes per watering station per assigned day. This provision does not apply to landscape irrigation systems using water efficient devices, including but not limited to: weather based controllers, drip/micro-irrigation systems and stream rotor sprinklers.

3. Water landscaped areas, including trees and shrubs located on residential and commercial properties, and not irrigated by a landscape irrigation system governed by section 5 (b) (1), on the same schedule set forth in section 5 (b) (1) by using a bucket, hand-held hose with a positive shut-off nozzle, or low-volume non-spray irrigation.

4. Repair all leaks within seventy-two (72) hours of notification by the Fallbrook Public Utility District unless other arrangements are made with the General Manager.

For Levels 3 and above, the District may establish a water allocation for property served by the Fallbrook Public Utility District using a method that does not penalize persons for the implementation of conservation methods or the installation of water saving devices and allows for the banking and subsequent use of unused allocations.

If the District establishes a water allocation it shall provide notice of the allocation within (14) days of its establishment by including it in the regular billing statement for the fee or charge or by any other mailing to the address to which the District customarily mails the billing statement for fees or charges for ongoing water service. The following customer classes are subject to allocations: Commercial Agriculture (CA), Commercial Agriculture Domestic (CB), Commercial (C), Government (G), and Irrigation (I). Following the effective date of the water allocation as established by the District, any person that uses water in excess of the allocation shall be subject to a penalty in the amount of 1.5 times the Base Rate, for each unit of usage greater than the allocation. The penalty for excess water usage shall be cumulative to any other remedy or penalty that may be imposed for violation of this Article.

This provision shall not be construed to preclude the resetting or turn-on of meters to provide continuation of water service or to restore service that has been interrupted for a period of one year or less.

Sec. 17.8.4 WATER SHORTAGE RESPONSE LEVEL 4 – WATER SHORTAGE WARNING CONDITION.

During a Level 4 Water Shortage Warning condition, the District will increase its public education and outreach efforts to emphasize increased public awareness of the need to implement water conservation practices to ensure that no water is wasted, and promote a consumer demand reduction of up to forty percent.

All persons using District water shall comply with Level 1 Normal, Level 2 Water Shortage Watch and Level 3 Water Shortage Alert water conservation practices as identified in Sections 17.8.1, 17.8.2 and 17.8.3 during a Level 4 Water Shortage Warning condition and shall also comply with the following additional mandatory conservation measures:

1. During the months of June through October, limit residential and commercial landscape irrigation to no more than two (2) assigned days per week on a schedule established by the General Manager and posted by the Fallbrook Public Utility District. This section shall not apply to commercial growers or nurseries.

2. Water landscaped areas, including trees and shrubs located on residential and commercial properties, and not irrigated by a landscape irrigation system governed by section 6 (b) (1), on the same schedule set forth in section 6 (b) (1) by using a bucket, hand-held hose with a positive shut-off nozzle, or low-volume non-spray irrigation.

3. Stop filling or re-filling ornamental lakes or ponds, except to the extend needed to sustain aquatic life, provided that such animals are of significant value and have

been actively managed within the water feature prior to declaration of a drought response level under this Article.

4. Stop washing vehicles except at commercial carwashes that recirculate water, or by high pressure/low volume wash systems.

5. Repair all leaks within forty-eight (48) hours of notification by the Fallbrook Public Utility District unless other arrangements are made with the General Manager.

Sec. 17.8.5 WATER SHORTAGE RESPONSE LEVEL 5 – WATER SHORTAGE CRITICAL CONDITION.

During a Level 5 Water Shortage Critical condition, the District will increase its public education and outreach efforts to emphasize increased public awareness of the need to implement water conservation practices to ensure that no water is wasted, and promote a consumer demand reduction of up to fifty percent.

All persons using District water shall comply with Level 1 Normal, Level 2 Water Shortage Watch, Level 3 Water Shortage Alert and Level 4 Water Shortage Warning water conservation practices as identified in Sections 17.8.1, 17.8.2, 17.8.3 and 17.8.4 during a Level 5 Water Shortage Critical Condition, and shall also comply with the following additional mandatory conservation measures:

1. Stop all landscape irrigation, except crops and landscape products of commercial growers and nurseries. This restriction shall not apply to the following categories of use unless the Fallbrook Public Utility District has determined that recycled water is available and may be lawfully applied to the use.

   A. Maintenance of trees and shrubs that are watered on the same schedule set forth in section 6 (b) (1) by using a bucket, hand-held hose with a positive shut-off nozzle, or low-volume non-spray irrigation;

   B. Maintenance of existing landscaping necessary for fire protection as specified by the Fire Marshal of the local fire protection Fallbrook Public Utility District having jurisdiction over the property to be irrigated;

   C. Maintenance of existing landscaping for erosion control;

   D. Maintenance of plant materials identified to be rare or essential to the well being of rare animals;

   E. Maintenance of landscaping within active public parks and playing fields, day care centers, school grounds, cemeteries, and golf course greens, provided that such irrigation does not exceed two (2) days per week according to the schedule established under section 6 (b) (1);

   F. Watering of livestock; and

G. Public works projects and actively irrigated environmental mitigation projects.

2. Repair all water leaks within twenty-four (24) hours of notification by the Fallbrook Public Utility District unless other arrangements are made with the General Manager.

The District may establish a water allocation for property served by the District. If the District establishes a water allocation it shall provide notice of the allocation by including it in the regular billing statement for the fee or charge or by any other mailing to the address to which the District customarily mails the billing statement for fees or charges for ongoing water service. Following the effective date of the water allocation as established by the District, any person that uses water in excess of the allocation shall be subject to a penalty in the amount 1.5 times the Base Rate, for each unit of usage greater than the allocation. The penalty for excess water usage shall be cumulative to any other remedy or penalty that may be imposed for violation of this Article.

3. (PSAWR) customers participating in the San Diego County Water Authority (SDCWA) PSAWR Program must abide by any PSAWR restrictions that may be in place.

Water consumed during each billing period will be compared to the assigned target. Any use below the target will be accumulated and carried forward. The customer's cumulative use will be compared with the cumulative target, and any total usage above the target will be billed at the "above target" rates. This cumulative comparison will continue for the duration of the fiscal year. Below target usage "credits" will be carried forward until the cumulative target is exceeded, at which time, all cumulative "over target" use will be billed at the "above target" rates and the cumulative comparison process will start over in the next fiscal year.

Sec. 17.8.6 WATER SHORTAGE RESPONSE LEVEL 6 – EMERGENCY CONDITION.

During a Level 6 Emergency Condition, the District will increase its public education and outreach efforts to emphasize increased public awareness of the need to implement water conservation practices to ensure that no water is wasted, and promote a consumer demand reduction of greater than fifty percent.

All person using District water shall comply with Level 1 Normal, Level 2 Water Shortage Water, Level 3 Water Shortage Alert, Level 4 Water Shortage Warning, and Level 5 Water Shortage Critical water conservation practices as identified in Sections 17.8.1, 17.8.2, 17.8.3, 17.8.4 and 17.8.5, and shall also comply with the following additional mandatory conservation measures:

The General Manager is authorized to require submission of water use curtailment plans from those users having the largest effect on overall District consumption in order to protect the minimum supplies necessary to provide for public health, sanitation, and fire protection. Failure to provide curtailment plans in a timely

manner or plans that do not meet the required cutbacks shall authorize the District to install flow restrictors at the meter or termination of service.

Sec. 17.8.7 Drought Rates

Drought Rates would be implemented during declaration of Levels 2, 3, 4, 5 and 6 described above. Drought Rates would only be in effect during declared drought Levels 2-6. The escalation factors that would be used to calculate "Drought Rates" relative to a given year's normal rates are set forth in the tables below:

Monthly Drought Rates by Drought Levels *($/kgal)*				
	Level 1	**Level 2**	**Level 3**	**Level 4, 5, and 6**
Drought rates (actual class and tier rates beyond "Level 1" will be calculated and adjusted based upon a given year's approved rates and the drought level in place)	No Drought Rates (Normal Rates)	104.98% of Level 1 (Normal Rates)	109.61% of Level 1 (Normal Rates)	123.03% of Level 1 (Normal Raes)

*TSAWR customers must implement cuts to water use during drought restrictions or face penalties. Program compliance is discussed above in Section 17.1.2.

Sec. 17.9 Implementation of Conservation Levels.

The General Manager shall monitor the projected supply and demand for water by its customers on a daily basis. The General Manager shall determine the extent of the conservation required through the implementation and/or termination of particular conservation stages in order for the District to prudently plan for and supply water to its customers. Thereafter, the General Manager may order or recommend to the Board of Directors that the appropriate level of water conservation be implemented or terminated in accordance with the applicable provision of this Administrative Code. The declaration of any level beyond Water Shortage Response Level 1shall be made by public announce-ment and notice shall be published a minimum of three (3) consecutive times in

a newspaper of general circulation. The level designated shall become effective immediately upon announcement. The declaration of any level beyond Water Shortage Response Level 1 shall be by action of the Board of Directors.

Section 17.10 Water Shortage Emergencies.

Restrictions in this subsection shall apply if the Board of Directors declares a Water Shortage Emergency in the manner and on the grounds provided in Water Code section 350 et seq. "Water Shortage Emergency" means a condition existing within the District in which the ordinary water demands and requirements of the persons within the District cannot be satisfied without depleting the District's water supply to the extent that there would be insufficient water for human consumption, sanitation and fire protection. A water shortage emergency includes a threatened water shortage, in which the District determines that its supply cannot meet an increased future demand.

The District may determine no new potable water service will be provided, no new temporary meters will be provided and those in use will be terminated and collected, no permanent meters will be installed, no additional capacity will be sold, and no statements of immediate ability to serve or provide potable water service (such as, will serve letters, certificates, or letters of availability) will be issued, as authorized by Water Code sections 350 and 356. Exceptions to these restrictions may be allowed under the following circumstances:

1. A valid, unexpired building permit has been issued for the project, all grading has been completed, and the construction of structures has begun; or

2. The project is necessary to protect the public's health, safety, and welfare; or

3. The applicant provides substantial evidence of an enforceable commitment that water demands for the project will be offset to the satisfaction of the District.

This provision shall not be construed to preclude the resetting or turn-on of meters to provide continuation of water service or to restore service that has been interrupted for a period of one year or less.

Sec. 17.11 Variances.

If, due to unique circumstances, a specific requirement of this Article of the Administrative Code would result in undue hardship to a person using District water or to property upon which the District water is used, that is disproportionate to the impacts to the District water users generally or to similar property or classes of water uses, then the person may apply for a variance to the requirements as provided in this section.

The variance may be granted or conditionally granted, only upon a written finding of the existence of facts demonstrating an undue hardship to a person using District water or to property upon with the District water is used, that is disproportionate to the impacts to the District water users generally or to similar property or classes of water use due to specific and unique circumstances of the user or the user's property.

A completed appeal shall describe the specific reason(s) the allocation is causing undue hardship, including the following:

1. Commercial buildings that were empty or partially occupied during base period but are now occupied to a greater degree and require more water.

2. A grove with new trees planted a year before the base period began that, in the third year of growth, would need additional water.

3. Agricultural land used for annual crops that had abnormally low irrigation application during the base year.

4. An unexpected emergency line break, or equipment malfunction that has since been fixed.

5. Loss or reduction of an alternative water source, such as a well or pond.

6. Other, with a detailed description.

Sec. 17.11.1 Application.

Application for a variance shall be a form prescribed by Fallbrook Public Utility District.

Sec. 17.11.2 Supporting Documentation.

The application shall be accompanied by photographs, maps, drawings, and other information, including a written statement of the applicant.

Sec. 17.11.3 Required Findings for Variance.

An application for a variance shall be denied unless the approving authority finds, based on the information provided in the application, supporting documents, or such additional information as may be requested, and on water use information for the property as shown by the records of the Fallbrook Public Utility District, all of the following:

A. That the variance does not constitute a grant of special privilege inconsistent with the limitations upon other Fallbrook Public Utility District customers.

B. That because of special circumstances applicable to the property or its use, the strict application of this Article would have a disproportionate impact on the property or use that exceeds the impacts to customers generally.

C. That the authorizing of such variance will not be of substantial detriment to adjacent properties, and will not materially affect the ability of the Fallbrook Public Utility District to effectuate the purpose of this chapter and will not be detrimental to the public interest.

D. That the condition or situation of the subject property or the intended use of the property for which the variance is sought is not common, recurrent or general in nature.

Sec. 17.11.4. Approval Authority.

The General Manager or his/her designee shall exercise approval authority and act upon any completed application no later than 20 days after submittal and may approve, conditionally approve, or deny the variance. The applicant requesting the variance shall be promptly notified in writing of any action taken. Unless specified otherwise at the time a variance is approved, the variance applies to the subject property during the term of the mandatory drought response.

Sec. 17.11.5 Appeals to Fallbrook Public Utility District Board of Directors.

An applicant may appeal a decision or condition of the General Manager on a variance application to the Fallbrook Public Utility District Board of Directors within 10 days of the written decision upon written request for a hearing. The request shall state the grounds for the appeal. Any determination not appealed within ten (10) days is final. At a public meeting, the Fallbrook Public Utility District Board of Directors shall act as the approval authority and review the appeal de novo by following the regular variance procedure. The decision of the Fallbrook Public Utility District Board of Directors is final.

ARTICLE 26 (Renumbered as Article 17 by Resolution 5006)
Sec. 26.6 – Rev. 7/97 Sec. 26.4, Sec. 26.5, Sec. 26.8.2 – Rev. 10/07 Article 26 revised in its entirety – 6/08 Sec. 26.8.3, 26.9, 26.10 , 26.10.1, 26.10.2, 26.10.3, 26.10.4, 26.10.5, and addition of Domestic Class and Multi-Unit Class rates– Rev. 6/09 Sec. 26.8.3 –Rev. 10/09 Sec. 26.8.3 – Rev. 5/11 Sec. 26.8.3 – Rev. 8/14 Sec. 26.11 – Rev 6/15 Secs. 26.1.1, 26.1.2, 26.4, 26.5, 26.8.3, 26.8.5, 26.10, 26.10.1, 26.10.4, 26.10.5, 26.11 – Rev. 3/16 Secs. 26.8.1, 26.8.3 – Rev. 6/16 Secs. 26.8.2, 26.8.3, 26.8.6 – Rev. 12/17 Secs. 26.1.1, 26.1.2, 26.8.5 – Rev. 12/20

APPENDIX G
RATES & CHARGES

Proposed Effective 01/01/2021

WATER RATES

FALLBROOK PUBLIC UTILITY DISTRICT / CUSTOMER BILLING INFORMATION

Meters are read in three cycles each month for billing periods ending on the 10th, 20th, and 30th. An account is placed in a cycle according to the location of the meter within the District. All customers are billed on a monthly basis. Payment is due and payable upon receipt and delinquent after the due date shown on the bill. In the event delinquent accounts are not paid a disconnection processing fee will be charged and services may be interrupted without further notice.

MONTHLY CHARGES

							MWD RTS	CWA IAC
METER SIZE	**WATER FIXED SERV. CHARGE**	**WATER CIC CHARGE**	**STANDBY FIXED SERV. CHARGE**	**STANDBY CIC CHARGE**	**RECYCLED FIXED SERV. CHARGE**	**BACKFLOW DEVICE**	**All Classes Except R & SS**	**All Classes Except R & SS**
3/4"	$53.52	$9.77	$24.02	$4.42	$24.02	$5.90	$1.95	$3.64
1"	$81.70	$16.27	$32.52	$7.37	$32.52	$6.95	$3.26	$6.08
1 1/2"	$152.12	$32.55	$53.77	$14.75	$53.77	$12.86	$6.49	$12.12
2"	$236.65	$52.07	$79.27	$23.60	$79.27	$15.42	$10.39	$19.40
3"	$462.01	$104.14	$147.29	$47.19	$147.29	$30.81	$20.81	$38.86
4"	$715.55	$162.72	$223.81	$73.73	$223.81	$48.15	$32.51	$60.72
6"	$1419.85	$325.43	$436.34	$147.46	$436.34	$96.28	$64.99	$121.39

C = Commercial; **M** = Multi Unit; **D** = Domestic; **LD** = Large Lot Domestic; **G** = Government; **SS** = Standby; **R**=Recycled; **CA** = Commercial Ag; **CB** = Commercial Ag Domestic; **AS** = Ag (SAWR); **AT** = Ag Domestic (SAWR); **I** = Irrigation Only; **CIC** = Capital Improvement Charge

Temporary Construction Meter: $1,266 deposit plus $123 installation; $123 relocation; operations charge $354.98 per month

Initiate Standby Service: $50
Delinquent Processing Fee: $30
Disconnection Processing Fee: $50

Fire Flow Test: $532
Broken / Tampered Lock Fee: $100
Meter Testing Fee *(¾" & 1" meters)*: $123
Meter Testing Fee *(1 ½" & 2" meters)*: $165

Residential: Domestic (**D**), Large Lot Domestic (**LD**), and Multi Unit (**M**)
1 - 5 units per month $6.83
6 - 30 units per month $6.92
Over 30 units per month $8.44

Government (**G**): All usage $6.91
Commercial (**C**): All usage $7.03

Recycled Water (**R**): All usage $5.84
Construction Water (**C**): All usage $8.70
Pumping Charges (DSA & Toyon only) $0.84
Pumping CIC (DSA & Toyon only) $0.10
Irrigation Only (**I**): All usage $7.04

ALL PRICES ARE PER UNIT (1 unit = 1,000 gal.)

SAWR

Ag (**AS**): All usage $5.06

Ag Domestic (**AT**): 1 - 5 units $6.83
6 - 17 units per month $5.86
Over 17 units per month $5.06

Com Ag (**CA**): All usage $5.86

Com Ag Dom (**CB**): 1 - 5 units $6.83
Over 5 units per month $5.86

If you have any questions about these rates or how they will affect your account, please contact FPUD at (760) 728-1125

Proposed Effective 01/01/2021

WASTEWATER R A T E S

FALLBROOK PUBLIC UTILITY DISTRICT / CUSTOMER BILLING INFORMATION

Wastewater service charges are established upon each property within the District that is connected to a wastewater line of the District whether said premises are occupied or unoccupied.

USER CLASS	COMMODITY RATE 1,000 GAL OF WASTEWATER *
Single Family Residence, Ag Domestic, Multi-Family ***(Average BOD & SS = 0 -200)***	$10.79/Unit
Government, Schools, Churches, and Low-Strength Commercial	$10.72/Unit
Medium Strength Commercial ***(Average BOD & SS = 201 – 600)***	$13.22/Unit
High Strength Commercial ***(Average BOD & SS = ≥ 601)***	$16.48/Unit

***Residential sewer billable flow is calculated based upon a 2 year winter average water use, adjusted by the RTS (Return to Sewer). Residential RTS is 75%**

****Commercial sewer billable flow is calculated based upon monthly water usage, adjusted by the RTS (Return to Sewer). Commercial RTS is 90%**

FIXED CHARGES

Monthly Fixed Wastewater Charge	$10.60/Equivalent Dwelling Unit (EDU)
Wastewater Capital Improvement Charge (per month)	$11.63/EDU

If you have any questions about these rates or how they will affect your account, please contact FPUD at (760) 728-1125

APPENDIX H
2020 CONSUMER CONFIDENCE REPORT

WATER QUALITY REPORT 2020

Fallbrook Public Utility District

We test our drinking water quality for many constituents, as required by State and Federal Regulations. This report shows the results of our monitoring from calendar year 2019.

Este informe contiene información muy importante sobre su agua potable. Tradúzcalo ó hable con alguien que lo entienda bien.

The sources of our drinking water may include rivers, lakes, streams, ponds, reservoirs, springs and wells. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity.

Type of water sources in use: While FPUD is a water retailer, virtually all of our water is purchased from the San Diego County Water Authority, which purchases much of its water from the Metropolitan Water District of Southern California. Virtually all tap water delivered by FPUD is treated at Metropolitan's Lake Skinner Filtration Plant in Riverside County.

Name & location of source(s): FPUD receives virtually all its water from two sources: a 242-mile-long aqueduct that brings Colorado River water from Lake Havasu to Southern California, and another 444-mile-long aqueduct that carries water from the Feather River in northern California through the Delta to State Water Project contractors throughout the state. One percent of FPUD water comes from our Capra Well, when available.

Drinking water source assessment information: About one percent of FPUD water comes from our Capra Well. A source water assessment was conducted on the water system in May 2004. The well is considered most vulnerable to low-density septic systems, agricultural/irrigation wells, and historic mining operations. Discussion of vulnerability: The Capra Well is in a rural area close to Red Mountain with few activities that could potentially contaminate the water supply. The only significant possible contaminating activities observed are pesticide and fertilizer use in the groves in the general area surrounding the well. In 2011, any water from Capra Well was diverted to Red Mountain Reservoir where it is treated through UV disinfection.

Safety is our #1 priority! Drinking water, including bottled water, may reasonably be expected to contain small amounts of some contaminants. The presence of contaminants does not necessarily indicate that the water poses a health risk.

Time and place of regularly scheduled board meetings: Every fourth Monday of the month at 4 p.m. in the district boardroom, located at 990 E. Mission Road. They are open to the public.

For more information contact: Jason Cavender, Operations Manager, (760) 728-1125.

We take extra measures to disinfect our water at Red Mountain Reservoir

- The District's Red Mountain Reservoir is an open reservoir with a capacity of 440 million gallons and is used to store treated water purchased from the San Diego County Water Authority. The open reservoir met the health standards of the day when it was constructed in 1949 and was reconstructed and lined in 1985, and it has continued to meet or exceed water quality standards. Drainage collection and diversion ditches prevent local runoff water from entering the reservoir. The reservoir is physically inspected at least twice daily. Bacteriological tests are taken once a week. FPUD upgraded its chlorination facilities in early 2010 by installing Ultraviolet Technology (UV Technology) for additional disinfection.

- The water the District purchases from the Water Authority is a blend of fully-treated Colorado River and State Water Project water that receives complete conventional treatment, along with ozone treatment – a cutting-edge, high-quality disinfection process. The water is treated at Metropolitan Water District's Skinner Filtration Plant. The water delivered to Red Mountain has a chloramine (mixture of chlorine and ammonia) disinfectant residual.

Red Mountain Reservoir

Contaminants that may be present in source water include:

- **Microbial contaminants,** such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations and wildlife.
- **Inorganic contaminants,** such as salts and metals, which can be naturally occurring or a result of urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.
- **Pesticides and herbicides** may come from a variety of sources such as agriculture, urban stormwater runoff and residential uses.
- **Organic chemical contaminants,** including synthetic and volatile organic chemicals, which are byproducts of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff, agricultural application and septic systems.
- **Radioactive contaminants,** which can be naturally occurring or the result of oil and gas production and mining activities.

In order to ensure that tap water is safe to drink, the U.S. Environmental Protection Agency and the State Water Resources Control Board prescribe regulations that limit the amount of certain contaminants in tap water. These regulations also establish limits for contaminants in bottled water for the same public health protection.

For more information about contaminants and potential health effects, or for USEPA/Centers for Disease Control guidelines on appropriate means to lessen the risk of infection by cryptosporidium and other microbial contaminants, call the USEPA Safe Drinking Water Hotline (1-800-426-4791). Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline or at http://www.epa.gov/safewater/lead.

Terms Used in This Report:

- **Maximum Contaminant Level (MCL)**: The highest level of a contaminant allowed in drinking water. Primary MCLs are set as close to the PHGs (or MCLGs) as is economically and technologically feasible. Secondary MCLs are set to protect the odor, taste, and appearance of drinking water.
- **Maximum Contaminant Level Goal (MCLG)**: The level of a contaminant in drinking water below which there is no known or expected risk to one's health. MCLGs are set by the U.S. Environmental Protection Agency (USEPA).
- **Public Health Goal (PHG)**: The level of a contaminant in drinking water below which there is no known or expected risk to one's health. PHGs are set by the California Environmental Protection Agency.
- **Maximum Residual Disinfectant Level (MRDL):** The level of a disinfectant added for water treatment that may not be exceeded at the consumer's tap.
- **Maximum Residual Disinfectant Level Goal (MRDLG):** The level of a disinfectant added for water treatment below which there is no known or expected risk to health. These are set by the U.S. Environmental Protection Agency.

1 part per million or 1 mg/L is:	1 part per billion or 1 µg/L is:
• 1 cent in $10, 000	• 1 cent in $10,000,000
• 1 minute in 2 years	• 1 minute in 2,000 years
• 1 inch in 16 miles	• 1 inch in 16,000 miles
• 1 drop in 10 gallons	• 1 drop in 10,000 gallons

- **Primary Drinking Water Standards (PDWS)**: MCLs or MRDLs for contaminants that affect health along with their monitoring and reporting requirements, and water treatment requirements.
- **Secondary Drinking Water Standards (SDWS):** MCLs for contaminants that affect taste, odor, or appearance of the drinking water. Contaminants with SDWSs do not affect the health at the MCL levels.
- **Treatment Technique (TT)**: A required process intended to reduce the level of a contaminant in drinking water.
- **Regulatory Action Level (AL)**: The concentration of a contaminant which, if exceeded, triggers treatment or other requirements, that a water system must follow.
- **NA:** Not applicable, indicate when there is no establish level
- **ND**: Not detectable at testing limit
- **NL** Notification Level to SWRCB
- **SI:** Saturation Index
- **µS/cm:** Measure of electrical conductance
- **pCi/L**: Picocuries per liter (a measure of radiation)
- **ppm or mg/L**: Parts per million or milligrams per liter
- **ppb or µg/L**: Parts per billion or micrograms per liter
- **ppt or ng/L:** Parts per trillion or micrograms per liter
- **LRAA**: Locational Running Annual Average; The LRAA is the highest Individual of all Running Annual Averages. It is calculated as an average of all the samples collected within a 12-month period.

The tables that follow list the drinking water contaminants that were detected during the most recent sampling. The presence of these contaminants does not necessarily indicate that the water poses a health risk. The State Water Resource Control Board (SWRCB) allows us to monitor for certain contaminants less than once per year because the concentrations of these contaminants do not change frequently. Some of the data, though it is representative of the water quality, is more than one year old.

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as those with cancer undergoing chemotherapy, those who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, and some elderly and infants, can be particularly at risk for infection. These people should seek advice from their health-care providers.

What about Lead? If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. FPUD is responsible for providing high-quality drinking water, but cannot control the variety of materials used in personal plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline or at http://www.epa.gov/safewater/lead.

TABLE 1 - Sampling results showing the detection of coliform bacteria

Microbiological Contaminants (to be completed only if there was a detection of bacteria)	**Highest No. of detections**	**Months in violation**	**State or Federal MCL** (Maximum Contaminant Level)	**MCLG**	**Typical Source of Bacteria**
Total Coliform Bacteria	0	0	More than 5.0% of monthly samples are positive;	0	Naturally present in the environment
Fecal Coliform or *E. coli*	0	0	A routine sample and a repeat sample detect total coliform, and either sample also detects fecal coliform or E.coli	0	Human and animal fecal waste

TABLE 2 - Sampling results showing the detection of lead and copper for residential

Lead and Copper (Tested every 3 years. Data is from 2019.) Test again August 2022	**No. of samples collected**	**90th percentile level detected**	**No. of sites exceeding Action Level**	**Action Level**	**PHG**	**Typical Source of Contaminant**
Lead (µg/L)	33	ND	0	15	0.2	Internal corrosion of household plumbing systems; discharges from industrial manufacturers; erosion of natural deposits
Copper (mg/L)	33	0.22	0	1.3	0.3	Internal corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives

In addition, on January 2017, the State of California issued new guidelines on lead testing in schools. We are committed to supporting our school districts' efforts to protect students and ensure that the drinking water at their school sites meet lead limits. We have already completed our work with school districts serving kindergarten through 12th grade to develop sampling plans unique to each school site. We have also already sampled seven schools in our district and all the results were below the Action Level. There was no follow-up monitoring required, nor was there a need to take corrective action on any plumbing fixtures at any school sampled.

Sampling results showing the detection of lead for our K-12th grade schools

Contaminant (CCR units)	**Action Level**	**PHG**	**No. of sites exceeding Action Level**	**Sample Date**	**Number of Schools Requesting Lead Sampling**	**Typical Source of Contaminant**
Lead (µg/L)	15	0.2	0	2017	7	Internal corrosion of household plumbing systems; discharges from industrial manufacturers; erosion of natural deposits

TABLE 3 - Detection of contaminants with a primary (health-related) drinking water standard

Chemical or Constituent (and reporting units)	Level Detected (average)	Range of Detections	MCL [MRDL]	PHG (MCLG) [MRDLG]	Typical Source of Contaminant
Clarity					
Lake Skinner Combined Filter Effluent Turbidity (NTU)	Highest	0.7	TT	NA	Soil Runoff
	% ≤ 0.3	100			
Inorganic Chemicals					
Aluminum	56	ND -94	1000	600	Residue from water treatment process; natural deposits erosion
Barium (mg/l)	.105	.100 - .110	1	2	Erosion of Natural deposits
Fluoride – (mg/L)	0.7	0.30 - .80	2	1	Erosion of natural deposits; Metropolitan Water District treats our water by adding fluoride to the naturally occurring fluoride level to help prevent dental caries in consumers. Fluoride levels in the treated water are maintained within a range of 0.7 to 1.3 mg/L, as required by the State Board regulations.
Radiological					
Gross Alpha (pCi/L)	ND	ND – 4.0	15	(0)	Erosion of natural deposits
Gross Beta (pCi/L)	ND	ND – 5.0	50	(0)	Decay of natural and man-made deposits
Uranium (pCi/L)	ND	ND – 3.0	20	0.43	Erosion of natural deposits
Disinfection by-products, Disinfectant Residuals and Disinfection by-product precursors (Federal Rule)					
Bromate (ppb)	2.8	ND – 10	10	0.1	By-product of drinking water ozonation
Total Chlorine Residual (mg/L) *Highest RAA*	2.05	0.01 – 3.6	[4]	[4]	Drinking water disinfectant added for treatment
Haloacetic Acids (five) (µg/L) *Highest LRAA*	14.5	5.0 – 22.0	60	NA	By-product of drinking water disinfection
Total Trihalomethanes (µg/L) *Highest LRAA*	30.8	16.0 – 57.0	80	NA	By-product of drinking water disinfection

TABLE 4 – Detection of contaminants with a secondary (aesthetic) drinking water standard

Chemical or Constituent (and reporting units)	Level Detected (average)	Range of Detections	MCL	PHG (MCLG) [NL]	Typical Source of Contaminant
Chloride (mg/L)	83	68 - 93	500	NA	Runoff/leaching from natural deposits; seawater influence
Color (units)	1	ND - 2	15	NA	Naturally occurring organic materials
Manganese (ppb)	NA	ND - 21	50	[500]	Leaching from natural deposits
Odor Threshold (TON) *Threshold Odor Number*	NA	ND - 1	3	NA	Naturally occurring organic materials
Specific Conductance (µS/cm)	765	576- 920	1600	NA	Substances that form ions when in water; seawater influence
Sulfate (mg/L)	147	90 - 200	500	NA	Runoff/leaching from natural deposits; industrial wastes
Total Dissolved Solids (mg/L)	467	330 - 580	1000	NA	Runoff/leaching from natural deposits

Turbidity (NTU) *Nephelometric Turbidity Unit*	.34	.01 –1.10	5	NA	Soil runoff

TABLE 5 – Additional parameters

Chemical or Constituent (and reporting units)	**Level Detected (average)**	**Range of detections**	**Notification Level**	**Major sources in drinking water**
Alkalinity (mg/L)	92	84 - 99	NA	Naturally present in the environment
Bicarbonate (HCO_3) (mg/L)	98	96 - 99	NA	Naturally present in the environment
Boron (µg/L)	NA	120	1,000	Runoff leaching from natural deposits; industrial waste
Calcium (mg/L)	48	33 - 60	NA	Naturally present in the environment
Chlorate (µg/L)	NA	35	800	By-product of drinking water chlorination; industrial processes
Corrosivity (SI)	.24	.20 - .28	NA	Elemental balance in water; affected by temperature, other factors
Hardness (mg/L) *Conversion to grains below	196	139 - 240	NA	Consists of Magnesium and Calcium and is usually naturally occurring
Magnesium (mg/L)	18	14 - 21	NA	Naturally present in the environment
N-Nitrosodimethylamine (ppt)	NA	3.9	10	Byproduct of drinking water chloramination; industrial process
Perfluorchexanoic Acid (PFHxA) (ppt)	2.3	2.2 – 2.4	NA	Industrial chemical factory discharges; runoff/leaching from landfills; use in fire-retarding foams and various industrial processes
pH (pH units)	8.2	7.9 - 8.2	NA	Naturally present in the environment
Potassium (mg/L)	3.9	3.3 - 4.4	NA	Naturally present in the environment
Sodium (mg/L)	78	62 - 90	NA	Generally naturally occurring
TOC (mg/L) *Total Organic Compounds*	2.4	2.0 - 2.7	TT	Various natural and manmade sources

*To convert Hardness (mg/L) to Hardness (grains) divide by 17.1. For example, 230mg/L divide by 17.1 = 13.4 grains.

Fallbrook Public Utility District

General Manager:
Jack Bebee

Board of Directors:
Don McDougal
Jennifer DeMeo
Dave Baxter
Ken Endter
Charley Wolk

990 E. Mission Road
Fallbrook, CA 92028
(760) 728-1125

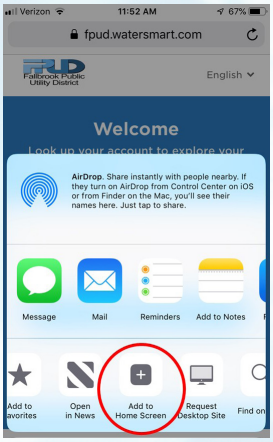
Here's What's New!

View and Manage Your Water Use Online

Log onto www.onlinebiller.com/fpud so you can:

- **Sign up for High Usage Alerts. **** Alert yourself to a potential leak. The objectives of WaterSmart are to provide helpful, proactive service to customers experiencing high water usage. You will be notified sooner of high usage reads – possibly weeks before the monthly billing statements would arrive. The various leak resolution tips will help you identify the source of the water loss, and the step-by-step instruction videos give you options that can help resolve the issue.
- **Compare your use** to other, similar households in Fallbrook.
- It's all part of our replacement and transition to "smart meters." Check it out!
- **It's super easy to do!**

** If you're only able to view monthly usage, stay tuned as we transition all our meters over the next 2 - 3 years.



You can add a shortcut to your mobile device for quick access to your account.

Currently, the prompt to suggest you download an icon to your phone shows up the first time you access the mobile site, in response to an email invitation, a leak alert, a high use notification, etc. If you respond yes to the prompt, a water drop icon will appear on your phone.

Without that prompt, you can click on the Upload link at the bottom of the phone. You can then select "Add to the Home Screen" to have the link added to the Home Screen (see image).

Billing Payment Options

Walk-in: 990 E. Mission Road, Fallbrook, CA 92028

Online: www.onlinebiller.com/fpud

By Phone: 877-281-3434

PayNearMe: Make a cash payment at participating locations:

CVS pharmacy

CASHIER INSTRUCTIONS:
1. Scan barcode.
2. Enter payment amount.
3. Collect payment from customer.
4. Give the customer their receipt.

PayNearMe

1R7M5P

7-ELEVEN

CASHIER INSTRUCTIONS:
1. Ask customer for amount to load.
2. Press OTHER FUNCT, then LOAD.
3. Scan barcode.
4. Collect Payment from customer.
5. Give customer receipt and slip

PayNearMe

1R7M5P

APPENDIX I
EMERGENCY ACTION PLAN

Article 20. Emergency Action Plan (EAP)

The Fallbrook Public Utility District has adopted an Emergency Action Plan for internal use by its officers, employees and Directors. The plan sets guidelines to use when an emergency arises.

The District's Emergency Action Plan (EAP) is made a part of this Administrative Code and incorporated into the District's Injury/Illness Prevention Program (IIPP).

ARTICLE 29
(Renumbered as Article 20 by Resolution 5006)

Program Adopted 6/94
Rev. 2/20

FALLBROOK PUBLIC UTILITY DISTRICT EMERGENCY ACTION PLAN (EAP)

All employees will follow the guidelines below when an emergency arises. All employees will be required to participate in all "training elements."

1) The Operations Manager (or designee) will be the individual responsible for coordinating the Emergency Response Plan. His responsibilities include, but are not limited to:

    A. Assessing the situation to determine if an emergency exists that requires activating the District Emergency Action Plan.
    B. Directing all efforts in the area, including evacuating personnel and minimizing property loss.
    C. Ensuring that outside agencies are called when necessary.
    D. Directing shutdown of operations, when necessary.
    E. Direct the Emergency Response Team.

2) If a major emergency involving fire or threat of an explosion occurs, and evacuation of the building and/or yard is necessary, the following will be done:

    A. The Receptionist will alert all employees by way of the intercom system that there is an emergency and that all employees will evacuate to the announced designated meeting area.
    B. The Operations Manager will establish his "command post" next to where the employees are to be evacuated.
    C. Alternate communications can be the District's cellular phone, radio system (high band and low band), and coordination with the Sanitary District's base station with our radio system.
    D. Regular updating of off-duty emergency on-call personnel will help keep the answering service current on who to notify during off-hours.

3) The Operations Manager (or designee) will be responsible to account for all personnel and notify authorities if anyone is believed missing. No personnel shall leave the scene until a total head count has been conducted (unless it is not safe to remain). Do not leave this area until the Operations Manager (or designee) or your supervisor knows you are leaving.

4) The Emergency Response Team (ERT) has to be able to distinguish between an emergency that they can handle and one that needs professional emergency aid. The emergency response team will be trained in the following:

    A. Use of various types of fire extinguishers;
    B. First Aid and CPR;
    C. Shutdown procedures including all electric panels, gas main and location of the shut off devices;
    D. Evacuation procedures;
    E. Use of breathing apparatus (when applicable);
    F. Search and rescue procedures (if there is a major disaster).

5) The Emergency Response Team members are:

A. Operations Manager,
B. Field Service Manager,
C. All Department Supervisors,
D. Safety & Risk Officer.

6) Employee Accountability Procedures after Evacuations:

A. When an evacuation signal is given, each supervisor involved will assume a station in the vicinity of the designated evacuation area. Supervisor will insure all personnel are evacuated and will provide assistance to employees requiring same.
B. All employees will proceed to a designated evacuation area for a head count by their supervisor. Supervisors will then report their department's status to Safety or designee. No one is to re-enter the building or yard for any reason until the Fire Department or other responsible agency has notified the District the building or yard is safe for re-entry

BUILDING EVACUATION

IN THE OFFICE OR YARD:

1) Each employee is to be aware of all marked exits from the area and building.

2) When evacuating the building, do not collect your personal belongings (purse, brief case, etc.) leave by walking quickly to the nearest marked exit and ask others to do the same. DO NOT RUN.

3) Assist all customers and the handicapped in exiting the building.

4) When outside, proceed to the announced designated meeting area. Keep well away from the building and keep clear of emergency vehicles. Do not leave this area until the Operations Manager or your supervisor knows you are leaving.

5) Supervisors, to the best of their ability, and without re-entering the building, will report to the Operations Manager if everyone has evacuated the area safely.

6) Do not return to the building until being told it is OK to do so by the Fire Dept. or Police.

FIRE

IN THE OFFICE OR YARD:

1) Know the location of fire extinguishers in your area and know how to use them.

2) In case of fire, immediately call 911. Give your name and describe the location and size of the fire.

3) On a minor fire that appears to be controllable, promptly direct the charge of a fire extinguisher toward the base of the flame. Get help if necessary.

4) On large fires that are not immediately controllable, promptly or after using the extinguisher, close all doors to confine the fire and reduce the oxygen - but do not lock doors.

5) Notify the receptionist to alert employees and instruct them to evacuate the building by quickly walking to the nearest exit, (being sure to collect your personal belongings, purse, brief case, etc.) and alerting people as you go.

6) Once outside, move to the announced designated meeting area, and stay well away from the building. Do not leave this area until the Operations Manager or your supervisor knows you are leaving. Keep clear of emergency vehicles.

7) Do not return to the building until being told it is OK to do so by the Fire Dept. or Police.

IN THE FIELD:

1) Notify the office, by radio, to report the fire to the fire department. Be sure to describe the location, type of fire and the area involved.

2) On a minor fire that appears to be controllable, promptly direct the charge of a fire extinguisher toward the base of the flame.

3) If in a remote area, coordinate to meet the Fire Dept. at a predetermined location to direct them to the area.

VIOLENCE OR CRIMINAL BEHAVIOR

IN THE OFFICE OR DISTRICT YARD:

Assist in making the Facility a safe place by being alert to suspicious situations.

1) If you witness any suspicious situations do not hesitate, CALL 911 and then, if safe, alert your supervisor or Operations Manager of the situation.
2) If you are the victim; or are involved in any on property violation of the law; or witness an on-property violation of the law, such as assault, robbery, theft, overt sexual behavior, etc., DO NOT TAKE ANY UNNECESSARY CHANCES. Notify your supervisor and call 911 and report the following:

    a. Nature of incident.
    b. Building location of incident.
    c. Description of person(s) involved.
    d. Description of property involved.

3) Assist the sheriff when they arrive by supplying them with additional information and ask others to do the same.

4) Report to your supervisor the existence of any person loitering or soliciting on District property. These people may be asked to leave if they do not have permission or a proper reason for being on the property. The Sheriff's Dept. is to be called if they refuse to leave when asked.

IN THE FIELD:

1) Do not confront any trespasser(s) on District property.

2) If trespassers are observed stay at a safe distance and;

    a. Report to the Operations Manager, by radio, the area and what activity is going on.
    b. The Operations Manager will notify the Sheriff's Office who will respond to the area.

EXPLOSION – AIRPLANE CRASH OR SIMILAR

IN THE OFFICE OR YARD:

1) Immediately take cover under tables, desks and any other such objects, which will give you protection against glass or debris.

2) After the effects of the explosion have subsided, call 911. Give your name; describe the location and nature of the emergency.

3) Evacuate the building being sure to collect your personal belongings (purse, brief case, etc.) and:

    a. Be aware of any structural damage.
    b. Stay away from glass doors and windows.
    c. Do not touch or move any suspicious objects.

4) Assist others, especially the injured and handicapped in the evacuation of the building.

5) Once outside, move to the announced designated meeting area, away from the affected area. Keep clear of emergency vehicles. Do not leave this area until the Operations Manager or your supervisor knows you are leaving.

6) To the best of your ability, and without re-entering the building, determine if everyone has evacuated safely.

7) Do not return to the building until being told it is OK to do so by the Fire Dept. or Police.

IN THE FIELD:

1) Notify the office by radio, cell phone, or other means the location, the extent of the incident, and what assistance you need.

2) Do not touch or move any suspicious objects.

3) Keep a safe distance until emergency help arrives.

EARTHQUAKE

IN THE OFFICE OR YARD:

1) During an earthquake remain calm and quickly follow the steps outlined below.

2) If indoors, seek refuge in a doorway or under a desk or table. Stay away from glass windows shelves and anything else that might fall.

3) If outdoors, move quickly away from buildings, utility poles and other structures.

4) After the initial shock, evaluate the situation and if emergency help is necessary, call 911. Protect yourself at all times and be prepared for aftershocks.

5) Coordinate with management and begin turning off all potentially hazardous equipment such as gas and electric appliances. Damaged facilities should be reported.

6) Evacuate the building by quickly walking to the nearest exit, alerting people as you go. Be aware of structural damage and assist both the handicapped and injured. DO NOT RUN.

7) Once outside, move to the announced designated meeting area away from the building. Keep clear of emergency vehicles. Do not leave this area until the Operations Manager or your supervisor knows you are leaving.

8) Do not return to the building until told to do so by police and fire personnel.

IN THE FIELD:

1) Pull over to the side of the road, away from possible falling objects like power lines, telephone poles, trees, buildings, etc. and stay in your vehicle.

2) Report to the main office as soon as it is safe to travel. If it is not safe to travel, contact the office or another unit by radio informing them of your location and situation.

SUBJECT: EMERGENCY NOTIFICATION PROCEDURE OF AMMONIA RELEASE, WATER DEPARTMENT

Ammonia stations are equipped with a Telemetry Alarm System that when activated will page the "on-call" System Operator. If there is no response with 30 minutes, the Operation Manager will then be called.

REGULAR WORKING HOURS (7:00 AM TO 4:30 PM):

Fallbrook Service Area:	Cellular Phone #
Standby System Operator	760-497-4096

AFTER HOURS, WEEKENDS AND HOLIDAYS: Incoming calls to the District's answering service (760728-1125) will be given to the water department on-call duty person who will be responsible for notifying the following personnel.

Name	Cellular Phone #
Standby System Operator	760-497-4096
Water System Supervisor	760-497-5777
Operations Manager	760-497-4103