
Existing Water Supply and Policy

3.1 INTRODUCTION

This chapter presents an overview of existing water supplies, rights and permits, and contracts available to El Dorado County’s water purveyors and others. Details were obtained from available reports and interviews with water purveyor and County personnel. This chapter also describes the various state and federal policies that regulate the use of these water sources.

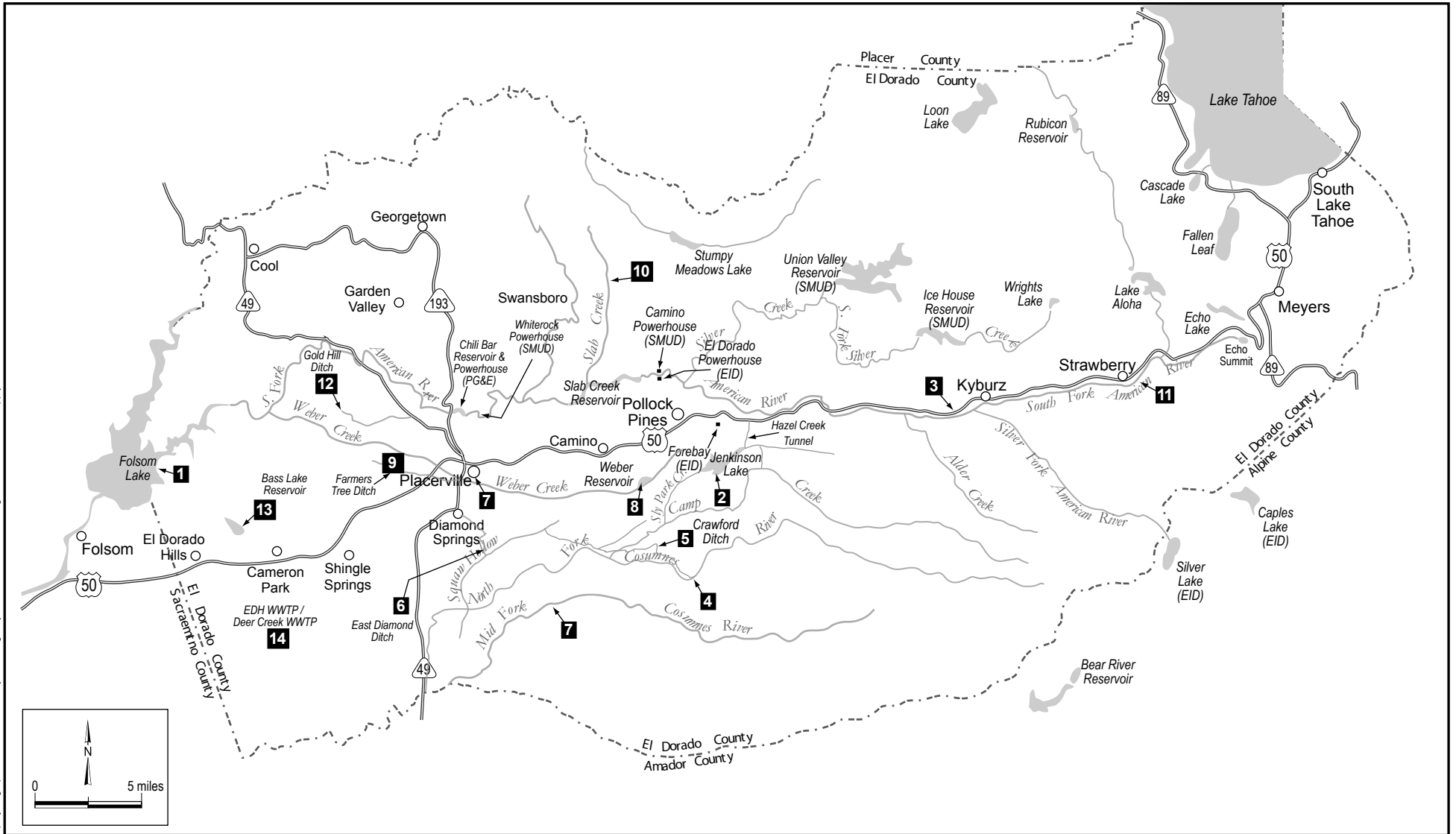
3.2 EL DORADO COUNTY WATER AGENCY

The Water Agency holds no water entitlements at this time. The Agency is working with the U.S. Bureau of Reclamation (USBR) to secure 15,000 acre-feet of water from Folsom Lake as authorized under Public Law (PL) 101-514 and then will transfer that water through contracts with El Dorado Irrigation District (EID) and Georgetown Divide Public Utility District (GDPUD). The Water Agency, in its role with the El Dorado Water and Power Authority (EDWPA), has also taken the lead in negotiating the SMUD Cooperation Agreement, which allows use of SMUD’s Upper American River Project to develop a water supply of up to 40,000 AF and is currently pursuing water rights in association with this project. These supplies will be discussed in more detail in Chapter 5.

3.3 EL DORADO IRRIGATION DISTRICT

The EID water supply is by far the most complex of the systems in El Dorado County and comes from a variety of sources. The following general descriptions of these sources and the accompanying figures and tables are taken primarily from the District’s draft *Water Supply Master Plan*¹ but have been reviewed and updated by EID staff for purposes of this report. The approximate location of each source is shown in **Figure 3-1**, and diversion rates, storage amounts, and other water rights information are summarized in **Table 3-1**.

¹ See Appendix A (Bibliography), No. 1



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|---|--|---|
| 1 Folsom Lake | 6 Squaw Hollow Creek / East Diamond Ditch | 11 South Fork American River / Strawberry |
| 2 Jenkinson Lake / Camp, Park, & Hazel Creeks | 7 Middle Fork Cosumnes River / Outingdale | 12 Hangtown Creek / Gold Hill Ditch |
| 3 South Fork American River / Kyburz | 8 Weber Reservoir / Weber Dam | 13 Bass Lake Reservoir |
| 4 North Fork Cosumnes River / North Fork Extension | 9 Weber Creek / Farmer's Free Ditch | 14 Recycled Water / EDH and Deer Creek WWTPs |
| 5 Clear Creek / Crawford Ditch | 10 Slab Creek / Summerfield Ditch | |

Figure 3-1
Location of Existing Water Supply Sources

Table 3-1
Existing EID Water Sources

Source No.	Water Source	Facility Name or Location	Contract / Agreement or Appropriator	Water Right Application Number	Water Right Permit Number	Water Right License Number	Maximum Diversion Rate	Entitlement or Storage	Notes
1	Folsom Lake	EID Raw Water Pump Station	USBR / EID Contract 14-06-200-1375A (El Dorado Hills)	13370, 13371 USBR	11315 & 6 USBR	USBR	19.5 mgd (30.2 cfs)	7,500 af/yr	a
1	Folsom Lake	EID Raw Water Pump Station	USBR / EID Contract	Included above with El Dorado Hills	Included above with El Dorado Hills	USBR	Included above	50 af/yr	a
2	Jenkinson Lake (Camp Creek, Hazel Creek, Sly Park Creek)	Sly Park Reservoir and Dam	EID 23,000 af of average annual yield	13707 & 8 5645A, 2270	10473 & 4 12258, 2631	11835 11836	500 cfs Inlet (Camp Creek and 125 cfs Outlet)	EID water right of 33,400 af/yr	b, c
2	Camp Creek	Jenkinson Lake	EID	Pre-1914	N/A	N/A	12.5 cfs	None	c
3	South Fork American River at Kyburz and Project 184 Reservoir	El Dorado Forebay Diversion to EID Main Ditch	EID	Pre-1914	N/A	N/A	40 cfs	15,080 af/yr	d
3	South Fork American River at Folsom	Project 184	EID	A005645B	Permit 21112		156 cfs up to 17,000 af/yr	Folsom Reservoir	m
4	North Fork Cosumnes River	North Fork Cosumnes Extension	EID	Pre-1914	N/A	N/A	15 cfs	5,000 af/yr	e
5	Clear Creek	Crawford Ditch	EID	Pre-1914	N/A	N/A	15 cfs	5,000 af/yr	f
6	Squaw Hollow Creek	East Diamond Ditch	EID	Pre-1914	N/A	N/A	Natural Flow	None	g
7	Middle Fork Cosumnes River	Outingdale Subdivision	EID	7478	4071	Pending	0.26 cfs	104 af/yr	
8	Weber Reservoir	Weber Dam	EID	1692	1053	2184	Natural Flow	(1,145 af/yr)	
9	Weber Creek	Farmer's Free Ditch	Missouri Flat Ditch Association & EID 1930 Agreement	Pre-1914	N/A	N/A	7 cfs	None	h
10	Slab Creek	Summerfield Ditch	EID	Pre-1914	N/A	N/A	10 cfs	None	i
11	South Fork American River	Strawberry	EID	Prescriptive Statement 10717	N/A	N/A	0.222 cfs	50 af/yr (200,000 gal storage tank)	j
11	Unnamed Spring	Strawberry	EID	15140	9467	11401	0.011 cfs	Included above with strawberry	j

Table 3-1
Existing EID Water Sources

Source No.	Water Source	Facility Name or Location	Contract / Agreement or Appropriator	Water Right Application Number	Water Right Permit Number	Water Right License Number	Maximum Diversion Rate	Entitlement or Storage	Notes
11	Unnamed Stream	Strawberry	EID	11675	6999	11400	0.026 cfs	Included above with strawberry	j
12	Hangtown Creek	Gold Hill Ditch	EID	Pre-1914	N/A	N/A	Natural Flow	None	k
13	Bass Lake Watershed	Bass Lake	EID	Statement 009304	N/A	N/A	Natural Flow	700 af existing capacity	l
14	Recycled Water	EI Dorado Hills and Deer Creek Reclamation Plants	EID	N/A	N/A	N/A	EDH plant 3.0 mgd; DC plant 3.6 mgd	192 af storage at EDHWWTP	

N/A Not Applicable

- [a] The combined supply of 7,550 acre-feet per year is diverted by pump from Folsom Lake to the EI Dorado Hills water treatment plant with a current capacity of 19.5 mgd. This water is then treated and distributed in the EI Dorado Hills service area.
- [b] Reservoir capacity at full pool is 41,000 acre-feet, including dead storage of 480 acre-feet and an allowance of 1,000 acre-feet for sedimentation. The reservoir is operated as two years of storage, with treated water released through the Camino Conduit to Reservoirs 2, and through the Pleasant Oak Main to Reservoir A.
- [c] In addition to the 500 cfs Camp Creek diversion, EID has rights to 12.5 cfs based upon pre-1914 water rights for diversions from Camp Creek at the Camp Creek segment of the Crawford Ditch. When Sly Park Dam was constructed, the point of diversion for these rights was moved upstream from the Camp Creek Ditch, to the diversion dam at the inlet to the Camp Creek tunnel to Jenkinson Lake.
- [d] In October of 1999, the Pacific Gas & Electric Company transferred the water rights for both power generation and consumptive uses to EID for the FERC Project 184. This project includes reservoirs and associated dams, canals, a powerhouse and other facilities. The original water rights claim is dated 1856.
- [e] Diversions are made between April and November each year to meet customer demands on the North Fork Extension and Camp Creek segment of the Crawford Ditch. Tail water flows can also be used to supplement the Clear Creek segment of the Crawford Ditch when available.
- [f] Diversions are made year round into the Crawford Ditch from Clear Creek when available. Supplemental water is also released from Jenkinson Lake into Clear Creek for aesthetic flow purposes (by agreement with homeowners), which are recaptured at Clear Creek diversion dam to meet Crawford Ditch irrigation demands. A 0.5 cfs bypass flow below the diversion dam is now maintained as of 2005.
- [g] Water is released into Squaw Hollow Creek from the end of the Crawford Ditch to supplement natural creek flows diverted to the East Diamond Ditch to serve irrigation customers.
- [h] The natural flows of Weber Creek are rediverted at Folsom Lake through a Warren Act Contract with the USBR for use in EI Dorado Hills, pursuant to pre-1914 rights.
- [i] EID historically made direct diversions from Slab Creek to the Summerfield Ditch to supply irrigation customers. Since 2003, EID has rediverted this water at Folsom Lake through a Warren Act Contract with the USBR for use in EI Dorado Hills, pursuant to pre-1914 rights. ,
- [j] EID makes direct diversions from the South Fork American River by pump. Upgraded water treatment facilities and a 200,000-gallon water storage tank were installed in 1994 to improve water quality and supply reliability. Direct diversions are no longer made from the unnamed spring and stream because of the unreliability of the water supply and water quality.
- [k] Direct diversions were historically made from Hangtown Creek into the Gold Hill Ditch at the west end of Placerville. Since 2003, EID has rediverted this water at Folsom Lake through a Warren Act Contract with the USBR for use in EI Dorado Hills, pursuant to pre-1914 rights.
- [l] The Bass Lake storage is used to supplement the recycled water system during peak summertime demands. Potable water from EID's nearby piped system is used to fill Bass Lake as needed, but is normally scheduled when Jenkinson Lake is full and spilling.
- [m] In 2001, EID received consumptive water right for 17,000 acre-feet of FERC Project 184 water to be taken at Folsom Reservoir.

- **Folsom Lake.** This water supply is based on 1968 El Dorado Hills and 1958 Lake Hills contractual entitlements with the USBR. Through current water service contracts with the USBR for Folsom water, EID is entitled to 7,550 acre-feet per year.
- **Jenkinson Lake (Sly Park Unit of the Central Valley Project).** This project is based on a 1953 USBR contractual entitlement (Water right application numbers 13707 and 13708). EID and the USBR renewed this contract for the purchase of water from Jenkinson Lake. In late 2003, EID completed the transfer of the Sly Park Unit and acquired Jenkinson Lake from the USBR. Federal legislation authorizing the transfer was signed into law in October of 2000 by President Clinton. EID is no longer bound by the USBR contractual limits on operation of the facility and now holds the water rights.
- **South Fork American River and Project 184 Reservoirs.** These sources supply the existing FERC 184 Water Project. This supply is delivered by the El Dorado Canal and Forebay for diversion into the EID Main Ditch for subsequent treatment at the Forebay Water Treatment Plant. The water was formerly purchased under a contract with Pacific Gas & Electric (PG&E) and its predecessor Western States Gas and Electric Co. In 1999, PG&E transferred the water rights for both power generation and consumptive uses to EID.
- **North Fork Cosumnes River, Clear Creek and Squaw Hollow Creek.** EID retains pre-1914 water rights for direct diversion from North Fork Cosumnes River, Clear Creek and Squaw Hollow Creek for serving the Crawford Ditch System.
- **Middle Fork Cosumnes River.** EID holds a 1933 appropriative water right for direct diversion from the Middle Fork Cosumnes River serving the Outingdale Subdivision.
- **Weber Reservoir.** EID holds a 1920 appropriative water right for storage in Weber Reservoir.
- **Weber Creek.** EID retains a pre-1914 water right for direct diversion from Weber Creek. Since 2003, EID has rediverted this water at Folsom Lake through a temporary Warren Act Contract with the USBR for use in El Dorado Hills, pursuant to the pre-1914 right.

- **Slab Creek.** EID retains a pre-1914 water right for direct diversion from Slab Creek. Since 2003, EID has rediverted this water at Folsom Lake through a Warren Act Contract with the USBR for use in El Dorado Hills, pursuant to the pre-1914 right.
- **South Fork American River and Unnamed Spring and Stream.** EID retains prescriptive and riparian rights for direct diversion by pump from South Fork American River, as well as a 1947 appropriative water right for direct diversions from an unnamed stream and an unnamed spring.
- **Hangtown Creek.** EID retains a pre-1914 water right for direct diversion, first used by a predecessor to EID during the 1850s. Since 2003, EID has rediverted this water at Folsom Lake through a Warren Act Contract with the USBR for use in El Dorado Hills, pursuant to the pre-1914 right.
- **Bass Lake Reservoir.** EID retains a pre-1914 water right for collection of the surrounding watershed, tributary to Bass Lake. Water was first used at this site in 1866.
- **Recycled Water.** Recycled water from the El Dorado Hills reclamation plant has been used for industrial purposes and golf course irrigation since 1979. Recycled water has been used from the Deer Creek reclamation plant for golf course, landscape, and road median irrigation since 1994. A noteworthy accomplishment has been the use of recycled water for residential landscape irrigation in both front and backyards in El Dorado Hills since 1998. Currently, EID supplies over 3,000 acre-feet of recycled water and plans to provide approximately 7,000 acre-feet by 2020.
- **South Fork American River and Project 184 Reservoirs.** In 1991, EID and the El Dorado County Water Agency jointly submitted an application for diversion and consumptive use of 17,000 acre-feet of water from Project 184. In 2001, EID received Water Right Permit No. 21112 allowing additional water to be diverted from Folsom Lake for consumptive purposes, subject to certain terms and conditions. In 2006, an Appellate Court affirmed a lower court decision in favor of EID, ruling that Term 91 could not be applied to restrict the use of the 17,000 acre-feet. The USBR has not yet executed a long term Warren Act Contract to allow EID to access this water.

Actual water availability is not equal to the sum of all water entitlements. Several factors influence water availability from EID's entitlements such as use history, infrastructure constraints, and seasonal diversion and storage policies. Firm yield for EID's water supply has been established through computer modeling and is defined as the yield that the integrated supply system can reliably deliver in 95 percent of the years, while incurring shortages in no more than 5 percent of the years. In 2006 EID adopted a supply based system firm yield of 60,550 acre-feet per year. The infrastructure constrained firm yield is 47,000 acre-feet. Safe yield is estimated by this Water Resource Plan at 58,753 acre-feet per year.

3.4 GEORGETOWN DIVIDE PUBLIC UTILITY DISTRICT

GDPUD's source of water is the Stumpy Meadows project. The reservoir, built in 1962, has a capacity of 20,000 acre-feet and a firm yield of 12,200 acre-feet. Safe yield is estimated at 10,500 acre-feet. Components of the Stumpy Meadows project include:

- **Pilot Creek** – GDPUD holds a Pre-1914 water right to divert and store water from Pilot Creek
- **Pilot Creek** – GDPUD retains a Post 1914 appropriative water right to divert and store water from Pilot Creek
- **Mutton Canyon** – GDPUD retains a Pre-1914 water right to divert water and store water from Mutton Canyon
- **Bacon Canyon** – GDPUD retains a Pre-1914 water right to divert water and store water from Bacon Canyon
- **Deep Canyon** – GDPUD retains a Pre-1914 water right to divert water and store water from Deep Canyon
- **Structure 2** –GDPUD holds a Pre-1914 water right to divert water and store water from an un-named tributary to Pilot Creek
- **Structures 3-7** – GDPUD holds a Post 1914 permit to divert water from five un-named tributaries to Pilot Creek
- **Otter Creek** – GDPUD holds a Post 1914 permit to divert water from Otter Creek
- **Onion Creek** – GDPUD holds a Post 1914 permit to divert water from Onion Creek

Firm yield for the GDPUD water supply was established through modeling and is defined as the yield that the integrated supply system can reliably deliver in 95 percent of the years, while incurring shortages of no more than 10 percent annually for domestic service and 50 percent for untreated water in 5 percent of the years. GDPUD has adopted a system firm yield of 12,200 acre-feet per year. Safe yield is estimated to be 10,500 acre-feet per year.

3.5 GRIZZLY FLAT COMMUNITY SERVICES DISTRICT

GFCSD's current water supply comes from Big Canyon and North Canyon, two surface water tributaries in the North Fork Cosumnes River Basin. Use of this water is allowed under a pre-1914 water right for the direct diversion of available flows from these two streams, at two points of diversions into the Eagle Ditch. The two streams are fed by seasonal rainfall and snowmelt and are also part of a spring-fed system.

At the head of the supply system, below the confluence of North Canyon and an unnamed tributary a diversion conveys water into the upper reach of GFCSD's Eagle Ditch. At the tail end of the upper reach, flow from Big Canyon is diverted into the system and the combined flow is conveyed through the lower reach of the Eagle Ditch to the District's raw water storage reservoir. An adjacent water treatment plant treats the water and releases it into the distribution system for the Grizzly Park subdivision.³

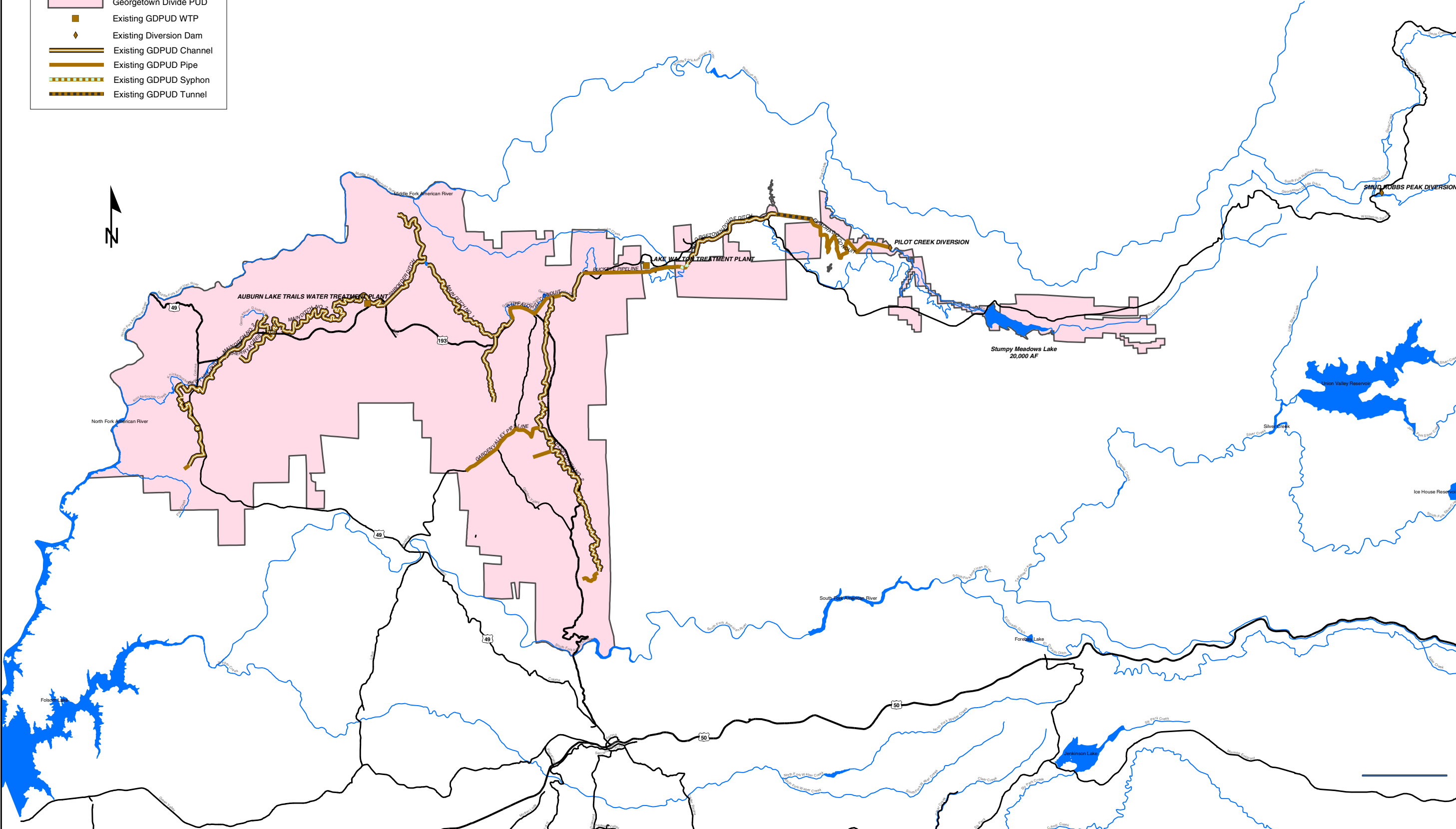
The firm yield of the direct diversions which could be conveyed to the water treatment plant was calculated by estimating the quantity of direct diversion, through hydraulic analysis, available to Grizzly Flats CSD, including the reservoir seepage loss, the monthly water use distribution, and evaporation loss. Based on this analysis in the 1998 Borcalli report³, the safe yield of direct diversions conveyed to the water treatment plant was calculated to 143.5 acre-feet per year.

The District was issued two permits by the State Water Resources Control Board (SWRCB) on August 18, 1989 (Permit 20357 and Permit 20358). Permit 20357 authorizes the District to divert water from an unnamed tributary to the Steely Fork of the Cosumnes River, the total not to exceed 3 acre-feet per year from November 1 through June 15. According to the Borcalli Report (1998), this water flows from Grizzly Creek into Porters Pond for fire suppression purposes. Questions have been raised regarding contamination of this water from septic systems located near the pond. There are currently no facilities to treat this water.

Georgetown Divide Public Utility District

LEGEND

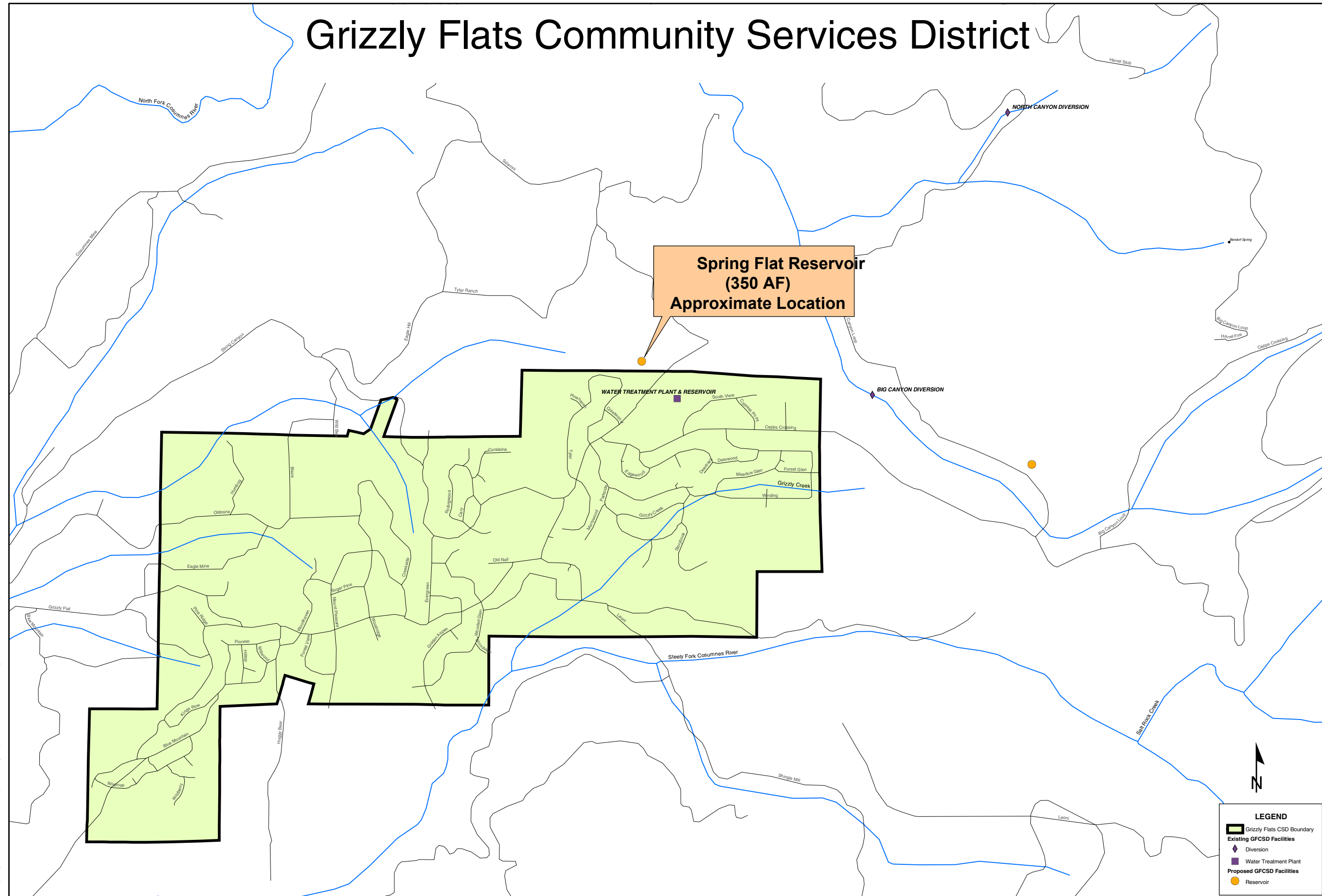
- Georgetown Divide PUD
- Existing GDPUD WTP
- Existing Diversion Dam
- Existing GDPUD Channel
- Existing GDPUD Pipe
- Existing GDPUD Syphon
- Existing GDPUD Tunnel



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Figure 3-2
Georgetown Divide Public Utility District System Water Supply

Grizzly Flats Community Services District



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Figure 3-3

Grizzly Flats Community Services District, Water Supply Projects

Permit 20358 authorizes GFCSD to divert water to storage from North Canyon and Big Canyon. The water appropriated under this permit is not to exceed 31 acre-feet per year and is to be collected between November 1 and June 15. This permit is understood to be for diversion to storage rather than for consumption and, therefore, is more than adequate to allow for seasonal storage in the existing raw water reservoir with its active capacity of about 15 acre-feet.

3.6 SOUTH TAHOE PUBLIC UTILITY DISTRICT

STPUD relies solely on groundwater for its water supply. Starting in 1996, the District detected methyl tertiary butyl ether (MTBE) in one of its wells. Since then, the District has removed 13 wells from service or drastically reduced their pumping rates because of numerous MTBE plumes. Litigation with various petroleum suppliers over the groundwater contamination issue was settled in the District's favor in 2002. As of 2006 the District operates 17 active wells with a nominal capacity of 13,742 gallons per minute (gpm) or 19.79 million gallons per day (mgd). The District's system includes 22 storage tanks with an operational storage capacity of 9 million gallons and 11 booster pump stations with a total maximum pumping capacity of 7,019 gpm.

3.7 TAHOE CITY PUBLIC UTILITY DISTRICT

Until 1989, approximately 60 percent of the District's needs were supplied from Lake Tahoe. The U.S. Environmental Protection Agency (EPA) Surface Water Treatment Rule and other prospective surface water regulations and the attendant costs of their implementation prompted the District to convert their water supply to groundwater. The surface water intakes in the lake are maintained as a standby source in case of emergency.

The District is primarily located in Placer County with the Rubicon System serving the area between Meeks Bay and Bliss State Park in El Dorado County. The Rubicon System supply consists of three wells, a booster pump station, and three steel reservoirs. These facilities are reported to be generally in good condition² with some concern expressed for site security and potential fire danger from trees close to the facilities.

The District's Rubicon System facilities include three wells with a total operating capacity of 645 gpm (for two wells; the third is N/A), three storage tanks having a total capacity of 538,000 gallons, and two booster pumps with capacities of 185 gpm each.

² See Appendix A (Bibliography)

3.8 AGRICULTURE

As stated in the previous chapter, virtually all the agricultural water use within El Dorado County occurs on the western slope, and virtually all of the surface water for agricultural use is supplied by EID and GDPUD and is included in those purveyors' water use figures. Agricultural water use outside of the purveyor service areas is generally supplied from individually owned springs, wells and ponds, and water production and use figures are not readily available.

3.9 OTHER USERS

Water for the non-public water purveyors operating in the portion of the Lake Tahoe area within El Dorado County is supplied by groundwater and all indications are that they will continue to do so in the future. Water production capability figures supplied by purveyors that provided information are as follows:

- **Lukens Water Company:** 2,000 gpm from three active wells,
- **Tahoe Keys Homeowners Association:** 5,000 gpm from three active wells, and
- **Tahoe Swiss Village Utility, Inc.:** 150 gpm from one well.

3.10 GROUNDWATER

Groundwater is the source of supply for the purveyors in the South and West Tahoe areas and indications are that groundwater will continue to provide an adequate supply of water to those areas. Settlement of litigation related to MTBE contamination in South Tahoe will likely provide sufficient funding to treat the contaminated groundwater supplies for domestic use.

On the western slope of El Dorado County, however, groundwater occurs primarily in hard rock. In the County, as in other parts of the Sierra Nevada foothills, alluvium consisting of unconsolidated deposits of clay, silt, sand, and gravel laid down by flowing water occurs only in small areas too thin to provide a significant amount of storage. Thus the amount of usable groundwater is limited. A cooperative study entitled Georgetown Divide Water Management Study prepared by the Department of Water Resources⁸ describes water supply alternatives available to the Georgetown Divide area and includes a discussion of the groundwater situation on the western slope. The following is an example from that study.

Many wells are drilled in hard crystalline rock that lies at or near the ground surface or under the thin layers of alluvium. In rock formations, water moves through and is stored in fractures in the rock mass. The width of each fracture usually decreases with depth, causing diminished water flow and storage capacity. The amount of water that can be stored and transmitted in such fractures is generally small compared to the amount that can be held and conveyed in a porous alluvial aquifer.

During the drought of 1976 and 1977, El Dorado County Division of Environmental Health initiated a water well survey canvassing residents with wells in 15 county planning areas. **Table 3-2** lists median depth and estimated production rate for wells in 15 of the planning areas.

Table 3-2
Well Characteristics in El Dorado County

County Planning Area	Number of Wells Surveyed	Median Depth (Feet)	Median Rate (gpm)
Camino-Fruitridge	57	100	5
Cool	29	200	5
El Dorado/Diamond Springs	19	150	4
Finnon	37	150	10
Garden Valley	70	150	10
Gold Hill	2	---	5-10
Kelsey	45	125	4
Latrobe	23	200	5
Lotus-Coloma	66	<100	10
Pilot Hill	21	150	7
Pleasant Valley	199	100	6
Rescue	120	125	10
Shingle Springs	42	125	4
Somerset/Fairplay/Mt. Aukum	---	---	10
Pollock Pines	10	---	8

Source: Calkins, Carla, *Water Well Survey Report*, June 1978

The survey showed that while many residential wells produced 4 to 10 gallons per minute, many had flow rates less than 1 gpm and some had gone dry. Other reports^{6,7} substantiate the limitation of groundwater as a dependable source of water for supplementing public water supply or augmenting surface water storage during droughts. In fact, the contrary may be true where users of groundwater may look to the Districts for service when their wells go dry during droughts. Surveys also indicate that groundwater quality, though satisfactory in most areas of the western slope, is often marginal.

As future development occurs in areas beyond pipeline service, both quantity and quality of groundwater sources could be threatened.

3.11 CALIFORNIA WATER POLICY AND REGULATIONS

This section describes existing regional and statewide water programs being implemented by various water suppliers that are important to recognize in context of the EDCWA water supply plan. The Agency is mindful of these various programs and policies and takes these various programs into consideration when developing the water plan.

This section also presents information on the continuing regulation of both drinking water and wastewater and how these new laws affect or could potentially affect water supply planning.

3.11.1 ASSOCIATION OF CALIFORNIA WATER AGENCIES – THE ACWA BLUEPRINT

ACWA is a statewide non-profit association whose 440 public agency members are responsible for about 90 percent of the water deliveries in California. ACWA is a powerful lobbying organization for the California water community and regularly comments on bills and legislation that could potentially impact their members. ACWA's mission is to assist its members in promoting the development, management and reasonable beneficial use of good quality water at the lowest practical cost in an environmentally balanced manner. The ACWA Blueprint, published in 2005, is an informational document to further educate Californians and elected officials on priority actions needed to sustain the state water supply and economy. The three goals of the ACWA Blueprint are to:

- Find common ground among the diverse voices in the water community and to identify their biggest challenges and agree on actions needed to resolve them;
- Collectively develop a forward-looking action plan for meeting California's future water needs; and
- Create a policy-oriented document that would encourage leaders at the state and federal level to re-engage in water issues and also provide a roadmap for investing California's water future.

The ACWA Blueprint contains 12 primary action plans that their member agencies believe will ensure a safe and reliable water supply for the State. The 12 action plans are:

- Action 1: Improve existing Delta water conveyance system to increase flexibility and enhance water supply, water quality, levee stability and environmental protection in the near term,
- Action 2: Evaluate long-term threats to the Delta levee and conveyance system and pursue actions to reduce risks to the state's water supply and the environment,
- Action 3: Ensure delivery of adequate Colorado River water supplies for Southern California and defend California's water rights on the river,
- Action 4: Implement and fund the Sacramento Valley Water Management Program,
- Action 5: Develop additional groundwater and surface water storage, including proposed surface storage projects that are now under study or are determined to be feasible,
- Action 6: Support and fund efforts to expand recycled water use and implement best management practices for urban and agricultural water use efficiency,
- Action 7: Improve the quality of California's drinking water supplies to safeguard public health and enhance water quality for agriculture and the environment,
- Action 8: Work with local agencies to overcome constraints to developing seawater and brackish groundwater desalination,
- Action 9: Modernize the federal Endangered Species Act,
- Action 10: Expedite Approval Process for voluntary water transfers,
- Action 11: Clarify and expand the state's role in flood control and promote multi-benefit flood control agencies, and
- Action 12: Support Integrated Regional Planning.

EDCWA is a member agency of ACWA and seeks to promote these issues when necessary and appropriate at local and regional levels. Specifically, EDCWA and EDC purveyors are actively engaged in several action steps identified in the ACWA Blueprint. For example:

- This plan identifies new storage reservoirs and water supplies being considered in El Dorado County that will ensure a safe and reliable water supply for residents of the County,
- The El Dorado Irrigation District has supplied recycled water since the 1970's. In the 1990's, the system was expanded to residential irrigation and currently the construction of a seasonal storage reservoir is being studied,
- El Dorado County water purveyors employ various best management practices for urban uses. EID and EDCWA both provide irrigation management systems for the County, and
- EDCWA is currently participating in a Proposition 50 Regional Planning Water Grant with the Cosumnes, American, Bear and Yuba River group (CABY).

3.11.2 INTEGRATED REGIONAL WATER SUPPLY PLANNING

California Proposition 50, the Water Security, Clean Drinking Water, Coastal and Beach Protection Act passed by the California voters in 2002 approved the issuance of a bond to add, among other things, \$500 million for Integrated Resource Water Management. An IRWM plan is a planning document that identifies broadly-supported goals, objectives, strategies, actions and projects within the region. The intent of the IRWM Grant Program is to encourage integrated regional strategies for management of water resources and to provide funding, through competitive grants, for projects that protect communities from drought, protect and improve water quality and improve local water security by reducing dependence on imported water³⁸. The IRWM Grant Program is administered through the DWR and SWRCB. EDCWA is working jointly with other county water suppliers and non-governmental organizations in the CABY Region to submit an implementation grant application to the IRWM grant program.

EDCWA is a participant and a supporter of the CABY IRWMP, which will provide an integrated approach to water management across the region's four watersheds which include the Consumes, American, Bear, and Yuba, to address long-term water supply needs, protection of water quality, and enhancement of environmental and habitat resources. Based on technical knowledge and endorsed

by a united community, the resulting CABY IRWMP actions and projects have significant opportunities to attract local, state and federal grants and other financial support. The CABY group used the Stockholm Environment Institute's Water Evaluation and Planning System (WEAP) model in the preparation of their regional plan. The WEAP framework analyzes climate scenarios, rather than relying upon historical hydrological patterns.

The CABY implementation proposal includes a total of 26 projects that address specific water supply, water quality, groundwater and environmental habitat issues identified in the CABY planning grant application. This proposal signifies the monumental effort of the stakeholders to bring together diverse interests within the region and integrate the individual efforts of organizations that were planning to submit separate Proposition 50 implementation applications. The IRWMP effort was funded by a Proposition 50 planning grant awarded by Department of Water Resources in January 2006 to EID, who administered the \$500,000 grant for the region. The Plan was completed in 2006 and will be updated on a regular basis as additional technical analysis is completed and projects are added. This Water Resources Development and Management Plan significantly contributes to the IRWMP process in that it provides a thorough analysis of the water supply gap in El Dorado County which was addressed on a regional basis in the CABY IRWMP.

CABY Projects in El Dorado County

The CABY Implementation Proposal includes several projects in El Dorado County. These projects involve capital improvements, education and outreach programs, water efficiency/conservation studies, and environmental restoration and preservation. The projects are described below:

El Dorado Irrigation District

Junior High School Water Efficient Landscape Education Program – This program will involve students in 6th through 9th grades in water efficient landscape design through installations at their school site;

Caples Spillway Channel Stabilization - The purpose of this program is to stabilize Caples Spillway Channel and protect environmental and watershed resources. Stabilization will indirectly enhance habitat by minimizing erosion and downstream sediment deposits;

Conservation and Increased Agricultural Water Use Efficiency – The purpose of this project is to expand EID’s irrigation scheduling system for commercial agriculture throughout the CABY region. By monitoring evapotranspiration rates, soil types, and moisture levels, an appropriate irrigation schedule will be developed for each grower;

Evapotranspiration Rates measured in the Cosumnes, American, Bear, and Yuba River Watersheds – This project will establish a weather station that will measure evapotranspiration rates throughout the CABY region. These rates then can be used to develop individual irrigation schedules;

Esmerelda Creek Restoration– This project proposes to restore the lower portion of Esmerelda Creek below the El Dorado Canal diversion, making the creek more hospitable for native riparian species;

Recycled Water Infrastructure Expansion – This project will expand EID’s current recycled water system to meet current and future community landscape water demands. Expanding the recycled water system will enable EID to preserve more potable water;

Outingdale Water System Improvements Project – The purpose of this project is to correct a deficient water system consisting of an unreliable and damaged diversion dam, unreliable raw water intake, inadequate treatment capacity, inadequate water storage capacity, lack of emergency power, and other system deficiencies. In a joint effort with the EDCWA, this project may also analyze the feasibility of bringing a raw surface water source to the South County for agricultural purposes; and

Regional Wastewater/Recycled Water Development Project - This project involves connecting three wastewater systems (Placerville WWTP, Camino Heights WWTP, and Deer Creek WWTP) for the development of a reclaimed water supply. This project would potentially allow a recycled water supply for the City of Folsom.

El Dorado County Water Agency

Regional Water System Reliability and Conservation Project – This project involves improvements in regional ditch conveyance systems, thereby improving raw water conveyance reliability, eliminating seepage, and minimizing evaporation. Ditches within EID, GDPUD, Nevada Irrigation District and Placer County Water Agency have been identified for improvement. The project also includes lining of the GFCSD raw water reservoir and monitoring within the distribution system, and

Groundwater Response to Climate Variation – This study will explore the effect of climate variation on groundwater and private wells within the CABY region. The project will include a review of similar studies in the Sierra Nevada foothills, and a long term well monitoring program. This information will also provide a better understanding of the potential for well contamination from leach fields in the CABY region.

Georgetown Divide Resource Conservation District

Finnon Lake Dam Reconstruction Project – This project entails restoring Finnion Lake, which is in a degraded state, to 350 acre-feet. Reconstruction will enhance fish and wildlife habitat and recreational uses.

3.11.3 CALIFORNIA WATER PLAN (CWP)

The California Department of Water Resources is responsible for statewide water supply planning, prepares the State Water plan, and operates and maintains the California Water Project. The CWP provides a framework for water managers, legislators and the public to consider options and make decisions regarding California's water future. The plan, which is updated every five years, presents basic data and information on California's water resources including water supply evaluation and assessments of agricultural, urban and environmental water uses to quantify the gap between water supplies and uses. The plan also identifies and evaluates existing and proposed statewide demand management and water supply augmentation programs and projects aimed at addressing the State's water needs. The goal of the CWP is to meet State Water Code requirements, develop broad support among those participating in California's water resource planning, and provide useful information for the public, water planners throughout the state, legislators and other decision-makers³⁹.

The EDCWA is part of the Sacramento River Region in the CWP.

3.11.4 CALFED PROGRAM

The CALFED Bay-Delta Program is a unique collaboration among 25 state and federal agencies whose mission is to improve water supplies in California and the health of the San Francisco Bay/Sacramento-San Joaquin River Delta. In 2000, CALFED drafted a 30-year plan described in its programmatic Record of Decision that set forth general goals and laid out a science-based planning process through which they are able to make better, more informed decisions on future projects and programs within their purview. Two years later, the California Bay-Delta Authority was created to oversee the program's implementation and Congress adopted the plan in 2004. CALFED emerged from the water crisis of the 1990s and was shaped by funding crises in the early 2000s. It was seen as an alternative to the costly and time-consuming legal wrangling amongst Delta interests and a way to solve conflicts in the Delta to benefit the system. CALFED has always embodied the most important ideals of government: interagency coordination, collaborative problem solving, and public involvement leading to open and transparent decision-making and accountability.

The California Bay-Delta Authority oversees the implementation of the CALFED Bay-Delta Program for the 25 state and federal agencies working cooperatively to improve the quality and reliability of California's water supplies while restoring the Bay-Delta ecosystem. The California Bay-Delta Act of 2003 established the Authority as the new governance structure and charged it with providing accountability, ensuring balanced implementation, tracking and assessing Program progress, using sound science, assuring public involvement and outreach, and coordinating and integrating related government programs.

The Bay-Delta Plan is a balanced, comprehensive approach to reduce conflicts over limited water supplies and to address the Program's four objectives through 11 major program elements:

- Water Management
- Water Storage
- Water Conveyance
- Water Use Efficiency
- Water Transfers
- Environmental Water Account
- Watershed Management
- Water Quality
- Ecosystem Restoration
- Science
- Levee Integrity

Of the many program elements, Water Storage, Conveyance, Use Efficiency and Water Management are of primary relevance with regard to EDCWA and El Dorado County western slope purveyors plans. Water Storage and Conveyance are discussed in the Project Water Supply Needs chapter of this report. Additional information on Water Use Efficiency and Water Management on the state level is provided in the following sections. Information specific to water use efficiency and management programs in El Dorado County is provided in the Chapter 9, Water Efficiency.

3.11.5 WATER USE EFFICIENCY

Through competitive processes that will fast-track water conservation and recycling projects, the CALFED Bay-Delta Program aims to generate significant water supply, water quality and ecosystem benefits in the short term by:

- Reducing water demand through "real water" conservation;
- Improving water quality by altering volume, concentration, timing and location of return flows; and
- Improving ecosystem health by increasing in-stream flows where necessary to achieve targeted benefits.

Some of the accomplishments of the program include:

- \$13.3 million in water conservation grants and loans for 65 projects in 2001—including 37 urban and 28 agricultural projects. These projects were geographically diverse and were matched with over \$9.1 million in local funding.
 - Urban projects range from a voucher incentive program for clothes washers to more efficient landscape water programs
 - Agricultural projects range from canal lining to buried drip irrigation

Funded projects will collectively save 30,000 acre-feet of water, improve water quality, and save energy. These projects include:

- Two water recycling grants;

- Establishment of 60 out of 200 quantifiable objectives for agricultural water use efficiency actions (on track to develop 30 more by 2003);
- Assembly of an Independent Review Panel to assist in developing a definition of appropriate water measurement;
- Successful negotiation of a cooperative agreement with the Agricultural Water Management Council, U.S. Bureau of Reclamation and California Department of Water Resources to support locally cost-effective agricultural water conservation;
- Creation of a foundation for establishing a Water Use Efficiency Public Advisory Committee, an approach to WUE monitoring, and Urban BMP Certification;
- Development of a draft agricultural WUE milestones as part of overall assurances framework; and
- Initiation of an effective water use efficiency team with key CALFED agencies.

El Dorado County Irrigation District has received numerous grants for water efficiency projects and programs. These grants include \$175,000 in USBR grant funding support for 36 water use efficiency projects between 1995 through 2006; \$230,000 in DWR funding support for four (4) water use efficiency grant projects 2002 through 2006 including Prop 13 funds for a Low- Income Toilet Voucher/Rebate Project and a Large Landscape Incentive Program and Prop 50 funds for IRWMP and CII/Multi-Family Sub-metering and ET Controller Project; \$128,000 in NRCW funded support for one agricultural soil moisture monitoring project; \$6,000 in EDCWA funding support for two projects.

3.11.6 WATER MANAGEMENT PROGRAM

The CALFED Program encompasses an array of projects and approaches to expand water supplies and ensure efficient use of the resource. The Program has identified actions that could increase California water supplies by nearly three million acre-feet over the next 10 years, which is enough water to meet the needs of 6 million families annually. The primary goals of the program are to:

- Maximize use of available water supplies through conservation, water recycling, and water quality improvements;

- Increase the flexibility of water systems at the state, federal and local level through improvements in conveyance, storage and water project operations; and
- Develop groundwater and surface water storage projects to boost flexibility and provide additional supplies for agriculture, urban and environmental use.

3.11.7 URBAN WATER MANAGEMENT PLANNING

El Dorado County water purveyors are engaged in many activities that support the State's overall Water Management Plan goals. Conservation water recycling and conveyance improvements are discussed in Chapter 9 and surface water storage projects are discussed in the Water Supply Needs chapter of this report. In large urban areas, the California Department of Water Resources requires each water provider to prepare an Urban Water Management Plan (UWMP), which describes programs and policies to ensure a reliable water supply for their service area. All urban water suppliers in the State of California are required to prepare an UWMP and complete updates every five years on or before December 31. As defined by California Water Code Section 10631, an urban water supplier is defined as a provider that is either privately or publicly-owned, that serves at least 3,000 customers or supplies more than 3,000 acre-feet of water annual on a wholesale or retail basis. Urban water management programs typically require the following elements: description of the water supply, water supply reliability, water demand management measures, water shortage contingency plans, and water recycling and water service reliability. The UWMP includes a variety of nonstructural measures to improve operations and water use efficiency. EID, GDPUD, TCPUD, STPUD and the City of Placerville are required to prepare UWMPs. Additional information regarding El Dorado County purveyors' urban water management planning is provided in Chapter 9, Water Efficiency.

3.11.8 WATER QUALITY REGULATIONS

The Clean Water Act and Safe Drinking Water Act are the primary laws governing the use and treatment of water and wastewater. The Clean Water Act regulates the discharge of wastewaters to waters of the US to ensure protection of the biological and chemical integrity of the nation's water supplies. In California, the Porter-Cologne Water Quality Control Act is the primary regulation protecting groundwater from discharge of wastes. The Safe Drinking Water Act, enacted in 1974, sets standards for acceptable levels of constituents in finished drinking water. As such, the programs and regulations from these laws can have direct impacts on water resources managers throughout the county. This section provides brief overviews of these important laws.

Clean Water Act

Waters of the United States are regulated by the Clean Water Act (33 USC 1344). Generally, the Clean Water Act provides the basis for regulations of pollutant discharge to waters of the U.S., and established the National Pollutant Elimination System (NPDES). Specifically, it prohibits the discharge of any waste into surface waters without a permit, requires the establishment of water quality standards for contaminants, and grants authority to the U.S. Environmental Protection Agency (EPA) to implement pollution control programs. The EPA has delegated the authority to administer and enforce the Clean Water Act and the NPDES to the State of California.

Porter Cologne Water Quality Control Act

The State of California established the State Water Resources Control Board (SWRCB), under which there are nine Regional Water Quality Control Boards, through the Porter-Cologne Water Quality Control Act (Porter-Cologne). Through the enforcement of the Clean Water and Porter Cologne acts, the SWRCB determines the beneficial uses of the waters (surface and groundwater) of the state, establishes narrative and/or numerical water quality standards, and initiates policies relating to water quality. The SWRCB and more specifically, the RWQCB is authorized to prescribe Waste Discharge Requirements (WDRs) for the discharge of waste, which may impact the waters of the State. Furthermore, the development of water quality control plans, or Basin Plans, are required by Porter-Cologne to protect water quality.

Safe Drinking Water Act

The Safe Drinking Water Act (SDWA) authorizes the U.S. Environmental protection (EPA) to protect the nation's drinking water supplies using three methods: (1) developing and enforcing

national primary and secondary drinking water regulations; (2) promulgating underground injection regulations to protect sources of drinking water; and (3) developing groundwater protection grant programs. The SDWA permits these activities to be implemented by the states. In California, the California Department of Health Services is the state agency empowered to oversee SDWA requirements. It is important to note that the SDWA does not regulate discharges of pollutants into surface water even though these activities might eventually affect drinking water supplies. These activities are regulated by the Clean Water Act, which was previously discussed. In order to implement National Primary Standards, the EPA established Maximum Contaminant Levels or (MCLs) for each chemicals of concern. These MCLs are the maximum concentration of a chemical allowed in a public drinking water system.

3.12. EXISTING AND FUTURE REGULATORY/ INSTITUTIONAL ISSUES

3.12.1 EXISTING WATER SUPPLY PLANNING REQUIREMENTS (SENATE BILLS 610 AND 221)

SB 610 and 221 were passed to ensure land use planning agencies evaluate water supply availability when approving major urban development projects in California.

SB 610 made changes to the Urban Water Management Planning Act to require additional information in Urban Water Management Plans if groundwater is identified as a source available to the supplier. The information required includes a copy of any groundwater management plan adopted by the supplier, a copy of the adjudication order or decree for adjudicated basins, and if non-adjudicated, whether the basin has been identified as being overdrafted or projected to be overdrafted in the most current California Department of Water Resources (DWR) publication on that basin. If the basin is in overdraft, that plan must include current efforts to eliminate any long-term overdraft. A key provision in SB 610 requires that any project subject to the California Environmental Quality Act supplied with water from a public water system provide a specified water supply assessment, except as specified in the law.

SB 221 prohibits approval of subdivisions consisting of more than 500 dwelling units unless there is verification of sufficient water supplies for the project from the applicable water supplier(s). This requirement also applies to increases of 10 percent or more of service connections for public water systems with less than 500 service connections. The law defines criteria for determining "sufficient water supply" such as using normal, single-dry, and multiple-dry year hydrology and identifying the

amount of water that the supplier can reasonably rely on to meet existing and future planned uses. If used for the project, rights to extract additional groundwater must be substantiated.

3.12.2 EL DORADO COUNTY LAFCO MUNICIPAL SERVICE REVIEW

The El Dorado County LAFCO is currently preparing a municipal services review for water supply, wastewater and power as required by state law. Before the Commission can update its sphere of influence, state law requires municipal service reviews for all service agencies in the county. There are over 25 different types of services in the County and LAFCO has completed and adopted one review and has a second out for public review. The intent is to ensure that county residents have reliable service from water, power and other services in the county prior to expanding their SOI.

3.12.3 FUTURE STATE AND FEDERAL REGULATIONS

History has shown that state and federal regulations related to safe drinking water, protecting the environment and water quality continue to evolve and have generally become more complex and protective over time. New drinking water standards for protection of public health may require additional treatment processes by the water suppliers. New research in the wastewater field may create the basis for regulation of new compounds such as pharmaceuticals, personal care products and others that are not currently regulated today that will add to the complexity of reuse and recycling of treated wastewater that is an integral part of the water supply solution. It is reasonable to assume that new regulations or revised regulations with more stringent requirement or standards will continue to be implemented and enforced that will impact all water purveyors. As such, the plan of actions proposed in the water plan will need to adjust accordingly to address the new future regulations