

**South Feather Water and Power Agency
URBAN WATER MANAGEMENT PLAN
2005**



SOUTH FEATHER
■ WATER & POWER ■

SUBMITTED BY: SOUTH FEATHER WATER AND POWER AGENCY
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August 29, 2006

Table Of Contents

PUBLIC PARTICIPATION.....	1
PUBLIC PARTICIPATION	1
PLAN ADOPTION	1
AGENCY COORDINATION	2
INTERAGENCY COORDINATION	2
SUPPLIER SERVICE AREA.....	3
AGENCY BACKGROUND	3
SERVICE AREA.....	3
CLIMATE.....	4
WATER SOURCES (SUPPLY)	7
WATER SUPPLY SOURCES	7
GROUNDWATER	8
RELIABILITY PLANNING	10
RELIABILITY.....	10
TRANSFER OR EXCHANGE OPPORTUNITIES	12
WATER TRANSFERS.....	12
WATER USE PROVISIONS	13
PAST, CURRENT AND PROJECTED WATER USE	13
DOMESTIC SECTOR	14
AGRICULTURAL SECTOR	14
SUPPLY AND DEMAND COMPARISON PROVISIONS.....	15
SUPPLY AND DEMAND COMPARISON	15
WATER DEMAND MANAGEMENT MEASURES	16
WATER DEMAND MANAGEMENT MEASURES (IMPLEMENTED).....	15
DMM 2 -- PLUMBING RETROFIT	16
DMM 3 -- DISTRIBUTION SYSTEM WATER AUDITS, LEAK DETECTION AND REPAIR	16
DMM 4 -- METERING WITH COMMODITY RATES	17
DMM 5 -- LARGE LANDSCAPE WATER AUDITS AND INCENTIVES	17
DMM 7 -- PUBLIC INFORMATION	18
DMM 8 -- SCHOOL EDUCATION	18
DMM 10 -- WHOLESALE AGENCY PROGRAMS	18
DMM 11 -- CONSERVATION PRICING, WATER SERVICE	18
DMM 12 -- WATER CONSERVATION COORDINATOR.....	19
DMM 13 -- WATER WASTE PROHIBITION	19
WATER DEMAND MANAGEMENT MEASURES (NOT IMPLEMENTED)	21
DMM 1 -- INTERIOR AND EXTERIOR WATER AUDITS FOR RESIDENTIAL CUSTOMERS	22
DMM 6 -- HIGH EFFICIENCY WASHING MACHINE REBATE PROGRAM	22
DMM 9 -- COMMERCIAL AND INDUSTRIAL WATER CONSERVATION	22
DMM 14 -- ULTRA-LOW FLUSH TOILET REPLACEMENT	22
WATER SHORTAGE CONTINGENCY PLAN.....	20
STAGES OF ACTION	23
THREE YEAR MINIMUM SUPPLY.....	23
WATER SHORTAGE EMERGENCY RESPONSE	23

ANALYSIS OF REVENUE IMPACTS OF REDUCED WATER SALES	27
WATER SHORTAGE CONTINGENCY ORDINANCE/RESOLUTION	27
WATER RECYCLING	27
WASTEWATER SYSTEM DESCRIPTION	27
APPENDIX A	29
LEGAL NOTICE OF PUBLIC HEARING	30
APPENDIX B	31
RESOLUTION TO ADOPT THE URBAN WATER MANAGEMENT PLAN	32
APPENDIX C	33
SFWPA RATE SCHEDULE (2006)	34

List of Tables and Figures

TABLE 1 COORDINATION AND PUBLIC INVOLVEMENT.....	2
TABLE 2 POPULATION PROJECTIONS.....	4
FIGURE 1 OROVILLE TEMPERATURE.....	5
FIGURE 2 OROVILLE PRECIPITATION.....	5
FIGURE 3 OROVILLE EVAPOTRANSPIRATION.....	6
FIGURE 4 RESERVOIR STORAGES FOR MAJOR FACILITIES.....	8
FIGURE 5 SFWPA CONVEYANCE AND DISTRIBUTION SYSTEM.....	9
TABLE 3 CURRENT AND PROJECTED WATER SUPPLIES.....	8
TABLE 4 SUPPLY RELIABILITY.....	10
TABLE 5 BASIS OF WATER YEAR DATA.....	11
TABLE 6 PAST, CURRENT AND PROJECTED WATER USE.....	13
TABLE 7 PROJECTED SUPPLY AND DEMAND COMPARISON.....	15
TABLE 8 SINGLE DRY YEAR AND MULTIPLE DRY WATER YEARS.....	15
TABLE 9 NON-IMPLEMENTED DMM UNIT COST.....	21
TABLE 10 THREE-YEAR ESTIMATED MINIMUM WATER SUPPLY.....	24
TABLE 11 EMERGENCY AND THREAT SCENARIOS ACTION PLANS.....	25
TABLE 12 GALLONS OF WATER NEEDED FOR VARIOUS DURATIONS.....	26
TABLE 13 WATER SHORTAGE REVENUE IMPACTS.....	27

South Feather Water and Power Agency 2005 Urban Water Management Plan Contact Sheet

Date plan submitted to the Department of Water Resources: **08/25/06**

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The Water supplier is a:

**A Public Agency formed pursuant to Water Code § 20500 et seq. Formerly:
Oroville-Wyandotte Irrigation District**

The Water supplier is a:

Retailer

Utility services provided by the water supplier include:

Domestic and Irrigation Water Service, Hydro Generation

Is This Agency a Bureau of Reclamation Contractor?

No

Is This Agency a State Water Project Contractor?

No

Public Participation

Law

10642. Each urban water supplier shall encourage the active involvement of diverse social, cultural, and economic elements of the population within the service area prior to and during the preparation of the plan. Prior to adopting a plan, the urban water supplier shall make the plan available for public inspection and shall hold a public hearing thereon. Prior to the hearing, notice of the time and place of hearing shall be published ... After the hearing, the plan shall be adopted as prepared or as modified after the hearing.

Public Participation

South Feather Water and Power Agency (Agency) has actively encouraged community participation in its urban water management planning efforts since the first plan was developed in 1990. Public meetings were held on the development and adoption of the 1990, 1995, 2000 and 2005 plans.

For the 2005 update to the Urban Water Management Plan a formal public session was held for review and comment on the draft plan before the Board of Directors approval. In addition to local newspaper announcement of the public meeting our Board meeting agendas and supporting documents were posted on the Agency website. Public notification was also posted at the Agency main office at 2310 Oro-Quincy Hwy, Oroville. Copies of the draft plan were available at the Agency main office and the Agency website: <http://www.southfeather.com/>.

The Agency is a participant and actively involved in the Butte County Integrated Water Resources Plan (IWRP). The development of the IWRP involved extensive public involvement and seeks implementation grants for water conservation measures.

Plan Adoption

The Agency prepared this update of its Urban Water Management Plan (UWMP) during the winter and Spring of 2006. The updated plan was adopted by the Board of Directors in August 2006 and submitted to the California Department of Water Resources within 30 days of Board approval. Attached to the cover letter addressed to the Department of Water Resources and attached as Appendix B are copies of the signed Resolution of Plan Adoption. This plan includes all information necessary to meet the requirements of California Water Code Division 6, Part 2.6 (Urban Water Management Planning).

Agency Coordination

Law

10620 (d) (2) 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.

Interagency Coordination

The Agency has extensive coordination with local planning and development agencies by providing information on the adequacy of water supply, distribution system, and water rates to meet area current and future growth needs. The agency has provided the UWMP and coordinated with these local agencies to assist in the development of Municipal Service Review Studies and local fire safety evaluations.

During the period of Plan development the Agency has coordinated water system planning activities with the following agencies:

- California Department of Health Services
- Butte County Public Works Department
- Butte County Water and Resource Conservation Department
- Butte County Fire Department
- The City of Oroville Public Works Department

The Agency is a participant in the Butte County Integrated Water Resources Plan that includes proposed regional water resource enhancement projects coordinated through Butte County Water and Resource Conservation Department. The Agency is the proponent of proposed water conservation projects that are viewed as not cost effective for the Agency to pursue without additional grant funding.

The development of the IWRP involved extensive public and regional water supplier involvement. The IWRP was designed by a steering committee that included broad representation by environmental, urban and agricultural stakeholders actively involved in local water resource planning. Table 1 summarizes the efforts South Feather Water and Power Agency has taken to include various agencies and citizens in its planning process.

Table 1. Agency Coordination and Public Involvement						
Entities	Actions					
	Helped write the plan	Was contacted for assistance	Was provided a copy of the draft	Commented on the draft	Attended public meetings	Was notified of intention to adopt
Local Retailers			✓			✓
Wastewater Agency		✓	✓			✓
Regional Agency		✓	✓			✓
Citizen Groups						✓
General Public			✓		✓	✓

Supplier Service Area

Law

10631. A plan shall be adopted in accordance with this chapter and shall do all of the following:

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.

Agency Background

South Feather Water and Power Agency – originally named Oroville-Wyandotte Irrigation District – 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 District 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 of 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 District 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 District 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 District. In addition to irrigation service, the district 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 District's expanding infrastructure, the District's Board of Directors proposed the construction of the South Fork Project. The South Fork Project, covering 82 square miles in three counties, consisted of 8 dams, 17 tunnels, 21 miles of canals and conduits, 3 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.

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 to provide water to approximately 6,500 households, maintains a service area of over 31,000 acres supplied by 141 miles of pipeline, and delivers irrigation water to over 500 customers.

Agency Service Area

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 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. Predominant vegetative types include a mixture of blue oak woodland, montane hardwood forest, and chaparral, grassland, and riparian vegetation.

The Oroville Area Land Use Plan of the Butte County General Plan designates much of the service area of SFW&P as Agricultural-Residential. The purpose of the Agricultural-Residential designation is to provide areas for agricultural uses and single-family dwellings at rural densities.

The Agency currently provides domestic water services to approximately 6,471 customer accounts and serving an estimated population of nearly 20,000. The water distribution system does not service all households in the Agency service area. It is estimated that an approximate population of 21,400 reside in the Agency service area. The population projections in Table 2 were made using two values for growth rate. The first value was obtained from the historical growth rate for Butte County. This growth rate was determined from the growth that took place in the County from 1990 to 2000, about 1.1% per year. As the Agency local service area includes parts of the City of Oroville and nearby unincorporated areas of Butte County, the mean growth rate used in the second row is based on those two sub-areas and projected by the Butte County Association of Governments at approximately 2.35%.¹

Table 2. Population Projections					
	2005	2010	2015	2020	2025
Service Area Population based on historical County Growth Rate	21,400	22,600	23,870	25,220	26,630
Service Area Population based on Planned Future Growth Rate	21,400	24,040	27,000	30,320	34,050

Climate

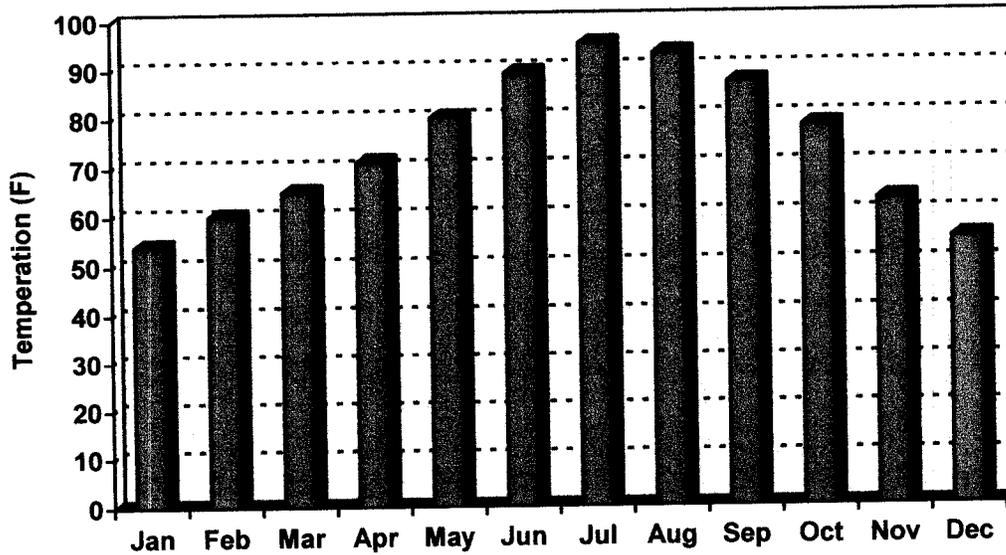
Temperature and precipitation information is obtained from the National Weather Service from the USFS weather observer located just outside the service area boundary near downtown Oroville. The information is based on the recent 30-year period from 1971-2000.

The Agency service area has a Mediterranean-type climate with four very distinct seasons. Winter months are cool to cold with temperatures from mid to high 50s down to the 30s. Summers are warm to extremely warm with temperatures ranging from the low 80s up to the low 100s and an annual average

1. Butte LAFCo Domestic Water and Wastewater Service Providers, October, 2005

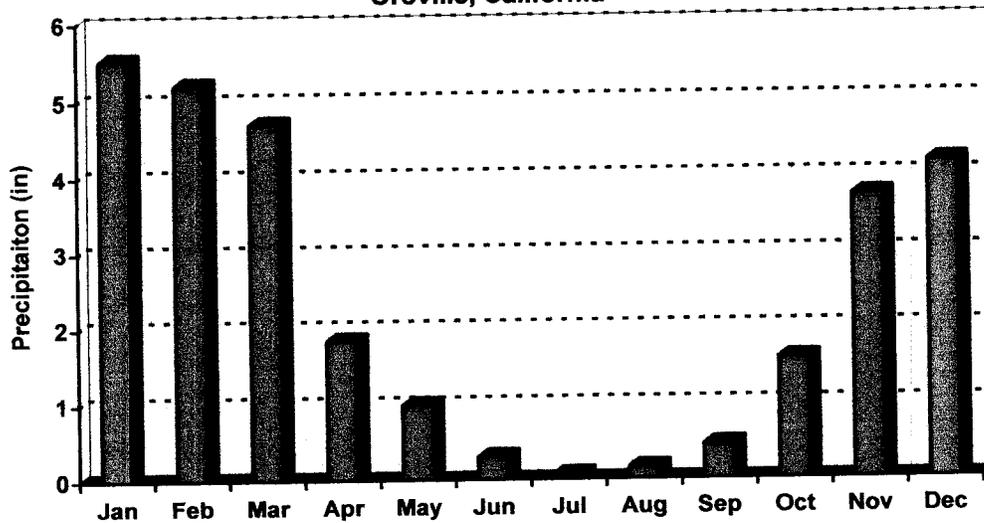
mean temperature of 61degrees. Figure 1. presents the mean daily maximum temperatures for each month based on the 30-year period of 1971 through 2000.²

**Figure 1.
Monthly Mean Daily Maximum Temperature
Oroville, California²**



Winter Monthly precipitation amounts vary from a maximum over 16-inches in January (1995) to a minimum of no precipitation in December (1989). The average annual precipitation is 28.8-inches with nearly 70-percent occurring in the winter months (Dec-Mar). Figure 2. Presents the mean monthly precipitation for the Oroville area.

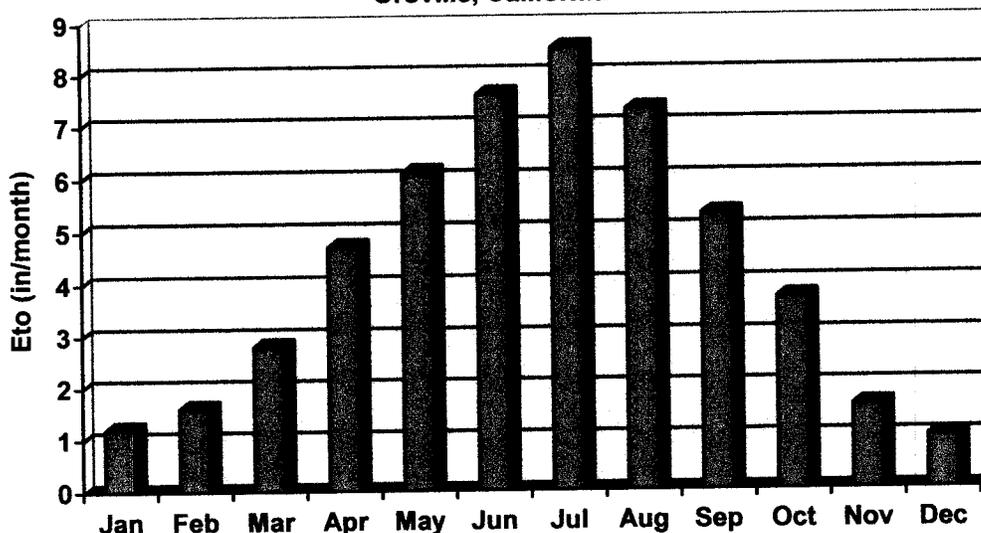
**Figure 2.
Mean Monthly Precipitation
Oroville, California²**



². National Climatic Data Center for Oroville, CA coop ID # 046521

Climatic conditions have a direct affect on the water demands for landscape and agricultural irrigation purposes. California Irrigation Management Information System (CIMIS) was established in 1982 to assist in providing information required to estimate crop water needs. Reference Evapotranspiration (ET_o) is a term used to describe the evapotranspiration rate from a reference crop such as grass that can be used to determine water needs for other crops. The ET_o for an average year is referred to as normal year ET_o. Figure 3 presents the normal year ET_o for the Oroville area.³ The annual normal year ET_o total is 51.4 inches.

Figure 3.
Normal Monthly Evapotranspiration (Eto)
Oroville, California



3. Data provided by California Department of Water Resources
<http://www.owue.water.ca.gov/docs/WaterOrdSecRef.pdf>

Water Sources (Supply)

Law

10631. A plan shall be adopted in accordance with this chapter and shall do all of the following:

10631 (b) Identify and quantify, to the extent practicable, the existing and planned sources of water available to the supplier over the same five-year increments [to 20 years or as far as data is available.]

Water Supply Sources

The Agency has an excellent water supply. SFWPA is permitted to store 172,064 acre-feet 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. Completed in 1981, the treatment plant has the capacity to treat 14.5 million gallons per day (MGD).

The South Fork Feather River (SFFR) headwaters originate at an elevation of 7,457 feet. The combined drainage area of the South Fork Feather River and Slate Creek (a tributary of the North Fork Yuba River) contributing to the Agency's water supply is 157 square miles. The total average annual runoff of the SFFR including diversions from Slate Creek is 319,895 AF. Figure 5 on page 9 is a schematic of SFWPA's water sources and raw-water distribution. 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, flood control, 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 nine impoundments is 172,584 AF, or about 52 percent of the SFFR's total runoff. Figure 4 shows the historical operations of SFWPA reservoirs and the relative seasonal fluctuations of the active storage.

The figure shows median storage based on daily storage readings for 1973 through 2001. Little Grass Valley and Sly Creek reservoirs are operated to capture rain and snowmelt in the winter and spring months and slowly drafted during the Summer and Fall for environmental, power generation, irrigation, and domestic consumption purposes. The Lost Creek, Forbestown, Ponderosa and Miners Ranch Reservoirs are operated as re-regulating reservoirs that do not have annual draw down and refill cycles.

The water diversion, storage, conveyance, and distribution operations are guided by a set of priorities as follows: 1) safety; 2) regulatory requirements and allocations; 3) water consumptive demands; and 4) power generation.

SFWPA anticipates these sources of developed water supply will continue to more than adequately meet the current and the foreseeable demand through 2035. Based on the annual watershed production of 320,000 acre-feet, ability to store 172,000 acre-feet, and associated consumptive water rights, SFWPA conservatively estimates the developed water supply will provide a safe annual yield of 70,000 AF annually (Table 3).

Figure 4.
Average Daily Reservoir Storages for Major Facilities 1973-2001

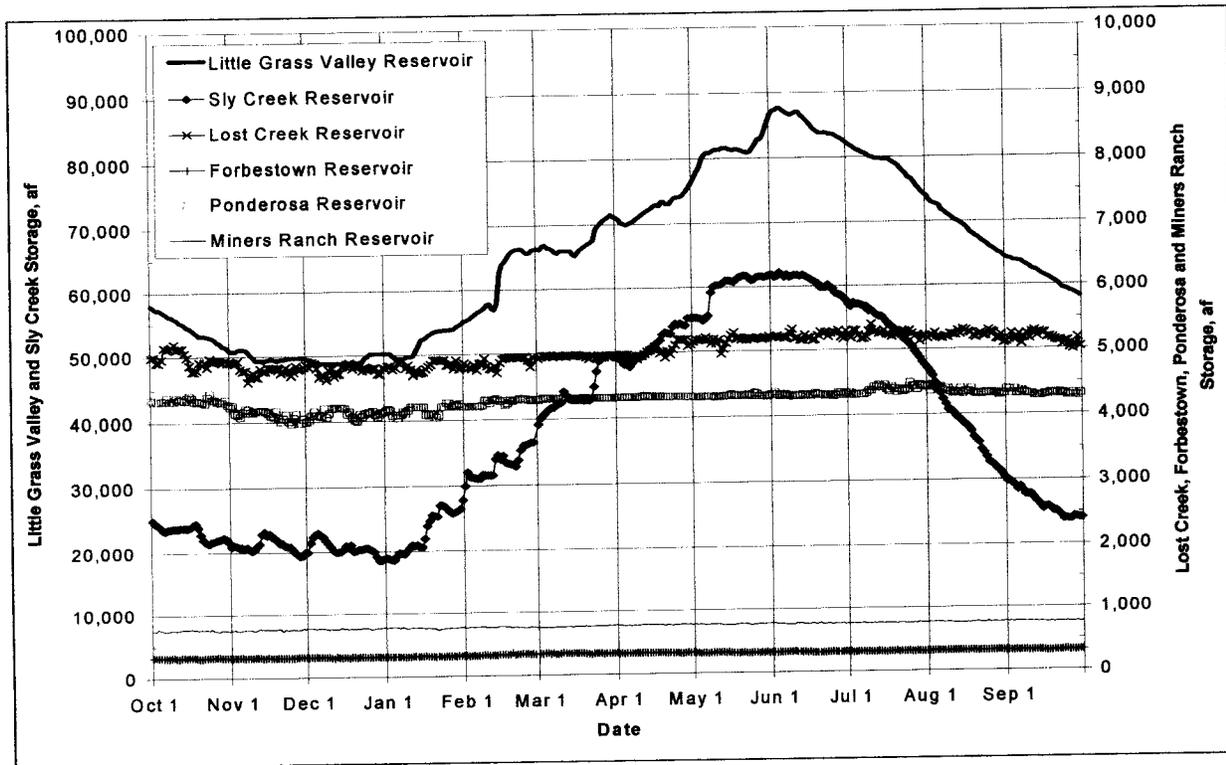


Table 3.
Current and Planned Water Supplies (AFA)

Water Supply Sources	2005	2010	2015	2020	2025
South Fork Feather River	70,000	70,000	70,000	70,000	70,000
Total	70,000	70,000	70,000	70,000	70,000

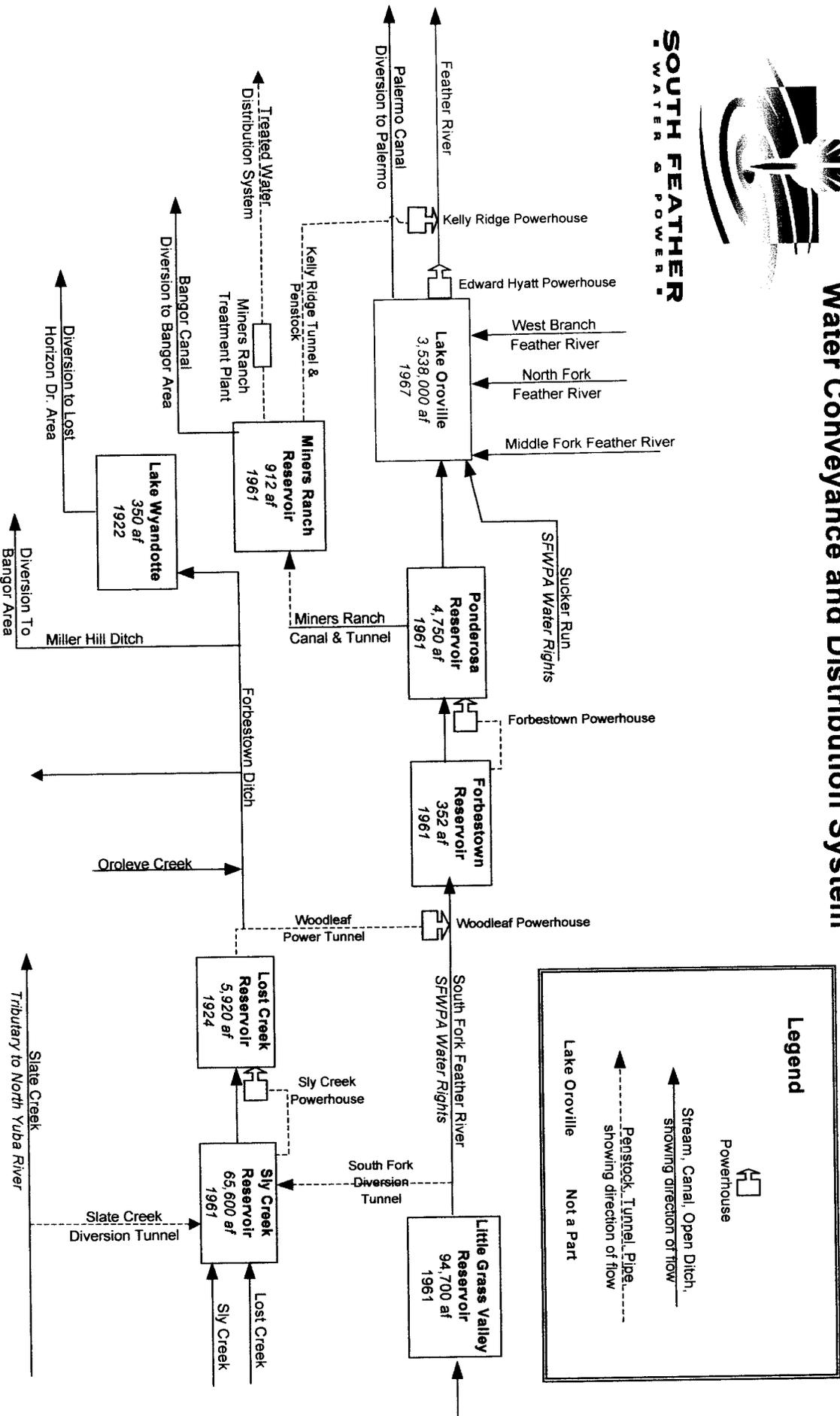
Groundwater

SFWPA does not have the need and does not anticipate any future need to utilize any regional groundwater supplies. There exist some private wells used for domestic and irrigation purposes. Portions of the Agency service area are included in Butte County Groundwater Management Plan.



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**Figure 5. South Feather Water & Power Agency
Water Conveyance and Distribution System**



Reliability Planning

Law

10631. A plan shall be adopted in accordance with this chapter and shall do all of the following:

10631 (c) Describe the reliability of the water supply and vulnerability to seasonal or climatic shortage, to the extent practicable.

10631 (c) For any water source that may not be available at a consistent level of use, given specific legal, environmental, water quality, or climatic factors, describe plans to replace that source with alternative sources or water demand management measures, to the extent practicable.

10631 (c) Provide data for each of the following:

(1) An average water year, (2) A single dry water year, (3) Multiple dry water years.

10632. The plan shall provide an urban water shortage contingency analysis which includes each of the following elements which are within the authority of the urban water supplier:

10632 (b) An estimate of the minimum water supply available during each of the next three-water years based on the driest three-year historic sequence for the agency's water supply.

Reliability

The SFWPA consumes approximately 27,000 acre-feet annually for domestic and irrigation purposes. Based on the annual watershed production of 320,000 acre-feet, Agency ability to store 172,000 acre-feet, and the associated consumptive water rights, SFWPA conservatively estimates the developed water supply will provide a safe annual yield of 70,000 AF annually. SFWPA anticipates these sources of developed water supply will continue to more than adequately meet the current and any foreseeable future demand through 2035.

The Agency has not completed a formal water supply study that would include physical and temporal factors of reservoir operations, watershed runoff, water rights allocations, and demand distribution. We are currently developing a watershed model through our Federal Energy Regulatory Commission (FERC) relicensing efforts. Water supply reliably values in Table 4 provide minimum values based on combined operations for Little Grass Valley and Sly Creek reservoirs only and does not consider the temporal factors such as watershed production, demand variability and water conveyance system operation.

Table 4					
Supply Reliability - AF Year					
Average / Normal Water Year	Single Dry Water Year	Multiple Dry Water Years			
		Year 1	Year 2	Year 3	Year 4
70,000	46,000	70,000	68,000	56,000	63,000
% of Normal	66	100	96	79	89

Table 5 presents the annual period used for the water supply reliability values.

Table 5
Basis of Water Year Data

Water Year Type	Period
Average Water Year	1973-2001
Single-Dry Water Year	1977
Multiple-Dry Water Years	1989-1992

Transfer or Exchange Opportunities

Law

10631. A plan shall be adopted in accordance with this chapter and shall do all of the following:

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

Water Transfers

The Agency frequently has the opportunity to re-regulate reservoirs and institute water conservation programs to provide an opportunity to transfer water to other water management agencies without causing injury to downstream water users. Transfers of approximately 10,000 acre-feet have occurred in six of the last fifteen years to environmental water management agencies, water suppliers in Northern California and Southern California. SFWPA is currently pursuing additional opportunities for long term and short-term transfers including the transfer of conserved water.

SFWPA has aggressively pursued opportunities to implement water conservation measures that result in surplus water that would be available for transfer. Domestic pipeline replacement and irrigation canal improvements have generated approximately 1,500 acre-feet of conserved water annually. It is conservatively estimated that an additional 7,000 acre-feet of conserved water annually potentially could be made available for transfer. SFWPA is actively seeking programs that make additional water conservation efforts more economically feasible.

Water Use Provisions

Law

10631. A plan shall be adopted in accordance with this chapter and shall do all of the following:

10631 (e) (1) 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, identifying the uses among water use sectors including, but not necessarily limited to, all of the following uses:

(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; and (I) Agricultural.

(2) The water use projections shall be in the same 5-year increments to 20 years or as far as data is available.

Past, Current and Projected Water Use

Table 6 illustrates Past, Current, and Projected Water Use for 2000 - 2025 in acre-feet per year and number of customers per year.

Table 6. Past Current and Projected Water Deliveries

Water Use Sectors		2000		2005		2010*		2015		2020		2025	
		# of accounts	Deliveries AFY										
Domestic Water	Single and Multi-Family Units	n/a		6471	5,123	7269	5,755	8164	6,464	9168	7,259	10296	8,152
	Commercial	n/a		81	100	91	113	102	127	115	142	129	160
	Industrial	n/a		13	86	15	97	16	109	18	122	21	137
	Use Subtotal	6125	5,537	6565	5,310	7375	5965.1	8283	6699.5	9301	7523.3	10446	8448.9
	Loss %		16%		14%		14%		14%		14%		14%
Agricultural Water	Agricultural Use	535	18,601	552	15,153	552	15,153	552	15,153	552	15,153	552	15,153
	Agricultural System Loss %		86%		82%		82%		82%		82%		82%
TOTAL WATER	Total Diversions	6,660	24,413	7,117	20,682	7927	21,118	8,835	21,853	9,853	22,676	10,998	23,602
	Water Use Losses		70%		65%		65%		65%		65%		65%

* Based on population projections Table 2.

Domestic Sector

Since 2000, new domestic connections are being added at a rate about 1.4% per year, but because of distribution system upgrades, increases in operational efficiency, new plumbing efficiency standards, and other conservation programs, domestic water demand has decreased at a rate nearly 1% per year. Over the past 10 years domestic system unaccounted water losses have been reduced from 34% to about 14% of total production which has an annual conserved water value of nearly 800 acre-feet.

Agricultural Sector

In 2005 approximately 73% of total annual water diversions was for agricultural irrigation uses. This raw water distribution system utilizes nearly 110 miles of open canal conveyance that can date back to the early mining era. Significant seepage through unlined canals and operational spills contribute to the majority of total diverted water losses.

Agricultural water demand is projected to remain constant for the next ten years, and then probably gradually decrease over the next twenty to thirty years. SFWPA's 535 agricultural accounts irrigate about 9,500 acres of olive and citrus orchards, vineyards, alfalfa, pasture, and other incidental agricultural crops. Agriculture water consumption averages approximately 19,000 AFY from the Agency's raw water source.

Supply and Demand Comparison Provisions

Law

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.

Supply and Demand Comparison

Table 7 compares current, and projected water supply and demand. It indicates that the Agency has more than sufficient water to meet its customers' needs, through 2025. This is based on conservative quantity estimates of the Agency's multiple water rights and a reasonable level of operational storage.

Table 7						
Projected Supply and Demand Comparison						
	2005	2010	2015	2020	2025	
Supply totals	70,000	70,000	70,000	70,000	70,000	
Demand totals	20,682	21,118	21,853	22,676	23,602	
Difference	49,318	48,882	48,147	47,324	46,398	
Units of Measure: Acre-feet/Year						

In any one dry year or multiple dry years it is not anticipated that the Agency's urban water demands will be impacted. Table 8 presents a supply and demand comparison where future increased demand does not fluctuate in conjunction with a change in supply. This analysis demonstrates that if supply were to be reduced from a water supply shortage, the existing supply is sufficient to meet current and future demands.

Table 8					
Single Dry Year and Multiple Dry Water Years					
Water Supply Sources	Current Supply 2005 (Volume)	Single Dry Water Year (Volume)	Multiple Dry Water Years		
			Year 1 (Volume)	Year 2 (Volume)	Year 3 (Volume)
Supply totals	70,000	46,000	70,000	68,000	56,000
Percent Shortage		0%	0%	0%	0%
Demand totals	20,682	23,602	23,602	23,602	23,602
Difference	49,318	22,398	46,398	44,398	32,398
Unit of Measure: Acre-feet/Year					

Water Demand Management Measures

Law

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

(1) A description of each water demand management measure that is currently being implemented, or scheduled for implementation, including the steps necessary to implement any proposed measures, including, but not limited to, all of the following:.....

- (1) *Water survey programs for single-family residential and multifamily residential customers.*
- (2) *Residential plumbing retrofit.*
- (3) *System water audits, leak detection, and repair.*
- (4) *Metering with commodity rates for all new connections and retrofit of existing connections.*
- (5) *Large landscape conservation programs and incentives.*
- (6) *High-efficiency washing machine rebate programs.*
- (7) *Public information programs.*
- (8) *School education programs.*
- (9) *Conservation programs for commercial, industrial, and institutional accounts.*
- (10) *Wholesale agency programs.*
- (11) *Conservation pricing.*
- (12) *Water conservation coordinator.*
- (13) *Water waste prohibition.*
- (14) *Residential ultra-low-flush toilet replacement programs.*

For the purpose of responding to the Urban Water Management Planning Act the Agency will address the 14 Demand Management Measures by sections identified by implemented and not implemented.

Water Demand Management Measures (Implemented)

DMM 2 -- Plumbing Retrofit

IMPLEMENTATION DESCRIPTION: SFWPA supports upgrading and retrofitting of water efficient plumbing and appliances. The Agency provides educational material addressing replacing old fixtures, and installing water-saving devices in faucets, toilets and appliances.

IMPLEMENTATION SCHEDULE: The Agency will continue to implement this DMM.

CONSERVATION SAVINGS: Conservation savings from this DMM are not quantifiable.

DMM 3 -- Distribution System Water Audits, Leak Detection and Repair

IMPLEMENTATION DESCRIPTION: The Agency has conducted water audits and leak detection and repair since the late 1980's. Over the past twenty years SFWPA has undertaken a steel pipeline replacement project at a cost of over \$10.7 million. The agency has completely replaced old failing steel water mains with over 60 miles of new C900 PVC pipe. This distribution system repair has reduced unaccounted-for-water from 34% to a respectable 13% for an approximate annual savings of 1,200 acre-feet.

IMPLEMENTATION SCHEDULE: The Agency has permanently incorporated this DMM into its operations and maintenance procedures.

METHODS TO EVALUATE EFFECTIVENESS: Documentation of leak service calls has shown a decrease from up to 167 leaks per month to less than 5 leaks per month.

CONSERVATION SAVINGS: Savings were initially estimated to be about 1,200 AFY. Unaccounted water losses have been reduced from 34% to about 13% per year.

BUDGET: Annual budget: \$500,000 (from operations and maintenance records).

DMM 4 -- Metering with Commodity Rates

IMPLEMENTATION DESCRIPTION: The Agency's Domestic water use is fully metered and Agricultural water use is volumetrically measured. A domestic water-billing unit is one hundred cubic feet (748 gallons), commonly abbreviated HCF or CCF. The Agency has a declining multi-block rate structure. Non-potable (irrigation) water use is directly metered and billed by CCF or measured at equivalent rates-of-use (miners-inch-days) and volumetrically billed. For a copy of SFWPA 2006 rate information see Appendix A.

IMPLEMENTATION SCHEDULE: The Agency will continue to install and read meters on all new services, and will continue to conduct its meter calibration and replacement program to assure measurement accuracy.

METHODS TO EVALUATE EFFECTIVENESS: Periodic review of customer water use, comparing current water use per capita with historic data.

CONSERVATION SAVINGS: Metered accounts may result in a 10% reduction in demand compared to non-metered accounts.

BUDGET: Meter installation and maintenance costs are part of new service connection fees.

DMM 5 -- Large Landscape Water Audits and Incentives

IMPLEMENTATION DESCRIPTION: the Tehama County Resource Conservation District in cooperation with the Butte County RCD and the Butte County Department of Water and Resource Conservation has conducted Irrigation surveys for irrigation customers. The survey team calculates a water budget for the site -- the amount of water necessary for that site based on irrigated acres, the crop type, and the climate. The Agency staff review landscape customers' water use monthly.

The Agency utilizes a California Irrigation Management Information System (CIMIS) weather station located on the eastside of the Sacramento Valley at the CSU, Chico School Farm. Daily climatological data (temperatures, relative humidity, wind velocity, and precipitation) are made available on a telephone recording for the public. By special arrangement with the Butte County Resource Conservation District, landscape managers, and agricultural customers are instructed on the use of these data to develop irrigation schedules.

The Agency is considering a financial incentive program to encourage high water users to convert to more water efficient landscapes. Financial incentives may include: irrigation system conversions, automatic controllers, soil moisture sensors, automated CIMIS scheduling, and plants and other landscape materials.

IMPLEMENTATION SCHEDULE and METHODS TO EVALUATE EFFECTIVENESS: The Agency will continue to implement this DMM by review of customers' water use and by providing website links to local RCD and CIMIS information

CONSERVATION SAVINGS: Agricultural and landscape irrigation systems that are evaluated and upgraded based on survey recommendations could result in a 15% reduction in water demand.

DMM 7 -- Public Information

IMPLEMENTATION DESCRIPTION: Through public information and outreach, the Agency promotes water conservation several ways. We distribute public information through bill inserts, brochures, community speakers, and many special events every year. The Agency established a World Wide Web Home Page, which includes information on water conservation and other resource issues. Annually, the Agency conducts a Water Tour to provide information to the customers on our water supply, conservation, operations and Agency issues.

The Agency water bills were redesigned in 2005 to show gallons used per month for the last 12 monthly billings. This provides the customer with the ability to visualize the annual water use pattern and to compare the current billing period to the same period for the previous year.

IMPLEMENTATION SCHEDULE: The Agency will continue to provide public information services and materials to remind the public about water and other resource issues.

METHODS TO EVALUATE EFFECTIVENESS: The Agency will track the commentary regarding the information provided.

CONSERVATION SAVINGS: The Agency has no method to quantify the savings of this DMM but believes that this program is in the public's interest.

DMM 8 -- School Education

IMPLEMENTATION DESCRIPTION: The Agency continues to work with local school districts to promote water conservation measures and to educate students about resource issues.

The Agency provides educational materials for several grade levels at local science fairs and conducts facilities tours (for example, Miners Ranch Reservoir, the surrounding watershed, and water treatment facilities).

IMPLEMENTATION SCHEDULE: The Agency will continue to implement this DMM at the levels described.

METHODS TO EVALUATE EFFECTIVENESS: The Agency will continue to survey the institutions and educators on the number of programs, materials and attendance at water conservation activities.

CONSERVATION SAVINGS: The Agency has no method to quantify the savings of this DMM but believes that this program is in the public's interest.

DMM 10 -- Wholesale Agency Programs

IMPLEMENTATION DESCRIPTION: SFWPA is a retail water provider and is not a wholesale water provider. Therefore this DMM is not applicable and is considered implemented.

DMM 11 -- Water Service Conservation Pricing

IMPLEMENTATION DESCRIPTION: The incentive of this DMM is to decrease the customer's water costs and water use through price incentives. The Agency's Domestic water use billing has a declining multi-block rate structure. The significant price break for quantities greater than 100 units billed at \$0.25/unit results in low water costs to the customer but provides little incentive for customers to conserve water usage above 100 units per month. The agencies operations and maintenance cost to produce a unit of water at the Miners Ranch Treatment Plant is approximately \$0.20.

Non-potable (irrigation) water use is billed at a flat usage rate directly metered and billed by CCF or measured at equivalent rates-of-use (miners-inch-days) and volumetrically billed.

For a copy of SFWPA 2006 rate information see Appendix A.

METHODS TO EVALUATE EFFECTIVENESS: Monitor the number of accounts that exceed the initial block rate and assess the potential effects of converting to a flat or inclining block rate structure.

CONSERVATION SAVINGS: The Agency has no method to quantify the savings of this DMM but believes that this program should continue to be evaluated.

DMM 12 – Water Conservation Coordinator

IMPLEMENTATION DESCRIPTION: This DMM is fully implemented. The Agency has appointed the Water Division Manager as the Water Conservation Coordinator. Additional efforts from the Agency staff including the General Manager, Assistant Engineer, GIS technician, and Treatment Plant Superintendent have significantly contributed to conserved water programs and policies.

IMPLEMENTATION SCHEDULE: The Agency has incorporated this DMM into its work program.

METHODS TO EVALUATE EFFECTIVENESS: SFWPA has reduced its water uses for both domestic and irrigation sectors. Significant savings have occurred from programs and policies that strive for efficient, beneficial and economic water conservation programs and policies.

CONSERVATION SAVINGS: Refer to DMM 1 through 14.

BUDGET: Proposed annual budget: \$100,000 for staff labor and materials.

DMM 13 -- Water Waste Prohibition

IMPLEMENTATION DESCRIPTION: The Agency has a prohibition on wasting water for irrigation customers and has reserved the right to refuse service until conditions causing the waste of water are remedied. The Agency is currently investigating the addition of a prohibition on wasting water for domestic customers.

IMPLEMENTATION SCHEDULE: The Agency has permanently incorporated this DMM into its rules and regulations.

METHODS TO EVALUATE EFFECTIVENESS: All citations and violations are reported annually.

CONSERVATION SAVINGS: The Agency has no method to quantify the savings of this DMM but believes that this program is in the public's interest.

BUDGET: Enforcement costs are a part of the water department's overhead.

Water Demand Management Measures (Not Implemented)

Law

(g) An evaluation of each water demand management measure listed in paragraph (1) of subdivision (f) that is not currently being implemented or scheduled for implementation. In the course of the evaluation, first consideration shall be given to water demand management measures, or combination of measures, that offer lower incremental costs than expanded or additional water supplies. This evaluation shall do all of the following:

- (1) Take into account economic and noneconomic factors, including environmental, social, health, customer impact, and technological factors.
- (2) Include a cost-benefit analysis, identifying total benefits and total costs.
- (3) Include a description of funding available to implement any planned water supply project that would provide water at a higher unit cost.
- (4) Include a description of the water supplier's legal authority to implement the measure and efforts to work with other relevant agencies to ensure the implementation of the measure and to share the cost of implementation.

South Feather Water and Power Agency has implemented many water conservation programs that have resulted in water savings primarily from facilities under direct control of the Agency in its operations and maintenance programs. The Agency has strongly considered the Demand Management Measures that are not implemented and evaluated the economic, environmental, social, health, customer impact, and technological factors. The Agency has determined that the non-implemented DMM listed below primarily affect customer owned facilities such as residences and businesses and determined they would most efficiently be implemented with the investment of a full time water conservation coordinator that could seek additional outside funding sources and administer the required programs. It is estimated that this program would require an annual budget of \$200,000 including a full time staff person, training program, program administration, brochures, and purchase of showerheads, aerators, dye tablets, and other miscellaneous materials.

Toilets, showers, and faucets combined represent two-thirds of all indoor water use. The Agency estimates an annual savings of nearly 40,000 gallons of water savings per residence for retrofit to more efficient water fixtures. This equates to a potential annual savings of 400 acre-feet annually. The annual cost for such a program is estimated at \$500/acre-foot for conserved water. This is considered highly un-economical considering the Agency has an adequate water supply source at virtually no cost.

Table 16	
Evaluation of unit cost of water resulting from non-implemented	
	Per-AF Cost (\$)
Non-implemented & Not Scheduled DMM	
Interior and Exterior Water Audits for Single Family and Multi-Family Customers	500
High-efficiency washing machine rebate programs	500
Commercial and Industrial Water Conservation	500
Ultra-low Flush Toilet Replacement	500

DMM 1 -- Interior and Exterior Water Audits for Single Family and Multi-Family Customers

IMPLEMENTATION DESCRIPTION: The Agency has not conducted formal water audits for single family and multi-family residences. Customers are encouraged to contact the agency for account review and metered water use advice. The Agency has billing and water meter technicians available for account specific billing and on-site investigations.

IMPLEMENTATION SCHEDULE and CONSERVATION SAVINGS: The Agency does not anticipate implementing formal water audits for the purpose of conserving water.

METHODS TO EVALUATE EFFECTIVENESS: It would be anticipated that individual water audits would contribute to minor levels of conserved water however; the agency does not consider this to be a priority approach to more effective water use.

Proposed annual budget: \$200,000 includes a full time staff person, training program, brochures, and purchase of showerheads, aerators, dye tablets, and other miscellaneous materials (this budget item does not reflect the costs associated with ultra-low flush toilets - see DMM 16).

DMM 6 -- High-efficiency washing machine rebate programs

IMPLEMENTATION DESCRIPTION: SFWPA is not in a financial position to provide efficient appliance rebate programs.

IMPLEMENTATION SCHEDULE and CONSERVATION SAVINGS: It would be anticipated that water efficient washing machines would contribute to minor levels of conserved water however; the agency does not consider this to be a priority approach to more effective water use within the Agency. This DMM will be re-evaluated in the next five-year update.

DMM 9 -- Commercial and Industrial Water Conservation

IMPLEMENTATION DESCRIPTION: There are very few commercial and industrial customers in the district. SFWPA has not conducted formal water audits for commercial and industrial users.

IMPLEMENTATION SCHEDULE and CONSERVATION SAVINGS: It would be anticipated that water audits would contribute to minor levels of conserved water however; the agency does not consider this to be a priority approach to more effective water use. This DMM will be re-evaluated in the next five-year update.

DMM 14 -- Ultra-low Flush Toilet Replacement

IMPLEMENTATION DESCRIPTION: SFWPA is not in a financial position to provide efficient appliance rebate programs. It is anticipated that a water efficient ULF toilet replacement program would contribute to minor levels of conserved water however; the agency does not consider this to be a priority approach to more effective water use within the Agency.

IMPLEMENTATION SCHEDULE: This DMM will be re-evaluated in the next five-year update.

Water Shortage Contingency Plan

Law

10632. The plan shall provide an urban water shortage contingency analysis which includes each of the following elements which are within the authority of the urban water supplier:

- (a) Stages of action to be undertaken by the urban water supplier in response to water supply shortages, including up to a 50 percent reduction in water supply, and an outline of specific water supply conditions which are applicable to each stage.
- (b) An estimate of the minimum water supply available during each of the next three water years based on the driest three-year historic sequence for the agency's water supply.
- (c) Actions to be undertaken by the urban water supplier to prepare for, and implement during, a catastrophic interruption of water supplies including, but not limited to, a regional power outage, an earthquake, or other disaster.
- (d) Additional, mandatory prohibitions against specific water use practices during water shortages, including, but not limited to, prohibiting the use of potable water for street cleaning.
- (e) Consumption reduction methods in the most restrictive stages. Each urban water supplier may use any type of consumption reduction methods in its water shortage contingency analysis that would reduce water use, are appropriate for its area, and have the ability to achieve a water use reduction consistent with up to a 50 percent reduction in water supply.
- (f) Penalties or charges for excessive use, where applicable.
- (g) An analysis of the impacts of each of the actions and conditions described in subdivisions (a) to (f), inclusive, on the revenues and expenditures of the urban water supplier, and proposed measures to overcome those impacts, such as the development of reserves and rate adjustments.
- (h) A draft water shortage contingency resolution or ordinance.
- (i) A mechanism for determining actual reductions in water use pursuant to the urban water shortage contingency analysis.

Stages of Action

Water supply interruption events will vary in scale from compromised incremental supply volumes to complete catastrophic loss of water supply. The ability for SFWP to successfully respond to a catastrophic water supply interruption will be highly correlated to the existence of interconnections and alternative sources of supply. Catastrophic water supply interruptions will generally be identified by other events, such as physical equipment damage, severe weather or others, which are likely to have a specific direct action plan. Incremental interruptions due to longer-term events such as drought or acute loss of one source, will lead to a prescribed series of contingency measures. There are a number of potential levels of severity involved in a water supply interruption. A series of stages of action corresponding to increasing impacts on water are:

- Normal Conditions
- Water Alert
- Water Warning
- Water Crisis
- Water Emergency

Each stage has specific definitions, in terms of percent of water supply reduction, with appropriate actions or restrictions at each stage. SFWP will have a series of escalating penalties for successive violations of restrictions. These stages are:

- **Normal Conditions** – Normal conditions apply. Water is available.

- **Water Alert** – A 5% or greater reduction in water usage is to meet the immediate needs of customers. The water shortage situation is explained to the public and voluntary water conservation is requested. SFWPA maintains an ongoing public information campaign consisting of distribution of literature, speaking engagements, bill inserts, and conversation messages printed in local newspapers.
- **Water Warning** – A 15% or greater reduction in water usage is to meet the immediate needs of customers. SFWPA aggressively continues its public information and education programs. Consumers are asked for a 15% or greater voluntary or mandatory water use restriction. Additional landscape irrigation restrictions may be implemented. Businesses may be asked not to serve water in restaurants.
- **Water Crisis** – A 30% or greater reduction in water usage is to meet the immediate needs of customers. Water supply shortage is severe. Additional requirements may include:
 - Dramatic landscape irrigation restrictions;
 - Restrictions on use of potable water to fill or refill swimming pools, artificial lakes, ponds, or streams until the water crisis is declared over;
 - Prohibition on water use for ornamental ponds and fountains;
 - Restrictions on washing of automobiles and equipment (e.g., such as requiring that it be done on the lawn or at a commercial establishment that uses recycled or reclaimed water);
 - Restriction of flushing of sewers or fire hydrants to cases of emergency and essential operations;
 - Introduction of a permanent water meter on existing non-metered services and/or flow restrictors on existing metered services at customer's expense upon receipt of the second water violation.
- **Water Emergency** – A 50% or greater reduction in water usage is to meet the immediate needs of customers. Water shortage is critical. Additional requirements may include:
 - Disallowing all landscape irrigation;
 - Disallowing potable water use for construction purposes such as dust control, compaction, or trench jetting.

Additionally, large industrial users (e.g., canneries or other food manufacturers) may be required to reduce or cease all water use.

Three-Year Minimum Supply

The three-year minimum supply table shown below estimates the supply based on the historical three year driest on record. The three driest years on record correspond to the first three years of the multiple dry years estimates shown in the tables at the beginning of the plan (1989-1992).

	Source	Normal	2007	2008	2009
South Fork Feather River		70,000	68,000	56,000	63,000
	Total	70,000	68,000	56,000	63,000

Water Shortage Emergency Response

In 2005, SFWPA developed an Emergency Response Plan (ERP). The purpose of this ERP is to provide the SFWPA with standardized preparedness/planning, response, and recovery protocols to prevent, minimize, and mitigate injuries or damages to life, property, or the environment resulting from emergencies or disasters of natural or man-made origin. The goals of this ERP are to:

- Rapidly restore water service after an emergency;

- Ensure adequate water supply for fire suppression;
- Minimize water system damage;
- Minimize impact and loss to customers;
- Minimize negative impacts on public health and employee safety;
- Provide emergency public information concerning customer safety.

Requirements and authorities are included in the ERP to identify what directed the development of this ERP. Requirements and authorities outline the laws or legal powers given to a water utility, or the laws and regulations that require specific actions. This list of legal requirements should remind the planners, responders, management, and employees why this ERP is required. From the list of requirements and authorities, specific types of planning occur, particular documents must be prepared, training conducted, and materials/equipment obtained to support the plan.

The following requirements and authorities authorize and require SFWPA to create, manage, and activate an ERP, utilizing its powers to take actions and carry out the responsibilities described herein.

- **California Emergency Services Act** (California Government Code Title 2, Division 1, Chapter 7). Authorizes all political subdivisions of the State (special districts, cities, counties) to conduct emergency operations. Such action can take place in response to an emergency that immediately overwhelms local resources. Recent additions to this Act include §8607 that requires the use of the Standardized Emergency Management System (SEMS) by local government and special districts if they want to recover certain emergency response costs.
- **Oath of Affirmation of Allegiance for Disaster Service Workers and Public Employees** (California Government Code Title 1, Division 4, Chapter 8). Identifies public agency employees as Disaster Service Workers.
- **California Safe Drinking Water Act** (California Health & Safety Code Division 104, Part 12, Chapter 4). The requirements for an Emergency Notification Plan are contained within §116460. Specific operational requirements are contained in §116555. Penalties for tampering with public water systems are contained within §116750.
- **California Waterworks Standards** (California Code of Regulations Title 22 Division 4 Article 2 §64560) Water distribution systems must be designed and constructed to: Minimize the effects of events such as power supply, equipment, and structural failures, earthquakes, fires, floods and sabotage that are reasonably foreseeable; Protect against unauthorized entry and/or vandalism; Protect against adverse effects in areas subject to freezing weather.
- **Public Health Security and Bioterrorism Preparedness and Response Act** (United States Public Law 107-188). "All community water systems serving more than 3,300 population (1,000 service connections) shall prepare or revise an Emergency Response Plan that incorporates the results of Vulnerability Assessments (VA) that have been completed. The updated Emergency Response Plan shall be certified to EPA within 6 months of completing the Vulnerability Assessment."

Specific Action Plans (APs) have been developed to address each of the high-risk threat scenarios identified in the VA. The APs are tailored actions that address specific major events. For security reasons, the procedures outlined in these documents are intentionally general in nature, omitting confidential details and affected assets. The APs developed for emergencies from natural events and man-made threats are identified in Table 11, below.

Table 11. Action Plans for Identified Emergencies and Threat Scenarios

Action Plan No.	Emergency or Threat Scenario
1	Power Outage
2	Water Supply Interruption
3a	Natural Event – Winter Storm/Deep Freeze
3b	Natural Event – Flood
3c	Natural Event – Earthquake

Table 11. Action Plans for Identified Emergencies and Threat Scenarios

Action Plan No.	Emergency or Threat Scenario
4	Chlorine Release
5a	Threat or Actual Contamination to Water System – Possible Stage
5b	Threat or Actual Contamination to Water System – Credible Stage
5c	Threat or Actual Contamination to Water System – Confirmed Stage
6a	Bomb Threat – Written
6b	Bomb Threat – Suspicious Package/Letter
6c	Bomb Threat – Telephone
6d	Bomb Threat – In-Person
7a	Information Technology (IT) Security Incident
7b	Supervisory Control and Data Acquisition (SCADA) Security Incident
8	Employee Assaulted with Weapon / Armed Intruder
9	Structural Damage from Explosive Device

The specific APs to each of the natural disasters or events caused by human intervention are attached in Appendix A of the ERP document.

Typical residential water usage in the United States is on the order of 300 to 500 gallons per residence per day, or 100 to 150 gallons per capita per day. Although these amounts can typically be significantly reduced during crisis situations, SFWPA has found it useful to develop an estimate for the quantity of supplemental water required for a number of potential outage scenarios. These estimates are provided in Table 12, below.

Table 12. Gallons of Water Needed for Various Durations

Affected Connections	Duration of Service Interruption				
	1 Hour	12 Hours	1 Day	2 Days	1 Week
25	417	5,000	10,000	20,000	70,000
50	833	10,000	20,000	40,000	140,000
100	1,667	20,000	40,000	80,000	280,000
200	3,333	40,000	80,000	160,000	560,000
500	8,333	100,000	200,000	400,000	1,400,000
1,000	16,667	200,000	400,000	800,000	2,800,000
2,000	33,333	400,000	800,000	1,600,000	5,600,000
4,000	66,667	800,000	1,600,000	3,200,000	11,200,000
6,000	100,000	1,200,000	2,400,000	4,800,000	16,800,000

Note: Assume conservative usage of 400 gpd per residence (i.e., connection). Actual average use documented at 800 gpd/residence.

For purposes of illustrating the critical nature of the balance between system demand and supply from Miners Ranch Conduit, SFWPA estimated the emergency supply of water. For the SFWPA, the estimated maximum emergency supply of water in the MRTP system is equal to the maximum amount of treated water in storage plus the maximum amount of raw water available in the Miners Ranch Reservoir (Assuming this supply is not contaminated, 802 acre-feet at elevation 888 ft minus 208 acre-feet at elevation 870 ft), divided by a conservative demand of 400 gallons per residence (i.e., connection) per day. This calculation is carried out below:

$$\text{Emergency Supply} = (\text{Treated Water Storage} + \text{Raw Water Supply}) / \text{Demand}$$

6,000,000 gallons	Maximum Treated Water Storage
+ 594 acre-feet	Max. Accessible Supply, Miners Ranch Reservoir
193,555,244 gallons	Max. Treated Water Storage + Raw Water Supply
÷ 2,603,600 gpd	6,509 Service Connections x 400 gpd/connection
<u>74.3 days</u>	Assuming 400 gpd/connection, MRR full/clean

However, the average water demand for the MRTP system is approximately 800 gallons per day (gpd) per residence. The peak water demand for the MRTP system is approximately 1,800 gpd per residence. These calculations are carried out below:

Emergency Supply = 6,000,000 gallons
(Average Demand) + 594 acre-feet
193,555,244 gallons
÷ 5,207,200 gpd
37.2 days

Maximum Treated Water Storage
Max. Accessible Supply, Miners Ranch Reservoir
Max. Treated Water Storage + Raw Water Supply
6,509 Service Connections x 800 gpd/connection
Assuming 800 gpd/connection, MRR full/clean

Emergency Supply = 6,000,000 gallons
(Peak Demand) + 594 acre-feet
193,555,244 gallons
÷ 11,716,200 gpd
16.5 days

Maximum Treated Water Storage
Max. Accessible Supply, Miners Ranch Reservoir
Max. Treated Water Storage + Raw Water Supply
6,509 Service Connections x 1,800 gpd/connection
Assuming 1,800 gpd/connection, MRR full/clean

Again this emergency supply is contingent upon the Miners Ranch Reservoir being full of clean, non-contaminated water, and its contents not being diverted for any other use (e.g., irrigation, power generation, etc.). At the documented average demand of approximately 800 gpd/connection but with no usable raw water supply, the maximum emergency supply of treated water from storage alone would last only approximately 1.15 days or 27.6 hours.

For this reason, SFWPA has investigated alternate supplies of raw untreated water to be treated, treated water from neighboring utilities, and bulk supplies of treated water for distribution directly to customers.

Analysis of Revenue Impacts of Reduced Sales During Shortages

The Agency charges a service charge and a consumption charge to customers. The 2005-budgeted amount of revenue from consumption is \$2,900,000. The following table illustrates the impact on revenue for each of the stages using the budgeted revenues.

Action Stage	Consumption Reduction	Revenue Reduction
Water Alert	5%	\$145,000
Water Warning	15%	\$435,000
Water Crisis	30%	\$870,000
Water Emergency	50%	\$1,450,000

The Agency has established operating reserves, which would fund majority of the financial impact. After a water shortage has developed, the Agency will use a combination of rate adjustments, operational resource evaluations, and postponement of capital projects to address the revenue impacts of the reductions in consumption that the contingency fund cannot meet.

Water Shortage Contingency Ordinance/Resolution

A draft resolution to declare a water shortage emergency is provided in Appendix C.

Water Recycling

Wastewater System Description

Law

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. To the extent practicable, the preparation of the plan shall be coordinated with local water, wastewater, groundwater, and planning agencies and shall include all of the following:

- (a) A description of 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) A description of the quantity of treated wastewater that meets recycled water standards, is being discharged, and is otherwise available for use in a recycled water project.
- (c) A description of the recycled water currently being used in the supplier's service area, including, but not limited to, the type, place, and quantity of use.
- (d) A description and quantification of the potential uses of recycled water, including, but not limited to, agricultural irrigation, landscape irrigation, wildlife habitat enhancement, wetlands, industrial reuse, groundwater recharge, and other appropriate uses, and a determination with regard to the technical and economic feasibility of serving those uses.
- (e) The projected use of recycled water within the supplier's service area at the end of 5, 10, 15, and 20 years, and a description of the actual use of recycled water in comparison to uses previously projected pursuant to this subdivision.
- (f) A description of actions, including financial incentives, which may be taken to encourage the use of recycled water, and the projected results of these actions in terms of acre-feet of recycled water used per year.
- (g) A plan for optimizing the use of recycled water in the supplier's service area, including actions to facilitate the installation of dual distribution systems, to promote recirculating uses, to facilitate the increased use of treated wastewater that meets recycled water standards, and to overcome any obstacles to achieving that increased use.

Wastewater Collection and Treatment

The wastewater collection in the Agency's Service area is comprised of sanitary sewer connections to Lake Oroville Area Public Utility District (LAOPUD) and the City of Oroville. Wastewater is then delivered to the Sewage Commission Oroville Region (SCOR) where effluent is treated and returned to the Feather River. There is a significant amount of rural residences that utilize on site disposal through leach field systems. In fiscal year 2004/2005 LAOPUD collected 0.94 MGD and an additional 0.16 MGD was collected from the agency service area by the City of Oroville's collection system.

Other than downstream uses, there are no current local uses for recycled water and very little incentives to consider utilization of wastewater as potential sources for recycled water supplies. At this time it is not economically justifiable to consider additional water treatment and other uses for the wastewater stream. This

UWMP Plan has frequently stated and shown that the region has a more than adequate water supply. Any future need for additional water supplies would likely rely on local water agencies and the plentiful fresh water resources.

APPENDIX A

Legal Notice Of Public Hearing

notice

(SPACE FOR FILING STAMP ONLY)

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

In the Matter Of

PUBLIC NOTICE

NO.

AFFIDAVIT OF PUBLICATION

State of California }
County of Butte } SS.

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

That I am, and at all time herein mentioned was a citizen of the United States and not a party to or 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 Before 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 Attached is a true printed copy, was published in Said newspaper on the following days

AUGUST 4, 11, 2006.

Dated August 11, 2006.
at Chico, California.

Robin Anderson
(Signature)

RECEIVED

AUG 15 2006

S.F.W.P.
OROVILLE OFFICE

PUBLIC NOTICE
(California Government Code Section 6066)
Notice of Draft Urban Water Management Plan
Urban Water Management Plan 2005
South Feather Water & Power Agency's Board of Directors will consider the adoption of the 2005 Urban Water Management Plan at its normally scheduled meeting on Tuesday, August 22, 2006 at 2:00 p.m. the meeting will be held in the Agency's Board Room at 2310 Oroquincy Highway, Oroville, California. The long range planning document focuses on current and projected water supplies, reasonable and practical beneficial uses, conservation, and demand management measures. The Agency may rely on the UWMP to verify the adequacy of water supplies for land use planning purposes. The Plan is developed in accordance with California Water Code, Division 6, Part 2.6 (Urban Water Management Planning). Draft Copies are available for viewing at the Agency's main office and on the Internet at www.SouthFeather.com.
Publish: August 4 & 11, 2006

APPENDIX B

Resolution of Plan Adoption



SOUTH FEATHER WATER & POWER AGENCY

RESOLUTION OF THE BOARD OF DIRECTORS ADOPTION OF THE 2005 URBAN WATER MANAGEMENT PLAN RESOLUTION NO. 06-8-1

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, the primary objective of which is to plan for the conservation and efficient use of water; and,

WHEREAS, South Feather Water And Power Agency is an urban supplier of water providing water to more than 3,000 customers; and,

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

WHEREAS, the Plan must be adopted after public review and hearing, and filed with the California Department of Water Resources within 30 days of adoption; and,

WHEREAS, the Agency has therefore, prepared and made available for public review a draft Urban Water Management Plan, and a properly noticed public hearing regarding said Plan was held by the Agency on August 22nd, 2006; and,

NOW, THEREFORE, BE IT RESOLVED by the Board of Directors of the South Feather Water and Power Agency, that the 2005 Urban Water Management Plan is hereby adopted;

BE IT FURTHER RESOLVED that the General Manager is authorized and directed to file the 2005 Urban Water Management Plan within 30 days to the California Department of Water Resources.

PASSED AND ADOPTED by the Board of Directors of the South Feather Water and Power Agency at the regular meeting of said Board on the 22nd day of August 2006 by the following vote:

AYES:	Cecchi, Edwards, Hunter, Meyer.
NOES:	None.
ABSTAINED:	None.
ABSENT:	Brown.



Louis F. Cecchi, President



Michael C. Glaze, General Manager

APPENDIX C

South Feather Water and Power Agency Rate Schedule Effective February 1, 2006

Part D (Rules & Regulations Governing Water Service) – Water Rates

Potable Water-

Inactive Account Standby Charge (per month)	\$5
Service Charge (per month).....	\$15
Multi-Family Residential Units Service Charge	\$7.90
(Per occupied unit per month)	
Rates of-Use (in addition to Service Charge):	
First 100 Units (10,000 cubic feet)	\$0.64/unit
After First 100 Units (over 10,000 cubic feet).....	\$0.25/unit
Oversized Meter Charge (in addition to Service Charge; not applicable to mobile home parks, apartment complexes, duplexes, multiple commercial units, etc.):	

<u>Meter Size</u>	<u>Monthly Charge</u>
1"	\$6.00
1½"	\$16.00
2"	\$20.50
3"	\$50.00
4"	\$72.50
6"	\$105.00

Oversized Meter Charges will be reduced by 50% if all watering is done between the hours of 9:00 PM and 6:00 AM (i.e., NO watering may be done during the day). Customers must come to the SFWPA office and apply for this reduction annually.

Non-Potable Water-

Service Charge (per month).....	\$17.50 ⁴
Rate of-Use (in addition to Service Charge):	
Miners Inch Accounts	\$2.25/MI
Metered (unit = 100 cubic feet)	10¢
Flat Rate Accounts (per month).....	\$45.00 ⁵
(All non-potable rates-of-use equate to \$45.00 per acre-foot.)	

Fees & Charges

New Service Charge (installation estimates, processing, etc.)	\$40
Account Transfer Charge (processing, meter reading, etc.)	\$20
Turn-on Charge.....	\$15
(After Hours.....)	\$50
Standard Meter-Set Fee	\$85
Radio-read Meter-Set Fee	\$240
Development Plan Check (of Engineer's Estimate - potable water)	3% ea.
Development Inspection Fee (of Engineer's Estimate - potable water)	3% ea.
Encroachment Permit (includes inspection).....	\$50
Non Standard Service	

⁴ Multi-family residential units excluded.

⁵ The flat rate is \$45/month, and that flat rate customers also pay the \$11/month service charge, for a total monthly rate of \$56.

System Capacity Charges⁷

Miners Ranch Treatment Plant:

Meter Size	Capacity Charges	GPM	Plant Capacity
5/8"	\$3,250	20	0.206%
1"	\$8,123	50	0.514%
1 1/2"	\$16,248	100	1.029%
2"	\$25,999	160	1.646%
3"	\$51,988	320	3.291%
4"	\$81,233	500	5.143%
6"	\$162,467	1,000	10.286%
8"	\$389,918	2,400	24.686%
10"	\$617,370	3,800	39.086%
12"	\$812,329	5,000	51.429%

Larger meters will require evaluation of peak flows needed for service. Applicant will be responsible for providing required data. Based on this information, SFWPA will determine the capacity charge.

The System Capacity Charge shall be paid prior to the physical connection of any service to the domestic water system. For meter sizes greater than 2", payment of the System Capacity Charge may be required at the time the application for service is approved and prior to construction of the structure for which service is requested.

Bangor Treatment Plant: \$3,250

The System Capacity Charge shall be paid prior to the physical connection of any service to the domestic water system. Connections to this system shall be limited to 5/8" residential meters only.

⁷ increases annually in accordance with Engineering News Record's National Construction Cost Index
August 29 2006

Temporary Building-Construction Service (6 month max.).....	\$10/month
Bulk-Service Meter Deposit.....	\$650
Water-Truck or –Container Backflow Inspection Fee.....	\$30
Bulk-Service Meter Charge.....	\$20/month
Bulk-Service Volume-of-Usage Rage.....	\$1.50/unit
Minimum Bulk-Service Meter Damage Repair Fee.....	\$25
Bulk Raw-Water Charge (2,500 gal. max.).....	\$5/load
Filling Station Charge (2,500 gal. max.).....	\$5/load
Flow Test Fee \$50/test.....	
Returned Check Fee (returned by bank).....	\$20/check
Escrow Information Charge.....	\$5/order
Meter Tampering Fee (resetting, damaging, cutting locks, etc.)	
First Incident.....	\$25 + repair costs
Second and Subsequent Incidents.....	\$250 + repair costs
Delinquent Penalty.....	1½%/month penalty after 30 days
Shut-off Notice Service Fee.....	\$10
Meter Lock Service Fee.....	\$40
Annexation Fees ⁶	
Processing (if fully developed).....	\$ 115.97
Processing (if not fully developed).....	\$ 231.95
Annexation Fee	
Per-Acre Basis.....	\$ 342.25/lot or acre
Size-of-Service Basis	
½" meter.....	\$ 685.63
1" meter.....	\$1,713.51
Flat Rate (irrigation system only).....	\$ 917.60
Miners' Inch (irrigation system only).....	\$1,371.27/MI
Quitclaim Deed Processing Fee.....	\$25
Meter Check Fee:	
½" Meter.....	\$45 prepaid
Meters Over ½".....	per estimate, prepaid
SFWPA will check accuracy of water user's meter at user's request. If meter is within 2% accurate, SFWPA will retain fee. If inaccuracy exceeds 2% fast, fee will be returned. Adjustments for any over-charge will be made on next billing, with adjustment not to exceed three (3) months.	

⁶ increases annually in accordance with the Engineering News Record's National Construction Cost Index
August 29 2006