



Fallbrook Public Utility District
2015 Urban Water Management Plan

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Section 1 – Introduction and Overview

1.1 CALIFORNIA URBAN WATER MANAGEMENT PLANNING ACT

The California Water Code requires all urban water suppliers within the state to prepare Urban Water Management Plans 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 §10656 of the Water Code detail the information that must be included in these plans, as well as who must file them.

This plan is prepared to satisfy the requirements of the Act, however the 2015 plans prepared by the San Diego County Water Authority (Water Authority) and the Metropolitan Water District of Southern California (Metropolitan) address many of the projections for resource reliability for the entire Southern California region, including Fallbrook.

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 board of directors in 1981, 1985, 1991, 1995, 2000, 2005 and 2010.

This is the 2015 Urban Water Management Plan for the Fallbrook Public Utility District (FPUD). It is an update to the District's 2010 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 2040.

1.2 SUMMARY OF WATER SOURCES

FPUD is a water retailer and purchases virtually 100% of its potable water from supplies imported by our two wholesalers, the Water Authority and Metropolitan. These wholesalers have addressed regional issues concerning San Diego County and Southern California water supplies in their own 2015 Urban Water Management Plans. More information on their regional plans, which include continuing to provide virtually 100% of FPUD's potable water, can be found in their 2015 Plans.

1.3 OTHER PROJECTS TO MAXIMIZE RESOURCES AND MINIMIZE IMPORTED WATER

Tools the district is either using or pursuing to maximize resources and minimize the need to import water include three projects: the Santa Margarita Conjunctive-Use Project, and a cooperative agreement with Metropolitan Water District to store rainfall in Lake Skinner in Temecula, and expanding the use of recycled water.

The Lake Skinner agreement solves a decades-old water-rights problem for the district. FPUD had rights to collect water in the Santa Margarita River, but no place to store it. Lake Skinner has the storage space, but no rights to the local water. The deal enables FPUD to store run-off in Lake Skinner, and then the water is later delivered to Fallbrook, 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 other project, the Santa Margarita Conjunctive-Use Project, involves a plan with Marine Corps Base Camp Pendleton as a partner in developing the Santa Margarita River as a local source of water. If the project is developed, the river could meet as much as 30% of the district's future needs and 100% of Camp Pendleton's needs. The water would be stored in an underground water basin on Camp Pendleton. The project would provide a reliable water supply, enabling the district to become more self-sustaining, with its own water sources, rather than relying solely on imported water. The project is in the final design phase. More information on this project can be found in Section 6.

The District also recently completed a \$25 million rehabilitation of its Fallbrook Water Reclamation Plant and a \$2 million recycled water pipeline extension. The pipeline extension will double FPUD's recycled water deliveries from 600 acre-feet per year to more than 1,200 acre-feet per year. The expansion project will allow FPUD to increase its reuse of the District's wastewater from 30% to almost 70% of the total wastewater. The primary customers for the expansion are local nursery operations. More information can be found in Section 6.

Section 2 – Plan Preparation

2.1 BASIS FOR PREPARING A PLAN

The California Water Code requires all urban water suppliers within the state to prepare Urban Water Management Plans 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.

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) is an urban water supplier operating a Public Water System (PWS) and therefore is required to update and adopt a 2015 UWMP for submittal to the California Department of Water Resources.

The table below shows FPUD’s total number of municipal connections and volume of water supplied in Fiscal Year 2014-2015.

Table 2-1 Retail Only: Public Water Systems			
Public Water System Number	Public Water System Name	Number of Municipal Connections 2015	Volume of Water Supplied 2015
3710008	Fallbrook Public Utility District	9,215	11,849
TOTAL		9,215	11,849

FPUD has updated its Urban Water Management Plan to satisfy the year 2015 requirements of the UWMP Act, including addressing the requirements of the Water Conservation Act of 2009. This 2015 Plan describes the availability of water for normal, dry, and multiple dry-year scenarios. It also discusses water use, reclamation and water-conservation activities. This Plan concludes that the water supplies available to FPUD’s customers are adequate over the next 20-year planning period.

2.2 REGIONAL PLANNING

As a member of the San Diego County Water Authority (Water Authority), the regional wholesaler, FPUD is actively involved in the Authority's regional planning processes, and is supportive of the Authority's efforts in this regard.

FPUD relies on imported water supplied by the Water Authority, which in turn relies, to a large extent, on Metropolitan Water District of Southern California (Metropolitan). Since virtually 100% of FPUD's potable water is supplied by the aforementioned two agencies, their water supply plans and forecasts relate to this District. We look to and participate in their planning for our future needs. For more information on their water supply plans for FPUD, it may be helpful to reference the 2015 Urban Water Management Plans for the Water Authority and Metropolitan.

FPUD also has its own local programs to maximize water resources which are described in detail in other sections of this Plan.

2.3 INDIVIDUAL OR REGIONAL PLANNING AND COMPLIANCE

FPUD's 2015 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 2015 UWMP reports information on a fiscal year, beginning with Fiscal Year 2014-2015. 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)	
	UWMP Tables Are in Calendar Years
X	UWMP Tables Are in Fiscal Years
If Using Fiscal Years Provide Month and Day that the Fiscal Year Begins (dd/mm)	
01/07	
Units of Measure Used in UWMP	
Unit	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 UWMP Act requires the District, to the extent practicable, to coordinate the preparation of its Plan with other appropriate agencies.

COORDINATION WITH APPROPRIATE AGENCIES §10620 (d) (2)

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 Plan, the District coordinated its efforts with the Water Authority, the nearby Rainbow Municipal Water District, the local chamber of commerce and library, San Diego County Department of Planning and Development, the San Diego Local Agency Formation Commission, San Diego Association of Governments, County Supervisor Bill Horn’s office, the Fallbrook Planning Group, the Marine Corps Base Camp Pendleton, and Mission Resource Conservation District (a watershed group). 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.

COORDINATION WITHIN THE DISTRICT

District staff members met and coordinated the development of this plan. Those members included Noelle Denke, Public Affairs Specialist; Jeff Marchand, Engineering Supervisor; Mick Cothran, Drought Coordinator; Jack Bebee, Assistant General Manager; and Brian J. Brady, General Manager.

As a member agency of the Water Authority, district staff and board members coordinate planning efforts through participation with the Water Authority’s staff and board, as well as other member agencies. The District’s general manager is a member of the Water Authority Board and currently serves on the Engineering and Operations; and Water Planning committees.

PUBLIC PARTICIPATION LAW §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 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 third and fourth quarters of 2016. The updated plan was adopted by the board of directors on June 27, 2016 and submitted to the California Department of Water Resources within 30 days of the board's approval. This plan includes all information necessary to meet the requirements.

A draft of this plan was presented to the Board of Directors at its regular monthly meeting on May 23, 2016, 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

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.

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 -1990. 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 adopted on Dec. 31, 1974 by the Board of Supervisors and updated in November 2015. 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 change 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 remain close to the historic long-term trend.

Conversion of land uses from purely agricultural use to rural residential is a function of agricultural economics, high water costs and increasing land values.

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, 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 member of the San Diego County Water Authority (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 Water District (Metropolitan) of Southern California. 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 is in the Water Sources section of this plan, beginning on page 8.

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 DeLuz 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 DeLuz 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 40% 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 33,476 in 2015. Annual water consumption increased to a high of 19,597 acre-feet/year in 2007, then decreased to 11,725 in 2015. 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.

Because FPUD is a water retailer, which purchases 100% of its potable water from supplies imported by our two wholesalers, the Water Authority and Metropolitan, this 2015 Plan addresses issues that relate to the consumer. Our two wholesalers have addressed regional issues concerning San Diego County and Southern California water supplies in their own 2015 plans.

The District is one of 23 member agencies of the Water Authority. The Water Authority is, in turn, a member agency of Metropolitan's. Since virtually all the potable water supplied by FPUD is supplied by the two large water wholesalers, this district looks to, and actively participates in, the decisions and policies adopted by them to provide a safe and reliable supply of water. FPUD has one representative that sits on the Water Authority's governing board.

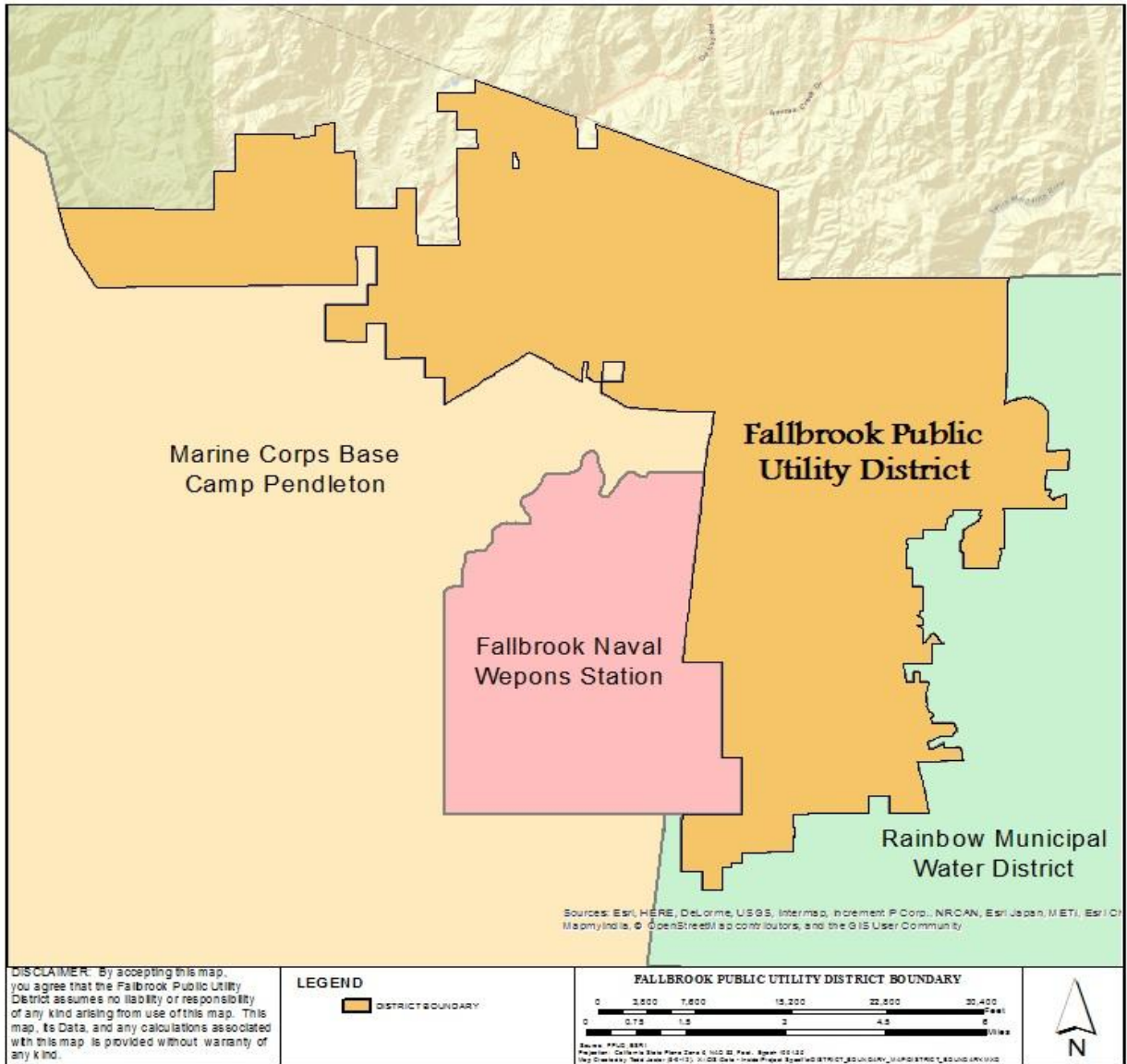
Agency's governance

The FPUD board of directors is made up of five community members, elected at-large, where the top vote-getters overall win a seat on the board. The district will likely, beginning in November 2016, change its election procedure to one whereby board members are 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.

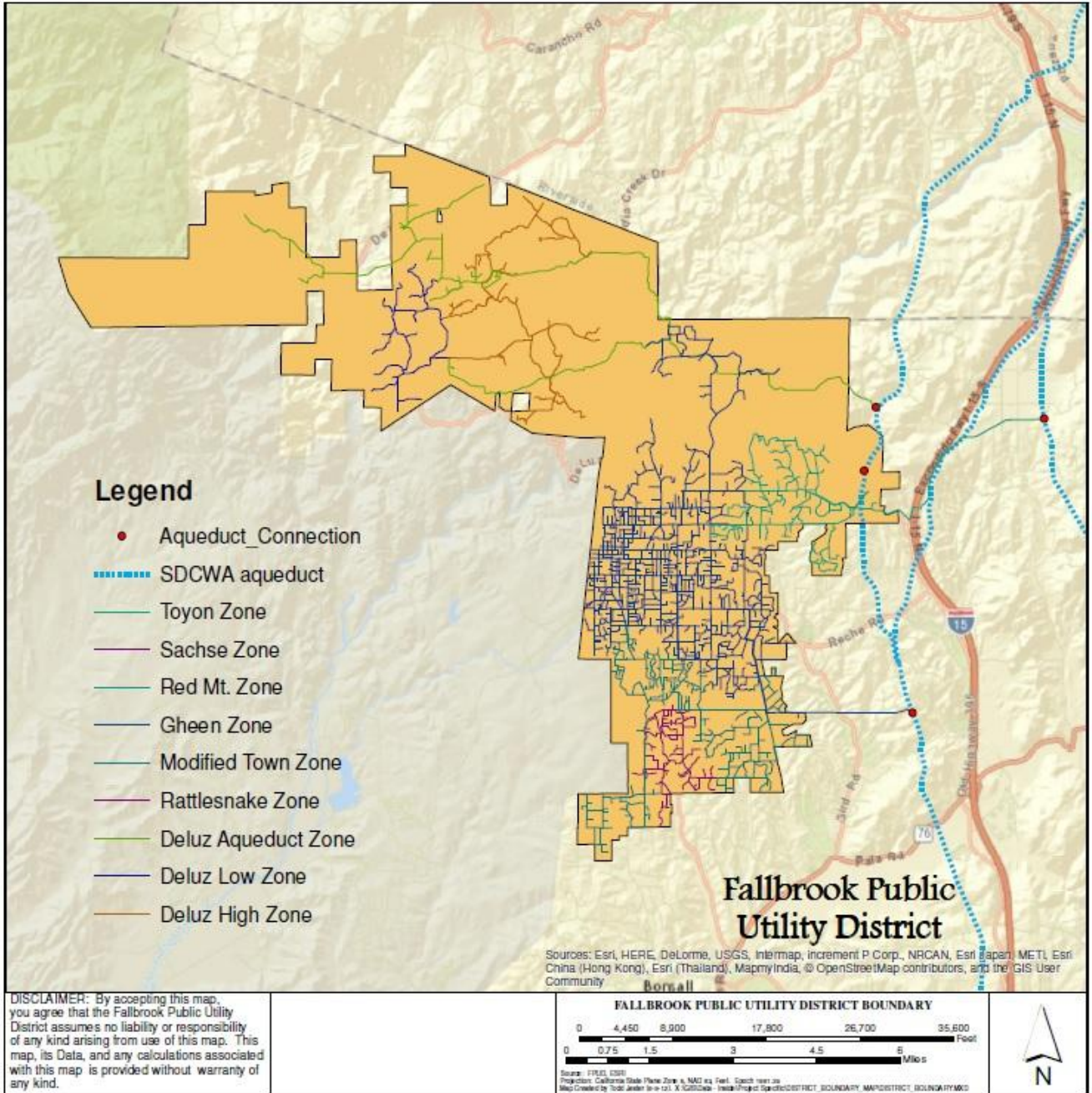
Legislation to allow FPUD to elect its directors by territorial unit has been introduced to the State Senate. It will require a two-thirds vote in both the State Senate and the State Assembly for passage, but would take effect immediately.

3.2 SERVICE AREA BOUNDARY MAPS

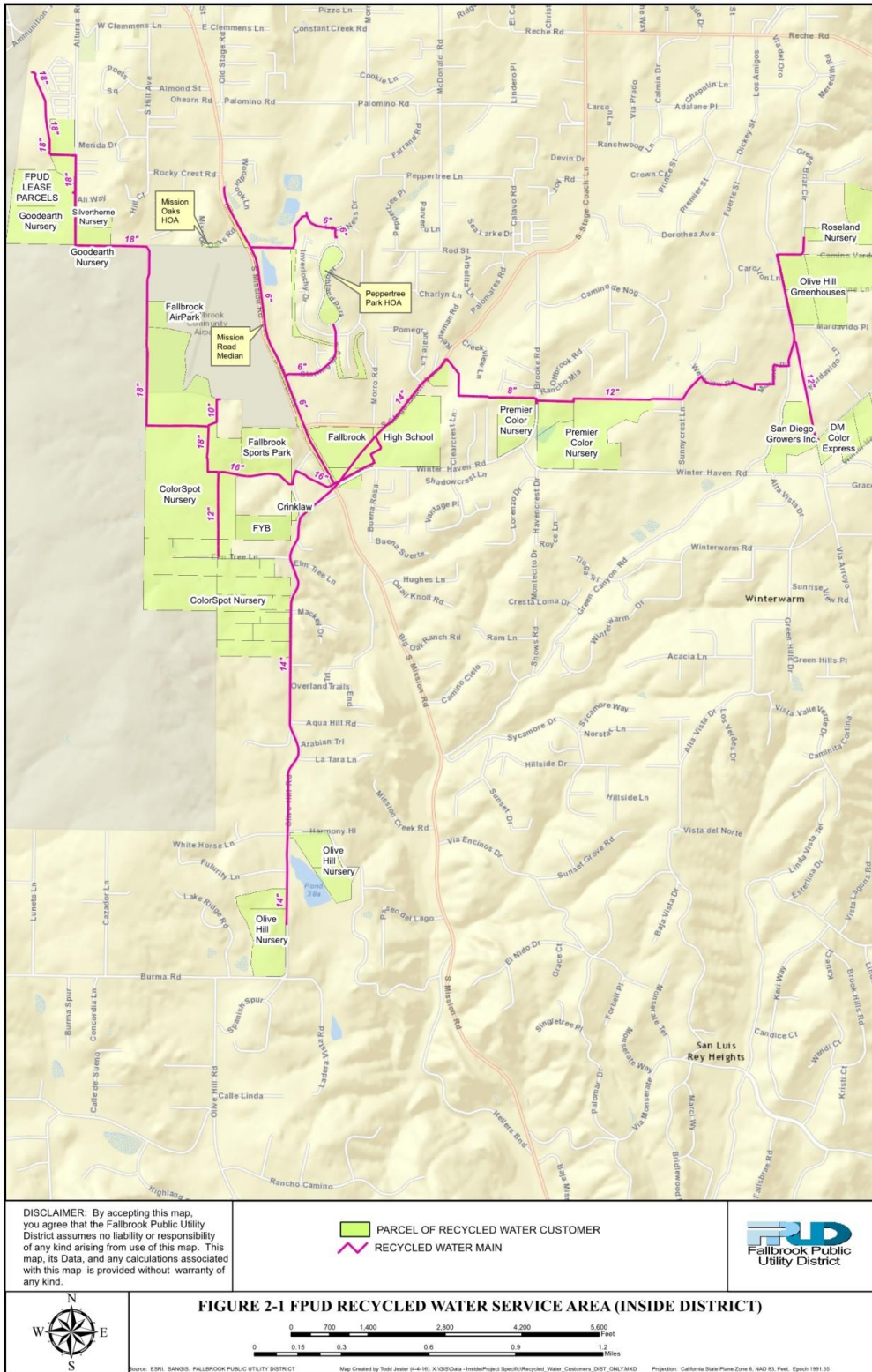
The map below shows FPUD’s potable water service area boundaries with reference to Camp Pendleton and Rainbow Municipal Water District.



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 90 degrees. Average winter nighttime temperature is 42 degrees and mostly frost-free.

Climate change is an issue in that droughts are cyclical and planned for by the District and its wholesalers.

The table below shows population data.

Table 3-1 Retail: Population - Current and Projected						
Population Served	2015	2020	2025	2030	2035	2040(opt)
	33,476	36,061	40,363	41,105	41,322	41,539

3.4 OTHER DEMOGRAPHIC FACTORS AFFECTING WATER MANAGEMENT

Historically, water usage has remained the same in FPUD’s service area. Over the years, the larger agricultural areas have been converted to smaller residential properties. Those smaller, but more numerous, properties have used the same amount of water as the larger agricultural properties they replaced.

Currently, however, water use has declined overall for residential customers, due to the water shortage and mandatory conservation that was imposed. Agricultural water consumption has declined about 60%. This is due to the increased cost of water, coupled with the fact that the cost to produce food is increasing, as there is considerable competition for farmers since lower-priced food is being produced and is available in other countries. Municipal and Industrial water usage has also decreased. The increase in water demand is projected to be mainly due to population growth.

Agricultural water discount

Agricultural customers have the option of enrolling in a discount water program. The Transitional Special Agricultural Water Rate, or TSAWR, is offered through the Water Authority. 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, such products to be grown or raised on a parcel of land having an area of not less than one acre utilized exclusively therefore.”

By participating in this program, the certified Ag customer receives 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 TSAWR customer would be required to reduce his own usage by that same percentage.

The TSAWR 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 Desalination Plant, the Imperial Irrigation District Transfer and the lining of the All American Canal, are more expensive because they provide a higher level of reliability.

The TSAWR discount is set to continue until at least Dec. 31, 2020. Continuation of the program beyond 2020 is pending future reviews and approval from the Water Authority.

Section 4 – System Water Use

4.1 RECYCLED VERSUS POTABLE AND RAW WATER DEMAND

The Fallbrook Public Utility District provides water and sewer services for portions of the rural town of Fallbrook. Sewer service is provided to approximately 4,500 sewer connections in an unincorporated area of about 6.6 miles. The remainder of customers in FPUD’s service area is on a septic system. The District’s Water Reclamation Plant treats an average of 1.7 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 the Water Reclamation Plant and a \$2 million recycled water pipeline extension. This extension will double recycled water deliveries from 600 acre-feet per year (AFY) to more than 1,200 AFY. This will allow FPUD to increase its reuse of the total available wastewater supplies from 30% to almost 70%.

FPUD purchases all its potable water from the San Diego County Water Authority (Water Authority) as treated water. FPUD does not purchase or import any raw water.

4.2 WATER USES BY SECTOR

The table below shows demands for potable water in 2015

Table 4-1 Retail: Demands for Potable and Raw Water - Actual			
Use Type <i>(Add additional rows as needed)</i>	2015 Actual		
<i>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</i>	Additional Description <i>(as needed)</i>	Level of Treatment When Delivered <i>Drop down list</i>	Volume
Single Family		Drinking Water	4,593
Multi-Family		Drinking Water	673
Commercial		Drinking Water	528
Institutional/Governmental		Drinking Water	180
Landscape		Drinking Water	15
Agricultural irrigation		Drinking Water	5,052
Losses	Includes all Non-Revenue Water, 5.8% of total production	Drinking Water	686
TOTAL			11,725

Losses in table 4.1 include all forms of non-revenue water, as explained in further detail in the AWWA Water Loss Audit in included in Appendix A.

The table below shows water demand through 2035.

Table 4-2 Retail: Demands for Potable and Raw Water - Projected					
Use Type <i>(Add additional rows as needed)</i>	Additional Description <i>(as needed)</i>	Projected Water Use <i>Report To the Extent that Records are Available</i>			
<i>Use Drop down list</i> <i>May select each use multiple times</i> <i>These are the only Use Types that will be recognized by the WUEdata online submittal tool</i>		2020	2025	2030	2035
Single Family		5,049	6,496	7,038	7,190
Multi-Family		717	800	820	901
Commercial		609	689	708	802
Institutional/Governmental		187	194	202	210
Landscape		15	15	15	15
Agricultural irrigation		3,696	3,441	3,307	3,146
Losses	5.80%	661	749	773	783
TOTAL		10934	12384	12863	13047

Demand projections are made using population figures provided by San Diego Association of Governments (SANDAG), San Diego’s regional planning agency. Data for deliveries forecasted from 2020 – 2040 was derived from the Water Authority Preliminary Member Agency 2040 Demand Forecast.

Since FPUD does not sell water to any other agencies, there are no figures to report for the wholesale demands category.

The table below shows water demand for recycled & potable water through 2035

Table 4-3 Retail: Total Water Demands					
	2015	2020	2025	2030	2035
Potable and Raw Water <i>From Tables 4-1 and 4-2</i>	11,725	10,934	12,384	12,863	13,047
Recycled Water Demand <i>From Table 6-4</i>	594	1,100	1,200	1,200	1,200
TOTAL WATER DEMAND	12,319	12,034	13,584	14,063	14,247

4.3 DISTRIBUTION SYSTEM WATER LOSSES

The maximum annual unaccounted-for water loss within FPUD’s potable water system averages 5.8%. That figure was used to project estimated system losses for the years 2020 – 2040.

This table shows the most recent System Water Loss for a 12-month period

Table 4-4 Retail: 12 Month Water Loss Audit Reporting	
Reporting Period Start Date (mm/yyyy)	Volume of Water Loss
07/2014	377.535
NOTES: "Water Loss" as described in FPUD's 2015 AWWA Water Loss Audit, where "Water Loss" equals "Water Supplied" minus "Authorized Consumption". Total Non-Revenue Water for the reporting period was 685.5 Acre Feet, or 5.8%.	

4.4 ESTIMATING FUTURE WATER SAVINGS

Estimates of both active and passive future savings have been incorporated into water use projections.

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. Below is a description of the process.

Active conservation savings are derived from conservation programs and activities implemented within the Water Authority service area. Over 50 active conservation activities (such as, indoor and outdoor rebate incentives, landscape classes, and WaterSmart irrigation checkups) are tracked in the AWE Tool and are based on agencies’ program participation. Water savings from these

activities are calculated using water efficiency estimates, by activity type, contained in the standardized AWE Tool Library. Future active conservation is set at the 2015 level of participation in program offerings and estimated savings for each year over the planning horizon, excluding the recent large-scale turf replacement program. Additionally, retail water agency system loss control is estimated at 2 percent of total deliveries.

Passive conservation savings is based on appliance standards, plumbing code changes, and conversion of active savings to passive as the useful life of devices is reached. Calculation of future passive savings starts in 2013 and is tracked over the planning period. Additionally, estimated savings from the 2015 Model Water Efficient Landscape Ordinance (MWELO) are included in this category. Based on discussions with subject matter expert Dr. Tom Chesnutt of A&N Technical Services, MWELO compliance on new residential development was set at 80% and a majority of this savings was assumed to continue over the 2040 planning horizon. Additionally, to capture anticipated market transformation on existing homes, the passive conservation total also includes savings from landscape conversions on a portion of current single family homes. A quarter of existing single family homes are predicted to convert to efficient landscapes over the 2015 UWMP planning horizon (approximately 150,000 homes) in the Water Authority's service area.

Supporting data used in the conservation savings calculations was derived from the San Diego Association of Governments - Series 13 Regional Growth Forecast and includes socio-demographic data on population and housing stock projections by member agency. The number of retail accounts by customer class was based on data provided by Water Authority member agencies through a survey conducted in the fall of 2015.

4.5 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 2040 Demand Forecast.

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

Table 4-5 Retail Only: Inclusion in Water Use Projections	
<p>Are Future Water Savings Included in Projections? (Refer to Appendix K of UWMP Guidebook) <i>Drop down list (y/n)</i></p>	Yes
<p>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.</p>	See Section 4.4, page 18
<p>Are Lower Income Residential Demands Included In Projections? <i>Drop down list (y/n)</i></p>	Yes

Section 5 – SB X7-7 Baselines and Targets

In 2009, the California Water Code 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 “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 agencies 2010 Urban Water Management Plans.

5.1 UPDATING CALCULATIONS FROM 2010 UWMP

Urban water suppliers have the option in their 2015 plans to update the target method utilized in their 2010 Urban Water Management Plan to calculate the 2020 water use target. FPUD chooses to retain “Method 1” as the source of its current 20 by 2020 calculation.

5.2 BASELINE PERIODS

Urban water suppliers have the option in their 2015 plans to update the baseline period utilized in their 2010 Urban Water Management Plan to calculate the 2020 water use target. FPUD chooses to retain the same baseline periods as used in its 2010 plan as the source of its current 20 by 2020 calculation.

5.3 SERVICE AREA POPULATION

Population data for FPUD’s 2010 and 2015 was provided by a SANDAG (San Diego Association of Governments) survey, which was pre-approved by the Department of Water Resources.

5.4 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 California Water Code. Calendar year totals were drawn from FPUD records, and used to calculate 20 by 2020 targets.

5.5 BASELINE DAILY PER CAPITA WATER USE

Utilizing “Method 1,” SANDAG population data, and a 10-year baseline period starting in 1999, FPUD’s baseline per capita per day water use is 467.

The table below shows the baseline target summary.

Table 5-1 Baselines and Targets Summary					
<i>Retail Agency or Regional Alliance Only</i>					
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)					

5.6 2015 AND 2020 TARGETS

FPUD's 2015 20 by 2020 target is 374 GPCD, with a 2015 interim target of 421 GPCD.

5.7 2015 COMPLIANCE DAILY PER CAPITA WATER USE

FPUD is in compliance with its 2015 target of 421 GPCD, with an actual calculated 2015 per capita per day water use of 272.

The table below shows the agency's compliance.

Table 5-2: 2015 Compliance								
<i>Retail Agency or Regional Alliance Only*</i>								
Actual 2015 GPCD	2015 Interim Target GPCD	Optional Adjustments to 2015 GPCD Enter "0" for adjustments not used <i>From Methodology 8</i>					2015 GPCD (Adjusted if applicable)	Did Supplier Achieve Targeted Reduction for 2015? Y/N
		Extraordinary Events	Economic Adjustment	Weather Normalization	TOTAL Adjustments	Adjusted 2015 GPCD		
272	421	0	0	0	0	272	272	Yes
*All values are in Gallons per Capita per Day (GPCD)								

Section 6 – System Supplies

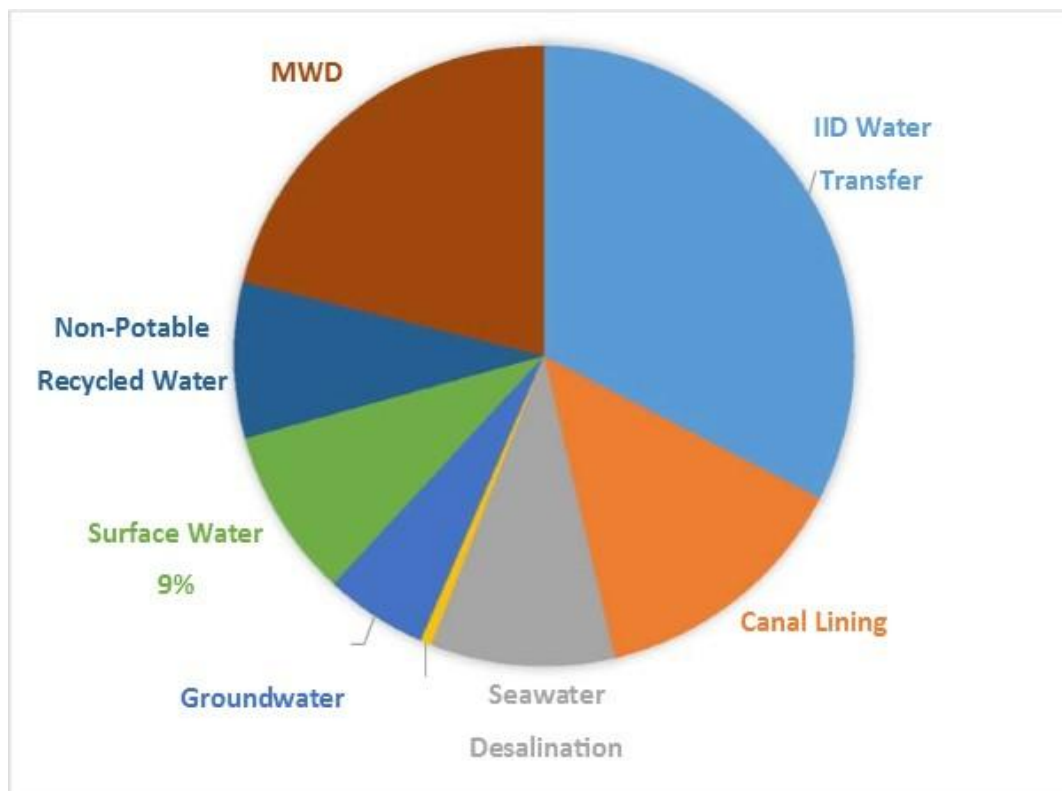
6.1 PURCHASED OR IMPORTED WATER

The Fallbrook Public Utility District (FPUD) purchases all its water from the San Diego County Water Authority (Water Authority) as treated, potable water. The Water Authority, in turn, relies on the Metropolitan Water District of Southern California (Metropolitan) for close to half of its supply. 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 Water Authority also has a number of local supply projects. After experiencing severe shortages from Metropolitan during the 1987–1992 drought, the Water Authority began aggressively pursuing actions to diversify the region’s supply sources. Comprehensive supply and facility planning over the past 20 years provided the direction for implementation of these actions. One of these projects includes a 50-million gallon per day seawater desalination plant that began producing potable water in December 2015. It is capable of producing up to 56,000 AF per year, and is considered a drought-proof water supply. It is enough to meet 8% of the San Diego region’s demand. The Water Authority also has ongoing water transfer discussions and entered into a transfer agreement with the Imperial Irrigation District in 2002. That project, the Quantification Settlement Agreement, will provide up to 200,000 AF by 2030. As part of that project and related contracts, the Water Authority contracted for 77,700 AF/YR of conserved water by lining portions of the All-American Canal and the Coachella Canal. Those lining projects reduced the loss of water that occurred through seepage, and the conserved water is delivered to the Water Authority.

The below chart illustrates the water sources for the Water Authority.



For more information on the Water Authority and Metropolitan’s water supply plans for FPUD, it may be helpful to reference their 2015 Urban Water Management Plans.

The *actual* volume of water the District purchased in 2015 from the Water Authority was 11,849 AF. More details on actual water supplies can be found in Table 6-8 Water Supplies – Actual. The District’s *projected* demand on the Water Authority in 2020 is 11,491 AF. More details on projected water supplies can be found in Table 6-9 – Water Supplies – Projected.

6.2 GROUNDWATER

PURCHASED WATER

Some of FPUD’s water is groundwater pumped by the Water Authority and Metropolitan. For more information, refer to their 2015 Plans.

GROUNDWATER MANAGEMENT

A potential source of water for FPUD is the lower Santa Margarita River. However, if the planned Santa Margarita River Conjunctive-Use Project, described below, does not come to fruition, FPUD will continue to rely on the Water Authority for virtually 100% of its water supply.

SANTA MARGARITA RIVER CONJUNCTIVE-USE PROJECT, HISTORY AND BACKGROUND

Fallbrook used to produce some of its 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 have not been rebuilt. Subsequently the state cancelled 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 quiet its title to the adjudicated rights accruing to Camp Pendleton.

Currently, 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 could eventually realize a reliable annual local water supply from this project of 3,100 AF per year. Facilities are now in the final design phase for FPUD and Camp Pendleton. The project is targeted for completion in three to five years.

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 project.

WATER CODE SECTION §10631

(b)(2) If groundwater is identified as an existing or planned source of water available to the supplier, all of the following information shall be included in the plan: A description of any groundwater basin or basins from which the urban water supplier pumps groundwater.

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. In addition, the basin is adjudicated and overseen by a federal watermaster so an additional groundwater management plan does not need to be prepared.

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

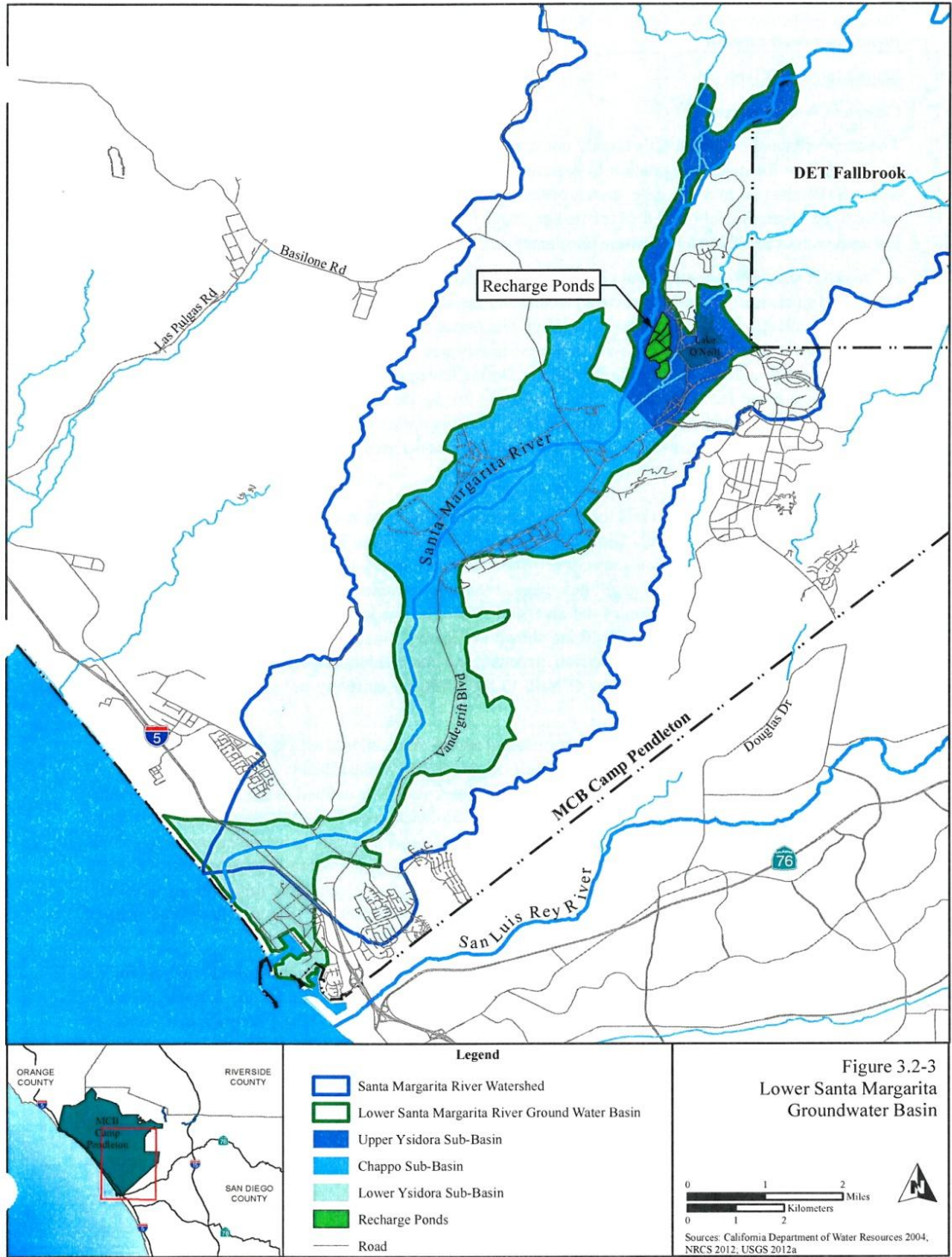


Figure 3.2-3
Lower Santa Margarita
Groundwater Basin

3-13

COURT ADJUDICATION

The Santa Margarita River is adjudicated in that the rights are established, but the amount of water is not quantified. That remains under court jurisdiction. 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>.

CAPRA WELL – GROUNDWATER SOURCE

The source of groundwater for the Capra Well is a small fractured-rock aquifer in a localized watershed of Red Mountain below the District’s Red Mountain Reservoir. A groundwater management plan is not required and one has not been adopted for this groundwater source. The groundwater basin 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. The well is not a reliable source of water.

The table below shows the volume of water pumped from Capra Well

Table 6-1 Retail: Groundwater Volume Pumped						
Supplier does not pump groundwater. The supplier will not complete the table below.						
Groundwater Type <i>Drop Down List</i> <i>May use each category multiple times</i>	Location or Basin Name	2011	2012	2013	2014	2015
<i>Add additional rows as needed</i>						
Fractured Rock	Capra Well	0	143.1	134.7	39.2	119.8
	TOTAL	0	143	135	39	120

6.3 SURFACE WATER

Virtually all of the District’s potable water is purchased from the Water Authority. None is currently self-supplied from a surface water source. The Water Authority also relies on Metropolitan for a significant portion of its water. Metropolitan gets its water from two sources: the Colorado River and the State Water Project. However, the Water Authority is focusing on diversifying its sources of water to reduce reliance on Metropolitan.

For more information on their water supply plans for FPUD, refer to the 2015 Urban Water Management Plans for the Water Authority and Metropolitan.

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 4,500 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 1.7 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 2015, the total wastewater collected and treated was 1,725 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 2015, 1,126 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 expansion and upgrade of the system. 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.

The table below shows the volume of wastewater collected in 2015

Table 6-2 Retail: Wastewater Collected Within Service Area in 2015						
<input type="checkbox"/> There is no wastewater collection system. The supplier will not complete the table below.						
Percentage of 2015 service area covered by wastewater collection system <i>(optional)</i>						
Percentage of 2015 service area population covered by wastewater collection system <i>(optional)</i>						
Wastewater Collection			Recipient of Collected Wastewater			
Name of Wastewater Collection Agency	Wastewater Volume Metered or Estimated? <i>Drop Down List</i>	Volume of Wastewater Collected in 2015	Name of Wastewater Treatment Agency Receiving Collected Wastewater	Treatment Plant Name	Is WWTP Located Within UWMP Area? <i>Drop Down List</i>	Is WWTP Operation Contracted to a Third Party? <i>(optional) Drop Down List</i>
<i>Add additional rows as needed</i>						
Fallbrook Public Utility District	Metered	1,725	Fallbrook Public Utility District	Fallbrook Public Utility District Treatment Plant No. 1	Yes	No
Total Wastewater Collected from Service Area in 2015:		1,725				

The table below shows Wastewater Treatment and Discharge in 2015

Table 6-3 Retail: Wastewater Treatment and Discharge Within Service Area in 2015										
<input type="checkbox"/> 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 <i>(optional)</i>	Method of Disposal <i>Drop down list</i>	Does This Plant Treat Wastewater Generated Outside the Service Area?	Treatment Level <i>Drop down list</i>	2015 volumes			
							Wastewater Treated	Discharged Treated Wastewater	Recycled Within Service Area	Recycled Outside of Service Area
<i>Add additional rows as needed</i>										
Fallbrook Public Utility District Treatment Plant No. 1	Oceanside	Oceanside		Ocean outfall	Yes	Tertiary	1,725	1,126	543	56
Total							1,725	1,126	543	56

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. We have two proposed sites: San Diego Growers and DM Color. In addition, two of our existing recycled customers,

Premier Color Nursery and Silverthorne Nursery, are expanding and looking to add another recycled meter to each of their sites.

Approximately 70% of our recycled water is used for agricultural purposes and 30% is used for landscape irrigation. We have recycled an average of 193 million gallons (MG), or 594 acre-feet per year, over the past five years.

The most recent reporting year figures show that FPUD recycles an average of approximately 35% of our total plant flow. We estimate wastewater flow increases at the same rate as the population growth. These projections are provided by San Diego Association of Governments (SANDAG), San Diego's regional planning agency.

Our recent expansion allows us the flexibility of doubling our recycled usage from 600 AFY to 1,200 AFY.

The District made the commitment and commenced its wastewater recycling efforts in 1994. 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.

FPUD's Recycled Water Master Plan is in the process of being updated. The most current plan to date is included in Appendix B.

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 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 2015, FPUD sold 416 AF of recycled water for agricultural irrigation and projects that amount will increase to 770 AF by 2020, 840 AF by 2025 and thereafter. In 2015, the District sold 178 AF of recycled water for landscape irrigation and projects that amount will increase to 330 AF by 2020, 360 AF by 2025 and thereafter. These numbers are considerably higher than the projections in the 2010 Urban Water Management Plan due to the completion of recent expansion and upgrade of the wastewater treatment and water reclamation plant. The \$27 million project took three years to complete and came in under budget and ahead of schedule. It allowed the District to double the recycled water used from 600 AFY to more than 1,200 AFY. More information on this can be found in

the section below, “Actions to Encourage and Optimize Future Recycled Water Use.” Earlier projections for recycled water used for agricultural irrigation were 255 AFY for 2015 and 288 for landscape irrigation. Projections were based on the proportions of actual recycled water use during 2010. In the time since the 2010 plan, FPUD has expanded its agricultural customer base which now comprises roughly 70% of total recycled water use. As FPUD continues to expand its recycled water customer base, agricultural customers are expected to make up the majority of recycled water use.

The table below shows current and projected recycled water use

Table 6-4 Retail: Current and Projected Recycled Water Direct Beneficial Uses							
Name of Agency Producing (Treating) the recycled water:		Fallbrook Public Utility District					
Name of Agency Operating the recycled water distribution system:		Fallbrook Public Utility District					
Supplemental Water Added in 2015:		162.2 Acre Feet					
Source of 2015 Supplemental Water:		Fallbrook Public Utility District					
Beneficial Use Type	General Description of 2015 Uses	Level of Treatment	2015	2020	2025	3030	2035
Agricultural irrigation	Nursery production, cash crops	Tertiary	416	770	840	840	840
Landscape irrigation (excludes golf courses)	HOAs, roadways, natural areas	Tertiary	178	330	360	360	360
Total:			594	1,100	1,200	1,200	1,200

The table below shows projected vs. actual use

Table 6-5 Retail: 2010 Recycled Water Use Projection Compared to 2015 Actual		
Use Type	2010 Projection for 2015	2015 Actual Use
Agricultural irrigation	255	416
Landscape irrigation (excludes golf courses)	288	178
Total:	543	594

ACTIONS TO ENCOURAGE AND OPTIMIZE FUTURE RECYCLED WATER USE

FPUD has made recycled water available and its use is mandatory where available and cost-effective. 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 28 details the requirements for the use of recycled water whenever feasible. Article 28 is attached in Appendix C.

The District has also established financial incentives for the use of recycled water within its service area. The incentive is determined by the philosophy that recycled water is an offset to potable water; we set the recycled water rate at 80% of the average of our Tier 1 and Tier 2 rates. The exact formula is as follows: We add the Tier 1 rate to the Tier 2 rate. That total is divided by two to get the average of the two tiers. That divided number is multiplied by 80% to obtain the recycled water rate.

The District has taken great strides in the past five years to increase recycled water use. Following the \$27 million completion of the expansion and upgrade of the wastewater treatment and water reclamation plant, FPUD brought five new users online and has three more proposed sites in the works. This is anticipated to double the recycled usage from 600 AFY to more than 1,200 AFY. The expansion project involved improving processes at the Plant, increasing recycled water storage there, and extending the recycled pipeline by 10,000 feet thereby allowing new users to tap into the system. The District secured more than \$750,000 in Integrated Regional Water Management Funds from the Department of Water Resources to offset the recycled pipeline project costs.

The District also took 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 retro-fit costs.

To publicize the upgrades, the District had a public workshop to help potential new users understand their options for using recycled water. The District also held a well-attended ribbon-cutting ceremony after the December 2015 completion, and has done multiple tours with the board of directors, and has held workshops with residents adjacent to the facility.

The table below shows methods for expanding recycled use

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.		
33	Provide page location of narrative in UWMP		
Name of Action	Description	Planned Implementation Year	Expected Increase in Recycled Water Use
<i>Add additional rows as needed</i>			
Distribution system expansion	New extensions of recycled water mainlines	Ongoing	N/A
New customer outreach	Community meetings, agricultural surveys, site supervisor training for potential recycled water customers within current distribution area	Ongoing	N/A
Requirements for future development	Any future development with an opportunity to connect to recycled service shall expand service area to connect to recycled water. See FPUD Administrative Code Article 28.10	Ongoing	N/A
Connect new services	Planning and implementation for new customers (plant nurseries, agriculture, parks and recreation)	Ongoing	642
Total			642

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. This desalination plant produces about 8% of the San Diego region’s demand. The Water Authority is also investigating other potential desalinated water projects, including one with Marine Corps Bay Camp Pendleton on the base, and another with Otay Water District in Rosarito Beach. More information on these projects can be found in the Water Authority’s 2015 Urban Water Management Plan.

6.7 EXCHANGES OR TRANSFERS

WATER CODE SECTION §10631

(d) 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.

Rancho California Water District is the only other adjacent water agency, and the agencies are evaluating opportunities for transfers or emergency connections.

As a member agency of the Water Authority, the District actively participates in Water Authority's ongoing water transfer discussions through our general manager, Brian Brady, who is on the Water Authority's board of directors. The Water Authority entered into a transfer agreement with the Imperial Irrigation District, which will provide up to 200,000 AF by 2030. The Water Authority also contracted for 77,700 AFY of conserved water from projects that lined portions of the All-American Canal and the Coachella Canal, reducing seepage. These are separate from and in addition to imported water supply purchases from Metropolitan Water District. More information on these projects and Water Authority's potential water transfers can be found in the Water Authority's 2015 Urban Water Management Plan.

6.8 FUTURE PROJECTS

A potential water supply project for FPUD is the Santa Margarita River Conjunctive-Use Project, described in Section 6.1, with the Marine Corps Base Camp Pendleton as a partner. The project involves capturing surface water during storms and storing the surplus in an aquifer on Camp Pendleton. FPUD could eventually realize a reliable annual local water supply from this project of 3,100 AF per year. Facilities are now in the final design phase for FPUD and Camp Pendleton. The project is targeted for completion in three to five years. More details and historical information can be found on this project in 6.2, "Santa Margarita River Conjunctive-Use Project, History and Background." However, if this project does not come to fruition, FPUD will continue to rely on the Water Authority for virtually 100% of its water supply.

The table below shows expected future water supply projects

Table 6-7 Retail: Expected Future Water Supply Projects or Programs						
Name of Future Projects or Programs	Joint Project with other agencies?		Description	Planned implementation year	Planned for Use in Year Type	Increase in water supply
Santa Margarita Conjunctive-Use Project	Yes	Marine Corps Base Camp Pendleton	Conjunctive groundwater use	2020	Average year	3,100

6.9 SUMMARY OF EXISTING AND PLANNED SOURCES OF WATER

In summary, FPUD’s existing and planned sources of water are a combination of purchased water from the Water Authority; groundwater from the unreliable Capra Well; groundwater from the potential Santa Margarita River Conjunctive-Use Project; surface water from diversions into Lake Skinner when available; and recycled water produced by the District. Actual supplies for 2015 were 12,563 AF.

The table below shows actual supplies for 2015

Table 6-8 Retail: Water Supplies — Actual				
Water Supply	Additional Detail on Water Supply	2015		
<i>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</i>		Actual Volume	Water Quality <i>Drop Down List</i>	Total Right or Safe Yield <i>(optional)</i>
<i>Add additional rows as needed</i>				
Purchased or Imported Water	San Diego County Water Authority	11,849	Drinking Water	
Groundwater	Capra Well	120	Drinking Water	
Groundwater	Santa Margarita Conjunctive Use Project	0	Drinking Water	
Surface water	Lake Skinner surface diversions	0	Drinking Water	
Recycled Water		594	Recycled Water	
Total		12,563		0

FPUD’s planned – or projected – sources of water include water purchased from the Water Authority. Groundwater from two local supply sources – the Capra Well and the Santa Margarita River Conjunctive-Use Project, which is expected to come online in 2018, are projected to provide a combined total of 3,200 AFY in 2020 and thereafter through at least 2040. Surface water diversions into Lake Skinner, when available, will provide an average of 300 AFY in 2020 and thereafter through at least 2040; and recycled water produced by the District is projected to increase to 800 AFY in 2020 and thereafter through at least 2040. However, if the Capra Well and Santa Margarita River Conjunctive-Use project

do not produce water and/or come to fruition, and recycled water production does not increase in demand, thereby offsetting potable demand, FPUD will continue to rely on the Water Authority for its water supply. For more information on the Water Authority’s supply plans, refer to their 2015 Urban Water Management Plan.

The table below shows projected supplies through 2035

Table 6-9 Retail: Water Supplies — Projected									
Water Supply	Additional Detail on Water Supply	Projected Water Supply							
<i>Drop down list</i> <i>May use each category multiple times.</i> <i>These are the only water supply categories that will be recognized by the WUEdata online submittal tool</i>		2020		2025		2030		2035	
		Reasonably Available Volume	Total Right or Safe Yield <i>optional</i>	Reasonably Available Volume	Total Right or Safe Yield <i>optional</i>	Reasonably Available Volume	Total Right or Safe Yield <i>optional</i>	Reasonably Available Volume	Total Right or Safe Yield <i>optional</i>
Purchased or Imported Water	Purchase from SDCWA	11,491		13,041		13,520		13,704	
Groundwater	Capra Well and Santa Margarita River Conjunctive Use	3,200	3,200	3,200	3,200	3,200	3,200	3,200	3,200
Surface Water	Lake Skinner diversions	300	300	300	300	300	300	300	300
Recycled Water		1,100		1,200		1,200		1,200	
Total		16,091	3,500	17,741	3,500	18,220	3,500	18,404	3,500

Section 7 – Water Supply Reliability Assessment

7.1 CONSTRAINTS ON WATER SOURCES

WATER CODE SECTION §10631

(c)(2) For any water source that may not be available at a consistent level of use, given specific legal, environmental, water quality, or climactic factors, describe plans to supplement or replace that source with alternative sources or water demand management measures, to the extent practicable.

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 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 ample supplies for its member agencies during normal water year conditions through 2040.

During single dry year and multiple dry year events, FPUD’s local potable sources may prove unreliable, and the district will rely on the Water Authority for 100% of its potable water supplies. The Water Authority has developed a diverse portfolio of supplies, storage, and supply management practices to provide a secure and consistent supply of water for its member agencies. In the Water Authority’s 2015 Urban Water Management Plan, a detailed reliability assessment demonstrates that the region’s existing and projected water resources are drought-resilient, with no shortages anticipated during single dry water year events through 2040, and only minor shortages anticipated during multiple dry water years 15-20 years in the future. These shortages can be mitigated through extraordinary water conservation actions and other supply management practices. Detailed accounts of region’s secure and drought resilient water supplies can be found in the Water Authority’s 2015 UWMP.

7.2 RELIABILITY BY TYPE OF YEAR

WATER CODE SECTION §10631

(1)(1) Describe the reliability of the water supply and vulnerability to seasonal or climatic shortage, to the extent practicable, and provide data for each of the following:

- (a) An average water year.*
- (b) A single dry year.*
- (c) Multiple dry water years*

Over the past 25 years, Fallbrook and the greater San Diego area have experienced multiple periods of drought. Adapting policies and procedures to deal with these periods of scarcity has led local water agencies to understand what it takes to operate during drought conditions. In the years leading up to the drafting of this plan, the region has been immersed in one of the most severe multiple year droughts on record. Whether this period of prolonged drought is a temporary climactic anomaly, or a harbinger of a new normal remains to be seen. What is known is that the Water Authority and its member agencies have made significant investments in diversifying water supplies, and refining 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, as were available from the Water Authority during the current drought. During fiscal year 2016, and at the time of drafting this plan, FPUD and the San Diego region have had a growing supply surplus, which has been left unused as a result of the state’s emergency drought restrictions.

The table below shows Dry-Year data

Table 7-1 Retail: Basis of Water Year Data			
Year Type	Base Year	Available Supplies if Year Type Repeats	
		Agency may provide volume only, percent only, or both	
		Volume Available	% of Average Supply
Average Year	2011		100%
Single-Dry Year	2015		107%
Multiple-Dry Years 1st Year	2012		107%
Multiple-Dry Years 2nd Year	2013		109%
Multiple-Dry Years 3rd Year	2014		112%

7.3 SUPPLY AND DEMAND ASSESSMENT

WATER CODE SECTION §106315

(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 total projected water use over the next 20 years, in five-year increments, for a normal water year, a single dry water year, and multiple dry 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. Supply and demand projections in this plan have been developed by taking into account historic demands in the FPUD service area, changing demographics as projected by a SANDAG (San Diego Association of Governments) survey, as well as supply and demand projections calculated by the Water Authority in its 2015 Urban Water Management Plan.

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, 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 entirely on the Water Authority to meet potable water demands. Planning for shifts in supply and demand has been an integral component of the Water Authority's efforts to diversify and secure the region's water supplies. Projects such as canal lining in the Imperial and Coachella valleys, construction and expansion of local storage facilities, and the construction of the nation's largest desalinization plant in Carlsbad exemplify San Diego's commitment to diverse and secure supplies of water.

Table 7-2 shows FPUD's projected supplies and demands during normal conditions, in five-year increments through 2035. These projections include local potable water supplies from groundwater and surface water projects, to be supplemented by purchases from the Water Authority. Remaining Potential Surplus will be handled through Management Actions.

The table below shows supply and demand

Table 7-2 Retail: Normal Year Supply and Demand Comparison					
	2020	2025	2030	2035	2040 (Opt)
Supply totals (autofill from Table 6-9)	16,091	17,741	18,220	18,404	0
Demand totals (autofill from Table 4-3)	12,034	13,584	14,063	14,247	0
Difference	4,057	4,157	4,157	4,157	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 2035. Local surface and groundwater are not considered reliable water sources during dry-year events, and are not included in supply totals during dry-year projections. As noted in the Water Authority’s 2015 UWMP, no shortages are anticipated within the Water Authority’s service area in a single dry-year through 2035.

The table below shows single dry year supply and demand

Table 7-3 Retail: Single Dry Year Supply and Demand Comparison					
	2020	2025	2030	2035	2040 (Opt)
Supply totals	13,472	15,238	15,750	15,947	
Demand totals	12,876	14,535	15,047	15,244	
Difference	596	703	703	703	0

Table 7-4 shows FPUD’s projected supplies and demands during multiple dry-year events in five-year increments through 2035. Local surface and groundwater are not considered reliable water sources during dry-year events, and are not included in supply totals during dry-year projections. As noted in the Water Authority’s 2015 UWMP, only minor shortages are anticipated during multiple dry water years 15-20 years in the future, which can be mitigated through extraordinary water conservation actions and other supply management practices, as determined by the Water Authority and its member agencies at that time.

The table below shows multiple dry year supply and demand

Table 7-4 Retail: Multiple Dry Years Supply and Demand Comparison						
		2020	2025	2030	2035	2040 (Opt)
First year	Supply totals	13,598	15,380	15,898	16,245	
	Demand totals	12,997	14,671	15,188	15,529	
	Difference	601	709	710	716	0
Second year	Supply totals	14,102	15,950	16,634	16,991	
	Demand totals	13,478	15,214	15,891	16,242	
	Difference	624	736	743	749	0
Third year	Supply totals	15,109	16,947	16,781	16,469	
	Demand totals	14,441	16,165	16,594	17,096	
	Difference	668	782	187	(627)	0
Fourth year <i>(optional)</i>	Supply totals					
	Demand totals					
	Difference	0	0	0	0	0
Fifth year <i>(optional)</i>	Supply totals					
	Demand totals					
	Difference	0	0	0	0	0
Sixth year <i>(optional)</i>	Supply totals					
	Demand totals					
	Difference	0	0	0	0	0

7.4 REGIONAL SUPPLY RELIABILITY

WATER CODE SECTION §106320

(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 (see Section 6), the district plans to develop a local supply with a projected average annual yield of 3,100 Acre Feet per year. In addition, 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 curb the misuse 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.

Section 8 – Water Shortage Contingency Planning

8.1 STAGES OF ACTION

WATER CODE SECTION §10632 (a) (1)

Stages of action to be undertaken by the urban water supplier in response to water supply shortages, including up to a 50% reduction in water supply, and an outline of specific water supply conditions which are applicable to each stage.

In the event of declared water shortages, Article 26 of the Administrative Code will be implemented. A copy is included in Appendix D. This plan includes both voluntary and mandatory rationing during water supply shortages to help control consumption. It identifies four stages of rationing, and identifies the stages of action FPUD would take in the event of a declared shortage. It also illustrates the specific water supply conditions that trigger activation of each stage of action. It should also be noted that FPUD's water wholesaler, the San Diego County Water Authority (Water Authority), reports regional information and methodology in its 2015 Urban Water Management Plan, and that it has a comprehensive Drought Management Plan in the event the region faces supply shortages. More information can also be found in the wholesaler Metropolitan Water District of Los Angeles's 2015 Urban Water Management Plan.

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 four stages of actions that would be taken by FPUD in the event of a declared shortage. A narrative summary is beneath the table and the complete text is in Appendix D.

The table below shows the four stages of our shortage plan

Table 8-1 Retail Stages of Water Shortage Contingency Plan		
Stage	Complete Both	
	Percent Supply Reduction ¹ <i>Numerical value as a percent</i>	Water Supply Condition <i>(Narrative description)</i>
<i>Add additional rows as needed</i>		
1	10%	Water Shortage Watch
2	20%	Water Shortage Alert Condition
3	40%	Water Shortage Critical Condition
4	50%	Water Shortage Emergency Condition
¹ One stage in the Water Shortage Contingency Plan must address a water shortage of 50%.		

The first stage in our Water Shortage Contingency Plan is Level 1 “Water Shortage Watch” which is a stage that is in force at all times and prohibits water waste. In this level, customers are asked to follow 11 common-sense restrictions. These voluntary restrictions enforce using water wisely and ensure conservation measures so no water is wasted.

Level 2 “Water Shortage Alert” is enforced when the Water Authority notifies the District that cutbacks are necessary, caused by water shortages or other reduction in supplies, then a consumer demand of up to 20% is required in order to have sufficient supplies available to meet anticipated demands.

Level 3 “Water Shortage Critical” applies when the Water Authority notifies the District that due to increasing cutbacks caused by water shortages or other reduction of supplies, a consumer demand reduction of up to 40% is required in order to have sufficient supplies available to meet anticipated demands in the future and a 15% reduction in water use is required to meet all minimal needs of customers.

Level 4 “Drought Emergency” applies when the Water Authority notifies the District that it has declared a water shortage emergency and requires a demand reduction of more than 40% in order for the District to have maximum supplies available to meet anticipated demands.

8.2 PROHIBITIONS ON END USES

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 26 of the Administrative Code, in Appendix B.

The table below shows mandatory prohibitions

Table 8-2 Retail: Restrictions and Prohibitions on End Uses			
Stage	Restrictions and Prohibitions on End Users <i>Drop down list</i> <i>These are the only categories that will be accepted by the WUEdata online submittal tool</i>	Additional Explanation or Reference (optional)	Penalty, Charge or Other Enforcement?
<i>Add additional rows as needed</i>			
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	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 8-2 Retail: Restrictions and Prohibitions on End Uses			
Stage	Restrictions and Prohibitions on End Users <i>Drop down list</i> <i>These are the only categories that will be accepted by the WUEdata online submittal tool</i>	Additional Explanation or Reference (optional)	Penalty, Charge or Other Enforcement?
<i>Add additional rows as needed</i>			
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	Water Features – Restrict water use for decorative water features, such as fountains		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 26, in Appendix D	Yes
4	Water Features – Restrict water use for decorative water features, such as fountains	Prohibited	Yes
4	Other – Customers must repair leaks, breaks, and malfunctions in a timely manner	Within 24 hours	Yes
4	Other – Prohibit vehicle washing, except at facilities using recycled or recirculating water		Yes

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

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 8-2 and Appendix D.

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 8-2 and Appendix D.

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 8-2 and Appendix D.

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 8-2 and Appendix D.

8.3 PENALTIES, CHARGES, OTHER ENFORCEMENT OF PROHIBITIONS

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.

The District also utilizes a conservation rate structure of inclining block rates that penalizes users with increased usage. The District's current rate structure can be found at: <http://www.fpud.com/PDFDocuments/CurrentWaterRates.pdf>.

8.4 CONSUMPTION REDUCTION METHODS

The District uses a number of consumption reduction methods.

CATEGORIES OF CONSUMPTION REDUCTION METHODS

To reduce usage, Fallbrook Public Utility District will:

- Expand its public information campaign, including holding public meetings, attending community events and disseminating conservation information, writing articles for the local newspapers, producing ads in the local newspaper and increasing speaking engagements.
- Improve customer billing by adding information to the bill such as allocation information or usage reduction requirement notices.
- Offer water-use surveys through the contracted Mission Resource Conservation District.
- Provide conservation rebates through the Metropolitan Water District of Los Angeles's SoCalWaterSmart rebate program.
- Provide giveaways of plumbing fixtures and devices such as hose nozzles with shut-off valves, faucet aerators, toilet leak-detection tablets and shower timers.
- Provide rebates for landscape irrigation efficiency through Metropolitan's SoCalWaterSmart rebate program.
- Increase water waste patrols by hiring a Drought Coordinator, asking for customers' assistance, also through implementation of a mobile app "When in Drought" whereby water waste can be reported on a phone or mobile device.
- Implement a drought-rate structure with potential fees.

The table below summarizes Consumption Reduction Methods

Table 8-3 Retail Only: Stages of Water Shortage Contingency Plan - Consumption Reduction Methods		
Stage	Consumption Reduction Methods by Water Supplier <i>Drop down list</i> <i>These are the only categories that will be accepted by the WUEdata online submittal tool</i>	Additional Explanation or Reference <i>(optional)</i>
<i>Add additional rows as needed</i>		
1	Expand Public Information Campaign	
1	Improve Customer Billing	
1	Offer Water Use Surveys	
1	Provide Rebates for Turf Replacement	
1	Provide Rebates for Landscape Irrigation Efficiency	
1	Provide Rebates on Plumbing Fixtures and Devices	
2	Increase Water Waste Patrols	Enforce Level 2 water use restrictions
2	Implement or Modify Drought Rate Structure or Surcharge	
2	Other	Monthly water savings tips on customer bills
3	Increase Water Waste Patrols	Enforce Level 3 water use restrictions
4	Increase Water Waste Patrols	Enforce Level 4 water use restrictions

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

8.5 DETERMINING WATER SHORTAGE REDUCTIONS

The District measures and determines actual water savings by following what the Water Authority dictates is necessary. The Water Authority establishes a base year and FPUD is required to reduce consumption by a specific percentage of that base year. For example, in the current drought, FPUD is required to reduce consumption by 28% of consumption in the base year, 2013. The base year is determined by what is considered to be the most recent normal water year. The Water Authority dictates the required reduction, and FPUD measures the required reduction by relying upon water meters to record the production and consumption of water.

8.6 REVENUE AND EXPENDITURE IMPACTS

If FPUD were to encounter an extended water shortage, the 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.

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 we collect 80% of the fixed costs of running the Water Operations in our 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.

8.7 RESOLUTION OR ORDINANCE

The District's water shortage contingency plan is Article 26 of our Administrative Code. It is included in Appendix D.

8.8 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 DeLuz 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.

As a member agency of Water Authority wholesale water supplier, the District actively participates in the Water Authority's ongoing reliability discussions. Due to the reduced allocation the Water Authority received from Metropolitan during the 1987-1992 drought, the Water Authority is focusing on diversifying its sources of water, rather than relying on Metropolitan for the majority of its water. The Water Authority entered into a transfer agreement with the Imperial Irrigation District, which will provide up to 200,000 AF by 2030. The Water Authority has also added seawater desalination as a supply source. That source came online in December 2015 and produces 50-million gallons per day. More information on these projects can be found in the Water Authority's 2015 Urban Water Management Plan.

Catastrophic events such as earthquakes or regional power outages can impact water supply. As a member agency of the Water Authority, the District is a participant in the Water Authority's Emergency Response Plan and benefits from its Emergency Storage Project. The Response Plan provides information to allow staff to respond to an emergency that impedes the Water Authority's ability to

provide reliable water service to the District. The Response Plan includes: policies, an Emergency Operations Center activation and deactivation guidelines, multi-agency and multi-jurisdictional coordination, emergency staff and organization, Mutual Aid agreements and pre-emergency planning and emergency operations procedures.

The Emergency Storage Project is a system of reservoirs, pipelines and other facilities that will work together to store and move water around the county in the event of a natural disaster. The ESP facilities are located throughout San Diego County and are being constructed in phases. Construction of the first facilities began in 2000. The initial ESP phase included construction of the 318-foot-high Olivenhain Dam and accompanying Olivenhain Reservoir, which together added 24,300 acre-feet of emergency storage for the region. Raising the height of the San Vicente Dam was the last major component of the ESP, and was completed in 2012. The raised dam adds an additional 117 feet, making this the tallest dam raise in the United States, and allows for an additional 52,000 acre-feet of emergency storage, as well as 100,000 acre-feet of carryover storage. The ESP provides 90,100 acre-feet of storage water for emergency purposes in the Water Authority's service area. The Water Authority is in the planning stages to determine the required pumping and distribution facilities that would be needed to deliver Emergency Storage Project water to FPUD. The amount of storage developed by the ESP is anticipated to meet the Water Authority's needs through at least 2030. More information can also be found in the Water Authority's 2015 Plan.

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.

1. Action to be taken: Notify management personnel as quickly as possible. Consider activation of Emergency Operations Center.
2. Determine the flow to 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.
3. 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.
4. Notify the public, *via electronic signage, 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, 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, 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, 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.

8.9 MINIMUM SUPPLY NEXT THREE YEARS

The Urban Water Management Planning Act requires agencies to project demand and supplies during each of the next three years, 2016, 2017 and 2018, based on the driest historic sequence for the District's water supply.

The table below shows minimum supply for the next three years

Table 8-4 Retail: Minimum Supply Next Three Years			
	2016	2017	2018
Available Water Supply	13,222	13,458	13,814
NOTES: FPUD supplies meet or exceed demands over the next three years.			

Since the District's local supplies may not provide a reliable water supply during drought conditions, they are excluded from the dry-year calculations. FPUD could then be 100% reliable on the Water Authority during a drought. It is possible, however, that local weather in Fallbrook could be wetter than the conditions causing a regional drought and as a result, local water supplies could be available. In order to take a conservative approach to supply planning, however, these figures are excluded. In a single dry year, the Water Authority is able to meet all its member agencies' demands, as shown in their 2015 Plan. In multiple dry years, it is estimated that a cutback proportional to the cutback identified in the Water Authority's 2015 Plan would be required as shown in the tables.

Section 9 – Demand Management Measures

The California Urban Water Conservation Council (CUWCC) organizes ongoing efforts to promote best management practices amongst California water agencies, with the goal of promoting and enforcing responsible water use. FPUD has long been an active participant in integrating these practices into the operations of the District, which are summarized in the following sections, as they relate to Water Code Section §106131 and the amended “*Memorandum of Understanding*” published by the CUWCC in January of 2016.

9.1 FOUNDATIONAL BEST MANAGEMENT PRACTICES

“Water utilities throughout California are implementing water conservation programs and providing services to the customers they serve. There are four subcategories that comprise signatory utility operation program responsibilities.” - CUWCC Memorandum of Understanding

9.1.1 OPERATIONS PRACTICES

FPUD currently has a full-time staff member who is responsible for the responsibilities of BMP planning, organization and compliance.

Water waste prevention has many facets, and FPUD has made and will continue to make strides to curb the misuse of water. 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 26 of the FPUD administrative code Appendix D.

The San Diego County Water Authority (Water Authority) provides a variety of assistance programs, including workshops, educational materials, countywide public outreach and conservation assistance. Detailed accounts of these programs can be found in the Water Authority’s 2015 UWMP.

Membership in the CUWCC has enabled FPUD to stay on top of current trends in conservation practices. FPUD staff participates in discussions regarding conservation during a monthly meeting held at the Water Authority.

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*, and maintains detailed internal records. Data from these records was used to complete the AWWA Water Audit Software worksheet for the current reporting period, and report water loss, which totaled 5.8% for fiscal year 2015. This worksheet is included in this plan as Appendix A. Future worksheets will be completed annually after the close of each fiscal year.

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, read meters with automated meter reading (AMR), perform monthly billing, track and account for all meters, execute programs for meter testing/repair/replacement, and intends to develop fully automated metering infrastructure (AMI) in the next two to three years.

9.1.4 RETAIL CONSERVATION PRICING

Part I – Retail Water Service Rates

Retail conservation pricing entails structuring water rates in such a way as to promote conservation. While each agency has it at its discretion to set rates, the way those rates are structured should comply with CUWCC guidelines. To summarize compliance, FPUD chooses “Option 3,” which sums a matrix of points earned by exercising retail conservation practices such as structuring rates in tiers, or inclining blocks, metering, developed forms of metering infrastructure (AMR) and extensive customer communication such as advance notification regarding water use anomalies, website tools, use history and benchmarking.

Part 2 – Retail Wastewater Rates

Retail conservation pricing entails structuring wastewater rates in such a way as to promote conservation. Conservation pricing provides incentives to reduce average and peak use, in addition to recovering the costs associated with providing service. For all FPUD sewer accounts, pricing is the sum of fixed charges based on meter size and charges based on estimated sewer flows, which are calculated by taking into consideration metered water use and the type of account. FPUD’s retail wastewater rates can be found at: <http://www.fpud.com/PDFDocuments/CurrentSewerRates.pdf>.

9.2 EDUCATION PRACTICES

The District has many 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. The District also benefits from the Water Authority's regional public outreach program.

9.2.1 PUBLIC INFORMATION PROGRAMS

FPUD's 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 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. The District also coordinates with the Water Authority and other agencies and local entities, developing partnerships with stakeholders who carry the conservation message to customers, for events such as rain barrel distribution pick-up events. 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. The District also benefits from the Water Authority's public outreach program which includes social media campaigns, landscape water conservation media campaigns, production of fliers and general water conservation information, produces articles and stories for local news media, supports and advertises the Water Conservation Garden at Cuyamaca College, and maintains a website on regional information.

9.2.2 SCHOOL EDUCATION PROGRAMS

FPUD's public affairs representative implements a robust school education program that includes working with elementary school students. One program, the "Grease in the Can, Not the Drain" public relations campaign involves approximately 30 classroom presentations per year. The related contest for the most creative "grease can" garners about 600 entries each year. The students are recognized at a board meeting, their winning grease cans are put on display

at the Fallbrook Library along with a Meet the Artist event, and the program receives significant media attention. The campaign has been in place since 2002 and in 2012, it won the California Association of Water Agencies award for best public outreach campaign for a small agency. The campaign has also received three grants awards and has earned three local Cornucopia Awards.

The District also participates in 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. The District also sponsors the Splash Van Science Mobile Lab and the Green Machine Mobile Lab for elementary students in Fallbrook. The District pays half the cost of these on-site “field trips” for eight full days for local schools. The Water Authority pays the other half.

The District also benefits from the Water Authority’s public outreach program which includes water quality testing kits for high schools, a large water conservation display at the Reuben H. Fleet Science Center in San Diego, the H₂O Where Did You Go? theatre program, youth and scout patch programs, and other regional programs.

9.3 RESIDENTIAL PROGRAMMATIC PRACTICES

Residential water use has a variety of opportunities for improved conservation measures. While a home may not use as much water as a farm or large business, there are many different ways water is used in residential settings, many of which provide opportunities to save water.

When considering indoor water use, retrofitting fixtures, toilets and appliances to modern, low-water-use designs can significantly lower a residence’s water demands. FPUD actively promotes rebate programs through the Metropolitan Water District program, *SoCal Water\$mart*, and has done so, like other districts in the region, for over 20 years. There has been some discussion amongst water agencies in recent years that many of the customer bases in the San Diego region have reached high levels of saturation with regard to rebate programs, as participation in these programs has become stagnant, if not in steady decline.

Outdoor water use may hold the most potential for water conservation savings for many years to come. The sheer quantity of irrigation equipment, including automated irrigation system controls (that need constant updating to efficiently irrigate a landscape), emitters (which suffer from wear and tear, clogging, damage and poorly planned use), and widely varying levels of water management training for homeowners and landscapers alike all contribute to significant quantities of water lost through poor landscape water management. To assist customers in assessing the quality of their systems and irrigation scheduling, FPUD, in conjunction with the Water Authority, contracts out to Mission Resource Conservation District to perform Landscape Water Surveys and Agriculture Irrigation System Audits for customers free of charge. Rebates are also available for high efficiency irrigation equipment through *SoCal Water\$mart*.

9.4 COMMERCIAL, INDUSTRIAL AND INSTITUTIONAL PROGRAMMATIC PRACTICES

Commercial, industrial and institutional water use makes up a small portion of FPUD's overall water use. Conservation targets in CUWCC mandates called for a 10% reduction in district-wide commercial water use, with baseline water use defined as the water consumed by CII accounts in the agency's service area in 2008. Fiscal year 2015 saw a 46% reduction in district-wide commercial water use compared to the 2008 base year. A significant portion of this reduction has been the result of a general decline in local commerce and industry, as a result of difficult economic conditions during the Great Recession.

9.5 LANDSCAPE PROGRAMMATIC PRACTICES

Dedicated irrigation accounts are water accounts that have been established for the sole purpose of irrigating landscape areas. Having an established block of these accounts provides water agencies an opportunity to track landscape irrigation use, and direct resources toward accounts that may benefit from irrigation audits. In addition, per CUWCC mandates, dedicated irrigation accounts are to be provided water use budgets based on Maximum Applied Water Allowance calculations, which take into account plant material and reference evapotranspiration figures to set reasonable targets for landscape water use. During the reporting period referenced in this plan, dedicated irrigation meters made up just over 0.1% of overall water use in FPUD's service area. Efforts to expand the number of dedicated irrigation accounts have been a recent development in FPUD's management practices. In 2011, the district performed a feasibility study to explore the potential costs involved in retrofitting "Commercial" accounts with mixed commercial/irrigation water use as separate "Commercial" and "Irrigation" accounts. The costs of such expansive programs proved prohibitive, especially when taking into consideration higher priority needs with regard to district infrastructure. The County of San Diego's Model Water Efficient Landscape Ordinance specifies that new construction shall abide by MAWA specifications to promote responsible and efficient landscape water use.

Section 10 – Plan Adoption, Submittal and Implementation

10.1 INCLUSION OF ALL 2015 DATA

The 2015 Urban Water Management Plan includes all the water use and planning data for the entire year of 2015. The Fallbrook Public Utility District is completing this report on a fiscal year basis. Data and planning figures are projected through 2035.

10.2 NOTICE OF PUBLIC HEARING

FPUD held a public hearing on the Plan at its board of directors monthly meeting on May 23, 2016, at 4 p.m. The District notified Cities and County agencies with written letters at least 60 days in advance of the public hearing.

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 Bill Horn	Yes	Yes
Marine Corps Base Camp Pendleton	Yes	Yes
Rainbow Municipal Water District	Yes	Yes
Mission Resource Conservation District	Yes	Yes
San Diego County Water Authority	Yes	Yes

NOTICE TO THE PUBLIC

Notice to the public was made by advertising in the Fallbrook Village News. Two ads were placed, 60 days in advance of the hearing, in the March 10, 2016 and March 24, 2016 papers. Additionally two public hearing notices (legal ads) also ran in the Fallbrook Village News. They ran on March 31, 2016 and April 7, 2016. Ads indicated the date and time of the hearing and where the plan could be reviewed. Notice was also placed in the display case outside the District office.

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

FPUD news

Keeping Fallbrook informed



State law requires turning off sprinklers after measurable rainfall

Remember to turn off your sprinklers for at least 48 hours after a rain event. By state law, it's illegal to irrigate landscapes during measurable rainfall and for 48 hours afterward.

Longterm Water Plan public hearing

We're drafting our Urban Water Management Plan which forecasts our water supply and needs through the year 2035. Come be a part of the discussion.
When: May 23, 4 p.m. on our draft plan.

Free sandbags for El Niño storms

Different locations in Fallbrook and throughout the county are offering free sand and bags, or just bags, or are asking people to bring their own shovels.

Sandbags can help protect property from water runoff, mud, debris and soil erosion caused by El Niño storms and flooding. The bags are being offered through the County of San Diego Department of Public Works, Fire Authority and CAL FIRE.

Here are a few locations that offer the free bags. It is a good idea to call ahead to confirm sand and bag availability. For more information, visit: readysandiego.org/el-nino/

DE LUZ

- 39524 Daily Road, phone: 760-728-3140
- 39431 De Luz Road, phone: 760-728-2422

FALLBROOK

- 4375 Pala Mesa Dr., phone: 760-723-2024

FALLBROOK – bags only

- 3660 E. Mission Rd, phone: 760-728-1323

Pipeline shutdown coming this month

We need your help, starting this week

Beginning Friday, March 18, we will be relying on a limited supply of water stored in our tanks during a shutdown running until March 28, the day after Easter.

Our water wholesaler, the San Diego County Water Authority, will be discontinuing water supply to perform maintenance and repair work on the pipelines that distribute water to us and other parts of the county.

The Water Authority specifically chooses winter and early spring for shutdowns as the weather is typically colder and wetter,



minimizing the need for irrigation. However, it's likely that additional conservation will be necessary.

Please help us by conserving water both indoors and outside. We especially need your help with **outdoor** irrigation conservation.

You will still have water delivered to your home. You can still flush your toilet, run your dishwasher and washing machine, and shower as you normally would. But since 60% of the average home's water usage is actually outdoors,

we're asking you to reduce your outside irrigation to only 50% of your normal outside watering.

With your conservation efforts, the shutdown shouldn't be noticeable to the majority of our customers. However, in the event of heavy irrigation, there may be limited flows and low pressure.

Thank you! We really appreciate your conservation efforts. ●

public hearing

Fallbrook Public Utility District

In accordance with state requirements, we're holding a public hearing to review and discuss the draft of our

Urban Water Management Plan which forecasts our water supply and needs through 2035.

May 23, 4 p.m.



**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 May 23, 2016, 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 2015 Urban Water Management Plan prepared by District staff prior to adoption at either the May 23, 2016 or the June 27, 2016 regular board meetings and prior to submittal to the Department of Water Resources in July 2016.

The draft 2015 Urban Water Management Plan is available for public inspection at the Fallbrook Library, 124 South Mission Road, Fallbrook, California; the Fallbrook Public Utility District, 990 East Mission Road, Fallbrook, California; and at www.fpud.com.

Mary Lou Boultinghouse
Secretary, Board of Directors

Published: March 31, 2016
 April 7, 2016

10.3 ADOPTION

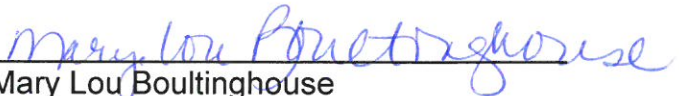
The District's board of directors adopted the 2015 Urban Water Management Plan at the June 27, 2016 board meeting. Resolution 4884 is included on the following page.

FALLBROOK PUBLIC UTILITY DISTRICT
BOARD OF DIRECTORS

* * * * *

I, Mary Lou Boultinghouse, Secretary of the Board of Directors of the Fallbrook Public Utility District, do hereby certify that the attached and foregoing is a full, true, and correct copy of Resolution No. 4884 of said Board passed and adopted at a regular meeting of the Board of Directors of the Fallbrook Public Utility District on 27th day of June, 2016.

Executed this 28th day of June, 2016, at Fallbrook, California.


Mary Lou Boultinghouse
Secretary, Board of Directors



RESOLUTION NO. 4884

A RESOLUTION OF THE BOARD OF DIRECTORS OF THE
FALLBROOK PUBLIC UTILITY DISTRICT ADOPTING THE 2015
URBAN WATER MANAGEMENT PLAN UPDATE FOR FALLBROOK
PUBLIC UTILITY DISTRICT

* * * * *

WHEREAS, the proper and most effective conservation of our public water resources is essential to ensuring adequate water supplies now and in the future; and

WHEREAS, water conservation must be a permanent way of life for all residents living in semi-arid Southern California; and

WHEREAS, the Fallbrook Public Utility District has updated their Urban Water Management Plan (the "Plan") pursuant to the requirements of California Water Code Section 10621, et. seq.; and

WHEREAS, the Plan is the formal document to discuss past, current, and projected water demands; current and alternate conservation measures; water supply deficiencies and future water management practices for the Fallbrook service area.

NOW, THEREFORE, BE IT RESOLVED BY the Board of Directors of the Fallbrook Public Utility District as follows:

1. The Board of Directors of the Fallbrook Public Utility District approves and adopts the updated Plan entitled "2015 Urban Water Management Plan Update for Fallbrook Public Utility District."
2. The General Manager of the District is authorized and directed to implement the water conservation measures included in the updated Plan as the District's part in the local, regional, and statewide water conservation effort.

PASSED AND ADOPTED by the Board of Directors of the Fallbrook Public Utility District at a regular meeting of the Board held on the 27th day of June 2016, by the following vote:

AYES: Directors Anderson, Davies, Gebhart, McDougal, and Wolk
NOES: None
ABSENT: None
ABSTAIN: None


President, Board of Directors

ATTEST:


Secretary, Board of Directors

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
AWWA WATER LOSS AUDIT



AWWA Free Water Audit Software: Reporting Worksheet

WAS v5.0

American Water Works Association.

?	Click to access definition
+	Click to add a comment

Water Audit Report for: Fallbrook Public Utility District
Reporting Year: 2015 7/2014 - 6/2015

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.

WATER SUPPLIED

----- Enter grading in column 'E' and 'J' -----					
Volume from own sources:	+	?	9	119.800	acre-ft/yr
Water imported:	+	?	10	11,728.900	acre-ft/yr
Water exported:	+	?	n/a	0.000	acre-ft/yr

Master Meter and Supply Error Adjustments

	+	?	n/a	[radio] [radio]	acre-ft/yr
	+	?	9	[radio] [radio]	123.500
	+	?	[]	[radio] [radio]	[]

Enter negative % or value for under-registration
Enter positive % or value for over-registration

WATER SUPPLIED: 11,725.200 acre-ft/yr

AUTHORIZED CONSUMPTION

Billed metered:	+	?	9	11,039.700	acre-ft/yr
Billed unmetered:	+	?	[]	0.000	acre-ft/yr
Unbilled metered:	+	?	10	161.400	acre-ft/yr
Unbilled unmetered:	+	?	8	146.565	acre-ft/yr

Default option selected for Unbilled unmetered - a grading of 5 is applied but not displayed

AUTHORIZED CONSUMPTION: 11,347.665 acre-ft/yr

Click here: ?
for help using option buttons below

Pcnt:	1.25%	[radio] [radio]	[]	acre-ft/yr
-------	-------	-----------------	-----	------------

Use buttons to select percentage of water supplied **OR** value

Pcnt:	0.25%	[radio] [radio]	[]	acre-ft/yr
-------	-------	-----------------	-----	------------

Pcnt:	1.00%	[radio] [radio]	[]	acre-ft/yr
		[radio] [radio]	[]	27.599

WATER LOSSES (Water Supplied - Authorized Consumption)

377.535 acre-ft/yr

Apparent Losses

Unauthorized consumption: 29.313 acre-ft/yr

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

Customer metering inaccuracies:	+	?	7	113.142	acre-ft/yr
Systematic data handling errors:	+	?	9	27.599	acre-ft/yr

Apparent Losses: 170.054 acre-ft/yr

Real Losses (Current Annual Real Losses or CARL)

Real Losses = Water Losses - Apparent Losses: 207.481 acre-ft/yr

WATER LOSSES: 377.535 acre-ft/yr

NON-REVENUE WATER

NON-REVENUE WATER: 685.500 acre-ft/yr

= Water Losses + Unbilled Metered + Unbilled Unmetered

SYSTEM DATA

Length of mains:	+	?	9	268.0	miles
Number of <u>active</u> AND <u>inactive</u> service connections:	+	?	9	9,194	
Service connection density:	?			34	conn./mile main

Are customer meters typically located at the curbside or property line? Yes

Average length of customer service line: + ?

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

Average operating pressure: + ? 9 122.0 psi

COST DATA

Total annual cost of operating water system:	+	?	10	\$20,987,810	\$/Year
Customer retail unit cost (applied to Apparent Losses):	+	?	9	\$4.82	\$/1000 gallons (US)
Variable production cost (applied to Real Losses):	+	?	10	\$1,299.57	\$/acre-ft

Use Customer Retail Unit Cost to value real losses

WATER AUDIT DATA VALIDITY SCORE:

***** YOUR SCORE IS: 92 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: Unauthorized consumption
- 2: Customer metering inaccuracies
- 3: Billed metered

APPENDIX B
RECYCLED WATER MASTER PLAN

Fallbrook Public Utilities District Master Plan (2012) - Draft

Prepared by District Staff

Table of Contents

Chapter 1 – Water Supplies

Chapter 2 – Recycled Water

Chapter 3 – Water Treatment and Distribution

Chapter 4 – Wastewater

Chapter 5 - Summary

Chapter 2 – Recycled Water

2.1 Background

The District started serving reclaimed water in 1991. Currently the WWTP treats all influent flows to tertiary standards. The recycled sales peaked in 1997 at 860 AFY and sales have varied from 350 AFY to 675 AFY over the last few years. In 2010, two nursery customers who leased District property were required to relocate due to the construction of new District solar facilities, which resulted in reduced recycled usage. The average usage in 2011 was 600 AFY and this is used as the estimated average annual baseline usage with the current customers. The amount of recycled water available varies slightly due to minor infiltration in the wet season, but as shown in Table 2-1 is typical between 150-180 AF per month. The amount of recycled water used by customers varies significantly from summer to winter due to irrigation needs, but in the peak month of August recycled demand accounted for 77 AF or 44% of influent flows as shown in Table 2-1. The ratio of peak month (77 AF) demand to average monthly demand (50 AF) is 1.5:1.

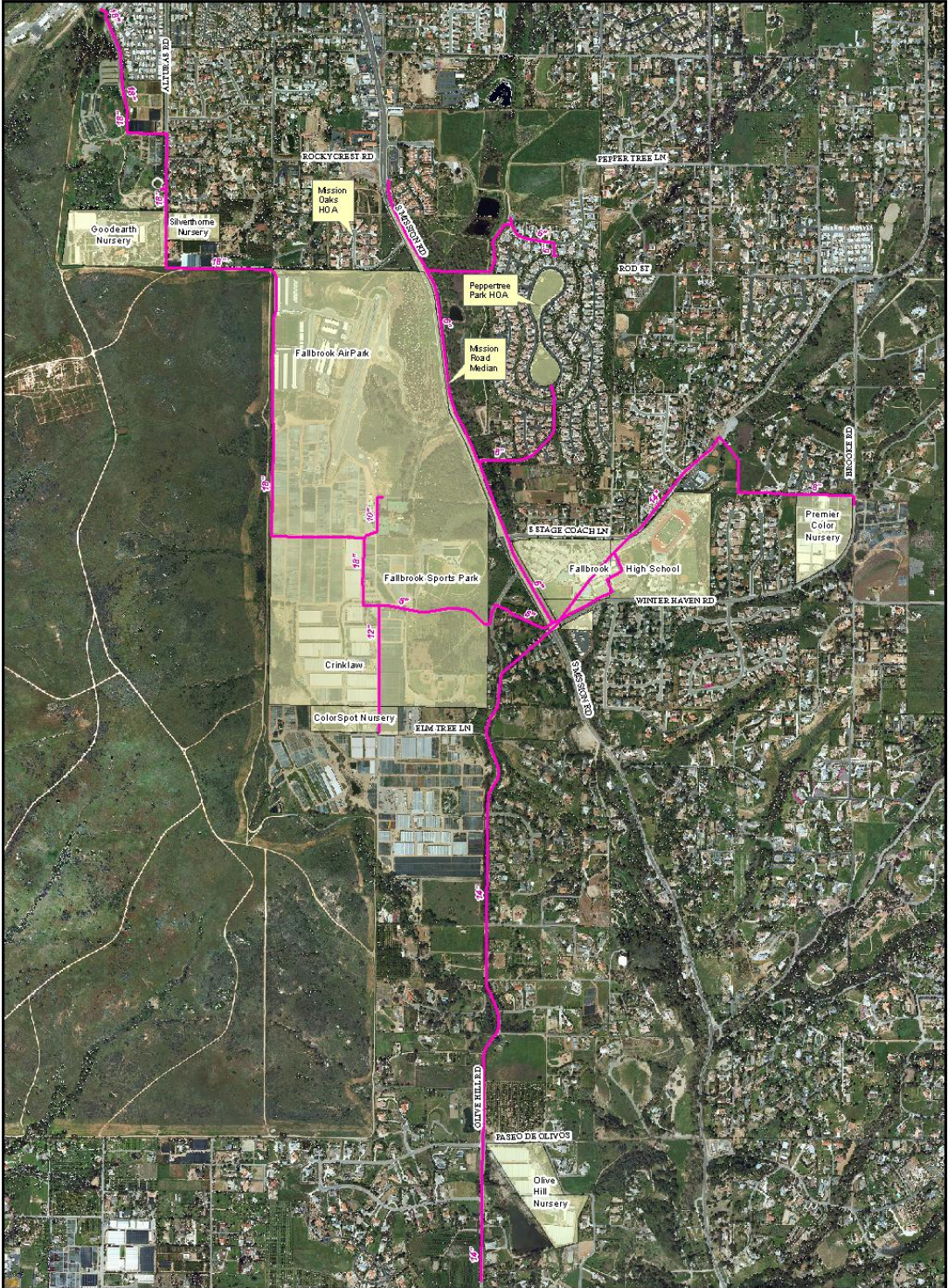
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
WWTP Influent Flow (AF)	183	162	177	163	168	164	165	165	160	162	159	170	2000
Recycled Water Sales (AF)	23	22	36	59	77	62	73	77	71	49	27	32	608
Unused Recycled Water (Ocean Disposal) (AF)	137	143	123	90	87	87	68	74	76	83	90	162	1220
% Recycled Usage	13%	13%	20%	36%	46%	38%	44%	47%	44%	30%	17%	19%	30%

Table 2-1 - Monthly Recycled Water Usage 2011 (All figures in AF)

The District currently serves the following recycled customers:

- Goodearth Nursery
- Silverthorne Nursery
- Crinklax
- ColorSpot Nursery
- Fallbrook Sports Park
- Olive Hill Nursery
- Fallbrook High School
- Peppertree Park HOA
- Mission Road Median
- Fallbrook Airpark
- Mission Oaks HOA
- California Department of Transportation (Caltrans)
- Arrowood Golf Course
- Premier Color Nursery
- Orange Grove Energy

The District serves users within FPUD service area and also users within the City of Oceanside’s service area through the land outfall and one user in Rainbow MWD service area (Orange Grove Energy) using fill trucks and a recycled fill station. The locations of the current users are shown on Figures 2-1 and 2-2.



DISCLAIMER: By accepting this map, you agree that the Fallbrook Public Utility District assumes no liability or responsibility of any kind arising from use of this map. This map, its Data, and any calculations associated with this map is provided without warranty of any kind.

- PARCEL OF RECYCLED WATER CUSTOMER
- RECYCLED WATER MAIN

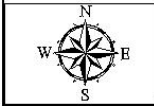
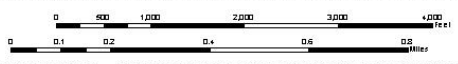


FIGURE 2-1 FPU D RECYCLED WATER SERVICE AREA (INSIDE DISTRICT)



Source: Eagle Point 2009, SANGIS, FALLBROOK PUBLIC UTILITY DISTRICT. Map Created by: Todd Jones (R-20-02), KIDDIS & ASSOCIATES. Includes Parcel SpatialReference: NAD_83, Customer: 12/15/2014. Read in: California State Plane Zone 9, NAD 83, 1 in. = 1000 Feet.

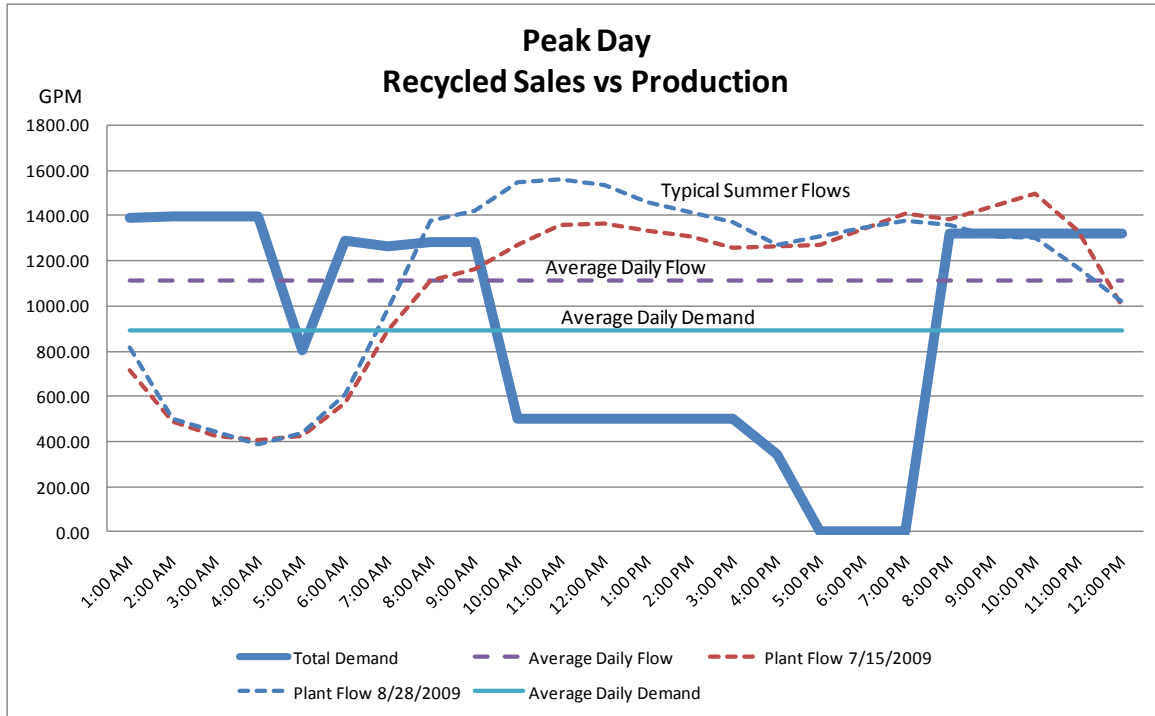


Figure 2-3 – Peak Day Recycled Demands versus Available Supply

Based on this evaluation, it was determined that recycled storage of at least 350,000 gallons is required to equalize flows during peak day demands. As part of the planned improvements at the WWTP approximately 1.5 MG of storage will be included to allow for equalization over several peak demand days. Once this storage is completed the District will be able to add additional recycled customers without increasing potable make-up water needs up to the approximate available monthly supply for the peak demand month.

Without any additional WWTP flows and with sufficient storage to deal with daily fluctuations, the recycled peak month demand could be expanded up to approximately the peak month supply. Without the construction of additional seasonal storage, the maximum recycled demand would be limited to the maximum recycled supply in the maximum demand month. This would allow an approximately 214% increase in demands, based on utilizing all recycled water in August which is the constraint on available supply versus demands as shown in Table 2-2. If it is assumed that the current demands could be increased proportionally in each month using our current demand profile, as shown in Table 2-2 then an estimated 1300 AFY would be available for additional recycled users. Since current usage is 600 AF, it would allow for up to 700 AF of new supply once the WWTP improvements are complete. Since the annual amount of influent wastewater is 2000 AF, at this utilization 700 AF would go out the outfall without additional of seasonal storage or 35% of the available supply.

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
WWTP Influent Flow (AF)	183	162	177	163	168	164	165	165	160	162	159	170	2000
Current Recycled Water Sales (AF)	23	22	36	59	77	62	73	77	71	49	27	32	608
Maximum Potential Usage (Maximum Month - 100%)	49	46	77	126	165	133	157	164	152	106	58	69	1301
Unused Recycled Water (Ocean Disposal) (AF)	134	116	101	36	4	31	9	1	9	57	101	101	699
% Maximum Recycled Usage	27%	28%	43%	78%	98%	81%	95%	100%	95%	65%	36%	41%	65%

Table 2-2 – Projected Maximum Monthly Available Recycled Water for new Users (All figures in AF – Based on 2011 Influent Flow and Recycled Usage)

2.3 Recycled Expansion Options

A number of options were evaluated for the recycled water system to try and ensure the District is evaluating the economic impacts of all feasible wastewater disposal and reuse options:

1. Eliminating the Recycled Water Program
2. Developing Additional Recycled Water Demands in FPU D Service Area
3. Development of an Potable Recharge Project with Aquifer Storage and Recovery
4. Development of a Potable Recharge Project with Reservoir Augmentation

2.3.1 Option 1 - Stopping Recycled Water Production

The District is in the process of planning extensive improvements at the WWTP to improve reliability. The estimate total cost of the project is over \$20 million. The improvements include extensive rehabilitation to the tertiary facilities that produce recycled water. If tertiary facilities were eliminated and all effluent was disposed of via the ocean outfall then the capital cost of the project could be reduced by about \$3-\$5 million. Recycled Water revenue is approximately \$1480/AF including MWD and SDCWA rebates, service charges and water sales. Based on current annual sales of 515 AF per year¹ this results in \$762,200 in annual revenue. If recycled sales were stopped it is estimated that O&M costs would reduce by \$200,000 per year in reductions in equipment and materials. It is not expected that staffing requirements would decrease to the extent that staff reductions would be possible. There would be no savings on costs from previous capital expenditures on distribution and treatment. The net annual loss would be \$562,000 per year. A summary of the capital, O&M and lifecycle cost for discontinuing recycled production is summarized below:

Capital Cost: \$3-\$5 million savings

O&M Cost: \$-562,000

Present Worth Lifecycle Costs (30 years, 3%): -\$8 to -\$6 million

1. Although 600 AFY is utilized some recycled water is utilized for community areas at no cost so revenue was collected for 515 AF of the 600 AF used.

2.3.1 Option 2- Additional Recycled Users in FPUD service Area

The District has identified 42 AF of new recycled projects that will be included in existing development projects as shown in Table 2-3. The projects are already included in developer plans and it is not expected for there to be any cost to the District for these projects. Additional recycled projects were also identified as shown in Figure 2-3. These projects include a East, South and North Extension of recycled service.

Recycled Water Projects	Estimated Demand (AFY)	Estimated Cost	Cost (1,000\$/AFY)
Peppertree Development Phase 7	14	0*	0
Peppertree Development Phase 8 and 9	28	0*	0
North Extension	55	\$475,000	\$8.6
East Extension	85	\$780,000	\$9.2
South Extension	40	\$520,000	\$13
Total	222	\$1,510,000	\$8.9
Total without North Extension**	167	\$1,035,000	\$6.2

*Costs Already included in the development

** North Extension Dependant on Construction of Army Reserve Base which is uncertain.

Table 2-3 – Additional Recycled Water Projects

The North Extension is tied to the potential construction of an Army Reserve Center on Naval Weapons Station Fallbrook. This project may not proceed and without this project there would not be sufficient demand for the extension, since the only additional demand on the North Extension would be from limited apartment complex retrofits and middle school outdoor irrigation. The East extension would feed a large nursery at the East end of the service area. The South extension would feed a nursery at the South Western end of our district. With the East and South extensions we would only be able to capture an additional 170 AFY. A summary of the estimated monthly supply and demands based on expanding the recycled system is shown in table 2-4.

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
WWTP Influent Flow (AF)	183	162	177	163	168	164	165	165	160	162	159	170	2000
Current Recycled Water Sales (AF)	23	22	36	59	77	62	73	77	71	49	27	32	608
Projected Potential Usage (Additional 170 AFY)	29	28	46	76	98	79	94	98	91	63	35	41	778
Unused Recycled Water (Ocean Disposal) (AF)	153	135	131	87	70	84	72	67	70	99	125	129	1221
% Maximum Recycled Usage	16%	17%	26%	46%	58%	49%	57%	60%	57%	39%	22%	24%	39%

Table 2-4 – Projected Monthly Recycled Water Usage with New Users (All figures in AF)

Since the facility already produces tertiary water, there are no additional capital costs and the marginal O&M costs for production and supply are limited and estimate to be \$166/AF additional cost so the annual revenue is estimated at \$1314/AF. A summary of the capital, O&M and lifecycle cost for developing additional recycled pipelines based on details in Appendix A is summarized below:

Capital Cost: \$1,035,000 million

Annual Revenue (170 AFY at \$1314/AF): \$223,380

Present Worth Lifecycle Costs (30 years, 3%): \$3.3 million

Regulatory Issues:

The existing recycled permit should cover new users for the East and South extension which are in the San Luis Rey watershed. It will require requesting approval from the RWQCB and County, approval of recycled piping plans and having the County conduct an initial cross connection test. The North extension would result in additional users in the Santa Margarita Watershed which has stricter Total Dissolved Solids (TDS) and Nutrient limits and may require the District to complete a salt and nutrient management plan in order to obtain RWQCB approval.

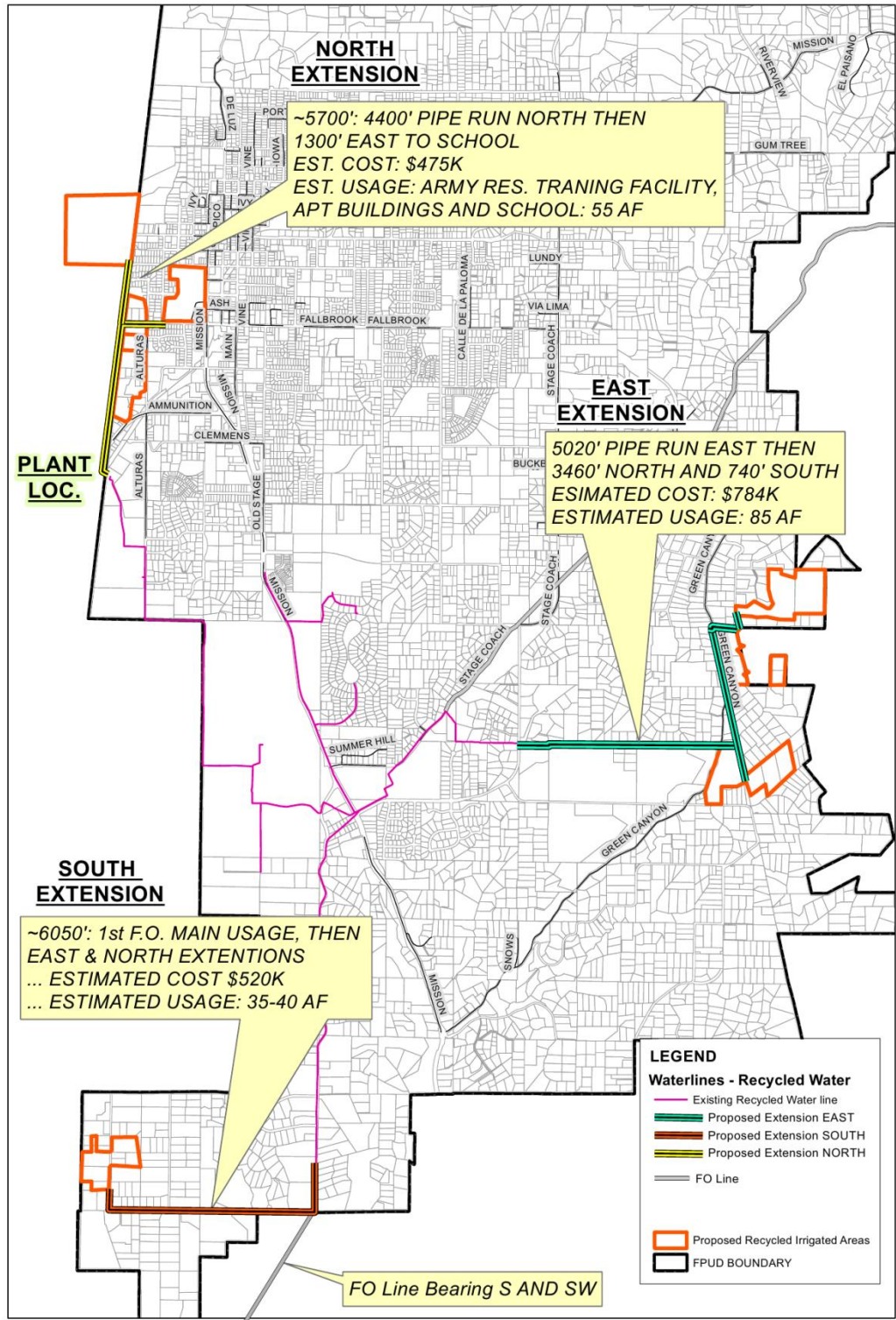
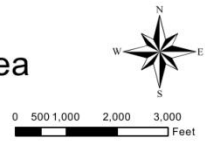


Figure 2-3 Additional Recycled Water Users in FPUD Service Area

1 inch = 2,000 feet

MAP BY SOLEIL DEVELLE 8/24/12
 X:\SOLEIL\PROJECTS\Water usage_Reclaim water\RECYCLEDWATER_EXPANSION_PLAN_2012-8-11X17



2.3.2 Development of Potable Reuse Aquifer Storage and Recovery (ASR) Project

Based on the analysis in Section 2.3.1, an additional 170 AFY can be developed within the FPUD service area to create a total annual recycled water demand of 778 AFY which would still result in 1220 AFY sent to the ocean, so the District is also evaluating potential Potable Reuse (PR) alternatives such as aquifer storage and recovery to more fully utilize local water resources. Potable recharge projects that implement discharges to recharge groundwater basins have been successfully permitted and operated in California since 1962. This type of project would allow the District to more fully utilize available recycled water as a water supply source. Since the District does not overlay a viable aquifer, it would require coordination with either Camp Pendleton or Oceanside who overlay aquifer’s downstream of the District. The WRP is located so that disposal could be to Fallbrook Creek in the Santa Margarita Watershed or with some additional piping to Ostrich Creek in the San Luis Rey Watershed. The water would then need to be diverted and recharged to the aquifer on the lower end of the rivers, which overlay viable aquifers.

As shown in Figure 2-4, the facilities for diversion and recharge of river flows already exist on Camp Pendleton for the Santa Margarita Watershed. In addition, as part of the Santa Margarita Conjunctive Use Project additional facilities are planned to pump groundwater and deliver to Fallbrook. The benefits and drawbacks of each option are listed in Table 2-5 below:

Option	Benefits	Drawbacks
Discharge to Fallbrook Creek	<p>Increases Yield of Conjunctive Use Project (CUP).</p> <p>Facilities Planned as part of CUP to divert, store and deliver water back to FPUD.</p> <p>Provides potential permanent outfall capacity for Oceanside.</p> <p>FPUD holds water rights in Santa Margarita River.</p>	<p>Requires Live Stream discharge permit from RWQCB with potential limits of 1 mg/l as N for N and 0.1 mg/l as P for P. Annual limit but cannot be exceeded more than 10% of the time. TDS Target 750 mg/l.</p>
Discharge to Ostrich Creek	<p>Water Quality Discharge limits are higher for the San Luis Rey Watershed.</p> <p>Could provide additional yield for Oceanside’s Desalters.</p>	<p>Requires Live Stream discharge permit from RWQCB with potential limits of 1 mg/l as N for N and 0.1 mg/l as P for P. Annual limit but cannot be exceeded more than 10% of the time. TDS Target 500 mg/l.</p> <p>Requires infrastructure for conveyance to Ostrich Creek.</p>

		<p>No facilities planned to improve recharge or delivery water from San Luis Rey River to Fallbrook and would require a water exchange agreement with Oceanside.</p> <p>FPUD holds no water rights for San Luis Rey. Water rights requirements would need to be determined.</p>
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Table 2-5 – Comparison of Potable Reuse ASR Projects

2.3.2.1 Fallbrook Creek Potable Recharge Project

Of the two options discharge to Fallbrook Creek has more potential as a viable PR project since the facilities to recharge the groundwater basin and transport water back to the District from the Groundwater basin on Camp Pendleton. As shown in Table 2-6 if an additional 170 AFY per year of recycled demands are developed, there is still the opportunity for 1000 AFY of title 22 water as a supply for an ASR PR project. In order to meet the surface water discharge objectives of 1 mg/l as N and 0.1 mg/l as P it would be necessary for the plant to operate in nitrification/denitirication mode and utilize the filters as denitrification filters. Additional chemical treatment would also be required for Phosphorous Removal. The current recycled water average TDS is 880 mg/l so a reduction in TDS of 130 mg/l would be required unless the District could demonstrate that the higher TDS would not have adverse impacts. This following modifications and additional facilities would be required:

- Additional of Recirculation Pumps in the Activated Sludge Tanks
- Replacement of Filter Media for Conversion to Denitrification Filters
- Chemical addition for P removal
- Construction of 1 MGD Microfiltration Facilities for P removal and RO pre-treatment.
- Addition of Methanol Feed Facilities for Denitrification Fillters
- Reverse Osmosis Facilities to treat 15% of flow to meet 750 mg/l TDS target.

The brine could be disposed via the existing outfall. A summary of the general criteria for the ASR IPR project are below:

Criteria	Units
Design Capacity	Up to 1 MGD Discharge to Fallbrook Creek
Process Components	Modification for Denitrification/Nitrification at WRP. 1 MGD MF Facility. 0.15 MGD RO IPR Facility.
Estimated Footprint ⁽¹⁾	3000 sf
IPR Water Source ⁽²⁾	Title 22 Filtered Water from Fallbrook WRF

Discharge Location	Fallbrook Creek
Recharge Location	Lake O'Neil or recharge ponds – Upper Ysidora Sub Basin
Average Retention Time in Aquifer ⁽³⁾	27 years
Average Recycled Water Contribution ⁽⁴⁾	9%
Maximum Recycled Water Contribution ⁽⁴⁾	15%
Overall Estimate Percent Recovery ⁽⁵⁾	83%
Net Additional Water Supply Produced	830 AFY

- (1) Rough Estimate Based on footprint of City of San Diego 1 mgd demonstration Facility
- (2) Includes initiation of nitrification/denitrification at WRF.
- (3) Santa Margarita CUP auqifier includes Chappo at 27,000 and Upper Ysidora Sub-basins at 12,500. Based on location of Lake O'niel average retention time estimate based on Chappo volume and average annual discharge. Minimum retention time to closest withdrawal well will be substantially less.
- (4) Based on modeling projected by Stetson Engineers after construction of SMR CUP facilities based on 50 years of hydrology average yield will be 10,500 AFY. Minimum yield will be 5,600 AFY.
- (5) Based on 15% RO treatment and 85% Bypass with 95% recovery from MF, 85% RO and additional 10% loss for evapotranspiration

Table 2-6 Conceptual Criteria for Fallbrook Creek IPR Project.

This alternative would improve the yield of the conjunctive use project and free up permanent outfall capacity that is needed by Camp Pendleton. The FAT would be located at the existing WRP site as shown in Figure 2-5.

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
WWTP Influent Flow (AF)	183	162	177	163	168	164	165	165	160	162	159	170	2000
Projected Recycled Water Sales (AF)	29	28	46	76	98	79	94	98	91	63	35	41	778
IPR Production (1 MGD Max, 92 AFM)	92	92	92	87	70	84	72	67	70	92	92	92	1002
Unused Recycled Water (Ocean Disposal) (AF)	61	43	39	0	0	0	0	0	0	7	33	37	219
%Recycled Usage	66%	74%	78%	100%	100%	100%	100%	100%	100%	96%	80%	78%	89%

Table 2-6 – Projected Monthly Recycled Water Usage with New Users and 1 mgd WPF Facility (All figures in AF)

The overall economics of the project depends on the ability to apply the existing Local Water Supply Development (LWSD) Program from the SDCWA and MWD to the water produced. The LWSD program was developed to encourage recycled water projects and provided \$200/AF from SDCWA and the local resources program (LRP) provided \$250/AF from MWD. The LWSD program applied to up to 900 AFY, while the LRP allowable yield adjusts based on actual usage and 900 AFY is used as an estimate. Since we expect 780 AFY of recycled sales the rebate would apply up to 120 AFY only of the additional PR project unless the rebates could be secured for the full project. In addition, the rebate applied to water designated for non-potable beneficial uses, but it was not specifically identified that potable recharge was an eligible use. It is currently not clear if the rebate will apply for these projects. As identified in Table 2-5, Camp Pendleton is looking to secure some permanent outfall capacity, and it is estimated that the value to Camp Pendleton of permanent capacity in the outfall would be at a minimum equal to their current annual cost for leased capacity which is roughly \$200,000 per year.

A summary of estimated capital and O&M costs to implement a Fallbrook Creek IPR Project without the SDCWA and MWD rebate based on details in Appendix A is below:

Capital Cost: \$9,750,000 million

O&M Cost for Potable Water Produced: \$928 per AF

Offset for Outfall Capacity Dedicated to Camp Pendleton: \$240/AF

Capitalized Unit Cost (30 years, 3%): \$600/AF

Annual Avoided Water Cost (830 AFY at \$672/AF, No Rebate, outfall capacity offset): \$557,760

Present Worth Lifecycle Costs (30 years, 3%): \$1.2 million

Total Unit Production Cost: Capital + O&M (No rebate) + Outfall Offset = \$1250/AF

Regulatory Issues:

While this project would provide recharge to the groundwater basin, the proposed discharge configuration would make it a live stream discharge project, which are widely used across California. The project would require a NPDES permit from the RWQCB as well as approval from the CDPH. The project would likely be required to meet basin plan objectives by the RWQCB for nutrients and TDS for the Santa Margarita Watershed which are 1 mg/l as N for total Nitrogen, 0.1 mg/l as P for Phosphorous and 750 mg/l for TDS unless studies demonstrate that beneficial uses can be protected at higher nutrient and TDS levels. It may be subject to groundwater replenishment regulations by the CDPH, although it could be argued that it is not a groundwater recharge application and less expensive capital facilities could potentially be utilized. Currently the cost assumptions are based on meeting the basin plan objectives and not providing Full Advanced Treatment (FAT). Studies are currently underway to further evaluate nutrient limits in the Santa Margarita Watershed, which may effect discharge limits for the facility. Given the volume of the aquifer and the recharge location, it is likely that the CDPH retention requirements could be met if they were required by CDPH, but more detailed studies are necessary based on the nearest well sites.

2.3.2.2 Red Mountain Reservoir Augmentation Project

In-lieu of discharging advanced treated water into Fallbrook Creek, the water could be discharged into Red Mountain Reservoir. The dedicated piping from the WWTP to Red Mountain is planned as part of the Santa Margarita Conjunctive Use Project as shown in Figure 2-4. This project would be a direct potable reuse project and the Full Advanced Treatment (FAT) purified water would be treated again through the Red Mountain Disinfection Facility with UV disinfection and chlorine. This Project would require constructing a 1 mgd FAT Facility. Some water would be lost as brine and waste washwater through the MF and RO processes. Initial assumed overall recovery value of 80% is used for this study based on 95% recovery of MF and 85% recovery through RO, so 800 AFY of new water supply and 200 AFY of waste brine would be produced from 1000 AFY title 22 supply. It is estimated that the FAT water

purification facility at the WWTP would require additional capital costs for monitoring and fail safe controls.

Criteria	Units
Design Capacity	1 MGD
Process Components	Microfiltration/Reverses Osmosis/UV Advance Oxidation
Estimated Footprint ⁽¹⁾	4000-5000 sf
FAT Facility Water Source ⁽²⁾	Title 22 Filtered Water from Fallbrook WRF
Discharge Location	Red Mountain Reservoir
Average Retention Time in Reservoir ⁽³⁾	8 months
Average Recycled Water Contribution ⁽⁴⁾	8.5%
Maximum Recycled Water Contribution ⁽⁴⁾	15%
Overall Estimate Percent Recovery ⁽⁵⁾	80%
Net Additional Water Supply Produced	800 AFY

(1) Based on footprint of City of San Diego 1 mgd demonstration Facility

(2) May require initiation of nitrification/denitrification at WRF.

(3) Red Mountain Reservoir Capacity is 1350 AF, based on 50% full at 675 AF and average flow of 1002 AFY.

(4) Based on 2010 SDCWA Water Purchases of 11,700 AFY.

(5) Based on 95% recovery from MF and 85% recovery through RO

A summary of estimated capital and O&M costs to implement a ASR PR Project without the rebate based on details in Appendix A is below:

Capital Cost: \$20,000,000 million

O&M Cost for Potable Water Produced: \$650 per AF

Capitalized Unit Cost (30 years, 3%): \$1250 per AF

Offset for Outfall Capacity Dedicated to Camp Pendleton: \$250/AF

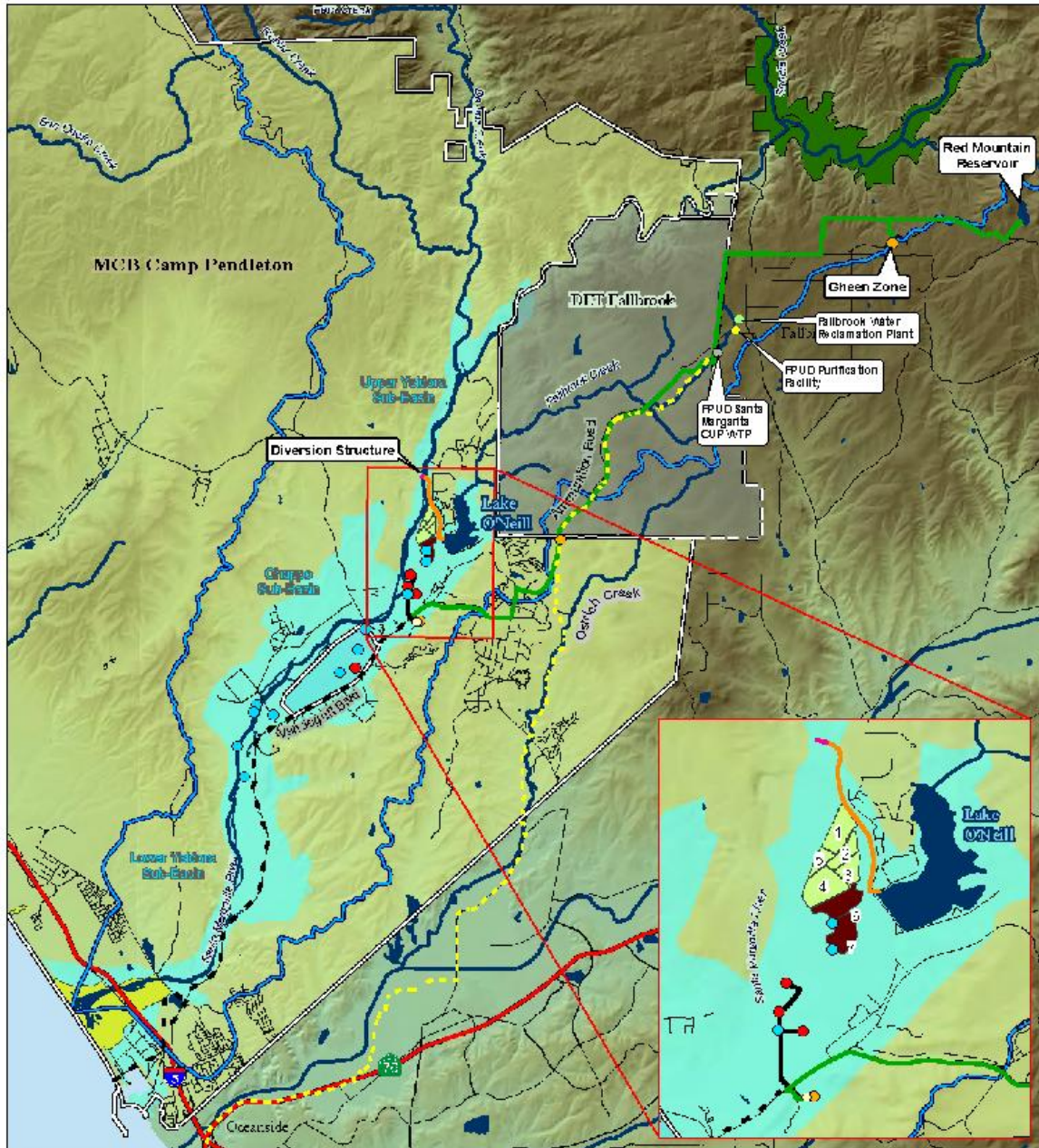
Annual Avoided Water Cost (800 AFY at \$950/AF, No Rebate, outfall capacity offset): \$760,000

Present Worth Lifecycle Costs (30 years, 3%): -\$5 million

Total Unit Production Cost: Capital + O&M (No rebate) = \$1650/AF

Regulatory Issues:

Since the discharge of this project is to a drinking water reservoir it is not subject to RWQCB approval or permitting. The project would require extensive CDPH permitting and is unlikely to be permitted at this time. Key issues would be the limited retention time in the reservoir and the lack of full conventional treatment at the reservoir. There are no similar facilities currently operating in California. There is a small 0.1 mgd facility potable recharge facility operating in New Mexico and one in Texas, but both are discharge to a WTP that includes filtration. Additional Facilities would need to be built and permitted in California before it would be feasible for the District to pursue permitting the project.



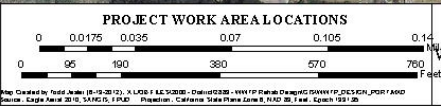


DISCLAIMER: By accepting this map, you agree that the Fallbrook Public Utility District assumes no liability or responsibility of any kind arising from use of this map. This map, its Data, and any calculations associated with this map is provided without warranty of any kind.

FIGURE 2-5

Legend

-  FACILITIES
-  FPUID PARCEL



Map Created by: Total Station (8-18-2012), A LUIS J. GARCIA - CHARTERED SURVEYOR (C.S. 1000) FOR PLANES DRAWING NUMBER: FPUID_SCH_PDF1.dwg
 Source: Eagle Point 2010, SAHRS, FPUID. Projection: California State Plane Zone 8, NAD 83, 1 mi., Epoch 1983.00

2.4 Other Potential Recycled Expansion through Coordination with other Agencies

FPUD is exploring opportunities to expand recycled water usage with the City of Oceanside, Camp Pendleton, and Rainbow MWD. Camp Pendleton currently has available recycled water with limited users. The City of Oceanside has limited recycled water production and is planning on developing more users and Rainbow does not have any recycled production or usage. The Districts agreement with Oceanside allows for the City to take available water in the outfall that does not affect existing outfall customers at no cost, so there is limited financial incentive for the District to serve additional customers in Oceanside. FPUD is exploring the following opportunities with these agencies:

City of Oceanside

- Work with Oceanside where they are planning to provide recycled water from the outfall to ensure it does not disrupt service to Caltrans.

Camp Pendleton

- Jointly pursue grant funding for additional Fallbrook Creek IPR studies.
- Explore opportunities for connection of outfall with Camp Pendleton recycled system to expand distribution and storage.

Rainbow MWD

- Explore opportunities to serve additional customers in Rainbow's service area using the abandoned Fallbrook-Oceanside Line.
- Explore Additional Users on the South Line Extension in Rainbow.
- Explore option to more fully utilize existing WRP capacity and increase recycled water supplies by diverting Wastewater from RMWD to the Fallbrook WRP.

2.5 Recommendations

Based on the economic evaluation, expansion of recycled water uses represents an additional revenue source for the District. Over the long-term the value of the recycled water will make every drop of recycled water a resource for the District. As shown in Figure 2-6, based on currently projected SDCWA rate increases and an estimate 3% increase in annual O&M for the District, in the long-term a potable reuse project could be a reliable lower cost supply as SDCWA water costs continue to escalate. The District should pursue the following steps for the recycled water system:

1. Pursue proposed tertiary improvements at the WWTP to maintain recycled revenue. Ensure Facility is expanded in a way that allows for the potential future operation to support a Potable Recharge Project.
2. Pursue planning and design for proposed pipeline expansions to the South and East to serve additional recycled users identified using internal resources. Work with identified users to begin

planning for these extensions. Construct the North line if the Army Reserve Center is built. If development occurs along the proposed recycled pipeline alignments, require developers to install the pipeline sections and install connections for future recycled use.

3. Discuss with RMWD serving additional users in RMWD service area. Evaluate feasibility of service to additional users.
4. Pursue grant funding opportunities to further study the economics and regulatory limitations for the Fallbrook Creek Recharge Projects. As shown in Figure 2-6, this option could provide a long term solution to improve reliability and control water costs, but key regulatory and economic uncertainties must be further addressed. This project is also dependant on the Santa Margarita CUP.
5. Since in the long-term the Red Mountain Reservoir augmentation project may provide a local cost effective supply even without the SMRCUP project, support current efforts of the City of San Diego to advance their aquifer storage and recovery project. Support and stay informed on current efforts and testing being conducted by the City of the quality and safety of purified water supplies.

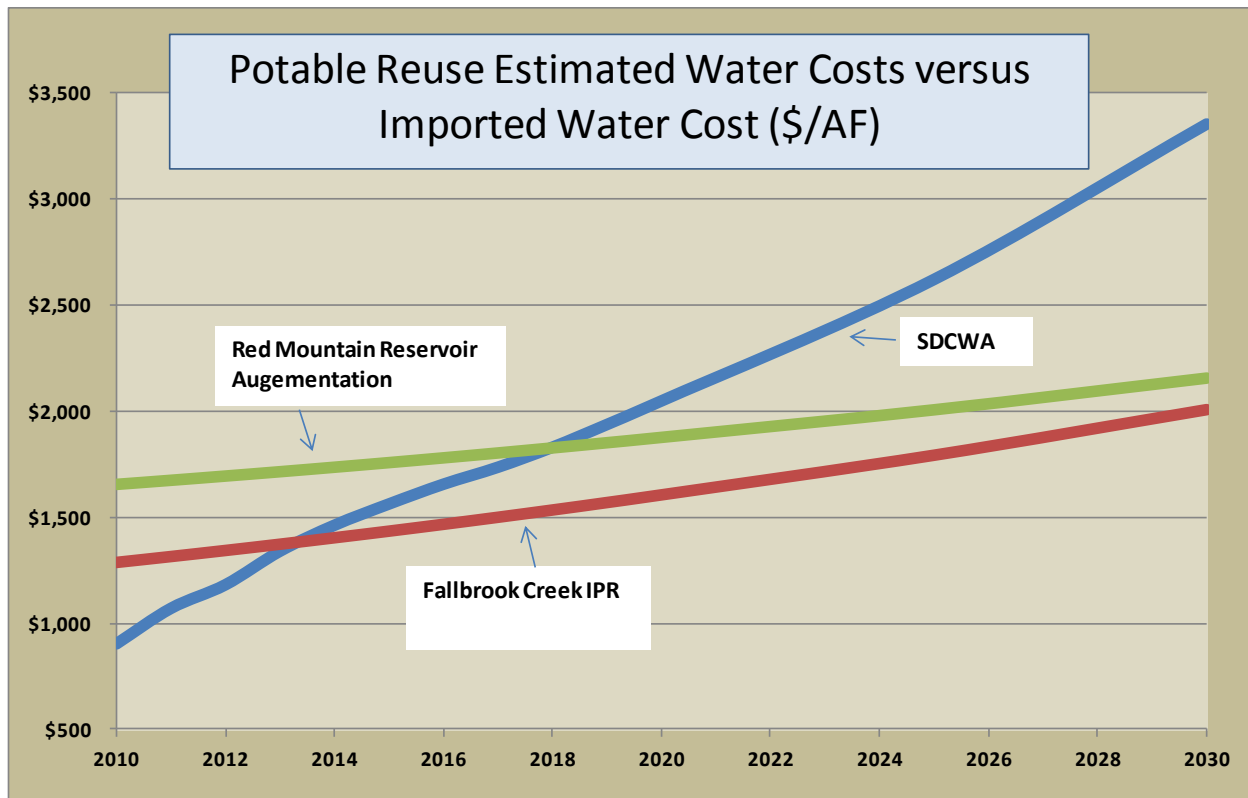


Figure 2-6 Comparison of Potable Recharge Project Costs versus SDCWA Water Costs

Chapter 2 – Appendix A – Recycled Alternatives Cost Assumptions

Option 1 – Eliminating the Recycled Water Program

Capital Savings – Based on deferring filter construction and recycled storage from planned improvements.

O&M Savings – Based on eliminating non labor costs from 2011-12 Final Budget from recycled O&M. Labor costs would be re-allocated to other WWTP functions as it would not result in a reduction in staffing.

Option 2 - Developing Additional Recycled Water Demands in FPUD Service Area

Recycled Revenue from 2011-12 Budget

Water Sales:	\$494,701
Service Charges	\$49,800
MWD/CWA Incentive	\$240,750
Sundry (annual fees)	\$5,000
Total	\$790,251

Projected Sales: 535 AF

Revenue per AF = $\$790,251/535 = \$1480/AF$

Capital Costs for pipeline extensions Based on \$100/lf for paved areas and \$80/lf for unpaved. Values derived from FPUD costs for pipeline installation.

O&M Costs for additional supply: Since Tertiary Water is already produced marginal O&M increase is only pumping of this water. Estimated at \$100/AF.

Option 3 - Development of an Indirect Potable Recharge (IPR) Project.

Capital Construction Costs:

Additional Mixed Liquor Recirculation Facilities: \$0.5 Million

Methanol and Alum Storage: \$0.5 Million

Conversion of Filters: \$0.5 million

1 MGD MF facility (Based on \$2.5 Mil/MGD): \$2.5 Million

0.15 MGD RO Facility: (Based on \$3 Mil/MGD): \$0.5 Million (Rounded Up)

Site Work/Piping \$2.0 Million

Mark-up for engineering (15%), Construction Management (10%) and Contingency (25%): \$3.25 million.

Total Capital Cost: \$9.75 million

Construction of Facilities to Divert, Store and Distribute Groundwater back to FPUD: \$0 (already included in Santa Margarita CUP).

Construction of Facilities to treat and distribute water to Red Mountain Reservoir: \$0 (already included in Santa Margarita CUP).

Dedication of Outfall Capacity to Camp Pendleton: \$200,000 per year

Outfall Offset = $\$200,000/830 \text{ AF} = \$240/\text{AF}$

Capitalized Unit Cost (A/P, 3%, 30 years) = $0.051 \times \$9.75 \text{ million} = \$0.5 \text{ mil per year} / 830 \text{ AFY} = \$600 / \text{AF}$

O&M Costs

Costs of additional Treatment: \$120/AF (\$120/AF Based on \$3/gal for methanol, \$300/ton alum, membrane replacement at \$20,000/yr and \$25,000 power with net production 830 AFY): \$120

For Demineralization Facilities Add \$100/AF

Recharge Facilities on Camp Pendleton: \$90/AF (Based on Values Developed by Stetson Engineers for SMRCUP)

Groundwater Production: \$280/AF (Based on Values Developed by Stetson Engineers for SMRCUP)

Conveyance to FPUD: \$230/AF (Based on Values Developed by Stetson Engineers for SMRCUP)

FPUD Treatment and Conveyance to RMR: \$108/AF (Based on Values Developed by Stetson Engineers for SMRCUP)

Total O&M Production: \$928/AF

SDCWA Water Cost (Projected 2016): \$1600/AF

SDCWA Rebate: \$200/AF

MWD Rebate: \$250/AF

Annual Avoided Cost (SDCWA Water Cost – Total O&M Cost) without rebates: \$672/AF

Annual Avoided Cost (SDCWA Water Cost – Total O&M Cost) with rebates: 1122\$/AF

Total Unit Cost = Capital + O&M no rebate – Outfall Offset = \$600 + \$928 -\$278 = \$1250/AF

Option 4 - Development of a Direct Potable Recharge (DPR) Project

Capital Costs Based on City of San Diego Demonstration 1 mgd facility: \$11.8 million (Quicho et al., Sustaining San Diego, Water Environment and Technology, May 2012)

Mark-up for engineering (15%), Construction Management (10%) and Contingency (25%): \$5.9 million.

Construction of Facilities to treat and distribute water to Red Mountain Reservoir: \$0 (already included in Santa Margarita CUP).

Modifications to Discharge into Red Mountain Reservoir and additional monitoring and controls: \$2 million

Dedication of Outfall Capacity to Camp Pendleton: \$200,000 per year

Outfall Offset = \$200,000/800 AF = \$250/AF

Total Capital: \$19.7

Capitalized Unit Cost (A/P, 3%, 30 years) = $0.051 \times \$19.7 = \$1 \text{ mil per year} / 800 \text{ AFY} = \$1250 / \text{AF}$

O&M Costs

MF/RO/UV AOP Treatment: \$600/AF

FPUD Conveyance to RMR: \$50/AF

Total O&M Production: \$650

SDCWA Water Cost (Projected 2016): \$1600

SDCWA Rebate: \$200/AF

MWD Rebate: \$250/AF

Annual Avoided Cost (SDCWA Water Cost – Total O&M Cost) without rebates: \$950/AF

Annual Avoided Cost (SDCWA Water Cost – Total O&M Cost) with rebates: \$1400/AF

Total Unit Cost – Capital + O&M no rebate + Outfall Offset = \$1250 + \$650 -\$250/AF = \$1650/AF

APPENDIX C
ARTICLE 28 – RECYCLED WATER ORDINANCE

Article 28. Recycled Water Program

Sec. 28.1 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 use of potable water for irrigation or other non-potable uses is prohibited 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. Permission to use recycled water is based on the ability to adequately treat wastewater to the point that the recycled water (effluent) meets or exceeds the requirements of existing Title 22, Division 4, of the California Code of Regulations. Title 22 was promulgated by the State Water Resources Control Board—Division of Drinking Water to ensure proper health protection and specify the treatment degree to match the intended applications.
- c. FPUD shall determine whether a potential service will be furnished with recycled water and/or potable water. This determination shall be in accordance with standards of treatment and water quality requirements set for in Title 22 and with the intent of FPUD to protect the public health. The availability and/or feasibility of making recycled water service available will be considered on a case-by-case basis.

Sec. 28.2 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 19.22
 2. FPUD Recycled Water Program, Article 28
 3. 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
 4. California Code of Regulations, Department of Public Health (Title 22, Division 4)
 5. Department of Public Health “Guidance Manual for Cross-Connection Control”, latest edition
 6. California Code of Regulations, Title 17, Division 1, Chapter 5, Group 4, Article 1
 7. California-Nevada Section American Water Works Association “Guidelines for Distribution of Non-Potable Water”

8. California-Nevada Section American Water Works Association “Guidelines for the On-Site Retrofit of Facilities Using Disinfected Tertiary Recycled Water”
9. Department of Public Health “Guidelines for Use of Recycled Water for Construction Purposes”
10. Department of Public Health “Guidelines for the Preparation of an Engineering Report for the Production, Distribution and Use of Recycled Water”
11. San Diego County Department of Environmental Health “Recycled Water Plan Check and Inspection Manual”
12. All applicable Federal, State or local statutes, regulations and ordinances

Sec. 28.3 General.

It is the responsibility of the user of these documents to make reference to and utilize industry standards not otherwise directly referenced within this document. The Engineer or Landscape Architect of Work may not deviate from the criteria presented in these standards and specifications without prior written authority of the District’s engineer.

Sec. 28.4 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 identified in the District’s Recycled Water Master Plan, including all subsequent revisions. Recycled water service shall be provided to the service area when related transmission and distribution facilities are completed and service becomes available.
- b. The uses of recycled water include only those uses approved by the District, local and State regulatory authorities and 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. 28.5 Definitions.

a. Agricultural Uses.

Agricultural Uses include: Annual Agricultural Products, field and row crops grown for seed or other annual plants; Perennial Agricultural Products, field and nursery

crops, trees, vines and other perennial plants. Watering livestock is only allowed in drought emergencies.

b. Approved Backflow Prevention Assemblies.

A device/assembly approved by the State of California, the USC Foundation for Cross-Connection Control and Hydraulic Research 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 or 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. User's Recycled Water 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. 28.6 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. Regulations.

The General Manager shall make and enforce regulations necessary to the administration of this Article of the Administrative Code.

c. 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. Approvals of developments shall be consistent with the Plan in all respects including developer piping for recycled and non-potable water uses.

d. Public Awareness Program.

The District shall establish and update comprehensive Recycled Water Public Awareness and Assistance Program.

e. 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.

f. 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.

g. 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. 28.7 Suspension or Termination of Service.

28.7.1 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 Ordinance.
2. The 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. Failure of any designated User to pay all of the fees and charges outlined in Article 21 of the Administrative Code.

28.7.2 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.

28.7.3 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.

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.

28.7.4 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.

28.8 Implementation.

28.8.1 Designation of Users.

A Notice of Determination that a specific water user shall be a Designated User of recycled water shall be mailed to the potential Designated User by certified mail. 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.

28.8.2 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.

28.8.3 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.

28.8.4 Recycled Water Supervisor.

The Designated User shall designate a User Water 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.

28.8.5 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.

28.8.6 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.

28.9 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.

28.10 Future Extension.

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.

28.11 Public Safety Requirements.

28.11.1 Cross-Connections.

No Designated User of other parties shall install or create a cross-connection between the on-site potable water system and the on-site recycled water system.

28.11.2 Drinking Fountains.

Any and all drinking fountains located within an area approved for the use of recycled water shall be protected by siting or shielding from contact with recycled water, whether by windblown spray or by direct application through irrigation or other approved uses.

28.11.3 Hose Bibs.

The portions of the non-potable water piping system that are in areas subject to access by the general public shall not include any hose bibs. Only quick couplers that differ from those used on the potable water system shall be used on the portions of the non-potable water piping system in areas subject to public access.

28.11.4 Fire Hydrants.

No Designated User or other party shall use or install fire hydrants on any on-site system that is designed to operate with recycled water regardless of the fire hydrant construction or identification.

28.11.5 Marking.

All above-ground recycled water piping and appurtenances shall be color coded or painted the color purple or banded with non-potable marking tape to identify it as using recycled water. In-ground new piping shall be color coded purple and identified as recycled water piping. Existing non-potable piping shall be tagged at all valves as non-potable (recycled) water.

Exposed portions of potable water piping and appurtenances shall be color coded or painted the color blue or banded with potable water marking tape to identify it as using potable water. All non-potable outlets shall be signed or tagged with the words "Recycled water - Do not drink" in English and Spanish. Where appropriate, the international symbol for "Do not drink" should be posted. All potable water outlets intended for drinking purposes shall be plainly marked. Main shutoff valves shall be clearly identified to distinguish between potable and non-potable water. Methods of identifying potable and non-potable water systems shall be called out on the use site plans and approved by the District before installation.

28.11.6 Backflow Protection at the Service Meter.

If a recycled water customer requires potable water service on the same property a reduced pressure principle backflow prevention assembly must be installed on the potable water service at the potable meter. The installation and maintenance cost will be a District expense.

28.12 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.

28.13 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.

28.14 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
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

APPENDIX D
ARTICLE 26 OF ADMINISTRATIVE CODE
WATER CONSERVATION PLAN

Article 26. **Water Shortage Response Program.**

Sec. 26.1 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.

Sec. 26.1.1 TSAWR Reduction Program.

The San Diego County Water Authority Transitional Special Agricultural Water Program (TSAWR) 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 under Article 162 of the SDCWA Administrative Code. During periods of water shortages imposed by the Metropolitan Water District (MWD), those customers who are participating in the TSAWR shall abide by the conditions set forth by SDCWA for implementation of the TSAWR Reduction Program. TSAWR customers shall be notified of impending drought restrictions within (14) days of the Board's declaration of a water shortage. Administration of the TSAWR Reduction Plan is incorporated by reference in Article 19 of this Administrative Code.

Sec. 26.1.2 TSAWR Reduction Compliance.

When SDCWA imposes a mandatory use reduction, TSAWR 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", allocations to facilitate compliance.

In accordance with the MWD Water Supply Allocation Plan (WSAP), any person that uses water in excess of the allocation shall be subject to a penalty, structured as an "Allocation Surcharge". Currently, the "Allocation Surcharge" for each unit of usage greater than the allocation but less than 115% of the allocation is \$1,480 per acre-foot, and the penalty for each unit of water in excess of 115% of the allocation is \$2,960 per acre-foot. The Penalty Rate is charged over and above the water rates for the use of water.

Sec. 26.2 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 in the coastal San Diego County 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.

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. Customers are requested to follow the guidelines presented in Sec. 26.8.1. Under Normal Conditions, the District will provide public education and outreach efforts to emphasize public awareness of the need to always voluntarily use water wisely and practice water conservation measures.

Sec. 26.3 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. 26.4 Determination and Declaration by General Manager of Water Supply Conditions.

Based on 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 and publish said notice in the local newspaper:

WATER SHORTAGE RESPONSE LEVEL 1 – WATER SHORTAGE WATCH CONDITION. This level applies when the San Diego County Water Authority notifies its member agencies 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 10 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 1 condition and take action to implement the Level 1 conservation practices identified in Sec. 26.8.2. The District will suspend consideration of annexations to its service area.

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 and publish said notice in the local newspaper:

WATER SHORTAGE RESPONSE LEVEL 2 – WATER SHORTAGE ALERT CONDITION. This level applies when the San Diego County Water Authority notifies its member agencies that due to cutbacks caused by water shortages or other reduction in supplies, a consumer demand reduction of up to 20 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 2 condition and implement the mandatory Level 2 conservation measures identified in Sec. 26.8.3. The District will suspend consideration of annexations to its service.

WATER SHORTAGE RESPONSE LEVEL 3 – WATER SHORTAGE CRITICAL CONDITION. This level applies when the San Diego County Water Authority notifies its member agencies that due to increasing cutbacks caused by water shortages or other reduction of supplies, a consumer demand reduction of up to 40 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 Level 3 conservation measures identified in Sec. 26.8.4. The District will suspend consideration of annexations to its service area and no new potable water service shall be provided and no statements of immediate ability to serve or provide potable water service shall be issued.

WATER SHORTAGE RESPONSE LEVEL 4 – DROUGHT EMERGENCY CONDITION. This level applies when the San Diego County Water Authority Board of Directors declares a water shortage emergency pursuant to California Water Code Section 350 and notifies its member agencies that Level 4 requires a demand reduction of more than 40% in order for the District to have maximum supplies available to meet anticipated demands. The District shall declare a Water Shortage Emergency in the manner and on the grounds provided in California Water Code Section 350.

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. 26.5 **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 San Diego County Water Authority distribution facilities, or the prospect of a major failure of the supply and 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 in the coastal San Diego county 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 Emergency Water Management Program 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. 26.6 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. 26.7 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. 26.8 Water Conservation Stages.

Sec. 26.8.1 NORMAL CONDITIONS.

During Normal Conditions, customers are asked to use water wisely and to practice water conservation measures so that water is not wasted.

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. 26.8.2 WATER SHORTAGE RESPONSE LEVEL 1 – WATER SHORTAGE WATCH CONDITION.

During a Level 1 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.

All persons using District water shall comply with Normal Conditions water conservation practices during a Level 1 Water Shortage Watch, as identified in Sec. 26.8.2.

Upon declaration of a Level 1 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. 26.8.3 WATER SHORTAGE RESPONSE LEVEL 2 – WATER SHORTAGE ALERT CONDITION.

During a Level 2 Water Shortage Alert condition, all persons using District water shall comply with Normal and Level 1 Water Shortage Watch water conservation practices during a Level 2 Water Shortage Alert, as identified in Sec. 26.8.2 and 26.8.3, 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 2 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. For domestic and multi-unit classes, the district may instead of allocations establish a tiered pricing structure which promotes conservation. These rates shall be calculated as follows:

Normal/Shortage Level 1

<u>Domestic & Large Lot Domestic</u>	<u>Multi-Unit</u>
Units 1-5 @ .90 x Base Rate	Units 1-5 @ .90 x Base Rate
Units 6-30 @ Base Rate	Units 6-18 @ Base Rate
Units 31+ @ 1.1 x Base Rate	Units 19+ @ 1.1 x Base Rate

Shortage Level 2

<u>Domestic & Large Lot Domestic</u>	<u>Multi-Unit</u>
Units 1-5 @ .90 x Base Rate*	Units 1-5 @ .90 x Base Rate
Units 6-27 @ Base Rate	Units 6-17 @ Base Rate
Units 28-54 @ 1.5 x Base Rate	Units 18-34 @ 1.5 x Base Rate
Units 55-81 @ 1.75 x Base Rate	Units 35-50 @ 1.75 x Base Rate
Units 82+ @ 2 x Base Rate	Units 51+ @ 2 x Base Rate

Shortage Level 3

<u>Domestic & Large Lot Domestic</u>	<u>Multi-Unit</u>
Units 1-5 @ .90 x Base Rate*	Units 1-5 @ .90 x Base Rate
Units 6-22 @ Base Rate	Units 6-14 @ Base Rate

Units 23-45 @ 1.75 x Base Rate	Units 15-22 @ 1.75 x Base Rate
Units 46-67 @ 2 x Base Rate	Units 23-31 @ 2 x Base Rate
Units 68+ @ 2.5 x Base Rate	Units 32+ @ 2.5 x Base Rate

Shortage Level 4

<u>Domestic & Large Lot Domestic</u>	<u>Multi-Unit</u>
Units 1-5 @ .90 x Base Rate	Units 1-5 @ .90 x Base Rate
Units 6-15 @ Base Rate	Units 6-9 @ Base Rate
Units 16-30 @ 2 x Base Rate	Units 10-18 @ 2 x Base Rate
Units 31-45 @ 2.5 x Base Rate	Units 19-27 @ 2.5 x Base Rate
Units 46+ @ 3 x Base Rate	Units 28+ @ 3 x Base Rate

(See attached "Domestic Class Block Ranges at Different Shortage Levels" bar graph for conservation rates effective July 2014.)

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 ordinance.

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. 26.8.4 **WATER SHORTAGE RESPONSE LEVEL 3 – WATER SHORTAGE CRITICAL CONDITION.**

During a Level 3 Water Shortage Critical condition, all persons using District water shall comply with Normal, Level 1 Water Shortage Watch and Level 2 Water Shortage Alert water conservation practices during a Level 3 Water Shortage Critical 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 extent 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 ordinance.
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. 26.8.5 WATER SHORTAGE RESPONSE LEVEL 4 – WATER SHORTAGE EMERGENCY CONDITION.

During a Level 4 Water Shortage Emergency condition, all persons using District water shall comply with Normal, Level 1 Water Shortage Watch, Level 2 Water Shortage Alert, and Level 3 Water Shortage Critical water conservation practices during a Level 4 Water Shortage Emergency 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 ordinance.

3. (TSAWR) customers as defined in the San Diego County Water Authority (SDCWA) Administrative Code must abide by any TSAWR 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. 26.9 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 1 shall be made by public announcement 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.

Sec. 26.10 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 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 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. 26.10.1 Application.

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

Sec. 26.10.2 Supporting Documentation.

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

Sec. 26.10.3 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 ordinance 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. 26.10.4. 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. 26.10.5 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

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, 26.4, 26.5,

26.8.3, 26.8.5, 26.10,

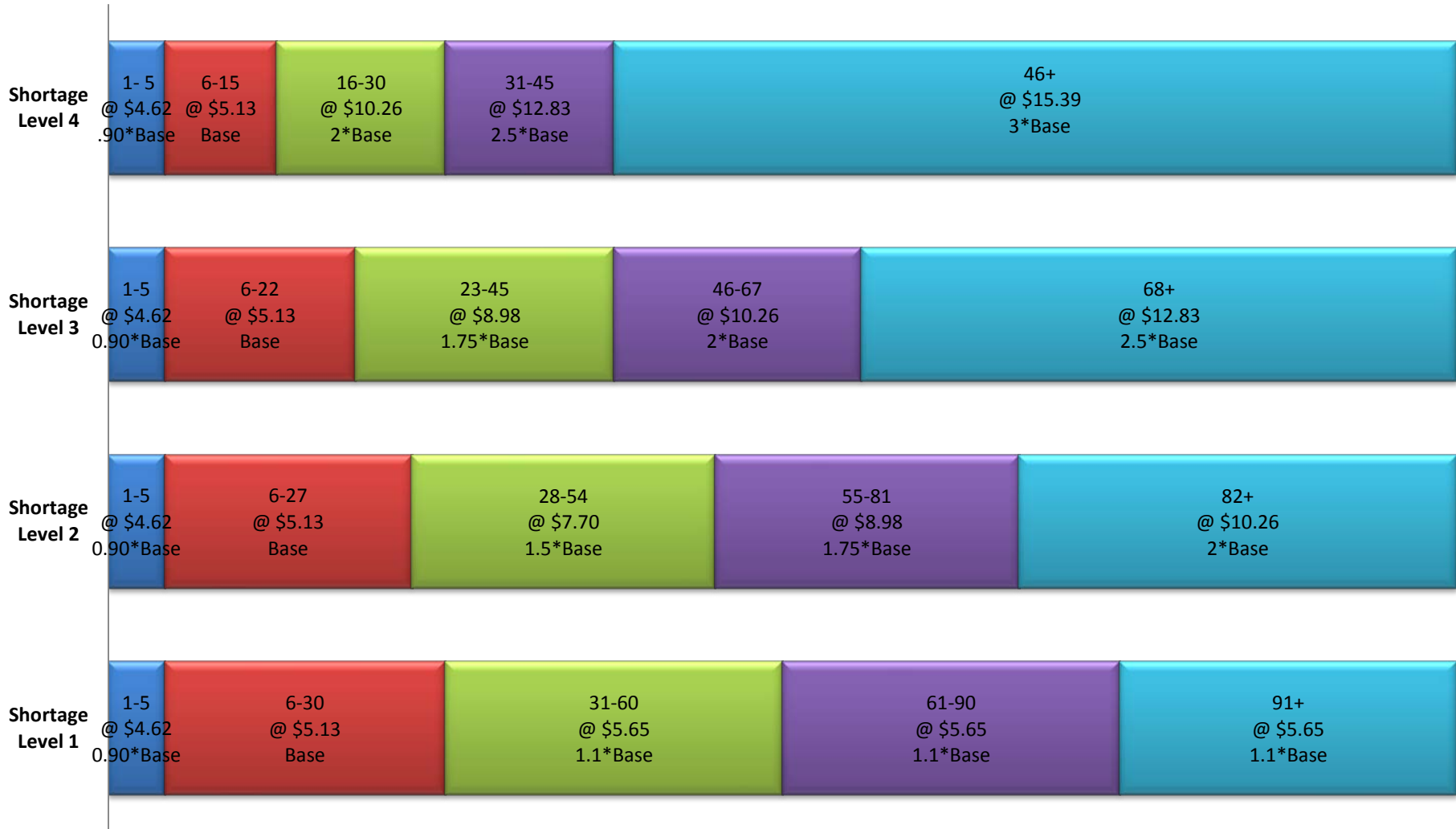
26.10.1, 26.10.4,

26.10.5 – Rev. 3/16

Secs. 26.8.1, 26.8.3 –

Rev. 6/16

Domestic & Lg Domestic Class Block Ranges at Different Shortage Levels



Units per Month
And Rate per Unit Effective CY 16