

WaterSMART Drought Response Program Drought Resiliency Projects for FY 2018

FOA

BOR-DO-18-F008

PREPARED FOR

Bureau of Reclamation Mail Services ATTN: Mr. Kevin Connolly Denver Federal Center Bldg. 67, Rm. 152 6th Avenue and Kipling Street Denver, CO 80225 (303) 445-2221

PREPARED BY

Ms. Diana Langley, P.E. Director of Public Works City of Yuba City 1201 Civic Center Boulevard Yuba City, CA 95993 dlangley@yubacity.net (530) 822-4626

Yuba City, CA: Groundwater Well for Drought Resiliency





Table of Contents

Standard Form 424 (online submission)	
Standard Form 424C Budget Information-Construction Programs (online submission)	
Standard Form 424 D Construction Programs (Assurances)(online submission)	
Standard Form LLL (Assurances) (online submission)	
Title Page	1
Table of Contents	2
 Technical Proposal A. Executive Summary 	3
B. Background Data	4
C. Technical Project Description	8
D. Evaluation Criteria (A, B, C, D, E)	9
 2. Project Budget A. Funding Plan and Letters of Commitment	3 5 6
3. Environmental and Cultural Resources Compliance2	7
4. Required Permits or Approvals	9
5. Drought Plan	0
6. Letters of Project Support5	7
7. Official Resolution	3

1. TECHNICAL PROPOSAL & EVALUATION CRITERIA (begin 20-page maximum narrative)

1A. Executive Summary:

Date:	February 13, 2018
Applicant Name:	Yuba City
City, County, State:	Yuba City, Sutter County, California

Project Summary.

Yuba City (City), California (population 67,445¹) respectfully requests \$750,000 to construct a potable groundwater well. Bureau of Reclamation (BOR) funding represents 19% of the total project cost, which is estimated to be \$3,983,159. The new groundwater well will produce an annual average 1,500 gallons per minute (gpm) or 2,400 acre feet (AFY) of quality, potable water. The project will reduce the City's

reliance on imported water from the State Water Project (SWP), a BOR facility by reducing withdrawals from the Feather River, the City's main water supply source. The proposed groundwater well may be an aguifer storage and recovery well (ASR) in future phases, which will provide seasonal and long-term groundwater storage of potable water supplies. In addition to providing emergency water in drought years, ASR wells make better use of water right permits; maximize control of supply sources; and make the best use of existing water diversion, treatment, and transmission facilities, potentially reducing planned capital expenditures for water infrastructure improvements. Yuba City identified the proposed well as a priority capital project as far back as 2010 with the adoption of the City's Urban Water Management Plan (UWMP). The UWMP includes a Water Shortage Contingency Plan (WSCP) along with several drought policies and proposed capital projects. The project has an estimate useful



Fig. 1. Yuba City receives 90% of its water supply from the Feather River, a tributary to the Sacramento River

life of 50 years and will positively impact water supply for the City each year; but in particular, in times of drought. **Project Timeline.** The project is ready to initiate immediately and can be completed and operational in 2.5 years. Assuming a BOR grant agreement is executed in summer 2018, the project should be completed by December 2020. **Federal Facility.** The project will not be located on federal land.

¹California Dept. of Finance E-1 Population Estimates for Cities, Counties, and the State - January 1, 2016 and 2017

1B. Background Data:

Location. The proposed groundwater well will be located within Yuba City proper near the City's Water Treatment Plant (WTP) at 701 Northgate Drive, Yuba City. The latitude and longitude of the WTP is 39.160041 and -121.624382, respectively. Yuba City is located within the northern Sacramento Valley within the Sacramento Groundwater Basin. It is situated in eastern Sutter County on the western bank of the Feather River. Primarily undeveloped agricultural land exists to the north, west, and south of the City. The Sutter Buttes are located to the northwest of the City. Yuba City is the *largest city* in Sutter County with almost 70% of the Sutter County population living in Yuba City and is about 40 miles north of the state capitol, Sacramento. The new groundwater well will be located in the same area as an existing groundwater well (see visual below).



Fig. 2. Five monitoring wells were constructed in 2015 in two different groundwater producing zones. Zone A represents a shallow aquifer system and Zone B represents a deeper aquifer system. MW-1A is an existing monitoring well. The five monitoring wells are: MW-1B, MW-2A and 2B, and MW-3A and 3B. The proposed new groundwater well will be located near <u>MW-2B</u> or <u>MW-3B</u> with the exact location to be determined during final design. The letters A and B represent the identified upper and lower hydrogeologic zones, respectively.

Municipal Water District History. In February 1910, the City's municipal water district was formed and in 1922, a sanitation department was formed and created a sewer system. Prior to 1969, the City's water supply was local groundwater. The water was hard and contained high levels of sulfides, iron, and manganese. In 1965, the citizens passed a bond issue, 91% in favor, to construct a new surface WTP. The WTP was placed on line in 1969. In 2001, the City acquired the Hillcrest Water Company (HWC). HWC provided groundwater service to four regions, within the City's sphere of influence. The HWC systems included approximately 4,600 service connections and 13 active groundwater wells. All of the HWC wells are now inactive and all of the HWC customers have been connected to surface water (completed October 2010).

Source of Water Supply. The City obtains water for its water system through four different permits/contracts from the Feather River. The Feather River is a tributary to the Sacramento River and provides the primary watershed for the SWP. The main water supply source, 90% of all water, for the City is surface water from the Feather River. The City also has access to one groundwater well located at the WTP for use in drought or emergency conditions. The water supply sources are summarized as follows:

Table 1: Yuba City Water Sources											
Water Supply	Additional Detail	Total Allocation	Time of Use	Source							
Surface Water	State Water Resources	6,500	Sept - June	Feather River							
	Control Board (SWRCB)										
	License 13855										
Surface Water	SWRCB Permit 18558	9,000	Oct - June	Feather River							
Surface Water	North Yuba Water	4,500	Summer	Feather River							
	District Agreement										
Surface Water	DWR SWP	9,600	Year Round	Feather River							
Groundwater	Backup WTP	3,248	As Needed	Sutter Subbasin							
	Groundwater Well										
Totals		32,848									
Source: Tables 6-8 and	d 7-0, Yuba City 2015 UWMP, a	and January 21, 2014,	Staff Report								

Water Supply Reliability. Historically, SWRCB License 13855 and the North Yuba Water District (NYWD)

have been reliable sources of water. License 13855 is one of the City's older permits and drought restrictions have only been applied twice: 1977 and in 1992. In 2014, SWRCB License 13855 was curtailed June-October and Permit 18558 was curtailed March-October. In 2015, License 13855 was curtailed May - October and Permit 18558 was curtailed May-November. The DWR SWP Contract is typically subject to restrictions, with severe restrictions occurring in 1990 and 1991 when the City's allocation was reduced to 20%, 1992 to 45%, 2014 to 5%, and 2015 to 25%.²

The California Water Code requires urban water suppliers within the State to prepare and adopt an UWMP every five years. This process includes addressing the reliability of the City's water supplies,



Fig. 3. Raw water intake at Feather River

² City of Yuba City Staff Report, January 21, 2014, Agenda Item #12

including an analysis of supply availability in a single dry year and multiple dry years. The City's UWMP was updated in 2015 by Carollo Engineers. Based on the 2015 UWMP process, it was determined that the City's water supply was vulnerable during the most recent drought. The tables below provide a comparison of water supply to water demand during a normal year, single dry year, and multiple dry years. The demand totals are based on 3% annual growth. The City's baseline daily per capita water use was calculated to be 240 gallons per capita per day (gpcd). *All scenarios show the need for the City to secure additional water supplies for reliability and long-term growth of the City.*³

Table 2: Normal Year Supply and Demand Comparison (all in AF)											
	2020	2025	2030	2035	2040						
Supply Totals	31,042	31,042	31,042	31,042	31,042						
Demand Totals	18,088	20,905	24,171	27,958	32,346						
Difference	12,954	10,137	10,137 6,871 3,084		(1,304)						
Table	e 3: Single Dry Yea	r Supply and Dem	and Compariso	n (all in AF)							
	2020	2025	2030	2035	2040						
Supply Totals	15,924	15,924	15,924	15,924	15,924						
Demand Totals	18,088	20,905	24,171	27,958	32,346						
Difference	(2,164)	(4,981)	(8,247)	(12,034)	(16,422)						

	Table 4: Multiple Dry Years Supply and Demand Comparison (all in AF)											
		2020	2025	2030	2035	2040						
First	Supply Totals	26,064	26,064	26,064	26,064	26,064						
Voar	Demand Totals	18,088	20,905	24,171	27,958	32,346						
real	Difference	7,976	5,159	1,893	(1,894)	(6,282)						
Second	Supply Totals	28,722	28,722	28,722	28,722	28,722						
Voar	Demand Totals	18,088	20,905	24,174	27,958	32,346						
real	Difference	10,634	7,817	4,551	764	(3,624)						
Third	Supply Totals	15,924	15,924	15,924	15,924	15,924						
Voar	Demand Totals	18,088	20,905	24,171	27,958	32,346						
real	Difference	(2,164)	(4,981)	(8,247)	(12,034)	(16,422)						

Water Rights. The City holds two appropriative water rights, SWRCB License 13855 (Application Number 0A18025) and 18558 (Application Number A025751) and two surface water supply contracts from the North Yuba Water District (NYWD) and the DWR SWP that pull from the Feather River. The City's allocation from the SWP can be significantly reduced in low rainfall years (2014 - 5% allocation and 2015 - 25% allocation). Permit 18558 was also curtailed March-October 2014. The City recently obtained water rights to an additional 53 AFY through the DWR Dry Year Water Purchase Program at a cost of \$93.75 per AF for the first 37 AF and at \$125 per AF for the next 16 AF. The original contract for water with the NYWD was negotiated in 1965 and provides for diversion from the Feather River until 2035. Contract renewal is available at the end of the contract term. Annual withdrawals are limited to 4,500 AFY. The price for the water is directly tied to the consumer price index.

³ City of Yuba City Staff Report, June 21, 2016, Agenda Item #3

The original contract for water with the DWR was negotiated in 1963 and provides water until 2035. Contract renewal is available at the end of the contract term with certain renewal rights. Annual withdrawals are limited to 9,600 AFY. This contract is primarily only supplemental to the NYWD contract for the months of July and August; however, water from this contract can be used during any month. Full allocations have been reduced several times since 1990. In 1990 and 1991 allocations were reduced to 20%, in 1992 to 45%, in 2014 to 5%, and in 2015 to 25%. Increased long-term water demands, due to a larger service area, and increased number of customers will necessitate optimizing existing water supply. The reliability of the SWP allocations also necessitates augmentation to more reliably meet the City's water supply needs.

Current and Projected Water Demand/Users. Water demands consist of residential, commercial, industrial, and landscape agricultural with the majority of water use being provided to single family residents. Currently there are 19,035 connections/metered accounts, and approximately 90% of metered water deliveries are for single and multi-family residential accounts. The City's total water demand for calendar year 2016 was 12,143 AF. Projections for population growth provide the City with insight regarding future water resource needs. The projected populations are based on a 3% annual population growth as depicted in the 2010 Census data. Given the 3% projections, it is estimated that the City's population will be 128,361 in 2035. The table below provides current and projected water demands.

Table 5: Current and Projected Water Demand (all in AFY)											
Unit Type	Current ¹	Projected ²									
	2016	2020	2025	2030	2035	2040					
Single-Family	6,487	9,504	11,017	12,773	14,807	17,164					
Multi-Family	1,583	2,360	2,737	3,173	3,680	4,266					
Commercial & Institutional	1,532	2,286	2,652	3,075	3,563	4,131					
Industrial	1,790	2,526	2,928	3,394	3,934	4,560					
Landscape	748	991	1,151	1,335	1,547	1,792					
Other ³	3	18	21	25	28	3					
TOTAL	12,143	17,685	20,506	23,775	27,559	31,916					
¹ 2016 Vuba City DWR Bonart with Bu	blic Water System St	atistics Form	20 Caland	ar Voar 201	6 (this AE is	tha					

¹2016 Yuba City DWR Report with Public Water System Statistics, Form 38, Calendar Year 2016 (this AF is the reported AF to DWR and is based upon metered readings; does not include water loss) ²Source: Table 4-2 Yuba City 2015 UWMP

³"Other" uses include fire suppression, street cleaning, line flushing, construction meters, and temporary meters

Water Distribution System. The City limits comprise 14.9 square miles. The water service area encompasses the entire City limits and some connections outside of the City limits. The City sphere of influence borders are currently the Feather River to the east, Pease Road to the north, Township Road to the west, and Bogue Road to the south. The sphere of influence is the probable ultimate physical boundary and service area of the City determined by the Local Agency Formation Commission of Sutter County. Water service is provided to residents within the City limits, residents outside of the City limits but within the sphere of influence, and Franklin Elementary School, which is outside of the City's sphere of influence. The City is in the process of expanding the sphere of influence. The City maintains and repairs over 19,035 connections/meters through approximately 275 miles of water mains, system valves, and other equipment.

The City's WTP employs State Certified Operators that operate the WTP 24/7 to provide safe drinking

water, sustain system pressure, and maintain water storage to fulfill the needs of residents. The City's WTP capacity is 36 mgd. The City's distribution system is typically operated at 50 to 60 pounds per square inch. Pressure can be reduced in times of water shortages. The distribution system contains no elevated water storage tanks. The City monitors and fixes leaks every year as the distribution system ranges from 49 -100 years old.⁴

Past Relationships with BOR.

BOR Anadromous Fish Screen Program. In 2006, the City was awarded a \$900,000 grant for the Yuba City Feather River Fish Screen Project. The \$6.1 million project replaced an existing



Fig. 4. Yuba City Water Treatment Plant - proposed location for the groundwater well

unscreened intake structure on the Feather River with a new intake structure. In June 2013, several SWRCB and BOR representatives were on-site to observe the removal of the Coffer Dam from Feather River. This project was completed on April 3, 2014 (on time and on budget).

BOR WaterSMART: Small-Scale Water Efficiency Program. In

July 2017, the City was awarded a \$73,996 grant to install water conservation irrigation controllers and meters in local parks and landscape maintenance districts. The grant agreement has been executed with the BOR and the project is proceeding on schedule and on budget.

1C. Technical Project Description

The construction of the new potable groundwater (with the potential to be an ASR well in future phases) will expand the City's water production by 2,400 AFY and help Yuba City be more drought resilient. The City's 2016 calendar year water demand was 12,143 AF; therefore, the additional



Fig. 5. Coffer Dam - the BOR participated in this \$6.1 million project

groundwater well will provide about 20% of the City's available potable water. A feasibility study and preliminary planning has been completed by West Yost Associates and the conclusion is that a groundwater well, with future ASR capability, is viable at the WTP. West Yost Associates installed five monitoring wells in the City to identify the most appropriate location for the new well. A construction contract will be awarded once design, engineering, and environmental compliance are complete. The groundwater well project will be completed in 2.5 years from the award date and the useful life of the groundwater well is 50 years for a total lifetime production of 120,000 AF. Please see Evaluation Criterion D for the proposed Work Plan.

⁴ Yuba City Adopted Annual Operating Budget, Fiscal Year 2016-2017

1D. Evaluation Criteria

Evaluation Criterion A—Project Benefits

How Project Builds Long-term Resilience to Drought. The proposed project provides an additional source of water for City residents that can be relied upon during drought conditions and is not subject to restrictions from outside agencies. As outlined in the table below, the City relies heavily on water sources that are dependent on licenses and permits from other agencies and this has had negative consequences on the City's resilience to drought, ability to grow, and quality of life. In 2016, the City's potable water allotment versus volume utilized was as follows:⁵

Table 6: 2016 Allotment vs. Volume Utilized (all AF)									
Water Source	Contract Allotment	2016 Volume Utilized							
SWRCB License 13855	6,500	2,855							
SWRCB Permit 18558	9,000	6,244							
North Yuba WD	4,500	3,028							
DWR SWP	9,600	1,229							
Backup Groundwater Well	3,248	414							
TOTALS:	32,848	13,770*							
		(based on actual volume of water pulled from							
		Feather River and Groundwater)							

The groundwater well is expected to yield up to 2,400 AFY of drinking water, which is approximately 20% (2,400/12,143) of the City's 2016 calendar year demand (does not include water loss). The project is estimated to provide these benefits for the entire estimated useful life of 50 years.

Making Additional Water Supplies Available. The project makes additional water supplies available via drilling a new groundwater well. The new groundwater well will deliver an estimated 2,400 additional AFY or 1,500 gpm of water to the City based on a comprehensive Monitoring Well Construction Report (November 2016) and a Feasibility Study (dated November 8, 2016), both reports developed by West Yost Associates. The additional water produced by the new groundwater well represents an estimated 20% of the City's current demand for water as determined by dividing the additional water to be supplied by the current water demand total, 12,143 AF in calendar year 2016. As stated in the previous section, the groundwater well project will have a useful life of 50 years; therefore, adding approximately 120,000 additional AF of water to the City's water supply.

Qualitative Significance. On January 17, 2014, Governor Brown proclaimed a State of Emergency asking all Californians to reduce water consumption by 20% because the State's water supplies had "...dipped to alarming levels...". The extremely dry conditions started in 2012 and were projected to continue beyond 2014. In April 2014, Governor Brown enacted a first-ever 25% statewide mandatory water reduction. According to the California DWR, the three driest consecutive years of statewide precipitation in this historical record were in 2012-2014.⁶ During this timeframe, the drought conditions significantly impacted the City. The following provides a summary of these impacts:

⁵ Yuba City Emergency Water Restrictions & Conservation Update, June 7, 2016

⁶ California DWR "California's Most Significant Droughts," February 2015;

http://www.water.ca.gov/waterdatalibrary/docs/historic/Reports/Drought/California_Signficant_Droughts_2015. pdf

- On November 15, 2013, the City received a letter from the SWRCB that Permit 18558 is restricted until further notice. *The City relies on an annual allocation of 9,000 AF from Permit* 18558.
- On November 19, 2013, the City received a letter from the DWR that the City's initial allocation from the SWP Contract will only be 5% of the City's contract amount for 2014, or 480 AFY. *The City relies on an annual allocation of 9,600 AF from the SWP Contract.*
- The 25% statewide mandatory water reduction enacted in April 2014 (referenced above) placed urban water suppliers into one of nine tiers assigned a conservation standard ranging from 4%–36%. The tier assignment was based upon per capita residential consumption information
- reported for July September 2014. Based on the City's consumption during that time period, the City was assigned Tier 8, which required reductions of 32%!
- On June 1, 2015, the City began implementing extreme conservation measures throughout the City to meet the State-mandated 32% reduction in potable water use.
- By December 31, 2015, the City had issued 3,309 first violations, 507 second violations, 81 third violations, and 14 fourth violations. <u>The only water sources available to</u> <u>the City during the summer months (peak demand) were</u> <u>the NYWD allocation of 4,500 AFY, DWR carryover water,</u> <u>and the backup groundwater well.</u>

Other historical drought restrictions were implemented in 1977 and in June of 1992 when no water could be diverted. Two state declarations between 1950 and 2006 in Sutter County were for droughts. Total damages in 1976 related to drought amounted to \$2,664,000,000. In total over the 1950 – 2006 period, there were 20 state declarations, but the droughts caused the most in financial damages. According to the Sutter County Multi-Hazard Mitigation Plan, a major event receiving a disaster



Fig. 6. Oroville Dam and Lake Oroville on the Feather River is located 40 miles north

declaration occurs every 2.8 years or, stated another way, there is a 35.7% chance of a major disaster declaration in any given year.

And finally, the Oroville Dam has historically allowed for sufficient water flow to the Feather River; however, if a catastrophic event were to occur, the City would face dire consequences with its potable water supply. The reality of catastrophe was witnessed by the world in February 2017 when the Oroville Dam's main and emergency spillways were significantly damaged resulting in the evacuation of more than 190,000 people living downstream along Feather River, including Yuba City residents. It is vital that the City be proactive and plan for future potential water needs through drought conditions, an increase in population, and disasters. The new groundwater well will help mitigate all three of these concerns. Governor Edmund G. Brown Jr. ended the drought state of emergency in most of California on April 7, 2017. However Governor Brown warned, "This drought emergency is over, but the next drought could be around the corner."⁷

⁷ drought.ca.gov

Improving the Management of Water Supplies. The primary purpose of the proposed project is to improve the City's ability to deliver water during times of drought, which is directly improving our ability to manage our water supplies. As articulated above, the City has viable concerns over its future water supply due to the prolonged drought periods of 2012-2015. It is crucial at this time that the City be able to produce a greater supply of water and manage our existing contracts and licenses as the City is planning to add two new developments, El Margarita and Riverbend West, to the service area. The El Margarita Master Plan will accommodate 895 single family homes and 273 multi-family units in a 650-acre development. The Riverbend West Master Plan consists of 752 acres. The new service areas and connections will be detailed in the 2020 UWMP. The new groundwater well will provide the City with quality, potable water at a reasonable price. The groundwater well will expand the SWP water supply due to the City's decreased need for SWP withdrawals, which will directly impact many Californians that are not able to utilize groundwater sources or are in a worse water supply situation.

New Information for Water Managers. The proposed project will make new water supply information and water storage capacity available via SCADA equipment to water managers and maintenance staff.

Benefits to Fish, Wildlife, and

Environment. The Sacramento Valley, which includes Yuba City, is vital to the economy of the state of California as the Valley feeds millions, and provides tens of thousands of agricultural jobs to Californians. According to What's at Stake: The Importance of Protecting Water Resources in the Sacramento Valley brochure produced by the Northern California Water Association, "Not only do the rice fields provide a dependable source of income for farmers, surrounding communities and related industries, they also provide an essential natural habitat for migrating waterfowl that would otherwise cost up to \$2 billion to acquire and restore, with an additional \$35 million annually to maintain."⁸ The Valley is home to 50% of the threatened and endangered species of California. Maintaining a healthy supply of quality water is





essential and constructing a groundwater well at this time will help to preserve our fish, our wildlife and our environment since the City will rely less on SWP water and the Feather River and be able to rely upon groundwater for future needs.

⁸ norcalwater.org

Well Information. The estimated capacity of the new groundwater well is 1,500 gpm or 2,400 AFY and approximately 20% of the City's calendar year 2016 water demand of 12,143 AFY. West Yost Associates determined the extra water capacity after they installed five monitoring wells in the City to identify the most appropriate location for the new well and the probable well capacity. The City's existing groundwater well, near the same site, produces a similar volume of water, which helps corroborate the estimated capacity of the new well. The new groundwater well will be constructed to allow for ASR capabilities in the future and will be a supplemental well to the City's existing portfolio of water allotments.

Of the five monitoring wells, two locations are preferred by the City: well MW-2B and well MW-3B (see Fig. 2). After careful consideration and with input from the final design engineers, the City will determine which well location is most appropriate for the City's needs. Construction for monitoring well MW-2B began on November 10, 2015, and ended on November 24, 2015. Well <u>MW-2B</u> was constructed as a dual completion monitoring well within two aquifer zones, Zones A and B, at depths of 214 and 400 fbg, respectively. Construction for monitoring well <u>MW-3B</u> began on November 17, 2015, and ended on November 25, 2015. Well MW-3B was constructed as a dual completion monitoring well within two aquifer zones, Zones A and B, at depths of 205 and 400 fbg, respectively. Figure 2 provides the two proposed locations for the well and the following table provides summary as-built well construction details taken from the Monitoring Well Construction Report prepared by West Yost Associates in November 2016. Please note that only one well will be drilled and final design will determine if it will be at the MW-2B or MW-3B site:

Table 7: Proposed As-Built Construction Summaries for MW-2B and MW-3B										
Groundwater Well	Depth, feet	Construction Detail	Material							
	0-340	Well Casing	2.5" Schedule 80 PVC Blank Casing							
MW-2B	340-390	Screen Interval	2.5" Schedule 80 PVC Screen w/ 0.03" Slots							
	390-400	Sump	10' Sump w/ End Cap							
	0-335	Well Casing	2.5" Schedule 80 PVC Blank Casing							
MW-3B	335-390	Screen Interval	2.5" Schedule 80 PVC Screen w/ 0.03" Slots							
	390-400	Sump	10' Sump w/ End Cap							

Aquifer Description. Currently, the California DWR does not consider any of the groundwater subbasins underlying Sutter County to be in overdraft nor is the area negatively affected by land subsidence. The Sutter County Groundwater Management Plan (section 7.1.3) states that land subsidence has not been historically reported or documented within Sutter County. In Northern California, the Sacramento Valley aquifer systems, which cover 5,500 square miles, are divided into the Sacramento Valley and Redding Groundwater Basins. The City overlies a portion of an unadjudicated basin, the Sacramento Valley Groundwater Basin, and Sutter Subbasin.⁹ The Sutter Subbasin lies entirely within the Sacramento River watershed with the most notable hydrological features being the Sacramento and Feather Rivers.

⁹ March 21, 2017, Yuba City Staff Report, Agenda Item #3

The Sutter Subbasin is bound on the north by the confluence of Butte Creek, the Sacramento River, and the Sutter Buttes, by the Sacramento River on the west, by the confluence of the Sacramento River and Sutter Bypass on the south, and on the east by the Feather River. The principal sources of groundwater recharge are stream percolation, deep percolation of rainwater, and percolation of irrigation water. The Sutter Subbasin is not an adjudicated groundwater basin. The proposed well will draw from the Sutter Subbasin.¹⁰ The primary groundwater chemistry is calcium, magnesium, calcium bicarbonate. The water from the proposed groundwater well will be blended with available treated surface water to satisfy drinking water quality and aesthetic standards.

Groundwater Monitoring Plan. Yuba City, as a Groundwater Sustainability Agency (GSA), coordinates as a member agency with Sutter County and other local GSAs and water suppliers for the SGMA determined Sutter Subbasin to comply with SGMA requirements. Currently Yuba City has submitted an Alternative Groundwater Sustainability Plan to DWR for review and consideration with applicable data showing our groundwater status and mitigation efforts. The proposed addition of a new groundwater well in Yuba City for water supply would be in accordance with the guidelines established in the Alternative GSP and, should the well be constructed, the well would be incorporated into the Alternative GSP update or GSP to ensure that monitoring and draw down do not negatively affect the long-term groundwater sustainability in the basin. It is important to note that Sutter County also maintains a comprehensive Groundwater Management Plan that includes the Sutter Subbasin. This Plan identifies and addresses several groundwater to sustain a drought, taxes and fees for groundwater use, and obtaining good quality water.

Other Existing or Planned Aquifer Recharge Facilities. A search of literature and plans did not identify any existing or planned aquifer recharge facilities in the Sutter Subbasin.

Positive Benefits of ASR. It is important to note the positive groundwater benefits of an ASR. The proposed well will be constructed to allow for ASR capability in future phases. ASR wells are fully supported by the Environmental Protection Agency, the Federal Emergency Management Agency, and others as an effective drought mitigation project. Appropriate measures will be installed and policies created to manage potential leaching or contamination but the benefits of ASR wells far exceed the risks from leaching or contamination. Any future injection process will be reviewed and implemented in cooperation with the EPA's Underground Injection Control program.

Evaluation Criterion B—Drought Planning and Preparedness

The City adopted an UWMP in July 2016. The purpose of the UWMP is to maintain efficient use of urban water supplies, continue to promote conservation programs and policies, ensure that sufficient water supplies are available for future beneficial uses, and *provide a mechanism for responses during water drought conditions*. To that end, the UWMP serves as the City's Drought Plan. Select pages of the

¹⁰ The California DWR maintains a publicly available on-line database, which includes groundwater level data for the County. The DWR Water Data Library (WDL) website can be found at http://www.wdl.water.ca.gov. Wells monitored by DWR and cooperating agencies are identified by the State Well Number (SWN). Data can be obtained for specific wells by means of a map interface, by groundwater basin, or by the assigned SWN.

UWMP are provided as an Attachment. The following excerpts are examples of how the Plan addresses drought (this list is not comprehensive):

- Recycled Water Coordination: Identify and secure reliable water supplies now, to accommodate future growth and drought (p 6-4).
- Current and Projected Water Supplies: The City maintains a variety of permits, licenses, and contracts to ensure a reliable water source under severe drought conditions.
- Utilizing ASR is identified as a way to "close the gap" between supply and demand (p. 7-6).
- Chapter 8 is "Water Shortage and Contingency Planning" which is dedicated exclusively to preparing for and responding to drought and catastrophic reductions in water supplies (pp. 8-1 to 8-13).

Climate Change Impacts. Included within the UWMP is the City-completed Integrated Regional Water Management (IRWM) Climate Change Vulnerability Assessment (Appendix B) and references to climate change considerations are included throughout the UWMP. The City's Climate Change Vulnerability Assessment reports that both seasonal water use and water needed for crops will increase as average temperatures increase and droughts become more prevalent. Loss of snowmelt due to climate change will also produce negative impacts of the City's water supply. Climate change may also make the quality of the City's water supply vulnerable due to increased wildfires, and increases in storm severity. In addition, in June 2015, the Yuba City Council authorized staff to work with Atkins to develop a Climate Action Plan, which has since been named the "City of Yuba City Resource Efficiency Plan." This Plan was finalized in June 2016 and includes goals for making the City more drought resilient as a result of climate change.

Collaborative Process of Drought Plan. Multiple stakeholders were collaborated with to produce the City's UWMP. The City coordinated with the following agencies, organizations and communities for completion of the UWMP: Department of Public Works, NYWD, SWRCB, DWR, Sutter County and the General Public. On June 10, 2016, and June 17, 2016, the City placed a notice in the *Appeal Democrat* (local newspaper) stating that its UWMP was being updated and that a public hearing would be conducted to address comments and concerns from members of the community.

The notice stated that a public review period would be scheduled through June 21, 2016. The Draft 2015 UWMP was made available for public inspection at City Hall 1201 Civic Center Boulevard and the City website. A public hearing was held on June 21, 2016, prior to adoption of the UWMP. The public hearing provided an opportunity for the public to provide input on the plan before it was adopted. Additionally, the public hearing provided an opportunity for the City's customers, residents, and employees to learn and ask questions about the current and future water supply of the City.



How Project Supports Existing Drought Plan. Pages 6-11 and 6-12 of the UWMP provide a lengthy discussion about the proposed groundwater/future ASR well as a viable way to increase the City's water supply and page 7-6 identifies, by name, *aquifer storage and recovery wells* as a way for the City to "close the gap" between supply and demand. There is no specific prioritization within the UWMP but the City Council has supported exploring ASR wells dating back to 2010 with the authorization of \$650,000 for the well testing and preliminary engineering. The project addresses a goal/need identified in the Plan as follows, "During dry years and drought periods it is possible that the future demand for water in the City will exceed the supply" (p. 7-6).

As articulated previously, the City purchases surface water from the DWR under the SWP. The original contract for water with the DWR was negotiated in 1963 and provides water until 2035. Contract renewal is available at the end of the contract term with certain renewal rights. Annual withdrawals are limited to 9,600 AFY. This contract is primarily only supplemental to the NYWD contract for the months of July and August; however, water from this contract can be used during any month. Full allocations have been reduced several times since 1990. In 1990 and 1991 allocations were reduced to 20%, in 1992 the allocations were reduced to 45%, in 2014 the allocation was 5%, and in 2015 the allocation was 25%. Therefore these contracts have the possibility of considerably affecting the City's water supply, particularly under severe drought conditions.

In 1964, the City received the right to diversion from the Feather River pursuant to SWRCB License 13855. This license is critical as it provides the foundation of the City's water supply. In 1978, the City received the right to diversion from the Feather River except during the months of July, August, and September pursuant to SWRCB Permit Number 18558. In 2014, the SWRCB License was restricted from June-October and the SWRCB permit 18558 was restricted March-October. In 2015, the SWRCB License was restricted from May-October and the SWRCB permit 18558 was restricted May-November . Therefore the license and permit have the possibility of considerably affecting the City's water supply, particularly in severe drought conditions.

The City estimates that 5,189 million gallons of water is the minimum annual water supply available to satisfy demand in a three-year historic drought situation. In the event of a significant decrease in the flow of the Feather River, the City maintains about 20.6 million gallons of treated water and a standby water supply well at the WTP.

The WSCP document contains stages of appropriate action that need be taken in the event of a drought. If implemented, the WSCP would be enforced within the City's service area. The City is not connected to potable water systems maintained by other water suppliers. The City has a four-step action plan that includes both voluntary and mandatory requirements and the Yuba City Council will determine the action plan stages as needed. Currently there exists a No Waste Provision in place at all times under the City Municipal Code.

Increased future demands on water consumption due to annexation and population growth, restriction on water supply contracts, licenses, and permits, and lingering drought impacts from California's historical 2011-2014 drought necessitates that a new groundwater well be constructed at this time to avoid future catastrophe.

Evaluation Criterion C—Severity of Actual or Potential Drought Impacts to be Addressed by the Project

Ongoing Drought Impacts if No Action is Taken. Since the 2011-2014 major droughts in California history, rivers and streams have significantly maintained reduced flows. The Feather River provides the City with the vast majority of the City's water supply (90%), and with reduced river flows from the ongoing drought, the City faces near-term water shortages. The City's Water Shortage Conservation Plan (WSCP) incorporates demand reductions of up to 50% of normal year demands. Several events could occur that would significantly impede the ability of the Feather River water supply in complying with the demand reductions: drought-induced supply curtailments imposed by the state of California; river stages less than needed for full diversions; spills or other water quality impairments that prevent diversions; and failure of the City's diversion or treatment infrastructure. Such emergencies are more impactful during the summer months, but could occur at any time during the year. Climate change and clean water are at the forefront of environmental planning, and the groundwater well project will reduce the burden of providing quality water for the City.

As articulated previously, projections for population growth provide the City with insight regarding future water resource needs. Projected populations are based on a 3% annual population growth as depicted in the 2010 Census. Given the 3% growth projections, it is estimated that the City's population will be 128,361 in 2035. Water demands of the City consist of residential, commercial, industrial, and landscape agricultural with the majority of water use being provided to the single family residents.

Public Health/Social Concerns. The quality of life of the City's residents was made vulnerable in 2015 when a 32% per household reduction requirement was implemented due to reduced water allocations

of the SWP to 5%. Many citations were given as residents were trying desperately to create some sense of normalcy in their dayto-day lives during the drought.

Potential Environmental Impacts. Governor Brown signed the Sustainable Groundwater Management Act (SGMA) in September 2014 following the historical drought from 2011-2014. Sustaining water sources are integral in preventing potential environmental impacts to threatened or endangered species or habitat. According to the Northern California Water Association, "The Sacramento Valley represents the single most important wintering area for the waterfowl along the



Fig. 9. The South Fork of the Feather River feeding Lake Oroville on September 5, 2014. Photo credit: Kelly M. Grow/California DWR.

Pacific Flyway. Migrating waterfowl rely upon this region of the state to rest and feed during their annual migration. In addition to the multiple species of waterfowl, raptors, and shorebirds that seasonally inhabit the region, these lands provide habitat for a number of other species who rely upon this area year-round."¹¹ According to the United States Drought Monitor website, "...droughts create a domino effect that can impact everything in the environment."¹²

¹¹ norcalwater.org

¹² drought.unl.edu

Economic Losses. In 2002, drought conditions within Sutter County greatly impacted the agricultural industry in the amount of \$34,000,000, and again in 2004, drought conditions on a county-wide basis disrupted the economy of the agricultural sector. According to The *Sacramento Bee*, "The drought is costing California \$2.7 billion this year", and "Economic growth in the Valley 'is a bit slower than it would be without the drought.' The drought is leading to direct crop revenue losses of \$900 million in 2015 and is costing dairy and livestock producers \$350 million. Crops most impacted include rice, alfalfa, and corn."¹³

Existing/Potential Drought Conditions. Potential drought conditions are a constant worry and conservation has become a way of life for the people living in California. The recent drought of 2011-2014 left consequences for the City's water supply and the City is preparing for the next drought, population growth, increased mandatory conservation efforts, and consequences of climate change through the construction of a new groundwater well. The area where the new groundwater well will be located is currently not in a drought; however, as recently as 2014-2016, the area suffered from <u>severe drought</u> to <u>exceptional drought</u> conditions. Looking forward, the *San Francisco Gate* reported on February 1, 2018, that "...a consortium of nationwide water experts reported that 44% of the State [of California] is again experiencing at least moderate drought conditions." The State is witnessing, again, unusually low snowpacks as a result of a very dry December (2017). The winter snowpack supplies nearly one-third of California's annual water needs.

Projected Drought Severity/Duration Due to Climate Change. The City's Climate Change Vulnerability Assessment, Appendix B of the 2015 UWMP, reports that both seasonal water use and water needed for crops will increase as average temperatures increase and droughts become_more prevalent. Loss of snowmelt due to climate change will also produce negative impacts of the City's water supply. Climate change may also make the quality of the City's water supply vulnerable due to increased wildfires, and increases in storm severity.

Evaluation Criterion D—Project Implementation

Proposed Project Plan. The proposed project is ready to proceed to final design and construction upon an executed agreement with the BOR. The following details the scope of work, major tasks, deliverables, and a project schedule and are organized to align with the Budget and Schedule items:

Task 1: Execute Grant Agreement – The City will meet with the BOR staff to review grant requirements and expectations, and learn procedures for invoicing and auditing. The City will work alongside the Yuba City Council to successfully comply with all grant procedures. *Deliverables:* Executed grant agreement.

Task 2: Develop Plan, Specifications, and Cost Estimate (PS&E) – The proposed project will be constructed on property owned by the City. Design work to construct a new well and selection of SCADA equipment will be developed. *Deliverables:* Final design and construction documents.

2.1: Prepare Bid Package for Well Construction – The Project Manager will prepare a bid package for construction of the well. This work will be performed under the supervision of a licensed hydrogeologist. *Deliverables:* Bid Package for Well Construction.

¹³ sacbee.com, 8/18/2015

2.2: Prepare Bid Package for Well Head Facilities - The Project Manager will prepare a bid package for well head facilities. *Deliverables:* Bid Package for Well Head Facilities.

Task 3: Provide Environmental Documentation (CEQA/NEPA) – Environmental documentation meeting the requirements of CEQA and NEPA will be prepared for the proposed project. The City will partner with BOR staff to evaluate the project area to determine the level of environmental documentation required. *Deliverables:* Project Manager will coordinate with BOR for the completion of any additional environmental documentation required. Complete and report results of any pre-activity biological survey work done at the time of construction.

Task 4: Obtain Permits and Approvals – Permitting and approvals for the proposed project will be obtained and include the certification from the Department of Environmental Health for the well Drilling, a certified Drinking Water Source Assessment and Protection (DWSAP) from the Division of Drinking Water and Environmental Management of the California Department of Health Services. Extensions for all agencies, as needed, will be requested by the Project Manager. Work also includes securing the necessary SWPPP/NPDES permits and approvals. *Deliverables:* Completion of necessary permits, approvals and extensions, as needed, prior to construction.

Task 5: Bid, Award, and Execute Contract – Yuba City staff will issue a Request for Qualifications (RFQ) to procure a qualified Contractor. The Project Manager will bid, award, and execute a contract with the selected Contractor. *Deliverables:* Executed Contract.

5.1: Kick-off Meeting: The Contractor and Project Manager will discuss the proposed project. *Deliverables:* Meeting Minutes.

5.2: Refined Timeline and Expectation Plan: The Project Manager and Contractor will review and establish tasks and a project timeline with deliverables in accordance with the BOR grant requirements. *Deliverables:* Contractor Timeline with scheduled deliverables.

Task 6: Notify Residents about Project (including nearby residents)– Yuba City staff will conduct outreach and host community meetings at the site and with individual homeowners who will be potentially affected by the construction. The City will continue to notify stakeholders of progress made. *Deliverables:* Public Announcements.

Task 7: Construct Well Facility and Start-Up and Testing – Complete construction of the new well with facility improvements. Activities include mobilization and site preparation (pre-construction surveys, pre-construction meetings, and equipment delivery), construction of a new well with motorized controls, installation of a power line connections, start up and performance testing, SCADA communication equipment. *Deliverables:* Construction completion.

7.1: Well Construction and Testing: City staff will contract with a well drilling contractor and drill and develop a new well to current DEH and AWWA standards. This will include water quality sampling in order to design a well disinfection plan to treat the well's specific water quality at the WTP. *Deliverables:* Performance Reports for well testing, water quality results, and a certified DWSAP.

7.2: Well Head Facility and Appurtenances (Treatment Facilities and SCADA): City staff will contract with a mechanical contractor to construct the well head facilities, including well head pumps, civil site work,

and electrical and SCADA facilities. *Deliverables:* Compaction testing reports, equipment testing reports, and special inspection reports.

7.3: Start Up and Testing of the well: *Deliverables:* Final DEH Well Completion certificates and Final Operations and Maintenance Manuals.

Task 8: Grant Administration, Reports, Reimbursements – The Project Manager will perform all construction administration activities that include organization of files and grant tracking activities to ensure compliance with complex state and federal regulations; completion of project reports, financial reports and payment requests; grant close-out reports and final reporting requirements; audit preparation and records retention, as needed. *Deliverables:* Construction progress pay estimates, documentation and authorization of Change Orders, responses to Request for Information (RFIs), and final Notice of Completion.

8.1: Reports on the financial status of the project will be submitted by the City in accordance with the final BOR executed agreement. A final project report will be prepared upon project completion and provided to the BOR for review and final project closeout. *Deliverables:* Semi-annual status reports, significant development reports, and a Final Project Report as specified in the grant agreement.

Permits. During the final design phase and before construction, the City will work with the design firm to obtain all necessary permits. The City has extensive experience with the permitting process and has quality relationships with the agencies that will require a permit prior to construction. These include:

- Department of Environmental Health for the well Drilling;
- Certified Drinking Water Source Assessment and Protection (DWSAP) from the Division of Drinking Water and Environmental Management of the California Department of Health Services;
- Development of a Storm Water Pollution Prevention Plan;
- Obtaining a National Pollutant Discharge Elimination System permit (NPDES); and
- Yuba City Building Permit.

Engineering/Design Work Complete. To date, the City has expended local funds for the testing of the well construction and feasibility study, completed by Carollo Engineers and West Yost Associates, respectively. No other engineering or design work has been completed, to date.

New Policies/Administrative Actions. There is no need for new policies or administrative actions to implement the project.

Describe how the environmental compliance estimate was developed. Have the compliance costs been discussed with the local BOR office? Based on Yuba City's prior experience with BOR grant programs, \$2,500 in grant funding has been set-aside for BOR staff to conduct NEPA compliance, as needed. See the detailed budget and budget narrative for more information.

Table 8: Project Schedule													
Quarters (calend									dar y	ear)			
No.	Task		20	018			20	19		2020			
						1	2	3	4	1	2	3	4
0	BOR Grant Award Notification (May 2018)												
1	Execute Grant Agreement												
2	Develop Plans, Specifications, and Cost Estimate												
2.1	Prepare Bid Package for Well Construction												
2.2	Prepare Bid Package for Well Head Facilities												
3	Prepare Environmental Documentation (CEQA and NEPA)												
4	Obtain Permits and Approvals (DWSAP/SWPPP/NPDES, etc.)												
5	Bid Award and Execute Construction Contract												
5.1	Kick-off Meeting between Contractor and Project Manager												
5.2	Refine Timeline and Expectations Plan												
6	Notify Residents about Project (include community mtgs)												
7	Construct Well Facility and Start-up Testing												
7.1	Well Construction and Testing (to include DEH/AWWA stds)												
7.2	Well Head Facility and Appurtenances (including well head												
	pumps, disinfection and other treatment facilities, civil site												
	work, electrical, and SCADA)												
7.3	Start-up, Testing, and Notice of Completion												
8	Grant Administration, Reports, Reimbursements												

Evaluation Criterion E—Nexus to Reclamation

Connection to Reclamation Project. The City is one of 27 California State Water Project Contractors and the SWP has been confirmed as being a BOR facility. "The SWP is the nation's largest, state-built water and power development and delivery system, supplying clean, high-quality water to 25 million Californians. The SWP gets Californians through droughts more efficiently than any other source, augments local water supply sources and recharges ground water basins. Some regions rely on the SWP water for up to 80% of their supply." ¹⁴

Project Benefit to Tribes. The groundwater well will not directly benefit any Native American tribes. However, the groundwater well will decrease the City's dependence on the SWP which in turn will benefit other demographics, including Native American tribes, in more dire need of water supplies. It is important to note that the City has been dubbed by some sources as "the Mini Punjab in USA." This ethnic people group came from India as peasant proprietors over 100 years ago and today comprise over 10% of the total population in the Yuba-Sutter area. Punjabi farmers grow an estimated 95% of the peach crop and 60% of prunes in the farming area.¹⁵

Reclamation Project Water Received. The City receives BOR project water and the groundwater well project will help to reduce draw from the SWP, which in turn will help to benefit other Californians in

¹⁴ swc.org, 01/17/2018

¹⁵ India Empire; site accessed February 5, 2018,

http://indiaempire.com/article/331/yuba_citythe_mini_punjab_in_usa

more dire need of the water from the SWP or Feather River. The groundwater well project will not be located directly on reclamation lands, but will have a positive impact on a BOR project.

Reclamation Lands/Facilities/Basins. The project will not be located on BOR project lands.

Contributed Water to Basin for Reclamation Project. The groundwater well project will contribute to water in a basin where a BOR project is located by decreasing the City's dependence on the SWP, which will mean fewer draws from the SWP.

Performance Measures. Well structures are important components of sustainable design systems. The proposed project has been designed to achieve specific performance measures that include the following:

Water Supply Reliability. City staff will measure performance by the reliability to efficiently and consistently deliver an annual average of 2,400 AFY of water through the new well. The proposed project will increase the reliability of the current water supply by replacing a non-working well structure, providing an additional water source for the City. Water supplies will be measured by the total volume of water flowing through the structures and calculated using SCADA equipment. The City will utilize preand post-project water calculations to evaluate the project performance. The City has completed a Hydrogeologic Assessment that tabulated historical groundwater elevation level data for monitoring the production of wells. Post-project performance will be measured by documenting the amount of time each pump motor operates, and the total volume of water discharged. The City will compare pre-project (from the Hydrogeologic Assessment) and post-project water level conditions.

Measurement Tools. Digital flow meters will be utilized to measure water supply via supervisory control and data acquisition (SCADA) equipment. SCADA is a control system that uses computers, networked data communications, and graphical user interfaces for a high-level process of supervisory management. The proposed project includes the installation of SCADA equipment to better manage the water delivery system and accurately measure water volumes. The City staff will log any problems encountered during the performance period of one year after completion of the project.

Energy Efficiency. The energy required to operate the well and motorized piping systems will be recorded and reported monthly. Therefore, the power meter readings and AF of water supply will be gathered and assessed as a kilowatt hour (kWh) per acre-feet efficiency value analyzed by the City staff. The data will be compared to the City's other backup operating well and will be used to quantify how much energy is used to operate the proposed well to determine energy efficiency. Energy improvements will be presented in both energy (kWh/AF) and water flow units (volume of water) with the assumption that the new system will utilize less energy compared to other water supply sources

Water Management. The proposed project is estimated to provide an additional water supply of 2,400 AFY, helping to improve operational efficiency and save the City money in operating a well structure that bolsters sustainability. Upgraded automated SCADA equipment will allow the City to better monitor water supply, identify water issues (shortages, breaks in service, etc.), and address problems more quickly and efficiently.

End 20-page maximum narrative

PROJECT BUDGET

PROJECT BUDGET – FUNDING PLAN

 How you will make your contribution to the cost share requirement, such as monetary and/or inkind contributions and source funds contributed by the applicant (e.g., reserve account, tax revenue, and/or assessments).

The City's financial share and obligation is estimated to be \$3,233,159.

- \$1,800,000 is currently budgeted in the Second Groundwater Well CIP (Account No. 971191),
- \$1,000,000 is proposed in the Fiscal Year 18/19 CIP Budget, and
- Staff will request a budget transfer for the remaining \$433,159 required for the project if the grant is awarded to the City.
- Describe any in-kind costs incurred before the anticipated study start date that you seek to include as study costs. Include:

Although prior in-kind costs have been incurred, the City does not intend to seek funding for them.

• Provide the identity and amount of funding to be provided by funding partners, as well as the required letters of commitment.

The City has no funding partners.

• Describe any funding requested or received from other Federal partners. Note: Other sources of Federal funding may not be counted towards the applicant's 50% cost share unless otherwise allowed by statute.

The City has not requested nor received other Federal funds.

• Describe any pending funding requests that have not yet been approved and explain how the project will be affected if such funding is denied.

The City has no pending funding requests for the planning effort.

LETTERS OF COMMITMENT

Not applicable. The City is not requesting funding from any potential partners to implement the proposed project.

The total cost of the project is estimated at \$3,983,159. The City will provide an 81% share of \$3,233,159 and is requesting BOR funding of \$750,000, or 19% as follows:

The reliability of our budget is based on a Feasibility Analysis conducted by West Yost Associates. West Yost Associates, established in 1990, has broad experience in providing planning, design, construction management and program management services exclusively for clients with water supply, wastewater, recycled water, groundwater, and storm water needs.

Funding Sources	% of Total Cost	Total Cost by Source
Non-Federal:	81%	\$3,233,159
Recipient Funding		
Federal:	19%	\$750,000
Reclamation Funding		
Total	100%	\$3,983,159

Table 9: Funding Sources

A further breakdown of these costs is provided on the following pages.

BUDGET PROPOSAL										
	I	Labor Costs		Con	sulting/Mat	erials/Equip	ment			
Budget Category	Rate	# of Hours	Total Labor	Unit Cost	Units	# of Units	Total Cost	City of Yuba City	BOR REQUEST \$750,000 Max	TOTALS
Salaries and Wages										\$12,893
Project Manager-Engineer	\$52.97	243	\$12,893					\$12,893		\$12,893
Fringe Benefits						•				\$5,266
Project Manager-Engineer	\$21.67	243	\$5,266					\$5,266		\$5,266
Travel		•	•		•					\$0
None Expected										\$0
Equipment										\$0
None Expected										\$0
Supplies										\$0
None Expected										\$0
Contractual/Construction										\$3,965,000
Design and CEQA document preparation (Consultant) (4.36% of construction cost)				\$150,000	Lump Sum	1	\$150,000	\$150,000		\$150,000
Environmental and Regulatory Compliance (NEPA crossover, required mitigation, SWPPP, NPDES) (\$2,500 set-aside <u>for</u> <u>BOR</u> for NEPA compliance)				\$25,000	Lump Sum	1	\$25,000	\$22,500	\$2,500	\$25,000
Construct Groundwater Well (Estimated 400' Depth, Stainless Steel Casing, 1,500 gpm Capacity)				\$3,440,000	Lump Sum	1	\$3,440,000	\$2,692,500	\$747,500	\$3,440,000
Construction Management and Inspections (10% of construction cost)				\$350,000	Lump Sum	1	\$350,000	\$350,000		\$350,000
Grand Total:								\$3,233,159 (81% of Total Project Cost)	\$750,000 (19% of Total Project Cost)	\$3,983,159

Table 10: Detailed Budget

PROJECT BUDGET – NARRATIVE

Salaries and Wages – Total salaries and wages \$12,893 are budgeted for one **Engineering Manager.** It is estimated that the engineering manager will spend 8 hours per month (on average) for the 30-month project duration (2.5 years). The Engineering Manager will be responsible for managing the project to ensure successful delivery, including on time and on budget performance. The Engineering Manager will be significantly assisted by the Final Design Firm personnel during design and the Construction Manager during construction. Hourly wage is $$52.97 \times 243$ hours = \$12,893.

Fringe Benefits - The total fringe benefits are $\frac{55,266}{5,266}$ for the Engineering Manager identified above. Fringe typically includes retirement, vacation, sick leave, health and life insurance, disability, workman's comp, etc. Fringe benefits is calculated at \$21.67 per hour x 243 hours = $\frac{55,266}{5}$.

Travel - Not Applicable. No travel costs are anticipated for the proposed project.

Equipment – Not Applicable. Equipment will be included in the Contractual/Construction costs.

Materials & Supplies – Not Applicable. No materials or supplies are anticipated for the proposed project.

Contractual/Construction – The project proposes four contractual/construction line items as follows:

1) Design and CEQA document preparation. This task requires the procurement of a qualified design consultant who will prepare final design plans, construction documents, and complete the CEQA requirements. The design firm will also be required to remain on the project team through construction and provide quality control and help answer design questions, etc. The estimated cost is \$150,000, which is roughly 4.5% of the construction line item (4.36% x \$3,440,000).

2) Environmental and Regulatory Compliance (NEPA crossover, required mitigation, SWPPP, NPDES). This task includes a \$2,500 set-aside for BOR staff to assist in complying with NEPA regulations. Funds are also budgeted to comply with any required mitigation as a result of CEQA and NEPA compliance (if needed) and for permitting fees. The estimated total cost is $\frac{$25,000}{2}$.

3) Construct Groundwater Well (estimated 400' depth, Stainless Steel Casing, 1,500 gpm Capacity). Yuba City will hire a qualified contactor to complete the construction phase of the project. This line items is to construct all groundwater well elements including mobilization, drilling, well head treatments, electrical, SCADA equipment, and testing, etc. The total estimated cost is <u>\$3,440,000</u>.

4) Construction Management and Inspections. The budget includes a \$350,000 line item for construction management and inspections, which is 10% of the construction cost of \$3.440 million. The construction manager will work closely with the Yuba City Engineering Manager and Design consultant throughout the construction phase through to Owner Acceptance and Notice of Completion.

Indirect Costs – Not applicable.

Total Costs – Total project cost is estimated to be <u>\$3,983,159</u> Grant Request: \$750,000, 19% of total project cost Local Match: \$3,233,159, 81% of total project cost

ENVIRONMENTAL AND CULTURAL RESOURCES COMPLIANCE

Will the proposed project impact the surrounding environment (e.g., soil [dust], air, water [quality and quantity], animal habitat)? Please briefly describe all earth-disturbing work and any work that will affect the air, water, or animal habitat in the project area. Please also explain the impacts of such work on the surrounding environment and any steps that could be taken to minimize the impacts.

The groundwater well project is located within the City wholly owned property and is a rather small project overall therefore the impact to the surrounding environment will be minimal. In particular, there will be no impacts to air, water, quality and quantity, or animal habitat. All constructors will be required by contract to perform due diligence in mitigating noise, emissions and dust controls.

Are you aware of any species listed or proposed to be listed as a Federal threatened or endangered species, or designated critical habitat in the project area? If so, would they be affected by any activities associated with the proposed project?

The region provides habitats for several threatened and endangered species; however, the project will not affect any habitats.

Are there wetlands or other surface waters inside the project boundaries that potentially fall under CWA jurisdiction as "Waters of the United States?" If so, please describe and estimate any impacts the proposed project may have.

There are no wetlands or other surface waters inside the groundwater well project boundaries.

When was the water delivery system constructed?

The project's water delivery system was constructed over a period of years with the age of the system ranging from 49 to 100 years old.

Will the proposed project result in any modification of or effects to, individual features of an irrigation system (e.g., headgates, canals, or flumes)? If so, state when those features were constructed and describe the nature and timing of any extensive alterations or modifications to those features completed previously.

The groundwater well project will not require any modifications of or effects to individual features of an irrigation system.

Are any buildings, structures, or features in the irrigation district listed or eligible for listing on the National Register of Historic Places? A cultural resources specialist at your local Reclamation office or the State Historic Preservation Office can assist in answering this question.

The groundwater well project location does not have any buildings, structures, or features in the irrigation district listed or eligible for listing on the National Register of Historic Places.

Are there any known archeological sites in the proposed project area?

The groundwater well project does not have any known archeological sites within the proposed project area.

Will the proposed project have a disproportionately high and adverse effect on low income or minority populations?

The groundwater well project will not have a disproportionately high and adverse effect on low income or minority populations. The groundwater well project will actually have a positive impact on all City constituents as the groundwater well will produce a new source of safe drinking water, decrease dependence on water from the SWP and provide for the City to store groundwater supplies for drought and emergency use.

Will the proposed project limit access to and ceremonial use of Indian sacred sites or result in other impacts on tribal lands?

The groundwater well project will not limit access to and ceremonial use of Indian sacred sites or result in other impacts on tribal lands.

Will the proposed project contribute to the introduction, continued existence, or spread of noxious weeds or non-native invasive species known to occur in the area?

The groundwater well project will not contribute to the introduction, continued existence, or spread of noxious weeds or non-native invasive species known to occur in the area.

REQUIRED PERMITS OR APPROVALS

- 1. Department of Environmental Health for the well Drilling
- 2. Certified Drinking Water Source Assessment and Protection (DWSAP) from the Division of Drinking Water and Environmental Management of the California Department of Health Services
- 3. Development of a Storm Water Pollution Prevention Plan
- 4. Obtaining a National Pollutant Discharge Elimination System permit (NPDES)
- 5. Yuba City Building Permit

DROUGHT PLAN

ZUDA Urban Water Management Plan Update July 2016 FINAL

INTRODUCTION AND OVERVIEW

1.1 BACKGROUND AND PURPOSE

The California Water Code (CWC) requires urban water suppliers within the state to prepare and adopt Urban Water Management Plans (UWMPs) for submission to the California Department of Water Resources (DWR). The UWMPs, which must be filed every five years, must satisfy the requirements of the Urban Water Management Planning Act (UWMPA) of 1983, including amendments that have been made to the Act. The UWMPA requires urban water suppliers servicing 3,000 or more connections, or supplying more than 3,000 acre-feet (AF) of water annually, to prepare a UWMP.

The purpose of the UWMP is to maintain efficient use of urban water supplies, continue to promote conservation programs and policies, ensure that sufficient water supplies are available for future beneficial use, and provide a mechanism for response during water drought conditions. This document, which was prepared in compliance with the CWC, and as set forth in the 2015 Urban Water Management Plan Guidebook for Urban Water Suppliers (March 2016) established by the DWR, constitutes the City of Yuba City (City) 2015 UWMP.

This 2015 UWMP was prepared in compliance with the UWMPA (California Water Code §10610 et seq.) and the Water Conservation Bill of 2009 (Senate Bill [SB] X7-7) by Carollo Engineers. Contact information for the City and Carollo Engineers is included in the Contact Sheet provided at the beginning of this document.

The City recognizes the importance of maintaining a high quality reliable water supply. Although water is a renewable resource, it is limited. A long-term reliable supply of water is essential to protect the local and state economy. The main focus for the City is to provide high quality water, maximize the efficient use of water, and promote conservation.

1.2 URBAN WATER MANAGEMENT PLANNING AND THE CALIFORNIA WATER CODE

The CWC sections applicable to UWMPs are summarized in the sections below.

1.2.1 Urban Water Management Planning Act of 1983

In 1983, State Assembly Bill (AB) 797 modified the CWC Division 6 by creating the UWMPA. Several amendments to the original UWMPA, which were introduced since 1983, have increased the data requirements and planning elements to be included in the UWMPs.

Initial amendments to the UWMPA required that total projected water use be compared to water supply sources over the next 20 years, in 5-year increments. Recent DWR guidelines

is subject to Term 91 curtailments. During normal runoff years, Permit 18558 diversion is curtailed at the end of June. During below normal runoff years, Permit 18558 is curtailed in mid-May. Water was drawn from this permit for the first time in 2000. This permit will become more valuable as the winter water usage exceeds the demands of License 13855. There is no cost for water taken under this permit. Permit 18558 limits annual withdrawal to 9,000 AFY. The monthly total without the limit is 11,371 AF. Permit 18558 was restricted in September 2014 through November 2014, and again in April 2015 through November 2015.

6.4 STORMWATER

The City has not identified any opportunities related to stormwater recapture to offset the use of potable water.

6.5 WASTEWATER AND RECYCLED WATER

The UWMPA requires that the UWMP address the opportunities for development of recycled water, including the description of existing recycled water applications, quantities of wastewater currently being treated to recycled water standards, limitations on the use of available recycled water, an estimate of projected recycled water use, the feasibility of said projected uses, and practices to encourage the use of recycled water.

6.5.1 Recycled Water Coordination

It is important for the City to identify and secure reliable water supplies now, to accommodate future growth and drought. Recycled water would serve as a source of water for non-potable uses such as domestic and agricultural irrigation, and commercial and industrial uses. The City and other agencies (City of Marysville and Linda County Water District) participated in the Yuba-Sutter Regional Recycled Water Master Plan (YSRRWMP) in May 2007 to develop alternatives to increase water supply reliability.

The City explored options for recycled water use in the 2006 update to their in Wastewater System Master Plan. These options included irrigation of commercial and industrial areas, parks, median strips, commercial green areas and residential yard irrigation. The plan looked at producing unrestricted reuse water at the City's Wastewater Treatment Facility (WWTF). Water reclamation in the City is currently not feasible.

6.5.2 Wastewater Collection, Treatment Systems, and Disposal

The City owns, operates, and maintains a wastewater collection, treatment, and disposal system that provides sewerage service for the entire area served by the City water supply, except for those customers utilizing septage tanks. Originally, sewage treatment was provided by individual septage systems. Sometime prior to 1950, the City constructed a

If successfully demonstrated, the City would continue to implement ASR at the WTP site and would consider constructing additional ASR wells within other portions of its service area. Table 6-7 summarizes the potential future water supply projects in the City.

Table 6 7 Retail: Expected Future Water Supply Projects or Programs										
	No exp quantif the tab	No expected future water supply projects or programs that provide a quantifiable increase to the agency's water supply. Supplier will not complete the table below.								
V	Some o compat	Some or all of the supplier's future water supply projects or programs are not compatible with this table and are described in a narrative format.								
6-12	Provide	Provide page location of narrative in the UWMP								
Name of Future Projects or Programs	Joint Project with other agencies?		Description	Planned Implementation	Planned for Use in Year	Expected Increase in Water Supply to				
	Drop Down List (y/n)	lf Yes, Agency Name	(in needed)	Year	l ype Drop Down List	Agency This may be a range				
Add additional rows as neede	d	•	•							
Aquifer Storage Recovery	No			TBD	All Year Types					

6.9 SUMMARY OF EXISTING AND PLANNED SOURCES OF WATER

6.9.1 Current and Projected Water Supplies

The City has a surface water SWRCB Permit, SWRCB license, and two surface water supply contracts. The combination of permit, license, and contracts has been established such that they supply reliable water under severe drought conditions. In recent years both the SWP contract with DWR and the SWRCB contract have been restricted. In 2014 the SWP contract was reduced to 5 percent of the allocation and the SWRCB permit 18558 was restricted completely.

Increased long-term water demands, due to a larger service area, and increased number of customers will necessitate optimizing existing water supply. The reliability of the SWP allocations also necessitates augmentation to more reliably meet City customers' water supply needs. The actual source and volume of water for the year 2015 is presented in Table 6-8.

WATER SUPPLY RELIABILITY

The Urban Water Management Planning Act (UWMPA) requires that the Urban Water Management Plan (UWMP) address the reliability of the agency's water supplies. This includes supplies that are vulnerable to seasonal or climatic variations. In addition, an analysis must be included to address supply availability in a single-dry year and in multiple-dry years.

7.1 CONSTRAINTS ON WATER SOURCES

7.1.1 Water Supply Reliability

There are two aspects of supply reliability that can be considered. The first relates to immediate service needs and is primarily a function of the availability and adequacy of the supply facilities. The second aspect is climate-related, and involves the availability of water during mild or severe drought periods. This section examines the reliability of the water supply available to the City of Yuba City (City), under both normal and dry conditions.

When assessing the adequacy of the water supply, the City's water source is the Feather River, north of the confluence with the Yuba River. Upstream dams on all forks of Feather River control flow in the Feather River. Oroville Dam is the primary upstream control. The Department of Water Resources (DWR) operates Oroville Reservoir for the State Water Project (SWP).

The City holds two appropriative water rights, State Water Resources Control Board (SWRCB) License 13855 (Application Number 0A18025) and 18558 (Application Number A025751) and two surface water supply contracts from the North Yuba Water District (NYWD) and the DWR SWP that pull from the Feather River. During low rainfall years, the City's allocation from the SWP can be significantly reduced, as was done in 2014 when allocations were reduced to 5 percent and in 2015 when allocations were reduced to 25 percent. Additionally, the SWRCB permit 18558 has also been significantly reduced in recent years due to drought. The City recently obtained water rights to an additional 53 AFY through the DWR Dry Year Water Purchase Program.

Oroville Dam was completed in 1967. Since the dam's completion, there has always been sufficient flow in the Feather River to allow withdrawal of some water. This includes the drought periods of the 1970's, 1980's, 1990's and most recently in 2013-2015. In the event of a catastrophic problem that prevents any release from Lake Oroville, the City would implement significant mandatory water conservation, and blend available surface water with a standby groundwater well located at the Water Treatment Plant (WTP). Other than water shortage and emergency conditions, it appears that water would always be available for withdrawal from the Feather River.

The City has one State Water Resources Control Board (SWRCB) license and one permits, two surface water supply contracts, and a standby groundwater well. The combination of licenses, permits, and contracts has been established such that they supply reliable water under severe drought conditions.

When assessing the vulnerability of the water supply due to seasonal or climatic changes, historically the only factor that has affected the reliability of these sources has been seasonal rain and snowfall. Following is curtailment history for the City's Feather River diversions:

- SWRCB License 13855 was curtailed in 2014 and 2015
- SWRCB Permit 18558 has been curtailed several times including in 2014 and 2015
- NYWD has never curtailed delivery in the last 30 years
- SWP is subject to annual curtailment

Both SWRCB permits and the SWP contract have the possibility of significantly affecting the City's water supply. Under severe drought conditions, the SWP allocation has been limited to 5 percent.

Table 7-0 contains a summary of factors affecting water supply reliability and that may pose an opportunity for inconsistency in supply. Water quantity represents the potential supply limitation due to surface water curtailments. Water quality factors represent illegal dumping in the river. Other factors that could affect the ability to deliver water from the Feather River could include vandalism of the water pumping station or another emergency condition. Environmental factors include Term 91 curtailments. Climatic factors are selected as the City would be required to comply with state mandates for conservation or reductions in allocations.

In the event of severe water quality impacts of the Feather River, several immediate steps would take place:

- Pumping of raw water from the Feather River would immediately stop
- Use of treated stored water would be initiated
- Large water customers would be told to shut down
- Mandatory water conservation would be required of all customers
- The City Emergency Operations Center would be activated

Table 7 0 Factors Resulting in Inconsistency of Supply							
Source Information			So	urce Lim	itation		
Water Supply Sources	Specific Source Name	Water Quantity	Legal	Environmental	Water Quality	Climatic ⁽⁴⁾	Additional Information
SWRCB License 13855	Feather River	Yes ¹	-	-	Yes	Yes	-
SWRCB Permit 18558	Feather River	Yes ¹	-	Yes ³	Yes	Yes	-
North Yuba Water District	Feather River	Yes ¹	-	-	Yes	Yes	-
State Water Project	Feather River	Yes ¹	-	-	Yes	Yes	-
Backup Groundwater Well	Sutter Subbasin	Yes ²	-	-	-	-	-
NOTES:			•			•	

1. Potential surface water curtailments.

2. Limited by pumping capacity.

3. Permit 18558 is subject to Term 91 curtailments.

4. The City would be required to comply with state mandates for conservation and/or reduced allocations.

7.1.2 Water Quality

The UWMPA requires that the UWMP include a discussion of water quality impacts on the reliability of an agency's water supplies. The purpose of this section is to discuss the quality of the City's surface water and groundwater supplies, and the potential impacts water quality may have on supply reliability.

The U.S. Geological Survey completed an evaluation of water quality conditions of the Feather River as a component of an overall analysis of conditions in the Sacramento River watershed. Average concentrations from monthly water samples for conventional physical and inorganic chemical constituents measured in the Feather River at Nicolaus and at Marysville from February 1996 through April 1998 indicated that both rivers were low in total dissolved solids and total hardness, had a neutral pH, moderate alkalinity, and adequate dissolved oxygen levels for aquatic organisms. The water in the Feather River is also generally low in nutrients (nitrogen and phosphorus) that can cause growth of nuisance algae and aquatic vascular plants. Trace metal content is low in the rivers. Although mercury is routinely detected in the Feather River, the concentrations have not exceeded ambient criteria. Pesticides have been detected in the Feather River; however, with the exception of the drinking-water standard for carbofuran, there are no applicable regulatory

criteria established for the pesticides that have been detected. Pesticide levels in the Feather River are presumably related to the influence of the extensive agricultural and urban activities (Oroville, Marysville, and Yuba City) occurring in the watershed (PBS&J/EIP, Feather River Setback Levee Project at Star Bend Draft Environmental Impact Report (SCH #2006052087), prepared for Levee District No.1 of Sutter County, February 2007).

In recent years the City has experienced some taste and odor issues during periods of low flow in the Feather River. Low water levels are associated with the drought conditions during this time period. The City has the option to supplement the water supply using the groundwater well at the WTP during these periods. The City recently completed a taste and odor study in which the results suggested upgrading the WTP's activated carbon. The City expects taste and odor issues to be minimized based upon the recommendations of the study.

The City does not anticipate a reduction in supply as a result of water quality issues due to the nature of the potential water quality impacts described above, no future unaddressed impacts have been identified, and the potential quantitative impacts cannot be established.

A copy of the City's 2015 Water Consumer Confidence Report is included in Appendix D.

7.2 RELIABILITY BY TYPE OF YEAR

This section considers the City's water supply reliability during three water scenarios: average year, single-dry year, and multiple-dry year period. An average year is also referred to as a "normal" year.

These scenarios are defined as follows:

- Average year: a year, or an averaged range of years, that most closely represents the average water supply available to the City. Generally a year in the historical sequence that most closely represents median runoff levels and patterns. It is defined as the median runoff over the previous 30 years or more. This median is recalculated every 10 years.
- **Single-dry year**: the year that represents the lowest water supply available to the City. Generally considered to be the lowest annual runoff for a watershed since the water-year beginning in 1903. Suppliers should determine this for each watershed from which they receive supplies.
- **Multiple-dry year period**: the period that represents the lowest average water supply available to the City for a consecutive multiple year period. Generally considered to be the lowest average runoff for a consecutive multiple year period (three years or more) for a watershed since 1903.

Since the City's only water supply in future years will come from the Feather River, seasonal and climatic changes may affect the availability of water. The backup groundwater well at the WTP can be used to supplement surface water if needed.

The specific years identified for average, single-dry, and multiple-dry water years presented in Table 7-1 were developed based on historical DWR runoff records for the Sacramento Valley and the availability of City records. Table 7-1 reflects data from 2000 to 2015, including the recent drought (2013-2015). The year 2015 was selected for the single-dry year because the City's water supply allocation was reduced in this year, following the driest year in the recent runoff record. Table 7-1 contains the actual water supply that was available and used by the City for each of the water year types, as a percentage of the average water year that occurred in 2009.

Table 7 1 Retail: Basis of Water Year Data						
	Base Year If not using a calendar year, type in the last year of the fiscal, water year, or range of years, for example, water year 1999-2000, use 2000	Available Supplies if Year Type Repeats				
Year Type			Quantification of available supplies is not compatible with this table and is provided elsewhere in the UWMP. Location			
			Quantification of available supplies is provided in this table as either volume only, percent only, or both.			
		Volume Available	% of Average Supply			
Average Year	2010	9645	100%			
	2010	5045				
Single-Dry Year	2015	4948	51%			
Single-Dry Year Multiple-Dry Years 1st Year	2015 2013	4948 8098	51% 84%			
Single-Dry Year Multiple-Dry Years 1st Year Multiple-Dry Years 2nd Year	2015 2013 2014	4948 8098 8924	51% 84% 93%			
Single-Dry Year Multiple-Dry Years 1st Year Multiple-Dry Years 2nd Year Multiple-Dry Years 3rd Year	2015 2013 2014 2015	4948 8098 8924 4948	51% 84% 93% 51%			
Single-Dry Year Multiple-Dry Years 1st Year Multiple-Dry Years 2nd Year Multiple-Dry Years 3rd Year Multiple-Dry Years 4th Year Optional	2015 2013 2014 2015	4948 8098 8924 4948	51% 84% 93% 51%			
Single-Dry Year Multiple-Dry Years 1st Year Multiple-Dry Years 2nd Year Multiple-Dry Years 3rd Year Multiple-Dry Years 4th Year <i>Optional</i> Multiple-Dry Years 5th Year <i>Optional</i>	2015 2013 2014 2015	4948 8098 8924 4948	51% 84% 93% 51%			
Single-Dry Year Multiple-Dry Years 1st Year Multiple-Dry Years 2nd Year Multiple-Dry Years 3rd Year Multiple-Dry Years 4th Year <i>Optional</i> Multiple-Dry Years 5th Year <i>Optional</i> Multiple-Dry Years 6th Year <i>Optional</i>	2015 2013 2014 2015	4948 8098 8924 4948	51% 84% 93% 51%			
Single-Dry Year Multiple-Dry Years 1st Year Multiple-Dry Years 2nd Year Multiple-Dry Years 3rd Year Multiple-Dry Years 4th Year <i>Optional</i> Multiple-Dry Years 5th Year <i>Optional</i> Multiple-Dry Years 6th Year <i>Optional</i> NOTES:	2015 2013 2014 2015	4948 8098 8924 4948	51% 84% 93% 51%			

7.3 SUPPLY AND DEMAND ASSESSMENT

During dry years and drought periods it is possible that the future demand for water in the City will exceed the supply. There are several ways that the City can close the gap between supply and demand. These include:

- Obtain additional water supply through contracts/increase reliability of existing contract
- Increase conservation efforts
- Utilize additional groundwater
- Utilize recycled water if feasible
- Utilize aquifer storage and recovery

Based on recent experience, it is conceivable that water usage could be reduced by up to 30 percent should conservation measures be necessary due to multi-year drought conditions.

7.3.1 Supplies and Demands for a Normal Water Year

Future citywide demands, assuming the City can meet the water use targets, will not exceed the supplies until 2040. Table 7-2 provides an estimate of the projected normal year supply and demand totals. The water demands through 2040 are estimated based on water use targets and population projections (See Section 4.2). As shown in Table 7-2, the City is anticipated not to have sufficient water production capabilities to support the long-term growth of the community. The City will require additional water supply by 2040 if an annual growth of 3 percent is maintained.

Actual shortages would occur due to the nature of the City's raw water supply contracts. Water diversions under License 13855 and Permit 18558 are not available during the summer months due to the permits' season of diversion. Summer raw water supply is currently met with the NYWD and SWP contracts. The NYWD contract has never been curtailed and is considered a very reliable water source. The SWP contract is not as reliable during dry years and curtailments are regularly enacted.

Table 7 2 Retail: Normal Year Supply and Demand Comparison					
	2020	2025	2030	2035	2040 (Opt)
Supply totals					
(autofill from Table 6-9)	10,115	10,115	10,115	10,115	10,115
Demand totals					
(autofill from Table 4-3)	5,894	6,812	7,876	9,110	10,540
Difference	4,221	3,303	2,239	1,005	(425)
NOTES:	•	•	•	•	•
1. Units of measure in this UWMP are million gallons	s (MG).				

7.3.2 Supplies and Demands for a Single-Dry Water Year

Table 7-3 provides an estimate of the projected single-dry year supply and demand totals. Demand reductions due to water shortage stage rationing measures are not included in the single-dry year demand estimates. Currently, the City is short supply in all of the projected years during the single-dry year condition.

Table 7 3 Retail: Single Dry Year Supply and Demand Comparison					
	2020	2025	2030	2035	2040 (Opt)
Supply totals	5,189	5,189	5,189	5,189	5,189
Demand totals	5,894	6,812	7,876	9,110	10,540
Difference	(705)	(1,623)	(2,687)	(3,921)	(5,351)
NOTES:	(1.10)				

1. Units of measure in this UWMP are million gallons (MG).

7.3.3 Supply and Demand for Multiple-Dry Water Year Periods

The multiple-dry year supplies were developed based on the DWR Sacramento Valley runoff tables and available water supply data. Table 7-4 provides an estimate of the projected multiple-dry year supply and demand totals. Demand reductions due to water shortage stage rationing measures are not included in the multiple-dry year demand estimates. Currently, the City is short supply in all of the projected years during the third year of a multiple dry year condition. The City would not be short supply until 2035 and 2040, in the first and second dry year, respectively.

Table 7 4 Retail: Multiple Dry Years Supply and Demand Comparison						
2020 2025 2030 2035 2040 (Opt)						
First year	Supply totals	8,493	8,493	8,493	8,493	8,493
	Demand totals	5,894	6,812	7,876	9,110	10,540
	Difference	2,599	1,681	617	(617)	(2,047)
	Supply totals	9,359	9,359	9,359	9,359	9,359
Second year	Demand totals	5,894	6,812	7,876	9,110	10,540
	Difference	3,465	2,547	1,483	249	(1,181)
Third year	Supply totals	5,189	5,189	5,189	5,189	5,189
	Demand totals	5,894	6,812	7,876	9,110	10,540
	Difference	(705)	(1,623)	(2,687)	(3,921)	(5,351)
	Supply totals					
Fourth year (optional)	Demand totals					
	Difference	0	0	0	0	0
	Supply totals					
Fifth year (optional)	Demand totals					
	Difference	0	0	0	0	0
	Supply totals					
Sixth year (optional)	Demand totals					
	Difference	0	0	0	0	0
NOTES: 1. Units of measure in this UWMP	are million gallor	ns (MG).				

7.4 REGIONAL SUPPLY RELIABILITY

The City is maximizing the use of local water resources (the Feather River) and reducing waste through the implementation of demand management measures (DMMs) (see Chapter 9.0). The City's efforts help to minimize the need to purchase water from other agencies and construct new wells.

WATER SHORTAGE CONTINGENCY PLANNING

The Urban Water Management Planning Act (UWMPA) requires that the Urban Water Management Plan (UWMP) include an urban water shortage contingency analysis that addresses stages of action to be undertaken by the urban water supplier in response to water supply shortages, including up to a 50 percent reduction in water supply and an outline of specific water supply conditions which are applicable to each stage. In addition to actions, the City of Yuba City (City) is required to develop mandatory prohibitions against specific water use during shortages and consumption reduction methods in the most restrictive stages, including up to a 50 percent reduction in water supply.

8.1 STAGES OF ACTION

Water Shortage Contingency Planning includes actions (prohibitions, restrictions, and penalties) and conservation measures to be taken during droughts and catastrophic reductions in water supplies. This Water Shortage Contingency Plan, if implemented, would be enforced within the City's service area. A copy of this plan will be submitted to the City and County Offices of Emergency Planning.

Section 10620 (d)(2) of the California Water Code (CWC) requires that the City coordinate, to the extent practicable, preparation of its urban water shortage contingency plan with other urban water suppliers and public agencies in the area. The City does not have any interconnections between its potable water system and potable water systems operated by other water suppliers.

The City has developed a four-stage conservation plan. The plan includes voluntary and mandatory stages. Supply shortages and City Council action will trigger the different water rationing stages. The development of the stages is based on current water supply contracts, and expected annual growth of current customer base. Shortage conditions are based on percent reduction of water supply. The stages of action in response to water supply shortages, including up to a 50 percent reduction in water supply are summarized in Table 8-1. Detailed descriptions of each stage of action are included in the following sections. There is currently a *No Waste Provision* in place at all times under the City Municipal Code.

Table 8 1	Retail Stages of Water Shortage Contingency Plan				
	Complete Both				
Stage	Percent Supply Reduction ¹ Numerical value as a percent	Water Supply Condition (Narrative description)			
Add additiona	Add additional rows as needed				
Normal	Use Water Efficiently	Normal Water Conditions			
1	20%	Water Alert			
2	30%	Water Warning			
3	40%	Water Crisis			
4	50%	Water Emergency			
¹ One stage in the Water Shortage Contingency Plan must address a water shortage of 50%.					
NOTES:					
1. Stages are based on guidance provided in the Regional Water Authority					
(RWA) do	cument "Water Shortage St	age Workshop Summary Report" from			
March 203	March 2015.				

During June, July, and August the only available surface water contracts are with North Yuba Water District (NYWD) and SWP. NYWD has never curtailed or reduced delivery during the last 30 years. The SWP is subject to reduction in delivery. In recent years, due to drought conditions, the State Water Resources Control Board (SWRCB) allocations have also been reduced.

8.2 **PROHIBITIONS ON END USES**

In addition to conservation actions, the City is required to develop mandatory prohibitions against specific water use during shortages, as well as consumption reduction methods in the most restrictive stages.

The City Municipal Code Section 6-6.19 Emergency Water Restrictions contains emergency water restriction criteria that must be met once the City Council declares an emergency. The prohibitions include restrictions on outdoor water use, car washing, leaky plumbing, and restaurants among others. In the event of a 50 percent reduction in water supply for a single year, the City will continue with Stage 3 rationing measures, mandate adherence to all Stage 4 measures, intensify media outreach program with regular updates on the emergency, and monitor production weekly for compliance with necessary reduction.

Section 6-6.19 of the Municipal Code dictates that the City Council must make a declaration that water supply conditions are such that they dictate and justify the implementation of

emergency water restrictions. The City Municipal Code Section 6-6.20 Enforcement Measures contains enforcement measures that will take place once the City Council declares an emergency. Penalties and charges as well as possible disconnection of service will be enforced on water wasters under this condition. The restrictions and prohibitions on end user are summarized in Table 8-2.

On May 9, 2016, the Governor of California issued an Executive Order declaring the following practices be permanently prohibited:

- Hosing off sidewalks, driveways, and other hardscapes
- Washing automobiles with hoses not equipped with a shut-off nozzle
- Using non-recirculated water in a fountain or other decorative water feature
- Watering lawns in a manner that causes runoff, or within 48 hours after measurable precipitation
- Irrigating ornamental turf on public street medians

In the event any provision of this Chapter or the City Municipal Code conflicts or overlaps with any mandatory State regulation related to water conservation, the most stringent shall apply.

Table 8 2	Retail Only: Restrictions and Prohibitions on End	Uses	
Stage	Restrictions and Prohibitions on End Users Drop down list These are the only categories that will be accepted by the WUEdata online submittal tool	Additional Explanation or Reference <i>(optional)</i>	Penalty, Charge, or Other Enforcement? <i>Drop Down List</i>
Add additional	rows as needed		
	Other - Customers must repair leaks, breaks, and malfunctions in a timely manner	Fix leaks or faulty sprinklers within 14 days.	No
	Water Features - Restrict water use for decorative water features, such as fountains	Decorative water features (fountains etc.) must recirculate water and shall be leak proof.	No
	Landscape - Limit landscape irrigation to specific times	All landscapes shall be watered during cooler morning and evening hours to reduce evaporation and minimize landscape runoff.	No
	Landscape - Restrict or prohibit runoff from landscape irrigation	Landscape watering shall be confined to a users property and shall not runoff onto adjacent properties, roadsides, to gutters.	No
	Landscape - Prohibit certain types of landscape irrigation	No landscape irrigation shall occur while it is raining.	No
Normal	Other - Require automatic shut of hoses	Use shutoff nozzle on hoses.	No
Conditions	Other - Prohibit use of potable water for washing hard surfaces	Washing down impervious surfaces such as driveways and sidewalks is prohibited unless for public health and safety purposes.	No
	Other	Unauthorized use of hydrants is prohibited. Authorization for use must be obtained from water supplier.	No
	CII - Other CII restriction or prohibition	Commercial, industrial, institutional equipment must be properly maintained and in full working order.	No
	Other	Encourage customers to wash only full loads when washing dishes or clothes.	No
	Pools and Spas - Require covers for pools and spas	Encourage customers to use pool covers to minimize evaporation.	No
	Other	Encourage restaurants to only serve water to customers on request.	No

Table 8 2	e 8 2 Retail Only: Restrictions and Prohibitions on End Uses					
Stage	Restrictions and Prohibitions on End Users Drop down list These are the only categories that will be accepted by the WUEdata online submittal tool	Additional Explanation or Reference (optional)	Penalty, Charge, or Other Enforcement? <i>Drop Down List</i>			
	Other - Customers must repair leaks, breaks, and malfunctions in a timely manner	Fix leaks or faulty sprinklers within 14 days.	Yes			
	CII - Restaurants may only serve water upon request	Require restaurants to only serve water to customers on request.	Yes			
1	Landscape - Prohibit certain types of landscape irrigation	No restrictions on landscape watering with non-potable water.	Yes			
	Landscape - Prohibit certain types of landscape irrigation	Up to 3 days per week turf watering when using potable water. Plant containers, trees, shrubs, and vegetable gardens may be watered additional days using only drip irrigation or hand watering.	Yes			
	Other - Customers must repair leaks, breaks, and malfunctions in a timely manner	Fix leaks or faulty sprinklers within 14 days.	Yes			
	Water Features - Restrict water use for decorative water features, such as fountains	Decorative water features that use potable water must be drained and kept dry.	Yes			
	Other - Prohibit vehicle washing except at facilities using recycled or recirculating water	Car washing is only permitted using a commercial carwash that recirculates water or by high pressure/low volume wash systems.	Yes			
2	Other - Prohibit use of potable water for construction and dust control	Require a construction water use plan be submitted to the water supplier that addresses how impacts to the existing water users will be mitigated (such as dust control).	Yes			
	Landscape - Other landscape restriction or prohibition	With the exception of landscape watered with non- potable water, limit the installation of new landscaping to drought tolerant trees, shrubs, and groundcover, Prohibit installation to new turf or hydroseed. Customers may apply for a waiver to irrigate during an establishment period.	Yes			

Table 8 2	Retail Only: Restrictions and Prohibitions on End	Uses	
Stage	Restrictions and Prohibitions on End Users Drop down list These are the only categories that will be accepted by the WUEdata online submittal tool	Additional Explanation or Reference <i>(optional)</i>	Penalty, Charge, or Other Enforcement? <i>Drop Down List</i>
	Warm/Dry Season		Yes
	Landscape - Limit landscape irrigation to specific days	Up to two days per week turf watering using potable water.	Yes
2	Landscape - Prohibit certain types of landscape irrigation	Plant containers, trees, shrubs, and vegetable gardens maybe watered additional days using inly drip irrigation or hand watering.	Yes
	Cool/Wet Season		Yes
	Landscape - Prohibit certain types of landscape irrigation	Turf shall not be watered unless utilizing non-potable water during extended dry spells.	Yes
	Landscape - Prohibit certain types of landscape irrigation	Plant containers, trees, shrubs, and vegetable gardens shall be watered only by drip irrigation or hand watering.	Yes
	Other - Customers must repair leaks, breaks, and malfunctions in a timely manner	Fix leaks or faulty sprinklers within 14 days.	Yes
	Pools - Allow filling of swimming pools only when an appropriate cover is in place.	Existing pools shall not be emptied and refilled using potable water unless required for public health and safety purposes.	Yes
	Other water feature or swimming pool restriction	No new permits for pools will be issued.	Yes
3	Landscape - Other landscape restriction or prohibition	No new landscape installations or renovations will be permitted	Yes
3	Landscape - Other landscape restriction or prohibition	Previous waivers for watering during an establishment period will be revoked.	Yes
	Warm/Dry Season		Yes
	Landscape - Limit landscape irrigation to specific days	Up to one day per week turf watering when using potable water.	Yes
	Landscape - Prohibit certain types of landscape irrigation	Plant containers, tress shrubs, and vegetable gardens shall be watered only by drop irrigation or hand watering.	Yes

Table 8 2	able 8 2 Retail Only: Restrictions and Prohibitions on End Uses					
Stage	Restrictions and Prohibitions on End Users Drop down list These are the only categories that will be accepted by the WUEdata online submittal tool	Additional Explanation or Reference <i>(optional)</i>	Penalty, Charge, or Other Enforcement? <i>Drop Down List</i>			
	Cool/Wet season		Yes			
2	Landscape - Prohibit certain types of landscape irrigation	Turf shall not be watered unless utilizing non-potable water during extended dry spells.	Yes			
3	Landscape - Prohibit certain types of landscape irrigation	Plant containers, trees, shrubs and vegetable gardens shall only be water using drop irrigation or hand watering.	Yes			
4	Other	Water use for public health and safety purposes only.	Yes			
NOTES: 1. Stages are t March 2015	based on guidance provided in the Regional Water Authority	(RWA) document "Water Shortage Stage Workshop Summary	Report" from			

8.2.1 Defining Water Features

The water features that are artificially supplied with water, including ponds, lakes, waterfalls, and fountains, are to be defined separately from swimming pools and spas in the 2015 UWMPs and supporting documents. This chapter specifically identifies and defines the water features to which prohibitions are applicable to, thus meeting the requirement.

8.3 PENALTIES, CHARGES, OTHER ENFORCEMENT OF PROHIBITIONS

Emergency water regulations have been in place in the City since July 2015. City staff has implemented enforcement measures for the water restriction starting in September 2015. Violations are issued to residents not observing the regulations. Violations may include watering on the wrong day of the week, watering on the correct day of the week but wasting water into the street, using water to clean sidewalks, driveways, parking lots and other hardscapes, and not having shutoff nozzles on hoses.

These enforcement measures include:

- Water patrol staff looking for properties in violation of the emergency water restrictions.
- Water patrol staff takes time-stamped photos of the property as the violation is occurring.
- The photo is attached to a letter that is sent to the person to whom the water bill is sent notifying them of the violation and giving them one week to make the necessary adjustments to gain compliance.
- If a second or subsequent violation is issued, the Finance Department will add the appropriate surcharge to their next monthly bill.

The penalties associated with water restriction violations are assessed in the form of a surcharge added to the bill of the responsible party.

Section 6-6.20 of the City Municipal Code states:

"For each violation of any of the provisions/regulations set forth in this chapter, there shall be assessed against the responsible party for the property on which the violation occurs, i.e. the owner, lessee, person in possession of said property, or the person reflected in the Yuba City utility records as the party to whom the water bill is sent, the following penalties:

- a) First violation: A written warning of such violation
- b) Second violation: Fifty and no/100ths (\$50.00) Dollars surcharge which shall appear on the next monthly water billing.

- c) Third violation: One hundred and no/100ths (\$100.00) Dollars surcharge which shall appear on the next monthly water billing.
- d) Fourth and subsequent violations: Two hundred- fifty and no/100ths (\$250.00) Dollars surcharge which shall appear on the next monthly water billing. (§ 3, Ord. 03-91, eff. April 17, 1991)

8.4 CONSUMPTION REDUCTION METHODS

The UWMPA requires that the UWMP include an urban water shortage contingency analysis that addresses methods to reduce consumption. Table 8-3 contains consumption reduction methods by water shortage stage.

Table 8 3Retail Only: Stages of Water Shortage Contingency Plan Consumption Reduction Methods				
Stage	Consumption Reduction Methods by Water Supplier Drop down list These are the only categories that will be accepted by the WUEdata online submittal tool	Additional Explanation or Reference <i>(optional)</i>		
Add ad	ditional rows as needed			
1-4	Expand Public Information Campaign			
1-4	Improve Customer Billing			
1-4	Increase Frequency of Meter Reading			
1-4	Offer Water Use Surveys			
1-4	Provide Rebates on Plumbing Fixtures and Devices			
1-4	Provide Rebates for Landscape Irrigation Efficiency			
3-4	Decrease Line Flushing			
3-4	Reduce System Water Loss			
4	Increase Water Waste Patrols			
4	Moratorium or Net Zero Demand Increase on New Connections			
4	Implement or Modify Drought Rate Structure or Surcharge			

8.5 DETERMINING WATER SHORTAGE REDUCTIONS

The UWMPA requires that the UWMP include a means to determine the actual water use reduction in the event of a water shortage. The City began installing water meters in the 1990's. Until 2010, there was a combination of metered and flat-rate billing. Installation of meters on all connections was completed in July 2010. Monthly meter readings will be used to ensure compliance. Reductions in water use for each user can be determined based on meter readings. In the event of a severe shortage meters could be read more frequently.

Under normal water supply conditions, water production figures are recorded daily. The Water Plant Supervisor monitors water production. Totals are reported monthly to the Public Works Director and to the Division of Drinking Water.

Once a Stage 2 shortage is declared the Water Plant Supervisor will begin to track, and graph, water production and determine if the voluntary goal is being achieved. Results of the review will be reported to the Public Works Director weekly.

If the City Council declares a Stage 3 condition, the reduction of demand will be monitored daily. Weekly reports will be presented to the Public Works Director, and updates as required to the City Manager and City Council. Use of the media will also take place to inform citizens on a weekly basis of their conservation status.

In an emergency shortage, the City Emergency Operations Center will be activated. The Operations Center would be staffed 24 hours per day with top city managers including Police Department, Fire Department, Public Works, and Finance. Water storage is instantly available via the departments Supervisory Control and Data Acquisition (SCADA) system. Updates to the public will made to the media through a public information officer. Information will also be transmitted on the City public radio station.

8.6 REVENUE AND EXPENDITURE IMPACTS

According to the UWMPA, the UWMP is required to include an urban water shortage contingency analysis that addresses the financial impacts from reduced water sales and proposed measures to overcome deficits (e.g., development of a reserve account or special rate adjustments).

The City water utility is a financially independent enterprise. In the event of a significant drought, or water shortage, resulting in reduced customer demand, there would be reduction in revenues. Metered customers are billed per unit of water used, with a minimum monthly fee determined by the meter size. If there were a significant reduction in demand due to customer conservation measures, reduction of income would also take place. A decrease in expenses related to power costs, raw water costs, and chemicals to treat the water would also occur with a decrease in demand for water.

The Utility could absorb a reduction of income without an immediate required rate adjustment. However, the rate structure would be evaluated and long-term adjusted if required. The City is currently revising water rates to include a tiered rate structure. New rates are expected to take effect in July 2016. The City maintains a minimum of three months operating reserves and 3.5 million dollars in reserves that can be used as an emergency fund for water in the event of water shortages.

8.7 **RESOLUTION OR ORDINANCE**

The CWC requires that the City develop mandatory provisions and a draft water shortage contingency resolution as part of the UWMP to reduce water use, including prohibitions against specific wasteful practices, such as gutter flooding. Chapter 6 of the City Municipal Code, which contains water restrictions, enforcement measures during a water shortage, the water waste prohibition, and the provision for the City Council to declare a water shortage emergency, are included in Appendix E.

The City Ordinance allows the City Council to declare an emergency condition and institute mandatory water conservation programs. Such measures include:

- Irrigation limitations to two times per week
- No use of water on impermeable surfaces
- All evaporative coolers must be recirculating type
- Shutoff nozzles on all hoses
- Large water users must submit a conservation plan
- Car wash limitations
- Water requirements for trees, shrubs, and other plant materials except lawns
- Requirements for leak repair
- Prohibition of fountains, ponds, etc.
- Restaurant restrictions

The City normally operates its water distribution system at 50 to 60 pounds per square inch (psi). In the event of significant water shortages, the system pressure could be reduced. System pressure is maintained using variable speed pumps. No elevated water storage tanks are in use. The pressure reduction would reduce demand and reduce the amount of distribution system leakage.

The City Fire Department maintains direct contact with the WTP via radios and phones. In the event of a fire, the system pressure can be increased almost instantly through the WTP SCADA system. This system allows remote operation of all water booster stations and reservoirs from the WTP. The WTP is staffed 24 hours per day, 7 days per week.

The City Council would be required to act on this ordinance when needed. The City Council meets two times per month, but can schedule emergency meetings if required.

8.8 CATASTROPHIC SUPPLY INTERVENTION

The UWMPA requires that the City develop stages of action to be undertaken during a catastrophic interruption of water supply or the City's water treatment facilities that could include flooding, major fire emergencies, regional power outage, an earthquake, water contamination, and acts of sabotage.

The stages of action to be undertaken during a catastrophic interruption of water supply in the Feather River or the City's water treatment facilities that could include flooding, major fire emergencies, regional power outage, an earthquake, water contamination, and acts of sabotage. In response to these possibilities, the City has developed an Emergency/Disaster Response Plan as described below. Appendix E contains the City's Water System Ordinance, which includes the water shortage emergency measure, and the current Water Emergency Notification Plan.

The City is not located within a high activity seismic zone. The risk of earthquake is minor. All WTP improvements are designed to meet seismic standards.

Another potential catastrophic water supply interruption would be a significant reduction in flow in the Feather River due to upstream reservoir failures. The City maintains approximately 20.6 million gallons of treated water in storage. The City also maintains a standby water supply well at the WTP that can be used in the event surface water is not available.

The eastern boundary of the City is the Feather River. Feather River flow is controlled by upstream reservoirs and levee system. The City experienced a significant flood in 1955. Levees on the other, east, side of the Feather River failed in 1985 and 1997. The City was evacuated in 1997 due to potential failure of the levee system. Significant improvements have been made to the levee system since 1997 including stabilization rock, slurry walls, and relief wells.

Annually, City staff conducts an emergency drill simulating a flood or other significant catastrophe. City staff has visited other cities that have recovered from significant flood events to learn from their experience. A detailed slow rise flood emergency plan has been prepared. The City is fully certified under the Standardized Emergency Management System (SEMS) and maintains access to all benefits associated with the system.

The City public safety office operates an emergency telephone system. This system can be programmed to dial up to eight numbers at a time with a prerecorded message. The City maintains a mutual aid agreement with Roseville that adds an additional sixteen lines. This system could make up to 1,440 calls per hour. All customers with phones, listed or unlisted, could be notified in less than eight hours. In the event of a need to immediately reduce

water consumption this system can be put into place within an hour. Other emergency notification methods include police car patrolling with loud speakers, radio, cable television, and low power radio station.

The City has developed a relationship with the local cable company that includes the use of Channel 5 as a method of communicating emergency information to all area subscribers. Messages can be quickly placed on Channel 5 informing residents of the local emergency and desired actions on their part.

Local radio station AM1600 is designated as the local emergency response radio station. In the event of an emergency, the station can inform residents of the local emergency and desired actions on their part.

The City owns and maintains a low power radio system. This system operates 24 hours per day with a prerecorded message. In the event of an emergency, the message can be easily changed to inform residents of requested actions.

Employees are on standby weekends and holidays. In the event of a localized emergency condition, the police dispatcher can contact standby personnel and call in additional personnel if required. The water plant is staffed 24 hours per day, 7 days per week.

The City WTP maintains an emergency diesel powered generator sized to run the entire plant at peak load. The generator continuously monitors availability of Pacific Gas & Electric (PG&E) electricity. In the event of a power outage, the generator is online within ten seconds. The generator contains sufficient fuel to run 24 hours at full load, longer under a reduced load. Additional fuel is stored at the WTP, Public Works Corporation Yard, and wastewater plant. In addition, the City maintains contracts for emergency delivery of fuel.

8.9 MINIMUM SUPPLY NEXT THREE YEARS

The CWC requires that the City estimate the minimum water supply available during each of the next three years (2016, 2017, 2018), assuming the driest three-year historic supply shortage (see Table 7-1). Assuming the lowest availability of water as observed during the historic multiple-dry year period, the estimate for the minimum supply for the next three years is included in Table 8-4.

Table 8 4 Retail: Minimum Supply Next Three Years					
	2016	2017	2018		
Available Water Supply	5,189	5,189	5,189		
NOTES: 1. Units of measure in this UWMP are million gallons (MG). 2. These are based off of the reasonably available water supply in the driest year.					

LETTERS OF SUPPORT

DIANNÉ FEINSTEIN CALIFORNIA

COMMITTEE ON THE JUDICIARY - RANKING MEMBER SELECT COMMITTEE ON INTELLIGENCE COMMITTEE ON APPROPRIATIONS COMMITTEE ON RULES AND ADMINISTRATION

Hníted States Senate WASHINGTON, DC 20510-0504 http://feinstein.senate.gov

February 8, 2018

Kevin Connolly Grants Management Specialist Bureau of Reclamation Financial Assistance Support Section Denver Federal Center P.O. Box 25007 Denver, CO 80225

Dear Mr. Connolly,

I write in support of Yuba City's application for funding from the WaterSMART Drought Response Program, administered through the United States Bureau of Reclamation.

Yuba City is requesting \$750,000 for construction of an aquifer storage and recovery well (ASR well), which will provide an additional source of potable water for residents and businesses. Yuba City currently relies heavily upon water from sources that are dependent on licenses and permits from outside agencies. This has negatively impacted the city's independence, resilience to drought, and preparedness for emergency events.

If awarded funding, Yuba City will be able to construct the ASR well in order to facilitate seasonal and long-term water storage, decrease the city's dependence on outside water supplies, and diversify water supplies throughout the area. In addition to providing emergency relief in drought years, the well could potentially reduce capital expenditures for water infrastructure improvements by making the best use of existing water diversion, treatment, and transmission facilities. Further, the new well will reduce overall withdrawals from Feather River, the city's main water supply source. California's climate conditions, growing population, and the instability of imported water demand that agencies work to utilize a diverse array of water resources such as the proposed ASR well for Yuba City.

I urge you to give Yuba City's application your full consideration. If you have any questions, please do not hesitate to contact my San Francisco office at (415) 393-0707.

Sincerely

Dianne Feinstein United States Senator

JOHN GARAMENDI 3rd District, California

ARMED SERVICES COMMITTEE STRATEGIC FORCES SUBCOMMITTEE EMERGING THREATS AND CAPABILITIES SUBCOMMITTEE

TRANSPORTATION AND INFRASTRUCTURE COMMITTEE RANKING MEMBER COAST GUARD AND MARITIME TRANSPORTATION SUBCOMMITTEE WATER RESOURCES AND ENVIRONMENT SUBCOMMITTEE AVIATION SUBCOMMITTEE

UNITED STATES CONGRESS

February 5, 2018

2438 Rayburn House Office Building Washington, DC 20515 Phone: (202) 225-1880 Fax: (202) 225-5914

DISTRICT OFFICES:

412 G Street Davis, CA 95616 Phone: (530) 753-5301 Fax: (530) 753-5614

1261 TRAVIS BOULEVARD, SUITE 130 FAIRFIELD, CA 94533 PHONE: (707) 438-1822 FAX: (707) 438-0523

> 795 PLUMAS STREET YUBA CITY, CA 95991 PHONE: (530) 329-8865 FAX: (530) 763-4248

David G. Murillo Regional Director, Mid-Pacific Region United States Bureau of Reclamation 2800 Cottage Way Sacramento, CA 95825 Darion Mayhorn, Reclamation Drought Coordinator United States Bureau of Reclamation PO Box 25007 Denver, CO 80225-0007

RE: WaterSMART Drought Response Program Drought Resiliency Projects for Fiscal Year 2018 Yuba City, California

Dear Mr. Murillo and Mr. Mayhorn:

I write today in support of an effort by Yuba City to build long-term drought resiliency. Yuba City is applying for Drought Resiliency Grant Program funding to help offset the cost of constructing a groundwater well that will provide a more certain drinking water supply in times of drought.

Yuba City has developed a comprehensive Urban Water Management Plan for long-term conservation and resiliency. With funding from the Drought Resiliency Grant Program, Yuba City will reduce its reliance on imported water by building a potable water well to provide an additional source of drinking water to the growing community. During periods of excess water, the well will also be used to inject water back into surrounding aquifers, providing an even greater level of resilience against future drought conditions.

Thank you for your time and consideration. Please contact Garrett Durst with my office at (202)-225-1880 or <u>Garrett.Durst@mail.house.gov</u> should you need additional information.

Sincerely,

JOHN GARAMENDI Member of Congress

PRINTED ON 59YCLED PAPER

BOARD OF SUPERVISORS COUNTY OF SUTTER

1160 Civic Center Blvd. Yuba City, CA 95993 (530) 822-7106 FAX: (530) 822-7103

February 7, 2018

Mr. David Murillo, Regional Director, Mid-Pacific Region Mr. Darion Mayhorn, Reclamation Drought Coordinator Bureau of Reclamation Denver Federal Center 6th Avenue and Kipling Street Denver, CO 80225

Re: Bureau of Reclamation Funding Opportunity Announcement No.: BOR-DO-18-F008

Dear Mr. Murillo and Mr. Mayhorn:

The City of Yuba City, California, is submitting a grant proposal for the abovementioned funding opportunity. Yuba City is requesting \$750,000 to offset cost of constructing a groundwater well that will be an additional source of drinking water for residents and businesses.

California recently experienced a statewide drought lasting several years. Communities throughout the state made great sacrifices during the drought and new strategies and efforts are needed to make cities and counties more drought resilient. This project is an effort to help the City be more drought resilient by reducing their dependency on imported water.

Water sustainability and water conservation are important goals. Sutter County supports Yuba City's efforts to increase its resiliency, and this grant would help the City succeed in this effort.

Thank you for your time and attention to this matter.

Sincerely, Dan Flores Chair

County Administrative Officer Scott Mitnick

Clerk of the Board Donna M. Johnston 1415 L Street, Suite 300 Sacramento, CA 95814 tel: 916.321.9000 fax: 916.321.9551 tdd: 916.321.9550 www.sacog.org

February 7, 2018

Mr. David Murillo, Regional Director, Mid-Pacific Region Mr. Darion Mayhorn, Reclamation Drought Coordinator Bureau of Reclamation Denver Federal Center 6th Avenue and Kipling Street Denver, CO 80225

Re: Yuba City's WaterSMART Drought Response Program Application

Dear Mr. Murillo and Mr. Mayhorn:

I am writing on behalf of the Sacramento Area Council of Governments (SACOG) to provide my support for Yuba City's WaterSMART Drought Response Program Application. The project will allow Yuba City to construct a potable water deep well, which will allow the City to have an additional sustainable water source. The new well will reduce the City's reliance on imported water and provide additional emergency support during severe drought conditions.

SACOG serves as a forum for the study and resolution of regional issues for the California counties of El Dorado, Placer, Sacramento, Sutter, Yolo, Yuba and the 22 cities within these six counties. SACOG uses many indicators to provide a bigger picture for understanding the region's economy, social, and environmental health. According to the Sacramento Area Regional Progress Report, indicators reveal that regional populations are on the rise; which in turn indicate that both jobs and the need for housing are also on the rise in the region. Population growth places a hardship on the demand for existing water resources. To help meet our projected population growth, all of our member counties and cities must take proactive approaches to increasing their own water sustainability.

To that end, we support Yuba City and their efforts to be forward thinking by providing an additional source of water for its current and future residents. The proposed groundwater potable well is expected to generate an additional 2,000 acre feet of quality water on average per year. The well will enable less dependency on imported water from the Feather River.

Please carefully consider Yuba City's WaterSMART Drought Reponses Program application. Should you have any questions, please contact me at 916.321.9000.

Sincerely,

James Corless Chief Executive Officer

JC:rh

61

Colfax Davis El Dorado County Elk Grove Folsom Galt Isleton Live Oak Lincoln Loomis Marysville Placer County

Auburn

Citrus Heights

Placerville

Rancho Cordova

Rocklin

Roseville

Sacramento

Sacramento County

Sutter County

West Sacramento

Wheatland

Winters

Woodland

Yolo County

Yuba City Yuba County

To advance the economic, social and environmental sustainability of Northern California by enhancing and preserving the water rights, supplies and water quality.

February 7, 2018

Mr. David Murillo, Regional Director, Mid-Pacific Region Mr. Darion Mayhorn, Reclamation Drought Coordinator Bureau of Reclamation Denver Federal Center 6th Avenue and Kipling Street Denver, CO 80225

Subject: Northern California Water Association Support for the Yuba City Drought Resiliency Grant Proposal

Dear Mr. Murillo and Mr. Mayhorn:

The Northern California Water Association (NCWA) supports Yuba City's grant proposal to the Bureau of Reclamation WaterSMART Drought Response Program for its drought resiliency project.

NCWA is committed to advance the economic, social, and environmental sustainability of the Sacramento Valley by enhancing and preserving its water rights, supplies, and water quality for the rich mosaic of farmlands, refuges and managed wetlands, and meandering rivers that support fisheries and wildlife, and cities and rural communities in the region.

Yuba City is taking a proactive approach in planning ahead for their future water supply. With this grant, Yuba City will reduce its reliance on imported water by building a potable water deep well to provide another source of drinking water to the community. The well will prove especially helpful during times of drought. According to the Yuba City Urban Water Management Plan, during dry years and drought periods it is possible that the future demand for water in the City will exceed the supply. The City can close the gap between supply and demand, in part, by utilizing aquifer storage and recovery with the production of the new well.

I fully support the Yuba City WaterSMART Drought Response Program application. Should you have any questions or comments, please contact me at (916) 442-8333.

Sincerely,

Jodd Manley

Todd N. Manley Director of Government Relations

OFFICIAL RESOLUTION

RESOLUTION NO. 18-007

RESOLUTION OF THE CITY COUNCIL OF THE CITY OF YUBA CITY APPROVING THE APPLICATION FOR GRANT FUNDS FOR THE BUREAU OF RECLAMATION'S WATERSMART DROUGHT RESPONSE PROGRAM: DROUGHT RESILIENCY PROJECTS FOR FISCAL YEAR 2018 FOR THE GROUNDWATER WELL FOR DROUGHT RESILIENCY PROJECT

WHEREAS, the City of Yuba City has prepared an application to apply for federal funding from the United States Department of the Interior, Bureau of Reclamation (Bureau) to assist in the funding of the Drought Response Program: Drought Resiliency Project; and

WHEREAS, the funding opportunity provided by the Bureau through their Grant Program entitled "WaterSMART Drought Response Program: Drought Resiliency Projects for Fiscal Year 2018" Funding Opportunity Announcement No. is BOR-DO-18-F008; and

WHEREAS, the City of Yuba City intends to construct a groundwater well to reduce the City's reliance on water from the Feather River in an effort to increase the City of Yuba City's drought resiliency; and

WHEREAS, the Applicant, if selected, will enter into an agreement with the Bureau to carry out the project.

NOW, THEREFORE, BE IT RESOLVED that the City Council of the City of Yuba City hereby:

- 1. Approves the filing of an application for the implementation of the Groundwater Well for Drought Resiliency Project; and
- 2. Certifies that Applicant understands that the Applicant will work with the Bureau to meet established deadlines for entering into a grant or cooperative agreement; and
- 3. Certifies that it understands the assurances and certification in the application; and
- 4. Certifies that Applicant is capable of providing the amount of funding specified in the application; and
- 5. The City appoints the City Manager, or designee, as agent to conduct all negotiations, execute and submit all documents including, but not limited to applications, agreements, payment requests and so on, which may be necessary for the completion of the aforementioned project; and
- 6. The Mayor, or presiding officer, is hereby authorized to affix his signature to this Resolution signifying its adoption by the City Council of the City of Yuba City and the City Clerk, or her duly appointed assistant, is directed to attest thereto.

###

18-007

The foregoing resolution was duly and regularly introduced, passed, and adopted by the City Council of the City of Yuba City at a regular meeting thereof held on the 6th day of February 2018.

AYES: Councilmember Buckland, Cleveland, Harris and Mayor Didbal

11111111

None NOES:

ABSENT: Councilmember Cardoza

ATTEST:

101000 23 S Patricia Buckland, City Clerk

Preet Didbal, Mayor

18-007

65