



**Key Revisions and Updates Anticipated in Fallbrook Public Utility District 2020
Urban Water Management Plan**

12/17/2020

While the Fallbrook Public Utility District (FPUD or District) is still in the process of developing its updated 2020 Urban Water Management Plan (UWMP), this document provides a summary of some of the key substantive updates since the 2015 UWMP that will be included in the 2020 UWMP. In the past, the District's UWMP has relied solely on forecasts provided by the San Diego County Water Authority (SDCWA). There are 3 key areas that are discussed in this memorandum:

- 1. Overall water demands continue to decline**
- 2. SDCWA regional forecasts continue to overestimate future FPUD demands**
- 3. FPUD local supply development will play an increased role in meeting water demands**

1. Water demands continue to decline

FPUD water demands peaked in calendar year 2007 at just over 21,000 AFY and have steeply declined by over 50% since then. As shown in Figure 1 the overall trend has been a continued decline in overall demands. Calendar Year 2019 Total Water Demand was 8327 AF, which is the lowest demand for the District since 1958. Calendar Year 2020 is trending similarly to 2019. This decline in demand has been consistent over different weather conditions and savings experienced through conservation efforts during the drought of 2014-2016 have been maintained by FPUD customers.

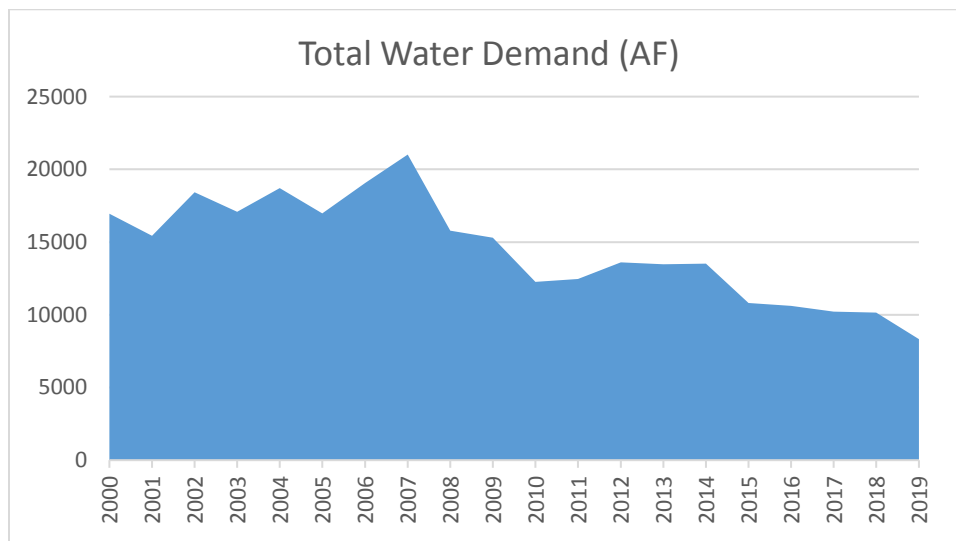


Figure 1 – Total District Water Demand by Calendar Year (AF)

The decrease in demand is both municipal and industrial (M&I) and agricultural. Agricultural water demands have comprised 30-40% of the District total water demands over the last decade. The District residential characteristics are largely rural with a service population of roughly 35,000 over 28,000 acres or 1.25 people per acre. The overall area served by the San Diego County Water Authority (SDCWA) is generally much more urban with a population of roughly 3.3 million over 950,000 acres or roughly 3.5 people per acre. The lower population density and larger parcel sizes in the District's service area results in higher per capita usage and significant outdoor irrigation. This results in the potential for future significant declines in M&I use as customers continue to reduce outdoor irrigation. Table 1 shows trends in M&I and agricultural demands over the last eight fiscal years.

	FY '13	FY '14	FY '15	FY '16	FY '17	FY '18	FY '19	FY '20
Total Water Demand	13,385	12,999	11,849	9,573	9,193	10,090	8,043	7,986
Total Water Sales	12,531	12,164	11,040	8,656	8,592	9,269	7,496	7,305
Total Agricultural Water Sales	5,494	5,378	4,767	3,550	3,242	3,412	2,333	2,350
Total M&I Water Sales	7,037	6,786	6,273	5,105	5,349	5,857	5,163	4,955
% Agriculture	44%	44%	43%	41%	38%	37%	31%	32%

Table 1 – Potable Water Demand and Agricultural and M&I Sales (Fiscal Years 2013-19 - All figures in AF)

While the District has yet to complete its UWMP projection for future demands there are some factors that will impact a potential “rebound” in water demands including:

1. Limited potential for growth in the District Service area.
2. Water cost and state conservation legislation and regulation continuing to drive per capita use downward, especially outdoor irrigation.
3. Continued decline in high water use agricultural crops.

The overall growth rate for the District service area was projected to be 0.9% in the 2015 UWMP and this growth rate has been revised downward by SANDAG to 0.5% for the 2020 UWMP. Growth within the District is largely infill and conversion of agricultural parcels to residential, and there are no new large master planned communities being developed in the District service area. In the last five years the District has added 55 new water meters or 11 per year. The District has 9270 meters so this represents an increase of 0.12% annually in new meters.

It is anticipated that the increasing cost of water will continue to impact both M&I and agricultural water demands. As shown in Figure 2, the unit cost of water FPU purchases from SDCWA has gone up over 9% annually over the last decade, and it is anticipated that water costs will increase above the rate of inflation. It is anticipated that the cost of water will continue to drive District customers to invest in landscaping conversions to low water landscaping. The State of California also passed water conservation legislation in 2018 (AB 1668 and SB 606) that are targeted to further improve water use efficiency for both M&I and agricultural users with new water use requirements. The impacts of AB 1668 and SB 606 are anticipated to continue to decrease per capita water usage.

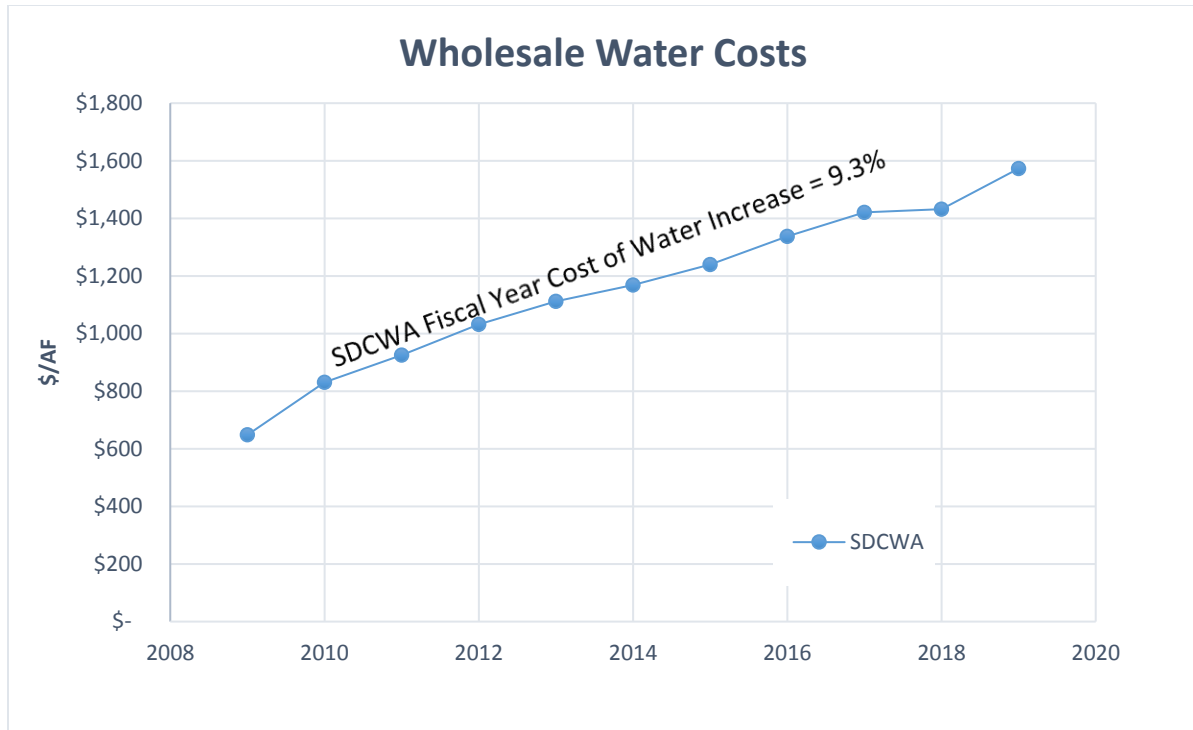


Figure 2 – Wholesale Water Cost Increases

The District is not experiencing or forecasting a rebound in agricultural water demand. In fact there continues to be a loss of agricultural operations mostly due to price sensitivity over the cost of water and market conditions. The District has been evaluating a potential rebound by evaluating operations of some of the large avocado growers, and there has been a significant number that have halted operation and abandoned their groves. These operations have let their trees die and will not be able to rebound without significant investments. Since 2011, there have been a reduction in agricultural water services from 666 accounts to 535 accounts or a 24% reduction.

Given the long-term downward trend in District demands, limited growth, significant reductions in the amount of outdoor irrigation and anticipated future pricing trends, the 2020 UWMP demand projections will be lower than the 2015 UWMP projections, and there is no objective justification for a sharp “rebound” in demands.

2. Regional Forecast continues to over predict FPUD demands

For previous UWMP updates, the District relied on forecasts provided by SDCWA. SDCWA has been using a complex econometric regional model since the 1990s. The model took historical member agency data and growth information and developed an overall region-wide forecast and an individual forecast for each member agency. The model has historically overestimated demands regionally and specifically for FPUD. For example, the 2005 UWMP projection was a total demand of over 16,000 AFY in 2020, while the 2015 UWMP reduced the 2020 demand closer to 12,000 AF, or 25% lower. A summary of the UWMP forecasts is shown in Figure 3 below.

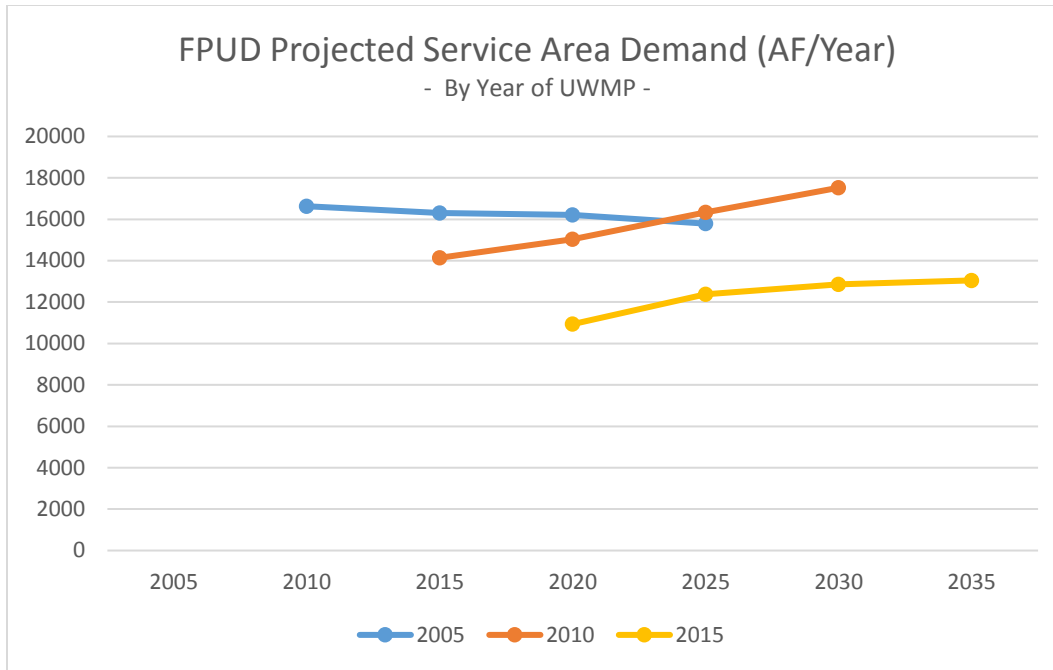


Figure 3 – Previous UWMP District Demand Forecasts from SDCWA and actual demands

Given the previous challenges with using the regional SDCWA econometric model to project District demands, the District is looking to utilize an alternative approach to project future demands. While the regional SDCWA UWMP projections continue to forecast that the trend in the decline in demands is over and there will be a rebound, a number of factors that were previously outlined make this outcome somewhat more uncertain for FPUD. As shown in Table 2, even discounting the decline in demands, and solely analyzing average demands and precipitation over the last seven years would establish a current baseline total water demand estimate of approximately 10,900 AFY.

	FY '13	FY '14	FY '15	FY '16	FY '17	FY '18	FY '19	FY '20	Average
FPUD Service Area Potable Demand	13,385	12,999	11,849	9,573	9,193	10,090	8,043	7,986	10,390
FPUD Service Area Recycled Demand*	591	608	543	491	535	604	466	495	542
Total Service Area Demand	13,976	13,608	12,392	10,063	9,727	10,694	8,508	8,481	10,931
Service Area Rainfall	12.06	7.98	11.56	10.31	14.76	14.79	15.1	28.62	14
Rainfall % Average	86%	57%	83%	74%	105%	106%	108%	204%	103%

*Excludes out of service area recycled demand including Caltrans and orange grove energy

Table 2 – Average Total Demand and Rainfall Fiscal Years 2013-20

The District is developing a revised UWMP water demand projection based on past data and trends, population growth projections, and an evaluation on changes in agricultural parcels, and it is anticipated the projection will be at least 10% below the 2015 UWMP projections.

3. FPUD local supply development will play an increased role in meeting water demands.

The District is continuing to invest in local water supply development including groundwater supplies and recycled water system expansion. The District is about halfway through the construction of the \$60 million Santa Margarita Conjunctive Use Project (SMRCUP). The project is a joint project with Marine Corps Base Camp Pendleton (CPEN) and resolves over 60 years of water rights litigation between the federal government and the District. The project improves groundwater recharge facilities on CPEN for

the lower Santa Margarita Groundwater Basin and provides facilities to deliver this groundwater to the District. The parties will share the overall yield of the groundwater basin, and deliveries to the District are based on hydrological year and available additional supplies. The project requires certain deliveries to the District as described in a settlement agreement approved by the federal court. The initial overall average yield was projected to be 3,100 AFY, but due to lower CPEN demands, the available average yield for the District is closer to 4,200 AFY, so there will be additional local supplies of approximately 1,100 AFY projected in the UWMP.

Although the deliveries will vary based on hydrological year, the northern California and Colorado basin hydrology that typically causes statewide shortages does not necessarily overlap the local hydrology that drives the yield from the Santa Margarita Basin. There will be an analysis conducted based on the last 50 years of hydrology to examine how much local water should be anticipated in shortages. In the previous UWMP, this dry year analysis of local supplies was not completed.

The District has also been evaluating potential projects to increase the yield of the lower Santa Margarita groundwater basin jointly with CPEN. The parties are completing a feasibility study looking at utilizing available CPEN recycled supplies and/or District supplies to recharge the basin. Both parties currently produce recycled water that is discharged to the ocean. Camp Pendleton discharges about 1.6 mgd of recycled water to the ocean, and FPUD discharges about 0.9 mgd to the ocean. From the initial findings of the study, it appears the use of the 1.6 mgd of CPEN supplies for groundwater recharge looks highly cost effective, but the use of the additional 0.9 mgd of District supplies faces some regulatory hurdles and may not be cost effective at this time. The District and CPEN will be pursuing funding for recharging the basin with CPEN recycled supplies, which would increase local supplies to the District by up to an additional 1,800 AFY. These supplies will not be listed as verifiable supplies since the environmental work is not completed, but will be identified as additional planned supplies in the UWMP update. It is anticipated this project will ultimately move forward with funding from either the District or CPEN.

A summary of the anticipated local supply updates for the 2020 UWMP is summarized in Table 3 below:

Local Project	2015 UWMP Yield	Anticipated 2020 UWMP Yield
SMRCUP	3,100 AFY	4,200 AFY
Santa Margarita Groundwater Recharge Project	0	1,800 AFY*
*Will be identified as additional planned supplies		

Table 3 – Anticipated changes in local supply project yields in 2020 UWMP

Summary

While the 2020 UWMP is still in progress, there are some clear updates that will be included in the plan:

1. District demand projections will be lower than what was projected in the 2015 UWMP.
2. The yields of District local supplies will be higher than was projected in the 2015 UWMP.
3. Due to the lower demands and increased local supplies, the District’s reliance on imported water will be substantially lower.

Given that Eastern Municipal Water District (EMWD) previously conducted a water supply availability analysis based on the District’s 2015 UWMP that demonstrated it could meet the District’s water supply needs under all conditions, and that the District’s imported water supply needs will decrease substantially

in its 2020 update, it is anticipated that an updated analysis using 2020 UWMP data will continue to show EMWD can reliably meet the District's imported water supply needs under the single and multiple dry years.