SUBMITTED JULY 1, 2021

2020 URBAN WATER MANAGEMENT PLAN

1919-
2021

SOUTH FEATHER WATER & POWER AGENCY

Submitted electronically: https://wuedata.water.ca.gov/

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Appendices (TO BE INCLUDED AFTER PUBLIC COMMENT PERIOD)

CHAPTER 1 – INTRODUCTION AND OVERVIEW

The California Water Code (CWC) Section I, Part 2.55 and Part 2.6 requires urban water suppliers to prepare and adopt an UWMP every five years. All urban water suppliers, either publicly or privately owned, providing water for municipal purposes either directly or indirectly to more than 3,000 customers or supplying more than 3,000 acre-feet annually are required to prepare an UWMP and submit the plan to the California Department of Water Resources (DWR). This 2020 UWMP was prepared in compliance with the CWC, and follows the recommended structure established in the Urban Water Management Plan Guidebook 2020 prepared by DWR. This chapter discusses the importance and fundamental uses of this Urban Water Management Plan (UWMP), the relationship of this plan to the California Water Code (CWC), as well as other local and regional planning efforts, and how this plan is organized.

This chapter contains the following sections:

1.0 UWMP Introduction and Lay Description

South Feather Water and Power Agency – originally named Oroville-Wyandotte Irrigation District (OWID) – has roots extending back to the California gold rush. The ditch system utilized by the Agency today to distribute its irrigation water is a modification and expansion of the ditch network constructed by early miners who diverted water from tributaries of the Feather River to their mining claims.

In 1852, a small ditch company was organized to construct a ditch from the South Fork of the Feather River to the mining sites at Forbestown, Wyandotte, Honcut, Ophir, and Bangor. The Palermo Ditch, completed in 1856 by the Feather River and Ophir Water Company, was a major impetus to the growth of gold mining within the area occupied by the present City of Oroville where rich gold deposits were discovered in 1849.

OWID was organized on November 17, 1919, and included 16,800 acres of land. The Agency was formed by assuming the old water rights from the South Feather Land and Water Company and the Palermo Land and Water Company. In July 1944, OWID initiated plans to sell water for domestic use, and between 1944 and 1967, approximately 80 miles of coal-tar lined and tar paper wrapped steel pipe was installed.

The residential growth rate within the Agency was greatly accelerated by the housing demands associated with the construction of the Oroville Dam in the early 1960's. The irrigation system in the northern part of the Agency was slowly abandoned as the domestic pipeline system was

expanded to meet the growing residential demand. By 1962, OWID served approximately 4,800 acres of agricultural land, with 8,000 AF of irrigation water delivered by the Agency. In addition to irrigation service, the Agency furnished water to approximately 2,500 residences.

As a result of the concern for an adequate water supply and for a revenue source to fund the Agency's expanding infrastructure, the Agency's Board of Directors proposed the construction of the South Feather Power Project (originally named South Fork Project). The South Feather Power Project, covering 82 square miles in three counties, consisted of eight dams, 9 tunnels, 21 miles of canals and conduits, three hydroelectric power plants and 21 miles of road. The project was completed in 1963 at a cost of $62 million, and was financed through the sale of revenue bonds secured by the projected revenues from power generation. Those bonds were defeased in 2009.

In 1975, Congress passed the Clean Water Act that enacted sweeping changes in domestic drinking water standards. No longer would unfiltered surface water be acceptable for drinking water. Faced with a building moratorium, OWID voters passed a revenue bond in 1978 that allowed for the construction of Miners Ranch Treatment Plant.

Today, SFWPA has grown as a retail supplier to provide water to just over 6,800 households, maintains a service area of over 31,000 acres supplied by 141 miles of pipeline, and delivers irrigation water seasonally to over 500 customers by way of 110 miles of primarily open earthen canals.

SFWPA's domestic-water facilities are comprised of two treatment plants that use a combination of filtration and chlorination to remove/mitigate contaminants. Following the treatment process, water is distributed through SFWPA's pipelines to one of its four storage facilities, and from there to consumption by SFWPA's customers.

The Agency operates a hydropower project (South Feather Power Project, FERC License No. 2088) located in Butte, Plumas and Yuba counties on the South Fork of the Feather River and Slate Creek, a tributary to the North Fork Yuba River, and is situated almost entirely within the Plumas National Forest. The Project includes Little Grass Valley Reservoir, Sly Creek Reservoir, Lost Creek Reservoir, Ponderosa Reservoir, and Miners Ranch Reservoir, with a combined storage of 164,577 acre-feet (af).

South Feather Water and Power Agency (SFWPA or Agency), originally named Oroville-Wyandotte Irrigation District (OWID), has roots extending back to the California gold rush. OWID was organized on November 17, 1919. Today, SFWPA has grown to provide drinking water to approximately 6,823 households and delivers irrigation water seasonally to over 500 customers.

SFWPA recognizes the importance of maintaining resource management planning documents

that have been developed at the local level. SFWPA has been completing UWMPs since 1990. Five-year incremental updates to the UWMP not only satisfy the requirements of the Urban Water Management Planning Act, but serve as a tracking mechanism for ensuring that adequate supplies of high quality water are available for future beneficial uses.

The purpose of the UWMP is to inform the public, and local and state agencies of South Feather Water and Power Agency's water supply availability, exposure during periods of drought, conservation efforts, and plans for future supply.

1.1 Recommended UWMP Organization

The organization of this Plan follows the structure outlined in 2020 UWMP Guidebook.

Chapter 1 - Introduction and Lay Description
Chapter 2- Plan Preparation
Chapter 3 - System Description
Chapter 4 – Water Use Characterization
Chapter 5- SB X7-7 Baselines, Targets, and 2020 Compliance
Chapter 6 – Water Supply Characterization
Chapter 7— Water Service Reliability and Drought Risk Assessment
Chapter 8 – Water Shortage Contingency Plan
Chapter 9 — Demand Management Measures
Chapter 10 — Plan Adoption, Submittal, and Implementation
Appendices – Additional information to support the Plan

Pursuant to CWC §10644(a)(2), this plan utilizes the standardized forms, tables, and displays developed by DWR for the reporting of water use and supply information required by the UWMP Act. This plan also includes other tables, figures, and maps, to augment the set developed by DWR.

1.2 UWMP in Relation To Other Efforts

This plan provides information specific to the water management and planning efforts of the Agency, however, SFWPA also prioritizes collaborative efforts with the local planning and land development agencies in order to best manage local resources. SFWPA coordinates with the respective planning departments of the City of Oroville and the County of Butte by providing information on the adequacy of its water supply, distribution system, and water rates to meet the area's current and future growth needs, cooperation in the preparation of CEQA documents and processing applications for subdivisions and commercial developments. As Butte County embarks on an update of the current General Plan, the Agency will participate and provide information as requested. The Agency continues to participate with other municipal water purveyors and fire departments in Butte County and the City of Oroville to plan for the implementation of new fire safety regulations; is currently working in cooperation with the Butte Local Agency Formation

Commission to assist with the updates of multiple agency Municipal Service Review Study, and, on an ongoing basis with North Yuba Water District (NYWD) regarding water supplies and their management (NYWD shares water storage facilities with SFWPA, as well as one of SFWPA's distribution facilities).

During disasters or large-scale incidents, the Butte County Office of Emergency Management (OEM) coordinates the overall response through the Emergency Operations Center (EOC). When activated, the EOC provides a central location for responding and supporting agencies to collaborate response and recovery efforts in order to effectively and efficiently provide information and deploy resources. In non-disaster times, the Butte County OEM supports and coordinates disaster planning, community preparedness, mitigation, and training. SFWPA participated in the 2019 update of the Butte County Local Hazard Mitigation Plan (LHMP), and the hazard mitigation planning elements specific to SFWPA are incorporated in the plan as Annex N[1]. SFWPA continues to strengthen internal emergency response by strengthening relationships with OEM and other local Emergency Response partners. Climate Change, Drought, and Wildfire are all significant local hazard threats addressed in the2019 LHMP, and the Water Shortage Contingency Plan as well as the Drought Risk Assessment will serve as supplements to this previous work.

The Sustainable Groundwater Management Act (SGMA), passed in the fall of 2014, establishes a new structure for managing groundwater resources in California. Groundwater basins and subbasins are defined in the Department of Water Resources (DWR) Bulletin 118 document. SGMA requires Groundwater Sustainability Agencies (GSAs) to manage groundwater at the local level through the development and implementation of Groundwater Sustainability Plans (GSPs). The GSPs must ensure sustainable conditions by 2042 while avoiding the six distinct undesirable results of 1) Chronic lowering of groundwater levels indicating a significant and unreasonable depletion of supply, 2) Significant and unreasonable reduction of groundwater storage, 3) Significant and unreasonable seawater intrusion, 4) Significant and unreasonable degradation of water quality, 5) Significant and unreasonable land subsidence, and 6) Groundwater-related surface water depletions that have significant and unreasonable adverse impacts on beneficial used of surface water. The decisions about sustainability will be made locally through public involvement. The Wyandotte Creek Subbasin is a portion of the larger Sacramento Valley Groundwater Basin covering approximately 59,382 acres. A SFWPA staff was appointed to the Wyandotte Creek Advisory Committee in October 2020, and is actively participating in the groundwater sustainability plan development.

[1] http://www.buttecounty.net/oem/mitigationplans

1.3 UWMP AND GRANT OR LOAN ELIGIBILITY

CWC *10608.56 (a) On and after July 1, 2016, an urban retail water supplier is not eligible for a water grant or loan awarded or administered by the state unless the supplier complies with this part.*

(c) Notwithstanding subdivision (a), the department shall determine that an urban retail water supplier is eligible for a water grant or loan even though the supplier has not met the per capita reductions required pursuant to Section 10608.24, if the urban retail water supplier has submitted to the department for approval a schedule, financing plan, and budget, to be included in the grant or loan agreement, for achieving the per capita reductions. The supplier may request grant or loan funds to achieve the per capita reductions to the extent the request is consistent with the eligibility requirements applicable to the water funds.

(e) Notwithstanding subdivision (a), the department shall determine that an urban retail water supplier is eligible for a water grant or loan even though the supplier has not met the per capita reductions required pursuant to Section 10608.24, if the urban retail water supplier has submitted to the department for approval documentation demonstrating that its entire service area qualifies as a disadvantaged community.

(f) The department shall not deny eligibility to an urban retail water supplier or agricultural water supplier in compliance with the requirements of this part and Part 2.8 (commencing with Section 10800), that is participating in a multiagency water project, or an integrated regional water management plan, developed pursuant to Section 75026 of the Public Resources Code, solely on the basis that one or more of the agencies participating in the project or plan is not implementing all of the requirements of this part or Part 2.8 (commencing with Section 10800).

CWC *10656 An urban water supplier is not eligible for a water grant or loan awarded or administered by the state unless the urban water supplier complies with this part.*

California Code of Regulations Section 596.1 (b)(2) "disadvantaged community" means a community with a median household income that is less than 80 percent of the statewide annual median household income.

The Agency intends to maintain compliance with UWMP submissions as we work to support access to clean drinking water for all. At this time, the Agency is involved in potential consolidation efforts with existing small water systems that supply water in disadvantaged communities within our service area. It is critical to our mission that we maintain compliance as a steward of the resource.

1.4 DEMONSTRATION OF CONSISTENCY WITH THE DELTA PLAN

The SFWPA is situated north of the Sacramento-San Joaquin Delta, and is not reliant on water originating south of our place of use, nor is there any dependence on the Delta watershed. Historical water transfers originating from this Agency have been single-year transfers to users south of the Delta, not multi-year transfers that would unduly impact the Delta long-term, or create an out of the region dependency on our watershed.

CHAPTER 2 – PLAN PREPARATION

This chapter discusses the several requirements for preparing an UWMP and includes information that will document consistency with plan preparation requirements. Coordination and outreach during the development of the plan is also discussed.

This chapter includes the following sections:

2.1 Plan Preparation

This chapter provides the guidance for determining if a water supplier is required to prepare a UWMP and describes the various levels of regional coordination that an agency may employ. It also includes guidance and tables for two pieces of information to apply consistently throughout the UWMP: the use of a fiscal or calendar year, and the specific units of measure used by the Supplier to report water volumes.

2.2 Basis For Preparing a Plan

CWC *10617 "Urban water supplier" means a supplier, either publicly or privately owned, providing water for municipal purposes either directly or indirectly to more than 3,000 customers or supplying more than 3,000 acre-feet of water annually. An urban water supplier includes a supplier or contractor for water, regardless of the basis of right, which distributes or sells for ultimate resale to customers. This part applies only to water supplied from public water systems…*

10620(b) Every person that becomes an urban water supplier shall adopt an urban water management plan within one year after it has become an urban water supplier.

10621(a) Each urban water supplier shall update its plan at least once every five years on or before December 31, in years ending in five and zero, except as provided in subdivision (d).

SFWPA qualifies as an Urban Water Supplier based on the California Water Code definition of providing water to more than 3,000 customers and because it supplies over 3,000 acre-feet of water annually. The Agency has completed updated Urban Water Management Plans every five years, in years ending in zero or five, since 1990, with the exception of the 2015 Plan, which was prepared in 2018. This 2020 Urban Water Management Plan (UWMP) is being completed as required by California Water Code (CWC) 10621(d), and all future plans will be updated and submitted in years ending in six and one.

2.2.1 Public Water Systems

CWC *10644 (a)(2) The plan, or amendments to the plan, submitted to the department … shall include any standardized forms, tables, or displays specified by the department.*

California Health and Safety Code 116275
(h) "Public Water System" means a system for the provision of water for human consumption through pipes or other constructed conveyances that has 15 or more service connections or regularly serves at least 25 individuals daily at least 60 days out of the year.

SFWPA serves two public water systems. This UWMP represents the water use and planning information for the just over 6,900 households receiving treated domestic water and 500 irrigation customers within the SFWPA service area served by these two systems.

2.2.2 Suppliers Serving Multiple Service Areas/Public Water Systems

SFWPA operates two separate Public Water Systems, as summarized in Table 2-1, below.

2.3 Regional Planning

SFWPA continues to promote cooperation and sharing of planning information with the Butte County Department of Water and Resource Conservation (the Butte County entity tasked with managing the County's groundwater and State Water Project allocation), other water service agencies, and surrounding landowners, to facilitate the implementation of solutions to water supply reliability issues that cross jurisdictional boundaries. SFWPA participated in the development of the Northern Sacramento Integrated Regional Water Management Plan, which covers Butte County, and is actively participating in the Wyandotte Creek GSA with an appointed member on the Advisory Committee.

2.4 Individual Or Regional Planning and Compliance

Urban water suppliers may elect to prepare individual or regional UWMPs. At this time, SFWPA is preparing an individual UWMP solely for its own distribution service area.

2.4.1 Regional UWMP

CWC *10620(d)(1) An urban water supplier may satisfy the requirements of this part by participation in area wide, regional, watershed, or basin wide urban water management planning where those plans will reduce preparation costs and contribute to the achievement of conservation and efficient water use.*

This UWMP reports solely on the SFWPA service area. It has not been prepared to report on a combined regional service area. SFWPA is not a member of a Regional UWMP.

2.4.1 Regional Alliance

CWC *10608.20(a)(1) …Urban retail water suppliers may elect to determine and report progress toward achieving these targets on an individual or regional basis as provided in subdivision (a) of Section 10608.28…*

CWC *10608.28(a) An urban retail water supplier may meet its urban water use target within its retail service area, or through mutual agreement by any of the following:*
(1) Through an urban wholesale water supplier.
(2) Through a regional agency authorized to plan and implement water conservation, including, but not limited to, an agency established under the Bay Area Water Supply and Conservation Agency Act (Division 31 (commencing with Section 81300)).
(3) Through a regional water management group as defined in Section 10537. (4) By an integrated regional water management funding area.
(5) By hydrologic region.
(6) Through other appropriate geographic scales for which computation methods have been developed by the department.
(b) A regional water management group, with the written consent of its member agencies, may undertake any or all planning, reporting, and implementation functions under this chapter for the member agencies that consent to those activities. Any data or reports shall provide information both for the regional water management group and separately for each consenting urban retail water supplier and urban wholesale water supplier.

South Feather Water and Power Agency is not a member of a regional alliance for the purpose of addressing the requirements of the Water Conservation Act of 2009 (SB X7-7).

2.5 Fiscal or Calendar Year

CWC *1608.20(a)(1) Urban retail water suppliers…may determine the targets on a fiscal year or calendar year basis.*

Annual volumes of water reported in this UWMP are reported on a calendar year basis.

2.5.1 Reporting Complete 2020 Data

Water use and planning data reported in this UWMP for the calendar year 2020 cover the full twelve months of the year, as required by the UWMP Guidelines.

2.5.2 Units of Measure

Volumes of water reported in this UWMP are in units of million gallons.

2.6 Coordination and Outreach

CWC *16031 (h) An urban water supplier that relies upon a wholesale agency for a source of water shall provide the wholesale agency with water use*

projections from that agency for that source of water in five-year increments to 20 years or as far as data is available. The wholesale agency shall provide information to the urban water supplier for inclusion in the urban water supplier's plan that identifies and quantifies, to the extent practicable, the existing and planned sources of water as required by subdivision (b), available from the wholesale agency to the urban water supplier over the same five-year increments, and during various water-year types in accordance with subdivision (f). An urban water supplier may rely upon water supply information provided by the wholesale agency in fulfilling the plan informational requirements of subdivisions (b) and (f).

2.6.1 Wholesale and Retail Coordination

There is no source of wholesale water supply available to SFWPA, nor does the Agency have a need for such supplies.

2.6.2 Coordination With Other Agencies and The Community

CWC *10620(d)(3) Each urban water supplier shall coordinate the preparation of its plan with other appropriate agencies in the area, including other water suppliers that share a common source, water management agencies, and relevant public agencies, to the extent practicable.*

CWC *10642 Each urban water supplier shall encourage the active involvement of diverse social, cultural, and economic elements of the population within the service area prior to and during the preparation of the plan...*

SFWPA has actively encouraged community participation in its urban water management planning efforts since the first plan was developed in 1990. Public meetings were held for the adoption of all UWMPs from 1990 through 2015, as well as for this 2020 version. This UWMP was discussed at the public Board meetings prior to and during the preparation of the UWMP. The Agency actively encourages community participation from the public including the diverse social, cultural, and economic elements of the population.

2.6.3 Notice to Cities and Counties

CWC *10621 (b)Every urban water supplier required to prepare a plan pursuant to this part shall, at least 60 days before the public hearing on the plan required by Section 10642, notify any city or county within which the supplier provides water supplies that the urban water supplier will be reviewing the plan and considering amendments or changes to the plan.*

On March 18, 2021 the Agency notified Butte County Water and Resource Conservation as well as City of Oroville Administration, and Butte County Development

Services that it was updating its 2020 UWMP. Additionally, the preparation notice was sent to the local wastewater collection and treatment agencies, as well as all of the local schools served by the Agency. These notifications are reported in Table 10-1 (see Chapter 10, below).

2.7 SUBMITTAL AND SB X7-7 TABLES

Submittal Table 2-1 Retail Only: Public Water Systems			
Public Water System Number	Public Water System Name	Number of Municipal Connections 2020	Volume of Water Supplied 2020 *
Add additional rows as needed			
CA0410006	SFWPA Miners Ranch	6,909	1,730
CA0410012	SFWPA Bangor	22	7
	TOTAL	6,931	1,737
**** Units of measure (AF, CCF, MG)*** *must remain consistent throughout the UWMP as reported in Table 2-3.*			
NOTES: MG			

Submittal Table 2-2: Plan Identification			
Select Only One	**Type of Plan**		**Name of RUWMP or Regional Alliance** *if applicable* (select from drop down list)
☑	**Individual UWMP**		
	☐	Water Supplier is also a member of a RUWMP	
	☐	Water Supplier is also a member of a Regional Alliance	
☐	**Regional Urban Water Management Plan (RUWMP)**		

Submittal Table 2-3: Supplier Identification	
Type of Supplier (select one or both)	
☐	Supplier is a wholesaler
☑	Supplier is a retailer
Fiscal or Calendar Year (select one)	
☑	UWMP Tables are in calendar years
☐	UWMP Tables are in fiscal years
If using fiscal years provide month and date that the fiscal year begins (mm/dd)	
Units of measure used in UWMP * (select from drop down)	
Unit	MG
***Units of measure (AF, CCF, MG)** must remain consistent throughout the UWMP as reported in Table 2-3.*	

Submittal Table 2-4 Retail: Water Supplier Information Exchange
The retail Supplier has informed the following wholesale supplier(s) of projected water use in accordance with Water Code Section 10631.
Wholesale Water Supplier Name
Add additional rows as needed
N/A

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

CHAPTER 3 – SYSTEM DESCRIPTION

This chapter provides a description of SFWPA's water system and the service area, including climate, population and demographics, and an overview of the Agency's organizational structure and history.

This chapter includes the following sections:

3.1 Service Area General Description
3.2 Service Area Maps
3.3 Service Area Climate
3.4 Service Area Population and Demographics
3.5 Submittal and SB X7-7 Tables

CWC *10631. (a) Describe the service area of the supplier, including current and projected population, climate, and other demographic factors affecting the supplier's water management planning. The projected population estimates shall be based upon data from the state, regional, or local service agency population projections within the service area of the urban water supplier and shall be in five- year increments to 20 years or as far as data is available. The description shall include the current and projected land uses within the existing or anticipated service area affecting the supplier's water management planning. Urban water suppliers shall coordinate with local or regional land use authorities to determine the most appropriate land use information, including, where appropriate, land use information obtained from local or regional land use authorities, as developed pursuant to Article 5 (commencing with Section 65300) of Chapter 3 of Division 1 of Title 7 of the Government Code.*

3.1 General Description

SFWPA owns and operates the South Feather Power Project (SFPP, FERC No. 2088) a water supply/hydropower project located within Plumas, Yuba and Butte counties in the Sierra Nevada Mountain Range in Northern California. The project lies within the Middle Fork Feather hydrologic unit (1802023), and water is supplied to the project from two watersheds; the South Fork Feather River watershed and the North Fork Yuba River watershed. The United States Forest Service has managed up to 1,146,000 acres of scenic mountain lands designated as the Plumas National Forest in the northern Sierra Nevada since the Forest was established in 1905. The SFPP lies within the boundaries of the Plumas National Forest, includes a small piece situated on federal lands administered by the Bureau of Land Management, and the balance is on SFWPA owned lands, or private property. Project facilities are located on the South Fork Feather River; on Lost Creek, a tributary to the South Fork Feather River; and on Slate Creek, a tributary to the North Yuba River. The highest elevation facility, Little Grass Valley Dam is located at about 5,050 feet above sea level, while the lowest elevation facility, Kelly Ridge Powerhouse, is located at about 225 feet above sea level.

The power project facilities include eight dams, seven tunnels, four powerhouses, and an open conduit that includes elevated flume and siphon sections. There are a series of reservoirs owned and operated by SFWPA; Little Grass Valley, Sly Creek, Lost Creek, Ponderosa and Miners Ranch which have a combined storage of 164,577 acre-feet. Irrigation and treated water is supplied to customers of South Feather Water and Power Agency in Butte County and North Yuba Water District in Yuba County. Water not consumed by the customers of these two organizations is released to the State Water Project's Feather River facilities (FERC No. 2100) at either Lake Oroville or Thermalito Diversion Dam.

The mission of SFWPA is to deliver a dependable supply of safe, quality drinking water to its current and future customers, and a dependable supply of water for irrigation and agricultural users, in an economical, efficient and publicly responsible manner for the benefit of the entire district. The Agency service area is located 70 miles north of Sacramento on the east side of California's Sacramento Valley in the Sierra foothills of southeast Butte County. The 31,000-acre service area includes an elevation range from a low point of approximately 200 feet above sea level at the western boundary, to a high point of approximately 1,200 feet above sea level at the northeasterly boundary.

SFWPA is an independent special district formed under the Irrigation Code of the State of California. It is governed by a five-member elected board of directors. The Agency provides treated water service to the communities of Oroville, Palermo and Bangor in southeast Butte County.

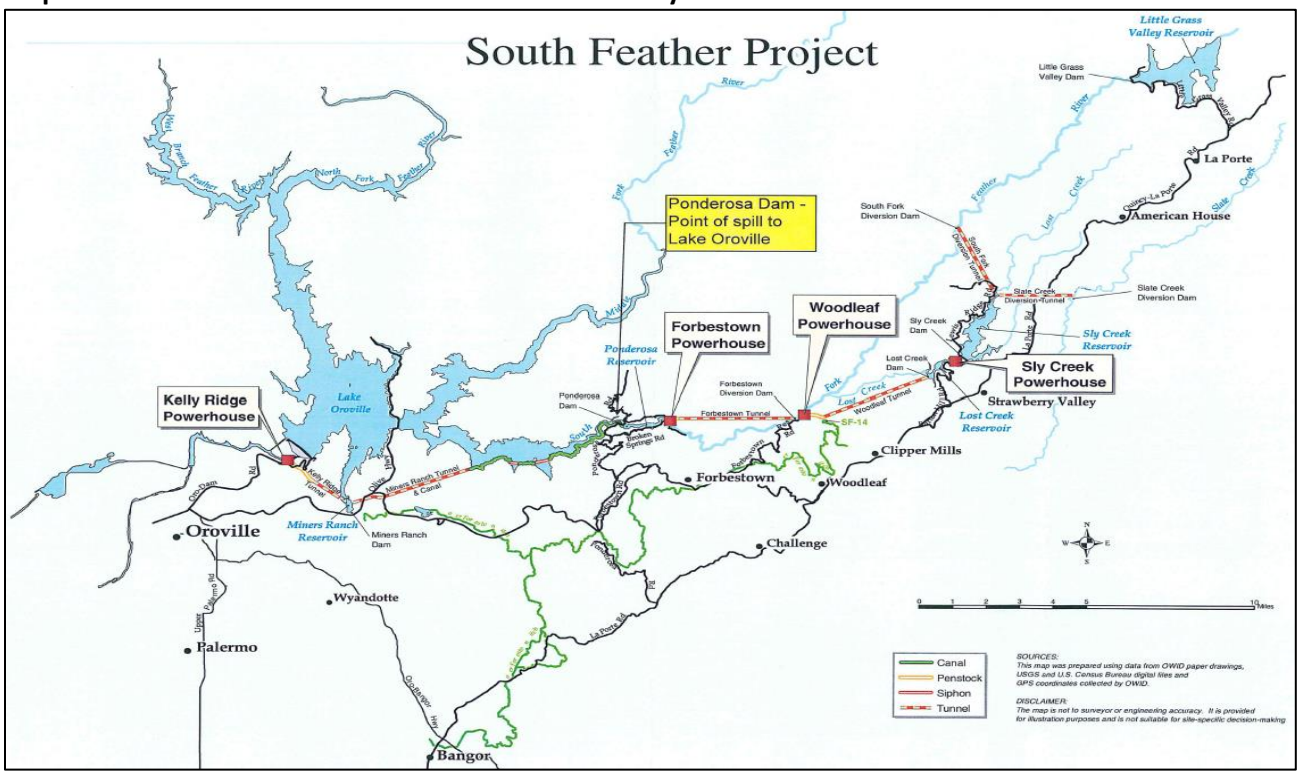
SFWPA's service area is wholly within Butte County's First Supervisorial District. In addition to the County of Butte, other public agencies with territory within SFWPA's boundaries are:

City of Oroville;
Oroville Union High School District;
Oroville City Elementary School District;
Palermo Elementary School District;
Bangor Elementary School District;
Oroville Mosquito Abatement District;
Butte County Mosquito and Vector Control District;
Lake Oroville Area Public Utility District; and,
Feather River Recreation and Park District.

3.2 Service Area Boundary Maps

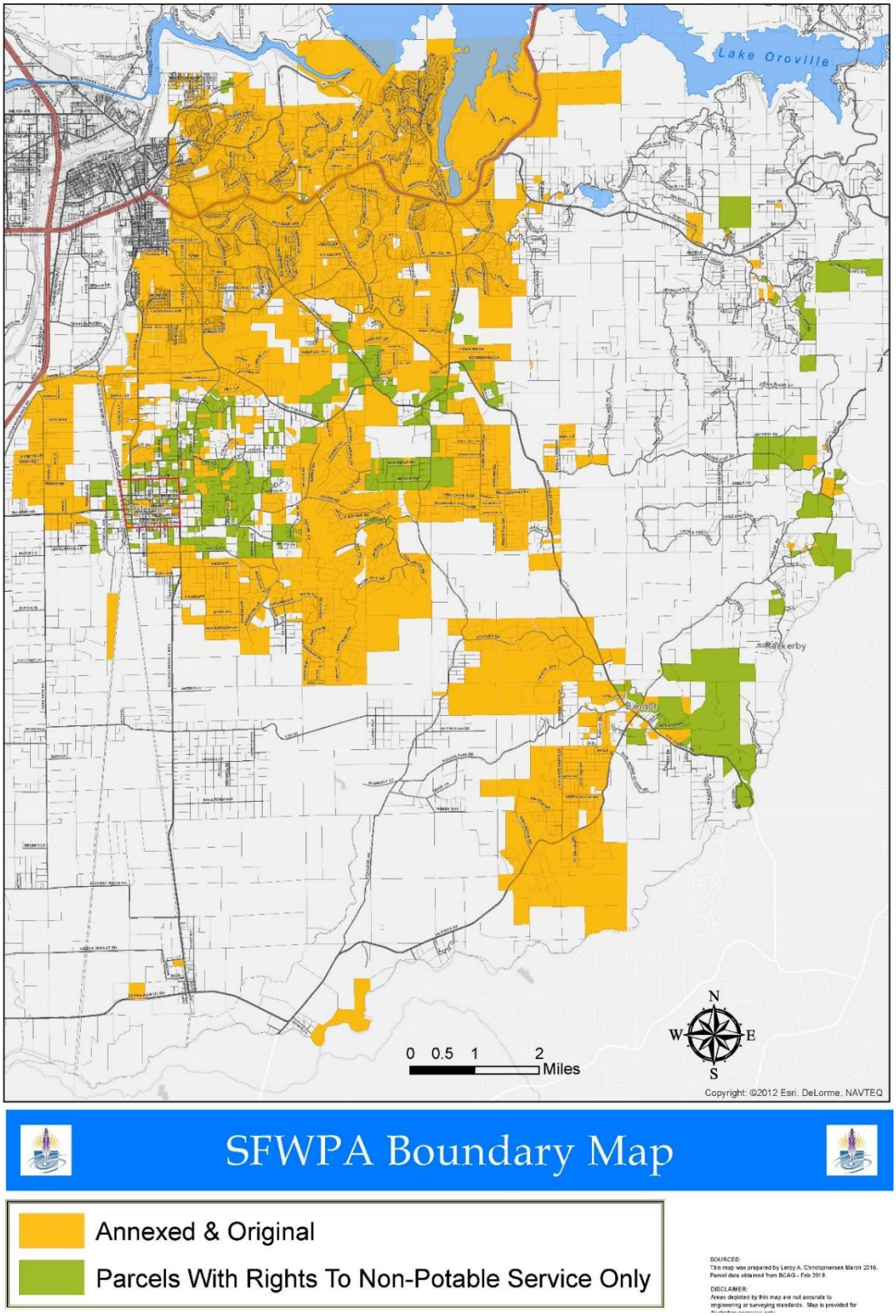
- Map projection –Lambert_Conformal_Conic with NAD 1983 StatePlane_California_II_FIPS_0402_Feet Coordinate System.
- Contact information for the person that created the map – Leroy A. Christophersen
- Start and end dates for which the map is valid - Start date would be 2016 with no ending date.
- Constraints or other notes to share – DISCLAIMER: Areas depicted by this map are not accurate to engineering or surveying standards. Map is provided for illustration purposes only. South Feather Water and Power Agency(SFWPA) has made every effort to ensure the accuracy, correctness and timeliness of materials provided but assumes no responsibility for errors or omissions. In no event shall SFWPA become liable to users of these data, or any other party, for any loss or direct, indirect, special, incidental, or consequential damages, including but not limited to time, money, or goodwill, arising from the use or modification of the data.
- Attribute table definitions – Legend: Orange = Annexed & Original; Green = Parcels With Rights To Non-Potable Service Only.
- Digitizing base (e.g., USGS 7.5-minute quadrangle, or 1-meter resolution 2010 digital aerial photograph) World Light Gray Canvas Base - ESRI, HERE, Garmin, (c) OpenStreetMap contributors, and the GIS user community.

Map 1 – Raw Water Sources and Water Transmission System

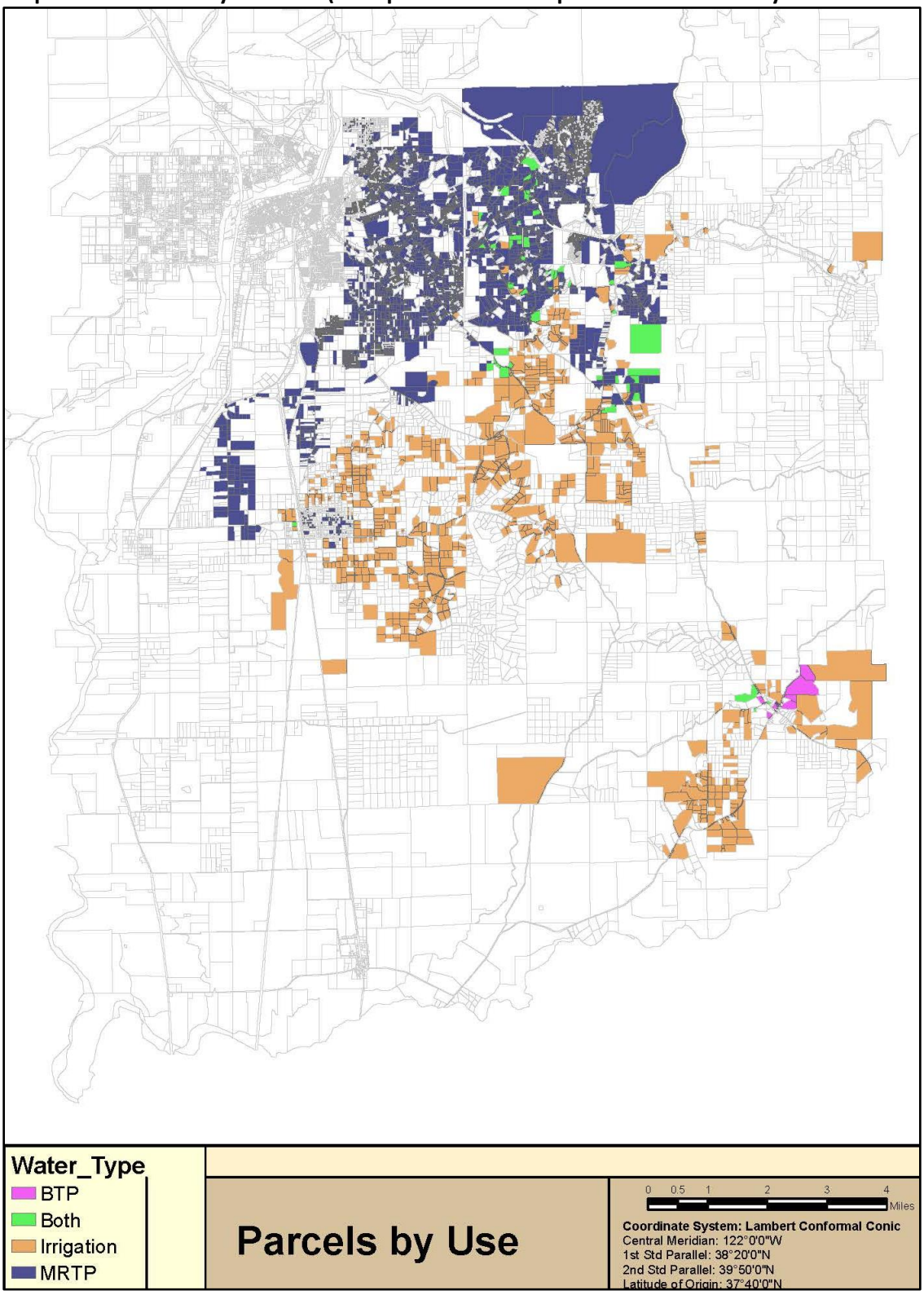


NOTE: Miners Ranch Reservoir and the terminus of the canal at Bangor are the points of treatment and distribution.

Map 2 – SFWPA Boundary Map



Map 3 - Distribution System Use (both potable and non-potable distribution system boundaries)



3.3 Service Area Climate

CWC *10631(a) A plan shall… Describe the service area of the supplier, including … climate…*

CWC *10630. It is the intention of the Legislature, in enacting this part, to permit levels of water management planning… while accounting for impacts from climate change.*

The Agency's service area has a Mediterranean-type climate with four distinct seasons. Winter months are cool to cold with temperatures from the mid-30s to low 60s. Summers are warm to hot with temperatures ranging from the upper 60s to low 110s, and an annual average temperature of 67ºF.

SFWPA's service area ranges in elevation from 200 feet above sea level to 1,200 feet. Winter monthly precipitation totals in the Agency's service area have varied over time from 0.06 inches in January 2007 to 18.7 inches in January 1995. The average annual precipitation is 32.7 inches with 78.9 percent occurring in November through March.

3.3.1 Climate Change

For the purposes of considering how climate change in Northern California may impact water resource providers, it is noted that many climatologists agree on the following:

1. Northern California will experience an increase in individual storm intensity.[2]
2. Mountain areas will likely see an increase in precipitation, though the snow/rain mix is likely to change toward more rain and less snow.[3]
3. California as a whole will experience hotter summers and possibly wetter winters.[4]
4. The potential for wildfires will increase. [5]

Although there are other impacts that will likely occur as a result of climate change instability, the above issues, which are expanded upon below, represent the most immediate and direct impacts to the Agency.

More Rain and Less Snow

While individual storm events may be more severe, resulting in more snow and rain within an individual storm, the increase in temperature is expected to result in less snow overall and more rain in the foothills of California. Less snow pack will result in less "natural" storage and gradual runoff as the snow melts. Instead, runoff from rain would be more immediate and less sustained into spring. The California Department of Water Resources has projected that the Sierra

[2] California Climate Change Center. *Our Changing Climate: Assessing Risks to California*. July 2006.
[3] California Climate Change Center. *Scenarios of Climate Change in California.* February 2006.
[4] Union of Concerned Scientists, *Confronting Climate Change in California*, October 2006.
[5] California Climate Change Center. *Scenarios of Climate Change in California.* February 2006.

snowpack will experience a 25 to 40 percent reduction from its historic average by the year 2050.

Hotter Summers

As summers become hotter for longer periods of time, there will be proportionally greater demand for water use; for example, for landscape irrigation. Energy use patterns and costs are also expected to be effected as temperatures during the summer increase between 5 and 10 degrees, causing greater use of air conditioning. Warmer temperatures and extended dry periods will likely increase evapotranspiration rates and extend growing seasons, thereby increasing the amount of water that will be needed for the irrigation of crops, urban landscaping and environmental water needs. Reduced soil moisture and surface flows will disproportionately affect the environment and other water users that rely on annual rainfall such as non- irrigated agriculture and livestock grazing on non-irrigated rangeland. The Cal-Adapt[6] modeling tool projects a roughly +5.4 (°F) temperature increase from the baseline in the Upper Feather River Watershed over the next 30 years.

Increased Wildfire Danger

As summers become hotter and drier, the already pervasive risk of wildfire will increase even more. It is expected that, because of prolonged dry periods, forests and foothill grass and chaparral lands will experience more frequent and intense fires, resulting in changes in vegetation cover and, eventually, a reduction in the water supply and storage capacity benefits of a healthy watershed.

3.4 Service Area Population and Demographics

CWC *10631(a)Describe the service area of the supplier, including current and projected population …The projected population estimates shall be based upon data from the state, regional, or local service agency population projections within the service area of the urban water supplier and shall be in five-year increments to 20 years or as far as data is available.*

On average, SFWPA provided domestic water service to 6,845 customer accounts in 2020. Given the predominantly residential makeup of the Agency's service area, almost all of its customer accounts represent a household. Because the Census Bureau has not yet released the results of the 2020 Census, the current population numbers are only estimates based on 2010 Census data. According to California Department of Finance (DOF) data, the population of Butte County, including the incorporated municipalities, was approximately 205,291 people March 31, 2020. The 2020 population reflects a 6.69% decrease from the 2010 Census. The majority of these residents, approximately 137,651 people, live in the incorporated municipalities. The balance of these residents, approximately 67,640, live in the County's unincorporated areas. The devastating Camp Fire in November 2018 destroyed roughly 95 percent of the structures in

[6] Cal-Adapt

Paradise and Concow, completing redefining the population distribution throughout the County.

Population projections for the Agency were based on review of the data used in previous Agency plans, the City of Oroville General Plan, Butte County General Plan, Butte County Association of Governments, (BCAG), and Local Agency Formation Commission (LAFCo). Table 3-1 below shows the estimated future population total for the Agency through 2045. The High Scenario of population estimates were used from the Butte County Association of Government data. Based upon their information it is assumed a 0.88% annual growth rate will be experienced from 2018 -2040. The 2010 Census reported the average household size in Oroville as 2.6 persons per household vs. the County average which is 2.45 persons per household. The average person per housing unit was prepared by dividing the 2010 DOF preliminary population estimates by the preliminary housing estimates for each jurisdiction. The Census defines a "household" as all persons occupying a housing unit, which may include single persons living alone, families related through marriage or blood, or unrelated persons sharing a single unit. Persons in group quarters such as dormitories, retirement or convalescent homes, or other group living situations are included in population totals but are not considered households.

Table 3-1 and SB X7-7 Table 3 below show the population data provided by the California Department of Finance, Demographic Research Unit. The future population projections are from data provided by the Butte County Association of Governments. BCAG has prepared forecasts using professionally accepted methodologies for long-range forecasting. Utilizing a "top down" approach, long-term projections prepared by the DOF were consulted for Butte County and used to re-establish control totals for the region. Additionally, a variety of data sources, including input from local jurisdictions, were reviewed and inserted at the local jurisdiction level, therefore incorporating a "bottom up" approach. Adjustments were made to compensate for the re-distribution and re-population of the Camp Fire burn area. Forecasts were then allocated into five-year increments until the year 2040. Population forecasts were prepared by applying the 2018 average persons per housing unit to the housing unit forecasts.

The latest DOF long-range projections, as of January 2018, were analyzed for the period 2018-2040 for the Butte County region. These projections estimate that the Butte County region will add ~16,600 new housing units over the next 22 years. This information was used to establish the control total for BCAG's medium forecast scenario.

An adjustment following the 2018 Camp Fire was then incorporated into the methodology to account for the units lost (~14,500) within the burn area. An initial 75% re-build assumption (~10,900 units) was first applied to Town of Paradise and unincorporated portions of the burn area, followed by a secondary re-distribution of 20 percent (~2,900) units to all jurisdictions using the base allocation method.

The units developed at the jurisdictional level for the base allocation and Camp Fire adjustment were then combined resulting in regional Compound Annual Growth Rate (CAGR) of 0.68 percent. This information was used to represent the medium forecast scenario. The information was then reviewed by local agency planning staff.

Based on a 0.2 percent incremental change between the established high and medium scenarios, a low and high housing scenario were developed using a CAGR of 0.48% and 0.88%. This incremental change is identical to that included with the 2014 forecasts, and is what was utilized in the preparation of the 2015 UWMP.

Not all households within the Agency's domestic water distribution system sphere of influence are connected to the system. Many get their potable water from individual on-site wells. Based on 2010 census data, it is estimated that an approximate population of 21,400 reside within the Agency's sphere of influence. New connections to the Agency's potable-water distribution system have increased on average by 0.6 percent annually between 2000 and 2020 with a total increase of only 12 percent (730 connections) in the same time period.

3.4.1 Other Social, Economic and Demographic Factors

CWC *10631 (a) Describe the service area of the supplier, including… other social, economic and demographic factors affecting the supplier's water management planning.*

According to the California Department of Finance, US Census Bureau 2010 data, households in Butte County, CA have a median annual income of $48,443, which is less than the median annual income of $61,937 across the entire United States. The economy of Butte County, CA employs 94.9k people. The largest industries in Butte County, CA are Health Care & Social Assistance (16,421 people), Retail Trade (12,823 people), and Educational Services (9,625 people), and the highest paying industries are Utilities ($94,688), Transportation & Warehousing, & Utilities ($59,219), and Mining, Quarrying, & Oil & Gas Extraction ($51,369).[7]

Population under 18: 20.4%
Population 18-64: 63%
Population over 64: 16.5%
Median Age: 36.8
Workforce: 103,600
Employed: 97,700
Unemployment Rate: 5.6%

Median Household Income: $43,444

[7] https://datausa.io/profile/geo/butte-county-ca#economy

Per Capita Income: $24,259
Families at or Below Poverty Level: 21%
Median Home Price: $209,500

Educational Attainment (Over 25 Years Old)
Less than High School: 12%
High School Graduate: 22.6%
Some College: 29.6%
Associates Degree: 9.9%
Bachelor's Degree: 17.5%
Graduate or Higher: 8.3%

Income and Wages
Average Hourly Wage (All Occupations): $20.89
Average Hourly Management Wage: $45.25
Average Hourly Manufacturing Wage: $16.93
Average Hourly Office and Admin Hourly Wage: $16.74[8]

3.5 Land Use within Service Area

CWC *10631. (a) The description shall include the current and projected land uses within the existing or anticipated service area affecting the supplier's water management planning. Urban water suppliers shall coordinate with local or regional land use authorities to determine the most appropriate land use information, including, where appropriate, land use information obtained from local or regional land use authorities…*

The Agency provides treated water to approximately 2,000 residences in the northeast quadrant of the City of Oroville. The Oroville Area Land Use Plan of the Butte County General Plan designates much of the service area of SFWPA as Agricultural-Residential. The purpose of the Agricultural-Residential designation is to provide areas for agricultural uses and single-family dwellings at rural densities. Butte County is a major producer of a wide variety of farm products. Agriculture is important not only to Butte County's economy, but also to its way of life. Agriculture is the dominant land use within unincorporated Butte County, accounting for approximately 60 percent of the county's area spread across the county.

There are two tribal reserves in Butte County, comprising approximately 400 acres in the Oroville area. Both reserves are anchored by casinos. Gold Country Casino occupies about 90 acres located off of Olive Highway and is operated by the Tyme Maidu of Berry-Creek Rancheria and is served treated water by the Agency. Casino and tribal reserve lands occupy over 300 acres off Ophir Road, all within the Agency's Sphere of Influence.

[8] http://www.buttecounty.net/economicdevelopment/Doing-Business/Demographics

The Water Element of the General Plan was a new inclusion for the Butte County General Plan 2030, and notes that *"The primary water source in Butte County is surface water, which serves 69 percent of the county's water needs, followed by groundwater, serving 31 percent of the water needs."* The majority of the surface water supply used by Butte County residents and businesses originates in the South Fork Feather River watershed, and is managed under water rights held by the County of Butte and SFWPA.

Butte County has announced plans to update the current version of the General Plan that was adopted in October 2010 and amended in November 2012. Any significant changes or projections for land use within the County will be included in the next versions of the UWMP.

3.6 SUBMITTAL AND SB X7-7 TABLES

Submittal Table 3-1 Retail: Population - Current and Projected						
Population Served	2020	2025	2030	2035	2040	2045*(opt)*
	16,770	17,521	18,306	19,125	19,882	20,887
NOTES: DOF long range projections, as of January 2018, were analyzed for the period 2018-2040 for the Butte County region. This information was used to establish the control total for BCAG's high forecast scenario for housing at 0.88%.						

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

SB X7-7 Table 3: 2020 Service Area Population	
2020 Compliance Year Population	
2020	16,770

CHAPTER 4 - SYSTEM WATER USE

This chapter provides descriptions and quantifications of SFWPA's past, current and future water use projections uses through the year 2040. This characterization is provided in an attempt to provide a realistic projection of future water supply and demand needs.

This chapter is divided into the following subsections:

4.1 Non-Potable Versus Potable Water Use

SFWPA does not currently make use of recycled water, because there is no centralized wastewater collection system, nor is there any wastewater recycled for direct reuse within the service area.

4.2 Past, Current and Projected Water Use by Sector

CWC *10635. (a) Every urban water Supplier shall include, as part of its urban water management plan, an assessment of the reliability of its water service to its customers during normal, dry, and multiple dry water years. This water supply and demand assessment shall compare the total water supply sources available to the water supplier with the long-term total projected water use over the next 20 years, in five-year increments, for a normal water year, a single dry water year, and a drought lasting five consecutive water years. The water service reliability assessment shall be based upon the information compiled pursuant to Section 10631, including available data from state, regional, or local agency population projections within the service area of the urban water supplier.*

CWC *10631. (d)(1) For an urban retail water supplier, quantify, to the extent records are available, past and current water use, over the same five-year increments described in subdivision (a), and projected water use, based upon information developed pursuant to subdivision (a), identifying the uses among water use sectors, including, but not necessarily limited to, all of the following…*
(2). The water use projections shall be in the same five-year increments described in subdivision (a).
(4)(A) Water use projections, where available, shall display and account for the water savings estimated to result from adopted codes, standards, ordinances, or transportation and land use plans identified by the urban water supplier, as applicable to the service area.

(B) To the extent that an urban water supplier reports the information described in subparagraph (A), an urban water supplier shall do both of the following: (i) Provide citations of the various codes, standards, ordinances, or transportation and land use plans utilized in making the projections. (ii) Indicate the extent that the water use projections consider savings from codes, standards, ordinances, or transportation and land use plans. Water use projections that do not account for these water savings shall be noted of that fact.

CWC *10631(d) (1) For an urban retail water supplier, quantify, to the extent records are available, past and current water use, over the same five-year increments described in subdivision (a), and projected water use, based upon information developed pursuant to subdivision (a), identifying the uses among water use sectors, including, but not necessarily limited to, all of the following:*

(A) Single-family residential.
(B) Multifamily.
(C) Commercial.
(D) Industrial.
(E) Institutional and governmental.
(F) Landscape.
(G) Sales to other agencies.
(H) Saline water intrusion barriers, groundwater recharge, or conjunctive use, or any combination thereof.
(I) Agricultural.
(J) Distribution system water loss.

4.2.1 Past Water Use

Since 1983, all of the Agency's domestic water service deliveries have been metered. Past water uses reported here have all been metered. Population estimates that drive the projections of water use were derived from the California Department of Finance. The Butte County Association of Governments used their data to provide projections for growth into the future. These population estimates together with the water use targets provide the basis for projected water use. Refer to the section on population for additional information.

Table 4-1, below, lists historical water demands as reported in the 2015 UWMP. Water use is shown broken out by demand sector to the extent possible using records available at that time. Historic water use shows consumption trending that correlates to the water year type and availability. Significant treatment plant upgrades at the Miners Ranch Treatment Plant were completed in 2018. Treatment capacity is greatly expanded, and water use efficiencies are evident. The Agency is currently working to specifically define all consumptive uses that were previously estimated in prior UWMP versions, and can now more accurately compare metered production data with metered consumptive uses by use category.

4.2.2 Current Water Use

CWC *10631(d)(1) For an urban retail water supplier, quantify, to the extent records are available, past and current water use, over the same five-year increments described in subdivision (a), and projected water use, based upon information developed pursuant to subdivision (a), identifying the uses among water use sectors, including, but not necessarily limited to, all of the following…*
(J) Distribution system water loss….

CWC *10631(d)(3) (A) The distribution system water loss shall be quantified for each of the five years preceding the plan update, in accordance with rules adopted pursuant to Section 10608.34*

(B) The distribution system water loss quantification shall be reported in accordance with a worksheet approved or developed by the department through a public process. The water loss quantification worksheet shall be based on the water system balance methodology developed by the American Water Works Association.
(C) In the plan due July 1, 2021, and in each update thereafter, data shall be included to show whether the urban retail water supplier met the distribution loss standards enacted by the board pursuant to Section 10608.34.

Table 4-1, below, lists 2020 water demands. Water use is shown broken out by demand sector to the extent possible using available records. Table 4-4 below shows water loss totals that were taken from AWWA worksheets prepared for the 12-month calendar period for each year listed.

4.2.3 Projected Water Use

CWC *10635 (a). Every urban water supplier shall include, as part of its urban water management plan, an assessment of the reliability of its water service to its customers during normal, dry, and multiple dry water years. This water supply and demand assessment shall compare the total water supply sources available to the water supplier with the long-term total projected water use over the next 20 years, in five-year increments, for a normal water year, a single dry water year, and a drought lasting five consecutive water years. The water service reliability assessment shall be based upon the information compiled pursuant to Section 10631, including available data from state, regional, or local agency population projections within the service area of the urban water supplier.*

CWC *10631 (h) An urban water supplier that relies upon a wholesale agency for a source of water shall provide the wholesale agency with water use projections from that agency for that source of water in five-year increments to 20 years or as far as data is available… The wholesale agency shall provide information to the urban water supplier for inclusion in the urban water supplier's plan that identifies and quantifies, to the extent practicable, the existing and planned sources of water as required by subdivision (b), available from the wholesale agency to the urban water supplier over the same five-year increments, and during various water-year types in accordance with subdivision (f). An urban water supplier may rely upon water supply information provided by the wholesale agency in fulfilling the plan informational requirements of subdivisions (b) and (f).*

CWC *10631(d)(4) (A) Water use projections, where available, shall display and account for the water savings estimated to result from adopted codes, standards, ordinances, or transportation and land use plans identified by the urban water supplier, as applicable to the service area.*
(B) To the extent that an urban water supplier reports the information described in subparagraph (A), an urban water supplier shall do both of the following:
(i) Provide citations of the various codes, standards, ordinances, or transportation and land use plans utilized in making the projections.
(ii) Indicate the extent that the water use projections consider savings from codes, standards, ordinances, or transportation and land use plans. Water use projections that do not account for these water savings shall be noted of that fact.

Table 4-2 lists projected future water demands. Future demands (year 2025 and following) were projected as the product of the estimated population for the target year and the 2020 consumption records. Future sector demands were projected proportionally to actual sector demands experienced during 2020.

4.2.3.1 20-Year Planning Horizon

The following table shows the Agency's projected water use, in five-year increments through 2040.

4.2.3.2 Water Year Types

DWR classifies the Sacramento River region water year type based on unimpaired flow at Sacramento River above Bend Bridge, the Feather River at Oroville, the Yuba River near Smartville, and the American River below Folsom Lake. This reference is applicable to our watershed because the sum includes both Feather River and Yuba River data. The following table correlates each year referenced in the supply characterization with the assigned water year type:

Table 4.2.3.2 Hydrologic Classification by Water Year

Year	SFWPA Supply Characterization	DWR Water Year Classification
1966	SFWPA - Average	DWR – Below Normal
1977	SFWPA - Driest	DWR – Critically Dry
1931	SFWPA – Cumulative Average Driest	DWR – Critically Dry
1932	SFWPA – Cumulative Average Driest	DWR - Dry
1933	SFWPA – Cumulative Average Driest	DWR – Critically Dry
1934	SFWPA – Cumulative Average Driest	DWR – Critically Dry
1935	SFWPA – Cumulative Average Driest	DWR – Below Normal

4.2.3.3 Characteristic Five-Year Water Use

CWC *10635(b) Every urban water supplier shall include, as part of its urban water management plan, a drought risk assessment for its water service to its customers as part of information considered in developing the demand management measures and water supply projects and programs to be included in the urban water management plan. The urban water supplier may conduct an interim update or updates to this drought risk assessment within the five-year cycle of its urban water management plan update. The drought risk assessment shall include each of the following…*

(3) A comparison of the total water supply sources available to the water supplier with the total projected water use for the drought period.

(4) Considerations of the historical drought hydrology, plausible changes on projected supplies and demands under climate change conditions, anticipated regulatory changes, and other locally applicable criteria.

Water Code Section 10635(b) is a new requirement for the 2020 UWMPs. A critical component of this new statutory language is the requirement to prepare a five-year Drought Risk Assessment. (see Chapter 7).

4.3 Water Use for Lower Income Households

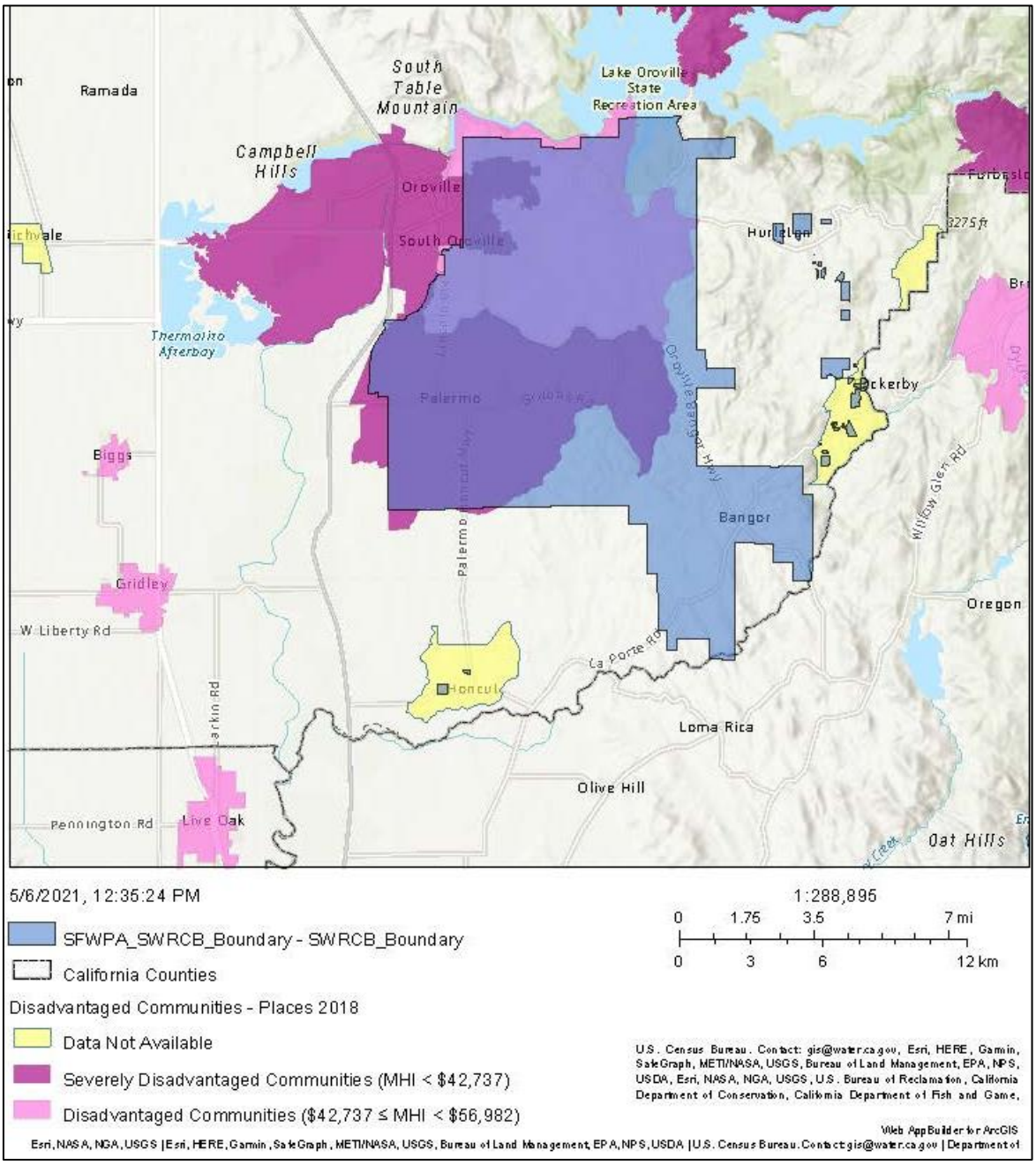
CWC *10631.1. (a) The water use projections required by Section 10631 shall include projected water use for single-family and multifamily residential housing needed for lower income households, as defined in Section 50079.5 of the Health and Safety Code, as identified in the housing element of any city, county, or city and county in the service area of the supplier.*

California Health and Safety Code *Section 50079.5 (a)*

"Lower income households" means persons and families whose income does not exceed the qualifying limits for lower income families… In the event the federal standards are discontinued, the department shall, by regulation, establish income limits for lower income households for all geographic areas of the state at 80 percent of area median income, adjusted for family size and revised annually.

Using the Disadvantaged Community (DAC) Mapping Tool provided by DWR, Census blocks where the median income is less than 80 percent of the state median income are shown within the Agency's service area in Figure 1 below.

Figure 1 – DAC Census Blocks within SFWPA Service Area



4.4 Climate Change Considerations

CWC *10630. It is the intention of the Legislature, in enacting this part, to permit levels of water management planning commensurate with the numbers of customers served and the volume of water supplied, while accounting for impacts from climate change.*

CWC *10635(b) Every urban water supplier shall include, as part of its urban water management plan, a drought risk assessment for its water service to its customers as part of information considered in developing the*

demand management measures and water supply projects and programs to be included in the urban water management plan. The urban water supplier may conduct an interim update or updates to this drought risk assessment within the five-year cycle of its urban water management plan update. The drought risk assessment shall include each of the following…
(4) Considerations of the historical drought hydrology, plausible changes on projected supplies and demands under climate change conditions, anticipated regulatory changes, and other locally applicable criteria.

SFWPA is not a large enough Agency to embark on the creation of planning documents beyond the scope of its' service area. The Agency does, however, participate in countywide planning efforts, and utilizes those documents for general guidance. The Butte County Climate Action Plan (CAP) is an implementation mechanism of the County's General Plan, and provides goals, policies, and programs to reduce greenhouse gas (GHG) emissions, address climate change adaptation, and improve quality of life in the county. Programs and actions defined in the CAP will help the county sustain its natural resources, grow efficiently, ensure long-term resiliency to a changing environmental and economic climate, and improve transportation. Climate change is expected to influence existing hazards and vulnerabilities. While anticipating consequences of a changing climate is a challenging task, the work plan prioritizes actions for the County to adopt to protect resources and prepare for changing precipitation patterns, reduced water supply, and increased hazards such as flooding, heat waves, and wildfire. Measures in the CAP and proactive steps will help the County achieve the General Plan vision of thriving communities, a strong agricultural base, and healthy natural resources.

Changes in precipitation patterns may affect snowpack in the mountains to the east of the county as well as reduce groundwater recharge. Both of these effects can reduce access to drinking water and agricultural irrigation. Through education, efficiency, and conservation, the following Agency supported adaptation actions will help our customers, and all Butte County residents, prepare for a future where water may be less plentiful and more expensive.

- Collaborate with Northern Sacramento Valley Integrated Regional Water Management agencies to include climate change considerations in the Integrated Regional Water Resource Management Plan (IRWRMP). Monitor climate change effects on water resources and update future IRWRMPs accordingly.
- Support other agencies to help vulnerable populations conserve water and reduce household resource costs through income-qualified subsidies and rebates for water-efficient equipment upgrades.
- Collaborate with water providers to incorporate anticipated water supply changes that may result from reduced snowpack and lower groundwater levels into agricultural management plans.

California is currently in the process of adopting a 2021 State Climate Adaptation Strategy that further define goals and metrics for building resilience and reducing climate induced risks across

the state.[9]

4.7 SUBMITTAL AND SB X7-7 TABLES

Submittal Table 4-1 Retail: Demands for Potable and Non-Potable[1] Water - Actual			
Use Type	2020 Actual		
Drop down list May select each use multiple times These are the only Use Types that will be recognized by the WUEdata online submittal tool	Additional Description (as needed)	Level of Treatment When Delivered Drop down list	Volume[2]
Add additional rows as needed			
Single Family		Drinking Water	1,427
Multi-Family		Drinking Water	110
Commercial		Drinking Water	148
Industrial		Drinking Water	0
Institutional/Governmental		Drinking Water	51
Landscape		Drinking Water	1
Agricultural irrigation		Drinking Water	24
Agricultural irrigation		Raw Water	958
Losses		Drinking Water	225
		TOTAL	2,944
[1] *Recycled water demands are NOT reported in this table. Recycled water demands are reported in Table 6-4.* [2] *Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Table 2-3.*			

[9] 2021 State Climate Adaptation Strategy (ca.gov)

Submittal Table 4-2 Retail: Use for Potable and Non-Potable[1] Water - Projected						
Use Type	Additional Description (as needed)	Projected Water Use[2] *Report To the Extent that Records are Available*				
Drop down list May select each use multiple times These are the only Use Types that will be recognized by the WUEdata online submittal tool		2025	2030	2035	2040	2045 (opt)
Add additional rows as needed						
Single Family		1,491	1,558	1,627	1,700	1,776
Multi-Family		115	120	125	131	137
Commercial		155	162	169	176	184
Industrial		0	0	0	0	0
Institutional/Governmental		53	56	58	61	63
Landscape		1	1	1	1	1
Agricultural irrigation		25	26	27	29	30
Agricultural irrigation		1,001	1,046	1,093	1,141	1,193
Losses		235	246	257	268	280
	TOTAL	3,076	3,215	3,357	3,507	3,664

[1] *Recycled water demands are NOT reported in this table. Recycled water demands are reported in Table 6-4.* [2] *Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Table 2-3.*

Submittal Table 4-3 Retail: Total Water Use (Potable and Non-Potable)						
	2020	2025	2030	2035	2040	2045 (opt)
Potable Water, Raw, Other Non-potable *From Tables 4-1R and 4-2 R*	2,944	3,076	3,215	3,357	3,507	3,664
Recycled Water Demand[1] *From Table 6-4*	0	0	0	0	0	0
Optional Deduction of Recycled Water Put Into Long-Term Storage[2]						
TOTAL WATER USE	2,944	3,076	3,215	3,357	3,507	3,664

[1] *Recycled water demand fields will be blank until Table 6-4 is complete* [2] *Long term storage means water placed into groundwater or surface storage that is not removed from storage in the same year. Supplier **may** deduct recycled water placed in long-term storage from their reported demand. This value is manually entered into Table 4-3.*

SOUTH FEATHER

Submittal Table 4-4 Retail: Last Five Years of Water Loss Audit Reporting	
Reporting Period Start Date (mm/yyyy)	Volume of Water Loss [1,2]
01/2015	154.634
01/2016	182.049
01/2017	202.352
01/2018	222.046
01/2019	213.024

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

Submittal Table 4-5 Retail Only: Inclusion in Water Use Projections	
Are Future Water Savings Included in Projections? (Refer to Appendix K of UWMP Guidebook) *Drop down list (y/n)*	No
If "Yes" to above, state the section or page number, in the cell to the right, where citations of the codes, ordinances, or otherwise are utilized in demand projections are found.	
Are Lower Income Residential Demands Included In Projections? *Drop down list (y/n)*	Yes

SB X7-7 Table 4: 2020 Gross Water Use

Compliance Year 2020	2020 Volume Into Distribution System *This column will remain blank until SB X7-7 Table 4-A is completed.*	2020 Deductions					2020 Gross Water Use
		Exported Water *	Change in Dist. System Storage* (+/-)	Indirect Recycled Water *This column will remain blank until SB X7-7 Table 4-B is completed.*	Water Delivered for Agricultural Use*	Process Water *This column will remain blank until SB X7-7 Table 4-D is completed.*	
	1,999			-	24	-	**1,975**

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

SB X7-7 Table 4-A: 2020 Volume Entering the Distribution System(s), Meter Error Adjustment Complete one table for each source.			
Name of Source	South Fork Feather River		
This water source is *(check one)* **:**			
☑	The supplier's own water source		
☐	A purchased or imported source		
Compliance Year 2020	Volume Entering Distribution System [1]	Meter Error Adjustment [2] *Optional (+/-)*	Corrected Volume Entering Distribution System
	1,999	-	1,999

[1] ***Units of measure (AF, MG , or CCF)*** *must remain consistent throughout the UWMP, as reported in SB X7-7 Table 0 and Submittal Table 2-3.* [2] ***Meter Error Adjustment*** *- See guidance in Methodology 1, Step 3 of Methodologies Document*

SB X7-7 Table 4-C: 2020 Process Water Deduction Eligibility (For use only by agencies that are deducting process water) Choose Only One	
☐	**Criteria 1**- Industrial water use is equal to or greater than 12% of gross water use. Complete SB X7-7 Table 4-C.1
☐	**Criteria 2** - Industrial water use is equal to or greater than 15 GPCD. Complete SB X7-7 Table 4-C.2
☐	**Criteria 3** - Non-industrial use is equal to or less than 120 GPCD. Complete SB X7-7 Table 4-C.3
☑	**Criteria 4** - Disadvantaged Community. Complete SB x7-7 Table 4-C.4
NOTES: N/A, not enough Industrial volume to report	

SB X7-7 Table 4-C.4: 2020 Process Water Deduction Eligibility *(For use only by agencies that are deducting process water using Criteria 4)*					
Criteria 4 Disadvantaged Community. A "Disadvantaged Community" (DAC) is a community with a median household income less than 80 percent of the statewide average.					
SELECT ONE "Disadvantaged Community" status was determined using one of the methods listed below:					
1. IRWM DAC Mapping tool https://gis.water.ca.gov/app/dacs/					
☑	If using the IRWM DAC Mapping Tool, include a screen shot from the tool showing that the service area is considered a DAC.				
2. 2020 Median Income					
	California Median Household Income*		Service Area Median Household Income	Percentage of Statewide Average	**Eligible for Exclusion? Y/N**
☑	**2020**	**$75,235**	$52,537	70%	YES
	*California median household income 2015 -2019 as reported in US Census Bureau QuickFacts.				
NOTES: Median household income for Butte County (in 2019 dollars) 2015-2019. In					

CHAPTER 5 – SB X7-7 BASELINES, TARGETS, AND 2020 COMPLIANCE

The goal of the SBX7-7 Baseline, Targets, and 2020 Compliance chapter in the Supplier's 2020 UWMP is to allow the Retail Supplier to demonstrate its compliance with its 2020 targeted water-use reduction, as required in the Water Conservation Act of 2009. The calculation of baselines, targets, and 2020 compliance is a very important but highly technical portion of the UWMP.

This chapter includes the following sections:

5.1 Baseline and Target Calculations for 2020 UWMPs
5.2 Methods for Calculating Population and Gross Water Use
5.3 2020 Compliance Daily Per-Capita Water Use (GPCD)
5.4 Submittal and SB X7-7 Tables

5.1 BASELINE AND TARGET CALCULATIONS FOR 2020 UWMPS

SFWPA submitted the 2015 UWMP in January of 2019. To date, DWR has not provided any feedback to the Agency regarding the submittal. However, the Baseline and Target calculations for the 2020 GPCD were outlined in that document, and this 2020 UWMP is measured against those established targets.

5.2 METHODS FOR CALCULATING POPULATION AND GROSS WATER USE

5.2.1 Service Area Population

CWC *10608.20 (e) An urban retail water supplier shall include in its urban water management plan due in 2010…the baseline per capita water use, along with the bases for determining those estimates, including references to supporting data.*

(f) When calculating per capita values for the purposes of this chapter, an urban retail water supplier shall determine population using federal, state, and local population reports and projections.

CWC *10644 (a)(2) The plan…shall include any standardized forms, tables or displays specified by the department.*

Within SFWPA's service area boundary, the communities of Oroville, Palermo and Bangor are provided quality drinking water for domestic customers, and a dependable supply of water for agricultural users. Service area population was estimated by persons per connection and Department of Finance data. Information on how the population figures were developed is included in Section 3.4 Service Area Population and Demographics, above. Population data, past and projected, is included in Submittal Table 3-1, above. Service area population for the baseline periods is summarized in SB X7-7 Table 3.

5.2.2 Gross Water Use

CWC *10608.12 (h) "Gross Water Use" means the total volume of water, whether treated or untreated, entering the distribution system of an urban retail water supplier, excluding all of the following:*
(1) Recycled water that is delivered within the service area of an urban retail water supplier or its urban wholesale water supplier
(2) The net volume of water that the urban retail water supplier places into long term storage
(3) The volume of water the urban retail water supplier conveys for use by another urban water supplier
(4) The volume of water delivered for agricultural use, except as otherwise provided in subdivision (f) of Section 10608.24.

California Code of Regulations *Title 23 Division 2 Chapter 5.1 Article 1 Section 596*
(a) An urban retail water supplier that has a substantial percentage of industrial water use in its service area is eligible to exclude the process water use of existing industrial water customers from the calculation of its gross water use to avoid a disproportionate burden on another customer sector.

Gross Water Use for SFWPA includes treated water used across the domestic customer uses, as well as the raw water used by irrigation customers. Submittal Tables 4-1 and 4-2, along with the subsequent comparisons to watershed yield, would not have been accurate without demonstrating both potable and non-potable demand.

5.3 2020 Compliance Daily Per Capita Water Use (GPCD)

CWC *10608.12 (f) "Compliance daily per-capita water use" means the gross water use during the final year of the reporting period…*

CWC *10608.20 (e) An urban retail water supplier shall include in its urban water management plan due in 2010 . . . compliance daily per capita water use, along with the bases for determining those estimates, including references to supporting data.*

California Code of Regulations *Title 23 Division 2 Chapter 5.1 Article*
Section 596 (a) An urban retail water supplier that has a substantial percentage of industrial water use in its service area is eligible to exclude the process water use of existing industrial water customers from the calculation of its gross water use to avoid a disproportionate burden on another customer sector.

SFWPA's baseline daily per capita use calculations are summarized in SB X7-7 Table 5. The Agency's 2020 Water Use Target was established as 240 GPCD. The 10-year average baseline is 308 GPCD and the 5-year average baseline is 301 GPCD. 2020 compliance year adjusted daily per capita use was 257 GPCD. The Agency does not generate a significant enough volume by industrial users to deduct it from gross water usage. The Agency has made significant reductions in its water use in the last few years through pipeline replacements, leak detection and repair, efficiency improvements in treated water production, customer leak notification, and public response to the statewide drought. SFWPA will continue efforts to educate its customers to

remain diligent in their efforts to continue to use water wisely. However, the Agency does fall short of the 2020 target by 10GPCD.

5.3.1 2020 Adjustments for Factors Outside of Supplier's Control

CWC *10608.24 (d)(1) When determining compliance daily per capita water use, an urban retail water supplier may consider the following factors:*
(A) Differences in evapotranspiration and rainfall in the baseline period compared to the compliance reporting period.
(B) Substantial changes to commercial or industrial water use resulting from increased business output and economic development that have occurred during the reporting period.
(C) Substantial changes to institutional water use resulting from fire suppression services or other extraordinary events, or from new or expanded operations, that have occurred during the reporting period.
(2) If the urban retail water supplier elects to adjust its estimate of compliance daily per capita water use due to one or more of the factors described in paragraph (1), it shall provide the basis for, and data supporting, the adjustment in the report required by Section 10608.40.

September 8, 2020 began a five-day evacuation period for more than half of the customer base in our service area due to the lighting caused Bear/Claremont Fire. Because of extreme heat, dry conditions and excessively high winds, the firestorm exploded in size to become the North Complex Fire, and became the sixth-largest fire event in California's modern history, and the deadliest of 2020. Families fled their homes leaving sprinklers on for the duration of the evacuation, as well as evacuating to other homes within the service area, causing drastically increased consumption as compared to the 10-year average for the same time period.

5.3.2 If Supplier Does Not Meet 2020 Target

The Agency missed the 2020 Target by 10 GPCD, but nonetheless, did not achieve compliance, and in theory is not eligible to receive a water grant or loan from the State of California. It is the hope of the Agency that we may be considered for grant or loan eligibility under the one of the following exception allowed in California Water Code:

CWC *Section 10608.56 (c) states that a water supplier shall be eligible for a water loan or grant if it "has submitted to the department for approval a schedule, financing plan, and budget, to be included in the grant or loan agreement, for achieving the per capita reductions."*

CWC *Section 10608.56 (e) states that a water supplier can also be eligible for a water loan or grant if it "has submitted to the department for approval documentation demonstrating that its entire service area qualifies as a disadvantaged community."*

The Agency is currently working on continual improvements to the Water Management Program. With internal resources and some additional external consulting, the Agency will be able to outline a clear plan for achieving GPCD compliance. Additionally, as Figure 1 listed above shows, almost the entire service area qualifies as a disadvantaged community.

5.4 SUBMITTAL AND SB X7-7 TABLES

Submittal Table 5-1 Baselines and Targets Summary
From SB X7-7 Verification Form
Retail Supplier or Regional Alliance Only

Baseline Period	Start Year *	End Year *	Average Baseline GPCD*	Confirmed 2020 Target*
10-15 year	*1999*	*2008*	*308*	*247*
5 Year	*2003*	*2007*	*301*	

**All cells in this table should be populated manually from the supplier's SBX7-7 Verification Form and reported in Gallons per Capita per Day (GPCD)*

Submittal Table 5-2: 2020 Compliance From SB X7-7 2020 Compliance Form
Retail Supplier or Regional Alliance Only

2020 GPCD			2020 Confirmed Target GPCD*	Did Supplier Achieve Targeted Reduction for 2020? Y/N
Actual 2020 GPCD*	2020 TOTAL Adjustments*	Adjusted 2020 GPCD* *(Adjusted if applicable)*		
321	*66*	*257*	*247*	*NO*

**All cells in this table should be populated manually from the supplier's SBX7-7 2020 Compliance Form and reported in Gallons per Capita per Day (GPCD)*

SB X7-7 Table 5: 2020 Gallons Per Capita Per Day (GPCD)		
2020 Gross Water *Fm SB X7-7 Table 4*	**2020 Population** *Fm SB X7-7 Table 3*	**2020 GPCD**
1,975	16,770	**323**

CHAPTER 6 – WATER SUPPLY CHARACTERIZATION

A thorough characterization and analysis of water supplies can provide a realistic reliability assessment of an urban water supplier's (Supplier) water assets under various hydrological and regulatory conditions. A thorough analysis examines surface water rights, water entitlements (i.e., contracts for water delivery), groundwater supplies, raw water supplies, and recycled water supplies. Moreover, it considers each water asset in the context of the infrastructure systems that convey water to the Supplier's service area—including infrastructure systems that are shared with other water suppliers. A detailed water supply analysis examines each water asset and then aggregates the information into a comprehensive picture of the Supplier's water supply portfolio.

This chapter includes the following sections:

6.1 Water Supply Analysis Overview
6.2 Supplier's UWMP Water Supply Characterization
6.3 Energy Use
6.4 Submittal and SB X7-7 Tables

6.1 WATER SUPPLY ANALYSIS OVERVIEW

CWC *Section 10631(b) Identify and quantify, to the extent practicable, the existing and planned sources of water available to the supplier [in five-year increments to 20 years or as far as data is available]1 providing supporting and related information, including all of the following:*

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

(2) When multiple sources of water supply are identified, a description of the management of each supply in correlation with the other identified supplies.

(3) For any planned sources of water supply, a description of the measures that are being undertaken to acquire and develop those water supplies.

The Agency does not purchase or import any supply, but rather relies on permitted rights to surface water originating from the combined South Fork Feather River/Slate Creek watershed, an expansive watershed within the Sierra Nevada Mountain Range, covering approximately 100,814 acres, or 158 square miles. Principal tributaries include Lost Creek, a natural tributary of the South Fork Feather River, and the upper portion of Slate Creek, a tributary of the North Fork Yuba River (which contributes to the South Fork Feather River watershed by way of a tunnel through the Gibsonville Ridge). The area of the Slate Creek sub-watershed is approximately 31,600 acres (49.4 square miles), or 31.4 percent of the total combined South Fork Feather River/Slate Creek watershed area. The area of Lost Creek sub-watershed is approximately 19,200 acres (30.0 square miles), or 19.0 percent of the total South Fork Feather River/Slate Creek watershed area.

This watershed falls within the jurisdictions of four adjacent counties: Plumas County, Butte County, Sierra County, and Yuba County. Approximately 49,580 acres of the watershed (49.2%)

is located within the unincorporated boundaries of Plumas County. Approximately 28,440 acres of the watershed (28.2%) is located within the unincorporated boundaries of Butte County. Approximately 19,160 acres of the watershed (19.0 %) is located within the unincorporated boundaries of Sierra County. Approximately 3,560 acres of the watershed (3.5 %) is located within the unincorporated boundaries of Yuba County.

Lands in the region are owned or managed by a variety of governmental and private entities. The single largest land owner within the watershed is the federal government, whose United States Forest Service (USFS) manages the Plumas National Forest. Sierra Pacific Industries, Chy Corporation, and Sillar Brothers are private owners of managed forest lands within this watershed.

This UWMP includes SFWPA's current supply calculations, what impacts a customer can expect during drought periods, and the impacts to water supply into the future. The Agency does not purchase or receive via imports any water from a wholesale supplier.

6.2 Supplier's UWMP Water Supply Characterization

6.2.1 Surface Water

The Agency has an excellent surface water supply. South Feather Water and Power Agency's primary water supply system is the South Fork Feather River watershed/North Fork Yuba watershed located at the north end of the Sierra Nevada mountain range. The watershed's headwaters originate at an elevation of 7,457 feet, and is bounded by the volcanic Cascade Range to the north, the Great Basin to the east, the Sacramento Valley to the west, and higher portions of the Sierra Nevada to the south. The upper watershed is ruggedly mountainous, bisected by deep canyons in the eastern third of the watershed. The central third of the watershed is a transition zone.

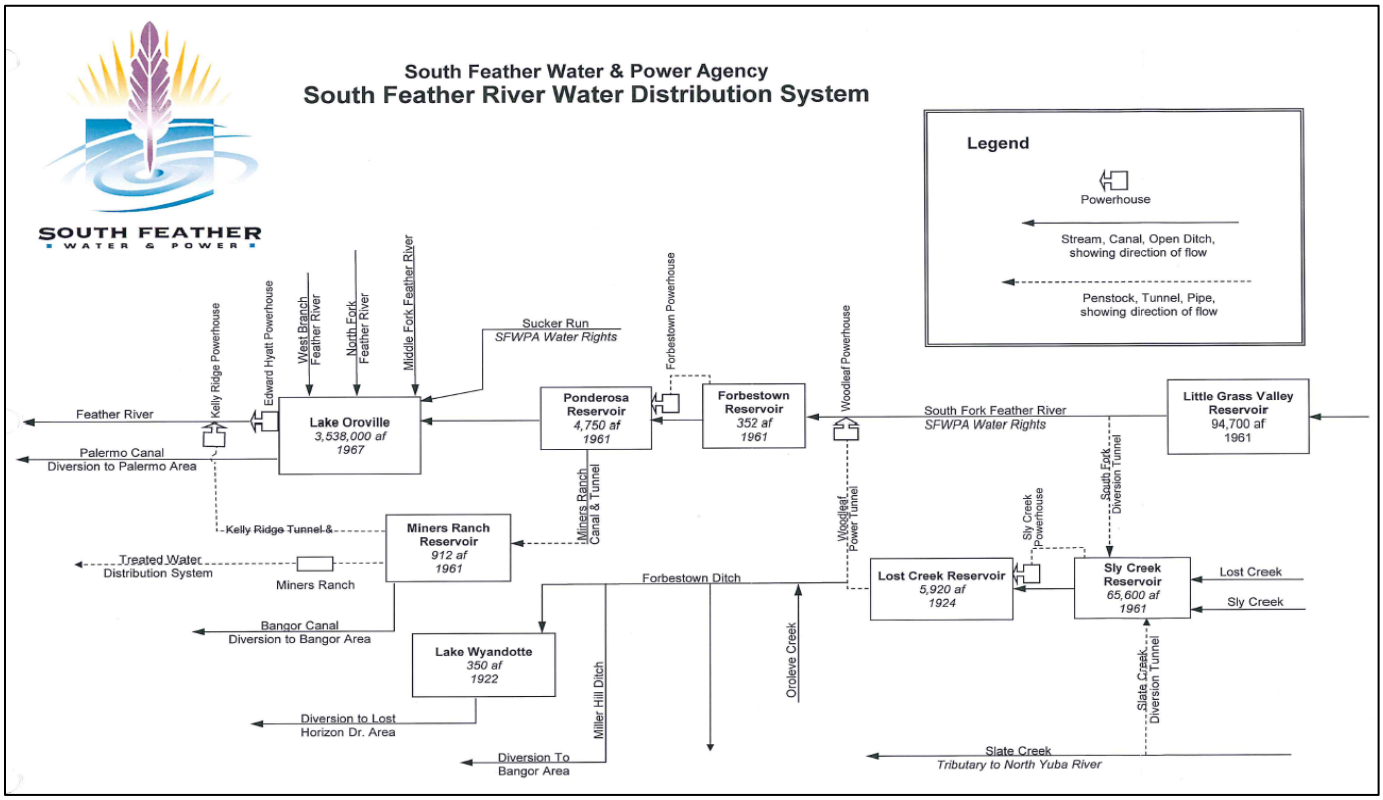
The following table outlines permitted water rights, the maximum diversion and storage rates, and annual diversion volumes.

Table 6.2.1 SFWPA Surface Water Rights							
Permit #	Application #	Uses	Source Water	Storage Amount	Storage Period	Diversion Amount	Time of Use
1267	A001651	Domestic	SFFR	**109,012 af**	Oct 1 to Jul 1		
		Irrigation	SFFR			200 cfs **36,036 af** total	Apr 1 to Jul 1
		Recreation	SFFR				
1268	A002142	Domestic	Lost Creek	**5,000 af**	Oct 1 to Jul 1		
		Irrigation					
		Recreation					
2492	A002778	Domestic	Lost Creek	**25,000 af**	Oct 1 to Jun 1		
		Irrigation	Sucker Run			50 cfs **6,039 af** total	Apr 1 to
		Recreation	Lost Creek				1-Jun
1271	A002979	Domestic	Lost Creek			185 cfs	Jan 1 to 31-Dec
		Irrigation	Lost Creek			excess of allowed under Permit 1268	Apr 1 to 15-Oct

SFWPA is permitted to store 172,064 acre-feet (56,076 MG) of runoff from the watersheds of the South Fork of the Feather River and Slate Creek (a tributary of the North Fork of the Yuba River) in several Agency reservoirs: Little Grass Valley, Sly Creek, Lost Creek, Forbestown, Ponderosa, and Miners Ranch. The water is distributed to the hydroelectric powerhouses, to agricultural consumers, and to the water treatment plants for domestic use. SFWPA's primary water treatment plant is located at the Miners Ranch Reservoir. Originally completed in 1981 with significant upgrades completed in 2018, the treatment plant has the capacity to treat 21 million gallons per day.

The total average annual runoff of the South Fork Feather River, excluding diversions from Slate Creek, is 254,347 AF. Figure 2 below represent SFWPA's water sources and raw-water delivery schematic. SFWPA operates its system of reservoirs and hydropower plants and manages the runoff throughout the annual hydrologic cycle to best achieve its purposes and needs including power supply, irrigation and municipal water supply, and recreation. There are nine dams that either divert or store water supply for multipurpose uses. Little Grass Valley and Sly Creek Reservoirs provide 93 percent of the active storage capacity within the system. Lost Creek and Ponderosa Reservoirs have active storage capacity equal to approximately 6 percent of active storage. The combined total storage capacity of these eight impoundments is 165,016 AF, or about 65 percent of the SFFR's average annual runoff. Even without activating Water Shortage Contingency Plan actions, SFWPA's supplies from the South Fork Feather River and upper Slate Creek can reliably meet the demands of a five-year drought.

Figure 2 – Raw Water Delivery Schematic



6.2.2 Groundwater

Ground water in Butte County is governed by the County's Groundwater Management Plan.[10] Portions of the Agency service area are included in Butte County Groundwater Management Plan, however, the Agency does not utilize groundwater supplies for any component of our supply and delivery chain. SFWPA does not have the need and does not anticipate a need within the planning horizon of the UWMP to develop groundwater resources. Some private wells within the Agency's sphere of influence are used by property owners for domestic and irrigation purposes.

6.2.3 Stormwater

Stormwater is not projected for beneficial reuse within the service area of the Agency.

[10] http://www.buttecounty.net/waterresourceconservation/groundwatermanagementplan

6.2.4 Recycled Water Coordination

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

The wastewater treatment provided in the Agency's service area is done so either by individual onsite septic systems or through the SCOR treatment facility. The collection, treatment and disposal of wastewater is the responsibility of the County of Butte and the City of Oroville respectively.

The City of Oroville and Lake Oroville Area Public Utility District (LOAPUD) each operate and maintain sewage collection systems in portions of the Agency's service area. However, approximately half of the parcels receiving water service from SFWPA utilize septic systems for sewage disposal.

The sewage collection systems of the City of Oroville and LOAPUD each terminate at Sewage Commission – Oroville Region's (SCOR) treatment facility that is west of and not within the Agency's service area. SCOR's treated effluent is discharged to the Feather River below Lake Oroville. SCOR does not currently operate a recycled water program. Thus, recycled water is not available to the Agency for use as a water source.

6.2.5 Wastewater and Recycled Water

CWC *10633(a) (Describe) the wastewater collection and treatment systems in the supplier's service area, including a quantification of the amount of wastewater collected and treated and the methods of wastewater disposal.*

(b) (Describe) the quantity of treated wastewater that meets recycled water standards, is being discharged, and is otherwise available for use in a recycled water project.

The City of Oroville operates and maintains the sewer system consisting of gravity sewers and pumping stations to collect wastewater from residential, commercial, and industrial customers. LOAPUD owns and operates a sanitary sewer collection system serving over 8,000 acres (roughly 4,000 customers) of unincorporated area east and south of the City of Oroville. The collected wastewater is discharged to trunk sewers owned and operated by the Sewerage Commission Oroville Region (SCOR) and conveyed to the SCOR Regional Wastewater Treatment Plant. However, approximately half of the parcels receiving water service from SFWPA utilize septic systems for sewage disposal.

SCOR does not operate a recycled water program, and therefore, recycled water is not available to the Agency for use as a water source. Within SFWPA's distribution system, there is no recycled or reused water being treated to Title 22 standards for municipal purposes within the

Agency's service area. The recycling of wastewater offers several potential benefits to groundwater dependent areas of Butte County, however these opportunities do not exist within the SFWPA Service Area. Perhaps the greatest of these benefits is to help maintain a sustainable groundwater supply either through direct recharge, or by reducing potable supply needs by utilizing recycled water for appropriate uses (e.g., landscape, irrigation) now being served by potable water. Currently, no wastewater is recycled for direct reuse from the domestic or industrial wastewater streams in the service area of SFWPA. No recycled water supply is expected to be available for the SFWPA service area within the next 20 years. This is primarily because potential customers in the City are approximately eight miles from the treatment plant, and the costs of transmission and distribution could not be justified based on anticipated water cost and the cost of effluent disposal. Therefore, the current projected recycled water supply for the City of Oroville portion of the SFWPA service area through the year 2045 is 0 acre-feet per year. The Agency has not implemented any incentive programs to encourage recycled water use because they do not hold ownership of the wastewater system. The implementation of a recycled water program here will need to involve longer-term measures and require regional participation by other agencies.

Since there is no centralized sewer system for the entirety of the SFWPA service area, there is no real opportunity for indirect potable reuse. A summary of the Wastewater Collection and disposal volumes of the systems operating within the Agency's service area are provided in Tables 6-2 and 6-3.

6.2.6 Desalinated Water

There are no opportunities for the development of desalinated water due to the geographic location of the Agency. SFWPA is located in the inland Sacramento Valley, many miles from potential sources of saline water.

6.2.7 Water Exchanges and Transfers

CWC *10631(d) Describe the opportunities for exchanges or transfers of water on a short-term or long-term basis.*

There are currently no opportunities for exchanges of water on either a short- or long-term basis. The Agency's raw-water storage reservoirs are above Lake Oroville on the South Fork of the Feather River, and there are no water storage or diversion facilities above those owned and operated by the Agency within its watershed. While the Agency can release raw water from its reservoirs into Lake Oroville for distribution via the State Water Project to downstream suppliers, there are no delivery systems by which water can be diverted to the Agency by other suppliers.

6.3 Energy Use

CWC *10631.2. (a) In addition to the requirements of Section 10631, an urban water management plan shall include any of the following information that the urban water supplier can readily obtain:*
(1) An estimate of the amount of energy used to extract or divert water supplies.

(2) An estimate of the amount of energy used to convey water supplies to the water treatment plants or distribution systems.
(3) An estimate of the amount of energy used to treat water supplies.
(4) An estimate of the amount of energy used to distribute water supplies through its distribution systems.
(5) An estimate of the amount of energy used for treated water supplies in comparison to the amount used for nontreated water supplies.
(6) An estimate of the amount of energy used to place water into or withdraw from storage.
(7) Any other energy-related information the urban water supplier deems appropriate.

Table O-1C: Recommended Energy Reporting - Multiple Water Delivery Products

Enter Start Date for Reporting Period: 1/1/2020
End Date: 12/30/2020
☑ Is upstream embedded in the values reported?

			Urban Water Supplier Operational Control							
			Water Management Process						Non-Consequential Hydropower (if applicable)	
			Extract and Divert	Place into Storage	Conveyance	Treatment	Distribution	Total Utility	Hydropower	Net Utility
Water Volume Units	Total Volume of Water Entering Process (volume units)		8915	0	0	0	0	N/A	371460	N/A
MG		Retail Potable Deliveries (%)	58%	0%	0%	0%	0%		1%	
		Retail Non-Potable Deliveries (%)	42%	0%	0%	0%	0%		1%	
		Wholesale Potable Deliveries(%)	0%	0%	0%	0%	0%		0%	
		Wholesale Non-Potable Deliveries (%)	0%	0%	0%	0%	0%		0%	
		Agricultural Deliveries (%)	0%	0%	0%	0%	0%		0%	
		Environmental Deliveries (%)	0%	0%	0%	0%	0%		0%	
		Other (%)	0%	0%	0%	0%	0%		98%	
		Total Percentage (must equal 100%)	100%	0%	0%	0%	0%	N/A	100%	N/A
		Energy Consumed (kWh)	0	0	0	0	0	0	-209545568	-209545568
		Energy Intensity (kWh/volume units)	0.0	0.0	0.0	0.0	0.0	N/A	-564.1	N/A

Water Delivery Type			Production Volume (volume units defined above)	Total Utility (kWh/volume)	Net Utility (kWh/volume)
		Retail Potable Deliveries	1730	401.7	0.0
		Retail Non-Potable Deliveries	0	0.0	0.0
		Wholesale Potable Deliveries	0	0.0	0.0
		Wholesale Non-Potable Deliveries	0	0.0	0.0
		Agricultural Deliveries	958	0.0	0.0
		Environmental Deliveries	0	0.0	0.0
		Losses	225	422.2	-912687.4
		All Water Delivery Types	2913	271.2	-70495.9

Quantity of Self-Generated Renewable Energy
790,000 kWh
Data Quality *(Estimate, Metered Data, Combination of Estimates and Metered Data)*
Metered Data

The Miners Ranch Treatment Plant 566-kW Solar Energy System was installed in 2005 in order to defray utility costs to operate the treatment facility. Power performance capabilities are monitored in real-time, and monthly analysis is conducted. For the calendar year of 2020, approximately 86 percent of power demand for operation of the treatment plant was provided by on-site solar.

6.4 SUBMITTAL AND SB X7-7 TABLES

Submittal Table 6-1 Retail: Groundwater Volume Pumped	
☑	Supplier does not pump groundwater. The supplier will not complete the table below.

Wastewater Collection			Recipient of Collected Wastewater			
Name of Wastewater Collection Agency	Wastewater Volume Metered or Estimated? *Drop Down List*	Volume of Wastewater Collected from UWMP Service Area 2020 *	Name of Wastewater Treatment Agency Receiving Collected Wastewater	Treatment Plant Name	Is WWTP Located Within UWMP Area? *Drop Down List*	Is WWTP Operation Contracted to a Third Party? *(optional)* *Drop Down List*
City of Oroville	Estimated	155	Sewerage Commission - Oroville Region (SC-OR)	SC-OR Regional Wastewater Treatment Plant	Yes	No
LOAPUD	Estimated	225	Sewerage Commission - Oroville Region (SC-OR)	SC-OR Regional Wastewater Treatment Plant	Yes	No
Total Wastewater Collected from Service Area in 2020:		380				

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

NOTES: unit of measurement is MG

Submittal Table 6-3 Retail: Wastewater Treatment and Discharge Within Service Area in 2020											
☐	No wastewater is treated or disposed of within the UWMP service area. The supplier will not complete the table below.										
Wastewater Treatment Plant Name	Discharge Location Name or Identifier	Discharge Location Description	Wastewater Discharge ID Number *(optional)* [2]	Method of Disposal *Drop down list*	Does This Plant Treat Wastewater Generated Outside the Service Area? *Drop down list*	Treatment Level *Drop down list*	2020 volumes [1]				
							Wastewater Treated	Discharged Treated Wastewater	Recycled Within Service Area	Recycled Outside of Service Area	Instream Flow Permit Requirement
SC-OR (Sewerage	Feather River			River or creek	Yes	Secondary,	607	607			
						Total	607	607	0	0	0

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

NOTES: units in MG

Submittal Table 6-4 Retail: Recycled Water Direct Beneficial Uses Within Service Area	
☑	Recycled water is not used and is not planned for use within the service area of the supplier. The supplier will not complete the table below.

Submittal Table 6-5 Retail: 2015 UWMP Recycled Water Use Projection Compared to 2020 Actual	
☑	Recycled water was not used in 2015 nor projected for use in 2020. The supplier will not complete the table below. If recycled water was not used in 2020, and was not predicted to be in 2015, then check the box and do not complete the table.

Submittal Table 6-6 Retail: Methods to Expand Future Recycled Water Use	
☑	Supplier does not plan to expand recycled water use in the future. Supplier will not complete the table below but will provide narrative explanation.

Submittal Table 6-7 Retail: Expected Future Water Supply Projects or Programs	
☑	No expected future water supply projects or programs that provide a quantifiable increase to the agency's water supply. Supplier will not complete the table below.

Submittal Table 6-8 Retail: Water Supplies — Actual				
Water Supply		2020		
Drop down list May use each category multiple times. These are the only water supply categories that will be recognized by the WUEdata online submittal tool	Additional Detail on Water Supply	Actual Volume*	Water Quality Drop Down List	Total Right or Safe Yield* (optional)
Add additional rows as needed				
Surface water (not desalinated)		39,447	Drinking Water	
Total		39,447		0
Units of measure (AF, CCF, MG) *must remain consistent throughout the UWMP as reported in Table 2-3.*				
NOTES: Based on 2020 watershed yield				

Submittal Table 6-9 Retail: Water Supplies — Projected											
Water Supply		Projected Water Supply * Report To the Extent Practicable									
Drop down list May use each category multiple times. These are the only water supply categories that will be recognized by the WUEdata online submittal tool	Additional Detail on Water Supply	2025		2030		2035		2040		2045 (opt)	
		Reasonably Available Volume	Total Right or Safe Yield (optional)	Reasonably Available Volume	Total Right or Safe Yield (optional)	Reasonably Available Volume	Total Right or Safe Yield (optional)	Reasonably Available Volume	Total Right or Safe Yield (optional)	Reasonably Available Volume	Total Right or Safe Yield (optional)
Add additional rows as needed											
Surface water (not desalinated)		82,783		82,783		82,783		82,783		82,783	
Total		82,783	0	82,783	0	82,783	0	82,783	0	82,783	0
Units of measure (AF, CCF, MG) *must remain consistent throughout the UWMP as reported in Table 2-3.*											
NOTES: Based on average available for the historical period of record, 1912-2020.											

CHAPTER 7 – WATER SERVICE RELIABILITY AND DROUGHT RISK ASSESSMENT

This chapter addresses the reliability of the Agency's water supplies. Assessment of water supply reliability is complex and dependent upon a number of factors, such as the number of water sources, regulatory and legal constraints, hydrological and environmental conditions, climate change, and expected growth, among others. Based on available historical information and projections of future water uses, regulatory and legal constraints, and hydrological and environmental conditions, including climate change, SFWPA has made its best determination of the future reliability of the Agency's water supplies.

This chapter includes the following sections:

7.1 INTRODUCTION

In this 2020 UWMP, water supply reliability is evaluated in two assessments: 1) the Water Service Reliability Assessment and 2) the Drought Risk Assessment (DRA). The Water Service reliability assessment compares projected supply to projected demand for three sets of hydrological conditions: a normal year, a single dry year, and a drought period lasting five consecutive years. The DRA is a new requirement in the UWMP that assesses water supply reliability under a severe drought period. The hydrologic conditions yielding the least supply are overlain the population estimates for the next five consecutive years in order to simulate a five year drought period from 2021 to 2025. Factors affecting reliability, such as climate change, regulatory requirements and localized watershed conditions, are also considered to prepare more realistic assessments.

7.2 WATER SERVICE RELIABILITY ASSESSMENT

CWC *10635(a) Every urban water supplier shall include, as part of its urban water management plan, an assessment of the reliability of its water service to its customers during normal, dry, and multiple dry water years. This water supply and demand assessment shall compare the total water supply sources available to the water supplier with the long-term total projected water use over the next 20 years, in five-year increments, for a normal water year, a single dry water year, and a drought lasting five consecutive water years. The water service reliability assessment shall be based upon the information compiled pursuant to Section 10631, including available data from state, regional, or local agency population projections within the service area of the urban water supplier.*

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

7.2.1 Consistency of Supply

The surface water supply available to SFWPA is projected to be capable of serving all demands under all hydrologic conditions. The Agency retains a hydrographer trained and experienced in water measurement. Data gathered from the gaging stations throughout the watershed are audited by the United States Geological Survey (USGS) annually. The data is published in real time for regulatory agency and public review[11]. There are no Legal, Environmental, or Water Quality factors that diminish consistency of supply for SFWPA water in the South Fork Feather River watershed for the period studied in this plan.

Based on the Agency's average annual watershed production of 254,015 acre-feet (82,783 MG), its ability to store 165,016 acre-feet (53,779 MG), and its associated consumptive water rights, SFWPA believes that its sources of developed water supply will continue to more than adequately meet the current and the foreseeable demand through 2045.

Table 7-1, below, shows the water supply reliability calculations for the Agency's surface water sources. These are the supplies currently available for use by SFWPA for the given water year scenario types.

7.2.2 Water Quality Impacts on Reliability

The Agency enjoys a pristine watershed that provides for a high-quality raw water supply. Source water for SFWPA all comes from exceptional quality sources via the South Fork Feather River, Lost Creek (a tributary of the South Fork Feather River), and Slate Creek (a tributary of the Nork Fork Yuba River).

The Agency updated their Watershed Sanitary Survey and Vulnerability Analysis in 2002 and did not find any significant changes in the watershed that would affect water quality. SFWPA is continually in compliance with all applicable water quality standards, and the 2020 Consumer Confidence Report was mailed out to all customers, and is available for review on the Agency's website at www.southfeater.com.

7.2.3 Climate Impacts on Reliability

Changing climate patterns are expected to shift precipitation patterns and affect water supply throughout the state of California. The Agency will continue to actively monitor hydrologic conditions in order to successfully operate the hydropower project and deliver adequate water supply to both domestic and irrigation customers.

[11] https://maps.waterdata.usgs.gov/mapper/?state=ca

7.3 Supply and Demand Assessment

CWC *10635 (a) Every urban water supplier shall include, as part of its urban water management plan, an assessment of the reliability of its water service to its customers during normal, dry, and multiple dry water years. This water supply and demand assessment shall compare the total water supply sources available to the water supplier with the total projected water use over the next 20 years, in five-year increments, for a normal water year, a single dry water year, and multiple dry water years. The water service reliability assessment shall be based upon the information compiled pursuant to Section 10631, including available data from the state, regional or local agency population projections within the service area of the urban water supplier.*

7.3.1 Projected NORMAL Year Supply and Demand

Table 7-2 below provides for the assessment of the reliability for customers in normal water years. Storage levels and runoff that provides for the supply totals were calculated utilizing in house hydrography data.

7.3.2 Projected SINGLE DRY Year Supply and Demand

Table 7-3 below contains an estimate of single dry year impact on supply and demand. The demands were not reduced because supply indicates a surplus even during an estimated dry year.

7.3.3 Projected MULTIPLE DRY Years Supply and Demand

Table 7-4 below contains supply and demand estimates for a multiple dry year scenario. The first year of the three dry year period is identified by the date at the top of the column.

If the information contained in Table 7-2, Table 7-3, or Table 7-4 shows a surplus when comparing projected supply and use. SFWPA management is working to improve all areas of data acquisition and management, and is assessing how to maximize permitted water rights for beneficial uses.

7.3.4 Regional Supply Reliability

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

South Feather Water and Power Agency's source of water is surface runoff from the South Fork Feather River (SFFR) above Lake Oroville, including diversions from Slate Creek, a tributary of the North Fork Yuba River. This supply is diverted from its natural watercourse at Ponderosa Reservoir and is transported via the Agency's Miners Ranch Canal to Miners Ranch Reservoir for treatment and delivery to customers

The median annual watershed runoff ("Average Year") is 254,015 acre-feet (82,783 MG). The single-dry year was in 1977, with a total runoff of 50,677 acre-feet (16,516 MG). The lowest average runoff for a consecutive multiple-year period ("multiple-dry year period") was 142,363 acre-feet (46,396 MG) for the five-year period, 1931-1935.

7.4 Drought Risk Assessment

CWC ***10635****(b) Every urban water supplier shall include, as part of its urban water management plan, a drought risk assessment for its water service to its customers as part of information considered in developing the demand management measures and water supply projects and programs to be included in the urban water management plan. The urban water supplier may conduct an interim update or updates to this drought risk assessment within the five-year cycle of its urban water management plan update. The drought risk assessment shall include each of the following:*

(1) A description of the data, methodology, and basis for one or more supply shortage conditions that are necessary to conduct a drought risk assessment for a drought period that lasts five consecutive water years, starting from the year following when the assessment is conducted.

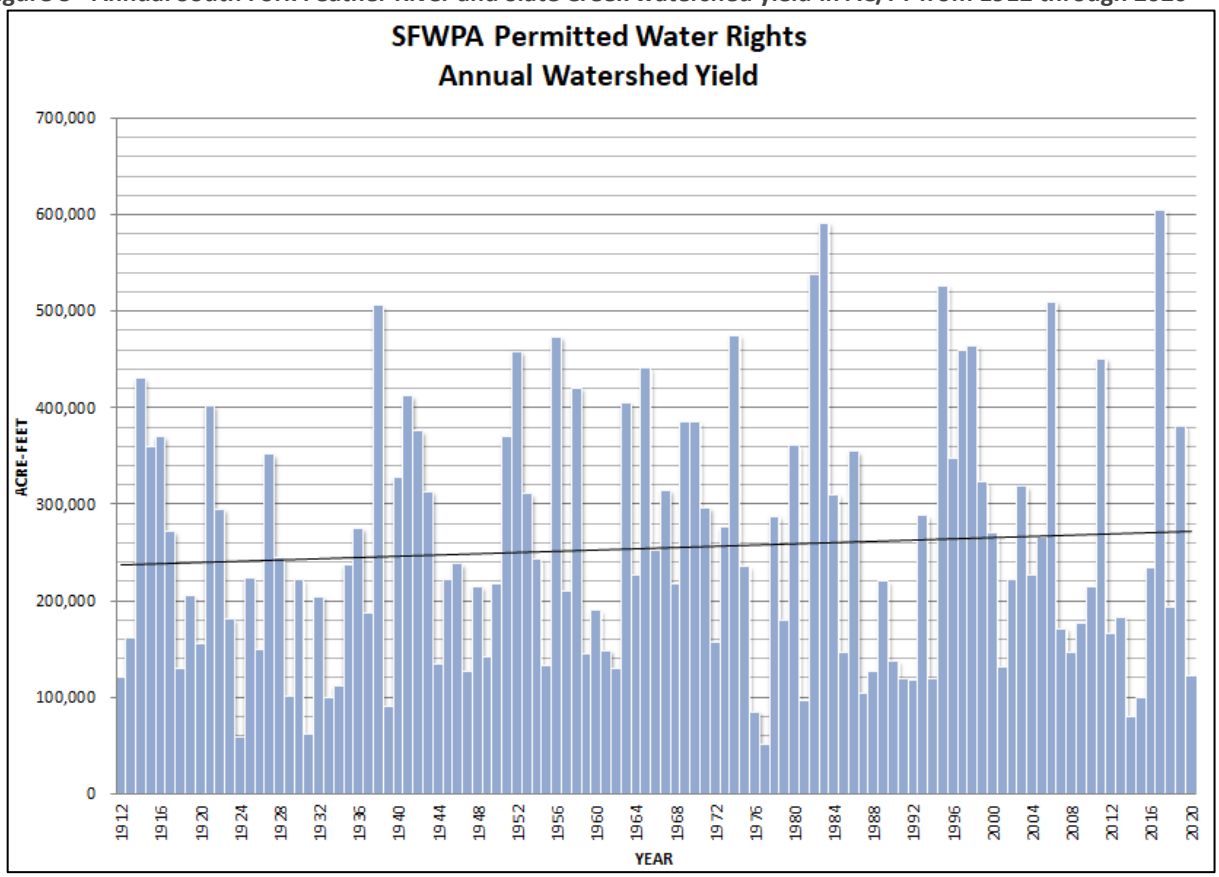
(2) A determination of the reliability of each source of supply under a variety of water shortage conditions. This may include a determination that a particular source of water supply is fully reliable under most, if not all, conditions.

(3) A comparison of the total water supply sources available to the water supplier with the total projected water use for the drought period.

(4) Considerations of the historical drought hydrology, plausible changes on projected supplies and demands under climate change conditions, anticipated regulatory changes, and other locally applicable criteria.

The Agency has the benefit of hydrologic records specific to the South Fork Feather River and North Fork Yuba River watersheds dating back to 1912. The cyclical nature of hydrology is evident in a data set of this length. The historical climatic baseline data available via Cal-Adapt only dates back to 1961, and is well outside of our historical five driest years within the watershed for any correlative analysis. In accordance with Water Code Section 10612, the DRA is based on the five driest consecutive years on record. Table 7-5 below incorporates 2020 consumption data, DOF/BCAG population estimates for 2020-2040, and watershed yield for the five driest years on record, 1931-1935.

Figure 3 - Annual South Fork Feather River and Slate Creek watershed yield in AC/FT from 1912 through 2020



The data shown above in Figure 3 for ***1912 through 1918*** is USGS annual mean daily flows at Enterprise plus estimated diversions (average of measured diversions, 1928-1941) into the Forbestown Ditch for irrigation purposes by the South Feather Land and Water Company (predecessor to Oroville-Wyandotte Irrigation Agency, which was named South Feather Water and Power Agency in 2003).

Values in Figure 3 for ***1919 through 1927*** are USGS annual mean daily flows at Enterprise plus estimated diversions (average of measured diversions, 1928-1941) into the Forbestown Ditch for irrigation purposes by Oroville-Wyandotte Irrigation Agency ("OWID", which was formed in 1919 and assumed responsibility for the Forbestown Ditch and the irrigators to whom it supplied water).

Values for ***1928 through 1941*** are USGS annual mean daily flows at Enterprise plus diversions into the Forbestown Ditch for irrigation purposes recorded by OWID.

Values for ***1942 through 1962*** are USGS annual mean daily flows at Enterprise plus estimated diversions (average of measured diversions, 1928-1941) into the Forbestown Ditch for irrigation purposes by OWID.

Values for ***1963 through 1972*** are USGS annual mean daily flows at Enterprise plus diversions into the Forbestown Ditch for irrigation purposes recorded by OWID.

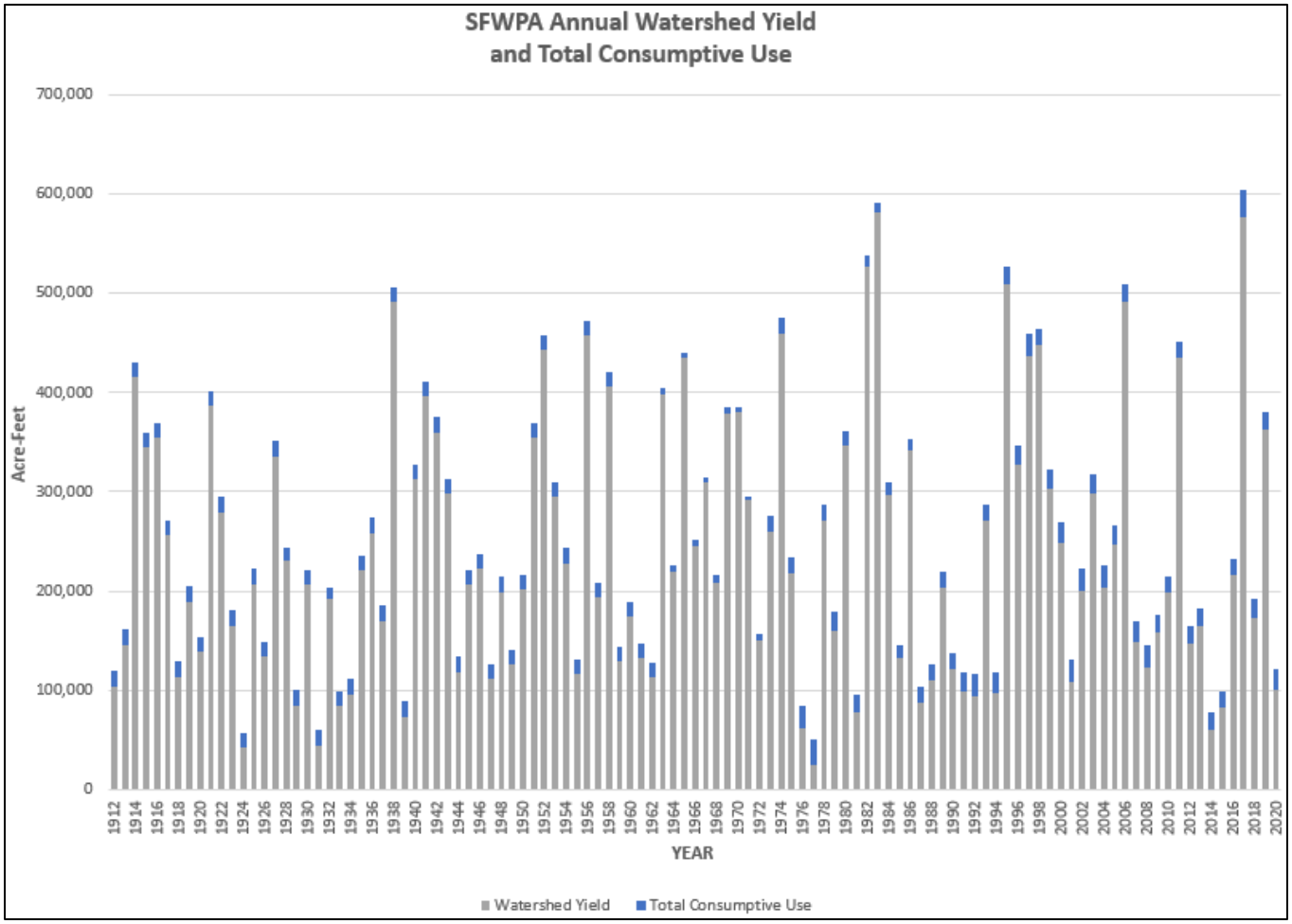
The data shown in Figure 3 for ***1973 through 2020*** are actual SFWPA measurements (Kelly Ridge Powerhouse+ Ponderosa Reservoir spills + consumptive use).

7.4.1 DRA Data, Methods, and Basis for Water Shortage Conditions

In 2004, the Butte County Board of Supervisors adopted the Drought Preparedness and Mitigation Plan through Resolution 04-200. A major element of the Drought Preparedness and Mitigation Plan was the creation of the Drought Task Force. Through the Drought Task Force, the Board of Supervisors receives recommendations on current conditions and actions that the county should take. At any time the Drought Task Force is activated, SFWPA will participate as a member of the public in order to obtain and share any relevant data sets.

7.4.2 DRA Total Water Supply and Use Comparison

Figure 4 - Annual Watershed Yield vs. Annual Total Consumptive Use



7.5 SUBMITTAL AND SB X7-7 TABLES

Submittal Table 7-1 Retail: Basis of Water Year Data (Reliability Assessment)			
Year Type	**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 2019-2020, use 2020	**Available Supplies if Year Type Repeats**	
		☐	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	1966	81968	100%
Single-Dry Year	1977	16516	20%
Consecutive Dry Years 1st Year	1931	19896	24%
Consecutive Dry Years 2nd Year	1932	66375	81%
Consecutive Dry Years 3rd Year	1933	32239	39%
Consecutive Dry Years 4th Year	1934	36402	44%
Consecutive Dry Years 5th Year	1935	77069	94%

Supplier may use multiple versions of Table 7-1 if different water sources have different base years and the supplier chooses to report the base years for each water source separately. If a Supplier uses multiple versions of Table 7-1, in the "Note" section of each table, state that multiple versions of Table 7-1 are being used and identify the particular water source that is being reported in each table.

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

NOTES: MG

Submittal Table 7-2 Retail: Normal Year Supply and Demand Comparison					
	2025	2030	2035	2040	2045 *(Opt)*
Supply totals *(autofill from Table 6-9)*	82,783	82,783	82,783	82,783	82,783
Demand totals *(autofill from Table 4-3)*	3,076	3,215	3,357	3,507	3,664
Difference	79,707	79,568	79,426	79,276	79,119
NOTES: Based on average from historical period of record 1912-2020.					

Submittal Table 7-3 Retail: Single Dry Year Supply and Demand Comparison					
	2025	2030	2035	2040	2045 (Opt)
Supply totals*	16,516	16,516	16,516	16,516	16,516
Demand totals*	2,957	3077	3,203	3,334	3,468
Difference	13,559	13,439	13,313	13,182	13,048
***Units of measure (AF, CCF, MG)** must remain consistent throughout the UWMP as reported in Table 2-3.*					
NOTES: Based on driest year of 1977 from historical period of record 1912-2020.					

Submittal Table 7-4 Retail: Multiple Dry Years Supply and Demand Comparison						
		2025*	2030*	2035*	2040*	2045* (Opt)
First year	Supply totals	19,896	19,896	19,896	19,896	19,896
	Demand totals	2,957	3,077	3,203	3,334	3,468
	Difference	16,939	16,819	16,693	16,562	16,428
Second year	Supply totals	66,375	66,375	66,375	66,375	66,375
	Demand totals	2,957	3,077	3,203	3,334	3,468
	Difference	63,418	63,298	63,172	63,041	62,907
Third year	Supply totals	32,239	32,239	32,239	32,239	32,239
	Demand totals	2,957	3,077	3,203	3,334	3,468
	Difference	29,282	29,162	29,036	28,905	28,771
Fourth year	Supply totals	36,402	36,402	36,402	36,402	36,402
	Demand totals	2,957	3,077	3,203	3,334	3,468
	Difference	33,445	33,325	33,199	33,068	32,934
Fifth year	Supply totals	77,069	77,069	77,069	77,069	77,069
	Demand totals	2,957	3,077	3,203	3,334	3,468
	Difference	74,112	73,992	73,866	73,735	73,601
Sixth year *(optional)*	Supply totals					
	Demand totals					
	Difference	0	0	0	0	0
***Units of measure (AF, CCF, MG)** must remain consistent throughout the UWMP as reported in Table 2-3.*						
NOTES: Based on five driest years from historical period of record 1912-2020.						

Submittal Table 7-5: Five-Year Drought Risk Assessment Tables to address Water Code Section 10635(b)	
2021	**Total**
Total Water Use	2,864
Total Supplies	66,336
Surplus/Shortfall w/o WSCP Action	63,472
Planned WSCP Actions (use reduction and supply augmentation)	
WSCP - supply augmentation benefit	
WSCP - use reduction savings benefit	86
Revised Surplus/(shortfall)	63,558
Resulting % Use Reduction from WSCP action	3%

2022	Total
Total Water Use	2,864
Total Supplies	66,336
Surplus/Shortfall w/o WSCP Action	63,472
Planned WSCP Actions (use reduction and supply augmentation)	
WSCP - supply augmentation benefit	
WSCP - use reduction savings benefit	143
Revised Surplus/(shortfall)	63,615
Resulting % Use Reduction from WSCP action	5%

2023	Total
Total Water Use	2,864
Total Supplies	32,220
Surplus/Shortfall w/o WSCP Action	29,356
Planned WSCP Actions (use reduction and supply augmentation)	
WSCP - supply augmentation benefit	
WSCP - use reduction savings benefit	200
Revised Surplus/(shortfall)	29,556
Resulting % Use Reduction from WSCP action	7%

2024	Total
Total Water Use	2,864
Total Supplies	36,384
Surplus/Shortfall w/o WSCP Action	33,520
Planned WSCP Actions (use reduction and supply augmentation)	
WSCP - supply augmentation benefit	
WSCP - use reduction savings benefit	229
Revised Surplus/(shortfall)	33,749
Resulting % Use Reduction from WSCP action	8%

2025	Total
Total Water Use	2,864
Total Supplies	77,028
Surplus/Shortfall w/o WSCP Action	74,164
Planned WSCP Actions (use reduction and supply augmentation)	
WSCP - supply augmentation benefit	
WSCP - use reduction savings benefit	258
Revised Surplus/(shortfall)	74,422
Resulting % Use Reduction from WSCP action	9%

CHAPTER 8 – WATER SHORTAGE CONTINGENCY PLANNING

The WSCP is a detailed proposal for how a Supplier intends to act in the case of an actual water shortage condition. This plan is part of good drought policy even if a Supplier's water supply appears to have a low probability of shortage conditions, as it improves preparedness for droughts and other impacts on water supplies. The WSCP anticipates a water supply shortage and provides pre-planned guidance for managing and mitigating a Supplier's shortage. A well-structured WSCP allows real-time water supply availability assessment and structured steps designed to respond to actual conditions, to allow for efficient management of any shortage with predictability and accountability. In severe drought conditions, a Supplier's WSCP serves as its roadmap of action for how to proceed through various levels of shortage.

CWC *10632.3 It is the intent of the Legislature that, upon proclamation by the Governor of a state of emergency under the California Emergency Services Act (Chapter 7 (commencing with Section 8550) of Division 1 of Title 2 of the Government Code) based on drought conditions, the board defer to implementation of locally adopted water shortage contingency plans to the extent practicable.*

This chapter describes the Water Shortage Contingency Plan (WSCP) developed for SFWPA as required by California Water Code Section 10632.3. The water shortage contingency plan includes the stages of response to a water shortage, such as a drought, that occur over a period of time, as well as catastrophic supply interruptions which occur suddenly. The primary objective of the water shortage contingency plan is to ensure that the Agency has in place the necessary resources and management responses needed to protect health and human safety, minimize economic disruption, and preserve environmental and community assets during water supply shortages and interruptions. This locally developed plan will be the first point of reference and implementation during 1) an Agency declared water shortage, 2) a City or County proclamation of a local water supply emergency, or 3) a declared statewide drought emergency.

As part of its UWMP, Water Code Section 10632 requires Suppliers to prepare and adopt a WSCP that consists of each of the following elements:

8.1 Water Supply Reliability Analysis
8.2 Annual Water Supply and Demand Assessment Procedures
8.3 Six Standard Water Shortage Stages
8.4 Shortage Response Actions
8.5 Communication Protocols
8.6 Compliance and Enforcement
8.7 Legal Authorities
8.8 Financial Consequences of WSCP Activation
8.9 Monitoring and Reporting
8.10 WSCP Refinement Procedures
8.11 Special Water Feature Distinction
8.12 Plan Adoption, Submittal, and Availability
8.13 Submittal and SB X7-7 Tables

8.1 Water Supply Reliability Analysis

CWC *10632(a)(1) The analysis of water supply reliability conducted pursuant to Section 10635.*

The Agency enjoys a pristine watershed that provides for a high-quality raw water supply. Source water for SFWPA all comes from exceptional quality sources via the South Fork Feather River, Lost Creek (a tributary of the South Fork Feather River), and Slate Creek (a tributary of the Nork Fork Yuba River). Based on the supply and demand assessments conducted by the Agency (See UWMP Chapter 7), SFWPA believes that its sources of developed water supply will continue to more than adequately meet the current and the foreseeable demand through 2045.

8.2 Annual Water Supply and Demand Assessment Procedures

CWC *10632(a)(2) The procedures used in conducting an annual water supply and demand assessment that include, at a minimum, both of the following:*
(A) The written decision-making process that an urban water supplier will use each year to determine its water supply reliability.
(B) The key data inputs *and assessment methodology used to evaluate the urban water supplier's water supply reliability for the current year and one dry year, including all of the following:*
(i) Current year unconstrained demand, considering weather, growth, and other influencing factors, such as policies to manage current supplies to meet demand objectives in future years, as applicable.
(ii) Current year available supply, considering hydrological and regulatory conditions in the current year and one dry year. The annual supply and demand assessment may consider more than one dry year solely at the discretion of the urban water supplier.
(iii) Existing infrastructure capabilities and plausible constraints.
(iv) A defined set of locally applicable evaluation criteria that are consistently relied upon for each annual water supply and demand assessment.
(v) A description and quantification of each source of water supply.

CWC *10632.1. An urban water supplier shall conduct an annual water supply and demand assessment pursuant to subdivision (a) of Section 10632 and, on or before July 1 of each year, submit an annual water shortage assessment report to the department with information for anticipated shortage, triggered shortage response actions, compliance and enforcement actions, and communication actions consistent with the supplier's water shortage contingency plan.*

If the available water supply continues to remain greater than customer demand, then no further action will be required. However, if in any given year, the typical customer demand appears to be great than available supply, the SFWPA Board of Directors may enact any stage of the Water Shortage Contingency Plan by adopting a resolution in response to local or regional water supply conditions. Several data sources will be consulted, including but not limited to internal and external hydrologic data, as well as all customer consumption records. The WSCP may be enacted based on a number of conditions, including:

- An actual or potential local water supply restriction or emergency affecting the SFWPA system;
- A collective recommendation from Butte County Water and Resource Conservation and

the City of Oroville;
- A formal water supply shortage notification by the Governor;

The Conservation Stages will normally be implemented in a progressive manner; however it may be necessary for the Agency to skip Stages in the use reduction plan in response to catastrophic supply reductions. In general, conservation/use reduction levels will be set according to the anticipated reduction in available water supplies.

The Agency takes seriously the charge to protect the resource for all available beneficial uses, and will continue to advance internal abilities to accurately conduct Annual Water Supply and Demand Assessments (Annual Assessment) over the course of the next five years. At such time that the Department of Water Resources publishes its stand-alone guidance document the Agency will follow that framework, in the meantime, this WSCP outlines Agency specific procedures for conducting the Annual Assessment.

8.2.1 Decision Making Process

Staff will present the Annual Assessment to the Board of Directors annually during the May Board meeting of each year. This report will outline comprehensive hydrologic conditions for the historical period of record, as well as the current water year conditions based on the last snow surveys conducted by SFWPA and DWR staff. Consumption data is routinely presented to the Board of Directors, however the consumption use will also be summarized in of this Annual Assessment in order for the Board to be fully informed as to whether or not any specific shortage response actions are necessary.
Key data sets to be presented to the Board include:

- SFWPA hydrologic data for reservoirs and streams in the Hydropower Project system
- Annual customer demand for both domestic and raw water
- Previous water year and to date water year supply availability
- Conveyance, treatment and distribution conditions
- Any other locally applicable factors

8.3 Six Standard Water Shortage Stages

Each of the below listed water shortage responses is intended to involove Agency customers in the process of reducing consumer demand during years of diminished supply due to reduced precipitation or any other event that could significantly reduce supply.

8.4 Shortage Response Actions

CWC *10632 (a)(4) Shortage response actions that align with the defined shortage levels and include, at a minimum, all of the following:*
(A) Locally appropriate supply augmentation actions.
(B) Locally appropriate demand reduction actions to adequately respond to shortages.
(C) Locally appropriate operational changes.

(D) Additional, mandatory prohibitions against specific water use practices that are in addition to state-mandated prohibitions and appropriate to the local conditions.
(E) For each action, an estimate of the extent to which the gap between supplies and demand will be reduced by implementation of the action.

8.4.1 Demand Reduction

The following Demand Reduction Actions correspond to the six water shortage levels outlined in the above section.

8.4.2 Supply Augmentation

The Agency has completed multiple demand and supply assessment scenarios, and at this time, none of those scenarios would require supply augmentation.

8.4.3 Operational Enhancements

The Agency continues to implement water conservation and water loss improvements. Improved monitoring, analysis and tracking of system operations and customer usage will continually improve the quality of annual water supply reliability assessments. During times of supply shortage, the Agency will reduce system flushing, increase hydrant and filling station security, and intensify the meter calibration program.

8.4.4 Mandatory Restrictions

Once the Agency has adopted a current Water Shortage Contingency Plan Resolution, there will be mandatory restrictions set in place as needed. This typically will not occur until the emergency shortage reaches the 40-50 percent level.

8.4.5 Emergency Response Plan

The Agency has operated the Miners Ranch Treatment Plant since 1981, and the BTP since 1989. Over the years, there have been numerous versions of Vulnerability Assessments, Emergency Response Plans, and Action Plans. The Agency has compiled an Emergency Response Plan (ERP) for the Miners Ranch Treatment Plant in conformance with the America's Water Infrastructure Act of 2018 Section 2013(b), obtained approval and adoption by the Board of Directors, and submitted to the Environmental Protection Agency as required The current ERP is an internal document containing critical infrastructure information. The Board of Directors have approved the ERP contents by way of staff recommendation, and the Agency has self-certified the contents with the Environmental Protection Agency.

8.4.6 Seismic Risk Assessment and Mitigation Plan

CWC *10632.5.(a) In addition to the requirements of paragraph (3) of subdivision (a) of Section 10632, beginning January 1, 2020, the plan shall include a seismic risk assessment and mitigation plan to assess the vulnerability of each of the various facilities of a water system and mitigate those vulnerabilities.*
(b) An urban water supplier shall update the seismic risk assessment and mitigation plan when updating its urban water management plan as required by Section 10621.

(c) An urban water supplier may comply with this section by submitting, pursuant to Section 10644, a copy of the most recent adopted local hazard mitigation plan or multihazard mitigation plan under the federal Disaster Mitigation Act of 2000 (Public Law 106-390) if the local hazard mitigation plan or multihazard mitigation plan addresses seismic risk.

An Agency specific seismic survey was completed during the expansion project at the Miners Ranch Treatment Plant. Although that report found no corrective actions needed, impacts to the Agency would vary significantly based on the location of the epicenter and magnitude of a seismic event, and for this reason, the Agency participated in the Butte County Office of Emergency Management led effort to produce a 2019 Local Hazard Mitigation Plan (LHMP) covering Butte County. The LHMP exists to demonstrate the community's commitment to reducing risks from hazards, and serves as a tool to help decision makers direct mitigation activities and resources. Annex N to the plan x details the hazard mitigation planning elements specific to South Feather Water and Power Agency. The only known active fault in Butte County is the Cleveland Hills fault, the site of the August 1975 Oroville earthquake. Due to the proximity of the Agency to the Cleveland Hills Fault, the Agency is at risk to an earthquake occurring on this fault. These earthquakes can also cause liquefaction within the Agency's service area. Since earthquakes are regional events, the whole of the Agency is at risk to earthquake. The Butte County LHMP plan can be found via this link: http://www.buttecounty.net/oem/mitigationplans

The ERP that addresses a variety of potential emergency situations specifically addresses earthquake. The associated Action Plan 3C outlines the following response procedures:

Assess the Problem:

- Inspect all structures for obvious cracks and damage.
- Assess condition of all electrical power feeds and switchgear.
- If SCADA is working, immediately review system for all types of malfunctions, including telemetry, pressure in the distribution system, and operation of pumps and other equipment.
- If buildings have any sign of damage, such as cracked walls, broken windows, downed power lines, do not enter but wait for trained personnel.
- If buildings appear safe, cautiously inspect condition of interiors for damaged equipment, leaks, chemical spills, etc.
- Communicate all findings to EOC or ERM, as appropriate.
- Activate personnel accountability network to check for injury of staff.

Recovery and Return to Safety:

- Contact outside emergency assistance as necessary to respond to staff injuries.
- Activate Emergency Operations Center.
- Notify customers, media, and state and local authorities if service is disrupted or if significant demand management is necessary.

- Inspect facilities for structural damage, including: buildings, storage tanks, and process equipment.
- Prioritize and repair water main leaks.
- Contact neighboring utilities for mutual aid arrangements and open connections as needed.
- Respond to side effects (e.g., loss of power, fire, chemical spills, etc.).

8.5 Communication Protocols

CWC *10632 (a)(5) Communication protocols and procedures to inform customers, the public, interested parties, and local, regional, and state governments, regarding, at a minimum, all of the following:*
(A) Any current or predicted shortages as determined by the annual water supply and demand assessment described pursuant to Section 10632.1.
(B) Any shortage response actions triggered or anticipated to be triggered by the annual water supply and demand assessment described pursuant to Section 10632.1.
(C) Any other relevant communications

This section lists a number of strategies that the Agency will employ to communicate with customers, land use and planning entities for the City of Oroville and County of Butte, as well as community partners.

- Supply clear, consistent and understandable messaging to encourage increased voluntary conservation via billing inserts and on the website.
- Collaborate with City and County partners to development effective communications regarding current conditions and specifically the Agency's WSCP.
- Regularly communicate with local, state and other elected officials in the region about the importance of achieving voluntary water conservation and encourage them to publicly promote such efforts.

8.6 Compliance and Enforcement

CWC *10632 (a)(6) For an urban retail water supplier, customer compliance, enforcement, appeal, and exemption procedures for triggered shortage response actions as determined pursuant to Section 10632.2.*

Pursuant to CWC Sections 376 and 10632, a water supplier is required to penalize or charge end users for excessive water use. In accordance with the Water Shortage Contingency Plan Resolution (which may be adopted as needed by the Board of Directors) it is a misdemeanor punishable by up to 30 days in county jail and/or a fine of up to $1,000 for any person to violate a requirement of the water conservation program.

8.7 Legal Authorities

CWC *10632 (a)(7) (A) A description of the legal authorities that empower the urban water supplier to implement and enforce its shortage response actions specified in paragraph (4) that may include, but are not limited to, statutory authorities, ordinances, resolutions, and contract provisions.*
(B) A statement that an urban water supplier shall declare a water shortage emergency in accordance with Chapter 3 (commencing with Section 350) of Division 1. [see below]

(C) A statement that an urban water supplier shall coordinate with any city or county within which it provides water supply services for the possible proclamation of a local emergency, as defined in Section 8558 of the Government Code.

CWC Chapter 3 Sections 350-359 outlines that *"The governing body of a distributor of a public water supply, whether publicly or privately owned and including a mutual water company, shall declare a water shortage emergency condition to prevail within the area served by such distributor whenever it finds and determines that the ordinary demands and requirements of water consumers cannot be satisfied without depleting the water supply of the distributor to the extent that there would be insufficient water for human consumption, sanitation, and fire protection."*

8.8 Financial Consequences of WSCP Activation

CWC *10632(a)(8) A description of the financial consequences of, and responses for, drought conditions, including, but not limited to, all of the following:*
(A) A description of potential revenue reductions and expense increases associated with activated shortage response actions described in paragraph (4).
(B) A description of mitigation actions needed to address revenue reductions and expense increases associated with activated shortage response actions described in paragraph (4).
(C) A description of the cost of compliance with Chapter 3.3 (commencing with Section 365) of Division 1. [retail urban suppliers only]

SFWPA is working to establish a rate structure that would be implemented by the Board during a declared water shortage emergency. Further analysis is needed to determine what financial impacts to hydropower operations and water distributions would be during times of an emergency.

8.9 Monitoring and Reporting

CWC *10632(a)(9) For an urban retail water supplier, monitoring and reporting requirements and procedures that ensure appropriate data is collected, tracked, and analyzed for purposes of monitoring customer compliance and to meet state reporting requirements.*

SFWPA will continue to track monthly production and consumption data, along with monitoring hydrologic conditions throughout the watershed and Sacramento Valley. Staff will present the annual Water Supply Reliability Analysis to the Board of Directors at their publicly held meeting each May.

8.10 WSCP Refinement Procedures

CWC *10632 (a)(10) Reevaluation and improvement procedures for systematically monitoring and evaluating the functionality of the water shortage contingency plan in order to ensure shortage risk tolerance is adequate and appropriate water shortage mitigation strategies are implemented as needed.*

SFWPA will continually make refinements to the WSCP based on real-time hydrologic conditions. As the current and historical conditions can only be used as a predictive tool, it will be necessary to make adjustments as more data is accumulated. Any updates to the WSCP will be presented to the Board of Directors and approved and adopted as required.

8.11 Special Water Feature Distinction

CWC *10632 (b) For purposes of developing the water shortage contingency plan pursuant to subdivision (a), an urban water supplier shall analyze and define water features that are artificially supplied with water, including ponds, lakes, waterfalls, and fountains, separately from swimming pools and spas, as defined in subdivision (a) of Section 115921 of the Health and Safety Code.*

SFWPA will analyze water features separately from pools and spas in the WSCP. Non-pool or non-spa water features such as "decorative water features" and "recreational water features" may use or be able to use recycled water, whereas pools and spas must use potable water for health and safety considerations. Limitations to pools and spas may require different considerations compared to non-pool or non-spa water features.

8.12 Plan Adoption, Submittal, and Availability

CWC *10632 (c) The urban water supplier shall make available the water shortage contingency plan prepared pursuant to this article to its customers and any city or county within which it provides water supplies no later than 30 days after adoption of the water shortage contingency plan.*

SFWPA will follow these steps prior to the adoption of the WSCP:

- The Agency will provide notification to customers, City and County officials and the public at large by publishing the notice of a public hearing in a local newspaper for two consecutive weeks prior to the hearing.
- The Agency will hold a public hearing to gather public feedback.
- Following the hearing, or at a subsequent Board meeting, the Board of Directors shall adopt the WSCP.
- The Agency will make the WSCP publicly available on the Agency website no later than 30 days after it is adopted.
- Each time the Agency makes amendments to the WSCP, the above process shall be followed.

8.13 SUBMITTAL AND SB X7-7 TABLES

Submittal Table 8-1 Water Shortage Contingency Plan Levels		
Shortage Level	**Percent Shortage Range**	**Shortage Response Actions** *(Narrative description)*
1	Up to 10%	The Agency will continually provide public information on basic water conservation measure and promote water wise Best Management Practices for residential, commercial and irrigatoin use.
2	Up to 20%	The Agency will provide specific information regarding current hydrologic conditions to the Board of Directors and the public. The public will be requested to eliminate all water wasting activities.
3	Up to 30%	The Agency will provide information to the Board and the public regarding current and/or upcoming hydrologic conditions which could impact the current and foreseeable future water supplies. The Board will adopt the Water Shortage Contingency Plan Resolution.
4	Up to 40%	The Agency will assess the effectiveness of Shortage Level 1-3 Response Actions. If the cumulative efforts are not deemed sufficient, the Agency will work with the Board to implement targeted outreach.
5	Up to 50%	Although supplies may be sufficient to meet current water year demands, the Agency will work with the Board to implement mandatory reduction measures to ensure future water deliveries and continued operability of the hydropower project.
6	>50%	The Agency will provide information to the Board and the public regarding the current water emergency. The Board will formally require customers to immediately discontinue any non-essential water usage.

Submittal Table 8-2: Demand Reduction Actions				
Shortage Level	Demand Reduction Actions ***Drop down list*** *These are the only categories that will be accepted by the WUEdata online submittal tool. Select those that apply.*	How much is this going to reduce the shortage gap? *Include units used (volume type or percentage)*	Additional Explanation or Reference *(optional)*	Penalty, Charge, or Other Enforcement? ***For Retail Suppliers Only*** *Drop Down List*
Add additional rows as needed				
1	Expand Public Information Campaign	1-3%		No
1	Improve Customer Billing	1-3%		No
2	Other - Require automatic shut of hoses	5%		No
3	Reduce System Water Loss	5%		No
4	Landscape - Restrict or prohibit runoff from landscape irrigation	5%		Yes
4	Landscape - Limit landscape irrigation to specific days	5%		Yes
5	Decrease Line Flushing	6%		No
5	CII - Restaurants may only serve water upon request	5%		Yes
6	Water Features - Restrict water use for decorative water features, such as fountains	5%		Yes
6	Other - Prohibit vehicle washing except at facilities using recycled or recirculating water	5%		Yes

CHAPTER 9 – DEMAND MANAGEMENT MEASURES

This chapter provides the opportunity to communicate SFWPA efforts to promote conservation and reduce demands on water supplies, provides a summary of past, as well as future, planned demand management measure (DMM) in response to population growth, and a look back at what has been implemented within the SFWPA service area. This type of analysis may help improve the water service reliability and help meet state and regional water conservation goals.

This chapter contains the following sections:

9.1 Demand Management Measures for Retail Agencies

CWC *10631 (e) Provide a description of the supplier's water demand management measures. This description shall include all of the following:*

(1)(A) For an urban retail water supplier, as defined in Section 10608.12, a narrative description that addresses the nature and extent of each water demand management measure implemented over the past five years. The narrative shall describe the water demand management measure that the supplier plans to implement to achieve its water use targets pursuant to Section 10608.20.

(B) The narrative pursuant to this paragraph shall include descriptions of the following water demand management measures:

(i) Water waste prevention ordinances.
(ii) Metering
(iii) Conservation pricing.
(iv) Public education and outreach.
(v) Programs to assess and manage distribution system real loss.
(vi) Water conservation program coordination and staffing support.

(C) Other demand management measures that have a significant impact on water use as measured in gallons per capita per day, including innovative measures, if implemented.

9.2.1 Water Waste Prevention Ordinance

The SFWPA Board of Directors maintains a draft Resolution declaring the Water Shortage Contingency Program. This resolution remains an effective tool that may be implemented as deemed necessary by the Board of Directors, or in conjunction with a declared State of Emergency. This draft Resolution explicitly states that the waste of water is prohibited. The resolution is included as Appendix B.

9.2.2 Metering

CWC *526 (a) Notwithstanding any other provisions of law, an urban water supplier that, on or after January 1, 2004, receives water from the federal Central Valley Project under a water service contract or subcontract... shall do both of the following:*

(1) On or before January 1, 2013, install water meters on all service connections to residential and nonagricultural commercial buildings... located within its service area.

CWC *527 (a) An urban water supplier that is not subject to Section 526 shall do both the following:*

(1) Install water meters on all municipal and industrial service connections located within its service area on or before January 1, 2025.

The Agency began requiring meters for all domestic service connections in 1983 and has continued this requirement for all new service connections. Current water data managers are working to develop a meter calibration program, whereby meters will be selected for flow testing and calibration, and then rebuilding as necessary. This program will enhance the data obtained for use in analyzing the system water losses, and help prioritize meter upgrades in the system.

9.2.3 Conservation Pricing

The Agency is not considering implementing conservation pricing at this time.

9.2.4 Public Education and Outreach

The Agency began providing educational material on its website in 2005 explaining how to check for leaks within residential plumbing systems. Staff contact information is also provided regarding who residential customers should contact if they have questions about their water consumption. Agency technicians are available to investigate potential water leaks when a customer experiences a suspiciously high water bill. Agency water bills were redesigned in 2005 to show customers their monthly consumption for the last 12 monthly billings. This provides the customer with the ability to visualize their annual water use pattern and to compare the current billing period to the same period for the previous year. It is assumed that the comparative data causes customers to think about conservation.

The Agency is continually looking for opportunities to provide customer education via the website. Upon adoption of the WSCP, the Agency will post a copy of the plan, along with information regarding ways customers can help maintain watershed health, and preserve and conserve our resources.

9.2.5 Programs to Assess and Manage Distribution System Real Loss

In addition to its routine and planned system maintenance and water loss evaluation, the Agency has conducted water audits and leak detection repairs since the late 1980's. The current number of leaks per month is less than five, drastically lower than the peak number of 167 per month in the 90's.

The Agency is working to develop a routine and planned system maintenance to prevent losses in anticipation of the publication of the distribution system loss standard that is being developed by the State Water Board. SFWPA is beginning the process of informing the Board of Directors and the public of these pending regulations, and the processes being considered for compliance.

9.2.6 Water Conservation Program Coordination and Staffing Support

The Agency is not a large organization, and staff work collaboratively with, and in support of the General Manager, to carry out the Agency Vision to *"Deliver the Best – Water, Energy, Service and Value to the customers we serve."* The collective effort to establish data collection protocols that will support the water conservation activities of the Agency is currently being done by the IT Manager, the Treatment Plant Superintendent, the Compliance and Regulatory Manager alongside the General Manager in order to not only improve the delivery system, but ensure compliance with every state regulatory agency that SFWPA interfaces with and reports to.

9.2.7 Other Demand Management Measures

In 2015 the Agency began the process of upgrading the Miners Ranch Treatment Plan. The following is a summary of the major improvements completed:

- Replaced one raw water pump with one sized to meet future demands.
- Installed new jet diffusion pump mixing station to increase mixing efficiency and decrease chemical use.
- Installed new absorption clarifiers to meet upgrades flow rates.
- Expanded filter capacity by adding new filter cells and enclosed filters in a new building to protect water quality and security.
- Constructed a 2 million gallon concrete clearwell in the same location of previous clearwell to increase treated water storage capacity, increase disinfection contact time, protect water quality and security, and provide long-term structural integrity designed to current California seismic standards.
- Separated backwash pump station and high service pump station to allow for full operation of backwash pump station.
- Constructed new filter backwash storage basin and solids removal equipment in basins.
- Constructed new solids transfer pumps, homogenization tank and residuals handling building and installed a new centrifuge to transport, store, and de-water treatment residuals prior to hauling off site for disposal. This eliminated the required for the Agency to maintain a National Pollutant Discharge Elimination System (NPDES) Permit.
- Installed new chlorine gas scrubber system to sequester chlorine gas that could potentially be released during a tank or operating system failure.
- Upgraded power service to the site to meet electrical loads associated with the plant upgrades and future system demands.
- Installed new emergency backup generator sized to meet the power requirements for operating the plant during power interruption. The plant remains fully operational during Public Safety Power Shut-off events.

9.3 Reporting Implementation

CWC *10631(f) Provide a description of the supplier's water demand management measures. This description shall include all of the following:*

(1)(A) … a narrative description that addresses the nature and extent of each water demand management measure implemented over the past five years.

The Agency completed the Miners Ranch Treatment Plant upgrades in 2018. The annual Consumer Confidence Report (CCR) demonstrates a consistent delivery of high quality drinking water. The Agency has completed a water use classification and billing improvement collaboration amongst the technical, regulatory and financial staff, and continues to prioritize developing methodologies that support compliance priorities.

9.4 Water Use Objectives

The Agency implemented metering and water loss tracking into its operations and maintenance programs a number of years ago, but in 2020-2021 has worked to continually improve data collection and management methodologies in an efforts to enhance and refine future water efficiency planning. All of these improvements will allow SFWPA will continue to coordinate public information programs targeting customer conservation, and determine where infrastructure improvements should be prioritized.

9.5 Submittal and SB X7-7 Tables

SB X7-7 Table 4: 2020 Gross Water Use

Compliance Year 2020	2020 Volume Into Distribution System *This column will remain blank until SB X7-7 Table 4-A is completed.*	2020 Deductions					2020 Gross Water Use
		Exported Water *	Change in Dist. System Storage* (+/-)	Indirect Recycled Water *This column will remain blank until SB X7-7 Table 4-B is completed.*	Water Delivered for Agricultural Use*	Process Water *This column will remain blank until SB X7-7 Table 4-D is completed.*	
	1,999			-	24	-	**1,975**

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

CHAPTER 10 – PLAN ADOPTION, SUBMITTAL, AND IMPLEMENTATION

This chapter provides guidance for addressing the Water Code requirements for a public hearing, the UWMP and WSCP adoption process, submitting an adopted UWMP and WSCP and making these plans available to the public, plan implementation, and the process for amending an adopted UWMP and WSCP.

This chapter includes the following sections:

10.1 INCLUSION OF ALL 2020 DATA

This UWMP revision contains all the water use and planning data for the entire calendar year of 2020.

10.2 NOTICE OF PUBLIC HEARINGS

10.2.1 Notice to Local Government

CWC *10621 (b) Every urban water supplier required to prepare a plan shall…at least 60 days prior to the public hearing on the plan…notify any city or county within which the supplier provides waters supplies that the urban water supplier will be reviewing the plan and considering amendments or changes to the plan.*

CWC *10642 …The urban water supplier shall provide notice of the time and place of a hearing to any city or county within which the supplier provides water supplies. Notices by a local public agency pursuant to this section shall be provided pursuant to Chapter 17.5 (commencing with Section 7290) of Division 7 of Title 1 of the Government Code. A privately owned water supplier shall provide an equivalent notice within its service area…*

Government Code *Section 7291*

…every local public agency… serving a substantial number of non-English-Speaking people, shall employ a sufficient number of qualified bilingual persons in public contact positions or as interpreters to assist those in such positions, to ensure provision of information and services in the language of the non-English-speaking person."

There are two audiences to be notified for the public hearing: cities and counties, and the general public. On March 18, 2021 the Agency notified Butte County Water and Resource Conservation as well as City of Oroville Administration, and Butte County Development Services that it was updating its 2020 UWMP. Additionally, the preparation notice was sent to the local wastewater collection and treatment agencies, as well as all of the local schools served by the Agency. This was in advance of the 60-day notification prior to a public hearing requirement.

10.2.2 Notice to the Public

CWC *10642 …Prior to adopting either [the plan or water shortage contingency plan], the urban water supplier shall make both the plan and the water shortage contingency plan available for public inspection and shall hold a public hearing or hearings thereon. Prior to any of these hearings, notice of the time and place of the hearing shall be published within the jurisdiction of the publicly owned water supplier pursuant to Section 6066 of the Government Code [see below]. The urban water supplier shall provide notice of the time and place of a hearing to any city or county within which the supplier provides water supplies.*

Government Code *Section 6066*
Publication of notice pursuant to this section shall be once a week for two successive weeks. Two publications in a newspaper published once a week or oftener, with at least five days intervening between the respective publication dates not counting such publication dates, are sufficient. The period of notice commences upon the first day of publication and terminates at the end of the fourteenth day, including therein the first day.

Notice to the Public included in the March 23, 2021 Board Agenda packet
20210323_Packet.pdf (southfeather.com)

The UWMP, along with the WSCP, were both available for public access and inspection at the Agency's Water Division office at 2310 Oro Quincy Highway, Oroville, California. The document is also available to the public on the Agency's internet website at www.southfeather.com, and the local library. Legal public notices were published in the local newspapers and posted at local facilities. A copy of the Legal Notice and Affidavit of Publication for the Public Hearing is attached as Appendix A.

10.3 Public Hearing and Adoption

CWC *10642 …Prior to adopting either, the [plan or water shortage contingency plan], the urban water supplier shall make both the plan and the water shortage contingency plan available for public inspection and shall hold a public hearing or hearings thereon.*

CWC *10608.26 (a) In complying with this part, an urban retail water supplier shall conduct at least one public hearing to accomplish all of the following:*
(1) Allow community input regarding the urban retail water supplier's implementation plan for complying with this part.
(2) Consider the economic impacts of the urban retail water supplier's implementation plan for complying with this part.
(3) Adopt a method, pursuant to subdivision (b) of Section 10608.20 for determining its urban water use target.

CWC *10642 …After the hearing or hearings, the plan or water shortage contingency plan shall be adopted as prepared or as modified after the hearing or hearings.*

The public hearing for both the UWMP and the WSCP took place at the June 22, 2021 Board of Directors meeting. The Agenda included the public hearing as an agenda item, and was properly noticed as required of a public agency.

The South Feather Water and Power Agency prepared this 2020 update of its Urban Water

Management Plan, and the Water Shortage Contingency Plan in 2021. A public hearing for review of the Plans was held at the Agency Office on May 25, 2021 at 2:00 PM.

The 2020 UWMP and the WSCP were adopted by the Agency's Board of Directors June 22, 2021. Attached as Appendix B are copies of the signed Resolution of Plan Adoption for both plans.

10.4 Plan Submittal

CWC *10621 (e) Each urban water supplier shall update and submit its 2020 plan to the department by July 1, 2021…*

CWC *10644 (a)(1) An urban water supplier shall submit to the department, the California State Library, and any city or county within which the supplier provides water supplies a copy of its plan no later than 30 days after adoption.*

CWC *10635 (c) The urban water supplier shall provide that portion of its urban water management plan prepared pursuant to this article to any city or county within which it provides water supplies no later than 60 days after the submission of its urban water management plan.*

10.4.1 Submitting the UWMP to DWR

After UWMP and WSCP adoption at the June 22, 2021 Board of Directors meeting, SFWPA will electronically submit the plans and all associated references to the WUE data portal. This electronic submission will be completed before the July 1, 2021 deadline.

10.4.2 Submitting the UWMP to the CA State Library

On July 1, 2021, which is not later than 30 days after adoption at the June 22, 2021 public hearing, the Agency will submit a CD or hardcopy of the adopted 2020 UWMP, including the adopted WSCP, to the California State Library at:

California State Library Government Publications Section
Attention: Coordinator, Urban Water Management Plans
P.O. Box 942837 Sacramento, CA 94237-0001

10.4.3 Submitting the UWMP to Cities and Counties

No later than 30 days after adoption, the Agency will submit a copy of the adopted 2020 UWMP, including the WSCP, to any city or county to which the Supplier provides water. This copy may be in an electronic format, which will satisfy Water Code Section 10635(b).

10.5 Public Availability

CWC *10645 (a) Not later than 30 days after filing a copy of its plan with the department, the urban water supplier and the department shall make the plan available for public review during normal business hours.*
(b) Not later than 30 days after filing a copy of its water shortage contingency plan with the department, the urban water supplier and the department shall make the plan available for public review during normal business hours.

The South Feather Water and Power Agency prepared this 2020 update of its Urban Water Management Plan, and the Water Shortage Contingency Plan in 2021. A public hearing for review

of the Plans was held at the Agency Office on May 25, 2021 at 2:00 PM.

The 2020 UWMP and the WSCP were adopted by the Agency's Board of Directors June 22, 2021. Attached as Appendix A are copies of the signed Resolution of Plan Adoption for both plans.

10.6 Notification to Public Utilities Commission

CWC *10621 (c) An urban water supplier regulated by the Public Utilities Commission shall include its most recent plan and water shortage contingency plan as part of the supplier's general rate case filings.* Per Water Code Section 10621(c), those Suppliers that are regulated by the California Public Utilities Commission (CPUC) must submit their UWMP and WSCP to the CPUC as part of its general rate case filings.

10.7 Amending an Adopted UWMP or Water Shortage Contingency Plan

CWC *10621(d) The amendments to, or changes in, the plan shall be adopted and filed in the manner set forth in Article 3 (commencing with Section 10640).*

CWC *10644(a)(1) Copies of amendments or changes to the plans shall be submitted to the department, the California State Library, and any city or county within which the supplier provides water supplies within 30 days after adoption.*

Should SFWPA amend either the adopted UWMP or WSCP, each of the steps for notification, public hearing, adoption, and submittal will be followed for the amended plan.

10.8 Submittal and SB X7-7 Tables

Submittal Table 10-1 Retail: Notification to Cities and Counties		
City Name	60 Day Notice	Notice of Public Hearing
Add additional rows as needed		
City of Oroville	Yes	Yes
County Name *Drop Down List*	60 Day Notice	Notice of Public Hearing
Add additional rows as needed		
Butte County	Yes	Yes

APPENDIX A – Notice of Public Hearing/ Affidavit of Publishing

Chico Enterprise-Record
400 E. Park Ave.
Chico, Ca 95928
530-896-7702
erlegal@chicoer.com

3756795

SOUTH FEATHER WATER AND POWER AGENCY
2310 ORO-QUINCY HIGHWAY
OROVILLE, CA 95966

IN THE SUPERIOR COURT OF THE STATE OF CALIFORNIA, IN AND FOR THE COUNTY OF BUTTE

In The Matter Of
Notice of Public Hearing - SFWPA Urban Water Management Plan 2020 Update

AFFIDAVIT OF PUBLICATION

STATE OF CALIFORNIA } **SS.**
COUNTY OF BUTTE }

The undersigned resident of the county of Butte, State of California, says:

That I am, and at all times herein mentioned was a citizen of the United States and not a party to nor interested in the above entitled matter; that I am the principal clerk of the printer and publisher of

The Chico Enterprise-Record
The Oroville Mercury-Register

That said newspaper is one of general circulation as defined by Section 6000 Government Code of the State of California, Case No. 26796 by the Superior Court of the State of California, in and for the County of Butte; that said newspaper at all times herein mentioned was printed and published daily in the City of Chico and County of Butte; that the notice of which the annexed is a true printed copy, was published in said newspaper on the following days:

06/05/2021, 06/12/2021

Dated June 14, 2021
at Chico, California

(Signature)

Legal No. **0006581556**

South Feather Water and Power Agency
Notice of Public Hearing Regarding the SFWPA Urban Water Management Plan 2020 update

Notice is Hereby Given that South Feather Water and Power Agency (SFWPA) will hold a public hearing regarding review and adoption of its Draft 2020 Urban Water Management Plan (UWMP). The public may present oral or written comments as part of the public hearing. In compliance with the Water Conservation Act of 2009 The public may comment on the terms and conditions of the UWMP including , without limitation, giving input regarding SFWPA's implementation plan for complying with the Act: economic impacts of SFWPA's implementation plan: and SFWPA's method for determining its water use target pursuant to the Act. The public hearing will be held as part of the SFWPA's Board of Directors regular meeting which is scheduled for Tuesday June 22, 2021 at 2:00pm in the SFWPA Board Room located at the District Office;
2310 Oro-Quincy Hwy, Oroville, California

The Urban Water Management Plan will be available for electronic review by visiting www.southfeather.com, or hard copies will be available at SFWPA's District Office and the Oroville Branch of the Butte County Library, 1820 Mitchell Avenue.

South Feather Water and Power Agency

Kristen McKillop
Regulatory Compliance Manager,
06/02/2021
6/05, 6/12/2021

APPENDIX B – Resolution of Plan Adoption

SOUTH FEATHER WATER & POWER AGENCY

RESOLUTION OF THE BOARD OF DIRECTORS
Resolution 21-06-02

ADOPTION OF THE 2020 URBAN WATER MANAGEMENT PLAN AND THE 2020 WATER SHORTAGE CONTINGENCY PLAN

WHEREAS, the California Legislature enacted Assembly Bill 797 (Water Code Section 10610 et Seq., known as the Urban Water Management Planning Act) during the 1983-1984 Regular Session, and as amended subsequently, which mandates that every supplier providing water for municipal purposes to more than 3,000 customers or supplying more than 3,000 acre-feet of water annually, prepare an Urban Water Management Plan (UWMP), the primary objective of which is to plan for the conservation and efficient use of water; and,

WHEREAS, the California Water Code Section 10632 requires that every urban water supplier shall prepare and adopt a Water Shortage Contingency Plan (WSCP) as part of its UWMP; and

WHEREAS, South Feather Water and Power Agency is an urban supplier of water providing water to more than 6,500 customers; and

WHEREAS, the UWMP must be periodically reviewed and updated at least once every five years, and the Agency shall make any amendments or changes to its UWMP which are indicated in the review; and,

WHEREAS, the WSCP is a stand-alone document and is included in the WSCP and shall be utilized as the guidance for conducting annual water supply and demand assessments; and

WHEREAS, the UWMP and WSCP must be adopted after public review and hearing, and within 30 days submitted to the California Department of Water Resources by July 1, 2021; and

WHEREAS, the Agency has, therefore, prepared and circulated for public review the 2020 Urban Water Management Plan and 2020 Water Shortage Contingency Plan and properly noticed the public hearing regarding the UWMP that was conducted by the Board of Directors on June 22, 2021.

NOW, THEREFORE, THE BOARD OF DIRECTORS OF SOUTH FEATHER WATER AND POWER AGENCY DO HEREBY RESOLVE AS FOLLOWS:

SECTION 1. The 2020 Urban Water Management Plan and the 2020 Water Shortage Contingency Plan are hereby adopted and ordered filed with the Agency Secretary.

SECTION 2. The General Manager is hereby authorized and directed to file the UWMP update and the WSCP with the California Department of Water Resources by July 1, 2021.

SECTION 3. The General Manager is hereby authorized to promote the implementation of the Water Conservation Programs as detailed in the adopted 2020 Urban Water Management Plan and 2020 Water Shortage Contingency Plan, including recommendations to the Agency's Board of Directors regarding necessary procedures, rules, and regulations to carry out effective and equitable water conservation programs.

PASSED AND ADOPTED by the Board of Directors of the South Feather Water and Power Agency at the regular monthly meeting of said Board on the 22nd day of June 2021 by the following votes:

AYES: RW/TH/DM/JE

NOES: —

ABSTAINED: —

ABSENT: JS

Rick Wulbern, President

Rath T. Moseley, Secretary

APPENDIX C – SBX7-7 Verification Forms

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

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

SB X7-7 Table 3: 2020 Service Area Population	
2020 Compliance Year Population	
2020	16,770
NOTES:	

SB X7-7 Table 4: 2020 Gross Water Use							
		2020 Deductions					
Compliance Year 2020	**2020 Volume Into Distribution System** *This column will remain blank until SB X7-7 Table 4-A is completed.*	**Exported Water ***	**Change in Dist. System Storage*** (+/-)	**Indirect Recycled Water** *This column will remain blank until SB X7-7 Table 4-B is completed.*	**Water Delivered for Agricultural Use***	**Process Water** *This column will remain blank until SB X7-7 Table 4-D is completed.*	**2020 Gross Water Use**
	1,999			-	24	-	**1,975**

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

NOTES:

SB X7-7 Table 4-A: 2020 Volume Entering the Distribution System(s), Meter Error Adjustment

Complete one table for each source.

Name of Source	South Fork Feather River
This water source is *(check one)* **:**	
☑	The supplier's own water source
☐	A purchased or imported source

Compliance Year 2020	Volume Entering Distribution System [1]	Meter Error Adjustment [2] *Optional (+/-)*	Corrected Volume Entering Distribution System
	1,999	-	1,999

[1] ***Units of measure (AF, MG , or CCF)*** *must remain consistent throughout the UWMP, as reported in SB X7-7 Table 0 and Submittal Table 2-3.* [2] ***Meter Error Adjustment*** *- See guidance in Methodology 1, Step 3 of Methodologies Document*

NOTES

SB X7-7 Table 4-C: 2020 Process Water Deduction Eligibility (For use only by agencies that are deducting process water) Choose Only One	
☐	**Criteria 1**- Industrial water use is equal to or greater than 12% of gross water use. Complete SB X7-7 Table 4-C.1
☐	**Criteria 2** - Industrial water use is equal to or greater than 15 GPCD. Complete SB X7-7 Table 4-C.2
☐	**Criteria 3** - Non-industrial use is equal to or less than 120 GPCD. Complete SB X7-7 Table 4-C.3
☑	**Criteria 4** - Disadvantaged Community. Complete SB x7-7 Table 4-C.4
NOTES: N/A, not enough Industrial volume to report	

SB X7-7 Table 4-C.1: 2020 Process Water Deduction Eligibility *(For use only by agencies that are deducting process water using Criteria 1)*

Criteria 1

Industrial water use is equal to or greater than 12% of gross water use

2020 Compliance Year	2020 Gross Water Use Without Process Water Deduction	2020 Industrial Water Use	Percent Industrial Water	**Eligible for Exclusion Y/N**
	1,975	0	0%	NO

NOTES: Industrial water use was only 0.25 MG in 2020

SB X7-7 Table 4-C.2: 2020 Process Water Deduction Eligibility *(For use only by agencies that are deducting process water using Criteria 2)*

Criteria 2
Industrial water use is equal to or greater than 15 GPCD

2020 Compliance Year	2020 Industrial Water Use	2020 Population	2020 Industrial GPCD	**Eligible for Exclusion Y/N**
	0	16,770	0	NO

NOTES: N/A Industrial water use was only 0.25 MG in 2020

SB X7-7 Table 4-C.3: 2020 Process Water Deduction Eligibility *(For use only by agencies that are deducting process water using Criteria 3)*

Criteria 3
Non-industrial use is equal to or less than 120 GPCD

2020 Compliance Year	2020 Gross Water Use Without Process Water Deduction *Fm SB X7-7 Table 4*	2020 Industrial Water Use	2020 Non-industrial Water Use	2020 Population *Fm SB X7-7 Table 3*	Non-Industrial GPCD	**Eligible for Exclusion Y/N**
	1,975	0	1,975	16,770	323	NO

NOTES: N/A Industrial water use was only 0.25 MG in 2020

SB X7-7 Table 4-C.4: 2020 Process Water Deduction Eligibility ***(For** use only by agencies that are deducting process water using Criteria 4)*

Criteria 4

Disadvantaged Community. A "Disadvantaged Community" (DAC) is a community with a median household income less than 80 percent of the statewide average.

SELECT ONE

"Disadvantaged Community" status was determined using one of the methods listed below:

1. IRWM DAC Mapping tool https://gis.water.ca.gov/app/dacs/

☑	If using the IRWM DAC Mapping Tool, include a screen shot from the tool showing that the service area is considered a DAC.

2. 2020 Median Income

	California Median Household Income*		Service Area Median Household Income	Percentage of Statewide Average	**Eligible for Exclusion? Y/N**
☑	**2020**	**$75,235**	$52,537	70%	YES

*California median household income 2015 -2019 as reported in US Census Bureau QuickFacts.

NOTES: Median household income for Butte County (in 2019 dollars) 2015-2019. In

SB X7-7 Table 5: 2020 Gallons Per Capita Per Day (GPCD)		
2020 Gross Water *Fm SB X7-7 Table 4*	**2020 Population** *Fm SB X7-7 Table 3*	**2020 GPCD**
1,975	16,770	**323**
NOTES:		

SB X7-7 Table 9: 2020 Compliance

Actual 2020 GPCD[1]	Optional Adjustments to 2020 GPCD (Enter "0" if Adjustment Not Used)			TOTAL Adjustments[1]	Adjusted 2020 GPCD [1] *(Adjusted if applicable)*	2020 Confirmed Target GPCD [1, 2]	**Did Supplier Achieve Targeted Reduction for 2020?**
	Extraordinary Events[1]	Weather Normalization[1]	Economic Adjustment[1]				
323	66	-	-	66	257	247	**NO**

[1] *All values are reported in GPCD*

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

NOTES: September 8, 2020 began a five-day evacuation period for more than half of the customer base in our service area due to the lighting caused Bear/Claremont Fire. Due to extreme heat, dry conditions and excessively high winds, the firestorm exploded in size to become the North Complex Fire, which became the sixth-largest fire event in California's modern history, and the deadliest of 2020. Families fled their homes leaving sprinklers on for the duration of the evacuation, as well as evacuating to other homes within the