ELDORADO IRRIGATION DISTRICT

URBAN WATER MANAGEMENT PLAN

2010 UPDATE

Jenkinson Lake in fall

PREPARED BY:

EL DORADO IRRIGATION DISTRICT

2890 MOSQUITO ROAD

PLACERVILLE, CA 95667

JULY 2011

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INTRODUCTION

This 2010 Urban Water Management Plan (UWMP) addresses the El Dorado Irrigation District (District) which was organized in 1925 under the Irrigation Act (Water Code §§20500, et seq.) and authorizing statues (Water Code §§22975, et seq.). The District provides water to more than 100,000 people for municipal, industrial, and irrigation uses as well as wastewater collection and treatment, and recycled water services to meet the growing needs of our customers. As such, the District is one of the few California districts that provide a full complement of water-related services.

This UWMP has been prepared in accordance with the Urban Water Management Act (Act). The Act is defined by the California Water Code, Division 6, Part 2.6, and §§10610 through §§10657. The Act became part of the California Water Code with the passage of Assembly Bill 797 during the 1983-1984 regular session of the California legislature. The Act requires urban water suppliers providing municipal water to more than 3,000 connections or supplying more than 3,000 ac-ft of water annually to adopt and submit a plan every five years to the California Department of Water Resources (DWR). Subsequent assembly bills have amended the Act. In complying with the Act, the District has followed the DWR *Guidebook to Assist Urban Water Suppliers*, as shown in the comprehensive checklist found in Section 8. This 2010 UWMP provides an update to the previous UWMP that was adopted by the District Board of Directors on January 23, 2006.

PLAN PREPARATION

This Section provides information on how the plan was prepared, coordinated with other agencies and the public, and adopted. This section includes the following subsections:

- Coordination
- Adoption, Submittal, and Implementation

Coordination

The Act requires the District to coordinate the preparation of its UWMP 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. The District coordinated with and sent a letter to the El Dorado County Water Agency (EDCWA), the El Dorado County Planning Department, the City of Placerville, and the City of Folsom 60 days prior to adoption stating that the Plan was being reviewed and amended. A copy of the letter is provided in Appendix A. Table 1-1 provides a summary of the UWMP coordination efforts with the appropriate agencies and other stakeholders.

Table 1-1 – Coordination with Appropriate Agencies (DWR Table 1)

Coordinating Agencies	Participated in developing the plan	Commented on the draft	Attended public meetings	Was contacted for assistance	Was sent a copy of the draft plan	Was sent a notice of intention to adopt
City of Folsom		X	X		X	X
El Dorado County Water Agency	X	X	X		X	X
City of Placerville	X	X	X	X	X	X
El Dorado County Planning Department	X		X		X	X
Stakeholders Committee	X		X	X		

The Act requires the encouragement of public participation and a public hearing as part of the UWMP approval process. As required by the Act, prior to adopting this UWMP, the District made the UWMP available for public review and held a public hearing to solicit comments. The hearing provided an opportunity for District customers, residents, and employees in the service area to learn about and comment on existing water supply and District plans for providing a reliable, safe, high-quality water supply for the future.

The District held two stakeholder workshops regarding the UWMP in October 2009 and February 2010. The main focus of these meetings was to inform the stakeholders of the preparation of the UWMP and to develop a climate change model applicable to the District

water supplies. Section 7 provides further information on climate change. A list of the stakeholder committee members is provided in Appendix B.

Adoption, Submittal, and Implementation

A Notice of Public Hearing was published in the Mountain Democrat, the local newspaper and on the District website. Copies of the draft UWMP were made available for public inspection at the District Headquarters Building and on the District website. A copy of the published Notice of Public Hearing is included in Appendix C. The UWMP was adopted by the District Board of Directors at a public hearing on June 27, 2011. A copy of the adopted resolution is provided in Appendix D.

Within 30 days of adoption of the UWMP, a copy will be submitted to the California State Library and the El Dorado County Library and will be available at the District Headquarters for public review. A copy of the adopted UWMP will be provided to the EDCWA, the City of Placerville, the El Dorado County Planning Department, and the City of Folsom within 60 days after submission to DWR.

This UWMP was prepared by the El Dorado Irrigation District. If you have any questions regarding this UWMP, please contact:

El Dorado Irrigation District
2890 Mosquito Road
Placerville, CA 95667
Cindy Megerdigian, P.E.
Water/Hydro Engineering Manager
Telephone (530)-642-4056
cmegerdigian@eid.org

SYSTEM DESCRIPTION

This section provides a description of the District service area, climate, population, demographics, and the physical water supply system including transmission, treatment and distribution facilities. This section includes the following subsections:

- Service Area Physical Description
- Potable Water System Description
- Local Climate
- Population, Employment, and Housing

The District currently serves a population of approximately 100,000 people through more than 38,000 active water meter connections. The Board of Directors is comprised of five members elected by the citizens in five geographical divisions within the service area.

Service Area Physical Description

The District contiguous service area encompasses approximately 220 square miles on the western slope of the Sierra Nevada Mountains in El Dorado County. The service area is bounded by Sacramento County to the west and the Pollock Pines/Sly Park area to the east and ranges from 500 to more than 4,000 feet in elevation. The area north of Coloma and Lotus establishes the northern-most part of the service area, while the communities of Pleasant Valley and South Shingle Springs establish the southern boundary. The City of Placerville, located in the central part of the District, receives water from the District as a wholesale customer. The District also operates two satellite water systems in the Strawberry and Outingdale communities.

The District is primarily located in two major watersheds, the South Fork American River in the north and the North Fork of the Cosumnes River in the south, and is hydrologically split by the Placerville Ridge and Highway 50 between these two drainage watersheds. Although the rivers drain east to west, the minor streams trend northwest toward the American River and southwest toward the Cosumnes River. The ridges generally trend in a west to east direction. Figure 2-1 illustrates the location of the District service area and the neighboring El Dorado County water systems.

Two hundred pressure-regulating stations are needed for reliable operation due to the varying topographies. The potable water system contains more than 1,250 miles of pipe, 27 miles of ditches, 5 water treatment plants, 36 storage tanks/reservoirs, and 37 pumping stations. The service zones within the District are shown on Figure 2-2.

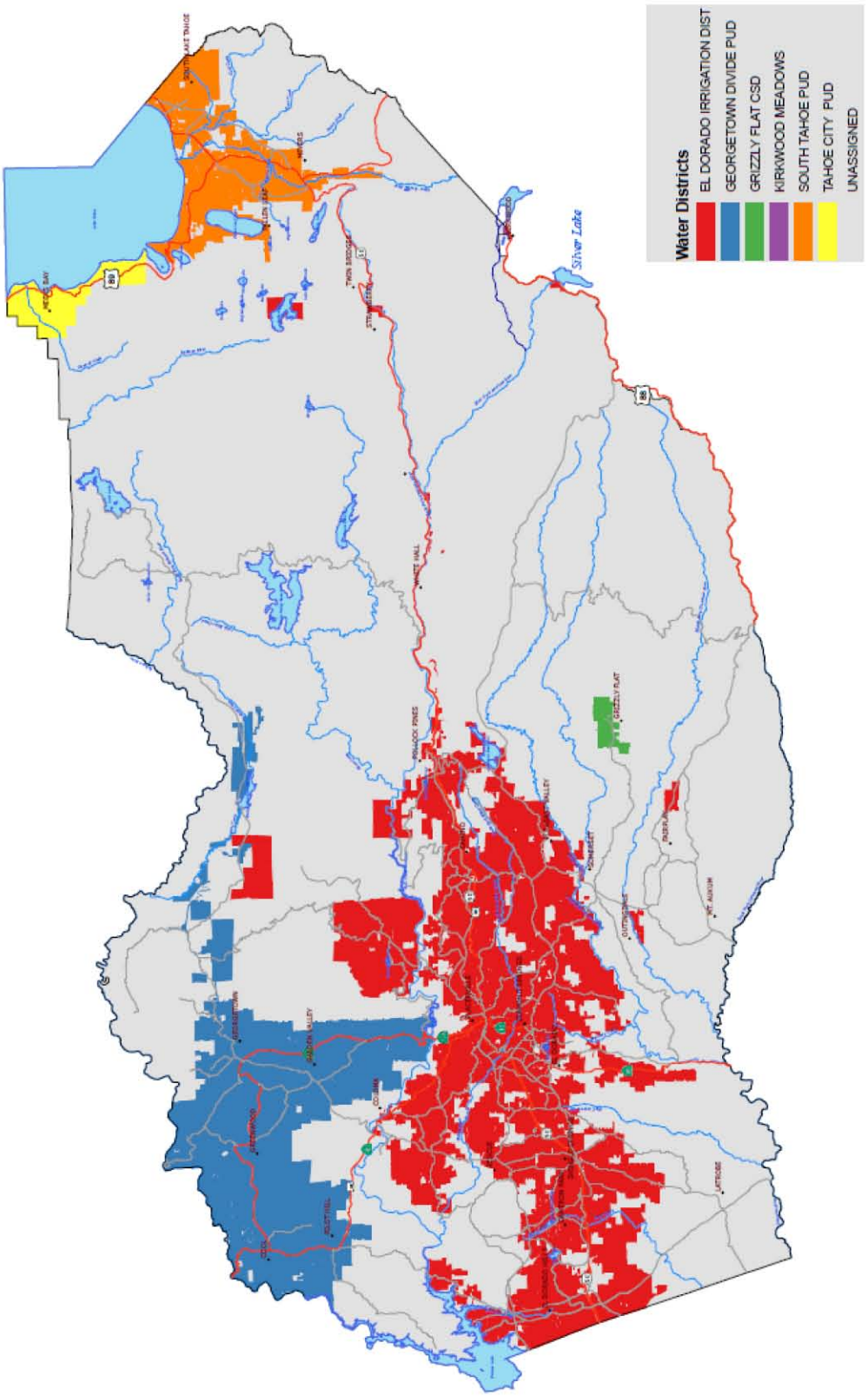


Figure 2-1 – El Dorado County Water Systems

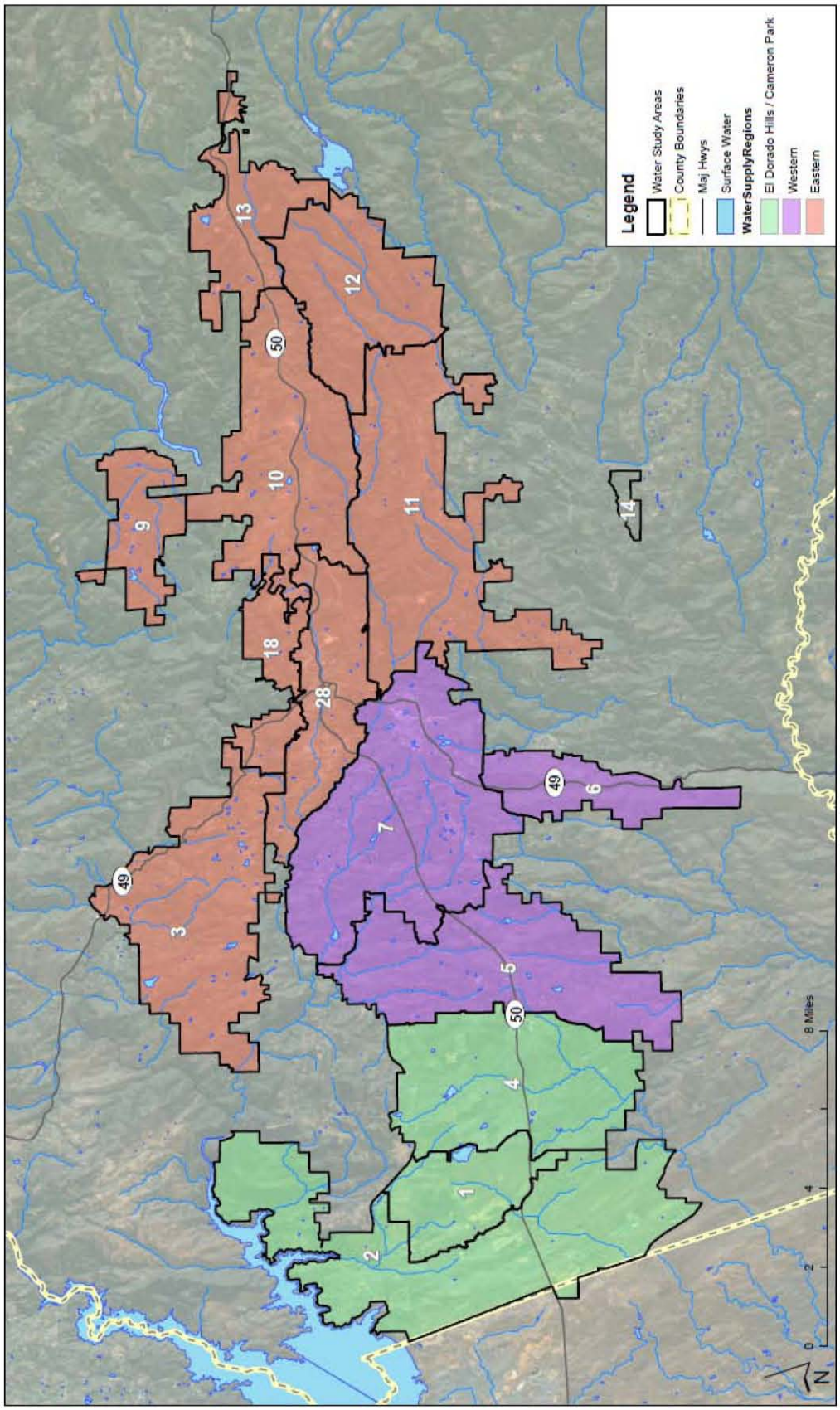


Figure 2-2 – Water Service Zone Map

Potable Water System Description

The District currently relies on surface water to meet its entire potable water demand. This section identifies the facilities which transmit, treat, distribute, and store the potable water provided to the service area. The following sections provide descriptions of the three primary water treatment plants and related subsystems in the District system: Reservoir 1 Water Treatment Plant and El Dorado Forebay Subsystem; Reservoir A Water Treatment Plant and Jenkinson Lake Subsystem; and El Dorado Hills Water Treatment Plant and Folsom Reservoir Subsystem. Schematics of each are shown on Figures 2-3 and 2-4.

Since the adoption of the 2005 UWMP, changes to the water facilities have occurred. Those changes include; the extension of existing transmission and distribution lines to serve new development, construction of new tanks and pump stations, and a capacity increase at one treatment plant. The modifications to the water system are further discussed in the subsections below.

Reservoir A Water Treatment Plant and Jenkinson Lake Subsystem

The Reservoir A WTP treats water from Jenkinson Lake and supplies up to 64 mgd of potable water to customers. Treatment processes include a raw water intake, chemical addition, rapid mix vault, dual-media gravity filters, and chlorination. Filter backwash wastewater is piped to an equalization basin and pumped to settling/drying beds.

Water is treated at the Reservoir A WTP and conveyed to Reservoir A. A small portion of the finished water is pumped to the Sly Park Hills Pressure Zone where the water is used to serve customers at higher elevations. From Reservoir A, water is distributed based on system demands northwest into Reservoirs 2 and 2A in the El Dorado Forebay subsystem via the Camino Conduit, and southwesterly via the Pleasant Oak Main. Water flowing in the Pleasant Oak Main is conveyed through Reservoirs B and C. Water leaving Reservoir C flows westerly to Reservoir 7, where it enters the Diamond Springs Main (DSM). The DSM conveys water in a westerly direction through the Diamond Springs, El Dorado, Logtown, Shingle Springs, and Cameron Park service zones and terminates at Reservoir 12 located east of Cameron Park.

Figure 2-3 – El Dorado Forebay and Jenkinson Lake Subsystem

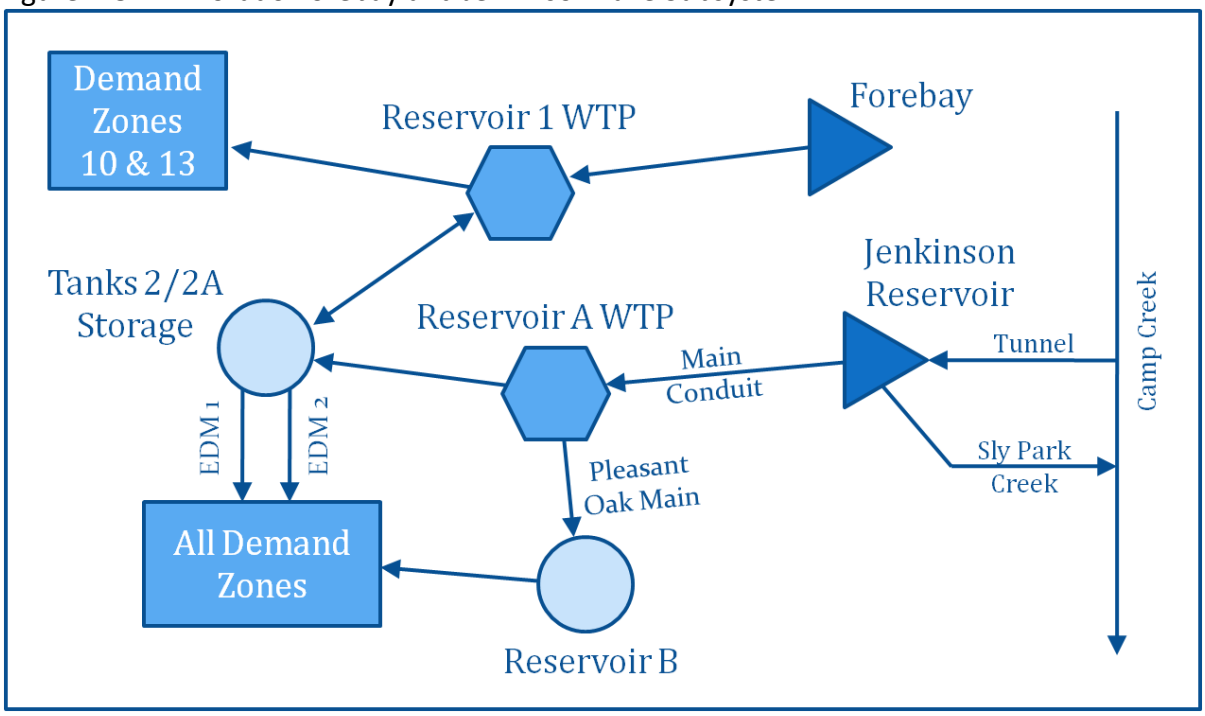
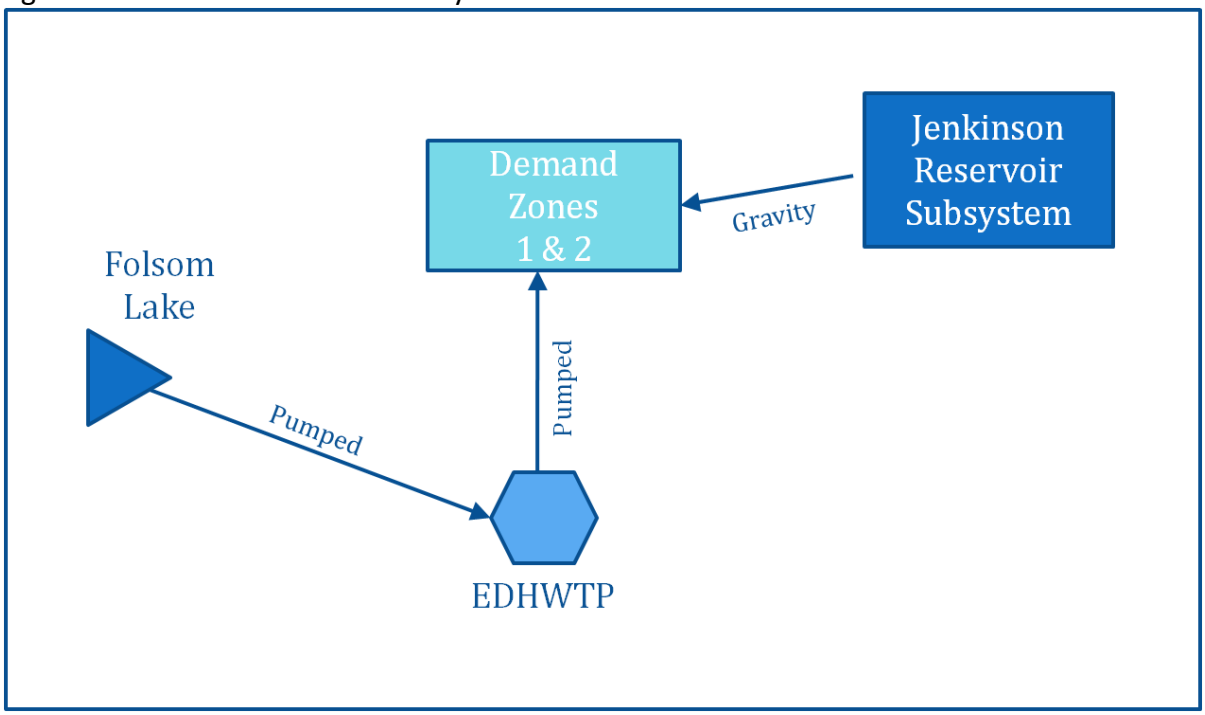


Figure 2-4 – Folsom Reservoir Subsystem



Reservoir 1 Water Treatment Plant and El Dorado Forebay Subsystem

The Reservoir 1 Water Treatment Plant treats water from the South Fork American River via Forebay Reservoir and supplies up to 26 mgd of potable water to customers throughout the service area. Raw water is diverted at the El Dorado Forebay where it travels through 3 miles of open ditch to the Reservoir 1 WTP. The Main Ditch also includes customers receiving raw water. The treatment process includes a manually-cleaned trash screen, automatically-cleaned bar screen, flocculation tanks, sedimentation basin, dual-media gravity filter, and chlorination. Sludge from the sedimentation basin is pumped to sludge lagoons for thickening and drying, and filter backwash is pumped to the backwash storage tank for recycling to the front of the WTP. Water is stored in the adjacent Reservoir 1 storage reservoir which then flows by gravity to Reservoir 2/2A and the town of Camino or is pumped to the Pollock Pines Reservoir to customers at higher elevations. A raw water pump station at the Reservoir A WTP allows raw water to be pumped to the Reservoir 1 WTP via the Sly Park Intertie providing a backup raw water supply to the Reservoir 1 WTP in the event that the El Dorado Forebay supply is not available.

From Reservoir 2/2A, El Dorado Main (EDM) 1 and 2 continues westward conveying water through Placerville into the Gold Hill area. Prior to reaching the Gold Hill area, three major storage facilities (Reservoirs 3, 4, and 5) are situated along EDM 1 and EDM 2. These storage facilities are utilized to reduce the pressure in the pipeline and provide system storage. At Reservoir 3, a lateral of EDM 1 begins and continues in a southerly direction around the southeastern edge of Placerville through Reservoir 6. The City of Placerville has turnouts along this lateral that divert water to the City water system. The Highway 49 Intertie connects downstream of Reservoir 6 and extends in a southerly direction to the Diamond Spring's Main (DSM) near Diamond Springs. EDM 2 begins at Reservoir 2A in Camino and extends in a westerly direction, generally following the alignment of EDM 1. EDM 2 also terminates in the Gold Hill area. Reservoir 2A is supplied from the Jenkinson Lake subsystem via the Camino Conduit and the Forebay Subsystem via the Moosehall Transmission Main.

The Gold Hill Intertie (GHI) connects to EDM 2 in the Gold Hill area and extends to the El Dorado Hills area along Green Valley Road. This pipeline provides water to the Cameron Park/Shingle Springs service zones. "Leg A" of the GHI connects with the DSM and extends from Green Valley Road to Reservoir 12. Another extension of the GHI, the AD3 Conduit extends from Bass Lake Road to the Bass Lake Tanks and to the Oakridge Tanks in the El Dorado Hills service zone.

El Dorado Hills Water Treatment Plant and Folsom Reservoir Subsystem

The El Dorado Hills Water Treatment Plant (EDHWTP) treats raw water from Folsom Reservoir to supply potable water to the El Dorado Hills service zone. An expansion of the EDHWTP has recently been completed to increase the plant's rated capacity from 19.5 to 26.0 mgd. Treatment processes include raw water pumping, chemical addition facilities,

clarifiers/filters, and disinfection in a clearwell. Treatment of backwash from the filters includes storage, chemical addition, and plate settlers. A series of high service water pumps distribute potable water to the distribution system.

Distribution System

The District water conveyance system is a combination of pipelines, regulating reservoirs, diurnal storage tanks, and a few Gold Rush Era ditches. The piped potable system consists of 1,250 miles of pipe ranging in size from 2 inches to 48 inches. The District has a total of 36 tanks with a combined storage capacity of 109 million gallons (mg).

In addition to a potable water system, the District operates a recycled water system that provides tertiary treated recycled water from the Deer Creek and El Dorado Hills wastewater treatment plants to serve portions of the service area to the west bordering Sacramento County. That water is distributed through a separate set of pipelines and is more fully described in Section 4.

Diurnal Storage

Each of the fourteen service zones is subdivided into storage zones which represent the area served by each potable water tank. Since the 2005 UWMP, two new tanks have been constructed. The new Promontory 1.6 mg tank and Valley View 700,000 gallon tank were constructed in El Dorado Hills to serve new development. An existing 60,000 gallon tank in Camino was replaced with a 300,000 gallon tank in the Rancho Del Sol community.

Local Climate

The District is located in a region of sunshine in the summer, moderate to heavy precipitation in the winter, and wide temperature ranges. Strong flows of marine air in the winter from the Pacific Ocean result in heavy precipitation. Precipitation in the summer is generally limited to a few scattered thunderstorms during July. According to the Western Regional Climate Center Placerville station, located centrally in the District, the historical annual average precipitation is approximately 38 inches, with an average monthly precipitation during winter months of about six inches. Temperatures throughout the service area range from warm in the summer to cold in the winter, with average monthly temperatures of 75° F in July to 42° F in January.

Evapotranspiration records, which measure the loss of water from the soil both by evaporation and by transpiration from the plants growing thereon, indicate average values ranging from 1.4 inches in the wet December, to 9.0 inches in much drier July. Low humidity usually occurs in the summer months, from May through September. The combination of hot and dry weather results in high water demands during the summer months.

Table 2-1 – Climate Characteristics

	Average Temperature (°F)	Average Rainfall (in)	Standard Average Eto (in)
January	42.7	6.98	1.41
February	45.7	6.73	1.88
March	48.9	5.78	2.99
April	53.3	3.10	4.47
May	60.2	1.50	5.91
June	67.7	0.44	7.46
July	74.7	0.08	9.00
August	73.5	0.09	8.21
September	68.5	0.56	6.23
October	59.8	2.14	4.19
November	48.9	4.54	1.84
December	43.3	6.43	1.37
Annual Average or Total	57.3	38.37	54.96

Data Source: El Dorado Irrigation District, Urban Water Management Plan, 2005

Population, Employment, and Housing

Over the years, the District has transitioned from serving mainly agricultural customers, to one that serves primarily residential, commercial, and industrial sectors, although agriculture remains a significant water user. The majority of growth in El Dorado County has occurred in the El Dorado Hills and Cameron Park areas, mirroring the steady increase in population growth of the Sacramento metropolitan area. From 2000 to 2009, the El Dorado County population increased by 13% from 157,079 to 176,075 residents with a projected population of 218,200 by 2015 according to the El Dorado County 2007 Economic and Demographic Profile.

El Dorado County residents employed within the District service area work in a variety of industries, including government, healthcare, retail trade, education, construction, manufacturing, agriculture, professional businesses, and hospitality services. The largest employers in El Dorado County are in the public sector, health care, data processing, and trade sectors. Most El Dorado County residents are within commuting distance of the greater Sacramento area, which offers employment in the defense and state government

sectors and more diversified employment opportunities such as computer technology, financial services, healthcare, and biotechnology. The largest percentage of the county employed civilian labor force works within El Dorado County.

Population projections for the District were prepared by Economic & Planning Systems (EPS) as part of the environmental impact assessment process in the County General Plan and reported in El Dorado County Water Agency Water Resources Development and Management Plan. Growth projections were developed based on historical patterns, market research, and new housing unit commitments (e.g., issued permits or approved subdivisions) for the near future. Since the year 2005, the District's population has grown at an annual rate of 2.8%, compared with a state annual growth rate of 1.4%. In 2009, the El Dorado County unemployment rate was 12.5%, an increase from 6.9% in 2008. Table 2-1 provides current and projected population within the District service area.

Table 2-2 – Current and Projected Population (DWR Table 2)

	2010	2015	2020	2025	2030
Service area population [1]	110,000	112,200	122,100	132,000	142,560

[1] *Service area population is defined as the population served by the distribution system. See Technical Methodology 2: Service Area Population (2010 UWMP Guidebook, Section M).*

Data Source: El Dorado County Water Agency - Water Resources and Development Management Plan, June 2007

SYSTEM DEMANDS

This section describes the District water system demands, including calculation of the baseline (base daily per capita) water use and interim and urban water use targets as described in SBx7-7. The current water system demand by category is quantified and projected over the planning horizon of the UWMP. These projections include water sales to other agencies, system water losses, and water use target compliance. This section includes the following subsections:

- Water Demands and Projections
- Water Use Baselines and Targets
- Water Use Reduction Plan

Water Demands and Projections

Using available historical records, water demands are provided by customer type and projected over the next 20 years as shown in Tables 3-1 through 3-5. Records for actual historical water use are as published in the annual Consumption Report. Projected demands are taken from the draft Integrated Water Resources Master Plan (IWRMP). Water use is presented in the following use categories: single family residential; multi-family residential; commercial; industrial; landscape; City of Placerville; saline water intrusion barriers, groundwater recharge, or conjunctive use, or any combination thereof; agricultural; and other authorized uses.

Consumption data for 2005 and 2010 was compiled from each annual consumption report using District defined user categories as follows:

- Single family = single family residential and single family dual potable
- Multi-family = multi-family residential
- Commercial/Industrial = commercial/industrial
- Landscape = recreational turf
- Agriculture and ditches = agricultural metered irrigation, domestic irrigation, and small farm irrigation
- Other authorized uses (metered) = ditches, City of Placerville, potable billed and unbilled, and raw water billed
- Other authorized uses (not metered) = Main ditch and potable billed ditches

Consumption data for 2015 and beyond was obtained from the draft IWRMP *Water Demand Projections* technical memorandum, HDR 2011. The total demand for each year was distributed among the user classes in the same proportion as 2010. Tables 3-1 through 3-5 provide summaries of actual and projected water uses.

Agricultural demand projection growth rates vary from those used in the EDCWA Water Resources Development and Management Plan, as that plan used higher growth rates which generated greater demands within the 2030 planning horizon.

Lower Income Housing Demands

Because the El Dorado County General Plan does not include a lower income housing land use designation and the District does not have a water use category for lower income housing, it not possible to estimate or identify those areas within the service area.

Table 3-1 – Water Deliveries, Actual 2005 (DWR Table 3)

	2005				
	Metered		Not metered		Total
Water use sectors	# of accounts	Volume	# of accounts	Volume	Volume
Single family	32,236	16,338	0	0	16,338
Multi-family	1,216	1,595	0	0	1,595
Commercial/Industrial	1,298	2,796	0	0	2,796
Landscape	104	1,321	0	0	1,321
Agriculture and ditches	1,820	6,596	0	0	6,596
Other authorized uses	527	3,447	0	84	3,531
Total	37,201	32,093	0	84	32,177

Units: acre-feet per year

Source: 2005 Consumption Report, El Dorado Irrigation District

Table 3-2 – Water Deliveries, Actual 2010 (DWR Table 4)

	2010				
	Metered		Not metered		Total
Water use sectors	# of accounts	Volume	# of accounts	Volume	Volume
Single family	34,741	14,895	0	0	14,895
Multi-family	806	1,430	0	0	1,430
Commercial/industrial	1,458	2,479	0	0	2,479
Landscape	111	1,073	0	0	1,073
Agriculture and ditches	1,755	5,431	0	0	5,431
Other authorized uses	16	1,166	0	1,287	2,453
Total	38,887	26,474	0	1,287	27,761

Units: acre-feet per year

Source: 2010 Consumption Report, El Dorado Irrigation District

Table 3-3 – Water Deliveries, Projected 2015 (DWR Table 5)

	2015				
	Metered		Not metered		Total
Water use sectors	# of accounts	Volume	# of accounts	Volume	Volume
Single family	35,881	21,725	0	0	21,725
Multi-family	832	2,086	0	0	2,086
Commercial/industrial	1,506	3,616	0	0	3,616
Landscape	115	1,565	0	0	1,565
Agriculture and ditches	1,813	7,921	0	0	7,921
Other authorized uses	17	1,701	0	4,216	5,917
Total	40,162	38,613	0	4,216	42,829

Units: acre-feet per year

Source: El Dorado Irrigation District - draft Integrated Water Resources Master Plan, 2011

Table 3-4 – Water Deliveries, Projected 2020 (DWR Table 6)

	2020				
	Metered		Not metered		Total
Water use sectors	# of accounts	Volume	# of accounts	Volume	Volume
Single family	49,949	23,410	0	0	23,410
Multi-family	1,159	2,248	0	0	2,248
Commercial/industrial	2,096	3,896	0	0	3,896
Landscape	160	1,686	0	0	1,686
Agriculture and ditches	2,523	8,536	0	0	8,536
Other authorized uses	23	1,833	0	4,216	6,049
Total	55,910	41,609	0	4,216	45,825

Units: acre-feet per year

Source: El Dorado Irrigation District - draft Integrated Water Resources Master Plan, 2011

Table 3-5 – Water Deliveries, Projected 2025 and 2030 (DWR Table 7)

	2025		2030	
	Metered		Metered	
Water use sectors	# of accounts	Volume	# of accounts	Volume
Single family	55,868	29,679	64,796	34,505
Multi-family	1,296	2,849	1,503	3,313
Commercial/industrial	2,345	4,939	2,719	5,743
Landscape	179	2,138	207	2,486
Agriculture and ditches	2,822	10,821	3,273	12,581
Other authorized uses	26	2,323	30	2,701
Total	62,535	52,750	72,529	61,328

Units: acre-feet per year

Source: El Dorado Irrigation District - draft Integrated Water Resources Master Plan, 2011

Water Sales to Other Agencies

The District currently wholesales potable water to the City of Placerville (City). The City demand for current and projected water deliveries by use category is shown in Table 3-6.

Table 3-6 – Sales to Other Agencies (DWR Table 9)

Water distributed	2005	2010	2015	2020	2025	2030
City of Placerville	1,666	1,155	1,200	1,215	1,275	1,330
Total	1,666	1,155	1,200	1,215	1,275	1,330

Units: acre-feet per year

Source: City of Placerville Engineering Department, June 2011

Wholesale Water

The District relies upon a USBR contract as described in Section 4 for wholesale water as shown in Table 3-8.

Table 3-7 – Water Provided by Wholesale Suppliers (DWR Table 12)

Wholesaler	Contracted Volume	2010	2015	2020	2025	2030
None	7,550	7,550	7,550	7,550	7,550	7,550

Additional Water Uses and Losses

System losses are unmetered water use resulting from system leaks, unauthorized connections, and meter inaccuracies. The District estimates its system losses at approximately 13%, which is less than the general 15 % for rural districts. Other authorized uses consist of water utilized for operational flushing, sewage lift station and collection system flushing, private fire service, and aesthetics maintenance. Growth for this use category is assumed to remain constant, remaining at 13% of metered demand.

Table 3-8 – Additional Water Uses and Losses (DWR Table 10)

Water use [1]	2005	2010	2015	2020	2025	2030
Saline barriers	0	0	0	0	0	0
Groundwater recharge	0	0	0	0	0	0
Conjunctive use	0	0	0	0	0	0
Raw water	1,369	1,783	1,800	1,800	1,800	1,800
Recycled water [2]	2,133	3,084	5,836	6,853	6,905	6,905
System losses	5,046	4,764	4,892	5,227	6,003	6,962
Total	8,548	9,631	12,528	13,880	14,708	15,667

Units: acre-feet per year

[1] *Any water accounted for in Tables 3-1 through 3-5 are not included in this table.*

[2] *Source: 2005 and 2010 Consumption Reports, El Dorado Irrigation District and Recycled Water Seasonal Storage System Task 1 Technical Memorandum, Table 4, October 2006*

Total Water Use

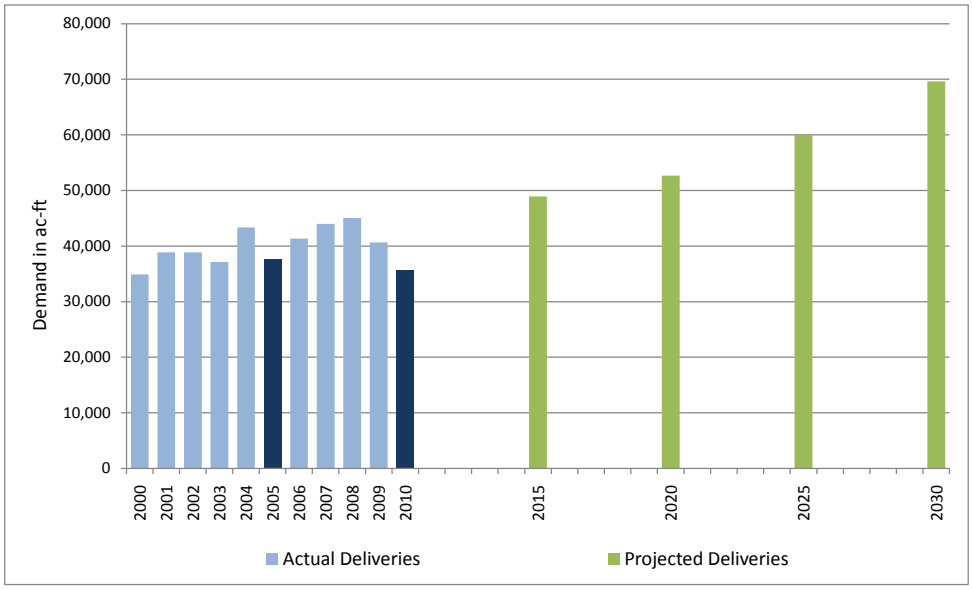
Table 3-9 provides a summary of all water deliveries, sales to other agencies and additional water uses for years 2005 through 2030 with 2005 and 2010 being actual demands while 2015 to 3030 are projected demands.

Table 3-9 – Total Water Use (DWR Table 11)

Water Use	2005	2010	2015	2020	2025	2030
Total water deliveries (from Tables 3-1 to 3-5)	32,177	27,761	42,829	45,825	52,750	61,328
Sales to other water agencies (from Table 3-6)	1,666	1,155	1,200	1,215	1,275	1,330
System losses (from Table 3-7, Line 6)	5,046	4,764	4,892	5,227	6,003	6,962
Total	38,889	33,680	48,921	52,267	60,028	69,620

Units: acre-feet per year

Figure 3-1 – Water Deliveries



Water Use Baselines and Targets

As required by the Water Conservation Act of 2009, the District used the four step process to develop baseline and target values and selected a methodology to meet the target as outlined below.

Step 1 – Determine Base Daily per Capita Water Use

Because the District recycled water supply was less than 10% of its total supply in 2008, the base period range for determining the baseline daily per capita water use is 10 years. Tables 3-10 and 3-11 provide the calculations used to determine the baseline.

Distribution system population is estimated using the number of residential accounts and the published average number of persons per household from the 1990 and 2000 census. The number of persons per household was 2.66 and 2.63 per the 1990 and 2000 census, respectively. The number of accounts is the total of the single-family residential, multi-family residential units, and domestic irrigation account user classes. Population for residential customers in the City of Placerville that are served directly by a District owned meter is estimated in the same manner. Population for residential customers in the City of Placerville that are served by City owned meters is not included.

The daily system gross water use is the sum of all water diversions from Folsom Reservoir, Jenkinson Lake, Forebay Reservoir, South Fork of the American River at Strawberry, and the Middle Fork of the Cosumnes River at Outingdale plus the recycled water supplied to the distribution system minus the exported water to the City of Placerville and water used specifically for agricultural purposes.

Table 3-10 – Base Period Ranges (DWR Table 13)

Base	Parameter	Value
10-year base period	2008 total water deliveries	45,051
	2008 total volume of delivered recycled water	2,904
	2008 recycled water as a percent of total deliveries	6.4%
	Number of years in base period [1]	10
	Year beginning base period range	1997
	Year ending base period range [2]	2006

Units: acre-feet per year

[1] If the 2008 recycled water percent is less than 10 percent, then the first base period is a continuous 10-year period. If the amount of recycled water delivered in 2008 is 10 percent or greater, the first base period is a continuous 10- to 15-year period.

[2] The ending year must be between December 31, 2004 and December 31, 2010.

Source: Water Diversion Report, El Dorado Irrigation District, 2008

Step 2 – Determine Urban Water Use Target

The Department of Water Resources (DWR) provided four methods that an urban water supplier may choose from to develop its water use target. Method 2 requires the determination of landscaped areas and is more suited for cities with greater commercial and industrial uses than the District has. Method 3 uses the regional target which for the District would be 176 gpcd, a target much lower than the 80% calculated value of 225 gpcd. Method 4 is a comprehensive calculation developed by DWR and is more suited to large cities rather than the more rural agencies such as the District. After review of each method,

the District selected Method 1, 80% of the base daily per capita use, to meet the urban water use target. Using Method 1, the calculated base daily per capita use from Table 3-11 is 281 gpcd, therefore the target is 225 gpcd.

Table 3-11 – Base Daily per Capita Water Use, 10 Year Range (DWR Table 14)

Base period year		Distribution System Population	Daily system gross water use (mgd)	Annual daily per capita water use (gpcd)
Sequence Year	Calendar Year			
Year 1	1997	83,100	22.5	271
Year 2	1998	86,000	20.1	234
Year 3	1999	87,800	25.5	291
Year 4	2000	90,100	27.4	304
Year 5	2001	93,300	27.6	295
Year 6	2002	96,400	27.9	289
Year 7	2003	101,100	24.6	244
Year 8	2004	104,700	32.8	314
Year 9	2005	108,300	29.9	276
Year 10	2006	110,200	32.6	296
			Base Daily Per Capita Water Use [1]	281

[1] *Add the values in the column and divide by the number of rows.*

Source: gpcd calculation spreadsheet prepared by District staff, May 2011.

Step 3 – Confirm Urban Water Use Target

Table 3-12 provides the annual daily per capita use for a 5-year period. Since the 5-year base daily per capita water use is not less than 100 gpcd, 95% of the 5-year base daily per capita water use was also calculated which is 273. The use target of 225 gpcd is compared to the 5-year base period to confirm that the use target meets a minimum threshold. Since the target use of 225 gpcd is less that the 95% of the 5-year base daily per capita water use of 273, no adjustments are needed.

Step 4 – Determine Interim Urban Water Use Target

The interim water use target has been established by adding the base daily per capita and the urban water use target and dividing by two. Therefore, the interim water use target is ((281+225)/2) or 253 gpcd for 2015.

Table 3-12 – Base Daily per Capita Water Use – 5-year Range

Base period year		Distribution System Population	Daily system gross water use (mgd)	Annual daily per capita water use (gpcd)
Sequence Year	Calendar Year			
Year 1	2003	101,100	24.6	244
Year 2	2004	104,700	32.8	313
Year 3	2005	108,300	29.9	276
Year 4	2006	110,200	32.6	296
Year 5	2007	111,200	34.2	308
			Base Daily Per Capita Water Use [1]	287

[1] *Add the values in the column and divide by the number of rows.*

Water Use Reduction Plan

The District proposes to use the following actions to meet the use target:

- Continued use of recycled water
- Expanded use of recycled water
- Capital improvements in the water system to reduce leakage such as pipe replacement
- Continued implementation of the Best Management Practices under the California Urban Water Conservation Council Memorandum of Understanding
- Conversion of raw water ditches to piped segments
- Installation of bulk water fill stations
- Water meter change-outs
- Conversion of un-metered services to metered services

The District will report progress on meeting its water use targets as part of future UWMP updates in 2015 and 2020.

SYSTEM SUPPLIES

This section describes the sources of water available, a description of each water source, source limitations (physical or political), water quality, and water exchange opportunities. A discussion of surface water, groundwater, recycled water, desalinated water, stormwater, and any other source of water that is part of the District water supply is included. Information regarding planned future water supplies projects and wholesale water supplies received from another source is also included. This section includes the following subsections:

- Water Sources
- Groundwater
- Transfer Opportunities
- Desalinated Water Opportunities
- Recycled Water Opportunities
- Wastewater System
- Future Water Projects

Water Sources

The District's potable water system is composed of a main contiguous system which serves over 95% of its customers, and two satellite systems. The three principle diversion points for delivering into the main system are: District owned and operated Sly Park Dam and Jenkinson Lake; the District owned and operated El Dorado Hydroelectric FERC Project 184 (Project 184) at Forebay Reservoir; and Folsom Reservoir via a United States Bureau of Reclamation (USBR) Water Service Contract, a Warren Act Contract for rediverted District ditch and Weber Reservoir water supplies, and State water right permit 21112. The two satellite diversions include potable water deliveries to Outingdale by diverting water from the Middle Fork of the Cosumnes River and Strawberry by diverting water from the upper South Fork American River. The District also diverts water into the Crawford Ditch from the North Fork of the Cosumnes River as a raw water source. Aside from the USBR Contract, the District does not currently purchase water from any wholesale supplier. In the future, the District expects to purchase water wholesale from the El Dorado County Water Agency (EDCWA), which is pursuing a USBR Contract under Public Law 101-514.

The District's existing sources of water supply include both surface water and recycled water. Each of the District's existing water supplies is described in the following subsections. Figure 4-1 shows the location of each existing water supply source while Table 4-1 provides the current and projected normal year water supplies for 2010 through 2030.

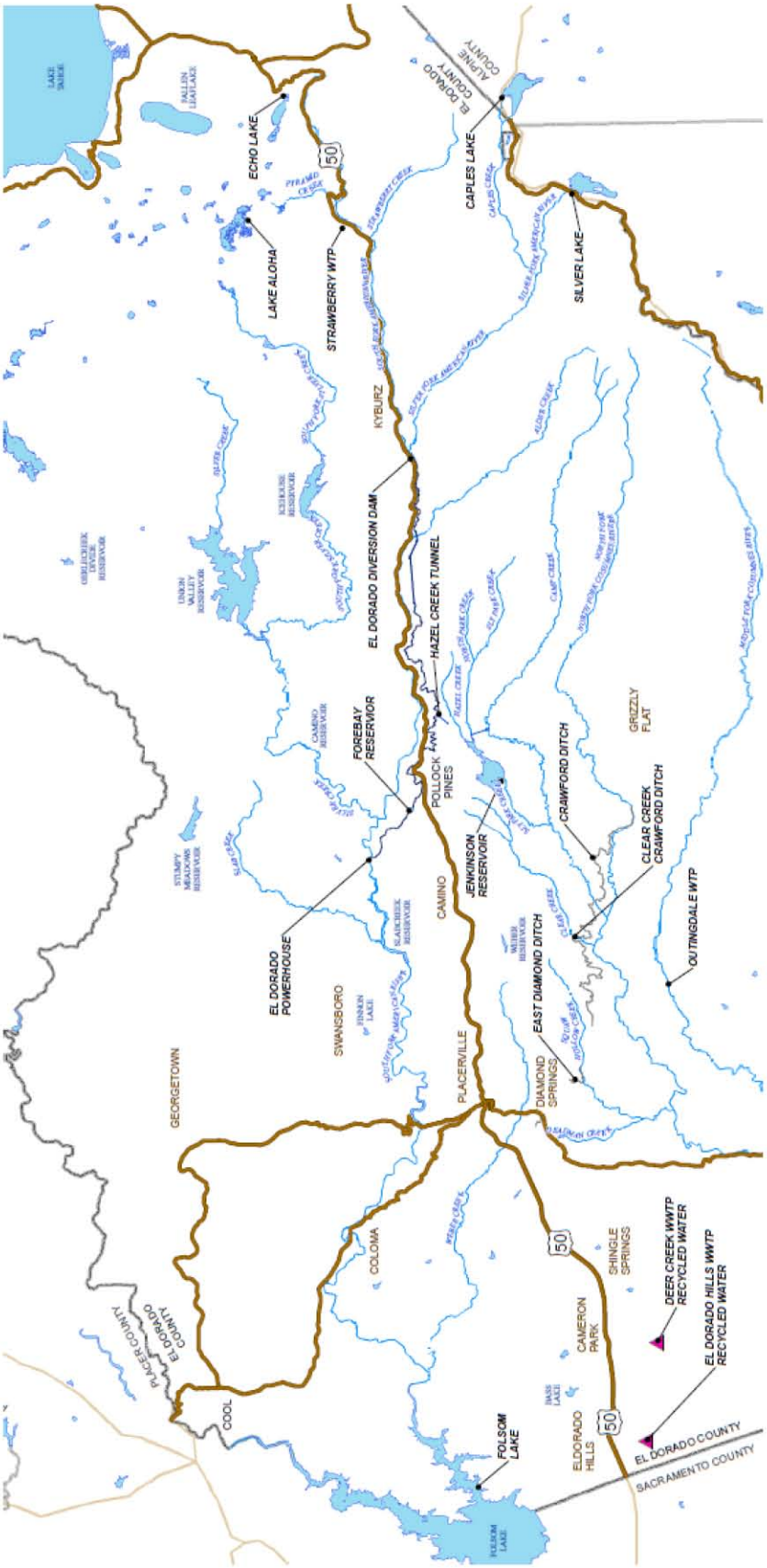


Figure 4-1 – Existing Water Supply Sources

Table 4-1 – Current and Projected Water Supplies (DWR Table 16)

Water Supply Sources		2010	2015	2020	2025	2030
Water purchased from USBR [1]	Folsom Reservoir - USBR	7,550	7,550	7,550	7,550	7,550
Supplier-produced surface water	Jenkinson Lake	23,000	23,000	23,000	23,000	23,000
Supplier-produced surface water	El Dorado Forebay [2]	15,080	15,080	15,080	15,080	15,080
Water purchased from EDCWA [1]	Folsom Reservoir - PL 101- 514 Fazio	0	7,500	7,500	7,500	7,500
Supplier-produced surface water	Folsom Reservoir - Warren Act Contract	4,560	4,560	4,560	4,560	4,560
Supplier-produced surface water	Project 184 - Permit 21112	17,000	17,000	17,000	17,000	17,000
Supplier-produced surface water	SMUD-El Dorado Agreement	0	0	30,000	30,000	40,000
Recycled Water	El Dorado Hills and Deer Creek WWTPs	3,084	4,356	5,878	7,730	7,730
Supplier-produced groundwater	None	0	0	0	0	0
Transfers in	None	0	0	0	0	0
Exchanges In	None	0	0	0	0	0
Desalinated Water	None	0	0	0	0	0
	Total	70,274	79,046	110,568	112,420	122,420

Units: acre-feet per year

[1] *Volumes shown are what was purchased in 2010 and what is anticipated to be purchased in the future.*

[2] *Supplies are from the South Fork American River and Project 184 Reservoirs.*

System Firm Yield

Several factors influence the District water availability, including infrastructure constraints, use history, and seasonal diversion and storage policies. The District's firm yield was established through computer modeling and is defined as the annual demand that the integrated supply system can theoretically meet 95% of the time while incurring shortages of no more than 20% annually in the remaining 5% of the time. In 2006, the District adopted a system firm yield of 60,550 ac-ft per year, which did not include the rediverted ditch or Weber Reservoir rights, and recycled water. Preliminary updated system firm yield estimates prepared by District staff indicate a slightly higher system firm yield of 63,500 ac-ft per year.

Physical Constraints

Due to the District's geography, topography, and infrastructure configuration, some water supplies are limited to certain areas of the District. For planning purposes, the District has divided its service area based on topography and points of diversion into two service regions; El Dorado Hills and Western/Eastern. Details of these regions are discussed in Section 2. The District has the ability to convey non-Folsom Reservoir water supplies by gravity to the El Dorado Hills region, however infrastructure constraints and pumping costs limit the ability to use Folsom supplies to serve the Western/Eastern region.

Appropriative Water Rights

The District obtains water from the North and Middle Forks of the Cosumnes River, Clear Creek, Squaw Hollow Creek, Park Creek, Camp Creek, Slab Creek, Weber Creek, and the South Fork American River in accordance with appropriative water rights, including pre-1914 rights. Some supply from appropriative water rights is diverted directly from rivers and creeks to be treated or conveyed as raw water. Other water is diverted to storage for subsequent treatment and distribution into the potable system. The District diverts water from the South Fork American River, its tributaries, and Echo Lake in accordance with water rights for both power generation and consumptive uses that Pacific Gas & Electric Co. (PG&E) transferred to the District in 1999.

Recycled Water

The District produces recycled water at both the El Dorado Hills and Deer Creek wastewater treatment plants which is then used by District customers for irrigation of residential landscape, commercial landscape, recreation turf and in a few areas for fire suppression and dust control. The availability of recycled water is currently limited to the El Dorado Hills and Cameron Park areas.

Sly Park Dam and Jenkinson Lake

Jenkinson Lake is the main storage reservoir in the District. It is formed by two earth and rock dams across Park Creek near Pollock Pines with a maximum capacity of 41,033 ac-ft. The dam was constructed as a portion of the USBR Central Valley Project in 1955. With the transfer of ownership from the USBR of the Sly Park dam and associated lands and facilities in 2003, the District not only operates and maintains the Jenkinson Lake and Sly Park Dam facilities, including recreational aspects, but holds the water rights. The average annual use from this facility is approximately 23,000 ac-ft, though the District's annual water right is for 33,400 ac-ft of total beneficial use. This water supply is used entirely within the District's contiguous service area. Under average flow conditions, Jenkinson Lake is operated to maintain 14,000 to 18,000 ac-ft of carryover storage each year. The outlet works at Sly Park Dam have a capacity of 125 cfs. Water is released to the Reservoir A Water Treatment Plant for subsequent treatment, transmission, and distribution.

Jenkinson Lake contributes approximately 20,920 ac-ft per year to the District's system firm yield. Over the past 5 years, the District's annual diversions from Jenkinson Lake have averaged approximately 22,600 ac-ft per year. The District's maximum and minimum diversions from this particular water source during this five-year period were 25,745 and 20,800 ac-ft per year, respectively.

Jenkinson Lake receives inflow from Park, Hazel and Camp Creeks, all of which are tributary to the North Fork Cosumnes River. With a drainage area of approximately 17.3 square miles, Park Creek and Hazel Creek contribute substantially to the total 45,920 ac-ft of average annual runoff flowing to the reservoir. However, due to annual variations in precipitation and runoff, water year runoff can vary substantially, ranging from approximately 8% of average in 1977 to 276% of average in 1983. Water from Camp Creek can be diverted from a diversion dam on Camp Creek to Jenkinson Lake through the 7-foot diameter, 2,856-foot long Camp Creek tunnel. As much as 500 cfs can be diverted between November 1 and June 30. The District also has pre-1914 water rights for 12.5 cfs.

Folsom Reservoir

USBR Contract

Surface water from Folsom Reservoir is provided to the El Dorado Hills area. By contract with the USBR for Folsom water, the District is entitled to 7,550 ac-ft per year. The contract includes provisions for use in a particular area that generally encompasses the El Dorado Hills and Cameron Park regions. The Folsom Project is operated by the USBR as part of the Central Valley Project (CVP), a multipurpose project that provides flood control, hydroelectricity, drinking water, and water for irrigation.

The El Dorado Hills County Water District entered into a USBR Contract in 1964 for water supply from Folsom Reservoir. The contract had a not-to-exceed limit of 37,600 ac-ft per year. When the District annexed the El Dorado Hills County Water District in 1973, the contract was assigned to the District, and subsequently, in 1979, an amendatory contract replaced the original 1964 contract and reduced the maximum annual supply quantity of Folsom Reservoir water to 6,500 ac-ft per year. In 1983, the USBR increased the maximum annual supply quantity from 6,500 to 7,500 ac-ft per year. The District also annexed and succeeded to a USBR Contract for 50 ac-ft per year to supply the Lakehills area in El Dorado Hills. In 2006, these two contracts were consolidated into a single 40-year USBR Contract with a maximum quantity of 7,550 ac-ft per year.

While the USBR Contract can supply a maximum of 7,550 ac-ft per year during normal and wetter years, the USBR utilizes a Shortage Policy to allocate supplies when full deliveries cannot be made. The USBR can impose shortages as a result of drought, unavoidable causes, or restricted operations resulting from legal obligations.

The Shortage Policy indicates that during periods of water shortage, allocations for municipal and industrial water supply can be reduced to 75% of historic use subject to upward adjustments for population growth, use of non-CVP supplies, or extraordinary conservation measures. Thus, the USBR Contract supply could be reduced from 7,550 to approximately 5,660 ac-ft per year. Previously, under severe water shortage conditions, the USBR has further reduced allocations in 1977, 1991, 1992, and 1994, when deliveries were reduced to approximately 2,200 ac-ft per year, and again in 2001, when deliveries were reduced to 5,354 ac-ft per year.

Warren Act Contract

Diversions from Weber Dam, Weber Creek, Slab Creek, and Hangtown Creek are available to be diverted at Folsom Reservoir with approximately 4,560 ac-ft available each year from these sources. The District recently entered into a long-term Warren Act Contract with the USBR to re-divert water right license No. 2184 for Weber Reservoir and three pre-1914 appropriative water rights on Weber Creek (Farmer's Free Ditch), Slab Creek (Summerfield Ditch), and Hangtown Creek (Gold Hill Ditch) to Folsom Reservoir. A Warren Act Contract allows the use of federal facilities to take non-CVP water such as these supplies. The 40-year contract commenced on March 1, 2011 and has a maximum contract amount of 4,560 ac-ft per year, which reflects the best estimate associated with these various water rights in a normal water year. The contract total also assumes a 15% conveyance loss between the former points of diversion and Folsom Reservoir, which can be adjusted at a later date by mutual agreement without amending the contract. The annual water diversion season is limited to April through November 15 and the water must be used for municipal and industrial purposes in the El Dorado Hills/Cameron Park area. Unlike CVP contracts, this contract has no USBR-controlled shortage provisions. However, the actual yield is expected to vary from year to year based on hydrologic conditions, with the amount taken in any given year being based on the amount of water introduced into Folsom Reservoir by Weber Dam, Weber Creek, Slab Creek, and Hangtown Creek. The estimated dry-year yield associated with this contract is 3,000 ac-ft per year.

Summary

Over the past 5 years, the District's annual diversions from Folsom Reservoir have averaged 7,500 ac-ft per year. The maximum and minimum diversions during this five-year period were 9,171, and 6,409 ac-ft per year, respectively.

Project 184 Permit 21112

The District was also awarded a water right for an additional 17,000 ac-ft per year of water supply associated with Project 184 facilities and power operations to be taken at Folsom Reservoir; authorized under Permit 21112 for diversion and consumptive use anywhere within the District contiguous service area. There are no cutback provisions on this supply. The District is currently pursuing a Warren Act Contract with the USBR to make use of this water right.

The El Dorado County Water Agency (EDCWA) and District applied to the SWRCB to obtain water rights for consumptive use of waters previously stored and released for power generation from Caples Lake, Silver Lake, and Lake Aloha, as well as certain direct diversions from the South Fork American River, all of which have been used by Project 184 for hydroelectric power generation or instream flows. The EDCWA later assigned all of its water under this application to the District. The State Water Resources Control Board (SWRCB) granted the right to appropriate 17,000 ac-ft per year of water. Permit 21112 allows the District to make direct diversions from the South Fork American River at Folsom Reservoir; to store in Caples, Silver, and Aloha Lakes; and to redivert the water released from storage. The sole approved point of take is at Folsom Reservoir.

South Fork American River and Project 184 Reservoirs

The District acquired Project 184 from PG&E in 1999. Project 184 includes reservoirs and associated dams, 24 miles of canals, a 21 Mw powerhouse, and other ancillary facilities. Prior to the transfer of ownership and water rights, the District purchased water from PG&E and its predecessor, Western States Gas and Electric Co. The original water rights claims date back to 1856, with additional claims being filed in the 1860s and 1870s. The water rights for diversions from Echo Lake were established in 1880 in a California Supreme Court decision. Then, in 1918, the California Railroad Commission (predecessor to the California Public Utilities Commission) recognized the use of water from the El Dorado Canal for irrigation and domestic purposes.

The sources of this water supply include natural flows in the South Fork American River and its tributaries, and stored water in Silver, Aloha, Echo, and Caples Lakes. Except for a small diversion to serve the Strawberry satellite service area, the supply is diverted from the South Fork American River at Kyburz and is conveyed via the El Dorado Canal to the El Dorado Forebay. Some additional water is obtained by diversions into the El Dorado Canal from streams tributary to the South Fork American River.

The District takes consumptive use of the water supply at the Main Ditch Intake, located at the El Dorado Forebay. This particular supply contributes 15,080 ac-ft per year to the District's system firm yield. Over the past 5 years, the District's annual diversions from Project 184 – Forebay Reservoir have averaged approximately 11,300 ac-ft per year. The District's maximum and minimum diversions from this particular water source during this five-year period were 12,423 and 8,424 ac-ft per year, respectively.

Some of this particular water right can be diverted to Jenkinson Lake through the Hazel Creek Tunnel. In 2008, 2,754 ac-ft was diverted via the HCT to Jenkinson Lake, equating to a total diversion of about 15,080 ac-ft, the maximum water right.

Water diversions of up to 156 cfs can be made from the South Fork American River at the diversion dam. These diversions are then supplemented by tributary flows into the El

Dorado Canal en route to the Forebay. In addition to these direct diversion rights, the District also has pre-1914 diversion and storage rights associated with portions of the waters stored in Silver Lake, Caples Lake, and Lake Aloha and all of the waters stored in Echo Lake.

El Dorado Forebay is filled by the surface water supply from the Project 184 facilities upstream in the South Fork American River basin and at Echo Lake. The District has a consumptive water entitlement of 15,080 ac-ft per year delivery at the Forebay. The entitlement is a pre-1914 water right, and diversions are made in compliance with the 40-year Federal Energy Regulatory Commission Project 184 operating license issued to the District in October 2006. Since the full entitlement can be provided in all years including the most severe historic single dry year 1977, this source of water is considered assured, and not subject to shortage from hydrologic droughts. Historically, this source has experienced temporary interruptions from damage to the conveyance system caused by forest fires, floods, and landslides.

Finally, the District can also divert water from these sources into Jenkinson Lake via the Hazel Creek Tunnel. The Hazel Creek Tunnel originates at the El Dorado Canal and extends 2,200-feet and discharges to Hazel Creek, a tributary to Jenkinson Lake. Although the 8-foot horseshoe-shaped tunnel has a design flow capacity of 160 cfs, flows are limited to 30 cfs to prevent streambed scour in Hazel Creek. The District's maximum and minimum diversions to Jenkinson Lake during this five-year period were 0 and 6,314 ac-ft per year, respectively. This water was supplied by the Permit 21112 and South Fork American River and Project 184 Reservoirs water rights.

North Fork Cosumnes River, Clear Creek, and Squaw Hollow Creek

The District retains pre-1914 water rights for direct diversion from the North Fork Cosumnes River, Clear Creek and Squaw Hollow Creek for serving the Crawford Ditch system. The system was acquired by the District from the Diamond Ridge Water Company in 1938. The Crawford Ditch is a conveyance system of pipes, siphons, lined and unlined canals, extending approximately 19 miles from the North Fork Cosumnes River to Reservoir 7 near Squaw Hollow. The Crawford Ditch consists of three segments which supply untreated irrigation water along the ditch system. It is not included in firm yield calculations of potable water.

A maximum of up to 15 cfs can be diverted from the North Fork Cosumnes River, below its confluence with the Steely Fork, into the North Fork Extension segment of the Crawford Ditch System. The water can then be supplied for irrigation purposes in the North Fork Extension and Camp Creek segments of the ditch. Additional water from Clear Creek is used to augment the ditch flows to serve the Clear Creek segment which flows year-round. Water diverted at Clear Creek into the Clear Creek segment consists of a mix of natural Clear Creek

flows and supplementary water released from Jenkinson Lake. The released water also satisfies a District obligation to provide aesthetic flows in Clear Creek.
The former Camp Creek point of diversion at the Camp Creek Ditch has been moved upstream to the diversion dam at the Camp Creek Tunnel which diverts water to Jenkinson Lake. Since that time, the pre-1914 Camp Creek water right of 12.5 cfs has been used to help fill Jenkinson Lake.

Approximately 5,000 ac-ft per year is available for diversion into the Clear Creek segment from the natural Clear Creek flow at the diversion dam. Similar to the North Fork Extension, not all the water diverted into the Clear Creek segment is available for beneficial uses due to conveyance losses. The flows in the Crawford Ditch system are regulated to provide sufficient water at the end of the Clear Creek segment for release to Squaw Hollow Creek for rediversion into the East Diamond Ditch, located at the diversion dam on Squaw Hollow Creek. Releases can also be made to the siphon and pipeline serving the Reservoir 7 Water Treatment Plant, which is not currently in use. Direct diversions of water from Squaw Hollow Creek to the East Diamond Ditch are also made in accordance with the District's pre-1914 water rights.

Middle Fork Cosumnes River

The District holds a 1933 appropriative water right for direct diversion from the Middle Fork Cosumnes River serving the Outingdale subdivision. The original water right permit #4071, for this supply was issued by the State of California in 1933 to predecessors C.T. Oeste and later the Outingdale Water Company in the amount of 104 ac-ft per year. The water system was transferred to the District in 1970 when the subdivision was annexed to the District, and included the accompanying water rights. Under the terms of the water right permit, the water was to be put to full beneficial use by December 1935. However, the subdivision has not reached build out conditions, and thus the District has requested extensions to allow it to develop and reach the level of consumptive use originally requested in the water right application. This water supply is an independent satellite potable system and therefore does not contribute to the potable firm yield calculation.

Groundwater

The District currently does not use groundwater as a supply source. Groundwater aquifers in the service area occur in fractured hard rock and are unreliable as a source. The District owns two wells in the Swansboro community north of the South Fork American River; however, they are physically disconnected from the system and are not considered further in this UWMP.

Transfer Opportunities

Presently, the District is not actively engaged in water transfers with urban or agricultural districts locally or statewide. However, the District has water supplies suitable for short-term transfers and an interest in actively pursuing such transfers in the near future. The

District has held conceptual discussions with potentially interested parties and facilitators, both within the Sacramento region and in other locales.

Desalinated Water Opportunities

The District currently has no opportunities or plans for using desalinated water as a supply source.

Recycled Water Opportunities

The District recycled water system consists of supply from the El Dorado Hills and Deer Creek wastewater treatment plants (EDHWWTP and DCWWTP), an interconnected network of transmission and distribution pipelines, pump stations, storage tanks, pressure reducing stations, and appurtenant facilities located within the communities of El Dorado Hills and Cameron Park. Figure 4-2 shows the existing recycled water system.

The District mandates the use of recycled water through Board Policy 7010, wherever economically and physically feasible, as determined by the Board, for non-domestic purposes when such water is of adequate quality and quantity, available at a reasonable cost, not detrimental to public health, and not injurious to plant life, fish, and wildlife. The type of use is defined in Title 22 of the California Code of Regulations. In general, the lands subject to mandatory recycled water use are defined in the most current version of the District's Recycled Water Master Plan.

Non-domestic use includes, but is not limited to, commercial landscape irrigation, residential or multi-family dual-plumbed landscape irrigation, construction water, industrial process water, and recreational impoundments. The criteria for determining whether recycled water is feasible for a particular property or non-domestic use include the following factors:

- The property is located within an area as defined in the most current version of the District's Recycled Water Master Plan.
- Recycled water may be furnished for the intended use at a reasonable cost to the customer and the District.
- Recycled water is of adequate quality for the intended use and does not require significant additional on-site treatment beyond that required for potable water.
- The use of recycled water is consistent with all applicable federal, state, and local laws and regulations.
- The use of recycled water will not be detrimental to the public health and will not adversely affect plant life, fish and wildlife.

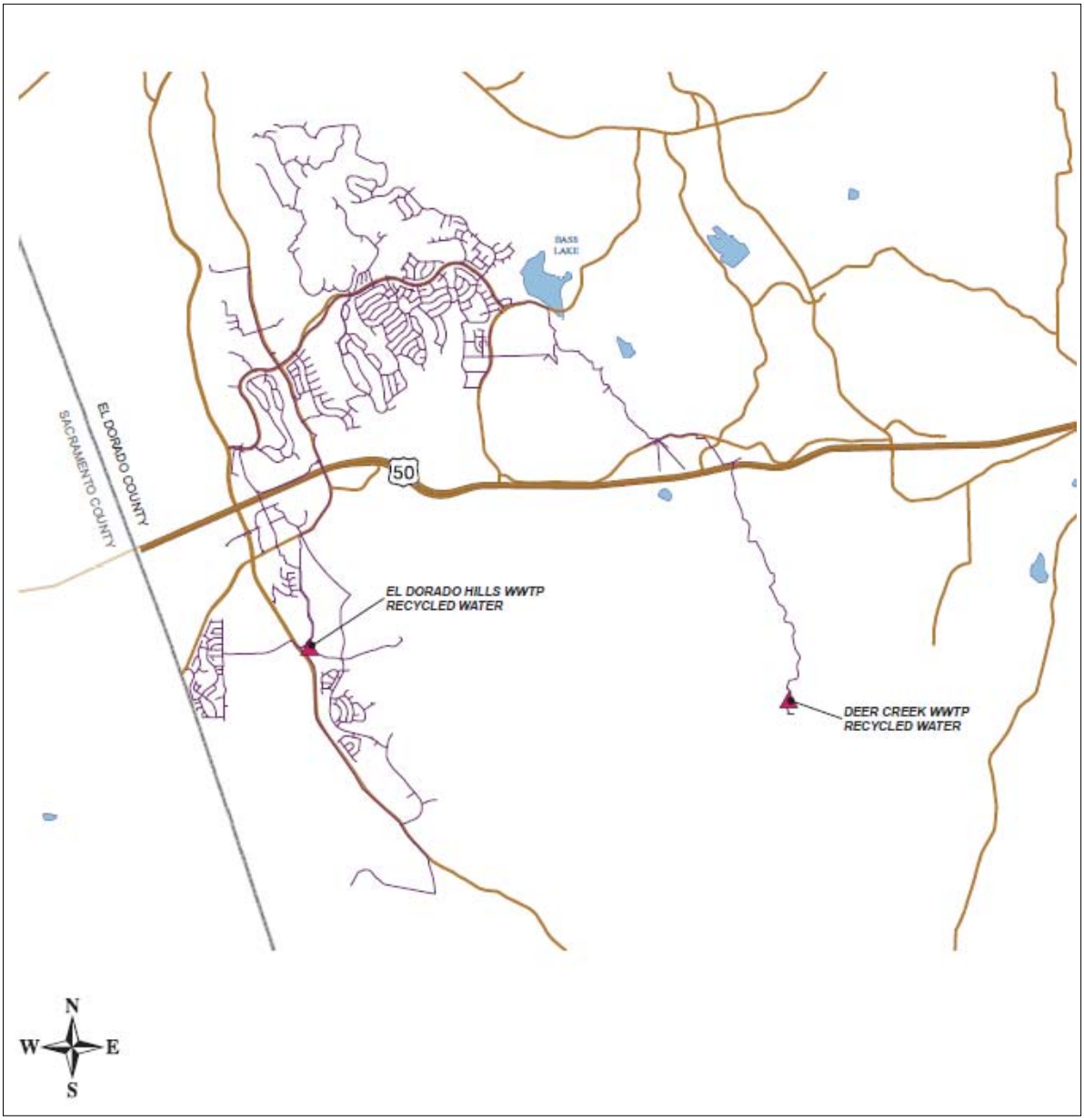


Figure 4-2 – Recycled Water System

The District began producing recycled water over 30 years ago at the EDHWWTP with the first recycled water deliveries made to the Wetsel-Oviatt Lumber Company for industrial purposes, and the El Dorado Hills Executive Golf Course, for turf irrigation. In early 1990, additional facilities were constructed to convey recycled water from the DCWWTP to the Serrano Development in El Dorado Hills. By 1997, the EDHWWTP had expanded its recycled water system and connected to the Deer Creek pipe network, thereby creating one interconnected delivery system. The District currently uses or distributes recycled water for golf course, street median, school, playground, soccer field, park, commercial, and residential landscape irrigation and construction (dust control, soil compaction and general construction use). Tables 4-2 through 4-4 provide the historical and projected amounts of recycled water and wastewater treated and collected and amounts of wastewater disposal. In Table 4-3, the discharge to creeks is notably less starting in 2015 due to residential development and the associated increase in recycled water demand at dual-plumbed homes.

Table 4-2 – Recycled Water, Wastewater Treatment and Collection (DWR Table 21)

Type of Wastewater	2005	2010	2015	2020	2025	2030
Wastewater collected & treated in service area	6,425	6,478	7,056	8,578	10,430	10,500
Volume that meets recycled water standard	6,425	6,478	7,056	8,578	10,430	10,500

Units: acre-feet per year

Source: EID Recycled Water Seasonal Storage, Assumption Verification and Update Technical Memorandum, HDR 2006

Table 4-3 – Recycled Water, Non-Recycled Wastewater Disposal (DWR Table 22)

Method of disposal	Treatment Level	2010	2015	2020	2025	2030
Discharge to Creeks [1]	Tertiary	4,371	1,220	1,725	3,525	3,595
Total		4,371	1,220	1,725	3,525	3,595

Units: acre-feet per year

[1] *Calculated from Tables 4-2 and 3-7.*

Table 4-4 – Recycled Water, 2005 UWMP Use Projection Compared to 2010 Actual (DWR Table 24)

Use type	2010 actual use	2005 Projection for 2010[1]
Agricultural irrigation	0	0
Landscape irrigation [2]	1,517	4,220
Commercial irrigation [3]	545	305
Golf course irrigation	0	850
Wildlife habitat	0	0
Wetlands	0	0
Industrial reuse	0	0
Groundwater recharge	0	0
Seawater barrier	0	0
Geothermal/Energy	0	0
Indirect potable reuse	0	0
Total	2,062	5,375

Units: acre-feet per year

[1] From the 2005 UWMP. There has been some modification of use types. Data from the 2005 UWMP can be left in the existing categories or modified to the new categories, at the discretion of the water supplier.

[2] Includes parks, schools, cemeteries, churches, residential, or other public facilities)

[3] Includes commercial building use such as landscaping, toilets, HVAC, etc) and commercial uses (car washes, laundries, nurseries, etc)

Recycled Water Production

Annual recycled water production capabilities are based on the total wastewater flow entering the DCWWTP and EDHWWTP, uses and losses which occur within each wastewater treatment plant, inflow and infiltration, and a minimum discharge of 1.0 mgd of treated effluent to Deer Creek as mandated by the State Water Resources Control Board. In 2008,

the average dry weather flows at the DCWWTP and EDHWWTP were each 2.6 mgd. Based on these values, and the methodology previously used for estimating recycled water production capabilities for the Seasonal Storage Project, it is estimated that a total of 6,135 ac-ft per year could have been available if treated effluent was stored year round. Of this combined total, 2,830 and 3,305 ac-ft per year could have been produced by the DCWWTP and EDHWWTP, respectively. By comparison, total combined DCWWTP and EDHWWTP recycled water demands in 2008 were approximately 3,500, 1,245, and 2,260 ac-ft per year which equates to approximately 57%, 44%, and 68% of the potential supply, respectively.

Transmission, Distribution, and Storage

A schematic of the existing recycled water system is provided in Figure 4-2. As shown, the District's recycled water transmission, distribution and storage facilities consist of approximately 54 miles of pipeline, six pump stations, four storage tanks, and numerous pressure reducing stations, values, and meters. There are five recycled water pump stations serving the system.

The use of recycled water for irrigation takes place primarily at night, thus peak demands occur during the time period when wastewater influent flows are at their lowest. Several diurnal storage tanks have been constructed to address this imbalance between production and demand that allow the recycled water to be stored and then distributed as demand increases.

The District has a 66 million gallon storage reservoir located at the EDHWWTP to balance the rate of wastewater influent with recycled water demands and to allow the plant to operate without discharging to Carson Creek during the dry season. A reservoir effluent pump station allows the reservoir to be drawn down and the limited storage capacity to be used.

Supplemental Water to the Recycled Water System

Peak recycled water demands cannot be met solely with treated effluent production at the EDHWWTP and DCWWTP, thus supplemental water is required. The supplemental water supplies include potable water introduced into the recycled water distribution system at one of the four diurnal storage tanks and Bass Lake Reservoir. Supplemental water can be obtained from Bass Lake Reservoir consisting of non-potable water generated from potable water, direct precipitation, or runoff from a local drainage basin. The Bass Lake Backup Supply Pump Station can be used to deliver supplemental water from Bass Lake.

Originally, Bass Lake Reservoir was to serve only as an emergency backup supply to the recycled water system and was not intended as an annual supplemental service. However, Bass Lake has been used because either the recycled water pumping and storage system could not meet peak demands or the total daily recycled water demands exceeded the capacity of wastewater influent flows.

The District has decided that the recycled water supply deficit will be met by potable water supplementation until additional recycled water supply is available. Maximum day potable water supplementation has ranged between 1.5 and 3.0 mgd over the past five years. Previous estimates, developed as part of the Recycled Water Seasonal Storage Project, indicate that maximum day potable water supplementation can be as high as 8.5 mgd based on buildout of the El Dorado Hills recycled water system.

Recycled Water Projections

Based on the build out capacities requirements of 5.0 and 5.7 mgd for the DCWWTP and EDHWWTP, respectively and the methodology previously used for estimating recycled water production capacities for the Seasonal Storage Project, it is estimated that a total of 11,490 ac-ft per year of recycled water could be available. Methods to encourage recycled water use are described in Table 4-5.

Table 4-5 – Methods to Encourage Recycled Water Use (DWR Table 25)

Actions	Projected Results				
	2010	2015	2020	2025	2030
Mandatory Use Policy	3,869	5,836	6,853	6,905	6,905
Total	3,869	5,836	6,853	6,905	6,905

Units: acre-feet per year

Source: Recycled Water Seasonal Storage Technical Memorandum, Table 4 Normal Year Demand, HDR 2006

Recycled Water Expansion

Daily wastewater influent flows and the 66 MG recycled water storage reservoir limit current recycled water supplies to about 3,500 acre-ft per year. In the future, when the EDHWWTP and DCWWTP are operating at their estimated buildout of 5.7 and 5.0 mgd, respectively, dry season influent flows and the 66 MG reservoir are estimated to limit daily recycled water supplies to about 4,100 acre-ft per year. Several potential recycled water expansion alternatives have been evaluated based on past projects and studies.

Other alternatives under consideration include:

- Potable Water Supplementation (No Seasonal Storage): This alternative assumes that recycled water supply would continue to be limited by dry season wastewater influent flows and the existing 66 MG reservoir. It is estimated that current and future (buildout) recycled water productions would be limited to 2,300 and 4,100 acre-ft per year, respectively.
- Limited Seasonal Storage at El Dorado Hills: This alternative assumes that 2,500 acre-ft of seasonal storage would be constructed south of the EDHWWTP to satisfy the projected recycled water demand of 6,905 acre-ft per year in the El Dorado Hills area.
- Limited Recycled Water Service: This alternative assumes that recycled water service would be limited to the existing or fully expanded El Dorado Hills service area. All Western and Eastern water demands would continue to be served now and in the future by potable water supplies.
- Full Seasonal Storage: This alternative assumes that a total of 5,000 acre-ft of recycled water seasonal storage would be installed and that all treated effluent would be reused. It has been estimated that recycled water production for this particular alternative would be limited to about 11,500 acre-ft/yr.

Wastewater Systems

The District has five wastewater service areas as shown in Figure 4-3. The three largest service areas of El Dorado Hills, Deer Creek, and Motherlode are served by a series of lift stations, forcemains, and gravity mains that convey sewage to either the El Dorado Hills Wastewater Treatment Plant (EDHWWTP) or Deer Creek Wastewater Treatment Plant (DCWWTP). Sewage from both the Deer Creek and Motherlode Service Areas flows the DCWWTP, whereas sewage from the El Dorado Hills Service Area flows to the EDHWWTP. Together, these two wastewater treatment plants serve a population of nearly 60,000 people. The two other service areas are; Gold Ridge Forest which serves a community of 46 single family residential homes and has an estimated service population of 120 people and the Camino Heights Wastewater Treatment Plant which serves an estimated population of 280 people and 106 single family residential home connections.

El Dorado Hills Wastewater System

The El Dorado Hills sewershed encompasses approximately 24.9 square miles located between the western El Dorado County Boundary and Bass Lake Road. As of December 2009, there are a total of 11,942 active sewer accounts equating to 10,643 equivalent dwelling units (EDUs) located within this particular sewershed. The collection system is comprised of 34 lift stations and approximately 192 miles of pipeline comprised of 180 miles of gravity sewers and 12 miles of forcemains.

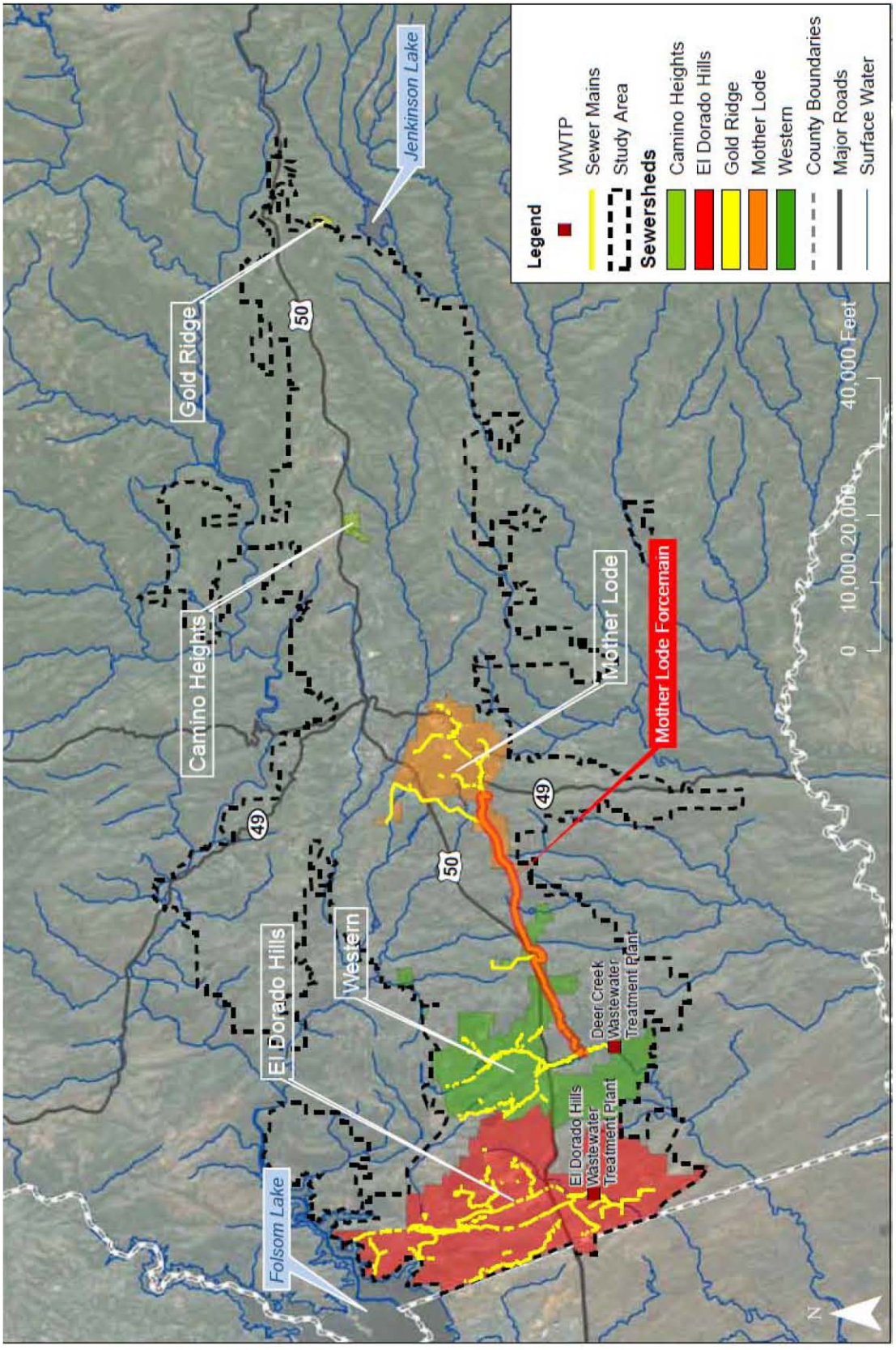


Figure 4-3 – Wastewater Service Areas

The EDHWWTP is located approximately 1.25 miles south of Highway 50 directly adjacent to Latrobe Road with housing developments to the north and south and a business park to the west. Housing developments are also planned immediately to the east on the adjacent hillsides. The EDHWWTP is situated along a hillside with both Carson Creek and Latrobe Road bordering the plant to the west, and a 66 mg storage pond bordering the plant to the east.

The EDHWWTP has a rated average dry weather flow (ADWF) capacity of 4.0 million gallons per day (mgd). Treated effluent is either recycled or discharged to Carson Creek, a tributary to the Cosumnes River. The EDHWWTP typically discharges to Carson Creek between November and April and distributes all treated effluent to the recycled water system between May and October. According to 2010 records, approximately 43% of the treated effluent produced at the EDHWWTP was sent to the recycled water system for reuse. Disinfected, tertiary treated recycled water produced at the EDHWWTP is distributed for irrigation of residential and commercial landscapes and also for use in construction.

Deer Creek Wastewater System

The Western and Motherlode service areas include 15.1 and 7.6 square miles, respectively. As of December 2009, there was a total of 9,583 active sewer accounts equating to 11,075 equivalent dwelling units (EDUs) located within these sewersheds.
The collection system, shown in Figure 4-X consists of approximately 180 miles of pipeline which is comprised of 165 miles of gravity sewers and 15 miles of forcemains and 38 lift stations.

The DCWWTP receives flow from the towns of Diamond Springs, El Dorado, Shingle Springs, and Cameron Park. The plant is located approximately two miles south of Highway 50 in the Cameron Park area, which is a relatively remote area with little development in the surrounding hills. The plant is situated in a small valley bordered by Deer Creek to the north and a smaller seasonal tributary creek to the south. The DCWWTP has a rated ADWF capacity of 3.6 mgd. Treated effluent from the plant is discharged to Deer Creek, and a portion of the flow is recycled for irrigation.

The State Water Resources Control Board adopted Waste Rights Order No. WR 95-9 requiring the District to maintain specific quantities of treated effluent discharge to Deer Creek. Whenever the DCWWTP produces a daily average treated effluent flow of 2.5 mgd or higher, the District must discharge a minimum of 1.0 mgd of treated effluent to Deer Creek, in accordance with Water Rights Order No. WR 95-9.

According to 2010 records, approximately 24% of the treated effluent produced at the DCWWTP was sent to the recycled water system. Disinfected, tertiary quality recycled water produced at the DCWWTP is distributed for irrigation of residential and commercial landscape and construction uses.

Camino Heights Wastewater System

The Camino Heights sewershed encompasses approximately 0.3 square miles located along Highway 50, approximately 2 miles east of Placerville in El Dorado County. As of December 2008, there were 108 active sewer accounts equating to 110 equivalent dwelling units (EDUs) located within this sewershed. The collection system is comprised of approximately 9,000 feet of gravity sewers and there are no lift stations.

The Camino Heights Wastewater Treatment Plant (CHWWTP) receives wastewater generated from residential homes located within Camino Heights and two commercial establishments. Single family residential houses are located around the plant, with the highest housing densities occurring north of the treatment plant. The treatment processes consist of screening followed by oxidation and polishing ponds. Treated effluent is disposed of via application to a 15-acre irrigation field. The irrigation field is designed to dispose of 40,000 gallons per day (gpd). Fencing is located around the field's perimeter to discourage unauthorized entry. The CHWWTP has a rated ADWF capacity of 0.06 mgd.

Gold Ridge Forest Wastewater System

The Gold Ridge Forest Subdivision is located approximately one-half mile north of Jenkinson Lake and about two miles southeast of Highway 50 in Pollock Pines. Typically, homes in this area are densely populated and are connected to individual septic tank leach field systems. However, a portion of this particular subdivision sits atop impervious agglomerate, locally called lava cap rock. The adverse characteristics of this subsurface geology warranted a community leachfield outside of the cap rock area. The Gold Ridge Forest wastewater system serves approximately 45 single family residential homes and is comprised of a gravity collection system, septic tank battery, and disposal facilities. The gravity collection system is designed to route sewage to a 19,200 gallon septic tank battery. The tank battery is comprised of twelve, 1,600-gallon septic tanks arranged in three parallel trains. The tanks are designed to provide treatment prior to gravity flow to eight hundred linear feet of leach lines situated on an approximately 15^0 sloping hillside. Together, treatment and disposal facilities are estimated to provide a rated ADWF capacity of 12,500 gpd.

Dissimilar to the other three wastewater systems which are owned by the District, the Gold Ridge Forest Owners Association owns the land associated with the wastewater system and the District is only responsible for the operation of the wastewater treatment facilities.

Future Water Projects

This section provides a description of the water supply projects and water supply programs that may or will be undertaken to meet the total projected water use and provide system reliability. These are projects and programs currently in progress or planned for the near future. Table 4-6 provides a summary and schedule of the future water supply projects. Also shown is a quantification of each project's normal-year yield, single dry-year yield, and multiple dry-year yields and Figure 4-4 shows the future water supply sources.

Public Law 101-514 Supply

Public Law 101-514 legislatively mandated the execution of a USBR Contract with EDCWA for 15,000 ac-ft per year of water from Folsom Reservoir. The District expects to receive at least 7,500 ac-ft per year of this total through execution of a contract with the EDCWA. This allocation would be subject to the USBR Shortage Policy for Municipal and Industrial Contractors of maximum dry year reductions of 25%.

SMUD-El Dorado Agreement

This agreement allows for 30,000 ac-ft of water storage in SMUD reservoirs under normal year conditions through 2025 and 40,000 ac-ft thereafter; with an additional 15,000 ac-ft available for carryover purposes. The District projects using 30,000 ac-ft of storage annually, with 15,000 ac-ft of carryover storage rights in a single dry year, 10,000 ac-ft in any second consecutive dry year, and a total of 5,000 ac-ft for years three and four of a multiple dry year sequence.

Table 4-6 – Future Water Supply Projects (DWR Table 26)

Project name [1]	Projected start date	Projected completion date	Potential project constraints [2]	Normal-year supply [3]	Single-dry year supply [3]	Multiple-dry year first year supply [3]	Multiple-dry year second year supply [3]	Multiple-dry year third year supply [3]
PL 101-514	2010	2015	project likely to occur	7,500	5,625	5,625	5,625	5,625
UARP/SMUD	2010	2020	project likely to occur	30,000	15,000	15,000	10,000	5,000
		Total		37,500	20,625	20,625	15,625	10,625

Units: acre-feet per year

[1] *Water volumes presented here are accounted for in Table 4-1.*

[2] *Indicates whether project is likely to happen and what constraints, if any, exist for project implementation.*

[3] *Estimated supply benefit.*

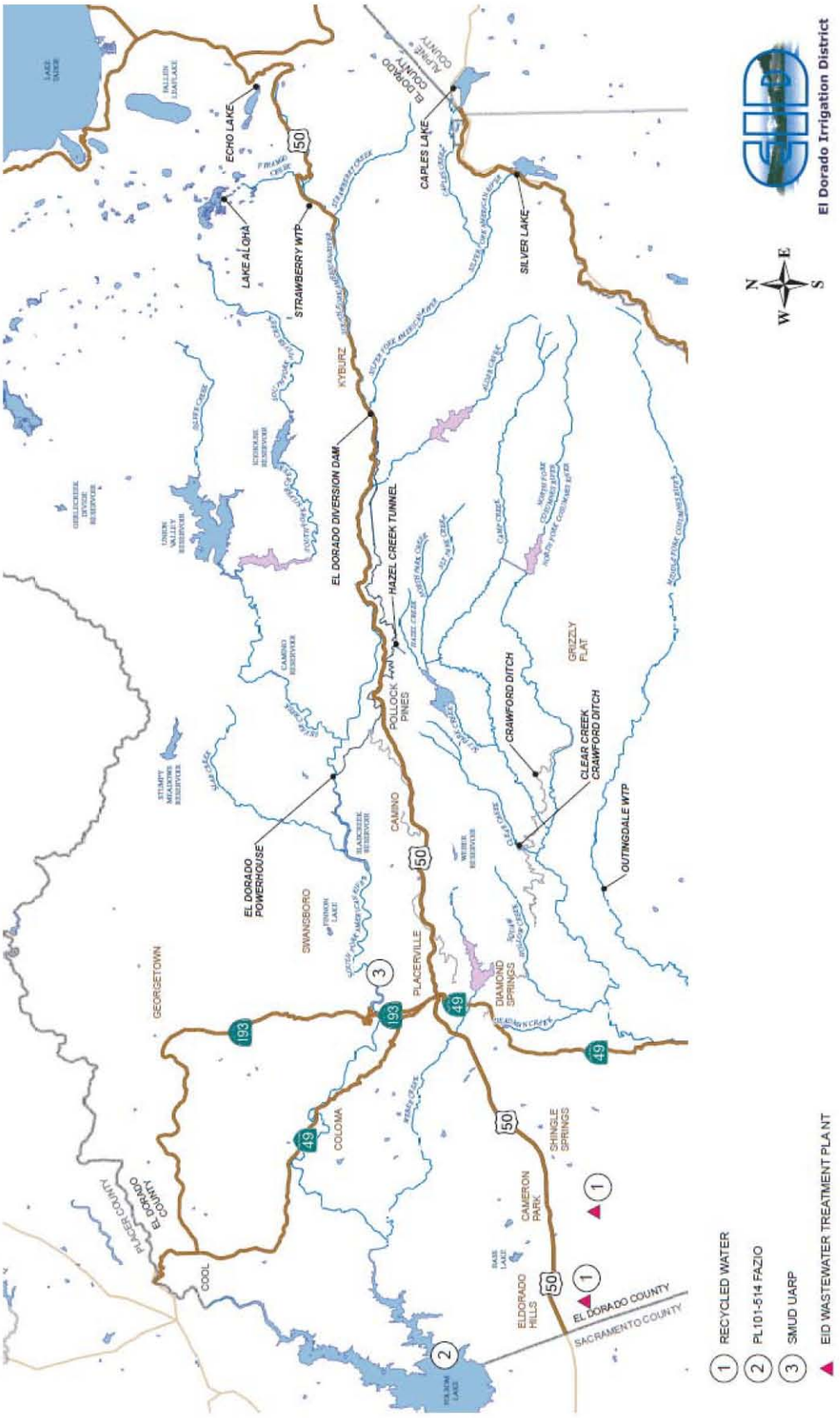


Figure 4-4 – Future Water Supply Sources

WATER SUPPLY RELIABILITY AND WATER SHORTAGE CONTINGENCY PLANNING

This section compares projected water supplies and demands, assesses the overall reliability of future water supplies, discusses how water sources can vary, and describes the drought contingency plan. This section includes the following subsections:

- Water Supply Reliability
- Water Quality
- Water Shortage Contingency Planning
- Drought Planning
- Projected Water Supply and Demand

Water Supply Reliability

The District manages its water supply under several Board policies and regulations. Board Policy 5000, Water Supply, was adopted on August 28, 2006 and includes BP 5010, Water Supply Management, with associated administrative regulations.

Water Availability and Commitments

The District maintains adequate water supply and demand records to ensure accurate monitoring and reporting. An updated *Water Resources and Service Reliability Report* (Report) is prepared annually for review by the Board of Directors which includes the current system firm yield of the overall District, along with the water supply and infrastructure capacity, potential demands, existing commitments, and meter availability for each water service area of the District as defined in the report.

The Report uses a system firm yield method to determine that sufficient water supply exists to meet potential demands. Under this methodology, approximately 95% of the time sufficient water supply is available to meet normal water demands, but during the remaining 5% of the time water shortages may occur. Such shortages may result in the implementation of voluntary or mandatory conservation measures. Although the District does not import any water into the system, this method of accounting provides the ability to maximize resources and foresee needs to obtain new supplies in advance rather than importing sources of water.

Should findings in the Report warrant restrictions on the issuance of new water meters, the General Manager will bring the situation to the attention of the Board of Directors. During emergency conditions when supplies are restricted or limited, the General Manager may also bring to the Board possible restrictions on water meter availability.

Table 5-1 provides the basis of water year types for normal, single-dry and multiple-dry water years based on the median runoff levels at Camp Creek in El Dorado County.

Table 5-1 – Basis of Water Year Data (DWR Table 27)

Water Year Type	Base Year(s)
Normal Water Year	1983
Single-Dry Water Year	1977
Multiple-Dry Water Years	1987 - 1992

Factors Resulting in Inconsistency of Supply

Water demand management measures would not be solely depended upon to replace inconsistent sources. The water shortage contingency plan would be implemented when there is a need to reduce demands significantly on a short-term basis. A summary of supply reliability based on historic conditions is provided in Table 5-2 while Table 5-3 provides the current water sources. The values of dry year water supply in Table 5-2 are a summary from Table 5-3 with an additional 1,200 ac-ft reduction in year 4 of the multiple dry year period. A summary of the factors resulting in inconsistency of the water supply is provided in Table 5-4.

Table 5-2 – Supply Reliability, Historic Conditions (DWR Table 28)

Average / Normal Water Year	Single Dry Water Year	Multiple Dry Water Years			
		Year 1	Year 2	Year 3	Year 4
70,274	65,824	65,824	60,824	59,324	58,124
Percent of Average/Normal Year:		94%	87%	84%	83%

Table 5-3– Supply Reliability, Current Water Sources (DWR Table 31)

Water Supply Sources [1]		Average / Normal Water Year Supply [2]	Multiple Dry Water Year Supply [2]		
			Year 1	Year 2	Year 3
Supplier-produced surface water	Jenkinson Lake	23,000	22,000	17,000	15,500
Supplier-produced surface water	El Dorado Forebay [2]	15,080	15,080	15,080	15,080
Wholesale Water	Folsom Reservoir - USBR Contract	7,550	5,660	5,660	5,660
Supplier-produced surface water	Folsom Reservoir - Warren Act Contract	4,560	3,000	3,000	3,000
Supplier-produced surface water	Project 184 - Permit 21112	17,000	17,000	17,000	17,000
Recycled Water	El Dorado Hills and Deer Creek WWTPs	3,084	3,084	3,084	3,084
Supplier-produced groundwater	None	0	0	0	0
Transfers in	None	0	0	0	0
Exchanges In	None	0	0	0	0
Desalinated Water	None	0	0		0
Total		70,274	65,824	60,824	59,324
Percent of normal year:			94%	87%	84%

Units: acre-feet per year

[1] *From Table 4-1.*

[2] *See Table 5-1 for basis of water type years.*

Table 5-4 – Factors Resulting in Inconsistency of Supply (DWR Table 29)

Water supply sources [1]	Specific source name	Limitation quantification	Legal	Environmental	Water quality	Climatic
Supplier-produced surface water	Jenkinson Lake	firm yield	none	none	none	none
Supplier-produced surface water	El Dorado Forebay [2]	none	none	none	none	none
Wholesale water from USBR	Folsom Reservoir USBR Contract	25% cutback	none	none	none	none
Supplier-produced surface water	Folsom Reservoir - Warren Act Contract	none	none	none	none	none
Supplier-produced surface water	Project 184 - Permit 21112	none	none	none	none	none
Recycled water	El Dorado Hills and Deer Creek WWTPs	none	none	none	none	none
Wholesale water from EDCWA	PL 101-514 - Folsom Lake	25% cutback	none	none	none	none
Supplier-produced surface water	SMUD-El Dorado Agreement	none	none	none	none	none
Supplier-produced groundwater	None	n/a	n/a	n/a	n/a	n/a
Transfers in	None	n/a	n/a	n/a	n/a	n/a
Exchanges In	None	n/a	n/a	n/a	n/a	n/a
Desalinated Water	None	n/a	n/a	n/a	n/a	n/a

Units: acre-feet per year

[1] *Volumes shown here should be what was purchased in 2010 and what is anticipated to be purchased in the future.*

[2] *Supplies are from the South Fork American River and Project 184 Reservoirs.*

[3] *Supplies are from the North Fork Cosumnes River, Clear Creek, and Squaw Hollow Creek.*

Water Quality

In accordance with California Department of Health Services regulations, annually the District prepares a Consumer Confidence Report which includes the water quality testing results for the previous year. That report is provided to all customers and is published on the District website. A copy of the most current report is provided in Appendix E. At this time, there is no known or potential water quality issues that could impact waters supplies either by natural or human-induced activities. Table 5-5 provides the affects of water quality on existing water sources.

Table 5-5 – Water Quality, Current and Projected Water Supply Impacts (DWR Table 30)

Water source	Description of condition	2010	2015	2020	2025	2030
Surface water	none	0	0	0	0	0
Recycled Water	none	0	0	0	0	0
Units: acre-feet per year						

Water Shortage Contingency Planning

The District projects water supply shortages in multiple-dry years based on current projected demand and supply. Based on experiences during the extended 1987-1992 drought, it is better to enter into a water shortage alert early, establish necessary water use reduction programs and policies, gain public support and participation, and reduce the likelihood of more severe shortages later. As the community continues to become more water efficient, it may become more difficult for customers to reduce their water use during drought. There are still reasonable water efficiency improvements available in landscape irrigation practices community-wide when comparing irrigation demands and local climatic conditions. Furthermore, there are additional opportunities for residential and commercial plumbing fixture and appliance replacements with low water use products. Improved water use efficiency does mean that water supply reserves must be larger and that water shortage responses must be made early to prevent severe economic and environmental impacts.

The District assesses its water supply conditions considering both hydrologic and water system conditions. Based on the water shortage stages and triggers, a water shortage condition may be declared. For planning purposes, the District, in conjunction with the EDCWA and several neighboring water purveyors, developed a regional drought model that not only simulates the District system response under dry year conditions, outputting shortfall, but incorporates switches to integrate potential water supply projects, potential demands cutbacks and climate change factors. Drought planning and the District Drought Plan is further discussed below.

Catastrophic Interruption of Water Supply

In addition to climate, other factors that can cause water supply shortages are earthquakes, chemical spills, dam failures, canal breaks, waterline ruptures, and energy outages at treatment and pumping facilities. The District has an adopted Emergency Operations Plan which provides procedures and guidance to District personnel in responding to emergency situations including catastrophic events, both natural and manmade. The plan provides procedures for preparing, mobilizing and employing District resources and coordinating

outside resources during an emergency. The District provides periodic training, including simulated events and responses to keep District personnel fully trained on implementation emergency procedures. Mobilization is consistent with Standardized Emergency Management and the Incident Command System.

Mandatory Prohibitions

Mandatory prohibitions against specific water uses practices during water shortages presented in the water shortage contingency plan are provided in Table 5-6.

Table 5-6 – Water Shortage Contingency, Mandatory Prohibitions (DWR Table 36)

Examples of Prohibitions	Stage When Prohibition Becomes Mandatory
Water waste prohibition	0
Prohibit filling of water features with potable water	1
New crops not yet planted not to be irrigated by EID water	2
No use of mist systems	2
Prohibit filling of empty swimming pools	2
Prohibit washing of vehicles with potable water	2
Implement drought rates	3
Mandatory restrictions in water use	3
Water rationing	3
New crop plantings	3

Consumption Reduction Methods

Consumption reduction methods which are used to reduce water use during water shortages presented in the water shortage contingency plan are provided in Table 5-7.

Table 5-7 – Water Shortage Contingency, Consumption Reduction Methods (DWR Table 37)

Consumption Reduction Method	Stage When Method Takes Effect	Projected Reduction (%)
Use prohibitions	1	not estimated
Education program	1	not estimated
Demand reduction program	2	5%
Mandatory rationing	2	5% - 50%
Irrigation only during off-peak hours	2	not estimated
Restriction to priority uses	3	not estimated

Penalties and Charges

In the event that restrictions or prohibitions set in place during a water shortage are violated, penalties and charges as shown in Table 5-8 are implemented.

Table 5-8 – Water Shortage Contingency, Penalties and Charges (DWR Table 38)

Penalties or Charges	Stage When Penalty Takes Effect
Invoke drought rates and surcharge	1, 2, and 3

Revenue Impacts of Reduced Sales During Shortages

Since all of the District's customers are metered, revenue impacts from decreasing consumer use during a shortage would be substantial. Furthermore, although expenditures on water purchases would decrease, administration and operations and maintenance expenses for the District would remain the same, or possibly increase, with additional operations and administrative activity. Drought rates have been adopted to account for this loss in revenue and are intended to be revenue neutral.

Reduction Measuring Mechanisms

Under normal water supply conditions, potable water production is totaled daily and incorporated into a water supply report.

During any stage of water shortage, water production amounts can be generated at a greater frequency, depending on the need, and reviewed by water operations personnel to monitor production goals and peaking water conditions. Water usage reports are reported to the Board of Directors as necessary.

During emergency shortages, production figures can be provided even more often and appropriate response measures can be implemented.

Drought Planning

The District recognizes that variations in weather patterns can cause watersheds to yield different quantities of water supply in any given year. In some years, dry weather or drought conditions may occur which result in varying degrees of water shortage. The District also recognizes that future climate change may impact the intensity and duration of future droughts.

As modeled in the District developed El Dorado County Drought Shared Vision Model, future supply projections assume the persistence of normal rainfall patterns and stable

water quality characteristics based on past observations, and moderate promulgation of water quality regulations.

The single most severe dry year was 1977. The District has also experienced drought periods in 1924, 1931-34, 1939, 1959-61, and 1987-92. The basis of the water year data to develop water supply reliability is provided in Table 5-1. Table 5-2 provides supply reliability based on historic conditions considering three water supply scenarios: normal water year, single-dry water year, and multiple-dry water years.

Drought Preparedness Plan

The actions required to respond to both near-term and long-term changing water supply conditions are outlined in the District's *Drought Preparedness Plan*, adopted by the Board of Directors on February 11, 2008. Drought stages are defined by associating water supply conditions and demand reduction goals. Drought stage definitions are summarized in Table 5-9 including the percent of water supply reduction anticipated for each stage and the corresponding percent of targeted demand reduction.

- ### Water supply normal and unrestricted - Drought Stage 0

  Stage Zero is in effect at all times unless another subsequent stage is declared and reflects periods when normal water supplies and normal distribution capacity are available. A prohibition of water waste will be in effect during both normal and restricted water supply conditions.

- ### Water supply slightly restricted - Drought Stage 1

  The objective of Stage 1 is to initiate public awareness of predicted water shortage conditions, and encourage voluntary water conservation to decrease normal demand up to 15%.

- ### Water supply moderately restricted - Drought Stage 2

  The objective of Stage 2 is to increase public understanding of worsening water supply conditions, encourage voluntary water conservation measures, and then if necessary enforce mandatory conservation measures in order to decrease normal demand up to 30%.

- ### Water supply severely restricted - Drought Stage 3

  The objective of Stage 3 is to enforce extensive mandatory restrictions on water use, and implement water rationing to decrease normal demand up to 50% to ensure that water use is limited to health and safety purposes.

- ### Declared water shortage emergencies

  The General Manager may also declare a water shortage emergency due to an existing condition or when there is a high probability that a condition will be realized

in the near future. Such conditions may include an unexpected disruption of supply, storage, or distribution system facilities.

Drought indicators and associated trigger levels function to declare a drought early enough to maximize saved water, but not so early that a false drought declaration is issued. Indicators and associated drought stage triggers coordinate with drought stage demand reductions to avoid water supply shortfalls.

The District uses the Supply Remaining Index (SRI) to determine drought stages. A key component of the SRI drought trigger plan is a measure of the number of days supply remaining (DSR). The DSR is a tool that predicts when the utility needs to reduce water demand. When the DSR is low, there is a limited amount of water supply is left and drought restrictions should be imposed to stretch the supplies longer. The DSR indicator incorporates expected future supply and demand, and calculates the DSR for each month. The DSR indicator is a function of:

- Current storage in Jenkinson Lake, Echo Lake, Lake Aloha, Silver Lake, and Caples Lake,
- Worst case expected supplies – conservatively based on the minimum monthly hydrology in the historical record, and
- Normal projected demand by month.

Table 5-9 – Water Shortage Contingency, Rationing Stages to Address Water Supply Shortages (DWR Table 35)

Stage No.	Water Supply Conditions	% Shortage
0	Normal	**0%**
1	Slightly restricted water supplies	**15%**
2	Moderately restricted water supplies	**30%**
3	Severely restricted water supplies	**50%**
One of the stages of action must be designed to address a 50 percent reduction in water supply		

Projected Water Supply and Demand by Water Year Type

This subsection presents the projected water supply and demand for three water year scenarios: normal year, single-dry year, and multiple-dry year. The supply and demand for all water year scenarios are projected through 2030. Demands are based on the El Dorado County General Plan using an analysis of the acreage within the region, and the demands that would result if the acreage were developed in accordance with the General Plan. The growth rate is based on average increase in demand experienced by the District as calculated in the Integrated Water Resources Master Plan. It is important to note that demand reductions as a result of conservation efforts are not included in these projections.

Normal Year Supply and Demand

Over the next 20 years water demands are expected to increase from approximately 40,000 ac-ft per year to 88,000 ac-ft per year in 2030. Impacts to water use due to any conservation measures implemented in the future are not reflected in the projected water demands. Table 5-10 summarizes the normal year supply and demand for the District. This is based on a continued commitment to conservation programs, gained water rights and distribution system upgrades.

Table 5-10 – Supply and Demand Comparison, Normal Year (DWR Table 32)

	2015	2020	2025	2030
Supply totals (from Table 4-1)	79,046	110,568	112,420	122,420
Demand totals (From Table 3-9)	48,921	52,267	60,028	69,620
Difference	30,125	58,301	52,392	52,800
Difference as % of Supply	38%	53%	47%	43%
Difference as % of Demand	62%	112%	87%	76%
Units: acre-feet per year				

Single-Year Dry Supply and Demand

Water use patterns change during dry years. During dry years, some water agencies cannot provide their customers with 100% of what is delivered during normal water years. One way to analyze the change in demand is to document expected changes to water demand by sector. Expected changes in demand may include assuming increasing demands due to increased irrigation needs and demand reductions resulting from rationing programs and policies. For the District, it is assumed that overall demands will not change during a single-

dry year. Any demand reductions due to the implementation of water conservation efforts are not included in the single-dry year demand estimates. Table 5-11 provides the single-dry year water supply and demand.

Table 5-11 – Supply and Demand Comparison, Single-Year Dry (DWR Table 33)

	2015	2020	2025	2030
Supply totals [1]	74,596	106,118	107,970	117,970
Demand totals (from Table 3-9)	48,921	52,267	60,028	69,620
Difference	25,675	53,851	47,942	48,350
Difference as % of Supply	34%	51%	44%	41%
Difference as % of Demand	52%	103%	80%	69%

Units: acre-feet per year

[1] *Supply totals are from Table 4-1 with reductions shown in Table 5-3 for a single-dry year.*

Multiple-Dry Year Supply and Demand

Table 5-12 provides the multiple-dry year water supply and demand for a three-year period and is intended to provide the most conservative approach. It is assumed that no additional water conservation efforts are in place and overall demands are not reduced to meet the 20% reductions by 2020. In addition to no water conservation, no mandatory rationing is assumed to be implemented in any of the dry years as shown in Table 5-9. In contrast to the non-reduced demand, supplies are reduced to dry year delivers as shown in Tables 4-1 and 5-3.

Table 5-12 – Supply and Demand Comparison, Multi-Year Dry (DWR Table 34)

		2015	2020	2025	2030
Multiple-dry year first year supply	**Supply totals** [1]	71,449	86,449	86,449	86,449
	Demand totals [2]	48,921	52,267	60,028	69,620
	Difference	22,528	34,182	26,421	16,829
	Difference as % of Supply	32%	40%	31%	19%
	Difference as % of Demand	46%	65%	44%	24%
Multiple-dry year second year supply	**Supply totals** [1]	66,449	76,449	76,449	76,449
	Demand totals [2]	48,921	52,267	60,028	69,620
	Difference	17,528	24,182	16,421	6,829
	Difference as % of Supply	26%	32%	21%	9%
	Difference as % of Demand	36%	46%	27%	10%
Multiple-dry year third year supply	**Supply totals** [1]	64,949	69,949	69,949	69,949
	Demand totals [2]	48,921	52,267	60,028	69,620
	Difference	16,028	17,682	9,921	329
	Difference as % of Supply	25%	25%	14%	0.5%
	Difference as % of Demand	33%	34%	17%	0.5%

Units: acre-feet per year.

[1] *Supply totals are from Tables 4-1 and 4-6 with reductions as shown in Table 5-3 and 4-6 for multiple-dry years.*

[2] *The same demands as in Table 3-10 are used.*

DEMAND MANAGEMENT MEASURES

This section describes the demand management measures undertaken by the District to increase water conservation. Demand management means those water conservation measures, programs, and incentives that prevent the waste of water and promote the reasonable and efficient use and reuse of available supplies. For the District, it is an integral, as well as mandated, part of the water management program. Although conservation and water loss control cannot eliminate the need for new water sources to meet demand, they can extend existing water supplies and allow for the most efficient use of water.

The District prohibits uses of District-supplied raw, potable, and recycled water that constitute water waste through AR 1041, Water Waste Prohibition. The objective is to encourage reasonable use of water supplies by prohibiting all intentional or unintentional water waste, including the use of wasteful equipment or techniques, when a reasonable solution or alternative is available. See Appendix F for Best Management Practices activity reports.

Water Conservation

Board Policy 5030, Water Conservation requires reasonable and prudent measures to conserve all water and to adopt and implement water-use efficiency programs that will benefit its customers. The District has long been a leader in water conservation. As early as 1925, the District began ditch lining projects for the purpose of conserving water. In addition, the District was the first irrigation district in California to have a water conservation plan and implement an irrigation management service. In the future, the District will continue its efforts for improved water conservation and documented water savings.

The District is required to have and implement conservation plans mandated by the State of California and the Federal government. As a requirement for the delivery of water from the Central Valley Project, the District must implement an effective water conservation and efficiency program. The Federal Central Valley Improvement Act of 1992 requires preparation of water conservation plans by all Federal water contractors, including the District. The District has two water service contracts with the USBR at Folsom Reservoir. The Reclamation Reform Act of 1982 and the Central Valley Project Improvement Act of 1992 require conservation plans that address both urban and agricultural water uses. Both urban and agricultural best management practices must be implemented by the water conservation plans.

SBx7-7, approved by the Governor in November 2009, requires all water suppliers to increase the efficiency of the use of water on a per capita basis by 2020 through promotion

of water conservation standards that are consistent with the California Urban Water Conservation Council (CUWCC) best management practices (BMPs). The State requires preparation of an Urban Water Management Plan (UWMP) by all urban water suppliers, which includes the District. The District has met these requirements by being a signatory to the CUWCC memorandum of understanding (MOU). The MOU is organized into five categories. Two categories, utility operations and education, are "Foundational BMPs" because they are considered to be essential water conservation activities by any utility and are adopted for implementation by all signatories to the MOU as ongoing practices with no time limits. The remaining BMPs are "Programmatic BMPs" and are organized into residential indoor and landscape, commercial/industrial/institutional (CII) indoor and landscape, and CII dedicated large landscape categories. Measures the District may take to implement these activities are:

- Staffing and maintaining the position of trained conservation coordinator and providing that function with the necessary resources to implement the BMPs.
- Adopting and enforcing a regulation that prohibits water waste.
- Supporting legislation or policies that prohibit water waste
- Enacting a drought policy to facilitate implementation of water shortage response measures.
- Implementing school education and public outreach materials and programs.
- Implementing a residential water audit program.
- Implementing a rebate program for installing ultra low flow toilets since this program was initiated in 1995, and high efficiency toilets since 2009.
- Implementing a rebate program for installing high efficiency clothes washers.
- Implementing an Irrigation Management Service which is the longest operating IMS program in California providing irrigation scheduling for commercial agriculture customers who have saved an estimated 2,000 ac-ft per year.

Based on the water savings reports from the CUWCC website prepared from the BMP reports submitted since 2002, the water savings is reported to be about 4,000 ac-ft to date.

Water Loss Control Program

The goals of water loss control methods include both an increase in water use efficiency in the utility operations and proper economic valuation of water losses to support water loss control activities. In May 2009 the American Water Works Association (AWWA) published the 3rd Edition M 36 Manual Water Audits and Loss Control Programs. The program states that all agencies shall quantify their current volume of apparent and real water loss and shall complete the standard water audit and balance using the AWWA Water Loss software to determine their current volume of apparent and real water loss and the cost impact of these losses on utility operations at no less than annual intervals. For purposes of this BMP, the economic value of real loss recovery is based upon the agency's avoided cost of water as calculated by the CUWCC adopted Avoided Cost Model.

Pressure Management

The topography of the District service area is non-homogeneous in the foothills of the Sierras, and therefore system pressures are reduced through the operation of more than 300 pressure reducing stations. The future implementation of "advanced" pressure management by water operations can result in a further reduction of high pressures and water loss. The advanced pressure management may include flow modulated outlet pressures to reduce nighttime pressure when demands are the lowest.

Leak Detection Program

The District has and will continue to make repairs and replacements to maintain or lower system losses and may also implement "metered areas" to measure and record the total inflow to an area, versus the normal customer demand, in order to quickly detect leaks.

CLIMATE CHANGE

The Board supports the adoption and implementation of a drought preparedness plan to ensure a proactive response to the impacts of drought conditions through Board Policy 5040. Included in the planning effort is consideration of climate variability.

As a part of the UWMP update process, the District partnered with researchers from the RAND Corporation (RAND) and Stockholm Environment Institute (SEI) to apply new water planning tools and approaches for accommodating growing water supply needs, potential climatic changes, fire risk, and other challenges. These approaches are designed to significantly engage water agency staff, board members, and interested stakeholders.

Changes in climate over the coming years and decades have the potential to impact water management activities. The potential for early run-off or reduced snowpack needed to fill upper elevation reservoirs are two of the climatic changes that could have a direct effect on District water supplies. These changes make it problematic to rely on recent historical records when making long-term plans, yet predicting future hydrologic conditions cannot be done with sufficient confidence to simply replace historical hydrologic conditions with an estimate of future conditions when evaluating water management strategies. The modeling builds on on-going hydrologic modeling and drought planning work by SEI under a contract from NOAA and was intended to develop a methodology based upon robust decision making methodologies.

The District hosted two workshops over a 24-month period to support the 2010 UWMP and companion project. In the workshops, participants discussed important threats, interacted with water system models designed to evaluate management plans, helped develop responses to identified vulnerabilities, and provided feedback on promising adaptation strategies.

Workshop 1 included a discussion of issues facing the District and uncertainties that could impact the UWMP. RAND representatives presented ways that climate change modeling and forecasting could be used to analyze water management components, addressing a wide range of future uncertainties.

Workshop 2 was an interactive modeling session to explore the performance of several management strategies against numerous future scenarios. Goals included describing the WEAP model, presenting results of static strategies against range of future scenarios, and eliciting feedback and suggestions for model improvement and strategy augmentation.

Future evaluations of climate change will be done using the WEAP model created under this partnership.

COMPLETED UWMP CHECKLIST

This section includes a completed Table I-2 Urban Water Management Plan checklist, organized by subject provided in the 2010 UWMP Guidebook.

No.	UWMP requirement [a]	CA Water Code reference	Additional Clarification	UWMP Location
PLAN PREPARATION				
4	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.	10620(d)(2)		Page 1-1 Table 1-1 Appendix B
6	Notify, at least 60 days prior to the public hearing on the plan required by Section 10642, any city or county within which the supplier provides water that the urban water supplier will be reviewing the plan and considering amendments or changes to the plan. Any city or county receiving the notice may be consulted and provide comments.	10621(b)		Page 1-1 Appendix A
7	Provide supporting documentation that the UWMP or any amendments to, or changes in, have been adopted as described in Section 10640 et seq.	10621(c)		Page 1-2 Appendix C Appendix D
54	Provide supporting documentation that the urban water management plan has been or will be provided to any city or county within which it provides water, no later than 60 days after the submission of this urban water management plan.	10635(b)		Page 1-2

No.	UWMP requirement [a]	CA Water Code reference	Additional Clarification	UWMP Location
55	Provide supporting documentation that the water supplier has encouraged 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.	10642		Page 1-1 Section 7
56	Provide supporting documentation that the urban water supplier made the plan available for public inspection and held a public hearing about the plan. For public agencies, the hearing notice is to be provided pursuant to Section 6066 of the Government Code. The water supplier is to provide the time and place of the hearing to any city or county within which the supplier provides water. Privately-owned water suppliers shall provide an equivalent notice within its service area.	10642		Page 1-2 Appendix A Appendix B Appendix C
57	Provide supporting documentation that the plan has been adopted as prepared or modified.	10642		Page 1-2 Appendix D
58	Provide supporting documentation as to how the water supplier plans to implement its plan.	10643		Page 1-2
59	Provide supporting documentation that, in addition to submittal to DWR, the urban water supplier has submitted this UWMP to 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. This also includes amendments or changes.	10644(a)		Page 1-2
60	Provide supporting documentation that, not later than 30 days after filing a copy of its plan with the department, the urban water supplier has or will make the plan available for public review during normal business hours	10645		Page 1-2

No.	UWMP requirement [a]	CA Water Code reference	Additional Clarification	UWMP Location
SYSTEM DESCRIPTION				
8	Describe the water supplier service area.	10631(a)		Page 2-1
9	Describe the climate and other demographic factors of the service area of the supplier	10631(a)		Page 2-7 Table 2-1 Page 2-8 Page 2-9
10	Indicate the current population of the service area	10631(a)	Provide the most recent population data possible. Use the method described in "Baseline Daily Per Capita Water Use." See Section M.	Page 2-1 Page 2-9
11	Provide population projections for 2015, 2020, 2025, and 2030, based on data from State, regional, or local service area population projections.	10631(a)	2035 and 2040 can also be provided to support consistency with Water Supply Assessments and Written Verification of Water Supply documents.	Page 2-9 Table 2-2
12	Describe other demographic factors affecting the supplier's water management planning.	10631(a)		Page 2-1 Page 2-8

SYSTEM DEMANDS				
1	Provide baseline daily per capita water use, urban water use target, interim urban water use target, and compliance daily per capita water use, along with the bases for determining those estimates, including references to supporting data.	10608.20(e)		Page 3-7 to Page 3-10 Table 3-10 Table 3-11 Table 3-12
2	*Wholesalers:* Include an assessment of present and proposed future measures, programs, and policies to help achieve the water use reductions. *Retailers:* Conduct at least one public hearing that includes general discussion of the urban retail water supplier's implementation plan for complying with the Water Conservation Bill of 2009.	10608.36 10608.26(a)	Retailers and wholesalers have slightly different requirements	Page 3-6 Table 3-8
3	Report progress in meeting urban water use targets using the standardized form.	10608.40		Page 3-9
25	Quantify past, current, and projected water use, identifying the uses among water use sectors, for 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, conjunctive use, and (I) agriculture.	10631(e)(1)	Consider 'past' to be 2005, present to be 2010, and projected to be 2015, 2020, 2025, and 2030. Provide numbers for each category for each of these years.	Page 3-2 to Page 3-7 Table 3-1 to Table 3-9

33	Provide documentation that either the retail agency provided the wholesale agency with water use projections for at least 20 years, if the UWMP agency is a retail agency, or, if a wholesale agency, it provided its urban retail customers with future planned and existing water source available to it from the wholesale agency during the required water-year types	10631(k)	Average year, single dry year, multiple dry years for 2015, 2020, 2025, and 2030.	Page 3-1 Page 3-6 Table 3-9
34	Include projected water use for single-family and multifamily residential housing needed for lower income households, as identified in the housing element of any city, county, or city and county in the service area of the supplier.	10631.1(a)		Page 3-2
SYSTEM SUPPLIES				
13	Identify and quantify the existing and planned sources of water available for 2015, 2020, 2025, and 2030.	10631(b)	The 'existing' water sources should be for the same year as the "current population" in line 10. 2035 and 2040 can also be provided.	Page 4-1 to Page 4-10 Table 4-1

14	Indicate whether groundwater is an existing or planned source of water available to the supplier. If yes, then complete 15 through 21 of the UWMP Checklist. If no, then indicate "not applicable" in lines 15 through 21 under the UWMP location column.	10631(b)	Source classifications are: surface water, groundwater, recycled water, storm water, desalinated sea water, desalinated brackish groundwater, and other.	Page 4-9
15	Indicate whether a groundwater management plan been adopted by the water supplier or if there is any other specific authorization for groundwater management. Include a copy of the plan or authorization.	10631(b)(1)		Page 4-9
16	Describe the groundwater basin.	10631(b)(2)		Page 4-9
17	Indicate whether the groundwater basin is adjudicated? Include a copy of the court order or decree.	10631(b)(2)		Page 4-9
18	Describe the amount of groundwater the urban water supplier has the legal right to pump under the order or decree. If the basin is not adjudicated, indicate "not applicable" in the UWMP location column.	10631(b)(2)		Page 4-9

19	For groundwater basins that are not adjudicated, provide information as to whether DWR has identified the basin or basins as overdrafted or has projected that the basin will become overdrafted if present management conditions continue, in the most current official departmental bulletin that characterizes the condition of the groundwater basin, and a detailed description of the efforts being undertaken by the urban water supplier to eliminate the long-term overdraft condition. If the basin is adjudicated, indicate "not applicable" in the UWMP location column.	10631(b)(2)		Page 4-9
20	Provide a detailed description and analysis of the location, amount, and sufficiency of groundwater pumped by the urban water supplier for the past five years	10631(b)(3)		Page 4-9
21	Provide a detailed description and analysis of the amount and location of groundwater that is projected to be pumped.	10631(b)(4)	Provide projections for 2015, 2020, 2025, and 2030.	Page 4-9
24	Describe the opportunities for exchanges or transfers of water on a short-term or long-term basis.	10631(d)		Page 4-9
30	Include a detailed description of all water supply projects and programs that may be undertaken by the water supplier to address water supply reliability in average, single-dry, and multiple-dry years, excluding demand management programs addressed in (f)(1). Include specific projects, describe water supply impacts, and provide a timeline for each project.	10631(h)		Page 4-1 to Page 4-9 Table 4-1
31	Describe desalinated water project opportunities for long-term supply, including, but not limited to, ocean water, brackish water, and groundwater.	10631(i)		Page 4-10

44	Provide information on recycled water and its potential for use as a water source in the service area of the urban water supplier. Coordinate with local water, wastewater, groundwater, and planning agencies that operate within the supplier's service area.	10633		Page 4-10 to Page 4-16 Table 4-2 Table 4-3 Table 4-4
45	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.	10633(a)		Page 4-16 To Page 4-19 Table 4-2
46	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.	10633(b)		Table 4-3
47	Describe the recycled water currently being used in the supplier's service area, including, but not limited to, the type, place, and quantity of use.	10633(c)		Table 4-4
48	Describe and quantify the potential uses of recycled water, including, but not limited to, agricultural irrigation, landscape irrigation, wildlife habitat enhancement, wetlands, industrial reuse, groundwater recharge, indirect potable reuse, and other appropriate uses, and a determination with regard to the technical and economic feasibility of serving those uses.	10633(d)		Table 4-5 Page 4-15
49	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.	10633(e)		Table 4-5
50	Describe the 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.	10633(f)		Table 4-5

51	Provide 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.	10633(g)		Page 4-15
WATER SHORTAGE RELIABILITY AND WATER SHORTAGE CONTINGENCY PLANNING [b]				
5	Describe water management tools and options to maximize resources and minimize the need to import water from other regions.	10620(f)		Page 5-1
22	Describe the reliability of the water supply and vulnerability to seasonal or climatic shortage and provide data for (A) an average water year, (B) a single dry water year, and (C) multiple dry water years.	10631(c)(1)		Page 5-1 Table 5-1 Table 5-2 Table 5-3
23	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 supplement or replace that source with alternative sources or water demand management measures, to the extent practicable.	10631(c)(2)		Table 5-4 Table 5-5
35	Provide an urban water shortage contingency analysis that specifies stages of action, including up to a 50-percent water supply reduction, and an outline of specific water supply conditions at each stage	10632(a)		Page 5-5 to Page 5-9 Table 5-6 Table 5-7 Table 5-8 Table 5-9
36	Provide 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.	10632(b)		Table 5-2

37	Identify 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.	10632(c)		Page 5-5
38	Identify 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.	10632(d)		Page 5-6 Table 5-6
39	Specify 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.	10632(e)		Page 5-6 Table 5-7
40	Indicated penalties or charges for excessive use, where applicable.	10632(f)		Page 5-7 Table 5-8
41	Provide 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.	10632(g)		Page 5-7
42	Provide a draft water shortage contingency resolution or ordinance.	10632(h)		Appendix F
43	Indicate a mechanism for determining actual reductions in water use pursuant to the urban water shortage contingency analysis.	10632(i)		Page 5-7

52	Provide information, to the extent practicable, relating to the quality of existing sources of water available to the supplier over the same five-year increments, and the manner in which water quality affects water management strategies and supply reliability	10634	For years 2010, 2015, 2020, 2025, and 2030	Page 5-4 Table 5-5
53	Assess the water supply reliability during normal, dry, and multiple dry water years by comparing 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. Base the assessment on the information compiled under Section 10631, including available data from state, regional, or local agency population projections within the service area of the urban water supplier.	10635(a)		Page 5-10 to Page 5-12 Table 5-10 Table 5-11 Table 5-12
DEMAND MANAGEMENT MEASURES				
26	Describe how each water demand management measures is being implemented or scheduled for implementation. Use the list provided.	10631(f)(1)	Discuss each DMM, even if it is not currently or planned for implementation. Provide any appropriate schedules.	Page 6-1 To Page 6-3
27	Describe the methods the supplier uses to evaluate the effectiveness of DMMs implemented or described in the UWMP.	10631(f)(3)		Page 6-1 To Page 6-3
28	Provide an estimate, if available, of existing conservation savings on water use within the supplier's service area, and the effect of the savings on the ability to further reduce demand.	10631(f)(4)		Page 6-2

29	Evaluate each water demand management measure that is not currently being implemented or scheduled for implementation. The evaluation should include economic and non-economic factors, cost-benefit analysis, available funding, and the water suppliers' legal authority to implement the work.	10631(g)	See 10631(g) for additional wording.	Page 6-1 To Page 6-3
32	Include the annual reports submitted to meet the Section 6.2 requirements, if a member of the CUWCC and signer of the December 10, 2008 MOU.	10631(j)	Signers of the MOU that submit the annual reports are deemed compliant with Items 28 and 29.	Appendix G

Footnotes to Checklist:

a The UWMP requirement descriptions are general summaries of what is provided in the legislation. Urban water suppliers should review the exact legislative wording prior to submitting its UWMP.

b The subject classification is provided for clarification only. It is aligned with the organization presented in Part I of this guidebook. A water supplier is free to address the UWMP Requirement anywhere with its UWMP, but is urged to provide clarification to DWR to facilitate review.

REFERENCES

Brown and Caldwell, El Dorado County Drought Shared Vision Model, October 2005

El Dorado County Water Agency, Water Resources Development and Management Plan, June 2003

El Dorado Irrigation District, 2005 Consumption Report

El Dorado Irrigation District, 2010 Consumption Report

El Dorado Irrigation District, 2009 Comprehensive Annual Financial Report

El Dorado Irrigation District, El Dorado Irrigation District Urban Water Management Plan 2005 Update, January 2006

El Dorado Irrigation District, Water Supply Master Plan, Administrative Draft December 2001

El Dorado Irrigation District, Integrated Water Resources Master Plan, 2011

El Dorado Irrigation District, Board Policies and Administrative Regulations

El Dorado Irrigation District, 2010 Diversion Report

APPENDIX A

Letter to Interested Parties

El Dorado Irrigation District

In Reply Refer To: EOL0111-027

January 18, 2011 VIA FIRST CLASS MAIL

El Dorado County Development Services Department
Attn: Roger Trout, Director
2850 Fairlane Court
Placerville, CA 95667

Subject: Urban Water Management Plan
60-day Preparation Notification

Dear Mr. Trout:

In accordance with the California Water Code Section 10621, each urban water supplier shall update its Urban Water Management Plan (UWMP) at least once every five years. Also, every urban water supplier required to prepare a plan pursuant to this part shall, at least 60 days prior to 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. The urban water supplier may consult with, and obtain comments from, any city or county that receives notice pursuant to this subdivision. Because the District must prepare an UWMP and because your agency is one which the District provides water to or has involvement with for the purposes of water supply, you are receiving this notice.

The District plans to prepare its 2010 UWMP and adopt it at a Board hearing at a date and time yet to be determined. Prior to adopting a plan, the plan will be made available for public inspection and prior to the hearing, notice of the time and place of hearing will be published within the jurisdiction of the District pursuant to Section 6066 of the Government Code. The time and place of hearing will be provided in that notice. After the hearing, the plan will be adopted as prepared or as modified after the hearing.

If you have any questions regarding this matter, please contact me at 530-642-4056 or cmegerdigian@eid.org.

Sincerely,

Cindy Megerdigian, P.E.
Water/Hydro Engineering Manager

CM:ss

cc: Brian Mueller, P.E., Director of Engineering

Distribution:

El Dorado County Water Agency
Attn: David Philip Eggerton, Esq., General Manager
3932 Ponderosa Road #200
Shingle Springs, CA 95682-9486

City of Placerville
Attn: M. Cleve Morris, City Manager
3101 Center Street
Placerville, CA 95667

El Dorado County Development Services Department
Attn: Roger Trout, Director
2850 Fairlane Court
Placerville, CA 95667

City of Folsom
Attn: Ken Payne, Chief of Environmental/Water Resources Development
50 Natoma Street
Folsom, CA 95630

El Dorado Irrigation District

In Reply Refer To: EOL0111-026

January 18, 2011 VIA FIRST CLASS MAIL

City of Placerville
Attn: M. Cleve Morris, City Manager
3101 Center Street
Placerville, CA 95667

Subject: Urban Water Management Plan
60-day Preparation Notification

Dear Mr. Morris:

In accordance with the California Water Code Section 10621, each urban water supplier shall update its Urban Water Management Plan (UWMP) at least once every five years. Also, every urban water supplier required to prepare a plan pursuant to this part shall, at least 60 days prior to 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. The urban water supplier may consult with, and obtain comments from, any city or county that receives notice pursuant to this subdivision. Because the District must prepare an UWMP and because your agency is one which the District provides water to or has involvement with for the purposes of water supply, you are receiving this notice.

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Sincerely,

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Water/Hydro Engineering Manager

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Placerville, CA 95667

City of Folsom
Attn: Ken Payne, Chief of Environmental/Water Resources Development
50 Natoma Street
Folsom, CA 95630

El Dorado Irrigation District

In Reply Refer To: EOL0111-025

January 18, 2011

VIA FIRST CLASS MAIL

Mr. David Philip Eggerton, Esq.
General Manager
El Dorado County Water Agency
3932 Ponderosa Road #200
Shingle Springs, CA 95682

Subject: Urban Water Management Plan
60-day Preparation Notification

Dear Mr. Eggerton:

In accordance with the California Water Code Section 10621, each urban water supplier shall update its Urban Water Management Plan (UWMP) at least once every five years. Also, every urban water supplier required to prepare a plan pursuant to this part shall, at least 60 days prior to 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. The urban water supplier may consult with, and obtain comments from, any city or county that receives notice pursuant to this subdivision. Because the District must prepare an UWMP and because your agency is one which the District provides water to or has involvement with for the purposes of water supply, you are receiving this notice.

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If you have any questions regarding this matter, please contact me at 530-642-4056 or cmegerdigian@eid.org.

Sincerely,

Cindy Megerdigian, P.E.
Water/Hydro Engineering Manager

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City of Folsom
Attn: Ken Payne, Chief of Environmental/Water Resources Development
50 Natoma Street
Folsom, CA 95630

El Dorado Irrigation District

In Reply Refer To: EOL0111-028

January 18, 2011 VIA FIRST CLASS MAIL

City of Folsom
Attn: Ken Payne,Chief of Environmental/Water Resources Development
50 Natoma Street
Folsom, CA 95630

Subject: Urban Water Management Plan
60-day Preparation Notification

Dear Mr. Trout:

In accordance with the California Water Code Section 10621, each urban water supplier shall update its Urban Water Management Plan (UWMP) at least once every five years. Also, every urban water supplier required to prepare a plan pursuant to this part shall, at least 60 days prior to 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. The urban water supplier may consult with, and obtain comments from, any city or county that receives notice pursuant to this subdivision. Because the District must prepare an UWMP and because your agency is one which the District provides water to or has involvement with for the purposes of water supply, you are receiving this notice.

The District plans to prepare its 2010 UWMP and adopt it at a Board hearing at a date and time yet to be determined. Prior to adopting a plan, the plan will be made available for public inspection and prior to the hearing, notice of the time and place of hearing will be published within the jurisdiction of the District pursuant to Section 6066 of the Government Code. The time and place of hearing will be provided in that notice. After the hearing, the plan will be adopted as prepared or as modified after the hearing.

If you have any questions regarding this matter, please contact me at 530-642-4056 or cmegerdigian@eid.org.

Sincerely,

Cindy Megerdigian, P.E.
Water/Hydro Engineering Manager

CM:ss

cc: Brian Mueller, P.E., Director of Engineering

Distribution:

El Dorado County Water Agency
Attn: David Philip Eggerton, Esq., General Manager
3932 Ponderosa Road #200
Shingle Springs, CA 95682-9486

City of Placerville
Attn: M. Cleve Morris, City Manager
3101 Center Street
Placerville, CA 95667

El Dorado County Development Services Department
Attn: Roger Trout, Director
2850 Fairlane Court
Placerville, CA 95667

City of Folsom
Attn: Ken Payne, Chief of Environmental/Water Resources Development
50 Natoma Street
Folsom, CA 95630

APPENDIX B

Stakeholders Committee Member List

2010 Urban Water Management Plan Update Stakeholder's List

No.	Last Name	First Name	representation
1	Abercrombie	Jim	EID
2	Berry	Sandra	RAND
3	Britting	Sue	customer
4	Burdick	Katie	CABY
5	Davis	Marie	PCWA
6	Dickerson	Rhonda	SS Rancheria
7	Eden-Bishop	Tracey	EDCWA
8	Eggerton	Dave	EID
9	Fecko	Andy	PCWA
10	Fidell	Megan	DWR
11	Fraser	John	EID
12	Gee	Marion	SNA
13	George	Bill	EID
14	Gladin	Liz	SEI
15	Groves	David	RAND
16	Larsen	Melissa	customer
17	Leisz	Doug	customer
18	Lind	Rick	EN2
19	Mansfield	Liz	customer
20	Marquez	Melissa	RCD
21	Megerdigian	Cindy	EID
22	Mehta	Vishal	SEI
23	Modrall	Keri	CABY
24	Morales	Kim	USFS
25	Mosbacher	Frank	USFS
26	Mueller	Brian	EID
27	Nelson	Ron	NID
28	Pesses	Randy	City of Placerville
29	Prillwitz	Marsha	CUWCC
30	Quidachay	Karen	customer
31	Swartz	Rob	RWA
32	Valdes	Tony	USFS
33	Wells	Elizabeth	EID

APPENDIX C

Notice of Public Hearing

NOTICE OF PUBLIC HEARING
AND
NOTICE OF ADOPTION OF THE
URBAN WATER MANAGEMENT PLAN 2010 UPDATE

(Pursuant to the Urban Water Management Act,
California Water Code, Division 6, Part 2.6, Section 10610 through 10657)

NOTICE IS HEREBY GIVEN that the El Dorado Irrigation District (District) proposes to adopt the Urban Water Management Plan 2010 Update (UWMP) pursuant to the Urban Water Management Act. The Act requires urban water suppliers providing municipal water to more than 3,000 connections or supplying more than 3,000 ac-ft of water annually to adopt and submit a plan every five years to the California Department of Water Resources (DWR). Subsequent assembly bills have amended the Act.

The UWMP will be discussed by the District Board of Directors at a meeting to be held on June 13, 2011 and is scheduled for adoption at or after 10:00 am at a public hearing to be held on June 27, 2011.

The public meeting and hearing will provide an opportunity for District customers and residents and employees in the service area to learn about and comment on existing water supply and District plans for providing a reliable, safe, high-quality water supply for the future.

Copies of the UWMP are available on the District website at www.eid.org.

For additional information, please contact:

Cindy Megerdigian, P.E.
Water/Hydro Engineering Manager
El Dorado Irrigation District
2890 Mosquito Road
Placerville, CA 95667
530-642-4056

APPENDIX D

Adopted Resolution

RESOLUTION OF THE BOARD OF DIRECTORS OF EL DORADO IRRIGATION DISTRICT AUTHORIZING THE ADOPTION OF THE URBAN WATER MANAGEMENT PLAN 2011 UPDATE

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 serve as a long range planning document for EL DORADO IRRIGARTION DISTRICT'S Water supply; and

WHEREAS, the EL DORADO IRRIGATION DISTRICT ("District") is an urban supplier of water providing water to approximately 38,575 customer accounts; and

WHEREAS, the Urban Water Management Plan ("Plan") shall be periodically reviewed at least once every five years, and that the District shall make any amendments or changes to its plan which are indicated by the review; and

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

WHEREAS, the District has therefore, prepared and circulated for public review a draft Urban Water Management Plan 2010 Update, and a properly notice public hearing regarding said Plan was held on June 27, 2011; and

NOW, THEREFORE, BE IT RESOLVED that the Board of Directors of the EL DORADO IRRIGATION DISTRICT that:

1. The Urban Water Management Plan 2010 Update is hereby adopted, and
2. The EL DORADO IRRIGATION DISTRICT will file the 2010 Plan Update with the California Department of Water Resources within thirty days.

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The foregoing Resolution was introduced at a regular meeting of the Board of Directors of EL DORADO IRRIGATION DISTRICT, held on the 27th day of June 2011, by Director Fraser, who moved its adoption. The motion was seconded by Director George, and a poll vote taken which stood as follows:

AYES: Directors Fraser, George, Osborne, Wheeldon, and Norris

NOES:

ABSENT:

ABSTAIN:

The motion having a majority of votes "Aye", the resolution was declared to have been adopted, and it was so ordered.

Harry J. Norris, President
Board of Directors
EL DORADO IRRIGATION DISTRICT

ATTEST:

Jennifer Sullivan
Clerk to the Board
EL DORADO IRRIGATION DISTRICT

(SEAL)

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I, the undersigned, Clerk to the Board of EL DORADO IRRIGATION DISTRICT hereby certify that the foregoing resolution is a full, true and correct copy of a Resolution of the Board of Directors of EL DORADO IRRIGATION DISTRICT entered into and adopted at a regular meeting of the Board of Directors held on the 27th day of June 2011.

Jennifer Sullivan
Clerk to the Board
EL DORADO IRRIGATION DISTRICT

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APPENDIX E

Consumer Confidence Report of 2009

El Dorado Irrigation District
2890 Mosquito Road
Placerville, CA 95667
www.eid.org

CONSUMER **CONFIDENCE** REPORT
Your **2009 Water Quality Report**


Jenkinson Lake

We welcome your ideas, suggestions, and involvement.

Let us know what's on your mind.

- Come to EID Board meetings, normally held twice a month at our Harry J. Dunlop Customer Service Building, 2890 Mosquito Road in Placerville. See our web site at www.eid.org for the meeting schedule, or call us at 530-622-4513 or 916-965-0930 for that information.
- Join our special public meetings and workshops. We publish notices about these events in local newspapers and the newsletters and other publications of community organizations. We also post the notices on our web site.
- Send us your comments to the address above. Or use our web site: click on "Contacts" on the home page.

Este informe contiene información muy importante sobre su agua beber. Tradúzcalo o hable con alguien que lo entienda bien.

2009 water quality results...

Where your water comes from. EID has rights to approximately 77,590 acre-feet of water from various sources in the Sierra Nevada foothills. (An acre-foot equals one acre of land covered by a foot of water; there are 325,851 gallons in an acre-foot.) Jenkinson Lake, at the center of Sly Park Recreation Area, provides nearly one half of our water supply. Forebay Reservoir in Pollock Pines delivers water under a pre-1914 water right from the high-alpine streams and lakes that are part of our Project 184 hydropower system. We have a water contract with the Bureau of Reclamation at Folsom Lake, which the Bureau operates as part of the state's Central Valley Water Project. And we hold ditch water rights (Weber, Slab, and Hangtown creeks), water rights at Weber Reservoir, and a water right under Permit 21112 for Project 184 water—all of which is delivered from Folsom Lake.

Information about potential sources of pollution. The California Department of Public Health (CDPH) requires water providers to conduct a source water assessment to help protect the quality of water supplies. The assessment describes where a water system's drinking water comes from, the types of polluting activities that may threaten the quality of the source water, and an evaluation of the water's vulnerability to the threats.

Updated assessments of EID's drinking water sources were completed in October 2006 and October 2008. Our source water is considered most vulnerable to recreation, residential sewer, septic system, and urban runoff activities, which are associated with constituents detected in the water supply. Our source water is also considered most vulnerable to illegal activities, dumping, fertilizer, pesticide and herbicide application, forest activities, and wildfires, although constituents associated with these activities were not detected. Copies of the assessments are available at CDPH, Sacramento District Office, 1616 Capitol Avenue, Sacramento, CA 95899. To view them, contact David Lancaster, CDPH Sacramento District Engineer, at 916-449-5668, or Dana Strahan, EID Water Division Operations Manager, at 530-642-4060.

Testing the water. To help ensure that safe water is delivered to our customers, EID's water-quality monitoring program includes taking samples of raw and treated water throughout the year from many locations in the District's service area. Analyses cover more than 100 different constituents. Tests are performed by EID professionals at our state-certified laboratory and at state-certified commercial labs.

The table below lists all constituents that were detected in 2009 under our monitoring and testing program. The information shows that EID meets or exceeds all state and federal drinking water standards.

RESULTS CHART

			El Dorado Main Water System		Outingdale Water System		Strawberry Water System			
General Properties	**Units**	**PHG/MCL**	**Range**	**Average**	**Range**	**Average**	**Range**	**Average**	**Most Recent Sampling Date**	**Typical source of contaminant**
Alkalinity	mg/L	–	12–89	24	21–36	30	9–13	11	2009	
Bicarbonate	mg/L	–	12–89	24	21–36	30	9–13	11	2009	
Calcium	mg/L	–	2.2–7.8	4.4	3.4–7.6	5.1	1.4–3.6	2.4	2009	
Chloride	mg/L	500	2.6–5.0	3.0	2.0	2.0	2.7	2.7	2009	Runoff/leaching from natural deposits; seawater influence
Corrosivity	Aggressive Index	Non-corrosive	9.27–9.76	9.6	10.6	10.6	9.18	9.18	2009	
Hardness	mg/L	–	8–15	13	16	16	5.2	5.2	2009	
Hardness (grains per gallon)	gpg	–	0.47–0.88	0.76	0.94	0.94	0.30	0.30	2009	
Magnesium	mg/L	–	ND–1.3	0.8	1.1	1.1	0.16	0.16	2009	
N-nitroso-diethylamine (NDEA)	µg/L	–	ND–0.0054	ND	–	–	–	–	2009	
N-nitroso-dimethylamine (NDMA)	µg/L	–	ND–0.0026	ND	–	–	–	–	2009	
Orthophosphate	mg/L	–	ND–0.31	0.18	ND	ND	ND–0.017	0.006	2009	
Potassium	mg/L	–	ND	ND	1	1	ND	ND	2007	
Sodium	mg/L	–	1.6–6.8	4.6	4.1	4.1	3.2	3.2	2009	
Specific Conductance	umho/cm	1600	49–82	64	65–70	67	27–80	56	2009	Substances that form ions when in water
Sulfate	mg/L	500	0.6–4.0	2.1	1.1	1.1	ND	ND	2009	Runoff/leaching from natural deposits; industrial wastes
Total Dissolved Solids	mg/L	1000	36–46	40	43	43	11	11	2009	Runoff/leaching from natural deposits
Inorganics										
Zinc	mg/L	5.0	ND–0.08	0.05	ND	ND	ND	ND		Runoff/leaching from natural deposits; industrial waste
Microbiological		**PHG (MCLG)**	**MCL (MRDL)**	**Level Found**	**MCL (MRDL)**	**Level Found**	**MCL (MRDL)**	**Level Found**		
Total Coliform Bacteria	% of Samples	(0)	No more than 5% postivie monthly sample	1.0%	No more than 1 postivie monthly sample	0.0%	No more than 1 postivie monthly sample	0.0%	2009	Naturally present in environment
Giardia lambilia	# of Cysts	(0)	TT=Reduction	0–5, Ave. = ND	TT=Reduction	–	TT=Reduction	–	2005	Naturally present in environment
Cryptosporidium	# of Cysts	(0)	TT=Reduction	0–2, Ave. = ND	TT=Reduction	–	TT=Reduction	–	2005	Naturally present in environment
Disinfection Byproducts Precursors		**Action Level**	**Range**	**Lowest Running Annual Average**	**Range**	**Highest Running Annual Average**	**Range**	**Highest Running Annual Average**		
Total Organic Carbon	mg/L	TT=Removal	0.3–2.9	n/a	–	n/a	–	n/a	2009	Various natural and manmade sources
Total Organic Carbon Removal Ratio	%	TT=<1.0	na	1.10	–	n/a	–	n/a	2009	Various natural and manmade sources
Disinfection Byproducts		**MCL (MRDL)**	**Range**	**Highest Running Annual Average**	**Range**	**Highest Running Annual Average**	**Range**	**Highest Running Annual Average**		
Chlorine [as Cl_2]	mg/L	(4.0)	0.60–0.84	0.71	0.67–1.23	0.92	0.59–1.71	0.98	2009	Drinking water disenfectant added for treatement
Total Haloacetic Acids (HAA5)	µg/L	60	25–52.3	40.2	33.2	33.2	28.2	28.2	2009	Byproduct of drinking water disinfection
Total Trihalomethanes	µg/L	80	16–68	39.9	45	45	20	20	2009	Byproduct of drinking water disinfection
Lead and Copper		**Action Level**	**90th Percentile**	**No. of sites sampled/ No. exceeding action level**	**90th Percentile**	**No. of sites sampled/ No. exceeding action level**	**90th Percentile**	**No. of sites sampled/ No. exceeding action level**		
Lead (at the tap)	µg/L	15	ND	51/0	5.4	10/1	ND	10/1	2008	Internal corrosion of household plumbing systems; discharges from industrial manurfacturers, erosion of natural deposits
Copper (at the tap)	mg/L	1.3	0.24	51/0	0.076	10/0	0.21	10/0	2008	Internal corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives

		El Dorado Main Water System			Outingdale Water System			Strawberry Water System				
	Units	**MCL**	**Maximum Value**	**Lowest Monthly % samples meeting**	**MCL**	**Maximum Value**	**Lowest Monthly % samples meeting requirements**	**MCL**	**Maximum Value**	**Lowest Monthly % samples meeting requirements**		**Typical source of contaminant**
Turbidity	NTU	TT=95% of samples ≤0.3 NTU	0.17	100%	TT=95% of samples ≤0.3 NTU	0.19	100%	TT=95% of samples ≤0.1 NTU	0.10	100%	2009	Soil runoff

...meet or exceed health standards

A note for sensitive populations

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. USEPA/Centers for Disease Control guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and other microbial contaminants are available from the Safe Drinking Water Hotline at 1-800-426-4791.

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. EID is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, test methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline, or at http://www.epa.gov/safewater/lead.

Questions?

For more information from EID about this report, contact Dana Strahan, Water Division Operations Manager, at 530-642-4060.

For information from the California Department of Public Health, contact David Lancaster, District Engineer, at 916-449-5668.

Safe Drinking Water Hotline: 1-800-426-4791

Editor: Deanne Kloepfer
Design/production: Jesse Saich

The following definitions help explain information in the table.

Public health goal (PHG): The level of a contaminant in drinking water below which there is no known or expected risk to health. The California Environmental Protection Agency sets PHGs.

Maximum contaminant level goal (MCLG): The level of contaminant in drinking water below which there is no known or expected risk to health. The U.S. Environmental Protection Agency (EPA) sets these levels.

Maximum contaminant level (MCL): The highest level of a contaminant allowed in drinking water. Primary MCLs are set as close to the PHG or MCLGs as is economically and technologically feasible. Secondary MCLs are set to protect the odor, taste, and appearance of drinking water.

Maximum residual disinfectant level (MRDL): The highest level of a disinfectant allowed in drinking water. There is convincing evidence that the addition of a disinfectant is necessary for the control of microbial contaminants.

Primary drinking water standard (PDWS): MCLs and MRDLs for contaminants that affect health along with their monitoring and reporting requirements, and water treatment requirements.

Regulatory action level (AL): The concentration of a contaminant that, if exceeded, triggers treatment or other requirements for water systems.

Treatment technique (TT): A required process intended to reduce the level of a contaminant in drinking water.

A note on *cryptosporidium*

Cryptosporidium is a microbial pathogen found in surface water throughout the United States. Although filtration removes *cryptosporidium*, the most commonly-used filtration methods cannot guarantee 100 percent removal. Our monitoring indicates the presence of these organisms in our source water. Current test methods do not allow us to determine if the organisms are dead or if they are capable of causing illness. Ingestion of *cryptosporidium* may cause cryptosporidiosis and abdominal infection. Symptons of infection include nausea, diarrhea, and abdominal cramps. Most healthy individuals can overcome the symptoms within a few weeks. However, immuno-compromised people are at greater risk developing life-threatening illness. We encourage immuno-compromised individuals to consult their doctor regarding appropriate precautions to take to avoid infection. *Cryptosporidium* must be ingested to cause disease, and it may be spread through means other than drinking water.

Key:

NA=not applicable
ND=not detected
NR=not reportable
mg/L=milligrams/liter
µg/L=micrograms/liter
ntu=nephelometric turbidity unit (measure of clarity)

What the state wants you to know

California's Department of Public Health requires all public water systems to include the following information in their yearly consumer confidence reports.

About drinking water
The sources of drinking water—both tap and bottled—include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and, in some cases, radioactive material and can pick up substances resulting from the presence of animals or from human activity.

The following contaminants may be present in source water before it is treated.

Microbial contaminants such as viruses and bacteria from sewage treatment plants, septic systems, livestock operations, and wildlife.
Inorganic contaminants such as salts and metals that occur naturally or stem from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining, and farming.
Pesticides and herbicides from sources such as agriculture, urban stormwater runoff, and residential uses.
Organic chemical contaminants such as synthetic and volatile organic chemicals that are byproducts of industrial processes and petroleum production or that come from gas stations, urban stormwater runoff, agricultural applications, and septic systems.
Radioactive contaminants that occur naturally or are the result of oil and gas production and mining.

The summer recreation season is in full swing, and we urge visitors to area lakes and rivers to help stop the spread of invasive quagga and zebra mussels. These small creatures have wreaked havoc east of the Mississippi and are now found in many states in the west, including California. To learn more about what you can do, visit the EID website at www.eid.org.

To ensure that tap water is safe to drink, the U.S. Environmental Protection Agency and the California Department of Public Health prescribe regulations that limit the amount of certain contaminants in water provided by public water systems. Department regulations also establish limits for contaminants in bottled water that must provide the same protection for public health.

The state of California allows us to monitor for some contaminants less than once a year because the concentrations of the contaminants do not change frequently. Some of our data, although representative, may be more than a year old.

NOTE: Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. Contact the U.S. Environmental Protection Agency's Safe Drinking Water Hotline at 1-800-426-4791 for more about contaminants and potential health effects.

Actions you can take to practice sensible, year-round water conservation

- Water outside only when necessary.
- Sweep, don't wash, paved areas.
- Repair leaky faucets.
- Don't dawdle in the shower.
- Wash when your dishwasher and clothes washer are full.
- Don't run water continuously while shaving, brushing teeth, peeling vegetables, or washing dishes by hand.
- If you are an agriculture customer and are not enrolled in our conservation-oriented Irrigation Management Service program, we encourage you to file a conservation plan.

H_2OUSE WATER SAVER HOME

Loss of water through leaks and inefficient practices—inside and outside of your home or office—can add up fast!

The California Urban Water Conservation Council's website, "**H_2OUSE**," contains tips for maintenance, leak detection, and repair, along with loads of useful facts and cost-benefit analyses. To find out more, head to their website at **h2ouse.org/action**.

El Dorado Irrigation District
CLOSE THE TAP ON WATER WASTE

EID's water waste regulation is in effect all year under all conditions.

The regulation gives the district the ability to enforce prohibitions against water waste.

To read the regulation, go to the district home page at **www.eid.org** and click on the "Close the Tap on Water Waste" icon.

APPENDIX F

Adoption of Drought Preparedness Plan
Board Agenda Item

Action Item Number 8
February 11, 2008

EL DORADO IRRIGATION DISTRICT

Subject: Adoption of Drought Preparedness Plan

Board Action:
July 19, 2004 - The Board approved the Phase I Drought Analysis cost sharing agreement.

June 12, 2006 - The Board approved the Phase II Drought Analysis cost sharing agreement.

Between 2006 -2008 El Dorado Irrigation District/El Dorado County Water Agency hosted five public workshops.

January 28, 2008 – Presentation on the Drought Preparedness Plan at the Engineering and Operation Standing Committee Meeting

Board Policy/Rules & Regulations/Procedure:

Formal adoption of the Drought Preparedness Plan requires Board approval.

Summary of Issue:

The Drought Preparedness Plan for EID was completed in January 2008. This Plan presents the actions and procedures for preparing for, identifying, and responding to a drought. The objective of the Plan is to help EID preserve essential public services and minimize the effects of a water shortage on public health and safety, economic activity, environmental resources, and individual lifestyle. Adoption of the Drought Preparedness Plan is needed by the Board in order to implement the Plan if a drought event occurred.

Staff Analysis/Evaluation:

Planning Overview
In 2004, because of the need and value of drought planning and preparedness, the El Dorado County Water Agency (EDCWA) and EID initiated a drought planning process. The objective was to address the needs of residents on the western slope of the County during drought conditions. The drought planning process has been conducted in two phases in a collaborative approach among drought plan stakeholders centered on a "shared vision" approach to drought analysis and planning. This approach helped the County water community develop an understanding of the drought susceptibility of each

agency and the actions that can be pursued individually and as a community to reduce or mitigate drought impact.

Phase 1 - drought planning included the analysis of drought impacts in EID and the western slope of the County, with focus on the potential to reduce drought impacts through demand management and supply augmentation actions. The El Dorado County Western Slope Drought Analysis – Phase 1 Report (Brown and Caldwell, 2006) describes the development of the drought triggers, the Shared Vision Model (SVM) and the results of the drought analysis. At the conclusion of Phase 1, drought stakeholders understood the current water supply reliability during drought for each of the County's three western slope water purveyors based on current policy, water rights, and infrastructure. Additionally, drought stakeholders understood the needs, opportunities, and constraints facing each agency in the future as they implement policies, programs, and projects to mitigate or avoid drought impacts.

Phase 2 - drought planning effort focused on the development of the dashboard for monitoring of drought conditions and the individual drought plans for EID, EDCWA, Grizzly Flats Community Service District (GFCSD), and Georgetown Divide Public Utility District (GDPUD). Drought plans include actions to improve drought management within the service area of each water agency, and also include actions from the shared vision process that encourage collaboration across the County western slope community to gain efficiency in drought monitoring, provide water for essential public health and safety, synthesize outreach activities, and integrate drought avoidance projects at the County level. Phase 2 also includes addition climate change analysis through the Water Evaluation And Planning Model (WEAP).

Drought Preparedness Plan

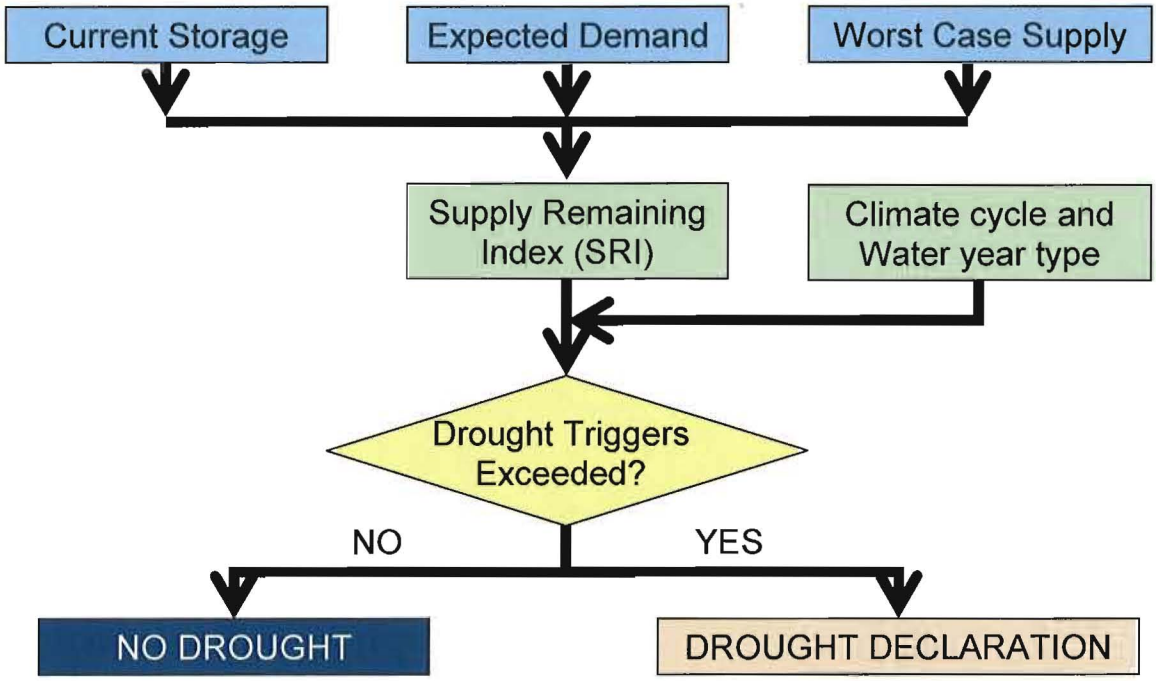
While the occurrence of droughts cannot be controlled, droughts and their impacts can be anticipated and planned for. A Drought Preparedness Plan is needed to guide EID to accomplish its mission of providing high quality water services in an environmentally and fiscally responsible manner during drought conditions.

The major elements of the Plan include:

- Defining a common understanding of drought susceptibility, monitoring, communication, response, and opportunities for drought avoidance among each of the County west slope water agencies.

- Updating EID drought planning to incorporate new water supplies, most recent water demand projections, expanding water conservation efforts, new methods of public outreach, and potential impacts of climate change.

- Defining improved drought indicators and trigger levels that declare droughts accurately and early enough (see schematic below).



- Defining drought stages with demand curtailments that can reasonably be accomplished in drought conditions, are financially sustainable, administratively appropriate, user-friendly, and will perform well for all customers and stakeholders (see below).

Water Supply Condition	**Drought Stage**	**Overall Objective**	**Response Actions**
Normal	Stage Zero	Public awareness	Normal actions No Water Waste

Slightly Restricted	Stage 1	Encourage voluntary conservation	Decrease demand up to 15%
Moderately Restricted	Stage 2 (Phases I and II)	I-Voluntary Conservation II-Mandatory measures	Decrease demand up to 30%
Severely Restricted	Stage 3	Limit water use to health and safety purposes	Decrease demand up to 50%

- Providing a roadmap for Plan implementation that focuses EID's continuing efforts on activities that will monitor for the onset of drought, minimize drought impact on customers and EID, and implement projects and other measures to reduce the need to declare drought.

Policy Issues

On October 29, 2007 EID held a Drought Workshop to discuss the Drought Preparedness Plan development. During the workshop, two specific policy issues were raised for staff to discuss and provide a recommendation.

- The first issue regarded the implementation of drought actions and conservation measures for customers who use recycled water. Since recycled water use customers are currently reducing the demand of potable water use, the question revolves around the "fairness" of implementing mandatory potable water cutbacks. Staff recommendation:
    a. Stage 1 - normal conservation education;
    b. Stage 2 - focused education on conservation methods; however if 30% demand is not reduced overall, potable water supplementation will be reduced.
    c. Stage 3- Customers subject to mandatory conservation; Potable water supplementation stopped in this stage.

- The second issue regarded the implementation of drought actions and conservation measures for customers in the various service areas such as El Dorado Hills that receive their water supply from Folsom Reservoir. The reliability of water could vary according to the various supplies. Staff recommendation:
    d. No variation in actions or conservation measures (treat all customers fairly.)
    e. Expand and improve water supply infrastructure to ensure the same reliability.
    f. Work with State/Federal governments to change points of diversion if needed to meet demands.

Related Regulation Changes

If the Drought Preparedness Plan is adopted by the Board the following regulations will require change:

- Administrative Regulation number 5011, Water Supply Conditions, will be replaced with the new water supply conditions and drought stages stated in the Plan.
- Administrative Regulation number 5013, Water Service Interruptions or Restrictions, will be updated with the drought stages.
- A new Administrative Regulation number 1041, Water waste Prohibition, will be implemented to address the suggested action in the Plan and the Best Management Practice 13 required by the California Urban Water Conservation Council as a U.S. Bureau of Reclamation contractor.

Next Steps (after adoption)

Staff is continuing efforts to further prepare EID in case of a drought. In 2008 staff will prepare a Drought Action Plan that will document the specific and detailed actions and policies to be taken in each drought stage. The Drought Preparedness Plan provides the critical triggers and stages for implementing a drought plan, however it does not address policy issues like the two discussed above or specific actions that will be required by each department at EID. The Action Plan will save EID time and money in its ability to be prepared for implementation.

In addition to the Drought Action Plan, staff is planning to propose a drought rate structure in advance of a drought and as part of the current rate study. The State highly recommended this strategy to prepare for drought and emphasized this point during their drought workshops in 2007. The benefits of advance drought rates include; time-savings to implement rates; make-up for additional costs and loss of revenue during a drought; discourage excessive water use; and no expiration date.

Board Decision/Options:

Option 1: Adopt the EID Drought Preparedness Plan.

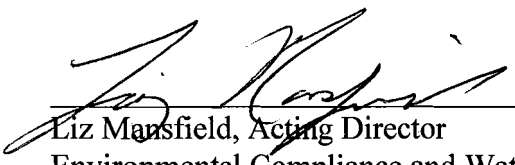
Option 2: Take other action as directed by the Board

Option 3: Take no action

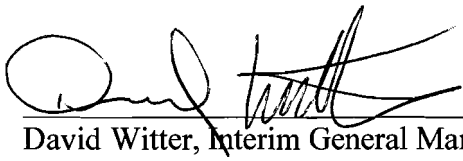
Staff Recommendation:

Option 1

Support Documents Attached:
Draft Administrative Regulation No. 5011
Draft Administrative Regulation No. 5013
Draft Administrative Regulation No. 1041
Draft Action Plan Outline



Liz Mansfield, Acting Director
Environmental Compliance and Water Policy



David Witter, Interim General Manager

El Dorado Irrigation District

AR 5011 Water Supply Management Conditions

The District recognizes that variations in weather patterns can cause watersheds to yield different quantities of water supply in any given year. In some years, dry weather or drought conditions may occur which result in varying degrees of water shortage. The District also recognizes that future climate change may impact the intensity and duration of future droughts.

The actions required to respond to both near- and long-term changing water supply conditions are outlined in the District's *Drought Preparedness Plan*, adopted by the Board of Directors on _____. The following water supply management conditions, and corresponding drought stages, describe the incremental steps needed to manage increasing levels of water shortage.

AR 5011.1 Water supply normal and unrestricted Drought Stage Zero – Ongoing water conservation

Stage Zero is in effect at all times unless another subsequent stage is declared. Stage Zero reflects periods when normal water supplies and normal distribution capacity are available, and the District anticipates the ability to meet the unrestricted demands of its customers. A prohibition of water waste will be in effect during both normal and restricted water supply conditions.

AR 5011.2 Water supply slightly restricted Drought Stage 1 – Voluntary reductions in use

The objective of Stage 1 is to initiate public awareness of predicted water shortage conditions, and encourage voluntary water conservation to decrease normal demand up to 15%.

AR 5011.3 Water supply moderately restricted
Drought Stage 2 – Voluntary and mandatory reductions

The objective of Stage 2 is to increase public understanding of worsening water supply conditions, encourage voluntary water conservation measures, and then if necessary, enforce mandatory conservation measures in order to decrease normal demand up to 30%.

AR 5011.4 Water supply severely restricted
Drought Stage 3 – Mandatory restrictions

The objective of Stage 3 is to enforce extensive mandatory restrictions on water use, and implement water rationing to decrease normal demand up to 50% to ensure that water use is limited to health and safety purposes.

AR 5011.5 Declared water shortage emergencies

The General Manager may also declare a water shortage emergency due to an existing condition or when there is a high probability that a condition will be realized in the near future. Such conditions may include an unexpected disruption of supply, storage, or distribution system facilities.

El Dorado Irrigation District

AR 5013 Water Service Interruptions or Restrictions

Water service interruptions or restrictions may occur during certain water supply conditions, especially Drought Stages 2 and 3, and water shortage emergencies as declared by the General Manager. The District may, with prior notification, temporarily remove or lock off meters or otherwise interrupt water service to classifications not assigned for human consumption.

Irrigation and agricultural services provided by the District may be subject to an interruption or restriction under these conditions. Construction fire hydrant meters or other temporary water meter services provided by the District may also be subject to removal, lock-off, restriction, or discontinuance.

The District may also restrict water availability to construction fire hydrant meters in certain locations due to constraints in the distribution system.

AR 5013.1 Violations

The District reserves the right to interrupt or restrict, without prior notice, any irrigation or agricultural service, construction, or temporary meter that is found to violate the restrictions imposed by a water shortage condition.

AR 5013.2 Service interruptions due to planned or unplanned maintenance

The District reserves the right at any and all times to shut off water delivery or reduce pressure for the purpose of maintenance or making repairs and alterations to the water system. Whenever possible, advance notice of interruption of service will be given to all affected water users.

El Dorado Irrigation District

AR 1041 Water Waste Prohibition

AR 1041.1 Purpose

The District prohibits uses of District-supplied raw, potable, and recycled water that constitute water waste. The objective is to encourage reasonable use of water supplies by prohibiting all intentional or unintentional water waste, including the use of wasteful equipment or techniques, when a reasonable solution or alternative is available. See AR 5011 for additional water waste regulations that apply during declared drought conditions.

AR 1041.2 Definition of Water Waste

Any of the following acts or omissions, whether willful or negligent, shall constitute the waste of water.

A. Causing or permitting water to discharge, flow, or run to waste into any gutter, sanitary sewer, water course, or storm drain, or to any adjacent lot, from any tap, hose, faucet, pipe, sprinkler, or nozzle. In the case of irrigation, "discharge," "flow," or "run to waste" means that the earth intended to be irrigated has been saturated with water to the point that excess water flows over the earth to waste. In the case of washing, "discharge," "flow," or "run to waste" means that water in excess of that necessary to wash, wet or clean the dirty or dusty object, such as an automobile, sidewalk, or parking area, flows to waste.
B. Allowing water fixtures or heating or cooling devices to leak or discharge.
C. Maintaining ponds, waterways, decorative basins, or swimming pools without water recirculation devices.
D. Backwashing so as to discharge to waste swimming pools, decorative basins, or ponds in excess of the frequency reasonably necessary to maintain the clarity and cleanliness of the water.
E. Operation of an irrigation system that applies water to an impervious surface or that is in disrepair.
F. Use of a water hose not equipped with a control nozzle capable of completely shutting off the flow of water except when positive pressure to leave the hose on is applied.
G. Irrigation of landscaping during rainfall.
H. Overfilling of any pond, pool, or fountain that results in water discharging to waste.

AR 1041.3 Exceptions

Notwithstanding AR 1041.3, the following acts do not constitute the waste of water.

A. Flow resulting from temporary water supply system, water fixture, or heating/cooling device failures or malfunctions lasting 48 hours or less.
B. Flow resulting from firefighting or routine inspection of fire hydrants or from fire training activities.
C. Water applied to abate spills of flammable or other hazardous materials, where water is an appropriate abatement methodology.
D. Water applied to prevent or abate imminent health, safety, or accident hazards when alternate methods are not available.

AR 1041.4 Informing District Customers of the Regulation

The District shall inform customers at least once a year of the water waste regulation, either through a special item in the newsletter that accompanies each two-month bill or as a separate insert in the bill.

AR 1041.5 Enforcement

To enforce this regulation, District personnel will follow the process outlined in AR 1041.6, Penalties for Violation of the District's Water Waste Regulation.

AR 1041.6 Penalties for Violation of the District's Water Waste Regulation

District personnel may report or receive reports of violations of AR 1041, which prohibits uses of raw, potable, and recycled water that result in waste. In the case of the first reported failure to comply with the provisions of AR 1041, the District shall issue to the customer a written notice of the water waste violation. In each instance of subsequent failure to comply, the District shall issue a written notice and may levy a fee on the violator's water bill of $45 or 20% of the two-month water bill, whichever is greater, or issue a citation punishable by a fine of up to $100.00. Unpaid fees or fines are subject to the property lien procedure of Water Code section 25806. Upon issuance of a third notice of water waste within a twenty-four month period, the District may discontinue service of the water supply—raw, potable, or recycled water—that has been wasted.

If service is discontinued due to violations of this regulation, a reconnection fee of $100.00 per disconnection event will be charged. Reconnection will not take place until satisfactory remediation of the violation has occurred.

AR 1041.7 Appeal and Hearing

A customer may appeal any notice of water waste violation by filing a written request for a hearing with the District's General Counsel within seven calendar days after receiving the notice. The appeal shall identify the property and state the grounds of appeal together with all material facts in support of it. Appeals will be heard by the General Counsel or her or his designee. The filing of a request for hearing shall stay any consequences for violation until the appeal is decided.

When a hearing is requested, the hearing officer shall send written notice to the appellant by certified mail, return receipt requested, stating the time and place of the hearing. Hearing procedures shall be informal, but serve the goals of proper decorum and the pursuit of the truth. At the hearing, the appellant shall have the right to present information as to the alleged facts upon which the notice was issued, and as to any other facts that may aid the hearing officer in determining whether a violation has occurred and, if so, the appropriate consequences.

Within ten calendar days after the close of the hearing, the hearing officer shall issue a written determination either upholding, reversing, or modifying the notice of water waste violation, and briefly stating the reasons that support the determination. Failure to issue a written determination within ten calendar days shall automatically reverse the notice of water waste violation. The hearing officer's written determination shall constitute the District's final action.

EID Drought Action Plan

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APPENDIX G

Best Management Practices Activity Reports

CUWCC BMP RETAIL COVERAGE REPORT 2009-2010

Foundation Best Management Practices for Urban Water Efficiency

Agency: El Dorado Irrigation District **District Name:** El Dorado Irrigation District **CUWCC Unit #:** 6293
Retail

Primary Contact Sharon Fraser **Telephone** 530-642-4112 **Email:** sfraser@eid.org

Compliance Option Chosen By Reporting Agency:
(Traditional, Flex Track or GPCD)
GPCD if used:

GPCD in 2010	**253**
GPCD Target for 2018	230

Year	Report	Target		Highest Acceptable Bound	
		% Base	GPCD	% Base	GPCD
2010	1	96.4%	271	100%	281
2012	2	92.8%	261	96%	271
2014	3	89.2%	250	93%	261
2016	4	85.6%	240	89%	250
2018	5	82.0%	230	82%	230

Not on Track if 2010 GPCD is > than target

GPCD in 2010	253
Highest Acceptable GPCD for 2010	281

On Track

Agency: El Dorado Irrigation District **District Name:** El Dorado Irrigation District **CUWCC Unit #:** 6293
Retail

CUWCC BMP RETAIL COVERAGE REPORT 2009-2010

Foundation Best Management Practices for Urban Water Efficiency

Foundational BMPs

BMP 1.1 Operational Practices

		2009	2010	Conservation Coordinator provided with necessary resources to implement BMPs?
1.Conservation Coordinator provided with necessary resources to implement BMPs?	Name	Sharon Fraser	Sharon Fraser	
	Title	Water Conservation Coordinator	Water Conservation Coordinator	
	Email		sfraser@eid.org	
		On Track	On Track	

2. Water waste prevention documentation				
	Descriptive File	0		
	Descriptive File 2010		0	On Track if any one of the 6 ordinance actions done, plus documentation or links provided
	URL	EID adopted Administrative Regulation No. 1041 - Water		
	URL 2010		http://www.eid.org/doc_lib/02_dist_info/AR1041-Rev-2_20090327.pdf	
	Describe Ordinance Terms	EID adopted Administrative Regulation No. 1041 - Water		
	Describe Ordinance Terms 2010		EID adopted Administrative Regulation No. 1041 - Water Waste Prohibition - in February 2008. This regulation is within the legal authority	
		On Track	On Track	

Agency: El Dorado Irrigation District | District Name: El Dorado Irrigation District | CUWCC Unit #: 6293

Retail

CUWCC BMP RETAIL COVERAGE REPORT 2009-2010

Foundation Best Management Practices for Urban Water Efficiency

BMP 1.2 Water Loss Control

	2009		
Complete a prescreening Audit	yes	On Track	On Track if Yes
Metered Sales	32,141		
Verifiable Other Uses	194		
Total Supply	40,660		
(Metered Sales + System uses)/ Total Supply >0.89	0.80	Not on Track	On Track if =>.89, Not on Track if No
If ratio is less than 0.9, complete a full scale Audit in 2009?	Yes	On Track	On Track if Yes
Verify Data with Records on File?	Yes	On Track	On Track if Yes
Operate a system Leak Detection Program?	Yes	On Track	On Track if Yes

	2010		
Compile Standard Water Audit using AWWA Software?	Yes	On Track	On Track if Yes, Not on Track if No
AWWA file provided to CUWCC?	EID_EID_6293_ 2010_AWWA_WaterAudit.xls	On Track	On Track if Yes, Not on Track if No
AWWA Water Audit Validity Score?	78		Info only until 2012
Completed Training in AWWA Audit Method?	yes		
Completed Training in Component Analysis Process?	No		Info only until 2012
Complete Component Analysis?	No		Info only until 2012
Repaired all leaks and breaks to the extent cost effective?	Yes	On Track	On Track if Yes, Not on Track if No
Locate and repair unreported leaks to the extent cost effective.	Yes	On Track	On Track if Yes, Not on Track if No
Maintain a record-keeping system for the repair of reported leaks, including time of report, leak location, type of leaking pipe segment or fitting, and leak running time from report to repair.			Info only until 2012

Provided 7 types of Water Loss Control Info

Leaks Repaired	Value Real Losses	Value Apparent Losses	Miles Surveyed	Press Reduction	Cost of Interventions	Water Saved
709	$ 563,598	$ 416,963	0	Yes	$ -	0

Info only until 2012

Agency: El Dorado Irrigation District District Name: El Dorado Irrigation District CUWCC Unit #: 6293
Retail

CUWCC BMP RETAIL COVERAGE REPORT 2009-2010

Foundation Best Management Practices for Urban Water Efficiency

1.3 METERING WITH COMMODITY RATES FOR ALL NEW CONNECTIONS AND RETROFIT OF EXISTING CONNECTIONS

If signed MOU prior to 31 Dec 1997, On Track if all connections metered; If signed after 31 Dec 1997, complete meter installations by 1 July 2012 or within 6 yrs of signing and 20% biannual reduction of unmetered connections.

	2009		2010		
Exemption or 'At least as Effective As' accepted by CUWCC					
Numbered Unmetered Accounts	138	Not onTrack	0	On Track	On Track if no unmetered accounts
Metered Accounts billed by volume of use	Yes	On Track	Yes	On Track	Volumetric billing required for all connections on same schedule as metering
Number of CII accounts with Mixed Use meters	1,404		1,196		Info only
Conducted a feasibility study to assess merits of a program to provide incentives to switch mixed-use accounts to dedicated landscape meters?	No	On Track	No	On Track	Info only, due 2011
Feasibility Study provided to CUWCC?	No	On Track	No	On Track	Info only, due 2011
Completed a written plan, policy or program to test, repair and replace meters	Yes	On Track	Yes	On Track	On Track if Yes, Not on Track if No

CUWCC BMP RETAIL COVERAGE REPORT 2009-2010

Foundation Best Management Practices for Urban Water Efficiency

Agency: El Dorado Irrigation District **District Name:** El Dorado Irrigation District **CUWCC Unit #:** 6293
Retail
Coverage Report Date: June 15, 2011

Primary Contact Sharon Fraser **Email:** sfraser@eid.org

1.4 Retail Conservation Pricing

Metered Water Rate Structure

Date 2009 data received June 1, 2011
Date 2010 data received June 1, 2011

On Track if: Increasing Block, Uniform, Allocation, Standby Service; Not on Track if otherwise

Customer Class	2009 Rate Type	Conserving Rate?
Single-Family	Increasing Block	Yes
Multi-Family	Uniform	Yes
Commercial	Uniform	Yes
Dedicated Irrigation	Increasing Block	Yes
Agricultural	Increasing Block	Yes
	On Track	

Customer Class	2010 Rate Type	Conserving Rate?
Single-Family	Increasing Block	Yes
Multi-Family	Uniform	Yes
Commercial	Uniform	Yes
Dedicated Irrigation	Increasing Block	Yes
Agricultural	Increasing Block	Yes
	On Track	

Year Volumetric Rates began for Agencies with some Unmetered Accounts

Info only

Agencies with Partially Metered Service Areas: If signed MOU prior to 31 Dec. 1997, implementation starts no later than 1July 2010. If signed MOU after 31 Dec. 1997, implementation starts no later than 1July 2013, or within seven years of signing the MOU,

Agency: El Dorado Irrigation District
Retail

District Name: El Dorado Irrigation District

CUWCC Unit #: 6293

Coverage Report Date: June 15, 2011

CUWCC BMP RETAIL COVERAGE REPORT 2009-2010

Foundation Best Management Practices for Urban Water Efficiency

Adequacy of Volumetric Rates) for Agencies with No Unmetered Accounts

Customer Class	2009 Rate Type	2009 Volumetric Revenues $1000s	2010 Rate Type	2010 Volumetric Revenues $1000s
Single-Family	Increasing Block	$ 11,603	Single-Family	$ 8,863
Multi-Family	Uniform	$ 883	Multi-Family	$ 754
Commercial	Uniform	$ 1,799	Commercial	$ 815
Dedicated Irrigation	Increasing Block	$ 390	Dedicated Irrigation	$ 814
Agricultural	Increasing Block	$ 241	Agricultural	$ 223
Other		$ 360		$ 306
Select a Customer Type		$ -		$ -
Total Revenue Commodity Charges (V):		$ 15,276		$ 11,775
Total Revenue Fixed Charges (M):		$ 7,547		$ 5,887
Calculate: V / (V + M):		67%		67%
		On Track		On Track

Agency Choices for rates:

A) Agencies signing MOU prior to 13 June2007, implementation starts 1 July2007: On Track if (V / (V + M) ≥ 70% x .8 = **56% for 2009** and 70%x0.90 = **63% for 2010**; Not on track if (V / (V + M)) < 70%;

B) Use Canadian model. Agencies signing MOU after 13June2007, implementation starts July 1 of year following signing.

Canadian Water & Wastewater Rate Design Model Used and Provided to CUWCC	**No** On Track	**No** On Track
If Canadian Model is used, was 1 year or 3 year period applied?		

Wastewater Rates

	2009	If 'No', then wastewater rate info not required.	2010
Does Agency Provide Sewer Service?	**Yes**		**Yes**

Customer Class	2009 Rate Type	Conserving Rate?	Customer Class	2010 Rate Type	Conserving Rate?
Single-Family	Uniform	Yes	Single-Family	Uniform	Yes
Multi-Family	Uniform	Yes	Multi-Family	Uniform	Yes
Commercial	Uniform	Yes	Commercial	Uniform	Yes
Other	Select a Rate Structure		Other	Select a Rate Structure	
	Select a Rate Structure			Select a Rate Structure	
	Select a Rate Structure			Select a Rate Structure	
	Select a Rate Structure			Select a Rate Structure	
	On Track			On Track	

On Track if: 'Increasing Block', 'Uniform', 'based on long term marginal cost' or 'next unit of capacity'

CUWCC BMP RETAIL COVERAGE REPORT 2009-2010

Foundation Best Management Practices for Urban Water Efficiency

BMP 2. EDUCATION PROGRAMS

BMP 2.1 Public Outreach Actions Implemented and Reported to CUWCC

	2009	2010
1) Contacts with the public (minimum = 4 times per year)	12	16
2) Water supplier contacts with media (minimum = 4 times per year, i.e., at least quarterly).	24	14
3) An actively maintained website that is updated regularly (minimum = 4 times per year, i.e., at least quarterly).	Yes	Yes
4) Description of materials used to meet minimum requirement.	Newsletter articles on conservation Website Email Messages General water conservation information Articles or stories resulting from outreach News releases Newspaper contacts Written editorials	Newsletter articles on conservation Newsletter articles on conservation Website Email Messages Articles or stories resulting from outreach News releases Radio contacts Select a type of media contact
5) Annual budget for public outreach program.	$ 70,547	$ 119,039
6) Description of all other outreach programs	Description is too large for text area. Data will be stored in the BMP Reporting database when online.	Description is too large for text area. Data will be stored in the BMP Reporting database when online.
	On Track	**On Track**

All 6 action types implemented and reported to CUWCC to be 'On Track')

CUWCC BMP RETAIL COVERAGE REPORT 2009-2010

Foundation Best Management Practices for Urban Water Efficiency

2.2 School Education Programs Implemented and Reported to CUWCC

	2009	2010	
Does a wholesale agency implement School Education Programs for this unility's benefit?	Yes	Yes	
Name of Wholesale Supplier?	Sacramento Regional Water Authority	Sacramento Regional Water Authority	
1) Curriculum materials developed and/or provided by agency	• Student supplements, written by an award-winning environmental educator and edited by water agency personnel. • Teaching materials, online Be Water Smart teacher guides and activities • California Waterways map • Student contests for K-4th grades and 5t	• Student supplements, written by an award-winning environmental educator and edited by water agency personnel. • Teaching materials, online Be Water Smart teacher guides and activities • California Waterways map • Student contests for K-4th grades and 5t	Yes/ No
2) Materials meet state education framework requirements and are grade-level appropriate?	Yes	Yes	All 5 actions types implemented and reported to CUWCC to be
3) Materials Distributed to K-6?	Yes	Yes	
Describe K-6 Materials	• Student supplements, written by an award-winning environmental educator and edited by water agency personnel. • Teaching materials, online Be Water Smart teacher guides and activities • California Waterways map • K-4 will receive a class set of “Water C	• Student supplements, written by an award-winning environmental educator and edited by water agency personnel. • Teaching materials, online Be Water Smart teacher guides and activities • California Waterways map • K-4 will receive a class set of “Water C	Describe materials to meet minimum requirements
Materials distributed to 7-12 students?	Yes	Yes	Info Only
4) Annual budget for school education program.	$ 24,000	$ 24,000	
5) Description of all other water supplier education programs	Educational materials are available to all local schools and youth programs within the EID service area and the City of Placerville. The materials include interactive classroom booklets for students (K-8) concerning water conservation, the water cycle, wa	Educational materials are available to all local schools and youth programs within the EID service area and the City of Placerville. The materials include interactive classroom booklets for students (K-8) concerning water conservation, the water cycle, wa	
	See Wholesale Report 0 **On Track**	**See Wholesale Report** 0 **On Track**	

El Dorado Irrigation District

Jenkinson Lake in winter