



Mocho Groundwater Demineralization Plant Membrane Modules

Zone 7 Water Agency

Fiscal Year 2010/11
Capital Improvement Program
Ten-Year Water System Plan
Five-Year Flood Protection Plan
October 2009





Zone 7 Water Agency Mission Statement

Zone 7 Water Agency is committed to providing a reliable supply of high quality water and an effective flood control system to the Livermore-Amador Valley. In fulfilling our present and future commitments to the community, we will develop and manage the water resources in a fiscally responsible, innovative, proactive and environmentally sensitive way.



Fiscal Year 2010/11 Biannual Capital Improvement Program

Ten-Year Water System Plan
Five-Year Flood Protection Plan

Prepared by:

Zone 7 Finance and Water Supply Engineering

Adopted by the Zone 7 Board of Directors
October 21, 2009

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A – ZONE 7 BOARD POLICY/PLANNING RESOLUTIONS

1. Groundwater Management Plan
2. Reliability Policy for Municipal & Industrial Water Supplies
3. Water Quality Policy for Potable and Non-Potable Water
4. Policy Principles and Joint Resolution of the City Council of the City of Pleasanton, the Board of Directors of the Dublin San Ramon Services District and the Board of Directors of the Zone 7 Water Agency Regarding Water Quality

B – Evaluation of Ozone and Peroxone for Water Quality Improvements at the Del Valle and Patterson Pass Water Treatment Plant: *Opinion of Probable Capital & Annual Operating Costs*

Acronyms and Terms Glossary

The following abbreviations and acronyms are used in the report:

af or AF	acre-feet
afa or AFA	acre-feet per year
APL	Altamont Pipeline
AMP	Asset Management Program
AWTP	Altamont Water Treatment Plant
CCI	Construction Cost Index
CWS	California Water Service
cfs	cubic feet per second
CIP	Capital Improvement Program
CUWA	California Urban Water Agencies
DIF	Development Impact Fee
DSRSD	Dublin San Ramon Services District
DV	Dougherty Valley
DVWTP	Del Valle Water Treatment Plant
DWR	California Department of Water Resources
ENR	Engineering New Record
FY	Fiscal year
ISA	Installment Sale Agreement
gpd	Gallons per day
gpcd	Gallons per capita per day
GWMP	Groundwater Management Plan
LAVWMA	Livermore Amador Valley Water Management Authority
LDV	Lake Del Valle
LOC	Line of Credit
MDD	Maximum day demand
MCL	Maximum Contaminant Level
MEIR	Master Environmental Impact Report
MGD or mgd	Million gallons per day
MOU	Memorandum of Understanding
M&I	Municipal & Industrial
MWQI	Municipal Water Quality Investigation

Acronyms and Terms Glossary

O&M	Operations and Maintenance
PPWTP	Patterson Pass Water Treatment Plant
R/R	Renewal/Replacement
SBA	South Bay Aqueduct
SDA	Special Drainage Area
SMMP	Stream Management Master Plan
SMP	Salt Management Plan
SRAF	Supplemental Revenue Augmentation Fund
SWI	System-Wide Improvements
SWP	State Water Project
SWRU	Stored Water Recovery Unit
UWMP	Urban Water Management Plan
WTP	Water Treatment Plant
Zone 7	Zone 7 Water Agency



EXECUTIVE SUMMARY



INTRODUCTION

On an annual basis, Zone 7 prepares a Capital Improvement Program (CIP) document, which outlines the plans for capital projects and programs needed to carry out the goals and policy objectives of the agency. This document incorporates the projects, costs, schedules, and priorities for the next five and ten years starting with FY 10/11, for the Flood Protection and Water Systems, respectively.

This Executive Summary highlights the goals and policy objectives of Zone 7, provides an overview of this capital plan, discusses the significant changes from the FY 2009/10 Ten-Year CIP document and presents key projects and issues impacting the CIP as well as an overview of the financial condition of the various capital funds.

WATER SYSTEM GOALS

To ensure that the needs of Zone 7 customers are met, Zone 7 has set goals relative to water reliability, quality and groundwater management. These Water System goals, as defined by adopted Board policies, are summarized below and further detailed in Section II. While every policy is subject to review and adjustment, the current policies can be found in Appendix A.

Reliability

- Meet 100% of treated water customer's needs.
- Provide sufficient surface water production capacity and infrastructure to meet at least 75% of the maximum daily municipal and industrial (M&I) demands.
- Provide surface water treatment design capacity to meet 85% of the Zone 7 maximum day demand. (Planning Criteria)
- Operate water supplies so that the groundwater basin does not drop below historic lows. (Operational Criteria)

Groundwater Management Plan

- Protect and enhance the quality of groundwater.
- Offset current and future salt loading, while facilitating reasonable regional recycled water use.
- Maintain or improve groundwater mineral quality.

EXECUTIVE SUMMARY – WATER SYSTEM

Water Quality

- Zone 7 shall meet all State and Federal primary and secondary Maximum Contaminant Levels¹ (MCLs) for potable water.
- Within technical and fiscal constraints, Zone 7 shall mitigate “earthy-musty” taste and odor events and reduce hardness levels.
- Zone 7 shall endeavor to deliver comparable quality water to non-treated customers.
- To achieve the above goals, Zone 7 shall endeavor to improve quality of source waters (i.e., the Delta and groundwater basin).
- Policy Principles and Joint Resolution for Zone 7 Water Quality Program - establishes policy principles to guide Zone 7, the City of Pleasanton and Dublin San Ramon Services District in developing programs and operational guidelines to improve water quality.



The new Mocho Groundwater Demineralization Plant will help remove salts and minerals from groundwater supplies. Shown above are Zone 7 General Manager Jill Duerig and Board member Bill Stevens retrieving demineralized water from the plant to toast at the facility’s open house.

¹ Maximum Contaminant Level (MCL): The highest level of a contaminant that is allowed in drinking water. Primary MCLs are set as close to the Public Health Goals (PHGs), or Maximum Contaminant Level Goals (MCLGs), as is economically and technically feasible. Secondary MCLs are set to minimize the odor, taste, and appearance of drinking water, unrelated to any potential health impacts.

EXECUTIVE SUMMARY – WATER SYSTEM

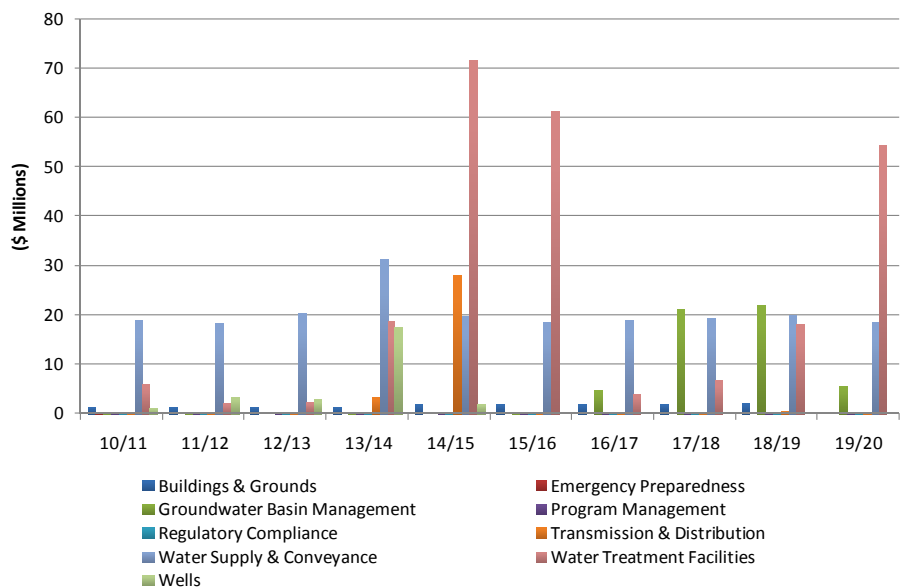
WATER SYSTEM CIP OVERVIEW

A primary function of the CIP is to provide Zone 7's Executive Staff and Board of Directors with a clear and orderly process for planning and budgeting for capital needs and to make informed decisions with regard to project priorities and scheduling.

In order to meet the mission, goals and policy objectives established by the Zone 7 Board, various capital projects and programs are needed to ensure a reliable and high quality water supply. The Zone 7 Water System CIP proposes the projects and programs needed to carry out the goals and mission of Zone 7. These projects anticipate the need to renew, replace and improve existing infrastructure (Fund 72, Water Rates) and to construct new facilities needed to accommodate future growth (Fund 73, Connection Fees).

For the Ten-Year CIP period, sixty-two Water System projects have been identified totaling \$642M and falling within the following nine program areas:

- **Buildings & Grounds**
- **Emergency Preparedness**
- **Groundwater Basin Management**
- **Program Management**
- **Regulatory Compliance**
- **Transmission and Distribution**
- **Water Supply and Conveyance**
- **Water Treatment Facilities**
- **Wells**



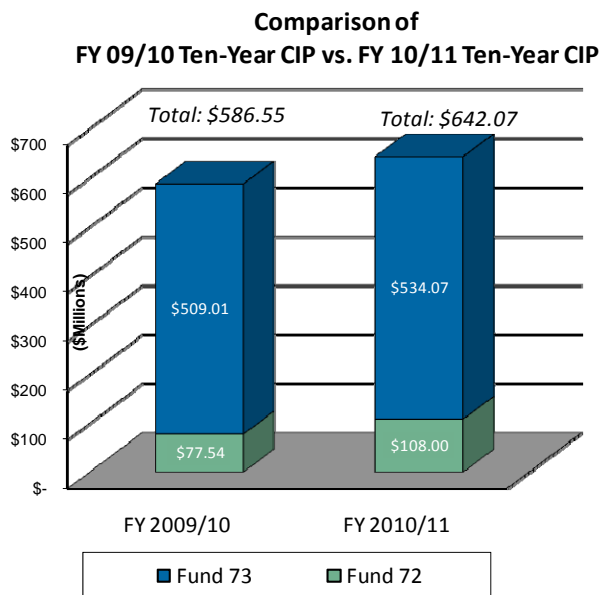
(\$ Millions)

Program (FY)	10/11	11/12	12/13	13/14	14/15	15/16	16/17	17/18	18/19	19/20	Total
Buildings & Grounds	1.29	1.32	1.35	1.37	1.93	1.98	2.02	2.07	2.11	0.00	15.43
Emergency Preparedness	0.32	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.32
Groundwater Basin Management	0.12	0.09	0.00	0.11	0.00	0.12	4.80	21.48	22.20	5.54	54.46
Program Management	0.29	0.29	0.29	0.30	0.30	0.30	0.30	0.30	0.31	0.31	2.97
Regulatory Compliance	0.11	0.12	0.12	0.13	0.13	0.14	0.14	0.15	0.15	0.16	1.35
Transmission & Distribution	0.16	0.16	0.16	3.34	28.20	0.20	0.20	0.20	0.56	0.25	33.41
Water Supply & Conveyance	19.08	18.53	20.58	31.44	19.96	18.83	19.15	19.69	20.13	18.84	206.22
Water Treatment Facilities	6.01	2.25	2.35	19.04	71.75	61.39	3.95	6.79	18.35	54.50	246.36
Wells	0.96	3.28	2.83	17.88	1.99	5.83	23.27	11.88	12.28	1.37	81.57
Total	28.33	26.03	27.67	73.61	124.25	88.77	53.82	62.54	76.08	80.97	642.07

PRIORITIZATION

The Ten-Year Water System CIP is dynamic in nature and is reviewed and revised annually. Project priorities and available funding are constantly monitored throughout the fiscal year to ensure there is adequate funding for the highest priority projects. In the development of this document, funding analysis was conducted to determine if there would be any limitations in funding the proposed capital projects and programs. Zone 7 does anticipate funding challenges in both Funds 72 and 73, and has utilized this opportunity to closely examine available funding, staff resources and Water System needs to determine which projects should be completed and when. As part of the capital planning process, a “CIP Prioritization Group” (includes the Assistant General Managers of Operations and Engineering, Production Manager, CIP Manager, a Senior Engineer and a Finance Staff Analyst) prioritizes the list of projects to be presented within this CIP document based on selected criteria, and also based on the level of discretion there is in meeting agency goals without implementing a given project. During the development of the FY 09/10 Ten-Year CIP document, the CIP Prioritization Group underwent a rigorous project priority setting process and identified Water System projects that could be deferred, deleted or accelerated. With firm project priorities in place, this year’s priority setting process was more routine. The resulting priorities and changes are detailed below (details of the FY 09-10 Ten-Year CIP prioritization process can be found within that document).

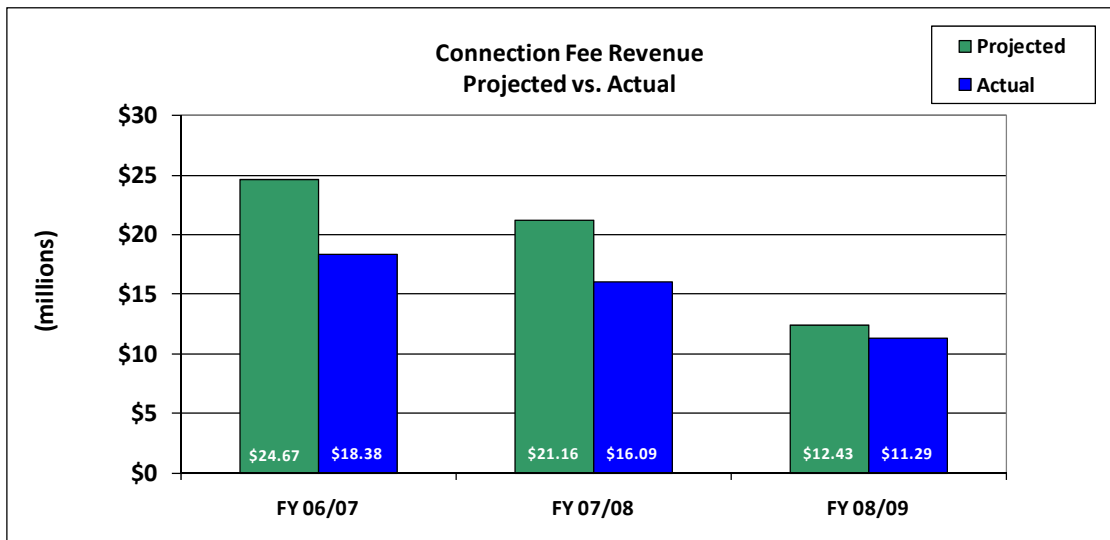
The planned FY 2010/11 Ten-Year CIP appropriations total \$642 million, which is approximately \$55 million or about 9.5% more than the FY 09/10 10-Year CIP total of \$587 million, due to the addition of new projects and increased project cost estimates. These changes are further detailed in the following pages.



EXECUTIVE SUMMARY – WATER SYSTEM

MAJOR CHANGES

The most significant change that has impacted the Water System CIP is the decrease in projected near-term revenues due to the slow-down in residential and commercial development that has occurred over the last few years. This trend is consistent with the overall slow-down in the national economy. Pursuant to the Zone 7 policy that “new development pays for itself”, the Expansion program (Fund 73) is funded from water connection fees paid by developers when connecting new homes or businesses to our Retailers’ water systems. Over the past three fiscal years (FY 06/07, FY 07/08 and FY 08/09), connection fee revenue has fallen substantially short of what was initially anticipated, and also even from revised projections, as demonstrated by the chart below.



Recognizing the potential of an extended slow-down in commercial and housing development, near-term connection fee revenue has been conservatively projected. This significant drop in planned revenue has a direct impact on Zone 7’s ability to fund major near-term Expansion capital projects, such as the Altamont Water Treatment Plant (AWTP), Altamont Pipeline (APL) - County Reach and Chain of Lake Wells, Phase 2. However, this is balanced against a reduced need for the projects due to the same slow-down in development. Staff is recommending deferral of these projects until sufficient funding is available. Note that the most recent in-house evaluation has shown that maximum day demands (MDD) on our system have not increased as fast as in previous estimates and therefore this deferral will not impact our ability to meet our Retailers’ demands.

EXECUTIVE SUMMARY – WATER SYSTEM

OVERVIEW OF THE WATER SYSTEM - MAJOR CHANGES (Fund 72)

New Projects – Fund 72

DVWTP Roof Panel Replacement, Roof System Repair, and Valve Replacements for 3.0 MG Clearwell - \$275,000 in FY 11/12.

- This project involves the replacement of a select number of metal roof panels, to repair/strengthen wooden roof system, and to replace the clearwell inlet and outlet valves, and drain valve for the 3.0 MG concrete clearwell.

Enhanced Conservation Program - \$400K annually through FY 19/20

- This program may include financial & technical support for our Retailers' conservation efforts; support & incentives to improve indoor and outdoor water use efficiency; promote & support implementation of new initiatives, alternative measures and new technologies in water conservation, public information & school education programs promoting water conservation and water use efficiency planning.

Changes to Project Costs/Schedule or Scope – Fund 72

PPWTP Rehabilitation of Clarifier and Replacement of Motor –\$930K in FY 09/10 and \$220K in FY 10/11, in-service March 2011.

- Previously scheduled for completion in FY 14/15, however, per, the 2006 Asset Management Program (AMP) Condition Assessment, this asset was determined to be in poor condition and recommended for timely repair/replacement to avoid failure.

High Efficiency Toilet Rebate Program – \$115K annually through FY 14/15

- Increased from roughly \$70K annually to \$115K due to increased program interest and enhanced program outreach.

High Efficiency Washing Machine Rebate Program - \$300K in FY 10/11 decreasing to \$170K by FY 14/15

- Near-term budget increase from \$85K to \$300K in FY 10/11 due to unprecedented program interest and outreach. These budgetary increases to the rebate programs promote conservation and are consistent with the 2009 cost-effectiveness study by Kennedy/Jenks and a goal of decreasing overall per capita demands by 2020.

DVWTP and PPWTP Taste and Odor Treatment – A total of \$50.25M in FYs 17/18- 20/21

- Zone 7 hired Water Quality Treatment Solutions to evaluate alternatives for long-term taste and odor treatment improvements to reduce earthy-musty tastes and odors from surface water supplies. Over a period of six months (May 2008 – October 2008) Zone 7 pilot tested ozone and “Peroxone” (ozone and hydrogen peroxide) to determine the optimum treatment process. The study concluded that the total capital cost to implement ozone would be approximately \$33M (in 2009 dollars), while the annual O&M costs would be \$2.3M (in 2009 dollars). A placeholder of \$50M (\$33M adjusted for 4% annual inflation) has been incorporated in the CIP and scheduled when projected cash flow permits. A technical memo detailing this cost estimate is attached as Exhibit B.

EXECUTIVE SUMMARY – WATER SYSTEM

OVERVIEW OF THE WATER SYSTEM - MAJOR CHANGES (Fund 73)

New Projects – Fund 73

Cope Lake Facilities and Improvements - estimated at a total of \$3.2M - \$600k in FY 10/11 and \$2.6M in FY 13/14

- This project provides for the development, design, and implementation of various improvements at Cope Lake, which are to be accomplished in a “phased-in” approach. Near-term, it provides for the laying back of over-steepened slopes, drainage improvements, and minor road grading, particularly along the eastern side of the lake to prevent total loss of the eastern bench. Phase 2 includes additional slope stabilization and wave-erosion measures, and maintenance road improvements necessary to maintain the integrity of the lake’s shoreline during future water management operations.

Fund 73 Projects Recommended For Deferral

AWTP Phase 1 – estimated at \$130M. Completion date deferred from June 2014 to June 2016.

- Due to the slowdown in growth/demands and connection fee revenue, it is recommended that the construction of the AWTP be deferred by an additional two years, with a new on-line date of summer 2016. In the FY 09-10 10-Year CIP document, this project was recommend for deferral by three years, from summer 2011 to summer 2014.

AWTP Phase 2 – estimated at \$62M. Completion date deferred from June 2019 to June 2020.

- Consistent with the deferral of AWTP Phase 1, this phase is also recommended for deferral of two additional years.

APL - County Reach – estimated at \$30M. Completion date deferred from June 2013 to June 2014, a one year deferral.

- The APL is divided into two phases/reaches. The first phase, APL - Livermore Reach, is approximately five miles in length and 42-inches in diameter. Construction began in July 2008, with Substantial Completion in August 2009. This second phase, APL - County Reach, is recommended for deferral due to funding constraints. The FY 09/10 Ten-Year CIP recommended a four-year deferral, with an on-line date of summer 2013. Due to projected funding constraints, an additional one-year deferral is recommended.

Second Groundwater Demineralization Facility (100% from Fund 73) – estimated at \$51M.

- Completion date deferred from June 2018 to June 2020 due to projected funding constraints. The Third Groundwater Demineralization Facility is recommended for similar and proportionate deferral.

EXECUTIVE SUMMARY – WATER SYSTEM

Fund 73 Projects Recommended For Deferral (cont'd)

Well Master Plan Wells, Phases 2 and 3

- Also due to funding constraints in Fund 73 and other planning and property acquisition delays, it is recommended to defer future phases of Well Master Plan Wells. While the new Chain of Lakes Wells 1 and 2 will be completed in 2009, the expected second phase (Chain of Lakes Wells 3, 4 and 5) will be online in 2016, rather than 2012, as previously planned. Future phases project two wells in the Bernal area in 2019, one in Busch Valley in 2020 and one more in a location to be determined in 2021.

North Canyons Building Lease, South Bay Aqueduct (SBA) Improvement and Enlargement Project and Fourth Contractor's Share sinking fund contributions

- Due to projected funding constraints in Fund 73, it is recommended to temporarily stop contributions to these three sinking funds, starting in FY 09/10 and ending in FY 13/14. Interest contributions will continue and contributions will start back up in FY 14/15. Note that the annual contributions that start in FY 14/15 have increased to include the five years of missed contributions, but the totals do not exceed originally calculated sinking fund balance targets.

Changes to Project Costs/Schedule or Scope – Fund 73

SBA Improvement and Enlargement Project

- Zone 7 has been notified by DWR that the overall project costs have increased by 10% (from approximately \$230M to ~\$250M). Staff will be requesting a detailed breakdown and explanation from DWR for reasons for the projected increase in project costs as well as auditing the numbers provided. The annual costs have been updated to reflect this cost increase and is a \$20M increase during this ten-year period (ten-year cost was \$85M in the FY 09/10 CIP).

Bay-Delta Habitat Conservation Program

- Ongoing annual costs for Fund 73's contribution towards the Bay-Delta Habitat Conservation Program have been added to this CIP, totaling \$1.9M (Fund 73 shares 25% and Fund 52 shares 75%).

EXECUTIVE SUMMARY – WATER SYSTEM

The following have been identified as key issues which may impact Zone 7's Ten-Year CIP.

Slow-Down in Growth, Demands, and Connection Fee Revenue

- The recent major economic downturn has caused a significant near-term reduction in connection fee revenue available to fund major Expansion projects. Therefore, deferral of the AWTP and APL - County Reach is needed. With regard to meeting water demands, since maximum day demands on our system have not increased nearly as fast as previous estimates, this deferral is not expected to impact our ability to meet our Retailers' needs.

Endangered Species Act and Impact on Reliability, Call for Conservation

- Based on DWR's draft State Water Project (SWP) Delivery Reliability report (December 2007) which incorporates the impacts of Judge Wanger's Delta Smelt interim remedies, the average-year SWP yield has been reduced from 76% to 66% (long-term SWP yield).

Increasing Costs of Supplies, Energy, Construction Materials

- Long-term increases in the cost of gas, energy, construction materials, etc., are very hard to predict and may increase the project cost estimates provided in this CIP beyond what has been developed using a 4% annual inflation rate.

Reaching Appropriate Funding Levels for the AMP, While Infrastructure is Maturing

- Zone 7 will have limits on the scale and timing of its Renewal/Replacement and System-Wide Improvements Program until a sufficient funding level is met. In FY 09/10, Zone 7 is performing an update to the AMP. This effort will include a condition assessment of above-ground assets, a recommended ten-year R/R CIP, funding levels and a separate financial plan to support it. These studies will be collaborative efforts, including the selected consultant, Zone 7 Engineering, O&M and Finance staff, and our Retailers. The condition assessment is expected to occur this winter, with the findings and recommendations to be presented to the Zone 7 Board in spring 2010. The results of these studies may impact both future revenues needs and planned projects, which will be reflected in next year's CIP document.

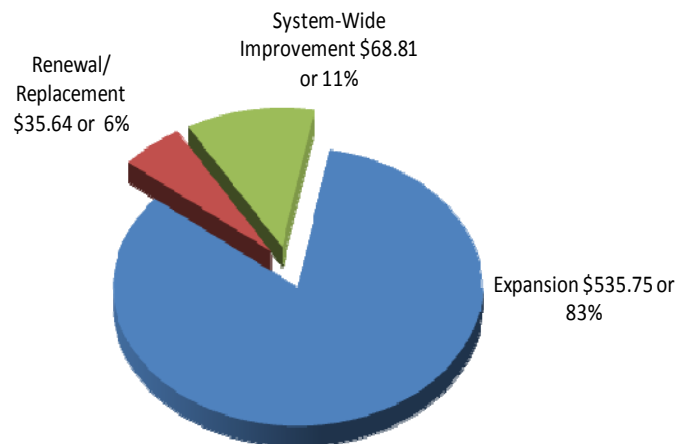
EXECUTIVE SUMMARY – WATER SYSTEM

WATER SYSTEM STRATEGY BREAKDOWN

The Water System CIP is categorized into these three strategies: Renewal/Replacement (R/R), System-Wide Improvements (SWI), and Expansion. R/R and SWI (Fund 72) is funded by water rates paid by existing customers via an annual transfer from Fund 52 – Water Enterprise (water rate revenue initially accrues to this fund) to Fund 72. Expansion (Fund 73) is funded by connection fees paid by new development.

The following chart and table present the total appropriations for the Ten-Year CIP by Strategy. As illustrated below, a large percentage of the CIP is dedicated to projects needed to meet the demands of future growth.

Water System Strategy Breakdown
FY 2010/11 Ten-Year Total



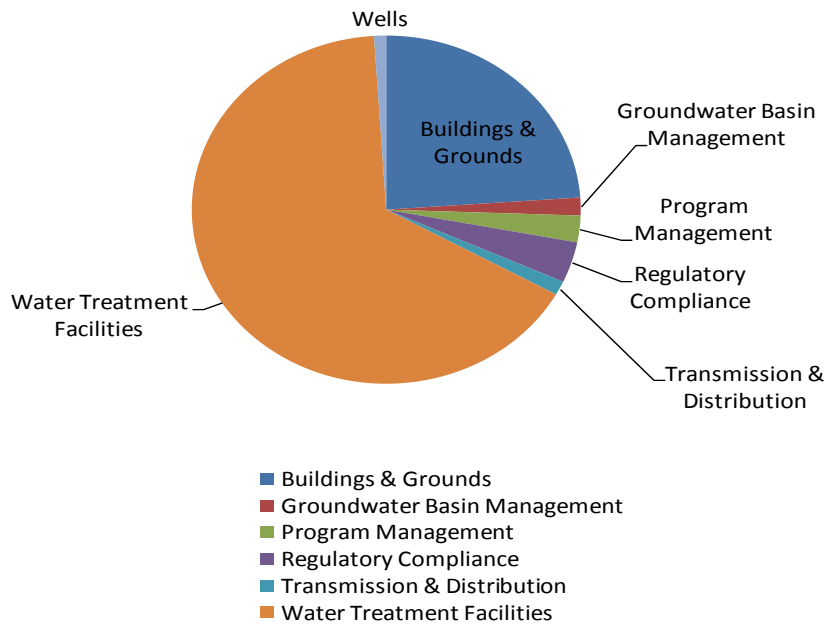
Strategy	Ten-Year Total (\$ Millions)	Percentage
Expansion	534.07	83%
Renewal/Replacement	35.64	6%
System-Wide Improvements	72.36	11%
Total	642.07	100.0%

EXECUTIVE SUMMARY – WATER SYSTEM

Fund 72 - Renewal/ Replacement Strategy Overview

This Strategy identifies the projects needed for the Renewal/Replacement of the capital assets of Zone 7's Water System. The first-year appropriation requirement for this strategy is \$3.75 million and the ten-year total is \$36 million. A breakdown by program for the Ten-year CIP period is shown below:

Water System Renewal/Replacement Strategy Ten-Year Total



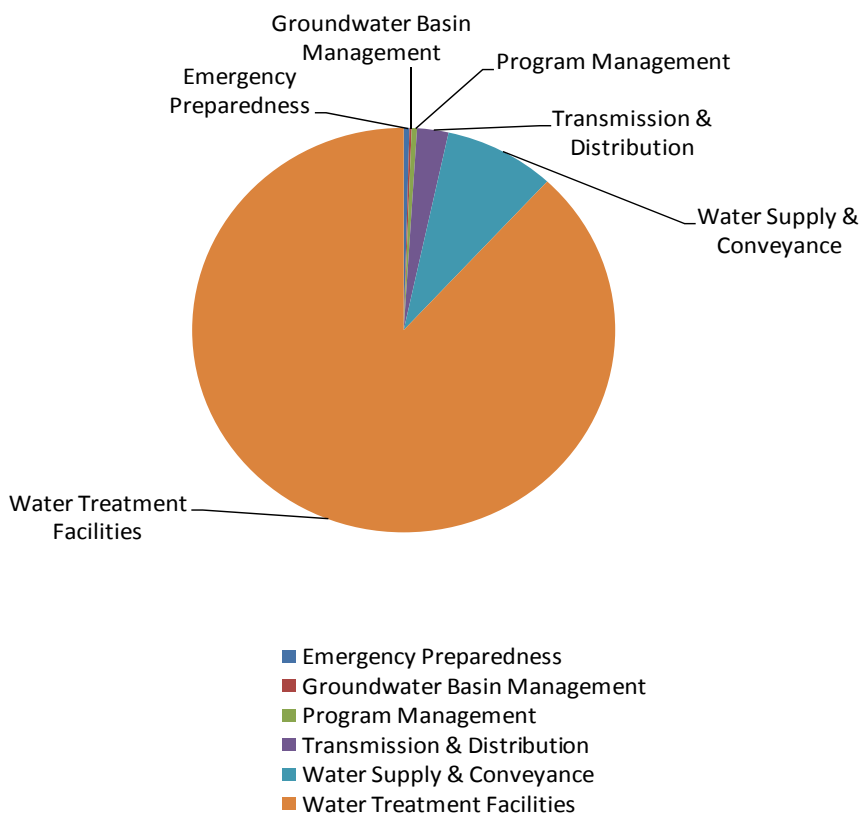
Program	Ten-Year Total (\$ Millions)	Percentage
Buildings & Grounds	8.51	24%
Groundwater Basin Management	0.59	2%
Program Management	0.89	2%
Regulatory Compliance	1.35	4%
Transmission & Distribution	0.47	1%
Water Treatment Facilities	23.47	66%
Wells	0.36	1%
Total	35.64	100%

EXECUTIVE SUMMARY – WATER SYSTEM

Fund 72 - System-Wide Improvements Strategy

This Strategy addresses enhancements to existing facilities that will improve water quality, safety, reliability, efficiency, operational flexibility, and/or decrease costs. The first-year appropriation requirement is \$4.7 million and the Ten-year CIP total for this strategy is \$72 million. A breakdown of the related programs for the Ten-year CIP period is shown below:

Water System
System-Wide Improvements Strategy



Program	Ten-Year Total (\$ Millions)	Percentage
Emergency Preparedness	0.32	0.4%
Groundwater Basin Management	0.12	0%
Program Management	0.30	0%
Transmission & Distribution	1.73	2%
Water Supply & Conveyance	6.12	8%
Water Treatment Facilities	63.77	88%
Total	72.36	100%

FUNDING ANALYSIS

Fund 72 – Renewal/Replacement & System-Wide Improvements Analysis

Fund 72 funds projects, or portions thereof, that relate to the replacement and/or improvement of existing water facilities, and which benefit existing customers. Revenues are generated from water rates paid by current Zone 7 Water System customers.

In order to minimize the burden to water rate payers of widely-varying annual costs, an annual funding allowance was formally established in 1994. In the 2004 Asset Management Program (AMP) Study, it was determined that the then-current \$4 million annual water rate contribution would no longer be adequate to fund the program. The AMP study included an evaluation of Zone 7's inventory of capital assets, asset service life as determined through condition assessments, economic life of the asset, asset risk, criticality, and vulnerability, true replacement costs under current conditions, and the annual allowance necessary to adequately fund Renewal/Replacement projects over the long term. In the 2004 study, Zone 7 obtained a current asset valuation of its existing facilities and recommended an annual funding allowance of \$10 million to adequately fund the program. In order to meet this \$10 million target, water rates would need to be raised. To lessen the impact of water rate increases, a gradual ramp-up to \$10M by FY 14/15 was proposed. In 2005, our Retailers expressed support for a gradual increase in the annual transfer of funds for the RR/SWI program; in particular, the Retailers supported the transfer of approximately \$4.6 million in each of the fiscal years ending 2006, 2007 and 2008 to fund both R/R and SWI projects.

In FY 09/10, Zone 7 is performing an update to the AMP. This effort will include a condition assessment of above-ground assets, a recommended ten-year R/R CIP, funding levels and a separate financial plan to support it. These studies will be collaborative efforts, including the selected consultant, Zone 7 Engineering, O&M and Finance staff, and our Retailers. The condition assessment is expected to occur this winter, with the findings and recommendations to be presented to the Zone 7 Board in spring 2010.



A new 500-kilowatt generator at the Del Valle Water Treatment Plant

EXECUTIVE SUMMARY – WATER SYSTEM

The near-term funding outlook projection (Table ES-1) shows that there will be adequate funding to complete projects scheduled in this Ten-Year CIP. At the end of FY 19/20, the program end balance is \$6 million. The R/R and SWI programs extend indefinitely beyond this ten-year planning period, therefore, the program ending balance shown will be used to fund future infrastructure replacement and improvement needs.

TABLE ES-1
Fund 72 - Water Rates
PROJECTED FUNDING OUTLOOK
(\$ Millions)

1	Fiscal year (FY)	09/10	10/11	11/12	12/13	13/14	14/15	15/16	16/17	17/18	18/19	19/20
2	Beg. Available Fund Balance	14.57	10.83	8.47	9.80	15.37	19.48	20.93	16.90	26.38	31.18	29.35
3	Revenue											
4	Water Rate	5.31	5.41	5.05	8.10	10.53	11.34	11.13	11.58	12.04	12.52	13.02
5	Facility Use Fees	1.00	1.00	1.00	1.25	1.25	1.30	1.30	1.35	1.35	1.40	1.40
6	Interest Income	0.31	0.43	0.34	0.39	0.61	0.78	0.84	0.68	1.06	1.25	1.47
7	Total Revenue	6.63	6.85	6.39	9.74	12.39	13.42	13.27	13.61	14.45	15.17	15.89
8	Expenditures											
9	R&R Expenditures	4.56	3.38	1.93	1.70	5.01	2.02	5.53	2.22	4.75	2.03	3.40
10	SWI Expenditures	4.70	4.71	2.01	1.33	2.12	8.80	10.60	0.73	3.71	13.77	24.58
11	Contingency [†]	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75
12	Total Expenditures	10.01	8.84	4.69	3.78	7.89	11.57	16.88	3.71	9.21	16.55	28.73
13	Fund Balance	11.19	8.84	10.17	15.76	19.88	21.33	17.32	26.81	31.61	29.79	16.51
14	Reserved Funds											
15	Building Sinking Fund	0.36	0.37	0.38	0.39	0.40	0.41	0.42	0.43	0.44	0.45	0.00
16	75% of Following Years' Contribution	4.06	3.79	6.07	7.90	8.51	8.35	8.68	9.03	9.39	9.77	10.16
17	Net Estimated Available Fund Balance	6.77	4.68	3.72	7.48	10.98	12.58	8.22	17.35	21.78	19.58	6.35

Key Assumptions

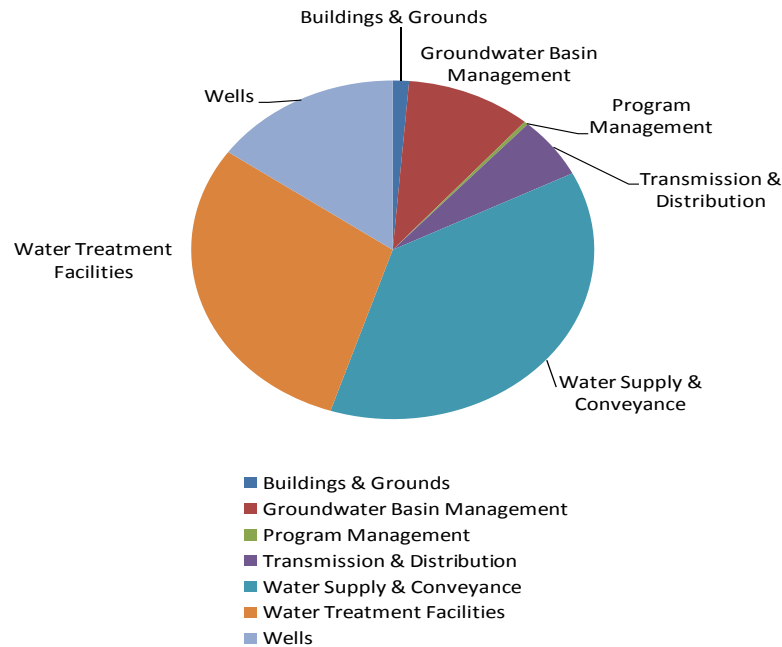
- Line 2 Beginning fund balance excludes prior year encumbrance carryovers.
- Line 4 Projected annual RR/SWI allowance transfer from Fund 52, Water Enterprise to Fund 72.
- Line 5 Facility use fees are charged to the Dougherty Valley Service Area to compensate Zone 7 for the use of Zone 7's existing facilities to provide water to this area.
- Line 6 Assumes 4% interest income earned on beginning cash and sinking fund balances.
- Line 8 Expenditures are shown in actual dollars (current dollars adjusted by a 4% annual inflation factor).
- Line 17 100% of the following years Water Rate Contribution is reserved so sufficient funding is available at the beginning of the following fiscal year.

EXECUTIVE SUMMARY – WATER SYSTEM

Fund 73 - Expansion Strategy Overview

Fund 73 funds projects, or portions thereof, that are needed because of additional demands on the Water System from new development. This includes all water purchases, new or expanded conveyance (e.g., SBA Improvement & Enlargement Project), and treatment and transmission facilities adding new capacity. The specific projects that comprise the Expansion Strategy are described in the following pages with respect to their associated programs. The first-year appropriation requirement is \$20 million while the ten-year total for this strategy is \$534 million, which is 83% of the \$642 million total estimated expenditures planned in this ten-year CIP. A breakdown by program for the ten-year plan is shown below:

Water System
Expansion Strategy
Ten-Year Total by Program



Program	Ten-Year Total (\$ Millions)	Percentage
Buildings & Grounds	6.92	1%
Groundwater Basin Manager	53.75	10%
Program Management	1.78	0.3%
Transmission & Distribution	31.21	6%
Water Supply & Conveyance	200.10	37%
Water Treatment Facilities	159.11	30%
Wells	81.21	15%
Total	534.07	100%

EXECUTIVE SUMMARY – WATER SYSTEM

FUNDING ANALYSIS

Fund 73 – Expansion

On January 15, 2008, Zone 7 completed the necessary documents required to close on a \$60 million Installment Sale Agreement (ISA), which is a form of lease financing which functions similarly to a line of credit. This funding is needed to bridge a short-term funding gap between anticipated expenditures and revenue. As of August 2009, Zone 7 had not drawn any funds from the ISA to fund the CIP.

In May 2008, staff performed an analysis to determine, based on the latest water demand information, when the AWTP is needed, and based on available funding, when Zone 7 can move forward with constructing the facility. Incorporating new water demand projections provided by our Retailers, the analysis determined that Zone 7 can meet projected MDD for an additional three years without the AWTP; however, under a scenario that assumes an extended outage at the Del Valle Water Treatment Plant (DVWTP), Zone 7 will not be able to provide 75% of MDD. In addition, the Zone 7 Water System will fall short of meeting the planning criteria of supplying 85% of MDD through our surface water production capacity until AWTP is in-service. However, with the slow-down in demands and increased conservation efforts, coupled with the new facilities soon to be in-service (Mocho Groundwater Demin, Chain of Lakes Wells 1 and 2, Altamont Pipeline-Livermore Reach), Zone 7 can meet near-term projected demands and water quality targets.

In July 2009, Zone 7 Finance staff made a presentation to the Zone 7 Finance Committee, discussing a potential water connection fee deferral program proposed by the Home Builders Association of Northern California (HBANC) to encourage growth during this current very slow economy. In this discussion, Finance staff updated the committee with the current status of this fund. It was noted that total FY 08/09 connection fee revenue was about \$1M less than projected (\$11.3M vs. \$12.4M). Considering this revenue trend, connection fee revenue for the next three years has been conservatively projected at an annual growth rate of 2%. Based on these updated projections, a \$30 M draw on the ISA in the immediate future to maintain acceptable fund balance levels is necessary. Additional borrowing, of up to \$145 million, may be necessary to fund the AWTP and APL – County Reach if development does not pick-up, and AWTP is to be online by summer 2016. Because of the uncertainty of the economy, the amount that Zone 7 would need to borrow to fund the AWTP is unknown, and is completely dependent on how development materializes. If development picks up, Zone 7 could borrow less (or not at all) and perhaps build the plant sooner. If the rate of development stays slow, the plant may be delayed even further if borrowing more is not feasible. Note that connection fee revenue is linked to new water demands, so if revenue is slow, further delaying AWTP should be acceptable. We will continue to evaluate this situation on both a quarterly and annual basis.

The cash flow scenario shown in Table ES-2 below is one example of the various cash flow scenarios analyzed. This scenario assumes that growth will continue to be slow through FY 12/13, and if AWTP

EXECUTIVE SUMMARY – WATER SYSTEM

should be online by FY 16/17, long-term borrowing of up to \$145M in the form of bonds, certificates of participation (COPs) or bank loans may be required. The amount needed to be borrowed cannot be precisely determined at this point in time. Staff will continue to closely monitor Fund 73 cash flow and make recommendations on the funding plan and needed in-service date for the AWTP as part of future budget and CIP actions. This draft CIP recommends that construction of AWTP (and the associated APL – County Reach) be deferred from a start date of January 2012, to January 2014. Assuming a two-year construction schedule, the plant should be substantially complete by January 2016, with final completion by summer 2016.

The near-term funding outlook projection (Table ES-2) below, shows that there will be adequate funding to complete projects scheduled in this Ten-Year CIP, assuming that the AWTP and related projects are deferred as recommended, connection fee revenue materializes as projected, and the funding sources shown are secured and utilized.

TABLE ES-2
Fund 73 – Connection Fees
PROJECTED FUNDING OUTLOOK
(\$ Millions)

Fiscal year (FY)	09/10	10/11	11/12	12/13	13/14	14/15	15/16	16/17	17/18	18/19	19/20
1 Beg. Available Fund Balance*	9.95	37.12	29.72	20.77	17.51	104.13	28.70	6.45	19.66	33.67	43.34
2 Revenue											
3 Connection Fees	11.38	11.84	12.56	20.90	34.78	50.72	62.97	79.92	83.87	87.70	89.77
4 Prepaid Connections	0.74	0.98	1.23	1.23	1.23	1.47	1.04	0.00	0.00	0.00	0.00
5 ISA Advance/Payments	30.00	0.00	0.00	0.00	-30.00	0.00	0.00	0.00	0.00	0.00	0.00
6 New Borrowing	0.00	0.00	0.00	0.00	145.00	0.00	0.00	0.00	0.00	0.00	0.00
7 Interest Income	0.82	1.00	0.84	1.05	2.18	2.36	1.01	1.05	1.64	2.00	2.45
8 Total Revenue	42.93	13.82	14.62	23.17	153.19	54.55	65.02	80.97	85.51	89.71	92.22
9 Expenditures											
10 Project Expenditures	3.28	2.43	4.55	9.39	51.04	99.56	56.74	37.11	40.72	49.15	50.14
11 Non-Discretionary Expenditures	11.90	18.18	17.62	15.59	15.29	15.29	15.31	15.33	15.36	15.38	14.93
12 Debt Service on New Borrowing	0.00	0.00	0.00	0.00	0.00	11.48	11.48	11.48	11.48	11.48	11.48
13 Unused Portion Fee/Interest on ISA	0.47	0.47	1.22	1.22	0.00	0.00	0.00	0.00	0.00	0.00	0.00
14 Sinking Funds	0.11	0.15	0.19	0.23	0.24	3.65	3.74	3.83	3.93	4.03	3.49
15 Total Expenditures	15.76	21.22	23.58	26.43	66.57	129.99	87.27	67.76	71.49	80.04	80.04
16 Net Estimated Available Fund Balance	37.12	29.72	20.77	17.51	104.13	28.70	6.45	19.66	33.67	43.34	55.52

Footnotes/Assumptions

Line 2 - Starting in FY 10/11, revenue assumes 4% annual inflationary adjustments to connection fees.
 Line 4 - Prepaid connections reflect anticipated revenue received from 2035 connections purchased in 2000 at \$4915 per connection.
 Line 6 - Assummes new borrowing of \$150M in @ 5% for 20 years.
 Line 7 - Assumes 2% interest earned on fund balance FY 08/09-FY 10/11, increasing to 3% thereafter.
 Line 10 - Project expenditures include: project expenditures (adjusted by 4% annual inflation); administrative fee (1% of connection fee revenue) to Retailers; \$500K program contingency for FY 06/07 - 09/10, increasing to 5% of total annual expenditures for FY 10/11 -15/16, 15% FY 16/17 -19/20 and 30% thereafter; and interest paid on ISA.
 Line 11 - Non Discretionary Expenditures include 1) Fixed Cost of Water Entitlement 2) Bay-Delta Conservation Plan 3) Semitropic Stored Recovry Unit 4) SWP Peaking Payment 5) North Canyon's Building Lease 6) Cawelo Groundwater Banking Program 7) Fourth Contractor's Share of SBA and 8) SBA Improvement and Enlargement.
 Line 13 - Annual unused portion fee is .5% of the unused amount. Interest rate as of August 2009 is .44% or 81.41% of Prime Rate minus 2.2%. Assumed rate for FY 09-10 and FY 10-11 is 1.5% increasing to 4% thereafter.
 Line 14 - Sinking Funds include: annual interest only contributions to the Future Contractor's Share of the SBA, SBA Enlargement and Administration & Engineering Building sinking funds through FY 13/14, increasing to the full amount thereafter.
 Line 16- Fund Balance Target is 50% of the following year's non-discretionary expenditures or ~\$7.5M.

Growth Scenario - for normal planning purposes a growth cycling concept is used. It assumes 70% of projected growth for the first five years and 130% for the succeeding five years. This scenario has been modified to assume 25% of projected growth 08/09 - 11/12, DV connections recovering in FY 18-19 - 22/23 and Z7 recovering in FY 20/21 - FY 25/26, rather than in the succeeding five years.

- Assumes the following major projects and online dates:
 - Mocho Demin - Spring 2009
 - Altamont Pipeline, Livermore Reach - Summer 2009
 - Altamont Water Treatment Plant - Summer 2016 and Pipeline-County Reach - Summer 2015
 - Chain of Lakes Wells 1 & 2 - Summer 2009
 - Chain of Lakes Wells 3,4 and 4 - Summer 2016

EXECUTIVE SUMMARY – WATER SYSTEM

The appropriation summary below identifies the appropriations for each project included in the Ten-Year Water System CIP.

Capital Improvement Program Project Summary by Program

Programs	Appropriations (\$Millions)										
	FY 10/11	FY 11/12	FY 12/13	FY 13/14	FY 14/15	FY 15/16	FY 16/17	FY 17/18	FY 18/19	FY 19/20	Total
Buildings & Grounds											
Administrative & Engineering Building Lease (Water System)	\$0.888	\$0.907	\$0.924	\$0.943	\$0.962	\$0.981	\$1.001	\$1.020	\$1.042		\$8.668
Administrative & Engineering Building - Sinking Fund (Fund 73)	\$0.033	\$0.034	\$0.035	\$0.036	\$0.564	\$0.578	\$0.593	\$0.608	\$0.623		\$3.104
Administrative & Engineering Building Sinking Fund (Fund 72)	\$0.367	\$0.377	\$0.386	\$0.395	\$0.406	\$0.416	\$0.427	\$0.437	\$0.448		\$3.659
Subtotal	\$1.288	\$1.318	\$1.345	\$1.374	\$1.932	\$1.975	\$2.021	\$2.065	\$2.113		\$15.431
Emergency Preparedness											
Local Hazard Mitigation Plan Update	\$0.210										\$0.210
Vulnerability Assessment Review & Update	\$0.110										\$0.110
Subtotal	\$0.320										\$0.320
Groundwater Basin Management											
Monitoring Well Replacements & Abandonments		\$0.090		\$0.110		\$0.120		\$0.130		\$0.140	\$0.590
New Groundwater Management Program Monitoring Wells	\$0.120										\$0.120
Second Groundwater Demineralization Facility							\$4.800	\$21.350	\$22.200	\$5.400	\$53.750
Subtotal	\$0.120	\$0.090		\$0.110		\$0.120	\$4.800	\$21.480	\$22.200	\$5.540	\$54.460
Program Management											
Capital Improvement Program Management	\$0.238	\$0.238	\$0.238	\$0.238	\$0.238	\$0.238	\$0.238	\$0.238	\$0.238	\$0.238	\$2.375
System-Wide Improvement, Renewal/Replacement Program Management	\$0.050	\$0.050	\$0.050	\$0.060	\$0.060	\$0.060	\$0.060	\$0.060	\$0.070	\$0.070	\$0.590
Subtotal	\$0.288	\$0.288	\$0.288	\$0.298	\$0.298	\$0.298	\$0.298	\$0.298	\$0.308	\$0.308	\$2.965
Regulatory Compliance											
Laboratory Equipment Replacement	\$0.110	\$0.120	\$0.120	\$0.130	\$0.130	\$0.140	\$0.140	\$0.150	\$0.150	\$0.160	\$1.350
Subtotal	\$0.110	\$0.120	\$0.120	\$0.130	\$0.130	\$0.140	\$0.140	\$0.150	\$0.150	\$0.160	\$1.350
Transmission & Distribution											
Altamont Pipeline - County Reach				\$2.900	\$28.000						\$30.900
Corrosion Master Plan Update				\$0.250					\$0.310		\$0.560
System-Wide Installation of Line Valves	\$0.060	\$0.060	\$0.060	\$0.060	\$0.070	\$0.070	\$0.070	\$0.070	\$0.100	\$0.100	\$0.720
Transmission System Master Plan	\$0.100	\$0.100	\$0.100	\$0.125	\$0.125	\$0.125	\$0.125	\$0.125	\$0.150	\$0.150	\$1.225
Subtotal	\$0.160	\$0.160	\$0.160	\$3.335	\$28.195	\$0.195	\$0.195	\$0.195	\$0.560	\$0.250	\$33.405

EXECUTIVE SUMMARY – WATER SYSTEM

Capital Improvement Program Project Summary by Program (Appropriations shown in \$Millions) (Continued)

Programs	Appropriations (\$Millions)										Total	
	FY 10/11	FY 11/12	FY 12/13	FY 13/14	FY 14/15	FY 15/16	FY 16/17	FY 17/18	FY 18/19	FY 19/20		
Water Supply & Conveyance												
Arroyo Mocho Low Flow Crossings	\$0.030	\$0.110	\$0.530									\$0.670
Arroyo Mocho/Lake H Diversion Structure		\$0.030	\$0.260	\$0.440								\$0.730
Bay-Delta Habitat Conservation Program	\$0.150	\$0.156	\$0.164	\$0.172	\$0.180	\$0.189	\$0.199	\$0.209	\$0.219	\$0.230		\$1.868
Cawelo Groundwater Banking Program	\$1.293	\$1.296	\$1.293	\$1.294	\$1.295	\$1.295	\$1.294	\$1.297	\$1.299	\$1.300		\$12.956
Chain of Lakes Facilities and Improvements	\$0.150	\$0.360	\$0.890	\$1.230	\$1.330	\$0.350	\$0.590	\$1.030	\$1.380			\$7.310
Chain of Lakes Master Plan			\$2.903	\$0.490								\$3.393
Cope Lake Facilities and Improvements	\$0.600			\$2.590								\$3.190
CUWA Membership	\$0.060	\$0.060	\$0.060	\$0.060	\$0.060	\$0.060	\$0.060	\$0.060	\$0.060	\$0.060	\$0.060	\$0.600
Enhanced Conservation Program	\$0.400	\$0.400	\$0.400	\$0.400	\$0.400	\$0.400	\$0.400	\$0.400	\$0.400	\$0.400	\$0.400	\$4.000
Fixed Cost of Water Entitlement	\$0.099	\$0.054	\$0.025	\$0.015								\$0.193
Fourth Contractor's Share of the SBA	\$3.100	\$3.000	\$3.000	\$3.000	\$3.000	\$3.000	\$3.000	\$3.000	\$3.000	\$3.000	\$3.000	\$30.100
Fourth Contractor's Share of the SBA - Sinking Fund	\$0.016	\$0.021	\$0.027	\$0.028	\$0.423	\$0.433	\$0.444	\$0.455	\$0.466	\$0.478		\$2.791
High Efficiency Toilet Rebate Program	\$0.110	\$0.115	\$0.115	\$0.115	\$0.115							\$0.570
High-Efficiency Washing Machine Rebate Program	\$0.300	\$0.200	\$0.170	\$0.170	\$0.170							\$1.010
Semitropic Stored Water Recovery Unit	\$0.048	\$0.048	\$0.048	\$0.048	\$0.048	\$0.048	\$0.048	\$0.048	\$0.048	\$0.048	\$0.048	\$0.480
South Bay Aqueduct Improvement & Enlargement Project	\$12.463	\$12.384	\$10.364	\$10.054	\$10.052	\$10.051	\$10.052	\$10.052	\$10.050	\$10.048		\$105.570
South Bay Aqueduct Improvement & Enlargement Project - Sinking Fund	\$0.096	\$0.130	\$0.166	\$0.170	\$2.660	\$2.726	\$2.794	\$2.864	\$2.936	\$3.009		\$17.551
SWP Peaking Payment (Lost Hills & Belridge Water Districts)	\$0.260	\$0.257	\$0.257	\$0.255	\$0.256	\$0.255	\$0.252	\$0.240	\$0.242	\$0.236		\$2.510
Water Conservation Best Management Practices	\$0.100	\$0.100	\$0.100	\$0.100	\$0.100	\$0.150	\$0.150	\$0.150	\$0.150	\$0.150		\$1.250
Water Supply Purchase for Reliability				\$11.000								\$11.000
Subtotal	\$19.081	\$18.529	\$20.579	\$31.440	\$19.957	\$18.825	\$19.153	\$19.685	\$20.128	\$18.841		\$206.218
Water Treatment Facilities												
Altamont Water Treatment Plant Operational Training					\$0.230	\$0.240						\$0.470
Altamont Water Treatment Plant Phase 1 (24 MGD)			\$0.900	\$13.900	\$62.350	\$46.650	\$2.500					\$126.300
Altamont Water Treatment Plant Phase 2 (12-18 MGD)									\$4.450	\$27.700		\$32.150
Dougherty Reservoir Access Road Rehabilitation	\$0.260											\$0.260
DVWTP Aqueous Ammonia System						\$3.230						\$3.230
DVWTP Chemical Systems Improvements	\$2.060											\$2.060
DVWTP Filter Underdrain Replacement							\$0.310	\$1.590				\$1.900
DVWTP Instrumentation Upgrades					\$0.040	\$0.390						\$0.430
DVWTP Interior Coating Improvements to the 4.5 MG Steel Clearwell	\$1.250											\$1.250
DVWTP Roof Panel Replacement and Roof System Repair for 3 MG Clearwell		\$0.160										\$0.160
DVWTP Sludge Handling Improvements				\$1.010	\$6.840							\$7.850
Minor Renewal/Replacement Projects	\$0.250	\$0.250	\$0.250	\$0.250	\$0.275	\$0.275	\$0.275	\$0.275	\$0.275	\$0.300		\$2.675
PPWTP Ammonia Facility Replacement				\$2.280								\$2.280
PPWTP Filter Improvements Study		\$0.080										\$0.080
PPWTP Filter to Waste Improvements	\$0.125											\$0.125
PPWTP Improvement Project 2011	\$0.770											\$0.770
PPWTP Improvement Project 2012	\$0.270	\$1.060										\$1.330
PPWTP Improvement Studies 2011	\$0.070											\$0.070

**Capital Improvement Program
Project Summary by Program**
(Appropriations shown in \$Millions)
(Continued)

Programs	Appropriations (\$Millions)										
	FY 10/11	FY 11/12	FY 12/13	FY 13/14	FY 14/15	FY 15/16	FY 16/17	FY 17/18	FY 18/19	FY 19/20	Total
PPWTP Instrumentation Upgrades					\$0.130	\$0.375				\$1.760	\$2.265
PPWTP Rehabilitation of Clarifier and Replacement of Motor	\$0.220										\$0.220
PPWTP Sludge Handling Improvements					\$1.050	\$9.900					\$10.950
PPWTP Ultrafiltration Membrane Replacement	\$0.390	\$0.400	\$0.410	\$0.400	\$0.460	\$0.000	\$0.490	\$0.510	\$0.530	\$0.550	\$4.140
Safety Improvements at Water Treatment Plants			\$0.450								\$0.450
SCADA Enhancements	\$0.250	\$0.250	\$0.250	\$1.150	\$0.270	\$0.270	\$0.270	\$1.350	\$0.300	\$0.300	\$4.660
Water Quality - PPWTP & DVWTP Taste and Odor Treatment								\$3.010	\$12.670	\$23.830	\$39.510
Water Quality Management Program	\$0.090	\$0.050	\$0.090	\$0.050	\$0.100	\$0.060	\$0.100	\$0.060	\$0.120	\$0.060	\$0.77
Subtotal	\$6.005	\$2.250	\$2.350	\$19.040	\$71.745	\$61.385	\$3.945	\$6.790	\$18.345	\$54.500	\$246.355
Wells											
Well Master Plan Wells	\$0.930	\$3.250	\$2.800	\$17.850	\$1.950	\$5.790	\$23.230	\$11.840	\$12.240	\$1.330	\$81.210
Well Pump, Motor and Casing Inspections	\$0.030	\$0.030	\$0.030	\$0.030	\$0.040	\$0.040	\$0.040	\$0.040	\$0.040	\$0.040	\$0.360
Subtotal	\$0.960	\$3.280	\$2.830	\$17.880	\$1.990	\$5.830	\$23.270	\$11.880	\$12.280	\$1.370	\$81.570
Total	\$28.332	\$26.035	\$27.672	\$73.607	\$124.247	\$88.768	\$53.822	\$62.543	\$76.084	\$80.969	\$642.074
In 2009 Dollars	\$27242	\$24.071	\$24.600	\$62.920	\$102.122	\$70.155	\$40.900	\$45.700	\$53.456	\$54.700	\$505.865

FLOOD PROTECTION CIP OVERVIEW

Zone 7 plans and designs flood protection and storm water drainage facilities that enhance acceptance, management and control of storm water runoff and drainage in the Livermore-Amador Valley. The agency conducts capital improvement activities that protect life and property from damage caused by storm water runoff and drainage generated during large rainfall events.² Zone 7's first priority is implementing capital improvements that renew, replace and repair existing facilities to maintain the integrity of the existing flood protection system. Zone 7's second priority is identifying and developing and system-wide improvements that integrate local storm water channels into one regional flood protection system.

The purpose of this section is to present the capital improvement activities (renewal, replacement and repair) required for flood protection over the next five years (i.e., the 5-Year CIP for Flood Protection), describe available funding sources and provide a brief overview of future flood protection activities.

PROPOSED RENEWAL, REPLACEMENT AND REPAIR ACTIVITIES

Zone 7 staff conducts an annual review of system-wide capital improvement activities required for existing facilities. Based on this review, Zone 7 staff has identified the following twelve capital improvement activities that will be conducted over the next five years:

- Administrative & Engineering Building: This project includes the continuing lease of a new office building that brought engineering, administrative, and operational staff together in one location; thereby, improving communications and staff productivity while conducting capital improvement activities.
- Administrative & Engineering Building – Sinking Fund: This project will cover the cost to purchase a new building after Zone 7's 15-year lease expires in 2020.
- Access Roads: This program is required to restore the function and integrity of maintenance roads so that staff can safely conduct facility inspection activities.
- Sediment Removal from Existing Channels: This program implements Zone 7's sediment removal activities from existing channels throughout the system.
- Fences and Gates: This program is required to replace fences and gates throughout Zone 7's existing flood protection system.
- Landscaping and Hydroseeding: This program is required to install landscaping and erosion control measures throughout the existing flood protection system.
- Embankment Repair: This program rehabilitates the embankments of existing channels throughout the system damaged during large storm events.

² For planning purposes in this CIP, a large rainfall event is defined as the 100-year rainfall event, or the rainfall event with the probability of occurring once every 100 years; this is also known as the 1% rainfall event.

EXECUTIVE SUMMARY – FLOOD PROTECTION

- Asphalt Driveways: This program replaces existing gravel driveways throughout the system with asphalt; thereby, enhancing the life and function of all driveways.
- Concrete V-Ditches: This program replaces existing earthen V-ditches along the top of embankments with concrete V-ditches, which will improve bank stability and reduce maintenance costs.
- New Drain Structures: This program constructs new drain inlets, cross drain piping, and outfall structures along the top of existing embankments; thereby, improving drainage and increasing bank stability.
- Vegetation Abatement: This program removes vegetation throughout the system per fire department regulations. This activity includes tree management.

Table ES-3 presents the projected costs for these capital improvements over the next five years. As shown in Table ES-3 total expenditures for Renewal and Replacement (referred to below as Flood Control Facilities) activities are expected average \$1.7M annually for the next five years.

Table ES-3 - Projected Renewal and Replacement Expenditures Over the Next Five Years

Programs	Appropriations (\$Millions)					Total
	FY 2010/11	FY 2011/12	FY 2012/13	FY 2013/14	FY 2014/15	
Building & Grounds						
Administrative & Engineering Building Lease (Flood Protection)	\$0.111	\$0.114	\$0.116	\$0.118	\$0.120	\$0.580
Administrative and Engineering Building - Sinking Fund (Flood Protection)	\$0.082	\$0.084	\$0.086	\$0.089	\$0.091	\$0.430
Subtotal	\$0.193	\$0.198	\$0.202	\$0.207	\$0.211	\$1.011
Flood Control Facilities						
Construction and Rehabilitation of Maintenance Roads	\$0.140	\$0.170	\$0.175	\$0.180	\$0.185	\$0.850
District-wide F. C. Channel Desilting Program	\$0.380	\$0.230	\$0.235	\$0.240	\$0.245	\$1.330
Fences & Gates Installation & Replacement	\$0.035	\$0.035	\$0.038	\$0.040	\$0.042	\$0.190
Landscaping & Hydroseeding Channel Embankments	\$0.095	\$0.095	\$0.098	\$0.100	\$0.102	\$0.490
Rehabilitation of F. C. Channel Embankments	\$0.600	\$0.600	\$0.610	\$0.620	\$0.630	\$3.060
System-wide Asphalt Paving F.C. Facility Driveway	\$0.050	\$0.070	\$0.075	\$0.080	\$0.085	\$0.360
System-wide Construction of Concrete V-ditches	\$0.050	\$0.060	\$0.065	\$0.070	\$0.075	\$0.320
System-wide Construction of Drain Structures	\$0.070	\$0.095	\$0.100	\$0.105	\$0.110	\$0.480
System-wide Vegetation Abatement	\$0.240	\$0.315	\$0.325	\$0.335	\$0.345	\$1.560
Total	\$1.660	\$1.670	\$1.721	\$1.770	\$1.819	\$8.640
Program Management						
Capital Improvement Program Management	\$0.006	\$0.006	\$0.006	\$0.006	\$0.006	\$0.030
Subtotal	\$0.006	\$0.006	\$0.006	\$0.006	\$0.006	\$0.030
Total	\$1.860	\$1.870	\$1.930	\$1.980	\$2.040	\$9.680

Additional information on each improvement activity is provided in Project Summaries at the end of Section III.

EXECUTIVE SUMMARY – FLOOD PROTECTION

FUNDING ANALYSIS

PROJECTED REVENUE FROM EXISTING FUNDS

Zone 7 currently uses two sources of revenue to fund flood protection activities. The first source is property taxes and the second source is development impact fees. Revenue from property taxes is placed in Fund 50, while revenue from development impact fees is placed in Fund 76; each is discussed in more detail below.

Fund 50 – Flood Protection General Fund

Alameda County provides Zone 7 a portion of the taxes levied based on one percent (1%) of the assessed value of all properties within Zone 7's service area. The revenues that Zone 7 receives from Alameda County are placed into Fund 50, and can be used to support both operation and maintenance (O&M) activities and the construction of new facilities. Zone 7 will sometimes supplement these revenues with state and federal grant funding. Table ES-4 presents the projected funding for Fund 50 over the next five years.

TABLE ES-4 - Fund 50 (Property Taxes) - NEAR-TERM FUNDING (\$ Millions)

Fiscal year (FY)	10/11	11/12	12/13	13/14	14/15
1 Beg. Available Fund Balance	20.10	20.49	21.00	21.55	22.22
2 Revenue					
3 Property Tax Revenue	5.84	6.02	6.26	6.57	6.90
4 Other Revenue	1.00	1.10	1.10	1.10	1.20
	6.84	7.12	7.36	7.67	8.10
5 Expenditures					
6 Capital Expenditures	1.79	1.80	1.85	1.90	1.95
7 Operating Expenditures	4.59	4.73	4.87	5.02	5.17
8 Building Sinking Fund	0.08	0.08	0.08	0.09	0.09
9 Total Expenditures	6.46	6.61	6.80	7.00	7.21
10 End. Available Fund Balance	20.49	21.00	21.55	22.22	23.11

Key Assumptions

- Line 1 Beginning fund balance excludes prior year encumbrance carryovers.
- Line 3 Since taxes are based on the assessed property value, which fluctuates over time, Zone 7 has based the contribution on historic experience. A five percent annual (5%) increase is conservatively estimated to account for growth in assessed valuation.
- Line 4 Assumes 4% interest income earned on beginning cash and sinking fund balances.
- Line 8 Expenditures are shown in actual dollars (current dollars adjusted by a 4% annual inflation factor).

Fund 76 – Flood Protection and Storm Water Drainage Development Impact Fee

On March 18, 2009, the Zone 7 Board of Directors adopted Ordinance 2009-01, which replaced the Special Drainage Area (SDA) 7-1 development impact fee previously adopted by Zone 7.³ The new ordinance also established the Flood Protection and Storm Water Drainage Development Impact Fee Fund (Fund 76); consequently, all funds from SDA Operations (Fund

³ Ordinance No. 00-2004-42 was repealed on March 18, 2009, the effective date of Ordinance 2009-01.

EXECUTIVE SUMMARY – FLOOD PROTECTION

71) and the SDA 7-1 Trust Fund (Fund 90) were transferred to Fund 76, while all of the outstanding SDA 7-1 exemption credits were liquidated.⁴

Fund 76 holds all fees collected from future development in support of Zone 7's flood protection and storm water drainage activities. The following sections describe Fund 76 in more detail:

- Basis for Establishing the New Fee
- Fee Implementation
- Existing and Projected Fund Balance

Basis for Establishing the New Fee

The Zone 7 Board of Directors approved the Stream Management Master Plan (SMMP) in August 2006. Zone 7 adopted Ordinance 2009-01 to establish the new development impact fee (DIF) necessary to support SMMP projects within the Alameda Creek Watershed. Zone 7 will conduct a separate analysis and prepare a separate ordinance for those projects located outside of the Alameda Creek Watershed, but within Zone 7's service area.

The new DIF was recommended in a March 2009 report entitled "Development Impact Fees for Flood Protection and Storm Water Drainage" prepared by HDR Consultants Inc. (2009 DIF Report). The nexus, methodology, and new fee recommended in the 2009 DIF report are described below in more detail.

Nexus: Impervious Area

The 2009 DIF Report established impervious area as the nexus between the DIF and the capital improvements proposed in the SMMP. Increased impervious area impacts the ability of Zone 7 to protect life and property on a regional scale because increased impervious area generates additional runoff and storm water drainage that eventually flows into Zone 7's flood protection and storm water drainage system.⁵

Methodology: Incremental

The 2009 DIF Report used an incremental methodology⁶ to determine the new fee, and divided all of the SMMP projects into two groups: (1) Conveyance and (2) Storage.

The SMMP conveyance projects function as a network that allows Zone 7 to accept and manage regional storm water runoff and drainage. Any one project by itself does not allow Zone 7 to manage the impacts generated by additional impervious area created by future development; instead, it is the network of all the conveyance projects working together.

⁴ Per Ordinance 2009-01, the funds were transferred and existing exemption credits were liquidated on May 18, 2009.

⁵ The 2009 DIF Report determined that future development would increase the total impervious surface within the Alameda Creek Watershed by approximately 17%.

⁶ The incremental methodology assumes that insufficient capacity is available in the existing system to accommodate future development and therefore, the new fee is based on the cost of new capital facilities required to accommodate additional storm water runoff and drainage created by future development.

EXECUTIVE SUMMARY – FLOOD PROTECTION

The SMMP storage projects include three projects⁷ necessary to divert, store and pump storm water runoff and drainage from the Arroyo Las Positas and Arroyo Mocho, near El Charro Road, into the Chain of Lakes. These projects are different from conveyance projects from a storm drainage management and hydrologic perspective; these projects are also sized based on volume, and not just flow.

Recommended Development Impact Fee

Based on the nexus and methodology described above, the 2009 DIF Report recommended a new fee of \$1.423 per square-foot of impervious area created by new development.

Fee Implementation

In light of the current severe economic downturn, Ordinance 2009-01 also included a five-year phasing schedule of the new fee. The five-year phasing schedule is as follows:

- Existing Fee: \$0.783 / ft² of impervious area
- Year 1 (1/1/10): \$0.87 + ENR⁸ adjustment
- Year 2 (1/1/11): \$0.96 + ENR adjustment
- Year 3 (1/1/12): \$1.10 + ENR adjustment
- Year 4 (1/1/13): \$1.30 + ENR adjustment
- Year 5 (1/1/14): \$1.42 + ENR adjustment

Five-Year Planning Horizon Efforts for Fund 76

Based on input obtained during a series of meetings with the Cities of Dublin, Pleasanton and Livermore, Zone 7 anticipates beginning a collaborative re-evaluation and update of the SMMP proposed projects and the associated program costs in 2012. Zone 7 anticipates that the first five years of fee collection under Fund 76 will be used on the top priority project: Phase I improvements in the regional storage/detention system at the Chain of Lakes.

As discussed below, Zone 7 staff will continue to evaluate additional funding mechanisms to support and implement the SMMP, and therefore, did not project significant expenditures for future expansion projects over the next five years.

OVERVIEW OF FUTURE FLOOD PROTECTION ACTIVITIES

The Zone 7 Board of Directors approved the SMMP in August 2006 to help guide future activities that will enhance Zone 7's ability to accept, manage and control storm water runoff and drainage during large rainfall events. As discussed previously, Zone 7 recently adopted Ordinance 2009-01 to establish the new Development Impact Fee and Fund 76 for the purposes of funding future development's share of the SMMP projects.

Zone 7 staff is currently reviewing funding options for the balance of the SMMP; these funding mechanisms include:

⁷ The storage projects consist of Projects R.5-2, R.5-3, and R.6-2 of the SMMP.

⁸ ENR is an acronym for Engineering News Record, and in this case refers to the San Francisco construction cost index produced by ENR.

EXECUTIVE SUMMARY – FLOOD PROTECTION

- Proposition 218 Property Owner-Approved Service Charge,
- Proposition 218 Voter-Approved Service Charge,
- Proposition 218 Property Owner-Approved Benefit Assessment,
- Special Taxes (e.g., Non-Ad and Ad-Valorem taxes), and
- Grant Opportunities

The applicability of each of these funding mechanisms depends on whether they will be used to fund O&M, Capital Improvements, or both, and whether they will generate sufficient funding. This new funding mechanism(s), when combined with revenues put into Fund 50 and Fund 76, will complete the financing portfolio necessary to implement the entire SMMP; thereby, allowing Zone 7 staff to present a formal CIP for the expansion activities associated with providing flood protection to the Livermore-Amador Valley.



Wente Vineyard and Golf Course in Livermore

S E C T I O N O N E

I N T R O D U C T I O N



SECTION 1 ~ INTRODUCTION

ABOUT ZONE 7

Zone 7 provides flood protection to all of eastern Alameda County and supplies treated drinking water to retailers serving nearly 200,000 people in Pleasanton, Livermore, Dublin and, through special agreement with the Dublin San Ramon Services District, to the Dougherty Valley area. Zone 7 also supplies untreated water to 3,500 acres, primarily South Livermore Valley farms and vineyards. *Figure 1 below shows the Zone 7 Service Area.*

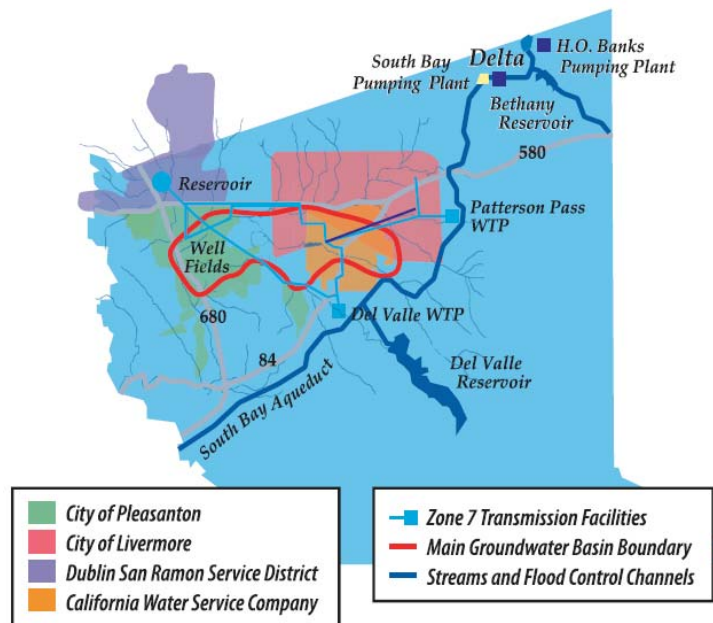


Figure 1 - Zone 7 Service Area shown in orange

WATER SYSTEM

Zone 7's water supply originates as snowmelt in the Sierra Nevada, and makes its way here using the Sacramento-San Joaquin Delta as a conveyance system. The water is imported to the Livermore-Amador Valley through State Water Project's South Bay Aqueduct. The Delta supplies Zone 7 with roughly 80% of its water supply, the remaining comes from local rain runoff stored at Lake Del Valle and from groundwater pumped from the Valley's groundwater basin. Water is treated either at the Patterson Pass Conventional Water Treatment Plant, the Patterson Pass Ultrafiltration Water Treatment Plant or the Del Valle Water Treatment Plant. In the future, an additional 24 million gallons per day (MGD) will be treated at the Altamont Water Treatment Plant. Groundwater production wells located in the Hopyard, Mocho, and Stoneridge wellfields provide 25 MGD of capacity, while the new Chain of Lakes Wells 1 and 2 will supply an additional 8 MGD. The new Mocho Groundwater Demineralization Facility will help reduce the hardness of groundwater supplies. *Figure 2 on the following page shows the Zone 7 Service Area with existing facilities.*

Figure 2
Zone 7 Service Area w/Existing Facilities



FLOOD PROTECTION

In addition to providing water to the Livermore-Amador Valley, Zone 7 owns and maintains 37 miles of local flood-protection channels, about a third of all the Valley’s channels and creeks. The remaining channels are owned either privately or by other public agencies, which are responsible for repairs and maintenance. The Valley’s flood-protection system begins at city-owned storm drains on local streets. Storm water flows through underground pipelines into creeks or man-made channels feeding into Arroyo Mocho, Arroyo las Positas and Arroyo del Valle. These larger channels converge with Arroyo de la Laguna, which ultimately drains into San Francisco Bay through Alameda Creek. In addition to flood protection, the channels also have recreational benefits and protect natural habitat.



Arroyo Mocho in Livermore

SECTION 1 ~ INTRODUCTION

PURPOSE

On a biannual¹ basis, Zone 7 prepares the Capital Improvement Program document, which plans the capital projects and programs needed to carry out the goals and policy objectives of the agency.

Specifically, this document:

- Communicates to all involved stakeholders, the projects, costs, schedules and priorities of its capital improvement program for both the Flood Protection and Water Systems.
- Facilitates decision making relative to project scheduling and resource allocations.
- Identifies how capital projects and programs will be paid for.

This document includes:

- A description of the CIP and the process used to develop the plan.
- Highlights of key projects, and comparison to the previous fiscal year and identification of the major changes and status of major capital projects.
- A description of each capital improvement project, including planned goals, justification, priority, operational impact, responsible section, in-service date, project costs, source of funds, cash flow.

¹ With the adoption of resolution no. 10-3349, the Zone 7 Board approved updating and adopting the CIP on a biannual basis.

- Cash flow projections for the various capital funds based on anticipated revenue and planned expenditures.

CIP STRUCTURE

The CIP consists of four primary levels. In descending order, these levels are: System, Strategy, Program, and Project.

SYSTEM

The highest level of capital improvement activities is a “System”. A System is identified as a primary service that Zone 7 is responsible for providing to its community. Currently, the CIP has identified the following Systems:

Water System – pertains to the acquisition, conveyance, land acquisition and construction of water supply facilities, treatment (for Municipal and Industrial customers), maintenance of water supply facilities, and distribution of water. This system also includes management of the groundwater basin.

Flood Protection System – provides for the management, engineering, land acquisition, construction, operation and maintenance of flood protection facilities and the protection of watercourses, watersheds, public highways, life and property from damage or destruction from flooding. Also provides community (e.g., recreational) and environmentally sensitive uses of the Valley’s streams.

STRATEGY

The second level in the CIP structure is a “Strategy”. A Strategy is a grouping of several programs that address the need to renew, replace, improve or expand Zone 7’s

SECTION 1 ~ INTRODUCTION

Water System and have a common source of funding. There are three capital program strategies, which are common to both systems.

- **Renewal/Replacement** focuses on existing facilities that have deteriorated or are in need of rehabilitation to maintain the established level of service to existing Zone 7 customers. The Water System projects are funded by *water rates, while Flood Protection Projects are funded by property taxes.*
- **System-Wide Improvements** addresses new regulatory requirements and enhancements to existing facilities that will improve operation and maintenance safety, flexibility, cost-effectiveness or optimize performance as necessary for existing Zone 7 customers. The Water System projects are funded by *water rates, while Flood Protection projects are funded by property taxes.*
- **Expansion** identifies the capital projects needed to meet the needs of new customers as approved by the appropriate local governmental agencies within Zone 7's service area. The Water System projects are *funded by water connection fees, while Flood Protection projects are funded by development fees.*

PROGRAM

The third level in the CIP structure is a "Program". Programs represent a group of related projects combined to support various components of the Water System. There are currently twelve capital programs:

- **Buildings & Grounds** addresses structures and support facilities not directly involved in the supply, treatment, transmission or storage of water or flood protection.
- **Emergency Preparedness** addresses Zone 7's goals and desired capability for emergency response.
- **Flood Protection** facilities are capital projects that focus on the rehabilitation, improvement or annual major maintenance of the existing flood protection facilities that are planned and funded by Zone 7.
- **Groundwater Basin Management** focuses on Zone 7's responsibility to manage the local groundwater basin, which includes stabilizing and reducing the buildup of total dissolved solids and hardness, and delivering high quality water to its customers.
- **Program Management** accounts for staff time and related costs associated with managing capital programs.
- **Regulatory Compliance** ensures compliance with a range of existing and future regulatory and/or permitting requirements.
- **Transmission & Distribution** consists of projects that are required for the transmission of treated water to Zone 7 Retailers.
- **Water Supply & Conveyance** focuses on the planning and purchase of new water supplies, and implementation of improvements required to convey raw

SECTION 1 ~ INTRODUCTION

water to Zone 7's surface water treatment plants, to local streams for recharge and to Zone 7's agricultural customers for their irrigation needs.

- **Water Treatment Facilities** addresses existing and proposed surface water treatment.
- **Wells** identifies facilities required to reliably maintain the production of treated water deliveries during drought periods and peak demand periods, during planned and unplanned outages of surface water treatment plants, and to optimize conjunctive use and facilitate groundwater basin management.

PROJECT

The fourth level in the CIP structure is a "Project". A Project is a discrete set of capital improvement tasks with a dedicated Project Manager assigned to it. Prioritization, appropriation requests and projected spending (cash flow) are authorized at this level. The FY 2010/11 Ten-year CIP has sixty-one Water System projects and twelve Flood Protection projects. Descriptions of the capital projects associated with the Water and Flood Protection System are located at the end of Chapters 2 and 3, respectively.

CIP PREPARATION

The Ten-year CIP document is prepared as a part of Zone 7's overall capital planning and budgeting process. The responsibilities for preparing and managing the CIP during the fiscal year are shared among three primary groups:

Program Management consists of Section Heads and Project Managers working

together to meet the needs of the annual CIP process and executing specific programs and projects during the fiscal year.

Project Managers are responsible for identifying new and updating current capital projects, their appropriations and cash flows. The Section Heads review and confirm proposed appropriations and cash flows within their programs as well as identifying resource constraints or conflicts.

CIP Manager is responsible for the overall management of the CIP during the capital budget process and throughout the fiscal year. Specific responsibilities include:

- Managing the CIP budget and planning systems and producing the CIP document.
- Ensuring Section Heads and Project Managers meet, review documents, coordinate efforts and resolve conflicts, accordingly.
- Providing staff support to and coordinating the transfer of information between the Capital Review Group, CIP Prioritization Group, Section Heads and Project Managers.
- Ensuring Capital Review Group decisions are reflected in the CIP.
- Reviewing the adequacy of Zone 7 financial and staffing resources to complete proposed projects.

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CIP Review Group is an internal agency group that is responsible for ensuring that the CIP meets the goals and objectives of Zone 7's Mission Statement and policies. The group is comprised of the General Manager, Assistant General Managers of Operations, Engineering and Finance, Production Manager, Facilities Supervisors, CIP Manager, key Section Heads, Project Managers and a Finance Staff Analyst. The responsibilities of the groups include:

- Reviewing the CIP document during its development for redundancies, cost-effectiveness, schedule and opportunities to add/delete/combine programs and projects.
- Confirming the adequacy of Zone 7 resources to complete proposed projects.
- Recommending necessary changes to project scope, schedule and budget that are within staff's administrative authority.

CIP Prioritization Group is an internal agency group consisting of the Assistant General Managers of Operations and Engineering, Production Manager, CIP Manager, a Senior Engineer and a Finance Staff Analyst. This group's role is to:

- Approve and prioritize the final list of projects to be presented within the CIP document to the General Manager and Board of Directors based on resources, available funding, and priority.
- Confirming proposed spending amounts for projects and programs and ensuring appropriate justification is provided.
- Meet on a quarterly basis to review the status of the CIP, including the financial condition of the various capital funds.

SECTION 1 ~ INTRODUCTION

PRIORITIZATION CRITERIA

Prioritizing projects is an important part of the CIP planning process. The project prioritization criteria provide a method to rank or rate the relative importance of a project based upon factors such as protection of health and safety, legal requirements and ability to provide and maintain levels of service to existing and future customers. These criteria provide a basis for decision-making regarding which projects will be implemented in any given year. In addition, they provide a basis for scheduling projects over the ten-year span of the CIP.

The following three categories reflect a range of priorities from high to low:

Priority 1, Mandatory Projects – These are critical projects representing the highest priority of all capital projects. These projects meet one or more of the following criteria:

- **Essential** for providing reliable water supply to meet projected demands
- **Essential** to meet Zone 7's Mission Statement and Board Policies or Level of Service Goals
- **Required** by legislation, regulation, and/or for protecting public health and safety
- Projects already under construction
- Funded by non-Zone 7 Agency sources such as grants, developers, contractors, or Retailers

Priority 2, Necessary Projects – These are projects that must be completed, but Zone 7 has a *moderate* level of control as to when they should be performed.

- Increase water supply reliability and delivered water quality
- Maintain or increase level of service goals and/or operating efficiencies with short-term paybacks (within 5 years)

Priority 3, Discretionary Projects – These are projects that should be implemented to increase level of service goals, but Zone 7 has a *significant* level of control as to when they should be performed. Many projects in this category are conceptual level and cost estimates are preliminary.

SECTION 1 ~ INTRODUCTION

SOURCES OF FUNDING

Funding for Zone 7's Water System CIP is primarily from Municipal & Industrial (M&I) Connection Fees and Water Rates, while Flood Protection is funded by Property Taxes and Development Fees. Revenue derived from these rates and fees are deposited into the funds listed below. The rates and fees are reviewed and, if necessary, adjusted annually. When determining the funding source for each project, the relative benefit to existing and future customers is evaluated carefully. For general reference, a description of each Zone 7 fund is provided below. Funding analyses specific to the appropriate System are located in Chapter 2.

<p>Fund 72 – Renewal/Replacement & System-Wide Improvements</p>	<p>Funds a project, or portion thereof, that relates to the replacement or improvement of existing water facilities, and which benefits existing customers. Funds are generated through water rates charged for the sale of water to current Zone 7 customers. Water rates are established based on the revenue required to operate and maintain the existing Water System including an allowance for Renewal/Replacement & System-Wide Improvements projects.</p> <p>Another source of revenue for Fund 72 is the Dougherty Valley facility use fees, which are charged to Dougherty Valley development. Per Amendment No. 1 of the Zone 7 and Dublin San Ramon Services District (DSRSD) Water Supply Contract, facility use fees are charged to the Dougherty Valley service area to compensate Zone 7 for the use of Zone 7's existing facilities to provide water to this area. Currently, the facility use fee is \$2,460 per new equivalent connection, based on a 5/8" meter.</p>
<p>Fund 73 – Expansion</p>	<p>Funds a project, or portion thereof, that relates to additional demands on the existing Water System, which includes all water purchases; conveyance, treatment and transmission facilities; and associated costs (e.g., planning, design, construction, legal, administration, property acquisition, permitting). Revenue is generated from the collection of water connection fees for new water services. Connection fees are developed and adjusted with respect to the capital improvements required to meet future demands on the water system. Connection fees are paid when securing permits for development. As of January 2009, the Zone 7 connection is \$21,550 per equivalent connection, based on a 5/8" meter. A separate connection fee of \$19,950 per equivalent connection is assessed to the Dougherty Valley area in San Ramon, which DSRSD serves per Amendment No. 1 of the Zone 7 and DSRSD Water Supply Contract. The revenue generated from connection fees provides funding for the implementation of all expansion projects.</p>

SECTION 1 ~ INTRODUCTION

<p>Fund 50 – Flood Protection/General Fund</p>	<p>Funds a project, or portion thereof, that relates to the replacement or improvement of existing flood protection facilities, and which benefits existing customers. Revenue is generated from a portion of the ad valorem taxes levied based on one percent (1%) of the assessed value of all properties within Zone 7.</p>
<p>Fund 76 - Flood Protection and Storm Water Drainage Development Impact Fee</p>	<p>On March 18, 2009, the Zone 7 Board of Directors adopted Ordinance 2009-01, which replaced the Special Drainage Area (SDA) 7-1 development impact fee previously adopted by Zone 7.² The new ordinance also established the Flood Protection and Storm Water Drainage Development Impact Fee Fund (Fund 76); consequently, all funds from SDA Operations (Fund 71) and the SDA 7-1 Trust Fund (Fund 90) were transferred to Fund 76, while all of the outstanding SDA 7-1 exemption credits were liquidated.³</p> <p>Fund 76 holds all fees collected from future development in support of Zone 7’s flood protection and storm water drainage activities. Chapter 3, Flood Protection describes Fund 76 in more detail.</p>

² Ordinance No. 00-2004-42 was repealed on March 18, 2009, the effective date of Ordinance 2009-01.

³ Per Ordinance 2009-01, the funds were transferred and existing exemption credits were liquidated on May 18, 2009.



Altamont Pipeline - Livermore Reach under construction

SECTION TWO

WATER SYSTEM



SECTION II – WATER SYSTEM

INTRODUCTION

This chapter identifies the specific goals and proposed appropriations for the individual Strategies and Programs associated with the Water System over the next ten years starting with FY 2010/11.

WATERSYSTEM GOALS

To ensure that the needs of Zone 7 customers are met, Zone 7 has set goals relative to water reliability, quality and groundwater management. These Water System goals, as defined by adopted Board policies, are outlined in the following pages. While every policy is subject to review and adjustment, the current policies can be found in Appendix A. The charts that follow each goal graphically illustrate Zone 7's ability to meet that particular goal.

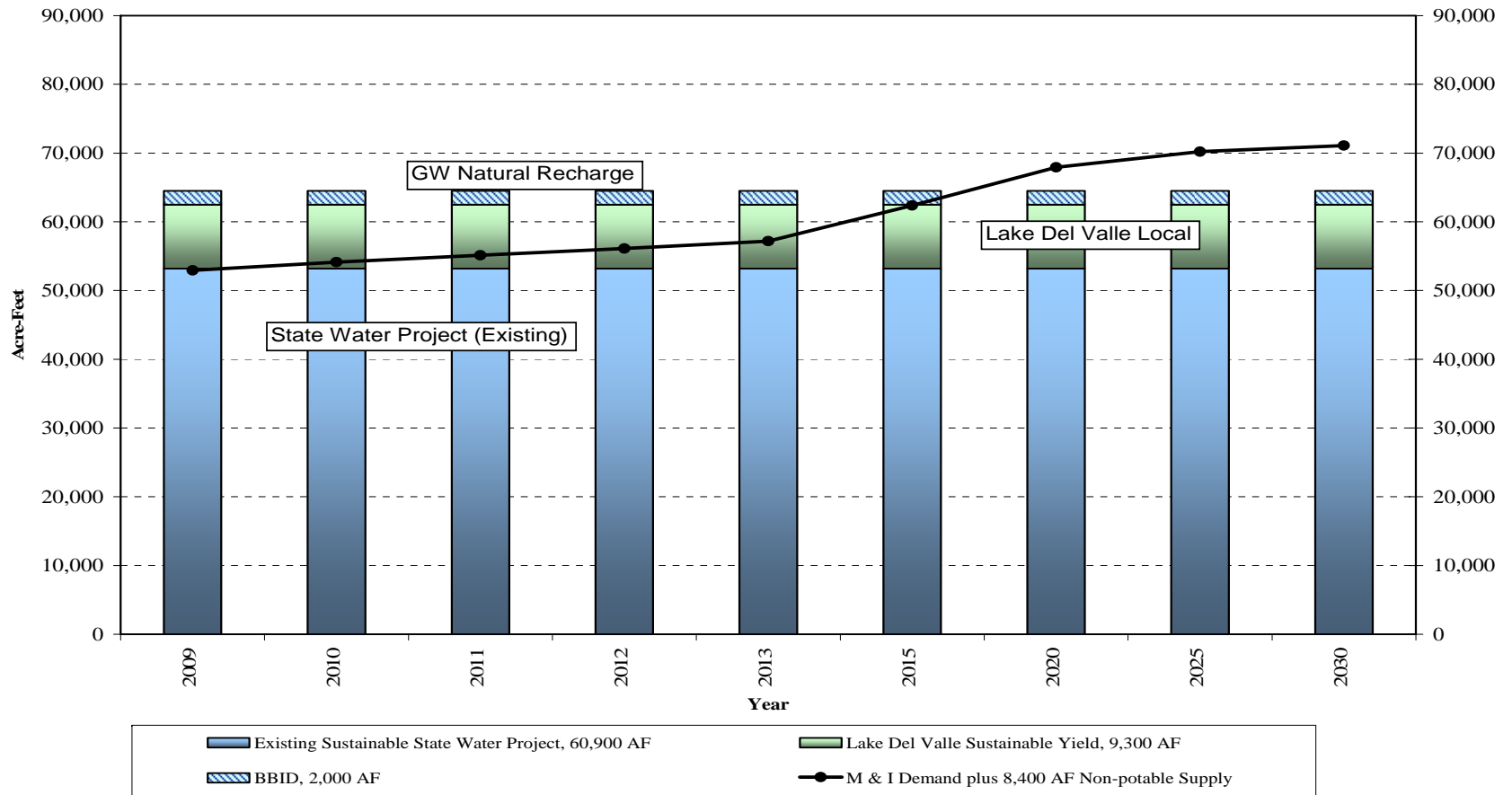
Water Reliability

Two water policy goals help guide Zone 7's capital and resource planning efforts. Adherence to these goals results in Zone 7 maintaining a highly reliable M&I water supply system for existing and future water demands under varying hydrologic conditions.

WATER SUPPLY AND RELIABILITY	RELIABILITY POLICY FOR MUNICIPAL AND INDUSTRIAL (M&I) WATER SUPPLIES (RESOLUTION NO. 04-2662)	
	Goal 1	Meet 100% of its treated water customers' water supply needs in accordance with Zone 7's most current contracts for M&I Water Supply, including existing and projected demands for the next twenty (20) years as specified in Zone 7's Urban Water Management Plan (UWMP), which will be coordinated with Zone 7's M&I water contractors. Zone 7 will endeavor to meet this goal during an average water year, a single dry water year, and multiple dry water years.
	Goal 2:	Provide sufficient treated water production capacity and infrastructure to meet at least 75% of the maximum daily M&I contractual demands should any one of Zone 7's major supply, production or transmission facilities experience an extended unplanned outage.
	Planning and Operational Criteria	In addition to the goals stated above, Zone 7 has a number of planning and operational criteria, which are associated with this Board resolution and are as follows: <ol style="list-style-type: none"> 1. Provide surface water treatment design capacity to meet 85% of the Zone 7 maximum day demand for reliability and operational flexibility. 2. Operate water supplies so that the groundwater basin levels do not drop below historic lows.

SECTION II – WATER SYSTEM

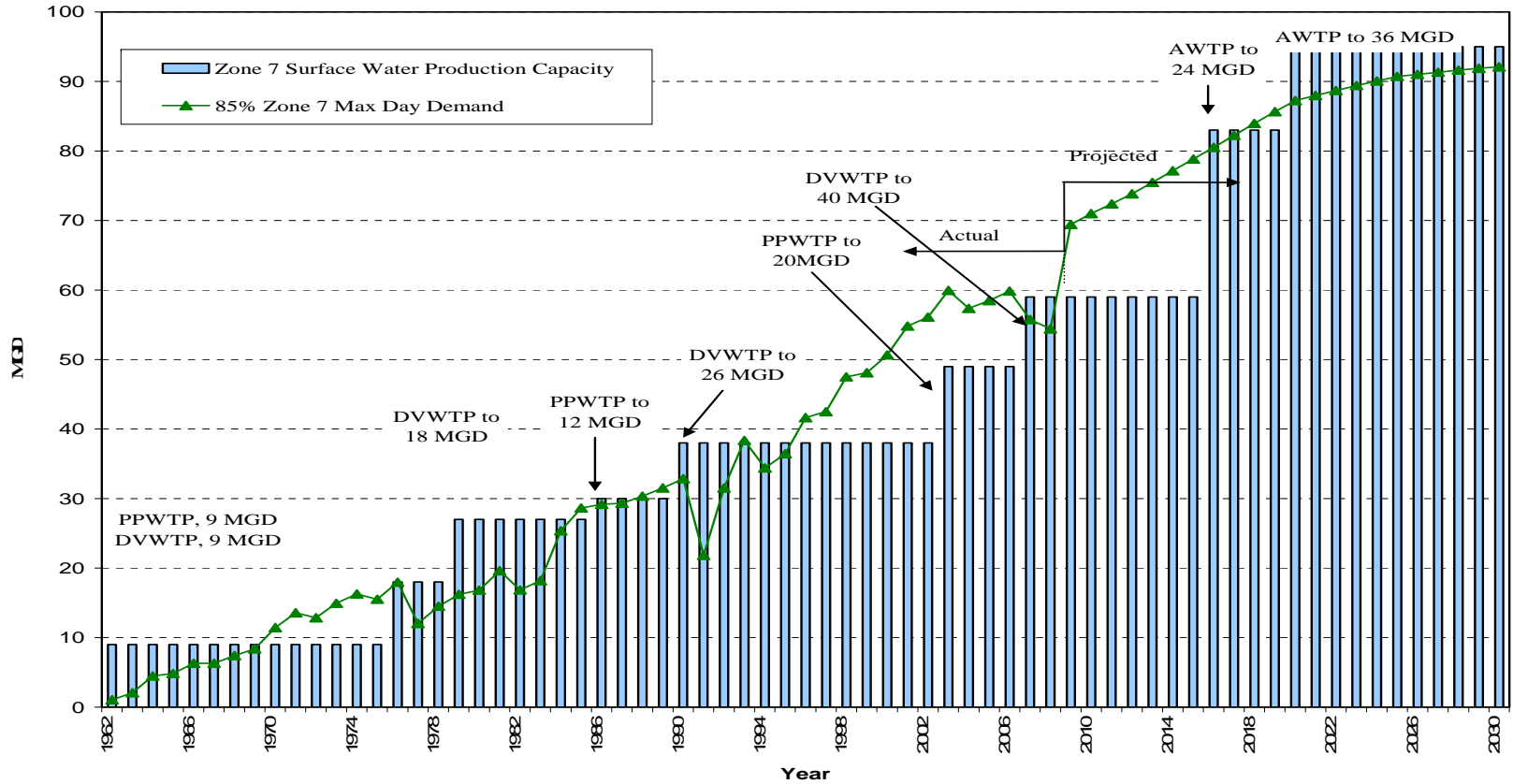
Figure 3
Projected Zone 7 Demand and Sustainable Water Supply



This figure reflects Zone 7's ability to meet Goal 1 of the Reliability Policy, which is to meet 100% of treated water demands under normal operating conditions, during an average water year, single dry water year, and multiple dry water years. Based on DWR's Draft SWP Delivery Reliability report (December 2007) which incorporates the impacts of Judge Wanger's Delta Smelt interim remedies, the average-year SWP yield is reduced from 76% to 66% (long-term SWP yield). In response, Zone 7 has asked customers to cut water use by 10%, and is actively involved in developing a long term solution for Delta conveyance and habitat conservation.

SECTION II – WATER SYSTEM

Figure 4
Treatment Plant Production Capacity vs. 85% Zone 7 Max Day M&I Demand
1962 – 2030



This chart illustrates Zone 7's treatment plant production capacity relative to 85% of maximum day demand. Until the AWTP is in-service, Zone 7 falls short of meeting this goal.

SECTION II – WATER SYSTEM

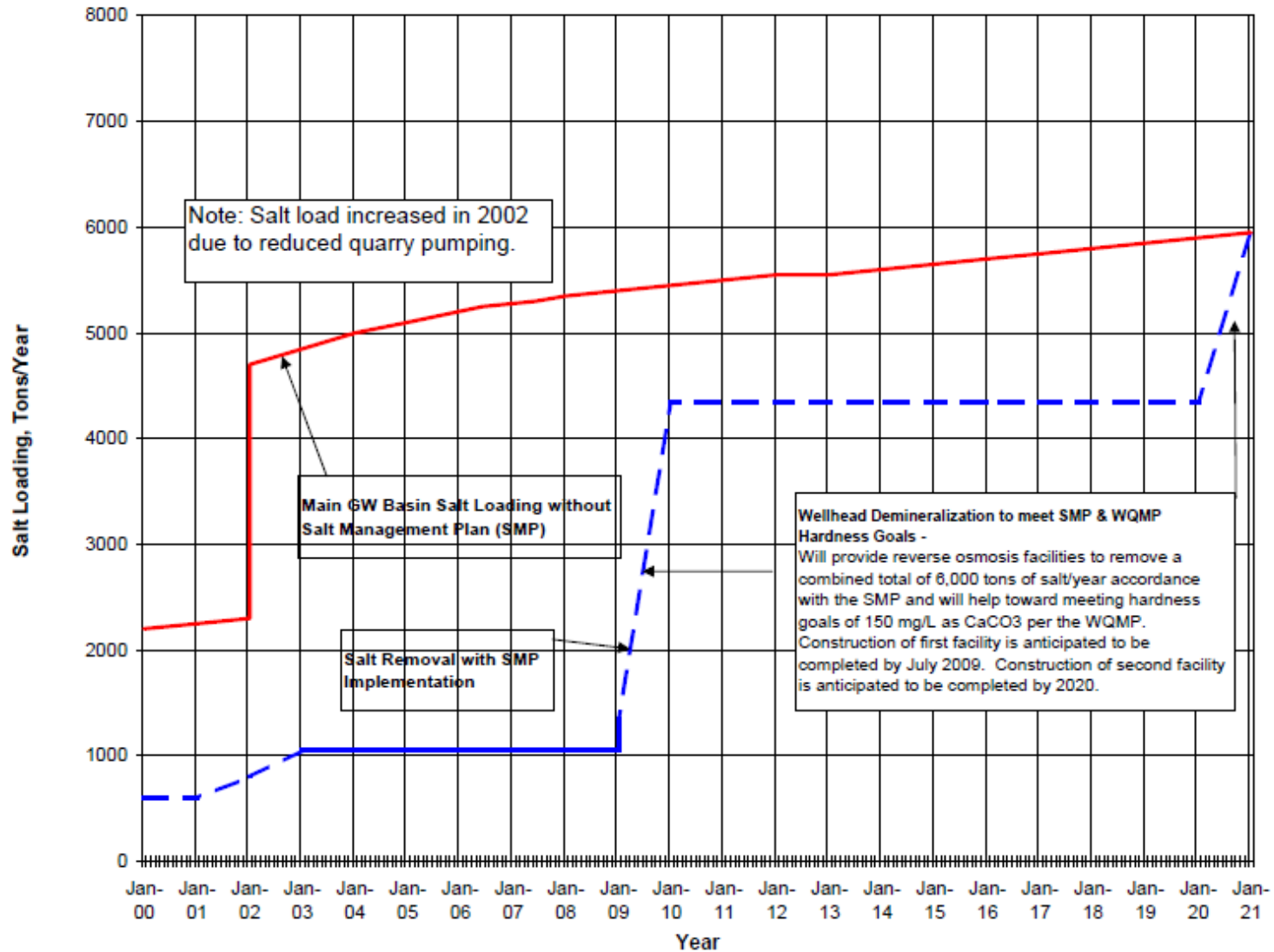
Groundwater Basin Management

The Livermore-Amador Valley’s main groundwater basin has an estimated storage capacity of 250,000 acre-feet. The Groundwater Basin supplies about 20% of Valley-wide water demands and provides local storage to meet demands during dry years.

<i>GROUNDWATER MANAGEMENT PLAN (RESOLUTION NO. 06--2796)</i>	
W A T E R Q U A L I T Y	Purpose
	Goal 1:
	Goal 2:
	Goal 3:
	Goal 4:
	Goal 5

SECTION II – WATER SYSTEM

Figure 5 - Increased Groundwater Usage for TDS & Hardness Removal



SECTION II – WATER SYSTEM

Water Quality

All of water Zone 7's delivers to its Retailers meets or beats State and Federal health standards, however, surface water and groundwater taste, odor and/or appearance can often vary depending on the source, season or customer's location. To address these aesthetic concerns, Zone 7 has; 1) established self-imposed water quality targets which are more stringent than State and Federal regulations; and 2) developed a Water Quality Management Plan to assist in setting policies to address drinking and agricultural water-quality issues, shape operational decisions, establish capital facilities and set design standards.

WATER QUALITY	<i>WATER QUALITY POLICY FOR POTABLE AND NON-POTABLE WATER (RESOLUTION NO. 03-2494)</i>	
	Goal 1	Zone 7 shall continue to meet all state and federal primary Maximum Contaminant Levels ¹ (MCLs) for potable water delivered to the M&I Contractors' turnouts, in accordance with existing water supply agreements.
	Goal 2:	Zone 7 shall meet all state and federal secondary MCLs ¹ in the potable water delivered to its M&I Contractors' turnouts. In addition, Zone 7 shall, within technical and fiscal constraints, proactively mitigate earthy-musty taste and odor events from surface water supplies and reduce hardness levels to "moderately hard", defined as 75 to 150 mg/L as CaCO ₃ . Also, Zone 7 shall optimize its treatment processes to minimize chlorinous odors by maintaining consistent disinfectant dosage and residual.
	Goal 3:	Goal 3: Zone 7 shall endeavor to deliver to its non-potable Contractor turnouts, from a variety of sources, water of a quality that meets the irrigation needs of its Contractors and does not negatively impact vegetation, crops, or soils.
	Goal 4:	In order to achieve Goals 1 through 3, Zone 7 shall continue to work to improve the quality of its source waters. This may be achieved through Zone 7's Salt Management Plan, which will maintain or improve the water quality in the groundwater basin, and through advocacy of improvements in the State Water Project, its facilities and their operations, which may improve the source water of Zone 7's surface water supplies. In addition, Zone 7 will encourage the retailers to take similar steps as those outlined in this policy to improve the quality of the retail customers' water.

¹ Maximum Contaminant Level (MCL): The highest level of a contaminant that is allowed in drinking water. Primary MCLs are set as close to the Public Health Goals (PHGs), or Maximum Contaminant Level Goals (MCLGs), as is economically and technically feasible. Secondary MCLs are set to protect the odor, taste, and appearance of drinking water.

SECTION II – WATER SYSTEM

Water Quality

Policy Principles and Joint Resolution of the City Council of the City of Pleasanton, the Board of Directors of the Dublin San Ramon Services District and the Board of Directors of the Zone 7 Water Agency Regarding Water Quality (Resolution No. 06-2783). This resolution establishes policy principles which will guide all three agencies in developing programs and operational guidelines relating to improving water quality. A copy of this resolution can be found in Appendix A.



Zone 7's water quality team works to ensure a safe, high quality water supply.

SECTION II – WATER SYSTEM

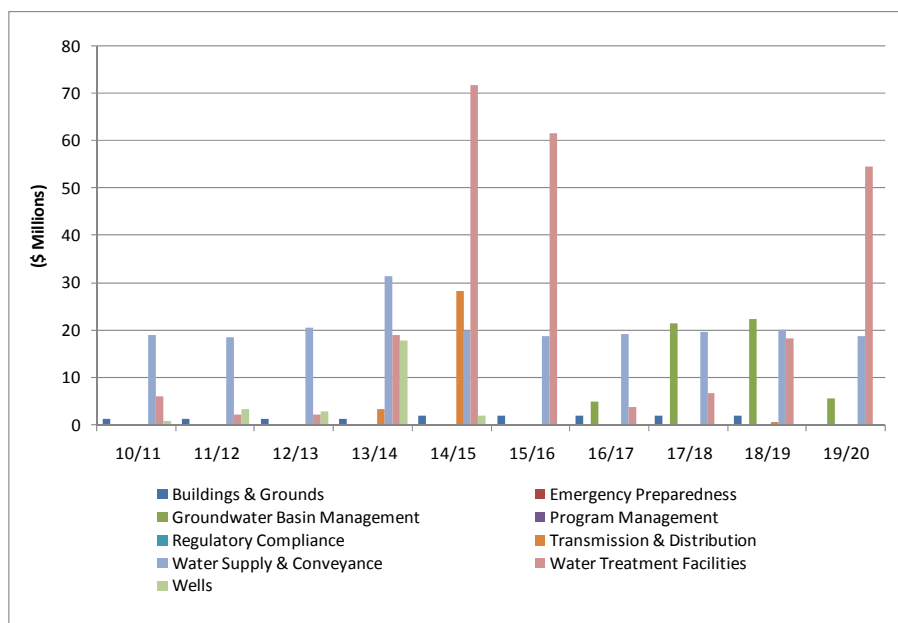
OVERVIEW OF THE WATER SYSTEM CIP

A primary function of the CIP is to provide Zone 7's Executive Staff and Board of Directors with a clear and orderly process for planning and budgeting for capital needs and to make informed decisions with regard to project priorities and scheduling.

In order to meet the mission, goals and policy objectives established by the Zone 7 Board, various capital projects and programs are needed to ensure a reliable and high quality water supply. The Zone 7 Water System CIP proposes the projects and programs needed to carry out the goals and mission of Zone 7. These projects anticipate the need to renew, replace and improve existing infrastructure (Fund 72, Water Rates) and to construct new facilities needed to accommodate future growth (Fund 73, Connection Fees).

For the Ten-Year CIP period, sixty-two Water System projects have been identified totaling \$642M and falling within the following nine program areas:

- **Buildings & Grounds**
- **Emergency Preparedness**
- **Groundwater Basin Management**
- **Program Management**
- **Regulatory Compliance**
- **Transmission and Distribution**
- **Water Supply and Conveyance**
- **Water Treatment Facilities**
- **Wells**



(\$ Millions)

Program (FY)	10/11	11/12	12/13	13/14	14/15	15/16	16/17	17/18	18/19	19/20	Total
Buildings & Grounds	1.29	1.32	1.35	1.37	1.93	1.98	2.02	2.07	2.11	0.00	15.43
Emergency Preparedness	0.32	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.32
Groundwater Basin Management	0.12	0.09	0.00	0.11	0.00	0.12	4.80	21.48	22.20	5.54	54.46
Program Management	0.29	0.29	0.29	0.30	0.30	0.30	0.30	0.30	0.31	0.31	2.97
Regulatory Compliance	0.11	0.12	0.12	0.13	0.13	0.14	0.14	0.15	0.15	0.16	1.35
Transmission & Distribution	0.16	0.16	0.16	3.34	28.20	0.20	0.20	0.20	0.56	0.25	33.41
Water Supply & Conveyance	19.08	18.53	20.58	31.44	19.96	18.83	19.15	19.69	20.13	18.84	206.22
Water Treatment Facilities	6.01	2.25	2.35	19.04	71.75	61.39	3.95	6.79	18.35	54.50	246.36
Wells	0.96	3.28	2.83	17.88	1.99	5.83	23.27	11.88	12.28	1.37	81.57
Total	28.33	26.03	27.67	73.61	124.25	88.77	53.82	62.54	76.08	80.97	642.07

Note: Throughout this document, FY 10/11 appropriations are highlighted in grey to emphasize the first year of the CIP, which is the basis for the FY 10/11 Capital Budget (to be adopted in winter 2010).

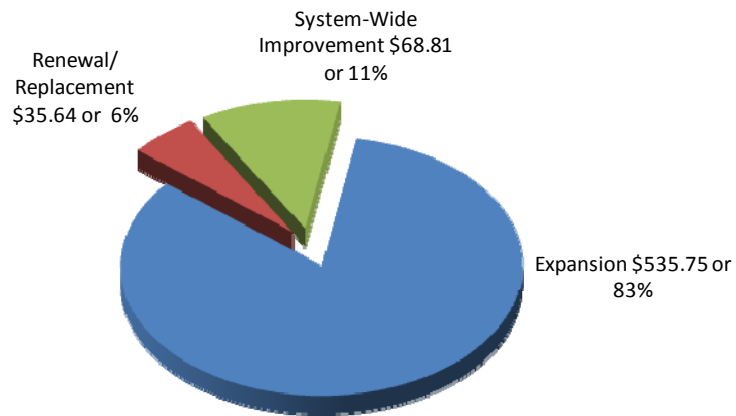
SECTION II – WATER SYSTEM

OVERVIEW OF THE WATER SYSTEM CIP

The Water System CIP is categorized into these three strategies: Renewal/Replacement, System-Wide Improvements, and Expansion. R/R and SWI (Fund 72) is funded by water rates paid by existing customers via an annual transfer from Fund 52 – Water Enterprise (water rate revenue initially accrues to this fund). Expansion (Fund 73) is funded by connection fees paid by new development.

The following charts and tables present the planned annual appropriations for the Ten-Year CIP by Strategy. As illustrated below, a large percentage of the CIP is dedicated to projects needed to meet the demands of future growth.

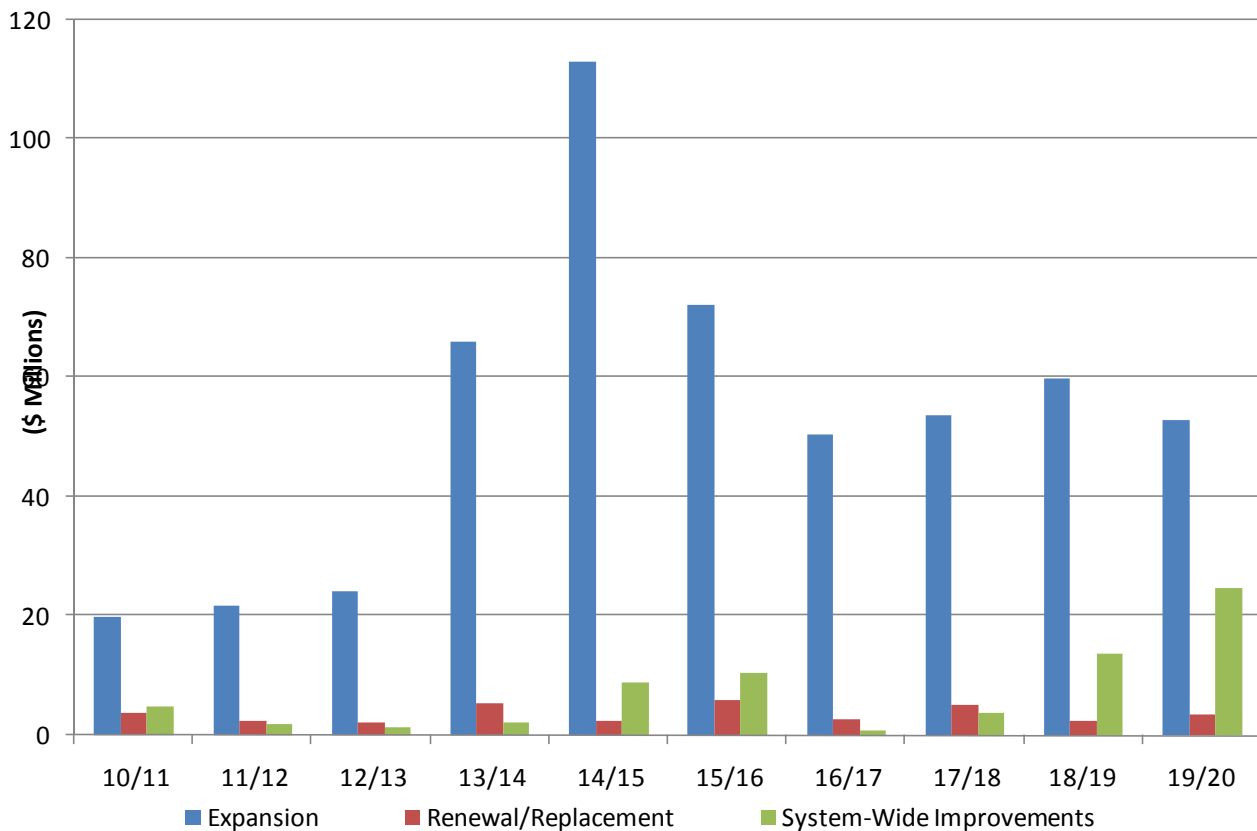
Water System
FY 2010/11 Ten-Year Total
Strategy Breakdown



Strategy	Ten-Year Total (\$ Millions)	Percentage
Expansion	534.07	83%
Renewal/Replacement	35.64	6%
System-Wide Improvements	72.36	11%
Total	642.07	100.0%

SECTION II – WATER SYSTEM

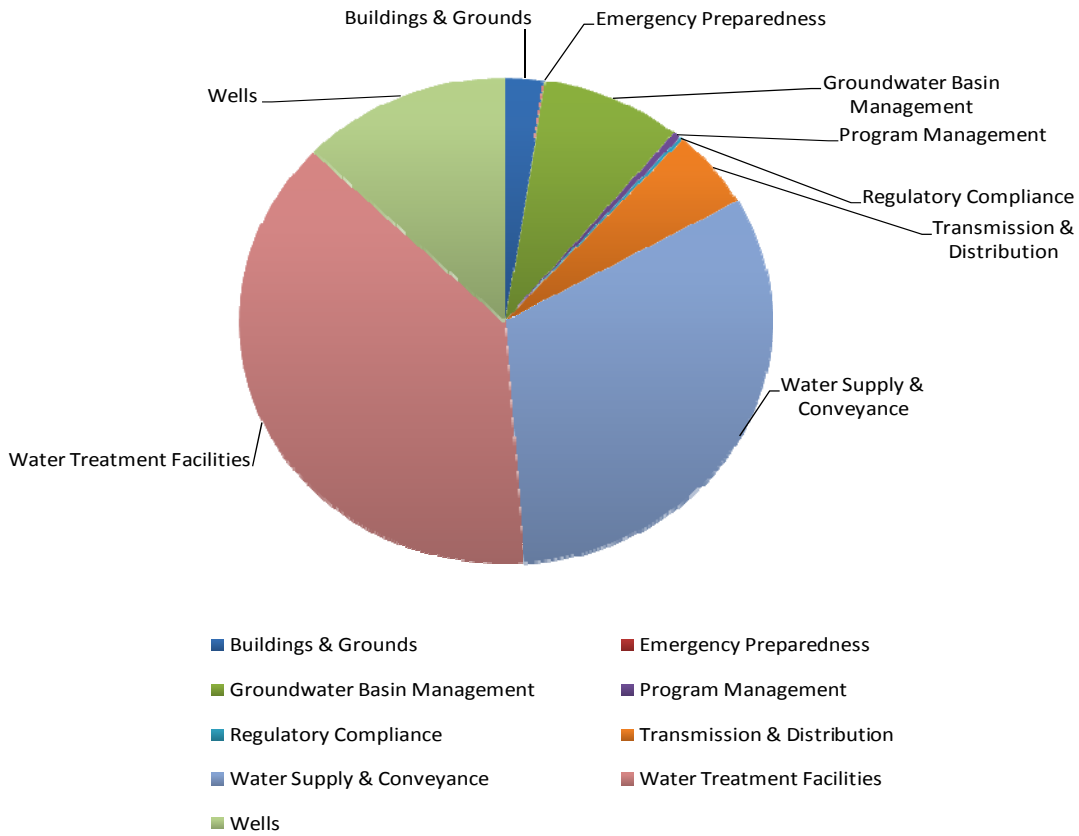
Water System
 FY 2010/11 Ten-Year Capital Improvement Program
 Planned Appropriations by Strategy and Fiscal Year
 (\$ Millions)



Strategy (FY)	10/11	11/12	12/13	13/14	14/15	15/16	16/17	17/18	18/19	19/20	Total
Expansion	19.88	21.72	24.26	66.07	113.02	72.23	50.44	53.64	59.83	52.99	534.07
Renewal/Replacement	3.75	2.31	2.09	5.41	2.43	5.94	2.65	5.19	2.48	3.40	35.64
System-Wide Improvements	4.71	2.01	1.33	2.12	8.80	10.60	0.73	3.71	13.77	24.58	72.36
Total	28.33	26.03	27.67	73.61	124.25	88.77	53.82	62.54	76.08	80.97	642.07

SECTION II – WATER SYSTEM

Water System FY 2010/11 CIP Ten-Year Total Program Breakdown



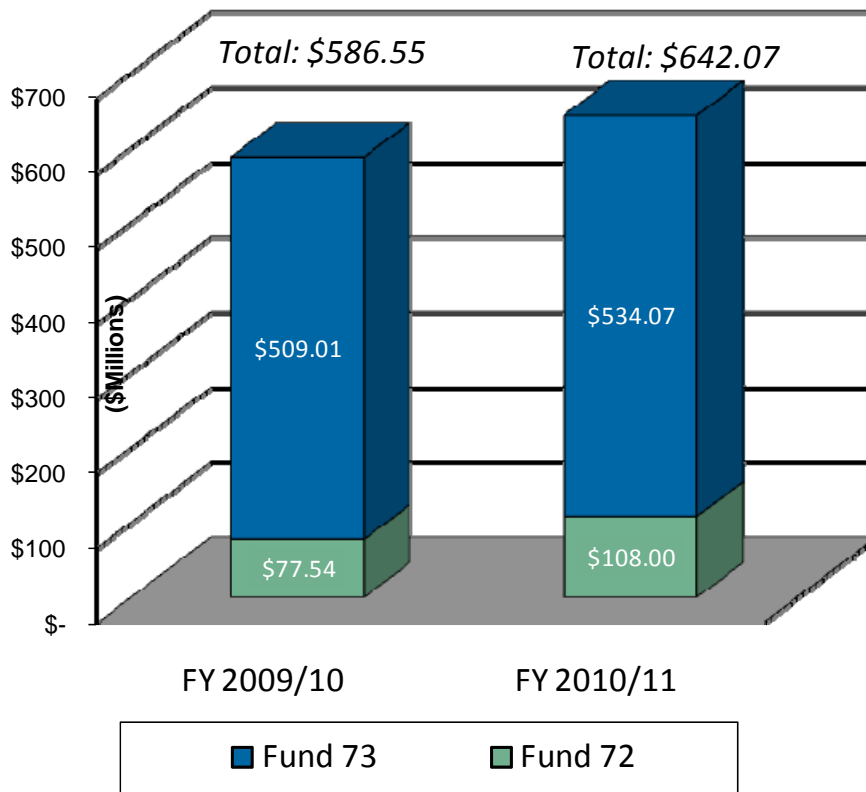
Program	Ten-Year Total (\$Millions)	Percentage
Buildings & Grounds	15.43	2%
Emergency Preparedness	0.32	0.0%
Groundwater Basin Management	54.46	8.5%
Program Management	2.97	0%
Regulatory Compliance	1.35	0.2%
Transmission & Distribution	33.41	5%
Water Supply & Conveyance	206.22	32%
Water Treatment Facilities	246.36	38%
Wells	81.57	13%
Total	642.07	100%

SECTION II – WATER SYSTEM

OVERVIEW OF THE WATER SYSTEM CIP – CHANGES

The planned FY 2010/11 Ten-Year CIP appropriations total \$642 million, which is approximately \$55 million or about 9.5% more than the FY 09/10 10-Year CIP total of \$587 million, due to the addition of new projects and increased project cost estimates. These changes are further detailed in the following pages.

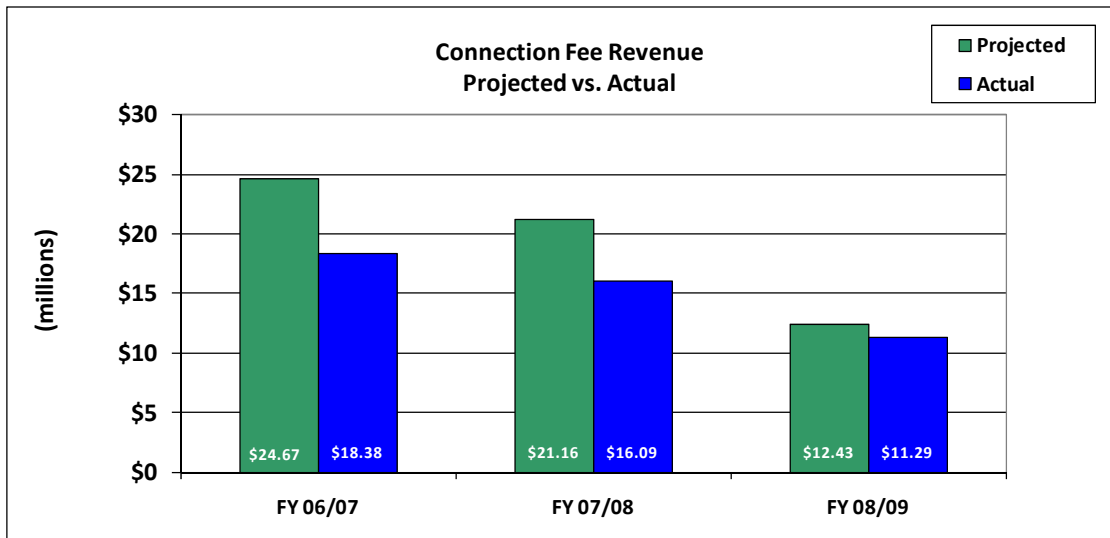
**Comparison of
FY 09/10 Ten-Year CIP vs. FY 10/11 Ten-Year CIP**



SECTION II – WATER SYSTEM

OVERVIEW OF THE WATER SYSTEM - CHANGES

The most significant change that has impacted the Water System CIP is the decrease in projected near-term revenues due to the slow-down in residential and commercial development that has occurred over the few years. This trend is consistent with the overall slow-down in the national economy. Pursuant to the Zone 7 policy that “new development pays for itself”, the Expansion program is funded from water connection fees paid by developers when connecting new homes or businesses to our Retailers’ water systems. Over the past three fiscal years (FY 06/07, FY 07/08 and FY 08/09), connection fee revenue has fallen substantially short of what was initially anticipated, and also even from revised projections, as demonstrated by the chart below.



Recognizing the potential of an extended slow-down in commercial and housing development, near-term connection fee revenue has been conservatively projected (see Funding Analysis in Section II for more details). This significant drop in planned revenue has a direct impact on Zone 7’s ability to fund major near-term Expansion capital projects, such as the AWTP, APL - County Reach and Chain of Lake Wells, Phase 2. Staff is recommending deferral of these projects until sufficient funding is available. Note that the most recent in-house evaluation has shown that MDD has not increased as fast as in previous estimates and therefore this deferral will not impact our ability to meet our Retailers’ demands.

SECTION II – WATER SYSTEM

OVERVIEW OF THE WATER SYSTEM - MAJOR CHANGES (Fund 72)

New Projects – Fund 72

DVWTP Roof Panel Replacement, Roof System Repair, and Valve Replacements for 3.0 MG Clearwell - \$275,000 in FY 11/12.

- This project involves the replacement of a select number of metal roof panels, to repair/strengthen wooden roof system, and to replace the clearwell inlet and outlet valves, and drain valve for the 3.0 MG concrete clearwell.

Enhanced Conservation Program - \$400K annually through FY 19/20

- This program may include financial & technical support for our Retailers' conservation efforts; support & incentives to improve indoor and outdoor water use efficiency; promote & support implementation of new initiatives, alternative measures and new technologies in water conservation, public information & school education programs promoting water conservation and water use efficiency planning.



Zone 7's mascot "Drippy" at a local cinema encourages Valley residents to conserve water.

SECTION II – WATER SYSTEM

Changes to Project Costs/Schedule or Scope – Fund 72

PPWTP Rehabilitation of Clarifier and Replacement of Motor –\$930K in FY 09/10 and \$220K in FY 10/11, in-service March 2011.

- Previously scheduled for completion in FY 14/15, however, per, the 2006 Asset Management Program (AMP) Condition Assessment, this asset was determined to be in poor condition and recommended for timely repair/replacement to avoid failure.

High Efficiency Toilet Rebate Program – \$115K annually through FY 14/15

- Increased from roughly \$70K annually to \$115K due to increased program interest and enhanced program outreach.

High Efficiency Washing Machine Rebate Program - \$300K in FY 10/11 decreasing to \$170K by FY 14/15

- Near-term budget increase from \$85K to \$300K in FY 10/11 due to unprecedented program interest and outreach. These budgetary increases to the rebate programs promote conservation and are consistent with Zone 7's request for voluntary water conservation, with a goal of 10% minimum.

DVWTP and PPWTP Taste and Odor Treatment – A total of \$50.25M in FYs 17/18- 20/21

- Zone 7 hired Water Quality Treatment Solutions to evaluate alternatives for long-term taste and odor treatment improvements to reduce earthy-musty tastes and odors from surface water supplies. Over a period of six months (May 2008 – October 2008) Zone 7 pilot tested ozone and “Peroxone” (ozone and hydrogen peroxide) to determine the optimum treatment process. The study concluded that the total capital cost to implement ozone would be approximately \$33M (in 2009 dollars), while the annual O&M costs would be \$2.3M (in 2009 dollars). A placeholder of \$50M (\$33M adjusted for 4% annual inflation) has been incorporated in the CIP and scheduled when projected cash flow permits. A technical memo detailing this cost estimate is attached as Exhibit B.

OVERVIEW OF THE WATER SYSTEM - MAJOR CHANGES (Fund 73)

New Projects – Fund 73

Cope Lake Facilities and Improvements - estimated at \$3.2M in FY 10/11 and FY 13/14

This project provides for the development, design, and implementation of various improvements at Cope Lake, which are to be accomplished in a “phased-in” approach. Near-term, it provides for the laying back of over-steepened slopes, drainage improvements, and minor road grading, particularly along the eastern side of the lake to prevent total loss of the eastern bench. Phase 2 includes additional slope stabilization and wave-erosion measures, and maintenance road improvements necessary to maintain the integrity of the lake’s shoreline during future water management operations.

SECTION II – WATER SYSTEM

Fund 73 Projects Recommended For Deferral

AWTP Phase 1 – estimated at \$130M. Completion date deferred from June 2014 to June 2016.

- Due to the slowdown in growth/demands and connection fee revenue, it is recommended that the construction of the AWTP be deferred by an additional two years, with a new on-line date of summer 2016. In the FY 09-10 10-Year CIP document, this project was recommend for deferral by three years, from summer 2011 to summer 2014.

AWTP Phase 2 – estimated at \$62M. Completion date deferred from June 2019 to June 2020.

- Consistent with the deferral of AWTP Phase 1, this phase is also recommended for deferral of two additional years.

APL - County Reach – estimated at \$30M. Completion date deferred from June 2013 to June 2014, a one year deferral.

- The APL is divided into two phases/reaches. The first phase, APL - Livermore Reach, is approximately five miles in length and 42-inches in diameter. Construction began in July 2008, with Substantial Completion in August 2009. This second phase, APL - County Reach, is recommended for deferral due to funding constraints. The FY 09/10 Ten-Year CIP recommended a four-year deferral, with an on-line date of summer 2013. Due to projected funding constraints, an additional one-year deferral is recommended.

Second Groundwater Demineralization Facility (100% from Fund 73) – estimated at \$51M.

- Completion date deferred from June 2018 to June 2020 due to projected funding constraints. The Third Groundwater Demineralization Facility is recommended for similar and proportionate deferral.

Well Master Plan Wells, Phases 2 and 3

- Also due to funding constraints in Fund 73 and other planning and property acquisition delays, it is recommended to defer future phases of Well Master Plan Wells. While the new Chain of Lakes Wells 1 and 2 will be completed in 2009, the expected second phase (Chain of Lakes Wells 3, 4 and 5) will be online in 2016, rather than 2012, as previously planned. Future phases project two wells in the Bernal area in 2019, one in Busch Valley in 2020 and one more in a location to be determined in 2021.

North Canyons Building Lease, South Bay Aqueduct (SBA) Improvement and Enlargement Project and Fourth Contractor's Share sinking fund contributions

- Due to projected funding constraints in Fund 73, it is recommended to temporarily stop contributions to these three sinking funds, starting in FY 09/10 and ending in FY 13/14. Interest contributions will continue and contributions will start back up in FY 14/15. Note that the annual contributions that start in FY 14/15 have increased to include the five years of missed contributions, but the totals do not exceed originally calculated sinking fund balance targets.

SECTION II – WATER SYSTEM

Changes to Project Costs/Schedule or Scope – Fund 73

SBA Improvement and Enlargement Project

- Zone 7 has been notified by DWR that the overall project costs have increased by 10% (from approximately \$230M to ~\$250M). Staff will be requesting a detailed breakdown and explanation from DWR for reasons for the projected increase in project costs. The annual cost have been updated to reflect this cost increase and is a \$20M increase during this ten-year period (ten-year cost was \$85M in the FY 09/10 CIP).

Fourth Contractor's Share of the SBA

- Updated ongoing costs to reflect the current cost of this additional 22,000 AFA of unallocated capacity in the South Bay Aqueduct purchased by Zone 7 under Amendments 19 and 20 to our water supply contract with DWR. Previous CIP costs estimates were \$726K annually, but have increased to approximately \$3M annually to reflect increased transportation capital costs.

Bay-Delta Habitat Conservation Program

- Ongoing annual costs for Fund 73's contribution towards the Bay-Delta Habitat Conservation Program have been added to this CIP, totaling \$1.9M (Fund 73 shares 25% and Fund 52 shares 75%).



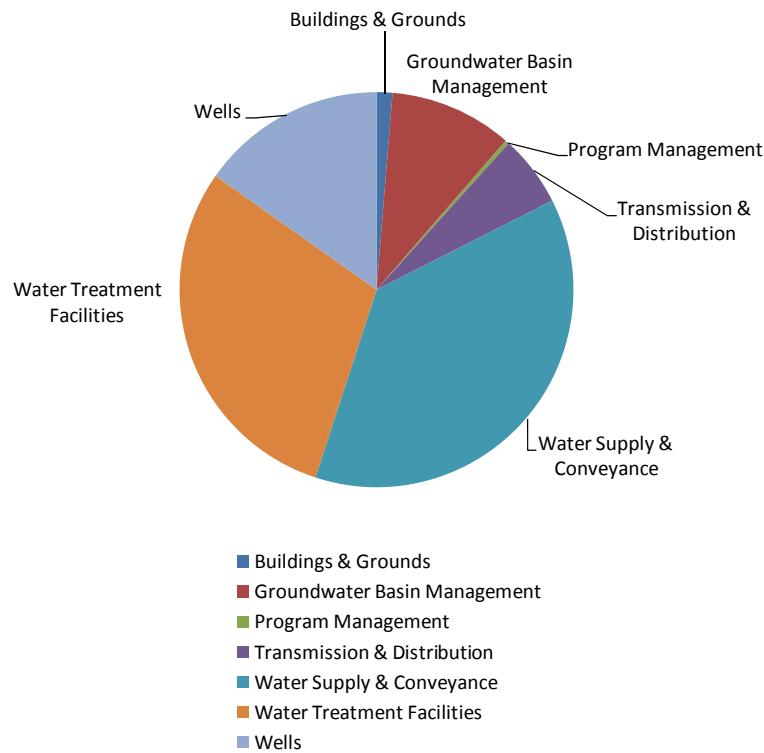
Roughly 80% of Zone 7's water supply is conveyed through the Sacramento-San Joaquin Delta.

SECTION II – WATER SYSTEM

Expansion Strategy – Fund 73

The specific projects that comprise the Expansion Strategy are described in the following pages with respect to their associated programs. The first year appropriation requirement is \$20 million while the ten-year total for this strategy is \$534 million, which is 83% of the \$642 million total estimated expenditures planned in this ten-year CIP.

**Water System
Expansion Strategy
Ten-Year Total by Program**



Program	Ten-Year Total (\$ Millions)	Percentage
Buildings & Grounds	6.92	1%
Groundwater Basin Manager	53.75	10%
Program Management	1.78	0.3%
Transmission & Distribution	31.21	6%
Water Supply & Conveyance	200.10	37%
Water Treatment Facilities	159.11	30%
Wells	81.21	15%
Total	534.07	100%

SECTION II – WATER SYSTEM

Expansion Strategy Breakdown

Programs	Appropriations (\$Millions)										
	FY 10/11	FY 11/12	FY 12/13	FY 13/14	FY 14/15	FY 15/16	FY 16/17	FY 17/18	FY 18/19	FY 19/20	Total
Buildings & Grounds											
Administrative & Engineering Building Lease (Water System)	\$0.391	\$0.399	\$0.407	\$0.415	\$0.423	\$0.432	\$0.440	\$0.449	\$0.458		\$3.814
Administrative & Engineering Building - Sinking Fund (Fund 73)	\$0.033	\$0.034	\$0.035	\$0.036	\$0.564	\$0.578	\$0.593	\$0.608	\$0.623		\$3.104
Subtotal	\$0.424	\$0.433	\$0.442	\$0.451	\$0.987	\$1.010	\$1.033	\$1.057	\$1.081		\$6.918
Groundwater Basin Management											
Second Groundwater Demineralization Facility							\$4.800	\$21.350	\$22.200	\$5.400	\$53.750
Subtotal	\$0.000						\$4.800	\$21.350	\$22.200	\$5.400	\$53.750
Program Management											
Capital Improvement Program Management	\$0.178	\$0.178	\$0.178	\$0.178	\$0.178	\$0.178	\$0.178	\$0.178	\$0.178	\$0.178	\$1.781
Expansion Program Management								\$0.000	\$0.000	\$0.000	\$0.000
Subtotal	\$0.178	\$0.178	\$0.178	\$0.178	\$0.178	\$0.178	\$0.178	\$0.178	\$0.178	\$0.178	\$1.781
Transmission & Distribution											
Altamont Pipeline - County Reach	\$0.000			\$2.900	\$28.000						\$30.900
Transmission System Master Planning	\$0.025	\$0.025	\$0.025	\$0.031	\$0.031	\$0.031	\$0.031	\$0.031	\$0.038	\$0.038	\$0.306
Subtotal	\$0.025	\$0.025	\$0.025	\$2.931	\$28.031	\$0.031	\$0.031	\$0.031	\$0.038	\$0.038	\$31.206
Water Supply & Conveyance											
Arroyo Mocho Low Flow Crossings	\$0.030	\$0.110	\$0.530								\$0.670
Arroyo Mocho/Lake H Diversion Structure		\$0.030	\$0.260	\$0.440							\$0.730
Bay-Delta Habitat Conservation Program	\$0.150	\$0.156	\$0.164	\$0.172	\$0.180	\$0.189	\$0.199	\$0.209	\$0.219	\$0.230	\$1.868
Cawelo Groundwater Banking Program	\$1.293	\$1.296	\$1.293	\$1.294	\$1.295	\$1.295	\$1.294	\$1.297	\$1.299	\$1.300	\$12.956
Chain of Lakes Facilities and Improvements	\$0.150	\$0.360	\$0.890	\$1.230	\$1.330	\$0.350	\$0.590	\$1.030	\$1.380		\$7.310
Chain of Lakes Master Plan			\$2.903	\$0.490							\$3.393
Cope Lake Facilities and Improvements	\$0.600			\$2.590							\$3.190
CUWA Membership	\$0.060	\$0.060	\$0.060	\$0.060	\$0.060	\$0.060	\$0.060	\$0.060	\$0.060	\$0.060	\$0.600
Fixed Cost of Water Entitlement	\$0.099	\$0.054	\$0.025	\$0.015							\$0.193
Fourth Contractor's Share of the SBA	\$3.100	\$3.000	\$3.000	\$3.000	\$3.000	\$3.000	\$3.000	\$3.000	\$3.000	\$3.000	\$30.100
Fourth Contractor's Share of the SBA - Sinking Fund	\$0.016	\$0.021	\$0.027	\$0.028	\$0.423	\$0.433	\$0.444	\$0.455	\$0.466	\$0.478	\$2.791
High Efficiency Toilet Rebate Program	\$0.028	\$0.029	\$0.029	\$0.029	\$0.029						\$0.143
High-Efficiency Washing Machine Rebate Program	\$0.075	\$0.050	\$0.043	\$0.043	\$0.043						\$0.253
Semitropic Stored Water Recovery Unit	\$0.048	\$0.048	\$0.048	\$0.048	\$0.048	\$0.048	\$0.048	\$0.048	\$0.048	\$0.048	\$0.480
South Bay Aqueduct Improvement & Enlargement Project	\$12.463	\$12.384	\$10.364	\$10.054	\$10.052	\$10.051	\$10.052	\$10.052	\$10.050	\$10.048	\$105.570
South Bay Aqueduct Improvement & Enlargement Project - Sinking Fund	\$0.096	\$0.130	\$0.166	\$0.170	\$2.660	\$2.726	\$2.794	\$2.864	\$2.936	\$3.009	\$17.551
SWP Peaking Payment (Lost Hills & Belridge Water Districts)	\$0.260	\$0.257	\$0.257	\$0.255	\$0.256	\$0.255	\$0.252	\$0.240	\$0.242	\$0.236	\$2.510
Water Conservation Best Management Practices	\$0.025	\$0.025	\$0.025	\$0.025	\$0.025	\$0.038	\$0.038	\$0.038	\$0.038	\$0.038	\$0.313
Water Supply Purchase for Reliability	\$0.000			\$11.000							\$11.000
Subtotal	\$18.493	\$18.010	\$20.083	\$30.942	\$19.400	\$18.445	\$18.771	\$19.293	\$19.738	\$18.447	\$201.620

SECTION II – WATER SYSTEM

Expansion Strategy Breakdown (Continued)

Programs	Appropriations (\$Millions)										Total
	FY 10/11	FY 11/12	FY 12/13	FY 13/14	FY 14/15	FY 15/16	FY 16/17	FY 17/18	FY 18/19	FY 19/20	
Water Treatment Facilities											
Altamont Water Treatment Plant Operational Training					\$0.230	\$0.240					\$0.470
Altamont Water Treatment Plant Phase 1 (24 MGD)			\$0.900	\$13.900	\$62.350	\$46.650	\$2.500				\$126.300
Altamont Water Treatment Plant Phase 2 (12-18 MGD)									\$4.450	\$27.700	\$32.150
Water Quality Management Program	\$0.023	\$0.013	\$0.023	\$0.013	\$0.025	\$0.014	\$0.025	\$0.014	\$0.030	\$0.015	\$0.193
Subtotal	\$0.023	\$0.013	\$0.923	\$13.913	\$62.605	\$46.904	\$2.525	\$0.014	\$4.480	\$27.715	\$159.113
Wells											
Well Master Plan Wells	\$0.930	\$3.250	\$2.800	\$17.850	\$1.950	\$5.790	\$23.230	\$11.840	\$12.240	\$1.330	\$81.210
Subtotal	\$0.930	\$3.250	\$2.800	\$17.850	\$1.950	\$5.790	\$23.230	\$11.840	\$12.240	\$1.330	\$81.210
Total	\$19.878	\$21.716	\$24.257	\$66.074	\$113.020	\$72.225	\$50.438	\$53.642	\$59.833	\$52.989	\$534.073
In 2009 Dollars	\$19.305	\$20.272	\$21.743	\$56.661	\$93.008	\$57.202	\$38.435	\$39.301	\$42.131	\$35.896	\$423.954

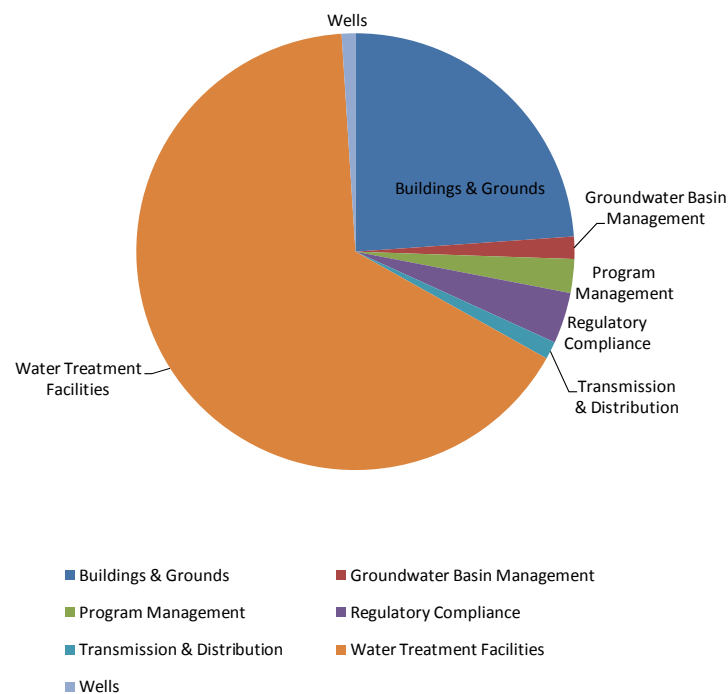
SECTION II – WATER SYSTEM

Renewal/ Replacement Strategy

This Strategy identifies the projects needed for the Renewal and Replacement of the existing capital assets of Zone 7's Water System.

The specific projects that comprise the Renewal/Replacement Strategy are listed below with respect to their associated programs. The first year appropriation requirement for this strategy is \$3.75 million and the ten-year total is \$36 million. A breakdown by program for the ten-year total is shown on the following pages.

**Water System
Renewal/Replacement Strategy
Ten-Year Total**



Program	Ten-Year Total (\$ Millions)	Percentage
Buildings & Grounds	8.51	24%
Groundwater Basin Management	0.59	2%
Program Management	0.89	2%
Regulatory Compliance	1.35	4%
Transmission & Distribution	0.47	1%
Water Treatment Facilities	23.47	66%
Wells	0.36	1%
Total	35.64	100%

SECTION II – WATER SYSTEM

	Renewal/Replacement Strategy Breakdown										
	FY 10/11	FY 11/12	FY 12/13	FY 13/14	FY 14/15	FY 15/16	FY 16/17	FY 17/18	FY 18/19	FY 19/20	Total
Buildings & Grounds											
Administrative & Engineering Building Lease (Water System)	\$0.497	\$0.508	\$0.517	\$0.528	\$0.539	\$0.549	\$0.561	\$0.571	\$0.584		\$4.854
Administrative & Engineering Building Sinking Fund (Fund 72)	\$0.367	\$0.377	\$0.386	\$0.395	\$0.406	\$0.416	\$0.427	\$0.437	\$0.448		\$3.659
Subtotal	\$0.864	\$0.885	\$0.903	\$0.923	\$0.945	\$0.965	\$0.988	\$1.008	\$1.032		\$8.513
Groundwater Basin Management											
Monitoring Well Replacements & Abandonments	\$0.000	\$0.090		\$0.110		\$0.120		\$0.130		\$0.140	\$0.590
Subtotal	\$0.000	\$0.090		\$0.110		\$0.120		\$0.130		\$0.140	\$0.590
Program Management											
Capital Improvement Program Management	\$0.059	\$0.059	\$0.059	\$0.059	\$0.059	\$0.059	\$0.059	\$0.059	\$0.059	\$0.059	\$0.594
System-Wide Improvement, Renewal/Replacement Program Management	\$0.025	\$0.025	\$0.025	\$0.030	\$0.030	\$0.030	\$0.030	\$0.030	\$0.035	\$0.035	\$0.295
Subtotal	\$0.084	\$0.084	\$0.084	\$0.089	\$0.089	\$0.089	\$0.089	\$0.089	\$0.094	\$0.094	\$0.889
Regulatory Compliance											
Laboratory Equipment Replacement	\$0.110	\$0.120	\$0.120	\$0.130	\$0.130	\$0.140	\$0.140	\$0.150	\$0.150	\$0.160	\$1.350
Subtotal	\$0.110	\$0.120	\$0.120	\$0.130	\$0.130	\$0.140	\$0.140	\$0.150	\$0.150	\$0.160	\$1.350
Transmission & Distribution											
Transmission System Master Plan	\$0.038	\$0.038	\$0.038	\$0.048	\$0.048	\$0.048	\$0.048	\$0.048	\$0.057	\$0.057	\$0.466
Subtotal	\$0.038	\$0.038	\$0.038	\$0.048	\$0.048	\$0.048	\$0.048	\$0.048	\$0.057	\$0.057	\$0.466
Water Treatment Facilities											
Dougherty Reservoir Access Road Rehabilitation	\$0.260										\$0.260
DVWTP Aqueous Ammonia System						\$3.230					\$3.230
DVWTP Filter Underdrain Replacement							\$0.310	\$1.590			\$1.900
DVWTP Instrumentation Upgrades					\$0.040	\$0.390					\$0.430
DVWTP Interior Coating Improvements to the 4.5 MG Steel Clearwell	\$1.250										\$1.250
DVWTP Roof Panel Replacement and Roof System Repair for 3 MG Clearwell		\$0.160									\$0.160
Minor Renewal/Replacement Projects	\$0.250	\$0.250	\$0.250	\$0.250	\$0.275	\$0.275	\$0.275	\$0.275	\$0.275	\$0.300	\$2.675
PPWTP Ammonia Facility Replacement				\$2.280							\$2.280
PPWTP Instrumentation Upgrades					\$0.130	\$0.375				\$1.760	\$2.265
PPWTP Rehabilitation of Clarifier and Replacement of Motor	\$0.220										\$0.220
PPWTP Ultrafiltration Membrane Replacement	\$0.390	\$0.400	\$0.410	\$0.400	\$0.460	\$0.000	\$0.490	\$0.510	\$0.530	\$0.550	\$4.140
SCADA Enhancements	\$0.250	\$0.250	\$0.250	\$1.150	\$0.270	\$0.270	\$0.270	\$1.350	\$0.300	\$0.300	\$4.660
Subtotal	\$2.620	\$1.060	\$0.910	\$4.080	\$1.175	\$4.540	\$1.345	\$3.725	\$1.105	\$2.910	\$23.470
Wells											
Well Pump, Motor and Casing Inspections	\$0.030	\$0.030	\$0.030	\$0.030	\$0.040	\$0.040	\$0.040	\$0.040	\$0.040	\$0.040	\$0.360
Subtotal	\$0.030	\$0.030	\$0.030	\$0.030	\$0.040	\$0.040	\$0.040	\$0.040	\$0.040	\$0.040	\$0.360
Total	\$3.747	\$2.307	\$2.086	\$5.410	\$2.427	\$5.942	\$2.649	\$5.190	\$2.478	\$3.401	\$35.637
In 2009 Dollars	\$3.603	\$2.133	\$1.854	\$4.624	\$1.995	\$4.696	\$2.013	\$3.792	\$1.741	\$2.298	\$28.750

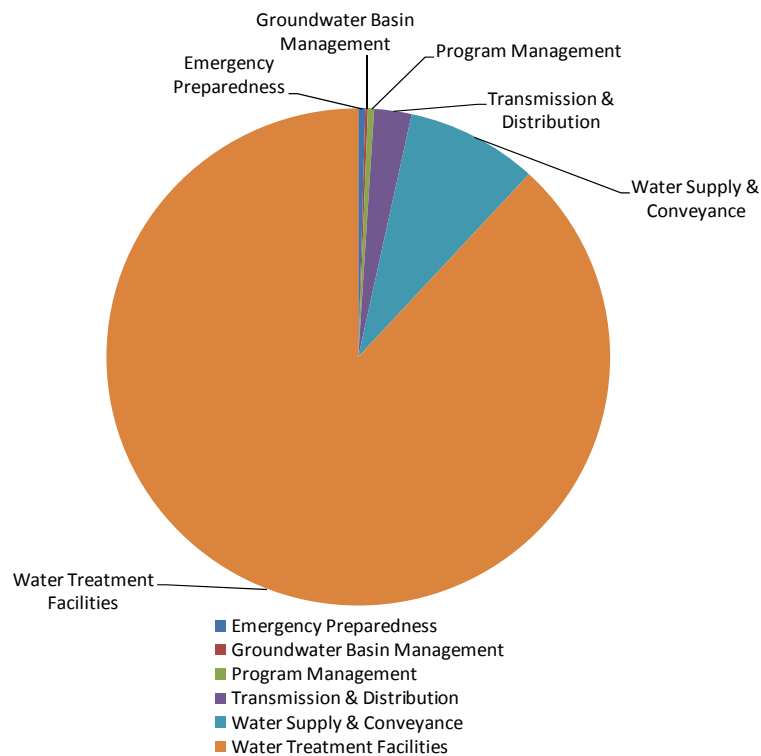
SECTION II – WATER SYSTEM

System-Wide Improvements Strategy

This Strategy addresses enhancements to existing facilities that will improve water quality, safety, reliability, efficiency, operational flexibility, and/or decrease costs.

The specific projects that comprise the System-Wide Improvements Strategy are listed below with respect to their associated programs. The first year appropriation requirement is \$4.7 million and the ten-year total for this strategy is \$72 million. A breakdown of the related programs for the ten-year total is shown on the following pages.

Water System System-Wide Improvements Strategy Ten-Year Total



Program	Ten-Year Total (\$ Millions)	Percentage
Emergency Preparedness	0.32	0.4%
Groundwater Basin Management	0.12	0%
Program Management	0.30	0%
Transmission & Distribution	1.73	2%
Water Supply & Conveyance	6.12	8%
Water Treatment Facilities	63.77	88%
Total	72.36	100%

SECTION II – WATER SYSTEM

System-Wide Improvements Strategy Breakdown

Programs	Appropriations (\$Millions)										Total	
	FY 10/11	FY 11/12	FY 12/13	FY 13/14	FY 14/15	FY 15/16	FY 16/17	FY 17/18	FY 18/19	FY 19/20		
Emergency Preparedness												
Local Hazard Mitigation Plan Update	\$0.210											\$0.210
Vulnerability Assessment Review & Update	\$0.110											\$0.110
Subtotal	\$0.320											\$0.320
Groundwater Basin Management												
New Groundwater Management Program Monitoring Wells	\$0.120											\$0.120
Subtotal	\$0.120											\$0.120
Program Management												
System-Wide Improvement, Renewal/Replacement Program Management	\$0.025	\$0.025	\$0.025	\$0.030	\$0.030	\$0.030	\$0.030	\$0.030	\$0.035	\$0.035		\$0.295
Subtotal	\$0.025	\$0.025	\$0.025	\$0.030	\$0.030	\$0.030	\$0.030	\$0.030	\$0.035	\$0.035		\$0.295
Transmission & Distribution												
Corrosion Master Plan Update				\$0.250						\$0.310		\$0.560
System-Wide Installation of Line Valves	\$0.060	\$0.060	\$0.060	\$0.060	\$0.070	\$0.070	\$0.070	\$0.070	\$0.100	\$0.100		\$0.720
Transmission System Master Plan	\$0.037	\$0.037	\$0.037	\$0.046	\$0.046	\$0.046	\$0.046	\$0.046	\$0.056	\$0.056		\$0.453
Subtotal	\$0.097	\$0.097	\$0.097	\$0.356	\$0.116	\$0.116	\$0.116	\$0.116	\$0.466	\$0.156		\$1.733
Water Supply & Conveyance												
Enhanced Conservation Program	\$0.400	\$0.400	\$0.400	\$0.400	\$0.400	\$0.400	\$0.400	\$0.400	\$0.400	\$0.400		\$4.000
High Efficiency Toilet Rebate Program	\$0.083	\$0.086	\$0.086	\$0.086	\$0.086							\$0.428
High-Efficiency Washing Machine Rebate Program	\$0.225	\$0.150	\$0.128	\$0.128	\$0.128							\$0.758
Water Conservation Best Management Practices	\$0.075	\$0.075	\$0.075	\$0.075	\$0.075	\$0.113	\$0.113	\$0.113	\$0.113	\$0.113		\$0.938
Subtotal	\$0.783	\$0.711	\$0.689	\$0.689	\$0.689	\$0.513	\$0.513	\$0.513	\$0.513	\$0.513		\$6.123
Water Treatment Facilities												
DVWTP Chemical Systems Improvements	\$2.060											\$2.060
DVWTP Sludge Handling Improvements				\$1.010	\$6.840							\$7.850
PPWTP Filter Improvements Study		\$0.080										\$0.080
PPWTP Filter to Waste Improvements	\$0.125											\$0.125
PPWTP Improvement Project 2011	\$0.770											\$0.770
PPWTP Improvement Project 2012	\$0.270	\$1.060										\$1.330
PPWTP Improvement Studies 2011	\$0.070											\$0.070
PPWTP Sludge Handling Improvements					\$1.050	\$9.900						\$10.950
Safety Improvements at Water Treatment Plants			\$0.450									\$0.450
Water Quality - PPWTP & DVWTP Taste and Odor Treatment								\$3.010	\$12.670	\$23.830		\$39.510
Water Quality Management Program	\$0.068	\$0.038	\$0.068	\$0.038	\$0.075	\$0.041	\$0.075	\$0.041	\$0.090	\$0.045		\$0.578
Subtotal	\$3.363	\$1.178	\$0.518	\$1.048	\$7.965	\$9.941	\$0.075	\$3.051	\$12.760	\$23.875		\$63.773
Total	\$4.707	\$2.011	\$1.328	\$2.123	\$8.800	\$10.600	\$0.734	\$3.710	\$13.773	\$24.578		\$72.363
In 2009 Dollars	\$4.526	\$1.859	\$1.181	\$1.815	\$7.233	\$8.377	\$0.558	\$2.711	\$9.677	\$16.604		\$54.540

SECTION II – WATER SYSTEM

FUNDING ANALYSIS

The Water System is funded by Fund 72 – Renewal/Replacement and System-Wide Improvements and Fund 73 – Expansion. The following sections discuss near-term funding over the next ten years.

Fund 72 – Renewal/Replacement & System-Wide Improvements Analysis

Fund 72 funds projects, or portions thereof, that relate to the replacement and/or improvement of existing water facilities, and which benefit existing customers. Revenues are generated from water rates paid by current Zone 7 Water System customers.

These Strategies identify the projects, funding and schedules needed for the future Renewal/Replacement and System-Wide Improvements of the capital assets of Zone 7's Water System. In order to minimize the burden to water rate payers of widely-varying annual costs, an annual funding allowance was formally established in 1994. In the 2004 Asset Management Program (AMP) Study, it was determined that the then-current \$4 million annual water rate contribution would no longer be adequate to fund the program. The AMP study included an evaluation of Zone 7's inventory of capital assets, asset service life as determined through condition assessments, economic life of the asset, asset risk, criticality, and vulnerability, true replacement costs under current conditions, and the annual allowance necessary to adequately fund Renewal/Replacement projects over the long term. In the 2004 study, Zone 7 obtained a current asset valuation of its existing facilities and recommended an

annual funding allowance of \$10 million to adequately fund the program. In order to meet this \$10 million target, water rates would need to be raised. To lessen the impact of water rate increases, a gradual ramp-up to \$10M by FY 14/15 was proposed. In 2005, our Retailers expressed support for a gradual increase in the annual transfer of funds for the RR/SWI program; in particular, the Retailers supported the transfer of approximately \$4.6 million in each of the fiscal years ending 2006, 2007 and 2008 to fund both R/R and SWI projects.

In FY 09/10, Zone 7 will perform an update to the AMP. This effort will include a condition assessment of above-ground assets, a recommended Ten-year R/R CIP and a funding plan to support it. This study will be a collaborative effort, including the selected consultant, Zone 7 Engineering, Finance and Operations & Maintenance staff, and our Retailers. The condition assessment will occur this winter, with the study findings and funding recommendation to be presented to the Zone 7 Board in spring 2010.



Crews replaced a 5,600-gallon ferric chloride tank with two new 8,000-gallon tanks at Patterson Pass Water Treatment Plant.

SECTION II – WATER SYSTEM

Conclusions

The near-term funding outlook projection (Table 2-1) shows that there will be adequate funding to complete projects scheduled in this Ten-Year CIP. At the end of FY 19/20, the program end balance is approximately \$6 million. The R/R and SWI programs extend indefinitely beyond this ten-year planning period, therefore, the program ending balance shown will be used to fund future infrastructure replacement and improvement needs..

TABLE 2-1
Fund 72 (Water Rates)
PROJECTED FUNDING OUTLOOK
(\$ Millions)

1	Fiscal year (FY)	09/10	10/11	11/12	12/13	13/14	14/15	15/16	16/17	17/18	18/19	19/20
2	Beg. Available Fund Balance	14.57	10.83	8.47	9.80	15.37	19.48	20.93	16.90	26.38	31.18	29.35
3	Revenue											
4	Water Rate	5.31	5.41	5.05	8.10	10.53	11.34	11.13	11.58	12.04	12.52	13.02
5	Facility Use Fees	1.00	1.00	1.00	1.25	1.25	1.30	1.30	1.35	1.35	1.40	1.40
6	Interest Income	0.31	0.43	0.34	0.39	0.61	0.78	0.84	0.68	1.06	1.25	1.47
7	Total Revenue	6.63	6.85	6.39	9.74	12.39	13.42	13.27	13.61	14.45	15.17	15.89
8	Expenditures											
9	R&R Expenditures	4.56	3.38	1.93	1.70	5.01	2.02	5.53	2.22	4.75	2.03	3.40
10	SWI Expenditures	4.70	4.71	2.01	1.33	2.12	8.80	10.60	0.73	3.71	13.77	24.58
11	Contingency[†]	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75
12	Total Expenditures	10.01	8.84	4.69	3.78	7.89	11.57	16.88	3.71	9.21	16.55	28.73
13	Fund Balance	11.19	8.84	10.17	15.76	19.88	21.33	17.32	26.81	31.61	29.79	16.51
14	Reserved Funds											
15	Building Sinking Fund	0.36	0.37	0.38	0.39	0.40	0.41	0.42	0.43	0.44	0.45	0.00
16	75% of Following Years' Contribution	4.06	3.79	6.07	7.90	8.51	8.35	8.68	9.03	9.39	9.77	10.16
17	Net Estimated Available Fund Balance	6.77	4.68	3.72	7.48	10.98	12.58	8.22	17.35	21.78	19.58	6.35

Key Assumptions

Line 2 Beginning fund balance excludes prior year encumbrance carryovers.

Line 4 Projected annual RR/SWI allowance transfer from Fund 52, Water Enterprise to Fund 72.

Line 5 Facility use fees are charged to the Dougherty Valley Service Area to compensate Zone 7 for the use of Zone 7's existing facilities to provide water to this area.

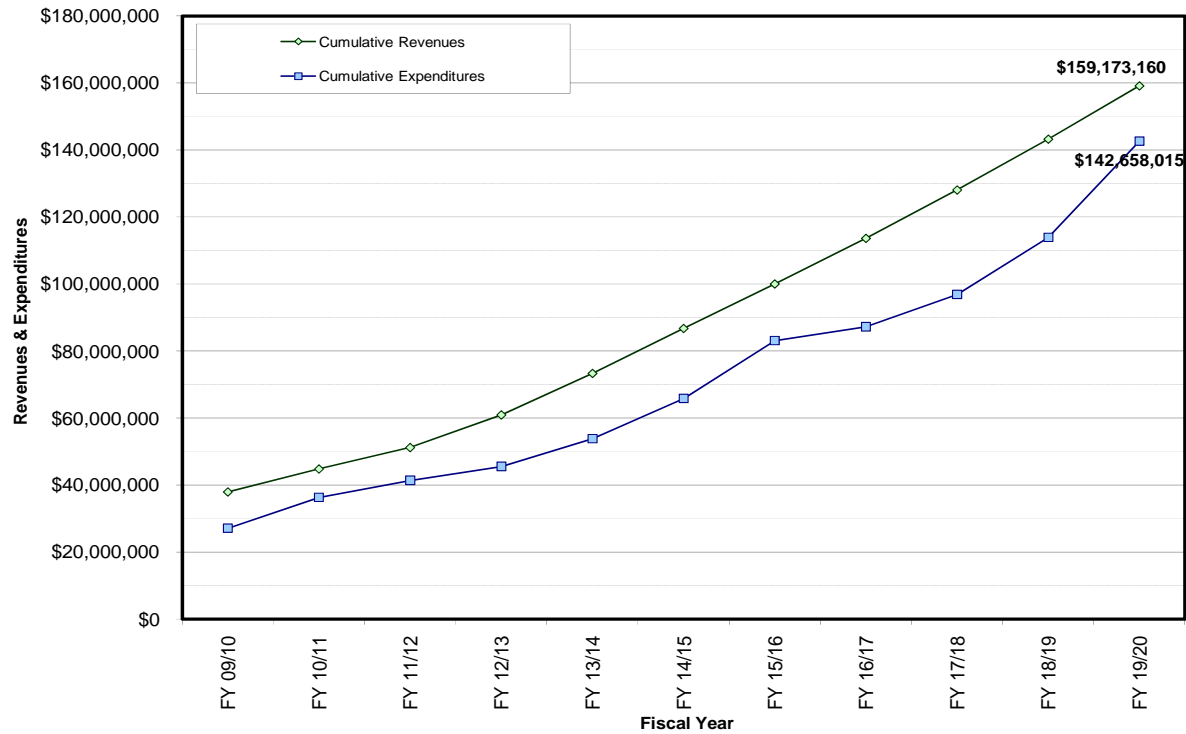
Line 6 Assumes 4% interest income earned on beginning cash and sinking fund balances.

Line 8 Expenditures are shown in actual dollars (current dollars adjusted by a 4% annual inflation factor).

Line 17 100% of the following years' Water Rate Contribution is reserved so sufficient funding is available at the beginning of the following fiscal year.

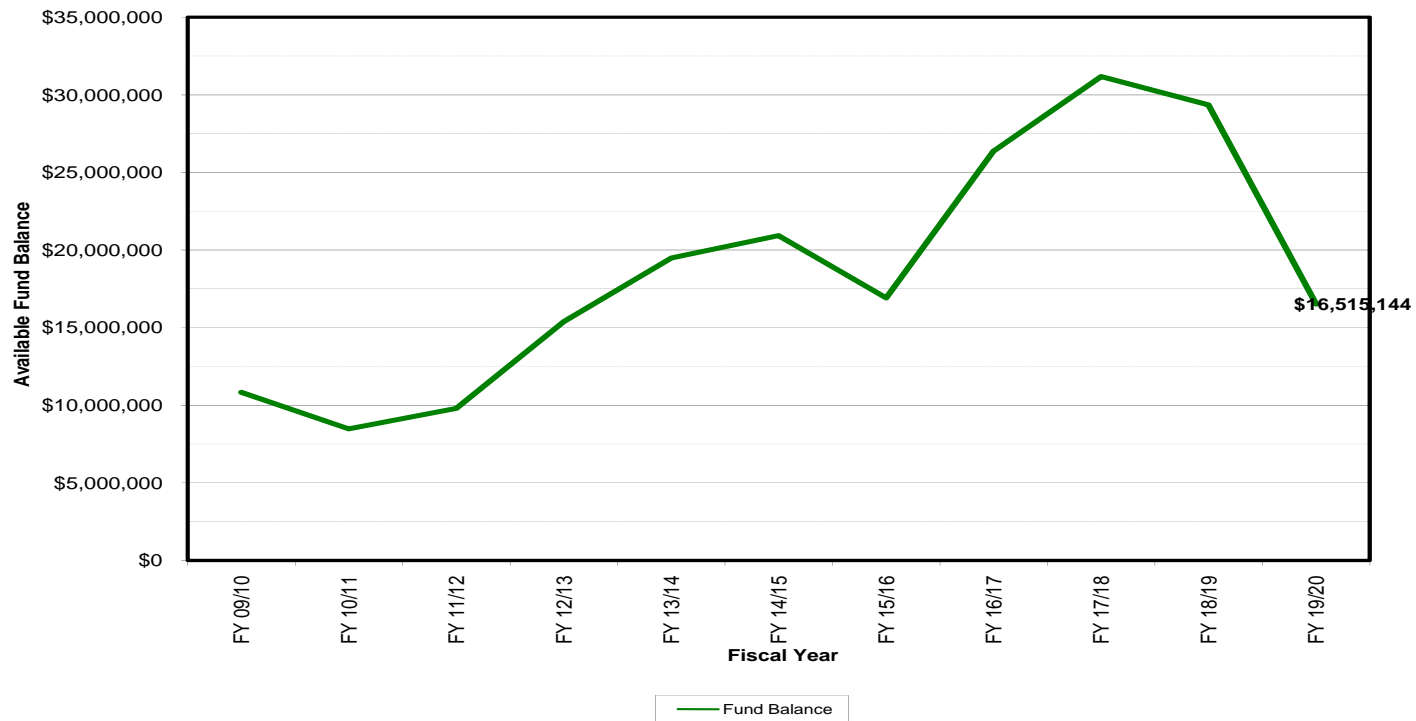
SECTION II – WATER SYSTEM

GRAPH 2-1
 Fund 72 – Funded by Water Rates
 Funding Outlook through FY 2019/20
 Projected Cumulative Revenue vs. Cumulative Expenditures



SECTION II – WATER SYSTEM

GRAPH 2-2
Fund 72 – Funded by Water Rates
Funding Outlook through FY 2019/20
Projected Available Fund Balance



SECTION II – WATER SYSTEM

Fund 73 – Expansion Funding Analysis

Fund 73 funds projects, or portions thereof, that are needed because of additional demands on the Water System from new development. This includes all water purchases, conveyance facilities (e.g., SBA Improvement & Enlargement Project), treatment and transmission facilities.

Background on Current Funding Plan

As has been communicated the last few CIP documents, there would be a funding shortfall in Fund 73 if there were to be no additional sources of revenues and/or no changes in projected expenditures & scheduling. The primary reason for this projected near-term deficit is the cost of the Altamont Water Treatment Plant Phase I and Pipeline Project. Zone 7 hired the firm of Bartle Wells Associates (BWA), independent public finance advisors, to develop funding strategies to meet this projected near-term deficit in Fund 73. BWA, with Zone 7's assistance, developed various potential financing plans capable of eliminating the otherwise-projected funding shortfall. In October 2006, staff recommended to the Zone 7 Board, a financing plan which included a 45% increase in connection fees and \$30 million in short-term financing. The Board subsequently approved the fee increase from \$13,500 to \$19,570 for the Zone 7 service area and from \$13,050 to \$18,120 for Dougherty Valley. At that time it was noted that staff would return to the Board with a full evaluation of the available funding alternatives and a request for authorization to pursue an appropriate course of action.

On April 4, 2007, staff and BWA presented the Zone 7 Finance Committee with a range of potential funding alternatives and communicated the need to secure more funding than previously anticipated. Based on

the then-current project cost estimates and cash flow needs, staff has identified the need to secure additional funding in the amount of \$60 million rather than the previously-estimated amount of \$30 million. This increase was attributed to increased project costs and lower-than-anticipated connection fee revenue. The Zone 7 Finance Committee directed staff to analyze various scenarios, including the "Most Probable", "Worst Case" and "Best Case" and present the findings to the full Board. The Finance Committee found it prudent to analyze each scenario considering continuation of the current development slowdown, which would affect revenue projections, as well as considering the impact of potential increased costs for major projects such as the Altamont Water Treatment Plant Phase 1 and Pipeline Project.

Accordingly, staff developed parameters for these scenarios which take in consideration the potential for increased project costs and decreased connection fee revenue in the near-term. These scenarios were presented to the full Zone 7 Board on April 18, 2007. At that time, staff recommended proceeding under Funding Scenario 1, which assumed timely completion of Expansion projects as planned (no delay of AWTP) while using conservative revenue projections. In addition, the scenario included financing of up to \$60 million over a six year period in the form of an Installment Sale Agreement (ISA). An ISA is a form of lease financing which functions similarly to a line of credit. Zone 7 will make interest only payments on the amount financed during the six-year term with the principal amount due in year six. It is important to note that while the ISA will be secured by net water revenues, actual payments will be made using connection fee revenue.

SECTION II – WATER SYSTEM

At the May 2, 2007 Zone 7 Board meeting; the Board authorized BWA, on behalf of the General Manager to solicit bids from financial institutions to secure an ISA. BWA issued a Request for Proposal (RFP) on May 25, 2007 to solicit bids from financial institutions to secure an ISS in the amount of \$60 million. The RFP was issued to eight financial institutions and five responses were received. BWA and Zone 7 staff reviewed all of the proposals received and recommended proceeding with Wells Fargo Bank, N.A. (Well Fargo). At the June 20, 2007 Zone 7 Board of Directors meeting, the Board authorized the Zone 7 General Manager to negotiate and execute an agreement with Wells Fargo secure the ISA.

Update

On January 15, 2008, Zone 7 completed the necessary documents required to close on a \$60 million Installment Sale Agreement (ISA), which is a form of lease financing which functions similarly to a line of credit. This funding is needed to bridge a short-term funding gap between anticipated expenditures and revenue. As of August 2009, Zone 7 had not drawn any funds from the ISA to fund the CIP.

In May 2008, staff performed an analysis to determine, based on the latest water demand information, when the AWTP is needed, and based on available funding, when Zone 7 can move forward with constructing the facility. Incorporating new water demand projections provided by our Retailers, the analysis determined that Zone 7 can meet projected MDD for an additional three years without the AWTP; however, under a scenario that assumes an extended outage at the DVWTP, Zone 7 will not be able to provide 75% of MDD. In addition, the Zone 7 Water System will fall short of meeting the planning criteria of supplying 85% of MDD through our surface

water production capacity until AWTP is in-service. However, with the slow-down in demands and increased conservation efforts, coupled with the new facilities in-service (Mocho Groundwater Demin, Chain of Lakes Wells 1 and 2, Altamont Pipeline-Livermore Reach), Zone 7 can meet near-term projected demands and water quality targets.

In July 2009, Zone 7 Finance staff made a presentation to the Zone 7 Finance Committee, discussing a potential water connection fee deferral program proposed by the Home Builders Association of Northern California (HBANC) to encourage growth during this current very slow economy. In this discussion, Finance staff updated the committee with the current status of this fund. It was noted that total FY 08/09 connection fee revenue was about \$1M less than projected (\$11.3M vs. \$12.4M). Considering this revenue trend, connection fee revenue for the next five years has been conservatively projected at an annual growth rate of 2%. Additional borrowing of up to \$145 million, may be necessary to fund the AWTP if development does not pick-up, and AWTP is to be online by summer 2016. Because of the uncertainty of the economy, the amount that Zone 7 would need to borrow to fund the AWTP is unknown, and is completely dependent on how development materializes. If development picks up, Zone 7 could borrow less (or not at all) and perhaps build the plant sooner. If the rate of development stays slow, the plant may be delayed even further if borrowing more is not feasible. Note that connection fee revenue is linked to new water demands, so if revenue is slow, further delaying AWTP should be acceptable. We will continue to evaluate this situation on both a quarterly and annual basis.

SECTION II – WATER SYSTEM

The cash flow scenario shown in Table 2-2 below is one example of the various cash flow scenarios analyzed. This scenario assumes that growth will continue to be slow through FY 13/14, a \$30M draw on the ISA in FY 09/10, and if AWTP should be online by FY 16/17, long-term borrowing of up to \$145M in the form of bonds, certificates of participation (COPs) or bank loans may be required. The amount needed to be borrowed cannot be precisely determined at this point in time. Staff will continue to closely monitor Fund 73 cash flow and make recommendations on the funding plan and needed in-service date for the AWTP as part of future budget and CIP actions. This draft CIP recommends that construction of AWTP (and the associated APLCO Pipeline) be deferred from a start date of January 2012, to January 2014. Assuming a two-year construction schedule, the plant should be substantially complete by January 2016, with final completion by summer 2016.

Conclusions

The near-term funding outlook (Table 2-3) shows that there will be adequate funding to complete projects scheduled in this Ten-Year CIP, assuming that the AWTP and related projects are deferred as recommended, connection fee revenue materializes as projected, and the funding sources shown are secured and utilized. At the end of FY 2019/20, the program end balance is approximately \$57 million. The Expansion Program extends indefinitely beyond this ten-year planning period; therefore, the program end balance shown will be used to fund infrastructure expansion needs.

The projected near-term funding outlook for Fund 73 is shown in Table 2-2 below.

Graph 2-3 - Shows the projected cumulative revenue versus cumulative expenditures for this program, from FY 09/10 through FY 2019/20.

Graph 2-4 - Shows the projected available fund balance through FY 2019/20

SECTION II – WATER SYSTEM

TABLE 2-2
Fund 73 – Connection Fees
PROJECTED FUNDING OUTLOOK
(\$ Millions)

Fiscal year (FY)	09/10	10/11	11/12	12/13	13/14	14/15	15/16	16/17	17/18	18/19	19/20
1 Beg. Available Fund Balance*	9.95	37.12	29.72	20.77	17.51	104.13	28.70	6.45	19.66	33.67	43.34
2 Revenue											
3 Connection Fees	11.38	11.84	12.56	20.90	34.78	50.72	62.97	79.92	83.87	87.70	89.77
4 Prepaid Connections	0.74	0.98	1.23	1.23	1.23	1.47	1.04	0.00	0.00	0.00	0.00
5 ISA Advance/Payments	30.00	0.00	0.00	0.00	-30.00	0.00	0.00	0.00	0.00	0.00	0.00
6 New Borrowing	0.00	0.00	0.00	0.00	145.00	0.00	0.00	0.00	0.00	0.00	0.00
7 Interest Income	0.82	1.00	0.84	1.05	2.18	2.36	1.01	1.05	1.64	2.00	2.45
8 Total Revenue	42.93	13.82	14.62	23.17	153.19	54.55	65.02	80.97	85.51	89.71	92.22
9 Expenditures											
10 Project Expenditures	3.28	2.43	4.55	9.39	51.04	99.56	56.74	37.11	40.72	49.15	50.14
11 Non-Discretionary Expenditures	11.90	18.18	17.62	15.59	15.29	15.29	15.31	15.33	15.36	15.38	14.93
12 Debt Service on New Borrowing	0.00	0.00	0.00	0.00	0.00	11.48	11.48	11.48	11.48	11.48	11.48
13 Unused Portion Fee/Interest on ISA	0.47	0.47	1.22	1.22	0.00	0.00	0.00	0.00	0.00	0.00	0.00
14 Sinking Funds	0.11	0.15	0.19	0.23	0.24	3.65	3.74	3.83	3.93	4.03	3.49
15 Total Expenditures	15.76	21.22	23.58	26.43	66.57	129.99	87.27	67.76	71.49	80.04	80.04
16 Net Estimated Available Fund Balance	37.12	29.72	20.77	17.51	104.13	28.70	6.45	19.66	33.67	43.34	55.52

Footnotes/Assumptions

Line 2 - Starting in FY 10/11, revenue assumes 4% annual inflationary adjustments to connection fees.
 Line 4 - Prepaid connections reflect anticipated revenue received from 2035 connections purchased in 2000 at \$4915 per connection.
 Line 6 - Assumes new borrowing of \$150M in @ 5% for 20 years.
 Line 7 - Assumes 2% interest earned on fund balance FY 08/09-FY 10/11, increasing to 3% thereafter.
 Line 10 - Project expenditures include: project expenditures (adjusted by 4% annual inflation); administrative fee (1% of connection fee revenue) to Retailers; \$500K program contingency for FY 06/07 - 09/10, increasing to 5% of total annual expenditures for FY 10/11 -15/16, 15% FY 16/17 -19/20 and 30% thereafter; and interest paid on ISA.
 Line 11 - Non Discretionary Expenditures include 1) Fixed Cost of Water Entitlement 2) Bay-Delta Conservation Plan 3) Semitropic Stored Recovery Unit 4) SWP Peaking Payment 5) North Canyon's Building Lease 6) Cawelo Groundwater Banking Program 7) Fourth Contractor's Share of SBA and 8) SBA Improvement and Enlargement.
 Line 13 - Annual unused portion fee is .5% of the unused amount. Interest rate as of August 2009 is .44% or 81.41% of Prime Rate minus 2.2%. Assumed rate for FY 09-10 and FY 10-11 is 1.5% increasing to 4% thereafter.
 Line 14 - Sinking Funds include: annual interest only contributions to the Future Contractor's Share of the SBA, SBA Enlargement and Administration & Engineering Building sinking funds through FY 13/14, increasing to the full amount thereafter.
 Line 16- Fund Balance Target is 50% of the following year's non-discretionary expenditures or ~\$7.5M.

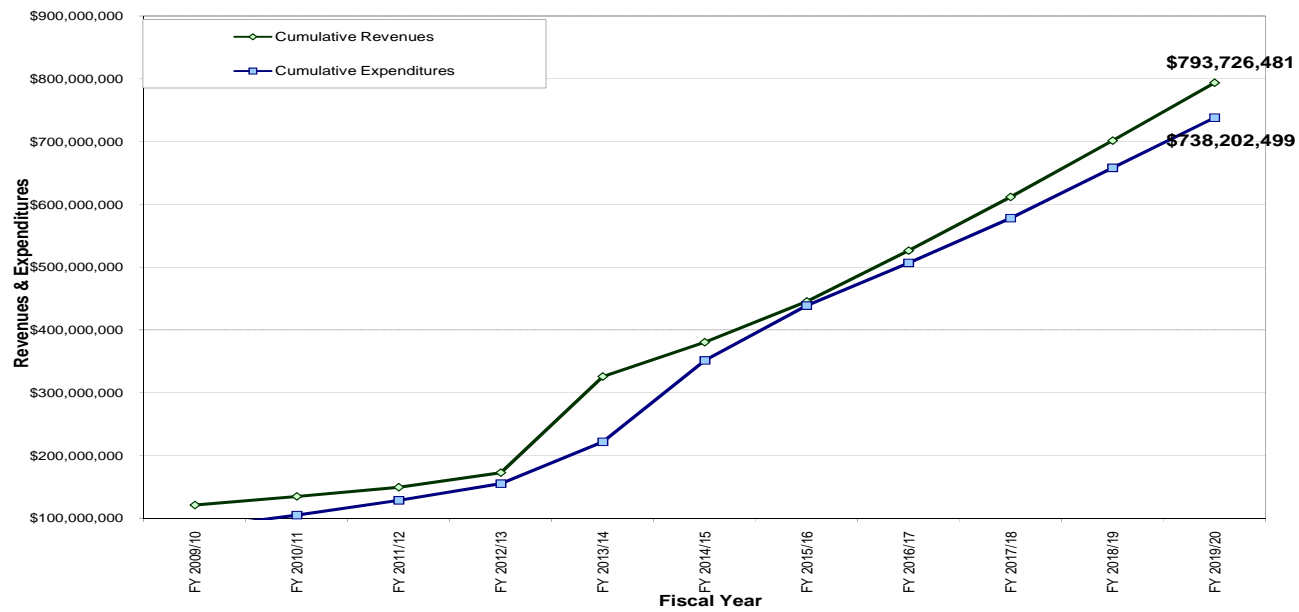
Growth Scenario - for normal planning purposes a growth cycling concept is used. It assumes 70% of projected growth for the first five years and 130% for the succeeding five years. This scenario has been modified to assume 25% of projected growth 08/09 - 11/12, DV connections recovering in FY 18-19 - 22/23 and Z7 recovering in FY 20/21 - FY 25/26, rather than in the succeeding five years.

- Assumes the following major projects and online dates:

- Mocho Demin - Spring 2009
- Altamont Pipeline, Livermore Reach - Summer 2009
- Altamont Water Treatment Plant - Summer 2016 and Pipeline-County Reach - Summer 2015
- Chain of Lakes Wells 1 & 2 - Summer 2009
- Chain of Lakes Wells 3,4 and 4 - Summer 2016

SECTION II – WATER SYSTEM

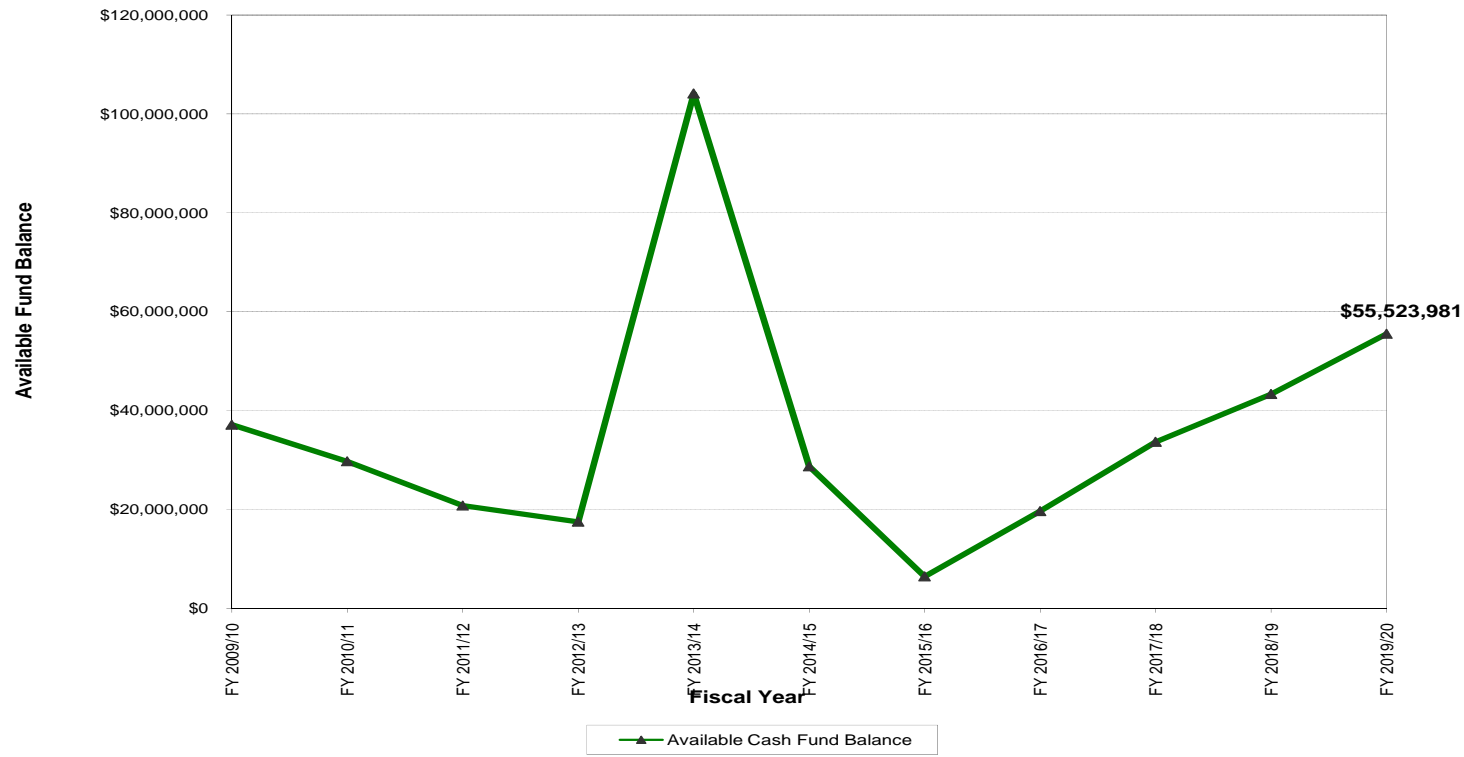
GRAPH 2-3
Fund 73 – Connection Fees
Funding Outlook through FY 2019/20
Cumulative Revenue vs. Cumulative Expenditures



Note: Cumulative Expenditures include retirement of ISA and debt service. Cumulative Revenues includes use of the ISA.

SECTION II – WATER SYSTEM

GRAPH 2-4
Fund 73 – Connection Fees
Ten-Year Funding Outlook until FY 2019/20
Available Fund Balance



SECTION II – WATER SYSTEM

CAPITAL PROJECTS APPROPRIATION SUMMARY BY PROGRAM

This section contains a ten-year estimated appropriation summary for the capital projects for the Water System included in the FY 2010/11 through FY 2019/20 CIP, a project summary sheet for each project and an alphabetical project listing

SECTION II – WATER SYSTEM

Capital Improvement Program Project Summary by Program (Appropriations shown in \$Millions)

Programs	Appropriations (\$Millions)										
	FY 10/11	FY 11/12	FY 12/13	FY 13/14	FY 14/15	FY 15/16	FY 16/17	FY 17/18	FY 18/19	FY 19/20	Total
Buildings & Grounds											
Administrative & Engineering Building Lease (Water System)	\$0.888	\$0.907	\$0.924	\$0.943	\$0.962	\$0.981	\$1.001	\$1.020	\$1.042		\$8.668
Administrative & Engineering Building - Sinking Fund (Fund 73)	\$0.033	\$0.034	\$0.035	\$0.036	\$0.564	\$0.578	\$0.593	\$0.608	\$0.623		\$3.104
Administrative & Engineering Building Sinking Fund (Fund 72)	\$0.367	\$0.377	\$0.386	\$0.395	\$0.406	\$0.416	\$0.427	\$0.437	\$0.448		\$3.659
Subtotal	\$1.288	\$1.318	\$1.345	\$1.374	\$1.932	\$1.975	\$2.021	\$2.065	\$2.113		\$15.431
Emergency Preparedness											
Local Hazard Mitigation Plan Update	\$0.210										\$0.210
Vulnerability Assessment Review & Update	\$0.110										\$0.110
Subtotal	\$0.320										\$0.320
Groundwater Basin Management											
Monitoring Well Replacements & Abandonments		\$0.090		\$0.110		\$0.120		\$0.130		\$0.140	\$0.590
New Groundwater Management Program Monitoring Wells	\$0.120										\$0.120
Second Groundwater Demineralization Facility							\$4.800	\$21.350	\$22.200	\$5.400	\$53.750
Subtotal	\$0.120	\$0.090		\$0.110		\$0.120	\$4.800	\$21.480	\$22.200	\$5.540	\$54.460
Program Management											
Capital Improvement Program Management	\$0.238	\$0.238	\$0.238	\$0.238	\$0.238	\$0.238	\$0.238	\$0.238	\$0.238	\$0.238	\$2.375
System-Wide Improvement, Renewal/Replacement Program Management	\$0.050	\$0.050	\$0.050	\$0.060	\$0.060	\$0.060	\$0.060	\$0.060	\$0.070	\$0.070	\$0.590
Subtotal	\$0.288	\$0.288	\$0.288	\$0.298	\$0.298	\$0.298	\$0.298	\$0.298	\$0.308	\$0.308	\$2.965
Regulatory Compliance											
Laboratory Equipment Replacement	\$0.110	\$0.120	\$0.120	\$0.130	\$0.130	\$0.140	\$0.140	\$0.150	\$0.150	\$0.160	\$1.350
Subtotal	\$0.110	\$0.120	\$0.120	\$0.130	\$0.130	\$0.140	\$0.140	\$0.150	\$0.150	\$0.160	\$1.350
Transmission & Distribution											
Altamont Pipeline - County Reach				\$2.900	\$28.000						\$30.900
Corrosion Master Plan Update				\$0.250					\$0.310		\$0.560
System-Wide Installation of Line Valves	\$0.060	\$0.060	\$0.060	\$0.060	\$0.070	\$0.070	\$0.070	\$0.070	\$0.100	\$0.100	\$0.720
Transmission System Master Plan	\$0.100	\$0.100	\$0.100	\$0.125	\$0.125	\$0.125	\$0.125	\$0.125	\$0.150	\$0.150	\$1.225
Subtotal	\$0.160	\$0.160	\$0.160	\$3.335	\$28.195	\$0.195	\$0.195	\$0.195	\$0.560	\$0.250	\$33.405

SECTION II – WATER SYSTEM

Capital Improvement Program Project Summary by Program (Appropriations shown in \$Millions) (Continued)

Programs	Appropriations (\$Millions)										
	FY 10/11	FY 11/12	FY 12/13	FY 13/14	FY 14/15	FY 15/16	FY 16/17	FY 17/18	FY 18/19	FY 19/20	Total
Water Supply & Conveyance											
Arroyo Mocho Low Flow Crossings	\$0.030	\$0.110	\$0.530								\$0.670
Arroyo Mocho/Lake H Diversion Structure		\$0.030	\$0.260	\$0.440							\$0.730
Bay-Delta Habitat Conservation Program	\$0.150	\$0.156	\$0.164	\$0.172	\$0.180	\$0.189	\$0.199	\$0.209	\$0.219	\$0.230	\$1.868
Cawelo Groundwater Banking Program	\$1.293	\$1.296	\$1.293	\$1.294	\$1.295	\$1.295	\$1.294	\$1.297	\$1.299	\$1.300	\$12.956
Chain of Lakes Facilities and Improvements	\$0.150	\$0.360	\$0.890	\$1.230	\$1.330	\$0.350	\$0.590	\$1.030	\$1.380		\$7.310
Chain of Lakes Master Plan			\$2.903	\$0.490							\$3.393
Cope Lake Facilities and Improvements	\$0.600			\$2.590							\$3.190
CUWA Membership	\$0.060	\$0.060	\$0.060	\$0.060	\$0.060	\$0.060	\$0.060	\$0.060	\$0.060	\$0.060	\$0.600
Enhanced Conservation Program	\$0.400	\$0.400	\$0.400	\$0.400	\$0.400	\$0.400	\$0.400	\$0.400	\$0.400	\$0.400	\$4.000
Fixed Cost of Water Entitlement	\$0.099	\$0.054	\$0.025	\$0.015							\$0.193
Fourth Contractor's Share of the SBA	\$3.100	\$3.000	\$3.000	\$3.000	\$3.000	\$3.000	\$3.000	\$3.000	\$3.000	\$3.000	\$30.100
Fourth Contractor's Share of the SBA - Sinking Fund	\$0.016	\$0.021	\$0.027	\$0.028	\$0.423	\$0.433	\$0.444	\$0.455	\$0.466	\$0.478	\$2.791
High Efficiency Toilet Rebate Program	\$0.110	\$0.115	\$0.115	\$0.115	\$0.115						\$0.570
High-Efficiency Washing Machine Rebate Program	\$0.300	\$0.200	\$0.170	\$0.170	\$0.170						\$1.010
Semitropic Stored Water Recovery Unit	\$0.048	\$0.048	\$0.048	\$0.048	\$0.048	\$0.048	\$0.048	\$0.048	\$0.048	\$0.048	\$0.480
South Bay Aqueduct Improvement & Enlargement Project	\$12.463	\$12.384	\$10.364	\$10.054	\$10.052	\$10.051	\$10.052	\$10.052	\$10.050	\$10.048	\$105.570
South Bay Aqueduct Improvement & Enlargement Project - Sinking Fund	\$0.096	\$0.130	\$0.166	\$0.170	\$2.660	\$2.726	\$2.794	\$2.864	\$2.936	\$3.009	\$17.551
SWP Peaking Payment (Lost Hills & Belridge Water Districts)	\$0.260	\$0.257	\$0.257	\$0.255	\$0.256	\$0.255	\$0.252	\$0.240	\$0.242	\$0.236	\$2.510
Water Conservation Best Management Practices	\$0.100	\$0.100	\$0.100	\$0.100	\$0.100	\$0.150	\$0.150	\$0.150	\$0.150	\$0.150	\$1.250
Water Supply Purchase for Reliability				\$11.000							\$11.000
Subtotal	\$19.081	\$18.529	\$20.579	\$31.440	\$19.957	\$18.825	\$19.153	\$19.685	\$20.128	\$18.841	\$206.218
Water Treatment Facilities											
Altamont Water Treatment Plant Operational Training					\$0.230	\$0.240					\$0.470
Altamont Water Treatment Plant Phase 1 (24 MGD)			\$0.900	\$13.900	\$62.350	\$46.650	\$2.500				\$126.300
Altamont Water Treatment Plant Phase 2 (12-18 MGD)								\$4.450	\$27.700		\$32.150
Dougherty Reservoir Access Road Rehabilitation	\$0.260										\$0.260
DVWTP Aqueous Ammonia System						\$3.230					\$3.230
DVWTP Chemical Systems Improvements	\$2.060										\$2.060
DVWTP Filter Underdrain Replacement							\$0.310	\$1.590			\$1.900
DVWTP Instrumentation Upgrades					\$0.040	\$0.390					\$0.430
DVWTP Interior Coating Improvements to the 4.5 MG Steel Clearwell	\$1.250										\$1.250
DVWTP Roof Panel Replacement and Roof System Repair for 3 MG Clearwell		\$0.160									\$0.160
DVWTP Sludge Handling Improvements				\$1.010	\$6.840						\$7.850
Minor Renewal/Replacement Projects	\$0.250	\$0.250	\$0.250	\$0.250	\$0.275	\$0.275	\$0.275	\$0.275	\$0.275	\$0.300	\$2.675
PPWTP Ammonia Facility Replacement				\$2.280							\$2.280
PPWTP Filter Improvements Study		\$0.080									\$0.080
PPWTP Filter to Waste Improvements	\$0.125										\$0.125
PPWTP Improvement Project 2011	\$0.770										\$0.770
PPWTP Improvement Project 2012	\$0.270	\$1.060									\$1.330
PPWTP Improvement Studies 2011	\$0.070										\$0.070

SECTION II – WATER SYSTEM

Capital Improvement Program Project Summary by Program (Appropriations shown in \$Millions) (Continued)

Programs	Appropriations (\$Millions)										
	FY 10/11	FY 11/12	FY 12/13	FY 13/14	FY 14/15	FY 15/16	FY 16/17	FY 17/18	FY 18/19	FY 19/20	Total
PPWTP Instrumentation Upgrades					\$0.130	\$0.375				\$1.760	\$2.265
PPWTP Rehabilitation of Clarifier and Replacement of Motor	\$0.220										\$0.220
PPWTP Sludge Handling Improvements					\$1.050	\$9.900					\$10.950
PPWTP Ultrafiltration Membrane Replacement	\$0.390	\$0.400	\$0.410	\$0.400	\$0.460	\$0.000	\$0.490	\$0.510	\$0.530	\$0.550	\$4.140
Safety Improvements at Water Treatment Plants			\$0.450								\$0.450
SCADA Enhancements	\$0.250	\$0.250	\$0.250	\$1.150	\$0.270	\$0.270	\$0.270	\$1.350	\$0.300	\$0.300	\$4.660
Water Quality - PPWTP & DVWTP Taste and Odor Treatment								\$3.010	\$12.670	\$23.830	\$39.510
Water Quality Management Program	\$0.090	\$0.050	\$0.090	\$0.050	\$0.100	\$0.060	\$0.100	\$0.060	\$0.120	\$0.060	\$0.77
Subtotal	\$6.005	\$2.250	\$2.350	\$19.040	\$71.745	\$61.385	\$3.945	\$6.790	\$18.345	\$54.500	\$246.355
Wells											
Well Master Plan Wells	\$0.930	\$3.250	\$2.800	\$17.850	\$1.950	\$5.790	\$23.230	\$11.840	\$12.240	\$1.330	\$81.210
Well Pump, Motor and Casing Inspections	\$0.030	\$0.030	\$0.030	\$0.030	\$0.040	\$0.040	\$0.040	\$0.040	\$0.040	\$0.040	\$0.360
Subtotal	\$0.960	\$3.280	\$2.830	\$17.880	\$1.990	\$5.830	\$23.270	\$11.880	\$12.280	\$1.370	\$81.570
Total	\$28.332	\$26.035	\$27.672	\$73.607	\$124.247	\$88.768	\$53.822	\$62.543	\$76.084	\$80.969	\$642.074
In 2009 Dollars	\$27242	\$24.071	\$24.600	\$62.920	\$102.122	\$70.155	\$40.900	\$45.700	\$53.456	\$54.700	\$505.865

SECTION II – WATER SYSTEM

Water Project Summary Listing

The following list shows the project title and page number for each Water System capital project in this Ten-Year CIP.

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Project Summaries

The following project summaries are presented in the order they appear in the Project Listing.

Capital Improvement Project Summary Report

Strategy	Expansion Renewal/Replacement
Program	Buildings & Grounds
Project	Administrative & Engineering Building Lease (Water System)
Project ID:	SP1
Priority	2
Project Description	A new office building has been constructed for administrative and engineering staff. The new building has a larger Board Room for public meetings. It is located closer to operations (treatment plants), and is more centrally located for employees and Valley residents. The cost is based on "Build to Suit" option and includes lease payments. In addition to the scheduled lease payment for the new building, \$696,000 plus interest per year will be contributed to a sinking fund in order to cover the purchase cost of the building after the lease payments have been completed in FY 2018/19.
Justification	Engineering, administrative and operations staff were at different locations. This project has brought administrative and engineering staff together and will bring both closer to operations. This project also accommodates future expansion. It will reduce overall agency travel times, improve communications and staff productivity.
Responsible Section	ASD Administrative Services Division
Operating Impact	Provides for more efficient and effective operations of administrative and engineering functions. Provides for secure Emergency Operations Center (EOC), as the new building meets strictest building and safety codes.
In Service Date	Month: June Year: 2019
Total Project Cost	\$13,993,000
Source of Funds	Fund 72 Water Rates 56% Fund 73 Connection Fees 44%

(\$1,000)

Appropriation	Prior	FY 10-11	FY 11-12	FY 12-13	FY 13-14	FY 14-15	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	Future	Total
Planning	\$277	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$277
Design	\$277	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$277
Construction	\$1,485	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,485
Other	\$3,286	\$888	\$907	\$924	\$943	\$962	\$981	\$1,001	\$1,020	\$1,042	\$0	\$0	\$11,954
Total	\$5,325	\$888	\$907	\$924	\$943	\$962	\$981	\$1,001	\$1,020	\$1,042	\$0	\$0	\$13,993

Note: 'Future' means all the project costs from FY 20/21 through FY 35/36, which is the planning horizon.

Capital Improvement Project Summary Report

Strategy	Expansion
Program	Buildings & Grounds
Project	Administrative & Engineering Building - Sinking Fund (Fund 73)
Project ID:	SP11
Priority	1
Project Description	In addition to the scheduled lease payment for the new building, \$696,000 plus interest per year will be contributed to this sinking fund in order to cover the purchase cost of the building after the lease payments have been completed in FY 2018/19.
Justification	This sinking fund will cover the cost to purchase the new Administrative & Engineering Building after Zone 7's 15 year lease is completed.
Responsible Section	ASD Administrative Services Division
Operating Impact	None.
In Service Date	Month: June Year: 2019
Total Project Cost	\$4,404,000
Source of Funds	Fund 73 Connection Fees 100%

(\$1,000)

Appropriation	Prior	FY	FY	FY	FY	FY	FY	FY	FY	FY	FY	Future	Total
		10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20		
Planning	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Design	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Construction	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Other	\$1,300	\$33	\$34	\$35	\$36	\$564	\$578	\$593	\$608	\$623	\$0	\$0	\$4,404
Total	\$1,300	\$33	\$34	\$35	\$36	\$564	\$578	\$593	\$608	\$623	\$0	\$0	\$4,404

Note: 'Future' means all the project costs from FY 20/21 through FY 35/36, which is the planning horizon.

Capital Improvement Project Summary Report

Strategy	Renewal/Replacement
Program	Buildings & Grounds
Project	Administrative & Engineering Building Sinking Fund (Fund 72)
Project ID:	SP21
Priority	1
Project Description	In addition to the scheduled lease payment for the new building, \$696,000 plus interest per year will be contributed to this sinking fund in order to cover the purchase cost of the building after the lease payments have been completed in FY 2018/19.
Justification	This sinking fund will cover the cost to purchase the new Administrative & Engineering Building after Zone 7's 15 year lease is completed.
Responsible Section	ASD Administrative Services Division
Operating Impact	None.
In Service Date	Month: June Year: 2019
Total Project Cost	\$5,612,000
Source of Funds	Fund 72 Water Rates 100%

(\$1,000)

Appropriation	Prior	FY 10-11	FY 11-12	FY 12-13	FY 13-14	FY 14-15	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	Future	Total
Planning	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Design	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Construction	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Other	\$1,953	\$367	\$377	\$386	\$395	\$406	\$416	\$427	\$437	\$448	\$0	\$0	\$5,612
Total	\$1,953	\$367	\$377	\$386	\$395	\$406	\$416	\$427	\$437	\$448	\$0	\$0	\$5,612

Note: 'Future' means all the project costs from FY 20/21 through FY 35/36, which is the planning horizon.

Capital Improvement Project Summary Report

Strategy	Expansion
Program	Transmission & Distribution
Project	Altamont Pipeline - County Reach
Project ID:	ALT11
Priority	1
Project Description	This is an approximately six mile segment of an eleven mile pipeline, that connects a future treatment plant to the Altamont Pipeline - Livermore Reach near Vasco Road.
Justification	The Treated Water Facilities Master Plan identified additional potable water transmission pipelines required with the construction of the future Altamont Water Treatment Plant. This new transmission pipeline will increase transmission capacity and provide additional operational flexibility through the provision of new pipeline loops in the Zone 7 transmission system.
Responsible Section	WSE Water Supply Engineering
Operating Impact	Provides needed water system transmission capacity and operational flexibility.
In Service Date	Month: June Year: 2015
Total Project Cost	\$30,900,000
Source of Funds	Fund 73 Connection Fees 100%

(\$1,000)

Appropriation	Prior	FY 10-11	FY 11-12	FY 12-13	FY 13-14	FY 14-15	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	Future	Total
Planning	\$0	\$0	\$0	\$0	\$500	\$28,000	\$0	\$0	\$0	\$0	\$0	\$0	\$28,500
Design	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Construction	\$0	\$0	\$0	\$0	\$2,400	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$2,400
Other	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Total	\$0	\$0	\$0	\$0	\$2,900	\$28,000	\$0	\$0	\$0	\$0	\$0	\$0	\$30,900

Note: 'Future' means all the project costs from FY 20/21 through FY 35/36, which is the planning horizon.

Capital Improvement Project Summary Report

Strategy	Expansion
Program	Water Treatment Facilities
Project	Altamont Water Treatment Plant Operational Training
Project ID:	ALT5
Priority	2
Project Description	This project is for an Operational Training Program for one Water Facilities Supervisor (75% of the time) for the new Altamont Water Treatment Plant.
Justification	In preparation for the completion of the new Altamont Water Treatment Plant, there is a need to begin training a Water Facilities Supervisor that will be staffed at this new facility.
Responsible Section	OPS Operations & Maintenance
Operating Impact	Increase of operational efficiencies.
In Service Date	Month: June Year: 2015
Total Project Cost	\$470,000
Source of Funds	Fund 73 Connection Fees 100%

(\$1,000)

Appropriation	Prior	FY 10-11	FY 11-12	FY 12-13	FY 13-14	FY 14-15	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	Future	Total
Planning	\$0	\$0	\$0	\$0	\$0	\$230	\$240	\$0	\$0	\$0	\$0	\$0	\$470
Design	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Construction	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Other	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Total	\$0	\$0	\$0	\$0	\$0	\$230	\$240	\$0	\$0	\$0	\$0	\$0	\$470

Note: 'Future' means all the project costs from FY 20/21 through FY 35/36, which is the planning horizon.

Capital Improvement Project Summary Report

Strategy	Expansion
Program	Water Treatment Facilities
Project	Altamont Water Treatment Plant Phase 1 (24 MGD)
Project ID:	ALT2
Priority	1
Project Description	AWTP Phase 1 is a 24 million gallon per day (MGD) treatment plant with provisions for expansion to 42 MGD. It will consist of an operations and control building, treatment process facilities, washwater and solids handling facilities, chemical storage and feed system, standby power, miscellaneous support facilities, parking and access road. The project is scheduled for completion in 2016.
Justification	The Treated Water Facilities Master Plan (2000) identified a need to construct a new water treatment plant with a maximum capacity of 42 MGD. The water treatment plant project EIR was certified in June 2001. The Master Plan also identified additional required potable water transmission. An eleven mile Altamont Pipeline will connect to Zone 7's existing Cross Valley and Vasco Pipelines. They will both increase transmission capacity and also provide additional operational flexibility through the provision of pipeline loops in the Zone 7 transmission system. The pipeline project EIR was certified in February 2005.
Responsible Section	WSE Water Supply Engineering
Operating Impact	Increases production and delivery capacity and improves operational flexibility.
In Service Date	Month: June Year: 2016
Total Project Cost	\$139,800,000
Source of Funds	Fund 73 Connection Fees 100%

(\$1,000)

Appropriation	Prior	FY 10-11	FY 11-12	FY 12-13	FY 13-14	FY 14-15	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	Future	Total
Planning	\$0	\$0	\$0	\$50	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$50
Design	\$13,500	\$0	\$0	\$850	\$1,300	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$15,650
Construction	\$0	\$0	\$0	\$0	\$12,600	\$62,350	\$46,650	\$2,500	\$0	\$0	\$0	\$0	\$124,100
Other	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Total	\$13,500	\$0	\$0	\$900	\$13,900	\$62,350	\$46,650	\$2,500	\$0	\$0	\$0	\$0	\$139,800

Note: 'Future' means all the project costs from FY 20/21 through FY 35/36, which is the planning horizon.

Capital Improvement Project Summary Report

Strategy	Expansion
Program	Water Treatment Facilities
Project	Altamont Water Treatment Plant Phase 2 (12-18 MGD)
Project ID:	ALT4
Priority	1
Project Description	This project involves the design and construction of a second phase of the Altamont Water Treatment Plant, expanding the plant from 24 MGD to 36-42 MGD.
Justification	The Treated Water Facilities Master Plan identified a need to construct a new water treatment plant with a potential maximum capacity of 42 MGD. The second phase of AWTP will assist in meeting increasing water demands due to growth and will maintain Zone 7's potable water supply reliability goal, improve water quality and increase operational flexibility.
Responsible Section	WSE Water Supply Engineering
Operating Impact	Increased supply capability, reliability and system flexibility.
In Service Date	Month: June Year: 2021
Total Project Cost	\$64,350,000
Source of Funds	Fund 73 Connection Fees 100%

(\$1,000)

Appropriation	Prior	FY 10-11	FY 11-12	FY 12-13	FY 13-14	FY 14-15	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	Future	Total
Planning	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,490	\$0	\$0	\$1,490
Design	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$2,960	\$0	\$0	\$2,960
Construction	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$27,700	\$32,200	\$59,900
Other	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Total	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$4,450	\$27,700	\$32,200	\$64,350

Note: 'Future' means all the project costs from FY 20/21 through FY 35/36, which is the planning horizon.

Capital Improvement Project Summary Report

Strategy	Expansion
Program	Water Supply & Conveyance
Project	Arroyo Mocho Low Flow Crossings
Project ID:	COL8
Priority	2
Project Description	This project provides stream channel improvements at two existing driveway crossings on the Arroyo Mocho off Mines Road to facilitate future artificial flow increases associated with the filling of the Chain of Lakes.
Justification	Zone 7 plans to use Lakes H and I for artificial groundwater recharge. This initial Chain of Lakes operation requires Zone 7 to increase its typical releases from 20 cubic feet per second (cfs) to up to 50 cfs; however the higher flows will preclude access of two residences located across the stream from their Mines Road driveway entrances. These improvements are necessary to route a substantial portion of the artificial flows below the crossing surface to facilitate vehicular access to the residences. The project is an identified mitigation in the Mitigation Monitoring and Reporting Program (MMRP) for the Arroyo Mocho Diversion Project.
Responsible Section	GP Groundwater Protection
Operating Impact	Increases water supply reliability. Increases channel maintenance costs.
In Service Date	Month: June Year: 2013
Total Project Cost	\$1,105,000
Source of Funds	Fund 73 Connection Fees 100%

(\$1,000)

Appropriation	Prior	FY 10-11	FY 11-12	FY 12-13	FY 13-14	FY 14-15	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	Future	Total
Planning	\$435	\$30	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$465
Design	\$0	\$0	\$110	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$110
Construction	\$0	\$0	\$0	\$530	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$530
Other	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Total	\$435	\$30	\$110	\$530	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,105

Note: 'Future' means all the project costs from FY 20/21 through FY 35/36, which is the planning horizon.

Capital Improvement Project Summary Report

Strategy	Expansion
Program	Water Supply & Conveyance
Project	Arroyo Mocho/Lake H Diversion Structure
Project ID:	COL9
Priority	2
Project Description	This project provides the additional materials and capital equipment that Zone 7 needs to effectively operate the Arroyo Mocho Diversion structure that Hanson Aggregates is constructing for Zone 7 at Lake H per their mining agreement. It also provides for the acquisition of permits, the development of specifications for the Zone 7-supplied equipment and the review and coordination of Hanson's design, plans and specifications for the structure that they are constructing. The Zone 7-supplied equipment includes fish screens, automatic screen cleaning apparatuses, water flow and water level monitoring equipment, and security facilities.
Justification	The diversion structure is necessary to operate Lakes H and I for their intended purpose, which is as artificial groundwater recharge percolation ponds. The additional recharge capacity that this project allows is necessary for the conjunctive use increases planned for by Zone 7 to maintain its future water system reliability goals. Environmental and regulatory pressures have forced Zone 7 to commit to certain operational constraints to prevent against the take of future potential migrating steelhead. Therefore, Zone 7 has agreed to take on the permitting and the expense for appurtenances necessary to comply operationally with the regulatory requirements, such as fish screens, screen cleaning devices, monitoring equipment and automatic controls.
Responsible Section	GP Groundwater Protection
Operating Impact	Indirectly increases water supply reliability. Adds new O&M and repair & replacement expenses for Zone 7.
In Service Date	Month: November Year: 2013
Total Project Cost	\$1,015,000
Source of Funds	Fund 73 Connection Fees 100%

(\$1,000)

Appropriation	Prior	FY 10-11	FY 11-12	FY 12-13	FY 13-14	FY 14-15	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	Future	Total
Planning	\$285	\$0	\$30	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$315
Design	\$0	\$0	\$0	\$260	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$260
Construction	\$0	\$0	\$0	\$0	\$440	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$440
Other	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Total	\$285	\$0	\$30	\$260	\$440	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,015

Note: 'Future' means all the project costs from FY 20/21 through FY 35/36, which is the planning horizon.

Capital Improvement Project Summary Report

Strategy	Expansion
Program	Water Supply & Conveyance
Project	Bay-Delta Habitat Conservation Program
Project ID:	WP19
Priority	1
Project Description	<p>Zone 7's share of DWR/United States Bureau of Reclamation (USBR) engineering and environmental studies for improved Delta conveyance facilities. Total study costs are estimated to be \$128 million for CY 2009 and 2010. With 10-15% contingencies, the study costs could be about \$140-\$150 million. State Water Project (SWP) and Central Valley Project participants will share costs 50/50. Zone 7's share of the SWP portion (\$75 million for CY 2009 and 2010) is about two percent, or about \$1.5 million. Pending approval of a Funding Agreement with DWR, Zone 7 will likely be billed \$750,000 beginning CY 2009 and \$750,000 for CY 2010. This project is funded 75% - Fund 52, Water Enterprise (\$1,125M) and 25% - Fund 73, Expansion (\$375K). Ongoing expenditures reflect Fund 73's share of the Bay-Delta Habitat Conservation Program (BDHCP).</p>
Justification	<p>The Delta Conveyance Facility is needed to restore SWP Reliability to previously anticipated levels (about 75%) of SWP Contract Table A Amounts. Currently, Endangered Species Act (State and Federal) concerns have limited SWP diversion exports. The Delta Conveyance Facilities will reduce the conflict between Delta exports and Delta habitat values. Additionally, the Delta Conveyance Facility will improve SWP water quality to Zone 7. There will be water quality improvements in salinity (TDS), toxics, disinfection by-products, etc.</p>
Responsible Section	WR Water Resources
Operating Impact	Increased SWP reliability and improved water quality.
In Service Date	Month: Year: Ongoing
Total Project Cost	\$2,081,000
Source of Funds	Fund 73 Connection Fees 100%

(\$1,000)

Appropriation	Prior	FY 10-11	FY 11-12	FY 12-13	FY 13-14	FY 14-15	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	Future	Total
Planning	\$213	\$150	\$156	\$164	\$172	\$180	\$189	\$199	\$209	\$219	\$230	\$0	\$2,081
Design	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Construction	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Other	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Total	\$213	\$150	\$156	\$164	\$172	\$180	\$189	\$199	\$209	\$219	\$230	\$0	\$2,081

Note: 'Future' means all the project costs from FY 20/21 through FY 35/36, which is the planning horizon.

Capital Improvement Project Summary Report

Strategy	Expansion Renewal/Replacement		
Program	Program Management		
Project	Capital Improvement Program Management		
Project ID:	SP13		
Priority	1		
Project Description	Ongoing program management of the Capital Improvement Program (CIP) including annual report preparation, Zone 7 labor and other CIP related efforts.		
Justification	Provides for better tracking of program management costs.		
Responsible Section	WSE Water Supply Engineering		
Operating Impact	None		
In Service Date	Month:	Year: Ongoing	
Total Project Cost	\$7,676,000		
Source of Funds	Fund 50	Flood Control/ General Fund	5%
	Fund 72	Water Rates	20%
	Fund 73	Connection Fees	75%

(\$1,000)

Appropriation	Prior	FY 10-11	FY 11-12	FY 12-13	FY 13-14	FY 14-15	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	Future	Total
Planning	\$979	\$238	\$238	\$238	\$238	\$238	\$238	\$238	\$238	\$238	\$238	\$4,323	\$7,676
Design	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Construction	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Other	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Total	\$979	\$238	\$238	\$238	\$238	\$238	\$238	\$238	\$238	\$238	\$238	\$4,323	\$7,676

Note: 'Future' means all the project costs from FY 20/21 through FY 35/36, which is the planning horizon.

Capital Improvement Project Summary Report

Strategy	Expansion
Program	Water Supply & Conveyance
Project	Cawelo Groundwater Banking Program
Project ID:	WP11
Priority	1
Project Description	<p>On June 21, 2006, the Zone 7 Board of Directors approved an agreement with the Cawelo Water District (a member unit of Kern County Water Agency) for a water banking and exchange program. The banking program will increase Zone 7's dry-year water supply by up to 10,000 acre-feet per year thus providing 100% water reliability through build-out (anticipated in 2030). Zone 7 will be able to store up to 120,000 acre-feet of water within the Cawelo Water District area. The banking program requires a capital expenditure of \$23-25 million to: (1) expand the Cawelo surface water delivery system to enlarge Cawelo's in-lieu recharge capacity, (2) construct additional wells, and (3) make certain improvements to Cawelo's connection to the California Aqueduct to increase its pump-back capacity to the State Water Project. Zone 7's share of the project construction cost is \$19 million.</p> <p>Cawelo financed this program by a \$21.055 million sale of Certificates of Participation (COP) on August 15, 2006. The COPs run through 2035 with an interest rate of 4%, and increasing to 4.67% by 2035. By agreement, Zone 7 will reimburse Cawelo for the COP annual debt service of about \$1.3 million per year.</p>
Justification	Increase reliability by providing additional water supplies during drought years.
Responsible Section	EPA Environmental and Public Affairs
Operating Impact	Increased operational reliability.
In Service Date	Month: Year: Ongoing
Total Project Cost	\$38,614,000
Source of Funds	Fund 73 Connection Fees 100%

(\$1,000)

Appropriation	Prior	FY 10-11	FY 11-12	FY 12-13	FY 13-14	FY 14-15	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	Future	Total
Planning	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Design	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Construction	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Other	\$4,772	\$1,293	\$1,296	\$1,293	\$1,294	\$1,295	\$1,295	\$1,294	\$1,297	\$1,299	\$1,300	\$20,886	\$38,614
Total	\$4,772	\$1,293	\$1,296	\$1,293	\$1,294	\$1,295	\$1,295	\$1,294	\$1,297	\$1,299	\$1,300	\$20,886	\$38,614

Note: 'Future' means all the project costs from FY 20/21 through FY 35/36, which is the planning horizon.

Capital Improvement Project Summary Report

Strategy	Expansion
Program	Water Supply & Conveyance
Project	Chain of Lakes Facilities and Improvements
Project ID:	COL10
Priority	1
Project Description	This project consists of the development, design, and implementation of improvements and facilities at the various lakes for the purposes of water storage and groundwater recharge. It includes improvements such as fences, access roads, slope grading and landscaping. It also includes inspections and the construction of recharge monitoring pizometers and installation of equipment such as flow meters, water level meters, and controls. Planning, design, and implementation of specific projects will be broken out of this "parent" budget; however, studies and improvements necessary for specific uses (i.e., flood detention or recycled water storage) at Cope Lake shall be funded from a separate project.
Justification	Zone 7 took possession of Lake I and Cope Lake in 2003 and awaits the transfer of Lake H. Additional lakes will become available to us in the future and the need/scope of improvements and facilities will have to be accessed. These lakes are integral components of Zone 7's future water storage and groundwater recharge operations as identified in the Water Supply Planning Study (February 1999). The plans and improvements provided by this project are necessary for the operation and maintenance of these important facilities.
Responsible Section	GP Groundwater Protection
Operating Impact	Increase of water supply reliability. Increased O&M costs.
In Service Date	Month: December Year: 2030
Total Project Cost	\$43,513,000
Source of Funds	Fund 73 Connection Fees 100%

(\$1,000)

Appropriation	Prior	FY 10-11	FY 11-12	FY 12-13	FY 13-14	FY 14-15	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	Future	Total
Planning	\$3,323	\$30	\$80	\$90	\$210	\$80	\$350	\$50	\$730	\$70	\$0	\$6,600	\$11,613
Design	\$110	\$20	\$200	\$100	\$110	\$110	\$0	\$40	\$300	\$230	\$0	\$25,720	\$26,940
Construction	\$370	\$100	\$80	\$700	\$910	\$1,140	\$0	\$500	\$0	\$1,080	\$0	\$0	\$4,880
Other	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$80	\$80
Total	\$3,803	\$150	\$360	\$890	\$1,230	\$1,330	\$350	\$590	\$1,030	\$1,380	\$0	\$32,400	\$43,513

Note: 'Future' means all the project costs from FY 20/21 through FY 35/36, which is the planning horizon.

Capital Improvement Project Summary Report

Strategy	Expansion
Program	Water Supply & Conveyance
Project	Cope Lake Facilities and Improvements
Project ID:	COL12
Priority	2
Project Description	This project provides for the development, design, and implementation of various improvements at Cope Lake, which are to be accomplished in a “phased-in” approach. Near-term, it provides for the laying back of over-steepened slopes, drainage improvements, and minor road grading, particularly along the eastern side of the lake to prevent total loss of the eastern bench. Phase 2 includes additional slope stabilization and wave-erosion measures, and maintenance road improvements necessary to maintain the integrity of the lakes shoreline during future water management operations.
Justification	Zone 7 accepted Cope Lake from Hanson Aggregates in 2003 in an “as is” condition, and without a warranty. During the years that followed: ground cracking and ‘piping’ have developed along the eastern margins of the property; portions of the concrete rubble placed by Hanson to prevent wave-erosion has slide into the lake; and the access road along the eastern bench has become impassable due to mass wasting from the slopes above. Without repair and certain drainage improvements, the bench on which the access road is located will likely slide into the lake and may become un-repairable for use as a base for an access road (Miller Pacific Engineers Group, 2009). In the future, when Cope Lake water levels are “operated” for flood control and/or water supply as currently planned, the lake margins will require additional improvements so their integrity is maintained during the rapid water level fluctuations.
Responsible Section	GP Groundwater Protection
Operating Impact	Protection of asset, and reduction of future facility maintenance and repairs. Potential increase of water supply and flood control reliability.
In Service Date	Month: June Year: 2014
Total Project Cost	\$3,190,000
Source of Funds	Fund 73 Connection Fees 100%

(\$1,000)

Appropriation	Prior	FY 10-11	FY 11-12	FY 12-13	FY 13-14	FY 14-15	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	Future	Total
Planning	\$0	\$20	\$0	\$0	\$40	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$60
Design	\$0	\$30	\$0	\$0	\$90	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$120
Construction	\$0	\$550	\$0	\$0	\$2,460	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$3,010
Other	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Total	\$0	\$600	\$0	\$0	\$2,590	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$3,190

Note: ‘Future’ means all the project costs from FY 20/21 through FY 35/36, which is the planning horizon.

Capital Improvement Project Summary Report

Strategy	System-Wide Improvements
Program	Transmission & Distribution
Project	Corrosion Master Plan Update
Project ID:	DS31
Priority	3
Project Description	This project includes periodic updates to the Corrosion Master Plan and evaluation of current condition of Zone 7's facilities with respect to corrosion and cathodic protection. Recommend future studies, plan, design and implement projects to repair and upgrade cathodic protection to ensure the service life of the facilities in compliance with industry standards. This program is planned to have a major update every 5 years.
Justification	This program is required to protect existing facilities from corrosion. In addition, the use of cathodic protection will lengthen facilities' service lives, this optimization of their service lives will help to minimize water rate increases.
Responsible Section	WSE Water Supply Engineering
Operating Impact	Lengthen service life and improve reliability.
In Service Date	Month: Year: Ongoing
Total Project Cost	\$2,278,000
Source of Funds	Fund 72 Water Rates 100%

(\$1,000)

Appropriation	Prior	FY 10-11	FY 11-12	FY 12-13	FY 13-14	FY 14-15	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	Future	Total
Planning	\$348	\$0	\$0	\$0	\$60	\$0	\$0	\$0	\$0	\$80	\$0	\$330	\$818
Design	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Construction	\$0	\$0	\$0	\$0	\$190	\$0	\$0	\$0	\$0	\$230	\$0	\$1,040	\$1,460
Other	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Total	\$348	\$0	\$0	\$0	\$250	\$0	\$0	\$0	\$0	\$310	\$0	\$1,370	\$2,278

Note: 'Future' means all the project costs from FY 20/21 through FY 35/36, which is the planning horizon.

Capital Improvement Project Summary Report

Strategy	Expansion		
Program	Water Supply & Conveyance		
Project	CUWA Membership		
Project ID:	WP15		
Priority	1		
Project Description	This expenditure is for the California Urban Water Agencies (CUWA) annual membership dues (\$60,000/year) and various Zone 7 staff members participation in four standing CUWA committees: 1. Technical Advisory & Oversight, 2. Water Quality, 3. Water Conservation, and 4. Planning.		
Justification	CUWA membership dues will complement on-going Delta studies, which are intended to maintain and improve Delta water quality and reliability, even as Delta exports increase.		
Responsible Section	EPA Environmental and Public Affairs		
Operating Impact	Increased reliability and water quality.		
In Service Date	Month:	Year: Ongoing	
Total Project Cost	\$2,160,000		
Source of Funds	Fund 73	Connection Fees	100%

(\$1,000)

Appropriation	Prior	FY 10-11	FY 11-12	FY 12-13	FY 13-14	FY 14-15	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	Future	Total
Planning	\$180	\$60	\$60	\$60	\$60	\$60	\$60	\$60	\$60	\$60	\$60	\$1,080	\$1,860
Design	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Construction	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Other	\$300	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$300
Total	\$480	\$60	\$60	\$60	\$60	\$60	\$60	\$60	\$60	\$60	\$60	\$1,080	\$2,160

Note: 'Future' means all the project costs from FY 20/21 through FY 35/36, which is the planning horizon.

Capital Improvement Project Summary Report

Strategy	Renewal/Replacement
Program	Water Treatment Facilities
Project	Dougherty Reservoir Access Road Rehabilitation
Project ID:	DV122
Priority	3
Project Description	Surface maintenance and road repairs to the Dougherty Reservoir access road is needed. This project consists of a completed pavement condition assessment and involves recommended pavement surface coating (slurry coat or chip seal), filling cracks, and repairing damaged pavement and base areas.
Justification	This project will maintain the Dougherty Reservoir access road in a safe and serviceable condition, extending the time period for which repaving and replacement repairs would be needed.
Responsible Section	WSE Water Supply Engineering
Operating Impact	Decrease maintenance, increase safety.
In Service Date	Month: June Year: 2011
Total Project Cost	\$260,000
Source of Funds	Fund 72 Water Rates 100%

(\$1,000)

Appropriation	Prior	FY 10-11	FY 11-12	FY 12-13	FY 13-14	FY 14-15	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	Future	Total
Planning	\$0	\$10	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$10
Design	\$0	\$30	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$30
Construction	\$0	\$220	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$220
Other	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Total	\$0	\$260	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$260

Note: 'Future' means all the project costs from FY 20/21 through FY 35/36, which is the planning horizon.

Capital Improvement Project Summary Report

Strategy	Renewal/Replacement
Program	Water Treatment Facilities
Project	DVWTP Aqueous Ammonia System
Project ID:	DV125
Priority	2
Project Description	Replacement of the existing anhydrous ammonia system with an aqueous ammonia system or upgrade existing system.
Justification	This project will replace or upgrade the last pure gaseous chemical system at DVWTP. Aqueous ammonia bulk storage will be approximately 19% ammonia and will be safer to handle and less of a hazardous threat; alternatively, the existing system could be upgraded with improved safety measures.
Responsible Section	WSE Water Supply Engineering
Operating Impact	Increase safety.
In Service Date	Month: June Year: 2016
Total Project Cost	\$3,230,000
Source of Funds	Fund 72 Water Rates 100%

(\$1,000)

Appropriation	Prior	FY	FY	FY	FY	FY	FY	FY	FY	FY	FY	Future	Total
		10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20		
Planning	\$0	\$0	\$0	\$0	\$0	\$0	\$200	\$0	\$0	\$0	\$0	\$0	\$200
Design	\$0	\$0	\$0	\$0	\$0	\$0	\$790	\$0	\$0	\$0	\$0	\$0	\$790
Construction	\$0	\$0	\$0	\$0	\$0	\$0	\$2,240	\$0	\$0	\$0	\$0	\$0	\$2,240
Other	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Total	\$0	\$0	\$0	\$0	\$0	\$0	\$3,230	\$0	\$0	\$0	\$0	\$0	\$3,230

Note: 'Future' means all the project costs from FY 20/21 through FY 35/36, which is the planning horizon.

Capital Improvement Project Summary Report

Strategy System-Wide Improvements

Program Water Treatment Facilities

Project **DVWTP Chemical Systems Improvements**

Project ID: DV129

Priority 2

Project Description This project consolidates the following DVWTP improvement and renewal/replacement projects:

DVWTP Caustic Soda Chemical Storage Upgrade
 DVWTP Chemical Feed System Replacement
 DVWTP Filter Gallery Pipe Supports Upgrade
 DVWTP Parking Lot Rehabilitation

Upgrade existing caustic soda chemical storage facility at DVWTP due to inadequate capacity. Project may involve new storage tanks, a new temperature-controlled storage building, chemical fill line improvements, chemical delivery truck roadway access improvements, and removal of existing under-sized tank.

Replace existing chemical feed systems, including pumps, which require regular maintenance. Provide adequate secondary containment, sufficient backup pumps, and SCADA control for all chemical feed systems.

The existing support system for conduit and chemical feed lines in the lower filter gallery needs to be evaluated and, as necessary, re-enforced or replaced with a properly designed system that can support the current and any future, anticipated load and has sufficient seismic capacity.

Justification The chemical storage tank is not sized to properly and efficiently schedule chemical deliveries. Existing chemical feed systems are subject to constant mechanical failure. Pipe support system must be properly designed in order to prevent sudden failure. Replacement of the DVWTP parking lot is needed to return it to an acceptable standard; thereby ensuring safety conditions including chemical deliveries.

Responsible Section WSE Water Supply Engineering
Operating Impact Improves ability to comply with regulatory requirements, increases operational effectiveness, increases reliability and safety, and decreases maintenance.

In Service Date **Month:** June **Year:** 2011

Total Project Cost \$2,545,000

Source of Funds Fund 72 Water Rates 100%

(\$1,000)

Appropriation	Prior	FY 10-11	FY 11-12	FY 12-13	FY 13-14	FY 14-15	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	Future	Total
Planning	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Design	\$485	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$485
Construction	\$0	\$2,060	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$2,060
Other	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Total	\$485	\$2,060	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$2,545

Note: 'Future' means all the project costs from FY 20/21 through FY 35/36, which is the planning horizon.

Capital Improvement Project Summary Report

Strategy	Renewal/Replacement
Program	Water Treatment Facilities
Project	DVWTP Filter Underdrain Replacement
Project ID:	DV104
Priority	2
Project Description	Replace filter underdrain system as recommended by the Asset Management Program. Filter walls should be epoxy-coated at the same time. Concurrent with the filter underdrain replacement is the filter media replacement from anthracite coal to GAC to address aesthetics issues (taste and odor) as recommended by the Water Quality Management Plan. Filter media replacement is currently identified in the CIP as a separate project.
Justification	Based on the condition assessment performed by Carollo Engineers for the Asset Management Program, the filter media and underdrains were assessed to be in poor condition. The expected remaining useful life of the filter underdrain is approximately five years.
Responsible Section	WSE Water Supply Engineering
Operating Impact	Improve backwashing operation and increases filter efficiencies and operations.
In Service Date	Month: June Year: 2018
Total Project Cost	\$1,900,000
Source of Funds	Fund 72 Water Rates 100%

(\$1,000)

Appropriation	Prior	FY 10-11	FY 11-12	FY 12-13	FY 13-14	FY 14-15	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	Future	Total
Planning	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$160	\$0	\$0	\$0	\$0	\$160
Design	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$150	\$0	\$0	\$0	\$0	\$150
Construction	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,590	\$0	\$0	\$0	\$1,590
Other	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Total	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$310	\$1,590	\$0	\$0	\$0	\$1,900

Note: 'Future' means all the project costs from FY 20/21 through FY 35/36, which is the planning horizon.

Capital Improvement Project Summary Report

Strategy	Renewal/Replacement
Program	Water Treatment Facilities
Project	DVWTP Instrumentation Upgrades
Project ID:	DV106
Priority	2
Project Description	Repair or replace/upgrade instrumentation (i.e. turbidimeters, counters, analyzers) at the Del Valle Water Treatment Plant. An AMP condition assessment in December 2003 confirmed the instruments to be in good condition and in FY 07/08, about 80% of turbidimeters were replaced. However, regular/continued use of the instruments promotes steady wear and tear, and over time compromises instrumentation accuracy. This results in more frequent and rigorous calibration and associated maintenance. Due to the standard wear and tear of the instruments, as well as recognizing continuing technological advances, the expected remaining useful life is approximately eight to ten years.
Justification	Properly functioning, reliable instrumentation is integral in water treatment process control. To ensure delivery of high quality water in compliance with drinking water standards, it is recommended that instrumentation be replaced on a regular basis.
Responsible Section	OPS Operations & Maintenance
Operating Impact	Increased operational effectiveness and assurance that instrumentation is appropriate to meet reporting requirements.
In Service Date	Month: June Year: 2013
Total Project Cost	\$430,000
Source of Funds	Fund 72 Water Rates 100%

(\$1,000)

Appropriation	Prior	FY 10-11	FY 11-12	FY 12-13	FY 13-14	FY 14-15	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	Future	Total
Planning	\$0	\$0	\$0	\$0	\$0	\$40	\$0	\$0	\$0	\$0	\$0	\$0	\$40
Design	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Construction	\$0	\$0	\$0	\$0	\$0	\$0	\$390	\$0	\$0	\$0	\$0	\$0	\$390
Other	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Total	\$0	\$0	\$0	\$0	\$0	\$40	\$390	\$0	\$0	\$0	\$0	\$0	\$430

Note: 'Future' means all the project costs from FY 20/21 through FY 35/36, which is the planning horizon.

Capital Improvement Project Summary Report

Strategy	Renewal/Replacement
Program	Water Treatment Facilities
Project	DVWTP Interior Coating Improvements to the 4.5 MG Steel Clearwell
Project ID:	DV102
Priority	2
Project Description	This project involves the removal and recoating of the interior of the 4.5 MG steel clearwell at DVWTP.
Justification	An inspection report of the 4.5 MG steel clearwell in November 2002 indicates that there are areas that show some evidence of blistering and holidays. However, the tank remains in relatively good condition and the underlying steel is being protected by the cathodic protection system. A new exterior coating system is planned for completion in FY 08/09. Due to budgetary constraints and the fair condition of the interior coating system, the interior recoating work is being deferred to FY10/11. A new cathodic protection system will be installed at that time.
Responsible Section	WSE Water Supply Engineering
Operating Impact	A new coating system will give better protection and prolong the useful life of the clearwell.
In Service Date	Month: June Year: 2011
Total Project Cost	\$1,800,000
Source of Funds	Fund 72 Water Rates 100%

(\$1,000)

Appropriation	Prior	FY 10-11	FY 11-12	FY 12-13	FY 13-14	FY 14-15	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	Future	Total
Planning	\$50	\$50	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$100
Design	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Construction	\$500	\$1,200	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,700
Other	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Total	\$550	\$1,250	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,800

Note: 'Future' means all the project costs from FY 20/21 through FY 35/36, which is the planning horizon.

Capital Improvement Project Summary Report

Strategy	Renewal/Replacement
Program	Water Treatment Facilities
Project	DVWTP Roof Panel Replacement and Roof System Repair for 3 MG Clearwell
Project ID:	DV131
Priority	2
Project Description	This project involves the replacement of a selected number of metal roof panels and to repair/strengthen wooden roof system for the 3.0 MG concrete clearwell. A roof panel inspection should be scheduled in winter 2011 to assess the degree and severity of corrosion of each panel that remained uncoated or for panels that have further coating delamination since all the roof panels were high-pressure washed in February 2009. The inspection will identify which panels are in need of replacement. In addition, a contractor submitted a site visit report in April 2009 which included recommendations to maintain and/or strengthen several roof structural members and also replace corroded bolt, tension straps and bolted angle connections and clean and coat metal plate connections for the wood beams.
Justification	It is estimated that the useful life of the roof panels installed in 1997 is approximately fifteen to twenty years under severe humid operating conditions. The recoating project for the 3.0 MG clearwell, completed in March 2009, repaired only approximately 2,600 square foot of the roof panels. Because of budget constraints, staff estimates that another five percent of the roof panel area, or approximately 2,500 square foot, was left unrepaired and uncoated. Corrosion of the galvanized steel panel begins immediately once the coating fails or is removed. In addition, the severe humid conditions in the clearwell and lack of adequate ventilation and air circulation is likely to contribute to further coating failures for the panels installed in the roof panel replacement project in 1997. Similarly, the roof system connections and several structural members need to be repaired during the next maintenance shutdown for interior repair work
Responsible Section	WSE Water Supply Engineering
Operating Impact	Replacement of selected panels will provide better protection and prolong the service life of the clearwell.
In Service Date	Month: December Year: 2011
Total Project Cost	\$160,000
Source of Funds	Fund 72 Water Rates 100%

(\$1,000)

Appropriation	Prior	FY 10-11	FY 11-12	FY 12-13	FY 13-14	FY 14-15	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	Future	Total
Planning	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Design	\$0	\$0	\$40	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$40
Construction	\$0	\$0	\$110	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$110
Other	\$0	\$0	\$10	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$10
Total	\$0	\$0	\$160	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$160

Note: 'Future' means all the project costs from FY 20/21 through FY 35/36, which is the planning horizon.

Capital Improvement Project Summary Report

Strategy	System-Wide Improvements
Program	Water Treatment Facilities
Project	DVWTP Sludge Handling Improvements
Project ID:	DV114
Priority	2
Project Description	A sludge thickening system that was designed to reduce drying time is currently in operation, however, the current measured sludge concentrations from the thickener is approximately 0.5 to 1.0 % rather than the anticipated concentration of 2.0%. Sludge studies will be conducted to determine the best alternative to increasing sludge handling capacity. The estimated construction cost is a placeholder for alternatives, including installing new sludge beds and installing a belt press/centrifuge system to handle solids during high loading periods. This project will also include the PLC improvements needed for the associated facilities. Currently, a rental mobile, centrifuge is successfully in use.
Justification	This project is required to ensure the long-term reliable production of treated water at DVWTP. It will enable Zone 7 to take full advantage of the maximum treated water production capacity at DVWTP.
Responsible Section	WSE Water Supply Engineering
Operating Impact	Increase operational reliability, flexibility, and effectiveness.
In Service Date	Month: June Year: 2015
Total Project Cost	\$7,850,000
Source of Funds	Fund 72 Water Rates 100%

(\$1,000)

Appropriation	Prior	FY 10-11	FY 11-12	FY 12-13	FY 13-14	FY 14-15	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	Future	Total
Planning	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Design	\$0	\$0	\$0	\$0	\$1,010	\$660	\$0	\$0	\$0	\$0	\$0	\$0	\$1,670
Construction	\$0	\$0	\$0	\$0	\$0	\$5,920	\$0	\$0	\$0	\$0	\$0	\$0	\$5,920
Other	\$0	\$0	\$0	\$0	\$0	\$260	\$0	\$0	\$0	\$0	\$0	\$0	\$260
Total	\$0	\$0	\$0	\$0	\$1,010	\$6,840	\$0	\$0	\$0	\$0	\$0	\$0	\$7,850

Note: 'Future' means all the project costs from FY 20/21 through FY 35/36, which is the planning horizon.

Capital Improvement Project Summary Report

Strategy	System-Wide Improvements
Program	Water Supply & Conveyance
Project	Enhanced Conservation Program
Project ID:	PR5
Priority	2
Project Description	As listed in the MOU regarding Urban Water Conservation in California, this program may include financial & technical support for our retailers' conservation efforts; support & incentives to improve indoor and outdoor water use efficiency; promote & support implementation of new initiatives, alternative measures and new technologies in water conservation, public information & school education programs promoting water conservation and water use efficiency planning.
Justification	Reduce long-term water demands by promoting Best Management Practices that encourage wise and efficient use of water.
Responsible Section	OGM Office of the General Manager
Operating Impact	Decreased potable water demands and increase system reliability.
In Service Date	Month: June Year: 2020
Total Project Cost	\$4,800,000
Source of Funds	Fund 72 Water Rates 100%

(\$1,000)

Appropriation	Prior	FY 10-11	FY 11-12	FY 12-13	FY 13-14	FY 14-15	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	Future	Total
Planning	\$800	\$400	\$400	\$400	\$400	\$400	\$400	\$400	\$400	\$400	\$400	\$0	\$4,800
Design	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Construction	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Other	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Total	\$0	\$400	\$400	\$400	\$400	\$400	\$400	\$400	\$400	\$400	\$400	\$0	\$4,800

Note: 'Future' means all the project costs from FY 20/21 through FY 35/36, which is the planning horizon.

Capital Improvement Project Summary Report

Strategy	Expansion
Program	Water Supply & Conveyance
Project	Fixed Cost of Water Entitlement
Project ID:	WP2
Priority	1
Project Description	Payment of a portion of the fixed cost for purchase of 24,619 acre-feet of additional State Water Project (SWP) entitlements, purchased via Amendments 19, 20, 21, 23, and 25 to Zone 7's SWP contract.
Justification	These purchases were required to meet Zone 7's long-term water supply needs, and thus allow Zone 7 to continue to meet its treated and untreated water customer demands. Expansion will pay declining amount over a ten-year period of the fixed SWP costs associated with water acquisitions that have not been used.
Responsible Section	WSE Water Supply Engineering
Operating Impact	Increased operation and maintenance.
In Service Date	Month: June Year: 2013
Total Project Cost	\$5,680,000
Source of Funds	Fund 73 Connection Fees 100%

(\$1,000)

Appropriation	Prior	FY 10-11	FY 11-12	FY 12-13	FY 13-14	FY 14-15	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	Future	Total
Planning	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Design	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Construction	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Other	\$5,487	\$99	\$54	\$25	\$15	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$5,680
Total	\$5,487	\$99	\$54	\$25	\$15	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$5,680

Note: 'Future' means all the project costs from FY 20/21 through FY 35/36, which is the planning horizon.

Capital Improvement Project Summary Report

Strategy	Expansion
Program	Water Supply & Conveyance
Project	Fourth Contractor's Share of the SBA
Project ID:	WP7
Priority	1
Project Description	Zone 7 contracted to purchase 22,000 AFA of previously-unallocated capacity in the South Bay Aqueduct under Amendments 19 and 20 to its water supply contract with DWR. The annual cost is \$2,690,000, of which 73% will be funded by Property Taxes and the remaining 27% will be funded by Dougherty Valley through connection fees. Previously entitled "Future Contractor's Share of the SBA"
Justification	Purchase of this unallocated share of the SBA was to allow Zone 7 to meet the water supply and peaking needs of new customers.
Responsible Section	WSE Water Supply Engineering
Operating Impact	The purchases were required to meet Zone 7's long-term water supply needs, and thus allow Zone 7 to continue to meet its treated and untreated water customer demands.
In Service Date	Month: June Year: 2035
Total Project Cost	\$89,261,000
Source of Funds	Fund 73 Connection Fees 100%

(\$1,000)

Appropriation	Prior	FY 10-11	FY 11-12	FY 12-13	FY 13-14	FY 14-15	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	Future	Total
Planning	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Design	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Construction	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Other	\$14,161	\$3,100	\$3,000	\$3,000	\$3,000	\$3,000	\$3,000	\$3,000	\$3,000	\$3,000	\$3,000	\$45,000	\$89,261
Total	\$14,161	\$3,100	\$3,000	\$3,000	\$3,000	\$3,000	\$3,000	\$3,000	\$3,000	\$3,000	\$3,000	\$45,000	\$89,261

Note: 'Future' means all the project costs from FY 20/21 through FY 35/36, which is the planning horizon.

Capital Improvement Project Summary Report

Strategy	Expansion
Program	Water Supply & Conveyance
Project	Fourth Contractor's Share of the SBA - Sinking Fund
Project ID:	WP14
Priority	1
Project Description	Zone 7 contracted to purchase 22,000 afa of previously-unallocated capacity in the South Bay Aqueduct under Amendments 19 and 20 to its contract with the Department of Water Resources. In addition to the schedule payment for the 22,000 afa, Zone 7 contributes \$196,000 per year into this sinking fund (beginning FY 2004/05 until FY 2024/25), in order to cover contractual costs from the year 2026 to 2035. The annual contributions to the sinking fund is funded by connection fees. Previously titled "Future Contractor's Share of the SBA - Sinking Fund."
Justification	This sinking fund is to cover contractual costs from the year 2026 to 2035.
Responsible Section	WSE Water Supply Engineering
Operating Impact	None.
In Service Date	Month: Year: 2024
Total Project Cost	\$6,351,000
Source of Funds	Fund 73 Connection Fees 100%

(\$1,000)

Appropriation	Prior	FY 10-11	FY 11-12	FY 12-13	FY 13-14	FY 14-15	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	Future	Total
Planning	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Design	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Construction	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Other	\$984	\$16	\$21	\$27	\$28	\$423	\$433	\$444	\$455	\$466	\$478	\$2,576	\$6,351
Total	\$984	\$16	\$21	\$27	\$28	\$423	\$433	\$444	\$455	\$466	\$478	\$2,576	\$6,351

Note: 'Future' means all the project costs from FY 20/21 through FY 35/36, which is the planning horizon.

Capital Improvement Project Summary Report

Strategy	Expansion System-Wide Improvements
Program	Water Supply & Conveyance
Project	High Efficiency Toilet Rebate Program
Project ID:	PR1
Priority	1
Project Description	This program encourages the replacement of existing high-water-using toilets with dual-flush or high-efficiency toilets (HET) that use 1.28 gallons or less per flush in residential, commercial, and industrial buildings by offering homeowners and businesses a \$150 rebate for installations of a dual-flush toilet or HET.
Justification	This program replaces existing high-water-using toilets with dual-flush toilets or HETs in residential, commercial, and industrial buildings. The estimated water savings from an HET is on the order of 48 gallons/day. The toilet rebate program is a water conservation BMP that Zone 7 implements in conjunction with its retailing water agencies.
Responsible Section	EPA Environmental and Public Affairs
Operating Impact	Decreased operations.
In Service Date	Month: Year: Ongoing
Total Project Cost	\$1,734,000
Source of Funds	Fund 72 Water Rates 75% Fund 73 Connection Fees 25%

(\$1,000)

Appropriation	Prior	FY 10-11	FY 11-12	FY 12-13	FY 13-14	FY 14-15	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	Future	Total
Planning	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Design	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Construction	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Other	\$1,164	\$110	\$115	\$115	\$115	\$115	\$0	\$0	\$0	\$0	\$0	\$0	\$1,734
Total	\$1,164	\$110	\$115	\$115	\$115	\$115	\$0	\$0	\$0	\$0	\$0	\$0	\$1,734

Note: 'Future' means all the project costs from FY 20/21 through FY 35/36, which is the planning horizon.

Capital Improvement Project Summary Report

Strategy	System-Wide Improvements Expansion
Program	Water Supply & Conveyance
Project	High-Efficiency Washing Machine Rebate Program
Project ID:	PR3
Priority	1
Project Description	This program encourages the purchase and installation of high-efficiency washing machines by offering buyers from \$75 to \$200 rebates. New regulations will require all washers to be energy-efficient.
Justification	Studies show that approximately 20% of a household's water is used by washing machines. High-efficiency washing machines use about 40% less water per load. This could lead to an annual water savings of approximately 5,100 gallons per machine.
Responsible Section	EPA Environmental and Public Affairs
Operating Impact	Decrease O & M costs.
In Service Date	Month: Year: Ongoing
Total Project Cost	\$2,830,000
Source of Funds	Fund 72 Water Rates 75% Fund 73 Connection Fees 25%

(\$1,000)

Appropriation	Prior	FY	FY	FY	FY	FY	FY	FY	FY	FY	Future	Total
		10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19		
Planning	\$445	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$445
Design	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Construction	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Other	\$1,375	\$300	\$200	\$170	\$170	\$170	\$0	\$0	\$0	\$0	\$0	\$2,385
Total	\$1,820	\$300	\$200	\$170	\$170	\$170	\$0	\$0	\$0	\$0	\$0	\$2,830

Note: 'Future' means all the project costs from FY 20/21 through FY 35/36, which is the planning horizon.

Capital Improvement Project Summary Report

Strategy	Renewal/Replacement
Program	Regulatory Compliance
Project	Laboratory Equipment Replacement
Project ID:	LAB2
Priority	2
Project Description	The replacement of various monitoring and analytical laboratory equipment. Examples of major equipment to be replaced include but are not limited to: HP 5890 GC with Hall ECD/PID detectors, autosampler and data acquisition system; PE 5100 PC AA with flame and graphite furnace with autosampler and data acquisition system; Varian Saturn GC/MS with dual autosampler and data acquisition system.
Justification	This program replaces existing laboratory equipment that has an average service life of ten years. This equipment is required for regulatory compliance monitoring and groundwater water quality management.
Responsible Section	LAB Laboratory
Operating Impact	Procures equipment required to meet regulatory compliance.
In Service Date	Month: Year: Ongoing
Total Project Cost	\$6,037,000
Source of Funds	Fund 72 Water Rates 100%

(\$1,000)

Appropriation	Prior	FY	FY	FY	FY	FY	FY	FY	FY	FY	FY	Future	Total
		10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20		
Planning	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Design	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Construction	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Other	\$727	\$110	\$120	\$120	\$130	\$130	\$140	\$140	\$150	\$150	\$160	\$3,960	\$6,037
Total	\$727	\$110	\$120	\$120	\$130	\$130	\$140	\$140	\$150	\$150	\$160	\$3,960	\$6,037

Note: 'Future' means all the project costs from FY 20/21 through FY 35/36, which is the planning horizon.

Capital Improvement Project Summary Report

Strategy	System-Wide Improvements		
Program	Emergency Preparedness		
Project	Local Hazard Mitigation Plan Update		
Project ID:	ESS3		
Priority	2		
Project Description	This project will update the existing Local Hazard Mitigation Plan Annex for Zone 7 Water Agency. The existing Annex will be reviewed and revised as necessary. New facilities and mitigations need to be added to the plan.		
Justification	Zone 7 is part of a Multi-Jurisdictional Local Hazard Mitigation Plan which was completed in 2005 by the Association of Bay Area Government. Each agency participating created their own Annex to the Plan. Zone 7 adopted Resolution 06-2827 adopting the Multi-Jurisdictional Plan and committed to taking appropriate actions outlined in our Annex. Zone 7's Annex stated we would update our plan every 5 years and provide an opportunity for the public to comment.		
Responsible Section	ASD Administrative Services Division		
Operating Impact	None.		
In Service Date	Month: November	Year: 2010	
Total Project Cost	\$260,000		
Source of Funds	Fund 72	Water Rates	100%

(\$1,000)

Appropriation	Prior	FY	FY	FY	FY	FY	FY	FY	FY	FY	FY	Future	Total
		10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20		
Planning	\$50	\$210	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$260
Design	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Construction	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Other	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Total	\$50	\$210	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$260

Note: 'Future' means all the project costs from FY 20/21 through FY 35/36, which is the planning horizon.

Capital Improvement Project Summary Report

Strategy	Renewal/Replacement
Program	Water Treatment Facilities
Project	Minor Renewal/Replacement Projects
Project ID:	DS36
Priority	2
Project Description	Replacement of assets, which individually, typically cost less than \$50K and require some engineering support.
Justification	Ongoing maintenance associated with the reliable supply of high-quality water.
Responsible Section	OPS Operations & Maintenance
Operating Impact	System operational reliability.
In Service Date	Month: Year: Ongoing
Total Project Cost	\$9,400,000
Source of Funds	Fund 72 Water Rates 100%

(\$1,000)

Appropriation	Prior	FY 10-11	FY 11-12	FY 12-13	FY 13-14	FY 14-15	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	Future	Total
Planning	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Design	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Construction	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Other	\$1,450	\$250	\$250	\$250	\$250	\$275	\$275	\$275	\$275	\$275	\$300	\$5,275	\$9,400
Total	\$1,450	\$250	\$250	\$250	\$250	\$275	\$275	\$275	\$275	\$275	\$300	\$5,275	\$9,400

Note: 'Future' means all the project costs from FY 20/21 through FY 35/36, which is the planning horizon.

Capital Improvement Project Summary Report

Strategy	Renewal/Replacement
Program	Groundwater Basin Management
Project	Monitoring Well Replacements & Abandonments
Project ID:	GW4
Priority	3
Project Description	This project provides for, on an as-needed basis, the replacement of old and damaged monitoring wells which are currently in Zone 7's monitoring network. In addition, it provides for the relocation of other Zone 7-monitored wells which need to be destroyed to allow for future development of land. The replacement wells will have various completion depths depending on their location. In some cases, nested monitoring wells having multiple completion intervals may be desirable. It is estimated that up to 2 wells will need to be replaced and/or destroyed each year.
Justification	Zone 7 operates an extensive monitoring well network for the monitoring of basin-wide groundwater levels and groundwater quality. In order for Zone 7 to continue to protect and manage the groundwater basin as a viable water supply, some of these monitoring wells will need to be replaced.
Responsible Section	GP Groundwater Protection
Operating Impact	Facilitate better monitoring of Zone 7's conjunctive use of the groundwater basin.
In Service Date	Month: Year: Ongoing
Total Project Cost	\$1,370,000
Source of Funds	Fund 72 Water Rates 100%

(\$1,000)

Appropriation	Prior	FY 10-11	FY 11-12	FY 12-13	FY 13-14	FY 14-15	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	Future	Total
Planning	\$20	\$0	\$20	\$0	\$30	\$0	\$30	\$0	\$30	\$0	\$30	\$250	\$410
Design	\$10	\$0	\$10	\$0	\$10	\$0	\$10	\$0	\$10	\$0	\$20	\$120	\$190
Construction	\$20	\$0	\$60	\$0	\$70	\$0	\$80	\$0	\$90	\$0	\$90	\$360	\$770
Other	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Total	\$50	\$0	\$90	\$0	\$110	\$0	\$120	\$0	\$130	\$0	\$140	\$730	\$1,370

Note: 'Future' means all the project costs from FY 20/21 through FY 35/36, which is the planning horizon.

Capital Improvement Project Summary Report

Strategy	System-Wide Improvements
Program	Groundwater Basin Management
Project	New Groundwater Management Program Monitoring Wells
Project ID:	GW7
Priority	2
Project Description	This project provides for the installation of "nested" monitoring wells around Livermore-Amador Valley. The monitoring wells will be specifically designed to monitor the groundwater quality and water levels across the groundwater basin. These wells will help fill data gaps in the current monitoring network.
Justification	Water quality and water level monitoring data obtained from these wells will facilitate wellfield operations planning, salt loading management, wellhead protection, and general basin management. They will be used to monitor changes in water quality, which in turn can be used to modify operational plans to optimize delivered water quality. They will also provide snapshots of the vertical distribution of water quality and recharge around the basin, which will also facilitate groundwater basin management activities.
Responsible Section	GP Groundwater Protection
Operating Impact	Increase of water supply reliability. Increase O&M costs.
In Service Date	Month: June Year: 2010
Total Project Cost	\$771,000
Source of Funds	Fund 72 Water Rates 100%

(\$1,000)

Appropriation	Prior	FY 10-11	FY 11-12	FY 12-13	FY 13-14	FY 14-15	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	Future	Total
Planning	\$0	\$30	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$30
Design	\$0	\$10	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$10
Construction	\$0	\$80	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$80
Other	\$651	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$651
Total	\$651	\$120	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$771

Note: 'Future' means all the project costs from FY 20/21 through FY 35/36, which is the planning horizon.

Capital Improvement Project Summary Report

Strategy	Renewal/Replacement
Program	Water Treatment Facilities
Project	PPWTP Ammonia Facility Replacement
Project ID:	PP48
Priority	1
Project Description	Replacement of existing anhydrous ammonia system with an aqueous ammonia storage and feed system for both the conventional and membrane plants. Storage tank, feed pumps and controls, motor control center will be housed in a metal building.
Justification	This project is necessary to improve ease of chemical handling and safety by replacing the existing ammonia gas (anhydrous) system with a liquid ammonia (aqueous) storage and feed system. The current anhydrous storage tank, ammoniator, and feed lines have been in use since 1990 and have exceeded their use life. This system has had an ammonia gas leak, as a result of a component failure, i.e. pressure reducing valve. The leak caused injury to a plant operator. The proposed replacement project improves safety for O&M personnel and other on-site plant personnel because the concentrations levels from any off-gassing from leaks, spills, or a storage tank rupture are significantly less than from the current system. Also, the conversion to aqueous ammonia from anhydrous ammonia is consistent with Zone 7's conversion at all of its wellfields.
Responsible Section	WSE Water Supply Engineering
Operating Impact	Increase safety and decrease maintenance.
In Service Date	Month: June Year: 2014
Total Project Cost	\$2,280,000
Source of Funds	Fund 72 Water Rates 100%

(\$1,000)

Appropriation	Prior	FY 10-11	FY 11-12	FY 12-13	FY 13-14	FY 14-15	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	Future	Total
Planning	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Design	\$0	\$0	\$0	\$0	\$130	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$130
Construction	\$0	\$0	\$0	\$0	\$2,150	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$2,150
Other	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Total	\$0	\$0	\$0	\$0	\$2,280	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$2,280

Note: 'Future' means all the project costs from FY 20/21 through FY 35/36, which is the planning horizon.

Capital Improvement Project Summary Report

Strategy	System-Wide Improvements
Program	Water Treatment Facilities
Project	PPWTP Filter to Waste Improvements
Project ID:	PP49
Priority	2
Project Description	This project includes an evaluation of the performance of the conventional plant filter to waste system; then design and construction to modify piping to reduce down time to filter after a backwash. The current filter to waste system allows us to waste at 800 gallons per minute (GPM). The marginal improvement in production needs to be weighed against the cost to upgrade the filter to waste system at a rate of about 2,800 GPM
Justification	The current filter to waste system takes roughly an hour or more to achieve the filter ripening process and to achieve the chlorine residual required for contact time compliance. Improvements to the filter to waste system to lessen filter down time will provide a marginal increase in the conventional plant production rate.
Responsible Section	WSE Water Supply Engineering
Operating Impact	Increased operational flexibility and reliability. Marginal increase in production.
In Service Date	Month: June Year: 2011
Total Project Cost	\$325,000
Source of Funds	Fund 72 Water Rates 100%

(\$1,000)

Appropriation	Prior	FY 10-11	FY 11-12	FY 12-13	FY 13-14	FY 14-15	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	Future	Total
Planning	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Design	\$100	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$100
Construction	\$100	\$100	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$200
Other	\$0	\$25	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$25
Total	\$200	\$125	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$325

Note: 'Future' means all the project costs from FY 20/21 through FY 35/36, which is the planning horizon.

Capital Improvement Project Summary Report

Strategy	System-Wide Improvements
Program	Water Treatment Facilities
Project	PPWTP Improvement Project 2011
Project ID:	PP56
Priority	2
Project Description	<p>This project includes several PPWTP improvement projects, consolidated into one project, which are scheduled for completion in FY 2010/11. These projects were identified as high priority projects in the 2004 PPWTP CIP Prioritization Study and include:</p> <p>PPWTP Electrical Service Upgrade PPWTP Finished Water Sample Line Improvements (UF Plant) PPWTP Clarifier Maintenance Facility Improvements (UF Plant) PPWTP Chemical Feed Piping Renewal/Replacement (Conv. Plant) PPWTP Tank Farm Improvements (Conv. Plant) PPWTP In-Line TOC Analyzers (Conv. Plant)</p>
Justification	These improvements would enable Zone 7 to take full advantage of the maximum treated water production capacity at PPWTP.
Responsible Section	WSE Water Supply Engineering
Operating Impact	Increases operational effectiveness.
In Service Date	Month: June Year: 2011
Total Project Cost	\$1,030,000
Source of Funds	Fund 72 Water Rates 100%

(\$1,000)

Appropriation	Prior	FY 10-11	FY 11-12	FY 12-13	FY 13-14	FY 14-15	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	Future	Total
Planning	\$90	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$90
Design	\$170	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$170
Construction	\$0	\$730	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$730
Other	\$0	\$40	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$40
Total	\$260	\$770	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,030

Note: 'Future' means all the project costs from FY 20/21 through FY 35/36, which is the planning horizon.

Capital Improvement Project Summary Report

Strategy	System-Wide Improvements
Program	Water Treatment Facilities
Project	PPWTP Improvement Project 2012
Project ID:	PP57
Priority	2
Project Description	<p>This project includes several PPWTP improvement projects, consolidated into one project, which are scheduled for completion in FY 2011/12. These projects are the second highest priority projects identified in the 2004 PPWTP CIP Prioritization Study and include:</p> <p>PPWTP Clearwell Overflow Improvements PPWTP Seismic Upgrade of Clearwell PPWTP Maintenance Storage Building PPWTP Valve Actuator Renewal/Replacement (Conv. Plant) PPWTP Relocate Retailer Line</p>
Justification	These improvements would enable Zone 7 to take full advantage of the maximum treated water production capacity at PPWTP.
Responsible Section	WSE Water Supply Engineering
Operating Impact	Increases operational effectiveness.
In Service Date	Month: June Year: 2012
Total Project Cost	\$1,330,000
Source of Funds	Fund 72 Water Rates 100%

(\$1,000)

Appropriation	Prior	FY 10-11	FY 11-12	FY 12-13	FY 13-14	FY 14-15	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	Future	Total
Planning	\$0	\$90	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$90
Design	\$0	\$180	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$180
Construction	\$0	\$0	\$1,010	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,010
Other	\$0	\$0	\$50	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$50
Total	\$0	\$270	\$1,060	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,330

Note: 'Future' means all the project costs from FY 20/21 through FY 35/36, which is the planning horizon.

Capital Improvement Project Summary Report

Strategy	System-Wide Improvements
Program	Water Treatment Facilities
Project	PPWTP Improvement Studies 2011
Project ID:	PP55
Priority	2
Project Description	<p>This project includes several PPWTP improvement studies, consolidated into one project, which are scheduled for completion in FY 2010/11. These studies are included within the 2004 PPWTP CIP Prioritization Study and include:</p> <p>PPWTP Raw Water Quality Monitoring PPWTP Chlorine Contact Time Analysis PPWTP Raw Water Pretreatment Analysis (UF Plant) PPWTP Sludge Handling Study</p>
Justification	These improvement studies and resultant projects, would enable Zone 7 to take full advantage of the maximum treated water production capacity at PPWTP.
Responsible Section	WSE Water Supply Engineering
Operating Impact	Increases operational effectiveness.
In Service Date	Month: June Year: 2011
Total Project Cost	\$340,000
Source of Funds	Fund 72 Water Rates 100%

(\$1,000)

Appropriation	Prior	FY 10-11	FY 11-12	FY 12-13	FY 13-14	FY 14-15	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	Future	Total
Planning	\$80	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$80
Design	\$170	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$170
Construction	\$0	\$70	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$70
Other	\$20	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$20
Total	\$270	\$70	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$340

Note: 'Future' means all the project costs from FY 20/21 through FY 35/36, which is the planning horizon.

Capital Improvement Project Summary Report

Strategy	Renewal/Replacement
Program	Water Treatment Facilities
Project	PPWTP Instrumentation Upgrades
Project ID:	PP30
Priority	2
Project Description	Repair or replace/upgrade instrumentation (i.e. turbidimeters, counters, analyzers) at the Patterson Pass Conventional Water Treatment Plant and the Patterson Pass Ultrafiltration Water Treatment Plant. A condition assessment in December 2003 confirmed the instruments to be in good condition. However, regular/continued use of the instruments promotes steady wear and tear, and over time compromises instrumentation accuracy. This results in more frequent and rigorous calibration and associated maintenance. Due to the standard wear and tear of the instruments, as well as recognizing continuing technological advances, the expected remaining useful life is approximately eight to ten years.
Justification	Properly functioning, reliable instrumentation is integral in water treatment process control. To ensure delivery of high quality water in compliance with drinking water standards, it is recommended that instrumentation be replaced on a regular basis.
Responsible Section	WSE Water Supply Engineering
Operating Impact	Increased operational efficiencies and ensure instrumentation is appropriate to meet reporting requirements.
In Service Date	Month: June Year: 2020
Total Project Cost	\$2,265,000
Source of Funds	Fund 72 Water Rates 100%

(\$1,000)

Appropriation	Prior	FY 10-11	FY 11-12	FY 12-13	FY 13-14	FY 14-15	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	Future	Total
Planning	\$0	\$0	\$0	\$0	\$0	\$130	\$0	\$0	\$0	\$0	\$320	\$0	\$450
Design	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Construction	\$0	\$0	\$0	\$0	\$0	\$0	\$375	\$0	\$0	\$0	\$1,440	\$0	\$1,815
Other	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Total	\$0	\$0	\$0	\$0	\$0	\$130	\$375	\$0	\$0	\$0	\$1,760	\$0	\$2,265

Note: 'Future' means all the project costs from FY 20/21 through FY 35/36, which is the planning horizon.

Capital Improvement Project Summary Report

Strategy	Renewal/Replacement
Program	Water Treatment Facilities
Project	PPWTP Rehabilitation of Clarifier and Replacement of Motor
Project ID:	PP1
Priority	1
Project Description	Improvement/replacement of cathodic protection system, re-coating of steel components as well as the concrete walls and floor and replacement of motor/drive mechanism.
Justification	Ultrasonic x-ray and materials inspection performed in December 1999 identified that the existing cathodic system required replacement and the steel structural components along with concrete walls and floor required sand/water blasting and re-coating to prolong the service life of the facility, along with replacement of the mechanical drive since it has been in service long past its expected useful life. As a result of recent study in the Asset Management Plan and PPWTP project prioritization review, this project has been upgraded to include the full replacement of the clarifier mechanism rather than just repair of the existing clarifier. It is expected that a new, modern, clarifier mechanism will improve operational performance and reduce coagulant dosing demands.
Responsible Section	WSE Water Supply Engineering
Operating Impact	Prolongs the facility's service life.
In Service Date	Month: March Year: 2011
Total Project Cost	\$1,200,000
Source of Funds	Fund 72 Water Rates 100%

(\$1,000)

Appropriation	Prior	FY 10-11	FY 11-12	FY 12-13	FY 13-14	FY 14-15	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	Future	Total
Planning	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Design	\$100	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$100
Construction	\$880	\$220	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,100
Other	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Total	\$980	\$220	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,200

Note: 'Future' means all the project costs from FY 20/21 through FY 35/36, which is the planning horizon.

Capital Improvement Project Summary Report

Strategy	System-Wide Improvements
Program	Water Treatment Facilities
Project	PPWTP Sludge Handling Improvements
Project ID:	PP43
Priority	2
Project Description	Sludge bed capacity limitations have become a bottleneck in the treatment process since the addition of the UF plant and coagulant upgrade from alum to ferric chloride. Either a full-scale mechanical dewatering facility or building additional sludge beds will be required. Since a rental mobile centrifuge has been successfully utilized since 2006, completion of this project can be deferred until FY 15/16.
Justification	This project would enable Zone 7 to take full advantage of the maximum treated water production capacity at PPWTP.
Responsible Section	WSE Water Supply Engineering
Operating Impact	Increased operational reliability, flexibility and effectiveness.
In Service Date	Month: December Year: 2016
Total Project Cost	\$10,950,000
Source of Funds	Fund 72 Water Rates 100%

(\$1,000)

Appropriation	Prior	FY 10-11	FY 11-12	FY 12-13	FY 13-14	FY 14-15	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	Future	Total
Planning	\$0	\$0	\$0	\$0	\$0	\$1,050	\$0	\$0	\$0	\$0	\$0	\$0	\$1,050
Design	\$0	\$0	\$0	\$0	\$0	\$0	\$410	\$0	\$0	\$0	\$0	\$0	\$410
Construction	\$0	\$0	\$0	\$0	\$0	\$0	\$8,240	\$0	\$0	\$0	\$0	\$0	\$8,240
Other	\$0	\$0	\$0	\$0	\$0	\$0	\$1,250	\$0	\$0	\$0	\$0	\$0	\$1,250
Total	\$0	\$0	\$0	\$0	\$0	\$1,050	\$9,900	\$0	\$0	\$0	\$0	\$0	\$10,950

Note: 'Future' means all the project costs from FY 20/21 through FY 35/36, which is the planning horizon.

Capital Improvement Project Summary Report

Strategy	Renewal/Replacement
Program	Water Treatment Facilities
Project	PPWTP Ultrafiltration Membrane Replacement
Project ID:	PP29
Priority	1
Project Description	Replacement of ultrafiltration membranes. Although the membranes are currently functioning adequately, after several years of operation, membranes reach their useful lives and will need to be replaced at regular intervals.
Justification	Several mechanisms for membrane fouling exist: absorption, pore blocking, particle deposition, and concentration polarization. As the fouling process continues, the flux through the membranes decreases. To minimize the effects of fouling, the membranes require frequent cleaning and eventually, replacement. As technology improves and/or existing membrane system become obsolete, system upgrades beyond the membranes can be expected, and these upgrades will replace this project in the CIP at that time.
Responsible Section	WSE Water Supply Engineering
Operating Impact	Increase operating reliability and effectiveness.
In Service Date	Month: Year: Ongoing
Total Project Cost	\$17,480,000
Source of Funds	Fund 72 Water Rates 100%

(\$1,000)

Appropriation	Prior	FY 10-11	FY 11-12	FY 12-13	FY 13-14	FY 14-15	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	Future	Total
Planning	\$0	\$0	\$0	\$0	\$10	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$10
Design	\$0	\$0	\$0	\$0	\$360	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$360
Construction	\$880	\$390	\$400	\$410	\$30	\$460	\$0	\$490	\$510	\$530	\$550	\$12,460	\$17,110
Other	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Total	\$880	\$390	\$400	\$410	\$400	\$460	\$0	\$490	\$510	\$530	\$550	\$12,460	\$17,480

Note: 'Future' means all the project costs from FY 20/21 through FY 35/36, which is the planning horizon.

Capital Improvement Project Summary Report

Strategy	System-Wide Improvements
Program	Water Treatment Facilities
Project	Safety Improvements at Water Treatment Plants
Project ID:	ESS5
Priority	2
Project Description	This project will provide facility-wide audible and visual emergency alarm devices and safety equipment to improve response to chemical emergencies, including, but not limited to, upgrades to emergency eyewash stations (tepid water), fall protection hardware, and chemical tank isolation valve improvements.
Justification	This project is in response to issues brought out by Alameda County Department of Environmental Health during review process for hazardous material handling and changing code requirements for workplace safety.
Responsible Section	WSE Water Supply Engineering
Operating Impact	Increased safety.
In Service Date	Month: April Year: 2013
Total Project Cost	\$450,000
Source of Funds	Fund 72 Water Rates 100%

(\$1,000)

Appropriation	Prior	FY 10-11	FY 11-12	FY 12-13	FY 13-14	FY 14-15	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	Future	Total
Planning	\$0	\$0	\$0	\$160	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$160
Design	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Construction	\$0	\$0	\$0	\$290	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$290
Other	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Total	\$0	\$0	\$0	\$450	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$450

Note: 'Future' means all the project costs from FY 20/21 through FY 35/36, which is the planning horizon.

Capital Improvement Project Summary Report

Strategy	Renewal/Replacement
Program	Water Treatment Facilities
Project	SCADA Enhancements
Project ID:	WTP103
Priority	2
Project Description	After the completion of Phase I of the SCADA Improvements project (May 2004 completion), there is an ongoing need for reprogramming, installation of additional devices and upgrading of the existing devices to improve the use of SCADA system to accommodate the changes in the plant and transmission system operation. The SCADA system will also require major software and hardware upgrades about every five years.
Justification	This project will enable operators to have increased control and monitoring capability of the treatment and transmission facilities using SCADA. The improvements will enhance personnel and equipment safety, and help meet regulations. The improvements will result in increased efficiency and enable operations to fine tune the treatment and transmission process.
Responsible Section	WSE Water Supply Engineering
Operating Impact	Improved control, monitoring and reporting through SCADA of process equipment.
In Service Date	Month: Year: Ongoing
Total Project Cost	\$24,174,000
Source of Funds	Fund 72 Water Rates 100%

(\$1,000)

Appropriation	Prior	FY 10-11	FY 11-12	FY 12-13	FY 13-14	FY 14-15	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	Future	Total
Planning	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Design	\$461	\$100	\$100	\$100	\$970	\$100	\$100	\$100	\$1,140	\$100	\$100	\$12,930	\$16,301
Construction	\$1,613	\$150	\$150	\$150	\$180	\$170	\$170	\$170	\$210	\$200	\$200	\$4,510	\$7,873
Other	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Total	\$2,074	\$250	\$250	\$250	\$1,150	\$270	\$270	\$270	\$1,350	\$300	\$300	\$17,440	\$24,174

Note: 'Future' means all the project costs from FY 20/21 through FY 35/36, which is the planning horizon.

Capital Improvement Project Summary Report

Strategy	Expansion
Program	Groundwater Basin Management
Project	Second Groundwater Demineralization Facility
Project ID:	W25
Priority	2
Project Description	Design and construction of a second groundwater demineralization facility utilizing reverse osmosis technology. The anticipated capacity for this facility is 6.2 mgd of delivered water with lower total dissolved solids (TDS) and hardness, and will remove up to an additional 3,000 tons of salt per year. The combined salt removal capacity of the first two demineralization facilities will be about 6000 tons per year. The location of this proposed facility is anticipated to be at the Zone 7 Parkside building location. Timing of this facility may be revised in the future depending upon the performance Mocho Groundwater Demineralization Plant. The cost estimate for this facility has been revised based on the cost of the Mocho Groundwater Demineralization Plant.
Justification	This project supports both the Water Quality Management and the Salt Management Programs adopted by the Zone 7 Board of Directors. This project would improve delivered water quality to Zone 7's retailers and mitigate salt build-up in the groundwater basin by exporting the salts out of the basin via the LAVWMA pipeline.
Responsible Section	WSE Water Supply Engineering
Operating Impact	Increased operations and maintenance costs estimated at up to \$1.5 to \$2 million per year (2007\$).
In Service Date	Month: June Year: 2019
Total Project Cost	\$53,750,000
Source of Funds	Fund 73 Connection Fees 100%

(\$1,000)

Appropriation	Prior	FY 10-11	FY 11-12	FY 12-13	FY 13-14	FY 14-15	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	Future	Total
Planning	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$4,800	\$0	\$0	\$0	\$0	\$4,800
Design	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$21,350	\$0	\$0	\$0	\$21,350
Construction	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$22,200	\$5,400	\$0	\$27,600
Other	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Total	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$4,800	\$21,350	\$22,200	\$5,400	\$0	\$53,750

Note: 'Future' means all the project costs from FY 20/21 through FY 35/36, which is the planning horizon.

Capital Improvement Project Summary Report

Strategy	Expansion
Program	Water Supply & Conveyance
Project	Semitropic Stored Water Recovery Unit
Project ID:	WP12
Priority	1
Project Description	<p>Semitropic Water Storage District and Zone 7 have finalized the amendment to the Semitropic Banking Program agreement that will provide for additional recovery capacity. On February 18, 2004, the Zone 7 Board approved Zone 7's participation in its proportional share (6.5%) of the Stored Water Recovery Unit (SWRU) project. Under the proposed amendment, Zone 7's minimum recovery capacity will increase by 3,250 acre-feet/year (from 5,850 afy to 9,100 afy).</p> <p>Zone 7's cost share of the SWRU project will be about \$1.04 million. The total cost of the SWRU project consists of about \$10.5 million for a 120-inch pipeline from Semitropic to the California Aqueduct and about \$5.5 million for new wells and conveyance enhancements to the Semitropic water system. The \$10.5 million pipeline portion of the SWRU project will be financed by 30-year bonds (5.266% bond sale interest rate), which debt service will be passed on to Zone 7 as annual payments.</p>
Justification	Increase reliability by providing additional water supplies during drought years.
Responsible Section	WSE Water Supply Engineering
Operating Impact	Increased operational reliability.
In Service Date	Month: April Year: 2009
Total Project Cost	\$48,000 Per Year
Source of Funds	Fund 73 Connection Fees 100%

(\$1,000)

Appropriation	Prior	FY 10-11	FY 11-12	FY 12-13	FY 13-14	FY 14-15	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	Future	Total
Planning	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Design	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Construction	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Other	\$288	\$48	\$48	\$48	\$48	\$48	\$48	\$48	\$48	\$48	\$48	\$768	\$1,536
Total	\$288	\$48	\$48	\$48	\$48	\$48	\$48	\$48	\$48	\$48	\$48	\$768	\$1,536

Note: 'Future' means all the project costs from FY 20/21 through FY 35/36, which is the planning horizon.

Capital Improvement Project Summary Report

Strategy	Expansion
Program	Water Supply & Conveyance
Project	South Bay Aqueduct Improvement & Enlargement Project
Project ID:	SP5
Priority	1
Project Description	<p>SBA improvements by the California Department of Water Resources (DWR) that will convey for Zone 7 an additional 130 cubic feet per second (cfs) through Reach 1 and 80 cfs through Reaches 2 through 4. Improvements include an expanded South Bay Pumping Plant, third (parallel) Brushy Creek Pipeline, raised linings on open channel sections, replacement of 54-inch pipe under I-580 with 78-inch pipe (completed 3/02), application of hydraulically smoother elastomeric polyurethane lining on the Altamont Pipeline (completed 3/02), enlarged Patterson Reservoir, and new 425 acre-foot (operational storage) raw water reservoir (Dyer Reservoir) located near Dyer Road and the future Altamont Water Treatment Plant.</p> <p>Note that Amendment No. 24 of Zone 7's water supply contract with DWR allows for debt financing of the SBA Improvement & Enlargement Project by DWR. Annual repayment by Zone 7 began in 2006 and will end in 2036. To ensure there is adequate funding available to repay debt after buildout is expected to occur (2025), a sinking fund has been established. This sinking fund will fund the remainder of the debt from 2026 to 2036. The costs shown reflect the actual repayment of the debt plus interest.</p>
Justification	As identified in the 1999 Water Supply Master Plan and 2001 Water Conveyance Study, provides for long-term Zone 7 raw water conveyance capacity through planned service-area build-out.
Responsible Section	WSE Water Supply Engineering
Operating Impact	Provides for enhanced long-term water supply, reliability and flexibility.
In Service Date	Month: Year: Ongoing
Total Project Cost	\$250,520,000
Source of Funds	Fund 73 Connection Fees 100%

(\$1,000)

Appropriation	Prior	FY 10-11	FY 11-12	FY 12-13	FY 13-14	FY 14-15	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	Future	Total
Planning	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Design	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Construction	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Other	\$24,598	\$12,463	\$12,384	\$10,364	\$10,054	\$10,052	\$10,051	\$10,052	\$10,052	\$10,050	\$10,048	\$120,352	\$250,520
Total	\$24,598	\$12,463	\$12,384	\$10,364	\$10,054	\$10,052	\$10,051	\$10,052	\$10,052	\$10,050	\$10,048	\$120,352	\$250,520

Note: 'Future' means all the project costs from FY 20/21 through FY 35/36, which is the planning horizon.

Capital Improvement Project Summary Report

Strategy Expansion

Program Water Supply & Conveyance

Project South Bay Aqueduct Improvement & Enlargement Project - Sinking Fund

Project ID: SP12

Priority 1

Project Description SBA improvements by the California Department of Water Resources (DWR) that will convey for Zone 7 an additional 130 cubic feet per second (cfs) through Reach 1 and 80 cfs through Reaches 2 through 4. Improvements include an expanded South Bay Pumping Plant, third (parallel) Brushy Creek Pipeline, raised linings on open channel sections, replacement of 54-inch pipe under I-580 with 78-inch pipe (completed 3/02), application of hydraulically smoother elastomeric polyurethane lining on the Altamont Pipeline (completed 3/02), enlarged Patterson Reservoir, and new 425 acre-foot (operational storage) raw water reservoir (Dyer Reservoir) located near Dyer Road and future Altamont Water Treatment Plant.

Note that Amendment No. 24 of Zone 7's water supply contract with DWR allows for debt financing of the SBA Improvement & Enlargement Project by DWR. Annual repayment by Zone 7 began in 2006 and end in 2036. To ensure there is adequate funding available to repay debt after buildout occurs (2025), a sinking fund has been established. This sinking fund will fund the remainder of the debt from 2026 to 2036. The costs shown reflect the actual repayment of the debt plus interest.

Justification This sinking fund is necessary to cover contractual costs from 2026 to 2035, during which time there will essentially be no on-going water connection fee revenues available because development buildout within the Valley is expected to be reached by this time.

Responsible Section WSE Water Supply Engineering

Operating Impact None.

In Service Date **Month:** **Year:** 2024

Total Project Cost \$39,826,000

Source of Funds Fund 73 Connection Fees 100%

(\$1,000)

Appropriation	Prior	FY 10-11	FY 11-12	FY 12-13	FY 13-14	FY 14-15	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	Future	Total
Planning	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Design	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Construction	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Other	\$6,063	\$96	\$130	\$166	\$170	\$2,660	\$2,726	\$2,794	\$2,864	\$2,936	\$3,009	\$16,212	\$39,826
Total	\$6,063	\$96	\$130	\$166	\$170	\$2,660	\$2,726	\$2,794	\$2,864	\$2,936	\$3,009	\$16,212	\$39,826

Note: 'Future' means all the project costs from FY 20/21 through FY 35/36, which is the planning horizon.

Capital Improvement Project Summary Report

Strategy	Expansion		
Program	Water Supply & Conveyance		
Project	SWP Peaking Payment (Lost Hills & Belridge Water Districts)		
Project ID:	WP10		
Priority	1		
Project Description	Zone 7 agreed to pay Lost Hills & Belridge Water Districts the extra SWP peaking payment when we acquired their SWP Table A amounts based on DWR billings to Kern County Water Agency (and to thus these 2 member agencies).		
Justification	Reliability of water supply.		
Responsible Section	WSE Water Supply Engineering		
Operating Impact	Extra peaking allows Zone 7 to deliver or store additional water when available in the SWP system.		
In Service Date	Month:	Year: 2035	
Total Project Cost	\$6,936,000		
Source of Funds	Fund 73	Connection Fees	100%

(\$1,000)

Appropriation	Prior	FY 10-11	FY 11-12	FY 12-13	FY 13-14	FY 14-15	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	Future	Total
Planning	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Design	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Construction	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Other	\$2,244	\$260	\$257	\$257	\$255	\$256	\$255	\$252	\$240	\$242	\$236	\$2,182	\$6,936
Total	\$2,244	\$260	\$257	\$257	\$255	\$256	\$255	\$252	\$240	\$242	\$236	\$2,182	\$6,936

Note: 'Future' means all the project costs from FY 20/21 through FY 35/36, which is the planning horizon.

Capital Improvement Project Summary Report

Strategy	System-Wide Improvements Renewal/Replacement		
Program	Program Management		
Project	System-Wide Improvement, Renewal/Replacement Program Management		
Project ID:	SP15		
Priority	1		
Project Description	Ongoing program management of the SWI and R&R programs.		
Justification	Provides for better tracking of program management costs.		
Responsible Section	WSE Water Supply Engineering		
Operating Impact	None		
In Service Date	Month:	Year: Ongoing	
Total Project Cost	\$2,159,000		
Source of Funds	Fund 72	Water Rates	100%

(\$1,000)

Appropriation	Prior	FY 10-11	FY 11-12	FY 12-13	FY 13-14	FY 14-15	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	Future	Total
Planning	\$209	\$50	\$50	\$50	\$60	\$60	\$60	\$60	\$60	\$70	\$70	\$1,360	\$2,159
Design	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Construction	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Other	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Total	\$209	\$50	\$50	\$50	\$60	\$60	\$60	\$60	\$60	\$70	\$70	\$1,360	\$2,159

Note: 'Future' means all the project costs from FY 20/21 through FY 35/36, which is the planning horizon.

Capital Improvement Project Summary Report

Strategy	System-Wide Improvements
Program	Transmission & Distribution
Project	System-Wide Installation of Line Valves
Project ID:	DS41
Priority	3
Project Description	Installation of approximately 30 new line valves in the transmission system, as needed, to provide a maximum of 2,000-2,500 feet separation throughout the transmission system.
Justification	The installation of additional line valves will reduce service interruptions due to scheduled maintenance and other activities such as leak repairs.
Responsible Section	WSE Water Supply Engineering
Operating Impact	Improve operation and reduce service interruptions.
In Service Date	Month: Year: Ongoing
Total Project Cost	\$1,710,000
Source of Funds	Fund 72 Water Rates 100%

(\$1,000)

Appropriation	Prior	FY 10-11	FY 11-12	FY 12-13	FY 13-14	FY 14-15	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	Future	Total
Planning	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Design	\$0	\$60	\$0	\$60	\$0	\$70	\$0	\$70	\$0	\$100	\$0	\$0	\$360
Construction	\$50	\$0	\$60	\$0	\$60	\$0	\$70	\$0	\$70	\$0	\$100	\$940	\$1,350
Other	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Total	\$50	\$60	\$60	\$60	\$60	\$70	\$70	\$70	\$70	\$100	\$100	\$940	\$1,710

Note: 'Future' means all the project costs from FY 20/21 through FY 35/36, which is the planning horizon.

Capital Improvement Project Summary Report

Strategy	Expansion System-Wide Improvements Renewal/Replacement
Program	Transmission & Distribution
Project	Transmission System Master Plan
Project ID:	DS37
Priority	2
Project Description	This program involves a comprehensive effort to define renewal/replacement and improvement projects needed for the transmission system in order to meet existing and future water demands. This program involves an integration of all aspects of transmission system planning, including the AMP, corrosion master planning, hydraulic modeling, etc.
Justification	Establish transmission system sustainability and increase operational/maintenance efficiencies and ensure that Zone 7 meets its goals and objectives to its retailers for existing and future demands, all in a cost-effective manner.
Responsible Section	WSE Water Supply Engineering
Operating Impact	Increase operational/maintenance effectiveness.
In Service Date	Month: Year: Ongoing
Total Project Cost	\$4,800,000
Source of Funds	Fund 72 Water Rates 75% Fund 73 Connection Fees 25%

(\$1,000)

Appropriation	Prior	FY 10-11	FY 11-12	FY 12-13	FY 13-14	FY 14-15	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	Future	Total
Planning	\$125	\$100	\$100	\$100	\$125	\$125	\$125	\$125	\$125	\$150	\$150	\$3,450	\$4,800
Design	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Construction	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Other	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Total	\$125	\$100	\$100	\$100	\$125	\$125	\$125	\$125	\$125	\$150	\$150	\$3,450	\$4,800

Note: 'Future' means all the project costs from FY 20/21 through FY 35/36, which is the planning horizon.

Capital Improvement Project Summary Report

Strategy	System-Wide Improvements
Program	Emergency Preparedness
Project	Vulnerability Assessment Review & Update
Project ID:	ESS1
Priority	2
Project Description	The project is a re-assessment of the vulnerabilities of Zone 7 facilities, including an evaluation the security levels of the treatment facilities, distribution system, and administration office.
Justification	This will update the 2003 Vulnerability Assessment report.
Responsible Section	WSE Water Supply Engineering
Operating Impact	Increased safety and emergency operations coordination for agency.
In Service Date	Month: June Year: 2011
Total Project Cost	\$110,000
Source of Funds	Fund 72 Water Rates 100%

(\$1,000)

Appropriation	Prior	FY 10-11	FY 11-12	FY 12-13	FY 13-14	FY 14-15	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	Future	Total
Planning	\$0	\$110	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$110
Design	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Construction	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Other	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Total	\$0	\$110	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$110

Note: 'Future' means all the project costs from FY 20/21 through FY 35/36, which is the planning horizon.

Capital Improvement Project Summary Report

Strategy	System-Wide Improvements Expansion
Program	Water Supply & Conveyance
Project	Water Conservation Best Management Practices
Project ID:	PR2
Priority	1
Project Description	As listed in the MOU regarding Urban Water Conservation in California which includes financial & technical support for our retailers' conservation efforts; support & incentives to improve large landscape water efficiency; and public information & school education programs promoting water conservation.
Justification	Reduce long-term water demands by promoting Best Management Practices that encourage wise and efficient use of water. Zone 7 studies show that per capita water use in our service area is declining, thus illustrating the effectiveness of our program.
Responsible Section	EPA Environmental and Public Affairs
Operating Impact	Decreased potable water demands and increase system reliability.
In Service Date	Month: Year: Ongoing
Total Project Cost	\$6,150,000
Source of Funds	Fund 72 Water Rates 75% Fund 73 Connection Fees 25%

(\$1,000)

Appropriation	Prior	FY 10-11	FY 11-12	FY 12-13	FY 13-14	FY 14-15	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	Future	Total
Planning	\$1,150	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,150
Design	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Construction	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Other	\$0	\$100	\$100	\$100	\$100	\$100	\$150	\$150	\$150	\$150	\$150	\$3,750	\$5,000
Total	\$1,150	\$100	\$100	\$100	\$100	\$100	\$150	\$150	\$150	\$150	\$150	\$3,750	\$6,150

Note: 'Future' means all the project costs from FY 20/21 through FY 35/36, which is the planning horizon.

Capital Improvement Project Summary Report

Strategy	System-Wide Improvements
Program	Water Treatment Facilities
Project	Water Quality - PPWTP & DVWTP Taste and Odor Treatment
Project ID:	DV110
Priority	2
Project Description	This project consists of the design and construction of a raw water conventional ozonation process at each plant site as the recommended long-term taste and odor treatment. The likely treatment capacity will be for a 44 million gallons per day (MGD) facility at DVWTP and for a 24.5 MGD facility at PPWTP. The facilities at each site will include two ozone contactor basins, ozone generation and feed system and housed in a building, liquid oxygen storage and feed system, chlorine contactor for CT compliance, supporting chemical feed systems for raw water pH control and bromate control, significant yard piping, modifications to existing facilities, electrical, instrumentation, and control. The project is scheduled for completion in 2021.
Justification	This project will mitigate seasonal earthy-musty taste and odor from treated surface water from PPWTP and DVWTP per the Water Quality Management Program Implementation Plan. A draft project report evaluating two ozone-based processes was completed in July 2009, with completion of Final Report planned for fall 2009. This report also included the results and findings from six-months of pilot testing from May to October 2008 for conventional ozone and ozone with hydrogen peroxide (peroxone). That report recommended conventional ozonation on the raw water for both existing plants to meet our taste and odor treatment goals. Project represents Zone 7's commitment to optimize delivered water quality, including esthetic qualities such as taste and odor, and most likely, will eliminate T&O complaints and thereby improve public perception of Zone 7's water quality.
Responsible Section	WSE Water Supply Engineering
Operating Impact	Increase operations and maintenance costs, including the addition of one new operator, mechanic, electrician, and instrument technician to cover both sites. Operational impacts include improved water treatability, lower primary coagulant dosage, and less sludge production and handling.
In Service Date	Month: June Year: 2021
Total Project Cost	\$51,000,000
Source of Funds	Fund 72 Water Rates 100%

(\$1,000)

Appropriation	Prior	FY 10-11	FY 11-12	FY 12-13	FY 13-14	FY 14-15	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	Future	Total
Planning	\$700	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$700
Design	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$2,740	\$2,560	\$0	\$0	\$5,300
Construction	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$8,540	\$22,200	\$9,810	\$40,550
Other	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$270	\$1,570	\$1,630	\$930	\$4,400
Total	\$700	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$3,010	\$12,670	\$23,830	\$10,740	\$50,950

Note: 'Future' means all the project costs from FY 20/21 through FY 35/36, which is the planning horizon.

Capital Improvement Project Summary Report

Strategy	System-Wide Improvements Expansion
Program	Water Treatment Facilities
Project	Water Quality Management Program
Project ID:	PR9
Priority	1
Project Description	A comprehensive water quality management program and implementation plan (Water Quality Management Plan) was completed in April 2003. This plan addresses water quality concerns of customers and community. It has lead to the Board adoption of policies that address specific water quality goals and objectives that meet internal (Zone 7) and customer and end user needs. This ongoing program will be one component of Zone 7's overall master planning process. It will help guide both our water system operations and our CIP over the next 20 years.
Justification	Will assist the Zone 7 Board of Directors in determining policies to effectively manage treated and untreated water quality issues. Will provide guidance to Zone 7's water operations, help establish capital facilities needs and design guidelines, and incorporate a funding strategy.
Responsible Section	WQ Water Quality
Operating Impact	Will provide clear operational guidelines. Potential additional treatment and blending facilities to operate.
In Service Date	Month: Year: Ongoing
Total Project Cost	\$5,530,000
Source of Funds	Fund 72 Water Rates 75% Fund 73 Connection Fees 25%

(\$1,000)

Appropriation	Prior	FY 10-11	FY 11-12	FY 12-13	FY 13-14	FY 14-15	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	Future	Total
Planning	\$410	\$110	\$120	\$120	\$130	\$130	\$140	\$140	\$150	\$160	\$170	\$3,750	\$5,530
Design	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Construction	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Other	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Total	\$410	\$110	\$120	\$120	\$130	\$130	\$140	\$140	\$150	\$160	\$170	\$3,750	\$5,530

Note: 'Future' means all the project costs from FY 20/21 through FY 35/36, which is the planning horizon.

Capital Improvement Project Summary Report

Strategy	Expansion
Program	Water Supply & Conveyance
Project	Water Supply Purchase for Reliability
Project ID:	WP16
Priority	2
Project Description	Additional Delta water supplies to be purchased for storage locally to meet future Zone 7 water demands. This project was previously entitled "Delta Water Supply/Storage".
Justification	Additional water supplies are needed for local storage to firm up reliability in case of inability to bring in adequate supplies from the Delta (e.g., due to a major levee break).
Responsible Section	AP Advance Planning
Operating Impact	Increased water supply reliability.
In Service Date	Month: June Year: 2011
Total Project Cost	\$11,000,000
Source of Funds	Fund 73 Connection Fees 100%

(\$1,000)

Appropriation	Prior	FY 10-11	FY 11-12	FY 12-13	FY 13-14	FY 14-15	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	Future	Total
Planning	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Design	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Construction	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Other	\$0	\$0	\$0	\$0	\$11,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$11,000
Total	\$0	\$0	\$0	\$0	\$11,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$11,000

Note: 'Future' means all the project costs from FY 20/21 through FY 35/36, which is the planning horizon.

Capital Improvement Project Summary Report

Strategy	Expansion
Program	Wells
Project	Well Master Plan Wells
Project ID:	W11
Priority	1
Project Description	This project involves the construction of several new municipal water supply wells (Chain of Lakes Wells 1 and 2 are the first two) to meet Zone 7's M&I drought reliability goal through buildout . The new wells will be constructed with schedule that mirrors the increases needed to maintain Zone 7's reliability as demand grows. The estimated project costs include all planning, site testing, land acquisition, well drilling, facility design and construction, pipeline additions and miscellaneous site work costs necessary to implement these Well Master Plan wells.
Justification	This project is required to maintain sufficient Zone 7 well capacity for Zone 7 to meet 100% of its M&I customers' projected future needs, even during worse-case drought conditions, as established in Zone 7 Resolution 02-2382. As additional benefits, these wells will provide Zone 7 with better abilities to manage groundwater levels, groundwater flow, dissolved salt build-up/removal, delivered water quality blending and peak-day demands.
Responsible Section	WSE Water Supply Engineering
Operating Impact	System reliability.
In Service Date	Month: June Year: 2020
Total Project Cost	\$105,880,000
Source of Funds	Fund 73 Connection Fees 100%

(\$1,000)

Appropriation	Prior	FY 10-11	FY 11-12	FY 12-13	FY 13-14	FY 14-15	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	Future	Total
Planning	\$1,550	\$100	\$110	\$110	\$120	\$0	\$90	\$130	\$140	\$0	\$0	\$0	\$2,350
Design	\$2,300	\$730	\$220	\$2,470	\$470	\$610	\$2,660	\$2,110	\$1,780	\$140	\$0	\$0	\$13,490
Construction	\$2,400	\$100	\$2,920	\$220	\$17,260	\$1,340	\$3,040	\$20,990	\$9,920	\$12,100	\$1,330	\$770	\$72,390
Other	\$17,650	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$17,650
Total	\$23,900	\$930	\$3,250	\$2,800	\$17,850	\$1,950	\$5,790	\$23,230	\$11,840	\$12,240	\$1,330	\$770	\$105,880

Note: 'Future' means all the project costs from FY 20/21 through FY 35/36, which is the planning horizon.

Capital Improvement Project Summary Report

Strategy	Renewal/Replacement
Program	Wells
Project	Well Pump, Motor and Casing Inspections
Project ID:	W35
Priority	2
Project Description	Zone 7 currently has seven production wells. This project involves annual inspection of well pumps, motors and casing and related repairs for one well.
Justification	This project will improve reliability of production wells.
Responsible Section	OPS Operations & Maintenance
Operating Impact	Increased operational service life of facilities thereby reducing future capital investments.
In Service Date	Month: Year: Ongoing
Total Project Cost	\$390,000
Source of Funds	Fund 72 Water Rates 100%

(\$1,000)

Appropriation	Prior	FY 10-11	FY 11-12	FY 12-13	FY 13-14	FY 14-15	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	Future	Total
Planning	\$30	\$30	\$30	\$30	\$30	\$40	\$40	\$40	\$40	\$40	\$40	\$0	\$390
Design	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Construction	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Other	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Total	\$30	\$30	\$30	\$30	\$30	\$40	\$40	\$40	\$40	\$40	\$40	\$0	\$390

Note: 'Future' means all the project costs from FY 20/21 through FY 35/36, which is the planning horizon.



SECTION THREE
FLOOD PROTECTION



SECTION III – FLOOD PROTECTION

INTRODUCTION

Zone 7 plans and designs flood protection and storm water drainage facilities that enhance acceptance, management and control of storm water runoff and drainage in the Livermore-Amador Valley. The agency conducts capital improvement activities that protect life and property from damage caused by storm water runoff and drainage generated during large rainfall events.¹ Zone 7's first priority is implementing capital improvements that renew, replace and repair existing facilities to maintain the integrity of the existing flood protection system. Zone 7's second priority is identifying and developing and system-wide improvements that integrate local storm water channels into one regional flood protection system.

The purpose of this section is to present the capital improvement activities (renewal, replacement, and repair) required for flood protection over the next five years (i.e., the 5-Year CIP for Flood Protection), describe available funding sources and provide a brief overview of future flood protection activities.

PROPOSED RENEWAL, REPLACEMENT, AND REPAIR ACTIVITIES

Zone 7 staff conducts an annual review of system-wide capital improvement activities required for existing facilities. Based on this review, Zone 7 staff has identified the following twelve capital improvement activities that will be conducted over the next five years:

- Administrative & Engineering Building: This project includes the continuing lease of a new office building that brought engineering, administrative, and operational staff together in one location; thereby, improving communications and staff productivity while conducting capital improvement activities.
- Administrative & Engineering Building – Sinking Fund: This project will cover the cost to purchase a new building after Zone 7's 15-year lease expires in 2020.
- Access Roads: This program is required to restore the function and integrity of maintenance roads so that staff can safely conduct facility inspection activities.
- Sediment Removal from Existing Channels: This program implements Zone 7's sediment removal activities from existing channels throughout the system.
- Fences and Gates: This program is required to replace fences and gates throughout Zone 7's existing flood protection system.
- Landscaping and Hydroseeding: This program is required to install landscaping and erosion control measures throughout the existing flood protection system.
- Embankment Repair: This program rehabilitates the embankments of existing channels throughout the system damaged during large storm events.

¹ For planning purposes in this CIP, a large rainfall event is defined as the 100-year rainfall event, or the rainfall event with the probability of occurring once every 100 years; this is also known as the 1% rainfall event.

SECTION III – FLOOD PROTECTION

- Asphalt Driveways: This program replaces existing gravel driveways throughout the system with asphalt; thereby, enhancing the life and function of all driveways.
- Concrete V-Ditches: This program replaces existing earthen V-ditches along the top of embankments with concrete V-ditches, which will improve bank stability and reduce maintenance costs.
- New Drain Structures: This program constructs new drain inlets, cross drain piping, and outfall structures along the top of existing embankments; thereby, improving drainage and increasing bank stability.
- Vegetation Abatement: This program removes vegetation throughout the system per fire department regulations. This activity includes tree management.

Table 1 presents the projected costs for these capital improvements over the next five years. As shown in Table 1 total expenditures for Renewal and Replacement activities are expected average \$1.7M annually for the next five years.

Table 1 - Projected Renewal and Replacement Expenditures Over the Next Five Years

Programs	Appropriations (\$Millions)					Total
	FY 2010/11	FY 2011/12	FY 2012/13	FY 2013/14	FY 2014/15	
Building & Grounds						
Administrative & Engineering Building Lease (Flood Protection)	\$0.111	\$0.114	\$0.116	\$0.118	\$0.120	\$0.580
Administrative and Engineering Building - Sinking Fund (Flood Protection)	\$0.082	\$0.084	\$0.086	\$0.089	\$0.091	\$0.430
Subtotal	\$0.193	\$0.198	\$0.202	\$0.207	\$0.211	\$1.011
Flood Control Facilities						
Construction and Rehabilitation of Maintenance Roads	\$0.140	\$0.170	\$0.175	\$0.180	\$0.185	\$0.850
District-wide F. C. Channel Desilting Program	\$0.380	\$0.230	\$0.235	\$0.240	\$0.245	\$1.330
Fences & Gates Installation & Replacement	\$0.035	\$0.035	\$0.038	\$0.040	\$0.042	\$0.190
Landscaping & Hydroseeding Channel Embankments	\$0.095	\$0.095	\$0.098	\$0.100	\$0.102	\$0.490
Rehabilitation of F. C. Channel Embankments	\$0.600	\$0.600	\$0.610	\$0.620	\$0.630	\$3.060
System-wide Asphalt Paving F.C. Facility Driveway	\$0.050	\$0.070	\$0.075	\$0.080	\$0.085	\$0.360
System-wide Construction of Concrete V-ditches	\$0.050	\$0.060	\$0.065	\$0.070	\$0.075	\$0.320
System-wide Construction of Drain Structures	\$0.070	\$0.095	\$0.100	\$0.105	\$0.110	\$0.480
System-wide Vegetation Abatement	\$0.240	\$0.315	\$0.325	\$0.335	\$0.345	\$1.560
Total	\$1.660	\$1.670	\$1.721	\$1.770	\$1.819	\$8.640
Program Management						
Capital Improvement Program Management	\$0.006	\$0.006	\$0.006	\$0.006	\$0.006	\$0.030
Subtotal	\$0.006	\$0.006	\$0.006	\$0.006	\$0.006	\$0.030
Total	\$1.860	\$1.870	\$1.930	\$1.980	\$2.040	\$9.680

Additional information on each improvement activity is provided in Project Summaries at the end of this section.

SECTION III – FLOOD PROTECTION

FUNDING ANALYSIS - PROJECTED REVENUE FROM EXISTING FUNDS

Zone 7 currently uses two sources of revenue to fund flood protection activities. The first source is property taxes and the second source is development impact fees. Revenue from property taxes is placed in Fund 50, while revenue from development impact fees is placed in Fund 76; each is discussed in more detail below.

Fund 50 – Flood Protection General Fund

Alameda County provides Zone 7 a portion of the taxes levied based on one percent (1%) of the assessed value of all properties within Zone 7's service area. The revenues that Zone 7 receives from Alameda County are placed into Fund 50, and can be used to support both operation and maintenance (O&M) activities and the construction of new facilities. Zone 7 will sometimes supplement these revenues with state and federal grant funding. Table ES-4 presents the projected funding for Fund 50 over the next five years.

TABLE 2 - Fund 50 (Property Taxes) - NEAR-TERM FUNDING (\$ Millions)

Fiscal year (FY)	10/11	11/12	12/13	13/14	14/15
1 Beg. Available Fund Balance	20.10	20.49	21.00	21.55	22.22
2 Revenue					
3 Property Tax Revenue	5.84	6.02	6.26	6.57	6.90
4 Other Revenue	1.00	1.10	1.10	1.10	1.20
Total Revenue	6.84	7.12	7.36	7.67	8.10
5 Expenditures					
6 Capital Expenditures	1.79	1.80	1.85	1.90	1.95
7 Operating Expenditures	4.59	4.73	4.87	5.02	5.17
8 Building Sinking Fund	0.08	0.08	0.08	0.09	0.09
9 Total Expenditures	6.46	6.61	6.80	7.00	7.21
10 End. Available Fund Balance	20.49	21.00	21.55	22.22	23.11

Key Assumptions

- Line 1 Beginning fund balance excludes prior year encumbrance carryovers.
- Line 3 Since taxes are based on the assessed property value, which fluctuates over time, Zone 7 has based the contribution on historic experience. A five percent annual (5%) increase is conservatively estimated to account for growth in assessed valuation.
- Line 4 Assumes 4% interest income earned on beginning cash and sinking fund balances.
- Line 8 Expenditures are shown in actual dollars (current dollars adjusted by a 4% annual inflation factor).

Fund 76 – Flood Protection and Storm Water Drainage Development Impact Fee

On March 18, 2009, the Zone 7 Board of Directors adopted Ordinance 2009-01, which replaced the Special Drainage Area (SDA) 7-1 development impact fee previously adopted by Zone 7.² The new ordinance also established the Flood Protection and Storm Water Drainage Development Impact Fee Fund (Fund 76); consequently, all funds from SDA Operations (Fund

² Ordinance No. 00-2004-42 was repealed on March 18, 2009, the effective date of Ordinance 2009-01.

SECTION III – FLOOD PROTECTION

71) and the SDA 7-1 Trust Fund (Fund 90) were transferred to Fund 76, while all of the outstanding SDA 7-1 exemption credits were liquidated.³

Fund 76 holds all fees collected from future development in support of Zone 7's flood protection and storm water drainage activities. The following sections describe Fund 76 in more detail:

- Basis for Establishing the New Fee
- Fee Implementation
- Existing and Projected Fund Balance

Basis for Establishing the New Fee

The Zone 7 Board of Directors approved the Stream Management Master Plan (SMMP) in August 2006. Zone 7 adopted Ordinance 2009-01 to establish the new development impact fee (DIF) necessary to support SMMP projects within the Alameda Creek Watershed. Zone 7 will conduct a separate analysis and prepare a separate ordinance for those projects located outside of the Alameda Creek Watershed, but within Zone 7's service area.

The new DIF was recommended in a March 2009 report entitled "Development Impact Fees for Flood Protection and Storm Water Drainage" prepared by HDR Consultants Inc. (2009 DIF Report). The nexus, methodology, and new fee recommended in the 2009 DIF report are described below in more detail.

Nexus: Impervious Area

The 2009 DIF Report established impervious area as the nexus between the DIF and the capital improvements proposed in the SMMP. Increased impervious area impacts the ability of Zone 7 to protect life and property on a regional scale because increased impervious area generates additional runoff and storm water drainage that eventually flows into Zone 7's flood protection and storm water drainage system.⁴

Methodology: Incremental

The 2009 DIF Report used an incremental methodology⁵ to determine the new fee, and divided all of the SMMP projects into two groups: (1) Conveyance and (2) Storage.

The SMMP conveyance projects function as a network that allows Zone 7 to accept and manage regional storm water runoff and drainage. Any one project by itself does not allow Zone 7 to manage the impacts generated by additional impervious area created by future development; instead, it is the network of all the conveyance projects working together.

³ Per Ordinance 2009-01, the funds were transferred and existing exemption credits were liquidated on May 18, 2009, the effective date of the new ordinance.

⁴ The 2009 DIF Report determined that future development would increase the total impervious surface within the Alameda Creek Watershed by approximately 17%.

⁵ The incremental methodology assumes that insufficient capacity is available in the existing system to accommodate future development and therefore, the new fee is based on the cost of new capital facilities required to accommodate additional storm water runoff and drainage created by future development.

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The SMMP storage projects includes three projects⁶ necessary to divert, store, and pump storm water runoff and drainage from the Arroyo Las Positas and Arroyo Mocho, near El Charro Road, into the Chain of Lakes. These projects are different from conveyance projects from a storm drainage management and hydrologic perspective; these projects are also sized based on volume, and not just flow.

Recommended Development Impact Fee

Based on the nexus and methodology described above, the 2009 DIF Report recommended a new fee of \$1.423 per square-foot of impervious area created by new development.

Fee Implementation

In light of the current severe economic downturn, Ordinance 2009-01 also included a five-year phasing schedule of the new fee. The five-year phasing schedule is as follows:

- Existing Fee: \$0.783 / ft² of impervious area
- Year 1 (1/1/10): \$0.87 + ENR⁷ adjustment
- Year 2 (1/1/11): \$0.96 + ENR adjustment
- Year 3 (1/1/12): \$1.10 + ENR adjustment
- Year 4 (1/1/13): \$1.30 + ENR adjustment
- Year 5 (1/1/14): \$1.42 + ENR adjustment

Five Year Planning Horizon Efforts for Fund 76

Based on input obtained during a series of meetings with the Cities of Dublin, Pleasanton, and Livermore, Zone 7 anticipates beginning a collaborative re-evaluation and update of the SMMP proposed projects and the associated program costs in 2012. Zone 7 anticipates that the first five years of fee collection under Fund 76 will be used on the top priority project, Phase I improvements in the regional storage/detention system at the Chain of Lakes.

As discussed below, Zone 7 staff will continue to evaluate additional funding mechanisms to support and implement the SMMP and therefore, did not project significant expenditures for future expansion projects over the next five years.

OVERVIEW OF FUTURE FLOOD PROTECTION ACTIVITIES

The Zone 7 Board of Directors approved the SMMP in August 2006 to help guide future activities that will enhance Zone 7's ability to accept, manage, and control storm water runoff and drainage during large rainfall events. As discussed previously, Zone 7 recently adopted Ordinance 2009-01 to establish the new Development Impact Fee and Fund 76 for the purposes of funding future development's share of the SMMP projects.

Zone 7 staff is currently reviewing funding options for the balance of the SMMP; these funding mechanisms include:

⁶ The storage projects consist of Projects R.5-2, R.5-3, and R.6-2 of the SMMP.

⁷ ENR is an acronym for Engineering News Record, and in this case refers to the San Francisco construction cost index produced by ENR.

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- Proposition 218 Property Owner-Approved Service Charge,
- Proposition 218 Voter-Approved Service Charge,
- Proposition 218 Property Owner-Approved Benefit Assessment,
- Special Taxes (e.g., Non-Ad and Ad-Valorem taxes), and
- Grant Opportunities

The applicability of each of these funding mechanisms depends on whether they will be used to fund O&M, Capital Improvements, or both, and whether they will generate sufficient funding. This new funding mechanism(s), when combined with revenues put into Fund 50 and Fund 76, will complete the financing portfolio necessary to implement the entire SMMP; thereby, allowing Zone 7 staff to present a formal CIP for the expansion activities associated with providing flood protection to the Livermore-Amador Valley.

PROJECT SUMMARIES

The following project summaries are presented to provide additional information on each project.

Project Title	Page No.
Administrative & Engineering Building	3-7
Administrative & Engineering Building – Sinking Fund	3-8
Capital Improvement Program Management	3-9
Construction and Rehabilitation of Maintenance Roads	3-10
District-wide F. C. Channel Desilting Program	3-11
Fences & Gates Installation and Repair	3-12
Landscaping & Hydroseeding Channel Embankments	3-13
Rehabilitation of F.C. Channel Embankments	3-14
System-wide Asphalt Paving F.C. Facility Driveway	3-15
System-wide Construction of Concrete V-ditches	3-16
System-wide Construction of Drain Structures	3-17
System-wide Vegetation Abatement	3-18

Capital Improvement Project Summary Report

Strategy	Expansion System-Wide Improvements
Program	Buildings & Grounds
Project	Administrative & Engineering Building Lease (Flood Protection)
Project ID:	SP17
Priority	2
Project Description	A new office building has been constructed for administrative and engineering staff. The new building has a larger Board Room for public meetings. It is located closer to operations (treatment plants), and is more centrally located for employees and Valley residents. The cost is based on "Build to Suit" option and includes lease payments. In addition to the scheduled lease payment for the new building, \$696,000 plus interest per year will be contributed to a sinking fund in order to cover the purchase cost of the building after the lease payments have been completed in FY 2018/19.
Justification	Engineering, administrative and operations staff were at different locations. This project has brought administrative and engineering staff together and will bring both closer to operations. This project also accommodates future expansion. It will reduce overall agency travel times, improve communications and staff productivity.
Responsible Section	ASD Administrative Services Division
Operating Impact	Provides for more efficient and effective operations of administrative and engineering functions. Provides for secure Emergency Operations Center (EOC), as the new building meets strictest building.
In Service Date	Month: June Year: 2019
Total Project Cost	\$4,887,000
Source of Funds	Fund 50 Flood Control/ General Fund 50% Fund 76 Flood Protection & Storm Water Drainage 50%

(\$1,000)

Appropriation	Prior	FY 10-11	FY 11-12	FY 12-13	FY 13-14	FY 14-15	Future	Total
Planning	\$142	\$0	\$0	\$0	\$0	\$0	\$0	\$142
Design	\$142	\$0	\$0	\$0	\$0	\$0	\$0	\$142
Construction	\$766	\$0	\$0	\$0	\$0	\$0	\$0	\$766
Other	\$1,155	\$222	\$227	\$231	\$236	\$241	\$0	\$3,322
Total	\$2,205	\$222	\$227	\$231	\$236	\$241	\$0	\$4,372

Capital Improvement Project Summary Report

Strategy	Expansion Renewal/Replacement
Program	Buildings & Grounds
Project	Administrative and Engineering Building - Sinking Fund (Flood Protection)
Project ID:	SP16
Priority	2
Project Description	In addition to the scheduled lease payment for the new building, \$696,000 plus interest per year will be contributed to this sinking fund in order to cover the purchase cost of the building after the lease payments have been completed in FY 2018/19.
Justification	This sinking fund will cover the cost to purchase the new Administrative & Engineering Building after Zone 7's 15 year lease is completed.
Responsible Section	ASD Administrative Services Division
Operating Impact	None.
In Service Date	Month: June Year: 2019
Total Project Cost	\$4,040,000
Source of Funds	Fund 50 Flood Control/ General Fund 50% Fund 76 Flood Protection & Storm Water Drainage 50%

(\$1,000)

Appropriation	Prior	FY 10-11	FY 11-12	FY 12-13	FY 13-14	FY 14-15	Future	Total
Planning	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Design	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Construction	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Other	\$902	\$164	\$168	\$172	\$177	\$181	\$0	\$2,535
Total	\$902	\$164	\$168	\$172	\$177	\$181	\$0	\$2,535

Capital Improvement Project Summary Report

Strategy	Expansion Renewal/Replacement		
Program	Program Management		
Project	Capital Improvement Program Management		
Project ID:	SP13		
Priority	1		
Project Description	Ongoing program management of the Capital Improvement Program (CIP) including annual report preparation, Zone 7 labor and other CIP related efforts.		
Justification	Provides for better tracking of program management costs.		
Responsible Section	WSE Water Supply Engineering		
Operating Impact	None		
In Service Date	Month:	Year:	Ongoing
Total Project Cost	\$7,676,000		
Source of Funds	Fund 50	Flood Control/ General Fund	5%
	Fund 72	Water Rates	20%
	Fund 73	Connection Fees	75%

(\$1,000)

Appropriation	Prior	FY 10-11	FY 11-12	FY 12-13	FY 13-14	FY 14-15	Future	Total
Planning	\$52	\$13	\$13	\$13	\$13	\$13	\$228	\$404
Design	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Construction	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Other	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Total	\$52	\$13	\$13	\$13	\$13	\$13	\$228	\$404

Capital Improvement Project Summary Report

Strategy	Renewal/Replacement
Program	Flood Control Facilities
Project	Construction and Rehabilitation of Maintenance Roads
Project ID:	FC9
Priority	1
Project Description	Construct new and rehabilitate existing gravel flood control maintenance roads by replenishing the road base, grading and compacting to proper grade.
Justification	Construction of new gravel roads is needed along channel. Heavy usage and previous storm damages have caused these maintenance roads to be inaccessible under wet conditions. This program is required to provide and to restore the function and integrity of these roads to provide safe access for staff to conduct facility inspection activities on a year-round basis
Responsible Section	FCE Flood Control Engineering
Operating Impact	Increased maintenance efficiencies by providing safe access for staff to conduct facility inspection activities on year-round basis.
In Service Date	Month: Year: Ongoing
Total Project Cost	\$1,945,000
Source of Funds	Fund 50 Flood Control/ General Fund 100%

(\$1,000)

Appropriation	Prior	FY 10-11	FY 11-12	FY 12-13	FY 13-14	FY 14-15	Future	Total
Planning	\$50	\$10	\$20	\$25	\$25	\$25	\$0	\$155
Design	\$80	\$10	\$30	\$30	\$30	\$30	\$0	\$210
Construction	\$885	\$110	\$120	\$120	\$125	\$130	\$0	\$1,490
Other	\$80	\$10	\$0	\$0	\$0	\$0	\$0	\$90
Total	\$1,095	\$140	\$170	\$175	\$180	\$185	\$0	\$1,945

Capital Improvement Project Summary Report

Strategy	Renewal/Replacement
Program	Flood Control Facilities
Project	District-wide F. C. Channel Desilting Program
Project ID:	FC5
Priority	1
Project Description	This District-wide desilting program is designed to systematically plan, design and remove roughly over 300,000 cubic yards of sediment which has accumulated in various flood control channels over the years.
Justification	Silt sedimentation decreases channel carrying capacity and conveyance capability which compromise the level of flood protection. This program is required to restore the flood control channel facilities to their original design hydraulic capacity and associated parameters in order to provide the design level of flood protection in servicing the community in any given time.
Responsible Section	FCE Flood Control Engineering
Operating Impact	Increased flood control channel efficiency and prolong service life.
In Service Date	Month: Year: Ongoing
Total Project Cost	\$4,295,000
Source of Funds	Fund 50 Flood Control/ General Fund 100%

(\$1,000)

Appropriation	Prior	FY 10-11	FY 11-12	FY 12-13	FY 13-14	FY 14-15	Future	Total
Planning	\$435	\$30	\$20	\$25	\$25	\$30	\$0	\$565
Design	\$360	\$30	\$20	\$20	\$20	\$20	\$0	\$470
Construction	\$2,170	\$280	\$150	\$150	\$155	\$155	\$0	\$3,060
Other	\$0	\$40	\$40	\$40	\$40	\$40	\$0	\$200
Total	\$2,965	\$380	\$230	\$235	\$240	\$245	\$0	\$4,295

Capital Improvement Project Summary Report

Strategy	Renewal/Replacement
Program	Flood Control Facilities
Project	Fences & Gates Installation & Replacement
Project ID:	FC7
Priority	1
Project Description	This project provides for the replacement of damaged or destroyed fences and gates within the flood control facilities.
Justification	Zone 7 owns about 39 miles of channels. From time to time, fences and gates are damaged or destroyed by vandalism, traffic accidents, or adjacent property owners' activities. In some cases, where the adjacent property becomes developed, it requires upgrading to a higher security fence other than a 5-wire field fence. Replacement of these fences and gates are necessary for security and liability purposes.
Responsible Section	FCE Flood Control Engineering
Operating Impact	Provides for the desired level of security, liability and safety within Zone 7 stream channels.
In Service Date	Month: Year: Ongoing
Total Project Cost	\$510,000
Source of Funds	Fund 50 Flood Control/ General Fund 100%

(\$1,000)

Appropriation	Prior	FY 10-11	FY 11-12	FY 12-13	FY 13-14	FY 14-15	Future	Total
Planning	\$55	\$10	\$10	\$13	\$40	\$17	\$0	\$145
Design	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Construction	\$240	\$25	\$25	\$25	\$0	\$25	\$0	\$340
Other	\$25	\$0	\$0	\$0	\$0	\$0	\$0	\$25
Total	\$320	\$35	\$35	\$38	\$40	\$42	\$0	\$510

Capital Improvement Project Summary Report

Strategy	System-Wide Improvements
Program	Flood Control Facilities
Project	Landscaping & Hydroseeding Channel Embankments
Project ID:	FC8
Priority	1
Project Description	Installation of landscaping to meet the Best Management Practices requirements under the Alameda County Clean Water Program, and erosion control hydroseeding at Zone 7 flood control channel facilities.
Justification	Provide erosion control measures.
Responsible Section	FCE Flood Control Engineering
Operating Impact	Increased maintenance.
In Service Date	Month: Year: Ongoing
Total Project Cost	\$990,000
Source of Funds	Fund 50 Flood Control/ General Fund 100%

(\$1,000)

Appropriation	Prior	FY 10-11	FY 11-12	FY 12-13	FY 13-14	FY 14-15	Future	Total
Planning	\$50	\$10	\$10	\$22	\$12	\$12	\$0	\$116
Design	\$20	\$10	\$10	\$0	\$10	\$10	\$0	\$60
Construction	\$400	\$75	\$75	\$76	\$78	\$80	\$0	\$784
Other	\$30	\$0	\$0	\$0	\$0	\$0	\$0	\$30
Total	\$500	\$95	\$95	\$98	\$100	\$102	\$0	\$990

Capital Improvement Project Summary Report

Strategy	Renewal/Replacement
Program	Flood Control Facilities
Project	Rehabilitation of F. C. Channel Embankments
Project ID:	FC3
Priority	1
Project Description	Rehabilitation of reaches of damaged flood control channel facilities.
Justification	Previous storm damages sometimes compounded by the end of their design service lives have deteriorated and degraded the structural integrity of these existing facilities. This project is required to restore the facilities to or above the original design function and protection level against storm events in any given time.
Responsible Section	FCE Flood Control Engineering
Operating Impact	Increase flood control channel efficiency and prolong service life.
In Service Date	Month: Year: Ongoing
Total Project Cost	\$7,130,000
Source of Funds	Fund 50 Flood Control/ General Fund 100%

(\$1,000)

Appropriation	Prior	FY 10-11	FY 11-12	FY 12-13	FY 13-14	FY 14-15	Future	Total
Planning	\$360	\$80	\$90	\$95	\$95	\$100	\$0	\$820
Design	\$210	\$30	\$30	\$30	\$30	\$30	\$0	\$360
Construction	\$3,250	\$450	\$470	\$475	\$485	\$490	\$0	\$5,620
Other	\$250	\$40	\$10	\$10	\$10	\$10	\$0	\$330
Total	\$4,070	\$600	\$600	\$610	\$620	\$630	\$0	\$7,130

Capital Improvement Project Summary Report

Strategy	System-Wide Improvements		
Program	Flood Control Facilities		
Project	System-wide Asphalt Paving F.C. Facility Driveway		
Project ID:	FC1		
Priority	1		
Project Description	Improve existing gravel flood control facility driveway entrances by construction of asphalt pavements.		
Justification	Gravel driveway entrances deteriorate with heavy traffic usage and wet weather. In addition, staff finds gravel scattered on the adjacent sidewalks at times creating tripping hazards which may expose Zone 7 to undesirable liability issues. Improving driveways from gravel to asphalt will provide all weather entrances, reduce potential claims and enhance Zone 7's public appearance.		
Responsible Section	FCE Flood Control Engineering		
Operating Impact	Increase in long term renewal and replacement costs but decrease in short term maintenance costs.		
In Service Date	Month:	Year:	Ongoing
Total Project Cost	\$730,000		
Source of Funds	Fund 50	Flood Control/ General Fund	100%

(\$1,000)

Appropriation	Prior	FY 10-11	FY 11-12	FY 12-13	FY 13-14	FY 14-15	Future	Total
Planning	\$75	\$10	\$10	\$15	\$15	\$15	\$0	\$140
Design	\$50	\$10	\$10	\$10	\$10	\$10	\$0	\$100
Construction	\$380	\$30	\$50	\$50	\$55	\$60	\$0	\$625
Other	\$75	\$0	\$0	\$0	\$0	\$0	\$0	\$75
Total	\$580	\$50	\$70	\$75	\$80	\$85	\$0	\$940

Capital Improvement Project Summary Report

Strategy	System-Wide Improvements		
Program	Flood Control Facilities		
Project	System-wide Construction of Concrete V-ditches		
Project ID:	FC4		
Priority	1		
Project Description	Improve existing earthen V-ditches to concrete V-ditches along the top of embankments.		
Justification	The slope of earthen V-ditches are often altered either by erosion and/or siltation may cause retardance of flow in just a single season. They require a high degree of maintenance activity for them to function properly (i.e., cleaning, regrading, weed abatement, etc.). Improving V-ditches from earthen to concrete will reduce maintenance costs in a long run and improve embankment stability.		
Responsible Section	FCE Flood Control Engineering		
Operating Impact	Increase in long term renewal and replacement costs but decrease in short term maintenance costs.		
In Service Date	Month:	Year:	Ongoing
Total Project Cost	\$770,000		
Source of Funds	Fund 50	Flood Control/ General Fund	100%

(\$1,000)

Appropriation	Prior	FY 10-11	FY 11-12	FY 12-13	FY 13-14	FY 14-15	Future	Total
Planning	\$60	\$10	\$10	\$10	\$10	\$10	\$0	\$110
Design	\$55	\$10	\$10	\$15	\$15	\$15	\$0	\$120
Construction	\$305	\$30	\$40	\$40	\$45	\$50	\$0	\$510
Other	\$30	\$0	\$0	\$0	\$0	\$0	\$0	\$30
Total	\$450	\$50	\$60	\$65	\$70	\$75	\$0	\$770

Capital Improvement Project Summary Report

Strategy	System-Wide Improvements		
Program	Flood Control Facilities		
Project	System-wide Construction of Drain Structures		
Project ID:	FC6		
Priority	1		
Project Description	Improve drainage along the top of embankment by construction of drain structures (drain inlets, cross drain piping and outfall structures).		
Justification	Water collects in V-ditches along the top of embankments must be conveyed to the channels. There are a number of reaches of flood control channels where the numbers of drain structures are inadequate, causing ponding and overflow. At these locations, new drain structures must be constructed in order to resolve the drainage problem and improve the embankment stability.		
Responsible Section	FCE Flood Control Engineering		
Operating Impact	Increase in long-term renewal and replacement costs but decrease in short-term maintenance costs.		
In Service Date	Month:	Year:	Ongoing
Total Project Cost	\$970,000		
Source of Funds	Fund 50	Flood Control/ General Fund	100%

(\$1,000)

Appropriation	Prior	FY 10-11	FY 11-12	FY 12-13	FY 13-14	FY 14-15	Future	Total
Planning	\$70	\$10	\$15	\$15	\$20	\$20	\$0	\$150
Design	\$50	\$10	\$10	\$10	\$10	\$10	\$0	\$100
Construction	\$440	\$50	\$70	\$75	\$75	\$80	\$0	\$790
Other	\$100	\$0	\$0	\$0	\$0	\$0	\$0	\$100
Total	\$660	\$70	\$95	\$100	\$105	\$110	\$0	\$1,140

Capital Improvement Project Summary Report

Strategy	System-Wide Improvements		
Program	Flood Control Facilities		
Project	System-wide Vegetation Abatement		
Project ID:	FC10		
Priority	1		
Project Description	Provide chemical and mechanical vegetation abatement at Zone 7 flood control facilities.		
Justification	Comply with local fire department regulations, enhance Zone 7's public appearance and provide cleanliness and functionality of facilities.		
Responsible Section	FCE Flood Control Engineering		
Operating Impact	Increase operation and maintenance efficiencies.		
In Service Date	Month:	Year:	Ongoing
Total Project Cost	\$3,480,000		
Source of Funds	Fund 50	Flood Control/ General Fund	100%

(\$1,000)

Appropriation	Prior	FY 10-11	FY 11-12	FY 12-13	FY 13-14	FY 14-15	Future	Total
Planning	\$70	\$15	\$315	\$15	\$20	\$20	\$0	\$455
Design	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Construction	\$1,800	\$225	\$0	\$310	\$315	\$325	\$0	\$2,975
Other	\$50	\$0	\$0	\$0	\$0	\$0	\$0	\$50
Total	\$1,920	\$240	\$315	\$325	\$335	\$345	\$0	\$3,480

Appendix A

Zone 7 Board Policy Resolutions

ZONE 7
ALAMEDA COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT

BOARD OF DIRECTORS

RESOLUTION NO. 99-2068

INTRODUCED BY DIRECTOR LAYTON

SECONDED BY DIRECTOR MARCHAND

WHEREAS, Zone 7 serves as the overall water quality management agency for the Alameda Creek watershed above Niles and has primary responsibility for management of the Livermore-Amador Valley's surface and groundwater resources;

NOW, THEREFORE, BE IT RESOLVED that the Board of Directors of Zone 7 Water Agency does hereby support the proposed Salt Management Program Implementation Plan and inclusion of the following policy goals in the Zone 7 annual operations plan:

- Offset the current 2200 tons per year of salt loading plus approximately 200 tons per year current projected annual increase;
- Maintain or improve groundwater mineral quality;
- Maintain or improve delivered water quality;
- Provide comparable delivered water quality to all retailers;
- Provide a mechanism for mitigation of all salt loading associated with recycled water use;
- Minimize total operational and maintenance costs through an adaptive management process.

BE IT FURTHER RESOLVED the Zone 7 General Manager is hereby authorized to proceed with the recommended year 2000-2002 Salt Management Implementation Plan.

ADOPTED BY THE FOLLOWING VOTE:

AYES: DIRECTORS CONCANNON, FIGURES, LAYTON, MARCHAND, STEVENS

NOES: NONE

ABSENT: DIRECTORS GRECI, KALTHOFF

ABSTAIN: NONE

I certify that the foregoing is a correct copy of a resolution
Adopted by the Board of Directors of Zone 7 of Alameda
County Flood Control and Water Conservation District on

August 18, 1999

Original resolution signed by the President, Board of Directors

ZONE 7
ALAMEDA COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT
BOARD OF DIRECTORS

RESOLUTION NO 04-2662

INTRODUCED BY DIRECTOR MARCHAND
SECONDED BY DIRECTOR CONCANNON

Reliability Policy for Municipal & Industrial Water Supplies

WHEREAS, the Zone 7 Board of Directors desires to maintain a highly reliable Municipal and Industrial (M&I) water supply system so that existing and future M&I water demands can be met during varying hydrologic conditions; and

WHEREAS, the Board has an obligation to communicate to its M&I customers and municipalities within its service area the ability of the Zone's water supply system to meet projected water demands.

WHEREAS, the Board on May 15, 2002 adopted Resolution No. 02-2382 setting forth its Reliability Policy for Municipal & Industrial Water Supplies; and

WHEREAS, the Zone's current water supply policy includes a provision for a valley-wide groundwater production capability to meet 75% of valley-wide M&I demand in the event of an outage of the South Bay Aqueduct; and

WHEREAS, the Board desires to revise the Reliability Policy to include all Zone 7 water supply facilities and to clarify demand levels for planning purposes;

NOW, THEREFORE, BE IT RESOLVED that the Board hereby rescinds Resolution No. 02-2382 adopting the May 15, 2002 Reliability Policy for Municipal & Industrial Water Supplies; and

BE IT FURTHER RESOLVED that the Board hereby adopts the following policy goals regarding reliability¹ to guide the management of the Zone's M&I water supplies as well as its Capital Improvement Program (CIP)²:

- GOAL 1. Meet 100% of its treated water customers water supply needs in accordance with Zone 7's most current Contracts for M&I Water Supply, including existing and projected demands for the next 20 years as specified in Zone 7's Urban Water Management Plan, (UWMP), which will be coordinated with Zone 7's M&I water Contractors. Zone 7 will endeavor to meet this goal during an average water year³, a single dry water year⁴, and multiple dry water years⁵, and

GOAL 2: Provide sufficient treated water production capacity and infrastructure to meet at least 75% of the maximum daily M&I contractual demands should any one of Zone 7's major supply, production or transmission facilities experience an extended unplanned outage.

BE IT FURTHER RESOLVED that to ensure that this Board policy is carried out effectively, the Zone 7 General Manager will provide a water supply status report to the Board every five years with the Zone 7 Urban Water Management Plan that specifies how these goals can be, or are being, achieved.

If the General Manager finds that the goals might not be met, then the Board will hold a public hearing within two months of the General Manager's finding to consider remedial actions that will bring the Zone into substantial compliance with the stated reliability goals. Remedial actions may include, but are not limited to, voluntary conservation or mandatory rationing to reduce water demands, acquisition of additional water supplies, and/or a moratorium on new water connections. After reviewing staff analyses and information gathered at the public hearing, the Board shall, as expeditiously as is feasible, take any additional actions that are necessary to meet the reliability goals during the following five-year period; and

BE IT FURTHER RESOLVED that the Zone 7 General Manager shall prepare an Annual Review of the Sustainable Water Supply Report which includes the following information:

- (1) An estimate of the current annual average water demand for M&I water as well as a five-year projection based on the same information used to prepare the UWMP and CIP;
- (2) A summary of available water supplies⁶ to Zone 7 at the beginning of the calendar year;
- (3) A comparison of current water demands with the available water supplies; and
- (4) A discussion of water conservation requirements and other long-term water supply programs needed to meet Zone 7 M&I water demands for a single dry water year and multiple dry years, as specified in the Zone's UWMP.

A summary of this review will be provided to M & I customers.

Definitions

¹**Reliability**—the ability of a water supply system to provide water during varying hydrologic conditions without the need for reductions in water use.

²**Capital Improvement Program (CIP)**—the CIP is the Zone's formal program for developing surface and ground water supplies, along with associated infrastructure, including import water conveyance facilities, surface water treatment plants, groundwater wells, and M&I water transmission system to meet projected water demands.

³**Average water year**—the statistical average quantity of water from all of the water supplies available to Zone 7 on a contractual or legal basis (e.g., surface water runoff to Del Valle reservoir), based on the historical hydrologic records available to Zone 7.

⁴**Single dry water year**—for the purposes of meeting the requirements of the UWMP, the Zone 7 staff will identify and justify the selection of a calendar year from the historic record that represents the lowest yield from all normally contracted or legally available supplies.

⁵**Multiple dry water years**—for the purposes of meeting the requirements of the UWMP, the Zone 7 staff will identify and justify the selection of three or more consecutive dry years from the historic record that represent the lowest yields from all normally contracted or legally available supplies.

⁶**Available water supplies** consist solely of (1) water supplies that the Zone 7 has contracted for (e.g., listed under Schedule A of the State Water Contract, dry-year water options, special contracts with other water districts, etc.) and (2) water actually stored in surface and subsurface reservoirs.

ADOPTED BY THE FOLLOWING VOTE:

AYES: DIRECTORS CONCANNON, GRECI, KOHNEN, MARCHAND, QUIGLEY

NOES: NONE

ABSENT: DIRECTORS KALTHOFF, STEVENS

ABSTAIN: NONE

I certify that the foregoing is a correct copy of a resolution
Adopted by the Board of Directors of Zone 7 of Alameda
County Flood Control and Water Conservation District on

August 18, 2004 _____

Original resolution signed by the President, Board of Directors

ZONE 7
ALAMEDA COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT

BOARD OF DIRECTORS

RESOLUTION NO.

INTRODUCED BY DIRECTOR MARCHAND

SECONDED BY DIRECTOR KALTHOFF

Water Quality Policy for Potable and Non-potable Water

WHEREAS, the Zone 7 Board of Directors is committed to delivering high quality water supplies, to its potable (treated drinking water) and non-potable water Contractors, that meet or exceed the California Department of Health Services and the United States Environmental Protection Agency's public health requirements in accordance with existing water supply agreements, in a manner that is fiscally responsible, proactive, and environmentally sensitive; and

WHEREAS, the Board desires to deliver potable water of an approximately equal quality to each Municipal and Industrial (M&I) Contractor without diminishing their existing water quality; and

WHEREAS, the Board desires to deliver non-potable water of an appropriate quality for irrigation users from current surface and ground water supplies, and as a blended source of untreated and recycled water, when available.

NOW, THEREFORE, BE IT RESOLVED that the Board hereby adopts the following policy goals regarding water quality to guide the Zone 7 potable and non-potable water operations and its Capital Improvement Program:

GOAL 1 – Zone 7 shall continue to meet all state and federal primary Maximum Contaminant Levels¹ (MCLs) for potable water delivered to the M&I Contractors' turnouts, in accordance with existing water supply agreements. In addition, Zone 7 shall deliver potable water of a quality that is as close as technically feasible and fiscally responsible to the Public Health Goals² (PHGs) and/or Maximum Contaminant Level Goals³ (MCLGs). To ensure a margin of safety, the delivered water shall generally be of a quality that contains no greater than 80 percent of the applicable state or federal primary MCLs.

GOAL 2 – Zone 7 shall meet all state and federal secondary MCLs¹ in the potable water delivered to its M&I Contractors' turnouts. In addition, Zone 7 shall, within technical and fiscal constraints, proactively mitigate earthy-musty taste and odor events from surface water supplies and reduce hardness levels to "moderately hard", defined as 75 to 150 mg/L. Also, Zone 7 shall optimize its treatment processes to minimize chlorinous odors by maintaining consistent disinfectant dosage and residual.

GOAL 3 – Zone 7 shall endeavor to deliver to its non-potable Contractor turnouts, from a variety of sources, water of a quality that meets the irrigation needs of its Contractors and does not negatively impact vegetation, crops, or soils.

GOAL 4 – In order to achieve Goals 1 through 3, Zone 7 shall continue to work to improve the quality of its source waters. This may be achieved through Zone 7's Salt Management Plan, which will maintain or improve the water quality in the groundwater basin, and through advocacy of improvements in the State

Water Project, its' facilities and their operations, which may improve the source water of Zone 7's surface water supplies. In addition, Zone 7 will encourage the retailers to take similar steps as those outlined in this policy to improve the quality of the retail customers' water.

BE IT FURTHER RESOLVED that this Board policy be reviewed and updated as needed. Also, to ensure that this Board policy is carried out effectively, the Zone 7 General Manager shall implement the following actions:

- An Implementation Plan shall be prepared as a part of the Water Quality Management Program to implement treatment or other processes necessary to meet the water quality policy goals. Optimization of system operations will be recommended, wherever possible, prior to the identification of the need for capital improvements;
- The Implementation Plan shall be reviewed and updated every two years, or sooner if required, to reflect any emerging water quality issues and other relevant regulatory and/or technology development; and
- The Implementation Plan, and any subsequent updates, shall be incorporated into the annual updates of Zone 7's Five-year Capital Improvement Plan, as feasible.

¹ Maximum Contaminant Level (MCL): The highest level of a contaminant that is allowed in drinking water. Primary MCLs are set as close to the PHGs (or MCLGs) as is economically and technically feasible. Secondary MCLs are set to protect the odor, taste, and appearance of drinking water.

² Public Health Goal (PHG): The level of a contaminant in drinking water below which there is no known or expected risk to health. PHGs are set by the California Environmental Protection Agency.

³ Maximum Contaminant Level Goal (MCLG): The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs are set by the United States Environmental Protection Agency.

ADOPTED BY THE FOLLOWING VOTE:

AYES: DIRECTORS CONCANNON, GRECI, JOHNSTON, KALTHOFF, LAYTON, MARCHAND

NOES: NONE

ABSENT: DIRECTOR STEVENS

ABSTAIN: NONE

I certify that the foregoing is a correct copy of a resolution
Adopted by the Board of Directors of Zone 7 of Alameda
County Flood Control and Water Conservation District on

April 16, 2003 _____

Original resolution signed by the President, Board of Directors

**City of Pleasanton
Resolution No. 05-065**

**DSRSD
Resolution No. 35-05**

**Zone 7 Water Agency
Resolution No. 06-2783**

**JOINT RESOLUTION
CITY OF PLEASANTON
DUBLIN SAN RAMON SERVICES DISTRICT
ZONE 7 WATER AGENCY**

A JOINT RESOLUTION OF THE CITY COUNCIL OF THE CITY OF PLEASANTON, THE BOARD OF DIRECTORS OF THE DUBLIN SAN RAMON SERVICES DISTRICT AND THE BOARD OF DIRECTORS OF THE ZONE 7 WATER AGENCY REGARDING WATER QUALITY

WHEREAS, the existing Zone 7 Water Quality Policy and Implementation Plan was adopted on April 16, 2003 after extensive discussions with stakeholders, and with the support of the Retail Water Contractors California Water Service Company, the Dublin San Ramon Services District, the City of Livermore, and the City of Pleasanton; and

WHEREAS, the adopted Water Quality Policy and Implementation Plan identified specific water quality targets, and proposed specific projects and implementation schedules; and

WHEREAS, the proposed projects are currently on schedule: and

WHEREAS, the Water Quality Policy calls Zone 7 to review and update that document at a minimum of every two years; and

WHEREAS, opinion surveys conducted by Zone 7, the City of Pleasanton, and the Dublin San Ramon Services show that a substantial number of customers desire feasible improvements to the quality of their delivered water; and

WHEREAS the Dublin San Ramon Services District and the City of Pleasanton desire revisions to the existing Water Quality Policy, Goals, and Implementation Plan, and desire that the Water Quality Goals, and Implementation Plan schedules and that various

City of Pleasanton Resolution No. 05-065
DSRSD Resolution No. 35-05
Zone 7 Water Agency Resolution No. 06-2783

other options to further improve water quality be evaluated in the ongoing biannual review of the Water Quality Policy; and

WHEREAS, the Dublin San Ramon Services District and the City of Pleasanton understand that the acceleration of project schedules, and the implementation of additional improvements to water quality may result in added costs to their customers; and;

WHEREAS, on May 13, 2005 a special meeting involving members of the City Council of the City of Pleasanton, the Board of Directors of the Dublin San Ramon Services District and the Board of Directors of the Zone 7 Water Agency was held for the purpose of discussing mutual concerns about the taste, odor and hardness of the water received by the customers of all three agencies; and

WHEREAS, the participants at that meeting expressed a shared desire to take prudent and practical steps to improve the taste and reduce the odor and hardness of the delivered water; and

WHEREAS, the road to improve the taste and to reduce the odor and hardness of the delivered water will include new facilities, operational considerations and financial decisions in which all three agencies have an interest; and

WHEREAS, another meeting involving members of the City Council of the City of Pleasanton, the Board of Directors of the Dublin San Ramon Services District and the Board of Directors of the Zone 7 Water Agency was held on August 1, 2005; and

WHEREAS, the City Council of the City of Pleasanton, the Board of Directors of the Dublin San Ramon Services District and the Board of Directors of the Zone 7 Water Agency wish to express their mutual commitment to work together for the benefit of the common customers they all serve.

City of Pleasanton Resolution No. 05-065
DSRSD Resolution No. 35-05
Zone 7 Water Agency Resolution No. 06-2783

NOW, THEREFORE BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF PLEASANTON, THE BOARD OF DIRECTORS OF THE DUBLIN SAN RAMON SERVICES DISTRICT AND THE BOARD OF DIRECTORS OF THE ZONE 7 WATER AGENCY AS FOLLOWS:

1. That the City of Pleasanton and the Dublin San Ramon Service District do hereby express their formal support for the water quality improvement projects listed in the Zone 7 brochure entitled "Water Quality Projects 2005-2015; December 2004"; and

2. That the Zone 7 Water Agency does hereby formally acknowledge the importance of the water quality concerns of the City of Pleasanton and the Dublin San Ramon Services District and commits to implementing the water quality improvements projects shown in the December 2004 brochure referenced in paragraph 1 in a prudent but expeditious manner; and

3. That the City of Pleasanton, the Dublin San Ramon Services District and the Zone 7 Water Agency pledge to work together to explore and identify ways to make further progress to improve the taste and reduce the odor and hardness of the water that is served to all customers; and

4. That City of Pleasanton, the Dublin San Ramon Services District and the Zone 7 Water Agency commit to do this in a way that will not degrade the quality of the water served to other parts of the Zone 7 service area.

5. That the attached "Policy Principles" will guide the City of Pleasanton, the Dublin San Ramon Services District and the Zone 7 Water Agency in developing and implementing projects, programs and operational guidelines related to improving delivered water quality.

City of Pleasanton Resolution No. 05-065
DSRSD Resolution No. 35-05
Zone 7 Water Agency Resolution No. 06-2783

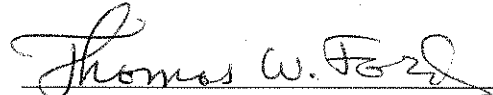
Adopted and passed by the Board of Directors of the Dublin San Ramon Services
District at its regular meeting held on August 2, 2005 by the following vote:

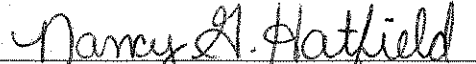
AYES: 5 - Directors Daniel J. Scannell, Richard M. Halket, Jeffrey G.
Hansen, Dwight L. Howard, Thomas W. Ford

NOES: 0

ABSENT: 0

ABSTAIN: 0

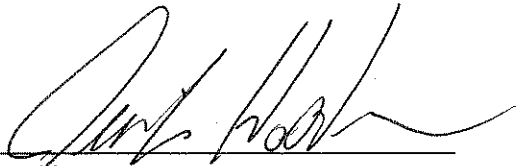

Thomas W. Ford, President

ATTEST: 
Nancy G. Hatfield, District Secretary

City of Pleasanton Resolution No. 05-065
DSRSD Resolution No. 35-05
Zone 7 Water Agency Resolution No. 06-2783

Adopted and passed by the City Council of the City of Pleasanton at its regular meeting held on August 16, 2005 by the following vote:

AYES: Councilmembers – Brozosky, McGovern, Sullivan, Thorne and Mayor Hosterman
NOES: None
ABSENT: None
ABSTAIN: None




Jennifer Hosterman, Mayor

APPROVED AS TO FORM:


for Michael H. Roush, City Attorney

ATTEST:


Dawn G. Abrahamson, City Clerk

City of Pleasanton Resolution No. 05-065
DSRSD Resolution No. 35-05
Zone 7 Water Agency Resolution No. 06-2783

Adopted and passed by the Board of Directors of the Zone 7 Water Agency at its regular meeting held on August 17, 2005 by the following vote:

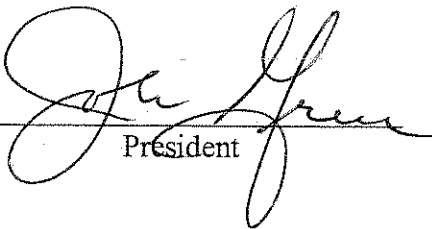
AYES: DIRECTORS CONCANNON, GRECI, KALTHOFF, KOHNEN, MARCHAND, QUIGLEY

NOES: NONE

ABSENT: DIRECTOR STEVENS

ABSTAIN: NONE

ATTEST: 
District Secretary


President

POLICY PRINCIPLES
For
ZONE 7 WATER QUALITY PROGRAM
Related to
IMPLEMENTATION PLAN UPDATE
In the areas of
GENERAL POLICIES
OPERATIONS
FACILITIES
EDUCATION
FUNDING

INTENT

The intent of these Policy Principles is to document the mutual expectations of the policy makers in the Tri-Valley related to the updating and implementation of Zone 7 Water Quality Program and the role of the Retailers in the updating of that program.

ZONE 7 WATER QUALITY PROGRAM

Zone 7 Water Quality Policy, Goals, and Targets, adopted by the Zone 7 Board of Directors in 2003, were developed after extensive discussions with, and in cooperation with, local retail water Contractors, including the California Water Service Company, the Cities of Livermore and Pleasanton, and the Dublin San Ramon Services District, and other interested stakeholders. The adopted Water Quality Policy expressly required that the Water Quality Program Implementation Plan be reviewed and updated at a minimum of every two years to reflect any emerging water quality issues and/or other relevant regulatory and/or technology development, and that, as feasible, any plan updates be incorporated into the annual updates of the Zone 7 Capital Improvement Plan. Zone 7 staff began work on the initial update to the adopted 2003 Implementation Plan in March 2005.

Opinion surveys conducted by Zone 7, the City of Pleasanton, and the Dublin San Ramon Services District show that a substantial number of customers desire feasible improvements to the quality of their water supply.

The following is a brief description of the preliminary Work Plan for the Water Quality Policy and Implementation Plan Update and the anticipated schedule.

Phase I:

Zone 7 staff will prepare an informational item to be presented to the Zone 7 Board of Directors in September, 2005 which will consist of a technical water quality report card. This Phase I Report Card will include graphical presentations of the status of each constituent of concern in relation to the Water Quality Targets, which were specified in the 2003 Zone 7 Water Quality Policy and Implementation Plan, at Retail Contractors'

turnouts. If desired, a similar presentation will be made at the Committee of Valley Water Retailers, which includes the California Water Service Company, the Dublin San Ramon Services District, the City of Livermore, and the City of Pleasanton. (CoVWR) at their annual October meeting.

Phase II:

Beginning in July/August, 2005 and concurrent with the development of the Water Quality Report Card, Zone 7 staff will develop a technical tool box, considering the Policy Principles herein, to assist in identifying and evaluating alternative projects or activities that would enhance Zone 7's ability to meet the Board's adopted Water Quality Policy Goals. For example, based on any data gaps identified in the Phase I Report Card, what could be done to better assess the water quality impacts of ongoing & future planned projects e.g. additional water quality monitoring, data collection, or modeling/forecasting needs for each retailer turnout? Phase II work is expected to be completed in September, 2005.

Phase III:

Initiate discussions in October/November, 2005 with Retail Water Contractors and other stakeholders, as appropriate, to further develop the technical tool box, and to further discuss Policy Principles in an effort to identify mutually acceptable Policies and feasible activities to incorporate into the Water Quality Program Implementation Plan and/or the Zone 7 Water Quality Policy. Phase III is expected to be accomplished within six months of its actual implementation date.

ROLE OF THE RETAILERS

Zone 7 will maintain a regular dialog with the retail agencies at all levels as appropriate throughout the development of the Water Quality Program. The schedule for any discussions will be such that there will be an opportunity for meaningful input from the retailers ahead of any decisions made by Zone 7 staff or Board. DSRSD and Pleasanton will provide input in a timely manner and will encourage the other retailers to do likewise. Zone 7 shall give serious consideration to the comments and suggestions of the Retailers.

POLICY PRINCIPLES

Identified in the following sections are mutually agreeable Policy Principles related to water quality. These Policy Principles will be evaluated in detail during Phase III discussions with Retail Water Contractors, and other interested stakeholders. The staff's of the parties will report back at a combined meeting of the Agencies' policy makers as the proposed method and schedule for adoption of the appropriate Policy Guidelines.

General Policy Principles

1. Reaffirm contractual commitment to provide aesthetically acceptable water and to blend Zone 7's different water sources within its operational capabilities to provide approximately equal quality water to each of the retailers.
2. Support the water quality projects in Zone 7's four-page brochure entitled "Water Quality Projects 2005-2015, December 2004".
3. Support and cooperate with development and implementation of the Salt Management Program.
4. Program and Project recommendations must not result in any degradation of the existing delivered water quality for east side retailers.
5. Each liaison committee (Pleasanton-Zone 7; Pleasanton-DSRSD and DSRSD-Zone 7) will receive a common staff report from the managers of each agency every six months on the status of the various efforts called for within these Policy Principles; those liaison committees may call for separate or combined liaison meetings to discuss the status reports.

Operational Principles

1. Examine Zone 7 and retailer operating practices over time (summer to winter, day to day and at individual turnouts to the retailers), at both present and future facilities, that could be feasibly optimized to improve, and to better equalize delivered water quality.
2. Establish operations guidelines for Zone 7 wells, that without compromising overall system reliability, would be consistent with the goals of delivering aesthetically acceptable water to retailers' turnouts, and improving and, to the extent possible, equalizing delivered water quality.
3. Study operational capacities of water treatment plants and transmission facilities to maximize deliveries of treated surface water to retailer turnouts.
4. Examine the practical extent to which wells with demineralization capabilities can be preferentially operated before wells without demineralization capabilities, without compromising overall water system reliability.

Facilities Principles

1. Implement all projects in the 4 page Water Quality brochure on the schedule shown to the maximum extent possible among which are projects that will improve the hardness, taste and odor of water delivered to the west side retailers.
2. Identify and evaluate the potential effectiveness and feasibility of constructing new facilities (pipelines, pumping facilities etc.) to minimize variations in

delivered water quality, to improve overall delivered water quality, and to better equalize delivered water quality.

3. Examine the feasibility of installing treatment facilities at individual turnouts to improve and to better equalize the water quality delivered to individual retailers
4. Examine the feasibility of "point of use" treatment devices or facilities in localized areas.
5. Examine alternative means to deliver treated surface water from any of the treatment plants to points closer to retailer turnouts so as to better balance surface water deliveries to each retailer.
6. Support those taste and odor improvement projects that will benefit east side retailers.

Educational Principles

1. Develop joint educational material for the public regarding local water supplies, emphasizing all the actions taken and to be taken to improve water quality, including how those actions affect each retailer.
2. Develop joint educational material describing the benefits of the Salt Management Program.

Funding Principles

1. Identify and evaluate the most appropriate alternatives to equitably fund the capital and operating costs needed to improve water quality.
2. Provide bi-annual reports to the community describing the condition of Zone 7 water system assets, actual and proposed uses of Asset Management Program (AMP) Funds, AMP fund balances, and the ability of the Asset Management Fund to meet the needs for which it has been established.

Appendix B

Evaluation of Ozone and Peroxone for Water Quality
Improvements at the Del Valle and Patterson Pass Water
Treatment Plant: *Opinion of Probable Capital & Annual
Operating Costs*

SECTION 7.0 – COST ESTIMATE

This Section presents WQTS' opinion of the probable capital and annual O&M cost for implementing either the ozone or Peroxone alternative at the Del Valle Water Treatment Plant (DVWTP) and the Patterson Pass Water Treatment Plant (PPWTP). Section 6 discussed the details of the modifications required under each treatment alternative. Table 7.1 summarizes the primary modifications to be implemented at each plant under each alternative.

Table 7.1 – Summary of Primary Modifications at Each Plant under Each Alternative

Ozone Alternative	Peroxone Alternative
Ozone contactor	Peroxone contactor
Ozone generation equipment & bldg	Ozone generation equipment & bldg
Carbon dioxide storage & feed system	Hydrogen peroxide storage & feed system
Air scour system	Air scour system
Small chlorine contactor	Chlorine CT contactor

7.1 CAPITAL COST

In developing the opinion of probable capital cost, a planning level budgeting approach was utilized. In this approach, costs of basic components are projected based on unit cost values, and specific percent markups are added for various project components such as general conditions, site work & yard piping, electrical, instrumentation & control, contingency, and engineering. This planning level approach is projected to have an uncertainty range of ±30%.

Tables 7.2 through 7.5 present the breakdown of the probable capital costs for ozone or Peroxone implementation at DVWTP and PPWTP. The footnotes at the bottom of each table explain the basis for the unit cost factors used. Unit costs for the ozone contactor, LOX system, ozone generation system and building, hydrogen peroxide feed system, and air scour addition were based on unit cost equations developed by McGivney & Kawamura (2008).⁶ The specific equations used are summarized in Table 6.

A few items should be noted regarding the capital cost breakdowns presented and the equations used:

1. McGivney & Kawamura (2008) does not have a specific equation for a H₂O₂ feed system. Therefore, the equation for a ferric chloride feed system was used as a substitute.
2. McGivney & Kawamura's equations were developed based on an ENR CCI of 8889. Therefore, the cost values generated by these equations were adjusted to ENR CCI 9755, which is the February 2009 ENR CCI for San Francisco.

⁶ McGivney & Kawamura, 2008. *Cost Estimating Manual for Water Treatment Facilities*, John Wiley & Sons, Hoboken, NJ.

Table 7.2 – Probable Capital Cost for Implementing Ozone at DVWTP

Capital Cost:			
Item	Level Unit	Note	Cost
Ozone Contactor	306,000 gallons	(1)	\$335,000
Ozone system & building	1,650 lbs/day	(1)	\$4,124,000
Carbon Dioxide System		(2)	\$675,000
Air Scour System	5,360 ft ²	(1)	\$587,000
Chlorine Contactor	520,000 gallons	(3)	\$780,000
Subtotal "A" =			\$6,500,000
General Conditions	15% of "A"		\$975,000
Site work & Yard Piping	40% of "A"		\$2,600,000
Electrical, Instrumentation & Control	40% of "A"		\$2,600,000
Subtotal "B" =			\$6,175,000
Construction Contingency	30% of "A+B"		\$3,803,000
Engineering, Legal, & Admin.	25% of "A+B+Contingency"		\$4,120,000
Probable 2009 Capital Cost (±30%)			\$20,600,000

- (1) McGivney & Kawamura (2008) adjusted to ENR CCI 9755 for San Francisco (S.F. ENR)
(2) TOMCO Budgetary Quote
(3) Estimated based on a unit cost of \$1.5/gal of clearwell volume (for volumes less than 1.0 MG)

Table 7.3 – Probable Capital Cost for Implementing Peroxone at DVWTP

Capital Cost:			
Item	Level Unit	Note	Cost
Ozone Contactor	92,000 gallons	(1)	\$154,000
Ozone system & building	1,100 lbs/day	(1)	\$3,171,000
Hydrogen Peroxide System	334 gal/day	(1)	\$239,000
Air Scour System	5,360 ft ²	(1)	\$587,000
Chlorine Contactor	2,140,000 gallons	(2)	\$2,140,000
Subtotal "A" =			\$6,300,000
General Conditions	15% of "A"		\$945,000
Site work & Yard Piping	40% of "A"		\$2,520,000
Electrical, Instrumentation & Control	40% of "A"		\$2,520,000
Subtotal "B" =			\$6,000,000
Construction Contingency	30% of "A+B"		\$3,690,000
Engineering, Legal, & Admin.	25% of "A+B+Contingency"		\$3,998,000
Total Probable Capital Cost (±30%)			\$20,000,000

- (1) McGivney & Kawamura (2008) adjusted to S.F. ENR CCI 9755
(2) Estimated based on a unit cost of \$1.0/gal of clearwell volume (for volumes greater than 1.0 MG)

Table 7.4 – Probable Capital Cost for Implementing Ozone at PPWTP

Capital Cost:			
Item	Level Unit	Note	Cost
Ozone Contactor	208,320 gallons	(1)	\$261,000
Ozone system & building	919 lbs/day	(1)	\$2,823,000
Carbon Dioxide System		(2)	\$570,000
Air Scour System	2,000 ft ²	(1)	\$402,000
Chlorine Contactor	100,000 gallons	(3)	\$150,000
Subtotal "A" =			\$4,200,000
General Conditions	15% of "A"		\$630,000
Site work & Yard Piping	40% of "A"		\$1,680,000
Electrical, Instrumentation & Control	40% of "A"		\$1,680,000
Subtotal "B" =			\$3,990,000
Construction Contingency	30% of "A+B"		\$2,457,000
Engineering, Legal, & Admin.	25% of "A+B+Contingency"		\$2,662,000
Probable 2009 Capital Cost (±30%)			\$13,300,000

(1) McGivney & Kawamura (2008) adjusted to S.F. ENR CCI 9755

(2) TOMCO Budgetary Quote

(3) Estimated based on a unit cost of \$1.5/gal of clearwell volume (for volumes less than 1.0 MG)

Table 7.5 – Probable Capital Cost for Implementing Peroxone at PPWTP

Capital Cost:			
Item	Level Unit	Note	Cost
Ozone Pipeline Contactor	543 ft	(1)	\$260,000
Ozone system & building	613 lbs/day	(2)	\$2,172,000
Hydrogen Peroxide System	186 gal/day	(2)	\$199,000
Air Scour System	2,000 ft ²	(2)	\$402,000
Chlorine Contactor	600,000 gallons	(3)	\$900,000
Subtotal "A" =			\$3,900,000
General Conditions	15% of "A"		\$585,000
Site work & Yard Piping	40% of "A"		\$1,560,000
Electrical, Instrumentation & Control	40% of "A"		\$1,560,000
Subtotal "B" =			\$3,705,000
Construction Contingency	30% of "A+B"		\$2,282,000
Engineering, Legal, & Admin.	25% of "A+B+Contingency"		\$2,472,000
Probable 2009 Capital Cost (±30%)			\$12,400,000

(1) \$480/ft of 48-inch pipe based on B&V's cost estimate for AWTP

(2) McGivney & Kawamura (2008) adjusted to S.F. ENR CCI 9755

(3) Estimated based on a unit cost of \$1.5/gal of clearwell volume (for volumes less than 1.0 MG)

Table 7.6 – Unit Cost Equations

Item	Unit Cost Equations (CCI = 8889)	Variable
Ozone Contactor	Cost = $89.217 \times X^{0.6442}$	X = Volume of contactor, gallons
Ozone System & Building	Cost = $31,015 \times X^{0.6475}$	X = ozone capacity, lbs/day
H ₂ O ₂ Feed System	Cost = $34,153 \times X^{0.3190}$	X = chemical feed rate, gal/day
Air Scour	Cost = $50.157 \times X + 266,176$	X = filter surface area, ft

Table 7.7 summarizes the probable 2009 capital costs for implementing ozone or Peroxone at the DVWTP and PPWTP presented in Tables 7.2 through 7.5. For DVWTP, the probable capital cost for ozone was estimated at \$20.6M, while that for Peroxone was estimated at \$20.0 M. These values are within 1.5% of the average of \$20.3M, which is well within the minimum accuracy of the capital costs developed ($\pm 30\%$). The same observation is made for the PPWTP where the cost of ozone or Peroxone is only within 3.9% of the average probable capital cost of \$12.9M. Therefore, for all practical purposes, the probable capital cost of either ozone or Peroxone is approximately \$20.3M for DVWTP and \$12.9M for PPWTP, for a combined total probable cost of \$33.2M for both plants.

Table 7.7 – Summary of Opinion of Probable 2009 Capital Cost

Plant	Ozone	Peroxone	Average	Relative Range
Del Valle WTP	\$20.6 M	\$20.0 M	\$20.3 M	$\pm 1.5\%$
Patterson Pass WTP	\$13.3 M	\$12.4 M	\$12.9 M	$\pm 3.5\%$
Total 2009 Capital Cost	\$33.9 M	\$32.4 M	\$33.2 M	$\pm 2.4\%$

7.2 ANNUAL OPERATING & MAINTENANCE COST

The annual operating and maintenance (O&M) cost was developed for implementing ozone or Peroxone at both plants. The operating cost covered includes energy, chemicals, and labor costs. The development of the annual chemical usage rate required specific assumptions about the T&O duration and the anticipated ozone dose during the T&O season compared to the rest of the year. These are important assumptions because the ozone system will be in operation full-time under the ozone option, but only during the T&O season under the Peroxone option. Therefore, the following assumptions and estimations were made to develop the annual operation cost of each option:

1. Based on discussion with Zone 7 staff, while the duration and specific period of T&O season may vary from year to year, the typical T&O season was assumed to extend from June through November (6 months).

2. Based on the production data from 2006, 2007, and 2008 provided by Zone 7 staff, the average annual water production was calculated at 24 MGD for DVWTP and 11 MGD for PPWTP. These values were used for the development of the annual operating cost under the ozone option.
3. Based on the production data from 2006, 2007, and 2008 provided by Zone 7 staff, the average water production during the T&O season of June through November was estimated at 31 MGD for DVWTP and 13 MGD for PPWTP. These values were used for the development of the annual operating cost under the Peroxone option.
4. The ozone dose during the T&O season was assumed to be 2.5 mg/L under both options. During the non-T&O season (December through May), the ozone dose under the ozone option was assumed to be 1.5 mg/L. This is a typical ozone dose used by other SBA users for disinfection purposes.
5. A general annual maintenance cost is estimated at 1% of the capital cost. This estimate covers miscellaneous ozone-related maintenance items such as:
 - a. Replacement dielectric cells (1/5th of total per year)
 - b. One complete set of fuses every three years
 - c. Specialized contractor for maintenance of cooling water system
 - d. Replacement parts for water-phase and gas-phase ozone analyzers
 - e. Complete set of gaskets for diffusers, every two years
 - f. Complete set of gaskets for generators, every year
6. For labor cost, the addition of either technology was assumed to require 0.5 Full-Time-Equivalent (FTE) of each of the following: operator, mechanic, instrumentation technician, and electrician. The burdened labor rates were obtained from Zone for 2008.
7. The addition of chlorine and ammonia upstream of the ozone or Peroxone contactor was assumed to be implemented only six (6) months each year when bromide levels in SBA water are elevated enough to require a bromate control strategy.

The detailed breakdowns of the probable annual operating costs for the Ozone and Peroxone options at DVWTP and PPWTP are presented in Tables 7.8 through 7.11. The tables also include unit costs for chemicals that are based on information gathered from Zone 7 and other Northern California water agencies. It is also noted that individual line items in Tables 7.8 through 7.11 are rounded to the nearest \$1000/yr, while the total is rounded to the nearest \$100,000/yr.

Table 7.8 – Probable 2009 Operating Cost for Implementing Ozone at DVWTP

Annual O&M Cost:	Note	Value Unit	
Annual Average Flow Rate	(1)	24 MGD	
Days of Operation		365 days	
Average Ozone Dose	(2)	2.0 mg/L	
		Value Unit	Unit Cost Unit
Energy Cost		8.0 kW-hr/lb	\$0.16 /kW-hr
LOX Cost		12.5 lb O ₂ /lb O ₃	\$0.25 /lb O ₂
CO ₂ Cost		20 mg/L	\$0.09 /lb
Chlorine Cost (6 months only)		0.75 mg/L	\$0.94 /lb
Ammonia Cost (6 months only)		0.19 mg/L	\$0.72 /lb
Total Consumables Cost			\$812,000
General Maintenance Cost	1.0 % of Capital		\$206,000
Labor Cost (Operator)	0.5 FTE	\$239,034 /yr	\$120,000
Labor Cost (Mechanic)	0.5 FTE	\$226,138 /yr	\$113,000
Labor Cost (Instrument Tech.)	0.5 FTE	\$253,261 /yr	\$127,000
Labor Cost (Electrician)	0.5 FTE	\$253,885 /yr	\$127,000
Total Labor Cost			\$487,000
Probable Annual Operating Cost (2009 Dollars)			\$1,500,000

(1) Based on average day flow between January 2006 and December 2008

(2) Assuming 2.5 mg/L during 6-month T&O season & 1.5 mg/L during rest of year

Table 7.9 – Probable 2009 Operating Cost for Implementing Peroxone at DVWTP

Annual O&M Cost:	Note	Value Unit	
Average Flow Rate during T&O season	(1)	31 MGD	
T&O season	(2)	180 days	
Average Ozone Dose during T&O season	(3)	2.5 mg/L	
		Value Unit	Unit Cost Unit
Energy Cost		8.0 kW-hr/lb	\$0.16 /kW-hr
LOX Cost		12.5 lb O ₂ /lb O ₃	\$0.25 /lb O ₂
H ₂ O ₂ Cost		1.25 mg/L	\$0.54 /lb
Chlorine Cost		0.75 mg/L	\$0.94 /lb
Ammonia Cost		0.19 mg/L	\$0.72 /lb
Total Consumables Cost			\$583,000
General Maintenance Cost	1.0 % of Capital		\$200,000
Labor Cost (Operator)	0.5 FTE	\$239,034 /yr	\$120,000
Labor Cost (Mechanic)	0.5 FTE	\$226,138 /yr	\$113,000
Labor Cost (Instrument Tech)	0.5 FTE	\$253,261 /yr	\$127,000
Labor Cost (Electrician)	0.5 FTE	\$253,885 /yr	\$127,000
Total Labor Cost			\$487,000
Probable Annual Operating Cost (2009 Dollars)			\$1,300,000

(1) Based on average day flow during June – November of 2006, 2007, and 2008

(2) Assuming T&O season from June through November

(3) Assuming 2.5 mg/L during T&O season

Table 7.10 – Probable 2009 Operating Cost for Implementing Ozone at PPWTP

Annual O&M Cost:	Note	Value Unit	
Annual Average Flow Rate	(1)	11 MGD	
Days of Operation		365 days	
Average Ozone Dose	(2)	2.0 mg/L	
		Value Unit	Unit Cost Unit
Energy Cost		8.0 kW-hr/lb	\$0.16 /kW-hr
LOX Cost		12.5 lb O ₂ /lb O ₃	\$0.25 /lb O ₂
CO ₂ Cost		20 mg/L	\$0.09 /lb
Chlorine Cost (6 months only)		0.75 mg/L	\$0.94 /lb
Ammonia Cost (6 months only)		0.19 mg/L	\$0.72 /lb
Total Consumables Cost			\$372,000
General Maintenance Cost	1.0 % of Capital		\$133,000
Labor Cost (Operator)	0.5 FTE	\$239,034 /yr	\$120,000
Labor Cost (Mechanic)	0.5 FTE	\$226,138 /yr	\$113,000
Labor Cost (Instrument Tech)	0.5 FTE	\$253,261 /yr	\$127,000
Labor Cost (Electrician)	0.5 FTE	\$253,885 /yr	\$127,000
Total Labor Cost			\$487,000
Probable Annual Operating Cost (2009 Dollars)			\$1,000,000

(1) Based on average day flow between January 2006 and December 2008

(2) Assuming 2.5 mg/L during 6-month T&O season & 1.5 mg/L during rest of year

Table 7.11 – Probable 2009 Operating Cost for Implementing Peroxone at PPWTP

Annual O&M Cost:	Note	Value Unit	
Average Flow Rate during T&O season	(1)	13 MGD	
T&O season	(2)	180 days	
Average Ozone Dose during T&O season	(3)	2.5 mg/L	
		Value Unit	Unit Cost Unit
Energy Cost		8.0 kW-hr/lb	\$0.16 /kW-hr
LOX Cost		12.5 lb O ₂ /lb O ₃	\$0.25 /lb O ₂
H ₂ O ₂ Cost		1.25 mg/L	\$0.54 /lb
Chlorine Cost		0.75 mg/L	\$0.94 /lb
Ammonia Cost		0.19 mg/L	\$0.72 /lb
Total Consumables Cost			\$244,000
General Maintenance	1.0 % of Capital		\$124,000
Labor Cost (Operator)	0.5 FTE	\$239,034 /yr	\$120,000
Labor Cost (Mechanic)	0.5 FTE	\$226,138 /yr	\$113,000
Labor Cost (Instrument Tech)	0.5 FTE	\$253,261 /yr	\$127,000
Labor Cost (Electrician)	0.5 FTE	\$253,885 /yr	\$127,000
Total Labor Cost			\$487,000
Probable Annual Operating Cost (2009 Dollars)			\$900,000

(1) Based on average day flow during June – November of 2006, 2007, and 2008

(2) Assuming T&O season from June through November

(3) Assuming 2.5 mg/L during T&O season

Table 7.12 presents a summary of the probable 2009 annual operating costs for the ozone or Peroxone option at each plant. The annual operating cost of the Peroxone system is projected to be slightly lower than that of the ozone system at either plant. The primary driver behind the difference is the fact that the Peroxone system is operated only 6 months per year, while the ozone system is operated full time. The 2009 operating cost for the ozone option at DVWTP is projected at \$1.5M/yr, while that of the Peroxone option is projected at \$1.3M/yr. Similarly, for the PPWTP, the 2009 operating cost for the ozone option is projected at \$1.0M/yr, while that of the Peroxone option is projected at \$0.9M/yr. If the ozone option is implemented at both plants, the 2009 annual operating cost is projected at \$2.5M/yr compared to \$2.2M/yr if the Peroxone process is implemented at both plants.

Table 7.12 – Summary of Opinion of Probable Annual O&M Cost (2009 Dollars)

Plant	Ozone	Peroxone
Del Valle WTP	\$1.5 M/yr	\$1.3 M /yr
Patterson Pass WTP	\$1.0 M/yr	\$0.9 M/yr
Total Annual O&M Cost (2009)	\$2.5 M/yr	\$2.2 M/yr

Unlike the development of the capital costs, the development of the annual operating costs is based on current pricing for chemicals and energy, as well as on the results of the pilot study and the operational information gathered from other water agencies using the same source water. Therefore, there is much less uncertainty in them compared to the capital cost estimates.

7.3 TOTAL ANNUAL COST

The total cost of implementing ozone or Peroxone includes the sum of the annual debt payment on the capital investment and the annual O&M cost. The debt payment was calculated based on an amortization rate of 6% and a debt-payment period of 20 years. The amortized capital cost was then added to the annual O&M cost to determine the total annual cost. It is important to emphasize that these costs are based on 2009 dollars since there is no current schedule for implementing this project at DVWTP or PPWTP. Tables 7.13 and 7.14 present the calculated total probable annual costs for implementing ozone or Peroxone at DVWTP and PPWTP, respectively. The total values are rounded to the nearest \$100,000/yr.

Table 7.13 – Total Probable Annual Cost for Implementing Ozone or Peroxone at DVWTP

Item	Ozone	Peroxone
Capital Cost	\$20,600,000	\$20,000,000
Annualized Capital Cost (6%, 20 yrs)	\$1,796,000	\$1,744,000
Annual O&M Cost	\$1,500,000	\$1,300,000
Probable Total Annual Cost	\$3,300,000	\$3,000,000

Table 7.14 – Total Probable Annual Cost for Implementing Ozone or Peroxone at PPWTP

Item	Ozone	Peroxone
Capital Cost	\$13,300,000	\$12,400,000
Annualized Capital Cost (6%, 20 yrs)	\$1,160,000	\$1,081,000
Annual O&M Cost	\$1,000,000	\$900,000
Probable Total Annual Cost	\$2,200,000	\$2,000,000

Table 7.15 summarizes the total annualized costs for implementing ozone or Peroxone at DVWTP and PPWTP. Due to the difference in the annual operating cost, the cost of implementing the Peroxone process is projected to be slightly lower than that of implementing the ozone process. For example, implementing the Peroxone process at DVWTP is projected to be \$300,000/yr less costly than that of implementing the ozone process at the plant, which is $\pm 5\%$ from the average cost of \$3.2M/yr. This is significantly lower than the minimum uncertainty of $\pm 30\%$ in the probable capital cost which makes up more than half of the total probable annual cost. For this reason, it is appropriate to assume that the difference in the probable annual cost between the two options is not significant, and that the average total probable annual costs listed in Table 7.15 should be assumed for either option.

Table 7.15 – Summary of Opinion of Probable Total 2009 Annual Cost

Plant	Ozone	Peroxone	Average	Relative Range
Del Valle WTP	\$3.3 M/yr	\$3.0 M/yr	\$3.2 M/yr	$\pm 5\%$
Patterson Pass WTP	\$2.2 M/yr	\$2.0 M/yr	\$2.1 M/yr	$\pm 5\%$
Total Annual Cost (2009)	\$5.5 M/yr	\$5.0 M/yr	\$5.3 M/yr	$\pm 5\%$

7.4 SUMMARY

The cost analysis presented in this Section demonstrated that the probable costs of implementing ozone and Peroxone at either plant are well within the accuracy of the cost projection. A summary of the cost information developed in this Section is presented in Table 7.16. The total probable capital cost of implementing an ozone-based T&O control strategy at Zone 7's two treatment plants is projected at \$33.2M, with the probable annual operating cost projected at \$2.3 M/yr (both are in 2009 dollars). Table 7.16 also includes an estimate of the impact of implementing ozone and/or Peroxone at either or both plants on the total water cost to Zone 7. This was determined by dividing the annual cost under each option by the 2008 total water production of 45,216 AF. Using this approach, the water cost impact of implementing either technology at both plants is projected at \$116/AF of total water produced by Zone 7.

Table 7.16 – Summary of Projected Probable Costs (2009 Dollars) of Implementing Ozone or Peroxone at DVWTP and PPWTP

Item	Del Valle WTP			Patterson Pass WTP			Probable Total
	Ozone	Peroxone	Average	Ozone	Peroxone	Average	
Capital Cost	\$20.6 M	\$20.0 M	\$20.3 M	\$13.3 M	\$12.4 M	\$12.9 M	\$33.2 M
Amortized Capital Cost	\$1.8 M/yr	\$1.7 M/yr	\$1.8 M/yr	\$1.2 M/yr	\$1.1 M/yr	\$1.2 M/yr	\$3.0 M/yr
Annual Operating Cost	\$1.5 M/yr	\$1.3 M/yr	\$1.4 M/yr	\$1.0 M/yr	\$0.9 M/yr	\$0.9 M/yr	\$2.3 M/yr
Total Annual Cost	\$3.3 M/yr	\$3.0 M/yr	\$3.2 M/yr	\$2.2 M/yr	\$2.0M/yr	\$2.1 M/yr	\$5.3 M/yr
Water Cost ⁽¹⁾	\$73 /AF	\$66 /AF	\$70 /AF	\$49 /AF	\$44 /AF	\$46 /AF	\$116 /AF

(1) Based on 2008 water production of 45,216 AF.