

CITY OF PLACERVILLE
2005 URBAN WATER MANAGEMENT PLAN

Prepared for
City of Placerville, CA
August 2007

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LIST OF ACRONYMS

ac-ft	acre-feet
acct	account
Act	Urban Water Management Planning Act
BMP	Best Management Practice
CEE	Consortium of Energy Efficiency
CIMIS	California Irrigation Management Information System
City	City of Placerville
CII	Commercial, Industrial and Institutional
CUWCC	California Urban Water Conservation Council
CWAC	California Water Awareness Campaign
DHS	California Department of Health Services
DMM	Demand Management Measure
DWR	California Department of Water Resources
EDCWA	El Dorado County Water Agency
EID	El Dorado Irrigation District
EPA	United States Environmental Protection Agency
ET _o	Evapotranspiration
° F	degrees Fahrenheit
FERC	Federal Energy Regulatory Commission
gpd	gallons per day
gpm	gallons per minute
gpd/acct	gallons per day per account
HET	high efficiency toilet
IMS	Irrigation Management Service
LAFCO	Local Agency Formation Commission
MGD	million gallons per day
MOU	Memorandum of Understanding
N/A	Not Applicable
NAICS/SIC	North American Industry Classification System/Standard Industrial Classification
NIE	Newspapers in Education
NOAA	National Oceanic & Atmospheric Administration
NPDES	National Pollutant Discharge Elimination System
NRCS	Natural Resources Conservation Service
PG&E	Pacific Gas & Electric
Plan	Urban Water Management Plan
PRV	pressure reducing valve
RWA	Regional Water Authority
RWMP	Recycled Water Master Plan
SMUD	Sacramento Municipal Utilities District
UAW	unaccounted-for water
UC	University of California
ULF	Ultra Low Flow
ULFT	Ultra Low-Flush Toilet
USBR	United States Bureau of Reclamation
WSMP	Water Supply Master Plan
WWMP	Waste Water Master Plan
WWTP	Waste Water Treatment Plant

CITY OF PLACERVILLE 2005 URBAN WATER MANAGEMENT PLAN

1. INTRODUCTION

This Urban Water Management Plan (Plan) addresses the City of Placerville (City) water system and includes a description of the water supply sources, magnitudes of historical and projected water use, and a comparison of water supply to water demands during normal, single-dry, and multiple-dry years. The City receives all of its water from El Dorado Irrigation District (EID). The Plan is required by the Urban Water Management Planning Act (Act).

This chapter provides an overview of the Act, public participation, agency coordination, and resource maximization and import minimization efforts, plan organization and assumptions.

1.1 Urban Water Management Planning Act

The City Plan has been prepared in accordance with the Urban Water Management Act. The Act is defined by the California Water Code, Division 6, Part 2.6, and Sections 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 acre-feet (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 reaching just over 3,000 accounts in 2004, this Plan is the first ever required by the City. This Plan serves as a long-range planning document for water supply. In complying with the Act, the City has followed DWR specified guidelines, as shown in a comprehensive checklist found in Appendix A. EID's urban water management plan should be consulted for details regarding EID's water supply.

1.2 Resource Maximization and Import Minimization

Water management tools have been used by the City to maximize water resources. The City has developed several documents to help maximize water resources, including several reports that have been prepared in the past decade that address water supply and demand for the City. An understanding of the results of these previous studies provides a broader context for preparing an updated water supply plan for the future. This section provides a list of these recent planning reports. These documents are also referenced throughout this Plan.

- EID 2005 Urban Water Management Plan, adopted January 23, 2006
- City of Placerville Water Master Plan (Kennedy/Jenks Consultants, 2005)
- El Dorado County Drought Shared Vision Model (Brown and Caldwell, 2005)
- EID 2005 United States Bureau of Reclamation Five-Year Water Management Plan 2005, adopted March 2006
- City of Placerville Sewer System Master Plan Draft (Holmes, 2006)
- Joint Benefit Investigation Plan: Technical Analysis for Preliminary Alternatives Prepared for El Dorado County Water Agency, El Dorado Irrigation District, Sacramento Municipal Utility District, and Georgetown Divide Public Utility District (Mead and Hunt, 2004)

1.3 Public Participation

The Act requires the encouragement of public participation and a public hearing as part of the Urban Water Management Plan approval process. As required by the Act, prior to adopting this Plan, the City made the Plan available for public review and held a public hearing to solicit comment. The hearing provided an opportunity for City's customers and all residents and employees in the City's water service area to learn about existing water supply and City plans for providing a reliable, safe, high-quality water supply for the future. The hearing provided an opportunity for interested parties to ask questions and provide comment.

A Notice of Public Hearing was published in the Mountain Democrat. Copies of the draft Plan were made available for public inspection at the City's Public Works-Engineering offices. A copy of the published Notice of Public Hearing is included in Appendix B. A copy of the adopted resolution is provided in Appendix C.

1.4 Agency Coordination

The Act requires the City to 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. The City coordinated the preparation of its Plan with its wholesale water supplier, EID, and El Dorado County Water Agency (EDCWA). The City sent a copy of this Plan to the EDCWA and EID, and notification of this Plan to the El Dorado County Local Agency Formation Commission (LAFCO) and the El Dorado County Planning Department. Table 1-1 provides a summary of the Plan coordination efforts with the appropriate agencies.

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

	EDCWA	EID	El Dorado County LAFCO	El Dorado County Planning Department
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	✓	✓	✓	✓
Not Involved / No Information				

1.5 Plan Organization

This section provides a summary of the chapters in the Plan. Chapter 2 provides a description of the City's water service area, climate, water supply facilities, and distribution system. Chapter 3 presents historical and projected water use. Surface and groundwater supplies are described in Chapter 4. Chapter 5 describes recycled water. Chapter 6 addresses water conservation. Chapter 7 provides a comparison of future water supply to demand.

1.6 Assumptions

The analyses, evaluation and conclusions throughout this Plan are based in part upon assumptions made by EID regarding their water supply. EID's 2005 urban water management plan should be consulted for information about these assumptions.

CITY OF PLACERVILLE 2005 URBAN WATER MANAGEMENT PLAN

2. DESCRIPTION OF EXISTING WATER SYSTEM

This chapter describes the City's water service area, climate, and water supply facilities. Chapter 4 of this Plan describes the quantities of water available to the City.

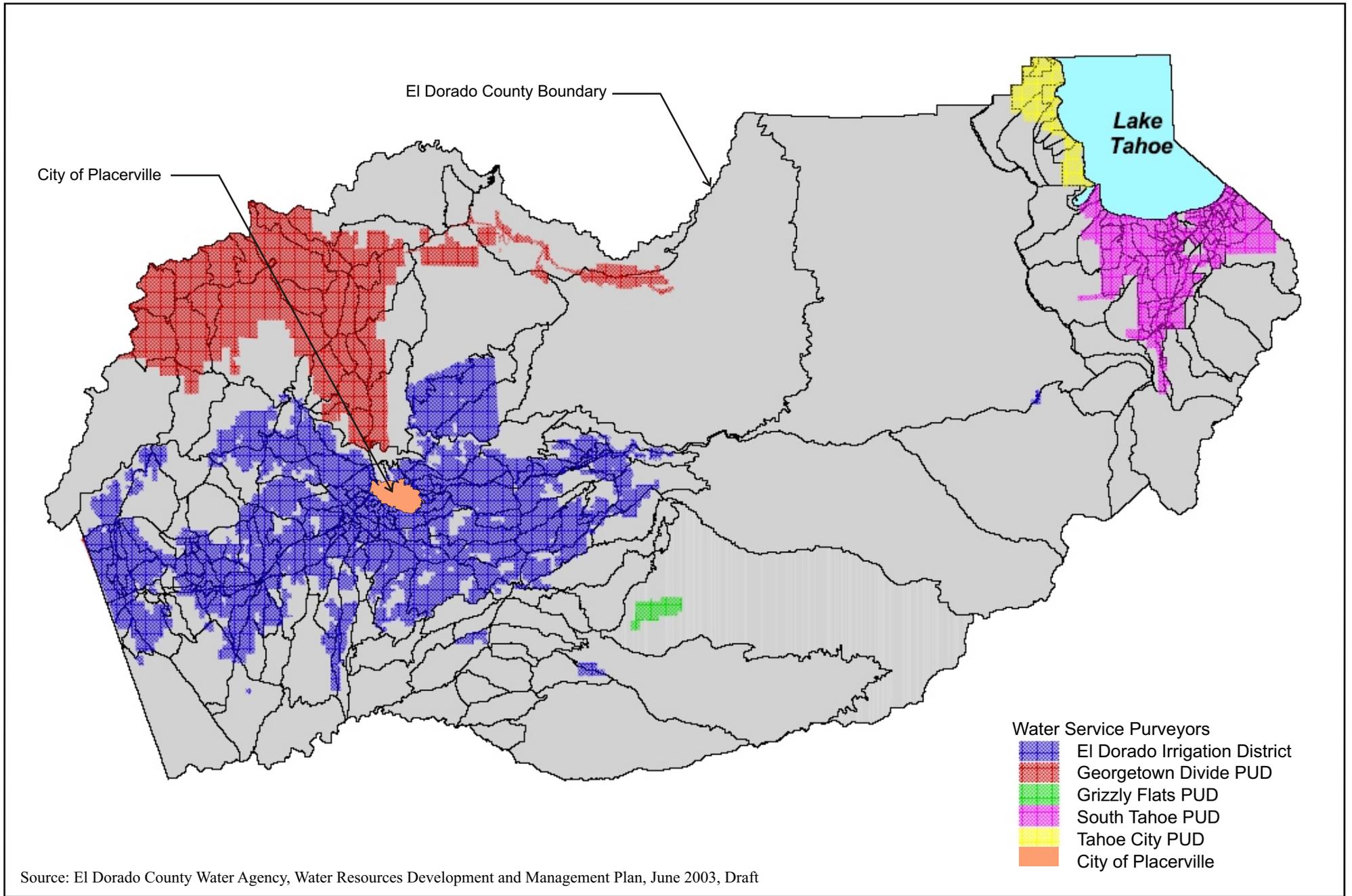
2.1 Description of Water Service Area

Located along Highway 50 in central El Dorado County, the City currently serves a population of approximately 10,900 people through 3,025 active service connections. The City is located on the western slope of the Sierra Nevada Mountains in El Dorado County, and primarily situated in two major watersheds, the South Fork of the American River watershed. Figure 2-1 illustrates the location of the City's water service area and the neighboring El Dorado County water systems.

The City water service area is shown on Figure 2-2; note that the City limits extend beyond the water service area as shown in Figure 2-2. The City water service area will remain constant, and the City will only deliver water to customers within the existing boundary. The City plans to continue to meet demand within their current water service area; consequently, EID will continue to provide water to periphery areas and be responsible for all improvements and costs associated with meeting those demands (Kennedy/Jenks, 2005).

2.2 Local Climate

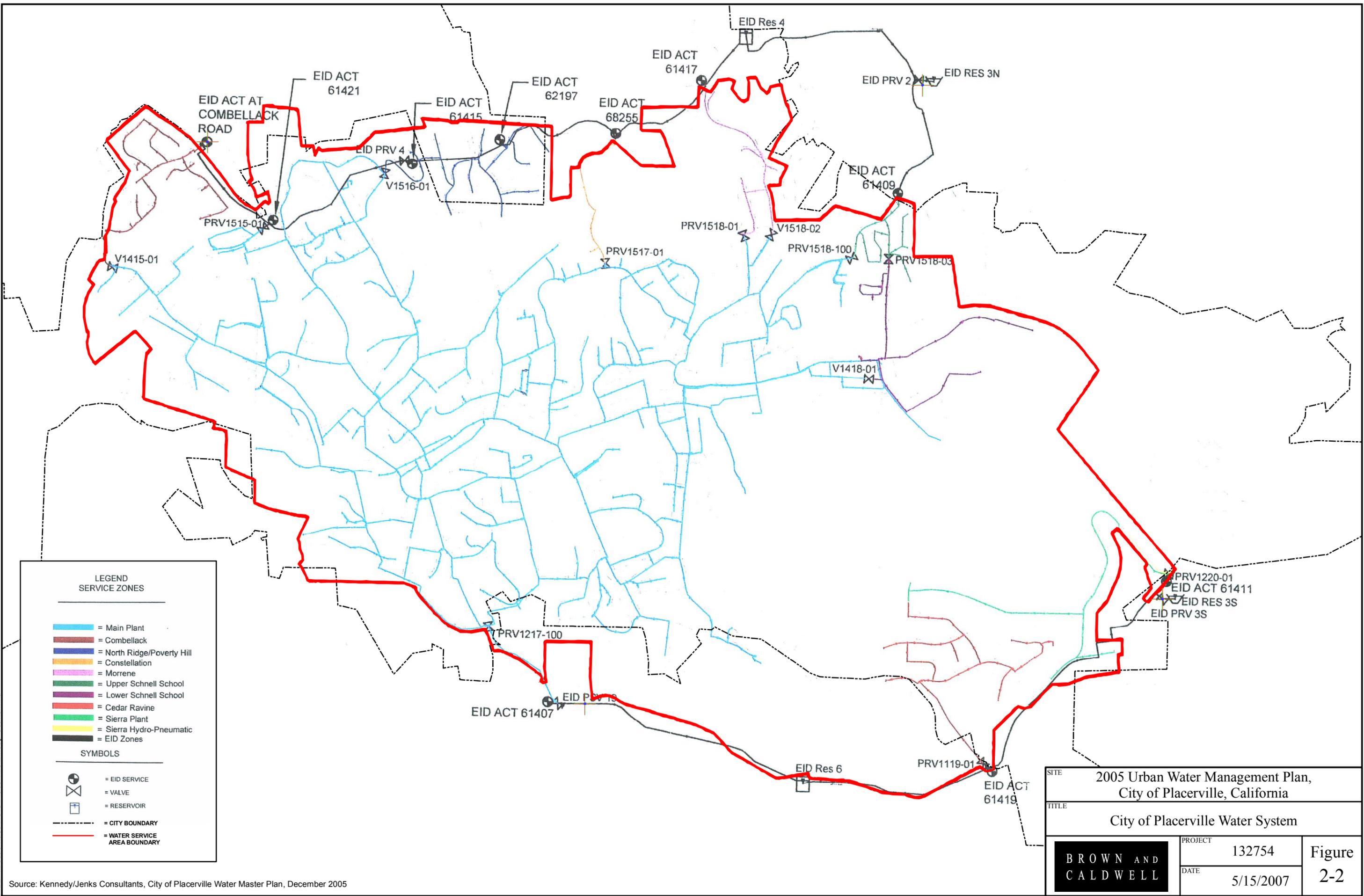
The City is located in a region of sunshine in the summer and moderate to heavy precipitation in the winter. Strong flows of marine air in the winter from the Pacific Ocean result in heavy precipitation. Precipitation in the summer is light, and generally limited to a few scattered thunderstorms. According to the Western Regional Climate Center's Placerville station, the historical annual average precipitation is approximately 39 inches, with an average monthly precipitation during winter months of about six inches. Temperatures throughout the City range from warm in the summer to cool in the winter, with average monthly temperatures of 75 degrees Fahrenheit (°F) in July to 43°F in January.



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

BROWN AND CALDWELL	PROJECT	132754	2005 Urban Water Management Plan, City of Placerville, California	Figure 2-1
	DATE	5-8-07		

FILE: \\besac-nas01\GIS\Placerville\Lineup_Scans.mxd



LEGEND
SERVICE ZONES

- = Main Plant
- = Combellack
- = North Ridge/Poverty Hill
- = Constellation
- = Morrene
- = Upper Schnell School
- = Lower Schnell School
- = Cedar Ravine
- = Sierra Plant
- = Sierra Hydro-Pneumatic
- = EID Zones

SYMBOLS

- + = EID SERVICE
- X = VALVE
- + = RESERVOIR
- = CITY BOUNDARY
- = WATER SERVICE AREA BOUNDARY

SITE	2005 Urban Water Management Plan, City of Placerville, California	
TITLE	City of Placerville Water System	
BROWN AND CALDWELL	PROJECT	132754
	DATE	5/15/2007
		Figure 2-2

Source: Kennedy/Jenks Consultants, City of Placerville Water Master Plan, December 2005

Evapotranspiration (ET_o) 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 City's 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. Table 2-1 summarizes the City's average climate conditions.

Months	Average temperature ^a , °F	Average rainfall ^a , in	Standard average ET _o ^b , in
January	42.80	6.98	1.41
February	45.80	6.73	1.88
March	48.80	5.78	2.99
April	53.30	3.1	4.47
May	60.40	1.5	5.91
June	67.80	0.44	7.46
July	75.00	0.08	9.00
August	73.70	0.09	8.21
September	68.60	0.56	6.23
October	59.90	2.14	4.19
November	49.10	4.54	1.84
December	43.50	6.43	1.37
Annual	57.40	38.36	54.96

Notes:

^a Period of Record : 1/1/1915 to 12/31/2006, Placerville data recorded by the National Oceanic & Atmospheric Administration (NOAA) www.wrcc.dri.edu.

^b Data recorded October 1982 to May 2007 from Sierra Foothill, Camino Station 13, California Irrigation Management Information System (CIMIS) www.cimis.water.ca.gov

2.3 Water Supply Facilities and Distribution System

The City owns and operates its own potable water storage and distribution facilities. Surrounded by EID, the City receives all its water supply from EID through a total of seventeen interties consisting of ten bulk flow meters and seven small service meters that are located on the periphery of the City. The City pays EID for the water based on flow through these meters. EID's Plan should be consulted for details regarding their water supply facilities and distribution system.

The City's water distribution system is comprised of eight separate service zones separated by pressure reducing valve (PRV) stations or normally-closed isolation valves. The distribution system includes one 40,000 gallon storage tank and approximately 37-miles of pipelines ranging in diameter of four to 18 inches and two miles of pipeline less than 4-inches in diameter. EID considers the City' to be a "municipal"

customer, and currently EID provides all storage for the City except for the City's Sierra Service Zone. EID's storage includes capacity for the City's demands as EID does not expect the City will continue to have its own storage facilities. The City's Water Master Plan does recommend the Sierra Tank be abandoned due to its size, age and system pressure considerations (Kennedy/Jenks, 2005). There are three pump stations in the City's distribution system: the Sierra Service Zone hydro-pneumatic system and two small privately operated facilities (Kennedy/Jenks, 2005). These two facilities were developed to increase City water pressure to two new small developments within the City. They remain privately operated and not incorporated into the City's distribution system due to not being completed to City specifications. A summary of the City's water supply facilities can be found in Table 2-2. The City's water service area zones depicting the locations of the storage tanks and pumping stations is presented on Figure 2-2.

Table 2-2. Water Supply Facilities	
Water supply facility component	Description ^a
EID-City interties	14 interties, consisting of ten bulk flow meters and four small service meters that are located on the periphery of the City, provide EID water to the City.
Storage	40,000 gallons in Sierra Service Zone (abandonment is recommended). EID considers the City to be a "municipal" customer and plans on providing all storage).
Pipeline	<ul style="list-style-type: none"> • 37 miles of 4-18 inch diameter pipeline • 2 miles of pipeline less than 4-inches in diameter.
Pump stations	3 pump stations: one in the Sierra Service Zone hydro-pneumatic system and two small privately operated facilities.

^a Source: Kennedy/Jenks, 2005

CITY OF PLACERVILLE
2005 URBAN WATER MANAGEMENT PLAN

3. HISTORICAL AND PROJECTED WATER USE

Water demand projections provide the basis for sizing and staging future water facilities. Water use and production records, combined with projections of population and urban development, provide the basis for estimating future water requirements. This chapter presents an analysis of available demographic and water use data, customer connections, and the resulting projections for future City water needs in varying water year types.

3.1 Population, Employment, and Housing

In recent years, population, housing, and employment have increased due in part to the booming California economy and a strong regional real estate market. As transportation services, housing, and employment opportunities increase, the recent population growth trend is expected to continue.

As discussed in Section 2.1 the City water service area will remain constant and the City will only deliver water to customers within its existing water service area boundary. However, with vacant commercial and residential parcels scattered throughout the area, the City has identified several specific future residential and commercial developments.

According to the City’s 2005 Water Master Plan the City’s population will grow at an annual rate of 2.75 percent until reaching buildout in the year 2015 (Kennedy/Jenks, 2005). This Plan assumes that the water demands within the City will grow at the same rate. According to the 2000 U.S. census, the City’s current service area population is approximately 10,900 (U.S. Census, 2007). Table 3-1 presents population projections for the City.

Table 3-1. (DWR Table 2) Population – Historic and Projected	
Year	Population
2000	9,610 ^a
2005	10,873
2010	12,302
2015	13,918
2020	13,918
2025	13,918
2030	13,918

Notes:

^a Based on U.S. 2000 Census (U.S. Census, 2007)

1. Population within current water service area boundary

2. 2005-2030 population estimates are based on 2.75 percent growth rate and buildout in 2015. Source: City of Placerville Water Master Plan (Kennedy/Jenks, 2005)

3.2 Past, Current, and Future Water Use

This section discusses the City's water use by customer type and projected water demands by water year type.

3.2.1 Water Use by Customer Type

The primary water uses in the City include residential, commercial, and unbilled municipal uses. The City has no unmetered accounts. The historical, current, and projected numbers of connections and deliveries to the City's customers by customer category are presented in Table 3-2. Since residential customer accounts servicing more than one dwelling unit are billed under commercial rates, the City tracks multi-family residential customers in their commercial customer category.

Historical account and water use data are based on the City's annual letter to EID from the City's Director of Finance (Annual, 2000 and 2005). Demand projections are from the City's 2005 Water Master Plan and assume water service area buildout to occur in year 2015. Total annual customer demand projections are based on 1990 and 2004 base year data sets with a 2.75 percent growth rate that is consistent with the City's General Plan population growth estimates (Kennedy/Jenks, 2005). Projected annual customer category demand and number of accounts are estimated in proportion to historic and current customer class accounts and demand. An average historical single-family unit water use of 378 gpd/acct and commercial/multi-family unit water use of 995 gpd/acct is used to project customer category number of accounts. Consistent with the City's historical trend, the number of unbilled City accounts is expected to remain constant. Historically unbilled City use has altered significantly from year to year. Therefore, unbilled City use projections are based on average annual unbilled City use from 1996 through 2006 (Segura, 2007).

As of 2005 there are nine known developments projected to be built in the City; these are included in the City's 2010 demand projections. These developments include seven single family residential developments with a total of 185 units, 1 senior residential/assisted living development with a total of 177 units and one 0.31 acre commercial site (Kennedy/Jenks, 2005). Between 2010 and 2015 an additional known 408 single family residential units are planned to be incorporated (Kennedy/Jenks, 2005). Customer demand and account projections include these known developments in addition to general water service area growth and fill-in estimates.

Unaccounted-for water (UAW) system losses are also shown in Table 3-2. UAW use is unmetered water use, such as that used for fire protection and training, system and street flushing, sewer cleaning, system leaks, as well as that used by unauthorized connections. UAW use can also result from meter inaccuracies. Based on historical data, the City's UAW use is approximately 10 percent of total production.

At this time, the City does not use water for groundwater recharge to prevent salt water intrusion (saline barriers), or for other conjunctive uses.

Table 3-2. (DWR Table 12 & 14) Past, Current and Projected Connections and Water Deliveries, ac-ft/yr

Year		Water use sectors				
		Residential ^{a,d}	Commercial ^a	Unbilled City ^b	UAW ^c	Total
2000 ^d	# of accounts	2,468	318	23	--	2,809
	Deliveries ac-ft/yr	1,099	524	397	-- ^c	2,244
2005 ^d	# of accounts	2,654	348	23	--	3,025
	Deliveries ac-ft/yr	1,099	393	24	150	1,666
2010	# of accounts	2,844	441	23	--	3,308
	Deliveries ac-ft/yr	1,220	498	203	202	2,123
2015 ^e	# of accounts	3,257	505	23	--	3,786
	Deliveries ac-ft/yr	1,379	563	230	228	2,400
2020	# of accounts	3,257	505	23	--	3,786
	Deliveries ac-ft/yr	1,379	563	230	228	2,400
2025	# of accounts	3,257	505	23	--	3,786
	Deliveries ac-ft/yr	1,379	563	230	228	2,400
2030	# of accounts	3,257	505	23	--	3,786
	Deliveries ac-ft/yr	1,379	563	230	228	2,400

Notes:

^a Projected annual residential and commercial category accounts and deliveries are estimated in proportion to historic and current customer class accounts and demand. An average historical residential unit water use of 378 gpd/acct and commercial unit water use of 995 gpd/acct is used to project customer category number of accounts.

^b The number of unbilled City accounts is expected to remain constant which is consistent with the City's historical trend. Historically unbilled City use has altered significantly from year to year. Unbilled City use projections are based on average annual unbilled City use from 1996 through 2006 (Segura, 2007).

^c Due to meter inaccuracies with EID-City meters before Year 2003, Year 2000 UAW data is unavailable. Projected annual UAW is approximately 9 percent and based on average annual historical UAW water use (Fraser, 2007). Year 2005 UAW is actual historical value (Annual, 2005).

^d Historical data is based on the *Annual letter to EID from the Director of Finance for the City of Placerville* (Annual, 2000 and 2005) in which the City tracks multi-family residential customers in their commercial customer category.

^e The City anticipates buildout by Year 2015 (Kennedy/Jenks, 2005).

3.2.2 Water Sales to Other Agencies

The City does not sell treated water as shown in Table 3-3.

Table 3-3. (DWR Table 13) Sales to Other Agencies

Water distributed to:	2000	2005	2010	2015	2020	2025	2030
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	0	0	0	0	0	0	0

N/A = not applicable

3.2.3 Total Water Use

The total past, present, and projected future water use for the system is shown in Table 3-4.

Water use	2000	2005	2010	2015	2020	2025	2030
Total water demand	2,244	1,666	2,123	2,400	2,400	2,400	2,400

Note:

This Table is equivalent to Table 3-2 totals, which includes all demand categories and system uses and losses.

3.3 Demand on Wholesale Supply

Table 3-5 provides the projected amount of water that the City expects to purchase from EID to meet water demands in the future. The City does not plan on using any local supplies to supplement EID's water supply.

Wholesaler	2010	2015	2020	2025	2030
EID	2,123	2,400	2,400	2,400	2,400

3.4 Projected Water Demands by Water Year Type

This section presents the projected water demands for three water year scenarios: normal year, single-dry year, and multiple-dry year. The demands for all water year scenarios are projected through 2030. As stated in the Agreement between EID and the City for a Water Supply (Agreement) in 1999 found in Appendix D “[a]ll water deliveries are subject to the availability of water, provided, however, the City will not incur any deficiencies greater than all other EID customers.” EID's water shortage contingency policies can be found in EID's Four Stage Water Supply Matrix in Appendix E (EID, 1995).

3.4.1 Normal Year Demand

Water demand projections are shown by water use sector in Table 3-2, and are summarized in Table 3-4. Over the next 10 years, water demands are expected to increase approximately 2.75 percent annually from a 2004 base year historical water use of 1,804 ac-ft/yr to a buildout water use of 2,400 ac-ft/yr in 2015. Total City water use is expected to remain at buildout water use levels through 2030. Impacts to water use due to any conservation measures implemented in the future are not reflected in the projected water demands. Table 3-6 presents total projected normal year type water demand for the City.

	2010	2015	2020	2025	2030
Total demand	2,123	2,400	2,400	2,400	2,400
Percent of year 2005	127	144	144	144	144

3.4.2 Single-Dry Year Demand

Water use patterns change during dry years. During dry years some water agencies cannot provide their customers with 100 percent of what they deliver during normal water years. It is assumed that the City's overall demands will not change during a single dry year; this is based on the City's contract with EID which states that "the City will not incur any deficiencies greater than all other EID customers" (Agreement, 1999). EID assumes that overall demands will not change during a single dry year, no demand reductions are estimated for the City in a single dry year. For further details on EID's single-dry year reliability reference EID's 2005 urban water management plan. Table 3-7 provides an estimate of the projected single-dry year water demands.

Table 3-7. (DWR Table 44) Projected Single-Dry Year Water Demands, ac-ft/yr

	2010	2015	2020	2025	2030
Total demand	2,123	2,400	2,400	2,400	2,400
Percent of projected normal ^a	100	100	100	100	100

Notes:

^a Projected normal from Table 3-6.

3.4.3 Multiple-Dry Year Demand

This section projects the impact of a multiple-dry year period for each 5-year period during the 25-year projection. In accordance with the Agreement, the City's anticipates multiple-dry year demand changes proportional to EID's and consistent with all EID customers. Based on EID's Four Stage Water Supply Matrix, found in Appendix E, and the expected multiple-dry year Sly Park Reservoir storage volumes (which is EID's current drought trigger), EID assumes that overall demands will change five, ten, and twenty percent in multiple dry years two, three, and four, respectively. These cutbacks assume the maximum conservation response based on the respective drought response stage as defined in EID's current Water Shortage Contingency Plan, found in Appendix F (EID, 1995). Tables 3-8 through 3-12 provide an estimate of the projected multiple-dry year water demands for each 5-year period.

Table 3-8. (DWR Table 47) Projected Multiple-Dry Year Water Demands, ac-ft/yr, Period Ending in 2010

	2006	2007	2008	2009	2010
Total demand	1,905	1,859	1,810	1,653	1,699
Percent of projected normal ^a	100	95	90	80	80

Notes:

^a Projected normal from Table 3-6.

**Table 3-9. (DWR Table 50) Projected Multiple-Dry Year Water Demands, ac-ft/yr,
Period Ending in 2015**

	2011	2012	2013	2014	2015
Total demand	2,182	2,130	2,073	1,893	1,920
Percent of projected normal ^a	100	95	90	80	80

Notes:

^a Projected normal from Table 3-6.

**Table 3-10. (DWR Table 53) Projected Multiple-Dry Year Water Demands, ac-ft/yr,
Period Ending in 2020**

	2016	2017	2018	2019	2020
Total demand	2,400	2,280	2,160	1,920	1,920
Percent of projected normal ^a	100	95	90	80	80

Notes:

^a Projected normal from Table 3-6.

**Table 3-11. (DWR Table 56) Projected Multiple-Dry Year Water Demands, ac-ft/yr,
Period Ending in 2025**

	2021	2022	2023	2024	2025
Total demand	2,400	2,280	2,160	1,920	1,920
Percent of projected normal ^a	100	95	90	80	80

Notes:

^a Projected normal from Table 3-6.

**Table 3-12. Projected Multiple-Dry Year Water Demands, ac-ft/yr,
Period Ending in 2030**

	2026	2027	2028	2029	2030
Total demand	2,400	2,280	2,160	1,920	1,920
Percent of projected normal ^a	100	95	90	80	80

Notes:

^a Projected normal from Table 3-6.

CITY OF PLACERVILLE
2005 URBAN WATER MANAGEMENT PLAN

4. WATER SUPPLY

This chapter describes the City’s current and planned water supply sources, quantities, constraints, and quality. In addition, this chapter describes current and projected water supplies, water supply reliability and vulnerability, and water transfers and exchanges. Recycled water supplies are discussed in Chapter 5 of this Plan.

4.1 Groundwater

The City does not use groundwater as a supply source. As shown in tables 4-1, 4-2, and 4-3. Groundwater aquifers in the both the City and EID’s service areas occur in fractured hard rock and are unreliable as a source.

Table 4-1. (DWR Table 5) Groundwater Pumping Rights	
Basin name	Pumping right, acre-feet per year
N/A	N/A

N/A = not applicable

Table 4-2. (DWR Table 6) Amount of Groundwater Pumped, ac-ft/yr					
Basin name	2000	2001	2002	2003	2004
N/A	0	0	0	0	0
Percent of Total Water Supply	0	0	0	0	0

Table 4-3. (DWR Table 7) Amount of Groundwater Projected to be Pumped, ac-ft/yr					
Basin name	2010	2015	2020	2025	2030
N/A	0	0	0	0	0
Percent of Total Water Supply	0	0	0	0	0

4.2 Surface Water

The City receives all its water supply from EID. EID's water supply is provided by Jenkinson Lake (Sly Park Reservoir), Project 184 Forebay, Folsom Lake and various ditch diversions. EID's Plan should be consulted for details regarding EID's water supply. This section briefly describes the physical constraints to EID's surface water supply and the legal background and constraints to EID and City water supplies. EID delivers water to the City from its Sly Park reservoir and Project 184 Forebay water supply sources (Fraser, 2007).

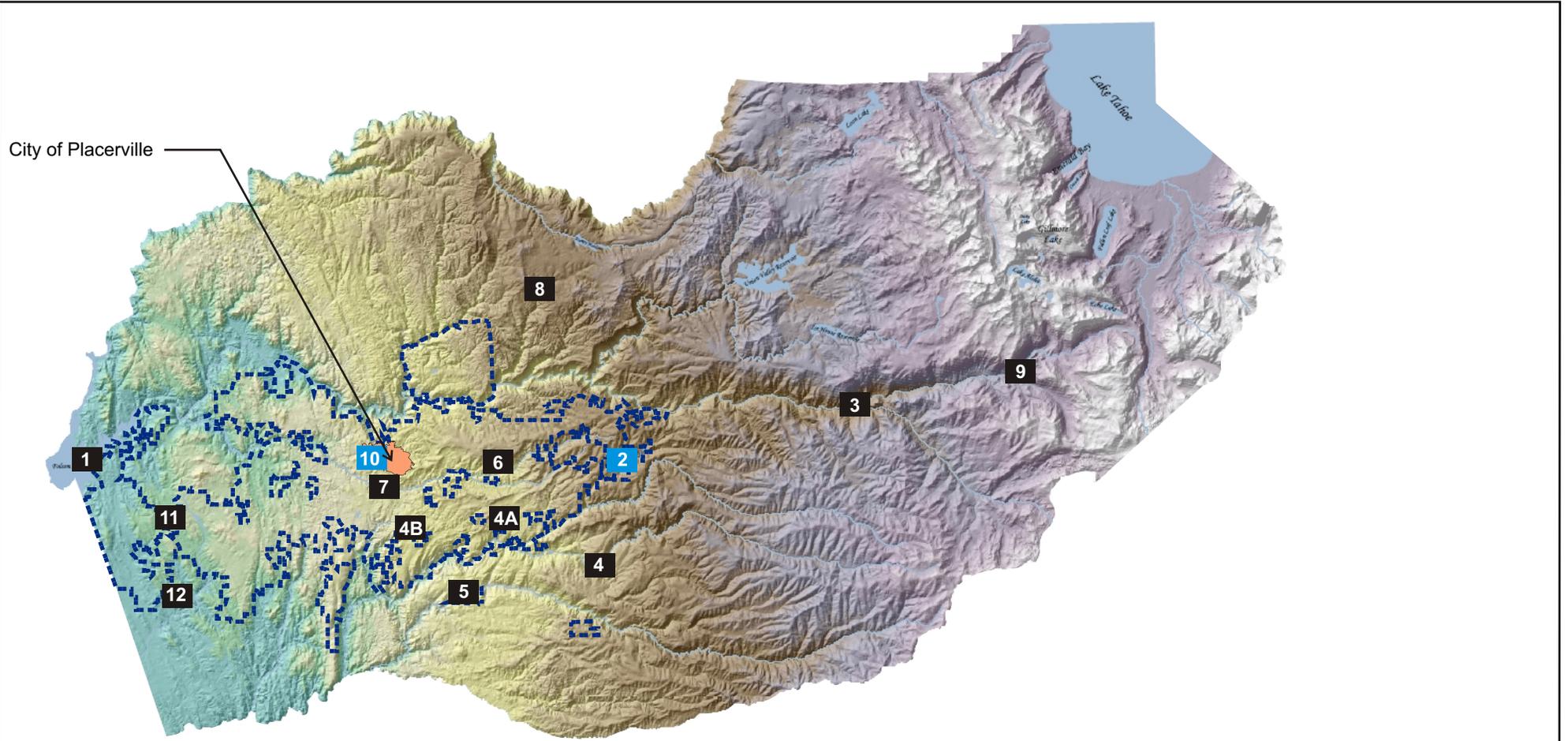
4.2.1 Description

The City receives all its water supply from EID through ten bulk flow meters and seven small service meters located on the periphery of the City. The following is a general description of EID's primary water supply sources. The approximate location of each source is shown in Figure 4-1. Details regarding specific diversion rates, storage amounts, and other water information can be found in the EID's Water Supply Master Plan (EID, 2001).

Sly Park Dam and Jenkinson Lake is the main storage project in EID. It is formed by two earth and rock dams across Sly Park Creek near Pollock Pines. Jenkinson Lake receives flow from Sly Park, Hazel, and Camp Creeks, all of which are tributary to the North Fork of the Cosumnes River. This reservoir provides about half the total water supply to EID. Maximum capacity is 41,033 ac-ft. The total surface area at the spillway crest is 650 acres. The dam was constructed as a portion of the United States Bureau of Reclamation's (USBR) Central Valley Project in 1955. With the recent transfer of ownership from USBR of the Sly Park dam and surrounding lands to EID, EID not only operates and maintains the Jenkinson Lake and Sly Park Dam facilities, including any recreational aspects, but holds the water rights as well. This source's average annual yield is approximately 23,000 ac-ft, though EID's annual water right is 33,400 ac-ft. This water supply is used entirely within EID's contiguous service area.

Project 184 Forebay is a surface water supply from EID's facilities upstream on the South Fork of the American River in the El Dorado Project (FERC Project 184). EID has an entitlement of 15,080 ac-ft per year consumptive delivery at the Forebay. The entitlement is a pre-1914 water right, and diversions are made in accordance with a schedule included in a now-lapsed agreement between EID and previous Project 184 owner, Pacific Gas and Electric (P.G. & E.). 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 (Brown and Caldwell, 2005). Historically, however, this source has experienced temporary interruptions in numerous instances by damage to the conveyance system from forest fires, floods and landslides.

Folsom Lake provides surface water to EID's El Dorado Hills area. By contract with the USBR for Folsom water, EID 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 region. The water supplied from Folsom Lake carries a measured risk of availability. The USBR has imposed restrictions on the Folsom supply several times due to water shortages in the Central Valley Project. Starting in 1994, the USBR adopted a shortage policy of a maximum 25 percent cutback. EID was also awarded a water right for an additional 17,000 ac-ft per year from Project 184 water supply from the South Fork of the American River stored in Folsom Lake; authorized under Permit 21112 for diversion and consumptive use. There are no cutback provisions on this supply.



--- EID Service Area Boundary
 City of Placerville

- | | |
|---|---|
| 1 Folsom Lake | 6 Weber Reservoir / Weber Dam |
| 2 Jenkinson Lake | 7 Weber Creek |
| 3 South Fork American River / Kyburz | 8 Slab Creek |
| 4 North Fork Cosumnes River / Crawford Ditch | 9 South Fork American River / Strawberry |
| 4A Clear Creek / Crawford Ditch | 10 Hangtown Creek |
| 4B Squaw Hollow Creek / East Diamond Ditch | 11 Bass Lake Reservoir |
| 5 Middle Fork Cosumnes River / Outingdale | 12 Recycled Water / EDH and Deer Creek WWTPs |

Source: EID Water Supply Master Plan, 2001

BROWN AND CALDWELL	PROJECT 132754	SITE 2005 Urban Water Management Plan, City of Placerville, California	Figure 4-1
	DATE 7-20-07	TITLE Location of Existing EID Water Supply Sources	

Pre-1914 ditch water rights include diversions from Weber Creek, Slab Creek, and Hangtown Creek. Combined with the licensed water right in Weber Reservoir, approximately 3,000 ac-ft is available each year from these sources (though the official water right is 4,560 ac-ft/yr). The ditch water rights sources are subject to diminution in dry years. EID has taken these ditch water rights at Folsom Lake from 2002-2004 under a series of contracts with USBR. At present, EID is nearing completion of a project to obtain the necessary state and USBR authorizations to take these ditch water rights and the Weber Reservoir right at Folsom Lake, on a permanent basis.

4.2.2 Physical Constraints

The City does not experience any supply restrictions due to physical system constraints.

4.2.3 Legal Constraints

As stated in the 1999 Agreement in Appendix D, EID intends to deliver and sell water to the City, at historical use levels, including normal growth increases under normal operating conditions. Additional legal considerations required by these agencies and documented in the Agreement are summarized as follows:

- Water sold and delivered must be used within the City's water service area as recorded by LAFCO unless written approval is made by EID's board, also contingent upon the availability of water.
- In a dry year or a year in which EID requires rationing or curtailment of water, EID may impose a drought surcharge on the City, reduce or restrict the water service to the City, including new meters issued to City customers, in proportion to any reduction, limitation or curtailment of water within EID. The City must implement and enforce water shortage conditions, drought stages or other emergencies that are adopted by EID.
- The City is responsible at its own cost and expense for any additional treatment of water, and agrees to hold EID free from any and all injuries and damages that may result from any City water treatment.
- Details regarding delivery measurements, treatment level liabilities, financial compensation, sales, use and account reporting, and water conservation program implementation can be found in the Agreement in Appendix D.

As summarized in their urban water management plan, EID receives surface water through numerous contracts or rights as summarized in Table 4-4.

Table 4-4. EID Surface Water Supply Contracts and Rights

Water source	Diversion/ Facility name	Contract/ Agreement or Appropriator	Water right permit number	Maximum diversion rate	Availability
Jenkinson Lake	Sly Park Dam	EID State water right permit	10473 & 4 12258, 2631	500 cfs Inlet (Camp Creek) and 125 cfs Outlet	33,400 ac-ft/yr water right 23,000 ac-ft/yr average annual yield
South Fork of the American River at Kyburz / FERC Project 184	El Dorado Forebay	EID Pre-1914	N/A	40 cfs	15,080 ac-ft/yr water right

Table 4-4. EID Surface Water Supply Contracts and Rights (continued)

Water source	Diversion/ Facility name	Contract/ Agreement or Appropriator	Water right permit number	Maximum diversion rate	Availability
Folsom Lake	EID raw water pump station	<ul style="list-style-type: none"> EID Contract 14-06-200-1375A (El Dorado Hills) EID Contract 14-06-200-7312 IRI (Lakehills Estates) EID State water right permit 	<ul style="list-style-type: none"> 11315 & 6 EID 21112 EID 	19.5 mgd	<ul style="list-style-type: none"> 7,550 ac-ft/yr contract 17,000 ac-ft/yr water right
Ditch/Weber Reservoir Water Rights	Weber Creek, Slab Creek, Hangtown Creek, Weber Reservoir	EID Pre-1914 (ditches)	EID state water right license L2184 (Weber)	N/A	4,560 ac-ft/yr water rights

Source: EID [Water Supply Master Plan](#), 2001.

4.3 Desalination

The City currently has no opportunities or plans for using desalinated water as a supply source, as shown in Table 4-5.

Table 4-5. (DWR Table 18) Opportunities for Desalinated Water

Sources of water	Opportunities
Ocean water	none
Brackish ocean water	none
Brackish groundwater	none

4.4 Water Quality

This section describes the water quality of the existing water supply sources within the City and the manner in which water quality affects water management strategies. In addition, this section describes the manner in which water quality affects water supply.

4.4.1 Water Quality of Existing Water Supply Sources

Until 2003 water delivered to the City by EID did not comply with California Department of Health Services (DHS) regulations as storage reservoirs upstream of the City were not entirely lined and covered. Most of the EID-delivered water was re-treated and fluoridated at the City's Main Treatment Plant and stored in clearwell/storage ponds prior to conveyance to the Main Service Zone, which is the largest of the City's service zones. A small amount of EID-delivered water was re-treated but not fluoridated at the City's Sierra

Treatment Plant for the Sierra Service Zone. The remaining, relatively small, service zones within the City distribution system north of State route 50 received EID-delivered water with no subsequent treatment by the City. After EID completed its potable water storage tanks in 2003, water delivered to the City complied with DHS regulations. By 2004, the City abandoned and bypassed the Main Treatment Plant, the Main Treatment Plant clearwell/storage ponds, and the Sierra Treatment Plant (Kennedy/Jenks, 2005).

With an interconnected transmission system, and the recent construction and improvement of storage tanks and PRV stations, City operations are flexible when water quality or other technical problems arise. Based on water quality data from the City, EID and other nearby water purveyors, the City water supply sources continue to be, and are anticipated to remain, high-quality water. There are no projected water supply changes due to water quality, as shown in Table 4-6.

Water supply sources	2005	2010	2015	2020	2025	2030
Planned Surface Water	0	0	0	0	0	0
Supplier produced groundwater	N/A	N/A	N/A	N/A	N/A	N/A
Recycled water ^a	0	0	0	0	0	0
Water supply loss due to water quality	0	0	0	0	0	0
Desalination water	N/A	N/A	N/A	N/A	N/A	N/A

Notes:

^a Recycled water is discussed in Chapter 5 of this Plan.

N/A indicates this is not a current or projected water supply source.

4.4.2 Water Quality Effects on Water Management Strategies

Water quality affects the City's water management strategies through efforts to comply with Federal and State drinking water regulations. These regulations require rigorous water quality testing, source assessments, and treatment compliance.

To ensure that tap water is safe to drink, the United States Environmental Protection Agency (EPA) and DHS prescribe regulations that limit the amount of certain contaminants in water served by public water systems. The City is required to monitor drinking water quality on a daily, weekly, monthly, and annual basis. Water quality sampling results are compared against state and federal standards.

4.5 Current and Projected Normal Year Water Supplies

Consistent with its 1999 Agreement with the City, EID intends to deliver and sell water to the City, at historical use levels, including normal growth increases under normal operating conditions. Table 4-7 summarizes the current and projected water supplies available to the City.

Table 4-7. (DWR Table 4) Projected Normal Year Water Supplies, ac-ft/yr

Water supply sources	2010	2015	2020	2025	2030
EID	2,123	2,400	2,400	2,400	2,400
Supplier produced groundwater	0	0	0	0	0
Supplier surface diversions	0	0	0	0	0
Transfers in or out	0	0	0	0	0
Exchanges in or out	0	0	0	0	0
Recycled water ^a	0	0	0	0	0
Desalination	0	0	0	0	0
Other	0	0	0	0	0
Total	2,123	2,400	2,400	2,400	2,400

^a Recycled water is discussed in Chapter 5 of this Plan.

As summarized in Table 4-8, the City plans to purchase water from EID. According to the Agreement with the City, EID intends to deliver and sell water to the City, at historical use levels, including normal growth increases under normal operating conditions (Agreement, 1999).

Due to the availability of further refined data, it may be relevant to note that projected City 2010 and 2015 demands on EID are slightly different from EID's 2005 urban water management plan reported projected sales to the City. Differences are negligible. EID's 2005 urban water management plan was submitted prior to the completion of the City's 2005 Water Supply Master Plan from which the 2010 and 2015 estimates are based.

Table 4-8. (DWR Table 20) Wholesaler Identified & Quantified Existing and Planned Sources of Water- ac-ft/yr

Wholesaler sources	2010	2015	2020	2025	2030
EID	2,123	2,400	2,400	2,400	2,400

A water supply reliability comparison for year 2030 EID supply is made in Table 4-9, considering three water supply scenarios: normal water year, single-dry water year, and multiple-dry water years. Based on EID's Four Stage Water Supply Matrix, in Appendix E, and the expected multiple-dry year Sly Park Reservoir storage volumes (which is EID's current drought trigger), EID assumes that overall supplies will change five, ten, and twenty percent in multiple dry years two, three, and four, respectively (EIDa, 2006).

The Agreement between the City and EID includes single dry-year and multiple dry-year supplies: "All water deliveries are subject to the availability of water, provided, however, the City will not incur any deficiencies greater than all other EID customers" (Agreement, 1999).

Table 4-9. (DWR Table 21) Wholesaler Supply Reliability – ac-ft/yr

Wholesaler	Normal water year	Single-dry water year	Multiple-dry water years			
			Year 1	Year 2	Year 3	Year 4
EID	2,400	2,400	2,400	2,280	2,160	1,920
Percent of Normal	100	100	100	95	90	80

Note:
This table represents 2030 projections.

4.6 Water Supply Projects

This section provides projections of the future water supply quantities available to the City and EID. Future water supplies from EID are dependent upon planned infrastructure improvements being approved and constructed. As shown in Table 4-10, no specific future projects that may contribute to the City’s water supply from EID are being planned.

Table 4-10. (DWR Table 17) Future Water Supply Projects

Project name	Projected start date	Projected completion date	Normal water year ac-ft	Single-dry water year yield ac-ft	Multiple-dry water years		
					Year 1 ac-ft	Year 2 ac-ft	Year 3 ac-ft
No projects planned	N/A	N/A	0	0	0	0	0

Treated as a “municipal” customer by EID, the City gains system reliability from EID’s water supply projects, though no specific additional projected sources of water supply.

EID water supply projects and water supply programs that may or will be undertaken to meet the total projected water use would improve City and EID system reliability. EID’s projects and programs currently in progress or planned for the near future are described below. Potential supply sources for EID (those projects currently being considered and investigated) are also presented and summarized.

The Water Loss Reduction Project consists of EID improving its distribution system so that water loss is reduced by 2,000 ac-ft per year (Brown and Caldwell, 2005). The project consists primarily of advanced pressure management, decreased repair time and additional meter testing and replacement.

The PL 101-514 (Fazio) Supply includes a proposed 7,500 ac-ft of legislatively transferred unallocated Central Valley Project Supply water from Folsom Lake to EID. This allocation would be subject to the USBR Shortage Policy for Municipal and Industrial Contractors of maximum dry year reductions of 25 percent.

The Sacramento Municipal Utilities District (SMUD)-El Dorado Agreement allows for 30,000 ac-ft of water storage in SMUD reservoirs under normal year conditions, with an additional 15,000 ac-ft available for carryover purposes. A total of 40,000 ac-ft of water will be shared between EID and GDPUD. EID projects using 20,000 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 5,000 ac-ft in years three and four of a multiple dry year sequence.

The Recycled Water supply projects include seasonal storage facilities and increased distribution system development. This supply will increase as wastewater effluent, directly proportional to consumptive potable water demand, increases. Recycled water is discussed in depth in Chapter 5 of this Plan.

Table 4-11 provides a summary and schedule of the future water supply projects within the EID service area. Also shown is a quantification of each project's normal-year yield, single dry-year yield, and multiple dry-year yields.

Table 4-11. EID Future Water Supply Projects

Project name	Projected start date	Projected completion date	Normal water year, ac-ft/yr	Single dry water year, ac-ft/yr	Multiple-dry years, ac-ft/yr			
					Year 1	Year 2	Year 3	Year 4
Water Loss Reduction	2006	2010	2,000	2,000	2,000	2,000	2,000	2,000
PL 101-514 Supply	Present	2007	7,500	5,625	5,625	5,625	5,625	5,625
SMUD-El Dorado Agreement	2015	2017	20,000	15,000	15,000	10,000	5,000	5,000

EID is currently investigating several potential water supply projects. Table 4-12 lists EID's potential supply projects, their expected yields and the information source where details regarding infrastructure, economic and environmental considerations, can be found.

Table 4-12. Potential EID Water Supply Projects

Potential water supply source	Capacity, AF	Source
Groundwater Banking	50,000	Brown and Caldwell, <u>El Dorado County Shared Vision Drought Model 2005</u>
Sly Park Flashboard Project	1,280	EID <u>Water Supply Master Plan 2001</u>
Alder Creek Reservoir	11,250	Mead and Hunt, <u>Joint Benefit Investigation Plan: Technical Analysis for Preliminary Alternatives Prepared for EDCWA, EID, SMUD, and GDPUD July 2004</u>
Texas Hill Reservoir	10,050	(Mead and Hunt, 2004)
Capps Crossing Reservoir	14,000	(Mead and Hunt, 2004)

4.7 Water Supply Reliability and Vulnerability

This section describes the reliability of the City's water supply and their vulnerability to seasonal or climatic shortage.

The costs of demand management or supply augmentation options to reduce the frequency and severity of shortages are increasing for the City. As part of EID's effort, the City is reliability planning and studying its

costs to make the best possible estimate of the net benefit of taking specific actions. Reliability is a measure of a water service system's expected success in managing water shortages.

In addition to climate, other factors that can cause water supply shortages are earthquakes, chemical spills, and energy outages at treatment and pumping facilities. Planning must include the probability of catastrophic outages when using the reliability planning approach.

Reliability planning requires information about: (1) the expected frequency and severity of shortages; (2) how additional water management measures are likely to affect the frequency and severity of shortages; and (3) how available contingency measures can reduce the impact of shortages when they occur.

4.7.1 Reliability Comparison

This section presents the projected supplies available during single and multiple-dry water years. The City's surface water supply from EID is subject to reductions during dry years. The reliability of the City's water sources is summarized in Table 4-13.

Sources	Normal water year, ac-ft/yr	Single dry water year, ac-ft/yr	Multiple-dry years, ac-ft/yr			
			Year 1	Year 2	Year 3	Year 4
EID	2,400	2,400	2,400	2,280	2,160	1,920
Groundwater wells	0	0	0	0	0	0
Transfers in or out	0	0	0	0	0	0
Recycled water	0	0	0	0	0	0
Total	2,400	2,400	2,400	2,280	2,160	1,920
Percent of Normal	100	100	100	95	90	80

The definitions of these three water supply scenarios as stated in DWR's Guidebook to Assist Water Suppliers in the Preparation of the 2005 Urban Water Management Plan are provided below.

1. Normal year is a year in the historical sequence that most closely represents median runoff levels and patterns. Normal is defined as the median runoff over the previous 30 years or more. This median is recalculated every ten years.
2. Single-dry year is generally considered to be the lowest annual runoff for a watershed since the water year beginning in 1903.
3. Multiple-dry year period is generally considered to be the lowest average runoff for a consecutive multiple year period (three years or more) for a watershed since 1903.

The basis of the water year data to develop the water supply reliability in Table 4-13 is provided in Table 4-14.

Water year type	Base year(s)
Average water year	2004
Single-dry water year	1976-1977
Multiple-dry water years	1987-1992

4.7.2 Projected Single-Dry Year Water Supplies

The projected single-dry year water supplies are provided in Table 4-15.

Table 4-15. (DWR Table 43) Projected Single-Dry Year Water Supplies, ac-ft/yr					
Water supply sources	2010	2015	2020	2025	2030
Total supply	2,123	2,400	2,400	2,400	2,400
Percent of normal year supply	100	100	100	100	100

4.7.3 Projected Multiple-Dry Year Water Supplies

This section projects the impact of a multiple-dry year period for each 5-year period during the 25-year projection. Tables 4-16 through 4-20 provide an estimate of the projected multiple-dry year water supplies for each 5-year period.

Table 4-16. (DWR Table 46) Projected Multiple-Dry Year Water Supply, ac-ft/yr, Period Ending in 2010					
Water supply sources	2006	2007	2008	2009	2010
Total supply	1,905	1,859	1,810	1,653	1,699
Percent of normal year supply	100	95	90	80	80

Table 4-17. (DWR Table 49) Projected Multiple-Dry Year Water Supply, ac-ft/yr, Period Ending in 2015					
	2011	2012	2013	2014	2015
Total supply	2,182	2,130	2,073	1,893	1,920
Percent of normal year supply	100	95	90	80	80

Table 4-18. (DWR Table 52) Projected Multiple-Dry Year Water Supply, ac-ft/yr, Period Ending in 2020					
	2016	2017	2018	2019	2020
Total supply	2,400	2,280	2,160	1,920	1,920
Percent of normal year supply	100	95	90	80	80

Table 4-19. (DWR Table 55) Projected Multiple-Dry Year Water Supply, ac-ft/yr, Period Ending in 2025					
	2021	2022	2023	2024	2025
Total supply	2,400	2,280	2,160	1,920	1,920
Percent of normal year supply	100	95	90	80	80

Table 4-20. Projected Multiple-Dry Year Water Supply, ac-ft/yr, Period Ending in 2030

	2026	2027	2028	2029	2030
Total supply	2,400	2,280	2,160	1,920	1,920
Percent of normal year supply	100	95	90	80	80

4.7.4 Factors Resulting in Inconsistency of Supply

A summary of the factors resulting in the inconsistency of the water sources is provided in Table 4-21.

Table 4-21. (DWR Table 10) Factors Resulting in Inconsistency of Supply

Water supply sources	Legal	Environmental	Water quality	Climatic
Surface water supply	X	X	N/A	X
Supplier produced groundwater	N/A	N/A	N/A	N/A

N/A = not applicable

Chapter 6 of this Plan describes the City's current demand management measures. Water demand management measures would not be solely depended upon to replace inconsistent sources. EID's water shortage contingency plan would be implemented when there is a need to reduce demands significantly on a short-term basis. This water shortage contingency plan is presented in Appendix F and discussed in Chapter 7. Factors resulting in inconsistency of the City's water supply are included in Table 4-22.

Table 4-22. (DWR Table 22) Factors Resulting in Inconsistency of Wholesaler's Supply

Name of supply	Legal	Environmental	Water quality	Climatic
EID surface water	Current and future supply is available at a consistent level of use with regard to these factors.		None	Drought could result in a reduction of surface water supply.

4.8 Transfer and Exchange Opportunities

Currently, the City does not transfer and/or exchange water with other entities, and there are no transfers or exchanges projected in this Plan. A summary of the City's water supply transfer and exchange opportunities is provided in Table 4-23.

Table 4-23. (DWR Table 11) Transfer and Exchange Opportunities, ac-ft/yr

Transfer agency	Transfer or exchange	Short term proposed quantities, acre-feet	Long term proposed quantities, acre-feet
N/A	N/A	0	0

N/A = not applicable

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5. RECYCLED WATER

The purpose of this chapter is to provide information on recycled wastewater and its potential for use as a water resource in the City. The elements of the chapter are: (1) the agency coordination involved with developing a reuse plan, (2) the quantity, quality and existing use of wastewater generated in the service area, and a description of the collection, treatment, and disposal/reuse of that wastewater, (3) the current plans for water recycling, (4) the potential for water recycling in the service area, and (5) the plan for promoting and optimizing the use of recycled water.

5.1 Agency Coordination

In addition to being responsible for urban water supply, the City manages the wastewater collection and treatment for the domestic and commercial wastewater flows generated within the City’s sanitary sewer service area. The City does not use recycled water to supplement their water supply demands and does not have a reuse plan. With EID currently needing to supplement its recycled water supply with potable water in order to meet its peak recycled water demand, available wastewater effluent from the City is being discussed as a potential source, though the City’s Hangtown Creek Reclamation Facility’s (WWTP) location makes distribution difficult. Table 5-1 lists the agencies involved in reuse planning within the City’s service area.

Table 5-1. (DWR Table 32) Agency Participation in Reuse Planning

Agency type	Participating agency	Role
Water Supplier	City of Placerville	Provided Information
	EID	Provided Information
Wastewater Provider	City of Placerville	Provided Information

Several resources were used in the completion of this chapter, including the City’s 2006 Sewer System Master Plan (Holmes, 2006) and the team at Owen Engineering who have been working on the City’s wastewater treatment plant upgrades (Herrera, 2007).

5.2 Wastewater Quantity, Quality, and Existing Uses

This section describes the estimated wastewater generated, treated and disposed of in the City’s wastewater service area. Currently the City is upgrading their WWTP.

5.2.1 Wastewater Generation

Municipal wastewater in the City is generated from a combination of residential and commercial sources. The quantities of wastewater generated are proportional to the population and the consumptive water use in the service area. The City maintains records of new and existing customer connections sold and in service.

Wastewater volume projections are based on base year 2000 wastewater effluent flow of 1.22 million gallons per day (mgd) and a projected two percent annual increase. The projections include the projected wastewater buildout service area which consists of the existing wastewater service area extended to the City's sphere of influence. The current City wastewater service area is greater than the City's water service area.

Estimates of the wastewater flows generated within the City for present and future conditions are presented in Table 5-2. The total projected wastewater collected is based on a projected 2 percent annual growth in effluent flow; this is based on Year 2000 wastewater effluent flow at 1.22 mgd (Herrera, 2007). Estimates are consistent with the City's current Hangtown Creek Reclamation Facility improvement project. The smaller 2 percent growth in wastewater effluent as compared to projected 2.75 percent growth in customer demands may be due increased potable use for irrigation purposes.

Table 5-2. (DWR Table 33) Wastewater Collected and Treated, ac-ft/yr

	2000	2005	2010	2015	2020	2025	2030 ^a
Total collected ^b	1,367 ^c	1,510	1,669	1,845	2,039	2,253	2,490
Quantity that meets recycled water standard ^d	1,367	1,510	1,669	1,845	2,039	2,253	2,490

Notes:

The City's current sanitary service area boundary is larger than the City's water service area boundary and is projected to further increase into the City's sphere of influence; this additional area will be served water by EID.

^a According to the City's Sewer System Master Plan Phase 1 Summary Report the City's sanitary system is expected to reach buildout in Year 2030 (Holmes, 2006).

^b Based on projected 2 percent annual growth in effluent flow with base year 2000 wastewater effluent flow at 1.22 mgd (Herrera, 2007).

^c Actual average wastewater effluent (Herrera, 2007).

^d All existing and future effluent is tertiary treated and disinfected, and could be reclaimed in accordance with Title 22 standards.

5.2.2 Wastewater Collection

The wastewater collection system in the City is a network of pipes, and lift stations that transport wastewater from its source to the treatment plant. Due to additions from inflow and infiltration the collected wastewater volume is greater than the wastewater volume generated solely by customers. Inflow and infiltration, includes water that enters the sewer system through breaks, gaps, and joints during rain, flood, and high water table conditions. In the City, the inflow and infiltration quantities are estimated to be significant; they primarily occur during the winter rainy season when recycled water use is less critical.

5.2.3 Wastewater Treatment

The Hangtown Creek Reclamation Facility is located off of Cool Water Creek Road in Placerville. Currently, the City is in the process of constructing the 2005 facility improvements project which is anticipated to complete construction in 2009. Due to new mandatory State environmental standards, the City plans on spending 45 million dollars to upgrade its existing plant. All existing and future effluent (except during high wet weather flow periods - assumed to be 5 percent of the time) is tertiary treated and disinfected, and could be reclaimed in accordance with Title 22 standards.

5.2.4 Wastewater Disposal

WWTP disposal methods are affected by the treatment required for surface water discharge. All Hangtown Creek WWTP effluent is discharged to Hangtown Creek per the City's National Pollutant Discharge

Elimination System (NPDES) Permit. Hangtown Creek is a tributary to Weber Creek and the South Fork of the American River. Projected disposal methods and quantities are presented in Table 5-3.

Table 5-3. (DWR Table 34) Disposal of (non-recycled) Wastewater, ac-ft/yr

Method of disposal	Treatment level	2005	2010	2015	2020	2025	2030
Hangtown Creek	Disinfected Tertiary	1,510	1,669	1,845	2,039	2,253	2,490

Note:

All existing and future effluent is tertiary treated and disinfected, and could be reclaimed in accordance with Title 22 standards.

5.3 Water Recycling Current Uses

Currently, the City does not use recycled water to mitigate urban demand. Though the City is not required to augment the streamflow in Hangtown Creek to meet aquatic resource requirements, aquatic resources do benefit from this effluent discharge. None of the effluent is currently reclaimed, except for negligible in-plant uses. This section presents current reuse by the City. Actual recycled water deliveries in 2005 are listed in Table 5-4.

Table 5-4. (DWR Table 35A) Existing Recycled Water Uses

Type of use	Treatment level	2005 ac-ft
Agriculture	--	0
Landscape	--	0
Wildlife habitat	--	0
Aquatic resources	Disinfected Tertiary	1,510 ^a
Groundwater recharge	--	0
Total	--	1,510 ^a

^a None of the City's effluent is currently reclaimed. Aquatic resources benefit from the City's effluent discharge, though the City is not required to augment the streamflow in Hangtown Creek to meet any requirements (Herrera, 2007).

5.4 Potential and Projected Recycled Water Use Plan

This section presents the projected potential use and methods to optimize reuse in the future. Though the City does not use recycled water to supplement their water supply demands, the Hangtown Creek disposal does benefit/support wetland conditions. Furthermore, with EID currently needing to supplement its recycled water supply in order to meet its peak recycled water demand, available wastewater effluent from the City is being discussed as a potential source, though the WWTP's location makes distribution difficult.

The volume of City potential recycled water use is shown in Table 5-5. This table presumes all wastewater effluent that can meet recycled water standards will be used, as shown in Table 5-2 previously.

Table 5-5. (DWR Table 35B) Recycled Water Uses – Potential ac-ft/yr

Type of use	Treatment level	2010	2015	2020	2025	2030
Agriculture ^a	Disinfected Tertiary	751	830	918	1,014	1,121
Landscape ^a	Disinfected Tertiary	751	830	918	1,014	1,121
Wildlife habitat	--	0	0	0	0	0
Aquatic resources	Disinfected Tertiary	167	185	204	225	249
Wetlands	--	0	0	0	0	0
Groundwater recharge	--	0	0	0	0	0
Total Potential Use		1,669	1,845	2,039	2,253	2,490

^a Potential agriculture and landscape recycled water use with sale to EID.

Since the City did not need to complete an urban water management plan in year 2000 there are no historic projections to compare to actual current recycled water use as shown in Table 5-6.

Table 5-6. (DWR Table 37) Recycled Water Uses – 2005 Projection versus Actual, ac-ft/yr

Method of disposal	2000 UWMP projection for 2005 ^a	2005 actual use ^b
Agriculture	N/A	0
Landscape	N/A	0
Wildlife habitat	N/A	0
Aquatic resources ^a	N/A	1,510 ^a
Wetlands	N/A	0
Groundwater recharge	N/A	0
Total	N/A	1,510

^a None of the City's effluent is currently reclaimed. Aquatic resources benefit from the City's effluent discharge, though the City is not required to augment the streamflow in Hangtown Creek to meet any requirements (Herrera, 2007).

The projected future use of recycled water in the City for the next 25 years is shown in Table 5-7. It is assumed that reuse water will not be available for the City service area.

Table 5-7. (DWR Table 36) Projected Future Use of Recycled Water, ac-ft/yr

Type of use	2010	2015	2020	2025	2030
Agriculture	0	0	0	0	0
Landscape	0	0	0	0	0
Wildlife habitat/ Wetlands	0	0	0	0	0
Aquatic Resources	1,669 ^a	1,845 ^a	2,039 ^a	2,253 ^a	2,490 ^a
Groundwater Recharge	0	0	0	0	0
Total	0	0	0	0	0

^a None of the City's effluent is currently or projected to be reclaimed. Aquatic resources benefit from the City's effluent discharge, though the City is not required to augment the streamflow in Hangtown Creek to meet any requirements (Herrera, 2007).

5.5 Optimizing the Use of Reclaimed Water

This section discusses how the City promotes the use of recycled water and their optimization plan for recycled water use.

5.5.1 Promotion of Recycled Water Use

On behalf of the region, EID currently exercises outreach programs in the forms of brochures and community meetings to convince the public that recycled water is safe and cost-effective. Public education is especially important because recycled water is often used for irrigating parks, athletic fields and other public areas. All new development in EID areas where reclaimed water distribution is feasible is required to provide recycled water. Furthermore, available City wastewater effluent is being investigated as a potential source of recycled water for applicable EID customers. The City's methods to encourage recycled water use are listed in Table 5-8.

Table 5-8. (DWR Table 38) Methods to Encourage Recycled Water Uses

Actions	Ac-ft/yr of use projected to result from this action				
	2010	2015	2020	2025	2030
Financial incentives	0	0	0	0	0
Education	0	0	0	0	0
Ordinance	0	0	0	0	0
Total	0	0	0	0	0

5.5.2 Optimization Plan for Recycled Water

To optimize the use of recycled water, a cost/benefit analyses must be conducted for each project alternative. These alternatives will then be ranked from highest to lowest net benefit so that the most balanced option can be implemented. Once the preferred alternative has been chosen, the City will work carefully to assure recycled water use is optimized so that all delivered water can be used.

Both economic and financial analysis will be conducted for each potential recycled water use alternative, such as coordination with EID for recycled water distribution to their pertinent customers. Data are common to both analyses; however, they are used for different purposes. An economic analysis considers all monetary costs and benefits to society, regardless of who pays the costs or receives the benefits. A financial analysis demonstrates financial feasibility of a project by evaluating who could pay or share the costs, and who receives or shares the benefits. Economic and financial feasibility do not always exist together for the same project. For instance, a project may be economically feasible from the broad regional or statewide perspective, yet financially infeasible from the local perspective.

Environmental impacts also have economic costs and benefits. The impacts should be identified and included in an environmental mitigation plan. Even though monetary estimates of environmental benefits and costs are difficult to make, these should be included, especially in cases where environmental enhancement and/or recreational opportunities play a major role in the justification of the project.

The acceptance of recycled water and the decision by customers to use recycled water instead of potable water depends on its cost, quality, reliability, and benefits. Currently the capital cost to produce and deliver tertiary treated recycled wastewater is higher than the cost to treat and deliver potable water. This is because it is costly to treat wastewater to strict tertiary standards. In addition there is a large capital cost to build a recycled water distribution piping system. The customer's expectation is to pay significantly less money for recycled water than for potable water as an incentive to build and maintain non-potable water piping as well as providing an incentive for taking on the risk perceived with using recycled water.

In addition to cost, the quality and reliability of recycled water is also critical to the adoption of recycled water. The recycled water should be odorless and colorless. It can not lead to algae growth that will clog irrigation nozzles and fittings. The water must not be corrosive or have a pH imbalance that would be a stressor to vegetation. It must not have a mineral content that will stain equipment or surfaces. The reliability of the recycled water supply is important to promote its dependability as a product. The construction of recycled water storage facilities are critical to ensuring there is an adequate supply under high demand conditions. These same facilities are necessary to maintain a consistent service water pressure. Elevated water tanks and reservoirs would be necessary for the promotion of recycled water as an alternative to potable water.

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6. WATER CONSERVATION

The unpredictable water supply and ever increasing demand on California’s complex water resources have resulted in a coordinated effort by the DWR, water utilities, environmental organizations, and other interested groups to develop a list of demand management measures (DMMs) or urban Best Management Practices (BMPs) for conserving water. This consensus-building effort resulted in a Memorandum of Understanding (MOU) Regarding Urban Water Conservation in California, which formalizes an agreement to implement these DMMs and makes a cooperative effort to reduce the consumption of California’s water resources. The DMMs as defined in the MOU are generally recognized as standard definitions of water conservation measures. The MOU is administered by the California Urban Water Conservation Council (CUWCC). The City is not currently an MOU signatory. However, EID is signatory and in accordance with their Agreement with the City, conducts water conservation activity on the City’s behalf.

According to the City’s Agreement with EID in Appendix D the City and EID are both mandated to implement a water conservation DMM Program as required by Federal and State regulations. The City agrees to contract with EID for these water conservation services and reimburse EID for implementation costs. Guidelines regarding programs, schedule, reimbursement and reporting for the water conservation program implementation by EID for the City are found in Attachment A of the Agreement in Appendix D of this Plan.

The MOU requires that a water utility implement only the BMPs that are economically feasible. If a BMP is not economically feasible, the utility may request an economic exemption for that BMP. The BMPs as defined by the MOU are presented in Table 6-1.

Table 6-1. Water Conservation Best Management Practices

No.	Name
1.	Water survey programs for single-family residential and multi-family residential connections.
2.	Residential plumbing retrofit.
3.	System water audits, leak detection and repair.
4.	Metering with commodity rates for all new connections and retrofit of existing connections.
5.	Large landscape conservation programs and incentives.
6.	High-efficiency washing machine rebate programs.
7.	Public information programs.
8.	School education programs.
9.	Conservation programs for commercial, industrial, and institutional accounts.
10.	Wholesale agency assistance programs.

Table 6-1. Water Conservation Best Management Practices (continued)

No.	Name
11.	Conservation pricing.
12.	Conservation coordinator.
13.	Water waste prohibition.
14.	Residential ultra-low flush toilet (ULFT) replacement programs.

6.1 Current and Historical Water Conservation Program

The City maintains an ongoing water conservation program. In accordance with the Agreement, the City contracts with EID for most DMM implementation. A description of each DMM and a schedule of implementation is provided in this section. The City does not currently have any method in place to evaluate the effectiveness of DMMs or estimate water savings and relies on EID's DMM analysis.

DMM 1 - Water Survey Programs for Single-family Residential and Multi-family Residential Connections

Description: On behalf of the City, EID's water survey programs for single-family residential and multifamily residential connections consist of annual water audits, water use reviews, and surveys of past program participants. Specifically, the DMM 1 program includes the following actions:

- Direct contact via letter or telephone single-family and multi-family residential customers; sign-ups through the EID water efficiency webpage and at public events; notification through billing inserts, direct distribution and public office notices.
- Surveys to single-family and multi-family units residential customers.
- Customer instruction in meter reading.
- Checks for leaks, including toilets/faucets and, if necessary, provide toilet flappers/faucet washers.
- Checks of showerhead and aerator flow rates, and the provision of low-flow models, as necessary.
- Checks of toilet flow rates and, when appropriate, recommendations for an ULFT replacement.
- Checks of irrigation systems for leaks/overlap and determination of timer functioning and current schedule.
- Measurements of landscaped areas and development of irrigation schedules.
- Provision to customers of evaluation results, water saving recommendations, instructional Water-Wise Gardening CD-ROM, rebate applications and other information.

In 1995 EID began its water audit program, offering free residential water use efficiency surveys to all single and multi-family customers, including all City customers. EID specifically addresses the top 20 percent of water users in each sector and cases with customer requests, as required by the CUWCC MOU. Since EID treats the City as just another customer, City single-family and multi-family customers are included in EID customer category accounting and this high-user list. An inquiry report was developed by EID's technology department that categorizes billing records by water use within each sector. Letters offering free water surveys are mailed directly to the highest water users within each sector. If a customer chooses to not

participate and remains on the highest water use list the subsequent year, the customer will receive follow-up letters offering this service.

EID utilizes a full-time Water Auditor to conduct water audits. Single-family surveys take approximately two hours. During the interior portion of the survey, the auditor measures flow rates of existing plumbing fixtures; inspects water fixtures and appliances for leaks and tests toilets for leakage using dye tablets; offers and installs showerheads and faucet aerators at no charge to the customer; provides an informational package containing water conservation literature, an instructional “Water-Wise Gardening” CD-ROM and information on EID’s ultra low flow toilet replacement and high efficiency clothes washer incentive programs. The exterior water audit includes a landscape survey. The auditor shows the customer the location of the water meter and provides instructions to read the meter as well as how to use a water meter as a leak detection tool; measures the landscaped areas; tests the sprinkler system for irrigation efficiency and distribution uniformity; teaches the customer how to set and adjust the irrigation controller; develops a seasonal irrigation schedule based on soil type, evapotranspiration, and irrigation system; recommends sprinkler system repairs or improvements; and provides informational brochures and an instructional CD-ROM on water efficient landscaping design, plant selections and a general prescription for irrigation scheduling. Multi-family surveys are similar, but require coordination with owners/manager tenants, and landscape management services.

A customer data form is completed for each dwelling unit and includes the number of people per household, number of bathrooms, age of appliances, lot and landscaped area square footage. Customer current and historic consumption records are reviewed before the survey and provided to the customer. This data is used to analyze the customer’s water use. A detailed customized report is provided to participating customers after every water survey with water saving recommendations.

Schedule: This survey program is conducted annually and began in the City 1999 (Heslin, 2007).

Evaluation of DMM Effectiveness: EID gages the effectiveness of this DMM by evaluating program penetration and by comparing prior audited customer water use to future water use. The City does not currently have any method in place to evaluate the effectiveness of this measure or estimate water savings, and relies on EID’s CUWCC guided DMM 1 analysis. The past number of actual surveys and the projected number of surveys including expenditures are provided in Tables 6-2 and 6-3, respectively.

Table 6-2. Actual Conservation Activities, Expenditures, and Water Savings, DMM 1. Water survey programs for single-family residential and multi-family residential connections

Year	2001	2002	2003	2004	2005
Single family surveys	12	13	20	19	41
Multi family surveys	8	3	2	9	25
Expenditures, \$	\$1,685	\$1,731	\$2,789	\$3,200	\$7,383
Water savings, ac-ft/yr ^a	N/A	N/A	N/A	N/A	N/A

^aWater savings estimates on water use and the effect of such savings on the City’s ability to further reduce demand are not available (N/A).

Table 6-3. Projected Conservation Activities, Expenditures, and Water Savings, DMM 1. Water survey programs for single-family residential and multi-family residential connections

Year	2006	2007	2008	2009	2010
Single family surveys ^a	41	41	41	41	41
Multi family surveys ^a	25	25	25	25	25
Expenditures, \$ ^b	\$7,678	\$7,985	\$8,305	\$8,637	\$8,983
Water savings, ac-ft/yr ^c	N/A	N/A	N/A	N/A	N/A

^a The projection of program activity and expenditures from 2006 through 2010 are proportional to EID's estimated USBR WMP estimates using City activity and budget in base year 2005.

^b With constant survey targets, expenditures increase is due to applied 4 percent inflation (EIDb, 2006)

^c Projected water savings estimates on water use and the effect of such savings on the City's ability to further reduce demand are not available (N/A).

DMM 2 - Residential Plumbing Retrofit

Description: On behalf of the City, EID's program includes the following actions:

- Retrofit kits consist of high-quality, 2.5 gpm or less showerheads, 2.2 gpm or less faucet aerators, toilet displacement devices and toilet leak detection tablets.
- Available to all EID customers (including City customers); distributed until 75 percent of single-family and 75 percent of multi-family units are retrofitted.
- Tracking of the location, type and number of retrofits completed, devices distributed, and program costs.

EID targets older homes built prior to 1992 and offers customers the opportunity to install low flow water appliances at no charge. Retrofits include low flow showerheads, faucet aerators, toilet tank banks or dams, toilet tank leak detection tablets, installation instructions, and water conservation literature. Retrofit kits are distributed during water surveys, at public events, over the counter and upon request. In 2005 program implementation was enhanced for increased participation.

Schedule: The program started in the City in 1999 and is conducted annually (Heslin, 2007).

Evaluation of DMM Effectiveness: EID gages the effectiveness of this DMM by evaluating program penetration and by comparing prior water use to future water use. The City does not currently have any method in place to evaluate the effectiveness of this measure or estimate its water savings, and relies on EID's CUWCC guided analysis.

The past number of retrofit kits and the projected number of retrofit kits distributed including expenditures are provided in Tables 6-4 and 6-5, respectively.

Table 6-4. Actual Conservation Activities, Expenditures, and Water Savings,
DMM 2. Residential Plumbing Retrofit

Year	1992-2001 ^a	2002	2003	2004	2005
Single family devices ^a	145	146	153	152	174
Multi family devices ^b	8	3	2	9	25
Expenditures, \$ ^c	\$2,784	\$2,711	\$2,820	\$2,930	\$3,622
Water savings, ac-ft/yr ^d	N/A	N/A	N/A	N/A	N/A

^a Program records available starting in Year 2001.

^b It is assumed one kit is distributed per residential survey and that five percent of residential customers are reached through public events, over the counter and upon request.

^c Expenditures assume cost per kit is \$18.23 (EIDc, 2006)

^d Water savings estimates on water use and the effect of such savings on the City's ability to further reduce demand are not available (N/A).

Table 6-5. Projected Conservation Activities, Expenditures, and Water Savings,
DMM 2. Residential Plumbing Retrofit

Year	2006	2007	2008	2009	2010
Single family devices ^a	177	177	177	177	177
Multi family devices ^a	25	25	25	25	25
Expenditures, \$ ^b	\$3,689	\$3,836	\$3,990	\$4,149	\$4,315
Water savings, ac-ft/yr ^c	N/A	N/A	N/A	N/A	N/A

^a It is assumed one kit is distributed per residential survey and that five percent of residential customers are reached through public events, over the counter and upon request.

^b Expenditures assume cost per kit is \$18.23 and include 4 percent inflation (EIDc, 2006).

^c Water savings estimates on water use and the effect of such savings on the City's ability to further reduce demand are not available (N/A)

DMM 3 - System Water Audits, Leak Detection and Repair

Description: A system water audit, leak detection and repair program consists of ongoing leak detection and repair within the system, focused on the high probability leak areas. This also includes an ongoing meter calibration and replacement program for all production and distribution meters. Of its 39 miles of distribution system lines, the City of Placerville performed leak detection on approximately 13 miles of pipe in Year 2002; several leaks were identified and repaired (Pesses, 2007). The City did not complete a full-scale audit during 2005, though was able to complete a pre-screening system audit. The City calculates verifiable uses as a percent of total production by comparing EID-City meter records and City distribution accounts. The City keeps all metered water use data on file. As described in Chapter 3 of this Plan, the City's UAW use is approximately 9 percent of total production.

Schedule: This program is ongoing as the City intends to continue ongoing capital improvement replacement projects to improve the distribution system and remove obsolete and inferior components. The City will complete a full-scale water audit if its UAW use goes above 10 percent of total production.

Evaluation of DMM Effectiveness: Effectiveness of this DMM will be evaluated by tracking leak detection and leak repair and by comparing prior water use to future water use. The City has ongoing capital

improvement replacement projects to improve the distribution system and remove obsolete and inferior components. These efforts are part of the City's overall operations and maintenance budget. Any identified leaks are repaired in an expedited fashion (Pesses, 2007).

As shown in Tables 6-6 and 6-7, the City does not currently have any particular method in place to estimate its leak detection and repair water savings, but the City does calculate verifiable uses as a percent of total production by comparing EID-City meter records and City distribution accounts.

**Table 6-6. Actual Conservation Activities, Expenditures, and Water Savings,
DMM 3. System Water Audits, Leak Detection, and Repair**

Year	2001	2002	2003	2004	2005
Percent unaccounted-for water ^a	15	N/A	20	13	9
Miles of distribution lines surveyed ^b	0	13	-- ^b	-- ^b	-- ^b
Miles of distribution lines repaired ^b	-- ^b	26 leaks ^c	-- ^b	-- ^b	-- ^b
Expenditures ^d , \$	-- ^d	-- ^d	-- ^d	-- ^d	-- ^d
Water savings ^e , ac-ft/yr	N/A	N/A	N/A	N/A	N/A

^a Source: (Annual, 2001-2005)

^b The City has ongoing capital improvement replacement projects to improve the distribution system and remove obsolete and inferior components; these efforts are part of the City's overall operations and maintenance. Any identified leaks are repaired in an expedited fashion (Pesses, 2007). In Year 2002 the City completed a water audit when UAW use went above 10 percent of total production in 2001.

^c The City identified and repaired 26 leaks (Pesses, 2007). An estimate of pipe miles is not available.

^d Detailed historical records of repair costs are not maintained. The City includes leak detection and repair as part of its overall operations and maintenance budget (Pesses, 2007).

^e Water savings estimates on water use and the effect of such savings on the City's ability to further reduce demand are not available (N/A)

**Table 6-7. Projected Conservation Activities, Expenditures, and Water Savings,
DMM 3. System Water Audits, Leak Detection, and Repair**

Year	2006	2007	2008	2009	2010
Percent unaccounted-for water ^a	9	9	9	9	9
Miles of distribution lines surveyed ^b	-- ^b				
Miles of distribution lines repaired ^b	-- ^b				
Expenditures ^c , \$	-- ^c				
Water savings, ac-ft/yr ^d	N/A	N/A	N/A	N/A	N/A

^a Estimated

^b The City has ongoing capital improvement replacement projects to improve the distribution system and remove obsolete and inferior components; these efforts are part of the City's overall operations and maintenance. Any identified leaks will be repaired in an expedited fashion. The City will perform a system water audit if UAW use exceeds 10 percent.

^c The City includes leak detection and repair as part of its overall operations and maintenance budget (Pesses, 2007).

^d Water savings estimates on water use and the effect of such savings on the City's ability to further reduce demand are not available (N/A)

DMM 4 - Metering with Commodity Rates for all New Connections and Retrofit of Existing Connections

Description: The City is fully metered with increasing block rate pricing. See rate schedule in Appendix G.

Schedule: The City has been fully metered since prior to 1970 (Pesses, 2007).

Evaluation of DMM Effectiveness: This DMM is complete as demonstrated in Tables 6-8 and 6-9.

Table 6-8. Actual Conservation Activities, Expenditures, and Water Savings, DMM 4. Metering with Commodity Rates for All New Connections and Retrofit of Existing Connections

Year	2001	2002	2003	2004	2005
Unmetered accounts	0	0	0	0	0
Retrofit meters installed	0	0	0	0	0
Accounts without commodity rates	0	0	0	0	0
Expenditures, \$	0	0	0	0	0
Water savings, ac-ft/yr	0	0	0	0	0

Table 6-9. Projected Conservation Activities, Expenditures, and Water Savings, DMM 4. Metering with Commodity Rates for All New Connections and Retrofit of Existing Connections

Year	2006	2007	2008	2009	2010
Unmetered accounts	0	0	0	0	0
Retrofit meters installed	0	0	0	0	0
Accounts without commodity rates	0	0	0	0	0
Expenditures, \$	0	0	0	0	0
Water savings, ac-ft/yr	0	0	0	0	0

DMM 5 - Large Landscape Conservation Programs and Incentives

Description: On behalf of the City, EID's large landscape conservation program includes the following components:

- Customer support, education, and assistance that provide non-residential customers with support and incentives to improve their landscape water use efficiency.

- Accounts with dedicated landscape irrigation meters will be measured, and ETo-based water use budgets equal to no more than 100 percent of reference evapotranspiration per square foot of landscape area will be assigned.

On behalf of the City, EID has provided customers with recommendations and information on water efficient irrigation technology, methods and landscape design for many years. EID's main office, located within the City's service area has a demonstration xeriscape garden for viewing and education.

In 1995 EID offered large landscape water audits at no cost to City customers. Audits included an irrigation system evaluation, irrigation scheduling, water budgets, and efficient irrigation system upgrade recommendations. EID offered \$200.00 cash as incentive to gain customer participation.

Currently, EID continues to offer large landscape surveys to dedicated metered irrigation accounts. The City has no dedicated metered irrigation accounts, so no water budgets can be developed; however, all customers with large landscapes (i.e. schools, parks, etc), are offered surveys. These audits are included and recorded under BMP 9 as part of EID's CII audits (Heslin, 2007). The survey includes landscape area measurements, plant identification, hydro-zoning, canopy coverage, irrigation efficiencies and microclimate factors to determine an ETo-based water use budget. EID has co-sponsored large landscape irrigation efficiency workshops with local school districts, the Natural Resources and Conservation Service (NRCS) and the University of California (UC) Cooperative Master Gardeners.

Since 2000 EID has received numerous United States Bureau of Reclamation (USBR) grants to assist support of this program. In 2000 EID received \$5,000 to collect large landscape ETo data to establish water budgets and \$7,000 for a master gardener CIMIS training program. In 2001 EID received \$1,500 to support a pilot irrigation controller rain sensor program. In 2002 EID received \$4,000 to implement a rain sensor irrigation system controller/rain shut-off device program, \$4,000 to provide a large landscape water management program training class, and \$3,000 to install a water efficient landscape project at the new EID customer service building. In 2003 EID received \$4,000 for agriculture and urban training courses for staff.

Schedule: This program is conducted annually and began in 1995 (Heslin, 2007).

Evaluation of DMM Effectiveness: The City does not currently have any method in place to evaluate the effectiveness of this measure or estimate its water savings, and relies on EID's analysis. The historical and projected number of large landscape surveys and follow-up visits are provided in Tables 6-10 and 6-11, respectively.

Table 6-10. Actual Conservation Activities, Expenditures, and Water Savings, DMM 5. Large Landscape Conservation Programs and Incentives

Year	2001	2002	2003	2004	2005
Budgets developed ^a	0	0	0	0	0
Surveys completed ^a	0	0	0	0	0
Follow-up visits	0	0	0	0	0
Expenditures, \$ ^b	0	0	0	0	0
Water savings, ac-ft/yr ^c	N/A	N/A	N/A	N/A	N/A

^a The City has no dedicated metered irrigation accounts, and so no budgets can be developed. All customers with large landscapes (i.e. schools, parks, etc), are offered surveys. These audits are included and recorded under BMP 9 as part of EID's CII audit program (Heslin, 2007).

^b Historically, the City has not been charged by EID to complete these surveys (Heslin, 2007).

^c Water savings estimates on water use and the effect of such savings on the City's ability to further reduce demand are not available (N/A)

Table 6-11. Projected Conservation Activities, Expenditures, and Water Savings,
DMM 5. Large Landscape Conservation Programs and Incentives

Year	2006	2007	2008	2009	2010
Budgets developed ^a	0	0	0	0	0
Surveys completed ^a	0	0	0	0	0
Follow-up visits	0	0	0	0	0
Expenditures, \$ ^b	0	0	0	0	0
Water savings, ac-ft/yr ^c	N/A	N/A	N/A	N/A	N/A

^a The City has no dedicated metered irrigation accounts, and so no budgets can be developed. All customers with large landscapes (i.e. schools, parks, etc), are offered surveys. These audits are included and recorded under BMP 9 as part of EID's CII audit program (Heslin, 2007).

^b Consistent with historical practices, the City does not expect to be charged by EID to complete these surveys.

^c Water savings estimates on water use and the effect of such savings on the City's ability to further reduce demand are not available (N/A)

DMM 6 - High-efficiency Washing Machine Rebate Programs

Description: On behalf of the City, EID's High Efficiency Clothes Washer Rebate Program includes the following components:

- The determination of whether local energy providers have a high-efficiency washing machine rebate program. Determination of cost-effective rebate amount.
- If the cost-effective rebate is \$50 or more, the establishment of a cooperative rebate program with local energy providers.
- If cost-effective rebates is less than \$50, or local energy providers do not have a high-efficiency washing machine rebate program, information on high-efficiency washing machines (and, if appropriate, local energy provider rebate program) will be provided to customers.
- Support for local, state, and federal legislation to improve efficiency standards for washing machines.

EID has received \$10,000 from USBR in cost-share grants offering water efficient clothes washer rebates for single and multi-family EID and City customers. \$100 rebates were offered in 2001 and 2003. In 2004 rebates were based upon the Consortium of Energy Efficiency (CEE) Tier 2, 3a & 3b criteria. Tier 2 washers were eligible for \$50 rebates, Tier 3a \$75, and Tier 3b \$100. With an additional \$7,500 in USBR grant funding in 2005, the same Tier based program was implemented.

Schedule: This program began in 1999 (Heslin, 2007) and will continue as long as funding is available. No activity was reported in Year 2001.

Evaluation of DMM Effectiveness: On behalf on the City, EID will monitor program success through the number of rebates requested. Expansion of the program is considered annually based on the previous years' participation levels.

The City does not currently have any method in place to evaluate the effectiveness of this measure or estimate its water savings, and relies on EID's CUWCC guided analysis. The historical and projected number of high-efficiency residential rebates paid and the cost per rebate, in addition to annual DMM 6 expenditures are provided in Tables 6-12 and 6-13, respectively.

Table 6-12. Actual Conservation Activities, Expenditures, and Water Savings,
DMM 6. High-Efficiency Washing Machine Rebate Programs

Year	2001	2002	2003	2004	2005
\$ per rebate ^{a,b}	N/A	\$75	\$75	\$75	\$75
No. of rebates paid	0	2	0	3	2
Expenditures, \$ ^b	\$0	\$240	\$0	\$165	\$147
Water savings, ac-ft/yr ^c	N/A	N/A	N/A	N/A	N/A

^a Tier 2 washers were eligible for \$50 rebates, Tier 3a \$75, and Tier 3b \$100

^b Source: EID invoices of conservation program management costs to City (EIDc, 2006)

^c Water savings estimates on water use and the effect of such savings on the City's ability to further reduce demand are not available (N/A).

Table 6-13. Projected Conservation Activities, Expenditures, and Water Savings,
DMM 6. High-Efficiency Washing Machine Rebate Programs

Year	2006	2007	2008	2009	2010
\$ per rebate	\$75	\$75	\$75	\$75	\$75
No. of rebates paid ^a	3	3	3	3	3
Expenditures, \$ ^b	\$165	\$172	\$178	\$186	\$193
Water savings, ac-ft/yr ^c	N/A	N/A	N/A	N/A	N/A

^a Projected rebates based on EID 2005 USBR WMP projections and proportional to average historical EID-City rebates paid (EIDb, 2006)

^b Projected expenditures are proportional to average historical expenditures versus awarded rebates and assume 4 percent are not available (N/A).

DMM 7 - Public Information Programs

Description: On behalf of the City, EID provides public information at public events, through paid advertising, public service announcements and the EID website, through speaking engagements for community and public interest groups, through the news media and with billing inserts. Individualized water consumption data is posted on customer bills comparing water usage in gallons per day for the current and previous years. Water conservation publications are distributed at community events, upon request and through multi water agency water efficiency public outreach campaigns.

EID began providing public information on water use and conservation during the 1977 drought. Both EID and City customers are informed about water efficiency programs through various means that include: speakers for community and public interest groups, (i.e. the Placerville City Council meetings and homeowners and local business owners association board meetings), paid advertising, public service announcements, customer newsletters, billing inserts, and free water efficiency publications. EID-sponsored booths are set-up at many community events including the El Dorado County Fair, Home & Garden Shows, the Gold Country Herb Faire, Kids Expo, Kids Day America and the annual USBR Get Wet Day. EID also sponsors of the California Water Awareness Campaign and participates in events throughout the year and during the month of May promoting Water Awareness. There is also a xeriscape demonstration garden at EID's main office for customer education. EID has also collaboratively produced and distributes an instructional "Water-Wise Gardening in the Gold Country Region" CD-ROM.

Schedule: EID's public information program is an ongoing, annual program. EID began implementing this program on behalf of the City in the year 1995 (Heslin, 2007).

Evaluation of DMM Effectiveness: Savings from this program cannot be directly quantified. The activities performed in this program as well as expenditures to-date and projected are provided in Tables 6-14 and 6-15, respectively. As part of their Agreement, EID does not specifically charge the City for general public information programs. In 2004 and 2005 EID did charge the City for 100 water-efficiency gardening CD-ROM distributions.

Table 6-14. Actual Conservation Activities and Expenditures,
DMM 7. Public Information Programs

Year	2001	2002	2003	2004	2005
a. Paid advertising	Yes	Yes	Yes	Yes	Yes
b. Public service announcement	Yes	Yes	Yes	Yes	Yes
c. Bill inserts/newsletters/brochures	Yes	Yes	Yes	Yes	Yes
d. Bill showing water usage	Yes	Yes	Yes	Yes	Yes
e. Demonstration gardens	1	1	1	1	1
f. Speaker events, media events	Yes	Yes	Yes	Yes	Yes
g. Speaker's bureau	No	No	No	No	No
h. Program to coordinate with other government agencies, industry, and public interest groups and media ^a	Yes, with RWA				
Expenditures, \$ ^b	\$0	\$0	\$0	\$173	\$173

^a RWA = Regional Water Authority

^b EID does not specifically charge the City for this service. Historically EID has spent approximately \$46,000 on this program annually (EIDb, 2006)

Table 6-15. Projected Conservation Activities and Expenditures,
DMM 7. Public Information Programs

Year	2006	2007	2008	2009	2010
a. Paid advertising	Yes	Yes	Yes	Yes	Yes
b. Public service announcement	Yes	Yes	Yes	Yes	Yes
c. Bill inserts/newsletters/brochures	Yes	Yes	Yes	Yes	Yes
d. Bill showing water usage	Yes	Yes	Yes	Yes	Yes
e. Demonstration gardens	1	1	1	1	1
f. Speaker events, media events	Yes	Yes	Yes	Yes	Yes
g. Speaker's bureau	No	No	No	No	No
h. Program to coordinate with other government agencies, industry, and public interest groups and media	Yes, with RWA				
Expenditures, \$ ^a	-- ^a	-- ^a	-- ^a	-- ^a	-- ^a

^aEID does not specifically charge the City for this program service. EID plans to spend approximately \$46,000 on this program annually (EIDb, 2006).

DMM 8 - School Education Programs

Description: On behalf of the City, EID's program includes working with schools in the service area to provide instructional assistance, educational materials, class-room presentations that identify urban, agricultural, and environmental issues and conditions in the local watershed. Education materials meet the state educational framework requirements, and grade appropriate materials are distributed to grade levels K-12.

EID actively promotes water efficiency with local school districts by providing educational programs for teachers and students. Educational materials, classroom presentations and facility tours are available upon request. The EID Water Efficiency webpage is linked to the DWR Public Affairs for Educators and Landscape websites for instructors to obtain free publications and classroom projects on water conservation. In 1999 EID co-sponsored a video on the El Dorado County watershed and water conservation for use in the schools and reach at least 600 students in most years. In 2004 EID co-sponsored the Sacramento Bee's Newspapers In Education (NIE) for local school districts and reached approximately 1,900 students. The newly developed "Water-Wise Gardening" CD-ROM has been requested by local schools to be used in science curriculums. Education is continually supported through the California Water Awareness Campaign, the annual CWAC Water Scholarship Program, the American River Conservancy Nature Bowl projects, Kid's Day America, Kid's Expo, local Cub and Boy Scout troops, the annual USBR GET WET event, and the AQUA scholarship program. EID works collaboratively with the Regional Water Authority (RWA) in order to reach additional students and educators throughout the Sacramento Region.

Schedule: EID's school education program is an ongoing, annual program. EID began implementing this program in the year 1995 (Helsin, 2007).

Evaluation of DMM Effectiveness: Savings from this program cannot be directly quantified. The activities performed in this program as well as expenditures to-date and projected are provided in Tables 6-16 and 6-17, respectively. As part of their Agreement, EID does not specifically charge the City for general public information programs. In 2004 and 2005, however, EID did charge the City for 100 water-efficiency gardening CD-ROM distributions; these expenditures are included in DMM 7 records.

**Table 6-16. Actual Conservation Activities and Expenditures,
DMM 8. School Education Programs**

Year	2001	2002	2003	2004	2005
Grades K-3rd	Yes	Yes	Yes	Yes	Yes
Grades 4 th -6 th	Yes	Yes	Yes	Yes	Yes
Grades 7 th -8 th	Yes	Yes	Yes	Yes	Yes
High School	Yes	Yes	Yes	Yes	Yes
Expenditures, \$ ^a	-- ^a	-- ^a	-- ^a	-- ^a	-- ^a

^a EID does not specifically charge the City for this program service. Historically EID has spent approximately \$5,000 on this program annually (EIDb, 2006)

**Table 6-17. Projected Conservation Activities and Expenditures,
DMM 8. School Education Programs**

Year	2006	2007	2008	2009	2010
Grades K-3rd	Yes	Yes	Yes	Yes	Yes
Grades 4 th -6 th	Yes	Yes	Yes	Yes	Yes
Grades 7 th -8 th	Yes	Yes	Yes	Yes	Yes
High School	Yes	Yes	Yes	Yes	Yes
Expenditures, \$ ^a	-- ^a	-- ^a	-- ^a	-- ^a	-- ^a

^a EID does not specifically charge the City for this program service. EID plans to spend approximately \$5,000 on this program annually (EIDb, 2006)

DMM 9 - Conservation Programs for Commercial, Industrial, and Institutional Accounts

Description: The program includes the following components:

- Provide audits to City Commercial and unbilled City accounts.
- Replace high-water-using toilets with ultra low flush toilets (ULFT)s.
- Monitor the effectiveness of implemented audit recommendations
- Identify incentives programs which would encourage the implementation of cost-effective audit recommendations which were not implemented.

EID has been awarded four grants through USBR to implement: (1) A waterless urinal retrofit program, (2) an North American Industry Classification System/Standard Industrial Classification NAICS/SIC codes implementation process to identify all CII customers by market segment, (3) a high efficiency commercial clothes washer incentive program with rebates up to \$300 available to eligible CII customers who purchase

water efficient commercial grade machines, and (4) Ultra Low Flow (ULF) toilet and high efficiency toilet (HET) rebates up to \$125 available to eligible customers that have a CII water survey.

Furthermore, when appropriate, free pre-rinse spray valves with free installation are available as an incentive to CII customers that have a water survey at their place of business.

Schedule: This program is conducted annually and began in the year 1999 (Heslin, 2007). No activity was reported in Year 2003.

Evaluation of DMM Effectiveness: EID gages the effectiveness of this DMM with a comparison of CII accounts prior water use to future water use. The City does not currently have any method in place to evaluate the effectiveness of this measure or estimate water savings, and relies on EID's CUWCC guided DMM 9 analysis. The activities performed in this program as well as expenditures to-date and projected are provided in Tables 6-18 and 6-19, respectively.

Table 6-18. Actual Conservation Activities, Expenditures, and Water Savings, DMM 9. Conservation Programs for Commercial, Industrial, and Institutional Accounts

Year	2001	2002	2003	2004	2005
On-site surveys completed	36	0	0	10	5
Were incentives provided? ^a	Yes	Yes	Yes	Yes	Yes
Follow-up visits	No	No	No	No	No
Expenditures, \$ ^b	\$700	\$0	\$0	\$897	\$950
Water savings, ac-ft/yr ^c	N/A	N/A	N/A	N/A	N/A

Notes:

Source: EID invoice of conservation program management costs to City (EIDc, 2006)

^a Incentives include rebates for clothes washers, ULFTs, HET's, waterless urinals, and spray rinse valves.

^b Expenditures include CII audit costs as well as clothes washer, ULFT, HET and waterless urinal rebate costs to the City. In 2005, there were 2 clothes washer rebates awarded.

^c Water savings estimates on water use and the effect of such savings on the City's ability to further reduce demand are not available (N/A).

Table 6-19. Projected Conservation Activities, Expenditures, and Water Savings, DMM 9. Conservation Programs for Commercial, Industrial, and Institutional Accounts

Year	2006	2007	2008	2009	2010
On-site surveys completed ^a	8	8	8	8	8
Will incentives be provided? ^b	Yes	Yes	Yes	Yes	Yes
Follow-up visits	Yes	Yes	Yes	Yes	Yes
Expenditures, \$ ^a	\$923	\$960	\$999	\$1,039	\$1,080
Water savings, ac-ft/yr ^c	N/A	N/A	N/A	N/A	N/A

^a Projected program activity and expenditures are proportional to EID projections as reported in their 2005 USBR WMP (EIDb, 2006). Expenditures include CII audit costs as well as projected clothes washer, ULFT, HET and waterless urinal rebate costs to the City. Expenditures assume 4 percent inflation.

^b Incentives include clothes washers, ULFTs, HET's, and waterless urinal rebates, as well as free spray rinse valves.

^c Water savings estimates on water use and the effect of such savings on the City's ability to further reduce demand are not available (N/A).

DMM 10 - Wholesale Agency Assistance Programs

This DMM is not applicable to the City because the City is not a wholesale agency.

DMM 11 - Conservation Pricing

Description: The program includes the following components:

- Eliminating non-conserving pricing.
- Adopting conserving pricing.
- Since the City supplies both water and sewer service, this DMM applies to pricing of both water and sewer service.

City water rates have been on an increasing block rate pricing since August 8, 2006 for all rate categories. The City had not increased its water rates since 1994. Sewer rates were changed in September 2005 from a flat rate to its current increasing block rate pricing. The City's water and wastewater rates can be found in Appendix G.

A discussion of the account types that apply to the City and the year the rate was effective is provided in Table 6-20.

Schedule: The implementation of this DMM is ongoing.

Evaluation of DMM Effectiveness: Effectiveness of this DMM will be evaluated by comparison of City water use prior to and following the implementation of conservation pricing.

Table 6-20. Description of City Rate Structures, DMM 11. Conservation Pricing

Account type		Define
Residential	Water rate structure	Tiered conservation rate structure - increasing block rate
	Year rate effective	August 2006
Commercial	Water rate structure	Tiered conservation rate structure - increasing block rate
	Year rate effective	August 2006

DMM 12 - Conservation Coordinator

Description: On behalf of the City, EID's program includes the designation of a water conservation coordinator and support staff whose duties include the following:

- Coordination and oversight of conservation programs and DMM implementation;
- Preparation and submittal of the annual conservation activity for City customers to the City;

- Communication and promotion of water conservation issues to agency senior management; coordination of agency conservation programs with operations and planning staff; preparation of annual conservation budget.

EID has had Water Conservation Coordinator since the mid-1980s.

The 2005 staffing level time is as follows:

0.50 - Conservation Coordinator
 2.0 – Program Coordinators/Certified Water Conservation Practitioners/
 Certified Landascape Irrigation Auditor (C.L.I.A)
 1.0 – Irrigation Management Services (IMS) Coordinator
1.0 - Watershed Coordinator
 4.5 Full-time staff equivalents

Conservation coordinator and staff information including annual expenditures historically and projected are provided in Tables 6-21 and 6-22.

Schedule: The implementation of this DMM is ongoing.

Evaluation of DMM Effectiveness: Water savings from this DMM cannot be directly quantified. Effectiveness of this DMM will be evaluated by the success of the City's water conservation program.

Table 6-21. Actual Conservation Activities and Expenditures,
DMM 12. Water Conservation Coordinator

Year	2001	2002	2003	2004	2005
Full-time positions ^a	4	4	4	4	4
Part-time staff ^a	1	1	1	1	1
Expenditures, \$ ^b	N/A	N/A	\$203,700	\$320,247	\$370,745

Notes:

Source: EID 2005 USBR WMP (EIDa, 2006)

^a The City has no designated full-time or part-time staff positions dedicated to water conservation, but on behalf of EID and the City, EID has five conservation staff including the conservation coordinator.

^b Expenditures are for EID only and include 50 percent conservation coordinator and four additional fulltime staff salaries. The City does not incur any specific expenditures for this DMM. Years 2001 and 2002 data are not available (N/A).

Table 6-22. Projected Conservation Activities and Expenditures,
DMM 12. Water Conservation Coordinator

Year	2006	2007	2008	2009	2010
Full-time positions ^a	4	4	4	4	4
Part-time staff ^a	1	1	1	1	1
Expenditures, \$ ^b	\$385,575	\$400,998	\$417,038	\$433,719	\$451,068

^a The City has no designated full-time or part-time staff positions dedicated to water conservation, but on behalf of EID and the City, EID has five conservation staff including the conservation coordinator.

^b Expenditures are for EID only and include 50 percent conservation coordinator and 4 additional fulltime staff salaries. Four percent inflation included. The City does not incur any specific expenditures for this DMM.

DMM 13 - Water Waste Prohibition

Description: This program includes the enactment and enforcement of an Unnecessary Water Waste Code prohibiting all unnecessary waste of water. This ordinance also states that during periods of water shortage customers willfully or negligently wasting water are guilty of an infraction and are subject to having their water supply turned off. See Appendix H for a copy of this ordinance.

On behalf of the City, EID implements this program by placing notices on customer door handles noting the water waste citation. Additionally, the City fields calls from customers concerned with their high water bill, compares water use to historic trends particular to that customer and makes suggestions on efficient water use practices.

Furthermore, EID is participating in a collaborative effort with DWR and RWA for Proposition 13 grant funding to establish large landscape irrigation incentive programming to improve irrigation system performance and reduce water waste and surface runoff. Since EID treats the City and City customers as just another customer, this effort also significantly benefits the City.

A summary of the program including annual expenditures in the past and projected is provided in Tables 6-23 and 6-24, respectively.

Schedule: The implementation of this DMM is ongoing.

Evaluation of DMM Effectiveness: Water savings from this program cannot be directly quantified.

**Table 6-23. Actual Conservation Activities and Expenditures,
DMM 13. Water Waste Prohibition**

Year	2001	2002	2003	2004	2005
Waste ordinance in effect	Yes	Yes	Yes	Yes	Yes
On-site visits ^a	5	5	5	5	5
Water softener ordinance	No	No	No	No	No
Expenditures, \$ ^b	-- b				

^a Estimated value based on approximately total EID citations (water waster/leak notices) (Heslin, 2007).

^b EID does not specifically charge the City for this program service. EID plans to spend approximately \$1,500 on this program annually (EIDb, 2006).

**Table 6-24. Projected Conservation Activities and Expenditures,
DMM 13. Water Waste Prohibition**

Year	2006	2007	2008	2009	2010
Waste ordinance will be in effect	Yes	Yes	Yes	Yes	Yes
On-site visits ^a	5	5	5	5	5
Water softener ordinance	No	No	No	No	No
Expenditures, \$ ^b	-- b				

^a Value based on proportion of expected total EID citations (water waster/leak notices) (Heslin, 2007).

^b EID does not specifically charge the City for this program service. EID plans to spend approximately \$1,500 on this program annually (EIDb, 2006).

DMM 14 - Residential ULFT Replacement Programs

Description: On behalf of the City, EID includes the following components in this program:

- Implementation of programs for replacing existing high-water-using toilets with ULFTs (1.6 gallons or less) in single-family and multi-family residences.
- Programs shall be at least as effective as requiring toilet replacement at time of resale.

In 1995, EID initiated a ULF Toilet Rebate Program with a total of 3,489 rebates being issued through 2003. In 2004 in an attempt to decrease the numbers of free-riders, a new direct distribution program was implemented with a total of 324 ULF toilets being distributed within a 7 month period. In 2004 EID partnered with Niagara Conservation Inc and developed a direct distribution program that shipped the standard ULF toilets directly to the customer. In 2005, EID held two “Take-a-Toilet Home” distribution campaigns. Customer feedback was positive and it has been determined the ULFT Distribution program will continue.

Schedule: The program began in the City in 1999 and is conducted annually (Heslin, 2007). No activity was reported in Year 2003.

Evaluation of DMM Effectiveness: EID gages the effectiveness of this DMM with a comparison of residential accounts prior water use to future water use. The City does not currently have any method in place to evaluate the effectiveness of this measure or estimate water savings, and relies on EID’s analysis.

The activities performed in this program as well as expenditures to-date and projected in the future are provided in Tables 6-25 and 6-26, respectively.

**Table 6-25. Actual Conservation Activities and Expenditures,
DMM 14. Residential ULFT Replacement Program**

Year	2001	2002	2003	2004	2005
Residential toilet rebates ^a	40	50	0	19	20
Expenditures, \$	\$3,648	\$4,463	0	\$1,740	\$1,877
Water savings, ac-ft/yr ^b	N/A	N/A	N/A	N/A	N/A

Notes:

Source: EID invoices of conservation program management costs to City (EIDc, 2006).

^a Records do not indicate what kind (SF or MF) of residential customer received toilet (EIDc, 2006).

^b Water savings estimates on water use and the effect of such savings on the City’s ability to further reduce demand are not available (N/A).

**Table 6-26. Projected Conservation Activities and Expenditures,
DMM 14. Residential ULFT Replacement Program**

Year	2006	2007	2008	2009	2010
SF toilet rebates ^a	17	17	17	17	17
MF toilet rebates ^a	3	3	3	3	3
Expenditures, \$ ^a	\$1,877	\$1,952	\$2,030	\$2,111	\$2,196
Water savings, ac-ft/yr ^b	N/A	N/A	N/A	N/A	N/A

^a The projection of program activity and expenditures from 2006 through 2010 are proportional to EID’s estimated USBR WMP estimates using City activity and budget in base year 2005. Expenditures assume 4 percent inflation. (EIDb, 2006)

^b Water savings estimates on water use and the effect of such savings on the City’s ability to further reduce demand are not available (N/A).

CITY OF PLACERVILLE
2005 URBAN WATER MANAGEMENT PLAN

7. WATER SUPPLY VERSUS DEMAND

This chapter provides a comparison of projected water supplies and demand and water shortage expectations. The City’s water shortage contingency actions are also presented.

7.1 Current and Projected Water Supplies versus Demand

This section provides a comparison of normal, single-dry, and multiple-dry water year supply and demand for the City. Water demands are addressed in Chapter 3, water supply is addressed in Chapter 4, and recycled water supply is addressed in Chapter 5 of this Plan.

7.1.1 Current and Projected Normal Year Water Supplies Versus Demand

The normal water year current and projected water supplies are compared to the current and projected demand for the City in Table 7-1.

Table 7-1. (DWR Table 42) Normal Year Water Supply and Demand Comparison, ac-ft/yr						
	2005	2010	2015	2020	2025	2030
Supply totals	1,666	2,123	2,400	2,400	2,400	2,400
Demand totals	1,666	2,123	2,400	2,400	2,400	2,400
Difference (supply minus demand)	0	0	0	0	0	0
Difference as a percent of supply	0	0	0	0	0	0
Difference as a percent of demand	0	0	0	0	0	0

Note: Demand projections assume water service area buildout occurs in year 2015 (Kennedy/Jenks, 2005)

7.1.2 Current and Projected Single-Dry Year Water Supplies Versus Demand

The current and projected water supplies are compared to the demands for a single-dry year for the City in Table 7-2.

Table 7-2. (DWR Table 45) Single-Dry Year Water Supply and Demand Comparison, ac-ft/yr

	2005	2010	2015	2020	2025	2030
Supply totals	1,666	2,123	2,400	2,400	2,400	2,400
Demand totals	1,666	2,123	2,400	2,400	2,400	2,400
Difference (supply minus demand)	0	0	0	0	0	0
Difference as a percent of supply	0	0	0	0	0	0
Difference as a percent of demand	0	0	0	0	0	0

Note: Demand projections assume water service area buildout occurs in year 2015 (Kennedy/Jenks, 2005)

7.1.3 Projected Multiple-Dry Year Water Supplies Versus Demand

The projected water supplies are compared to the demands for multiple-dry years for the City in Tables 7-3 through 7-7.

Table 7-3. (DWR Table 48) Multiple-Dry Year Water Supply and Demand Comparison, ac-ft/yr, Period ending in 2010

	2006	2007	2008	2009	2010
Supply totals	1,905	1,859	1,810	1,653	1,699
Demand totals	1,905	1,859	1,810	1,653	1,699
Difference (supply minus demand)	0	0	0	0	0
Difference as a percent of supply	0	0	0	0	0
Difference as a percent of demand	0	0	0	0	0

Table 7-4. (DWR Table 51) Multiple-Dry Year Water Supply and Demand Comparison, ac-ft/yr, Period ending in 2015

	2011	2012	2013	2014	2015
Supply totals	2,182	2,130	2,073	1,893	1,920
Demand totals	2,182	2,130	2,073	1,893	1,920
Difference (supply minus demand)	0	0	0	0	0
Difference as a percent of supply	0	0	0	0	0
Difference as a percent of demand	0	0	0	0	0

Note: Demand projections assume water service area buildout occurs in year 2015 (Kennedy/Jenks, 2005)

Table 7-5. (DWR Table 54) Multiple-Dry Year Water Supply and Demand Comparison, ac-ft/yr, Period ending in 2020					
	2016	2017	2018	2019	2020
Supply totals	2,400	2,280	2,160	1,920	1,920
Demand totals	2,400	2,280	2,160	1,920	1,920
Difference (supply minus demand)	0	0	0	0	0
Difference as a percent of supply	0	0	0	0	0
Difference as a percent of demand	0	0	0	0	0

Note: Demand projections assume water service area buildout occurs in year 2015 (Kennedy/Jenks, 2005)

Table 7-6. (DWR Table 57) Multiple-Dry Year Water Supply and Demand Comparison, ac-ft/yr, Period ending in 2025					
	2021	2022	2023	2024	2025
Supply totals	2,400	2,280	2,160	1,920	1,920
Demand totals	2,400	2,280	2,160	1,920	1,920
Difference (supply minus demand)	0	0	0	0	0
Difference as a percent of supply	0	0	0	0	0
Difference as a percent of demand	0	0	0	0	0

Note: Demand projections assume water service area buildout occurs in year 2015 (Kennedy/Jenks, 2005)

Table 7-7. Multiple-Dry Year Water Supply and Demand Comparison, ac-ft/yr, Period ending in 2030					
	2026	2027	2028	2029	2030
Supply totals	2,400	2,280	2,160	1,920	1,920
Demand totals	2,400	2,280	2,160	1,920	1,920
Difference (supply minus demand)	0	0	0	0	0
Difference as a percent of supply	0	0	0	0	0
Difference as a percent of demand	0	0	0	0	0

Note: Demand projections assume water service area buildout occurs in year 2015 (Kennedy/Jenks, 2005)

7.2 Water Shortage Expectations

The City does not project any water supply shortages in multiple-dry years based on current projected demand and supply and according to the City's Agreement with EID. Based on experiences during the extended 1987-1992 drought, the community recognizes that it is better to enter into a water shortage alert early, at a minimal level, to establish necessary water use reduction programs and policies, to gain public support and participation, and to reduce the likelihood of more severe shortage levels later. As the

community continues to become more water efficient, it may become more difficult for customers to reduce their water use during water shortages; this is known as demand hardening. Based on observations to date, it does not appear that City customers are yet approaching demand hardening. There are still reasonable water efficiency improvements available in landscaping 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 new low water using products. However, 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 City assesses its water supply conditions annually, considering both hydrologic and water system conditions. Based on its contract with EID and EID's water shortage stages and triggers, a water shortage condition may be declared. For planning purposes, EID, in conjunction with the EDCWA and several neighboring water purveyors, has developed a regional drought model that not only simulates EID's system response under dry year conditions, outputting shortfall, but incorporates switches to integrate potential water supply projects, potential demands cutbacks and climate change factors (Brown and Caldwell, 2005). In follow-up to this effort, a revised drought plan, considering climate change and long-term drought avoidance projects is currently being developed.

7.3 Water Shortage Contingency

The Water Forum Agreement describes supply scenarios for normal, dry, and multiple-dry years. However, the Water Forum Agreement acknowledges that there may be years where surface water supply is less than even the stipulated decreased demands. The City may also experience short-term water shortages due to mechanical failures or other circumstances. For these instances, according to the City's contract with EID, the City follows EID's water shortage contingency plan. The complete plan is included in Appendix F. In addition, the City follows an Emergency Response Plan to mitigate against the impact of catastrophic emergencies and inconvenience to its customers. Due to security purposes, only the some components of the Emergency Response Plan are included in Appendix I.

7.3.1 Stages of Action

The City uses EID's four stage water shortage plan whereby storage amounts in Jenkinson Lake are monitored by month as guidance in implementing conservation measures designed to reduce water deliveries. Since Jenkinson Lake is the main storage project in EID, serving approximately half of EID's water demand, it has been used as the guidance to implement actions to reduce water usage during water emergencies. A matrix of Jenkinson Lake storage levels was developed for the various stages by month, and can be found in EID's "4-Stage Water Supply Matrix and Water Shortage Response Measures" report in Appendix E. The water shortage planning stages are summarized in Table 7-8.

Table 7-8. (DWR Table 23) Water Shortage Contingency Plan Stages

Stage	Water supply conditions	Percent shortage
Stage 1 – Water Alert	Probability that supplies will not meet demands	0-5
Stage 2 – Water Warning	Supplies will not be able to meet expected demands	5-10
Stage 3 – Water Emergency	Supplies not meeting current demands	10-20
Stage 4 – Critical Water Emergency	Major failure of a supply, storage, or distribution system	20-50

7.3.2 Three-Year Minimum Water Supply

The three-year minimum water supply is presented in Chapter 4. Results are summarized in Table 7-9.

Water supply sources	Normal ^a	Year 1 ^b	Year 2 ^b	Year 3 ^b
EID Surface Water	1,905	1,905	1,859	1,810
Supplier produced groundwater	0	0	0	0
Recycled water	0	0	0	0
Water supply loss due to water quality	0	0	0	0
Transfers in or out	0	0	0	0
Exchanges in or out	0	0	0	0
Desalination Water	0	0	0	0
Total	1,905	1,905	1,859	1,810

Notes:

^a This is the projected supply for a normal 2006 year.

^b This represents the 2006 through 2008 year sequence.

7.3.3 Catastrophic Supply Interruption Plan

The City's Emergency Response Plan to provide procedures and guidance to City personnel in responding to emergency situations including catastrophic events, both natural and manmade. The plan provides procedures for preparing, mobilizing and employing City resources and coordinating outside resources during an emergency to provide potable water to customers. The City provides periodic training, including full scale simulated events and responses to keep City personnel fully trained on implementation emergency procedures. A copy of the Emergency Response Plan's cover and Table of Contents are provided in Appendix I. The following Table 7-10 summarizes the response actions to possible major catastrophes within the City. The Emergency Response Plan provides detailed response actions for each individual possible major catastrophe.

Table 7-10. (DWR Table 23) Preparation Actions for a Catastrophe	
Possible catastrophe	Summary of actions
<ul style="list-style-type: none"> • Earthquake • Fire/explosion • Medical • Flood • Tornado/severe weather • Bomb threat • Hard freeze • Loss of normal water supply • Hazardous material release • Contamination of City water supplies • Terrorist attack 	<p>Command chain is defined that dispatches crews to inspect infrastructure and critical operations. Operations response crews assigned to monitor system operations and modify as necessary. Communication command chain is defined to coordinate with other local water agencies and emergency response officials as necessary. Criteria and procedures provided to return system to normal operations including initiating water quality testing when necessary and performing necessary emergency repairs to the system. Plan contains contact information for responsible parties and support services. Water shortage contingency plan stages will be implemented as required by the situation.</p>

7.3.4 Prohibitions, Consumption Reduction Methods, and Penalties

Mandatory prohibition consumption reduction methods and penalties under the City's water shortage contingency policies are presented in conjunction with the City and EID's water supply contract. EID's water shortage contingency plan is provided in Appendix F and summarized in Tables 7-11 through 7-13 according to the DWR urban water management plan guidelines.

Table 7-11. (DWR Table 26) Mandatory Prohibitions		
Prohibitions	Stage when prohibition is voluntarily requested	Stage when prohibition becomes mandatory
Street/sidewalk cleaning	1	2
Washing cars (residential)	2	3
Watering lawns/landscapes	2	3
No refilling or filling of pools	2	3
New/proposed agricultural plantings	None	4
Construction water use for dust control, earth work or road construction	None	2

Note:

Water shortage contingency plan stages are defined in Table 7-8.

Table 7-12. (DWR Table 27) Consumption Reduction Methods

Examples of consumption reduction methods	Stage when method takes effect	Projected reduction, percent
Demand reduction program	2	5 - 50
Restrict building permits	3	Not estimated
Restrict for only priority uses	4	Not estimated
Use prohibitions	1	Not estimated
Mandatory rationing	2	5 - 50
Education Program	1	Not estimated
Irrigation allowed only during off-peak hours	2	Not estimated

Note:

Water shortage contingency plan stages are defined in Table 7-8.

Table 7-13. (DWR Table 28) Penalties and Charges

Examples of penalties and charges	Stage when penalty takes effect
Penalties for not reducing consumption	2
Termination of service and reconnect fee	3

Note:

Water shortage contingency plan stages are defined in Table 7-8.

7.3.5 Analysis of Revenue Impacts of Reduced Sales during Shortages

Since all of the City's customers are metered, revenue impacts from decreasing supply and consumer use would be substantial. Furthermore, although expenditures on water purchases would decrease, administration and operations and maintenance expenses for the City would remain the same, or possibly increase, with additional operations and administrative activity.

The following Tables 7-14 and 7-15 present the City's analysis of reduced revenues during water shortages.

Table 7-14. (DWR Table 29) Proposed Measures to Overcome Revenue Impacts

Name of measures	Summary of effects
Rate adjustment	No policy yet in place though past practice indicates that for prolonged water shortages with water sales that are 20% or less over a water year, City Council will investigate a rate increase. (Warren, 2007)
Development of reserves	The City has a reserve policy in place to help offset revenue impacts during times of emergency (Warren, 2007).

Table 7-15. (DWR Table 30) Proposed Measures to Overcome Expenditure Impacts

Name of measures	Summary of effects
Development of reserves	The City has a reserve policy in place to help offset expenditure impacts during times of emergency. The City raised water rates for the first time since 1994 in August 2006 to replenish this reserve fund (Warren, 2007).

7.3.6 Reduction Measuring Mechanisms

Under normal water supply conditions, potable water production figures are recorded instantaneously, and totaled daily. Daily totals are then manually recorded and sent to City headquarters. Daily totals are compiled monthly and incorporated into the water supply report.

During any stage of water shortage, production figures can be generated hourly, daily, weekly, or monthly, depending on the need. Water usage is then reviewed by the Director of Public Works to monitor production goals and peaking water conditions. Water usage reports are reported to City Council at the monthly meetings, or more often if necessary.

During emergency shortages, EID can provide production figures hourly and appropriate response measures can be implemented.

Table 7-16 summarizes the City's water use monitoring mechanisms.

Table 7-16. (DWR Table 31) Water Use Monitoring Mechanisms

Mechanism for determining actual reduction	Type and quality of data expected
EID-City distribution meters	Daily distribution will be monitored from the water production meters on a daily or weekly basis, dependant upon the severity of the water shortage.
Customer records	Customer water usage is monitored on a bimonthly reading cycle or as necessary.

CITY OF PLACERVILLE 2005 URBAN WATER MANAGEMENT PLAN

8. REFERENCES

- Agreement between El Dorado Irrigation District and City of Placerville for a Water Supply. 13 April 1999.
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- U.S. Census Bureau Year 2000 Population Estimate. Online 17 April 2007. <http://factfinder.census.gov>
- Warren, Dave. City of Placerville Director of Finance. Telephone interview. 9 May 2007
- Western Regional Climate Center. Placerville data recorded by NOAA, Period of Record 1/1/1915 to 12/31/2006. Online 2 May 2007. www.wrcc.dri.edu.

CITY OF PLACERVILLE
2005 URBAN WATER MANAGEMENT PLAN

9. LIMITATIONS

Report Limitations

This document was prepared solely for the City of Placerville in accordance with professional standards at the time the services were performed and in accordance with the contract between the City of Placerville and Brown and Caldwell dated April 11, 2007. This document is governed by the specific scope of work authorized by the City of Placerville; it is not intended to be relied upon by any other party except for regulatory authorities contemplated by the scope of work. We have relied on information or instructions provided by the City of Placerville and other parties and, unless otherwise expressly indicated, have made no independent investigation as to the validity, completeness, or accuracy of such information.

APPENDIX A

DWR UWMP Checklist

2005 Urban Water Management Plan Checklist

City of Placerville

Coordination with Appropriate Agencies (Water Code § 10620 (d)(1)(2))		
<input checked="" type="checkbox"/>	Describe the coordination of the plan preparation and anticipated benefits.	1.3 Reference & Section Number
Describe resource maximization / import minimization plan (Water Code §10620 (f))		
<input checked="" type="checkbox"/>	Describe how water management tools / options maximize resources & minimize need to import water	1.2 Reference & Section Number
Plan Updated in Years Ending in Five and Zero (Water Code § 10621(a))		
<input checked="" type="checkbox"/>	Date updated and adopted plan received _____ (enter date)	1.3 Reference & Section Number
City and County Notification and Participation (Water Code § 10621(b))		
<input checked="" type="checkbox"/>	Notify any city or county within service area of UWMP of plan review & revision	1.4 Reference & Section Number
<input checked="" type="checkbox"/>	Consult and obtain comments from cities and counties within service area	1.4 Reference & Section Number
Service Area Information Water Code § 10631 (a))		
<input checked="" type="checkbox"/>	Include current and projected population	3.1 Reference & Section Number
<input checked="" type="checkbox"/>	Population projections were based on data from state, regional or local agency	3.1 Reference & Section Number
<input checked="" type="checkbox"/>	Describe climate characteristics that affect water management	2.2 Reference & Section Number
<input checked="" type="checkbox"/>	Describe other demographic factors affecting water management	3.1 Reference & Section Number
Water Sources (Water Code § 10631 (b))		
<input checked="" type="checkbox"/>	Identify existing and planned water supply sources	4.5 Reference & Section Number
<input checked="" type="checkbox"/>	Provide current water supply quantities	4.5 Reference & Section Number
<input checked="" type="checkbox"/>	Provide planned water supply quantities	4.5 Reference & Section Number
If Groundwater identified as existing or planned source (Water Code §10631 (b)(1-4))		
<input type="checkbox"/>	Has management plan	N/A Reference & Section Number
<input type="checkbox"/>	Attached management plan (b)(1)	N/A Reference & Section Number
<input type="checkbox"/>	Description of basin(s) (b)(2)	N/A Reference & Section Number
<input type="checkbox"/>	Basin is adjudicated	N/A Reference & Section Number
<input type="checkbox"/>	If adjudicated, attached order or decree (b)(2)	N/A Reference & Section Number
<input type="checkbox"/>	Quantified amount of legal pumping right (b)(2)	N/A Reference & Section Number
<input type="checkbox"/>	DWR identified, or projected to be, in overdraft (b)(2)	N/A Reference & Section Number
<input type="checkbox"/>	Plan to eliminate overdraft (b)(2)	N/A Reference & Section Number
<input type="checkbox"/>	Analysis of location, amount & sufficiency, last five years (b)(3)	N/A Reference & Section Number
<input type="checkbox"/>	Analysis of location & amount projected, 20 years (b)(4)	N/A Reference & Section Number
Reliability of Supply (Water Code §10631 (c) (1-3))		
<input checked="" type="checkbox"/>	Describes the reliability of the water supply and vulnerability to seasonal or climatic shortage	4.7 Reference & Section Number
Water Sources Not Available on a Consistent Basis (Water Code §10631 (c))		
<input checked="" type="checkbox"/>	Describe the reliability of the water supply due to seasonal or climatic shortages	4.7.1 Reference & Section Number
<input checked="" type="checkbox"/>	Describe the vulnerability of the water supply to seasonal or climatic shortages	4.7.1 Reference & Section Number
<input type="checkbox"/>	No unreliable sources	N/A Reference & Section Number
<input type="checkbox"/>	Describe plans to supplement or replace inconsistent sources with alternative sources or DMMs	N/A Reference & Section Number
<input type="checkbox"/>	No inconsistent sources	N/A Reference & Section Number
Transfer or Exchange Opportunities (Water Code §10631 (d))		
<input checked="" type="checkbox"/>	Describe short term and long term exchange or transfer opportunities	4.5 Reference & Section Number
<input checked="" type="checkbox"/>	No transfer opportunities	4.5 Reference & Section Number
Water Use Provisions (Water Code §10631 (e)(1)(2))		
<input checked="" type="checkbox"/>	Quantify past water use by sector	3.2 Reference & Section Number
<input checked="" type="checkbox"/>	Quantify current water use by sector	3.2 Reference & Section Number
<input checked="" type="checkbox"/>	Project future water use by sector	3.2 Reference & Section Number
<input type="checkbox"/>	Identify and quantify sales to other agencies	N/A Reference & Section Number
<input checked="" type="checkbox"/>	No sales to other agencies	3.2 Reference & Section Number
<input checked="" type="checkbox"/>	Identify and quantify additional water uses	3.2 Reference & Section Number
Demand Management measures (Water Code §10631 (f))		
The Checklist for the Demand Management Measures (Water Code §10631 (f) & (g)), is found in last part of checklist.		
Planned Water Supply Projects, Programs and non-implemented DMMs (Water Code §10631 (g))		
<input type="checkbox"/>	No future water supply projects or programs	N/A Reference & Section Number
<input type="checkbox"/>	No non-implemented / not scheduled DMMs	N/A Reference & Section Number
<input type="checkbox"/>	Cost-Benefit includes economic and non-economic factors	N/A Reference & Section Number
<input type="checkbox"/>	Cost-Benefit analysis includes total benefits and total costs	N/A Reference & Section Number
<input type="checkbox"/>	Identifies funding available for projects with higher per-unit-cost than DMMs	N/A Reference & Section Number
<input checked="" type="checkbox"/>	Identifies Suppliers' legal authority to implement DMMs	Chapter 6 Reference & Section Number
<input checked="" type="checkbox"/>	Identifies Suppliers' efforts to implement the measures	Chapter 6 Reference & Section Number
<input checked="" type="checkbox"/>	Identifies Suppliers' efforts to identify cost share partners	Chapter 6 Reference & Section Number
Planned Water Supply Projects and Programs (Water Code §10631 (h))		
<input type="checkbox"/>	No future water supply projects or programs	N/A Reference & Section Number
<input checked="" type="checkbox"/>	Detailed description of expected future supply projects & programs	4.6 Reference & Section Number
<input checked="" type="checkbox"/>	Timeline for each proposed project	4.6 Reference & Section Number
<input checked="" type="checkbox"/>	Quantification of each projects normal yield (AFY)	4.6 Reference & Section Number
<input checked="" type="checkbox"/>	Quantification of each projects single dry-year yield (AFY)	4.6 Reference & Section Number
<input checked="" type="checkbox"/>	Quantification of each projects multiple dry-year yield (AFY)	4.6 Reference & Section Number
Opportunities for development of desalinated water (Water Code §10631 (i))		
<input checked="" type="checkbox"/>	Describes opportunities for development of desalinated water, including, but not limited to, ocean water, brackish water, and groundwater, as a long-term supply	4.3 Reference & Section Number

2005 Urban Water Management Plan Checklist

City of Placerville

City is not a CUWCC signatory

(Water Code § 10631 (j))

Urban suppliers that are CUWCC members may submit the annual reports identifying water demand management measures currently being implemented, or scheduled for implementation, to satisfy the requirements of subdivisions (f) and (g). The supplier's CUWCC Best Management Practices report should be attached to the UWMP.

- N/A Agency is a CUWCC member
- N/A 2003-04 annual updates are attached to plan
- N/A Both annual updates are considered completed by CUWCC website

If Supplier receives or projects receiving water from a wholesale supplier **(Water Code §10631 (k))**

- Agency receives or projects receiving wholesale water 4.2 Reference & Section Number
- Agency provided written demand projections to wholesaler, 20 years 1.4, 4.2, 4.5, 4.7 Reference & Section Number
- ALL wholesalers provided written water availability projections, by source, to agency, 20 years N/A Reference & Section Number
- Reliability of wholesale supply provided in writing by ALL wholesale agencies 4.5 Reference & Section Number

Water Shortage Contingency Plan Section **(Water Code § 10632)**

Stages of Action **(Water Code § 10632 (a))**

- Provide stages of action 7.3.1 Reference & Section Number
- Provide the water supply conditions for each stage 7.3.1 Reference & Section Number
- Includes plan for 50 percent supply shortage 7.3.1 Reference & Section Number

Three-Year Minimum Water Supply **(Water Code §10632 (b))**

- Identifies driest 3-year period 7.3.2 Reference & Section Number
- Minimum water supply available by source for the next three years 7.3.2 Reference & Section Number

Preparation for catastrophic water supply interruption **(Water Code §10632 (c))**

- Provided catastrophic supply interruption plan 7.3.3 Reference & Section Number

Prohibitions **(Water Code § 10632 (d))**

- List the mandatory prohibitions against specific water use practices during water shortages 7.3.4 Reference & Section Number

Consumption Reduction Methods **(Water Code § 10632 (e))**

- List consumption reduction methods to reduce water use in the most restrictive stages with up to a 50% reduction. 7.3.4 Reference & Section Number

Penalties **(Water Code § 10632 (f))**

- List excessive use penalties or charges for excessive use 7.3.4 Reference & Section Number

Revenue and Expenditure Impacts **(Water Code § 10632 (g))**

- Describe how actions and conditions impact revenues 7.3.5 Reference & Section Number
- Describe how actions and conditions impact expenditures 7.3.5 Reference & Section Number
- Describe measures to overcome the revenue and expenditure impacts 7.3.5 Reference & Section Number

Water Shortage Contingency Ordinance/Resolution **(Water Code § 10632 (h))**

- Attach a copy of the draft water shortage contingency resolution or ordinance. Appendix F Reference & Section Number

Reduction Measuring Mechanism **(Water Code § 10632 (i))**

- Provided mechanisms for determining actual reductions 7.3.6 Reference & Section Number

Recycling Plan Agency Coordination **Water Code § 10633**

- Describe the coordination of the recycling plan preparation information to the extent available.. 5.1 Reference & Section Number

Wastewater System Description **(Water Code § 10633 (a))**

- Describe the wastewater collection and treatment systems in the supplier's service area 5.2 Reference & Section Number
- Quantify the volume of wastewater collected and treated 5.2 Reference & Section Number

Wastewater Disposal and Recycled Water Uses **(Water Code § 10633 (a - d))**

- Describes methods of wastewater disposal 5.2 Reference & Section Number
- Describe the current type, place and use of recycled water 5.3 Reference & Section Number
- Describe and quantify potential uses of recycled water 5.4 Reference & Section Number
- Determination of technical and economic feasibility of serving the potential uses 5.4 Reference & Section Number
- No opportunities for recycled water. N/A Reference & Section Number

Projected Uses of Recycled Water **(Water Code § 10633 (e))**

- Projected use of recycled water, 20 years 5.4 Reference & Section Number
- Compare UWMP 2000 projections with UWMP 2005 actual (10633(e)) 5.4 Reference & Section Number

Plan to Optimize Use of Recycled Water **(Water Code § 10633 (f))**

- Describe actions that might be taken to encourage recycled water uses 5.5 Reference & Section Number
- Describe projected results of these actions in terms of acre-feet of recycled water used per year 5.5 Reference & Section Number
- Provide a recycled water use optimization plan which includes actions to facilitate the use of recycled water 5.5 Reference & Section Number

Water quality impacts on availability of supply **(Water Code §10634)**

- Discusses water quality impacts (by source) upon water management strategies and supply reliability 4.4 Reference & Section Number
- No water quality impacts projected 4.4 Reference & Section Number

Supply and Demand Comparison to 20 Years **(Water Code § 10635 (a))**

- Compare the projected normal water supply to projected normal water use over the next 20 years, in 5-year increments. 7.1.1 Reference & Section Number

Supply and Demand Comparison: Single-dry Year Scenario **(Water Code § 10635 (a))**

- Compare the projected single-dry year water supply to projected single-dry year water use over the next 20 years, in 5-year increments 7.1.2 Reference & Section Number

Supply and Demand Comparison: Multiple-dry Year Scenario **(Water Code § 10635 (a))**

- Project a multiple-dry year period occurring between 2006-2010 and compare projected s/d during those years 7.1.3 Reference & Section Number
- Project a multiple-dry year period occurring between 2011-2015 and compare projected s/d during those years 7.1.3 Reference & Section Number
- Project a multiple-dry year period occurring between 2016-2020 and compare projected s/d during those years 7.1.3 Reference & Section Number
- Project a multiple-dry year period occurring between 2021-2025 and compare projected s/d during those years 7.1.3 Reference & Section Number

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Provision of Water Service Reliability section to cities/counties (Water Code § 10635(b))		
<input checked="" type="checkbox"/>	Provided Water Service Reliability section of UWMP to cities and counties of UWMP submission to DWR	1.4 Reference & Section Number
Does the Plan Include Public Participation and Plan Adoption (Water Code § 10642)		
<input checked="" type="checkbox"/>	Attach a copy of adoption resolution	Appendix C Reference & Section Number
<input checked="" type="checkbox"/>	Encourage involvement of social, cultural & economic community groups	1.3 Reference & Section Number
<input checked="" type="checkbox"/>	Plan available for public inspection	1.3 Reference & Section Number
<input checked="" type="checkbox"/>	Provide proof of public hearing	Appendix B Reference & Section Number
<input checked="" type="checkbox"/>	Provided meeting notice to local governments	Appendix B Reference & Section Number
Review of implementation of 2000 UWMP (Water Code § 10643)		
<input type="checkbox"/>	Reviewed implementation plan and schedule of 2000 UWMP	N/A Reference & Section Number
<input type="checkbox"/>	Implemented in accordance with the schedule set forth in plan	N/A Reference & Section Number
<input checked="" type="checkbox"/>	2000 UWMP not required	1.1 Reference & Section Number
Provision of 2005 UWMP to local governments (Water Code § 10644 (a))		
<input checked="" type="checkbox"/>	Provide 2005 UWMP to DWR, and cities and counties within 30 days of adoption	1.4 Reference & Section Number
Proof plan is available for public review (Water Code § 10645)		
<input checked="" type="checkbox"/>	Does UWMP or correspondence accompanying it show where it is available for public review	1.3 Reference & Section Number

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DMM 1 -Water Survey Programs for Single-Family and Multi-Family Residential Customers (10631 f(1)(A))

Implementation

(Section 10631 (f) & (h))

<input checked="" type="checkbox"/>	Describe DMM currently being implemented or scheduled for implementation (10631 (f) (1)(2))	Chapter 6	Reference & Page Number
<input checked="" type="checkbox"/>	Describes steps necessary to implement measure	Chapter 6	Reference & Page Number
<input checked="" type="checkbox"/>	Describe the methods, if any, used to evaluate the effectiveness of this DMM (10631 (f)(3))	Chapter 6	Reference & Page Number
<input checked="" type="checkbox"/>	Provide estimates, if available, of existing conservation savings on water use and the effect of such savings on the supplier's ability to further reduce demand (10631(f)(4))	Chapter 6	Reference & Page Number

Provided an evaluation for this DMM if it is not implemented

(Section 10631 (g))

<input type="checkbox"/>	Evaluate legal authority (10631(g)(4))	n/a	Reference & Page Number
<input type="checkbox"/>	Evaluate economic and non-economic factors (10631(g)(1))	n/a	Reference & Page Number
<input type="checkbox"/>	Evaluate environmental, social, health factors (10631(g)(1))	n/a	Reference & Page Number
<input type="checkbox"/>	Evaluate customer impact & technological factors (10631(g)(1))	n/a	Reference & Page Number
<input type="checkbox"/>	Describe efforts to work with other relevant agencies to ensure implementation of the measure and to share the cost of implementation (10631 (g)(4))	n/a	Reference & Page Number
<input type="checkbox"/>	Describe funding available to implement any planned water supply project that would provide water at a higher unit cost (10631 (g)(3) & (h))	n/a	Reference & Page Number

If Another Agency Implementing

<input checked="" type="checkbox"/>	If another Agency is implementing (10631 (g)(4))	Chapter 6	Reference & Page Number
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DMM 2 - Residential Plumbing Retrofit (10631 (f)(1)(B))

Implementation

(Section 10631 (f) & (h))

<input checked="" type="checkbox"/>	Describe DMM currently being implemented or scheduled for implementation (10631 (f) (1)(2))	Chapter 6	Reference & Page Number
<input checked="" type="checkbox"/>	Describes steps necessary to implement measure	Chapter 6	Reference & Page Number
<input checked="" type="checkbox"/>	Describe the methods, if any, used to evaluate the effectiveness of this DMM (10631 (f)(3))	Chapter 6	Reference & Page Number
<input checked="" type="checkbox"/>	Provide estimates, if available, of existing conservation savings on water use and the effect of such savings on the supplier's ability to further reduce demand (10631(f)(4))	Chapter 6	Reference & Page Number

Provided an evaluation for this DMM if it is not implemented

(Section 10631 (g))

<input type="checkbox"/>	Evaluate legal authority (10631(g)(4))	n/a	Reference & Page Number
<input type="checkbox"/>	Evaluate economic and non-economic factors (10631(g)(1))	n/a	Reference & Page Number
<input type="checkbox"/>	Evaluate environmental, social, health factors (10631(g)(1))	n/a	Reference & Page Number
<input type="checkbox"/>	Evaluate customer impact & technological factors (10631(g)(1))	n/a	Reference & Page Number
<input type="checkbox"/>	Describe efforts to work with other relevant agencies to ensure implementation of the measure and to share the cost of implementation (10631 (g)(4))	n/a	Reference & Page Number
<input type="checkbox"/>	Describe funding available to implement any planned water supply project that would provide water at a higher unit cost (10631 (g)(3) & (h))	n/a	Reference & Page Number

If Another Agency Implementing

<input checked="" type="checkbox"/>	If another Agency is implementing (10631 (g)(4))	Chapter 6	Reference & Page Number
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DMM 3 - System Water Audits, Leak Detection and Repair (10631 (f)(1)(C))

Implementation

(Section 10631 (f) & (h))

<input checked="" type="checkbox"/>	Describe DMM currently being implemented or scheduled for implementation (10631 (f) (1)(2))	Chapter 6	Reference & Page Number
<input checked="" type="checkbox"/>	Describes steps necessary to implement measure	Chapter 6	Reference & Page Number
<input checked="" type="checkbox"/>	Describe the methods, if any, used to evaluate the effectiveness of this DMM (10631 (f)(3))	Chapter 6	Reference & Page Number
<input checked="" type="checkbox"/>	Provide estimates, if available, of existing conservation savings on water use and the effect of such savings on the supplier's ability to further reduce demand (10631(f)(4))	Chapter 6	Reference & Page Number

Provided an evaluation for this DMM if it is not implemented

(Section 10631 (g))

<input type="checkbox"/>	Evaluate legal authority (10631(g)(4))	n/a	Reference & Page Number
<input type="checkbox"/>	Evaluate economic and non-economic factors (10631(g)(1))	n/a	Reference & Page Number
<input type="checkbox"/>	Evaluate environmental, social, health factors (10631(g)(1))	n/a	Reference & Page Number
<input type="checkbox"/>	Evaluate customer impact & technological factors (10631(g)(1))	n/a	Reference & Page Number
<input type="checkbox"/>	Describe efforts to work with other relevant agencies to ensure implementation of the measure and to share the cost of implementation (10631 (g)(4))	n/a	Reference & Page Number
<input type="checkbox"/>	Describe funding available to implement any planned water supply project that would provide water at a higher unit cost (10631 (g)(3) & (h))	n/a	Reference & Page Number

If Another Agency Implementing

<input type="checkbox"/>	If another Agency is implementing (10631 (g)(4))	n/a	Reference & Page Number
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DMM 4 - Metering with Commodity Rates (10631 (f)(1)(D))

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Implementation

(Section 10631 (f) & (h))

<input checked="" type="checkbox"/>	Describe DMM currently being implemented or scheduled for implementation (10631 (f) (1)(2))	Chapter 6	Reference & Page Number
<input checked="" type="checkbox"/>	Describes steps necessary to implement measure	Chapter 6	Reference & Page Number
<input checked="" type="checkbox"/>	Describe the methods, if any, used to evaluate the effectiveness of this DMM (10631 (f)(3))	Chapter 6	Reference & Page Number
<input checked="" type="checkbox"/>	Provide estimates, if available, of existing conservation savings on water use and the effect of such savings on the supplier's ability to further reduce demand (10631(f)(4))	Chapter 6	Reference & Page Number

Provided an evaluation for this DMM if it is not implemented

(Section 10631 (g))

<input type="checkbox"/>	Evaluate legal authority (10631(g)(4))	n/a	Reference & Page Number
<input type="checkbox"/>	Evaluate economic and non-economic factors (10631(g)(1))	n/a	Reference & Page Number
<input type="checkbox"/>	Evaluate environmental, social, health factors (10631(g)(1))	n/a	Reference & Page Number
<input type="checkbox"/>	Evaluate customer impact & technological factors (10631(g)(1))	n/a	Reference & Page Number
<input type="checkbox"/>	Describe efforts to work with other relevant agencies to ensure implementation of the measure and to share the cost of implementation (10631 (g)(4))	n/a	Reference & Page Number
<input type="checkbox"/>	Describe funding available to implement any planned water supply project that would provide water at a higher unit cost (10631 (g)(3) & (h))	n/a	Reference & Page Number

If Another Agency Implementing

<input type="checkbox"/>	If another Agency is implementing (10631 (g)(4))	n/a	Reference & Page Number
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DMM 5 - Large Landscape Conservation Programs and Incentives (10631 (f)(1)(E))

Implementation

(Section 10631 (f) & (h))

<input checked="" type="checkbox"/>	Describe DMM currently being implemented or scheduled for implementation (10631 (f) (1)(2))	Chapter 6	Reference & Page Number
<input checked="" type="checkbox"/>	Describes steps necessary to implement measure	Chapter 6	Reference & Page Number
<input checked="" type="checkbox"/>	Describe the methods, if any, used to evaluate the effectiveness of this DMM (10631 (f)(3))	Chapter 6	Reference & Page Number
<input checked="" type="checkbox"/>	Provide estimates, if available, of existing conservation savings on water use and the effect of such savings on the supplier's ability to further reduce demand (10631(f)(4))	Chapter 6	Reference & Page Number

Provided an evaluation for this DMM if it is not implemented

(Section 10631 (g))

<input type="checkbox"/>	Evaluate legal authority (10631(g)(4))	n/a	Reference & Page Number
<input type="checkbox"/>	Evaluate economic and non-economic factors (10631(g)(1))	n/a	Reference & Page Number
<input type="checkbox"/>	Evaluate environmental, social, health factors (10631(g)(1))	n/a	Reference & Page Number
<input type="checkbox"/>	Evaluate customer impact & technological factors (10631(g)(1))	n/a	Reference & Page Number
<input type="checkbox"/>	Describe efforts to work with other relevant agencies to ensure implementation of the measure and to share the cost of implementation (10631 (g)(4))	n/a	Reference & Page Number
<input type="checkbox"/>	Describe funding available to implement any planned water supply project that would provide water at a higher unit cost (10631 (g)(3) & (h))	n/a	Reference & Page Number

If Another Agency Implementing

<input checked="" type="checkbox"/>	If another Agency is implementing (10631 (g)(4))	Chapter 6	Reference & Page Number
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DMM 6 - High-Efficiency Washing Machine Rebate Programs (10631 (f)(1)(F))

Implementation

(Section 10631 (f) & (h))

<input checked="" type="checkbox"/>	Describe DMM currently being implemented or scheduled for implementation (10631 (f) (1)(2))	Chapter 6	Reference & Page Number
<input checked="" type="checkbox"/>	Describes steps necessary to implement measure	Chapter 6	Reference & Page Number
<input checked="" type="checkbox"/>	Describe the methods, if any, used to evaluate the effectiveness of this DMM (10631 (f)(3))	Chapter 6	Reference & Page Number
<input checked="" type="checkbox"/>	Provide estimates, if available, of existing conservation savings on water use and the effect of such savings on the supplier's ability to further reduce demand (10631(f)(4))	Chapter 6	Reference & Page Number

Provided an evaluation for this DMM if it is not implemented

(Section 10631 (g))

<input type="checkbox"/>	Evaluate legal authority (10631(g)(4))	n/a	Reference & Page Number
<input type="checkbox"/>	Evaluate economic and non-economic factors (10631(g)(1))	n/a	Reference & Page Number
<input type="checkbox"/>	Evaluate environmental, social, health factors (10631(g)(1))	n/a	Reference & Page Number
<input type="checkbox"/>	Evaluate customer impact & technological factors (10631(g)(1))	n/a	Reference & Page Number
<input type="checkbox"/>	Describe efforts to work with other relevant agencies to ensure implementation of the measure and to share the cost of implementation (10631 (g)(4))	n/a	Reference & Page Number
<input type="checkbox"/>	Describe funding available to implement any planned water supply project that would provide water at a higher unit cost (10631 (g)(3) & (h))	n/a	Reference & Page Number

If Another Agency Implementing

<input checked="" type="checkbox"/>	If another Agency is implementing (10631 (g)(4))	Chapter 6	Reference & Page Number
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DMM 7 - Public Information Programs (10631 (f)(1)(G))

Implementation

(Section 10631 (f) & (h))

<input checked="" type="checkbox"/>	Describe DMM currently being implemented or scheduled for implementation (10631 (f) (1)(2))	Chapter 6	Reference & Page Number
<input checked="" type="checkbox"/>	Describes steps necessary to implement measure	Chapter 6	Reference & Page Number
<input checked="" type="checkbox"/>	Describe the methods, if any, used to evaluate the effectiveness of this DMM (10631 (f)(3))	Chapter 6	Reference & Page Number
<input checked="" type="checkbox"/>	Provide estimates, if available, of existing conservation savings on water use and the effect of such savings on the supplier's ability to further reduce demand (10631(f)(4))	Chapter 6	Reference & Page Number

Provided an evaluation for this DMM if it is not implemented

(Section 10631 (g))

<input type="checkbox"/>	Evaluate legal authority (10631(g)(4))	n/a	Reference & Page Number
<input type="checkbox"/>	Evaluate economic and non-economic factors (10631(g)(1))	n/a	Reference & Page Number
<input type="checkbox"/>	Evaluate environmental, social, health factors (10631(g)(1))	n/a	Reference & Page Number
<input type="checkbox"/>	Evaluate customer impact & technological factors (10631(g)(1))	n/a	Reference & Page Number
<input type="checkbox"/>	Describe efforts to work with other relevant agencies to ensure implementation of the measure and to share the cost of implementation (10631 (g)(4))	n/a	Reference & Page Number
<input type="checkbox"/>	Describe funding available to implement any planned water supply project that would provide water at a higher unit cost (10631 (g)(3) & (h))	n/a	Reference & Page Number

If Another Agency Implementing

<input checked="" type="checkbox"/>	If another Agency is implementing (10631 (g)(4))	Chapter 6	Reference & Page Number
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DMM 8 - School Education Programs (10631 (f)(1)(H))

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Implementation

(Section 10631 (f) & (h))

<input checked="" type="checkbox"/>	Describe DMM currently being implemented or scheduled for implementation (10631 (f) (1)(2))	Chapter 6	Reference & Page Number
<input checked="" type="checkbox"/>	Describes steps necessary to implement measure	Chapter 6	Reference & Page Number
<input checked="" type="checkbox"/>	Describe the methods, if any, used to evaluate the effectiveness of this DMM (10631 (f)(3))	Chapter 6	Reference & Page Number
<input checked="" type="checkbox"/>	Provide estimates, if available, of existing conservation savings on water use and the effect of such savings on the supplier's ability to further reduce demand (10631(f)(4))	Chapter 6	Reference & Page Number

Provided an evaluation for this DMM if it is not implemented

(Section 10631 (g))

<input type="checkbox"/>	Evaluate legal authority (10631(g)(4))	n/a	Reference & Page Number
<input type="checkbox"/>	Evaluate economic and non-economic factors (10631(g)(1))	n/a	Reference & Page Number
<input type="checkbox"/>	Evaluate environmental, social, health factors (10631(g)(1))	n/a	Reference & Page Number
<input type="checkbox"/>	Evaluate customer impact & technological factors (10631(g)(1))	n/a	Reference & Page Number
<input type="checkbox"/>	Describe efforts to work with other relevant agencies to ensure implementation of the measure and to share the cost of implementation (10631 (g)(4))	n/a	Reference & Page Number
<input type="checkbox"/>	Describe funding available to implement any planned water supply project that would provide water at a higher unit cost (10631 (g)(3) & (h))	n/a	Reference & Page Number

If Another Agency Implementing

<input checked="" type="checkbox"/>	If another Agency is implementing (10631 (g)(4))	Chapter 6	Reference & Page Number
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DMM 9 - Conservation Programs for Commercial, Industrial and Institutional (10631 (f)(1)(I))

Implementation

(Section 10631 (f) & (h))

<input checked="" type="checkbox"/>	Describe DMM currently being implemented or scheduled for implementation (10631 (f) (1)(2))	Chapter 6	Reference & Page Number
<input checked="" type="checkbox"/>	Describes steps necessary to implement measure	Chapter 6	Reference & Page Number
<input checked="" type="checkbox"/>	Describe the methods, if any, used to evaluate the effectiveness of this DMM (10631 (f)(3))	Chapter 6	Reference & Page Number
<input checked="" type="checkbox"/>	Provide estimates, if available, of existing conservation savings on water use and the effect of such savings on the supplier's ability to further reduce demand (10631(f)(4))	Chapter 6	Reference & Page Number

Provided an evaluation for this DMM if it is not implemented

(Section 10631 (g))

<input type="checkbox"/>	Evaluate legal authority (10631(g)(4))	n/a	Reference & Page Number
<input type="checkbox"/>	Evaluate economic and non-economic factors (10631(g)(1))	n/a	Reference & Page Number
<input type="checkbox"/>	Evaluate environmental, social, health factors (10631(g)(1))	n/a	Reference & Page Number
<input type="checkbox"/>	Evaluate customer impact & technological factors (10631(g)(1))	n/a	Reference & Page Number
<input type="checkbox"/>	Describe efforts to work with other relevant agencies to ensure implementation of the measure and to share the cost of implementation (10631 (g)(4))	n/a	Reference & Page Number
<input type="checkbox"/>	Describe funding available to implement any planned water supply project that would provide water at a higher unit cost (10631 (g)(3) & (h))	n/a	Reference & Page Number

If Another Agency Implementing

<input checked="" type="checkbox"/>	If another Agency is implementing (10631 (g)(4))	Chapter 6	Reference & Page Number
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DMM 10 - Wholesale Agency Programs (10631 (f)(1)(J))

Implementation

(Section 10631 (f) & (h))

<input type="checkbox"/>	Describe DMM currently being implemented or scheduled for implementation (10631 (f) (1)(2))	n/a	Reference & Page Number
<input type="checkbox"/>	Describes steps necessary to implement measure	n/a	Reference & Page Number
<input type="checkbox"/>	Describe the methods, if any, used to evaluate the effectiveness of this DMM (10631 (f)(3))	n/a	Reference & Page Number
<input type="checkbox"/>	Provide estimates, if available, of existing conservation savings on water use and the effect of such savings on the supplier's ability to further reduce demand (10631(f)(4))	n/a	Reference & Page Number

Provided an evaluation for this DMM if it is not implemented

(Section 10631 (g))

<input type="checkbox"/>	Evaluate legal authority (10631(g)(4))	n/a	Reference & Page Number
<input type="checkbox"/>	Evaluate economic and non-economic factors (10631(g)(1))	n/a	Reference & Page Number
<input type="checkbox"/>	Evaluate environmental, social, health factors (10631(g)(1))	n/a	Reference & Page Number
<input type="checkbox"/>	Evaluate customer impact & technological factors (10631(g)(1))	n/a	Reference & Page Number
<input type="checkbox"/>	Describe efforts to work with other relevant agencies to ensure implementation of the measure and to share the cost of implementation (10631 (g)(4))	n/a	Reference & Page Number
<input type="checkbox"/>	Describe funding available to implement any planned water supply project that would provide water at a higher unit cost (10631 (g)(3) & (h))	n/a	Reference & Page Number

If Another Agency Implementing

<input type="checkbox"/>	If another Agency is implementing (10631 (g)(4))	n/a	Reference & Page Number
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DMM 11 - Conservation Pricing (10631 (f)(1)(K))

Implementation

(Section 10631 (f) & (h))

<input checked="" type="checkbox"/>	Describe DMM currently being implemented or scheduled for implementation (10631 (f) (1)(2))	Chapter 6	Reference & Page Number
<input checked="" type="checkbox"/>	Describes steps necessary to implement measure	Chapter 6	Reference & Page Number
<input checked="" type="checkbox"/>	Describe the methods, if any, used to evaluate the effectiveness of this DMM (10631 (f)(3))	Chapter 6	Reference & Page Number
<input checked="" type="checkbox"/>	Provide estimates, if available, of existing conservation savings on water use and the effect of such savings on the supplier's ability to further reduce demand (10631(f)(4))	Chapter 6	Reference & Page Number

Provided an evaluation for this DMM if it is not implemented

(Section 10631 (g))

<input type="checkbox"/>	Evaluate legal authority (10631(g)(4))	n/a	Reference & Page Number
<input type="checkbox"/>	Evaluate economic and non-economic factors (10631(g)(1))	n/a	Reference & Page Number
<input type="checkbox"/>	Evaluate environmental, social, health factors (10631(g)(1))	n/a	Reference & Page Number
<input type="checkbox"/>	Evaluate customer impact & technological factors (10631(g)(1))	n/a	Reference & Page Number
<input type="checkbox"/>	Describe efforts to work with other relevant agencies to ensure implementation of the measure and to share the cost of implementation (10631 (g)(4))	n/a	Reference & Page Number
<input type="checkbox"/>	Describe funding available to implement any planned water supply project that would provide water at a higher unit cost (10631 (g)(3) & (h))	n/a	Reference & Page Number

If Another Agency Implementing

<input type="checkbox"/>	If another Agency is implementing (10631 (g)(4))	n/a	Reference & Page Number
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DMM 12 - Water Conservation Coordinator (10631 (f)(1)(L))

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Implementation			(Section 10631 (f) & (h))	
<input checked="" type="checkbox"/>	Describe DMM currently being implemented or scheduled for implementation (10631 (f) (1)(2))		Chapter 6	Reference & Page Number
<input checked="" type="checkbox"/>	Describes steps necessary to implement measure		Chapter 6	Reference & Page Number
<input checked="" type="checkbox"/>	Describe the methods, if any, used to evaluate the effectiveness of this DMM (10631 (f)(3))		Chapter 6	Reference & Page Number
<input checked="" type="checkbox"/>	Provide estimates, if available, of existing conservation savings on water use and the effect of such savings on the supplier's ability to further reduce demand (10631(f)(4))		Chapter 6	Reference & Page Number
Provided an evaluation for this DMM if it is not implemented			(Section 10631 (g))	
<input type="checkbox"/>	Evaluate legal authority (10631(g)(4))		n/a	Reference & Page Number
<input type="checkbox"/>	Evaluate economic and non-economic factors (10631(g)(1))		n/a	Reference & Page Number
<input type="checkbox"/>	Evaluate environmental, social, health factors (10631(g)(1))		n/a	Reference & Page Number
<input type="checkbox"/>	Evaluate customer impact & technological factors (10631(g)(1))		n/a	Reference & Page Number
<input type="checkbox"/>	Describe efforts to work with other relevant agencies to ensure implementation of the measure and to share the cost of implementation (10631 (g)(4))		n/a	Reference & Page Number
<input type="checkbox"/>	Describe funding available to implement any planned water supply project that would provide water at a higher unit cost (10631 (g)(3) & (h))		n/a	Reference & Page Number
If Another Agency Implementing				
<input checked="" type="checkbox"/>	If another Agency is implementing (10631 (g)(4))		Chapter 6	Reference & Page Number
DMM 13 - Waste Water Prohibition (10631 (f)(1)(M))				
Implementation			(Section 10631 (f) & (h))	
<input checked="" type="checkbox"/>	Describe DMM currently being implemented or scheduled for implementation (10631 (f) (1)(2))		Chapter 6	Reference & Page Number
<input checked="" type="checkbox"/>	Describes steps necessary to implement measure		Chapter 6	Reference & Page Number
<input checked="" type="checkbox"/>	Describe the methods, if any, used to evaluate the effectiveness of this DMM (10631 (f)(3))		Chapter 6	Reference & Page Number
<input checked="" type="checkbox"/>	Provide estimates, if available, of existing conservation savings on water use and the effect of such savings on the supplier's ability to further reduce demand (10631(f)(4))		Chapter 6	Reference & Page Number
Provided an evaluation for this DMM if it is not implemented			(Section 10631 (g))	
<input type="checkbox"/>	Evaluate legal authority (10631(g)(4))		n/a	Reference & Page Number
<input type="checkbox"/>	Evaluate economic and non-economic factors (10631(g)(1))		n/a	Reference & Page Number
<input type="checkbox"/>	Evaluate environmental, social, health factors (10631(g)(1))		n/a	Reference & Page Number
<input type="checkbox"/>	Evaluate customer impact & technological factors (10631(g)(1))		n/a	Reference & Page Number
<input type="checkbox"/>	Describe efforts to work with other relevant agencies to ensure implementation of the measure and to share the cost of implementation (10631 (g)(4))		n/a	Reference & Page Number
<input type="checkbox"/>	Describe funding available to implement any planned water supply project that would provide water at a higher unit cost (10631 (g)(3) & (h))		n/a	Reference & Page Number
If Another Agency Implementing				
<input type="checkbox"/>	If another Agency is implementing (10631 (g)(4))		n/a	Reference & Page Number
DMM 14 - Residential Ultra-Low-Flush Toilet Replacement Programs (10631 (f)(1)(N))				
Implementation			(Section 10631 (f) & (h))	
<input checked="" type="checkbox"/>	Describe DMM currently being implemented or scheduled for implementation (10631 (f) (1)(2))		Chapter 6	Reference & Page Number
<input checked="" type="checkbox"/>	Describes steps necessary to implement measure		Chapter 6	Reference & Page Number
<input checked="" type="checkbox"/>	Describe the methods, if any, used to evaluate the effectiveness of this DMM (10631 (f)(3))		Chapter 6	Reference & Page Number
<input checked="" type="checkbox"/>	Provide estimates, if available, of existing conservation savings on water use and the effect of such savings on the supplier's ability to further reduce demand (10631(f)(4))		Chapter 6	Reference & Page Number
Provided an evaluation for this DMM if it is not implemented			(Section 10631 (g))	
<input type="checkbox"/>	Evaluate legal authority (10631(g)(4))		n/a	Reference & Page Number
<input type="checkbox"/>	Evaluate economic and non-economic factors (10631(g)(1))		n/a	Reference & Page Number
<input type="checkbox"/>	Evaluate environmental, social, health factors (10631(g)(1))		n/a	Reference & Page Number
<input type="checkbox"/>	Evaluate customer impact & technological factors (10631(g)(1))		n/a	Reference & Page Number
<input type="checkbox"/>	Describe efforts to work with other relevant agencies to ensure implementation of the measure and to share the cost of implementation (10631 (g)(4))		n/a	Reference & Page Number
<input type="checkbox"/>	Describe funding available to implement any planned water supply project that would provide water at a higher unit cost (10631 (g)(3) & (h))		n/a	Reference & Page Number
If Another Agency Implementing				
<input checked="" type="checkbox"/>	If another Agency is implementing (10631 (g)(4))		Chapter 6	Reference & Page Number

APPENDIX B

Notice of Public Hearing

**CITY OF PLACERVILLE
NOTICE OF PUBLIC HEARING
ON URBAN WATER MANAGEMENT PLAN ***

NOTICE IS HEREBY GIVEN THAT PURSUANT TO THE PROVISIONS OF Section 10621 of the Water Code, **CITY OF PLACERVILLE** (City) has prepared its Urban Water Management Plan (Plan) and the City intends to adopt said Plan as a result of said preparation.

That said Plan and the proposed changes and amendments is available for public inspection at the City Public Works office located in City Hall at 3101 Center Street, Placerville, California. Loaner copies of the Plan are also available for checkout at the City Public Works office.

NOTICE IS FURTHER GIVEN that a public hearing will be held on the proposed Plan at a meeting of the City Council to be held on the 14th day of August at the hour of 7:00 p.m. at Town Hall located at 549 Main Street, Placerville, CA 95667.

Upon completion of said public hearing, the Plan will be adopted as prepared or as modified.

This notice shall be published once a week for two successive weeks in the Mountain Democrat.

Dated: July 27, 2007
CITY OF PLACERVILLE by/ Alison Costa,
Administrative Secretary
07/27/07, 08/03/07, 08/10/07 **02519643**

APPENDIX C

Adopted Resolution

RESOLUTION NO. 7529

**RESOLUTION OF THE CITY COUNCIL OF THE CITY OF
PLACERVILLE ADOPTING THE 2005 URBAN WATER
MANAGEMENT PLAN FOR THE CITY OF PLACERVILLE WATER
SERVICE AREA**

WHEREAS, the city of Placerville recently passed the threshold whereby it is subject to the provisions of section the 10610 of the California Water Code which requires that the City prepare an Urban Water Management Plan; and

WHEREAS, the City has retained the services of the engineering firm of Brown and Caldwell to produce the draft Urban Water Management Plan that meets the requirements of said provisions of the California Water Code; and

WHEREAS, on August 14, 2007 the City Council conducted a public hearing to receive input on the content of the draft Urban Water Management Plan; and

WHEREAS, at the conclusion of the public hearing no material modifications to the draft Urban Water Management Plan were deemed to be necessary;

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

1. Adopt the "City of Placerville 2005 Urban Water Management Plan"
2. Authorize staff to forward copies of the final adopted UWMP to the California Department of Water Resources pursuant to the requirements of section 10610 et seq. of the California Water Code.

Resolution No. 7529
Page Two

The foregoing Resolution was introduced at a regular meeting of the City Council of the City of Placerville held on August 14, 2007, by Councilmember Hagen who moved its adoption. The motion was seconded by Councilmember Colvin. The motion was passed by the following vote:

AYES: Acuna, Borelli, Colvin, Hagen

NOES: None

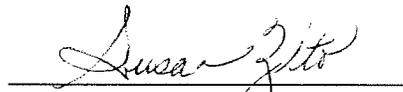
ABSENT: Rivas

ABSTAIN: None



Mark A. Acuna, Mayor

ATTEST:


Susan Zito, CMC, City Clerk

APPENDIX D

“Agreement between El Dorado Irrigation District and City of Placerville for a Water Supply”

AGREEMENT BETWEEN EL DORADO IRRIGATION DISTRICT
AND CITY OF PLACERVILLE FOR A WATER SUPPLY

THIS AGREEMENT, made and entered into this 13th day of April, 1999 by and between EL DORADO IRRIGATION DISTRICT, an irrigation district organized and existing under and by virtue of the laws of the State of California, First Party, hereinafter referred to as "DISTRICT", and the CITY OF PLACERVILLE, a municipal corporation, organized and existing under and by virtue of the laws of the State of California, Second Party, hereinafter referred to as "CITY",

WITNESSETH:

WHEREAS, District has water that can be sold to City: and

WHEREAS, City wishes to purchase water from District and treat same at its sole cost, expense and responsibility to supply its municipal requirements:

NOW, THEREFORE, the parties hereto agree as follows:

1. This Agreement shall be effective as of its date and shall continue in effect from year to year thereafter; subject to renegotiation by either party giving ninety (90) days prior written notice to the other before the annual renewal date.
2. a) It is the intent of the District to deliver and sell water to the City, at historic use levels, including normal growth increases, under normal operating conditions at the rates and charges set forth in Exhibit 1 attached hereto or as amended in accordance with ¶ 1 above. All water deliveries are subject to the availability of water, provided however, the City will not incur any deficiencies greater than all other District customers.
- b) Water delivered and sold to the City shall be used within the boundaries of the City's service area as is on file with the Local Agency Formation Commission, as modified from

time to time. Any extension of the City's water service area shall not be made without prior written approval of the District Board, contingent primarily upon the availability of water.

c) It is further understood and agreed that the parties to this Agreement shall not encroach or overlap each other's service area until adoption of a mutually agreeable criteria for extensions of service, including the availability of water.

3. District shall measure and deliver the water sold to City through measuring stations. Said measuring stations will be maintained and operated by District.

4. a) City shall pay the District, at the District's adopted Municipal Rate, as established by the District's Board of Directors from time to time, for all water delivered. The District will invite the City to participate in any municipal rate setting process. Following any District adopted rate increase, the effective date of the increase to the City will be sixty (60) days later, to allow the City time to adjust its rate structure.

b) The City shall pay to the District a Facility Capacity Charge (FCC) on all new water connections in the City. The FCC charge to the City is based on the District's duly adopted Facilities Capacity Charges, amended from time to time and adjusted by a ratio of the City's residential water useage compared to EID Placerville North/South service area residential useage and FCC transmission component benefiting the City (see Exhibit 2 for 1999). Following any District adopted FCC increase, the effective date of the increase to the City will be sixty (60) days later, to allow the City time to adjust its FCC structure.

c) City agrees within 60 days, to pay the District in lawful money of the United States all sums due and owing for water delivered during the preceding billing period and any FCC charges collected.

d) The City will provide the District, by January 30th of each year, an annual report on City accounts, water useage by use category, and meter sales. The City also agrees to make its water service records available to the District, upon reasonable notice, for audit purposes.

5. It is understood and agreed that in a year which is considered or deemed to be a drought year or in a year which in the estimation of District requires rationing or curtailment of use of water, District at its discretion may impose a drought surcharge, reduce or restrict the water service to City, including new meters issued to City customers, in proportion to any reduction, limitation or curtailment of use of water within the District. District shall notify City of its proposed actions as soon as known to District. The City agrees to implement and enforce water shortage conditions, drought stages or other emergencies as are duly adopted by the District, including a Declaration of Water Shortage Emergency.
6. The District is required, by its Federal Water Contracts, to provide a water conservation Best Management Practices (BMP's) Program to all customers receiving Federal water. To meet this requirement, within the city service area, the City agrees to contract with the District for these water conservation services and reimburse the District for implementation costs. (See Appendix A).
7. City shall be solely responsible at its sole cost and expense for any additional treatment of said water as may be desired, and City agrees to hold District free and harmless from any and all injuries and damages that may result from City's treatment of said water.
8. City shall indemnify and defend District, its officers, agents and employees against all loss, damage, expense and liability resulting from injury to or death to any person or persons or injury to property, arising out of the use of District water after delivery of the water to City mains, or in any way arising out of or connected with the performance of this Agreement.
9. District agrees to use reasonable diligence to maintain service without interruption, but it is realized that snow or ice blockages, line breaks, ditch or flume breaks, mechanical failure, and other causes may prevent such service.
10. This Agreement shall not create or convey any right, title or interest, legal or equitable in or to the property, ditches, water or water rights of District, nor interfere with or obstruct the

full, free and unobstructed use and disposition thereof by District; and District shall have full control of the distribution of water through its system, and the right to establish and enforce such rules and regulations as it may deem expedient; and the furnishing of water hereunder shall not become the basis of a permanent right.

The foregoing notwithstanding, this agreement shall not be interpreted as the City relinquishing or waiving any rights to water which may exist in favor of the City at the time of execution of the agreement.

11. This Agreement shall be effective APRIL 13, 1999 and shall supersede any other Agreement between the parties hereto of a prior date relating to the subject matter hereof and/or rights of City to receive water from District.

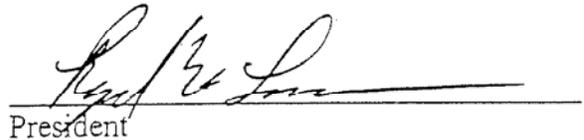
IN WITNESS WHEREOF, the parties hereto have executed this Agreement as of the day and year first hereinbefore written.

CITY OF PLACERVILLE

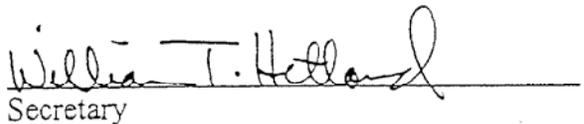
EL DORADO IRRIGATION DISTRICT



Mayor



President



Secretary

APPROVED AS TO FORM:

J. W. D. Russell
City Attorney

ATTEST:

Susan Zito, Deputy City Clerk
City Clerk

Exhibit 1

<u>MUNICIPAL</u>	3/17/99	Bi-Monthly Basic Charge	\$00.0 Minimum
(19)		0 - 295,500 cf	0.31 Per 100 Cubic Feet
		295,501 - 12,160,000 cf	0.35 Per 100 Cubic Feet
		12,160,001 - Excess	0.40 Per 100 Cubic Feet

**CALCULATION OF MUNICIPAL
FCC PAYMENT TO THE DISTRICT (1999)
(CITY OF PLACERVILLE)**

1.) Last full calendar year of City residential useage

Residential use AF - 1997 973 AF 973 divided by 2296 = .42 AF/Acct.
Residential accounts - 1997 2296 AF

2.) EID - Residential useage from Service Area - Placerville North & South - surrounding the City of Placerville

Residential use of AF - 1997 822 AF 822 divided by 1793 = .46 AF/Acct.
Residential accounts - 1997 1793 AF

3.) Ratio between City residential useage and EID - Placerville North/South Service Area residential useage

.42 AF/Acct. divided by .46 AF/Acct. = 91%

4.) EID FCC is based on Water Facility Capacity Charge (FCC) Study - March 1992

FCC component charges	-	Transmission	\$1,851.
	-	Treatment	\$ 586.
	-	Supply	<u>\$2,209.</u>
			\$4,646.

5.) FCC Transmission Component Calculation for City of Placerville

Taking 50% of the transmission component as benefiting the City, the new FCC total benefiting the City is:

-	Transmission	\$ 926.
-	Treatment	\$ 586.
-	Supply	<u>\$2,209.</u>
		\$3,721.

FCC component charge \$3,721 x .91 ratio = \$3,386.

6.) FCC Surcharge - Gabbro Soil

Board adopted 10/5/98 on all FCC's - District Wide.
\$345.

7.) Total City FCC under the agreement

\$3,386.	City FCC charge
<u>345.</u>	Surcharge
\$3,731.	Total City FCC

EXHIBIT 2

Appendix A - Implementation of a Water Conservation Program

The City of Placerville and El Dorado Irrigation District are both mandated to implement water conservation Best Management Practices (BMP's) as required by Federal and State regulations and the upcoming CAL-FED Program. Since EID currently implements a full BMP Program, it would be mutually beneficial and cost effective for the District to provide a water conservation program for the City of Placerville. In order to provide an efficient and cost effective program, the following guidelines will apply:

- 1.) By March 31 of each year the City and District will meet and agree on program implementations as well as target goals for each BMP. This will allow the City to budget funds to implement the program as agreed upon.
- 2.) EID will present the unit cost of each BMP Program, and this will be the basis of reimbursement by the City. The unit costs are actual costs of supplies, labor and transportation.
- 3.) District will account for each reimbursable BMP and bill the City on a quarterly basis for reimbursement based on the agreed upon unit costs.
- 4.) The City and EID will meet on an as needed basis to audit and evaluate the implementation of the program.
- 5.) The District will provide program implementation data or reports that allows the City to show compliance with water conservation BMP requirements.

APPENDIX E

4-Stage Water Supply Matrix and Water Shortage Response Measures



El Dorado Irrigation District

EL DORADO IRRIGATION DISTRICT

4-STAGE WATER SUPPLY MATRIX

AND

WATER SHORTAGE RESPONSE MEASURES

Adopted by EID Board of Directors

June 12, 1995

INTRODUCTION

The El Dorado Irrigation District maintains a water conservation plan called the **4-Stage Water Supply Matrix and Water Shortage Response Measures**. This conservation program establishes a logical series (i.e. stages) of measures which respond to increasingly severe water shortage conditions. This is accomplished by articulating an objective for each stage, and listing the corresponding conservation measures which, when implemented, are expected to achieve the stated objective. The four stages and associated objectives are documented below.

STAGE ONE WATER ALERT (0% - 5% Expected Conservation)

Objective: Heighten public awareness of emerging water shortage conditions and enlist voluntary customer participation in increased water conservation.

STAGE TWO WATER WARNING (5% - 10% Expected Conservation)

Objective: Ensure public understanding of worsening water supply condition and evoke customer compliance with voluntary and mandatory conservation measures.

STAGE THREE WATER EMERGENCY (10% - 20% Expected Conservation)

Objective: Confirm public recognition of the continuing water supply emergency and impose mandatory conservation measures.

STAGE FOUR CRITICAL WATER EMERGENCY (20% - 30% Expected Conservation)

Objective: Ensure that District water use is limited to those needs associated with maintaining public health and welfare.

PROGRAM ADMINISTRATION

The District's 4-stage water conservation program is administered according to a "Water Matrix" (see Table 1). The monthly Sly Park storage volumes listed in the matrix represent the threshold, or "trigger" values, that must first be observed before declaring the applicable conservation stage and associated water use restrictions. Accordingly, progression into and out of the various water conservation stages, except Stage 1, is based on the amount of water stored in Sly Park Reservoir.

Because of certain unique circumstances, the declaration of Stage 1 conservation measures is handled differently than declarations of Stages 2, 3 and 4. Prior to declaring a Stage 1 Water Alert, the Sly Park storage levels are monitored daily until the level is 1,000 below the applicable first-of-the-month Stage 1 threshold. Declaring a Stage 1 Alert at this point prevents Stage 1 declarations from being made when the threshold storage levels are exceeded for short periods of time. As a result, District customers are not called on to observe Water Alert conditions off and on from month to month.

The chart below depicts the conditions under which Stage 1 declarations are made.

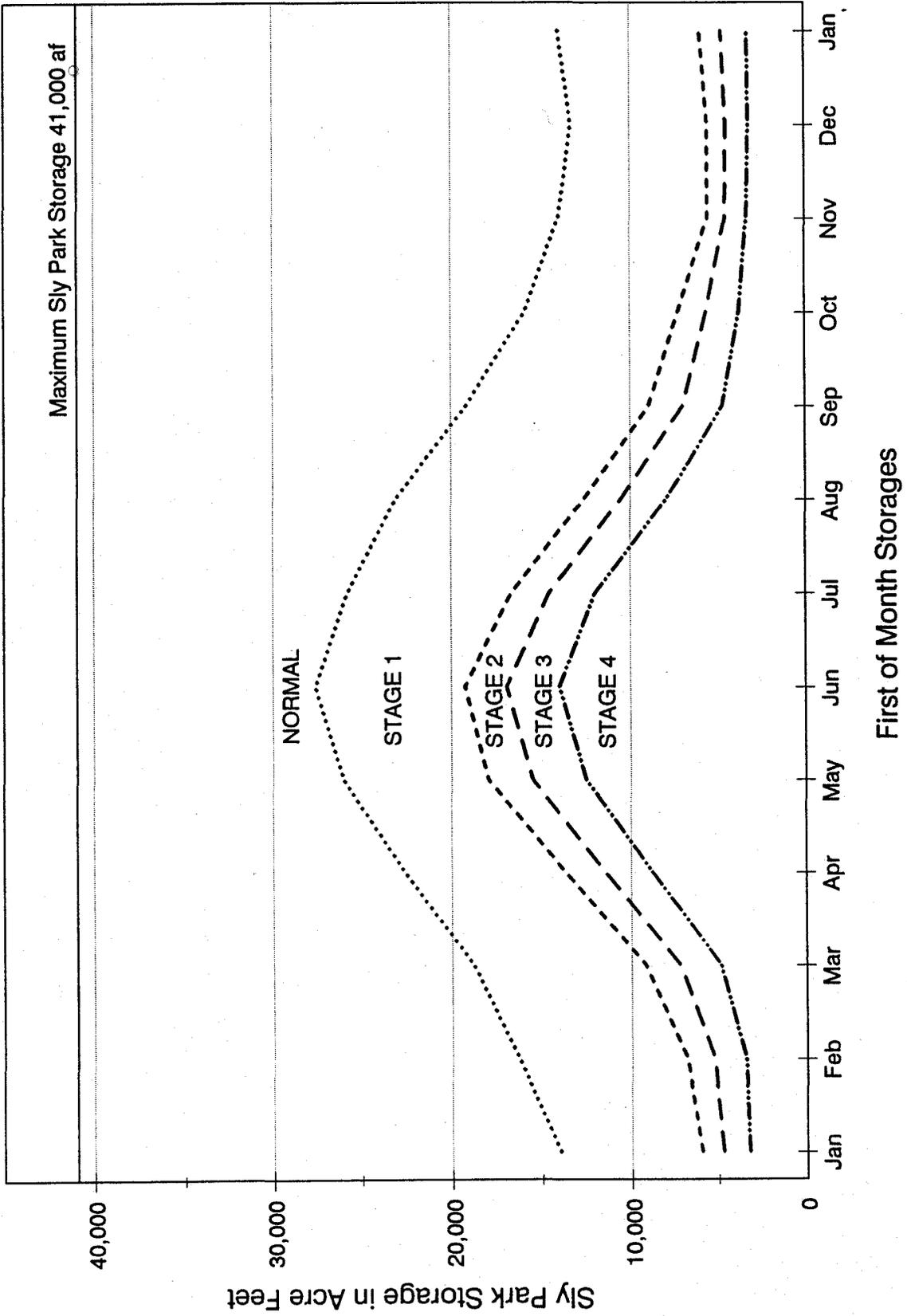
<u>MONTH</u>	<u>STAGE 1 THRESHOLD</u>	<u>STAGE 1 RESTRICTIONS IMPOSED</u>
January	14,000	13,000
February	16,300	15,300
March	18,800	17,800
April	22,600	21,600
May	26,000	25,000
June	27,600	26,600
July	25,800	24,800
August	23,100	22,100
September	19,200	18,200
October	15,900	14,900
November	14,000	13,000
December	13,300	12,300

TABLE 1
WATER MATRIX

(SLY PARK STORAGE VOLUME IN ACRE FEET)

1st of MONTH	NORMAL	STAGE 1	STAGE 2	STAGE 3	STAGE 4
OCTOBER	15,900 to 41,000	7,270 to 15,900	5,650 to 7,270	3,750 to 5,650	Below 3,750
NOVEMBER	14,000 to 41,000	5,560 to 14,000	4,530 to 5,560	3,300 to 4,530	Below 3,300
DECEMBER	13,300 to 41,000	5,560 to 13,300	4,490 to 5,560	3,200 to 4,490	Below 3,200
JANUARY	14,000 to 41,000	5,980 to 14,000	4,730 to 5,980	3,250 to 4,730	Below 3,250
FEBRUARY	16,300 to 41,000	6,840 to 16,300	5,260 to 6,840	3,450 to 5,260	Below 3,450
MARCH	18,800 to 41,000	9,190 to 18,800	7,210 to 9,190	4,850 to 7,210	Below 4,850
APRIL	22,600 to 41,000	13,680 to 22,600	11,450 to 13,680	8,800 to 11,450	Below 8,800
MAY	26,000 to 41,000	17,960 to 26,000	15,500 to 17,960	12,500 to 15,500	Below 12,500
JUNE	27,600 to 41,000	19,240 to 27,600	16,920 to 19,240	14,000 to 16,920	Below 14,000
JULY	25,800 to 41,000	16,670 to 25,800	14,580 to 16,670	12,000 to 14,580	Below 12,000
AUGUST	23,100 to 41,000	12,630 to 23,100	10,580 to 12,630	8,000 to 10,580	Below 8,000
SEPTEMBER	19,200 to 41,000	8,980 to 19,200	7,020 to 8,980	4,700 to 7,020	Below 4,700

EXHIBIT A
EL DORADO IRRIGATION DISTRICT
 Water Conservation Levels - Sly Park Storage



4-STAGE WATER SUPPLY MATRIX AND WATER SHORTAGE RESPONSE MEASURES

Stage One - "WATER ALERT" (0% - 5% Expected Conservation)

Objective: Heighten public awareness of emerging water shortage conditions and enlist voluntary customer participation in increased water conservation.

1. Initiate aggressive EID public information campaign to include informational publication/s mailed to all customers and ads in local newspapers describing situation and seeking support from customers to manage water supplies wisely and to be aware of current water situation.
2. Engage local radio and cable TV media outlets to advertise or announce water shortage information and promote customer wise water use.
3. Provide commercial agricultural customers with special water conservation information materials (literature) from the District.
4. Request all portable construction meter customers to voluntarily seek water sources other than potable EID water for dust control, earthwork, road construction, etc.

Stage Two - "WATER WARNING" (5% - 10% Expected Conservation)

Objective: Ensure public understanding of worsening water supply condition and evoke customer compliance with voluntary and mandatory conservation measures.

1. Intensify Stage 1 public information campaign.
2. Continue all other Stage 1 measures.
3. Implement **mandatory** conservation measures:
 - * Prohibit washing of driveways, parking lots and other surfaces with potable EID water.
 - * Ponds, lakes and other non-irrigation water features shall not be filled with potable EID water.
 - * Restaurants asked not to serve water to customers unless requested.
 - * Portable construction water meter customers directed not to use EID water for dust control, earthwork, or road construction.
4. Implement **voluntary** conservation measures:
 - * All outside watering, including garden, lawn, landscape, domestic and pasture irrigation, parks, golf courses, school grounds and public grounds shall occur only between 6:00 p.m. to 9:00 a.m.
 - * Empty swimming pools are not to be filled with potable EID water.
 - * No washing of automobiles, recreational vehicles, trailers, etc. with EID potable water.
5. Agricultural users not complying with existing Irrigation Management Service (IMS) Program to submit individual water conservation plans to EID for approval within 30 days of Stage 2 declaration.
6. Domestic irrigation users shall be sent an informational mailer which will include a "questionnaire" asking specific questions regarding the water shortage and how the customer intends to respond to it. All domestic irrigation customers will be required to return the questionnaire.

Stage Three - "WATER EMERGENCY" (10% - 20% Expected Conservation)

Objective: Confirm public recognition of the continuing water supply emergency and impose mandatory conservation measures.

1. Continue with Stage 2 informational campaign.
2. Continue Stage 2 mandatory measures.
3. Make Stage 2 voluntary measures mandatory.
4. Initiate steps and conduct public hearing(s) to consider Water Emergency pursuant to Water Code Section 350 et seq., and develop Rules and Regulations and associated enforcement powers appropriate to prevailing circumstances such as: drought water rates, citation and disconnect procedures, suspension of water meter sales, water patrol, etc.

Stage Four - "CRITICAL WATER EMERGENCY" (20% - 30% Expected Conservation)

Objective: Ensure that District water use is limited to those needs associated with maintaining public health and welfare.

1. Continue all Stage 3 measures.
2. Defer all proposed/new agricultural plantings until the water supply condition returns to a Stage 2 level and provided that it does not conflict with any established water emergency.
3. All outside watering including garden, lawn, landscape, domestic and pasture irrigation, parks, golf courses, school grounds and public grounds shall **not** be watered with potable EID water.

Adopted April 13, 1988 (5 Stage)
Revised April 10, 1989
Revised April 23, 1990 (4 Stage)
Revised May 30, 1990 (Resolution 90-91)
Revised February 25, 1991
Revised June 13, 1994
Revised June 12, 1995

4stage.95

APPENDIX F

Water Shortage Contingency Plan

WATER SHORTAGE CONTINGENCY PLAN



**ADOPTED:
JULY 13, 1992**

**EL DORADO IRRIGATION DISTRICT
2890 MOSQUITO ROAD
PLACERVILLE, CALIFORNIA 95667
(916) 622-4513**

IV ELEMENTS OF CONSERVATION PROGRAM

As the drought increased in intensity and with dwindling water supplies, the El Dorado Irrigation District and the City of Placerville initiated a number of measures to conserve water to prevent a complete water outage.

Water use in the service area has been subject not only to the actual prohibition of nonessential uses, penalties and other incentives curbing water consumption, but simultaneously to an intensive educational and retrofitting program and campaign to conserve water. Community and media efforts have heightened the awareness of the water shortage, the need to conserve, and communicated various ways of saving water.

Listed below is a summary of the multiply effect program instituted and the principle resolutions adopted by the El Dorado Irrigation District.

1. RESOLUTION 77-23 JANUARY 11, 1977

A. Usage Allocation

Established a per customer "life line" concept for the use of 1200 cubic feet maximum for a two month period at previously established rates.

B. Penalties For Excessive Use

Established a new rate structure to reflect increasing rates for increasing consumption. The basic charge for 1200 cubic feet or less for a two month period is \$12.50. The costs for uses in excess of this "lifeline" amount are shown below.

<u>Use in Cu. Ft.</u>	<u>Cost</u>
1201 - 2200	\$0.20 per 100 cu. ft.
2201 - 3200	\$1.25 per 100 cu. ft.
3201 - 4200	\$1.50 per 100 cu. ft.

This gradually rising scale was established as a penalty for excessive use to encourage conservation. Recently, the EID instituted

a further change to allow an additional \$2.00 reduction to those whose use is less than 800 cubic feet during a billing period.

Use in excess of 4200 cubic feet per two months per customer results in one warning followed by a shutoff for a second offense. The reconnection fee is set at \$50. The District felt it unnecessary to exercise the penalty option.

C. Prohibition of Nonessential Uses

Watering lawns and gardens between 6 a.m. and 8 p.m., except by hand.

Filling ponds of sizes in excess of 10' x 10' by 1-1/2' deep for nonagricultural purposes.

Gutter flooding - that is, water runoff caused by applying more water than soil can absorb.

Watering of golf course fairways, except where use of reclaimed water is available and authorized.

Watering of schools' green play areas and athletic fields.

Cooling of roofs for human comfort by other than recirculated water.

Flowing and flushing of hydrants by fire department.

Filling and draining of swimming pools, but existing pools can remain.

Washing down driveways, sidewalks or patios which can be swept clean.

Hosing down cars on sales lots . . . buckets and sponges to be used there and at home.

Use of swamp coolers, watering of galvanized roofs or water to cool refrigerants without closed-loop systems (recirculation) so water can be re-used. This also applies to commercial car-washes.

School shower systems without restrictions through use of time clocks or other controls.

Construction projects which do not use alternate water sources such as creeks, ponds or wastewater if available within five miles.

All restrooms in commercial buildings will be inspected and leaks must be repaired.

2. AGRICULTURAL ALLOTMENT

Resolution 77-30 adopted April 14, 1977 limited agricultural usage to

to 7800 acre feet for 1977 at a 35% increase in rates. Rates were increased from 40¢ per MID (Miners Inch Per Day) to 54¢ per MID.

To establish a control to assure the above goals would be met individual allocations were established as follows:

Orchards	2.3 Ac Ft/acre		
Orchards	2.3 Ac Ft/acre	Vineyards	1.5 Ac Ft/acre
Pasture	2.03 Ac Ft/acre	Walnuts	1.0 Ac Ft/acre

3. IRRIGATION MANAGEMENT PROGRAM

The El Dorado Irrigation District has conducted an irrigation management service using the neutron probe to detect soil moisture over the past two drought years to guide farmers in the efficient use of irrigation water. The Bureau of Reclamation, the Soil Conservation Service, the Agricultural Commissioner, and the Cooperative Extension Service have participated in this effort to conserve water and produce food more efficiently by providing technical assistance and personnel to collect data.

Don Price and Ralph Mouillesseaux from the EID staff have collaborated with the above agencies on implementing methods of water conservation in rural areas.

This program is described in greater detail in Chapter VIII, Page 46.

4. INDUSTRIAL/COMMERCIAL ALLOTMENT

Resolution passed by the EID board on March 8, 1977 reduced the water allocation for industrial and commercial use from 1000 acre feet used in 1976 to 700 acre feet for 1977. The rate was changed as follows:

	<u>1976</u>	<u>1977</u>
First 3,000 cubic feet	\$10.50	Minimum \$12.50
Next 17,000 cubic feet	30¢/100 cu ft	Usage 50¢/100 cu ft
Next 30,000 cubic feet	20¢/100 cu ft	
Over 50,000 cubic feet	10¢/100 cu ft	

5. EDUCATION - MOTIVATION

To promote an awareness for each individual within the District of the seriousness of the water shortage. To encourage the community to change its habits relating to water use. To start an education process

APPENDIX G

City of Placerville Water and Wastewater Rate Schedule

**CITY OF PLACERVILLE
NOTICE OF NEW WASTE WATER RATES**

The City of Placerville provides waste water (sewer) service to properties within, as well as outside, the City. To meet the costs of this service, the City Council has established a system of rates and charges.

Until last year, the City had not increased its waste water rates since 1997. The City has made its best efforts to minimize rate increases and operate the waste water system as efficiently as possible. However, the State of California has imposed new discharge requirements for the City's Waste Water Treatment Plant, thereby necessitating an estimated \$47 million in improvements to the Plant. Because of these State mandates, as well as the need to meet ever escalating operating costs, the City Council held a public workshop on September 14, 2005, and adopted a new eight-year waste water rate schedule on October 5, 2005. The following rates, which will become effective June 16, 2006, are included in the adopted rate schedule and will be used to calculate the September 10, 2006 waste water bills:

	<u>Charge - First 1,000 Cubic Feet</u>	<u>Per 100 cf (ccf) over 1,000 cf</u>
<i>Consumption Based - Per 100 Cubic Feet</i>		
<u>Residential:</u>		
Single Family	\$65.66	\$1.94
Lifeline	\$49.25	\$1.45
Apartment Units	\$59.10	\$1.94
<u>Non-Residential:</u>		
Retail Stores and Offices	\$60.87	\$4.04
Service Stations	\$71.13	\$4.86
Motel - Hotel Rooms (w/o kitchens)	\$71.17	\$3.43
Restaurants	\$136.25	\$7.93
Fast Food Service	\$117.18	\$5.69
Laundromats / Laundry	\$57.94	\$4.16
Hospitals	\$66.82	\$4.61
Resthomes	\$64.32	\$4.59
Markets	\$75.26	\$5.92
Churches	\$54.34	\$2.62
Car Wash	\$51.56	\$3.56
Bars	\$77.07	\$4.26
Mortuaries	\$86.92	\$6.01
Halls	\$54.34	\$2.87
Fire Station	\$63.91	\$4.24
Fair Grounds	\$68.85	\$4.99
<i>Consumption Based - Per Unit</i>		
Movie Theatre (per seat)	n/a	\$0.23
Schools (per student)	n/a	\$2.21

While the substantial portion of the rate increase is necessary to pay for State mandated improvements, the increase will also be used to remove sewer lines from Hangtown Creek, replace and maintain an aging waste water infrastructure, as well as for increased operating costs.

The new rates are based upon the City's waste water rate study performed by Economic & Planning Systems and was determined in accordance with State Water Resources Control Board (SWRCB) guidelines, where each customer's class's consumption or contribution is calculated with State-provided "strength" factors and average water consumption. In addition to meeting revenue requirements for State mandated improvements, a primary goal of the rate structure was to obtain equity amongst user groups, and to increase rates as gradually as possible while meeting construction and financing cash flow needs. For residential users, rates are based on this year's winter water consumption data. Non-Residential rates are based on current billing period water consumption data.

The new rates are to a large extent driven by the cost of the State mandated Waste Water Treatment Plant improvements and are necessary in order to meet the financing requirements of those improvements. Residential waste water bills will be calculated using this year's winter water consumption for the period of December 16, 2005 through February 15, 2006. Below are examples of the bi-monthly single family waste water charges that will be reflected on the September 10, 2006 utility bills:

Winter Water Consumption	Calculation	September 10, 2006 Waste Water Bill
1,000 cubic feet or less	Flat \$65.66 Base Charge only	\$65.66
2,000 cubic feet	Flat \$65.66 Base Charge + (1,000 ÷ 100 x \$1.94)	\$85.06
4,000 cubic feet	Flat \$65.66 Base Charge + (3,000 ÷ 100 x \$1.94)	\$123.86

Non-residential waste water bills will be calculated using actual water consumption for each billing period. Below are examples of the bi-monthly waste water charges for Retail Stores and Offices that will be reflected on the September 10, 2006 utility bills:

Billing Period Water Consumption	Calculation	September 10, 2006 Waste Water Bill
1,000 cubic feet or less	Flat \$60.87 Base Charge only	\$60.87
2,000 cubic feet	Flat \$60.87 Base Charge + (1,000 ÷ 100 x \$4.04)	\$101.27
4,000 cubic feet	Flat \$60.87 Base Charge + (3,000 ÷ 100 x \$4.04)	\$182.07

If you need assistance in determining what your September 10, 2006 waste water bill will be, please contact the City Finance Department at 3101 Center Street, Placerville, CA 95667, (530) 642-5225, Monday through Thursday 8:00 AM to 5:00 PM, and Friday 8:00 AM to 3:00 PM.

CITY OF PLACERVILLE NOTICE OF NEW WATER RATES

The City of Placerville provides water service to properties within, as well as outside, the City. To meet the costs of this service, the City Council has established a system of rates and charges.

The City has not increased its water rates since 1994. During that time, the City has made its best efforts to maintain the existing rates and operate the water system as efficiently as possible. However, the cost of operating and maintaining the water system has escalated over the years. The City's rates have remained static since 1994 in part because of uncertainties regarding certain components of the water system while the cost of operating the water system has increased by over 54%. Reserves have been utilized to absorb part of those increased costs. Also much of the City's water infrastructure system is in excess of 60 years old and is in need of repair or replacement. Additionally, State of California's requirements for operating a water system have added to increased operating and capital costs.

Because of the increase in operating costs and the need for unfunded capital replacement of the City's water infrastructure system, the City Council held an open hearing and adopted the following rates on August 8, 2006 which became effective August 16, 2006 and were used to calculate the November 10, 2006 water bills:

<i>Single Family Residential</i>	
Base Charge	\$18.57
0 to 2,500 cubic feet	\$1.98 per ccf
2,501 to 20,000 cubic feet	\$2.37 per ccf
Over 20,000 cubic feet	\$2.57 per ccf
<i>Single Family Residential (Lifeline)</i>	
Base Charge	\$15.93
0 to 2,500 cubic feet	\$1.49 per ccf
2,501 to 20,000 cubic feet	\$1.78 per ccf
Over 20,000 cubic feet	\$1.93 per ccf
<i>All Other</i>	
Base Charge	\$18.57
0 to 7,500 cubic feet	\$1.98 per ccf
7,501 to 50,000 cubic feet	\$2.37 per ccf
Over 50,000 cubic feet	\$2.57 per ccf

Below are examples of the new bi-monthly single family residential water charges that are reflected on the November 10, 2006 utility bills:

Water Consumption	Calculation	Bi-Monthly Water Bill
0 cubic feet	Base Charge Only	\$18.57
500 cubic feet	\$18.57 Base Charge + (\$1.98 x 5)	\$28.47
1,000 cubic feet	\$18.57 Base Charge + (\$1.98 x 10)	\$38.37
2,000 cubic feet	\$18.57 Base Charge + (\$1.98 x 20)	\$58.17
3,000 cubic feet	\$18.57 Base Charge + (\$1.98 x 25) + (\$2.37 x 25)	\$127.32
10,000 cubic feet	\$18.57 Base Charge + (\$1.98 x 25) + (\$2.57 x 75)	\$245.82
15,000 cubic feet	\$18.57 Base Charge + (\$1.98 x 25) + (\$2.57 x 125)	\$364.32
20,000 cubic feet	\$18.57 Base Charge + (\$1.98 x 25) + (\$2.57 x 175)	\$482.82

Below are examples of the proposed bi-monthly water charges for all other accounts that are reflected on the November 10, 2006 utility bills:

Water Consumption	Calculation	Bi-Monthly Water Bill
0 cubic feet	Base Charge Only	\$18.57
500 cubic feet	\$18.57 Base Charge + (\$1.98 x 5)	\$28.47
7,500 cubic feet	\$18.57 Base Charge + (\$1.98 x 75)	\$167.07
15,000 cubic feet	\$18.57 Base Charge + (\$1.98 x 75) + (\$2.37 x 75)	\$344.82
25,000 cubic feet	\$18.57 Base Charge + (\$1.98 x 75) + (\$2.37 x 175)	\$581.82
50,000 cubic feet	\$18.57 Base Charge + (\$1.98 x 75) + (\$2.37 x 425)	\$1,174.32
90,000 cubic feet	\$18.57 Base Charge + (\$1.98 x 75) + (\$2.37 x 425) + (\$2.57 x 400)	\$2,202.32

If you have any questions regarding your November 10, 2006 water bill, please contact the City Finance Department at 3101 Center Street, Placerville, CA 95667, (530) 642-5225, Monday through Thursday 8:00 AM to 5:00 PM, and Friday 8:00 AM to 3:00 PM.

APPENDIX H

City of Placerville Water Waste Prohibition

7-3-6: WATER; UNNECESSARY WASTE PROHIBITED:

Consumers shall prevent all unnecessary waste of water. During periods of drought or water shortage, the council may, from time to time, adopt emergency water conservation policies. Any person wilfully or negligently wasting water or violating any emergency water conservation policy, while such policies are in effect, shall be guilty of an infraction and shall be subject to having his/her water supply turned off, and shall not be allowed to purchase water from the city until he/she gives satisfactory proof that the wastage has ceased and has paid the sum of fifty dollars (\$50.00) to have the supply reconnected. (Ord. 1441, 5-24-1988)

APPENDIX I

Emergency Response Plan

BROWN AND CALDWELL

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3	SITE CHARACTERIZATION AND SAMPLING
4	SAMPLE ANALYSIS
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**CITY OF PLACERVILLE
WATER SYSTEM EMERGENCY RESPONSE PLAN
for
NATURAL DISASTERS AND BIOTERRORISM THREATS**

Introduction

Traditionally those events that posed threats to a water distribution system were such natural disasters as earthquakes, floods, fires, or construction related accidents that may cause cross-contamination threats to the water distribution system. However, since September 11, 2001 the United States has become much more cognizant of the potential threat to our water supply systems that may be posed by terrorist groups. This emergency response plan outlines those policies and procedures adopted by the city of Placerville to maximize the security and dependability of the city's water supply system, and to assure that response measures will be rapidly deployed by city staff to:

- Assess the nature and severity of the threat
- quickly determine whether the safety of the water supply is compromised
- notify the city's water customers and immediately if there is a problem with the water supply that is a health threat to the water users.
- Advise water users if the water supply should be boiled before using or if the water supply should be avoided completely until further notice.
- Implement measures immediately to repair damaged to the water supply system, or neutralize the points of system contamination.
- Coordinate with the state and local office of emergency services, and other water purveyors within the region to provide a coordinated response to the emergency.
- Take those steps necessary to eliminate the emergency situation as quickly as possible and notify the city's water users when their tap water is safe to drink without any special decontamination measures.

At one time the city owned and operated its own the water treatment facility. Water was provided from the El Dorado irrigation district on a wholesale basis to the water treatment plant, where the water was filtered and disinfected, and Flora dated for distribution to the city's water customers. In 2005 the water treatment plant was taken out of service and pipelines were installed to bypass the treatment plant and deliver treated water from EID directly to the city's water customers.

Since the water treatment plant is no longer in service that aspect of emergency response is not necessary. However, the city does maintain an extensive network of water distribution pipelines, and other appurtenant facilities, and this plan will outline those appropriate responses when the water system is disrupted due to natural disasters, accident, or terrorist activity.

THREAT ASSESSMENT AND RESPONSE PROCEDURES

Pursuant to the requirements of the "Public Health Security and Bioterrorism Response Act" of 2002, the city of Placerville was required to conduct a vulnerability assessment for the city's water treatment and distribution system. The city did complete that assessment (copy attached as appendix a) and forwarded a copy to the United States Environmental Protection Agency. The city's primary area of vulnerability identified in that assessment was the city's Main Water Treatment Facility on Pardi Lane. Since the completion of the vulnerability assessment, the city has decommissioned this water treatment facility and now accepts potable water directly from connection points to the El Dorado Irrigation District (EID) distribution system. Therefore, with the exception of a small area of the city's distribution system, known as the Sierra plant, the City of Placerville essentially purchases water on a wholesale basis from EID and distributes it to our customers within the city. The water treatment plant at the Sierra facility has also been decommissioned; however there still remains a small Hydro pneumatic pressure boosting station that serves approximately 8 homes, and a 50,000 gallon steel storage tank to provide in-line storage to that portion of the City's service area.

Potential for Terrorist Activity

As stated above, the decommissioning of the City's Main Water Treatment Facility has substantially reduced the city's vulnerability to the direct sabotage of the city's water supply. The risk of that potential has not been totally eliminated however, and therefore included in this emergency response plan are criteria for the detection and appropriate response to terrorist acts of sabotage. The primary goal of the city is to prevent any tampering with our water supply through the routine use of both passive and active security measures, such as use of security locks, security fencing, and the routine patrolling of our facilities with both public works personnel and the city's Police Department. If the city receives a direct threat by telephone or other medium, the staff person who receives that threat shall follow the procedures outlined in appendix B. of this report. If an act of sabotage is detected as it is occurring, then a separate set of procedures shall be followed, which are also included in appendix B.

Natural Disaster

The city of Placerville is located within the midst of the fault zones that are responsible for that gold bearing belt known as the Mother Lode. As such, the possibility does exist for earthquakes to occur in this area and potentially cause disruption to the city's water distribution system. Currently in the science of seismology it is not yet possible to predict the occurrence of an earthquake with any degree of reliability. Therefore it is important for the city maintenance staff to have effective procedures in place to provide an effective and rapid response should an emergency of this type occur. If an earthquake occurs during normal working hours, city crews would be on the job and are ready to respond immediately. The city currently has a maintenance superintendent, and 13 maintenance staff together with

backhoes, dump trucks, pumps compressors and incidental equipment, with an ample supply of spare gate valves, fire hydrants, pipe of various sizes, and fittings to appropriately respond in the event of an emergency. The personnel list and list of agencies to notify in the event of an emergency are attached as appendix C. the appropriate emergency notifications would occur immediately in the event of an emergency of this type. This would provide for a coordinated response with the city of Placerville and surrounding jurisdictions. In the event of an earthquake staff shall immediately patrol the city's water distribution system and identify any areas where damage has occurred. If a damaged section of distribution piping is located, steps will be taken immediately to close valves to isolate the damaged area if possible and maintain a water distribution in the undamaged portions of the system. Notification to the affected customers within the city would occur in accordance with the procedures identified in appendix C.

Once damaged sections of the city's water distribution system have been identified city staff shall be mobilized immediately to begin either temporary repairs or permanent repairs depending on the severity and extent of the damage. In addition, private contractors will be retained to assist in repair work as necessary. Temporary water supply will be provided to those portions of the city affected, if at all possible. That water supply may consist of aboveground piping, utilization of fire hoses with a centralized water delivery points, or if necessary, distribution of water from water trucks, or the provision of bottled water to customers.

Once permanent repairs have been made to the water distribution system city crews will completely disinfect the affected portions of the system. Upon satisfactory bacteriological test results the system will be put back into service, and broadcast notification together with door-to-door notice if possible, will be provided to let our customers know that the water system is back online and that the water is safe to drink.

Accidental Damage

It is possible that the city's water distribution system could be damaged accidentally during a construction project, or through equipment failure. The city takes reasonable and prudent steps to protect against this type of occurrence through its membership in the Underground Service Alert organization, and the timely maintenance of our various system components, however it is possible for an occurrence to damage our water distribution system to the extent that an emergency response is necessary. Under this circumstance the city's response procedures would be similar to those outlined above in the "Natural Disaster" segment of this plan. Under this scenario the area of damage would typically be more isolated in the ability for the city to provide a focused response would be readily possible.

Once the city is notified that an accident has occurred that has damaged the water distribution system the person taking the information shall determine the location of the accident and the nature of the accident and if possible the type and location and

extent of the damage. The city maintenance superintendent shall be immediately notified and shall be the incident commander.

Information shall be obtained as to the responsible party for purposes of financial responsibility.

The damaged area shall be isolated and if possible bypassed to maintain service to all city customers. In the event that the accident requires the shutting down on a portion of the system the office of emergency services shall be notified and all affected customers shall be provided direct notification.

Repair work shall be initiated immediately together with the necessary disinfection of the system. Upon satisfactory bacteriological test results the system may be placed back into service and the affected customers notified that water service has been restored. If

CONCLUSIONS

With proper planning, training, and procedures, the risk of major disruptions or damage to the city's water distribution system can be significantly minimized. It is essential that all city personnel be aware when suspicious activity occurs, and provide prompt and proper notification to the appropriate authorities. Further, it is incumbent upon us city's public works department maintenance crews to have procedures in place to promptly and appropriately respond once damage to the system has occurred. The protection of the health and safety of the citizens of Placerville is paramount and through the following of emergency procedures outlined in this emergency response plan the risks to the city's residents can be substantially reduced.